FINAL
FIVE-YEAR REVIEW REPORT
FOURTH FIVE-YEAR REVIEW REPORT

EVANS AREA, FORT MONMOUTH
Oceanport, Monmouth County, New Jersey

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ACRONYMS AND ABBREVIATIONS

µg/L	Micrograms per Liter
Army	United States Army
BRAC	Base Realignment and Closure Act
Calibre	Calibre Systems, Inc.
CEA	Classification Exception Area
COC	Contaminant of Concern
EPA	United States Environmental Protection Agency
GWQS	Groundwater Quality Standard
ICs	Institutional Controls
IDW	Investigation Derived Waste
JV	Seres-Arcadis SB Joint Venture, LLC
Kemron	Kemron Environmental Services, Inc.
MG	Million Gallons
MGD	Million Gallons per Day
msl	Mean Sea Level
MTBE	Methyl Tertiary Butyl Ether
NJDEP	New Jersey Department of Environmental Protection
PCE	Tetrachloroethylene
O&M	Operation and Maintenance
OSWER	Office of Solid Waste and Emergency Response
Shaw	Shaw Environmental, Inc.
SIR	Site Investigation Report
SSIR	Supplemental Site Investigation Report
SWQC	Surface Water Quality Criteria
TCE	Trichloroethene
UU/UE	Unlimited Use/Unrestricted Exposure
USACE	United States Army Corps of Engineers
VOC	Volatile Organic Compound
Watermark	Watermark Environmental Inc.
WRA	Well Restriction Area

EXECUTIVE SUMMARY

The United States Army (Army) has prepared this fourth five-year review for Fort Monmouth Evans Area, located in Wall Township, Monmouth County, New Jersey that addresses the period from August 2016 to July 2021. The assessment of this five-year review is that the implemented remedy is functioning as intended and continues to protect human health and the environment. This fourth five-year review was performed based on the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 which requires remedies which leave waste in place above levels that allow for unlimited use or unrestricted exposure be reviewed no less than every five years.

The proposed remedial action presented in the Decision Document (Kemron 2001) was Source Removal with Long-Term Monitoring, and consisted of the removal of sources of contamination, continued groundwater monitoring, and the implementation of a Classification Exception Area (CEA). The triggered initiation of remedial action is July 9, 2001, the date of the New Jersey Department of Environmental Protection (NJDEP) concurrence letter. As a part of the decision document, a NJDEP-approved Classification Exception Area (CEA) for the site was generated and approved on August 10, 2001.

The original long-term monitoring portion of the remedy included five contaminants of concern (COCs): tetrachloroethylene (PCE), trichloroethene (TCE), cadmium, lead, and nickel. PCE was dropped from the program after the 2012 annual sampling event. The remaining COCs are being closely monitored in various wells based on historical data and trends. After inception of the CEA, annual long-term monitoring was conducted and associated reports were generated, but in 2014, long-term monitoring was changed to every two years to coincide with the biennial certification for the CEA.

The original CEA included an estimated long-term monitoring period of five years for the COCs. During the first five-year review in 2007, the period of five years specified in the original conceptual site model/anticipated monitoring program was altered to 35 years. This change in duration was outlined in a CEA amendment, which was approved by the NJDEP in 2009.

Based on the current and reasonably-anticipated site and groundwater uses, the Army has determined that the Evans Area remedy currently protects human health and the environment. There are no unacceptable risks present at the site in groundwater and none are expected as long as the institutional controls are properly operated, monitored, and maintained.

Five-Year Review Summary Form

SITE IDENTIFICATION		
Site name *(from WasteLAN)*: Fort Monmouth Evans Area		
EPA ID *(from WasteLAN)*: NJ3210020324		
Region: 2	**State: NJ**	**City/County: Wall/Monmouth**
SITE STATUS		
NPL status: Final Deleted **X** Other (**Not Listed**)		
Remediation status (choose all that apply): Under Construction **X** Operating Complete		
Multiple OUs?* YES **X** NO	**Construction completion date:** September 2000	
Has site been put into reuse? X YES NO		
REVIEW STATUS		
Lead agency: EPA State Tribe **X** Other Federal Agency Department of the Army		
Author name: Thomas Lineer		
Author title: Thomas Lineer, BRAC Program Manager	**Author affiliation: U.S. Army Base Realignment and Closure Division**	
Review period:** 8/1/2016 to 7/31/2021		
Date(s) of site inspection: 7/29/2021		
Type of review: **X** Post-SARA Pre-SARA NPL-Removal only **X** Non-NPL Remedial Action Site NPL State/Tribe-lead Regional Discretion		
Review number: 1 (first) 2 (second) 3 (third) X Other (specify) _Fourth_____		
Triggering action: Actual RA On-site Construction at OU #____ Actual RA Start at OU#____ Construction Completion Previous Five-Year Review Report Other (specify) **X** NJDEP Concurrence Letter, dated July 9, 2001, of Draft Decision Document		
Triggering action date *(from WasteLAN)*: July 9, 2001		
Due date *(five years after triggering action date)*: 8/1/2021		

Issues, Recommendations, and Follow-Up Actions:

Based on the site inspection and review of available data, there are no issues that impact the protectiveness determination. Recommendations from the technical assessment include modification of the monitoring program as covered in Table 7-1, which includes removal of one well from the sampling program based on the groundwater trends in samples collected from monitoring wells across the CEA. Groundwater monitoring will continue on a biennial basis in the coming years and these activities are subject to routine modifications and adjustments.

Protectiveness Statement(s):

Based upon the review conducted by the Army of the Evans Area at Fort Monmouth, determinations have been made identifying whether the remedy selected remains protective of human health and the environment. The remedy implemented for the Evans Area is protective of the environment and protects human health. Currently, there are no unacceptable exposures to human or environmental receptors from source area contaminants and none are expected to occur during the next five years.

Evaluation of the remedy will be conducted again in the next FYR.

* = "OU" refers to operable unit.
** = Review period should correspond to the actual start and end dates of the Five-Year Review in WasteLAN.

1.0 INTRODUCTION

This fourth five-year review report for Fort Monmouth Evans Area, located in Wall Township, Monmouth County, New Jersey, was prepared by the Seres-Arcadis SB Joint Venture, LLC (the JV), using information provided by the United States Army (Army) through the Fort Monmouth Evans Area Base Realignment and Closure (BRAC) Environmental Coordinator. This review was conducted pursuant to Section 121(c) of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, (CERCLA, 42 U.S.C. Section 9601, et seq.), and 40 CFR 300.430(f)(4)(ii) of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP, 40 CFR Part 300) and in accordance with the U.S. Environmental Protection Agency's (EPA) Comprehensive Five-Year Review Guidance, Office of Solid Waste and Emergency Response (OSWER) Directive 9355.7-03B-P (EPA, 2001),Recommended Evaluation of Institutional Controls: Supplement to "Comprehensive Five-Year Review Guidance" OSWER Directive 9355.7-18 (EPA, 2011), and EPA Memorandum: Program Priorities for Federal Facility Five-Year Review (EPA, 2011). Historic information presented in this report was provided in previous submittals.

This fourth five-year review follows the five-year review template presented within the amendment to Appendix E of the EPA Comprehensive Five-Year Review Guidance document presented within the EPA memorandum dated January 20, 2016. The purpose of five-year reviews is to ensure that implemented remedies protect public health and the environment and that they function as intended by the site decision documents. Because Institutional Controls (ICs) are a component of this remedial action [New Jersey Department of Environmental Protection (NJDEP) Classification Exception Area (CEA) and corresponding Well Restriction Area (WRA)], the current and long-term effectiveness of these ICs was evaluated as part of the protectiveness determination. This review will become a part of the Administrative Record (40 CFR 300.800) for Fort Monmouth Evans Area.

The original triggering action for this statutory review is the initiation of remedial action on July 9, 2001. The remedy selected by the Army included source removal, long-term monitoring, and land use controls/ICs. NJDEP approved a CEA for the site on August 10, 2001, which supplemented the remedy by removing an exposure pathway to contaminated groundwater. The Army completed the first three five-year reviews in 2006, 2011, and 2016, and these reviews consisted of a review of documents, data, and other pertinent information. Recommendations from the first five-year review in 2007 revised the original time frame of the conceptual site model/groundwater monitoring duration from 5 years to 35 years. This fourth five-year review is required because hazardous substances, pollutants, or contaminants remain at the site above levels that allow for unlimited use and unrestricted exposure (UU/UE, CERCLA §9621(c)).

Based upon this fourth five-year review, it has been determined that the groundwater contamination at the site is under control, that no human or biological receptors are exposed to site-related contaminants, and that the remedy is protective of human health and the environment.

2.0 SITE CHRONOLOGY

This section describes the history of the site and summarizes the associated environmental activities that have taken place over the past 23 years. A more detailed list of the chronology of site events in included in **Table 2-1**, and select investigations are further described in Section 3.0.

The Evans Area was selected for closure under the BRAC Act in 1993 and at that time, initial site investigation activities were performed. The final supplemental site inspection report was submitted to NJDEP in September 1998, and soil excavation of the source area was completed in September 2000.

The source of the major contamination of concern had been previously identified as Building 9007, the former metal plating facility (Kemron 2001). As reported in the Decision Document (Kemron 2001), the initial remediation was conducted in August 1995 and involved the removal of the contents from the two wastewater tanks associated with the metal plating activities. The tanks themselves were later removed, and in October 1999, Building 9007 was demolished and removed (Kemron 2001). After the investigation of soil in the area of the former building, the soils determined to be contaminated were excavated in mid-2000. The Decision Document (Kemron 2001) concluded that the removal of Building 9007, the wastewater treatment tanks and contaminated soil resulted in the effective removal of "the source of the organic compound and metal contamination". Additional source removal activities included the removal of all known underground storage tanks, the removal of all known neutralization tanks, the removal of the sewage treatment system, and the removal of portions of the sewer system (Kemron 2001).

The proposed remedial action presented in the Decision Document (Kemron 2001) was Source Removal with Long-Term Monitoring, and consisted of the removal of sources of contamination, continued groundwater monitoring, and the implementation of a Classification Exception Area (CEA). As described above, the source removal activities associated with the remedy were completed prior to the issuance of the Decision Document and presented as such in the *Implementability* section for this remedial alternative.

Following their review of the April 2001 Decision Document, the NJDEP issued a letter dated July 9, 2001, approving the document "as submitted". The NJDEP letter approved the remedial alternative of Source Removal with Long-Term Monitoring proposed by the Army, stating that it was an appropriate remedial action.

The Evans Area CEA and accompanying decision document was approved by the Army, and NJDEP concurred with the remedy selected in 2001 (Kemron, 2001c). In June 2007, the first five-year review was completed and in 2008 the CEA amendment was submitted to NJDEP (Calibre, 2008). In January 2009, the Final Site Characterization and Baseline Ecological Evaluation was completed, and in June 2010, the first CEA Biennial Certification was submitted to NJDEP. In 2011, the Army completed a vapor intrusion report per EPA guidance. The second five-year review and CEA Biennial Certification was completed in October 2013 (Shaw, 2013). The third five-year review and CEA Biennial Certification was completed in December 2017 (Watermark, 2018). The most recent CEA Biennial Certification, which included the results of the 2019 biennial monitoring event, was approved by the NJDEP in August 2020

(Watermark, 2020). The most recent biennial monitoring event at the Evans Area was conducted in October 2021, and the results are presented in this fourth five-year review.

3.0 BACKGROUND

3.1 Physical Characteristics

Fort Monmouth is located in the east-central portion of New Jersey in Monmouth County, approximately 45 miles south of New York City and 70 miles northeast of Philadelphia. The Evans Area is located in Wall Township approximately 10 miles south of the main post. Historically, the Evans Area included approximately 219 acres divided into two adjacent areas. The first area is the main facility that was composed of 123 acres located south of Marconi Road; west of the residences along Evans Road, Hadley Court, and Edgemere Road; north of Belmar Boulevard; and east of Lincoln Avenue, Roosevelt Street, and Monmouth Boulevard. The second area consists of 96 acres of land located south of Brighton Avenue; west of Marconi Road and the Shark River; north of Monmouth Boulevard; and east of a wooded area located adjacent to State Route 18. Since the Evans Area was selected for closure, numerous parcels have been transferred out of federal government control. The land within this site includes parcels owned by Wall Township that are currently unutilized and/or used for recreational purposes, land owned by Wall Township used for a historical monument (InfoAge), and land owned by Brookdale College used for education.

A mix of residential and commercial development of varying densities surrounds the Evans Area. To the northeast, the site borders the Shark River. The area of Wall Township adjacent to the Evans Area is characterized by older residential developments on relatively small lots. Refer to **Figure 3-1** for a map depicting physical characteristics within and around the site.

3.2 Geology/Hydrogeology/Topography/Surface Drainage

3.2.1 Geology

A profile of the soils at the Evans Area has been developed based on previous investigations. There are thin, surface deposits of imported fill, disturbed sediments, and recent alluvial deposits consisting of sand, clay, silt, and gravel. These surface deposits are underlain by the Kirkwood Formation, ranging in depth from 0 to 103 feet, which consists of quartz sand interbedded with dark-gray to brown clay-silt. In the Evans Area, the Kirkwood consists of basal and upper units. The basal unit is sand with some pebbles, brown lignitic silt, or very fine sand. The upper unit is characterized by light gray to yellowish-brown, very fine quartz sand containing quartz granules and small pebbles. The Kirkwood serves as an aquifer in southeastern Monmouth County, although the local municipal wells draw water from the deeper Mount Laurel and Wenonah formations. General groundwater flow in the aquifer is to the southeast toward the Manasquan River, Shark River, and Ocean County. The Kirkwood Formation, which is approximately 74 feet thick, is underlain by the Shark River and the Manasquan formations. The Shark River and Manasquan formations, along with the subjacent Vincentown, Hornerstown, and Navesink-Red Bank formations, typically comprise low permeability sediments. The sediments consist of silty and clayey glauconitic quartz sands.

3.2.2 Hydrogeology

There are two sources of groundwater at the Evans Area: the shallow Kirkwood-Cohansey aquifer and two deep aquifers known as the Wenonah-Mount Laurel and Englishtown aquifers. The deep aquifers are encountered at depths of approximately 425 and 560 feet below ground surface, respectively. The upper aquifer is an unconfined (water table) aquifer. Groundwater is primarily encountered at approximately 20 to 30 feet below ground surface in the Evans Area and at shallower depths closer to the Shark River. Because of thin, silty clay lenses in the

vadose zone, there are localized areas of perched water. Groundwater flow in these areas tends to move laterally above the silty-clay zones before recharging the regional water table.

Numerous monitoring wells have been installed in the Kirkwood Cohansey at the Evans Area as part of previous investigations and an on-going groundwater monitoring program. Groundwater onsite generally flows northeast, toward the Shark River. The Laurel Gully Brook influences groundwater flow locally in the northern portion of the Evans Area. There is also a significant vertical downward gradient as indicated by monitoring wells screened in the upper and lower horizons of the Kirkwood-Cohansey. Water-level fluctuations measured in the monitoring wells also indicate that the water table is locally influenced by tidal variations in the Shark River.

As part of the 2019 CEA Biennial Certification process, which is discussed further in Section 6.3.1, the local water authority was contacted for information regarding water sources and usage in the area. This information is summarized below.

Wall Township receives its water from the Manasquan Reservoir and eight wells that are located in the deep confined Wenonah-Mount Laurel and Englishtown aquifers. Three of the municipal supply drinking water wells (Imperial Park Plant) used by Wall Township are located adjacent to the Evans Area. The Imperial Park 1 production well is located at the corner of Lincoln and Taft Streets, along the southern boundary of the Evans Area. The Imperial Park 2 production well is located at the end of Washington Street, west of the main Evans Area parking lot. The Imperial Park 3 production well is located in Building 9082, along the eastern boundary of the Evans Area near Evans Road. The Wall Township Imperial Park Plant supplies approximately 7,700 houses in the community including the Evans Area. Water Department wells primarily operate from May to September and provided 1.5 million gallons per day (MGD) in July 2017 and 1.8 MGD in August 2018 to meet peak system water demand. The average 2017 and 2018 groundwater withdrawal rate is 0.46 and 0.55 MGD, respectively, with the lowest average rates (< 0.01MGD), recorded in the winter months. These wells identified above pumped a total 80.3 million gallons (MG) in 2017, and 97.4 MG in 2018. The Water Department indicates there are no plans to increase or decrease pumping rates from these wells in the near future. The Wall Township groundwater supply is supplemented with surface water from the Manasquan River Reservoir, which is located approximately five miles south of the Evans Area (Wall Township, 2021).

3.2.3 Topography and Surface Drainage

The topography of the Evans Area ranges from approximately 80 feet above mean sea level (msl) in the southern portion of the site to two feet above msl near the Shark River. The central portion of the Evans Area is relatively flat with an average elevation ranging from 70 to 80 feet above msl. There is a relatively steep grade behind the residential properties toward the Shark River along the northeast boundary of the Evans Area. Laurel Gully Brook divides the Evans Area. The brook is incised into unconsolidated sediments, forming a steep ravine approximately 175 feet wide.

The primary surface water drainage features at the Evans Area consist of Laurel Gully Brook and the Shark River. The depth of surface water in the brook ranges from two to 12 inches, with a width approximately four to 10 feet. Storm water drainage from most of the Evans Area flows through a subsurface storm water drainage system, which discharges to Laurel Gully Brook. Laurel Gully Brook flows from the upland areas southwest of the Evans Area toward

the northeast, where it discharges into the tidal marsh area of the Shark River Bay. Along the eastern boundary of the facility, storm water flows directly toward the Shark River Bay. According to the previous five-year review, the residential areas along the eastern boundary of the facility do not have a subsurface storm drainage system.

3.2.4 Land and Resource Use

The site has historically been utilized as a laboratory for developing radio transmitters and receivers (early 1900s to 1927), as a recreational college (1937 to 1941), and by the Army as laboratories, radar research facilities, a foundry, maintenance shops, and for other research uses (until the mid-1980s). The property was phased out as a research facility from the late 1970s to the mid-1980s and remained vacant until the 1990s at which time the property was selected under the United States Department of Defense BRAC Act process.

The majority of what was Fort Monmouth Evans Area (Camp Evans) has been transferred to Wall Township and Brookdale College through the BRAC process. Camp Evans is now listed on the National Register of Historic Places and the Camp Evans Historic District was created and is operated by Info Age Learning Center. Refer to the Hydrogeology section above for information regarding area use of groundwater and surface water.

3.3 History of Contamination

The site was historically utilized by the Army and other research entities for operations associated with research and development of radar equipment. This included the use of laboratories, plating shops, a foundry, maintenance shops, underground storage tanks, septic tanks and associated leach fields, and sumps at and around various structures from the early 1900s until the mid-1980s. The main source of volatile organic compound (VOC) and metal contamination is related to former Building 9007 where a known metal plating shop was operated from approximately 1950 to 1976. Other sources of contamination included septic tanks and associated leach fields at other buildings, wastewater treatment tanks associated with other buildings, plating operations within other buildings, and the former storm sewer system located throughout the site. Environmental investigations performed in the 1990s also investigated several additional buildings, which were identified as potential sources of contamination (Kemron Environmental Services, Inc. [Kemron], 2001a).

Site contamination was originally discovered in the mid-1990s after the BRAC process prompted numerous environmental investigations and remediation throughout the Evans Area. This primarily included an investigation of Building 9007 where soils and groundwater impacted with VOCs and metals were discovered. Impacts discovered during the investigation around Building 9007 were remediated. These remedial actions are outlined in the Decision Document signed in 2001 and summarized in the below sections.

3.4 Initial Response

As stated above, Fort Monmouth Evans Area was selected under the BRAC process in 1993. As a result of this, several environmental investigations were performed throughout the Evans Area. Operations at the site at that time were only related to environmental investigations and the Army was no longer actively utilizing the site.

3.4.1 Enhanced Preliminary Assessment (1993-1994)

Initial environmental investigation of the site began in 1993 and 1994 in the form of a Preliminary Assessment (40 CFR 300.420)(Earth Tech, 1994). The final Enhanced Preliminary

Assessment Report was submitted in January 1994. This assessment detailed several possible sources of contamination including the metal plating operation and wastewater collection tanks at Building 9007, septic tanks and associated leach fields at several other buildings, wastewater treatment tanks associated with other buildings, plating operations within other buildings, and the former storm sewer system throughout the site.

3.4.2 Building 9007 Site and Remedial Investigation Activities (1995-1999)

During Site Inspection activities in 1995/1996, the wastewater treatment tank associated with Building 9007 was investigated and sampled to evaluate VOCs and metals. VOCs and metals were detected; however, tetrachloroethylene (PCE) and trichloroethene (TCE) were not detected. In addition, groundwater samples were collected near Building 9007 to evaluate potential impacts from releases associated with the building. Concentrations of PCE, TCE, and metals were detected above applicable regulatory criteria in the groundwater samples collected near Building 9007. Subsequently, a series of groundwater monitoring wells were installed around the site because of the groundwater contamination to assist in determining the nature and extent of this contamination, as well as potential impacts from other sources throughout the site. The Final Site Inspection Report (SIR)(Earth Tech, 1996), concluded that migration potential for the VOCs and metals detected in groundwater was elevated and could discharge to the nearby Laurel Gulley Brook. The conclusions also stated that leakage from the wastewater treatment tanks at Building 9007 was possible and could be a source of the impacts (Earth Tech, 1996). Following the recommendations of the Final SIR, the Fort Monmouth Department of Public Works evacuated the contents of the wastewater treatment tanks at Building 9007 and disposed of the resultant liquids. This effectively eliminated the tanks as a possible continual source of contamination (Kemron, 2001a).

Additional site assessment activities associated with Building 9007 were conducted and reported in a Supplemental Site Inspection Report (SSIR) September 1998 (Earth Tech, 1998). This investigation included the collection of soil samples beneath the flooring and outside Building 9007. Soil samples collected were found to be impacted with metals above applicable screening criteria. Groundwater samples were also collected during the additional site assessment activities. The groundwater investigation found concentrations of TCE, PCE, and metals above applicable regulatory criteria. The SSIR concluded that the elevated concentrations of metals in the soils beneath the floor and around the building were a likely source to groundwater, and the elevated concentrations of PCE, TCE, and metals in groundwater were attributed to this source.

In September and October 1999, Building 9007 was demolished, and the building debris was removed. Soil samples were collected following demolition of the building, which showed elevated concentrations of several contaminants including cadmium, lead, and PCE. Subsequently, these soils were excavated and removed in September 2000. This excavation was completed as part of the demolition process and not selected as part of a CERCLA remedy. Post-excavation samples collected after this soil removal indicated that contaminated soil had been removed, which eliminated the soils as a continual source to groundwater impacts.

3.4.3 Other Evans Area Site and Remedial Investigation Activities

As a part of the Site Investigation activities performed at the site from 1994 to 2001, additional potential sources of contamination were identified and investigated. These included the following: 1) leach fields associated with Buildings 9019, 9021, 9088, 9037A, 9017, 9037D,

and 9099; 2) wastewater treatment tanks associated with Buildings 9034 and 9037; 3) electroplating activities associated with Buildings T-9097, 9011, and 9037; 4) leach fields and a septic tank associated with Buildings 9004 and 9005 (i.e., the Marconi Buildings) located to the north of Marconi Road adjacent to the Shark River; and 5) the storm sewer system located throughout the site.

3.4.3.1 Leach Fields (Buildings 9019, 9021, 9088, 9037A, 9017, 9037D, and 9099)

The leach fields associated with Buildings 9019, 9021, 9088, 9037A, 9017, 9037D, and 9099 were investigated as part of site investigation activities. Soil samples were collected from each of the leach fields associated with these buildings. The leach field investigations of Buildings 9019, 9021, 9088, 9037A, 9017, 9037D, and 9099 did not reveal soils contaminated with elevated concentrations of PCE, TCE, or metals.

3.4.3.2 Wastewater Treatment Tanks (Buildings 9034 and 9037)

A wastewater treatment tank used for neutralization of laboratory sink wastes was identified in Building 9034. As a part of site investigation activities, the wastewater treatment tank associated with Building 9034 was removed in October 1993, thus eliminating it as a continual source of groundwater contamination. However, cadmium was detected in soil located underneath the tank at levels above applicable regulatory criteria. The contents of the wastewater treatment tank associated with Building 9037 were tested for VOCs and metals in April 2000, and the results did not reveal these analytes above applicable regulatory criteria. Therefore, this tank was eliminated as a potential source of groundwater contamination.

3.4.3.3 Electroplating Activities (Buildings T-9097, 9011, and 9037)

The preliminary assessment identified Buildings T-9097, 9011, and 9037 as possible locations for electroplating activities from the 1950s through the 1970s. However, activities associated with Buildings T-9097, 9011, and 9037 were not investigated because it was determined that these buildings were connected to the sanitary sewer system at the time of operation and, therefore, were not considered a source of groundwater contamination.

3.4.3.4 Leach Fields and Septic Tank (Marconi Buildings)

Prior to site investigation activities, the Marconi Buildings were identified as being used as laboratories between 1917 and 1970. The leach fields and septic tank associated with the Marconi Buildings were investigated from 1995 to 1999, which included the collection of soil and groundwater samples. Results from the 1995 investigation indicated metals were the only analytes detected above applicable screening criteria (soil only). Additional groundwater and soil samples were collected in 1996 to confirm the 1995 investigation results. Results from the 1996 investigation indicated no groundwater or soil exceedances for metals.

A large septic tank associated with these buildings was investigated in 1999 which included collection of water and sediment samples from within the tank. Results indicated metals above applicable regulatory criteria for water and sediment. This tank was subsequently removed in 1999 and, therefore, was not considered a continual source to groundwater contamination. Since additional groundwater and soil samples collected adjacent to the Marconi Buildings did not reveal evidence of contaminants above regulatory criteria and given the fact the septic tank was removed, the operations of these areas were not considered a source to the groundwater

contamination. Refer to Section 6.3.3 for additional discussion on historical investigations in the area of Building 9004.

3.4.3.5 Site Storm Sewer System

The storm sewer system located throughout the site was investigated from January to April 2000. This investigation included the collection of soil and groundwater samples throughout the site to determine if the system was a possible source of PCE, TCE, and metals contamination. Some of the groundwater and soil samples collected found concentrations of PCE, TCE, and metals above regulatory criteria. The storm sewer system was removed during the second half of 2000, and therefore, is not considered a continual source of contamination.

3.4.4 Initial CEA Activities

On August 5, 1999, the Army compiled a document stating their intentions to establish a groundwater CEA for a portion of the Evans Area. This document, entitled Evans Area Groundwater Assessment CEA Notice of Intent, included the analytical data report and results for groundwater samples collected on June 23 and 24, 1999.

Following submittal of the CEA notice of intent to the NJDEP in August 1999, Kemron prepared the Low Flow Sampling Plan for the Evans Area, dated November 21, 2000, for the United States Army Corps of Engineers (USACE), Baltimore District to address groundwater contamination at the Evans Area (Kemron, 2000). This document details the sampling guidelines and procedures for performing low flow sampling at the Evans Area.

After low flow sampling was conducted at the Evans Area, the Groundwater Model for Classification Exception Area at the Evans Area was developed, and documented in a report dated January 16, 2001 (Kemron, 2001a). The sample results confirmed the presence of contaminants exceeding New Jersey Groundwater Quality Standards (GWQS). The document presented the details of the site history, environmental setting, subsurface investigations, groundwater model grid and layers, groundwater model properties, groundwater model boundaries, and groundwater model results for the defined area.

The Army proposed the CEA for the contaminated portion of the Evans Area, and a Classification Exception Area Application for the Evans Area was submitted to the NJDEP on April 2, 2001 (Kemron, 2001b). The intent of the CEA was to ensure that the uses of the designated aquifer in the Evans Area would be restricted until appropriate levels of cleanup were achieved. The CEA for the Evans Area was based on having a groundwater remedy approved and monitored by the NJDEP. The report indicated that the primary sources of contamination were the former Building 9007 plating operations, storm sewer lines, and former research laboratories. The report also stressed that the groundwater contamination at the CEA was the result of releases from several low-level sources located throughout the CEA, and not necessarily one specific source. Contaminants of concern (COCs) identified in this report included cadmium, lead, nickel, TCE, and PCE. The report specified that monitoring in support of the CEA would continue for five years. After five years, the remedy would be reevaluated if concentrations of COCs had not fallen below New Jersey GWQS. The NJDEP reviewed and accepted the CEA application and the associated model, which is documented in a CEA Approval Letter from the NJDEP, dated August 10, 2001 (NJDEP, 2001b).

3.4.5 CEA Amendment

On December 19, 2008, a CEA Amendment was submitted to NJDEP [Calibre Systems, Inc. (Calibre), 2008] to address persistent levels of groundwater contamination at the site. The CEA was originally proposed for five years under the assumption that the primary COCs, TCE and PCE would degrade in that timeframe. The CEA also stated that nickel and cadmium contamination would attenuate to below New Jersey GWQS levels in 11 and 42 years, respectively. No specific timeframe for attenuation of lead was given in the CEA. After more than five years of monitoring at the site, TCE was still detected in the deeper aquifer above the New Jersey GWQS. The CEA amendment concluded that the CEA time frame for PCE and TCE would be extended 35 years from 2007 and that lead should be monitored in select wells another five years. No other changes to the CEA were proposed in the CEA amendment.

3.5 Basis for Taking Action

As stated in the Initial Response section above, groundwater samples collected during site investigation activities performed from 1994 to 2001 indicated elevated levels of certain metals, PCE, and TCE in the groundwater at the site; most notably associated with former operations at Building 9007. Therefore, the Evans Area Decision Document selected remedy was to reduce the concentrations of contamination present in the groundwater and source removal with long-term monitoring (Kemron, 2001c). As a result of the Decision Document, a CEA was prepared to ensure the uses of the designated aquifer in the Evans Area would be restricted until appropriate cleanup levels were achieved. Refer to Section 4.0 for specific details on the Decision Document.

4.0 REMEDIAL ACTIONS

4.1 Remedy Selection and Objectives

The Army signed a Decision Document for the Evans Area, which selected the preferred remedy of source removal, with long-term monitoring of the groundwater. The Remedial Action Objectives (RAOs) included the reduction of concentrations of contaminants present in the groundwater. (Kemron, 2001c). The NJDEP concurred with the DD in a Groundwater Remedial Action Decision Document Approval Letter, dated July 9, 2001 (NJDEP, 2001a). The major components of the selected remedy were:

1. Removal of the sources of contamination, which included various tanks, sumps, and storm sewer lines on the property that stored or transported contaminants generated by historical activities at the Evans Area.
2. Removal of contaminated soils as a result of releases from tanks, sumps, and storm sewer lines.
3. Natural degradation, dispersion, and retardation of contaminants in groundwater.
4. Long-term monitoring of groundwater for an initial term of five years for specific COCs, which included PCE, TCE, cadmium, lead, and nickel. This portion of the remedy also includes long-term monitoring of surface water in the Laurel Gully Brook. The remedy was to be evaluated after five years if COCs remained above their respective GWQS.
5. Establishment of CEA boundaries with consultation and approval from the NJDEP for the area affected by the contamination, which would remain in effect until the contaminant concentrations are below the GWQS. The CEA would act as an institutional control for the site.
6. Establishment of a WRA for the CEA, which would act as an institutional control by restricting groundwater use in the area for the duration of the CEA.

Table 4-1: Summary of Implemented ICs

Media, engineered controls, and areas that do not support unlimited use/unrestricted exposure (UU/UE) based on current conditions	ICs needed	ICs called for in the Decision Documents	Impacted Parcel(s)	IC Objective	Title of IC Instrument Implemented and Date
Groundwater	CEA/WRA	CEA/WRA	Block 240 - 55.01, 55.04, 55.06, and 55.07; Block 241 - 1.01 and 1.03; Block 242 – 1.03 and 1.04	Restrict installation of ground water wells and ground water use	Classification Exception Area Application for the Evans Area [Submitted on April 2, 2001 (Kemron, 2001b)]; CEA Amendment [Submitted on December 19, 2008 (Calibre, 2008)]

4.2 Remedy Implementation

The selected remedy was implemented in July and August 2001 upon NJDEP's concurrence with the DD and approval of the CEA. The source removal portion of the selected remedy was implemented from 1994 to 2001, before the final remedy was selected in the DD, i.e., the DD selected removal actions that took place during the investigation phase of the remedial process as components of the final remedy. The only component of the selected remedy to implement after the signature of the DD was monitoring of the groundwater contamination, which remains in effect. Based on the model presented in the CEA, the projected timeframe for levels of COCs to attenuate to below cleanup standards was a period of approximately 4.5 years.

The first five-year review entitled Fort Monmouth Evans Area, Five-Year Review, Groundwater Remedy was completed by the Army in June 2007 (Calibre, 2007). This first five-year review was submitted to re-evaluate remedial alternatives following the site monitoring period of June 2001 to August 2006. During this period, the selected remedy was implemented, and post implementation monitoring was conducted. The review found that the original conceptual site model constructed for the site was in error. The model was revised and incorporated into a revised CEA. The modified CEA, dated December 19, 2008, was approved by the NJDEP on January 9, 2009. The new timeframe for degradation of all COCs was for a period of 35 additional years from the year 2007. The new conceptual site model used for the modified CEA included site-specific data since 2001, including a review of degradation products of TCE and PCE. The review also pointed out that TCE concentrations found in the upgradient well 3MW07 are related to other sources of contamination onsite, and given their distance of travel to the Laurel Gulley Brook, the timeframe for complete groundwater TCE degradation was increased. Furthermore, the review found that the concentrations of PCE in wells FEMW13 and FEMW14 may be related to the historical storm sewer system. Given the complex nature of the storm sewer system and the unknown location of potential releases associated with the system, it is unknown how far the sources would have been from wells FEMW13 and FEMW14. Given this information combined with the fact that PCE adsorbs onto soil twice as strongly as TCE, the timeframe for complete groundwater PCE degradation was increased as well.

As part of the first five-year review, monitoring activities performed from 2001 to 2006 were summarized. Seven sampling events of site groundwater monitoring wells and Laurel Gully Brook surface water sampling were performed in this time period. The conclusions listed below were formed from these groundwater sampling events.

1. TCE contamination had reduced by over one order of magnitude in selected wells.
2. PCE contamination at wells FEMW13 and FEMW14 continued to fluctuate from 1.0 to 4.0 micrograms per liter (µg/L).
3. Cadmium concentrations remained around 50 µg/L in well 3MW01.
4. Lead concentrations had reduced below GWQS at the wells in which it was deemed a COC. Lead detected in other site wells above GWQS had decreased below GWQS since 2003.
5. Nickel concentrations remained between 200 and 400 µg/L in well 3MW01.
6. COCs were not detected above New Jersey Surface Water Quality Criteria (SWQC) in the samples collected from Laurel Gully Brook.
7. COCs were not detected above GWQS in the shallow well adjacent to the Shark River.

8. No evidence of unidentified sources or new releases was observed since the inception of the CEA.
9. No new contaminants were detected at concentrations above their respective GWQS.

As part of the second five-year review, monitoring activities performed from 2006 to 2011 were summarized. Five sampling events of site groundwater monitoring wells and Laurel Gully Brook surface water sampling were performed in this time period. The conclusions listed below were determined from these sampling events:

1. No COCs were detected above New Jersey GWQS in monitoring wells 3MW02, 3MW03, 3MW04, FEWM13, and FEMW14 during the review period.
2. Only lead was detected above the New Jersey GWQS in monitoring wells FEMW03 and FEMW15. Lead is not a COC in monitoring well FEMW15 and FEMW03 is not required for down-gradient monitoring.
3. TCE was detected above the New Jersey GWQS in monitoring well 3MW07 during all five events, ranging from 8.9 µg/L to 12 µg/L; and TCE was detected above the New Jersey GWQS in 3MW05R during the September 2007 event.
4. Lead was detected during at least one sampling event at monitoring wells 9004-MW01R, 3MW05R, 3MW06, 3MW07, 3MW08, and 3MW09. Lead was only detected above the New Jersey GWQS in monitoring well 3MW07 during the June 2011 sampling event. It should be noted that lead is not a COC for monitoring well 3MW07.
5. Cadmium was detected in monitoring well 3MW01 above the New Jersey GWQS during all five monitoring events; concentrations decreased from 50 µg/L in September 2007 to 24.2 µg/L in June 2011.
6. Nickel was detected in monitoring well 3MW01 above the New Jersey GWQS during two events (2007 and 2009). Concentrations of nickel appeared to be decreasing.
7. COCs were not detected above New Jersey SWQC in the samples collected from Laurel Gully Brook.
8. No evidence of unidentified sources or new releases was observed since the inception of the CEA.
9. No new contaminants were detected at concentrations above their respective GWQS.

The Army completed the second five-year review (2006 – 2011), on October 28, 2013. The proposed changes above did not take place until after the 2012 annual sampling event (Shaw, 2013).

As part of the third five-year review, monitoring activities performed from 2011 to 2016 were summarized. One sampling event of site groundwater monitoring wells was performed in this time period. The conclusions listed below were determined from this sampling event:

1. TCE concentrations in 3MW01 and 3MW07 are consistent with historical trends. Although concentrations of TCE in 3MW01 and 3MW07 have increased slightly compared to the previous five-year review period, the overall TCE trend for 3MW01 and 3MW05R is stable.
2. TCE was not detected in 3MW05R, 3MW06, 3MW08, and 3MW09. TCE has never been detected in 3MW06, 3MW08, and 3MW09, and TCE has not been detected in 3MW05R since September 2007.

3. Cadmium concentrations remain above the GWQS of 4 µg/L in 3MW01 at a concentration of 24 µg/L.
4. Lead was not detected in monitoring well 3MW06 and 9004-MW01R. These non-detect results are consistent with historical fluctuations of lead at these locations dating back to 1996 for 3MW06 and 2009 for 9004-MW01R. Over the past three monitoring events, lead was detected above the New Jersey GWQS once (2014).
5. Nickel concentrations were found below the New Jersey GWQS of 100 µg/L in monitoring well 3MW01, which represents a downward trend compared with recent results. Concentrations at 3MW01 have remained well below historical concentrations in the last three sampling rounds. There have been no exceedances of nickel in 3MW01 since 2009.

Discussions of long-term groundwater monitoring since the last five-year review are included within the following sections. Current data indicate that the remedy has performed well since implementation. Groundwater contamination at the site is under control, no human receptors are exposed to site-related contaminants, and the remedy is protective of the environment.

5.0 PROGRESS SINCE LAST FIVE-YEAR REVIEW

Since the last five-year review period (2011-2016), two long-term groundwater monitoring events have been conducted at the site in May 2019 and October 2021 and one biennial certification has been submitted to NJDEP on February 5, 2020. Groundwater analytical results indicate that COCs are either decreasing or stable. Based on these results, the selected remedy of source area removals and long-term monitoring in conjunction with institutional control including a Classification Exception Area (CEA) is proving to be an effective remediation measure at the site. In addition, the conceptual site model remains the same and continued groundwater monitoring at the site is prudent.

6.0 FIVE-YEAR REVIEW PROCESS

6.1 Community Notification & Involvement

A public notice was made available in the Asbury Park Press Newspaper on February 1, 2022, stating that there was a five-year review underway. The results of the review and the report will be made available at the Site information repository located online at Fort Monmouth Site Restoration Records (https://fortmonmouthrecords.com/site-records/).

6.2 Document Review

In preparing the five-year review, the Army reviewed all documents necessary to complete the required evaluations. The documents, data, and information that were reviewed in completing the five-year review are listed in Section 11. All potential changes to clean up levels or potential new clean up levels were reviewed. The sources of cleanup levels/applicable or relevant and appropriate requirements used for this report include the New Jersey GWQS. The reference for this standard is also included in Section 11. The Army reviewed all sampling and monitoring plans and results from monitoring activities including the previous five-year review report. This is inclusive of the most recently collected groundwater sampling data from October 2021. The data contained in these reports forms the basis for the technical analysis performed in the protectiveness summary.

6.3 Data Review

Since the third five-year review, two long-term monitoring events have been performed at the Evans Area. These events included one biennial groundwater long-term monitoring sampling event (May 2019) performed by Watermark Environmental, Inc (Watermark) and one biennial long-term monitoring sampling event (October 2021) performed by the JV. The results for the 2019 biennial long-term monitoring sampling event were included in the 2020 CEA Biennial Certification submittal (Watermark, 2020). Refer to Sections 6.3.1 and 6.3.2 for a discussion of the 2019 and 2021 biennial long-term monitoring, respectively.

6.3.1 Biennial Certification and 2019 Long-Term Monitoring

In February 2020, a final version of the Fort Monmouth Evans Area 2020 CEA Biennial Certification was submitted to NJDEP as required to ensure the uses of the designated aquifer in the Evans Area will be restricted until appropriate levels of cleanup are achieved (Watermark, 2020). The biennial certification consisted of the following elements: 1) an evaluation of laws and regulations pertaining to the CEA; 2) an evaluation of future water uses; 3) a well radius search; 4) an inspection of existing site monitoring wells, and 5) land use evaluation. As part of this submittal, the 2019 long-term monitoring results were included within the CEA Biennial Certification to document the results of groundwater sampling conducted in May 2019. The biennial certification evaluation indicated that several buildings were demolished in the southern portion of the CEA to make way for development by Brookdale College. The groundwater in this area does not appear to be impacted by site COCs and this activity did not interfere with the protectiveness of the CEA. The biennial certification concluded that the remedy was progressing according to plan and that the CEA is protective of the site occupants, surrounding community, and surrounding biological receptors.

Based on recommendations from the technical assessment of the third five-year review, monitoring well 9004-MW01R and nickel were removed from the sampling program prior to the May 2019 sampling event. In addition, monitoring well 3MW06 was sampled for lead during the May 2019 sampling round. Lead was not detected in 3MW06 during the

May 2019 sampling round and has only been detected above the groundwater quality standards (GWQS) in this well once in the last five events. Groundwater monitoring and inspections will continue on a biennial basis into the future.

As part of the NJDEP approved CEA Long-Term Monitoring program, Watermark collected groundwater samples at the site on May 16, 2019. All sampling was performed in accordance with the November 2014 Long-Term Monitoring Work Plan (Watermark, 2014). Six monitoring wells were sampled; one shallow well (upper zone) 3MW01; and five deep wells (lower zone) 3MW05R, 3MW06, 3MW07, 3MW08, and 3MW09.

A New Jersey licensed surveyor in accordance with State requirements previously surveyed all monitoring wells sampled in the performance of this work. Relevant installation data for the 16 site wells, including former wells 3MW05 and 9004-MW01 are summarized in **Table 6-1**.

Groundwater Water-Level Monitoring

Groundwater flow gradient contour maps for the shallow and deep zones of Evans Area were generated by applying static groundwater level measurements collected from the monitoring wells at Evans Area based on static depth to water measurements (**Table 6-1**) recorded on May 15, 2019, prior to the sampling of site monitoring wells. The potentiometric surface for the shallow and deep units observed in May 2019 are presented in **Figures 6-1** and **6-2**, respectively. A contour map reporting form referenced in the N.J.A.C Technical Requirements for Site Remediation Appendix G is included in **Appendix A**. No significant variations in groundwater flow conditions were observed in comparison with those reported in previous monitoring events, and with the groundwater model predictions presented in the first five-year review. Historical groundwater elevation measurements are included in **Table 6-2**.

The groundwater underlying the CEA at the Evans Area generally flows to the north-northeast toward the Laurel Gully Brook and the Shark River in both the deep and shallow aquifers. Higher groundwater elevations in the shallow wells relative to the deep wells indicate a downward vertical flow gradient.

Groundwater Sampling

Groundwater samples were collected in May 2019 and October 2021 from the specified monitoring wells using decontaminated stainless steel submersible pumps (Grundfos Redi-Flo2) with dedicated 3/8-inch Teflon-lined tubing via low flow methodology. Turbidity, pH, oxidation-reduction potential, and dissolved oxygen were monitored during purging. Refer to **Table 6-3** for a summary of groundwater quality measurements; groundwater sample logs are included in **Appendix B**. Immediately following collection, the groundwater samples were placed in laboratory supplied bottle-ware. The sample containers were labeled, sealed, placed in coolers, and transported under proper chain-of-custody to the laboratory. Samples collected from 3MW01, 3MW05R, 3MW07, 3MW08, and 3MW09 were analyzed for VOCs, by EPA Method 8260. In addition, the sample collected from 3MW01 was also analyzed for cadmium by EPA Method 6010B and the sample collected from 3MW06 was analyzed for lead by EPA Method 6010B. VOC analysis consisted of the EPA Target Compound List plus a library search of tentatively identified compounds. In addition, one duplicate sample, one quality control sample (matrix spike/matrix spike duplicate), one rinse blank, and one trip blank were collected for analysis in accordance with the quality assurance/quality control plan. Chemtech, a New

Jersey certified laboratory (Certification Number 20012), performed all chemical analyses. Laboratory certification documentation is included in **Appendix C**.

The analytical results of all analyses conducted on the May 2019 samples are provided in **Appendix D**. Analytical data was validated by AMEC Foster Wheeler and Infrastructure for data quality and usability in accordance with NJDEP Data Quality and Data Assessment and Usability Evaluation Technical Guidance. Validation results indicate that analytical results are accurate and representative for use. The data validation report is included in **Appendix E**.

Approximately 40 gallons of investigation derived waste (IDW), consisting of purge water and decontamination fluid was generated during long-term monitoring activities. IDW was stored onsite in one 55-gallon drum. AWT services of Sayreville New Jersey removed the IDW on July 9, 2019, and transported it to MXI Environmental of Abington, Virginia for recycling. IDW disposal documentation is included in **Appendix F**.

The relationship of the 2019 data to historical values can be seen in summary **Tables 6-4** through **6-9**. Shaded analytes marked with an asterisk have been designated as COC for the respective wells in the CEA.

6.3.2 Biennial Long-Term Monitoring (2021)

Based on recommendations from the technical assessment of the third five-year review, monitoring well 3MW06 and lead were removed from the sampling program prior to the October 2021 sampling event, as lead was not detected in 3MW06 during the May 2019 sampling round and has only been detected above the GWQS in this well once in the last five events. Groundwater monitoring and inspections will continue on a biennial basis into the future.

As part of the NJDEP approved CEA Long-Term Monitoring program, the JV collected groundwater samples at the site on October 26 and 27, 2021. All sampling was performed in accordance with the November 2014 Long-Term Monitoring Work Plan (Watermark, 2014). Five monitoring wells were sampled; one shallow well (upper zone) 3MW01; and four deep wells (lower zone) 3MW05R, 3MW07, 3MW08, and 3MW09.

A New Jersey licensed surveyor in accordance with State requirements previously surveyed all monitoring wells sampled in the performance of this work. Relevant installation data for the 16 site wells, including former wells 3MW05 and 9004-MW01 are summarized in **Table 6-1**.

Groundwater Water-Level Monitoring

Groundwater flow gradient contour maps for the shallow and deep zones of Evans Area were generated by applying static groundwater level measurements collected from the monitoring wells at Evans Area based on static depth to water measurements (**Table 6-1**) recorded on October 26, 2021, prior to the sampling of site monitoring wells. The potentiometric surface for the shallow and deep units observed in October 2021 are presented in **Figures 6-3** and **6-4**, respectively. A contour map reporting form referenced in the N.J.A.C Technical Requirements for Site Remediation Appendix G is included in **Appendix A**. No significant variations in groundwater flow conditions were observed in comparison with those reported in previous monitoring events, and with the groundwater model predictions presented in the first five-year review. Historical groundwater elevation measurements are included in **Table 6-2**.

The groundwater underlying the CEA at the Evans Area generally flows to the north-northeast toward the Laurel Gully Brook and the Shark River in both the deep and shallow aquifers. Higher groundwater elevations in the shallow wells relative to the deep wells indicate a downward vertical flow gradient.

Groundwater Sampling

Groundwater samples were collected from the five specified monitoring wells using decontaminated stainless steel submersible pumps (Grundfos Redi-Flo2) with dedicated 3/8-inch Teflon-lined tubing via low flow methodology. Turbidity, pH, oxidation-reduction potential, and dissolved oxygen were monitored during purging. Refer to **Table 6-3** for a summary of groundwater quality measurements; groundwater sample logs are included in **Appendix B**. Immediately following collection, the groundwater samples were placed in laboratory supplied bottle-ware. The sample containers were labeled, sealed, placed in coolers, and transported under proper chain-of-custody to the laboratory. Samples collected from 3MW01, 3MW05R, 3MW07, 3MW08, and 3MW09 were analyzed for VOCs, by EPA Method 8260. In addition, the sample collected from 3MW01 was also analyzed for cadmium by EPA Method 6010B. VOC analysis consisted of the EPA Target Compound List plus a library search of tentatively identified compounds. In addition, one duplicate sample, one quality control sample (matrix spike/matrix spike duplicate), one rinse blank, and one trip blank were collected for analysis in accordance with the quality assurance/quality control plan. Eurofins Lancaster, a New Jersey certified laboratory (Certification Number 0001.01), performed all chemical analyses. Laboratory certification documentation is included in **Appendix C**.

The analytical results of all analyses conducted on the October 2021 samples are provided in **Appendix D**. Analytical data from the October 2021 event were validated by the JV for data quality and usability in accordance with NJDEP Data Quality and Data Assessment and Usability Evaluation Technical Guidance. Validation results indicate that analytical results are accurate and representative for use. The data validation report is included in **Appendix E**.

Approximately 15 gallons of IDW, consisting of purge water and decontamination fluid was generated during the October 2021 long-term monitoring activities. IDW was stored onsite in one 55-gallon drum. AWT services of Sayreville New Jersey removed the IDW on July 9, 2019, and transported it to MXI Environmental of Abington, Virginia for recycling. IDW disposal documentation is included in **Appendix F**.

The relationship of the 2021 data to historical values can be seen in summary **Tables 6-4** through **6-9**. Shaded analytes marked with an asterisk have been designated as COCs for the respective wells in the CEA.

6.3.3 Groundwater Quality Trends and Conclusions from the 2019 and 2021 Biennial Long-Term Monitoring

Groundwater Quality Trends

The CEA was originally designated for five COCs (PCE, TCE, cadmium, lead, and nickel) but was reduced to four COCs (PCE was eliminated) after the second five-year review. COCs are restricted to relatively small sub areas (restricted to one to three wells each). TCE was identified as a COC only in groundwater near monitoring wells 3MW01, 3MW05R, and 3MW07. Cadmium and nickel were identified as COCs only in the vicinity

of monitoring well 3MW01. Lead was identified as a COC only in the vicinity of monitoring wells 3MW06 and 9004-MW01R. **Figures 6-5** through **6-8** present concentrations of TCE and cadmium in the monitoring wells in which they have been identified as COCs over the entire monitoring period.

TCE was detected above the New Jersey GWQS of 1 µg/L in monitoring well 3MW07 during both the May 2019 (17.70 µg/L) and October 2021 (26 µg/L) events and in monitoring well 3MW01 during the October 2021 event (6.2 µg/L in the parent sample at 3MW01 and 5.8 µg/L in its associated duplicate sample). TCE was not detected in monitoring well 3MW01 during the May 2019 event and in wells 3MW05R, 3MW08, and 3MW09 in 2019 or 2021. The concentrations of TCE in monitoring well 3MW07 (**Figure 6-7**) observed during the 2019 and 2021 events are higher than the results presented in the third Fort Monmouth Evans Area Five-Year Review. The concentration of TCE in monitoring well 3MW07 continues to fluctuate, with the May 2019 and October 2021 results higher than historical levels (**Figure 6-7**). These relatively higher concentrations may indicate a slow dissolution and transport of TCE from finer grained zones from which it is migrating under diffusion-limited transport.

Cadmium was detected above the New Jersey GWQS of 4.0 µg/L during the 2019 groundwater sampling event in the primary sample from monitoring well 3MW01, and its associated duplicate sample at concentrations of 7.82 µg/L and 8.32 µg/L, respectively. Cadmium was detected below the New Jersey GWQS during the October 2021 sampling event in the primary sample from monitoring well 3MW01, and its associated duplicate sample at concentrations of 3.5 µg/L and 3.6 µg/L, respectively. The historic concentration trends for cadmium at monitoring well 3MW01 are shown on **Figure 6-8**.

Similar to the 2016 round, lead was not detected in monitoring well 3MW06 during the 2019 sampling round. As shown on **Table 6-6**, lead at 3MW06 was detected above the GWQS once (2014) in the last five monitoring events. Based on the recent trend, non-detects for the last two rounds and historical trends with many events being non-detect or low level, the lead periodically observed in 3MW06 does not indicate an ongoing source of lead. Therefore, it was recommended that analyzing the groundwater from 3MW06 for lead be discontinued and monitoring well 3MW06 was not included in the sampling program for the October 2021 event.

Conclusions

Based on the 2019 and 2021 biennial LTM results, the remedy selected for the Evans Area is performing as expected. Specifically:

- PCE was not detected during the May 2019 or October 2021 rounds.
- TCE was not detected in 3MW01, 3MW05R, 3MW08, and 3MW09 in May 2019, but TCE was detected during the October 2021 event in 3MW01 at concentrations above the GWQS with concentrations of 6.2 µg/L and 5.8 µg/L in the primary and duplicate samples, respectively. This is consistent with recent and/or historical monitoring events. The TCE concentrations observed in 3MW07 in May 2019 and October 2021 were above the GWQS. TCE was observed in the sample collected from 3MW07 in October 2021 at a concentration (26 µg/L) slightly higher than historical levels. The concentration trends observed in samples from 3MW07 may indicate a slow release of TCE from finer grained zones under diffusion-limited transport.

- Cadmium concentrations observed during the May 2019 event were above the GWQS of 4 µg/L in 3MW01 at concentrations of 7.82 µg/L in the parent sample and 8.32 µg/L in its associated duplicate sample at this location. Cadmium concentrations observed during the October 2021 event in 3MW01 were below the GWQS for the first time since 1997, with a concentration of 3.5 µg/L in the parent sample and 3.6 µg/L in its associated duplicate sample. Concentrations of cadmium observed at 3MW01 in 2019 and 2021 are consistent with an overall decreasing trend.
- Lead was not detected in monitoring well 3MW06 during the May 2019 LTM event. Lead in this well has only been detected above the GWQS once in the last five events. As such, well 3MW06 was not sampled for lead during the 2021 event because the NJDEP approved its removal from the sampling program based on the submittal of the 2019 Biennial Certification Report.
- There is no evidence of unidentified sources of contamination or new releases since the inception of the CEA.

Therefore, it is recommended that the CEA for the Evans Area remain in effect and long-term monitoring should continue.

6.4 Site Inspection

As part of the biennial monitoring event performed at the site in May 2019, Watermark personnel conducted a site inspection as required for the five-year review on May 15 and 16, 2019. The site inspection was performed to gather information on the site's current status and to visually confirm and document the conditions of the remedy, the site, and the surrounding area. In October 2021, the JV personnel conducted a monitoring well condition inspection as part of routine monitoring activities. Photographs taken during the site inspection that document site conditions during the October 2021 monitoring event are included as **Appendix G**. The site inspection consisted of evaluating remedy institutional controls, evaluating access controls to sampling locations, reviewing site-related monitoring report and safety plans, and inspecting other general site areas. The site inspections conducted by Watermark and the JV concluded that site monitoring wells are generally in good condition, with the exception of 3MW02, which was observed to have a bent casing and PVC stickup during the October 2021 inspection. The well will be repaired and bollards will be added around it before the next biennial monitoring event. Access to the majority of the monitoring wells and site is limited and within gated areas, which are in good condition. A review of the monitoring reports indicates institutional controls are operating correctly and the CEA is currently in place. Access to the site-specific health and safety plan and monitoring reports was readily available to site personnel and contractors. No deficient areas were observed during the site inspections.

An in-person visit with the Wall Township planning/building department was also conducted by Watermark on May 16, 2019 to inquire about construction of a classroom building, parking lot, and surface water detention basin that had been completed in the southwest portion of the CEA in an area of the Site controlled by Brookdale College. The building department indicated that the certificate of occupancy was issued on July 26, 2017. During the construction of the building, surface soils contaminated with lead, polycyclic aromatic hydrocarbons, and pesticides were identified. Contaminated soil was excavated and transported off site for disposal. An unrestricted use Response Action Outcome for this action was submitted to NJDEP, the Monmouth County Regional Health Commission, and the Wall Township Clerk and Building Department official on September 7, 2017. It should

be noted that groundwater was not encountered during the investigation of the Brookdale College parcel associated with the excavation of contaminated soils. According to Pat Flanagan of InfoAge, no other significant land disturbance activities have taken place at the CEA during the reporting period. During the site inspection, no detention basins that intercepted groundwater were observed. Therefore, these land disturbance activities did not warrant the collection of groundwater/surface water samples as required by N.J.A.C. 7@26E-8.6(a) 5.

EPA guidance regarding five-year reviews typically requires interviews of various personnel associated with the project and residing in the surrounding area. The JV conducted telephone interviews in January 2022 with Wall Township and InfoAge. The NJDEP project manager was interviewed in August 2022. Attempts were also made to contact the Brookdale Community College, but no response was received. The telephone interview logs are included in **Appendix H**.

7.0 TECHNICAL ASSESSMENT

7.1 Question A: Is the remedy functioning as intended by the decision documents?

As a part of this five-year review, the COCs from the original DD and CEA are evaluated to determine if the remedy is functioning as intended. The following sections summarize each COC for the well(s) in which the COCs are impacting.

7.1.1 Institutional Controls

The decision document specifies ICs for groundwater at the site because levels of COCs in groundwater do not allow for UU/UE. The IC component of the remedy is implemented through governmental controls in the form of the NJDEP CEA and corresponding WRA. The CEA is registered with the State of New Jersey and implemented with all substantive and administrative requirements being met by the Army. The CEA was proposed by the Army and approved by the NJDEP in 2001. The CEA was modified in 2008 to include a new timeframe for degradation of cadmium, nickel, PCE, and TCE of 35 years (from 2007). This revised CEA was approved by the NJDEP in 2009. In addition to the CEA, restrictions on the use of groundwater have been placed in the deeds transferring property of Fort Monmouth, Evans Area. Biennial reviews of the CEA have been performed in accordance with the NJDEP guidance. Based on the evaluation performed as part of this five–year review, ICs are in place and effective for all areas of the site that did not achieve UU/UE.

7.1.2 Trichloroethene

TCE was selected as a COC based on concentrations above the New Jersey GWQS of 1.0 µg/L in monitoring wells 3MW01, 3MW05R, and 3MW07. Since the third five-year review, TCE in shallow monitoring well 3MW01 declined below the GWQS and was non-detect in May 2019, but in the October 2021 event, the TCE concentration exceeded the New Jersey GWQS. TCE has been observed to rebound in 3MW01, and it can be concluded that TCE is being flushed from the shallow groundwater bearing zone. TCE levels at this well are considered stable, but it is recommended that TCE should remain a monitored COC in well 3MW01.

Monitoring wells 3MW05R and 3MW07 are located in the deeper groundwater-bearing zone, and TCE is a COC in these wells. TCE has not been detected in well 3MW05 or 3MW05R since 2007. Prior to this, TCE was observed to be in a general decline. TCE has exhibited an upward trend in well 3MW07 since 2007 with concentrations ranging from 8.9 µg/L to 26 µg/L, which may be indicative of a slow release of TCE from finer grained zones under diffusion limited transport. There may be residual effects of TCE migration in the deeper groundwater-bearing zone at well 3MW05R in the future from the source of contamination near well 3MW07. The source of contamination at well 3MW07 remains unknown but is likely associated with up-gradient historical laboratory uses.

TCE impacts in the deeper groundwater bearing zone near well 3MW07 are expected to remain consistent in the near future given a likely slow release from finer grained zones in and above the saturated zone. The conceptual site model flushing time for TCE of 35 years, which was stated in the last CEA amendment dated December 19, 2008, is still anticipated to be the case. TCE will remain a COC in wells 3MW01, 3MW05R, and 3MW07. In addition, TCE will be monitored in wells 3MW08 and 3MW09 due to their downgradient and cross gradient locations relative to 3MW07.

7.1.3 Cadmium

Cadmium was selected as a COC because concentrations were above the New Jersey GWQS of 4.0 µg/L in monitoring well 3MW01. Cadmium was not detected in the down-gradient well 3MW05 during the 2012 event. Cadmium analysis in 3MW05/3MW05R was subsequently dropped from the sampling program (based on recommendations from the second five-year review). Cadmium appears to be attenuating from the groundwater in the shallow groundwater-bearing zone. The cadmium concentrations in well 3MW01 show a general decline since the second five year review, from 24 µg/L to 3.5 µg/L. The conceptual site model flushing time of 40 years (from 2000), which was stated in the last CEA amendment, is still anticipated to be relevant. Cadmium will remain a COC in well 3MW01.

7.1.4 Lead

Lead was originally selected as a COC because concentrations were above the New Jersey GWQS of 5.0 µg/L in monitoring wells 3MW05R, 3MW06, and FEMW13. Based on recommendations in the second five-year review, FEMW13 was removed from the sampling program, and lead was removed as a COC in 3MW05R.

The replacement well 9004-MW01R was added to the sampling program in 2008. Based on the second five-year review, this sampling location was to be removed from the program if lead was not detected above the New Jersey GWQS during the 2014 event. During the 2014 event lead was detected at 13.70 µg/L. This well was sampled again in 2016, and lead was not detected. Based on this result, the third five-year review recommended that this well also be removed from the sampling program.

Lead was detected in 3MW06 during the 2014 sampling event at 6.69 µg/L. This was the first detection of lead in this well since 2010. Because lead was not detected at 3MW06 during the July 2016 or May 2019 sampling events, a recommendation to drop this well from the sampling program was made within the 2019 Biennial Certification. Based on this recommendation, monitoring well 3MW06 was not sampled during the October 2021 monitoring event, and lead is no longer identified as a COC.

7.1.5 Nickel

Nickel was selected as a COC based on concentrations above the New Jersey GWQS of 100 µg/L in monitoring well 3MW01. Since the second five-year review, nickel has been detected between 70 µg/L and 97.6 µg/L. The concentrations of nickel have shown a steady decline since 2007, and a large decline since the highest concentration was observed in 2003 (752 µg/L). In addition, the last three rounds of groundwater sampling have shown nickel concentrations of 97.6 µg/L (2012), 79.4 µg/L (2014), and 70 µg/L (2016), which are below the New Jersey GWQS. During the 2012 sampling event, nickel was also detected in 3MW05R, 3MW06, 3MW07, 3MW08, and 3MW09 at concentrations ranging from 2.1 µg/L to 5.45 µg/L. Nickel detections in these wells were well below the New Jersey GWQS and based on the second five-year review nickel analysis was dropped from the sampling program for these wells.

The CEA amendment indicated a nickel flushing time of 11 years (from 2000) in groundwater. As indicated in the groundwater results since 2007, nickel concentrations have dropped below the New Jersey GWQS during the last five events. Based on this, it was recommended that nickel be dropped as a COC in monitoring well 3MW01 within the third five-year review. Based on this recommendation, nickel was not evaluated at 3MW01 during the May 2019 or October 2021 monitoring events.

7.1.6 Conclusions

Based on the above summaries of COCs in groundwater at the site, the remedy is functioning as intended by the DD. Some of the cleanup levels are being achieved while concentrations of other COCs are exhibiting trends consistent with predictions made in the revised CEA and are indicating signs of achieving GWQS The CEA, should remain in place to prevent exposure to human receptors.

7.2 Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objective used at the time of the remedy still valid?

Based on a review of standards and regulations, the New Jersey GWQS remain the same as presented in the decision documents, the last five-year review, and the CEA amendment.

Potential new exposure pathways were evaluated for this five-year review. Although there has been development in the southern portion of the CEA area, there have been no new land use changes or physical site changes in areas with impacted groundwater that would affect the protectiveness of the remedy. During the second five-year review period, vapor intrusion investigations were performed at buildings adjacent to monitoring wells 3MW07, FEMW13, and FEMW14, and at nearby residences. Based on the results of those investigations, no unacceptable risk associated with the vapor intrusion exposure pathway was found to either the on-site buildings or off-site residences. Based on the above, there has been no new human health or ecological routes of exposure identified that would affect the protectiveness of the remedy.

Toxicity factors for TCE and PCE were revised by EPA in 2012. However, these changes do not affect the protectiveness of the remedy since the New Jersey GWQSs for these compounds have not changed. In addition, other contaminant characteristics have not changed in a way that could affect the protectiveness of the remedy. Furthermore, standardized risk assessment methodologies have not changed in a way that could affect the protectiveness of the remedy. Overall, progress toward meeting the remedial goal is proceeding as expected.

7.3 Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

Since the previous five-year review, land ownership has not changed; however, land use has changed slightly in the southern portion of the CEA. Several buildings were demolished, and Brookdale College has completed construction of a classroom building, parking lot, and surface water detention basin. This change in land use does not create additional receptors nor does it call the protectiveness of the remedy into question.

As mentioned in Section 7.2, vapor intrusion investigations were performed during the second five-year review period in some on-site buildings and off-site residences to evaluate potential affects from historical PCE and TCE groundwater contamination. As stated, no unacceptable risk associated with the vapor intrusion exposure pathway were found. Therefore, the results of the vapor intrusion investigations do not question the protectiveness of the remedy. It is anticipated that the protectiveness of the remedy will not be affected by natural disasters (earthquake, flood, etc.) or acts of God.

7.4 Technical Assessment Summary

Based on the three questions answered above, it has been determined that the remedy is functioning as intended by the DD. The RAOs are being maintained and the remedy is progressing as expected. The cleanup levels originally established have not changed. No

new information has come to light that could call into question the protectiveness of the remedy. ICs are in place and effective for the groundwater which did not achieve UU/UE. ICs are tailored to the use restrictions specified in the DD. Current land use is compatible with the remedy. Groundwater monitoring will continue in the coming years, which are activities subject to routine modifications and adjustments.

8.0 ISSUES, RECOMMENDATIONS, AND FOLLOW-UP ACTIONS

Based on the site inspections and review of available data, there are no issues that currently prevent the protectiveness of the remedy. Monitoring well 3MW06 was not sampling during the 2021 event based on the recommendations made in the 2019 biennial certification. Groundwater monitoring will continue in the coming years, which are activities subject to routine modifications and adjustments.

A summary of the monitoring program moving forward is described below and shown in **Table 8-1**:

- Cadmium is the only metal remaining in the monitoring program. Cadmium is a COC in well 3MW01 and was detected at a concentration below the New Jersey GWQS during the most recent monitoring event (October 2021). Because it has been detected above the New Jersey GWQS within the last two monitoring events, cadmium monitoring at 3MW01 should continue.
- VOCs will continue to be analyzed in wells 3MW07 and 3MW01 because TCE remains at concentrations exceeding the New Jersey GWQS. VOCs will continue to be monitored in wells 3MW05R, 3MW08, and 3MW09 because of the potential deeper migration of TCE-impacted groundwater from up-gradient wells..

9.0 PROTECTIVENESS STATEMENT

Based on the current and reasonably anticipated site and groundwater uses, the Army has determined that the site-wide remedy is protective of human health and the environment. There are no unacceptable risks present at the site and none are expected as long as the institutional and access controls are properly operated, monitored, and maintained

10.0 NEXT REVIEW

The fifth five-year review should be performed in 2026 to evaluate the selected remedy, to determine if the CEA needs modification, and to determine if the remedies appear to be functioning as intended and continue to protect human health and the environment.

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TABLES

Table 2-1
Site Chronology
Fourth Five-Year Review
Fort Monmouth, Evans Area
Wall Township, New Jersey

Event	Date
Site selected for closure under the BRAC Act	1993
Final Enhanced Preliminary Assessment Report	January 1994
Initial Site Investigation activities	1994 to 1996
Final Site Inspection Report	April 1996
Final Supplemental Site Inspection Report	September 1998
Demolition of Building 9007 and associated activities	September/October 1999
Soil excavation activities around Building 9007	September 2000
CEA application submitted to the NJDEP	April 2001
Decision Document submitted to the NJDEP	April 2001
Decision Document apporoved by the NJDEP (including source removal approval for Building 9007)	July 2001
CEA approved by the NJDEP	August 2001
First Five-Year Review submitted to the NJDEP	June 2007
2007 Annual Monitoring Report submitted to the NJDEP	November 2007
Remedial activities performed associated with PCB soil contamination in the Building 9053 area	April to November 2008
CEA Amendment submitted to the NJDEP	December 2008
First Five-Year Review and modified CEA approved by NJDEP	January 2009
Final Building 9004 Area Site Characterization Report and Baseline Ecological Evaluation submitted to the NJDEP	January 2009
2008 Annual Monitoring Report submitted to the NJDEP	May 2009
Final Remedial Action Report for PCB Soil Contamination, Building 9053 Area	June 2009
CEA Biennial Certification submitted to the NJDEP (included 2009 Annual Report)	June 2010
2010 Annual Monitoring Report submitted to the NJDEP	December 2010
Final Vapor Intrusion Investigation Report submitted to the USACE	February 2011
Final Remedial Action Report for Soil Removal - Building 9004 Area submitted to the NJDEP	April 2011
Final Vapor Intrusion Investigation Report Update submitted to the NJDEP	September 2011
Submission of the Draft Final CEA Biennial Certification to the NJDEP	October 2011
Submission of the Draft Final Vapor Intrusion Report Update to the NJDEP	December 2012
Submission of the 2012 Annual Monitoring Report to NJDEP	June 2013
Submission of the Final Vapor Intrusion Update to NJDEP	August 2013
Second Five-Year Review submitted to the NJDEP	October 2013
Submission of the Final CEA Biennial Certification to the NJDEP	October 2013
Final Long-Term Monitoring Work Plan submitted to USACE	November 2014
Submission of the Draft CEA Biennial Certification (included the 2014 Biennial Monitoring Report) to the NJDEP	April 2015
Submission of the Final CEA Biennial Certification (included the 2014 Biennial Monitoring Report) to the NJDEP	November 2015
2016 biennial sampling event performed	July 2016
Third Five-Year Review (Pre-Final) submitted to the NJDEP	July 2017
Submission of the Draft CEA Biennial Certification (including 2016 Biennial Monitoring Report) to the NJDEP	August 2017
Third Five-Year Review and CEA Biennial Certification approved by the NJDEP	December 2017
2019 biennial sampling event performed	May 2019
Submission of the Final CEA Biennial Certification (including the 2019 Biennial Monitoring Report) to the NJDEP	February 2020
CEA Biennial Certification (including the 2019 Biennial Monitoring Report approved by the NJDEP	August 2020
2021 biennial sampling event performed	October 2021
Fourth Five-Year Review submitted to the NJDEP	TBA
Fourth Five-Year Review approved by the NJDEP	TBA

Notes:

BRAC = base realignment and closure

CEA = Classification Exception Area

NJDEP = New Jersey Department of Environmental Protection

PCB = polychlorinated biphenyl

USACE = United States Army Corps of Engineers

Table 6-1
Well Construction and Groundwater Elevation Summary
Fourth Five-Year Review
Fort Monmouth Evans Area
Wall Township, New Jersey

Well ID	Diameter (Inches)	Location[1]		Elevation[2]										
		Easting	Northing	Top of PVC	Ground Surface	Top of Screen	Bottom of Screen	Water Level (5/15/2019)	Groundwater Elevation (5/15/2019)	Approximate Sample Elevation (5/15/19)	Water Level (10/26/21)	Groundwater Elevation (10/26/21)	Approximate Sample Elevation (10/26/21 through 10/27/21)
Shallow wells (Upper Zone)													
3MW01	2	614846.788	493312.674	50.83	48.88	38.88	28.88	11.8	39.03	34	14.14	36.69	34
3MW02	2	615005.018	493287.815	59.04	56.68	39.18	29.18	19.35	39.69	N/A	21.92	37.12	N/A
3MW03	2	615252.639	492997.449	65.29	63.38	41.38	31.38	23.78	41.51	N/A	26.38	38.91	N/A
3MW04	2	615086.669	493591.077	42.73	40.78	34.28	24.28	9.60	33.13	N/A	18.30	24.43	N/A
FEMW03	4	614384.98	492653.525	71.45	71.80	44.08	34.08	22.12	49.33	N/A	N/A[4]	N/A[4]	N/A
FEMW13	4	615116.758	492275.414	65.44	65.44	39.25	19.25	14.90	50.54	N/A	18.06	47.38	N/A
FEMW14	2	615067	492201	63.68	63.68	49.14	29.14	13.25	50.43	N/A	16.53	47.15	N/A
Deeper Wells (Lower Zone)													
3MW05R	2	614848.374	493406.472	36.33	33.97	8.97	-11.03	14.90	21.43	-1	15.86	20.47	-1
3MW06	2	615092.971	493585.247	44.1	41.28	-16.72	-41.72	26.66	17.44	-29	27.90	16.20	-29
3MW07	2	614985.765	492890.016	68.92	66.78	1.78	-23.22	41.45	27.47	-11	42.99	25.93	-11
3MW08	2	615222.37	493066.068	62.27	60.08	-2.92	-27.92	35.84	26.43	-15	37.25	25.02	-15
3MW09	2	614810.128	493145.549	60.35	58.38	3.38	-21.62	33.33	27.02	-9	34.96	25.39	-9
FEMW15	4	614878	492592	69.71	69.77	-23.1	-33.1	40.37	29.34	-28	42.44	27.27	-28
9004-MW01R[3]	2	615527.143	493663.328	8.27	6.15	4.15	-5.85	5.32	2.95	N/A	3.58	4.69	N/A

Notes:
All well risers are polyvinyl chloride construction
[1] = New Jersey State Plane Coordinates (NY East) 2900 NAD (CONUS)
[2] = Elevation in feet above NAVD88 Datum
[3] = Although 9004-MW01R is screened at a shallow depth, the corresponding screen elevation classifies this well as a "Lower Zone" well. This classification is consistent with previous reports.
[4] = FEMW03 was inaccessible during the October 2021 sampling event.
N/A = Not Applicable; Well not Sampled

Table 6-2
Historic Groundwater Elevation Summary
Fourth Five-Year Review
Fort Monmouth, Evans Area
Wall Township, New Jersey

Date	Shallow Wells (Upper Zone)							Deeper Wells (Lower Zone)						
	3MW01	3MW02	3MW03	3MW04	FEMW03	FEMW13	FEMW14	3MW05/ 3MW05R[1]	3MW06	3MW07	3MW08	3MW09	FEMW15	9004-MW01R
Jun-01	37.47	38.91	40.43	32.24	47.97	48.09	48.48	22.76	17.90	27.15	24.86	26.35	24.83	N/A
Sep-01	36.57	37.50	39.21	31.10	46.63	46.49	47.02	22.33	16.53	26.53	24.07	25.46	24.21	N/A
Jul-02	35.27	36.07	37.43	30.38	44.53	42.85	43.09	21.50	15.78	25.71	23.06	24.56	23.16	N/A
Aug-03	37.86	39.57	41.26	32.74	49.07	48.94	48.08	23.12	17.07	27.79	30.48	26.95	28.78	N/A
Jul-04	37.86	39.54	41.38	32.48	48.61	47.43	48.42	22.70	16.80	27.22	24.57	26.16	27.27	N/A
Aug-05	37.33	38.79	40.38	32.11	47.48	47.36	47.77	22.05	16.51	26.40	24.43	25.84	27.19	N/A
Aug-06	37.61	38.24	39.75	31.84	47.17	47.03	47.4	22.00	15.22	26.43	23.55	25.66	26.84	N/A
Sep-07	35.81	36.89	38.6	30.59	46.57	47.29	47.08	20.69	15.07	25.01	23.26	24.25	26.63	N/A
Sep-08	35.33	36.16	37.83	30.29	45.71	45.94	46	20.74	15.08	25.41	23.22	24.37	26.68	N/A
Aug-09	36.51	37.67	39.28	31.41	47.47	48.18	47.97	N/A	15.75	26.02	24.36	25.33	27.80	5.45
Jul-10	36.89	38.14	39.98	31.14	48.30	48.76	48.54	20.32	15.16	25.27	23.51	24.56	26.77	4.96
Jun-11	36.81	37.87	39.43	31.59	47.53	48.24	48.03	20.36	15.59	25.60	24.16	24.94	27.33	4.23
Aug-12	36.39	37.18	38.54	31.03	46.51	47.03	46.88	19.98	15.17	25.21	23.83	24.52	26.80	4.41
Dec-14	37.50	37.34	38.69	32.51	46.48	47.46	47.30	20.74	16.17	26.22	25.05	25.62	28.02	5.89
Jul-16	35.85	36.67	38.24	30.72	45.77	46.42	46.37	19.61	15.78	24.90	23.98	24.44	26.49	3.98
May-19	39.03	39.69	41.51	33.13	49.33	50.54	50.43	21.43	17.44	27.47	26.43	27.02	29.34	2.95
Oct-21	36.69	37.12	38.91	24.43	N/A[4]	47.38	47.15	20.47	16.20	25.93	25.02	25.39	27.27	4.69

Notes:
[1] = In 2009, 3MW05 was damaged and subsequently replaced with 3MW05R in 2010.
[2] = FEMW03 was inaccessible during the October 2021 sampling event.
Elevations are in feet above NAVD88 Datum
N/A = Not Applicable

Table 6-3
Groundwater Quality Summary
Fourth Five-Year Review
Fort Monmouth, Evans Area
Wall Township, New Jersey

Well ID	Temp. (°C)	pH (SU)	Specific Conductivity (µS/cm)	Turbidity (NTU)	DO (mg/L)	ORP (mV)	Approximate Flow Rate (mL/min)	Initial Static Water Level (feet below MP)	Final Water Level (feet below MP)	Drawdown (feet)	Color/Clarity
May 2019 Event											
3MW01	14.50	5.89	211	167	0.81	81.7	350	11.80	11.91	0.11	Colorless/Cloudy
3MW05R	15.93	5.32	146	3.05	2.9	51.8	400	14.90	14.91	0.01	Clear
3MW06	16.16	6.23	116	31	0.24	80.1	500	26.66	27.07	0.41	Cloudy
3MW07	15.82	4.10	207	1.27	0.87	134.7	400	41.45	41.47	0.02	Clear
3MW08	15.22	5.71	103	109	0.89	79.9	350	35.84	36	0.16	Cloudy
3MW09	16.28	5.90	102	14.9	3.5	70.1	400	33.33	33.53	0.20	Clear
October 2021 Event											
3MW01	18.49	5.94	0.136	19.8	0.00	49	250	14.14	14.42	0.28	Brown
3MW05R	16.38	5.66	0.124	19.3	0.00	57	300	15.86	15.91	0.05	Clear
3MW07	14.96	4.06	0.192	0.5	0.00	189	250	42.90	42.92	0.02	Clear
3MW08	15.36	6.10	0.104	19.4	0.00	12	330	37.25	37.31	0.06	Brown
3MW09	15.21	6.26	0.085	10.5	0.00	2	270	34.90	34.93	0.03	Clear

Notes:
DO = dissolved oxygen
mg/L = milligrams per liter
mL/min = milliliter per minute
MP = measuring point
NTU = nephelometric turbidity unit
ORP = oxidation reduction potential
SU = standard unit
µS/cm= micro Siemens per centimeter
mV = millivolt
°C = degrees celcius

Table 6-4
Monitoring Well 3MW01 - Analytical Results
Fourth Five-Year Review
Fort Monmouth, Evans Area
Wall Township, New Jersey

Date Sampled	Analyte and GWQS (µg/L)				
	TCE* (1.0)	PCE (1.0)	Cadmium* (4.0)	Lead (5.0)	Nickel (100)
8/9/1994	7.9	2.8	112	60.9	454
9/14/1995	3.6	ND	20.1	2.71	66.8
1/3/1996	2.4	24	28	2.43	84.9
1/24/1996	ND	ND	33.2	ND	93.2
7/30/1997	2.76	ND	ND	ND	ND
11/25/1997	1.21	ND	62.9	3	383.5
1/30/1998	ND	ND	NA	NA	NA
6/24/1999	ND	ND	NA	NA	NA
9/29/1999	2.55	ND	NA	NA	NA
12/7/1999	16.82	ND	35.4	2.9	318
3/9/2000	9.2	ND	58.9	ND	347
6/7/2000	ND	ND	42.4	6.12	354
3/1/2001	ND	ND	46.2	ND	152
6/14/2001	NA	NA	48.9	ND	238
9/20/2001	ND	ND	41.1	ND	247
7/25/2002	2	ND	59.2	9.54	489
8/14/2003	ND	ND	122	ND	752
7/29/2004	ND	ND	26.9	ND	242
8/4/2005	ND	0.48	30.4	ND	319
8/23/2006	ND	0.64	74.8	ND	309
9/26/2007	ND	ND	50	ND	140
9/25/2008	ND	ND	35.3	ND	91.2
7/30/2009	ND	ND	39.4	ND	124
7/28/2010	ND	ND	26.3	4.55 J	93.3
6/29/2011	1 J	ND	24.2	ND	80
8/9/2012	2.27 J	0.69	15.6	0.617	97.6
12/10/2014	4.90 / **4.70**	ND / **ND**	20.20 / **17.60**	NA	79.40 / **68.60**
7/21/2016	4.90 / **4.90**	ND / **ND**	24 / **23.4**	NA	70 / **66.3**
5/15/2019	ND / **ND**	ND / **ND**	7.82 / **8.32**	NA	NA
10/26/2021	6.2 / **5.8**	ND / **ND**	3.5 / **3.6**	NA	NA

Notes:
Duplicate sample result presented in bold.
*COC designated for this well in CEA.
Shaded cells indicate analyte above GWQS.
µg/L = micrograms per liter
COC = contaminant of concern
GWQC = Gound Water Quality Standard (March 4, 2014)
J = estimated value
NA = not analyzed
ND = non-detect
PCE = tetrachloroethene
TCE = trichloroethene

Table 6-5
Monitoring Well 3MW05R - Analytical Results
Fourth Five-Year Review
Fort Monmouth, Evans Area
Wall Township, New Jersey

Date Sampled	Analyte and GWQS (µg/L)				
	TCE* (1.0)	PCE (1.0)	Cadmium (4.0)	Lead (5.0)	Nickel (100)
1/3/1996	99	19	ND	ND	15.9
1/25/1996	110	ND	NA	NA	NA
7/30/1997	69.27	ND	NA	NA	NA
11/25/1997	38.72	ND	ND	ND	ND
1/30/1998	14.05	ND	NA	NA	NA
6/24/1999	84.6	2.39	NA	NA	NA
9/29/1999	3.85	ND	ND	ND	ND
12/7/1999	3.6	ND	1.41	ND	24.6
3/9/2000	4.6	ND	ND	ND	ND
6/7/2000	40.76	ND	3.11	7.08	16.7
3/2/2001	13.92	ND	2.2	ND	1.54
6/14/2001	ND	ND	0.87	ND	ND
9/20/2001	8.83	ND	ND	ND	1.84
7/25/2002	5.47	ND	ND	ND	ND
8/14/2003	3.42	ND	ND	1.03	1.79
7/29/2004	9.78	ND	ND	ND	ND
8/3/2005	9.12	ND	ND	ND	ND
8/23/2006	7.15	ND	0.347	ND	3.55
9/26/2007	23	ND	ND	ND	ND
9/25/2008	ND	ND	ND	ND	ND
7/29/2009	Well not sampled due to damage				
7/28/2010	ND	ND	ND	8.42	4.89 J
6/29/2011	ND	ND	ND	ND	7.11 J
8/8/2012	ND	ND	ND	ND	5.59
12/10/2014	ND	ND	NA	NA	NA
7/21/2016	ND	ND	NA	NA	NA
5/15/2019	ND	ND	NA	NA	NA
10/26/2021	ND	ND	NA	NA	NA

Notes:
Note: Results after 2009 are for replacement well 3MW05R.
Duplicate sample result presented in bold.
*COC designated for this well in CEA.
Shaded cells indicate analyte above GWQS.
µg/L = micrograms per liter
COC = contaminant of concern
GWQC = Gound Water Quality Standard (March 4, 2014)
J = estimated value
NA = not analyzed
ND = non-detect
PCE = tetrachloroethene
TCE = trichloroethene

Table 6-6
Monitoring Well 3MW06 - Analytical Results
Fourth Five-Year Review
Fort Monmouth, Evans Area
Wall Township, New Jersey

Date Sampled	Analyte and GWQS (µg/L)				
	TCE (1.0)	PCE (1.0)	Cadmium (4.0)	Lead* (5.0)	Nickel (100)
2/27/1996	ND	ND	ND	ND	ND
7/30/1997	ND	ND	NA	NA	NA
1/28/1998	ND	ND	NA	NA	NA
9/29/1999	ND	ND	NA	NA	NA
12/7/1999	ND	ND	0.76	ND	2.52
3/9/2000	ND	ND	ND	ND	ND
6/7/2000	ND	ND	1.02	ND	3.77
2/27/2001	ND	ND	ND	1.4	1.58
6/12/2001	ND	ND	ND	ND	1.27
9/18/2001	ND	ND	ND	ND	3.74
7/24/2002	ND	ND	ND	ND	ND
8/12/2003	ND	ND	ND	ND	3.11
7/27/2004	ND	ND	ND	ND	ND
7/28/2005	ND	ND	ND	ND	ND
8/22/2006	ND	ND	0.378	ND	12.1
9/24/2007	ND	ND	ND	ND	ND
9/23/2008	ND	ND	ND	6.95	5.03 J
7/30/2009	ND	ND	ND	8.49	ND
7/28/2010	ND	ND	ND	15.4	4.77 J
6/29/2011	ND	ND	ND	ND	5.98 J
8/9/2012	ND	ND	ND	ND	2.1
12/10/2014	NA	NA	NA	6.69 / **5.57**	NA
7/21/2016	NA	NA	NA	ND / **ND**	NA
5/15/2019	NA	NA	NA	ND / **ND**	NA

Notes:
Duplicate sample result presented in bold.
*COC designated for this well in CEA.
3MW06 was not sampled during the 2021 event due to the recommendation to remove the well from the program after the 2019 event.
Shaded cells indicate analyte above GWQS.
µg/L = micrograms per liter
COC = contaminant of concern
GWQC = Gound Water Quality Standard (March 4, 2014)
J = estimated value
NA = not analyzed
ND = non-detect
PCE = tetrachloroethene
TCE = trichloroethene

Table 6-7
Monitoring Well 3MW07 - Analytical Results
Fourth Five-Year Review
Fort Monmouth, Evans Area
Wall Township, New Jersey

Date Sampled	Analyte and GWQS (µg/L)				
	TCE* (1.0)	PCE (1.0)	Cadmium (4.0)	Lead (5.0)	Nickel (100)
2/28/1996	4.5	ND	ND	ND	ND
3/19/1996	3.5	ND	NA	NA	NA
7/30/1997	2.45	ND	NA	NA	NA
1/30/1998	1.54	ND	NA	NA	NA
6/24/1999	ND	ND	NA	NA	NA
9/29/1999	5.81	ND	NA	NA	NA
12/7/1999	5.1	ND	0.561	ND	3.04
3/10/2000	6.31	ND	ND	ND	3.13
6/7/2000	2.7	ND	3.1	6.22	10.4
6/14/2001	4.49	ND	0.705	ND	3.45
9/20/2001	5.79	ND	ND	ND	6.07
7/25/2002	5.59	ND	ND	13.3	13.9
8/13/2003	6.92	ND	ND	1.17	4.41
7/29/2004	6.89	ND	ND	ND	ND
7/29/2005	7.63	ND	ND	ND	ND
9/13/2006	3.9	ND	ND	ND	4.28
9/25/2007	11	ND	ND	ND	ND
9/25/2008	8.9	ND	ND	ND	4.1 J
7/28/2009	12	ND	ND	ND	5.1 J
7/26/2010	11	ND	ND	5.57 J	ND
6/27/2011	12	ND	1.11 J	6.83	22.2
8/7/2012	15	ND	ND	0.569	5.45
12/11/2014	20.8	ND	NA	NA	NA
7/21/2016	16.1	ND	NA	NA	NA
5/15/2019	17.7	ND	NA	NA	NA
10/27/2021	26	ND	NA	NA	NA

Notes:
Duplicate sample result presented in bold.
*COC designated for this well in CEA.
Shaded cells indicate analyte above GWQS.
µg/L = micrograms per liter
COC = contaminant of concern
GWQC = Gound Water Quality Standard (March 4, 2014)
J = estimated value
NA = not analyzed
ND = non-detect
PCE = tetrachloroethene
TCE = trichloroethene

Table 6-8
Monitoring Well 3MW08 - Analytical Results
Fourth Five-Year Review
Fort Monmouth, Evans Area
Wall Township, New Jersey

Date Sampled	Analyte and GWQS (µg/L)				
	TCE* (1.0)	PCE (1.0)	Cadmium (4.0)	Lead (5.0)	Nickel (100)
3/1/1996	ND	ND	ND	ND	ND
7/30/1997	ND	ND	NA	NA	NA
1/30/1998	ND	ND	NA	NA	NA
6/24/1999	ND	ND	NA	NA	NA
9/29/1999	ND	ND	NA	NA	NA
12/7/1999	ND	ND	2.13	ND	1.81
3/10/2000	ND	ND	ND	ND	5.05
6/7/2000	ND	ND	1.73	ND	2.9
2/27/2001	ND	ND	ND	ND	ND
6/12/2001	ND	ND	ND	ND	1
9/18/2001	ND	ND	ND	ND	ND
7/23/2002	ND	ND	ND	5.06	1.6
8/12/2003	ND	ND	ND	ND	1.04
7/26/2004	ND	ND	ND	ND	ND
8/1/2005	ND	ND	ND	ND	ND
9/13/2006	ND	ND	ND	ND	ND
9/24/2007	ND	ND	ND	ND	ND
9/24/2008	ND	ND	ND	4.18 J	ND
7/29/2009	ND	ND	ND	5.31 J	ND
7/26/2010	ND	ND	ND	14.3	4.26 J
6/28/2011	ND	ND	0.8 J	2.71 J	5.15 J
8/7/2012	ND	ND	ND	ND	2.47
12/11/2014	ND	ND	NA	NA	NA
7/21/2016	ND	ND	NA	NA	NA
5/15/2019	ND	ND	NA	NA	NA
10/27/2021	ND	ND	NA	NA	NA

Notes:
Duplicate sample result presented in bold.
*COC designated for this well in CEA.
Shaded cells indicate analyte above GWQS.
µg/L = micrograms per liter
COC = contaminant of concern
GWQC = Gound Water Quality Standard (March 4, 2014)
J = estimated value
NA = not analyzed
ND = non-detect
PCE = tetrachloroethene
TCE = trichloroethene

Table 6-9
Monitoring Well 3MW09 - Analytical Results
Fourth Five-Year Review
Fort Monmouth, Evans Area
Wall Township, New Jersey

Date Sampled	Analyte and GWQS (µg/L)				
	TCE* (1.0)	PCE (1.0)	Cadmium (4.0)	Lead (5.0)	Nickel (100)
3/1/1996	ND	ND	2.11	5.13	ND
7/30/1997	ND	ND	NA	NA	NA
11/25/1997	ND	ND	ND	ND	ND
1/30/1998	ND	ND	NA	NA	NA
6/24/1999	ND	ND	NA	NA	NA
9/29/1999	ND	ND	NA	NA	NA
12/7/1999	ND	ND	1.87	ND	6.98
3/10/2000	ND	ND	2.44	ND	1.51
6/7/2000	ND	ND	2.07	2.77	5.06
2/27/2001	ND	ND	ND	ND	ND
6/12/2001	ND	ND	ND	ND	ND
9/18/2001	ND	ND	ND	ND	0.946
7/24/2002	ND	ND	ND	46.8	36.1
8/12/2003	ND	ND	ND	ND	1.44
7/27/2004	ND	ND	ND	ND	ND
8/2/2005	ND	ND	ND	ND	ND
9/13/2006	ND	ND	ND	ND	1.42
9/24/2007	ND	ND	ND	ND	4.5 J
9/24/2008	ND	ND	ND	5.28 J	ND
7/29/2009	ND	ND	ND	5.56 J	ND
7/26/2010	ND	ND	ND	16	68
6/27/2011	ND	ND	0.99 J	4.33 J	11.9 J
8/7/2012	ND	ND	ND	ND	4.13
12/11/2014	ND	ND	NA	NA	NA
7/21/2016	ND	ND	NA	NA	NA
5/15/2019	ND	ND	NA	NA	NA
10/27/2021	ND	ND	NA	NA	NA

Notes:
Duplicate sample result presented in bold.
*COC designated for this well in CEA.
Shaded cells indicate analyte above GWQS.
µg/L = micrograms per liter
COC = contaminant of concern
GWQC = Gound Water Quality Standard (March 4, 2014)
J = estimated value
NA = not analyzed
ND = non-detect
PCE = tetrachloroethene
TCE = trichloroethene

Table 7-1
Proposed Changes to Monitoring Program
Fourth Five-Year Review
Fort Monmouth, Evans Area
Wall Township, New Jersey

Well ID	COC(s) in CEA	Summary of Recent Results	Current Sampling Frequency and Parameters	Proposed Sampling Frequency and Parameters	Rationale for Proposed Changes
3MW01	TCE, cadmium, and nickel	Cadmium detected above New Jersey GWQS in one event since last five-year review.	Biennially for VOCs and cadmium	No changes proposed	N/A
3MW05R	TCE	TCE has not been detected since September 2007.	Biennially for VOCs	No changes proposed	N/A
3MW06	Lead	Lead was not detected during the 2019 biennial groundwater sampling event, which was the event following the third five-year review.	Biennially for lead	Remove well from program (after 2019 biennial groundwater sampling event).	Lead has not been detected above the New Jersey GWQS since December 2014. Since December 2014, lead has been non-detect in this well for two sampling events.
3MW07	TCE	TCE concentrations continue to be above the GWQS and concentrations are stable.	Biennialy for VOCs	No changes proposed	N/A
3MW08	None	No TCE detections between 1996 and 2019.	Biennialy for VOCs	No changes proposed	N/A
3MW09	None	No TCE detections between 1996 and 2019.	Biennialy for VOCs	No changes proposed	N/A

Notes:
GWQS = Groundwater Quality Standard
TCE = trichloroethene
N/A = not applicable
VOCs = volatile organic compounds

FIGURES

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

SHARK RIVER

ADRIENNE ROAD

PINEWOOD DR

HAMPTON CT

LAUREL GULLY BROOK

FORMER BUILDING 9007 AREA

3MW04

9004-MW01R

3MW06

3MW05R

3MW01

3MW02

3MW09

3MW08

3MW03

3MW07

FEMW03

FEMW15

BUILDING 9034

FEMW13

FEMW14

TAFT ST

MONMOUTH BLVD

MCKINLEY ST

WASHINGTON AVE

ROOSEVELT ST

DJANNA RD

SQUIRREL RD

SALEM AVE

CORAL WAY

CORAL WAY

MANOR DR

MANOR PATH

HILLVIEW AVE

BAY PLAZA

SHORE DR

LEGEND

MONITORING WELL

CEA BOUNDARY

0 500 1,000

SCALE IN FEET

FORT MONMOUTH, EVANS AREA
WALL TOWNSHIP, NEW JERSEY

SITE LOCATION MAP

Seres Engineering & Services,LLC

ARCADIS a joint venture

FIGURE 3-1

CITY: NOVI, MI DIV: ENV DB: TRY PIC: PM: TM: TR: PROJECT NUMBER: 30061472.09AA COORDINATE SYSTEM: NAD 1983 StatePlane New Jersey FIPS 2900 Feet
D:\GIS\Project Files\FortMonmouth\Oceanport\Documents\EvansArea\FYR_Report\3-1_FtMonmouth_EvansArea_SiteLocation.mxd PLOTTED: 11/24/2021 11:41:51 AM BY: TYarbrough

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

9004-MW01R
3MW04
3MW06
33.13
34
36
3MW05R
38
3MW01
39.03
3MW02
39.69
40
3MW09
42
3MW08
3MW03
41.51
44
3MW07
46
48
FEMW03
49.33
FEMW15
50
FEMW13
50.54
FEMW14
50.43
MONMOUTH BLVD
WASHINGTON AVE
ADRIENNE ROAD
DIANNA RD
SQUIRREL RD
SALEM AVE
CORAL WAY
BAY PLAZA
MANOR DR
TAFT ST
ROOSEVELT ST

LEGEND

- UPPER ZONE MONITORING WELL
- LOWER ZONE MONITORING WELL
- GROUNDWATER CONTOUR (ft msl)
- GROUNDWATER FLOW DIRECTION
- CEA BOUNDARY

0 250 500
SCALE IN FEET

FORT MONMOUTH, EVANS AREA
WALL TOWNSHIP, NEW JERSEY

GROUNDWATER POTENTIOMETRIC MAP (2019) SHALLOW WELLS

Seres Engineering & Services,LLC
ARCADIS a joint venture

FIGURE
6-1

CITY: NOVI, MI DIV: ENV DB: TRY PIC: PM: TM: TR: PROJECT NUMBER: 30061472.09AA COORDINATE SYSTEM: NAD 1983 StatePlane New Jersey FIPS 2900 Feet
D:\GIS\Project Files\FortMonmouth\Oceanport\Documents\EvansAreaIFYR_Report\6-1_FtMonmouth_EvansArea_GW_Shallow.mxd PLOTTED: 11/23/2021 6:08:48 PM BY: TYarbrough

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

9004-MW01R
2.95

3MW04
3MW06
17.44

3MW05R
21.43

3MW01
3MW02

3MW09
27.02

3MW08
26.43

3MW03

3MW07
27.47

FEMW03

FEMW15
29.34

FEMW13

FEMW14

4
8
12
16
20
24
28

MONMOUTH BLVD
WASHINGTON AVE
TAFT ST
ROOSEVELT ST
ADRIENNE ROAD
DIANNA RD
SQUIRREL RD
SALEM AVE
CORAL WAY
MANOR DR
BAY PLAZA

LEGEND

- UPPER ZONE MONITORING WELL
- LOWER ZONE MONITORING WELL
- GROUNDWATER CONTOUR (ft msl)
- GROUNDWATER FLOW DIRECTION
- CEA BOUNDARY

0 250 500
SCALE IN FEET

FORT MONMOUTH, EVANS AREA
WALL TOWNSHIP, NEW JERSEY

GROUNDWATER POTENTIOMETRIC MAP (2019) DEEP WELLS

Seres Engineering & Services,LLC
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FIGURE
6-2

CITY: NOVI, MI DIV: ENV DB: TRY PIC: PM: TM: TR: PROJECT NUMBER: 30061472.09AA COORDINATE SYSTEM: NAD 1983 StatePlane New Jersey FIPS 2900 Feet
D:\GIS\Project Files\FortMonmouth\Oceanport\Documents\EvansAreaIFYR_Report\6-2_FtMonmouth_EvansArea_GW_Deep.mxd PLOTTED: 11/23/2021 6:07:58 PM BY: TYarbrough

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

3MW04
24.43
3MW06
9004-MW01R
26
28
30
3MW05R
32
3MW01
34
36.69
3MW02
37.12
36
3MW09
38
3MW08
3MW03
38.91
40
3MW07
42
FEMW03
MONMOUTH BLVD
ADRIENNE ROAD
FEMW15
44
WASHINGTON AVE
46
FEMW13
47.38
FEMW14
47.15
DIANNA RD
TAFT ST
SQUIRREL RD
SALEM AVE
CORAL WAY
BAY PLAZA
MANOR DR
ROOSEVELT ST

LEGEND

- UPPER ZONE MONITORING WELL
- LOWER ZONE MONITORING WELL
- GROUNDWATER CONTOUR (ft msl)
- GROUNDWATER FLOW DIRECTION
- CEA BOUNDARY

0 250 500
SCALE IN FEET

FORT MONMOUTH, EVANS AREA
WALL TOWNSHIP, NEW JERSEY

GROUNDWATER POTENTIOMETRIC MAP (2021) SHALLOW WELLS

Seres Engineering & Services,LLC
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FIGURE
6-3

CITY: NOVI, MI DIV: ENV DB: TRY PIC: PM: TM: TR: PROJECT NUMBER: 30061472.09AA COORDINATE SYSTEM: NAD 1983 StatePlane New Jersey FIPS 2900 Feet
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Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

9004-MW01R
4.69

3MW04
3MW06
16.20

3MW05R
20.47

3MW01
3MW02

3MW09
25.39

3MW08
25.02

3MW03

3MW07
25.93

FEMW03

FEMW15
27.27

FEMW13

FEMW14

6
8
10
12
14
16
18
20
22
24
26

MONMOUTH BLVD
WASHINGTON AVE
ADRIENNE ROAD
DIANNA RD
SQUIRREL RD
SALEM AVE
CORAL WAY
BAY PLAZA
MANOR DR
TAFT ST
ROOSEVELT ST

LEGEND

- UPPER ZONE MONITORING WELL
- LOWER ZONE MONITORING WELL
- GROUNDWATER CONTOUR (ft msl)
- GROUNDWATER FLOW DIRECTION
- CEA BOUNDARY

0 250 500
SCALE IN FEET

FORT MONMOUTH, EVANS AREA
WALL TOWNSHIP, NEW JERSEY

GROUNDWATER POTENTIOMETRIC MAP (2021) DEEP WELLS

Seres Engineering & Services,LLC
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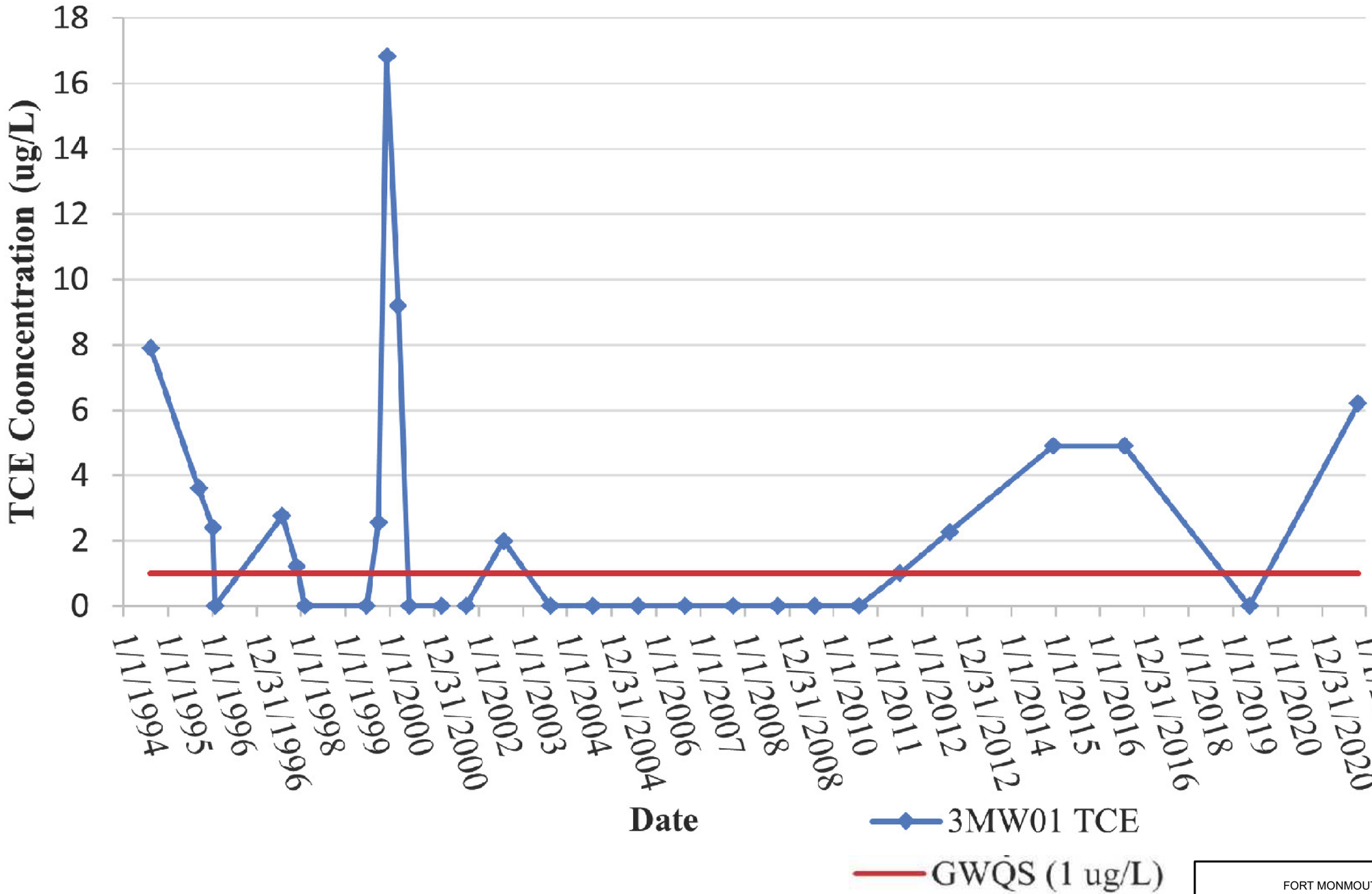
FIGURE
6-4

CITY: NOVI_MI DIV: ENV DB: TRY PIC: PM: TM: TR: PROJECT NUMBER: 30061472.09AA COORDINATE SYSTEM: NAD 1983 StatePlane New Jersey FIPS 2900 Feet
D:\GIS\Project Files\FortMonmouth\Oceanport\Documents\EvansAreaFYR_Report_20211\6-4_FtMonmouth_EvansArea_GW_Deep_2021.mxd PLOTTED: 1/5/2022 9:48:11 PM BY: TYarbrough



FORT MONMOUTH, EVANS AREA
WALL TOWNSHIP, NEW JERSEY

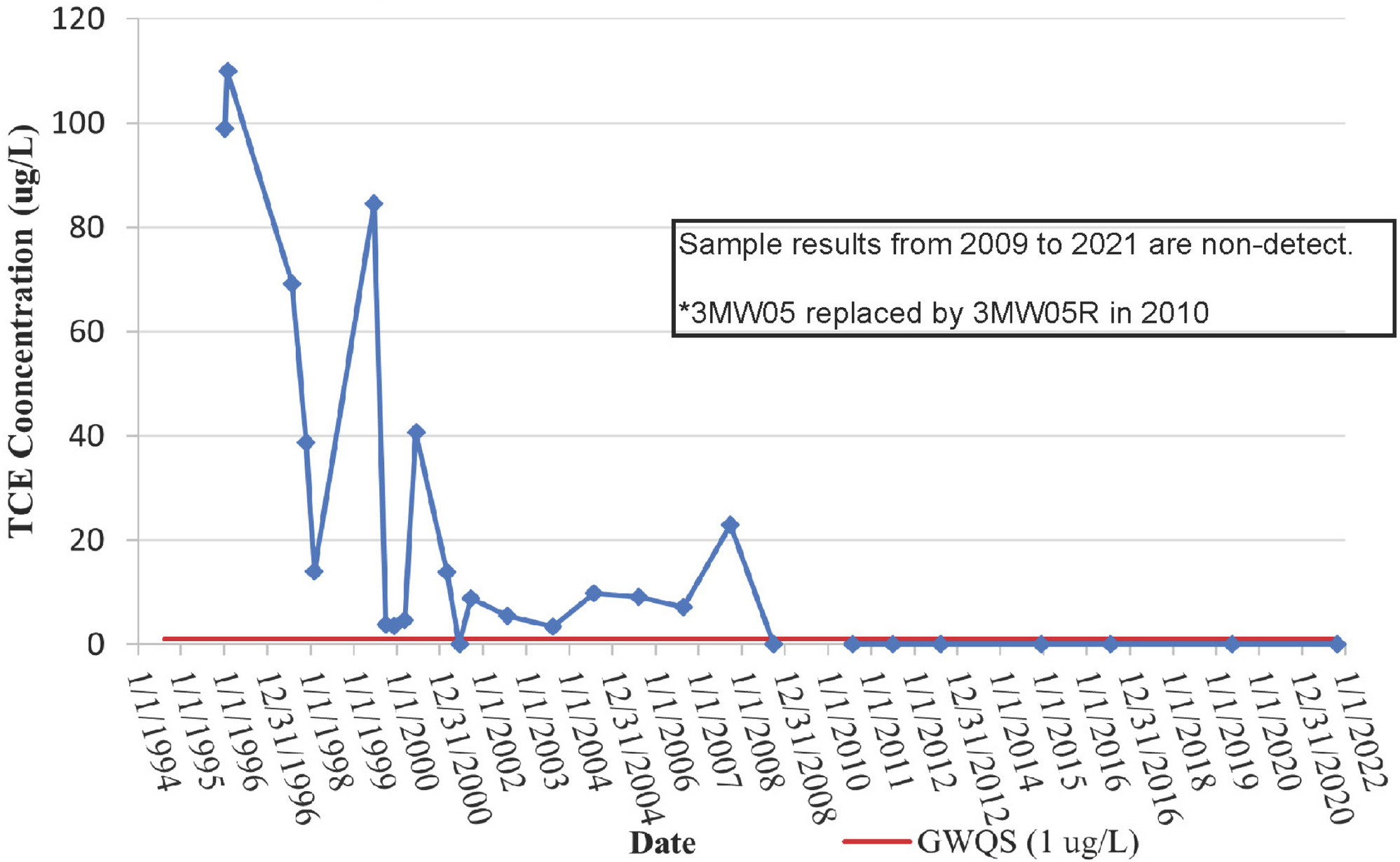
TCE CONCENTRATIONS IN 3MW01 OVER TIME

Seres Engineering & Services,LLC | ARCADIS a joint venture

FIGURE
6-5

CITY: NOVI, MI DIV: ENV DB: TRY PIC: PM: TM: TR: PROJECT NUMBER: 30061472.09AA COORDINATE SYSTEM: NAD 1983 StatePlane New Jersey FIPS 2900 Feet
D:\GIS\Project Files\FortMonmouth\Oceanport\Documents\EvansAreaIFYR_Report\6-5_TCE Concentrations in 3MW01 Over Time.mxd PLOTTED: 1/5/2022 8:57:12 PM BY: TYarbrough

CITY: NOVI, MI DIV: ENV DB: TRY PIC: PM: TM: TR: PROJECT NUMBER: 30061472.09AA COORDINATE SYSTEM: NAD 1983 StatePlane New Jersey FIPS 2900 Feet
D:\GIS\Project Files\FortMonmouth\Oceanport\Documents\EvansArea\FYR_Report\6-6_TCE Concentrations in 3MW05 Over Time.mxd PLOTTED: 1/5/2022 8:57:43 PM BY: TYarbrough



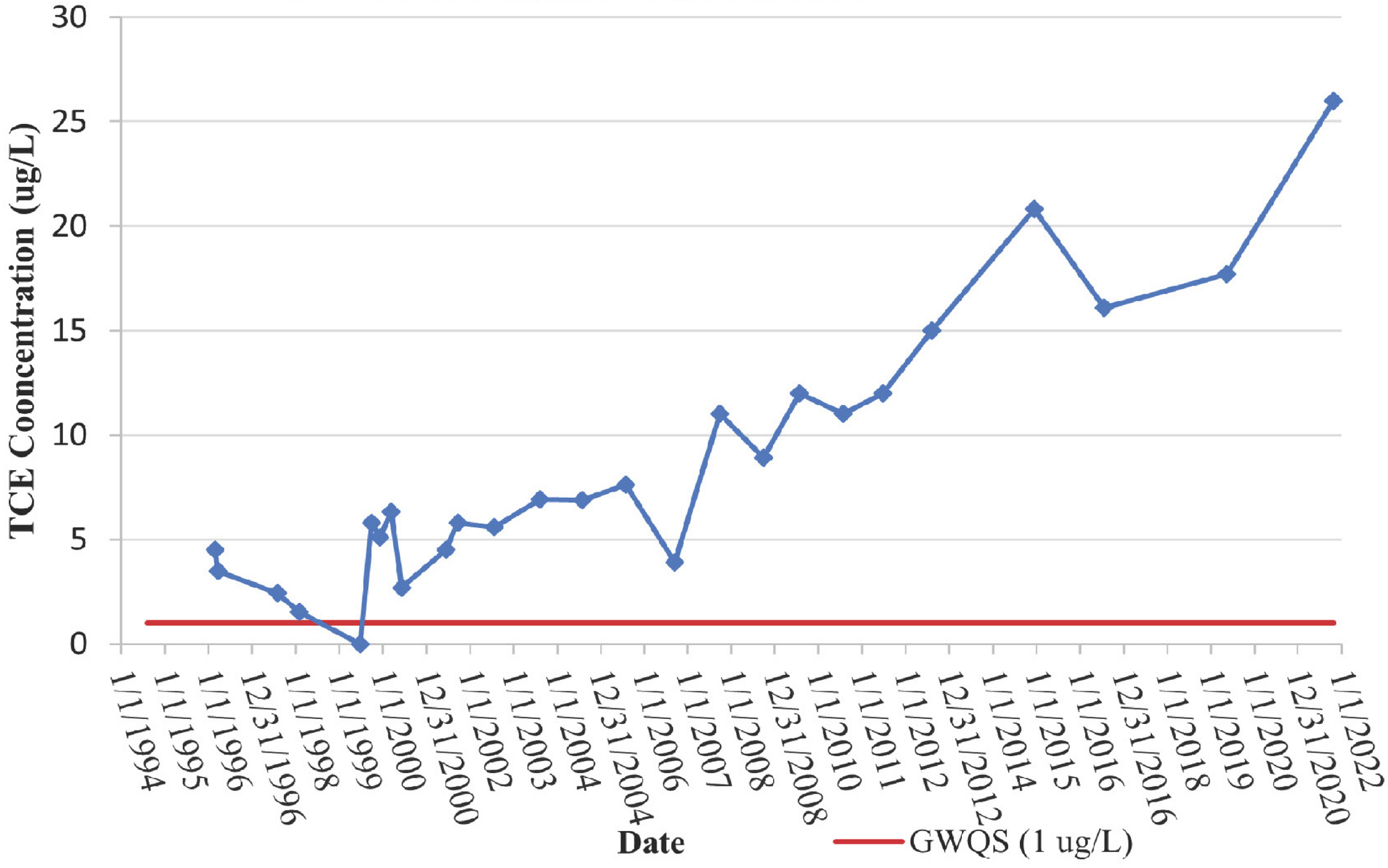
FORT MONMOUTH, EVANS AREA
WALL TOWNSHIP, NEW JERSEY

TCE CONCENTRATIONS IN 3MW05* OVER TIME

Seres Engineering & Services,LLC | ARCADIS a joint venture

FIGURE
6-6

CITY: NOVI, MI DIV: ENV DB: TRY PIC: PM: TM: TR: PROJECT NUMBER: 30061472.09AA COORDINATE SYSTEM: NAD 1983 StatePlane New Jersey FIPS 2900 Feet
D:\GIS\Project Files\FortMonmouth\Oceanport\Documents\EvansArea\FYR_Report\6-7_TCE Concentrations in 3MW07 Over Time.mxd PLOTTED: 1/5/2022 8:58:16 PM BY: TYarbrough



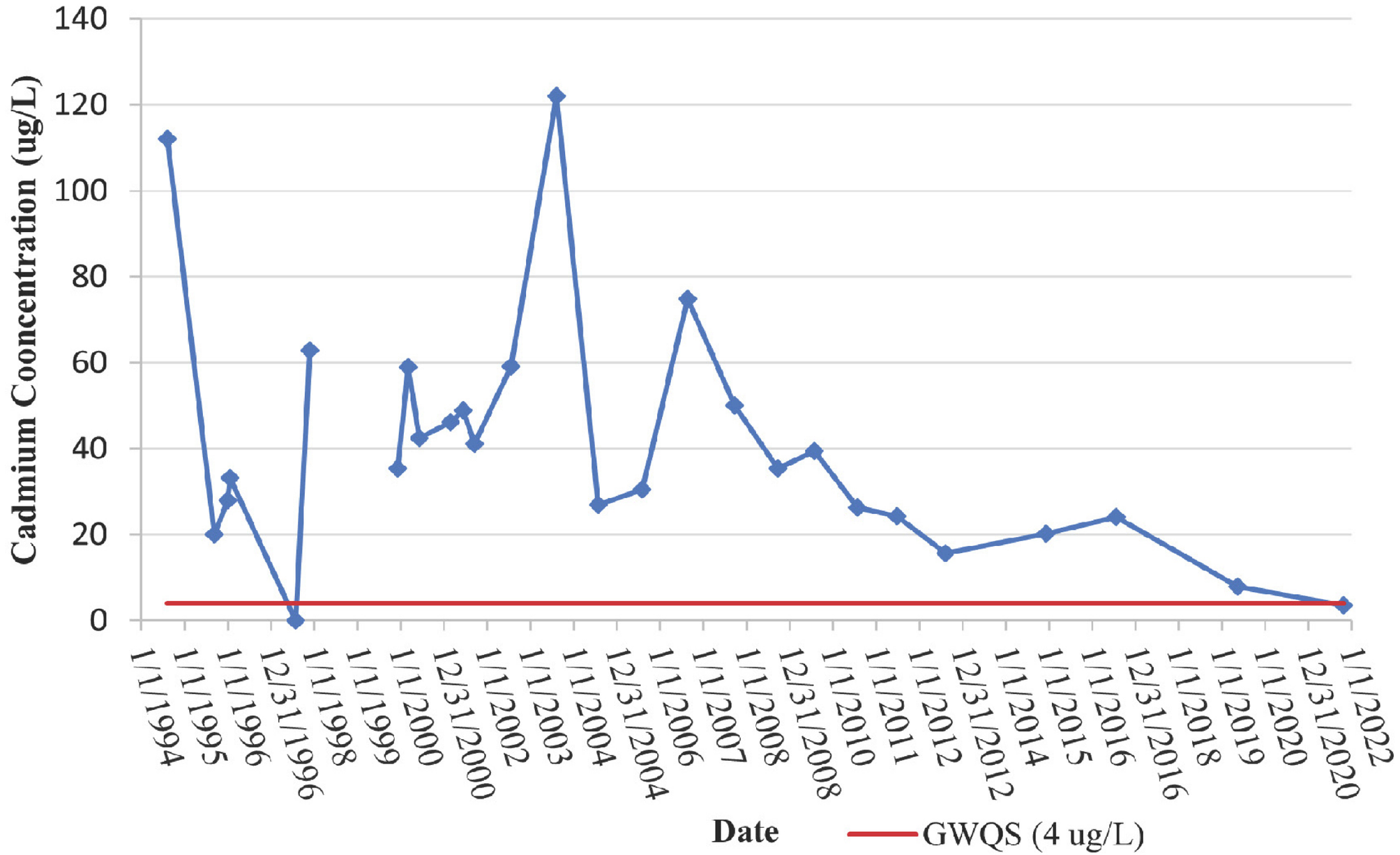
FORT MONMOUTH, EVANS AREA
WALL TOWNSHIP, NEW JERSEY

TCE CONCENTRATIONS IN 3MW07 OVER TIME

Seres Engineering & Services, LLC | ARCADIS a joint venture

FIGURE
6-7

CITY: NOVI, MI DIV: ENV DB: TRY PIC: PM: TM: TR: PROJECT NUMBER: 30061472.09AA COORDINATE SYSTEM: NAD 1983 StatePlane New Jersey FIPS 2900 Feet
D:\GIS\Project Files\FortMonmouth\Oceanport\Documents\EvansArea\FYR_Report\6-8_Cadmium Concentrations in 3MW01 Over Time.mxd PLOTTED: 1/5/2022 8:59:26 PM BY: TYarbrough



FORT MONMOUTH, EVANS AREA
WALL TOWNSHIP, NEW JERSEY

CADMIUM CONCENTRATIONS IN 3MW01 OVER TIME

Seres Engineering & Services,LLC | ARCADIS a joint venture

FIGURE
6-8

APPENDIX A
CONTOUR MAP REPORTING FORMS

NOTE: THIS IS A COURTESY COPY OF THIS RULE. ALL OF THE DEPARTMENT'S RULES ARE COMPILED IN TITLE 7 OF THE NEW JERSEY ADMINISTRATIVE CODE.

APPENDIX A
Contour Map Reporting Form
- 2019 Event

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No✓. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes✓ No___. If yes, identify these wells.

FEMW03
FEMW13

3. Are there any monitor wells present at the site but omitted from the contour map? Yes✓ No___. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

All 14 wells cited in the 2001 CEA are included in the current contour maps

4. Are there any monitor wells containing separate phase product during this measuring event? Yes___ No✓. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No___. If yes, show the formula used to correct the water table elevation.

NOTE: THIS IS A COURTESY COPY OF THIS RULE. ALL OF THE DEPARTMENT'S RULES ARE COMPILED IN TITLE 7 OF THE NEW JERSEY ADMINISTRATIVE CODE.

5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No✓. If yes, discuss the reasons for the change.

6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No✓. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes✓ No___. If no, justify inclusion of those wells.

Shallow well groundwater elevation data from the 2019 event is presetned in Figure 6-1
Deep groundwater elevation data from the 2019 event is presented in Figure 6-2

8. Were the ground water contours computer generated___, computer aided___, or hand-drawn✓? If computer aided or generated, identify the interpolation method(s) used.

NOTE: THIS IS A COURTESY COPY OF THIS RULE. ALL OF THE DEPARTMENT'S RULES ARE COMPILED IN TITLE 7 OF THE NEW JERSEY ADMINISTRATIVE CODE.

APPENDIX A
Contour Map Reporting Form
- 2021 Event

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No✓. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes✓ No___. If yes, identify these wells.

FEMW13

3. Are there any monitor wells present at the site but omitted from the contour map? Yes✓ No___. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

13 of the 14 wells cited in the 2001 CEA are included in the current contour maps

for 2021. FEMW03 was inaccessible for gauging during the 2021 groundwater monitoring

event, as it was surrounded by a fence without a gate.

4. Are there any monitor wells containing separate phase product during this measuring event? Yes___ No✓. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No___. If yes, show the formula used to correct the water table elevation.

NOTE: THIS IS A COURTESY COPY OF THIS RULE. ALL OF THE DEPARTMENT'S RULES ARE COMPILED IN TITLE 7 OF THE NEW JERSEY ADMINISTRATIVE CODE.

5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No✓. If yes, discuss the reasons for the change.

6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No✓. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes✓ No___. If no, justify inclusion of those wells.

Shallow well groundwater elevation data from the 2021 event is presetned in Figure 6-3
Deep groundwater elevation data from the 2021 event is presented in Figure 6-4

8. Were the ground water contours computer generated___, computer aided___, or hand-drawn✓? If computer aided or generated, identify the interpolation method(s) used.

APPENDIX B
GROUNDWATER SAMPLING DATA SHEETS

Site I.D.: Ft Monmouth Evans Area
Well I.D.: 3MW05R
Pump Start: 1308
Sample Time: 1345

Watermark

GROUNDWATER SAMPLING DATA SHEET

Depth to NAPL = _____ ft

Static Water Level (WL) (from T.O.C.) = 14.90 ft

Well Depth (from T.O.C) = 41.10 ft

Date: 5/15/19

Well Diameter (d) = 2 inches

Screen Depth 25 to 40 Feet below grade

Sampler(s): John Bowers

Height of Water in Well (T):

T = depth (ft) - Static Water Level (ft)

T = 41.1 - 14.90

T = 26.2 ft

Well Volume: 4.3 (gallons)

Low Flow Yes☒ No☐

Purging Device: Grundfos

Sampling Device: Grundfos Pump

Pump Intake (depth below TOC): 40 Feet

Actual Purge Volume: 3.7 (Gallons)

Time	Temp. (°C) (± 3%)	pH (SU) (± 0.1)	Specific Conductance (umhos/cm) (± 3%)	Turbidity (NTUs) (+10% if >1)	D.O. (mg/l) (± 10%)	ORP (mV) (± 10)	Flow Rate (ml/min)	Static water Level	Color/ Clarity	Comments
1313	15.03	5.30	153	90.6	5.0	90.3	400	14.89	Cloudy/orange tint	
1318	15.12	5.30	147	51.8	3.8	76.7	400	14.91	Cloudy	
1323	15.28	5.35	146	18.9	3.1	63.5	400	14.91	Cloudy	
1328	15.75	5.37	146	8.39	3.1	52.8	400	14.91	Clear	
1333	15.82	5.37	147	3.74	2.9	55.3	400	14.91	Clear	
1338	16.08	5.38	146	3.31	2.9	54.5	400	14.91	Clear	
1343	15.93	5.32	146	3.05	2.9	51.8	400	14.91	Clear	
	Sampled 1345 VOC TIC's									

Volume in gallons/feet for common monitoring well sizes: 1-inch = 0.041, 2-inch = 0.163, 3-inch = 0.367, 4-inch = 0.652, 6-inch = 1.468

Site I.D.: Fort Monmouth

Well I.D.: 3MW01 (DUP-01) + (MS/MSD)

Pump Start: 13:15

Sample Time: 14:00

Watermark

GROUNDWATER SAMPLING DATA SHEET

Depth to NAPL = — ft

Static Water Level (WL) (from T.O.C.) = 11.80' ft

Well Depth (from T.O.C) = SOC ± 20.70 ft

Date: 5/15/19

Well Diameter (d) = 2" inches

Screen Depth 10 to 20 Feet below grade

Sampler(s): J. Carney

Height of Water in Well (T):

T = depth (ft) - Static Water Level (ft)

T = 20.70 - 11.80

T = 8.9 ft

Well Volume: 1.45 (gallons)

Low Flow Yes ☒ No ☐

Purging Device: Grundfos

Sampling Device: " "

Pump Intake (depth below TOC): ≈15 Feet

Actual Purge Volume: ~4.5 (Gallons)

Time	Temp. (°C) (± 3%)	pH (SU) (± 0.1)	Specific Conductance (umhos/cm) (± 3%)	Turbidity (NTUs) (±10% if >1)	D.O. (mg/l) (± 10%)	ORP (mV) (± 10)	Flow Rate (ml/min)	Static water Level	Color/ Clarity	Comments
13:20	14.36	6.05	278	421	0.94	96.9	~250	11.89	cloudy/ orange/brown	No odor/No sheen
13:25	15.08	5.93	252	276	1.11	94.5	~275	11.90	" "	
13:30	14.98	5.91	239	228	1.11	91.5	~275	11.90	" "	
13:35	14.88	5.91	227	222	1.07	88.8	~300	11.90	" "	
13:40	14.71	5.91	218	205	1.02	86.2	~300	11.90	" "	
13:45	14.62	5.90	213	177	0.95	84.2	~300	11.90	" "	
13:50	14.54	5.89	211	167	0.87	82.4	~300	11.91	colorless/ cloudy	
13:55	14.50	5.89	211	167	0.81	81.7	~300	11.91	" "	
14:00	** SAMPLE COLLECTED FOR VOC's + TICS + Cadmium **									
	SAMPLE ID: FM-EA-3MW01-051519 (LAB QC + DUP01)									

Volume in gallons/feet for common monitoring well sizes: 1-inch = 0.041, 2-inch = 0.163, 3-inch = 0.367, 4-inch = 0.652, 6-inch = 1.468

Site I.D.: Ft Monmouth Evans Area

Well I.D.: 3 MW 06

Pump Start: 1501

Sample Time: 16:10

Watermark

GROUNDWATER SAMPLING DATA SHEET

Depth to NAPL = _____ ft

Static Water Level (WL) (from T.O.C.) = 26.66 ft

Well Depth (from T.O.C) = 84.84 ft

Date: 5/15/19

Well Diameter (d) = 2 inches

Screen Depth 60 to 85 Feet below grade

Sampler(s): John Bowers

Height of Water in Well (T):

T = depth (ft) - Static Water Level (ft)

T = 84.84 - 26.66

T = 58.18 ft

Well Volume: 9.5 (gallons)

Low Flow Yes ☒ No ☐

Purging Device: Grundfos Pump

Sampling Device: Grundfos Pump

Pump Intake (depth below TOC): ~72.5 Feet

Actual Purge Volume: ~9 (Gallons)

Time	Temp. (°C) (± 3%)	pH (SU) (± 0.1)	Specific Conductance (umhos/cm) (± 3%)	Turbidity (NTUs) (+10% if >1)	D.O. (mg/l) (± 10%)	ORP (mV) (± 10)	Flow Rate (ml/min)	Static water Level	Color/ Clarity	Comments
1506	17.21	6.20	119	>999	1.08	104	500	27.08	Cloudy	dark gray
1511	16.90	6.17	119	>999	0.83	105.3	500	27.05	Cloudy	dark gray
1516	16.32	6.14	118	>999	0.77	105.9	500	27.03	Cloudy	dark gray
1521	16.49	6.16	118	853	0.70	104.2	500	27.03	Cloudy	dark gray
1526	16.28	6.16	117	820	0.51	100.9	500	27.03	Cloudy	dark gray
1531	16.33	6.18	117	683	0.44	97.0	500	27.05	Cloudy	dark gray
1536	16.56	6.16	116	294	0.39	96.0	500	27.08	Cloudy	dark gray
1541	16.37	6.17	117	162	0.35	94.3	500	27.09	Cloudy	grayish tint
1546	16.28	6.21	116	88.8	0.29	88.1	500	27.08	Cloudy	grayish tint
1551	16.16	6.21	116	59.3	0.27	84.8	500	27.08	Cloudy	
1556	16.22	6.23	116	42.3	0.25	80.3	500	27.07	Cloudy	
1601	16.22	6.23	116	36.0	0.25	80.0	500	27.07	Cloudy	
1606	16.16	6.23	116	31.0	0.24	80.1	500	27.07	Cloudy	

Sample Pb 1610 MS/MSD Dup

Volume in gallons/feet for common monitoring well sizes: 1-inch = 0.041, 2-inch = 0.163, 3-inch = 0.367, 4-inch = 0.652, 6-inch = 1.468

Site I.D.: Ft. Monmouth Evans Area

Well I.D.: 3 MW 09

Pump Start: 831

Sample Time: 910

Watermark

GROUNDWATER SAMPLING DATA SHEET

Depth to NAPL = _____ ft

Static Water Level (WL) (from T.O.C.) = 33.33 ft

Well Depth (from T.O.C) = 83.00 ft

Date: 5/16/19

Well Diameter (d) = 2 inches

Screen Depth 57.9 to 82.9 Feet below grade

Sampler(s): John Bowers

Height of Water in Well (T):

T = depth (ft) - Static Water Level (ft)

T = 83.0 - 33.33

T = 49.67 ft

Well Volume: 8.1 (gallons)

Low Flow Yes ☑ No ☐

Purging Device: Grundfos pump

Sampling Device: Grundfos pump

Pump Intake (depth below TOC): ~77'

Actual Purge Volume: 4.2 Feet (Gallons)

Time	Temp. (°C) (± 3%)	pH (SU) (± 0.1)	Specific Conductance (umhos/cm) (± 3%)	Turbidity (NTUs) (±10% if >1)	D.O. (mg/l) (± 10%)	ORP (mV) (± 10)	Flow Rate (ml/min)	Static water Level	Color/ Clarity	Comments
836	15.80	6.22	101	190	3.6	40.3	400	33.47	Cloudy	
841	15.87	6.17	105	86.2	5.3	37.3	400	33.50	Cloudy	
846	15.83	6.12	101	28.4	5.0	26.8	400	33.52	Clear	
851	15.91	6.06	101	18.5	4.7	40.3	400	33.52	Clear	
856	16.00	5.96	101	16.7	4.1	61.3	400	33.53	Clear	
901	16.11	5.93	101	15.8	3.8	65.6	400	33.53	Clear	
906	16.28	5.90	102	14.9	3.5	70.1	400	33.53	Clear	
	Sampled 910 VOC TIC's									

Volume in gallons/feet for common monitoring well sizes: 1-inch = 0.041, 2-inch = 0.163, 3-inch = 0.367, 4-inch = 0.652, 6-inch = 1.468

Site I.D.: Fort Monmouth

Well I.D.: 3MW08

Pump Start: 8:40

Sample Time: 9:20

Watermark

GROUNDWATER SAMPLING DATA SHEET

Depth to NAPL = — ft

Static Water Level (WL) (from T.O.C.) = 35.84 ft

Well Depth (from T.O.C) = 90.20 ft

Date: 5/16/19

Well Diameter (d) = 2 inches

Screen Depth 66 to 91 Feet below grade

Sampler(s): J. Carney

Height of Water in Well (T):

T = depth (ft) - Static Water Level (ft)

T = 90.20 - 35.84

T = ~~54.36~~ ft

Well Volume: 8.86 (gallons)

Low Flow Yes ☒ No ☐

Purging Device: Grundfos

Sampling Device: "

Pump Intake (depth below TOC): ~78 Feet

Actual Purge Volume: ~4.5 (Gallons)

Time	Temp. (°C) (± 3%)	pH (SU) (± 0.1)	Specific Conductance (umhos/cm) (± 3%)	Turbidity (NTUs) (±10% if >1)	D.O. (mg/l) (± 10%)	ORP (mV) (± 10)	Flow Rate (ml/min)	Static water Level	Color/ Clarity	Comments
8:45	14.18	5.61	103	173	1.59	152.3	~350	36.00	cloudy w/ particles	No odor/No sheen
8:50	14.70	5.71	103	195	1.44	122.3	~400	36.00	" "	
8:55	14.98	5.71	103	140	1.32	104.2	~400	36.00	" "	
9:00	15.13	5.71	103	128	1.15	94.6	~400	36.00	" "	
9:05	15.26	5.72	103	123	1.04	83.9	~400	36.00	" "	
9:10	15.29	5.71	103	119	0.93	84.8	~350	36.00	" "	
9:15	15.22	5.71	103	109	0.89	79.9	~325	36.00	" "	
9:20	** SAMPLE COLLECTED FOR VOC's + TICS **									

2ND SAMPLE ID => FM-EA-3MW08-051619

Volume in gallons/feet for common monitoring well sizes: 1-inch = 0.041, 2-inch = 0.163, 3-inch = 0.367, 4-inch = 0.652, 6-inch = 1.468

Site I.D.: Ft Monmouth Evans Area

Well I.D.: 3MW07

Pump Start: 1021
Sample Time: 1055

Watermark

GROUNDWATER SAMPLING DATA SHEET

Depth to NAPL = — ft

Static Water Level (WL) (from T.O.C.) = 41.45 ft

Well Depth (from T.O.C) = 92.40 ft

Date: 5/16/19

Well Diameter (d) = 2 inches

Screen Depth 65 to 90 Feet below grade

Sampler(s): John Bowers

Height of Water in Well (T):

T = depth (ft) - Static Water Level (ft)

T = 92.40 - 41.45

T = 50.95 ft

Well Volume: 8.3 (gallons)

Low Flow: Yes ☒ No ☐

Purging Device: Grundfos pump

Sampling Device: Grundfos pump

Pump Intake (depth below TOC): 85 Feet

Actual Purge Volume: ~3.7 (Gallons)

Time	Temp. (°C) (± 3%)	pH (SU) (± 0.1)	Specific Conductance (umhos/cm) (± 3%)	Turbidity (NTUs) (±10% if >1)	D.O. (mg/l) (± 10%)	ORP (mV) (± 10)	Flow Rate (ml/min)	Static water Level	Color/ Clarity	Comments
1026	15.70	4.08	207	13.0	1.24	147.1	400	41.46	clear	started off cloudy/grayish cleared up after 2mins
1031	15.72	4.08	206	4.42	1.16	144.3	400	41.46	Clear	
1036	15.93	4.08	207	2.62	1.05	143.0	400	41.46	Clear	
1041	15.83	4.08	207	1.45	1.01	140.7	400	41.47	clear	
1046	15.90	4.10	207	1.31	0.94	138.1	400	41.47	Clear	
1051	15.82	4.10	207	1.27	0.87	134.7	400	41.47	Clear	
		Sampled 1055		VOC TIC's						

Volume in gallons/feet for common monitoring well sizes: 1-inch = 0.041, 2-inch = 0.163, 3-inch = 0.367, 4-inch = 0.652, 6-inch = 1.468

ARCADIS Design & Consultancy for natural and built assets

Groundwater Sampling Form

Well ID: 3MW01

Sample ID: 3MW01-102621

Page ____ of ____

Project No. ____

Date 10/26/21

Project Name/Location Ft Monmouth. Evans Area.

Weather Overcast, 60s.

Measuring Pt. Description TOC

Casing Diameter ~~4in~~ 2

Purge Method Low-Flow

Pump On/Off 1440

Screen Setting (ft-bmp) ____

Total Depth (ft-bmp) 19.82

Sample Method Bailer ____

Sample Time: 1555

Static Water Level (ft-bmp) 14.10

Well Material X PVC ____ Stainless Steel

Water Column ____

Pump Bladder

Pump Intake (ft-bmp) 17.00'

Other ____

Replicate / Code No. ____

Sampled by T-Taye.

Time	Minutes Elapsed	Rate (mL/min) 200ml/min +	Depth to Water (ft) -0.3	Temp. (°C) +/- 3%	Specific Conductivity (mS/cm) +/- 3%	Dissolved Oxygen (mg/L) +/- 10%	pH +/- 0.1 unit	Redox (mV) +/- 10mV	Turbidity (NTU) +/- 10%	Observations Color	Odor	Other
1445	5	250	14.14	18.07	0.178	1.82	5.86	118	7.78	Brown	Nan	—
1450	10		14.38	18.48	0.174	0.73	5.92	137	7.24	"	"	—
1455	15		14.30	18.47	0.169	0.39	5.93	108	4.59	"	"	—
1500	20		14.33	18.45	0.162	0.09	5.92	88	3.28	"	"	—
1505	25		14.38	18.47	0.158	0.00	5.94	69	2.17	"	"	—
1510	30		14.34	18.49	0.154	0.00	5.95	47	1.31	"	"	—
1515	35		14.40	18.49	0.148	0.00	5.95	53	7.69	"	"	—
1520	40		14.41	18.49	0.145	0.00	5.94	50	5.73	"	"	—
1525	45		14.40	18.49	0.142	0.00	5.95	50	5.03	"	"	—
1530	50		14.41	18.49	0.139	0.00	5.94	53	3.92	"	"	—
1535	55		14.42	18.48	0.136	0.00	5.95	51	3.41	"	"	—
1540	60		14.41	18.49	0.136	0.00	5.94	50	2.78	"	"	—
1545	65		14.43	18.47	0.135	0.00	5.95	49	2.52	"	"	—
1550	70		14.42	18.49	0.136	0.00	5.94	49	1.98	"	"	—

Constituents Sampled	Container Type	Number	Preservative

Equipment Used

	Make/Model	Rental ID Number
Pump	Bladder pump	
Water Quality Meter	Horiba - U52	
Turbidimeter	Horiba - U52	
Water Level Indicator	Solinst IP	
Photoionization Detector	MiniRAE 3000	
Other		

Well Casing Volumes

Gallons/Foot: 1" = 0.04; 1.25" = 0.06; 1.5" = 0.09; 2" = 0.16; 2.5" = 0.26; 3" = 0.37; 3.5" = 0.50; 4" = 0.65; 6" = 1.47

Well Information

Well Location: ~10 ft from Monmouth Blvd.

Condition of Well: good

Well Completion: Stick Up / ~~Flush Mount~~

Well Locked at Arrival: Yes / No

Well Locked at Departure: Yes / No

Key Number To Well: ____

ARCADIS Design & Consultancy for natural and built assets

Groundwater Sampling Form

Well ID: 3MW05R
Sample ID: 3MW05R-102621
Page 1 of 1
Date 10/26/21
Project No.
Project Name/Location Ft. Monmouth Evans Area
Weather Overcast/60s.

Measuring Pt. Description: TOC
Casing Diameter: 4in
Purge Method: Low-Flow
Pump On/Off: 1325
Screen Setting (ft-bmp): 35' - 45'
Total Depth (ft-bmp): 41.04
Static Water Level (ft-bmp): 15.86
Sample Method Bailer:
Sample Time: 1425
Water Column:
Pump: Bladder
Well Material: X PVC ; Stainless Steel
Pump Intake (ft-bmp): 32'
Other:

Replicate / Code No.: N/A.
Sampled by: T. Taye & G. Bashiyan

Time	Minutes Elapsed	Rate (mL/min) 200ml/min +	Depth to Water (ft) -0.3	Temp. (°C) +/- 3%	Specific Conductivity (mS/cm) +/- 3%	Dissolved Oxygen (mg/L) +/- 10%	pH +/- 0.1 unit	Redox (mV) +/- 10mV	Turbidity (NTU) +/- 10%	Observations Color	Odor	Other
1330	5	300	15.02	17.38	0.154	1.01	6.05	-3	197	Clear	None	
1335	10		15.93	15.87	0.127	1.01	5.54	53	112	"	"	
1340	15		15.97	15.28	0.128	0.00	5.55	50	75.5	"	"	
1345	20		15.90	15.20	0.128	0.00	5.62	46	64.2	"	"	
1350	25		15.91	15.21	0.129	0.00	5.68	43.0	53.2	"	"	
1355	30		15.91	15.24	0.127	0.00	5.71	45	44	"	"	
1400	35	V	15.91	16.07	0.124	0.00	5.67	53	37.4	"	"	
1405	40		15.91	16.13	0.123	0.00	5.69	55	33.8	"	"	
1410	45		15.91	16.29	0.123	0.00	5.64	56	25.4	"	"	
1415	50		15.91	16.35	0.122	0.00	5.63	58	23.1	"	"	
1420	55		15.91	16.36	0.124	0.00	5.66	57	19.3	"	"	
1425	60											

Constituents Sampled	Container Type	Number	Preservative
VOCs 8260C	40mL VOA	3	HCl

Equipment Used

	Make/Model	Rental ID Number
Pump	Bladder pump	
Water Quality Meter	Horiba - U52	
Turbidimeter	Horiba - U52	
Water Level Indicator	Solinst 1P	
Photoionization Detector	MiniRAE 3000	
Other		

Well Casing Volumes
Gallons/Foot: 1" = 0.04; 1.25" = 0.06; 1.5" = 0.09; 2" = 0.16; 2.5" = 0.26; 3" = 0.37; 3.5" = 0.50; 4" = 0.65; 6" = 1.47

Well Information

Well Location: downslope from Monmouth Blvd.
Condition of Well: good
Well Completion: Stick Up

Well Locked at Arrival: Yes / No
Well Locked at Departure: Yes / No
Key Number To Well:

ARCADIS

Groundwater Sampling Form

Project No. 30061472

Well ID: 3MW07

Sample ID: 3MW07-102721

Page ____ of ____

Date 10/27/21

Project Name/Location Ft Monmouth, Evans Area

Weather Overcast, 50s

Measuring Pt. Description TOC

Casing Diameter ~~4in~~ 2in

Purge Method Low-Flow

Pump On/Off 1040

Screen Setting (ft-bmp) ____

Total Depth (ft-bmp) 93.20

Sample Method Bailer ____

Sample Time: 1115

Static Water Level (ft-bmp) 42.90

Water Column 50.30'

Pump Bladder

Well Material X PVC

Pump Intake (ft-bmp) 78'

Other ____

____ Stainless Steel

Replicate / Code No. ____

Sampled by T-Taye

Time	Minutes Elapsed	Rate (mL/min) 200ml/min +	Depth to Water (ft) -0.3	Temp. (°C) +/- 3%	Specific Conductivity (mS/cm) +/- 3%	Dissolved Oxygen (mg/L) +/- 10%	pH +/- 0.1 unit	Redox (mV) +/- 10mV	Turbidity (NTU) +/- 10%	Observations Color	Odor	Other
1045	5	250	42.89	15.23	0.191	3.15	4.97	174	77.6	Brown	None	
1050	10	↓	42.93	15.04	0.194	0.87	4.19	184	16.3	Clear	None	
1055	15		42.94	15.01	0.193	0.40	4.07	188	3.1	"	"	
1100	20		42.91	14.97	0.193	0.00	4.03	185	1.4	"	"	
1105	25		42.92	14.97	0.191	0.00	4.09	187	0.9	"	"	
1110	30		42.92	14.96	0.192	0.00	4.06	189	0.5	"	"	
~~1115~~	~~35~~											
~~1120~~	~~40~~											

(FD)

(MS)

Constituents Sampled	Container Type	Number	Preservative
VOCs 8260C	40mL VOA	3	HCl.

Equipment Used

	Make/Model	Rental ID Number
Pump	Bladder Pump	
Water Quality Meter	Horiba U52	
Turbidimeter	Horiba U52	
Water Level Indicator	Solinst IP	
Photoionization Detector	MiniRAE 3000	
Other		

Well Casing Volumes Gallons/Foot: 1" = 0.04; 1.25" = 0.06; ~~1.5" = 0.09~~ 2" = 0.16; 2.5" = 0.26; 3" = 0.37; 3.5" = 0.50; 4" = 0.65; 6" = 1.47

Well Information

Well Location: ____

Condition of Well: Good

Well Completion: Stick Up

Well Locked at Arrival: Yes / No

Well Locked at Departure: Yes / No

Key Number To Well: ____

ARCADIS

Groundwater Sampling Form

Project No. 30061472 | Well ID: 3MW08 | Sample ID: 3MW08-102721

Page ___ of ___

Date 10/27/21

Project Name/Location Ft Monmouth, Evans area.

Weather Overcast, 60s.

Measuring Pt. Description: TOC | Casing Diameter: 4in | Purge Method: Low-Flow

Pump On/Off: 0925, 1040

Screen Setting (ft-bmp): ___ | Total Depth (ft-bmp): 91.21 | Sample Method: Bailer ___

Sample Time: 1035

Well Material: X PVC ___ Stainless Steel | Static Water Level (ft-bmp): 37.25 | Water Column: 53.96 | Pump: Bladder | Pump Intake (ft-bmp): ~75' | Other ___

Replicate / Code No. — | Sampled by: T. Taye

Time	Minutes Elapsed	Rate (mL/min) 200ml/min +	Depth to Water (ft) -0.3	Temp. (°C) +/- 3%	Specific Conductivity (mS/cm) +/- 3%	Dissolved Oxygen (mg/L) +/- 10%	pH +/- 0.1 unit	Redox (mV) +/- 10mV	Turbidity (NTU) +/- 10%	Observations: Color	Odor	Other
0930	5	330	37.31	15.30	0.563	1.63	8.27	-14	159	Brown	None	
0935	10		37.31	15.17	0.167	0.00	6.28	35	199	"	"	
0940	15		37.32	15.05	0.129	0.07	6.20	8	216	"	"	
0945	20		37.32	15.02	0.116	0.15	6.19	1	243	"	"	
0950	25		37.31	15.02	0.108	0.00	6.16	-2	229	"	"	
0955	30		37.31	15.06	0.101	0.00	6.15	1	170	"	"	
(PM) 1000	35		37.31	15.11	0.099	0.00	6.13	9	157	"	"	
1005	40		37.31	15.18	0.111	0.00	6.14	16	106.3	"	"	
1010	45		37.31	15.20	0.155	0.00	6.12	17	90.2	"	"	
1015	50		37.31	15.32	0.107	0.00	6.11	13	61.3	"	"	
1020	55		37.31	15.34	0.103	0.00	6.11	12	45.2	"	"	
1025	60		37.31	15.38	0.103	0.00	6.09	12	20.1	"	"	
1030	65		37.31	15.36	0.104	0.00	6.10	12	19.4	"	"	
(FM) ~~1035~~	~~70~~											
(FT) ~~1040~~	~~75~~											

Constituents Sampled	Container Type	Number	Preservative
VOCs 8260C	40mL VOA	3	HCl.

Equipment Used

	Make/Model	Rental ID Number
Pump	Bladder pump	
Water Quality Meter	Heron water level meter	
Turbidimeter	Horiba U52	
Water Level Indicator	Horiba U52	
Photoionization Detector	MiniRAE 3000	
Other		

Well Casing Volumes Gallons/Foot: 1" = 0.04; 1.25" = 0.06; ~~1.5" = 0.09~~ 2" = 0.16; 2.5" = 0.26; 3" = 0.37; 3.5" = 0.50; 4" = 0.65; 6" = 1.47

Well Information

Well Location: Marconi Rd, Entrance to Museum Parking Lot

Condition of Well: Good

Well Completion: Stick Up

Well Locked at Arrival: (Yes) / No

Well Locked at Departure: (Yes) / No

Key Number To Well:

ARCADIS

Groundwater Sampling Form

Project No. 30061472

Well ID: 3MW09

Sample ID: 3MW09-102721

Page ___ of ___

Date 10/27/21

Project Name/Location Ft. Monmouth, Evans Area

Weather Overcast, 60s

Pump On/Off 1120, 1200

Sample Time: 1155

Measuring Pt. Description: TOC

Screen Setting (ft-bmp): ___

Well Material: X PVC ___ Stainless Steel

Casing Diameter: 4in

Total Depth (ft-bmp): 83.72

Static Water Level (ft-bmp): 34.90

Water Column: 48.82

Pump Intake (ft-bmp): 77

Purge Method: Low-Flow

Sample Method: Bailer ___

Pump: Bladder

Other ___

Replicate / Code No. ___

Sampled by T. Taye

Time	Minutes Elapsed	Rate (mL/min) 200ml/min +	Depth to Water (ft) -0.3	Temp. (°C) +/- 3%	Specific Conductivity (mS/cm) +/- 3%	Dissolved Oxygen (mg/L) +/- 10%	pH +/- 0.1 unit	Redox (mV) +/- 10mV	Turbidity (NTU) +/- 10%	Observations: Color	Odor	Other
1125	5	270	34.92	15.55	0.099	4.90	6.26	16.00	64.3	Clear	None	
1130	10		34.92	15.35	0.092	0.67	6.23	7	49.7	"	"	
1135	15		34.93	15.24	0.089	0.00	6.25	4	16.9	"	"	
1140	20		34.93	15.23	0.087	0.00	6.24	3	13.1	"	"	
1145	25		34.93	15.20	0.085	0.00	6.26	1	11.9	"	"	
1150	30	↓	34.93	15.21	0.085	0.00	6.26	2	10.5	"	"	

Constituents Sampled	Container Type	Number	Preservative
VOCs 8260C	40mL VOA	3	HCl

Equipment Used

	Make/Model	Rental ID Number
Pump	Bladder Pump	
Water Quality Meter	Horiba U52	
Turbidimeter	Horiba U52	
Water Level Indicator	~~Solinst~~ Heron WLIM	
Photoionization Detector	MiniRAE 3000	
Other		

Well Casing Volumes

Gallons/Foot: 1" = 0.04; 1.25" = 0.06; 1.5" = 0.09; 2" = 0.16; 2.5" = 0.26; 3" = 0.37; 3.5" = 0.50; 4" = 0.65; 6" = 1.47

Well Information

Well Location: ___

Condition of Well: Good

Well Completion: Stick Up

Well Locked at Arrival: Yes / No

Well Locked at Departure: Yes / No

Key Number To Well: ___

APPENDIX C
LABORATORY CERTIFICATION DOCUMENTATION

State of New Jersey

Department of Environmental Protection

Certifies That

CHEMTECH

Laboratory Certification ID # 20012

is hereby approved as a

Nationally Accredited Environmental Laboratory

to perform the analyses as indicated on the Annual Certified Parameter List which must accompany this certificate to be valid

having duly met the requirements of the

Regulations Governing the Certification of Laboratories and Environmental Measurements N.J.A.C. 7:18 et. seq.

and

having been found compliant with the 2009 TNI Standard approved by the

The NELAC Institute

Expires June 30, 2020

Michele M. Potter
Manager

NJDEP is a NELAP Recognized Accreditation Body

This certificate is to be conspicuously displayed at the laboratory with the annual certified parameter list in a location on the premises visible to the public. Consumers are urged to verify the laboratory's current accreditation status with the State of NJ, NELAP.

State of New Jersey

Department of Environmental Protection

PHILIP D. MURPHY
Governor

SHEILA Y. OLIVER
Lt. Governor

Office of Quality Assurance
401 E. State Street
PO Box 420, Mail Code 401-02D
Trenton, NJ 08625-0420
Tel #: (609) 292-3950
Fax#: (609) 7777-1774

CATHERINE R. McCABE
Commissioner

June 3, 2019

Dear Laboratory Manager:

Your fiscal year 2020 (FY20) laboratory certification renewal application has been processed and a Certificate and Annual Certified Parameter List (ACPL) that reflects the current status of your facility are enclosed. If there are any discrepancies, please contact your Laboratory Certification Officer to verify information and make arrangements for a new ACPL. If the Office of Quality Assurance does not receive documentation of any discrepancies before July 10, 2019 this ACPL will be considered final and any changes received thereafter will be treated as a modification application. Effective with the receipt of this letter, your facility's certification status is valid through June 30, 2020. Both the ACPL and Certificate must be conspicuously displayed at your facility in a location on the premises that is visible to the public.

As always, we are available to discuss any comments or questions. Please do not hesitate to contact your laboratory certification officer or me.

Sincerely,

Michele M. Potter
Manager

Enclosures: ACPL; Certificate

The State of New Jersey is an equal opportunity employer. Printed on recycled and recyclable paper.

New Jersey Department of Environment Protection
Environmental Laboratory Certification Program

Annual Certified Parameter List and Current Status

Effective as of 07/01/2019 until 6/30/2020

Laboratory Name: CHEMTECH Laboratory Number: 20012 Activity ID: NLC 190001
284 SHEFFIELD ST
MOUNTAINSIDE NJ 07092

Category: AE04 --Organics Analysis

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	AE04.03510	Acetone	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.03580	Allyl chloride	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.03600	Benzene	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.03610	Benzyl chloride	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.03640	Bromodichloromethane	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.03650	Bromoform	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.03660	Bromomethane	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.03670	Butadiene (1,3-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.03690	Butylbenzene (n-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.03700	Carbon disulfide	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.03720	Carbon tetrachloride	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.03750	Chlorobenzene	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.03760	Chloroethane	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.03770	Chloroform	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.03780	Chloromethane	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.03800	Chlorotoluene (2-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.03820	Cyclohexane	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.03850	Dibromochloromethane	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.03860	Dibromoethane (1,2-) (EDB)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.03870	Dichlorobenzene (1,2-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.03880	Dichlorobenzene (1,3-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.03890	Dichlorobenzene (1,4-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.03900	Dichlorodifluoromethane	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.03910	Dichloroethane (1,1-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.03920	Dichloroethane (1,2-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.03930	Dichloroethene (1,1-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.03940	Dichloroethene (cis-1,2-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.03950	Dichloroethene (trans-1,2-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.03970	Dichloropropane (1,2-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.03980	Dichloropropene (cis-1,3-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.03990	Dichloropropene (trans-1,3-)	GC/MS, Canisters	EPA TO-15	NJ

New Jersey Department of Environment Protection
Environmental Laboratory Certification Program

Annual Certified Parameter List and Current Status

Effective as of 07/01/2019 until 6/30/2020

Laboratory Name: CHEMTECH Laboratory Number: 20012 Activity ID: NLC 190001
284 SHEFFIELD ST
MOUNTAINSIDE NJ 07092

Category: AE04 --Organics Analysis

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	AE04.04000	Dichlorotetrafluoroethane (1,2-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04070	Dioxane (1,4-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04100	Ethanol	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04110	Ethyl acetate	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04140	Ethylbenzene	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04170	Ethyltoluene (4-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04200	Heptane (n-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04210	Hexachlorobutadiene (1,3-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04230	Hexane (n-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04240	Hexanone (2-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04260	Isopropanol	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04270	Isopropylbenzene	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04290	Methyl ethyl ketone (MEK)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04310	Methyl isobutyl ketone (MIBK)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04330	Methyl methacrylate	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04340	Methyl tert-butyl ether	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04350	Methylene chloride (Dichloromethane)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04380	Naphthalene	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04490	Propylbenzene (n-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04510	Propylene	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04540	Sec-butylbenzene	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04550	Styrene	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04570	Tert-butyl alcohol	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04580	Tert-butylbenzene	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04590	Tetrachloroethane (1,1,2,2-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04600	Tetrachloroethene	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04610	Tetrahydrofuran	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04620	Toluene	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04630	Trichloro (1,1,2-) trifluoroethane (1,2,2-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04640	Trichlorobenzene (1,2,4-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04650	Trichloroethane (1,1,1-)	GC/MS, Canisters	EPA TO-15	NJ

New Jersey Department of Environment Protection
Environmental Laboratory Certification Program

Annual Certified Parameter List and Current Status

Effective as of 07/01/2019 until 6/30/2020

Laboratory Name: CHEMTECH Laboratory Number: 20012 Activity ID: NLC 190001
284 SHEFFIELD ST
MOUNTAINSIDE NJ 07092

Category: AE04 --Organics Analysis

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	AE04.04660	Trichloroethane (1,1,2-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04670	Trichloroethene	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04680	Trichlorofluoromethane	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04710	Trimethylbenzene (1,2,4-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04720	Trimethylbenzene (1,3,5-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04730	Trimethylpentane (2,2,4-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04740	Vinyl acetate	GC/MS, Canisters	EPA TO-15	NJ
Certified	No	AE04.04750	Vinyl bromide	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04760	Vinyl chloride	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04770	Xylene (m-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04780	Xylene (o-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04790	Xylene (p-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.04800	Xylenes (total)	GC/MS, Canisters	EPA TO-15	NJ

Category: CLP-1--NPW - Multi-Concentration Inorganics

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	CLP-1.00960	Aluminum	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-1.00970	Aluminum	ICP/MS	EPA ISM02.4	NJ
Certified	Yes	CLP-1.00980	Antimony	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-1.00990	Antimony	ICP/MS	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01000	Arsenic	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01010	Arsenic	ICP/MS	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01020	Barium	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01030	Barium	ICP/MS	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01040	Beryllium	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01050	Beryllium	ICP/MS	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01060	Cadmium	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01070	Cadmium	ICP/MS	EPA ISM02.4	NJ

New Jersey Department of Environment Protection
Environmental Laboratory Certification Program

Annual Certified Parameter List and Current Status

Effective as of 07/01/2019 until 6/30/2020

Laboratory Name: CHEMTECH Laboratory Number: 20012 Activity ID: NLC 190001
284 SHEFFIELD ST
MOUNTAINSIDE NJ 07092

Category: CLP-1--NPW - Multi-Concentration Inorganics

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	CLP-1.01080	Calcium	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01090	Calcium	ICP/MS	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01100	Chromium	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01110	Chromium	ICP/MS	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01120	Cobalt	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01130	Cobalt	ICP/MS	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01140	Copper	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01150	Copper	ICP/MS	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01160	Cyanide, Total in Water and Soil / Sediments	Micro Distillation, Spectrophotometric	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01170	Cyanide, Total in Water and Soil / Sediments	Midi Distillation, Spectrophotometric	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01180	Hardness - total as CaCO3	ICP/Calculation	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01190	Iron	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01200	Iron	ICP/MS	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01210	Lead	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01220	Lead	ICP/MS	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01230	Magnesium	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01240	Magnesium	ICP/MS	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01250	Manganese	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01260	Manganese	ICP/MS	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01270	Mercury	CVAA	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01280	Nickel	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01290	Nickel	ICP/MS	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01300	Potassium	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01310	Potassium	ICP/MS	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01320	Selenium	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01330	Selenium	ICP/MS	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01340	Silver	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01350	Silver	ICP/MS	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01360	Sodium	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01370	Sodium	ICP/MS	EPA ISM02.4	NJ

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Laboratory Name: CHEMTECH Laboratory Number: 20012 Activity ID: NLC 190001
284 SHEFFIELD ST
MOUNTAINSIDE NJ 07092

Category: CLP-1--NPW - Multi-Concentration Inorganics

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	CLP-1.01380	Thallium	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01390	Thallium	ICP/MS	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01400	Vanadium	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01410	Vanadium	ICP/MS	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01420	Zinc	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-1.01430	Zinc	ICP/MS	EPA ISM02.4	NJ

Category: CLP-2--NPW - Multi-Concentration Organics

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	CLP-2.01500	Acenaphthene	Extraction, GC/MS/SIM, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01510	Acenaphthylene	Extraction, GC/MS/SIM, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01520	Acetophenone	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01530	Anthracene	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01540	Atrazine	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01550	Benzaldehyde	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01560	Benzo(a)anthracene	Extraction, GC/MS/SIM, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01570	Benzo(a)pyrene	Extraction, GC/MS/SIM, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01580	Benzo(b)fluoranthene	Extraction, GC/MS/SIM, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01590	Benzo(ghi)perylene	Extraction, GC/MS/SIM, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01600	Benzo(k)fluoranthene	Extraction, GC/MS/SIM, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01610	Biphenyl (1,1'-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01620	Bis (2-chloroethoxy) methane	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01630	Bis (2-chloroethyl) ether	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01640	Bis(2-chloroisopropyl)ether|2,2'-oxybis(1-chloropropane)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01650	Bis (2-ethylhexyl) phthalate	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01660	Bromophenyl-phenyl ether (4-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01670	Butylbenzylphthalate	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ

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Category: CLP-2--NPW - Multi-Concentration Organics

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	CLP-2.01680	Caprolactam	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01690	Carbazole	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01692	Chloroaniline (4-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01700	Chloronaphthalene (2-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01710	Chlorophenol (2-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01720	Chlorophenyl-phenyl ether (4-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01730	Chrysene	Extraction, GC/MS/SIM, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01740	Dibenzo(a,h)anthracene	Extraction, GC/MS/SIM, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01750	Dibenzofuran	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01760	Dichlorobenzidine (3,3'-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01770	Dichlorophenol (2,4-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01780	Diethyl phthalate	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01790	Dimethyl phthalate	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01800	Dimethylphenol (2,4-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01810	Di-n-butyl phthalate	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01820	Dinitrophenol (2,4-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01830	Dinitrophenol (2-methyl-4,6-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01840	Dinitrotoluene (2,4-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01850	Dinitrotoluene (2,6-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01860	Di-n-octyl phthalate	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01870	Dioxane (1,4-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01880	Fluoranthene	Extraction, GC/MS/SIM, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01890	Fluorene	Extraction, GC/MS/SIM, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01900	Hexachlorobenzene	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01910	Hexachlorobutadiene (1,3-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01920	Hexachlorocyclopentadiene	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01930	Hexachloroethane	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01940	Indeno(1,2,3-cd)pyrene	Extraction, GC/MS/SIM, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01950	Isophorone	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01960	Methyl phenol (4-chloro-3-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01970	Methylnaphthalene (2-)	Extraction, GC/MS/SIM, Capillary	EPA SOM02.4	NJ

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284 SHEFFIELD ST
MOUNTAINSIDE NJ 07092

Category: CLP-2--NPW - Multi-Concentration Organics

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	CLP-2.01980	Methylphenol (2-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.01990	Methylphenol (3-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02000	Methylphenol (4-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02010	Naphthalene	Extraction, GC/MS/SIM, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02020	Nitroaniline (2-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02030	Nitroaniline (3-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02040	Nitroaniline (4-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02050	Nitroaromatics and isophorone	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02060	Nitrobenzene	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02070	Nitrophenol (2-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02080	Nitrophenol (4-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02090	N-Nitroso-di-n-propylamine	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02100	N-Nitrosodiphenylamine	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02110	Pentachlorophenol	Extraction, GC/MS/SIM, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02120	Phenanthrene	Extraction, GC/MS/SIM, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02130	Phenol	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02140	Pyrene	Extraction, GC/MS/SIM, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02150	Tetrachlorobenzene (1,2,4,5-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02160	Tetrachlorophenol (2,3,4,6-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02170	Trichlorophenol (2,4,5-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02180	Trichlorophenol (2,4,6-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02190	Aldrin	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02200	Alpha BHC	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02210	Beta BHC	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02220	Chlordane (alpha) (cis-)	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02230	Chlordane (gamma) (trans-)	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02240	DDD (4,4'-)	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02250	DDE (4,4'-)	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02260	DDT (4,4'-)	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02270	Delta BHC	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02280	Dieldrin	Extraction/GC (ECD)	EPA SOM02.4	NJ

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284 SHEFFIELD ST
MOUNTAINSIDE NJ 07092

Category: CLP-2--NPW - Multi-Concentration Organics

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	CLP-2.02290	Endosulfan I	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02300	Endosulfan II	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02310	Endosulfan sulfate	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02320	Endrin	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02330	Endrin aldehyde	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02340	Endrin ketone	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02350	Heptachlor	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02360	Heptachlor epoxide	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02370	Lindane (gamma BHC)	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02380	Methoxychlor	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02390	PCB 1016	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02400	PCB 1221	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02410	PCB 1232	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02420	PCB 1242	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02430	PCB 1248	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02440	PCB 1254	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02450	PCB 1260	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02460	PCB 1262	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02470	PCB 1268	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02480	Toxaphene	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02490	Acetone	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02500	Benzene	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02510	Bromochloromethane	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02520	Bromodichloromethane	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02530	Bromoform	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02540	Bromomethane	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02550	Butanone (2-) (Methyl ethyl ketone)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02560	Carbon disulfide	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02570	Carbon tetrachloride	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02580	Chlorobenzene	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02590	Chloroethane	GC/MS, P & T, Capillary	EPA SOM02.4	NJ

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Category: CLP-2--NPW - Multi-Concentration Organics

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	CLP-2.02600	Chloroform	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02610	Chloromethane	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02620	Cyclohexane	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02630	Dibromo-3-chloropropane (1,2-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02640	Dibromochloromethane	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02650	Dibromoethane (1,2-) (EDB)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02660	Dichlorobenzene (1,2-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02670	Dichlorobenzene (1,3-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02680	Dichlorobenzene (1,4-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02690	Dichlorodifluoromethane	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02700	Dichloroethane (1,1-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02710	Dichloroethane (1,2-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02720	Dichloroethene (1,1-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02730	Dichloroethene (cis-1,2-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02740	Dichloroethene (trans-1,2-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02750	Dichloropropane (1,2-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02760	Dichloropropene (cis-1,3-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02770	Dichloropropene (trans-1,3-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02780	Ethylbenzene	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02790	Hexanone (2-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02800	Isopropylbenzene	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02810	Methyl acetate	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02820	Methylcyclohexane	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02830	Methylene chloride (Dichloromethane)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02840	Pentanone (4-methyl-2-) (MIBK)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02850	Styrene	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02860	Tert-butyl methyl ether	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02870	Tetrachloroethane (1,1,2,2-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02880	Tetrachloroethene	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02890	Toluene	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02900	Trichloro (1,1,2-) trifluoroethane (1,2,2-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ

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Category: CLP-2--NPW - Multi-Concentration Organics

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	CLP-2.02910	Trichlorobenzene (1,2,3-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02920	Trichlorobenzene (1,2,4-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02930	Trichloroethane (1,1,1-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02940	Trichloroethane (1,1,2-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02950	Trichloroethene	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02960	Trichlorofluoromethane	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02970	Vinyl chloride	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02980	Xylene (m- + p-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-2.02990	Xylene (o-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ

Category: CLP-4--SCM - Multi-Concentration Inorganics

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	CLP-4.00840	Aluminum	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-4.00850	Aluminum	ICP/MS	EPA ISM02.4	NJ
Certified	Yes	CLP-4.00860	Antimony	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-4.00870	Antimony	ICP/MS	EPA ISM02.4	NJ
Certified	Yes	CLP-4.00880	Arsenic	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-4.00890	Arsenic	ICP/MS	EPA ISM02.4	NJ
Certified	Yes	CLP-4.00900	Barium	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-4.00910	Barium	ICP/MS	EPA ISM02.4	NJ
Certified	Yes	CLP-4.00920	Beryllium	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-4.00930	Beryllium	ICP/MS	EPA ISM02.4	NJ
Certified	Yes	CLP-4.00940	Cadmium	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-4.00950	Cadmium	ICP/MS	EPA ISM02.4	NJ
Certified	Yes	CLP-4.00960	Calcium	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-4.00970	Calcium	ICP/MS	EPA ISM02.4	NJ
Certified	Yes	CLP-4.00980	Chromium	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-4.00990	Chromium	ICP/MS	EPA ISM02.4	NJ

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Category: CLP-4--SCM - Multi-Concentration Inorganics

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	CLP-4.01000	Cobalt	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-4.01010	Cobalt	ICP/MS	EPA ISM02.4	NJ
Certified	Yes	CLP-4.01020	Copper	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-4.01030	Copper	ICP/MS	EPA ISM02.4	NJ
Certified	Yes	CLP-4.01040	Cyanide, Total in Water and Soil / Sediments	Micro Distillation, Spectrophotometric	EPA ISM02.4	NJ
Certified	Yes	CLP-4.01050	Cyanide, Total in Water and Soil / Sediments	Midi Distillation, Spectrophotometric	EPA ISM02.4	NJ
Certified	Yes	CLP-4.01060	Hardness - total as CaCO3	ICP/Calculation	EPA ISM02.4	NJ
Certified	Yes	CLP-4.01070	Iron	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-4.01080	Iron	ICP/MS	EPA ISM02.4	NJ
Certified	Yes	CLP-4.01090	Lead	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-4.01100	Lead	ICP/MS	EPA ISM02.4	NJ
Certified	Yes	CLP-4.01110	Magnesium	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-4.01120	Magnesium	ICP/MS	EPA ISM02.4	NJ
Certified	Yes	CLP-4.01130	Manganese	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-4.01140	Manganese	ICP/MS	EPA ISM02.4	NJ
Certified	Yes	CLP-4.01150	Mercury	CVAA	EPA ISM02.4	NJ
Certified	Yes	CLP-4.01160	Nickel	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-4.01170	Nickel	ICP/MS	EPA ISM02.4	NJ
Certified	Yes	CLP-4.01180	Potassium	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-4.01190	Potassium	ICP/MS	EPA ISM02.4	NJ
Certified	Yes	CLP-4.01200	Selenium	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-4.01210	Selenium	ICP/MS	EPA ISM02.4	NJ
Certified	Yes	CLP-4.01220	Silver	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-4.01230	Silver	ICP/MS	EPA ISM02.4	NJ
Certified	Yes	CLP-4.01240	Sodium	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-4.01250	Sodium	ICP/MS	EPA ISM02.4	NJ
Certified	Yes	CLP-4.01260	Thallium	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-4.01270	Thallium	ICP/MS	EPA ISM02.4	NJ
Certified	Yes	CLP-4.01280	Vanadium	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-4.01290	Vanadium	ICP/MS	EPA ISM02.4	NJ

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Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	CLP-4.01300	Zinc	ICP	EPA ISM02.4	NJ
Certified	Yes	CLP-4.01310	Zinc	ICP/MS	EPA ISM02.4	NJ

Category: CLP-5--SCM - Multi-Concentration Organics

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	CLP-5.01500	Acenaphthene	Extraction, GC/MS/SIM, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01510	Acenaphthylene	Extraction, GC/MS/SIM, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01520	Acetophenone	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01530	Anthracene	Extraction, GC/MS/SIM, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01540	Atrazine	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01550	Benzaldehyde	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01560	Benzo(a)anthracene	Extraction, GC/MS/SIM, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01570	Benzo(a)pyrene	Extraction, GC/MS/SIM, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01580	Benzo(b)fluoranthene	Extraction, GC/MS/SIM, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01590	Benzo(ghi)perylene	Extraction, GC/MS/SIM, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01600	Benzo(k)fluoranthene	Extraction, GC/MS/SIM, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01610	Biphenyl (1,1'-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01620	Bis (2-chloroethoxy) methane	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01630	Bis (2-chloroethyl) ether	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01640	Bis(2-chloroisopropyl)ether|2,2'-oxybis(1-chloropropane)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01650	Bis (2-ethylhexyl) phthalate	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01660	Bromophenyl-phenyl ether (4-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01670	Butylbenzylphthalate	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01680	Caprolactam	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01690	Carbazole	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01692	Chloroaniline (4-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01700	Chloronaphthalene (2-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ

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Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	CLP-5.01710	Chlorophenol (2-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01720	Chlorophenyl-phenyl ether (4-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01730	Chrysene	Extraction, GC/MS/SIM, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01740	Dibenzo(a,h)anthracene	Extraction, GC/MS/SIM, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01750	Dibenzofuran	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01760	Dichlorobenzidine (3,3'-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01770	Dichlorophenol (2,4-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01780	Diethyl phthalate	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01790	Dimethyl phthalate	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01800	Dimethylphenol (2,4-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01810	Di-n-butyl phthalate	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01820	Dinitrophenol (2,4-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01830	Dinitrophenol (2-methyl-4,6-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01840	Dinitrotoluene (2,4-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01850	Dinitrotoluene (2,6-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01860	Di-n-octyl phthalate	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01870	Dioxane (1,4-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01880	Fluoranthene	Extraction, GC/MS/SIM, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01890	Fluorene	Extraction, GC/MS/SIM, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01900	Hexachlorobenzene	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01910	Hexachlorobutadiene (1,3-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01920	Hexachlorocyclopentadiene	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01930	Hexachloroethane	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01940	Indeno(1,2,3-cd)pyrene	Extraction, GC/MS/SIM, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01950	Isophorone	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01960	Methyl phenol (4-chloro-3-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01970	Methylnaphthalene (2-)	Extraction, GC/MS/SIM, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01980	Methylphenol (2-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.01990	Methylphenol (3-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02000	Methylphenol (4-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02010	Naphthalene	Extraction, GC/MS/SIM, Capillary	EPA SOM02.4	NJ

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Category: CLP-5--SCM - Multi-Concentration Organics

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	CLP-5.02020	Nitroaniline (2-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02030	Nitroaniline (3-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02040	Nitroaniline (4-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02050	Nitroaromatics and isophorone	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02060	Nitrobenzene	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02070	Nitrophenol (2-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02080	Nitrophenol (4-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02090	N-Nitroso-di-n-propylamine	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02100	N-Nitrosodiphenylamine	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02110	Pentachlorophenol	Extraction, GC/MS/SIM, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02120	Phenanthrene	Extraction, GC/MS/SIM, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02130	Phenol	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02140	Pyrene	Extraction, GC/MS/SIM, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02150	Tetrachlorobenzene (1,2,4,5-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02160	Tetrachlorophenol (2,3,4,6-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02170	Trichlorophenol (2,4,5-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02180	Trichlorophenol (2,4,6-)	Extraction, GC/MS, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02190	Aldrin	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02200	Alpha BHC	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02210	Beta BHC	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02220	Chlordane (alpha) (cis-)	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02230	Chlordane (gamma) (trans-)	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02240	DDD (4,4'-)	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02250	DDE (4,4'-)	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02260	DDT (4,4'-)	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02270	Delta BHC	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02280	Dieldrin	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02290	Endosulfan I	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02300	Endosulfan II	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02310	Endosulfan sulfate	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02320	Endrin	Extraction/GC (ECD)	EPA SOM02.4	NJ

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Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	CLP-5.02330	Endrin aldehyde	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02340	Endrin ketone	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02350	Heptachlor	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02360	Heptachlor epoxide	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02370	Lindane (gamma BHC)	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02380	Methoxychlor	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02390	PCB 1016	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02400	PCB 1221	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02410	PCB 1232	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02420	PCB 1242	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02430	PCB 1248	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02440	PCB 1254	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02450	PCB 1260	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02460	PCB 1262	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02470	PCB 1268	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02480	Toxaphene	Extraction/GC (ECD)	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02490	Acetone	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02500	Benzene	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02510	Bromochloromethane	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02520	Bromodichloromethane	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02530	Bromoform	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02540	Bromomethane	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02550	Butanone (2-) (Methyl ethyl ketone)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02560	Carbon disulfide	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02570	Carbon tetrachloride	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02580	Chlorobenzene	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02590	Chloroethane	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02600	Chloroform	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02610	Chloromethane	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02620	Cyclohexane	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02630	Dibromo-3-chloropropane (1,2-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ

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Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	CLP-5.02640	Dibromochloromethane	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02650	Dibromoethane (1,2-) (EDB)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02660	Dichlorobenzene (1,2-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02670	Dichlorobenzene (1,3-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02680	Dichlorobenzene (1,4-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02690	Dichlorodifluoromethane	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02700	Dichloroethane (1,1-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02710	Dichloroethane (1,2-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02720	Dichloroethene (1,1-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02730	Dichloroethene (cis-1,2-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02740	Dichloroethene (trans-1,2-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02750	Dichloropropane (1,2-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02760	Dichloropropene (cis-1,3-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02770	Dichloropropene (trans-1,3-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02780	Ethylbenzene	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02790	Hexanone (2-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02800	Isopropylbenzene	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02810	Methyl acetate	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02820	Methylcyclohexane	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02830	Methylene chloride (Dichloromethane)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02840	Pentanone (4-methyl-2-) (MIBK)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02850	Styrene	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02860	Tert-butyl methyl ether	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02870	Tetrachloroethane (1,1,2,2-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02880	Tetrachloroethene	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02890	Toluene	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02900	Trichloro (1,1,2-) trifluoroethane (1,2,2-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02910	Trichlorobenzene (1,2,3-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02920	Trichlorobenzene (1,2,4-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02930	Trichloroethane (1,1,1-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02940	Trichloroethane (1,1,2-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ

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Category: CLP-5--SCM - Multi-Concentration Organics

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	CLP-5.02950	Trichloroethene	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02960	Trichlorofluoromethane	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02970	Vinyl chloride	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02980	Xylene (m- + p-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ
Certified	Yes	CLP-5.02990	Xylene (o-)	GC/MS, P & T, Capillary	EPA SOM02.4	NJ

Category: DW03 --Inorganic Parameters

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	DW03.01790	Turbidity	Nephelometric	EPA 180.1	NJ
Certified	Yes	DW03.01850	Turbidity	Nephelometric	SM 2130 B	NJ

Category: DW06 --Metals

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	DW06.00480	Mercury	Manual Cold Vapor	EPA 245.1	NJ

Category: DW07 --Metals - ICP, ICP/MS and DCP

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	DW07.00001	Aluminum	ICP	EPA 200.7	NJ
Certified	Yes	DW07.00020	Aluminum	ICP/MS	EPA 200.8	NJ
Certified	Yes	DW07.00050	Antimony	ICP/MS	EPA 200.8	NJ
Certified	Yes	DW07.00070	Arsenic	ICP/MS	EPA 200.8	NJ
Certified	Yes	DW07.00080	Barium	ICP	EPA 200.7	NJ

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Category: DW07 --Metals - ICP, ICP/MS and DCP

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	DW07.00110	Barium	ICP/MS	EPA 200.8	NJ
Certified	Yes	DW07.00120	Beryllium	ICP	EPA 200.7	NJ
Certified	Yes	DW07.00150	Beryllium	ICP/MS	EPA 200.8	NJ
Certified	Yes	DW07.00160	Boron	ICP	EPA 200.7	NJ
Certified	Yes	DW07.00170	Cadmium	ICP	EPA 200.7	NJ
Certified	Yes	DW07.00190	Cadmium	ICP/MS	EPA 200.8	NJ
Certified	Yes	DW07.00200	Calcium	ICP	EPA 200.7	NJ
Certified	Yes	DW07.00230	Calcium-hardness	Ca as Carbonate, AA	SM 2340 B	NJ
Certified	Yes	DW07.00240	Chromium	ICP	EPA 200.7	NJ
Certified	Yes	DW07.00270	Chromium	ICP/MS	EPA 200.8	NJ
Certified	Yes	DW07.00280	Cobalt	ICP	EPA 200.7	NJ
Certified	Yes	DW07.00290	Cobalt	ICP/MS	EPA 200.8	NJ
Certified	Yes	DW07.00300	Copper	ICP	EPA 200.7	NJ
Certified	Yes	DW07.00330	Copper	ICP/MS	EPA 200.8	NJ
Certified	Yes	DW07.00340	Iron	ICP	EPA 200.7	NJ
Certified	Yes	DW07.00380	Lead	ICP/MS	EPA 200.8	NJ
Certified	Yes	DW07.00400	Magnesium	ICP	EPA 200.7	NJ
Certified	Yes	DW07.00430	Manganese	ICP	EPA 200.7	NJ
Certified	Yes	DW07.00460	Manganese	ICP/MS	EPA 200.8	NJ
Certified	Yes	DW07.00500	Nickel	ICP	EPA 200.7	NJ
Certified	Yes	DW07.00530	Nickel	ICP/MS	EPA 200.8	NJ
Certified	Yes	DW07.00540	Potassium	ICP	EPA 200.7	NJ
Certified	Yes	DW07.00560	Selenium	ICP/MS	EPA 200.8	NJ
Certified	Yes	DW07.00570	Silica	ICP	EPA 200.7	NJ
Certified	Yes	DW07.00600	Silver	ICP	EPA 200.7	NJ
Certified	Yes	DW07.00630	Silver	ICP/MS	EPA 200.8	NJ
Certified	Yes	DW07.00640	Sodium	ICP	EPA 200.7	NJ
Certified	Yes	DW07.00660	Strontium	ICP	EPA 200.7	NJ
Certified	Yes	DW07.00670	Thallium	ICP/MS	EPA 200.8	NJ
Certified	Yes	DW07.00700	Total hardness	Hardness By Calculation, ICP	SM 2340 B	NJ
Certified	Yes	DW07.00750	Vanadium	ICP	EPA 200.7	NJ

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Category: DW07 --Metals - ICP, ICP/MS and DCP

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	DW07.00760	Vanadium	ICP/MS	EPA 200.8	NJ
Certified	Yes	DW07.00770	Zinc	ICP	EPA 200.7	NJ
Certified	Yes	DW07.00800	Zinc	ICP/MS	EPA 200.8	NJ

Category: DW08 --Organic Parameters - Chromatography

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	DW08.00710	Dibromo-3-chloropropane (1,2-)	Solvent Extract, GC	EPA 504.1	NJ
Certified	Yes	DW08.00720	Dibromoethane (1,2-) (EDB)	Solvent Extract, GC	EPA 504.1	NJ
Applied	No	DW08.00730	Trichloropropane (1,2,3-)	Solvent Extract, GC	EPA 504.1	NJ

Category: DW09 --Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	DW09.02270	Acetone	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02280	Acrylonitrile	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02290	Allyl chloride	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02300	Benzene	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02310	Bromobenzene	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02320	Bromochloromethane	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02330	Bromodichloromethane	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02340	Bromoform	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02350	Bromomethane	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02360	Butanone (2-) (Methyl ethyl ketone)	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02370	Butylbenzene (n-)	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02380	Carbon disulfide	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02390	Carbon tetrachloride	GC/MS, P & T	EPA 524.2	NJ

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Category: DW09 –Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	DW09.02410	Chlorobenzene	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02420	Chlorobutane (1-)	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02430	Chloroethane	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02440	Chloroform	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02450	Chloromethane	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02460	Chlorotoluene (2-)	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02470	Chlorotoluene (4-)	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02480	Dibromo-3-chloropropane (1,2-)	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02490	Dibromochloromethane	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02500	Dibromoethane (1,2-) (EDB)	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02510	Dibromomethane	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02520	Dichloro-2-butene (trans-1,4-)	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02530	Dichlorobenzene (1,2-)	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02540	Dichlorobenzene (1,3-)	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02550	Dichlorobenzene (1,4-)	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02560	Dichlorodifluoromethane	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02570	Dichloroethane (1,1-)	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02580	Dichloroethane (1,2-)	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02590	Dichloroethene (1,1-)	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02600	Dichloroethene (cis-1,2-)	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02610	Dichloroethene (trans-1,2-)	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02620	Dichloropropane (1,2-)	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02630	Dichloropropane (1,3-)	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02640	Dichloropropane (2,2-)	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02660	Dichloropropene (1,1-)	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02670	Dichloropropene (cis-1,3-)	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02680	Dichloropropene (trans-1,3-)	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02690	Diethyl ether (Ethyl ether)	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02700	Ethyl methacrylate	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02710	Ethylbenzene	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02720	Hexachlorobutadiene (1,3-)	GC/MS, P & T	EPA 524.2	NJ

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Category: DW09 --Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	DW09.02730	Hexachloroethane	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02750	Hexanone (2-)	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02760	Isopropylbenzene	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02770	Isopropyltoluene (4-)	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02780	Methacrylonitrile	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02790	Methyl acrylate	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02800	Methyl iodide	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02810	Methyl methacrylate	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02820	Methyl tert-butyl ether	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02830	Methylene chloride (Dichloromethane)	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02840	Naphthalene	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02850	Nitrobenzene	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02870	Pentachloroethane	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02880	Pentanone (4-methyl-2-) (MIBK)	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02890	Propionitrile	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02900	Propylbenzene (n-)	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02910	Sec-butylbenzene	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02920	Styrene	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02930	Tert-butyl alcohol	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02940	Tert-butylbenzene	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02950	Tetrachloroethane (1,1,1,2-)	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02960	Tetrachloroethane (1,1,2,2-)	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02970	Tetrachloroethene	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02980	Tetrahydrofuran	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.02990	Toluene	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.03000	Trichlorobenzene (1,2,3-)	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.03010	Trichlorobenzene (1,2,4-)	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.03030	Trichloroethane (1,1,1-)	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.03040	Trichloroethane (1,1,2-)	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.03050	Trichloroethene	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.03060	Trichlorofluoromethane	GC/MS, P & T	EPA 524.2	NJ

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Category: DW09 --Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	DW09.03070	Trichloropropane (1,2,3-)	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.03080	Trimethylbenzene (1,2,4-)	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.03090	Trimethylbenzene (1,3,5-)	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.03100	Vinyl chloride	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.03110	Xylene (m- + p-)	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.03120	Xylene (o-)	GC/MS, P & T	EPA 524.2	NJ
Certified	Yes	DW09.03130	Xylenes (total)	GC/MS, P & T	EPA 524.2	NJ

Category: NPW03--Inorganic Parameters

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	NPW03.00010	Acidity as CaCO3	Electrometric or Phenolphthalein	ASTM D1067-11	NJ
Certified	Yes	NPW03.00020	Acidity as CaCO3	Electrometric or Phenolphthalein	SM 2310 B-11	NJ
Certified	Yes	NPW03.00060	Alkalinity as CaCO3	Electrometric or Color Titration	SM 2320 B-11	NJ
Certified	Yes	NPW03.00260	Ammonia	Distillation or Gas Diffusion, Semi-automated Phenate	SM 4500-NH3 B plus G-11	NJ
Certified	Yes	NPW03.00350	Biochemical oxygen demand	Dissolved Oxygen Depletion - Membrane Electrode	SM 5210 B-11	NJ
Certified	Yes	NPW03.00540	Bromide	Ion Chromatography	EPA 300.0	NJ
Certified	Yes	NPW03.00580	Bromide	Ion Chromatography	SW-846 9056A	NJ
Certified	Yes	NPW03.00660	Carbonaceous BOD (CBOD)	Diss. Oxygen Depl., Nitrif. Inhib. - Membrane Electrode	SM 5210 B-11	NJ
Certified	Yes	NPW03.00820	Chemical oxygen demand	Spectrophotometric Manual/Auto	SM 5220 D-11	NJ
Certified	Yes	NPW03.00970	Chloride	Titrimetric, Mercuric Nitrate	SM 4500-Cl C-11	NJ
Certified	Yes	NPW03.01100	Chloride	Ion Chromatography	EPA 300.0	NJ
Certified	Yes	NPW03.01160	Chloride	Ion Chromatography	SW-846 9056A	NJ
Certified	Yes	NPW03.01370	Color	Colorimetric (Platinum-Cobalt)	SM 2120 B-11	NJ
Certified	Yes	NPW03.01440	Cyanide	Titrimetric/Manual Spectrophotometric	SW-846 9014	NJ
Certified	Yes	NPW03.01460	Cyanide	Distillation, Spectrophotometric (Manual)	SM 4500-CN B-11 plus E-11	NJ
Certified	Yes	NPW03.01470	Cyanide	Distillation, Spectrophotometric (Manual)	SM 4500-CN C-11 plus E-11	NJ
Certified	Yes	NPW03.01550	Cyanide	Colorimetric, Automated	SW-846 9012B	NJ
Certified	Yes	NPW03.01630	Cyanide	Distillation	SW-846 9010C	NJ

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Category: NPW03--Inorganic Parameters

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	NPW03.01660	Cyanide - amenable to Cl2	Manual Distillation, Titrimetr/Spectro	SM 4500-CN B-11 and G-11	NJ
Certified	Yes	NPW03.01670	Cyanide - amenable to Cl2	Manual Distillation, Titrimetr/Spectro	SM 4500-CN C-11 and G-11	NJ
Certified	Yes	NPW03.01720	Cyanide - amenable to Cl2	Distillation	SW-846 9010C	NJ
Certified	Yes	NPW03.01750	Dissolved organic carbon (DOC)	Filtration and Combustion	SM 5310 B-11	NJ
Certified	Yes	NPW03.01930	Fluoride	Ion Chromatography	EPA 300.0	NJ
Certified	Yes	NPW03.01980	Fluoride	Ion Chromatography	SW-846 9056A	NJ
Certified	Yes	NPW03.02320	Kjeldahl nitrogen - total	Digestion, Dist. or Gas Diffusion, Semi-auto. phenate	SM 4500-N Org C-11 plus NH3 B plus G-11	NJ
Applied	No	NPW03.02440	Kjeldahl nitrogen - total	Digestion, Distillation, Titration	SM 4500-N Org C-11 plus NH3 B-11 plus NH3 C-11	NJ
Certified	Yes	NPW03.02580	Nitrate	Ion Chromatography	EPA 300.0	NJ
Certified	Yes	NPW03.02640	Nitrate	Ion Chromatography	SW-846 9056A	NJ
Certified	Yes	NPW03.02850	Nitrate - nitrite	Ion Chromatography	EPA 300.0	NJ
Certified	Yes	NPW03.02960	Nitrite	Spectrophotometric, Manual	SM 4500-NO2 B-11	NJ
Certified	Yes	NPW03.03080	Nitrite	Ion Chromatography	EPA 300.0	NJ
Certified	Yes	NPW03.03140	Nitrite	Ion Chromatography	SW-846 9056A	NJ
Certified	Yes	NPW03.03200	Oil & grease - hem-LL	Gravimetric, Hexane Extractable Material-LL	EPA 1664A	NJ
Certified	Yes	NPW03.03340	Oil & grease - sgt-non polar	Gravimetric, Silica Gel Treated-Hem-LL	EPA 1664A	NJ
Certified	Yes	NPW03.03370	Organic nitrogen	Total Kjeldahl-N Minus Ammonia-N	SM TKN - NH3 method references	NJ
Certified	Yes	NPW03.03490	Orthophosphate	Ascorbic Acid, Manual Single Reagent	SM 4500-P E-11	NJ
Certified	Yes	NPW03.03550	Orthophosphate	Ion Chromatography	EPA 300.0	NJ
Certified	Yes	NPW03.03610	Orthophosphate	Ion Chromatography	SW-846 9056A	NJ
Certified	Yes	NPW03.03760	Phenols	Manual Distillation, Colorimetric 4AAP, Manual	EPA 420.1	NJ
Certified	Yes	NPW03.03790	Phenols	Colorimetric, Man, 4AAP Distillation	SW-846 9065	NJ
Certified	Yes	NPW03.03860	Phosphorus (total)	Persulfate Digestion + Manual	EPA 365.3	NJ
Certified	Yes	NPW03.04010	Residue - filterable (TDS)	Gravimetric, 180 Degrees C	SM 2540 C-11	NJ
Certified	Yes	NPW03.04050	Residue - nonfilterable (TSS)	Gravimetric, 103-105 Degrees C, Post Washing	SM 2540 D-11	NJ
Certified	Yes	NPW03.04080	Residue - settleable	Volumetric (Imhoff Cone) or Gravimetric	SM 2540 F-11	NJ
Certified	Yes	NPW03.04100	Residue - total	Gravimetric, 103-105 Degrees C	SM 2540 B-11	NJ
Certified	Yes	NPW03.04130	Residue - volatile	Gravimetric, 550 Degrees C	EPA 160.4	NJ
Applied	No	NPW03.04170	Salinity	Electrical Conductivity	SM 2520 B	NJ

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Category: NPW03--Inorganic Parameters

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	NPW03.04240	Specific conductance	Wheatstone Bridge	EPA 120.1	NJ
Certified	Yes	NPW03.04250	Specific conductance	Wheatstone Bridge	SM 2510 B-11	NJ
Certified	Yes	NPW03.04270	Specific conductance	Wheatstone Bridge	SW-846 9050A	NJ
Certified	Yes	NPW03.04410	Sulfate	Turbidimetric	SW-846 9038	NJ
Certified	Yes	NPW03.04490	Sulfate	Ion Chromatography	EPA 300.0	NJ
Certified	Yes	NPW03.04550	Sulfate	Ion Chromatography	SW-846 9056A	NJ
Certified	Yes	NPW03.04680	Sulfides - extractable	Water Extraction, Distillation	SW-846 9031	NJ
Certified	Yes	NPW03.04690	Sulfides, acid sol. & insol.	Redox Titration	SW-846 9030B	NJ
Certified	Yes	NPW03.04700	Sulfides, acid sol. & insol.	Titration	SW-846 9034	NJ
Certified	Yes	NPW03.04720	Surfactants	Colorimetric (Methylene Blue)	SM 5540 C-11	NJ
Certified	Yes	NPW03.04790	Total organic carbon (TOC)	Combustion	SM 5310 B-11	NJ
Certified	Yes	NPW03.04880	Total organic carbon (TOC)	Infrared Spectrometry or FID	SW-846 9060A	NJ
Certified	Yes	NPW03.04960	Total, fixed, and volatile solids (SQAR)	Gravimetric, 500 Degrees C	SM 2540 G SM 18th Ed.	NJ
Certified	Yes	NPW03.05010	Turbidity	Nephelometric	EPA 180.1	NJ
Certified	Yes	NPW03.05020	Turbidity	Nephelometric	SM 2130 B-11	NJ

Category: NPW04--Analyze-Immed. and Continuous Monitoring

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	NPW04.00080	Chlorine	Spectrophotometric, DPD	SM 4500-Cl G-11	NJ
Certified	Yes	NPW04.00230	Oxygen (dissolved)	Membrane Electrode	SM 4500-O G-11	NJ
Certified	Yes	NPW04.00310	Oxygen (dissolved)	Winkler, Azide Modification	SM 4500-O C-11	NJ
Certified	Yes	NPW04.00380	pH	Electrometric	SM 4500-H B-11	NJ
Certified	Yes	NPW04.00420	pH (corrosivity)	Aqueous, Electrometric	SW-846 9040C	NJ
Certified	Yes	NPW04.00430	pH	Wide Range pH Paper	SW-846 9041A	NJ
Certified	Yes	NPW04.00490	Temperature	Thermometric	SM 2550 B-10	NJ

Category: NPW06--Metals - NPW Preparation Methods

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Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	NPW06.00020	Metals	TCLP, Toxicity Procedure, Shaker	SW-846 1311	NJ
Certified	Yes	NPW06.00030	Metals	Synthetic PPT Leachate Procedure	SW-846 1312	NJ
Certified	Yes	NPW06.00040	Metals	Multiple Extractions	SW-846 1320	NJ
Certified	Yes	NPW06.00050	Metals, Total Rec and Dissolved	Acid Digestion/Surface and Groundwater	SW-846 3005A	NJ
Certified	Yes	NPW06.00060	Metals, Total	Acid Digestion/Aqueous Samples	SW-846 3010A	NJ

Category: NPW07--Metals

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	NPW07.01000	Chromium (VI)	Colorimetric	SW-846 7196A	NJ
Certified	Yes	NPW07.01020	Chromium (VI)	0.45u Filter, Colorimetric DPC	SM 3500-Cr B-11	NJ
Certified	Yes	NPW07.02160	Mercury	Manual Cold Vapor	EPA 245.1	NJ
Certified	Yes	NPW07.02190	Mercury - liquid waste	AA, Manual Cold Vapor	SW-846 7470A	NJ

Category: NPW08--Metals - ICP, ICP/MS and DCP

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	NPW08.00012	Aluminum	ICP	SW-846 6010D	NJ
Certified	Yes	NPW08.00050	Aluminum	Digestion, ICP	EPA 200.7	NJ
Certified	Yes	NPW08.00082	Aluminum	ICP/MS	SW-846 6020B	NJ
Certified	Yes	NPW08.00130	Aluminum	Digestion, ICP/MS	EPA 200.8	NJ
Certified	Yes	NPW08.00182	Antimony	ICP	SW-846 6010D	NJ
Certified	Yes	NPW08.00220	Antimony	Digestion, ICP	EPA 200.7	NJ
Certified	Yes	NPW08.00252	Antimony	ICP/MS	SW-846 6020B	NJ
Certified	Yes	NPW08.00300	Antimony	Digestion, ICP/MS	EPA 200.8	NJ
Certified	Yes	NPW08.00342	Arsenic	ICP	SW-846 6010D	NJ
Certified	Yes	NPW08.00370	Arsenic	Digestion, ICP	EPA 200.7	NJ
Certified	Yes	NPW08.00402	Arsenic	ICP/MS	SW-846 6020B	NJ

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Category: NPW08--Metals - ICP, ICP/MS and DCP

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	NPW08.00450	Arsenic	Digestion, ICP/MS	EPA 200.8	NJ
Certified	Yes	NPW08.00482	Barium	ICP	SW-846 6010D	NJ
Certified	Yes	NPW08.00510	Barium	Digestion, ICP	EPA 200.7	NJ
Certified	Yes	NPW08.00542	Barium	ICP/MS	SW-846 6020B	NJ
Certified	Yes	NPW08.00590	Barium	Digestion, ICP/MS	EPA 200.8	NJ
Certified	Yes	NPW08.00642	Beryllium	ICP	SW-846 6010D	NJ
Certified	Yes	NPW08.00680	Beryllium	Digestion, ICP	EPA 200.7	NJ
Certified	Yes	NPW08.00712	Beryllium	ICP/MS	SW-846 6020B	NJ
Certified	Yes	NPW08.00760	Beryllium	Digestion, ICP/MS	EPA 200.8	NJ
Certified	Yes	NPW08.00822	Boron	ICP	SW-846 6010D	NJ
Certified	Yes	NPW08.00860	Boron	ICP	EPA 200.7	NJ
Certified	Yes	NPW08.00892	Boron	ICP/MS	SW-846 6020B	NJ
Certified	Yes	NPW08.00982	Cadmium	ICP	SW-846 6010D	NJ
Certified	Yes	NPW08.01030	Cadmium	Digestion, ICP	EPA 200.7	NJ
Certified	Yes	NPW08.01062	Cadmium	ICP/MS	SW-846 6020B	NJ
Certified	Yes	NPW08.01110	Cadmium	Digestion, ICP/MS	EPA 200.8	NJ
Certified	Yes	NPW08.01172	Calcium	ICP	SW-846 6010D	NJ
Certified	Yes	NPW08.01200	Calcium	Digestion, ICP	EPA 200.7	NJ
Certified	Yes	NPW08.01232	Calcium	ICP/MS	SW-846 6020B	NJ
Certified	Yes	NPW08.01270	Calcium	Digestion, ICP/MS	EPA 200.8	NJ
Certified	Yes	NPW08.01312	Chromium	ICP	SW-846 6010D	NJ
Certified	Yes	NPW08.01350	Chromium	Digestion, ICP	EPA 200.7	NJ
Certified	Yes	NPW08.01382	Chromium	ICP/MS	SW-846 6020B	NJ
Certified	Yes	NPW08.01430	Chromium	Digestion, ICP/MS	EPA 200.8	NJ
Certified	Yes	NPW08.01502	Cobalt	ICP	SW-846 6010D	NJ
Certified	Yes	NPW08.01530	Cobalt	Digestion, ICP	EPA 200.7	NJ
Certified	Yes	NPW08.01562	Cobalt	ICP/MS	SW-846 6020B	NJ
Certified	Yes	NPW08.01610	Cobalt	Digestion, ICP/MS	EPA 200.8	NJ
Certified	Yes	NPW08.01652	Copper	ICP	SW-846 6010D	NJ
Certified	Yes	NPW08.01690	Copper	Digestion, ICP	EPA 200.7	NJ
Certified	Yes	NPW08.01722	Copper	ICP/MS	SW-846 6020B	NJ

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Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	NPW08.01770	Copper	Digestion, ICP/MS	EPA 200.8	NJ
Certified	Yes	NPW08.01900	Hardness - total as CaCO3	Ca + Mg Carbonates, ICP	SM 2340 B-11	NJ
Certified	Yes	NPW08.02002	Iron	ICP	SW-846 6010D	NJ
Certified	Yes	NPW08.02040	Iron	Digestion, ICP	EPA 200.7	NJ
Certified	Yes	NPW08.02072	Iron	ICP/MS	SW-846 6020B	NJ
Certified	Yes	NPW08.02110	Iron	Digestion, ICP/MS	EPA 200.8	NJ
Certified	Yes	NPW08.02172	Lead	ICP	SW-846 6010D	NJ
Certified	Yes	NPW08.02210	Lead	Digestion, ICP	EPA 200.7	NJ
Certified	Yes	NPW08.02242	Lead	ICP/MS	SW-846 6020B	NJ
Certified	Yes	NPW08.02290	Lead	Digestion, ICP/MS	EPA 200.8	NJ
Certified	Yes	NPW08.02362	Lithium	ICP	SW-846 6010D	NJ
Certified	Yes	NPW08.02382	Magnesium	ICP	SW-846 6010D	NJ
Certified	Yes	NPW08.02420	Magnesium	Digestion, ICP	EPA 200.7	NJ
Certified	Yes	NPW08.02452	Magnesium	ICP/MS	SW-846 6020B	NJ
Certified	Yes	NPW08.02490	Magnesium	Digestion, ICP/MS	EPA 200.8	NJ
Certified	Yes	NPW08.02542	Manganese	ICP	SW-846 6010D	NJ
Certified	Yes	NPW08.02580	Manganese	Digestion, ICP	EPA 200.7	NJ
Certified	Yes	NPW08.02612	Manganese	ICP/MS	SW-846 6020B	NJ
Certified	Yes	NPW08.02660	Manganese	Digestion, ICP/MS	EPA 200.8	NJ
Certified	Yes	NPW08.02722	Molybdenum	ICP	SW-846 6010D	NJ
Certified	Yes	NPW08.02750	Molybdenum	Digestion, ICP	EPA 200.7	NJ
Certified	Yes	NPW08.02782	Molybdenum	ICP/MS	SW-846 6020B	NJ
Certified	Yes	NPW08.02830	Molybdenum	Digestion, ICP/MS	EPA 200.8	NJ
Certified	Yes	NPW08.02872	Nickel	ICP	SW-846 6010D	NJ
Certified	Yes	NPW08.02910	Nickel	Digestion, ICP	EPA 200.7	NJ
Certified	Yes	NPW08.02942	Nickel	ICP/MS	SW-846 6020B	NJ
Certified	Yes	NPW08.02990	Nickel	Digestion, ICP/MS	EPA 200.8	NJ
Certified	Yes	NPW08.03142	Potassium	ICP	SW-846 6010D	NJ
Certified	Yes	NPW08.03150	Potassium	Digestion, ICP	EPA 200.7	NJ
Certified	Yes	NPW08.03200	Potassium	Digestion, ICP/MS	EPA 200.8	NJ
Certified	Yes	NPW08.03232	Potassium	ICP/MS	SW-846 6020B	NJ

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Category: NPW08--Metals - ICP, ICP/MS and DCP

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	NPW08.03282	Selenium	ICP	SW-846 6010D	NJ
Certified	Yes	NPW08.03310	Selenium	Digestion, ICP	EPA 200.7	NJ
Certified	Yes	NPW08.03342	Selenium	ICP/MS	SW-846 6020B	NJ
Certified	Yes	NPW08.03390	Selenium	Digestion, ICP/MS	EPA 200.8	NJ
Certified	Yes	NPW08.03440	Silica - dissolved	0.45u Filtration + ICP	EPA 200.7	NJ
Certified	Yes	NPW08.03532	Silver	ICP	SW-846 6010D	NJ
Certified	Yes	NPW08.03570	Silver	Digestion, ICP	EPA 200.7	NJ
Certified	Yes	NPW08.03602	Silver	ICP/MS	SW-846 6020B	NJ
Certified	Yes	NPW08.03650	Silver	Digestion, ICP/MS	EPA 200.8	NJ
Certified	Yes	NPW08.03712	Sodium	ICP	SW-846 6010D	NJ
Certified	Yes	NPW08.03740	Sodium	Digestion, ICP	EPA 200.7	NJ
Certified	Yes	NPW08.03772	Sodium	ICP/MS	SW-846 6020B	NJ
Certified	Yes	NPW08.03810	Sodium	Digestion, ICP/MS	EPA 200.8	NJ
Certified	Yes	NPW08.03840	Strontium	Digestion, ICP	EPA 200.7	NJ
Certified	Yes	NPW08.03862	Strontium	ICP	SW-846 6010D	NJ
Certified	Yes	NPW08.03882	Strontium	ICP/MS	SW-846 6020B	NJ
Certified	Yes	NPW08.03932	Thallium	ICP	SW-846 6010D	NJ
Certified	Yes	NPW08.03950	Thallium	Digestion, ICP	EPA 200.7	NJ
Certified	Yes	NPW08.03982	Thallium	ICP/MS	SW-846 6020B	NJ
Certified	Yes	NPW08.04030	Thallium	Digestion, ICP/MS	EPA 200.8	NJ
Certified	Yes	NPW08.04082	Thorium	ICP/MS	SW-846 6020B	NJ
Certified	Yes	NPW08.04090	Thorium	Digestion, ICP/MS	EPA 200.8	NJ
Certified	Yes	NPW08.04112	Tin	ICP	SW-846 6010D	NJ
Certified	Yes	NPW08.04130	Tin	Digestion, ICP	EPA 200.7	NJ
Certified	Yes	NPW08.04152	Tin	ICP/MS	SW-846 6020B	NJ
Certified	Yes	NPW08.04190	Tin	Digestion, ICP/MS	EPA 200.8	NJ
Certified	Yes	NPW08.04212	Titanium	ICP	SW-846 6010D	NJ
Certified	Yes	NPW08.04220	Titanium	Digestion, ICP	EPA 200.7	NJ
Certified	Yes	NPW08.04242	Titanium	ICP/MS	SW-846 6020B	NJ
Certified	Yes	NPW08.04280	Titanium	Digestion, ICP/MS	EPA 200.8	NJ
Certified	Yes	NPW08.04350	Uranium	Digestion, ICP/MS	EPA 200.8	NJ

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Category: NPW08--Metals - ICP, ICP/MS and DCP

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	NPW08.04374	Uranium	ICP/MS	SW-846 6020B	NJ
Certified	Yes	NPW08.04392	Vanadium	ICP	SW-846 6010D	NJ
Certified	Yes	NPW08.04430	Vanadium	Digestion, ICP	EPA 200.7	NJ
Certified	Yes	NPW08.04462	Vanadium	ICP/MS	SW-846 6020B	NJ
Certified	Yes	NPW08.04510	Vanadium	Digestion, ICP/MS	EPA 200.8	NJ
Certified	Yes	NPW08.04572	Zinc	ICP	SW-846 6010D	NJ
Certified	Yes	NPW08.04610	Zinc	Digestion, ICP	EPA 200.7	NJ
Certified	Yes	NPW08.04642	Zinc	ICP/MS	SW-846 6020B	NJ
Certified	Yes	NPW08.04690	Zinc	Digestion, ICP/MS	EPA 200.8	NJ
Certified	Yes	NPW08.04772	Zirconium	ICP/MS	SW-846 6020B	NJ

Category: NPW09--Organics - NPW Preparation Methods

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	NPW09.00040	Organics	Synthetic PPT Leachate Procedure	SW-846 1312	NJ
Certified	Yes	NPW09.00080	Semivolatile organics	TCLP, Toxicity Procedure, Shaker	SW-846 1311	NJ
Certified	Yes	NPW09.00090	Semivolatile organics	Separatory Funnel Extraction	SW-846 3510C	NJ
Certified	Yes	NPW09.00110	Semivolatile organics	Continuous Liquid-Liquid Extraction	SW-846 3520C	NJ
Applied	No	NPW09.00130	Semivolatile organics	Solid Phase Extraction (SPE)	SW-846 3535A	NJ
Certified	Yes	NPW09.00290	Volatile organics	TCLP, Toxicity Procedure, ZHE	SW-846 1311	NJ
Certified	Yes	NPW09.00340	Volatile organics	Purge & Trap Aqueous	SW-846 5030C	NJ

Category: NPW10--Organic Parameters - Chromatography

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	NPW10.03360	Aldrin	Extract/GC (ECD)	EPA 608.3	NJ
Certified	Yes	NPW10.03370	Alpha BHC	Extract/GC (ECD)	EPA 608.3	NJ

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Category: NPW10--Organic Parameters - Chromatography

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	NPW10.03380	Beta BHC	Extract/GC (ECD)	EPA 608.3	NJ
Certified	Yes	NPW10.03390	Chlordane	Extract/GC (ECD)	EPA 608.3	NJ
Certified	Yes	NPW10.03400	Chlordane (alpha) (cis-)	Extract/GC (ECD)	EPA 608.3	NJ
Certified	Yes	NPW10.03410	Chlordane (gamma) (trans-)	Extract/GC (ECD)	EPA 608.3	NJ
Certified	Yes	NPW10.03430	DDD (4,4'-)	Extract/GC (ECD)	EPA 608.3	NJ
Certified	Yes	NPW10.03440	DDE (4,4'-)	Extract/GC (ECD)	EPA 608.3	NJ
Certified	Yes	NPW10.03450	DDT (4,4'-)	Extract/GC (ECD)	EPA 608.3	NJ
Certified	Yes	NPW10.03460	Delta BHC	Extract/GC (ECD)	EPA 608.3	NJ
Certified	Yes	NPW10.03470	Dieldrin	Extract/GC (ECD)	EPA 608.3	NJ
Certified	Yes	NPW10.03480	Endosulfan I	Extract/GC (ECD)	EPA 608.3	NJ
Certified	Yes	NPW10.03490	Endosulfan II	Extract/GC (ECD)	EPA 608.3	NJ
Certified	Yes	NPW10.03500	Endosulfan sulfate	Extract/GC (ECD)	EPA 608.3	NJ
Certified	Yes	NPW10.03510	Endrin	Extract/GC (ECD)	EPA 608.3	NJ
Certified	Yes	NPW10.03520	Endrin aldehyde	Extract/GC (ECD)	EPA 608.3	NJ
Certified	Yes	NPW10.03530	Endrin ketone	Extract/GC (ECD)	EPA 608.3	NJ
Certified	Yes	NPW10.03550	Heptachlor	Extract/GC (ECD)	EPA 608.3	NJ
Certified	Yes	NPW10.03560	Heptachlor epoxide	Extract/GC (ECD)	EPA 608.3	NJ
Certified	Yes	NPW10.03570	Lindane (gamma BHC)	Extract/GC (ECD)	EPA 608.3	NJ
Certified	Yes	NPW10.03576	Methoxychlor	Extract/GC (ECD)	EPA 608.3	NJ
Applied	No	NPW10.03586	Mirex	Extract/GC (ECD)	EPA 608.3	NJ
Certified	Yes	NPW10.03590	PCB 1016	Extract/GC (ECD)	EPA 608.3	NJ
Certified	Yes	NPW10.03600	PCB 1221	Extract/GC (ECD)	EPA 608.3	NJ
Certified	Yes	NPW10.03610	PCB 1232	Extract/GC (ECD)	EPA 608.3	NJ
Certified	Yes	NPW10.03620	PCB 1242	Extract/GC (ECD)	EPA 608.3	NJ
Certified	Yes	NPW10.03630	PCB 1248	Extract/GC (ECD)	EPA 608.3	NJ
Certified	Yes	NPW10.03640	PCB 1254	Extract/GC (ECD)	EPA 608.3	NJ
Certified	Yes	NPW10.03650	PCB 1260	Extract/GC (ECD)	EPA 608.3	NJ
Certified	Yes	NPW10.03660	Toxaphene	Extract/GC (ECD)	EPA 608.3	NJ
Certified	Yes	NPW10.06010	Ethane	GC, Headspace, FID	Other J. Chrom. Sci. RSK-175	NJ
Certified	Yes	NPW10.06020	Ethene	GC, Headspace, FID	Other J. Chrom. Sci. RSK-175	NJ
Certified	Yes	NPW10.06040	Methane	GC, Headspace, FID	Other J. Chrom. Sci. RSK-175	NJ

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Category: NPW10--Organic Parameters - Chromatography

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	NPW10.06060	Extractable Petroleum Hydrocarbons	Extraction, GC, FID	Other NJDEP EPH 10/08, Rev. 3	NJ
Certified	Yes	NPW10.07680	Dibromo-3-chloropropane (1,2-)	Extract/GC (ECD)	SW-846 8011	NJ
Certified	Yes	NPW10.07690	Dibromoethane (1,2-) (EDB)	Extract/GC (ECD)	SW-846 8011	NJ
Applied	No	NPW10.07700	Trichloropropane (1,2,3-)	Extract/GC (ECD)	SW-846 8011	NJ
Applied	No	NPW10.08280	Acetone	GC, Direct Injection or P & T, FID	SW-846 8015D	NJ
Certified	Yes	NPW10.08290	Acetonitrile	GC, Direct Injection or P & T, FID	SW-846 8015D	NJ
Certified	Yes	NPW10.08300	Acrolein	GC, Direct Injection or P & T, FID	SW-846 8015D	NJ
Certified	Yes	NPW10.08310	Allyl alcohol	GC, Direct Injection or P & T, FID	SW-846 8015D	NJ
Certified	Yes	NPW10.08350	Crotonaldehyde	GC, Direct Injection or P & T, FID	SW-846 8015D	NJ
Certified	Yes	NPW10.08360	Diesel range organic	Extraction, GC, FID	SW-846 8015D	NJ
Certified	Yes	NPW10.08390	Dioxane (1,4-)	GC, Direct Injection or P & T, FID	SW-846 8015D	NJ
Certified	Yes	NPW10.08420	Ethylene Oxide	GC, Direct Injection, FID	SW-846 8015D	NJ
Certified	Yes	NPW10.08440	Gasoline range organic	GC P&T, FID	SW-846 8015D	NJ
Certified	Yes	NPW10.08460	Iso-butyl alcohol	GC, Direct Injection or P & T, FID	SW-846 8015D	NJ
Certified	Yes	NPW10.08490	Methyl ethyl ketone (MEK)	GC, Direct Injection or P & T, FID	SW-846 8015D	NJ
Applied	No	NPW10.08510	N-Nitroso-di-n-butylamine	GC, Direct Injection or P & T, FID	SW-846 8015D	NJ
Certified	Yes	NPW10.08520	Paraldehyde	GC, Direct Injection or P & T, FID	SW-846 8015D	NJ
Certified	Yes	NPW10.08530	Picoline (2-)	GC, Direct Injection or P & T, FID	SW-846 8015D	NJ
Certified	Yes	NPW10.08540	Propionitrile	GC, Direct Injection or P & T, FID	SW-846 8015D	NJ
Certified	Yes	NPW10.08570	Pyridine	GC, Direct Injection, FID	SW-846 8015D	NJ
Certified	Yes	NPW10.08600	Tert-butyl alcohol	GC, Direct Injection or P & T, FID	SW-846 8015D	NJ
Certified	Yes	NPW10.08610	Toluidine (2-) (2-Methylaniline)	GC, Direct Injection, FID	SW-846 8015D	NJ
Certified	Yes	NPW10.09880	Aldrin	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	NPW10.09890	Alpha BHC	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	NPW10.09910	Beta BHC	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	NPW10.09920	Chlordane (alpha) (cis-)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	NPW10.09930	Chlordane (gamma) (trans-)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	NPW10.09940	Chlordane (technical)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	NPW10.10010	DDD (4,4'-)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	NPW10.10020	DDE (4,4'-)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ

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Laboratory Name: CHEMTECH Laboratory Number: 20012 Activity ID: NLC 190001
284 SHEFFIELD ST
MOUNTAINSIDE NJ 07092

Category: NPW10--Organic Parameters - Chromatography

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	NPW10.10030	DDT (4,4'-)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	NPW10.10040	Delta BHC	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	NPW10.10050	Dieldrin	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	NPW10.10060	Endosulfan I	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	NPW10.10070	Endosulfan II	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	NPW10.10080	Endosulfan sulfate	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	NPW10.10090	Endrin	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	NPW10.10100	Endrin aldehyde	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	NPW10.10110	Endrin ketone	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	NPW10.10130	Heptachlor	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	NPW10.10140	Heptachlor epoxide	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	NPW10.10170	Lindane (gamma BHC)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	NPW10.10180	Methoxychlor	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Applied	No	NPW10.10210	Mirex	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	NPW10.10250	Toxaphene	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	NPW10.10780	PCB 1016	GC, Extraction, ECD or HECD, Capillary	SW-846 8082A	NJ
Certified	Yes	NPW10.10790	PCB 1221	GC, Extraction, ECD or HECD, Capillary	SW-846 8082A	NJ
Certified	Yes	NPW10.10800	PCB 1232	GC, Extraction, ECD or HECD, Capillary	SW-846 8082A	NJ
Certified	Yes	NPW10.10810	PCB 1242	GC, Extraction, ECD or HECD, Capillary	SW-846 8082A	NJ
Certified	Yes	NPW10.10820	PCB 1248	GC, Extraction, ECD or HECD, Capillary	SW-846 8082A	NJ
Certified	Yes	NPW10.10830	PCB 1254	GC, Extraction, ECD or HECD, Capillary	SW-846 8082A	NJ
Certified	Yes	NPW10.10840	PCB 1260	GC, Extraction, ECD or HECD, Capillary	SW-846 8082A	NJ
Certified	Yes	NPW10.10850	PCB 1262	GC, Extraction, ECD or HECD, Capillary	SW-846 8082A	NJ
Certified	Yes	NPW10.10860	PCB 1268	GC, Extraction, ECD or HECD, Capillary	SW-846 8082A	NJ
Certified	Yes	NPW10.12230	D (2,4-)	GC, Extraction, ECD, Capillary	SW-846 8151A	NJ
Certified	Yes	NPW10.12240	Dalapon	GC, Extraction, ECD, Capillary	SW-846 8151A	NJ
Certified	Yes	NPW10.12250	DB (2,4-)	GC, Extraction, ECD, Capillary	SW-846 8151A	NJ
Certified	Yes	NPW10.12260	DCPA (Dacthal)	GC, Extraction, ECD, Capillary	SW-846 8151A	NJ
Certified	Yes	NPW10.12270	Dicamba	GC, Extraction, ECD, Capillary	SW-846 8151A	NJ
Certified	Yes	NPW10.12280	Dichlorobenzoic acid (3,5-)	GC, Extraction, ECD, Capillary	SW-846 8151A	NJ
Certified	Yes	NPW10.12290	Dichlorprop	GC, Extraction, ECD, Capillary	SW-846 8151A	NJ

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284 SHEFFIELD ST
MOUNTAINSIDE NJ 07092

Category: NPW10--Organic Parameters - Chromatography

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	NPW10.12300	Dinoseb	GC, Extraction, ECD, Capillary	SW-846 8151A	NJ
Certified	Yes	NPW10.12320	MCPA	GC, Extraction, ECD, Capillary	SW-846 8151A	NJ
Certified	Yes	NPW10.12330	MCPP	GC, Extraction, ECD, Capillary	SW-846 8151A	NJ
Certified	Yes	NPW10.12340	Nitrophenol (4-)	GC, Extraction, ECD, Capillary	SW-846 8151A	NJ
Certified	Yes	NPW10.12350	Pentachlorophenol	GC, Extraction, ECD, Capillary	SW-846 8151A	NJ
Certified	Yes	NPW10.12360	Picloram	GC, Extraction, ECD, Capillary	SW-846 8151A	NJ
Certified	Yes	NPW10.12370	T (2,4,5-)	GC, Extraction, ECD, Capillary	SW-846 8151A	NJ
Certified	Yes	NPW10.12380	TP (2,4,5-) (Silvex)	GC, Extraction, ECD, Capillary	SW-846 8151A	NJ

Category: NPW11--Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	NPW11.07870	Acetone	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.07890	Acrolein	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.07900	Acrylonitrile	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.07940	Benzene	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.07950	Bromobenzene	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.07970	Bromodichloromethane	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.07990	Bromoform	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08000	Bromomethane	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08030	Butanone (2-) (Methyl ethyl ketone)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08070	Butylbenzene (n-)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08080	Carbon disulfide	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08090	Carbon tetrachloride	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08100	Chlorobenzene	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08110	Chloroethane	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08120	Chloroethyl vinyl ether (2-)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08130	Chloroform	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08140	Chloromethane	GC/MS, P & T, Capillary Column	EPA 624.1	NJ

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Category: NPW11–Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	NPW11.08150	Chlorotoluene (2-)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08160	Chlorotoluene (4-)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08180	Cyclohexane	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08200	Dibromo-3-chloropropane (1,2-)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08210	Dibromochloromethane	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08220	Dibromoethane (1,2-) (EDB)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08230	Dibromomethane	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08260	Dichlorobenzene (1,2-)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08270	Dichlorobenzene (1,3-)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08280	Dichlorobenzene (1,4-)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08282	Dichlorodifluoromethane	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08290	Dichloroethane (1,1-)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08300	Dichloroethane (1,2-)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08310	Dichloroethene (1,1-)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08320	Dichloroethene (cis-1,2-)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08330	Dichloroethene (trans-1,2-)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08340	Dichloropropane (1,2-)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08350	Dichloropropane (1,3-)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08360	Dichloropropane (2,2-)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08370	Dichloropropene (1,1-)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08380	Dichloropropene (cis-1,3-)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08390	Dichloropropene (trans-1,3-)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08420	Dioxane (1,4-)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08440	Ethyl acetate	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08460	Ethylbenzene	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08490	Hexachlorobutadiene (1,3-)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08510	Hexanone (2-)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08570	Isopropylbenzene	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08580	Isopropyltoluene (4-)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08600	Methyl acetate	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08630	Methyl isobutyl ketone (MIBK)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ

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284 SHEFFIELD ST
MOUNTAINSIDE NJ 07092

Category: NPW11–Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	NPW11.08650	Methyl tert-butyl ether	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08660	Methylcyclohexane	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08670	Methylene chloride (Dichloromethane)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08672	Naphthalene	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08720	Propylbenzene (n-)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08730	Sec-butylbenzene	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08740	Styrene	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08770	Tert-butyl alcohol	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08790	Tetrachloroethane (1,1,1,2-)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08800	Tetrachloroethane (1,1,2,2-)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08810	Tetrachloroethene	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08830	Toluene	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08840	Trichloro (1,1,2-) trifluoroethane (1,2,2-)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08850	Trichlorobenzene (1,2,3-)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08852	Trichlorobenzene (1,2,4-)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08860	Trichloroethane (1,1,1-)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08870	Trichloroethane (1,1,2-)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08880	Trichloroethene	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08890	Trichlorofluoromethane	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08900	Trichloropropane (1,2,3-)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08920	Trimethylbenzene (1,2,4-)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08930	Trimethylbenzene (1,3,5-)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08940	Vinyl acetate	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08950	Vinyl chloride	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08960	Xylene (m- + p-)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.08980	Xylene (o-)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.09000	Xylenes (total)	GC/MS, P & T, Capillary Column	EPA 624.1	NJ
Certified	Yes	NPW11.09010	Acenaphthene	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09020	Acenaphthylene	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09030	Acetophenone	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09050	Alpha - terpineol	Extract, GC/MS	EPA 625.1	NJ

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Certified	Yes	NPW11.09070	Aniline	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09080	Anthracene	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09110	Benzidine	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09120	Benzo(a)anthracene	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09130	Benzo(a)pyrene	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09140	Benzo(b)fluoranthene	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09150	Benzo(ghi)perylene	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09170	Benzo(k)fluoranthene	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09180	Benzoic acid	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09210	Bis (2-chloroethoxy) methane	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09220	Bis (2-chloroethyl) ether	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09230	Bis(2-chloroisopropyl)ether|2,2'-oxybis(1-chloropropane)	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09240	Bis (2-ethylhexyl) phthalate	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09250	Bromophenyl-phenyl ether (4-)	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09260	Butylbenzylphthalate	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09270	Carbazole	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09280	Chloroaniline (4-)	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09310	Chloronaphthalene (2-)	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09320	Chlorophenol (2-)	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09330	Chlorophenyl-phenyl ether (4-)	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09340	Chrysene	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09350	Decane (n-)	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09410	Dibenzo(a,h)anthracene	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09440	Dibenzofuran	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09450	Dichloroaniline (2,3-)	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09460	Dichlorobenzidine (3,3'-)	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09470	Dichlorophenol (2,4-)	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09490	Diethyl phthalate	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09520	Dimethyl phthalate	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09550	Dimethylphenol (2,4-)	Extract, GC/MS	EPA 625.1	NJ

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Certified	Yes	NPW11.09560	Di-n-butyl phthalate	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09580	Dinitrophenol (2,4-)	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09590	Dinitrophenol (2-methyl-4,6-)	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09600	Dinitrotoluene (2,4-)	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09610	Dinitrotoluene (2,6-)	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09620	Di-n-octyl phthalate	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09640	Diphenylhydrazine / Azobenzene	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09650	Docosane (n-)	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09660	Dodecane (n-)	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09670	Eicosane (n-)	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09690	Fluoranthene	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09700	Fluorene	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09710	Hexachlorobenzene	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09720	Hexachlorobutadiene (1,3-)	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09730	Hexachlorocyclopentadiene	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09740	Hexachloroethane	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09770	Hexadecane (n-)	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09780	Indeno(1,2,3-cd)pyrene	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09790	Isophorone	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09860	Methyl phenol (4-chloro-3-)	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09880	Methylnaphthalene (2-)	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09890	Methylphenanthrene (1-)	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09900	Methylphenol (2-)	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09910	Methylphenol (3-)	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09920	Methylphenol (4-)	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09930	Naphthalene	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09970	Nitroaniline (2-)	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09980	Nitroaniline (3-)	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.09990	Nitroaniline (4-)	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.10000	Nitrobenzene	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.10010	Nitrophenol (2-)	Extract, GC/MS	EPA 625.1	NJ

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Laboratory Name: CHEMTECH Laboratory Number: 20012 Activity ID: NLC 190001
284 SHEFFIELD ST
MOUNTAINSIDE NJ 07092

Category: NPW11--Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	NPW11.10020	Nitrophenol (4-)	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.10040	N-Nitrosodimethylamine	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.10060	N-Nitroso-di-n-propylamine	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.10070	N-Nitrosodiphenylamine / Diphenylamine	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.10120	Octadecane (n-)	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.10230	Pentachlorophenol	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.10250	Phenanthrene	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.10260	Phenol	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.10320	Pyrene	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.10330	Pyridine	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.10390	Tetrachlorobenzene (1,2,4,5-)	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.10400	Tetrachlorophenol (2,3,4,6-)	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.10410	Tetradecane (n-)	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.10440	Trichlorobenzene (1,2,4-)	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.10460	Trichlorophenol (2,4,5-)	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.10470	Trichlorophenol (2,4,6-)	Extract, GC/MS	EPA 625.1	NJ
Certified	Yes	NPW11.14330	Acetone	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14350	Acrolein	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14360	Acrylonitrile	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14390	Benzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14410	Bromobenzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14420	Bromochloromethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14430	Bromodichloromethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14440	Bromoethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14450	Bromoform	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14460	Bromomethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14500	Butanone (2-) (Methyl ethyl ketone)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14540	Butylbenzene (n-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14550	Carbon disulfide	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14560	Carbon tetrachloride	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14570	Chlorobenzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ

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284 SHEFFIELD ST
MOUNTAINSIDE NJ 07092

Category: NPW11–Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	NPW11.14580	Chloroethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14590	Chloroethyl vinyl ether (2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14600	Chloroform	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14610	Chloromethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14620	Chlorotoluene (2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14630	Chlorotoluene (4-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14650	Cyclohexane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14670	Dibromo-3-chloropropane (1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14680	Dibromochloromethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14690	Dibromoethane (1,2-) (EDB)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14700	Dibromomethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14730	Dichlorobenzene (1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14740	Dichlorobenzene (1,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14750	Dichlorobenzene (1,4-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14760	Dichlorodifluoromethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14770	Dichloroethane (1,1-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14780	Dichloroethane (1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14790	Dichloroethene (1,1-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14800	Dichloroethene (cis-1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14810	Dichloroethene (trans-1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14820	Dichloropropane (1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14830	Dichloropropane (1,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14840	Dichloropropane (2,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14850	Dichloropropene (1,1-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14860	Dichloropropene (cis-1,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14870	Dichloropropene (trans-1,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14900	Dioxane (1,4-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14920	Ethyl acetate	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14940	Ethylbenzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14970	Hexachlorobutadiene (1,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.14980	Hexachloroethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ

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284 SHEFFIELD ST
MOUNTAINSIDE NJ 07092

Category: NPW11--Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	NPW11.15000	Hexanone (2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.15040	Isopropylbenzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.15050	Isopropyltoluene (4-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.15070	Methyl acetate	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.15090	Methyl iodide	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.15110	Methyl tert-butyl ether	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.15120	Methylcyclohexane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.15130	Methylene chloride (Dichloromethane)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.15160	Naphthalene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.15230	Pentanone (4-methyl-2-) (MIBK)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.15250	Propylbenzene (n-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.15260	Sec-butylbenzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.15270	Styrene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.15300	Tert-butyl alcohol	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.15310	Tert-butylbenzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.15320	Tetrachloroethane (1,1,1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.15330	Tetrachloroethane (1,1,2,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.15340	Tetrachloroethene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.15360	Toluene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.15380	Trichloro (1,1,2-) trifluoroethane (1,2,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.15390	Trichlorobenzene (1,2,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.15400	Trichlorobenzene (1,2,4-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.15410	Trichloroethane (1,1,1-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.15420	Trichloroethane (1,1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.15430	Trichloroethene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.15440	Trichlorofluoromethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.15450	Trichloropropane (1,2,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.15470	Trimethylbenzene (1,2,4-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.15480	Trimethylbenzene (1,3,5-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.15490	Vinyl acetate	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.15500	Vinyl chloride	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ

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284 SHEFFIELD ST
MOUNTAINSIDE NJ 07092

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Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	NPW11.15510	Xylene (m-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.15520	Xylene (o-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.15530	Xylene (p-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.15540	Xylenes (total)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	NPW11.17750	Acenaphthene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.17760	Acenaphthylene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.17770	Acetophenone	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.17840	Aniline	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.17850	Anthracene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.17870	Atrazine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.17890	Benzaldehyde	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.17910	Benzidine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.17920	Benzo(a)anthracene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.17930	Benzo(a)pyrene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.17940	Benzo(b)fluoranthene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.17950	Benzo(ghi)perylene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.17970	Benzo(k)fluoranthene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.17980	Benzoic acid	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18000	Benzyl alcohol	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18030	Biphenyl (1,1'-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18040	Bis (2-chloroethoxy) methane	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18050	Bis (2-chloroethyl) ether	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18060	Bis(2-chloroisopropyl)ether|2,2'-oxybis(1-chloropropane)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18070	Bis (2-ethylhexyl) phthalate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18080	Bromophenyl-phenyl ether (4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18090	Butylbenzylphthalate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18100	Caprolactam	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18110	Carbazole	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18150	Chloroaniline (4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18180	Chloronaphthalene (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ

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284 SHEFFIELD ST
MOUNTAINSIDE NJ 07092

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Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	NPW11.18190	Chlorophenol (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18200	Chlorophenyl-phenyl ether (4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18210	Chrysene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18320	Dibenzo(a,h)anthracene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18360	Dibenzofuran	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18370	Dichlorobenzene (1,2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18380	Dichlorobenzene (1,3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18390	Dichlorobenzene (1,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18400	Dichlorobenzidine (3,3'-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18410	Dichlorophenol (2,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18440	Diethyl phthalate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18470	Dimethyl phthalate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18540	Dimethylphenol (2,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18550	Di-n-butyl phthalate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18580	Dinitrophenol (2,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18590	Dinitrophenol (2-methyl-4,6-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18600	Dinitrotoluene (2,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18610	Dinitrotoluene (2,6-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18620	Di-n-octyl phthalate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18634	Dioxane (1,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18650	Diphenylhydrazine / Azobenzene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18750	Fluoranthene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18760	Fluorene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18790	Hexachlorobenzene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18800	Hexachlorobutadiene (1,3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18810	Hexachlorocyclopentadiene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18820	Hexachloroethane	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18870	Indeno(1,2,3-cd)pyrene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18890	Isophorone	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.18980	Methyl phenol (4-chloro-3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Applied	No	NPW11.19000	Methylnaphthalene (1-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ

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284 SHEFFIELD ST
MOUNTAINSIDE NJ 07092

Category: NPW11--Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	NPW11.19010	Methylnaphthalene (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19020	Methylphenol (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19030	Methylphenol (3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19040	Methylphenol (4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19050	Naphthalene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19090	Nitroaniline (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19100	Nitroaniline (3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19110	Nitroaniline (4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19120	Nitrobenzene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19140	Nitrophenol (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19150	Nitrophenol (4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19170	N-Nitrosodimethylamine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19190	N-Nitroso-di-n-propylamine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19200	N-Nitrosodiphenylamine / Diphenylamine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19380	Pentachlorophenol	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19400	Phenanthrene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19410	Phenol	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19490	Pyrene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19500	Pyridine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19580	Tetrachlorobenzene (1,2,4,5-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19590	Tetrachlorophenol (2,3,4,6-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19640	Trichlorobenzene (1,2,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19650	Trichlorophenol (2,4,5-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19660	Trichlorophenol (2,4,6-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19690	Acenaphthene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19700	Acenaphthylene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19710	Anthracene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19720	Benzo(a)anthracene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19730	Benzo(a)pyrene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19740	Benzo(b)fluoranthene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19750	Benzo(ghi)perylene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ

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284 SHEFFIELD ST
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Category: NPW11--Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	NPW11.19760	Benzo(k)fluoranthene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19770	Chrysene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19780	Dibenzo(a,h)anthracene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19794	Dioxane (1,4-)	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19800	Fluoranthene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19810	Fluorene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19820	Hexachlorobenzene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19840	Indeno(1,2,3-cd)pyrene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19860	Methylnaphthalene (2-)	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19870	Naphthalene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19880	N-Nitrosodimethylamine	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19890	Pentachlorophenol	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19900	Phenanthrene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	NPW11.19910	Pyrene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ

Category: SCM02--Characteristics of Hazardous Waste

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	SCM02.00140	Free liquid	Flow-Through Paint Filter, Observation	SW-846 9095B	NJ
Certified	Yes	SCM02.00180	Ignitability	Pensky Martens	SW-846 1010A	NJ
Certified	Yes	SCM02.00230	Ignitability of solids	Burn Rate	SW-846 1030	NJ
Certified	Yes	SCM02.00240	pH	Wide Range pH Paper	SW-846 9041A	NJ
Certified	Yes	SCM02.00270	pH - soil and waste	Mix with Water or Calcium Chlorides	SW-846 9045D	NJ

Category: SCM03--Inorganic Parameters and Preparation

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State

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284 SHEFFIELD ST
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Category: SCM03--Inorganic Parameters and Preparation

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Applied	No	SCM03.00072	Ammonia	Distillation, Semi-automated	SM 4500-NH3 B plus NH3 G-11	NJ
Certified	Yes	SCM03.00130	Bromide	Ion Chromatography	SW-846 9056A	NJ
Certified	Yes	SCM03.00220	Chloride	Ion Chromatography	SW-846 9056A	NJ
Certified	Yes	SCM03.00270	Cyanide	Distillation	SW-846 9010C	NJ
Certified	Yes	SCM03.00292	Cyanide	Extraction, Oils and Solids	SW-846 9013A	NJ
Certified	Yes	SCM03.00310	Cyanide	Colorimetric, Automated	SW-846 9012B	NJ
Certified	Yes	SCM03.00380	Cyanide - amenable to Cl2	Distillation	SW-846 9010C	NJ
Certified	Yes	SCM03.00470	Fluoride	Ion Chromatography	SW-846 9056A	NJ
Applied	No	SCM03.00644	Kjeldahl nitrogen - total	Digestion, Distillation, Semi-auto., Phenate	SM 4500-N Org C-11 plus NH3 B plus NH3 G-11	NJ
Certified	Yes	SCM03.00680	Nitrate	Ion Chromatography	SW-846 9056A	NJ
Certified	Yes	SCM03.00780	Nitrite	Ion Chromatography	SW-846 9056A	NJ
Certified	Yes	SCM03.00800	Oil & grease - sludge-hem	Extraction & Gravimetric	SW-846 9071B	NJ
Certified	Yes	SCM03.00820	Oil & grease - sludge-hem-npm	Extraction & Gravimetric	SW-846 9071B	NJ
Certified	Yes	SCM03.00880	Orthophosphate	Ion Chromatography	SW-846 9056A	NJ
Certified	Yes	SCM03.00930	Phenols	Colorimetric, Man, 4AAP Distillation	SW-846 9065	NJ
Certified	Yes	SCM03.01020	Sulfate	Ion Chromatography	SW-846 9056A	NJ
Certified	Yes	SCM03.01050	Sulfides - extractable	Water Extraction, Distillation	SW-846 9031	NJ
Certified	Yes	SCM03.01070	Sulfides, acid sol. & insol.	Redox Titration	SW-846 9030B	NJ
Certified	Yes	SCM03.01080	Sulfides, acid sol. & insol.	Titration	SW-846 9034	NJ
Certified	No	SCM03.01120	Total organic carbon (TOC)	Infrared Spectrometry or FID	Other NJ Modified SM-846 9060A	NJ
Certified	Yes	SCM03.01130	Total organic carbon (TOC)	Pyrolytic	Other Lloyd Kahn	NJ

Category: SCM05--Metals - SCM Preparation Methods

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Applied	No	SCM05.00001	Metals	Acid Digestion, Oil	SW-846 3031	NJ
Certified	Yes	SCM05.00010	Metals	Acid Digestion, Soil Sediment & Sludge	SW-846 3050B	NJ
Certified	Yes	SCM05.00020	Metals	Chromium VI Digestion	SW-846 3060A	NJ

KEY: AE = Air and Emissions, BT = Biological Tissues, DW = Drinking Water, NPW = Non-Potable Water, SCM = Solid and Chemical Materials

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Category: SCM05--Metals - SCM Preparation Methods

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	SCM05.00030	Metals	Dissolution of Oil, Grease & Wax	SW-846 3040A	NJ
Applied	No	SCM05.00060	Metals - oily waste	Extraction	SW-846 1330A	NJ
Applied	No	SCM05.00090	Metals	Microwave Acid Digest: Soil Sediment & Sludge	SW-846 3051A	NJ
Certified	Yes	SCM05.00100	Metals	Multiple Extractions	SW-846 1320	NJ
Certified	Yes	SCM05.00130	Metals	Synthetic PPT Leachate Procedure	SW-846 1312	NJ
Certified	Yes	SCM05.00140	Metals	TCLP, Toxicity Procedure, Shaker	SW-846 1311	NJ

Category: SCM06--Metals

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	SCM06.00320	Chromium (VI)	Colorimetric	SW-846 7196A	NJ
Certified	Yes	SCM06.00660	Mercury - solid waste	AA, Manual Cold Vapor	SW-846 7471B	NJ

Category: SCM07--Metals - ICP, ICP/MS and DCP

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	SCM07.00022	Aluminum	ICP	SW-846 6010D	NJ
Certified	Yes	SCM07.00042	Aluminum	ICP/MS	SW-846 6020B	NJ
Certified	Yes	SCM07.00062	Antimony	ICP	SW-846 6010D	NJ
Certified	Yes	SCM07.00092	Antimony	ICP/MS	SW-846 6020B	NJ
Certified	Yes	SCM07.00122	Arsenic	ICP	SW-846 6010D	NJ
Certified	Yes	SCM07.00152	Arsenic	ICP/MS	SW-846 6020B	NJ
Certified	Yes	SCM07.00172	Barium	ICP	SW-846 6010D	NJ
Certified	Yes	SCM07.00202	Barium	ICP/MS	SW-846 6020B	NJ
Certified	Yes	SCM07.00232	Beryllium	ICP	SW-846 6010D	NJ
Certified	Yes	SCM07.00262	Beryllium	ICP/MS	SW-846 6020B	NJ
Certified	Yes	SCM07.00282	Boron	ICP	SW-846 6010D	NJ

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Category: SCM07--Metals - ICP, ICP/MS and DCP

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	SCM07.00332	Cadmium	ICP	SW-846 6010D	NJ
Certified	Yes	SCM07.00362	Cadmium	ICP/MS	SW-846 6020B	NJ
Certified	Yes	SCM07.00392	Calcium	ICP	SW-846 6010D	NJ
Certified	Yes	SCM07.00412	Calcium	ICP/MS	SW-846 6020B	NJ
Certified	Yes	SCM07.00432	Chromium	ICP	SW-846 6010D	NJ
Certified	Yes	SCM07.00462	Chromium	ICP/MS	SW-846 6020B	NJ
Certified	Yes	SCM07.00502	Cobalt	ICP	SW-846 6010D	NJ
Certified	Yes	SCM07.00532	Cobalt	ICP/MS	SW-846 6020B	NJ
Certified	Yes	SCM07.00552	Copper	ICP	SW-846 6010D	NJ
Certified	Yes	SCM07.00582	Copper	ICP/MS	SW-846 6020B	NJ
Certified	Yes	SCM07.00612	Iron	ICP	SW-846 6010D	NJ
Certified	Yes	SCM07.00632	Iron	ICP/MS	SW-846 6020B	NJ
Certified	Yes	SCM07.00662	Lead	ICP	SW-846 6010D	NJ
Certified	Yes	SCM07.00692	Lead	ICP/MS	SW-846 6020B	NJ
Certified	Yes	SCM07.00722	Lithium	ICP	SW-846 6010D	NJ
Certified	Yes	SCM07.00742	Magnesium	ICP	SW-846 6010D	NJ
Certified	Yes	SCM07.00762	Magnesium	ICP/MS	SW-846 6020B	NJ
Certified	Yes	SCM07.00792	Manganese	ICP	SW-846 6010D	NJ
Certified	Yes	SCM07.00822	Manganese	ICP/MS	SW-846 6020B	NJ
Certified	Yes	SCM07.00852	Molybdenum	ICP	SW-846 6010D	NJ
Certified	Yes	SCM07.00882	Molybdenum	ICP/MS	SW-846 6020B	NJ
Certified	Yes	SCM07.00912	Nickel	ICP	SW-846 6010D	NJ
Certified	Yes	SCM07.00942	Nickel	ICP/MS	SW-846 6020B	NJ
Certified	Yes	SCM07.00992	Potassium	ICP	SW-846 6010D	NJ
Certified	Yes	SCM07.01012	Potassium	ICP/MS	SW-846 6020B	NJ
Certified	Yes	SCM07.01042	Selenium	ICP	SW-846 6010D	NJ
Certified	Yes	SCM07.01072	Selenium	ICP/MS	SW-846 6020B	NJ
Certified	Yes	SCM07.01122	Silver	ICP	SW-846 6010D	NJ
Certified	Yes	SCM07.01152	Silver	ICP/MS	SW-846 6020B	NJ
Certified	Yes	SCM07.01182	Sodium	ICP	SW-846 6010D	NJ
Certified	Yes	SCM07.01202	Sodium	ICP/MS	SW-846 6020B	NJ

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Category: SCM07--Metals - ICP, ICP/MS and DCP

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	SCM07.01222	Strontium	ICP	SW-846 6010D	NJ
Certified	Yes	SCM07.01242	Strontium	ICP/MS	SW-846 6020B	NJ
Certified	Yes	SCM07.01292	Thallium	ICP	SW-846 6010D	NJ
Certified	Yes	SCM07.01322	Thallium	ICP/MS	SW-846 6020B	NJ
Certified	Yes	SCM07.01362	Thorium	ICP/MS	SW-846 6020B	NJ
Certified	Yes	SCM07.01382	Tin	ICP	SW-846 6010D	NJ
Certified	Yes	SCM07.01402	Tin	ICP/MS	SW-846 6020B	NJ
Certified	Yes	SCM07.01422	Titanium	ICP	SW-846 6010D	NJ
Certified	Yes	SCM07.01442	Titanium	ICP/MS	SW-846 6020B	NJ
Certified	Yes	SCM07.01514	Uranium	ICP/MS	SW-846 6020B	NJ
Certified	Yes	SCM07.01532	Vanadium	ICP	SW-846 6010D	NJ
Certified	Yes	SCM07.01562	Vanadium	ICP/MS	SW-846 6020B	NJ
Certified	Yes	SCM07.01592	Zinc	ICP	SW-846 6010D	NJ
Certified	Yes	SCM07.01622	Zinc	ICP/MS	SW-846 6020B	NJ
Certified	Yes	SCM07.01672	Zirconium	ICP/MS	SW-846 6020B	NJ

Category: SCM08--Organics - SCM Prep. / Screening Methods

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	SCM08.00080	Organics	Synthetic PPT Leachate Procedure	SW-846 1312	NJ
Certified	Yes	SCM08.00090	Organics	Waste Dilution	SW-846 3580A	NJ
Certified	Yes	SCM08.00130	Semivolatile organics	Automatic Soxhlet Extraction	SW-846 3541	NJ
Certified	Yes	SCM08.00150	Semivolatile organics	Cleanup-Alumina	SW-846 3610B	NJ
Certified	Yes	SCM08.00170	Semivolatile organics	Cleanup-Florisil	SW-846 3620C	NJ
Certified	Yes	SCM08.00180	Semivolatile organics	Cleanup-Gel Permeation	SW-846 3640A	NJ
Certified	Yes	SCM08.00190	Semivolatile organics	Cleanup-Silica Gel	SW-846 3630C	NJ
Certified	Yes	SCM08.00200	Semivolatile organics	Cleanup-Sulfur Removal	SW-846 3660B	NJ
Certified	Yes	SCM08.00220	Semivolatile organics	Cleanup-Sulfuric Acid/KMnO4	SW-846 3665A	NJ
Certified	Yes	SCM08.00270	Semivolatile organics	Pressurized Fluid Extraction	SW-846 3545A	NJ

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Category: SCM08--Organics - SCM Prep. / Screening Methods

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	SCM08.00320	Semivolatile organics	TCLP, Toxicity Procedure, Shaker	SW-846 1311	NJ
Certified	Yes	SCM08.00370	Triad Immunoassay	Field Immunoassay	SW-846 4000	NJ
Certified	Yes	SCM08.00390	Volatile organics	TCLP, Toxicity Procedure, ZHE	SW-846 1311	NJ
Certified	Yes	SCM08.00440	Volatile organics - high conc.	Methanol Extract, Closed System P & T	SW-846 5035A	NJ
Certified	Yes	SCM08.00460	Volatile organics - low conc.	Closed System Purge & Trap	SW-846 5035A	NJ

Category: SCM09--Organic Parameters - Chromatography

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	SCM09.00050	Extractable Petroleum Hydrocarbons	Extraction, GC, FID	Other NJDEP EPH 10/08, Rev. 3	NJ
Applied	No	SCM09.00690	Acetone	GC, Direct Injection or P & T, FID	SW-846 8015D	NJ
Certified	Yes	SCM09.00700	Acetonitrile	GC, Direct Injection or P & T, FID	SW-846 8015D	NJ
Certified	Yes	SCM09.00710	Acrolein	GC, Direct Injection or P & T, FID	SW-846 8015D	NJ
Certified	Yes	SCM09.00720	Allyl alcohol	GC, Direct Injection or P & T, FID	SW-846 8015D	NJ
Certified	Yes	SCM09.00760	Crotonaldehyde	GC, Direct Injection or P & T, FID	SW-846 8015D	NJ
Certified	Yes	SCM09.00770	Diesel range organic	Extraction, GC, FID	SW-846 8015D	NJ
Certified	Yes	SCM09.00800	Dioxane (1,4-)	GC, Direct Injection or P & T, FID	SW-846 8015D	NJ
Certified	Yes	SCM09.00830	Ethylene Oxide	GC, Direct Injection, FID	SW-846 8015D	NJ
Certified	Yes	SCM09.00850	Gasoline range organic	GC P&T, FID	SW-846 8015D	NJ
Certified	Yes	SCM09.00870	Iso-butyl alcohol	GC, Direct Injection or P & T, FID	SW-846 8015D	NJ
Applied	No	SCM09.00900	Methyl ethyl ketone (MEK)	GC, Direct Injection or P & T, FID	SW-846 8015D	NJ
Certified	Yes	SCM09.00930	Paraldehyde	GC, Direct Injection or P & T, FID	SW-846 8015D	NJ
Certified	Yes	SCM09.00940	Picoline (2-)	GC, Direct Injection or P & T, FID	SW-846 8015D	NJ
Certified	Yes	SCM09.00950	Propionitrile	GC, Direct Injection or P & T, FID	SW-846 8015D	NJ
Applied	No	SCM09.00980	Pyridine	GC, Direct Injection, FID	SW-846 8015D	NJ
Certified	Yes	SCM09.01010	Tert-butyl alcohol	GC, Direct Injection or P & T, FID	SW-846 8015D	NJ
Certified	Yes	SCM09.01020	Toluidine (2-) (2-Methylaniline)	GC, Direct Injection or P & T, FID	SW-846 8015D	NJ
Certified	Yes	SCM09.02290	Aldrin	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ

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MOUNTAINSIDE NJ 07092

Category: SCM09--Organic Parameters - Chromatography

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	SCM09.02300	Alpha BHC	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	SCM09.02320	Beta BHC	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	SCM09.02330	Chlordane (alpha) (cis-)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	SCM09.02340	Chlordane (gamma) (trans-)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	SCM09.02350	Chlordane (technical)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	SCM09.02420	DDD (4,4'-)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	SCM09.02430	DDE (4,4'-)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	SCM09.02440	DDT (4,4'-)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	SCM09.02450	Delta BHC	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	SCM09.02460	Dieldrin	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	SCM09.02470	Endosulfan I	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	SCM09.02480	Endosulfan II	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	SCM09.02490	Endosulfan sulfate	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	SCM09.02500	Endrin	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	SCM09.02510	Endrin aldehyde	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	SCM09.02520	Endrin ketone	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	SCM09.02540	Heptachlor	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	SCM09.02550	Heptachlor epoxide	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	SCM09.02580	Lindane (gamma BHC)	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	SCM09.02590	Methoxychlor	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Applied	No	SCM09.02620	Mirex	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	SCM09.02660	Toxaphene	GC, Extraction, ECD or HECD, Capillary	SW-846 8081B	NJ
Certified	Yes	SCM09.03190	PCB 1016	GC, Extraction, ECD or HECD, Capillary	SW-846 8082A	NJ
Certified	Yes	SCM09.03200	PCB 1221	GC, Extraction, ECD or HECD, Capillary	SW-846 8082A	NJ
Certified	Yes	SCM09.03210	PCB 1232	GC, Extraction, ECD or HECD, Capillary	SW-846 8082A	NJ
Certified	Yes	SCM09.03220	PCB 1242	GC, Extraction, ECD or HECD, Capillary	SW-846 8082A	NJ
Certified	Yes	SCM09.03230	PCB 1248	GC, Extraction, ECD or HECD, Capillary	SW-846 8082A	NJ
Certified	Yes	SCM09.03240	PCB 1254	GC, Extraction, ECD or HECD, Capillary	SW-846 8082A	NJ
Certified	Yes	SCM09.03250	PCB 1260	GC, Extraction, ECD or HECD, Capillary	SW-846 8082A	NJ
Certified	Yes	SCM09.03260	PCB 1262	GC, Extraction, ECD or HECD, Capillary	SW-846 8082A	NJ
Certified	Yes	SCM09.03270	PCB 1268	GC, Extraction, ECD or HECD, Capillary	SW-846 8082A	NJ

New Jersey Department of Environment Protection
Environmental Laboratory Certification Program

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Effective as of 07/01/2019 until 6/30/2020

Laboratory Name: CHEMTECH Laboratory Number: 20012 Activity ID: NLC 190001
284 SHEFFIELD ST
MOUNTAINSIDE NJ 07092

Category: SCM09--Organic Parameters - Chromatography

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	SCM09.04640	D (2,4-)	GC, Extraction, ECD, Capillary	SW-846 8151A	NJ
Certified	Yes	SCM09.04650	Dalapon	GC, Extraction, ECD, Capillary	SW-846 8151A	NJ
Certified	Yes	SCM09.04660	DB (2,4-)	GC, Extraction, ECD, Capillary	SW-846 8151A	NJ
Certified	Yes	SCM09.04670	DCPA (Dacthal)	GC, Extraction, ECD, Capillary	SW-846 8151A	NJ
Certified	Yes	SCM09.04680	Dicamba	GC, Extraction, ECD, Capillary	SW-846 8151A	NJ
Certified	Yes	SCM09.04690	Dichlorobenzoic acid (3,5-)	GC, Extraction, ECD, Capillary	SW-846 8151A	NJ
Certified	Yes	SCM09.04700	Dichlorprop	GC, Extraction, ECD, Capillary	SW-846 8151A	NJ
Certified	Yes	SCM09.04710	Dinoseb	GC, Extraction, ECD, Capillary	SW-846 8151A	NJ
Certified	Yes	SCM09.04730	MCPA	GC, Extraction, ECD, Capillary	SW-846 8151A	NJ
Certified	Yes	SCM09.04740	MCPP	GC, Extraction, ECD, Capillary	SW-846 8151A	NJ
Certified	Yes	SCM09.04750	Nitrophenol (4-)	GC, Extraction, ECD, Capillary	SW-846 8151A	NJ
Certified	Yes	SCM09.04760	Pentachlorophenol	GC, Extraction, ECD, Capillary	SW-846 8151A	NJ
Certified	Yes	SCM09.04770	Picloram	GC, Extraction, ECD, Capillary	SW-846 8151A	NJ
Certified	Yes	SCM09.04780	T (2,4,5-)	GC, Extraction, ECD, Capillary	SW-846 8151A	NJ
Certified	Yes	SCM09.04790	TP (2,4,5-) (Silvex)	GC, Extraction, ECD, Capillary	SW-846 8151A	NJ

Category: SCM10--Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	SCM10.05810	Acetone	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.05830	Acrolein	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.05840	Acrylonitrile	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.05870	Benzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.05890	Bromobenzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.05900	Bromochloromethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.05910	Bromodichloromethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.05920	Bromoethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.05930	Bromoform	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.05940	Bromomethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ

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Laboratory Name: CHEMTECH Laboratory Number: 20012 Activity ID: NLC 190001
284 SHEFFIELD ST
MOUNTAINSIDE NJ 07092

Category: SCM10--Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	SCM10.05980	Butanone (2-) (Methyl ethyl ketone)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06020	Butylbenzene (n-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06030	Carbon disulfide	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06040	Carbon tetrachloride	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06050	Chlorobenzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06060	Chloroethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06070	Chloroethyl vinyl ether (2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06080	Chloroform	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06090	Chloromethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06100	Chlorotoluene (2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06110	Chlorotoluene (4-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06130	Cyclohexane	GC/MS, P&T, or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06150	Dibromo-3-chloropropane (1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06160	Dibromochloromethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06170	Dibromoethane (1,2-) (EDB)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06180	Dibromomethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06210	Dichlorobenzene (1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06220	Dichlorobenzene (1,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06230	Dichlorobenzene (1,4-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06240	Dichlorodifluoromethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06250	Dichloroethane (1,1-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06260	Dichloroethane (1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06270	Dichloroethene (1,1-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06280	Dichloroethene (cis-1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06290	Dichloroethene (trans-1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06300	Dichloropropane (1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06310	Dichloropropane (1,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06320	Dichloropropane (2,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06330	Dichloropropene (1,1-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06340	Dichloropropene (cis-1,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06350	Dichloropropene (trans-1,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ

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Laboratory Name: CHEMTECH Laboratory Number: 20012 Activity ID: NLC 190001
284 SHEFFIELD ST
MOUNTAINSIDE NJ 07092

Category: SCM10--Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	SCM10.06380	Dioxane (1,4-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06400	Ethyl acetate	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06420	Ethylbenzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06450	Hexachlorobutadiene (1,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06460	Hexachloroethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06480	Hexanone (2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06520	Isopropylbenzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06530	Isopropyltoluene (4-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06550	Methyl acetate	GC/MS, P&T, or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06570	Methyl iodide	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06590	Methyl tert-butyl ether	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06600	Methylcyclohexane	GC/MS, P&T, or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06610	Methylene chloride (Dichloromethane)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06640	Naphthalene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06710	Pentanone (4-methyl-2-) (MIBK)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06730	Propylbenzene (n-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06740	Sec-butylbenzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06750	Styrene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06780	Tert-butyl alcohol	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06790	Tert-butylbenzene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06800	Tetrachloroethane (1,1,1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06810	Tetrachloroethane (1,1,2,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06820	Tetrachloroethene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06840	Toluene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06860	Trichloro (1,1,2-) trifluoroethane (1,2,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06870	Trichlorobenzene (1,2,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06880	Trichlorobenzene (1,2,4-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06890	Trichloroethane (1,1,1-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06900	Trichloroethane (1,1,2-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06910	Trichloroethene	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06920	Trichlorofluoromethane	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ

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Laboratory Name: CHEMTECH Laboratory Number: 20012 Activity ID: NLC 190001
284 SHEFFIELD ST
MOUNTAINSIDE NJ 07092

Category: SCM10--Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	SCM10.06930	Trichloropropane (1,2,3-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06950	Trimethylbenzene (1,2,4-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06960	Trimethylbenzene (1,3,5-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06980	Vinyl acetate	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.06990	Vinyl chloride	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.07000	Xylene (m-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.07010	Xylene (o-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.07020	Xylene (p-)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.07030	Xylenes (total)	GC/MS, P & T or Direct Injection, Capillary	SW-846 8260C	NJ
Certified	Yes	SCM10.09230	Acenaphthene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.09240	Acenaphthylene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.09250	Acetophenone	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.09320	Aniline	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.09330	Anthracene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.09350	Atrazine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.09370	Benzaldehyde	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.09390	Benzidine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.09400	Benzo(a)anthracene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.09410	Benzo(a)pyrene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.09420	Benzo(b)fluoranthene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.09430	Benzo(ghi)perylene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.09450	Benzo(k)fluoranthene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.09460	Benzoic acid	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.09480	Benzyl alcohol	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.09510	Biphenyl (1,1'-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.09520	Bis (2-chloroethoxy) methane	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.09530	Bis (2-chloroethyl) ether	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.09540	Bis(2-chloroisopropyl)ether|2,2'-oxybis(1-chloropropane)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.09550	Bis (2-ethylhexyl) phthalate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.09560	Bromophenyl-phenyl ether (4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ

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284 SHEFFIELD ST
MOUNTAINSIDE NJ 07092

Category: SCM10--Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	SCM10.09570	Butylbenzylphthalate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.09580	Caprolactam	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.09590	Carbazole	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.09630	Chloroaniline (4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.09660	Chloronaphthalene (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.09670	Chlorophenol (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.09680	Chlorophenyl-phenyl ether (4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.09690	Chrysene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.09800	Dibenzo(a,h)anthracene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.09840	Dibenzofuran	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.09850	Dichlorobenzene (1,2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.09860	Dichlorobenzene (1,3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.09870	Dichlorobenzene (1,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.09880	Dichlorobenzidine (3,3'-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.09890	Dichlorophenol (2,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.09920	Diethyl phthalate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.09950	Dimethyl phthalate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.10020	Dimethylphenol (2,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.10030	Di-n-butyl phthalate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.10060	Dinitrophenol (2,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.10070	Dinitrophenol (2-methyl-4,6-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.10080	Dinitrotoluene (2,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.10090	Dinitrotoluene (2,6-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.10100	Di-n-octyl phthalate	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.10114	Dioxane (1,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.10130	Diphenylhydrazine / Azobenzene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.10230	Fluoranthene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.10240	Fluorene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.10270	Hexachlorobenzene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.10280	Hexachlorobutadiene (1,3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.10290	Hexachlorocyclopentadiene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ

New Jersey Department of Environment Protection
Environmental Laboratory Certification Program

Annual Certified Parameter List and Current Status

Effective as of 07/01/2019 until 6/30/2020

Laboratory Name: CHEMTECH Laboratory Number: 20012 Activity ID: NLC 190001
284 SHEFFIELD ST
MOUNTAINSIDE NJ 07092

Category: SCM10--Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	SCM10.10300	Hexachloroethane	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.10350	Indeno(1,2,3-cd)pyrene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.10370	Isophorone	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.10460	Methyl phenol (4-chloro-3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Applied	No	SCM10.10480	Methylnaphthalene (1-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.10490	Methylnaphthalene (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.10500	Methylphenol (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.10510	Methylphenol (3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.10520	Methylphenol (4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.10530	Naphthalene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.10570	Nitroaniline (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.10580	Nitroaniline (3-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.10590	Nitroaniline (4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.10600	Nitrobenzene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.10620	Nitrophenol (2-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.10630	Nitrophenol (4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.10650	N-Nitrosodimethylamine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.10670	N-Nitroso-di-n-propylamine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.10680	N-Nitrosodiphenylamine / Diphenylamine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.10860	Pentachlorophenol	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.10880	Phenanthrene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.10890	Phenol	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.10970	Pyrene	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.10980	Pyridine	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.11060	Tetrachlorobenzene (1,2,4,5-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.11070	Tetrachlorophenol (2,3,4,6-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.11120	Trichlorobenzene (1,2,4-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.11130	Trichlorophenol (2,4,5-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.11140	Trichlorophenol (2,4,6-)	GC/MS, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.11170	Acenaphthene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.11180	Acenaphthylene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ

New Jersey Department of Environment Protection
Environmental Laboratory Certification Program

Annual Certified Parameter List and Current Status

Effective as of 07/01/2019 until 6/30/2020

Laboratory Name: CHEMTECH Laboratory Number: 20012 Activity ID: NLC 190001
284 SHEFFIELD ST
MOUNTAINSIDE NJ 07092

Category: SCM10--Organic Parameters - Chromatography/MS

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	SCM10.11190	Anthracene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.11200	Benzo(a)anthracene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.11210	Benzo(a)pyrene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.11220	Benzo(b)fluoranthene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.11230	Benzo(ghi)perylene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.11240	Benzo(k)fluoranthene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.11250	Chrysene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.11260	Dibenzo(a,h)anthracene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.11274	Dioxane (1,4-)	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.11280	Fluoranthene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.11290	Fluorene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.11300	Hexachlorobenzene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.11320	Indeno(1,2,3-cd)pyrene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.11340	Methylnaphthalene (2-)	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.11350	Naphthalene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.11360	N-Nitrosodimethylamine	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.11370	Pentachlorophenol	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.11380	Phenanthrene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ
Certified	Yes	SCM10.11390	Pyrene	GC/MS/SIM, Extract or Dir Inj, Capillary	SW-846 8270D	NJ

Michele M. Potter

Michele M. Potter, Manager

CERTIFICATE OF ACCREDITATION

ANSI-ASQ National Accreditation Board
500 Montgomery Street, Suite 625, Alexandria, VA 22314, 877-344-3044

This is to certify that

Chemtech
284 Sheffield Street
Mountainside, NJ 07092

has been assessed by ANAB
and meets the requirements of international standard

ISO/IEC 17025:2005

and DoD Quality Systems Manual for Environmental Laboratories (DoD QSM V 5.1.1)

while demonstrating technical competence in the fields of

TESTING

Refer to the accompanying Scope of Accreditation for information regarding the types of calibrations and/or tests to which this accreditation applies.

L2219
Certificate Number

ANAB Approval

Certificate Valid: 10/01/2018-10/20/2021
Version No. 004 Issued: 10/01/2018

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).

ANSI-ASQ National Accreditation Board

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005 AND DOD QUALITY SYSTEMS MAUAL FOR ENVIRONMENTAL LABORATORIES (DOD QSM V 5.1.1)

Chemtech
284 Sheffield Street
Mountainside, NJ 07092
Emanuel Hedvat
908-789-8900

TESTING

Valid to: **October 20, 2021** Certificate Number: **L2219**

Environmental

Air and Emissions		
Technology	**Method**	**Analyte**
GC/MS	TO-15	1,1,1-Trichloroethane
GC/MS	TO-15	1,1,2,2-Tetrachloroethane
GC/MS	TO-15	1,1,2-Trichloroethane
GC/MS	TO-15	1,1,2-Trichlorotrifluoroethane
GC/MS	TO-15	1,1-Dichloroethane
GC/MS	TO-15	1,1-Dichloroethene
GC/MS	TO-15	1,2,4-Trichlorobenzene
GC/MS	TO-15	1,2,4-Trimethylbenzene
GC/MS	TO-15	1,2-Dibromoethane
GC/MS	TO-15	1,2-Dichlorobenzene
GC/MS	TO-15	1,2-Dichloroethane
GC/MS	TO-15	1,2-Dichloropropane
GC/MS	TO-15	1,3,5-Trimethylbenzene
GC/MS	TO-15	1,3-Butadiene
GC/MS	TO-15	1,3-Dichlorobenzene

Air and Emissions		
Technology	**Method**	**Analyte**
GC/MS	TO-15	1,4-Dichlorobenzene
GC/MS	TO-15	1,4-Dioxane
GC/MS	TO-15	2,2,4-Trimethylpentane
GC/MS	TO-15	2-Butanone
GC/MS	TO-15	2-Chlorotoluene
GC/MS	TO-15	2-Hexanone
GC/MS	TO-15	4-Ethyltoluene
GC/MS	TO-15	4-Methyl-2-Pentanone
GC/MS	TO-15	Acetone
GC/MS	TO-15	Allyl Chloride
GC/MS	TO-15	Benzene
GC/MS	TO-15	Benzyl Chloride
GC/MS	TO-15	Bromodichloromethane
GC/MS	TO-15	Bromoethene
GC/MS	TO-15	Bromoform
GC/MS	TO-15	Bromomethane
GC/MS	TO-15	Carbon Disulfide
GC/MS	TO-15	Carbon Tetrachloride
GC/MS	TO-15	Chlorobenzene
GC/MS	TO-15	Chloroethane
GC/MS	TO-15	Chloroform
GC/MS	TO-15	Chloromethane
GC/MS	TO-15	cis-1,2-Dichloroethene
GC/MS	TO-15	cis-1,3-Dichloropropene
GC/MS	TO-15	Cyclohexane
GC/MS	TO-15	Dibromochloromethane
GC/MS	TO-15	Dichlorodifluoromethane

Air and Emissions		
Technology	**Method**	**Analyte**
GC/MS	TO-15	Dichlorotetrafluoroethane
GC/MS	TO-15	Ethanol
GC/MS	TO-15	Ethyl Acetate
GC/MS	TO-15	Ethyl Benzene
GC/MS	TO-15	Heptane
GC/MS	TO-15	Hexachloro-1,3-Butadiene
GC/MS	TO-15	Hexane
GC/MS	TO-15	Isopropyl Alcohol
GC/MS	TO-15	m/p-Xylene
GC/MS	TO-15	Methyl methacrylate
GC/MS	TO-15	Methyl tert-Butyl Ether
GC/MS	TO-15	Methylene Chloride
GC/MS	TO-15	Naphthalene
GC/MS	TO-15	o-Xylene
GC/MS	TO-15	Propene
GC/MS	TO-15	Styrene
GC/MS	TO-15	t-1,3-Dichloropropene
GC/MS	TO-15	tert-butyl alcohol
GC/MS	TO-15	Tetrachloroethene
GC/MS	TO-15	Tetrahydrofuran
GC/MS	TO-15	Toluene
GC/MS	TO-15	trans-1,2-Dichloroethene
GC/MS	TO-15	Trichloroethene
GC/MS	TO-15	Trichlorofluoromethane
GC/MS	TO-15	Vinyl Acetate
GC/MS	TO-15	Vinyl Chloride
GC/MS	TO-15	Isopropylbenzene

Air and Emissions		
Technology	**Method**	**Analyte**
GC/MS	TO-15	n-Butylbenzene
GC/MS	TO-15	n-propylbenzene
GC/MS	TO-15	p-Isopropyltoluene
GC/MS	TO-15	sec-Butylbenzene
GC/MS	TO-15	tert-Butylbenzene

Drinking Water		
Technology	**Method**	**Analyte**
GC/MS	EPA 524.2	1,1,1,2-Tetrachloroethane
GC/MS	EPA 524.2	Tetrachloroethene
GC/MS	EPA 524.2	1,1,1-Trichloroethane
GC/MS	EPA 524.2	1,1,2,2-Tetrachloroethane
GC/MS	EPA 524.2	1,1,2-Trichloro-1,2,2-trifluoroethane
GC/MS	EPA 524.2	1,1,2-Trichloroethane
GC/MS	EPA 524.2	1,1-Dichloroethane
GC/MS	EPA 524.2	1,1-Dichloroethene
GC/MS	EPA 524.2	1,1-Dichloropropene
GC/MS	EPA 524.2	1,2,3-Trichlorobenzene
GC/MS	EPA 524.2	1,2,3-Trichloropropane
GC/MS	EPA 524.2	1,2,4-Trichlorobenzene
GC/MS	EPA 524.2	1,2,4-Trimethylbenzene
GC/MS	EPA 524.2	1,2-Dibromo-3-Chloropropane
GC/MS	EPA 524.2	1,2-Dibromoethane
GC/MS	EPA 524.2	1,2-Dichlorobenzene
GC/MS	EPA 524.2	1,2-Dichloroethane
GC/MS	EPA 524.2	1,2-Dichloropropane
GC/MS	EPA 524.2	1,3,5-Trimethylbenzene

Drinking Water		
Technology	**Method**	**Analyte**
GC/MS	EPA 524.2	1,3-Dichlorobenzene
GC/MS	EPA 524.2	1,3-Dichloropropane
GC/MS	EPA 524.2	1,4-Dichlorobenzene
GC/MS	EPA 524.2	1-Chlorobutane
GC/MS	EPA 524.2	2,2-Dichloropropane
GC/MS	EPA 524.2	2-Butanone
GC/MS	EPA 524.2	Bromoform
GC/MS	EPA 524.2	2-Chlorotoluene
GC/MS	EPA 524.2	2-Hexanone
GC/MS	EPA 524.2	4-Chlorotoluene
GC/MS	EPA 524.2	4-Methyl-2-Pentanone
GC/MS	EPA 524.2	Acetone
GC/MS	EPA 524.2	Acrylonitrile
GC/MS	EPA 524.2	Allyl Chloride
GC/MS	EPA 524.2	Benzene
GC/MS	EPA 524.2	Bromobenzene
GC/MS	EPA 524.2	Bromochloromethane
GC/MS	EPA 524.2	Bromodichloromethane
GC/MS	EPA 524.2	Bromomethane
GC/MS	EPA 524.2	Carbon Disulfide
GC/MS	EPA 524.2	Carbon Tetrachloride
GC/MS	EPA 524.2	Chlorobenzene
GC/MS	EPA 524.2	Chloroethane
GC/MS	EPA 524.2	Chloroform
GC/MS	EPA 524.2	Chloromethane
GC/MS	EPA 524.2	cis-1,2-Dichloroethene
GC/MS	EPA 524.2	cis-1,3-Dichloropropene

Drinking Water		
Technology	**Method**	**Analyte**
GC/MS	EPA 524.2	Cyclohexane
GC/MS	EPA 524.2	Dibromochloromethane
GC/MS	EPA 524.2	Dibromomethane
GC/MS	EPA 524.2	Dichlorodifluoromethane
GC/MS	EPA 524.2	Diethyl Ether
GC/MS	EPA 524.2	Ethyl Benzene
GC/MS	EPA 524.2	Ethyl methacrylate
GC/MS	EPA 524.2	Ethyl-t-butyl ether
GC/MS	EPA 524.2	Hexachlorobutadiene
GC/MS	EPA 524.2	Hexachloroethane
GC/MS	EPA 524.2	Iodomethane
GC/MS	EPA 524.2	Isopropyl Ether
GC/MS	EPA 524.2	Isopropylbenzene
GC/MS	EPA 524.2	m/p-Xylenes
GC/MS	EPA 524.2	Methacrylonitrile
GC/MS	EPA 524.2	Methyl acrylate
GC/MS	EPA 524.2	Methyl methacrylate
GC/MS	EPA 524.2	Methyl tert-Butyl Ether
GC/MS	EPA 524.2	Methylcyclohexane
GC/MS	EPA 524.2	Methylene Chloride
GC/MS	EPA 524.2	Naphthalene
GC/MS	EPA 524.2	n-Butylbenzene
GC/MS	EPA 524.2	Nitrobenzene
GC/MS	EPA 524.2	n-propylbenzene
GC/MS	EPA 524.2	o-Xylene
GC/MS	EPA 524.2	Pentachloroethane
GC/MS	EPA 524.2	p-Isopropyltoluene

Drinking Water		
Technology	**Method**	**Analyte**
GC/MS	EPA 524.2	Propionitrile
GC/MS	EPA 524.2	sec-Butylbenzene
GC/MS	EPA 524.2	Styrene
GC/MS	EPA 524.2	t-1,3-Dichloropropene
GC/MS	EPA 524.2	t-1,4-Dichloro-2-butene
GC/MS	EPA 524.2	Tert-Amyl methyl ether
GC/MS	EPA 524.2	tert-Butyl Alcohol
GC/MS	EPA 524.2	tert-Butylbenzene
GC/MS	EPA 524.2	Tetrahydrofuran
GC/MS	EPA 524.2	Toluene
GC/MS	EPA 524.2	trans-1,2-Dichloroethene
GC/MS	EPA 524.2	Trichloroethene
GC/MS	EPA 524.2	Trichlorofluoromethane
GC/MS	EPA 524.2	Vinyl Chloride
ICP	EPA 200.7	Aluminum
ICP	EPA 200.7	Antimony
ICP	EPA 200.7	Arsenic
ICP	EPA 200.7	Barium
ICP	EPA 200.7	Beryllium
ICP	EPA 200.7	Boron
ICP	EPA 200.7	Cadmium
ICP	EPA 200.7	Calcium
ICP	EPA 200.7	Chromium
ICP	EPA 200.7	Cobalt
ICP	EPA 200.7	Copper
ICP	EPA 200.7	Iron
ICP	EPA 200.7	Lead

Drinking Water		
Technology	**Method**	**Analyte**
ICP	EPA 200.7	Magnesium
ICP	EPA 200.7	Manganese
ICP	EPA 200.7	Molybdenum
ICP	EPA 200.7	Nickel
ICP	EPA 200.7	Potassium
ICP	EPA 200.7	Selenium
ICP	EPA 200.7	Silicon
ICP	EPA 200.7	Silver
ICP	EPA 200.7	Sodium
ICP	EPA 200.7	Sulfur
ICP	EPA 200.7	Tin
ICP	EPA 200.7	Titanium
ICP	EPA 200.7	Vanadium
ICP	EPA 200.7	Zinc
ICP-MS	EPA 200.8	Aluminum
ICP-MS	EPA 200.8	Antimony
ICP-MS	EPA 200.8	Arsenic
ICP-MS	EPA 200.8	Barium
ICP-MS	EPA 200.8	Beryllium
ICP-MS	EPA 200.8	Boron
ICP-MS	EPA 200.8	Cadmium
ICP-MS	EPA 200.8	Calcium
ICP-MS	EPA 200.8	Chromium
ICP-MS	EPA 200.8	Cobalt
ICP-MS	EPA 200.8	Copper
ICP-MS	EPA 200.8	Iron
ICP-MS	EPA 200.8	Lead

Drinking Water		
Technology	**Method**	**Analyte**
ICP-MS	EPA 200.8	Magnesium
ICP-MS	EPA 200.8	Manganese
ICP-MS	EPA 200.8	Molybdenum
ICP-MS	EPA 200.8	Nickel
ICP-MS	EPA 200.8	Potassium
ICP-MS	EPA 200.8	Selenium
ICP-MS	EPA 200.8	Silicon
ICP-MS	EPA 200.8	Silver
ICP-MS	EPA 200.8	Sodium
ICP-MS	EPA 200.8	Sulfur
ICP-MS	EPA 200.8	Thallium
ICP-MS	EPA 200.8	Tin
ICP-MS	EPA 200.8	Titanium
ICP-MS	EPA 200.8	Vanadium
ICP-MS	EPA 200.8	Zinc
CVAA	EPA 245.1	Mercury

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/ECD	EPA 608.3	4,4`-DDD
GC/ECD	EPA 608.3	4,4`-DDE
GC/ECD	EPA 608.3	4,4`-DDT
GC/ECD	EPA 608.3	Aldrin
GC/ECD	EPA 608.3	alpha-BHC (alpha-Hexachlorocyclohexane)
GC/ECD	EPA 608.3	alpha Chlordane
GC/ECD	EPA 608.3	beta-BHC (beta-Hexachlorocyclohexane)
GC/ECD	EPA 608.3	Chlordane (tech.)

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/ECD	EPA 608.3	delta-BHC
GC/ECD	EPA 608.3	Dieldrin
GC/ECD	EPA 608.3	Endosulfan I
GC/ECD	EPA 608.3	Endosulfan II
GC/ECD	EPA 608.3	Endosulfan sulfate
GC/ECD	EPA 608.3	Endrin aldehyde
GC/ECD	EPA 608.3	Endrin ketone
GC/ECD	EPA 608.3	Endrin
GC/ECD	EPA 608.3	gamma-BHC (Lindane gamma-Hexachlorocyclohexane)
GC/ECD	EPA 608.3	gamma Chlordane
GC/ECD	EPA 608.3	Heptachlor epoxide
GC/ECD	EPA 608.3	Heptachlor
GC/ECD	EPA 608.3	Methoxychlor
GC/ECD	EPA 608.3	Toxaphene (Chlorinated camphene)
GC/ECD	EPA 608.3	Aroclor-1016 (PCB-1016)
GC/ECD	EPA 608.3	Aroclor-1221 (PCB-1221)
GC/ECD	EPA 608.3	Aroclor-1232 (PCB-1232)
GC/ECD	EPA 608.3	Aroclor-1242 (PCB-1242)
GC/ECD	EPA 608.3	Aroclor-1248 (PCB-1248)
GC/ECD	EPA 608.3	Aroclor-1254 (PCB-1254)
GC/ECD	EPA 608.3	Aroclor-1260 (PCB-1260)
GC/MS	EPA 624.1	1,1,1,2-Tetrachloroethane
GC/MS	EPA 624.1	1,1,1-Trichloroethane
GC/MS	EPA 624.1	1,1,2,2-Tetrachloroethane
GC/MS	EPA 624.1	1,1,2-Trichloroethane
GC/MS	EPA 624.1	1,1,2-Trichlorotrifluoroethane
GC/MS	EPA 624.1	1,1-Dichloroethane

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/MS	EPA 624.1	1,1-Dichloroethene
GC/MS	EPA 624.1	1,1-Dichloropropene
GC/MS	EPA 624.1	1,2,3-Trichlorobenzene
GC/MS	EPA 624.1	1,2,3-Trichloropropane
GC/MS	EPA 624.1	1,2,4-Trichlorobenzene
GC/MS	EPA 624.1	1,2,4-Trimethylbenzene
GC/MS	EPA 624.1	1,2-Dibromo-3-Chloropropane
GC/MS	EPA 624.1	1,2-Dibromoethane
GC/MS	EPA 624.1	1,2-Dichlorobenzene
GC/MS	EPA 624.1	1,2-Dichloroethane
GC/MS	EPA 624.1	1,2-Dichloropropane
GC/MS	EPA 624.1	1,3,5-Trimethylbenzene
GC/MS	EPA 624.1	1,3-Dichlorobenzene
GC/MS	EPA 624.1	1,3-Dichloropropane
GC/MS	EPA 624.1	1,4-Dichlorobenzene
GC/MS	EPA 624.1	1,4-Dioxane
GC/MS	EPA 624.1	2,2-Dichloropropane
GC/MS	EPA 624.1	2-Butanone
GC/MS	EPA 624.1	2-Chloroethyl vinyl ether
GC/MS	EPA 624.1	2-Chlorotoluene
GC/MS	EPA 624.1	2-Hexanone
GC/MS	EPA 624.1	4-Chlorotoluene
GC/MS	EPA 624.1	4-Methyl-2-Pentanone
GC/MS	EPA 624.1	Acetone
GC/MS	EPA 624.1	Acrolein
GC/MS	EPA 624.1	Acrylonitrile
GC/MS	EPA 624.1	Allyl chloride

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/MS	EPA 624.1	Benzene
GC/MS	EPA 624.1	Bromobenzene
GC/MS	EPA 624.1	Bromodichloromethane
GC/MS	EPA 624.1	Bromoform
GC/MS	EPA 624.1	Bromomethane
GC/MS	EPA 624.1	Carbon Disulfide
GC/MS	EPA 624.1	Carbon Tetrachloride
GC/MS	EPA 624.1	Chlorobenzene
GC/MS	EPA 624.1	Chloroethane
GC/MS	EPA 624.1	Chloroform
GC/MS	EPA 624.1	Chloromethane
GC/MS	EPA 624.1	cis-1,2-Dichloroethene
GC/MS	EPA 624.1	cis-1,3-Dichloropropene
GC/MS	EPA 624.1	Cyclohexane
GC/MS	EPA 624.1	Dibromochloromethane
GC/MS	EPA 624.1	Dibromomethane
GC/MS	EPA 624.1	Dichlorodifluoromethane
GC/MS	EPA 624.1	Diethyl Ether
GC/MS	EPA 624.1	Diisopropyl ether
GC/MS	EPA 624.1	Ethyl Acetate
GC/MS	EPA 624.1	Ethyl Benzene
GC/MS	EPA 624.1	Ethyl methacrylate
GC/MS	EPA 624.1	Hexachlorobutadiene
GC/MS	EPA 624.1	Hexachloroethane
GC/MS	EPA 624.1	Isopropyl Acetate
GC/MS	EPA 624.1	Isopropylbenzene
GC/MS	EPA 624.1	m/p-Xylenes

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/MS	EPA 624.1	Methacrylonitrile
GC/MS	EPA 624.1	Methyl Acetate
GC/MS	EPA 624.1	Methyl Iodide
GC/MS	EPA 624.1	Methyl methacrylate
GC/MS	EPA 624.1	Methyl tert-Butyl Ether
GC/MS	EPA 624.1	Methylcyclohexane
GC/MS	EPA 624.1	Methylene Chloride
GC/MS	EPA 624.1	n-amyl Acetate
GC/MS	EPA 624.1	Naphthalene
GC/MS	EPA 624.1	n-Butylbenzene
GC/MS	EPA 624.1	n-propylbenzene
GC/MS	EPA 624.1	o-Xylene
GC/MS	EPA 624.1	p-Isopropyltoluene
GC/MS	EPA 624.1	sec-Butylbenzene
GC/MS	EPA 624.1	Styrene
GC/MS	EPA 624.1	t-1,3-Dichloropropene
GC/MS	EPA 624.1	t-1,4-Dichloro-2-butene
GC/MS	EPA 624.1	tert-Butyl Alcohol
GC/MS	EPA 624.1	tert-butylbenzene
GC/MS	EPA 624.1	Tetrachloroethene
GC/MS	EPA 624.1	Toluene
GC/MS	EPA 624.1	Total 1,2-Dichloroethene
GC/MS	EPA 624.1	Total Xylenes
GC/MS	EPA 624.1	trans-1,2-Dichloroethene
GC/MS	EPA 624.1	Trichloroethene
GC/MS	EPA 624.1	Trichlorofluoromethane
GC/MS	EPA 624.1	Vinyl Acetate

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/MS	EPA 624.1	Vinyl Chloride
GC/MS	EPA 625.1	1,1-Biphenyl
GC/MS	EPA 625.1	1,2,4,5-Tetrachlorobenzene
GC/MS	EPA 625.1	1,2,4-Trichlorobenzene
GC/MS	EPA 625.1	1,2-Dichlorobenzene
GC/MS	EPA 625.1	1,3-Dichlorobenzene
GC/MS	EPA 625.1	1,4-Dichlorobenzene
GC/MS	EPA 625.1	1,4-Dioxane
GC/MS	EPA 625.1	2,2-oxybis(1-Chloropropane)
GC/MS	EPA 625.1	2,3,4,6-Tetrachlorophenol
GC/MS	EPA 625.1	2,4,5-Trichlorophenol
GC/MS	EPA 625.1	2,4,6-Trichlorophenol
GC/MS	EPA 625.1	2,4-Dichlorophenol
GC/MS	EPA 625.1	2,4-Dimethylphenol
GC/MS	EPA 625.1	2,4-Dinitrophenol
GC/MS	EPA 625.1	2,4-Dinitrotoluene
GC/MS	EPA 625.1	2,6-Dinitrotoluene
GC/MS	EPA 625.1	2-Chloronaphthalene
GC/MS	EPA 625.1	2-Chlorophenol
GC/MS	EPA 625.1	2-Methylnaphthalene
GC/MS	EPA 625.1	2-Methylphenol
GC/MS	EPA 625.1	2-Nitroaniline
GC/MS	EPA 625.1	2-Nitrophenol
GC/MS	EPA 625.1	3,3-Dichlorobenzidine
GC/MS	EPA 625.1	3+4-Methylphenols
GC/MS	EPA 625.1	3-Nitroaniline
GC/MS	EPA 625.1	4,6-Dinitro-2-methylphenol

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/MS	EPA 625.1	4-Bromophenyl-phenylether
GC/MS	EPA 625.1	4-Chloro-3-methylphenol
GC/MS	EPA 625.1	4-Chloroaniline
GC/MS	EPA 625.1	4-Chlorophenyl-phenylether
GC/MS	EPA 625.1	4-Nitroaniline
GC/MS	EPA 625.1	4-Nitrophenol
GC/MS	EPA 625.1	Acenaphthene
GC/MS	EPA 625.1	Acenaphthylene
GC/MS	EPA 625.1	Acetophenone
GC/MS	EPA 625.1	Aniline
GC/MS	EPA 625.1	Anthracene
GC/MS	EPA 625.1	Atrazine
GC/MS	EPA 625.1	Azobenzene
GC/MS	EPA 625.1	Benzaldehyde
GC/MS	EPA 625.1	Benzidine
GC/MS	EPA 625.1	Benzo(a)anthracene
GC/MS	EPA 625.1	Benzo(a)pyrene
GC/MS	EPA 625.1	Benzo(b)fluoranthene
GC/MS	EPA 625.1	Benzo(g,h,i)perylene
GC/MS	EPA 625.1	Benzo(k)fluoranthene
GC/MS	EPA 625.1	Benzoic acid
GC/MS	EPA 625.1	Benzyl Alcohol
GC/MS	EPA 625.1	bis(2-Chloroethoxy)methane
GC/MS	EPA 625.1	bis(2-Chloroethyl)ether
GC/MS	EPA 625.1	Bis(2-ethylhexyl)phthalate
GC/MS	EPA 625.1	Butylbenzylphthalate
GC/MS	EPA 625.1	Caprolactam

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/MS	EPA 625.1	Carbazole
GC/MS	EPA 625.1	Chrysene
GC/MS	EPA 625.1	Dibenzo(a,h)anthracene
GC/MS	EPA 625.1	Dibenzofuran
GC/MS	EPA 625.1	Diethylphthalate
GC/MS	EPA 625.1	Dimethylphthalate
GC/MS	EPA 625.1	Di-n-butylphthalate
GC/MS	EPA 625.1	Di-n-octyl phthalate
GC/MS	EPA 625.1	Fluoranthene
GC/MS	EPA 625.1	Fluorene
GC/MS	EPA 625.1	Hexachlorobenzene
GC/MS	EPA 625.1	Hexachlorobutadiene
GC/MS	EPA 625.1	Hexachlorocyclopentadiene
GC/MS	EPA 625.1	Hexachloroethane
GC/MS	EPA 625.1	Indeno(1,2,3-cd)pyrene
GC/MS	EPA 625.1	Isophorone
GC/MS	EPA 625.1	Naphthalene
GC/MS	EPA 625.1	Nitrobenzene
GC/MS	EPA 625.1	n-Nitrosodimethylamine
GC/MS	EPA 625.1	n-Nitroso-di-n-propylamine
GC/MS	EPA 625.1	n-Nitrosodiphenylamine
GC/MS	EPA 625.1	Pentachlorophenol
GC/MS	EPA 625.1	Phenanthrene
GC/MS	EPA 625.1	Phenol
GC/MS	EPA 625.1	Pyrene
GC/MS	EPA 625.1	Pyridine
GC/FID	NJDEP EPH 10/08, Rev.3	C9 to C12 Aliphatics

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/FID	NJDEP EPH 10/08, Rev.3	C12 to C16 Aliphatics
GC/FID	NJDEP EPH 10/08, Rev.3	C16 to C21 Aliphatics
GC/FID	NJDEP EPH 10/08, Rev.3	C21 to C40 Aliphatics
GC/FID	NJDEP EPH 10/08, Rev.3	Total Aliphatics
GC/FID	NJDEP EPH 10/08, Rev.3	C10 to C12 Aromatics
GC/FID	NJDEP EPH 10/08, Rev.3	C12 to C16 Aromatics
GC/FID	NJDEP EPH 10/08, Rev.3	C16 to C21 Aromatics
GC/FID	NJDEP EPH 10/08, Rev.3	C21 to C40 Aromatics
GC/FID	NJDEP EPH 10/08, Rev.3	Total Aromatics
GC/FID	NJDEP EPH 10/08, Rev.3	Total EPH
GC/ECD	EPA 8081B	4,4`-DDD
GC/ECD	EPA 8081B	4,4`-DDE
GC/ECD	EPA 8081B	4,4`-DDT
GC/ECD	EPA 8081B	Aldrin
GC/ECD	EPA 8081B	alpha-BHC (alpha-Hexachlorocyclohexane)
GC/ECD	EPA 8081B	alpha Chlordane
GC/ECD	EPA 8081B	beta-BHC (beta-Hexachlorocyclohexane)
GC/ECD	EPA 8081B	Chlordane (tech.)
GC/ECD	EPA 8081B	delta-BHC
GC/ECD	EPA 8081B	Dieldrin
GC/ECD	EPA 8081B	Endosulfan I
GC/ECD	EPA 8081B	Endosulfan II
GC/ECD	EPA 8081B	Endosulfan sulfate
GC/ECD	EPA 8081B	Endrin aldehyde

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/ECD	EPA 8081B	Endrin ketone
GC/ECD	EPA 8081B	Endrin
GC/ECD	EPA 8081B	gamma-BHC (Lindane gamma-Hexachlorocyclohexane)
GC/ECD	EPA 8081B	gamma Chlordane
GC/ECD	EPA 8081B	Heptachlor epoxide
GC/ECD	EPA 8081B	Heptachlor
GC/ECD	EPA 8081B	Methoxychlor
GC/ECD	EPA 8081B	Toxaphene (Chlorinated camphene)
GC/ECD	EPA 8082A	Aroclor-1016 (PCB-1016)
GC/ECD	EPA 8082A	Aroclor-1221 (PCB-1221)
GC/ECD	EPA 8082A	Aroclor-1232 (PCB-1232)
GC/ECD	EPA 8082A	Aroclor-1242 (PCB-1242)
GC/ECD	EPA 8082A	Aroclor-1248 (PCB-1248)
GC/ECD	EPA 8082A	Aroclor-1254 (PCB-1254)
GC/ECD	EPA 8082A	Aroclor-1260 (PCB-1260)
GC/ECD	EPA 8151A	2,4,5-T
GC/ECD	EPA 8151A	2,4-D
GC/ECD	EPA 8151A	Dalapon
GC/ECD	EPA 8151A	Dicamba
GC/ECD	EPA 8151A	Dinoseb
GC/ECD	EPA 8151A	Picloram
GC/ECD	EPA 8151A	Silvex (2,4,5-TP)
GC/ECD	EPA 8151A	2,4-DB
GC/ECD	EPA 8151A	DCPA (Dacthal)
GC/ECD	EPA 8151A	Dichlorobenzoic acid (3,5-)
GC/ECD	EPA 8151A	Dichlorprop
GC/ECD	EPA 8151A	MCPA

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/ECD	EPA 8151A	MCPP
GC/ECD	EPA 8151A	Nitrophenol (4-)
GC/ECD	EPA 8151A	Pentachlorophenol
GC/ECD	EPA 8011	EDB
GC/ECD	EPA 8011	DBCP
GC/ECD	EPA 504.1	EDB
GC/ECD	EPA 504.1	DBCP
GC/FID	RSK 175	Methane
GC/FID	RSK 175	Ethane
GC/FID	RSK 175	Ethene
GC/FID	EPA 8015D	Diesel range organics (DRO)
GC/FID	EPA 8015D	Gasoline range organics (GRO)
GC/MS	EPA 8260C	1,1,1,2-Tetrachloroethane
GC/MS	EPA 8260C	1,1,1-Trichloroethane
GC/MS	EPA 8260C	1,1,2,2-Tetrachloroethane
GC/MS	EPA 8260C	1,1,2-Trichloroethane
GC/MS	EPA 8260C	1,1-Dichloroethane
GC/MS	EPA 8260C	1,1-Dichloroethylene
GC/MS	EPA 8260C	1,1-Dichloropropene
GC/MS	EPA 8260C	1,2,3-Trichlorobenzene
GC/MS	EPA 8260C	1,2,3-Trichloropropane
GC/MS	EPA 8260C	1,2,4-Trichlorobenzene
GC/MS	EPA 8260C	1,2,4-Trimethylbenzene
GC/MS	EPA 8260C	1,2-Dibromo-3-chloropropane (DBCP)
GC/MS	EPA 8260C	1,2-Dibromoethane (EDB Ethylene dibromide)
GC/MS	EPA 8260C	1,2-Dichlorobenzene
GC/MS	EPA 8260C	1,2-Dichloroethane

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/MS	EPA 8260C	1,2-Dichloropropane
GC/MS	EPA 8260C	1,3,5-Trimethylbenzene
GC/MS	EPA 8260C	1,3-Dichlorobenzene
GC/MS	EPA 8260C	1,3-Dichloropropane
GC/MS	EPA 8260C	1,4-Dichlorobenzene
GC/MS	EPA 8260C	2,2-Dichloropropane
GC/MS	EPA 8260C	2-Butanone (Methyl ethyl ketone MEK)
GC/MS	EPA 8260C	2-Chloroethyl vinyl ether
GC/MS	EPA 8260C	2-Chlorotoluene
GC/MS	EPA 8260C	2-Hexanone
GC/MS	EPA 8260C	4-Chlorotoluene
GC/MS	EPA 8260C	4-Methyl-2-pentanone (MIBK)
GC/MS	EPA 8260C	Acetone
GC/MS	EPA 8260C	Acrolein (Propenal)
GC/MS	EPA 8260C	Acrylonitrile
GC/MS	EPA 8260C	1,1,2-Trichlorotrifluoroethane
GC/MS	EPA 8260C	Allyl chloride (3-Chloropropene)
GC/MS	EPA 8260C	Benzene
GC/MS	EPA 8260C	Bromobenzene
GC/MS	EPA 8260C	Bromochloromethane
GC/MS	EPA 8260C	Bromodichloromethane
GC/MS	EPA 8260C	Bromoform
GC/MS	EPA 8260C	Carbon disulfide
GC/MS	EPA 8260C	Carbon tetrachloride
GC/MS	EPA 8260C	Chlorobenzene
GC/MS	EPA 8260C	Chloroethane
GC/MS	EPA 8260C	Chloroform

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/MS	EPA 8260C	cis-1,2-Dichloroethylene
GC/MS	EPA 8260C	cis-1,3-Dichloropropene
GC/MS	EPA 8260C	Dibromochloromethane
GC/MS	EPA 8260C	Dibromomethane
GC/MS	EPA 8260C	Dichlorodifluoromethane
GC/MS	EPA 8260C	Ethyl acetate
GC/MS	EPA 8260C	Ethyl methacrylate
GC/MS	EPA 8260C	Ethylbenzene
GC/MS	EPA 8260C	Hexachlorobutadiene
GC/MS	EPA 8260C	Isopropylbenzene
GC/MS	EPA 8260C	m+p-Xylenes
GC/MS	EPA 8260C	Methacrylonitrile
GC/MS	EPA 8260C	Methyl bromide (Bromomethane)
GC/MS	EPA 8260C	Methyl chloride (Chloromethane)
GC/MS	EPA 8260C	Methyl tert-butyl ether (MTBE)
GC/MS	EPA 8260C	Methylene chloride
GC/MS	EPA 8260C	Naphthalene
GC/MS	EPA 8260C	n-Butylbenzene
GC/MS	EPA 8260C	n-Propylbenzene
GC/MS	EPA 8260C	o-Xylene
GC/MS	EPA 8260C	p-Dioxane
GC/MS	EPA 8260C	p-Isopropyltoluene
GC/MS	EPA 8260C	sec-Butylbenzene
GC/MS	EPA 8260C	Styrene
GS/MS	EPA 8260C	Tert-butyl alcohol
GC/MS	EPA 8260C	tert-Butylbenzene
GC/MS	EPA 8260C	Tetrachloroethylene (Perchloroethylene)

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/MS	EPA 8260C	Toluene
GC/MS	EPA 8260C	trans-1,2-Dichloroethylene
GC/MS	EPA 8260C	trans-1,3-Dichloropropylene
GC/MS	EPA 8260C	trans-1,4-Dichloro-2-butene
GC/MS	EPA 8260C	Trichloroethene (Trichloroethylene)
GC/MS	EPA 8260C	Trichlorofluoromethane
GC/MS	EPA 8260C	Vinyl acetate
GC/MS	EPA 8260C	Vinyl chloride
GC/MS	EPA 8260C	Xylene (total)
GC/MS	EPA 8260C	Cyclohexane
GC/MS	EPA 8260C	Diethyl Ether
GC/MS	EPA 8260C	Diisopropyl ether
GC/MS	EPA 8260C	Hexachloroethane
GC/MS	EPA 8260C	Isopropyl Acetate
GC/MS	EPA 8260C	Methyl Acetate
GC/MS	EPA 8260C	Methyl Iodide
GC/MS	EPA 8260C	Methyl methacrylate
GC/MS	EPA 8260C	Methylcyclohexane
GC/MS	EPA 8260C	Tetrahydrofuran
GC/MS	EPA 8270D	1,2,4,5-Tetrachlorobenzene
GC/MS	EPA 8270D	1,2,4-Trichlorobenzene
GC/MS	EPA 8270D	1,2-Dichlorobenzene
GC/MS	EPA 8270D	1,2-Diphenylhydrazine
GC/MS	EPA 8270D	1,3-Dichlorobenzene
GC/MS	EPA 8270D	1,4-Dichlorobenzene
GC/MS	EPA 8270D	2,3,4,6-Tetrachlorophenol
GC/MS	EPA 8270D	2,4,5-Trichlorophenol

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/MS	EPA 8270D	2,4,6-Trichlorophenol
GC/MS	EPA 8270D	2,4-Dichlorophenol
GC/MS	EPA 8270D	2,4-Dimethylphenol
GC/MS	EPA 8270D	2,4-Dinitrophenol
GC/MS	EPA 8270D	2,4-Dinitrotoluene (2,4-DNT)
GC/MS	EPA 8270D	2,6-Dinitrotoluene (2,6-DNT)
GC/MS	EPA 8270D	2-Chloronaphthalene
GC/MS	EPA 8270D	2-Chlorophenol
GC/MS	EPA 8270D	2-Methyl-4,6-dinitrophenol
GC/MS	EPA 8270D	2-Methylnaphthalene
GC/MS	EPA 8270D	2-Methylphenol (o-Cresol)
GC/MS	EPA 8270D	2-Nitroaniline
GC/MS	EPA 8270D	2-Nitrophenol
GC/MS	EPA 8270D	3,3`-Dichlorobenzidine
GC/MS	EPA 8270D	3+4-Methylphenol
GC/MS	EPA 8270D	3-Nitroaniline
GC/MS	EPA 8270D	4-Bromophenyl phenyl ether
GC/MS	EPA 8270D	4-Chloro-3-methylphenol
GC/MS	EPA 8270D	4-Chloroaniline
GC/MS	EPA 8270D	4-Chlorophenyl phenylether
GC/MS	EPA 8270D	4-Nitroaniline
GC/MS	EPA 8270D	4-Nitrophenol
GC/MS	EPA 8270D	Acenaphthene
GC/MS	EPA 8270D	Acenaphthylene
GC/MS	EPA 8270D	Acetophenone
GC/MS	EPA 8270D	Aniline
GC/MS	EPA 8270D	Anthracene

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/MS	EPA 8270D	Benzidine
GC/MS	EPA 8270D	Benzo(a)anthracene
GC/MS	EPA 8270D	Benzo(a)pyrene
GC/MS	EPA 8270D	Benzo(b)fluoranthene
GC/MS	EPA 8270D	Benzo(g,h,i)perylene
GC/MS	EPA 8270D	Benzo(k)fluoranthene
GC/MS	EPA 8270D	Benzoic acid
GC/MS	EPA 8270D	Benzyl alcohol
GC/MS	EPA 8270D	bis(2-Chloroethoxy)methane
GC/MS	EPA 8270D	bis(2-Chloroethyl) ether
GC/MS	EPA 8270D	bis(2-Chloroisopropyl) ether (2,2`-Oxybis(1-chloropropane))
GC/MS	EPA 8270D	bis(2-Ethylhexyl) phthalate (DEHP)
GC/MS	EPA 8270D	Butyl benzyl phthalate
GC/MS	EPA 8270D	Carbazole
GC/MS	EPA 8270D	Chrysene
GC/MS	EPA 8270D	Dibenz(a,h)anthracene
GC/MS	EPA 8270D	Dibenzofuran
GC/MS	EPA 8270D	Diethyl phthalate
GC/MS	EPA 8270D	Dimethyl phthalate
GC/MS	EPA 8270D	Di-n-butyl phthalate
GC/MS	EPA 8270D	Di-n-octyl phthalate
GC/MS	EPA 8270D	Diphenylamine
GC/MS	EPA 8270D	Fluoranthene
GC/MS	EPA 8270D	Fluorene
GC/MS	EPA 8270D	Hexachlorobenzene
GC/MS	EPA 8270D	Hexachlorobutadiene
GC/MS	EPA 8270D	Hexachlorocyclopentadiene

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/MS	EPA 8270D	Hexachloroethane
GC/MS	EPA 8270D	Indeno(1,2,3-cd)pyrene
GC/MS	EPA 8270D	Isophorone
GC/MS	EPA 8270D	Naphthalene
GC/MS	EPA 8270D	Nitrobenzene
GC/MS	EPA 8270D	n-Nitrosodimethylamine
GC/MS	EPA 8270D	n-Nitrosodi-n-propylamine
GC/MS	EPA 8270D	n-Nitrosodiphenylamine
GC/MS	EPA 8270D	Pentachlorophenol
GC/MS	EPA 8270D	Phenanthrene
GC/MS	EPA 8270D	Phenol
GC/MS	EPA 8270D	Pyrene
GC/MS	EPA 8270D	Pyridine
GC/MS	EPA 8270D	1,4-Dioxane
GC/MS	EPA 8270D	1,1'-Biphenyl
GC/MS	EPA 8270D	Atrazine
GC/MS	EPA 8270D	Benzaldehyde
GC/MS	EPA 8270D	Caprolactam
GC/MS	EPA 8270D	Azobenzene
GC/MS	EPA 8270D SIM	1,4-Dioxane
GC/MS	EPA 8270D SIM	2-Methylnaphthalene
GC/MS	EPA 8270D SIM	Acenaphthene
GC/MS	EPA 8270D SIM	Acenaphthylene
GC/MS	EPA 8270D SIM	Anthracene
GC/MS	EPA 8270D SIM	Benzo(a)anthracene
GC/MS	EPA 8270D SIM	Benzo(a)pyrene
GC/MS	EPA 8270D SIM	Benzo(b)fluoranthene

Non-Potable Water		
Technology	**Method**	**Analyte**
GC/MS	EPA 8270D SIM	Benzo(g,h,i)perylene
GC/MS	EPA 8270D SIM	Benzo(k)fluoranthene
GC/MS	EPA 8270D SIM	Chrysene
GC/MS	EPA 8270D SIM	Dibenzo(a,h)anthracene
GC/MS	EPA 8270D SIM	Fluoranthene
GC/MS	EPA 8270D SIM	Fluorene
GC/MS	EPA 8270D SIM	Indeno(1,2,3-cd)pyrene
GC/MS	EPA 8270D SIM	Naphthalene
GC/MS	EPA 8270D SIM	Phenanthrene
GC/MS	EPA 8270D SIM	Pyrene
Gravimetric	EPA 1664A	Oil & Grease
Gravimetric	EPA 1664A	Total Petroleum Hydrocarbons (TPH)
Colorimetric	HACH 8146	Ferrous Iron
Titrimetric	SM 2320B	Alkalinity
IC	EPA 9056A	Bromide
IC	EPA 9056A	Chloride
IC	EPA 9056A	Fluoride
IC	EPA 9056A	Nitrate
IC	EPA 9056A	Nitrite
IC	EPA 9056A	O-phosphate
IC	EPA 9056A	Sulfate
CVAA	EPA 7470A	Mercury
CVAA	EPA 245.1	Mercury
ICP	EPA 200.7	Aluminum
ICP	EPA 200.7	Antimony
ICP	EPA 200.7	Arsenic
ICP	EPA 200.7	Barium

Non-Potable Water		
Technology	**Method**	**Analyte**
ICP	EPA 200.7	Beryllium
ICP	EPA 200.7	Boron
ICP	EPA 200.7	Cadmium
ICP	EPA 200.7	Calcium
ICP	EPA 200.7	Chromium
ICP	EPA 200.7	Cobalt
ICP	EPA 200.7	Copper
ICP	EPA 200.7	Iron
ICP	EPA 200.7	Lead
ICP	EPA 200.7	Magnesium
ICP	EPA 200.7	Manganese
ICP	EPA 200.7	Molybdenum
ICP	EPA 200.7	Nickel
ICP	EPA 200.7	Potassium
ICP	EPA 200.7	Selenium
ICP	EPA 200.7	Silicon
ICP	EPA 200.7	Silver
ICP	EPA 200.7	Sodium
ICP	EPA 200.7	Sulfur
ICP	EPA 200.7	Thallium
ICP	EPA 200.7	Tin
ICP	EPA 200.7	Titanium
ICP	EPA 200.7	Vanadium
ICP	EPA 200.7	Zinc
ICP-MS	EPA 200.8	Aluminum
ICP-MS	EPA 200.8	Antimony
ICP-MS	EPA 200.8	Arsenic

Non-Potable Water		
Technology	**Method**	**Analyte**
ICP-MS	EPA 200.8	Barium
ICP-MS	EPA 200.8	Beryllium
ICP-MS	EPA 200.8	Boron
ICP-MS	EPA 200.8	Cadmium
ICP-MS	EPA 200.8	Calcium
ICP-MS	EPA 200.8	Chromium
ICP-MS	EPA 200.8	Cobalt
ICP-MS	EPA 200.8	Copper
ICP-MS	EPA 200.8	Iron
ICP-MS	EPA 200.8	Lead
ICP-MS	EPA 200.8	Magnesium
ICP-MS	EPA 200.8	Manganese
ICP-MS	EPA 200.8	Molybdenum
ICP-MS	EPA 200.8	Nickel
ICP-MS	EPA 200.8	Potassium
ICP-MS	EPA 200.8	Selenium
ICP-MS	EPA 200.8	Silicon
ICP-MS	EPA 200.8	Silver
ICP-MS	EPA 200.8	Sodium
ICP-MS	EPA 200.8	Sulfur
ICP-MS	EPA 200.8	Thallium
ICP-MS	EPA 200.8	Tin
ICP-MS	EPA 200.8	Titanium
ICP-MS	EPA 200.8	Vanadium
ICP-MS	EPA 200.8	Zinc
ICP	EPA 6010D	Aluminum
ICP	EPA 6010D	Antimony

Non-Potable Water		
Technology	**Method**	**Analyte**
ICP	EPA 6010D	Arsenic
ICP	EPA 6010D	Barium
ICP	EPA 6010D	Beryllium
ICP	EPA 6010D	Boron
ICP	EPA 6010D	Cadmium
ICP	EPA 6010D	Calcium
ICP	EPA 6010D	Chromium
ICP	EPA 6010D	Cobalt
ICP	EPA 6010D	Copper
ICP	EPA 6010D	Iron
ICP	EPA 6010D	Lead
ICP	EPA 6010D	Magnesium
ICP	EPA 6010D	Manganese
ICP	EPA 6010D	Molybdenum
ICP	EPA 6010D	Nickel
ICP	EPA 6010D	Potassium
ICP	EPA 6010D	Selenium
ICP	EPA 6010D	Silicon
ICP	EPA 6010D	Silver
ICP	EPA 6010D	Sodium
ICP	EPA 6010D	Thallium
ICP	EPA 6010D	Tin
ICP	EPA 6010D	Titanium
ICP	EPA 6010D	Vanadium
ICP	EPA 6010D	Zinc
ICP-MS	EPA 6020B	Aluminum
ICP-MS	EPA 6020B	Antimony

Non-Potable Water		
Technology	**Method**	**Analyte**
ICP-MS	EPA 6020B	Arsenic
ICP-MS	EPA 6020B	Barium
ICP-MS	EPA 6020B	Beryllium
ICP-MS	EPA 6020B	Boron
ICP-MS	EPA 6020B	Cadmium
ICP-MS	EPA 6020B	Calcium
ICP-MS	EPA 6020B	Chromium
ICP-MS	EPA 6020B	Cobalt
ICP-MS	EPA 6020B	Copper
ICP-MS	EPA 6020B	Iron
ICP-MS	EPA 6020B	Lead
ICP-MS	EPA 6020B	Magnesium
ICP-MS	EPA 6020B	Manganese
ICP-MS	EPA 6020B	Molybdenum
ICP-MS	EPA 6020B	Nickel
ICP-MS	EPA 6020B	Potassium
ICP-MS	EPA 6020B	Selenium
ICP-MS	EPA 6020B	Silicon
ICP-MS	EPA 6020B	Silver
ICP-MS	EPA 6020B	Sodium
ICP-MS	EPA 6020B	Thallium
ICP-MS	EPA 6020B	Tin
ICP-MS	EPA 6020B	Titanium
ICP-MS	EPA 6020B	Vanadium
ICP-MS	EPA 6020B	Zinc
ISE	EPA 9040C	Corrosivity (pH)
ISE	EPA 9040C	pH

Non-Potable Water		
Technology	**Method**	**Analyte**
pH Paper	EPA 9041A	pH
ISE	EPA 9050A	Conductivity
Physical	EPA 1010A	Ignitability
Titrimetric	EPA 9034	Sulfide
Probe21	EPA 9040C	pH
TOC	EPA 9060/9060A	Total organic carbon
Turbidimetric	EPA 9038	Sulfate
UV/VIS	EPA 7196A	Chromium VI
UV/VIS	EPA 9012B	Total cyanide
UV/VIS	EPA 9065	Total phenolics
Preparation	**Method**	**Type**
Distillation	EPA 9010C	Total cyanide
Organic Preparation	EPA 3510C	Separatory Funnel
Clean Up	EPA 3620C	Florisil Cleanup
Clean Up	EPA 3630C	Silica Gel Cleanup
Clean Up	EPA 3640A	Gel-Permeation Cleanup
Clean Up	EPA 3660	Sulfur Cleanup
Clean Up	EPA 3665A	Sulfuric Acid Permanganate Cleanup
Inorganic Preparation	EPA 3050B	Hotblock
Inorganic Preparation	EPA 3010A	Hotblock
Volatile Organic Preparation	EPA 5030B	Purge and Trap
Distillation	EPA 9030B	Sulfide
Extraction/Titrimetric	EPA 9031	Sulfide

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
GC/FID	NJDEP EPH 10/08, Rev.3	C9 to C12 Aliphatics
GC/FID	NJDEP EPH 10/08, Rev.3	C12 to C16 Aliphatics
GC/FID	NJDEP EPH 10/08, Rev.3	C16 to C21 Aliphatics
GC/FID	NJDEP EPH 10/08, Rev.3	C21 to C40 Aliphatics
GC/FID	NJDEP EPH 10/08, Rev.3	Total Aliphatics
GC/FID	NJDEP EPH 10/08, Rev.3	C10 to C12 Aromatics
GC/FID	NJDEP EPH 10/08, Rev.3	C12 to C16 Aromatics
GC/FID	NJDEP EPH 10/08, Rev.3	C16 to C21 Aromatics
GC/FID	NJDEP EPH 10/08, Rev.3	C21 to C40 Aromatics
GC/FID	NJDEP EPH 10/08, Rev.3	Total Aromatics
GC/FID	NJDEP EPH 10/08, Rev.3	Total EPH
GC/ECD	EPA 8081B	4,4`-DDD
GC/ECD	EPA 8081B	4,4`-DDE
GC/ECD	EPA 8081B	4,4`-DDT
GC/ECD	EPA 8081B	Aldrin
GC/ECD	EPA 8081B	alpha-BHC (alpha-Hexachlorocyclohexane)
GC/ECD	EPA 8081B	alpha Chlordane
GC/ECD	EPA 8081B	beta-BHC (beta-Hexachlorocyclohexane)
GC/ECD	EPA 8081B	Chlordane (tech.)
GC/ECD	EPA 8081B	delta-BHC
GC/ECD	EPA 8081B	Dieldrin
GC/ECD	EPA 8081B	Endosulfan I
GC/ECD	EPA 8081B	Endosulfan II
GC/ECD	EPA 8081B	Endosulfan sulfate

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
GC/ECD	EPA 8081B	Endrin aldehyde
GC/ECD	EPA 8081B	Endrin ketone
GC/ECD	EPA 8081B	Endrin
GC/ECD	EPA 8081B	gamma-BHC (Lindane gamma-Hexachlorocyclohexane)
GC/ECD	EPA 8081B	gamma Chlordane
GC/ECD	EPA 8081B	Heptachlor epoxide
GC/ECD	EPA 8081B	Heptachlor
GC/ECD	EPA 8081B	Methoxychlor
GC/ECD	EPA 8081B	Toxaphene (Chlorinated camphene)
GC/ECD	EPA 8082A	Aroclor-1016 (PCB-1016)
GC/ECD	EPA 8082A	Aroclor-1221 (PCB-1221)
GC/ECD	EPA 8082A	Aroclor-1232 (PCB-1232)
GC/ECD	EPA 8082A	Aroclor-1242 (PCB-1242)
GC/ECD	EPA 8082A	Aroclor-1248 (PCB-1248)
GC/ECD	EPA 8082A	Aroclor-1254 (PCB-1254)
GC/ECD	EPA 8082A	Aroclor-1260 (PCB-1260)
GC/ECD	EPA 8151A	2,4,5-T
GC/ECD	EPA 8151A	2,4-D
GC/ECD	EPA 8151A	Dalapon
GC/ECD	EPA 8151A	Dicamba
GC/ECD	EPA 8151A	Picloram
GC/ECD	EPA 8151A	Silvex (2,4,5-TP)
GC/ECD	EPA 8151A	Dinoseb
GC/ECD	EPA 8151A	2,4-DB
GC/ECD	EPA 8151A	DCPA (Dacthal)
GC/ECD	EPA 8151A	Dichlorobenzoic acid (3,5-)
GC/ECD	EPA 8151A	Dichlorprop

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
GC/ECD	EPA 8151A	MCPA
GC/ECD	EPA 8151A	MCPP
GC/ECD	EPA 8151A	Nitrophenol (4-)
GC/ECD	EPA 8151A	Pentachlorophenol
GC/FID	EPA 8015D	Diesel range organics (DRO)
GC/FID	EPA 8015D	GRO
GC/MS	EPA 8260C	1,1,1,2-Tetrachloroethane
GC/MS	EPA 8260C	1,1,1-Trichloroethane
GC/MS	EPA 8260C	1,1,2,2-Tetrachloroethane
GC/MS	EPA 8260C	1,1,2-Trichloroethane
GC/MS	EPA 8260C	1,1,2-Trichlorotrifluoroethane
GC/MS	EPA 8260C	1,1-Dichloroethane
GC/MS	EPA 8260C	1,1-Dichloroethylene
GC/MS	EPA 8260C	1,1-Dichloropropene
GC/MS	EPA 8260C	1,2,3-Trichlorobenzene
GC/MS	EPA 8260C	1,2,3-Trichloropropane
GC/MS	EPA 8260C	1,2,4-Trichlorobenzene
GC/MS	EPA 8260C	1,2,4-Trimethylbenzene
GC/MS	EPA 8260C	1,2-Dibromo-3-chloropropane (DBCP)
GC/MS	EPA 8260C	1,2-Dibromoethane (EDB Ethylene dibromide)
GC/MS	EPA 8260C	1,2-Dichlorobenzene
GC/MS	EPA 8260C	1,2-Dichloroethane
GC/MS	EPA 8260C	1,2-Dichloropropane
GC/MS	EPA 8260C	1,3,5-Trimethylbenzene
GC/MS	EPA 8260C	1,3-Dichlorobenzene
GC/MS	EPA 8260C	1,3-Dichloropropane
GC/MS	EPA 8260C	1,4-Dichlorobenzene

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
GC/MS	EPA 8260C	2,2-Dichloropropane
GC/MS	EPA 8260C	2-Butanone (Methyl ethyl ketone MEK)
GC/MS	EPA 8260C	2-Chloroethyl vinyl ether
GC/MS	EPA 8260C	2-Chlorotoluene
GC/MS	EPA 8260C	2-Hexanone
GC/MS	EPA 8260C	4-Chlorotoluene
GC/MS	EPA 8260C	4-Methyl-2-pentanone (MIBK)
GC/MS	EPA 8260C	Acetone
GC/MS	EPA 8260C	Acrolein (Propenal)
GC/MS	EPA 8260C	Acrylonitrile
GC/MS	EPA 8260C	Allyl chloride (3-Chloropropene)
GC/MS	EPA 8260C	Benzene
GC/MS	EPA 8260C	Bromobenzene
GC/MS	EPA 8260C	Bromochloromethane
GC/MS	EPA 8260C	Bromodichloromethane
GC/MS	EPA 8260C	Bromoform
GC/MS	EPA 8260C	Carbon disulfide
GC/MS	EPA 8260C	Carbon tetrachloride
GC/MS	EPA 8260C	Chlorobenzene
GC/MS	EPA 8260C	Chloroethane
GC/MS	EPA 8260C	Chloroform
GC/MS	EPA 8260C	Methylcyclohexane
GC/MS	EPA 8260C	m+p-xylene
GC/MS	EPA 8260C	o-xylene
GC/MS	EPA 8260C	cis-1,2-Dichloroethylene
GC/MS	EPA 8260C	cis-1,3-Dichloropropene
GC/MS	EPA 8260C	Dibromochloromethane

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
GC/MS	EPA 8260C	Dibromomethane
GC/MS	EPA 8260C	Dichlorodifluoromethane
GC/MS	EPA 8260C	Ethyl methacrylate
GC/MS	EPA 8260C	Ethylbenzene
GC/MS	EPA 8260C	Hexachlorobutadiene
GC/MS	EPA 8260C	Isopropylbenzene
GC/MS	EPA 8260C	Methacrylonitrile
GC/MS	EPA 8260C	Methyl bromide (Bromomethane)
GC/MS	EPA 8260C	Methyl chloride (Chloromethane)
GC/MS	EPA 8260C	Methyl tert-butyl ether (MTBE)
GC/MS	EPA 8260C	Methylene chloride
GC/MS	EPA 8260C	Naphthalene
GC/MS	EPA 8260C	n-Butylbenzene
GC/MS	EPA 8260C	n-Propylbenzene
GC/MS	EPA 8260C	p-Dioxane
GC/MS	EPA 8260C	p-Isopropyltoluene
GC/MS	EPA 8260C	sec-Butylbenzene
GC/MS	EPA 8260C	Styrene
GC/MS	EPA 8260C	tert-butyl alcohol
GC/MS	EPA 8260C	tert-Butylbenzene
GC/MS	EPA 8260C	Tetrachloroethylene (Perchloroethylene)
GC/MS	EPA 8260C	Toluene
GC/MS	EPA 8260C	trans-1,2-Dichloroethylene
GC/MS	EPA 8260C	trans-1,3-Dichloropropylene
GC/MS	EPA 8260C	trans-1,4-Dichloro-2-butene
GC/MS	EPA 8260C	Trichloroethene (Trichloroethylene)
GC/MS	EPA 8260C	Trichlorofluoromethane

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
GC/MS	EPA 8260C	Vinyl acetate
GC/MS	EPA 8260C	Vinyl chloride
GC/MS	EPA 8260C	Xylene (total)
GC/MS	EPA 8260C	Cyclohexane
GC/MS	EPA 8260C	Diethyl Ether
GC/MS	EPA 8260C	Diisopropyl ether
GC/MS	EPA 8260C	Hexachloroethane
GC/MS	EPA 8260C	Isopropyl Acetate
GC/MS	EPA 8260C	Methyl Acetate
GC/MS	EPA 8260C	Methyl Iodide
GC/MS	EPA 8260C	Methyl methacrylate
GC/MS	EPA 8260C	Tetrahydrofuran
GC/MS	EPA 8270D	1,2,4,5-Tetrachlorobenzene
GC/MS	EPA 8270D	1,2,4-Trichlorobenzene
GC/MS	EPA 8270D	1,2-Dichlorobenzene
GC/MS	EPA 8270D	1,2-Diphenylhydrazine
GC/MS	EPA 8270D	1,3-Dichlorobenzene
GC/MS	EPA 8270D	1,4-Dichlorobenzene
GC/MS	EPA 8270D	2,3,4,6-Tetrachlorophenol
GC/MS	EPA 8270D	2,4,5-Trichlorophenol
GC/MS	EPA 8270D	2,4,6-Trichlorophenol
GC/MS	EPA 8270D	2,4-Dichlorophenol
GC/MS	EPA 8270D	2,4-Dimethylphenol
GC/MS	EPA 8270D	2,4-Dinitrophenol
GC/MS	EPA 8270D	2,4-Dinitrotoluene (2,4-DNT)
GC/MS	EPA 8270D	2,6-Dinitrotoluene (2,6-DNT)
GC/MS	EPA 8270D	2-Chloronaphthalene

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
GC/MS	EPA 8270D	2-Chlorophenol
GC/MS	EPA 8270D	2-Methyl-4,6-dinitrophenol
GC/MS	EPA 8270D	2-Methylnaphthalene
GC/MS	EPA 8270D	2-Methylphenol (o-Cresol)
GC/MS	EPA 8270D	2-Nitroaniline
GC/MS	EPA 8270D	2-Nitrophenol
GC/MS	EPA 8270D	3,3`-Dichlorobenzidine
GC/MS	EPA 8270D	3+4-Methylphenol
GC/MS	EPA 8270D	3-Nitroaniline
GC/MS	EPA 8270D	4-Bromophenyl phenyl ether
GC/MS	EPA 8270D	4-Chloro-3-methylphenol
GC/MS	EPA 8270D	4-Chloroaniline
GC/MS	EPA 8270D	4-Chlorophenyl phenylether
GC/MS	EPA 8270D	4-Nitroaniline
GC/MS	EPA 8270D	4-Nitrophenol
GC/MS	EPA 8270D	Acenaphthene
GC/MS	EPA 8270D	Acenaphthylene
GC/MS	EPA 8270D	Acetophenone
GC/MS	EPA 8270D	Aniline
GC/MS	EPA 8270D	Anthracene
GC/MS	EPA 8270D	Benzidine
GC/MS	EPA 8270D	Benzo(a)anthracene
GC/MS	EPA 8270D	Benzo(a)pyrene
GC/MS	EPA 8270D	Benzo(b)fluoranthene
GC/MS	EPA 8270D	Benzo(g,h,i)perylene
GC/MS	EPA 8270D	Benzo(k)fluoranthene
GC/MS	EPA 8270D	Benzoic acid

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
GC/MS	EPA 8270D	Benzyl alcohol
GC/MS	EPA 8270D	bis(2-Chloroethoxy)methane
GC/MS	EPA 8270D	bis(2-Chloroethyl) ether
GC/MS	EPA 8270D	bis(2-Chloroisopropyl) ether (2,2`-Oxybis(1-chloropropane))
GC/MS	EPA 8270D	bis(2-Ethylhexyl) phthalate (DEHP)
GC/MS	EPA 8270D	Butyl benzyl phthalate
GC/MS	EPA 8270D	Carbazole
GC/MS	EPA 8270D	Chrysene
GC/MS	EPA 8270D	Dibenz(a,h)anthracene
GC/MS	EPA 8270D	Dibenzofuran
GC/MS	EPA 8270D	Diethyl phthalate
GC/MS	EPA 8270D	Dimethyl phthalate
GC/MS	EPA 8270D	Di-n-butyl phthalate
GC/MS	EPA 8270D	Di-n-octyl phthalate
GC/MS	EPA 8270D	Diphenylamine
GC/MS	EPA 8270D	Fluoranthene
GC/MS	EPA 8270D	Fluorene
GC/MS	EPA 8270D	Hexachlorobenzene
GC/MS	EPA 8270D	Hexachlorobutadiene
GC/MS	EPA 8270D	Hexachlorocyclopentadiene
GC/MS	EPA 8270D	Hexachloroethane
GC/MS	EPA 8270D	Indeno(1,2,3-cd)pyrene
GC/MS	EPA 8270D	Isophorone
GC/MS	EPA 8270D	Naphthalene
GC/MS	EPA 8270D	Nitrobenzene
GC/MS	EPA 8270D	n-Nitrosodimethylamine
GC/MS	EPA 8270D	n-Nitroso-di-n-butylamine

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
GC/MS	EPA 8270D	n-Nitrosodi-n-propylamine
GC/MS	EPA 8270D	n-Nitrosodiphenylamine
GC/MS	EPA 8270D	Pentachlorophenol
GC/MS	EPA 8270D	Phenanthrene
GC/MS	EPA 8270D	Phenol
GC/MS	EPA 8270D	Butylbenzylphthalate
GC/MS	EPA 8270D	Pyridine
GC/MS	EPA 8270D	Pyridine
GC/MS	EPA 8270D	1,4-Dioxane
GC/MS	EPA 8270D	1,1'-Biphenyl
GC/MS	EPA 8270D	Atrazine
GC/MS	EPA 8270D	Benzaldehyde
GC/MS	EPA 8270D	Caprolactam
GC/MS	EPA 8270D	Azobenzene
GC/MS	EPA 8270D SIM	1,4-Dioxane
GC/MS	EPA 8270D SIM	2-Methylnaphthalene
GC/MS	EPA 8270D SIM	Acenaphthene
GC/MS	EPA 8270D SIM	Acenaphthylene
GC/MS	EPA 8270D SIM	Anthracene
GC/MS	EPA 8270D SIM	Benzo(a)anthracene
GC/MS	EPA 8270D SIM	Benzo(a)pyrene
GC/MS	EPA 8270D SIM	Benzo(b)fluoranthene
GC/MS	EPA 8270D SIM	Benzo(g,h,i)perylene
GC/MS	EPA 8270D SIM	Benzo(k)fluoranthene
GC/MS	EPA 8270D SIM	Chrysene
GC/MS	EPA 8270D SIM	Dibenzo(a,h)anthracene
GC/MS	EPA 8270D SIM	Fluoranthene

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
GC/MS	EPA 8270D SIM	Fluorene
GC/MS	EPA 8270D SIM	Indeno(1,2,3-cd)pyrene
GC/MS	EPA 8270D SIM	Naphthalene
GC/MS	EPA 8270D SIM	Phenanthrene
GC/MS	EPA 8270D SIM	Pyrene
Colorimetric	EPA 9012B	Total cyanide
CVAA	EPA 7471B	Mercury
Gravimetric	EPA 9071B	Oil & Grease
Colorimetric	HACH 8146	Ferrous Iron
IC	EPA 9056A	Nitrite
IC	EPA 9056A	Nitrate
IC	EPA 9056A	Bromide
IC	EPA 9056A	Chloride
IC	EPA 9056A	Fluoride
IC	EPA 9056A	O-phosphate
IC	EPA 9056A	Sulfate
ICP	EPA 6010D	Aluminum
ICP	EPA 6010D	Antimony
ICP	EPA 6010D	Arsenic
ICP	EPA 6010D	Barium
ICP	EPA 6010D	Beryllium
ICP	EPA 6010D	Boron
ICP	EPA 6010D	Cadmium
ICP	EPA 6010D	Calcium
ICP	EPA 6010D	Chromium
ICP	EPA 6010D	Cobalt
ICP	EPA 6010D	Copper

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
ICP	EPA 6010D	Iron
ICP	EPA 6010D	Lead
ICP	EPA 6010D	Magnesium
ICP	EPA 6010D	Manganese
ICP	EPA 6010D	Molybdenum
ICP	EPA 6010D	Nickel
ICP	EPA 6010D	Potassium
ICP	EPA 6010D	Selenium
ICP	EPA 6010D	Silicon
ICP	EPA 6010D	Silver
ICP	EPA 6010D	Sodium
ICP	EPA 6010D	Thallium
ICP	EPA 6010D	Tin
ICP	EPA 6010D	Titanium
ICP	EPA 6010D	Vanadium
ICP	EPA 6010D	Zinc
ICP-MS	EPA 6020B	Aluminum
ICP-MS	EPA 6020B	Antimony
ICP-MS	EPA 6020B	Arsenic
ICP-MS	EPA 6020B	Barium
ICP-MS	EPA 6020B	Beryllium
ICP-MS	EPA 6020B	Boron
ICP-MS	EPA 6020B	Cadmium
ICP-MS	EPA 6020B	Calcium
ICP-MS	EPA 6020B	Chromium
ICP-MS	EPA 6020B	Cobalt
ICP-MS	EPA 6020B	Copper

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
ICP-MS	EPA 6020B	Iron
ICP-MS	EPA 6020B	Lead
ICP-MS	EPA 6020B	Magnesium
ICP-MS	EPA 6020B	Manganese
ICP-MS	EPA 6020B	Molybdenum
ICP-MS	EPA 6020B	Nickel
ICP-MS	EPA 6020B	Potassium
ICP-MS	EPA 6020B	Selenium
ICP-MS	EPA 6020B	Silicon
ICP-MS	EPA 6020B	Silver
ICP-MS	EPA 6020B	Sodium
ICP-MS	EPA 6020B	Thallium
ICP-MS	EPA 6020B	Tin
ICP-MS	EPA 6020B	Titanium
ICP-MS	EPA 6020B	Vanadium
ICP-MS	EPA 6020B	Zinc
ICP/Titrimetric	Chemtech SOP M-AVS	AVS/SEM
pH Paper	EPA 9041A	pH
Probe	EPA 9045C	pH
ISE	EPA 9040C	pH/Corrosivity
TOC	EPA 9060 Mod/ 9060A Mod	Total organic carbon
TOC	Lloyd Kahn Method	Total organic carbon
Physical	EPA 1010A	Ignitability
Titrimetric	EPA 9034	Sulfide
Turbidimetric	EPA 9038	Sulfate
Physical	EPA 9095A/B	Paint Filter Liquids Test

Solid and Chemical Materials		
Technology	**Method**	**Analyte**
UV/VIS	EPA 7196A	Chromium VI
UV/VIS	EPA 9012B	Total cyanide
UV/VIS	EPA 9065	Total phenolics
Preparation	**Method**	**Type**
Preparation	EPA 3060A	Chromium VI
Distillation	EPA 9010C	Total cyanide
Distillation	EPA 9013	Total cyanide
Preparation	EPA 1311	Toxicity Characteristic Leaching Procedure
Preparation	EPA 1312	SPLP
Organic Preparation	EPA 3541	Automated Soxhlet Extraction
Clean Up	EPA 3620C	Florisil Cleanup
Clean Up	EPA 3630C	Silica Gel Cleanup
Clean Up	EPA 3640A	Gel-Permeation Cleanup
Clean Up	EPA 3660	Sulfur Cleanup
Clean Up	EPA 3665A	Sulfuric Acid Permanganate Cleanup
Inorganics Preparation	EPA 3050B	Hotblock
Volatile Organics Preparation	EPA 5035A	Closed System Purge and Trap
Organic Preparation	EPA 3580A	Waste dilution
Distillation	EPA 9030B	Sulfide
Extraction/Titrimetric	EPA 9031	Sulfide
Soxhlet	EPA 3540C	Extraction Preparation Method

Note:

1. This scope is formatted as part of a single document including Certificate of Accreditation No. L2219.

Vice President

Laboratory Certification Documentation - Eurofins Lancaster Environmental Laboratories LLC

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

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ENVIRONMENTAL

Valid To: November 30, 2022 Certificate Number: 0001.01

In recognition of the successful completion of the A2LA evaluation process (including an assessment of the laboratory's compliance with the 2009 TNI Environmental Testing Laboratory Standard, and the requirements of the DoD Environmental Laboratory Accreditation Program (DoD ELAP) as detailed in version 5.3 of the DoD/DOE Quality Systems Manual for Environmental Laboratories, accreditation is granted to this laboratory to perform recognized EPA methods using the following testing technologies and in the analyte categories identified below:

Testing Technologies

Atomic Absorption/ICP-AES Spectrometry, ICP-MS Spectrometry, Gas Chromatography, Gas Chromatography/Mass Spectrometry, Gravimetry, High Performance Liquid Chromatography, Ion Chromatography, Misc.-Electronic Probes (pH, F^-, O_2), Oxygen Demand, Spectrophotometry (Visible), Spectrophotometry (Automated), Titrimetry, TCLP, Total Organic Carbon, Turbidity, Liquid Chromatography/Mass Spectrometry/Mass Spectrometry, High Resolution Gas Chromatography/Mass Spectrometry

Parameter/Analyte	Drinking Water	Non-Potable Water	Solid Hazardous Waste	
			Aqueous	Solid
Demands				
COD	----------	EPA 410.4	----------	----------
Total Organic Carbon	----------	EPA 9060A SM 5310C-2011	EPA 9060A SM 5310C-2011	EPA 9060A SM 5310 B-2011
Anions				
Ammonia	----------	EPA 350.1	EPA 350.1	SM 4500-NH3 B/C-2011
Fluoride	----------	EPA 300.0 EPA 9056A	EPA 9056A	EPA 9056A EPA 300.0
Nitrate (as N)	----------	EPA 300.0 EPA 9056A	EPA 9056A	EPA 9056A EPA 300.0
Nitrite (as N)	----------	EPA 300.0 EPA 9056A	EPA 9056A	EPA 9056A EPA 300.0

Parameter/Analyte	Drinking Water	Non-Potable Water	Solid Hazardous Waste	
			Aqueous	Solid
Bromide	----------	EPA 300.0 EPA 9056A	EPA 9056A	EPA 9056A EPA 300.0
Chloride	----------	EPA 300.0 EPA 9056A	EPA 9056A	EPA 9056A EPA 300.0
Sulfate	----------	EPA 300.0 EPA 9056A	EPA 9056A	EPA 9056A EPA 300.0
Wet Chemistry				
Alkalinity	----------	SM 2320B-2011	----------	----------
Corrosivity	----------	----------	SW-846 Chapter 7	SW-846 Chapter 7
Cyanide	----------	EPA 9012B	EPA 9012B	EPA 9012B
Filterable Residue (TDS)	----------	SM 2540C-2011	----------	----------
Flashpoint	----------	----------	EPA1010A	EPA 1010A
Grain Size	----------	----------	----------	ASTM D422
Hexavalent Chromium Digestion	----------	----------	----------	EPA 3060A
Hexavalent Chromium	----------	EPA 7196A EPA 7199	EPA 7196A EPA 7199	EPA 7196A EPA 7199
Ignitability	----------	----------	40 CFR 261.21	40 CFR 261.21
Nitrate/Nitrite	----------	----------	EPA 353.2	----------
Non-filterable Residue (TSS)	----------	SM 2540D-2011	----------	----------
pH	----------	SM 4500 H+B-2011 EPA 9040B EPA 9040C	EPA 9040B EPA 9040C	EPA 9045C EPA 9045D
Phenol	----------	EPA 9066	EPA 9066	----------
Reactivity	----------	----------	SW-846 Chapter 7.3	SW-846 Chapter 7.3
Sulfide	----------	EPA 376.1 EPA 376.2 SM 4500 S2D-2011 SM 4500 S2F-2011	----------	----------
Total Residue	----------	SM 2540B-2011	----------	SM 2540G-2011
Metals				
Metals Digestion	----------	EPA 3005A EPA 3010A EPA 3020A	EPA 3010A EPA 3020A	EPA 3050B
Aluminum	----------	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B
Antimony	----------	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B
Arsenic	----------	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B

Parameter/Analyte	Drinking Water	Non-Potable Water	Solid Hazardous Waste	
			Aqueous	Solid
Barium	----------	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B
Beryllium	----------	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B
Boron	----------	EPA 6010C EPA 6010D	EPA 6010C EPA 6010D	EPA 6010C EPA 6010D
Cadmium	----------	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B
Calcium	----------	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B
Chromium	----------	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B
Cobalt	----------	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B
Copper	----------	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B
Iron	----------	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B
Lead	----------	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B
Lithium	----------	EPA 6010C EPA 6010D	EPA 6010C EPA 6010D	EPA 6010C EPA 6010D
Molybdenum	----------	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B
Magnesium	----------	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B

Parameter/Analyte	Drinking Water	Non-Potable Water	Solid Hazardous Waste	
			Aqueous	Solid
Manganese	----------	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B
Mercury	----------	EPA 7470A	EPA 7470A	EPA 7471A EPA 7471B
Nickel	----------	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B
Potassium	----------	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B
Selenium	----------	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B
Silicon	----------	EPA 6010C EPA 6010D	EPA 6010C EPA 6010D	EPA 6010C EPA 6010D
Silver	----------	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B
Sodium	----------	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B
Strontium	----------	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B
Sulfur	----------	EPA 6010C EPA 6010D	EPA 6010C EPA 6010D	EPA 6010C EPA 6010D
Thallium	----------	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B
Thorium	----------	EPA 6010C EPA 6010D	EPA 6010C EPA 6010D	EPA 6010C EPA 6010D
Tin	----------	EPA 6010C EPA 6010D	EPA 6010C EPA 6010D	EPA 6010C EPA 6010D
Titanium	----------	EPA 6010C EPA 6010D	EPA 6010C EPA 6010D	EPA 6010C EPA 6010D
Tungsten	----------	EPA 6010C EPA 6010D	EPA 6010C EPA 6010D	EPA 6010C EPA 6010D

Parameter/Analyte	Drinking Water	Non-Potable Water	Solid Hazardous Waste	
			Aqueous	Solid
Uranium	----------	EPA 6020A EPA 6020B	EPA 6020A EPA 6020B	EPA 6020A EPA 6020B
Vanadium	----------	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B
Zinc	----------	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B	EPA 6010C EPA 6010D EPA 6020A EPA 6020B
Zirconium	----------	EPA 6010C EPA 6010D	EPA 6010C EPA 6010D	EPA 6010C EPA 6010D
Purgeable Organics (Volatiles)				
Volatile Preparation	----------	EPA 5030C	EPA 5030C	EPA 5035A
Acetone	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Acetonitrile	----------	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Acrolein	----------	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Acrylonitrile	----------	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Allyl chloride	----------	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
tert-Amyl Alcohol	----------	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
tert-Amyl Methyl Ether	----------	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
tert-Butyl Alcohol	----------	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
tert-Butyl Formate	----------	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Benzene	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Bromobenzene	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Bromochloromethane	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Bromodichloromethane	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Bromoform	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Bromomethane	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
2-Butanone	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
n-Butylbenzene	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
sec-Butylbenzene	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
tert-Butylbenzene	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Carbon disulfide	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Carbon tetrachloride	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
2-Chloro-1,3-butadiene	----------	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Chloroacetonitrile	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Chlorobenzene	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
1-Chlorobutane	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Chlorodifluoromethane	----------	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Chloroethane	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
2-Chloroethyl Vinyl Ether	----------	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Chloroform	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D

Parameter/Analyte	Drinking Water	Non-Potable Water	Solid Hazardous Waste	
			Aqueous	Solid
1-Chlorohexane	----------	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Chloromethane	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
2-Chlorotoluene	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
4-Chlorotoluene	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Cyclohexane	----------	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Cyclohexanone	----------	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Di-Isopropyl ether	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Dibromochloromethane	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
1,2-Dibromo-3-chloropropane	EPA 524.2	EPA 8260C/D EPA 8011	EPA 8260C/D EPA 8011	EPA 8260C/D
Dibromomethane	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
1,2-Dibromoethane (EDB)	----------	EPA 8260C/D EPA 8011	EPA 8260C/D EPA 8011	EPA 8260C/D
1,2-Dichlorobenzene	----------	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
1,3-Dichlorobenzene	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
1,4-Dichlorobenzene	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
trans-1,4-dichloro-2-butene	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Dichlorodi-fluoromethane	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
1,1-Dichloroethane	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
1,2-Dichloroethane	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
1,1-Dichloroethene	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
cis-1,2-Dichloroethene	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
trans-1,2-Dichloroethene	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Dichlorofluoromethane	EPA 524.2	----------	----------	----------
1,2-Dichloropropane	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
1,3-Dichloropropane	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
2,2-Dichloropropane	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
1,1-Dichloropropene	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
cis-1,3-Dichloropropene	----------	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
trans-1,3-Dichloropropene	----------	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
1,4-Dioxane	----------	EPA 8260C/D EPA 8260C/D SIM	EPA 8260C/D EPA 8260C/D SIM	EPA 8260C/D EPA 8260C/D SIM
Ethanol	----------	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Ethylbenzene	----------	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Ethyl ether	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Ethyl Methacrylate	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Ethyl Tert-Butyl Ether	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Freon-113	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Gasoline Range Organics (GRO) [Volatile Petroleum Hydrocarbons (VPH)]	----------	EPA 8015C EPA 8015D EPA 8260C/D NW TPH-Gx MA VPH AK101	EPA 8015C EPA 8015D EPA 8260C/D NW TPH-Gx MA VPH AK101	EPA 8015C EPA 8015D EPA 8260C/D NW TPH-Gx MA VPH AK101
Heptane	----------	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Hexane	----------	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
2-Hexanone	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D

Parameter/Analyte	Potable Water	Non-Potable Water	Solid Hazardous Waste	
			Aqueous	Solid
Hexachlorobutadiene	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Hexachloroethane	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Isobutyl Alcohol	----------	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Isopropyl Alcohol	----------	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Isopropylbenzene	----------	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
1,4-Isopropyltoluene	----------	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Methylacrylonitrile	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Methyl Acetate		EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Methyl Acrylate	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Methyl Iodide	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Methyl Ethyl ketone	----------	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Methylene Chloride	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Methyl Isobutyl Ketone	----------	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Methyl Methacrylate	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Methyl Tert-Butyl Ether	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
4-Methyl-2-pentanone	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Methylcyclohexane		EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
2-Nitropropane	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Naphthalene	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Pentachloroethane	----------	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Propionitrile	----------	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
n-Propylbenzene	----------	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Styrene	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Tert-Amyl Ethyl Ether		EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
1,1,1,2-Tetrachloroethane	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
1,1,2,2-Tetrachloroethane	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Tetrachloroethene	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Tetrahydrofuran	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Toluene	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
1,2,3-Trichlorobenzene	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
1,2,4-Trichlorobenzene	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
1,1,1-Trichloroethane	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
1,1,2-Trichloroethane	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Trichloroethene	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Trichlorofluoromethane	----------	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
1,2,3-Trichloropropane	----------	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
1,2,4-Trimethylbenzene	----------	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
1,3,5-Trimethylbenzene	----------	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Vinyl Acetate	----------	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Vinyl Chloride	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
Xylenes, Total	----------	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
1,2-Xylene (o-Xylene)	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D
1,3+1,4-Xylene (m+p Xylene)	EPA 524.2	EPA 8260C/D	EPA 8260C/D	EPA 8260C/D

Parameter/Analyte	Potable Water	Non-Potable Water	Solid Hazardous Waste	
			Aqueous	Solid
Extractable Organics (Semivolatiles)				
Acenaphthene	----------	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM
Acenaphthylene	----------	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM
Acetophenone	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
2-Acetylaminofluorene	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Alkylated PAHs	----------	EPA 8270D/E SIM	EPA 8270D/E SIM	EPA 8270D/E SIM
4-Aminobiphenyl	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
2-Amino-4,6-dinitrotoluene	----------	EPA 8330B	EPA 8330B	EPA 8330B
4-Amino-2,6-dinitrotoluene	----------	EPA 8330B	EPA 8330B	EPA 8330B
Aniline	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Anthracene	----------	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM
Atrazine	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Benzaldehyde	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Benzidine	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Benzoic acid	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Benzo (a) anthracene	----------	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM
Benzo (b) fluoranthene	----------	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM
Benzo (k) fluoranthene	----------	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM
Benzo (ghi) perylene	----------	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM
Benzo (a) pyrene	----------	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM
Benzo (e) pyrene	----------	EPA 8270D/E SIM	EPA 8270D/E SIM	EPA 8270D/E SIM
Benzyl Alcohol	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Biphenyl	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
bis (2-Chloroethoxy) Methane	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
bis (2-Chloroethyl) Ether	----------	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM
bis (2-Chloroisopropyl) Ether	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
bis (2-Ethylhexyl) Phthalate	----------	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM
4-Bromophenylphenyl Ether	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Butyl benzyl Phthalate	----------	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM

Parameter/Analyte	Potable Water	Non-Potable Water	Solid Hazardous Waste	
			Aqueous	Solid
Caprolactam	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Carbazole	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Carbon Range Organics C8-C44 (including subsets of this range i.e. HRO, MRO, ORO, RRO)	----------	EPA 8015C EPA 8015D	EPA 8015C EPA 8015D	EPA 8015C EPA 8015D
4-Chloroaniline	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
4-Chloro-3-methylphenol	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Chlorobenzilate	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
1-Chloronaphthalene	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
2-Chloronaphthalene	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
2-Chlorophenol	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
4-Chlorophenyl phenyl ether	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Chrysene	----------	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM
Cresols (Methyl phenols)	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
cis-/trans-Diallate	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
2,4-Diamino-6-nitrotoluene	----------	EPA 8330B	EPA 8330B	EPA 8330B
2,6-Diamino-4-nitrotoluene	----------	EPA 8330B	EPA 8330B	EPA 8330B
Dibenzo (a,h) acridine	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Dibenzo (a,h) anthracene	----------	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM
Dibenzofuran	----------	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM
1,2-Dichlorobenzene	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
1,3-Dichlorobenzene	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
1,4-Dichlorobenzene	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
3,3-Dichlorobenzidine	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Diesel Range Organics (DRO) [Extractable Petroleum Hydrocarbons (EPH)]	----------	EPA 8015C EPA 8015D NWTPH DX MA EPH TX1005/1006 AK102/103 AK102/103-SV	EPA 8015C EPA 8015D NWTPH DX MA EPH TX1005/1006 AK102/103 AK102/103-SV	EPA 8015C EPA 8015D NWTPH DX MA EPH TX1005/1006 AK102/103
2,4-Dichlorophenol	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
2,6-Dichlorophenol	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Diethyl Phthalate	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Dimethoate	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
p-Dimethylaminoazobenze	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
7,12-Dimethylbenz (a) anthracene	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
2,4-Dimethylphenol	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Dimethyl Phthalate	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
3,3'-Dimethylbenzidine	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E

Parameter/Analyte	Potable Water	Non-Potable Water	Solid Hazardous Waste	
			Aqueous	Solid
Di-n-butyl Phthalate	----------	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM
Di-n-octyl phthalate	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
3,5-Dinitroaniline	----------	EPA 8330B	EPA 8330B	EPA 8330B
1,3-Dinitrobenzene	----------	EPA 8270D/E EPA 8330B	EPA 8270D/E EPA 8330B	EPA 8270D/E EPA 8330B
1,4-Dinitrobenzene	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
2,4-Dinitrophenol	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
2,4-Dinitrotoluene	----------	EPA 8270D/E EPA 8330B	EPA 8270D/E EPA 8330B	EPA 8270D/E EPA 8330B
2,6-Dinitrotoluene	----------	EPA 8270D/E EPA 8330B	EPA 8270D/E EPA 8330B	EPA 8270D/E EPA 8330B
1,4-Dioxane	----------	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM
Diphenylamine	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Diphenyl ether	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
1,2-Diphenylhydrazine	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Ethyl Methane Sulfonate	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Fluoroanthene	----------	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM
Fluorene	----------	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM
Hexachlorobenzene	----------	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM
Hexachlorobutadiene	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Hexachlorocyclo-pentadiene	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Hexachloroethane	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Hexachloropropene	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	----------	EPA 8330B	EPA 8330B	EPA 8330B
Indeno (1,2,3-cd) Pyrene	----------	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM
Isodrin	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Isophorone	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E

Parameter/Analyte	Potable Water	Non-Potable Water	Solid Hazardous Waste	
			Aqueous	Solid
Isosafrole	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
3-Methycholanthrene	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
2-Methyl-4,6-dinitrophenol	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Methyl methane sulfonate	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
1-Methylnaphthalene	----------	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM
2-Methylnaphthalene	----------	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM
2-Methylphenol	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
4-Methylphenol	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Naphthalene	----------	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM
1,4-Naphthoquinone	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
1-Naphthylamine	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
2-Naphthylamine	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
4-Nitroquinoline-1-oxide	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
2-Nitroaniline	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
3-Nitroaniline	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
4-Nitroaniline	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Nitrobenzene	----------	EPA 8270D/E EPA 8330B	EPA 8270D/E EPA 8330B	EPA 8270D/E EPA 8330B
Nitroglycerin	----------	EPA 8330B	EPA 8330B	EPA 8330B
2-Nitrophenol	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
4-Nitrophenol	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
2-Nitrotoluene	----------	EPA 8330B	EPA 8330B	EPA 8330B
3-Nitrotoluene	----------	EPA 8330B	EPA 8330B	EPA 8330B
4-Nitrotoluene	----------	EPA 8330B	EPA 8330B	EPA 8330B
5-Nitro-o-toluidine	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
n-Nitroso-di-n-butylamine	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
n-Nitrosodiethylamine	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
n-Nitrosodimethylamine	----------	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM
n-Nitrosomethylethylamine	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
n-Nitrosomorpholine	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
n-Nitrosodi-n-propylamine	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
n-Nitrosodiphenylamine	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
n-Nitrosopiperidine	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
n-Nitrosopyrrolidine	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	----------	EPA 8330B	EPA 8330B	EPA 8330B

Parameter/Analyte	Potable Water	Non-Potable Water	Solid Hazardous Waste	
			Aqueous	Solid
2,2-Oxybis (1-chloropropane)	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Pentachlorobenzene	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Pentachloronitrobenzene	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Pentachlorophenol	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Pentaerythritol Tetranitrate (PETN)	----------	EPA 8330B	EPA 8330B	EPA 8330B
Perylene	----------	EPA 8270D/E SIM	EPA 8270D/E SIM	EPA 8270D/E SIM
Phenacetin	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Phenanthrene	----------	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM
Phenol	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
2-Picoline	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Pronamide	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Pyrene	----------	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM	EPA 8270D/E EPA 8270D/E SIM
Pyridine	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Safrole	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
1,2,4,5- Tetrachlorobenzene	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
2,3,4,6-Tetrachlorophenol	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Tetraethyl dithiopyrophosphate	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Tetraethy lead	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Tetryl	----------	EPA 8330B	EPA 8330B	EPA 8330B
Thionazin	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
o-Toluidine	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
1,2,4-Trichlorobenzene	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
1,3,5-Trinitrobenzene	----------	EPA 8330B	EPA 8330B	EPA 8330B
2,4,5-Trichlorophenol	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
2,4,6-Trichlorophenol	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
O,O,O-Tri-ethylphosphorothioate	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
2,4,6-Trinitrotoluene	----------	EPA 8330B	EPA 8330B	EPA 8330B
Organochlorine Pesticides				
Aldrin	----------	EPA 8081B	EPA 8081B	EPA 8081B
alpha-BHC	----------	EPA 8081B	EPA 8081B	EPA 8081B
beta-BHC	----------	EPA 8081B	EPA 8081B	EPA 8081B
delta-BHC	----------	EPA 8081B	EPA 8081B	EPA 8081B
gamma-BHC (Lindane)	----------	EPA 8081B	EPA 8081B	EPA 8081B

Parameter/Analyte	Potable Water	Non-Potable Water	Solid Hazardous Waste	
			Aqueous	Solid
alpha-Chlordane	----------	EPA 8081B	EPA 8081B	EPA 8081B
Chlordane (Technical)	----------	EPA 8081B	EPA 8081B	EPA 8081B
Chlorobenzilate	----------	EPA 8081B	EPA 8081B	EPA 8081B
2,4'-DDD	----------	EPA 8081B	EPA 8081B	EPA 8081B
2,4'-DDE	----------	EPA 8081B	EPA 8081B	EPA 8081B
2,4'-DDT	----------	EPA 8081B	EPA 8081B	EPA 8081B
4,4'-DDD	----------	EPA 8081B	EPA 8081B	EPA 8081B
4,4'-DDE	----------	EPA 8081B	EPA 8081B	EPA 8081B
4,4'-DDT	----------	EPA 8081B	EPA 8081B	EPA 8081B
Diallate	----------	EPA 8081B	EPA 8081B	EPA 8081B
1.2-Dibromo-3-chloropropane (DBCP)	----------	EPA 8081B	EPA 8081B	EPA 8081B
Dieldrin	----------	EPA 8081B	EPA 8081B	EPA 8081B
Dinoseb	----------	EPA 8270D/E	EPA 8270D/E	EPA 8270D/E
Endosulfan I (alpha)	----------	EPA 8081B	EPA 8081B	EPA 8081B
Endosulfan II (beta)	----------	EPA 8081B	EPA 8081B	EPA 8081B
Endosulfan Sulfate	----------	EPA 8081B	EPA 8081B	EPA 8081B
Endrin	----------	EPA 8081B	EPA 8081B	EPA 8081B
Endrin Aldehyde	----------	EPA 8081B	EPA 8081B	EPA 8081B
Endrin Ketone	----------	EPA 8081B	EPA 8081B	EPA 8081B
gamma-Chlordane	----------	EPA 8081B	EPA 8081B	EPA 8081B
Heptachlor	----------	EPA 8081B	EPA 8081B	EPA 8081B
Heptachlor Epoxide	----------	EPA 8081B	EPA 8081B	EPA 8081B
Hexachlorobenzene	----------	EPA 8081B	EPA 8081B	EPA 8081B
Hexachlorocyclopentadiene	----------	EPA 8081B	EPA 8081B	EPA 8081B
Isodrin	----------	EPA 8081B	EPA 8081B	EPA 8081B
Methoxychlor	----------	EPA 8081B	EPA 8081B	EPA 8081B
Mirex	----------	EPA 8081B	EPA 8081B	EPA 8081B
Toxaphene	----------	EPA 8081B	EPA 8081B	EPA 8081B
PCBs (Aroclors)				
PCB-1016 (Arochlor)	----------	EPA 8082A	EPA 8082A	EPA 8082A
PCB-1221	----------	EPA 8082A	EPA 8082A	EPA 8082A
PCB-1232	----------	EPA 8082A	EPA 8082A	EPA 8082A
PCB-1242	----------	EPA 8082A	EPA 8082A	EPA 8082A
PCB-1248	----------	EPA 8082A	EPA 8082A	EPA 8082A
PCB-1254	----------	EPA 8082A	EPA 8082A	EPA 8082A
PCB-1260	----------	EPA 8082A	EPA 8082A	EPA 8082A
PCB-1262	----------	EPA 8082A	EPA 8082A	EPA 8082A
PCB-1268	----------	EPA 8082A	EPA 8082A	EPA 8082A
PCB congeners (209)	----------	EPA 1668A EPA 1668C	EPA 1668A EPA 1668C	EPA 1668A EPA 1668C

Parameter/Analyte	Potable Water	Non-Potable Water	Solid Hazardous Waste	
			Aqueous	Solid
Herbicides				
2,4,5-T	----------	EPA 8151A	EPA 8151A	EPA 8151A
2,4,5-TP (Silvex)	----------	EPA 8151A	EPA 8151A	EPA 8151A
2,4-D	----------	EPA 8151A	EPA 8151A	EPA 8151A
2,4-DB	----------	EPA 8151A	EPA 8151A	EPA 8151A
Dalapon	----------	EPA 8151A	EPA 8151A	EPA 8151A
Dicamba	----------	EPA 8151A	EPA 8151A	EPA 8151A
Dichlorprop	----------	EPA 8151A	EPA 8151A	EPA 8151A
Dinoseb	----------	EPA 8151A	EPA 8151A	EPA 8151A
MCPA	----------	EPA 8151A	EPA 8151A	EPA 8151A
MCPP	----------	EPA 8151A	EPA 8151A	EPA 8151A
Pentachlorophenol	----------	EPA 8151A	EPA 8151A	EPA 8151A
PCB Homologues				
Monochlorobiphenyls	----------	EPA 680	EPA 680	EPA 680
Dichlorobiphenyls	----------	EPA 680	EPA 680	EPA 680
Trichlorobiphenyls	----------	EPA 680	EPA 680	EPA 680
Tetrachlorobiphenyls	----------	EPA 680	EPA 680	EPA 680
Pentachlorobiphenyls	----------	EPA 680	EPA 680	EPA 680
Hexachlorobiphenyls	----------	EPA 680	EPA 680	EPA 680
Heptachlorobiphenyls	----------	EPA 680	EPA 680	EPA 680
Octachlorobiphenyls	----------	EPA 680	EPA 680	EPA 680
Nonachlorobiphenyls	----------	EPA 680	EPA 680	EPA 680
Decachlorobiphenyls	----------	EPA 680	EPA 680	EPA 680
Dioxins/Furans				
2,3,7,8-TCDD	EPA 1613B	EPA 8290A	EPA 8290A	EPA 8290A
2,3,7,8-TCDF	----------	EPA 8290A	EPA 8290A	EPA 8290A
1,2,3,7,8-PeCDF	----------	EPA 8290A	EPA 8290A	EPA 8290A
2,3,4,7,8-PeCDF	----------	EPA 8290A	EPA 8290A	EPA 8290A
1,2,3,7,8-PeCDD	----------	EPA 8290A	EPA 8290A	EPA 8290A
1,2,3,4,7,8-HxCDF	----------	EPA 8290A	EPA 8290A	EPA 8290A
1,2,3,6,7,8-HxCDF	----------	EPA 8290A	EPA 8290A	EPA 8290A
2,3,4,6,7,8-HxCDF	----------	EPA 8290A	EPA 8290A	EPA 8290A
1,2,3,7,8,9-HxCDF	----------	EPA 8290A	EPA 8290A	EPA 8290A
1,2,3,4,7,8,-HxCDD	----------	EPA 8290A	EPA 8290A	EPA 8290A
1,2,3,6,7,8-HxCDD	----------	EPA 8290A	EPA 8290A	EPA 8290A
1,2,3,7,8,9-HxCDD	----------	EPA 8290A	EPA 8290A	EPA 8290A
1,2,3,4,6,7,8-HpCDF	----------	EPA 8290A	EPA 8290A	EPA 8290A
1,2,3,4,7,8,9-HpCDF	----------	EPA 8290A	EPA 8290A	EPA 8290A
1,2,3,4,6,7,8-HpCDD	----------	EPA 8290A	EPA 8290A	EPA 8290A
OCDF	----------	EPA 8290A	EPA 8290A	EPA 8290A
OCDD	----------	EPA 8290A	EPA 8290A	EPA 8290A
Total HpCDD	----------	EPA 8290A	EPA 8290A	EPA 8290A
Total HpCDF	----------	EPA 8290A	EPA 8290A	EPA 8290A
Total HxCDD	----------	EPA 8290A	EPA 8290A	EPA 8290A
Total HxCDF	----------	EPA 8290A	EPA 8290A	EPA 8290A
Total PeCDD	----------	EPA 8290A	EPA 8290A	EPA 8290A

Parameter/Analyte	Potable Water	Non-Potable Water	Solid Hazardous Waste	
			Aqueous	Solid
Total PeCDF	----------	EPA 8290A	EPA 8290A	EPA 8290A
Total TCDD	----------	EPA 8290A	EPA 8290A	EPA 8290A
Total TCDF	----------	EPA 8290A	EPA 8290A	EPA 8290A
Misc. Headspace Analysis				
Carbon dioxide	----------	RSK-175	RSK-175	----------
Ethane	----------	RSK-175	RSK-175	----------
Ethene	----------	RSK-175	RSK-175	----------
Methane	----------	RSK-175	RSK-175	----------
Hazardous Waste Characteristics				
Toxicity Characteristic Leaching Procedure	----------	----------	EPA 1311	EPA 1311
Synthetic Precipitation Leaching Procedure	----------	----------	EPA 1312	EPA 1312
ASTM Leaching Procedure	----------	----------	ASTM D3987-85	ASTM D3987-85
Other				
Perchlorate	----------	EPA 6850	EPA 6850	EPA 6850
Hydrazine	----------	EPA 8315A MOD	EPA 8315A MOD	EPA 8315A MOD
Formaldehyde	----------	----------	EPA 8315A	EPA 8315A
Methylhydrazine	----------	EPA 8315A MOD	EPA 8315A MOD	EPA 8315A MOD
1,1-Dimethylhydrazine	----------	EPA 8315A MOD	EPA 8315A MOD	EPA 8315A MOD
Volatile Preparation	----------	EPA 5030A EPA 5030C	EPA 5030A EPA 5030C	EPA 5035 EPA 5035A
Organic Extraction/Cleanup	----------	EPA 3510C EPA 3511 EPA 3660B, 3620C, 3665A	EPA 3510C EPA 3511 EPA 3660B, 3620C, 3665A	EPA 3546 EPA 3550C EPA 3660B, 3620C, 3665A, 3640A

Parameter/Analyte	Drinking Water	Nonpotable Water	Solid Haz.Waste
Per and Polyfluoroalkyl Substances (PFAS)			
N-ethyl Perfluorooctane-Sulfonamidoacetic Acid (NetFOSAA)	EPA 537 EPA 537.1	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15
N-methyl Perfluoroctane-Sulfonamidoacetic Acid (NMeFOSAA)	EPA 537 EPA 537.1	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15
Perfluorobutanesulfonic Acid (PFBS)	EPA 537 EPA 537.1	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15
Perfluorodecanoic Acid (PFDA)	EPA 537 EPA 537.1	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15

Parameter/Analyte	Drinking Water	Nonpotable Water	Solid Haz.Waste
Perfluorododecanoic Acid (PFDoDA)	EPA 537 EPA 537.1	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15
Perfluoroheptanoic Acid (PFHpA)	EPA 537 EPA 537.1	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15
Perfluorohexanesulfonic Acid (PFHxS)	EPA 537 EPA 537.1	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15
Perfluorohexanoic Acid (PFHxA)	EPA 537 EPA 537.1	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15
Perfluorononanoic Acid (PFNA)	EPA 537 EPA 537.1	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15
Perfluorooctanesulfonic Acid (PFOS)	EPA 537 EPA 537.1	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15
Perfluorooctanoic Acid (PFOA)	EPA 537 EPA 537.1	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15
Perfluorotetradecanoic Acid (PFTeDA)	EPA 537 EPA 537.1	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15
Perfluorotridecanoic Acid (PFTrDA)	EPA 537 EPA 537.1	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15
Perfluoroundecanoic Acid (PFUnDA)	EPA 537 EPA 537.1	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid (HFPODA)	EPA 537.1	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	EPA 537.1	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	EPA 537.1	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	EPA 537.1	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15
Perfluoro-n-butanoic Acid (PFBA)	----------	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15
Perfluoro-n-pentanoic Acid (PFPeA)	----------	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15

Parameter/Analyte	Drinking Water	Nonpotable Water	Solid Haz.Waste
8:2 Fluorotelomersulfonic Acid (8:2FTS)	----------	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15
4:2 Fluorotelomersulfonic Acid (4:2-FTS)	----------	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15
Perfluoropentanesulfonic Acid (PFPeS)	----------	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15
6:2 Fluorotelomersulfonic Acid (6:2-FTS)	----------	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15
Perfluoroheptanesulfonic Acid (PFHpS)	----------	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15
Perfluorononanesulfonic Acid (PFNS)	----------	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15
Perfluorodecanesulfonic Acid (PFDS)	----------	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15
10:2 Fluorotelomersulfonic Acid (10:2-FTS)	----------	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15
Perfluorododecanesulfonic Acid (PFDoDS)	----------	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15
Perfluorohexadecanoic Acid (PFHxDA)	----------	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15
Perfluorooctadecanoic Acid (PFODA)	----------	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15
Perfluorooctanesulfonamide (PFOSA)	----------	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15
2-(N-methylperfluoro-1-octanesulfonamido)-ethanol (NMePFOSAE)	----------	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15
N-methylperfluoro-1-octanesulfonamide (NMePFOSA)	----------	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15
(N-ethylperfluoro-1-octanesulfonamido)-ethanol (NEtPFOSAE)	----------	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15

Parameter/Analyte	Drinking Water	Nonpotable Water	Solid Haz.Waste
N-ethylperfluoro-1-octanesulfonamide (NEtPFOSA)	----------	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15	PFAS by LCMSMS Compliant with QSM 5.3 Table B-15

End of DoD ELAP section of scope

Start of KY, WY, and ISO 17025 section of scope

In addition, in recognition of the successful completion of the A2LA evaluation process (including an assessment of the laboratory's compliance with ISO IEC 17025:2017, the 2009 TNI Environmental Testing Laboratory Standard, and for the test methods applicable to Kentucky Statute KRS 224.60-130(2)(a), and for the test methods applicable to the Wyoming Storage Tank Remediation Laboratory Accreditation Program), accreditation is granted to this laboratory to perform recognized EPA methods using the following testing technologies and in the analyte categories identified below:

Testing Technologies

Atomic Absorption/ICP-AES Spectrometry, ICP-MS Spectrometry, Gas Chromatography, Gas Chromatography/Mass Spectrometry, Gravimetry, High Performance Liquid Chromatography, Ion Chromatography, Misc.-Electronic Probes (pH, F^-, O_2), Oxygen Demand, Spectrophotometry (Visible), Spectrophotometry (Automated), Titrimetry, TCLP, Total Organic Carbon, Turbidity, Liquid Chromatography/Mass Spectrometry/Mass Spectrometry, High Resolution Gas Chromatography/Mass Spectrometry

Parameter/Analyte	Tissue	Nonpotable Water	Solid Hazardous Waste	
			Aqueous	Solid
Other				
Perchlorate	Food & Food Products EPA 6850	EPA 6850	EPA 6850	EPA 6850
Hydrazine	----------	EPA 8315A MOD	EPA 8315A MOD	EPA 8315A MOD
Methylhydrazine	----------	EPA 8315A MOD	EPA 8315A MOD	EPA 8315A MOD
1,1-Dimethylhydrazine	----------	EPA 8315A MOD	EPA 8315A MOD	EPA 8315A MOD
Volatile Preparation	----------	EPA 5030A EPA 5030C	EPA 5030A EPA 5030C	EPA 5035 EPA 5035A
Organic Extraction/ Cleanup	EPA 3546 EPA 3550C EPA 3660B EPA 3620C EPA 3665A EPA 3640A	EPA 3510C EPA 3511 EPA 3660B EPA 3620C EPA 3665A	EPA 3510C EPA 3511 EPA 3660B EPA 3620C EPA 3665A	EPA 3546 EPA 3550C EPA 3660B EPA 3620C EPA 3665A EPA 3640A
Kentucky UST Program				
Metals				
Arsenic	----------	----------	EPA 6010B	EPA 6010B
Barium	----------	----------	EPA 6010B	EPA 6010B

Parameter/Analyte	Tissue	Nonpotable Water	Solid Hazardous Waste	
			Aqueous	Solid
Cadmium	----------	----------	EPA 6010B	EPA 6010B
Chromium	----------	----------	EPA 6010B	EPA 6010B
Lead	----------	----------	EPA 6010B	EPA 6010B
Mercury	----------	----------	EPA 7470A	EPA 7471A
Selenium	----------	----------	EPA 6010B	EPA 6010B
Silver	----------	----------	EPA 6010B	EPA 6010B

Parameter/Analyte	Tissue	Nonpotable Water	Solid Hazardous Waste	
			Aqueous	Solid
Purgeable Organics (Volatiles)				
Diesel Range Organics (DRO)	----------	EPA 8015C EPA 8015D	EPA 8015C EPA 8015D	EPA 8015C EPA 8015D
Gasoline Range Organics (GRO)	----------	EPA 8015C EPA 8015D	EPA 8015C EPA 8015D	EPA 8015C EPA 8015D
Wyoming Storage Tank Program				
Metals				
Cadmium	----------	----------	EPA 6010C	EPA 6010C
Chromium	----------	----------	EPA 6010C	EPA 6010C
Chromium (Total, hexavalent)	----------	----------	EPA 7196A	EPA 7196A
Lead	----------	----------	EPA 6010C	EPA 6010C
Purgeable Organics (Volatiles)				
Volatile Preparation	----------	----------	EPA 5030C EPA 5030C	EPA 5035 EPA 5035A
Benzene	----------	----------	EPA 5030C EPA 8260D	EPA 8260D
1,2-Dichloroethane	----------	----------	EPA 8260D	EPA 8260D
1,2-Dibromoethane	----------	----------	EPA 8011	EPA 8011
Diisopropyl Ether	----------	----------	EPA 5030C EPA 8260D	EPA 8260D
Ethyl Benzene	----------	----------	EPA 5030C EPA 8260D	EPA 8260D
Ethyl tert-butyl Ether	----------	----------	EPA 8260D	EPA 8260D
Methyl tert-butyl Ether	----------	----------	EPA 5030C EPA 8260D	EPA 8260D
Naphthalene	----------	----------	EPA 5030C EPA 8260D	EPA 8260D
Toluene	----------	----------	EPA 5030C EPA 8260D	EPA 8260D
Tert-amyl Methyl Ether	----------	----------	EPA 5030C EPA 8260D	EPA 8260D
Tert-butyl Alcohol	----------	----------	EPA 5030C EPA 8260D	EPA 8260D

Parameter/Analyte	Tissue	Nonpotable Water	Solid Hazardous Waste	
			Aqueous	Solid
Xylenes, total	----------	----------	EPA 5030C EPA 8260D	EPA 8260D
Gasoline Range Organics (GRO C6-C10)	----------	----------	EPA 5030C EPA 8260D	EPA 8260D
Extractable Organics (Semivolatiles)				
Diesel Range Organics (DRO C10-C32)	----------	----------	EPA 8015C w/ EPA 3630 cleanup	EPA 8015C w/ EPA 3630 cleanup

Food and Feed (WHO 29)	**Food/Feed**			
2,3,7,8-TCDD	EPA 1613B	----------	----------	----------
2,3,7,8-TCDF	EPA 1613B	----------	----------	----------
1,2,3,7,8-PeCDF	EPA 1613B	----------	----------	----------
2,3,4,7,8-PeCDF	EPA 1613B	----------	----------	----------
1,2,3,7,8-PeCDD	EPA 1613B	----------	----------	----------
1,2,3,4,7,8-HxCDF	EPA 1613B	----------	----------	----------
1,2,3,6,7,8-HxCDF	EPA 1613B	----------	----------	----------
2,3,4,6,7,8-HxCDF	EPA 1613B	----------	----------	----------
1,2,3,7,8,9-HxCDF	EPA 1613B	----------	----------	----------
1,2,3,4,7,8-HxCDD	EPA 1613B	----------	----------	----------
1,2,3,6,7,8-HxCDD	EPA 1613B	----------	----------	----------
1,2,3,7,8,9-HxCDD	EPA 1613B	----------	----------	----------
1,2,3,4,6,7,8-HpCDF	EPA 1613B	----------	----------	----------
1,2,3,4,7,8,9-HpCDF	EPA 1613B	----------	----------	----------
1,2,3,4,6,7,8-HpCDD	EPA 1613B	----------	----------	----------
OCDF	EPA 1613B	----------	----------	----------
OCDD	EPA 1613B	----------	----------	----------
Total HpCDD	EPA 1613B	----------	----------	----------
Total HpCDF	EPA 1613B	----------	----------	----------
Total HxCDD	EPA 1613B	----------	----------	----------
Total HxCDF	EPA 1613B	----------	----------	----------
Total PeCDD	EPA 1613B	----------	----------	----------
Total PeCDF	EPA 1613B	----------	----------	----------
Total TCDD	EPA 1613B	----------	----------	----------
Total TCDF	EPA 1613B	----------	----------	----------
6 marker PCBs (PCB28, PCB52, PCB101, PCB138, PCB153, and PCB180)	EPA 1668A EPA 1668C	----------	----------	----------

Parameter/Analyte	Tissue	Nonpotable Water	Solid Hazardous Waste	
			Aqueous	Solid

12 Dioxin-like PCBs (dl-PCBs)/coplanar PCBs (PCB77, PCB81, PCB105, PCB114, PCB118, PCB123, PCB126, PCB156, PCB157, PCB167, PCB169, and PCB189)	EPA 1668A EPA 1668C	----------	----------	----------

Parameter/Analyte	Drinking Water	Nonpotable Water	Solid Haz.Waste
Per and Polyfluoroalkyl Substances (PFAS)			
N-ethyl perfluorooctane-sulfonamidoacetic acid (NetFOSAA)	EPA 537 Ver. 1.1 EPA 537.1	EPA 537 Ver.1.1 Mod	EPA 537 Ver.1.1 Mod
N-methyl perfluoroctane-sulfonamidoacetic acid (NMeFOSAA)	EPA 537 Ver. 1.1 EPA 537.1	EPA 537 Ver.1.1 Mod	EPA 537 Ver.1.1 Mod
Perfluorobutanesulfonic acid (PFBS)	EPA 537 Ver. 1.1 EPA 537.1	EPA 537 Ver.1.1 Mod	EPA 537 Ver.1.1 Mod
Perfluorodecanoic acid (PFDA)	EPA 537 Ver. 1.1 EPA 537.1	EPA 537 Ver.1.1 Mod	EPA 537 Ver.1.1 Mod
Perfluorododecanoic acid (PFDoDA)	EPA 537 Ver. 1.1 EPA 537.1	EPA 537 Ver.1.1 Mod	EPA 537 Ver.1.1 Mod
Perfluoroheptanoic acid (PFHpA)	EPA 537 Ver. 1.1 EPA 537.1	EPA 537 Ver.1.1 Mod	EPA 537 Ver.1.1 Mod
Perfluorohexanesulfonic acid (PFHxS)	EPA 537 Ver. 1.1 EPA 537.1	EPA 537 Ver.1.1 Mod	EPA 537 Ver.1.1 Mod
Perfluorohexanoic acid (PFHxA)	EPA 537 Ver. 1.1 EPA 537.1	EPA 537 Ver.1.1 Mod	EPA 537 Ver.1.1 Mod
Perfluorononanoic acid (PFNA)	EPA 537 Ver. 1.1 EPA 537.1	EPA 537 Ver.1.1 Mod	EPA 537 Ver.1.1 Mod
Perfluorooctanesulfonic acid (PFOS)	EPA 537 Ver. 1.1 EPA 537.1	EPA 537 Ver.1.1 Mod	EPA 537 Ver.1.1 Mod
Perfluorooctanoic acid (PFOA)	EPA 537 Ver. 1.1 EPA 537.1	EPA 537 Ver.1.1 Mod	EPA 537 Ver.1.1 Mod
Perfluorotetradecanoic acid (PFTeDA)	EPA 537 Ver. 1.1 EPA 537.1	EPA 537 Ver.1.1 Mod	EPA 537 Ver.1.1 Mod
Perfluorotridecanoic acid (PFTrDA)	EPA 537 Ver. 1.1 EPA 537.1	EPA 537 Ver.1.1 Mod	EPA 537 Ver.1.1 Mod
Perfluoroundecanoic acid (PFUnDA)	EPA 537 Ver. 1.1 EPA 537.1	EPA 537 Ver.1.1 Mod	EPA 537 Ver.1.1 Mod
2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid (HFPODA)	EPA 537.1	EPA 537 Ver.1.1 Mod	EPA 537 Ver.1.1 Mod
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	EPA 537.1	EPA 537 Ver.1.1 Mod	EPA 537 Ver.1.1 Mod
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF3ONS)	EPA 537.1	EPA 537 Ver.1.1 Mod	EPA 537 Ver.1.1 Mod
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	EPA 537.1	EPA 537 Ver.1.1 Mod	EPA 537 Ver.1.1 Mod
Perfluoro-n-butanoic acid (PFBA)	----------	EPA 537 Ver.1.1 Mod	EPA 537 Ver.1.1 Mod
Perfluoro-n-pentanoic acid (PFPeA)	----------	EPA 537 Ver.1.1 Mod	EPA 537 Ver.1.1 Mod
8:2 Fluorotelomersulfonic acid (8:2FTS)	----------	EPA 537 Ver.1.1 Mod	EPA 537 Ver.1.1 Mod

Parameter/Analyte	Drinking Water	Nonpotable Water	Solid Haz.Waste
4:2 Fluorotelomersulfonic acid (4:2-FTS)	----------	EPA 537 Ver.1.1 Mod	EPA 537 Ver.1.1 Mod
Perfluoropentanesulfonic acid (PFPeS)	----------	EPA 537 Ver.1.1 Mod	EPA 537 Ver.1.1 Mod
6:2 Fluorotelomersulfonic acid (6:2-FTS)	----------	EPA 537 Ver.1.1 Mod	EPA 537 Ver.1.1 Mod
Perfluoroheptanesulfonic acid (PFHpS)	----------	EPA 537 Ver.1.1 Mod	EPA 537 Ver.1.1 Mod
Perfluorononanesulfonic acid (PFNS)	----------	EPA 537 Ver.1.1 Mod	EPA 537 Ver.1.1 Mod
Perfluorodecanesulfonic acid (PFDS)	----------	EPA 537 Ver.1.1 Mod	EPA 537 Ver.1.1 Mod
10:2 Fluorotelomersulfonic acid (10:2-FTS)	----------	EPA 537 Ver.1.1 Mod	EPA 537 Ver.1.1 Mod
Perfluorododecanesulfonic acid (PFDoDS)	----------	EPA 537 Ver.1.1 Mod	EPA 537 Ver.1.1 Mod
Perfluorohexadecanoic acid (PFHxDA)	----------	EPA 537 Ver.1.1 Mod	EPA 537 Ver.1.1 Mod
Perfluorooctadecanoic acid (PFODA)	----------	EPA 537 Ver.1.1 Mod	EPA 537 Ver.1.1 Mod
Perfluorooctanesulfonamide (PFOSA)	----------	EPA 537 Ver.1.1 Mod	EPA 537 Ver.1.1 Mod
2-(N-methylperfluoro-1-octanesulfonamido)-ethanol (NMePFOSAE)	----------	EPA 537 Ver.1.1 Mod	EPA 537 Ver.1.1 Mod
N-methylperfluoro-1-octanesulfonamide (NMePFOSA)	----------	EPA 537 Ver.1.1 Mod	EPA 537 Ver.1.1 Mod
2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol (NEtPFOSAE)	----------	EPA 537 Ver.1.1 Mod	EPA 537 Ver.1.1 Mod
N-ethylperfluoro-1-octanesulfonamide (NEtPFOSA)	----------	EPA 537 Ver.1.1 Mod	EPA 537 Ver.1.1 Mod

End of KY, WY, and ISO 17025 section of scope

Accredited Laboratory

A2LA has accredited

EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC

Lancaster, PA

for technical competence in the field of

Environmental Testing

In recognition of the successful completion of the A2LA evaluation process that includes an assessment of the laboratory's compliance with ISO/IEC 17025:2017, the 2009 TNI Environmental Testing Laboratory Standard, and the requirements of the Department of Defense Environmental Laboratory Accreditation Program (DoD ELAP) as detailed in version 5.3 of the DoD/DOE Quality System Manual for Environmental Laboratories (QSM), accreditation is granted to this laboratory to perform recognized EPA methods as defined on the associated A2LA Environmental Scope of Accreditation. This accreditation demonstrates technical competence for this defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated *April 2017*).

Presented this 28th day of January 2021.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 1.01
Valid to November 30, 2022

For the tests to which this accreditation applies, please refer to the laboratory's Environmental Scope of Accreditation.

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Document number: T-VOA-WI8194	**VOCs and GRO by GC/MS in Waters and Wastewaters by EPA 8260C/D**	**Work Instruction**
Old Reference: **1-P-QM-WI- 9013078**		
Version: **10**		Organisation level: **5-Sub-BU**
Approved by: **X6TJ** Effective Date **22-APR-2021**	Document users: **6_EUUSLA_GC/MS Volatiles_GC/MS Auditors/Verifiers, 6_EUUSLA_GC/MS Volatiles_Level II Peer Review, 6_EUUSLA_GC/MS Volatiles_Management, 6_EUUSLA_GC/MS Volatiles_SW846 8260B/C Water**	Responsible: **5_EUUSLA_GC/MS Volatiles_Manager**

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Revision Log

	Revision: 10	**Effective Date:** This version
Section	**Justification**	**Changes**
Revision Log	Formatting requirement per G-DC-SOP16244	Removed revision logs up to the previous version
Cross Reference	Update	Added reference to QA SOP for information regarding LLOQ
Reagents and Standards 2.d	Correction	Updated TSC Figure references
Calibration D	Enhancement	Added reference to Figure 3 for preparation
Quality Assurance/ Quality Control	Enhancement	Added reference to QA SOP for LLOQ procedure
Table 2	Clarification	Added note concerning alternative ion selection for quantitation
Figure 1-7	Update	Added Figure # and updated method to include 8260D, removed 8260A

	Revision: 9	**Effective Date:** This version
Section	**Justification**	**Changes**

Revision Log	Formatting requirement per G-DC-SOP16244	Removed revision logs up to the previous version
Sample Collection, Preservation and Handling	Current practice	Added verbiage concerning Acrolein and Acrylonitrile in regard to South Carolina requirements
Calibration C.1.e	Requirement	Added statement concerning quadratic regressions and SC compliance samples
Quality Assurance/ Quality Control	Clarification	Added information concerning SC requirements regarding batch QC

Reference

1. Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS), SW-846 Method 8260C, August 2006.

1. Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS), SW-846 Method 8260D, June 2018.

2. Determinative Chromatographic Separations, SW-846 Method 8000D, Revision 4, July 2014.

3. Purge and Trap for Aqueous Samples, SW-846 Method 5030B, December 1996.

4. Purge and Trap for Aqueous Samples, SW-846 Method 5030C, Rev 3, May 2003.

5. *Total Petroleum Hydrocarbons Analysis-Gasoline Method*, California Department of Health Services, LUFT Task Force.

6. *Chemical Hygiene Plan*, current version.

Cross Reference

Document	Document Title
T-VOA-WI7691	Glassware Washing
T-VOA-WI7619	GC and GC/MS Instrumentation Maintenance
T-VOA-WI7629	GC/MS Volatile Standards Traceability
T-VOA-WI7692	Preparation and Analysis of Cleaning Blanks for GC and GC/MS Volatiles
T-VOA-WI8373	GC/MS Volatiles Audit Process
T-VOA-WI8400	Level II Review of GS/MS Volatiles

Scope

This method is suitable for the determination of the target compounds listed and maintained in the LIMS (Laboratory Information Management System) for aqueous matrices. Associated MDLs/LOQs are also listed in the LIMS under the analysis number and/or Project Information lists. Non-target volatile compounds in the sample can be tentatively identified (TIC) using a mass spectral reference library comparison. This analysis must be performed by or under the direct supervision of an operator experienced in the analysis of volatile organics by purge and trap GC/MS methodologies and skilled in mass spectral interpretation. Using this method, the TICs are quantitated with an estimated concentration. Compounds other than those listed in the LIMS for this group of master scans are analyzed using USEPA SW-846 Method 8260C. Theoretical Standard Calibration (TSC) Sheets are included in the Appendix (Figures 1-7). These TSC sheets are to serve as examples only and may not reflect most current version in use. Due to poor purging efficiency or poor gas chromatographic performance, some analytes require calibration at higher levels and higher practical quantitation limits (PQLs). Any additional compounds must be added to the theoretical standard concentrations (TSC) sheet. Standards containing additional analytes must be prepared as described in the Standards section of this document. Both secondary stock solutions and matrix spike solutions must be prepared for use in analyzing additional compounds.

Basic Principles

A 5-mL or 25-mL sample or a dilution of a sample is placed in a specially designed purge vessel. The sample is purged with an inert gas and the effluent gas passed through a sorbent tube where the volatile organics are trapped. After purging, the sorbent trap is rapidly heated and backflushed on to the head of a gas chromatographic (GC) capillary column. The GC column is temperature programmed to separate the volatile compounds, which are subsequently detected and identified using mass spectrometric techniques.

When a compound reaches the Mass Spectrometer, it is bombarded by high-energy electrons (70 eV). This causes the compound to fragment and form ions. The positive ions are focused into a quadrupole mass analyzer, where the ions are separated according to their mass/charge ratios during rapid repetitive scans. These ions are then amplified and detected with an electron multiplier.

The resulting time/intensity/mass spectra data are stored and processed by a computer. Target compounds are identified on the basis of relative retention times and mass spectral matches to standards, which are injected every 12 hours on the same system. The internal standard method is used for quantitation.

The GRO analysis is typically performed in conjunction with the analysis of other volatile target compounds by SW-846 Method 8260C. The GRO quantitation range is 0.1 minutes before the peak apex of C6 (hexane) to 0.2 minutes after the peak apex of C12 (dodecane); however, other ranges can be established. By establishing a (C12) GRO window to 0.2 minutes following the elution of dodecane, the areas from a trio of unresolved peaks eluting near to the upper limit of the range must consistently be included in the total GRO area. In addition, the range remains tight enough to ensure that no C13 or greater compounds can be included in the total GRO area. The C4 range retention time is determined by selecting the first peak after the air and/or artifact peak minus 0.1 minutes in the first standard analyzed in the ICAL. The C5 range retention time is 0.1 minutes before the peak apex of pentane. This analysis must be performed by or under the direct supervision of an operator experienced in the analysis of volatile organics by GC/MS purge and trap methodologies. The area of the total ion chromatogram for the GRO range is determined. The area of the internal standards and surrogate standards are found and subtracted from the total area of the chromatogram within the desired time range. The resulting area is then quantitated versus the internal standard, fluorobenzene.

Interferences

Contaminant sources are volatile compounds in the laboratory environment, impurities in the inert purging gas, carryover from samples containing high concentrations of volatile organic compounds and dirty glassware. The analyst must demonstrate that the system is free from interferences (by producing acceptable method blank data) before analyzing a

batch of samples. Matrix effects from heavily contaminated waters can interfere with the internal standard responses, target analytes and surrogate recoveries, thereby hindering accurate quantitation. See Section 4.0 of SW-846 Method 8260C for further discussion.

Safety Precautions and Waste Handling

All laboratory waste is accumulated, managed, and disposed of in accordance with all federal, state, and local laws and regulations.

See *Chemical Hygiene Plan* for general information regarding employee safety, waste management, and pollution prevention.

The toxicity or carcinogenicity of each reagent used in this method has not been precisely defined; therefore, each chemical compound must be treated as a potential health hazard. Exposure to these chemicals must be reduced to the lowest possible level by whatever means available, such as the use of fume hoods, safety glasses, lab coats, and gloves. Neat compound sources and stock solutions must be collected into a lab pack upon expiration. The lab pack is delivered to Safety personnel for appropriate disposal. Expired secondary standard solutions in methanol must be disposed of as solvent waste. Pour expired secondary standard solutions into the appropriate solvent waste collection container. Aqueous calibration standard mixes are disposed of as nonhazardous aqueous waste due to the low concentration. Samples with a pH ≤2 are taken to storage until disposal in an acid waste container.

Personnel Training and Qualifications

Education Requirement: A 4-year Baccalaureate Degree from an accredited College or University in one of the physical sciences and/or one to three years of relevant gas chromatography experience.

Analysts must be trained in the proper method of volatile organic sample preparation and analysis as determined by the supervisor(s). All training and education relating to volatile organic sample preparation and analysis must be documented by each analyst in his/her training record. Specifically, each new chemist trains with an experienced chemist for the first 12 weeks depending on the individual and his/her previous experience. The first 12 weeks are spent working one-on-one with the trainer. This time is less if the new chemist has prior relevant experience in GC/MS and/or analytical chemistry background.

During the training period, the new chemist learns daily maintenance, calibration techniques, data and library search review, and forms generation. He/she is also required to read all relevant SOPs and EPA methods. All personnel performing this procedure must have documentation of reading, understanding, and agreeing to follow the current version of this SOP. Each analyst must perform an Initial Demonstration of Capability to measure proficiency. Thereafter, an annual Demonstration of Capability is performed and maintained in the analyst's training records.

NOTE: A separate Demonstration of Capability for GRO is required.

Sample Collection, Preservation, and Handling

The samples to be analyzed with this method must be stored in a refrigerator at 0°C to 6°C, not frozen. Samples are collected in 40-mL vials with no headspace. Preserve samples to a pH of <2 in order to prevent degradation of aromatic compounds that are present in the sample. 1:1 HCL is the recommended preservative. Preserved samples must be analyzed within 14 days of collection; those that are not preserved must be analyzed within 7 days of collection. Samples to be tested for Acrolein and Acrylonitrile must be collected without headspace in vials that are preserved to a pH range of 4.0 to 5.0 and must be analyzed within 7 days of collection. Samples may also be submitted in unpreserved vials for Acrolein and Acrylonitrile, but must be analyzed within 3 days of collection. Unpreserved samples from South Carolina for Acrolein and Acrylonitrile do not meet RCRA requirements and must be qualified. Samples submitted outside of the pH range or analyzed outside of the specified holding time windows will be reported with a comment on the final analytical report.

Apparatus and Equipment

1. Gastight micro-syringes – 1 to 1000 µL (various sizes)

2. 5-mL gastight syringes

3. Analytical balance, capable of accurately weighing ±0.0001 g

4. Glassware

   a. Class-A Volumetric flasks with ground-glass stopper

   b. Vials, 1.5-mL, 15-mL, and 40-mL screw cap, with Teflon™/silicone septa

   c. Mininert vials, 1 mL, 2 mL, and 5 mL

5. Purge and trap device – Consisting of the sample purger, the trap, and desorber; the OI Analytical 4560, OI Analytical 4660, or equivalent meets the requirements of this method. The purging chamber must have the purge gas passing through the sample as finely divided bubbles and minimize the headspace between the sample and the trap to <15 mL.

6. Autosampler – OI Analytical 4551, OI Analytical 4552, Archon, or equivalent meets the requirements of this method.

7. Spiker unit – OI analytical Model 4551/4552 SAM/Spiker or equivalent. One or two automated syringe spikers can be added to the OI Analytical Model 4551/4552 autosampler to automatically introduce 1 µL of internal standard (ISTD), surrogate standard, and/or matrix spiking solutions to the sample as it is being transferred to the sparge vessel. The Archon has a groove that can deliver 1 µL of appropriate standards.

8. GC/MS system – The Agilent 5890GC/5972 MSD, Agilent 6890GC/5973MSD, Agilent 6890GC/5975MSD and Shimadzu GC/MS QP5000 meet the requirements for this method.

9. Data System/Computer/Software – this is interfaced to the GC/MS system that continuously acquires and stores data during the analysis, and can process/reduce data to generate the appropriate forms and supporting data. The software used for acquisition is HP Chemstation®, and data reduction is accomplished using Target® software.

10. GC Columns

   a. Column 1 – 30M × 0.25 mm ID DB624 capillary column with a 1.4-µm film thickness from Agilent, or equivalent (to be used with the Shimadzu QP5000 or the Agilent 5972, 5973 and 5975 MSDs)

   b. Column 2 – 20M × 0.18 mm ID DB624 capillary column with a 1.0-µm film thickness from Agilent, or equivalent (to be used with the Shimadzu QP5000 or the Agilent 5972, 5973 and 5975 MSDs)

   c. Column 3 – 20M × 0.18 mm ID DB-VRX capillary column with a 1.0-µm film thickness from Agilent, or equivalent (to be used with the Shimadzu QP5000 or the Agilent 5972, 5973 and 5975 MSDs)

NOTE: Refer to *T-VOA-WI7619* for instrumentation maintenance and troubleshooting.

Reagents and Standards

A. Reagents

1. Reagent water is defined as water in which an interferent is not observed at or above the reporting limit for parameters of interest. In general, the deionized water supplied at the taps in the laboratory meets these criteria. If the reagent water does not meet the requirements, see your supervisor for further instructions.

2. Methanol, Purge and Trap Grade or equivalent.

B. Standards

See *T-VOA-WI7629* for standards traceability.

1. Stock standard solutions – Stock solutions must be prepared in methanol. Standards are prepared from ampulated and neat compounds obtained from suppliers that indicate the purity of the compound. No correction for purity is made if the purity is listed as ≥96%. Pre-made solutions can be used if the supplier documents the concentrations of the solutions. All ampulated standards are stored at ≤-10°C until the expiration date indicated by the vendor or for 1 year if no expiration date is provided.

a. For most of the target compounds, the stock standard solutions are purchased from a vendor as custom mixes (V for calibration and Q for separate source quality control). The internal and surrogate standards are purchased from a vendor, as well as the target compounds that are gases at room temperature. These gaseous standards have a 1-week expiration date, starting from the date they are opened.

b. 8260A Surrogate standard spiking solution (8260SS) – a 2500 µg/mL stock standard solution of dibromofluoromethane, toluene-d8, 4-bromofluorobenzene, and 1,2-dichloroethane-d4 is prepared in methanol by a commercial supplier.

c. 8260A Internal standard spiking solution (8260IS) – a 2500 µg/mL stock standard solution of fluorobenzene, chlorobenzene-d5, 1,4-dichlorobenzene-d4, and 12500 µg/mL deuterated tertiary butyl alcohol (tBA-d10) is prepared in methanol by a commercial supplier. Deuterated tertiary butyl alcohol (tBA-d10) is used sometimes as an auxiliary ISTD.

d. GRO calibration standard – a 5500-µg/mL stock unleaded gasoline composite prepared in methanol by a commercial supplier.

e. GRO QC standard – a 20,000-µg/mL stock unleaded gasoline composite prepared in methanol by a commercial supplier

To prepare stock standards from neat compounds:

(1) Place about 9.8 mL methanol or an equivalent solvent into a tared 10.0-mL glass-stoppered volumetric flask. Weigh the flask to the nearest 0.1 mg.

(2) Add the liquids using a syringe or pipette by adding 2 or more drops of the assayed material to the flask, being careful that no drop hits the side of the flask. Reweigh the flask, record/note the amount, dilute to volume, stopper, and mix by inverting the flask at least 3 times. Calculate the concentration of the standard.

(3) The stock standard solutions are stored in Teflon™-sealed screw-capped vials at ≤-10°C. The compound name, concentration, date prepared, expiration date, preparer name and storage method must appear on the bottle.

(4) Replace in-house prepared stock standard solutions every 6 months.

2. Secondary dilution standards - Using the stock standard solutions, prepare secondary stock solutions in methanol containing the desired compounds. These standards are prepared by calculating the volume of each stock standard required to produce a given volume of a mixed working standard with a known concentration of each analyte. When custom mixes are used, these are diluted down individually or combined together with other mixes. The working standard is tested according to *T-VOA-WI7629*. The verified working standard is poured into Teflon-lined screw-capped GC vials or mininert vials and stored at ≤-10°C. A designator indicating the standard name, month, and day of preparation and expiration date must be on the standard vials. The designator and all data pertaining to the working standard preparation are to be recorded in the standards logbook. Replace secondary dilution standards every 2-4 weeks (1 week for standards containing gases) unless otherwise indicated.

a. 1,4-Bromofluorobenzene (BFB) standard – Prepare a 50-µg/mL solution of BFB in methanol by diluting the stock standard (prepared from neat material) with methanol to a final volume of 100 mL. The volume of stock standard used varies depending on the actual stock concentration.

b. IS/SS spiking solution – Dilute 1 mL of 8260IS and 1 mL of 8260SS with methanol to 10-mL final volume (resulting in a concentration of 250 µg/mL, 1250 µg/mL for tBA-d10). This is assuming a 1-µL groove in the autosampler. If the groove is determined to be other than 1 µL, the standard preparation must be adjusted so that appropriate final concentration is obtained.(50& µg/L for 5-mL purge, 10 µg/L for 25-mL purge).

c. Calibration spiking solution – Prepare solutions in methanol that contain the compounds of interest at known concentrations. Suggested calibration levels are 1, 4, 10, 20, 50, 100, and 300 ppb for 5-mL purge analysis. Suggested calibration levels are 0.2, 0.5, 1, 2, 5, 10, and 25 ppb for 25-mL purge analysis. A Theoretical Standard Concentration (TSC) sheet is filled out for all initial calibrations (see Figures 1, 2, and 5). Replace calibration spiking solution every 2-4 weeks (1 week for standards containing gases).

d. Matrix spiking solution – Prepare second source solutions in methanol that contain the compounds of interest at known concentrations. A TSC sheet is filled out for all quality control samples (see Figures 3, 4 and 6). These solutions serve as both the matrix spiking solution and the laboratory control sample solutions. Matrix spikes also serve as duplicates. Therefore, two aliquots of the same sample need to be spiked for analysis with these solutions. Replace matrix spiking solution every 2-4 weeks (1 week for standards containing gases).

Store all standard solutions at ≤-10°C and protected from light.

Preparation of Glassware

All glassware is cleaned according to *T-VOA-WI7691*.

Calibration

A. Instrument conditions

1. The purge and trap device must have the trap conditioned for at least 10 minutes at 180° to 220°C at a flow rate of 20 to 60 mL/min prior to initial use.

2. An example of purge and trap conditions are listed below:

Purge Gas	Helium
Purge Flow	35 - 45 mL/min
Purge Temperature	40°C for 8260C waters
Purge Time	11 minutes
Desorb Temperature	190°- 220°C
Desorb Time	0.5 to 4 minutes **
Bake Temperature	180°-220°C
Bake Time	5 – 16 min

**Range as suggested by the purge and trap instrument manufacturer

NOTE: Purge and trap conditions are changed to optimize instrument operations. A record of actual purge and trap conditions for each instrument is found in the appropriate instrument maintenance log.

3. The suggested gas chromatographic operating conditions are listed in the table below, depending on the column used:

	Column 1	Column 2	Column 3
Column liquid phase	DB-624	DB-624	DB-VRX
Carrier gas	Helium	Helium	Helium

Carrier gas flow	0.8 mL/min	0.6 mL/min	0.6 mL/min
Make-up gas flow	None	None	None
Initial temperature	45°C	45°C	45°C
Initial hold time	4.5 min	2.5 min	4 min
Temperature ramp	12°/min until 100°C then 25°/min until 240°C	12°/min until 100°C then 25°/min until 235°C	25°/min until 60°C then 36°/min until 240°C
Final temperature	240°C	235°C	240°C
Final hold time	None	.02 min	1 min

4. The recommended mass spectrometer operating conditions are listed below:

Mass range:	35 – 300 amu
Scan time:	One scan cycle per second or less and resulting in at least five scans per chromatographic peak

NOTE: It is not necessary to use the exact parameters listed above. Equivalent columns and conditions that give the performance required by the method are acceptable.

B. Tuning

Tune the GC/MS system to meet the criteria in Table 1 following a 50-ng injection of BFB. The chromatographic conditions must be the same as those under which the samples are analyzed except that the temperature ramp is increased and the initial temperature and flow rate is different. The BFB tune must be verified every 12 hours.

The tune must be evaluated by taking the average of the three scans across the BFB peak apex with a background subtraction of a scan within 20 scans prior to the start of the BFB peak.

NOTE: All standards, samples, and associated quality control samples must be analyzed with the same MS parameters as those used to obtain a successful tune.

C. Initial calibration

1. The initial internal standard calibration consists of analyzing seven distinct levels of analyte concentrations and producing response factors for each compound (six levels are required if second order regression fits are used). Calibration for GRO consists of analyzing six distinct levels of GRO area in order to produce a response factor for the GRO quantitation range of interest using the internal standard, fluorobenzene. The relative standard deviation of the response factor determines the suitability of the average relative response factor for calculation of the GRO concentration. Refer to Figure 1, 2 or 5 for the preparation of the calibration standards and Figure 7 for preparation of GRO standards. The relative standard deviation of the response factors determines the suitability of the average relative response factor for calculation of the analyte concentration. Prior to the analysis of any calibration level, retention time markers must be run for the GRO range of interest. The retention time markers are hexane (C6) and Dodecane (C12). Other markers can be used if different ranges are required by a project.

NOTE: 5 levels of standard are required by the method.

a. When using an OI 4552 or OI 4551 autosampler, the standards (including target and surrogate compounds) are prepared and poured into 40-mL vials with Teflon™-lined septa. A 5-mL or 25-mL aliquot is withdrawn from the vial by the autosampler. The aliquot is transferred through the spiker unit to add the IS/SS spiking solution and then transferred to the sparge vessel.

b. Purge and desorb according to instrument conditions listed in Calibration A.

c. Collect GC/MS data until the end of the GC run.

d. Empty and rinse the purging chamber at least twice with reagent water prior to loading another sample into the vessel, to minimize the possibility of carryover contamination.

e. Each level is analyzed as described above. Next, tabulate the area response of the characteristic ions (Table 2) against concentration for each analyte, surrogate standard, and internal standard and calculate relative response factors (RRF) for each compound (see Calculation section). The calibration is valid for 12 hours from the injection of the BFB tune standard, at which time a new tune check and a continuing calibration check standard are evaluated prior to the analysis of additional samples. The following table describes the guidelines for an acceptable initial calibration:

Frequency	Acceptance Criteria	Corrective Action
Initially and then when analytes in the daily calibration standard fail criteria.	1. % RSD of≤20% is required for all analytes. 10% of the analytes may fail this criteria. 2. The relative retention times of the target compounds must agree within 0.06 relative retention time (RRT) units. The exception would be in the case of system maintenance. 3. Minimum response factors must be met for select compounds. See Table 3.	1. Any target analyte with a %RSD of ≤20% must use the average RRF for quantitation. For any analyte in which the %RSD >20%, a first-degree linear regression can be used (providing that the correlation coefficient [CC] is ≥0.995). A quadratic fit ** (using 6 stds) can also be used (provided the coefficient of determination [CD] is >0.99). If the linear fit and quadratic fit pass the criteria for any given analyte, then use the line/curve with the smallest positive y-intercept. If the y-intercept quantifies to be greater than the LOQ, consult your supervisor immediately or recalibrate. If CC or CD is <0.995 for linear or <0.99 for quadratic, recalibrate. Supervisory approval is required for exceptions to these guidelines. If >10% target analytes fail, recalibration is required. If a linear or quadratic curve fit is used for a target analyte, the calibration data must be refit back into the calibration model for all calibration levels. Percent error between the calculated and expected amounts of an analyte should be ≤30% for all standards. For some data uses, ≤50% may be acceptable for the lowest calibration point. NOTE: Quadratic regression cannot be used for South Carolina compliance samples. 2.-3. Perform system maintenance and recalibrate.

**Consult USEPA method 8000D for non-linear curve fitting techniques/guidelines

f. Each level is analyzed as described above. Next, tabulate the area response for the GRO quantitation range minus the peak areas for the internal and surrogate standards that elute within the GRO range. Calculate the relative response factor (RRF) for GRO (see Calculation section) using the internal standard peak area for fluorobenzene. Although four internal standard compounds are spiked for the 8260C analysis, only one, fluorobenzene, is used for the quantitation of the GRO result.

Calculate the average relative response factors for the GRO quantitation range of interest. The calibration levels are evaluated on the basis of the relative standard deviation of the RRF values (%RSD). The %RSD for the GRO range of interest must be ≤20%. If the calibration meets this requirement then the average RRF is used to calculate sample concentrations. If the %RSD is >20% then re-analysis of one or more levels can be necessary before the calibration is valid.

D. Following the calibration, an Initial Calibration Verification (ICV) standard must be run. The ICV acts as a second source standard to check against the initial calibration. All analytes must meet ICV acceptance windows of 70%-130% and is prepared according to the TSC sheet in Figure 3. If the ICV does not meet the aforementioned

criteria, a second ICV is analyzed before invalidating the initial calibration. Upon failure of the second ICV, the system must be recalibrated after proper corrective action is taken. For the GRO analysis, the ICV is prepared according to the TSC sheet in Figure 7 (QC prep). The ICV acts as a second source standard to check against the initial calibration. Results must quantitate within the 70-130% window. If the ICV does not meet the aforementioned criteria, a second ICV can be run before invalidating the initial calibration. Upon failure of the second ICV, the system must be recalibrated after proper corrective action is taken.

E. Continuing calibration verification (CCV) – The CCV is performed by analyzing a CCV standard in subsequent tune periods after an initial calibration. The CCV (prepared daily due to aqueous nature) is analyzed at 50 ppb for 5-mL purge waters and 10 ppb for 25-mL purge waters. The CCV is considered valid when the criteria listed below are met:

Frequency	Acceptance Criteria	Corrective Action
Every 12 hours.	1. % Drift of ≤20% is required for all analytes. No more than 20% of analytes may fail this criteria if not detected in proceeding samples. 2. The relative retention times (RRT) of the target compounds must agree within 0.06 RRT units. The exception would be in the case of system maintenance. 3. The extracted ion current profile (EICP) area for each internal standard must fall within the window of −50 % to +100 % from the mid-level standard area produced during the last initial calibration. 4. Minimum response factors must be met for select compounds. See Table 3.	1.-4. In the event that the continuing calibration verification (CCV) standard fails any of these criteria, sample analysis must be suspended and the CCV must be re-analyzed. If the re-analysis fails any of the criteria then adjustments are to be made to the analytical system to return it to its original condition, followed by the analyses of 2 consecutive CCVs at the same level that failed. If both CCVs pass the criteria, then sample analysis can continue. Otherwise, the system must be recalibrated and the samples reanalyzed, or the data can be qualified.

A 1100-ppb standard (prepared daily due to aqueous nature) is analyzed for the GRO analysis. The calibration is considered valid if the percent drift is ≤20%. Also, the internal standard peak area of fluorobenzene for the CCV is monitored against the mid-point standard of the initial calibration and must be −50% to +100% of the area counts. If any criteria listed above fails, the CCV is considered invalid. In the case where two consecutive CCVs fail, corrective action must be taken which can include re-analysis of the calibration check, instrument maintenance, and/or recalibration. If the criteria are met, the selected quantitation method from the initial calibration is used for blank and sample calculations until the end of the 12-hour period.

F. MDL Sensitivity Check- A MDL Sensitivity Check must be analyzed in cases where compounds fail to meet the % drift criteria in the CCV and have decreased sensitivity (-20% drift or greater). Affected compounds can be reported as non-detects if it is demonstrated that there is adequate sensitivity to detect the compound at the MDL. If the failed compound is detected, the concentration must be reported as an estimated value.

Procedure

A. Method Blank

Analyze the method blank as described above for the initial calibration standards using reagent water. Refer to table in QA/QC section for specific requirements. The method blank is examined for interfering peaks. Any target compound peaks are calculated as described under the Calculations section of this procedure. All compounds must be less than the reporting limit for the associated samples. If the blank values exceed these values, corrective action must be taken and the method blank reanalyzed until the criteria are met. The method blank must be analyzed before processing any samples.

B. Laboratory Control Sample/ Duplicate and Matrix Spike/Duplicate: Refer to table in QA/QC section for specific requirements.

C. Qualitative analysis

A compound is identified by comparison of the following parameters with those of a standard of this suspected compound (standard reference spectra). In order to verify identification, the following criteria must be met:

1. The intensities of the characteristic ions of the compound must maximize in the same scan or within one scan of each other.

2. The compound relative retention time must compare within ±0.06 RRT units of the RRT of the standard.

3. The characteristic ions from the reference mass spectrum are defined to be the three ions of greatest relative intensity, or any ions over 30% relative intensity if less than three such ions occur in the reference spectrum.

4. The relative intensities of the characteristic ions must agree within 30% of the relative intensities of these ions in the reference spectrum. Analyst discretion is used to determine compound identification. Example: for an ion with an abundance of 50% in the reference spectrum, the corresponding abundance in a sample spectrum can range between 20% and 80%).

5. The above criteria apply to hits greater than or equal to the LOQ. For hits between the MDL and the LOQ, both the criteria listed above and the analyst's discretion is used to determine compound identification.

6. The analyst must account for peaks that are greater than 10% relative intensity in the sample mass spectrum, but not present in the standard mass spectrum. Also, if a compound fails any of the criteria listed above but in the judgment of the mass spectral interpretation specialist is a correct identification, the identification is used and the quantitation of the peak is performed.

The primary and secondary ions for the target compounds can be found in Table 2.

7. For GRO, the Total Ion Chromatogram (TIC) is reviewed to insure proper integration around the 8260 surrogates and internal standards. Also the TIC is checked to make sure all major peaks are integrated.

D. Quantitative analysis

Once a compound has been identified, quantitation is based on the internal standard technique and the integrated area from the extracted ion current profile (EICP) of the primary characteristic ion. The list of primary characteristic ions is listed in Table 2.

The quantitation of the GRO range is performed using the equations listed in the Calculations section of this procedure. All calculations must report concentrations in values of µg/L. In the case where the total GRO concentration exceeds the calibration range, the sample is re-analyzed at a dilution that brings the GRO concentration within the calibration range of the GC/MS system.

E. Sample Analysis

A 5-mL or 25-mL aliquot of the sample is analyzed using the same instrumental conditions as the standard (whether ICAL or CCV), tune and method blank. If the QA criteria are satisfied and no target compounds are detected at concentrations above the calibration range, the results can be reported. To avoid possible matrix effects, sample carryover and re-analyses, an initial dilution is performed if:

1. Prescreening indicates a high volatile organic content in the sample

2. Historical data (or lack thereof) and/or sample appearance indicate a need for dilution

If target compounds are detected in the sample at concentrations above the calibration range, a dilution must be performed (See *T-VOA-WI7692* for information on when cleaning blanks must be run). See Section 11.5.6 in method SW-846 8260C for recommended dilution procedures.

Calculations

A. Calibration calculations

1. Calculation of the relative response factor (RRF):

$$RRF = \frac{[A(x) \times C(is)]}{[A(is) \times C(x)]}$$

Where:

A(x) = Characteristic ion area for the compound being measured

A(is) = Characteristic ion area for the specific internal standard

C(x) = Concentration of the compound being measured

C(is) = Concentration of specific internal standard

2. Regression Equations:

1st Order (linear) regression: Y = MX + B

2nd order (quadratic) regression: Y = CX2 + MX + B

Where:

x = Area(Std) /Area(Istd)
Y = Conc.(Std)/Conc.(Istd)
M = 1st degree slope
C = 2nd degree slope
B = Y-intercept

3. Percent relative standard deviation (%RSD):

$$\%\ RSD = \frac{Standard\ Deviation}{Mean} \times 100$$

4. Calculation of the percent drift:

$$\% \text{ Drift} = \frac{C(i) - C(c)}{C(i)} \times 100$$

Where:
C(i) = Calibration check compound standard concentration
C(c) = Measured concentration using selected quantification method

B. QA Calculations

1. Calculation of percent recovery

$$\% \text{ Recovery} = \frac{SSR - SR}{SA} \times 100$$

Where:

SSR = Spiked sample result

SR = Sample result

SA = Spike added

2. Relative percent difference (RPD):

$$RPD = \frac{MSR - MSDR}{(1/2)(MSR + MSDR)} \times 100$$

Where:

MSR = Matrix spike measured concentration

MSDR = Matrix spike duplicate measured concentration

3. Analyte Concentration

$$Concentration\ (\mu g/L) = \frac{(Ax)\,(Is)}{(Ais)\,(RRF)}$$

Where:

Ax = Area of the quantitation ion peak for the compound to be measured

Ais = Area of the quantitation ion peak for the appropriate internal standard

Is = Concentration of internal standard added in µg/L

RRF = Relative response factor from the initial calibration

Statistical Information/method Performance

The LCS must contain 80% to100% of the compounds in the calibration mix. LCS, MS, and surrogate recoveries and RPD are compared to the limits stored on the LIMS. These limits are statistically derived but must fall within 70% to 130% recovery for South Carolina compliance samples. Historical data for MS/Ds, LCS/Ds, measurement of uncertainty, is reviewed at least annually. Reporting limits including method detection limits (MDLs) and limits of quantitation (LOQs) are set according to EPA method requirements and are evaluated on an annual basis in accordance with 40 CFR Part 136. The MDLs are maintained in the LIMS. Updates to the LIMS are made as needed by the QA Department and only as directed by the supervisor. The department database is updated via a download from the LIMS.

Quality Assurance/Quality Control

Each analysis batch (consisting of no more that 20 samples) must contain a method blank, a laboratory control sample (LCS), and either an unspiked background sample (US), a matrix spike (MS), a matrix spike duplicate (MSD), a laboratory control sample/laboratory control sample duplicate (LCS/LCSD) or a duplicate (DUP). The LCS serves as a 2nd source standard verification of the initial calibration (ICAL). Additional QC samples are required to meet project or state certification requirements. Every sample or QC analysis must contain internal standards and surrogate compounds at a concentration of 50 µg/L for a 5-mL purge or 10 µg/L for a 25-mL purge. For South Carolina samples, an LCS duplicate (LCSD) is only necessary per client request, or when adequate sample volume is not provided to prepare a matrix spike and matrix spike duplicate (MS/MSD). It is not appropriate to prepare and analyze an LCSD with each batch of samples if adequate sample volume has been provided for a MS/DUP or MS/MSD.
The laboratory will establish the Lower Limit of Quantitation (LLOQ) at concentrations where both quantitative and qualitative requirements can consistently be met for 8000D. The LLOQ is the lowest concentration at which the laboratory has demonstrated target analytes can be reliably measured and reported with a certain degree of confidence, which must be ≤ the lowest point in the calibration curve. The LLOQ/LLOQVs (Limit of Quantitation Verifications) are analyzed once per instrument per quarter. See SOP *QA-SOP11892*.

The GC/MS system must be tuned to meet the criteria in Table 1 following BFB injection. The chromatographic conditions must be the same as those under which the samples are analyzed except that the rate of temperature ramping may be increased and the initial temperature and column flow may be different. The BFB tune must be verified every 12 hours.

Quality Control Item	Acceptance Criteria	Corrective Action
1. Internal Standards Added to every sample, standard, method blank and QC sample	1. Peak areas within -50% to +100% of the area in the associated reference standard. 2. Retention time (RT) within 30 seconds of RT for associated reference standard.	1. Check instrument for possible problems and then reanalyze samples. 2. If re-injecting meets the criteria, report this analysis. 3. If this reanalysis still shows the same problem, report results from first analysis and

		qualify data with a comment.
2 Surrogates Added to every sample, standard, method blank and QC sample	All % recoveries must fall within statistically derived QC limits, which are evaluated on a semi-annual basis.	If non-compliant, check for calculation or preparation errors. If no errors are found, check system for problems and reanalyze. If this reanalysis still shows the same problem, report first analysis and qualify data with a comment. If recoveries are outside of specification high and no target compounds are detected, then a reanalysis or comment is not required.
3 Method Blank (MB) Performed during each tune period after the initial calibration or CCV (minimum of 1 MB per 20 samples)	1. Must meet internal standard criteria. 2. Must meet surrogate criteria. 3. Quantitative results for all target compounds must be less than the reporting limit for the associated samples.	1.-2.Inspect system for possible problems and reanalyze. 3. If the MB contains target analytes and the associated samples do not, then no corrective action is required. If the target compounds in the MB are also in the associated samples, then they must be reanalyzed after a clean MB is obtained (certain projects may allow some exceptions for common laboratory contaminants like methylene chloride and acetone up to 5X the LOQ)
Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) LCS analyzed with each batch of ≤ 20 samples LCSD analyzed if MS/MSD unavailable See Figure	1. Must meet internal standard criteria. 2. Must meet surrogate criteria. 3. All % recoveries must fall within statistically derived QC limits, which are evaluated on a semi-annual basis.	1.-2. If non-compliant, check for calculation or preparation errors. If no errors found, check system for problems and reanalyze. 3. If LCS/LCSD re-analysis still fails, perform appropriate system maintenance and restart the tune period. Only with a LCS % recovery failing high (for the requested target compounds) with targets non-detected in the sample, can the results be reported. Otherwise, the sample must be analyzed with a compliant LCS.
Matrix Spike/Matrix Spike Duplicate (MS/MSD) MS/MSD analyzed with each batch of ≤ 20 samples (if sufficient sample volume available) See Figures 4 and 5 for preparation info.	1. % Recoveries must fall within statistically derived QC limits, which are evaluated on a semi-annual basis 2. RPDs within QC limits.	1. If LCS within QC limits, proceed with sample analysis. 2. If most recoveries and/or RPDs outside of QC limits, consult the supervisor.

NOTE: Prior to release from the analytical laboratory, all data is reviewed in accordance with *T-VOA-WI8373* or *T-VOA-WI8400* (dual purge and trap).

Table 1

BFB Key Ion Abundance Criteria

Mass	Ion Abundance Criteria
50	15% to 40% of mass 95

75	30% to 60% of mass 95
95	base peak, 100% relative abundance
96	5% to 9% of mass 95
173	less than 2% of mass 174
174	greater than 50% of mass 95
175	5% to 9% of mass 174
176	greater than 95% but less than 101% of mass 174
177	5% to 9% of mass 176

Table 2

Primary and Secondary Ions

Compound Name	Primary Ion	Secondary Ion
Chloromethane	50	52
Vinyl Chloride	62	64
Bromomethane	94	96
Chloroethane	64	66
1,1-Dichloroethene	96	61, 63
Acetone	43	58
Carbon Disulfide	76	78
Methylene Chloride	84	49, 86
1,1-Dichloroethane	63	65, 83
trans-1,2-Dichloroethene	96	61, 63
cis-1,2-Dichloroethene	96	61, 63
2-Butanone	43	72
Chloroform	83	85
1,2-Dichloroethane	62	98
1,1,1-Trichloroethane	97	61, 99
Carbon Tetrachloride	117	119
Benzene	78	
Trichloroethene	95	130, 132
1,2-Dichloropropane	63	76
Bromodichloromethane	83	85
cis-1,3-Dichloropropene	75	77, 110
trans-1,3-Dichloropropene	75	77, 110
1,1,2-Trichloroethane	97	83, 85
Dibromochloromethane	129	127
Bromoform	173	175
4-Methyl-2-pentanone	43	58
Toluene	92	91
Tetrachloroethene	166	131, 164
2-Hexanone	43	58
Chlorobenzene	112	77
Ethylbenzene	91	106

Xylene (total)	106	91
Styrene	104	78
1,1,2,2-Tetrachloroethane	83	85, 131
Dibromofluoromethane	113	111
1,2-Dichloroethane-d4	102	104
Fluorobenzene	96	70
Toluene-d8	98	100
Chlorobenzene-d5	117	82
4-Bromofluorobenzene	95	174
1,4-Dichlorobenzen-d4	152	115

NOTE: Alternative ions may be used for quantitation due to response factor, ion interference or other analytical needs.

Table 3
Minimum Relative Response Factors For ICAL and CCV

Volatile Compounds	Minimum Response Factor
Dichlorodifluoromethane	0.100
Chloromethane	0.100
Vinyl Chloride	0.100
Bromomethane	0.100
Chloroethane	0.100
Trichlorofluoromethane	0.100
1,1-Dichloroethene	0.100
1,1,2-Trichloro-1,2,2-trifluoroethane	0.100
Acetone	0.100
Carbon Disulfide	0.100
Methyl Acetate	0.100
Methylene Chloride	0.100
trans-1,2-Dichloroethene	0.100
cis-1,2-Dichloroethene	0.100
Methyl tert-Butyl Ether	0.100
1,1-Dichloroethane	0.200
2-Butanone	0.100
Chloroform	0.200
1,1,1-Trichloroethane	0.100
Cyclohexane	0.100
Carbon Tetrachloride	0.100
Benzene	0.500
1,2-Dichloroethane	0.100
Trichloroethene	0.200
Methylcyclohexane	0.100
1,2-Dichloropropane	0.100
Bromodichloromethane	0.200
cis-1,3-Dichloropropene	0.200
trans-1,3-Dichloropropene	0.100
4-Methyl-2-pentanone	0.100
Toluene	0.400
1,1,2-Trichloroethane	0.100
Tetrachloroethene	0.200
2-Hexanone	0.100
Dibromochloromethane	0.100
1,2-Dibromoethane	0.100
Chlorobenzene	0.500

Ethylbenzene	0.100

Table 3 - Continued

Volatile Compounds	Minimum Response Factor
m&p-Xylene	0.100
o-Xylene	0.300
Styrene	0.300
Bromoform	0.100
Isopropylbenzene	0.100
1,1,2,2-Tetrachloroethane	0.300
1,3-Dichlorobenzene	0.600
1,4-Dichlorobenzene	0.500
1,2-Dichlorobenzene	0.400
1,2-Dibromo-3-chloropropane	0.050
1,2,4-Trichlorobenzene	0.200

Attachment:
Figure 1 (.doc)
Figure 2 (.doc)
Figure 3 (.doc)
Figure 4 (.doc)
Figure 5 (.doc)
Figure 6 (.doc)
Figure 7 (.xls)

QA-SOP11892 Determining Method Detection Limits and Limits of Quantitation
T-VOA-WI7619 GC and GC/MS Instrumentation Maintenance
T-VOA-WI7629 GC/MS Volatile Standards Traceability
T-VOA-WI7691 Glassware Washing
T-VOA-WI7692 Preparation and Analysis of Cleaning Blanks for GC and GC/MS Volatiles
T-VOA-WI8373 GC/MS Volatiles Audit Process
T-VOA-WI8400 Level II Review of GC/MS Volatiles

End of document

Version history

Version	Approval	Revision information
8	18.JUL.2019	
9	25.MAR.2020	
10	08.APR.2021	

eurofins	Always check on-line for validity. **VOCs and GRO by GC/MS in Waters and Wastewaters by EPA 8260C/D**	Level: **Work Instruction**
Document number: **T-VOA-WI8194**		
Old Reference: **1-P-QM-WI- 9013078**		
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eurofins	Always check on-line for validity.	Level:
Document number: T-SVOA-WI9617	**Semivolatile Organic Compounds by Method 8270D/E in Aqueous and Non-Aqueous Matrices using GC-MS**	**Work Instruction**
Old Reference: 1-P-QM-WI-9015100		
Version: 12.1		Organisation level: 5-Sub-BU
Approved by: XL3S Effective Date 26-APR-2021	Document users: 5_EUUSLA_GC/MS Semivolatiles_All	Responsible: 5_EUUSLA_GC/MS Semivolatiles_Manager

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Revision Log

Revision: 12	**Effective Date:**	This version
Section	**Justification**	**Changes**
Revision Log	Formatting requirement	Removed revision logs up to the previous version
LIMS ID	Method not applicable to procedure	Removed TALS method 8270C
Throughout document	Clarification	Removed all references to footnotes regarding qualified data and drafted a general statement addressing data qualification as a means to differentiate between data that needs to be qualified and instances that require corrective action

Revision: 11	**Effective Date:**	17-MAR-2020
Section	**Justification**	**Changes**
Revision Log	Formatting requirement	Removed revision logs up to the previous version
LIMS ID	New analyses	Added LIMS ID for malononitrile (12987) and state-specific master 14960
Reference	Reflects current practice	Removed reference to method 8000C
Cross Reference	Enhancement	Added references to extractables SOPs
Basic Principles	Enhancement	Added references to extractables SOPs; made volume of injections less specific to allow for variation
Interferences	Enhancement	Added discussion of sample matrix as a possible interference

Personnel Training and Qualifications	Enhancement	Added specific information regarding IDOC spiking and acceptance criteria. Added additional DOC option
Sample Collection, Preservation, and Handling	Reflects current practice	Added specific information regarding collection containers and enhanced extract storage conditions
Reagents and Standards	Formatting requirements	Added chemical names for methylene chloride
Procedure E.2.	Removing duplicate	Both DFTPP tables were identical so one was removed
Procedure F.1.	Enhancement	Added tables addressing MDLs and ICVs; provided additional corrective actions; discussed the dropping of calibration points
Procedure F.2.	Clarification	Clarified that COD failure exceptions are not to be used for compliance samples and data reported under a calibration with a failed COD must be qualified
Procedure G.	Clarification	Clarified that low failures require analysis of a sensitivity check; added what can be done in the case of high failures; removed two consecutive CCV requirement as this was removed in 2016 TNI update – this was replaced with new TNI requirements
Procedure	Enhancement	Added sample analysis step and re-numbered section accordingly
Procedure	Clarification	Added acceptability of use of a certified reference library for reference spectra
Calculations	Ease of use	Removed all calibrations from this section and referred the reader to *T-SVOA-FRM9602*
Statistical Information and Method Performance	Clarification	Re-worded entire section
Quality Assurance/Quality Control	Clarification	Clarified when LCS/D is used as opposed to LCS/MS/MSD; added spike concentrations of compounds, internals, and surrogates; clarified that high surrogate recoveries in method blanks are OK when there aren't detections in the method blank; clarified when data would be qualified with a comment; added use of marginal exceedance; added MDL and LOQ information

Reference

1. SW-846 Test Method 8270E: Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS), Rev. 6, June 2018.
2. SW-846 Test Method 8270D: Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry, Rev. 5, February 2015.
3. Test Methods for Evaluating Solid Wastes, SW-846 Method 8000D, Rev. 5, July 2018.
4. *Federal Register*, Vol. 57, No. 227, November 24, 1992, p. 55114 (TCLP).
5. *Federal Register*, Vol. 57, No. 160, August 18, 1992, p. 37203 (CCW).
6. *Chemical Hygiene Plan*, current version.

eurofins	Always check on-line for validity.	Level:
Document number: T-SVOA-WI9617	**Semivolatile Organic Compounds by Method 8270D/E in Aqueous and Non-Aqueous Matrices using GC-MS**	**Work Instruction**
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Version: 12.1		Organisation level: 5-Sub-BU
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Cross Reference

Document	Document Title
T-OE-SVOA-WI10917	Waste Dilution, EPA 3580A for Acid Extractables and Base-Neutrals in a Non-Water Soluble Matrix
T-OE-SVOA-WI10916	Low-Level Sonic Probe Extraction Procedure by Method 3550C for the Determination of Semivolatiles in a Solid Matrix
T-OE-SVOA-WI10928	Microwave Extraction by Method 3546 for Semivolatiles
T-OE-SVOA-WI10935	Separatory Funnel Extraction (Method 3510C) or Waste Dilution (Method 3580A) of Base Neutrals and Acid Extractables in Leachates
T-OE-SVOA-WI11432	Separatory Funnel Extraction by Method 3510C for BNAs in Wastewater
T-SVOA-FRM9602	Dept 4026 Calculations
T-SVOA-WI11998	Semivolatile Spiking and Calibration Standards
T-SVOA-WI9598	GC/MS Preventative and Corrective Maintenance
T-SVOA-WI9604	Monitoring GC/MS Semivolatile QC Data Acceptance Limits
Q-EQA-FRM6869	Nonconformance Form
QA-SOP11178	Demonstrations of Capability
QA-SOP11892	Determining Method Detection Limits and Limits of Quantitation

Scope

This method is suitable for the determination of the concentration of certain semivolatile organic compounds (priority pollutant list, target compound list, Appendix IX list, TCLP list, and CCW list) found in soils, tissues, waters, and leachates. Typical limits of quantitation (LOQ) achieved are 33 µg/kg for soils, 132 µg/kg for tissues, 1 µg/L for waters, and 0.002 mg/L for leachates. Specific compound lists and associated method detection limits (MDLs) and LOQs can be found in the Laboratory Information Management System (LIMS) under the analysis numbers listed in the header of this SOP.

Basic Principles

Water samples are extracted according to *T-OE-SVOA-WI11432*. Soil samples are extracted according to T-OE-SVOA-WI10925 or *T-OE-SVOA-WI10928*. Leachates are extracted according to *T-OE-SVOA-WI10935*. Non-water soluble matrices are extracted according to *T-OE-SVOA-WI10917*.

An environmental sample (soil, water, sludge, etc.) is solvent extracted and then analyzed by electron impact gas chromatography/mass spectrometry (EI GC/MS). A predetermined aliquot of an extract containing organic compounds in solvent is injected onto a fused silica capillary column coated with a relatively non-polar stationary phase, which is enclosed in a temperature controlled oven. A carrier gas, which is ultra-pure helium, passes continuously through the column. The GC oven is temperature programmed and the organic mixture separates into its individual components as it moves along the length of the column. This separation is the function of the polarity and boiling point of the individual compounds. This column empties into a mass selective detector. When a compound reaches the detector, it is bombarded by high-energy electrons (70eV). This causes the compounds to fragment, forming ions. By applying various voltages to the lens, the positive ions are thrust into a quadrupole mass analyzer, which selects for a given mass fragment at a given time. These selected fragments reach an electron multiplier that detects and generates a signal for each mass fragment. The signals are amplified and sent to a computer. Target compounds are identified on the basis of relative retention times and spectral match to standards that are injected every 12 hours on the same system.

Quantification is achieved via use of the internal standard calibration technique. The average relative response factor of a multi-point calibration is used for quantification when the appropriate criteria are met.

Interferences

Method interferences may be caused by impurities in solvents, reagents, glassware, or other hardware used in the processing of samples. All glassware is solvent rinsed before use and a method blank is performed with each extraction batch to demonstrate that the extraction system is free of contamination.

Sample matrices can have an effect on the ability of the GC/MS system to resolve the individual masses used for quantification. Samples may require dilutions, a reduction in the extraction volume/weight used, a raised final extraction volume, or extract clean-up using various techniques in order to achieve proper target separation and determination.

Safety Precautions and Waste Handling

All laboratory waste is accumulated, managed, and disposed of in accordance with all federal, state, and local laws and regulations.

See *Chemical Hygiene Plan* for general information regarding employee safety, waste management, and pollution prevention.

The toxicity or carcinogenicity of each reagent used in this method has not been precisely defined; however, each chemical compound and reagent should be treated as a potential health hazard. From this viewpoint, exposure to these chemicals must be reduced to the lowest possible level by whatever means are available such as fume hoods, safety glasses, lab coats, and gloves.

All solvent waste generated from this analysis must be collected for recycling (if applicable) or must be disposed of in designated containers. These are then transferred to a lab-wide disposal facility. Any solid waste material (disposable pipettes, broken glassware, pH paper) must be disposed of in the normal solid waste collection containers or sharps containers, as applicable.

Personnel Training and Qualifications

All personnel performing this procedure must have documentation of reading, understanding, and agreeing to follow the current version of this SOP and an annual documented Demonstration of Capability (DOC) which is maintained in the analyst's training records.

Initially, each analyst performing instrumental analysis must work with an experienced analyst for a period of time until they can independently perform daily maintenance, calibrate the instrument, change the column, clean the source, interpret chromatograms, perform calculations, review data, and enter data into the LIMS. The analyst is also trained on the preparation of dilutions and calibration standards. Proficiency is measured through documented audits of the tasks listed and over checking of data as well as an Initial Demonstration of Capability (IDOC).

The IDOC consists of four laboratory control samples that are spiked at a concentration that is 1-4x the LOQ and are carried through all steps of the procedure. The defined acceptance criteria must be met. The criteria include the calculation of mean accuracy and standard deviation. The mean accuracy for all compounds must fall within the laboratory's most recent statistically derived LCS limits ±20% and must exhibit a standard deviation =20%.

Various options are available for a DOC and can include four laboratory control samples, one blind sample, or 1 valid initial calibration curve combined with four valid continuing calibration checks. Refer to *QA-SOP11178* for more guidance on these options.

Sample Collection, Preservation, and Handling

Water samples are collected in 250mL or 1L glass amber glass containers with PTFE-lined lids and may be preserved with sodium thiosulfate ($Na_2S_2O_3$). They are stored at 0°C to 6°C, not frozen, prior to extraction and must be extracted within 7 days of collection.

Solid samples are collected in glass wide-mouth jars with PTFE-lined lids and are not preserved. They are stored at 0°C to 6°C, not frozen, prior to extraction and must be extracted within 14 days of collection.

All sample extracts must be stored at ≤-10°C (freezer) and protected from light using amber glass vials. All samples, sample extracts, and standards must be stored separately and in an area free from contamination. All extracts must be analyzed within 40 days of extraction.

Apparatus and Equipment

1. Hewlett-Packard Model 5890 (Series I and II) or Hewlett-Packard/Agilent 6890 or 7890 Gas Chromatograph or equivalent
2. Hewlett-Packard Models 5971, 5972, and Hewlett-Packard/Agilent 5973, 5975 Mass Selective Detector or equivalent
3. Hewlett-Packard ChemStation Software
4. Thru-Put Systems Target Acquisition Software/Oracle Database or equivalent
5. Column – 20 M × 0.18 mm ID × 0.18 µm, Agilent DB-5MS or equivalent
6. Column - 30M × 0.25 mm ID x 0.25 µm df, J&W Scientific DB-5MS or equivalent
7. Hamilton Gastight syringe, or equivalent – various volumes
8. Amber GC vials with crimp caps

Reagents and Standards

A. Reagents - All reagents are stored per manufacturer guidelines unless otherwise noted. Reagent vendors are subject to change without notification.

1. Helium carrier gas, UPC grade
2. Methylene chloride ($MeCl_2$ or CH_2Cl_2) – Baker Ultra Resi-Analyzed

B. Standards

1. Supelco Equity Semivolatile Internal Standard Mix, Part #46955-U or equivalent, 1000 µg/mL in methylene chloride. Ampulated solutions are maintained under refrigeration (0° to 6°C, not frozen) until consumed or manufacturer determined expiration date. Working solution is maintained at room temperature and is replenished daily from ampulated solutions. For 250 mL aqueous analyses Supelco Equity Semivolatile Internal Stanadard

Mix is diluted 4x to make a 250 µg/mL in methylene chloride solution. This solution is maintained under refrigeration (0° to 6°C, not frozen) for up to 6 months.

2. Refer to *T-SVOA-WI11998* for the preparation and storage of tuning, calibration, and spiking solutions.

Calibration
See Procedure F for initial calibration processing and Procedure G for continuing calibration check processing.

Procedure

A. Standard preparation – Solutions are used to standardize the GC/MS system every 12 hours and are prepared approximately every 20-30 days or more frequently if needed based on consumption. See *T-SVOA-WI11998* for standard preparation. Calibration standard solutions may be used up to the labeled expiration date or until component degradation is observed. Degradation is determined by the inability to pass continuing calibration checks or by observations of unacceptable chromatography.

B. Internal standard mix is added to all standards and subsequent samples at a concentration of 20 µg/mL (5 µg/mL for 250 mL aqueous analyses). Using a 25-µL syringe, 20 µL of Supelco Equity Semivolatile Internal Standard Mix or equivalent, 1000 µg/mL (250 µg/mL for 250 mL aqueous analyses) in methylene chloride are added to 1 mL of standard or sample extract. If only 0.5 mL of sample is in the vial, 10 µL of internal spiking solution is added to the sample. See Table II for the list of compounds calibrated for and the internal standard that is assigned to each.

C. Daily maintenance – Refer to *T-SVOA-WI9598* for this procedure.

D. Instrument conditions

Equip a GC/MS (such as referenced under Apparatus and Equipment) in one of the two following manners:

1. For a 5890/5971 or 5972 and 6890/5973 or 5975

   a. Column – 30M × 0.25 mm ID x 0.25 µm df, J&W Scientific DB-5MS or equivalent

   b. Injector – Split/splitless operated in splitless mode

   c. Injector Temp – 275°C

   d. Detector Temp – 300°C

   e. Gas – Helium at approximately 1.5 mL/min, constant flow mode

   f. Oven Temp – 45°C for 3 minutes, ramp at 8°C/minute to 225°C, then ramp at 12°C/minute to 300°C and hold for 7.5 minutes.

2. For a 6890/5973 or 5975

   a. Column – 20M × 0.18 mm ID x 0.18 µm df, J&W Scientific DB-5MS or equivalent

   b. Injector – Split/splitless operated in split mode, 20:1 split

   c. Injector Temp – 275°C

   d. Detector Temp – 280°C

   e. Gas – Helium at approximately 1.0 mL/min, constant flow mode

   f. Oven Temp – 40°C for 1 minute, ramp at 25°C/minute to 100°C, then ramp at 30°C/minute to 280°C, followed by another ramp at 25°C/minute to 320°C, hold for 2 minutes.

NOTE: It is not necessary to use the exact parameters listed above. Equivalent columns and conditions may be used to improve the linearity, sensitivity, overall chromatography, and performance required by the method on each GC/MS system.

E. Tuning

1. The DFTPP tune check standard is used to assess GC column performance and injection port inertness as well as mass spectrometer performance. The GC/MS system's tune is checked by inspecting the mass spectrum of the DFTPP peak and column performance and injection port inertness is evaluated with pentachlorophenol, benzidine, and DDT.

2. The GC/MS should be tuned using a predetermined aliquot of a 50 ng/µL or 12.5 ng/µL solution of DFTPP containing decafluorotriphenylphosphine, pentachlorophenol, benzidine, and DDT. This solution is prepared as indicated in *T-SVOA-WI11998*. See the tables below for acceptance criteria and corrective actions.

DFTPP Frequency	Acceptance Criteria	Corrective Action
Prior to initial calibration and every 12 hours prior to	1. Criteria in Table I	1. Re-tune. Analysis cannot proceed until tune meets criteria.

continuing calibration standard	2. DDT breakdown ≤20%* 3. Tailing factors: - Benzidine ≤ 2 - Pentachlorophenol ≤ 2	2. More aggressive injection port maintenance. 3. Clean the source. 4. Change the column.

***NOTE:** DDT breakdown greater than 20% may be acceptable if you are calibrating for polynuclear aromatic hydrocarbon compounds only. Consult your supervisor when this situation occurs.

3. Use only the background-subtracted spectrum of the following when evaluating the DFTPP:

A three scan average of the apex of the scan, the apex of the scan −1 and the apex of the scan +1.

NOTE: All standards, samples, and associated quality control samples with a particular tune must use the identical conditions of the mass spectrometer.

F. Initial calibration (ICAL)

1. Perform standardization by analyzing at least five levels of calibration standards ranging from 0.5 µg/mL to 120 µg/mL or from 0.125 µg/mL to 30 µg/mL for mini-sep waters analysis. (Refer to *T-SVOA-WI11998* for the preparation of calibration standards.) Use the internal standard calibration technique to generate an average relative response factor for each target compound and surrogate. The relative standard deviation (%RSD) of the response factors determines the suitability of the average relative response factor for calculation of compound concentration. At the end of the calibration standard injections, inject a Method Detection Limit (MDL) standard and an initial calibration verification (ICV) standard. See the tables below for acceptance criteria and corrective actions.

ICAL Frequency	Acceptance Criteria	Corrective Action
Initially and when the daily calibration standard fails criteria.	1. Minimum response factors must be met in all levels of the calibration – especially in the lowest level of the calibration (see table IV).** 2. %RSD for each compound must be ≤20%. If more than 10% of the compounds in the ICAL exceed 20% RSD and/or also do not meet the minimum correlation coefficient for alternate fits (ie, the correlation coefficient is <0.990) then the analysis cannot proceed. 3. For any compound on a linear or quadratic fit the % error is measured between the calculated and expected amounts of the compound(s) at each calibration level to determine the calibration function acceptability for linear and non-linear curves. The % error must be ≤50% for the low calibration point. For calibration points above the LOQ the % error must be ≤30%. 4. The relative retention times of the target compounds must agree within 0.06 relative retention time units. 5. Structural isomers that produce very similar mass spectra are identified as individual isomers if they have sufficiently different GC	1. Any target compound with a %RSD <20% will use the average RRF. For any compound in which the %RSD >20%, use a first degree (linear) fit provided the correlation coefficient (CC; r) is ≥0.995 or the coefficient of determination (COD;r^2) is ≥0.99. If the linear fit fails to meet this criteria, then a second order (quadratic) fit may be used*** provided the coefficient of determination is ≥0.99. If use of both the linear fit and the quadratic fit is acceptable using this criteria for any given compound, then use the fit with the smallest negative y-intercept. When using a quadratic fit, if the y-intercept quantifies to be greater than the MDL, consult your supervisor immediately or re-calibrate. See below for corrective action if the coefficient of determination for a quadratic fit is <0.99.* 2. Re-inject any levels that appear to be outliers due to an injection error. 3. If standard levels on the outside of the curve appear to be outliers for individual compounds and are throwing off the calibration curve, they can be dropped from the calibration keeping the following in mind:

	retention times. Sufficient GC resolution is achieved if the height of the valley between two isomer peaks is <25% of the sum of the two peak heights. Otherwise, structural isomers are identified as isomeric pairs.	a. If a low calibration point is dropped, the analyst must ensure that the compound is still being calibrated to or below its LOQ. b. If a high calibration point is dropped, any detections must recover below the new upper calibration limit. 4. Re-prep calibration standards. 5. Perform more aggressive system maintenance as outlined in *T-SVOA-WI9598* and re-calibrate.

*See USEPA Method 8000D for the calculations associated with non-linear fit types.
**Minimum response factors are not required to be met for method 8270E. They are provided for guidance.
***Quadratic fits are not permitted when analyzing samples from South Carolina.

MDL Frequency	Acceptance Criteria	Corrective Action
Immediately following an initial calibration and before sample analysis	1. The system must be able to detect all compounds in the MDL standard.	1. If any compounds are not detected in the MDL standard, analysis can proceed if the compound is detected at or below its MDL in a higher concentration level. 2. If the system does not detect the compound(s), then the tuning and/or calibration procedure must be repeated under conditions that will yield a detection for the compound(s) or the MDL must be raised for the compound(s). 3. Perform more aggressive system maintenance as outlined in *T-SVOA-WI9598* and re-calibrate.

ICV Frequency	Acceptance Criteria	Corrective Action
Immediately following an initial calibration and before sample analysis	1. The ICV must be prepared using a second source standard. 2. %Drift for each compound must be ≤30% 3. The EICP area for each internal standard must fall within the window of -50% to +100% of the areas from the mid-level calibration standard produced during the initial calibration.	1. Re-prep and re-analyze the ICV. 2. If the recovery for any compound fails these criteria low, the compound cannot be analyzed for under the calibration until a new calibration has been established or a passing ICV has been analyzed. 3. If the recovery for any compound fails these criteria high, the compound may be analyzed for but any samples with detections should be re-analyzed under a valid ICAL or will be reported with a qualifying comment. 4. Perform more aggressive system maintenance as outlined in *T-SVOA-WI9598* and re-calibrate.

With supervisory approval, the following problematic compounds can be allowed to fail the 0.99 coefficient of determination criteria for a quadratic fit. If the COD is less than 0.99 for any other compound, the system should be inspected for problems and re-calibrated. Supervisory approval is required for exceptions to these guidelines.

1,4-Phenylenediamine
4-Aminobiphenyl

3,3'-Dimethylbenzidine
4,4'-Methylenebis(2-chloroaniline)
4-Nitroquinoline-1-oxide
1,4-Naphthoquinone
methapyrilene

Note that this allowance is not to be used for compliance samples, and any data reported under the calibration must be qualified.

NOTE: All data associated with failed quality control will be qualified on the final report. QC outlier qualifiers are added to the associated sample results on the report by the LIMS.

3. Six levels of calibration standards must be used if a quadratic (second-order) type calibration fit is used.

4. One of the calibration standards must be at a concentration at or below the limit of quantitation (LOQ). The other concentrations correspond to the expected range of concentrations found in samples or should define the working range of the GC/MS system.

5. The concentration of the MDL standard may require modification dependent upon the current MDL values.

G. Continuing Calibration Verification (CCV)

1. Perform a continuing calibration verification (CCV) by injecting a predetermined aliquot of a calibration standard at a concentration near the mid-point of the calibration, not to exceed ½ the highest level in the calibration.

CCV Frequency	Acceptance Criteria	Corrective Action
1. Every 12 hours. 2. The CCV is analyzed each day a curve is not analyzed. 3. The CCV is analyzed after the DFTPP.	Target compounds must meet the minimum response factor criteria (see Table IV).* 1. The maximum % drift for all target compounds is 20%. No more than 20% of the target compounds can be greater than 20% drift. All target compounds that exceed 20% drift must be less than or equal to 50% drift. 2. The relative retention times of the internal standards must be within 10 seconds of the retention times from the mid-level calibration standard of the last initial calibration. The exception would be in the case of column maintenance. 3. The EICP area for each internal standard must fall within the window of -50% to +100% from the areas of the mid-level standard produced during the last initial calibration. 4. Structural isomers that produce very similar mass spectra should be identified as individual isomers if they have sufficiently different GC retention times. Sufficient GC resolution is achieved if the height of the valley between two isomer peaks is <25% of the sum of the two peak heights. Otherwise, structural isomers are identified as isomeric pairs. The resolution should be verified on the mid-point concentration of the ICAL as well as the check standard.	1. In cases where compound(s) recover >20%D low, they may still be reported as non-detects if it can be demonstrated that there was adequate sensitivity to detect the compound(s) at the applicable quantitation limit. For situations when the failed compound is present, the concentrations must be reported as estimated values. 2. In cases where compound(s) recover >20%D high, analysis may continue, but any samples with detections should be re-analyzed under a valid CCV or the results will be qualified. 3. Perform more aggressive system maintenance as outlined in *T-SVOA-WI9598* and re-calibrate.

*Minimum response factors are not required to be met for method 8270E. They are provided for guidance.

NOTE: All data associated with failed quality control will be qualified on the final report. QC outlier qualifiers are added to the associated sample results on the report by the LIMS.

2. In the event that a CCV fails and the cause is not obvious such as in the case of a concentrated standard or a mis-injection, corrective action must be taken. The corrective action must be documented in the form of a non-conformance memo or with an internal non-conformance form (*Q-EQA-FRM6869*). If the CCV does not pass after corrective action, a new initial calibration must be established.

H. Analysis of Samples:

1. All sample extracts are stored at ≤-10°C and protected from light from the time of sample extraction.

2. Prior to sample analysis, add 20 µL of internal standard to each 1.0 mL of sample extract. Concentration of internal standards in extract is 20 ng/µL (5 ng/µL for 250 mL aqueous analyses).

3. Analyze a predetermined aliquot of each sample extract under the same conditions used for the initial and continuing calibrations.

4. At the conclusion of data acquisition, use the same software to tentatively identify peaks within the retention time window of interest. Examine the ion abundances of components in the chromatogram. If the ion abundance of the target ion used for quantitation exceeds the calibration range, dilute the aliquot and reanalyze. When preparing dilutions, add sufficient internal standard to maintain the same concentration as that of the ICAL.

Dilution criteria:

1) Initial dilutions are recommended in the following situations:

i. More than three internal standard recoveries are <-50%

ii. Either of the last two internal standard recoveries are <-80%.

iii. The analyst's judgment of a sample extract's color or viscosity indicates possible matrix interference.

2) Secondary dilutions are required to bring all target compounds into the calibration range of the GC/MS.

I. Qualitative analysis

A compound is identified by comparison of the following parameters with those of a standard of the suspected compound (standard reference spectra). The reference mass spectrum used for this comparison should be generated by the laboratory using the conditions of the method, but the laboratory may also use a certified reference library. In order to verify identification, the following criteria must be met:

1. The intensities of the characteristic ions of the compound must maximize in the same scan or within one scan of each other. The characteristic ions from the reference mass spectrum are defined to be the three ions of greatest relative intensity, or any ions over 30% relative intensity if less than three such ions occur in the reference spectrum.

2. The sample component relative retention time must compare within ±0.06 RRT units of the RRT of the standard component.

3. The relative intensities of the qualifier ion(s) should agree within 30% of the relative intensities of these ions in the reference spectrum.

NOTE: N-Nitrosodiphenylamine decomposes in the gas chromatographic inlet and cannot be separated from diphenylamine. For this reason, it is acceptable to report the combined result for both n-nitrosodiphenylamine and diphenylamine for either of these compounds as a combined concentration.

NOTE: 1,2-Diphenylhydrazine is unstable even at room temperature and readily converts to azobenzene. Given the stability problems, it would be acceptable to calibrate for 1,2-diphenylhydrazine using azobenzene. Under these poor compound separation circumstances the results for either of these compounds should be reported as a combined concentration.

J. Quantitative analysis

Once a compound has been identified, quantitation is based on the internal standard technique and the integrated abundance from the extracted ion current profile (EICP) of the primary characteristic ion. The list of primary characteristic ions and secondary ions can be found in Table III.

Calculations

Refer to *T-SVOA-FRM9602* for all calculations.

Statistical Information/Method Performance

LCS, MS, surrogate, and RPD recoveries are compared to the limits stored in the LIMS. LCS and surrogate limits are statistically derived every six months in accordance with *T-SVOA-WI9604*. All RPDs are set to a default value of 30%. MS limits are set equal to LCS limits.

Historical data for MS/Ds, LCS/Ds, surrogates, and measurement of uncertainty is reviewed at least annually.

Refer to the QA/QC section of this SOP and the criteria listed throughout this procedure for additional information on the performance of this

method.

Quality Assurance/Quality Control

A. Batch QC

1. Each extraction batch of ≤20 samples must contain a method blank, a laboratory control sample (LCS) and an unspiked background sample (US), a matrix spike (MS), and a matrix spike duplicate (MSD).

2. A laboratory control sample/laboratory control sample duplicate (LCS/LCSD) is prepared with the extraction batch if adequate sample volume is not provided to prepare a matrix spike and matrix spike duplicate.

3. Additional QC samples may be required to meet project or state certification requirements.

B. QC and sample spiking

1. The LCS/D and MS/D are spiked at a concentration of 50 µg/L with the exception of the following (in µg/L):

Hexachlorocyclopentadiene	100	Benzoic acid	100
2,4-Dinitrophenol	100	1-Naphthylamine	100
2-Naphthylamine	100	3,3'-Dimethylbenzidine	100
Benzidine	250	3-Methylphenol	25
4-Methylphenol	25		

2. All samples are spiked with surrogates by the organic extraction group to evaluate the extraction process. Acid extractable surrogates are spiked at a concentration of 200 ng/µL and base/neutral extractable surrogates are spiked at a concentration of 100 ng/µL.

3. Prior to analysis each extract is spiked with an internal standard mix at a concentration of 20 ng/µL.

4. All spiking concentrations are 4x lower for 250 mL aqueous analyses.

C. QC items, acceptance criteria, and corrective actions.

NOTE: If any client, state, or agency has more stringent QC, QC limits, or batch requirements, these must be followed instead.

Quality Control Item	Acceptance Criteria	Corrective Action
Internal Standards	1. Peak area within -50% to +100% of the area in the associated reference standard. 2. Retention time (RT) within 30 seconds of RT for associated reference standard.	1. Check instrument for possible problems and then re-inject sample(s). 2. If re-injection meets the criteria, report this injection. 3. If re-injection still shows the same problem, report first injection. 4. If there is substantial matrix interference, the analyst may dilute the extract as outlined in Procedure H.4.
Method Blank	1. Must meet internal standard criteria. 2. Must meet surrogate criteria. 3. All target compounds must be less than the reporting limit for the associated samples.	1. Inspect system for possible problems and reanalyze. 2. If the surrogates are out of spec high data can be used provided there aren't detections in the method blank. 3. If the surrogates are out of spec low and there aren't detections in the associated samples, the data can be used.* 4. If the method blank contains target compounds and the associated samples do not contain these compounds, no

		corrective action is required. 5. If the target compounds in the blank are also in the associated samples at a concentration <10x that in the blank, the samples are re-extracted unless the detection does not interfere with project data requirements. 6. If the target compounds in the blank are also in the associated samples at a concentration >10x than in the blank the data is usable.
Instrument Blank**	1. Must run after the CCV if no clean method blank is analyzed at the beginning of a 12-hour analytical period. 2. Must meet internal standard criteria. 3. All target compounds must be less than the reporting limit for the associated samples.	1. Inspect system for possible problems and reanalyze. 2. If the instrument blank contains target compounds and the associated samples do not contain these compounds, no corrective action is required. If the target compounds in the blank are also in the associated samples, the samples should be re-extracted unless it does not interfere with project data requirements or if sample detections are at a level 10x higher than the detections in the blank.
Laboratory Control Sample/Laboratory Control Sample Duplicate	1. Must meet internal standard criteria. 2. Must meet surrogate criteria. 3. % Recoveries within QC limits. Refer to the analysis numbers in the header of this document in LIMS for acceptance limits. These are reviewed and updated on a semiannual basis. 4. RPDs within QC limits.	1. If non-compliant, check for calculation or preparation errors. 2. If no errors found, check system for problems and reanalyze. 3. If LCS/LCSD recoveries are still outside acceptance limits, one of the following actions must be taken: a. if recoveries are outside acceptance limits low, the sample(s) must be re-extracted. b. if recoveries are outside acceptance limits high, data may be usable if the compounds that recovered above QC limits are not detected in samples. c. if recoveries are outside acceptance limits high and there are detections for the failing compounds, the sample(s) must be re-extracted. 4. If RPDs fail but recoveries are within QC limits, no further action is required. 5. If surrogates fail to meet criteria but all target compounds are within specification, data is usable.* 6. Marginal exceedance limits, as defined in the NELAC standards,

		may be used if the defined requirements have been met.
Matrix Spike/Matrix Spike Duplicate(MS/MSD)	1. Must meet internal standard criteria. 2. Must meet surrogate criteria. 3. % Recoveries within LCS limits. Refer to the analysis number in the header of this document in LIMS for acceptance limits. These are reviewed and updated on a semiannual basis. 4. RPDs within QC limits.	1. If LCS within QC limits, proceed with sample analysis. 2. If most recoveries or RPDs out of spec, consult supervisor. BKG, MS, MSD may need to be re-extracted.
Surrogates	% Recoveries within QC limits. Refer to the analysis numbers in the header of this document in LIMS for acceptance limits. These are reviewed and updated on a semiannual basis.	1. If non-compliant, check for calculation or preparation errors. 2. If no errors found, check system for problems and reanalyze. 3. If no problem is found, re-extract and reanalyze. 4. If surrogates are out of spec high and no targets are detected in the sample no corrective action is required. 5. For samples analyzed only at a dilution ≥10x, no further action is required for surrogate failures.

*Requires approval of supervisor
**Method blank or instrument blank in each 12-hour analytical period required for 8270E.

NOTE: Any failures without corrective action require approval of supervisor and completion of a non-conformance memo (NCM).

NOTE: All data associated with failed quality control will be qualified on the final report. QC outlier qualifiers are added to the associated sample results on the report by the LIMS.

D. Lower Limit of Quantitation (LLOQ)

1. Refer to *QA-SOP11892* for initial and ongoing LLOQ requirements.

E. Method Detection Limit (MDL)

1. Refer to *QA-SOP11892* for initial and ongoing MDL requirements.

F. Limit of Quantitation (LOQ)

1. Refer to *QA-SOP11892* for initial and ongoing LOQ requirements.
2. Until the laboratory has sufficient data to determine the acceptance limits, the LLOQ criteria is ± 20% of the statistically determined LCS limits.

Table I

DFTPP Key Ions and Ion Abundance Criteria

Mass	Ion Abundance Criteria
51	10% to 80% of mass 198
68	<2% of mass 69
70	<2% of mass 69
127	10% to 80% of mass 198
197	<2% of mass 198
198	Base peak, or >50% of mass 442
199	5% to 9% of mass 198

275	10% to 60% of mass 198
365	>1% of mass 198
441	Present but less than 24% of mass 442
442	Base peak, or >50% of mass 198
443	15% to 24% of mass 442

Table II

Semivolatile Internal Standard with Corresponding Compounds Assigned for Quantitation

1,4-Dichlorobenzene-d_4	Naphthalene-d_8	Acenaphthene-d_{10}
Acrylamide		
Aniline	Acetophenone	Acenaphthene
Benzyl alcohol	Benzoic acid	Acenaphthylene
Bis(2-chloroethyl) ether	Bis(2-chloroethoxy)methane	1-Chloronaphthalene
Bis(2-chloroisopropyl) ether	4-Chloroaniline	2-Chloronaphthalene
2-Chlorophenol	4-Chloro-3-methylphenol	4-Chlorophenyl phenyl ether
1,3-Dichlorobenzene	2,4-Dichlorophenol	Dibenzofuran
1,4-Dichlorobenzene	2,6-Dichlorophenol	Diethyl phthalate
1,2-Dichlorobenzene	α,α-Dimethylphenylamine	Dimethyl phthalate
Ethyl methanesulfonate	2,4-Dimethylphenol	2,4-Dinitrophenol
2-Fluorophenol (surr)	Hexachlorobutadiene	2,4-Dinitrotoluene
Hexachloroethane	Isophorone	2,6-Dinitrotoluene
Methyl methanesulfonate	2-Methylnaphthalene	Fluorene
2-Methylphenol	Naphthalene	2-Fluorobiphenyl (surr)
4-Methylphenol	Nitrobenzene	Hexachlorocyclopentadiene
N-Nitrosodimethylamine	Nitrobenzene-d5 (surr)	1-Naphthylamine
N-Nitroso-di-n-propyl amine	2-Nitrophenol	2-Naphthylamine
Phenol	N-Nitrosodi-n-butylamine	2-Nitroaniline
Phenol-d6 (surr)	N-Nitrosopiperidine	3-Nitroaniline
2-Picoline	1,2,4-Trichlorobenzene	4-Nitroaniline
1,4-Dioxane	1-Methylnaphthalene	4-Nitrophenol
Pyridine	O,O,O-triethylphosphorothioate	Pentachlorobenzene
		1,2,3,4-Tetrachlorobenzene
		1,2,3,5-Tetrachlorobenzene
Acetophenone	Hexachlorpropene	1,2,4,5-Tetrachlorobenzene
o-Toluidine	1,4-Phenylenediamine	2,3,4,6-Tetrachlorophenol
N-Nitrosomethylethylamine	Safrole	2,4,6-Tribromophenol (surr)
N-Nitrosodiethylamine	(2-Bromoethyl)benzene	2,4,6-Trichlorophenol
N-Nitrosopyrrolidine	Caprolactam	2,4,5-Trichlorophenol
N-Nitrosomorpholine	1, 3, 5 – Trichlorobenzene	1,1'-Biphenyl
N,N-dimethyl formamide	1, 2, 3 – Trichlorobenzene	Diphenyl ether
N,N-dimethyl acetamide	1, 2, 3, 4 – Tetrachlorobenzene	Isosafrole
Benzaldehyde	1 – Chloro-4-Nitrobenzene	1,4-Naphthoquinone
Malononitrile	2-chlorobenzaldehyde	1,4-Dinitrobenzene
		1,3-Dinitrobenzene
		Thionazin
		5-Nitro-o-toluidine
(surr) = surrogate		2-chlorobenzalmalononitrile

Phenanthrene-d_{10}
4-Aminobiphenyl
Anthracene
4-Bromophenyl phenyl ether
Di-n-butyl phthalate
4,6-Dinitro-2-methylphenol
Fluoranthene
Hexachlorobenzene
N-Nitrosodiphenylamine
Octachlorostyrene
Pentachlorophenol
Pentachloronitrobenzene
Phenacetin
Phenanthrene
Pronamide
1-Nitronaphthalene
1,2-Diphenylhydrazine
Carbazole
Tetraethyldithiopyrophosphate
1,3,5-Trinitrobenzene
Diallate trans/cis
Phorate
Dimethoate
Methyl parathion
Parathion
4-Nitroquinoline-1-oxide
Methapyrilene
Isodrin
Atrazine

(surr) = surrogate
Benzophenone

Pyrene-d_{10}
Benzidine
Benzo(a)anthracene
Bis(2-ethylhexyl) phthalate
Butyl benzyl phthalate
Chrysene
3,3'-Dichlorobenzidine
p-Dimethylaminoazobenzene
Pyrene

Terphenyl-d_{14} (surr)
7,12-Dimethylbenz(a)anthracene
Chlorobenzilate
2-Acetylaminofluorene
3,3'-Dimethylbenzidine
4,4'-Methylenebis(2-Chloroaniline)
3-Quinuclidinyl benzilate

Perylene-d_{12}
Benzo(b)fluoranthene
Benzo(k)fluoranthene
Benzo(g,h,i)perylene
Benzo(a)pyrene
Dibenz(a,j)acridine
Dibenz(a,h)anthracene
Indeno(1,2,3-cd)pyrene
Di-n-octylphthalate

3-Methylcholanthrene

Table III

Characteristic Ions for Semivolatile Compounds

Compound	Primary Ion	Secondary Ions
2-Picoline	93	66, 92
Aniline	93	66, 65
Phenol	94	65,66
Bis(2-chloroethyl) ether	93	63,95
2-Chlorophenol	128	64,130
1,3-Dichlorobenzene	146	148, 113
1,4-Dichlorobenzene-d_4 (IS)	152	150,115
1,4-Dichlorobenzene	146	148, 113
Benzyl alcohol	108	79,77
1,2-Dichlorobenzene	146	148, 113
N-Nitrosomethylethylamine	88	42,43,56
Bis(2-chloroisopropyl) ether	45	77, 121, 79
Methyl methanesulfonate	80	79,65,95
N-Nitrosodi-n-propylamine	70	42,101,130
Hexachloroethane	117	201,199
Nitrobenzene	77	123,65
Isophorone	82	95,138

N-Nitrosodiethylamine	102	42,57,44,56
2-Nitrophenol	139	109,65
2,4-Dimethylphenol	107	122, 121
Bis(2-chloroethoxy)methane	93	95,123
Benzoic acid	105	122,77
2,4-Dichlorophenol	162	164,98
Ethyl methanesulfonate	109	79,97,45,65
1,2,4-Trichlorobenzene	180	182,145
Naphthalene-d_8 (IS)	136	68
Naphthalene	128	129,127
Hexachlorobutadiene	225	223,227
4-Chloro-3-methylphenol	107	144,142
2-Methylnaphthalene	142	141, 115
2-Methylphenol	108	107,77,79,90
Hexachloropropene	213	211, 215, 117, 141
Hexachlorocyclopentadiene	237	235,272
N-Nitrosopyrrolidine	100	41,42,68,69
Acetophenone	105	71,51,120
4-Methylphenol	108	107,77,79,90
2,4,6-Trichlorophenol	196	198, 200
o-Toluidine	106	107,77,51,79
3-Methylphenol (as 4-Methylphenol)	108	107,77,79,90
2-Chloronaphthalene	162	127,164
N-Nitrosopiperidine	114	42,55,56,41
1,4-Phenylenediamine	108	80,53,54,52
1-Chloronaphthalene	162	127,164
2-Nitroaniline	138	92, 65
Dimethyl phthalate	163	194,164
Acenaphthylene	152	151,153
2,6-Dinitrotoluene	165	63,89, 121
Phthalic anhydride	104	76,148
3-Nitroaniline	138	108,92
Acenaphthene-d_{10} (IS)	164	162,160
Acenaphthene	153	154, 152
2,4-Dinitrophenol	184	63, 154, 107
2,6-Dinitrophenol	162	164,126,98,63
4-Chloroaniline	127	129,65,92
Isosafrole	162	131,104,77,51
Dibenzofuran	168	139
2,4-Dinitrotoluene	165	63,89, 182
4-Nitrophenol	109	139,65
2-Naphthylamine	143	115,116
1,4-Naphthoquinone	158	104,102,76,130
Diethyl phthalate	149	177,150
Fluorene	166	165,167
N-Nitrosodi-n-butylamine	84	57,41,116,158

4-Chlorophenyl phenyl ether	204	206,141
4,6-Dinitro-2-methylphenol	198	51, 105, 182, 77
N-Nitrosodiphenylamine	169	168,167
Safrole	162	104,77,103,135
Diphenylamine	169	168,167
1,2,4,5-Tetrachlorobenzene	216	214,179,143,218
1-Naphthylamine	143	115,89,63
4-Bromophenyl phenyl ether	248	250,141
2,4,5-Trichlorophenol	196	198,97,132,200
Hexachlorobenzene	283	142,249
Pentachlorophenol	266	264,268
5-Nitro-o-toluidine	152	77,79,106,94
Thionazin	107	96,97,143,79
4-Nitroaniline	138	65,108,92,80
Phenanthrene-d_{10} (IS)	188	94,80
Phenanthrene	178	179,176
Anthracene	178	176,179
1,4-Dinitrobenzene	168	75,50,76,92
1,3-Dinitrobenzene	168	76,50,75,92
Diallate (cis or trans)	86	234,43,70
Pentachlorobenzene	250	252,248,215,254
5-Nitro-o-anisidine	168	79,52,138,153,77
Pentachloronitrobenzene	237	142,214,249,295
4-Nitroquinoline-1-oxide	190	160, 116, 114
Di-n-butyl phthalate	149	150,104
2,3,4,6-Tetrachlorophenol	232	131,230,166,234
Fluoranthene	202	101, 203, 100
1,3,5-Trinitrobenzene	213	74,75,120,91
Benzidine	184	92,185
Pyrene	202	101,203
Phorate	75	121,97,93,260
Phenacetin	108	179,109,137,80
Dimethoate	87	93,125,143,229
4-Aminobiphenyl	169	168,170,115
Pronamide	173	175,145,109,147
Dinoseb	211	163,147,117,240
Disulfoton	88	97,89,142,186
Butyl benzyl phthalate	149	91,206
Methyl parathion	109	125,263,79,93
Dimethylaminoazobenzene	225	120,77,148,42
Benz(a)anthracene	228	229,226
Chrysene-d_{12} (IS)	240	120,236
3,3'-Dichlorobenzidine	252	254,126
Chrysene	228	226,229
Parathion	109	97,291, 186

Bis(2-ethylhexyl) phthalate	149	167,279
3,3'-Dimethylbenzidine	212	106,196,180
Methapyrilene	97	58, 72, 191, 261
Isodrin	193	66, 195, 263, 265,
Di-n-octyl phthalate	149	167,43, 150
2-Aminoanthraquinone	223	167, 195, 139
Aramite	185	191,319,334,197,321
Benzo(b)fluoranthene	252	253,125
Benzo(k)fluoranthene	252	253,125
Chlorobenzilate	139	251, 253, 111, 141
Benzo(a)pyrene	252	253,125
Perylene-d_{12} (IS)	264	260,265
7,12-Dimethylbenz(a)anthracene	256	241,239,120
2-Acetylaminofluorene	181	180,223,152
4,4'-Methylenebis(2-chloroaniline)	231	266, 140, 195
3-Methylcholanthrene	268	252,253,126,134
Indeno(1,2,3-cd)pyrene	276	138,227
Dibenz(a,h)anthracene	278	139,279
Benzo(g,h,i)perylene	276	138,277
1,2-Diphenylhydrazine	77	105, 182, 51
Endosulfan I	195	33
2-Fluorobiphenyl (surr)	172	171
2-Fluorophenol (surr)	112	64, 92
Nitrobenzene-d_5 (surr)	82	128,54
N-Nitrosodimethylamine	74	42,44
Phenol-d_6 (surr)	99	42,71
Terphenyl-d_{14} (surr)	244	122,212
2,4,6-Tribromophenol (surr)	330	332,141
N,N-dimethyl formamide	73	44,42
N,N-dimethyl acetamide	87	72,44,42
(2-Bromoethyl)benzene	184	77,91,105,186
Atrazine	200	173,215
Benzaldehyde	77	105, 106
Caprolacatam	113	55,56
1,1-Biphenyl	154	153,152,76
Carbazole	167	166,139
1,3,5-Trichlorobenzene	180	182,145,109
1,2,3-Trichlorobenzene	180	182,145,109
1,2,3,4-Tetrachlorobenzene	216	214,218,179
1-Chloro-4-Nitrobenzene	157	111,75,99

IS = internal standard

surr = surrogate

Acrylamide	71	55, 44
Octachlorostyrene	308	343, 380, 273
1,2,3,5-tetrachlorobenzene	216	214, 218, 179, 143

1,2,3,4-tetrachlorobenzene	216	214, 218, 179, 143
2-chlorobenzaldehyde	139	111, 140, 76
Benzophenone	105	182, 77, 51
3-Quinuclidinyl benzilate	183	126, 337, 110
2-chlorobenzalmalononitrile	153	188, 126
Malononitrile	<66	38,39

Table IV

Recommended Minimum Response Factor Criteria for Initial and Continuing Calibration Verification Using the Suggested Ions from Table III

Semivolatile Compounds	Minimum Response Factor (RF)
Benzaldehyde	0.010
Phenol	0.800
Bis(2-chloroethyl)ether	0.700
2-Chlorophenol	0.800
2-Methylphenol	0.700
2,2'-Oxybis-(1-chloropropane)	0.010
Acetophenone	0.010
4-Methylphenol	0.600
N-Nitroso-di-n-propylamine	0.500
Hexachloroethane	0.300
Nitrobenzene	0.200
Isophorone	0.400
2-Nitrophenol	0.100
2,4-Dimethylphenol	0.200
Bis(2-chloroethoxy)methane	0.300
2,4-Dichlorophenol	0.200
Naphthalene	0.700
4-Chloroaniline	0.010
Caprolactam	0.010
4-Chloro-3-methylphenol	0.200
2-Methylnaphthalene	0.400
Hexachlorocyclopentadiene	0.050
2,4,6-Trichlorophenol	0.200
2,4,5-Trichlorophenol	0.200
1,1'-Biphenyl	0.010
2-Chloronaphthalene	0.800
2-Nitroaniline	0.010
Dimethylphthalate	0.010

2,6-Drintrotoluene	0.200
Acenaphthylene	0.900
3-Nitroaniline	0.010
Acenaphthene	0.900
2,4-Dintirophenol	0.010
4-Nitrophenol	0.010
Dibenzofuran	0.800
2,4Dinitrotoluene	0.200
Diethylphthalate	0.010
1,2,4,5-Tetrachlorobenzene	0.010
4-Chlorophenyl-phenylether	0.400
Fluorene	0.900
4-Nitroaniline	0.010
4,6-Dinitro-2-methylphenol	0.010
4-Bromophenyl-phenylether	0.100
N-Nitrosodiphenylamine	0.010
Hexachlorobenzene	0.100
Atrazine	0.010
Pentachlorophenol	0.050
Phenanthrene	0.700
Anthracene	0.700
Carbazole	0.010
Di-n-butylphthalate	0.010
Fluoranthene	0.600
Pyrene	0.600
Butylbenzylphthalate	0.010
3,3'-Bichlorobenzidine	0.010
Benzo(a)anthracene	0.800
Chrysene	0.700
Bis(2-ethylhexyl)phthalate	0.010
Di-n-octlyphthalate	0.010
Benzo(b)fluoranthene	0.700
Benzo(k)fluoranthene	0.700
Benzo(a)pyrene	0.700
Indeno(1,2,3-cd)pyrene	0.500
Dibenz(a,h)anthracene	0.400
Benzo(g,h,i)perylene	0.500
2,3,4,6-Tetrachlorophenol	0.010

Q-EQA-FRM6869 Nonconformance Form
QA-SOP11178 Demonstrations of Capability
QA-SOP11892 Determining Method Detection Limits and Limits of Quantitation
T-OE-SVOA-WI10916 Low-Level Sonic Probe Extraction Procedure by Method 3550C for the Determination of Semivolatiles in a Solid Matrix
T-OE-SVOA-WI10917 Waste Dilution, EPA 3580A for Acid Extractables and Base-Neutrals in a Non-Water Soluble Matrix
T-OE-SVOA-WI10928 Microwave Extraction by Method 3546 for Semivolatiles
T-OE-SVOA-WI10935 Separatory Funnel Extraction (Method 3510C) of Base Neutrals and Acid Extractables in Leachates
T-OE-SVOA-WI11432 Separatory Funnel Extraction by Method 3510C for BNAs in Wastewater
T-SVOA-FRM9602 Dept 4026 Calculations
T-SVOA-WI11998 Semivolatile Spiking and Calibration Standards
T-SVOA-WI9598 GC/MS Preventative and Corrective Maintenance
T-SVOA-WI9604 Monitoring GC/MS Semivolatile QC Data Acceptance Limits

End of document

Version history

Version	Approval	Revision information
11	17.MAR.2020	
12	10.JUN.2020	
12.1	26.APR.2021	Version 12.1 published for editorial changes only

eurofins	Always check on-line for validity. **Pesticides in Water by Method 8081B using GC-ECD**	Level: **Work Instruction**
Document number: **T-PEST-WI9999**		
Old Reference: **1-P-QM-WI-9015107**		
Version: **8**		Organisation level: **5-Sub-BU**
Approved by: **X6TJ** Effective Date **30-NOV-2020**	Document users: **6_EUUSLA_Pesticide Residue Analysis_All Management, 6_EUUSLA_Pesticide Residue Analysis_OC Pesticide C**	Responsible: **5_EUUSLA_Pesticide Residue Analysis_Manager**

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Revision Log
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Cross Reference
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Basic Principles
Reference Modifications
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Safety Precautions and Waste Handling
Personnel Training and Qualifications
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Apparatus and Equipment
Reagents and Standards
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Statistical Information/Method Performance
Quality Assurance/Quality Control

Revision Log

Revision: 8	**Effective Date:**	This version
Section	**Justification**	**Changes**
Revision Log	Formatting requirement	Removed revision logs up to the previous version
Cross Reference	Formatting requirement	Updated to D4 nomenclature
Reagents and Standards	Reflects current practice	B.9. changed 2 mL to 1 mL B.10. updated chlordane standard vendor and added preparation of intermediate B.11. updated standard vendor B.12. updated standard vendor and removed statement that surrogates are contained in the mix B.13-15. updated standard vendor B.16.d. Revised the preparation formulation

Procedure J.3.b./J.5.d.	Clarification	Removed addition of sixth calibration level as all calibrations already have six levels
Procedure L.1.	Reflects current practice	Updated that ICV mixtures are directed directly after their respective curves and not after all curves.
Procedure M.7.a.	Reflects current practice	Updated level 3 to level 4

Revision 7		**Effective Date:** 29-MAR-2018
Section	**Justification**	**Changes**
Revision Log	Formatting requirement	Removed revision logs up to the previous version
Calibration	Clarification and Enhancement	Added 6 levels for chlordane and toxaphene and renumbered sequence. Added use of each individual peak in calculating response factors for chlordane and toxaphene. Added curve criteria for toxaphene and chlordane.

Reference

1. Test Methods for Evaluating Solid Wastes, SW-846 Method 8081B, Rev. 2, February 2007.

2. Determinative Chromotographic Separations, SW-846, Method 8000C, March 2003.

3. Determinative Chromotographic Separations, SW-846, Method 8000D, July 2014.

4. *Chemical Hygiene Plan*, current version.

Cross Reference

Document	Document Title
T-OE-PEST-WI10281	Cleanup Procedures for the Extraction of Pesticides and Polychlorinated Biphenyls (PCBs)
T-OE-PEST-WI10920	Separatory Funnel Extraction by Method 3510C, 608, 608.3, or 622 for Pesticides and PCBs in a Wastewater
T-PEST-WI10007	Preventative and Corrective GC Maintenance
T-PEST-WI10011	QC Data Acceptability and Corrective Action
T-PEST-WI10016	Setting Up Single Component Initial Calibrations
T-PEST-WI10022	Using "Datalog" Software for Data Acquisition of Multicomponent Pesticides/PCBs
T-PEST-WI11971	Polychlorinated Biphenyls (PCBs) by Method 608 or 8082 in Waters
T-PEST-WI9847	Common Equations Used During Chromatographic Analyses
T-PEST-WI9954	Interpretation of Chromatographic Data
T-PEST-WI9980	Monitoring QC Data Acceptance Limits
QA-SOP11892	Determining Method Detection Limits and Limits of Quantitation

Scope

This method is used for identifying and quantitating the following Pesticides in aqueous samples:

Compound	LOQ (µg/L)
alpha-BHC	0.01
beta-BHC	0.01
delta-BHC	0.01
gamma-BHC (lindane)	0.01
heptachlor	0.01
Aldrin	0.01
heptachlor epoxide	0.01
endosulfan I	0.01
endosulfan II	0.03
endosulfan sulfate	0.02
Dieldrin	0.02
Endrin	0.02
4,4'-DDE (*p,p*)	0.02
2,4'-DDE (*o,p*)	0.02
4,4'-DDD (*p,p*)	0.02
2,4'-DDD (*o,p*)	0.02
4,4'-DDT (*p,p*)	0.02
2,4'-DDT (*o,p*)	0.02
endrin aldehyde	0.1
endrin ketone	0.02
methoxychlor	0.1
technical chlordane	0.5
alpha-chlordane	0.01
gamma-chlordane	0.02
toxaphene	1
Kepone	0.2
Mirex	0.05
Telodrin	0.01
hexachlorobenzene (HCB)	0.01
Total Endosulfan (I + II)	.01
Total DDTs	0.02

Limits of Quantitation (LOQs) are based on annual statistical evaluation of laboratory data and are subject to change. The current Method Detection Limits (MDLs) and LOQs are maintained in the LIMS.

HCB, Telodrin, and Kepone, are additional compounds offered by special request.

Basic Principles

A portion of sample is extracted serially with methylene chloride. The volume of sample can be adjusted depending on the physical appearance of the sample and the amount sent for analysis. The extract is dried, concentrated, and exchanged to hexane. The pesticides are then identified and quantitated using gas chromatography with electron capture detectors (GC-ECD). Florisil, GPC, or copper cleanups may be employed to reduce matrix interferences that introduce large, unresolvable peaks into the chromatogram.

Reference Modifications

Gas Chromatography conditions differ from those listed in 8081B. However, all quality control (QC) criteria are met.

Interferences

A. Avoid contact with any plastic material during the extraction and analysis procedures to minimize interferences from phthalate esters.

B. Scrupulously clean all glassware to minimize interferences caused by laboratory contaminants.

C. An electron capture detector is very sensitive to compounds that contain halogens and will also respond to many other compounds and materials including oxygenated organics, unsaturated organics, and elemental sulfur.

D. Extracts may require further cleanup if interferences are present. Refer to *T-OE-PEST-WI10281* for details on each cleanup procedure. Interfering materials can introduce large, unresolvable peaks into the chromatogram.

1. Use Florisil cleanup to reduce organics that can interfere (polar compounds).
2. Use GPC to remove sulfur and higher molecular weight organics.
3. Use copper cleanup to remove elemental sulfur.

Safety Precautions and Waste Handling

See *Chemical Hygiene Plan* for general information regarding employee safety, waste management, and pollution prevention.

All laboratory waste is accumulated, managed, and disposed of in accordance with all federal, state, and local laws and regulations.

Gloves, lab coats, and safety glasses must be worn when preparing standards. Lab coats and safety glasses must be worn around the GC where solvents and sample extracts are handled.

All GC vials and vials containing extracts are placed in a hazardous waste container for lab pack disposal. There is a satellite container in the laboratory, which is then emptied into the main laboratory waste collection drums. All solvent waste is disposed of in solvent waste containers.

Personnel Training and Qualifications

All personnel performing this procedure must have documentation of reading, understanding, and agreeing to follow the current version of this SOP and an annual documented Demonstration of Capability (DOC) which is maintained in the analyst's training records.

Initially, each analyst performing the instrumental analysis must work with an experienced analyst for a period of time until they can independently calibrate the instrument, use the chromatography data system to set up sequences, perform the calculations, interpret chromatograms, perform instrument maintenance, and enter data into the LIMS. Proficiency is measured through documented audits of the tasks listed and over checking of data as well as an Initial Demonstration of Capability (IDOC).

The IDOC consists of four laboratory control samples that are carried through all steps of the analysis and meet

the defined acceptance criteria. The criteria include the calculation of mean accuracy and standard deviation. Various options are available for a DOC and can include four laboratory control samples, one blind sample, or one ICAL with ICVs and/or CCVs.

Sample Collection, Preservation, and Handling

Samples are collected in amber glass containers with Teflon™-lined caps, preserved with 0.008% sodium thiosulfate in case residual chlorine is present, and stored under refrigeration at 0º to 6°C, not frozen. Sample extraction must be performed within 7 days of collection, and sample analysis must be performed with 40 days of extraction. Extracts are stored frozen at ≤-10ºC.

Apparatus and Equipment

1. HP 6890 gas chromatograph equipped with dual electron capture detectors, or equivalent

2. Columns:

   a. Phenomenex MR1 30 m × 0.32 mm × 0.5 µm or equivalent

   b. Phenomenex MR2 30 m × 0.32 mm × 0.25 µm or equivalent

3. Integrating system such as Chrom Perfect® by Justice Laboratory Software, or equivalent. Chrom Perfect® is a data system capable of storing and reintegrating chromatographic data and determining peak areas using a forced baseline, area summation, baseline projection, and performing baseline compensation as required.

4. Various sizes of Class-A volumetric pipettes, flasks, and syringes

Reagents and Standards

A. Reagents

   1. Hexane for autosampler rinse vials, stored at room temperature.

   2. UPC (ultra pure carrier) helium for carrier gas

   3. UPC nitrogen for detector make-up gas

   4. UPC hydrogen for carrier gas, bottled or from a generator

B. Standards

   1. All standards are prepared using Class-A volumetric pipettes, flasks, and syringes.

   2. All weights are made on an analytical balance.

   3. Unopened ampules are stored according to the manufacturer's instructions and are stable until the expiration date provided by the manufacturer.

   4. All prepared standard solutions are stored at ≤ -10ºC in labeled containers.

   5. See the electronic standards database for the compound list and concentrations contained in the various mixes.

   6. PCB standards are identical to those outlined in the departmental analysis SOP *T-PEST-WI11971*.

7. Mix A – Restek Catalog #32292. Equivalent to the CLP (SOW-OLMO3.2) Mix A and B, contains all single component pesticides and surrogates in the TCL and PPL organochlorine lists.

8. Mix E – Restek Custom Mix #55992. Contains additional organochlorine pesticides such as kepone, the *o,p* isomers of DDT, DDD, DDE, telodrin, mirex, and hexachlorobenzene.

9. Toxaphene stock – Restek Catalog #32005 at 1,000,000 ppb. Prepare an intermediate by placing 1 mL into a 25-mL volumetric and bring to volume with hexane.

10. Chlordane stock (CAS# 57-74-9)– Restek catalog # 32021 (1,000,000 ppb in hexane).

a. Prepare an intermediate by placing 1 mL into a 10.0 mL volumetric and bring to volume with hexane.

11. Surrogate stock (SS) – Accustandard #CLP-032-R containing Decachlorobiphenyl (DCB) and Tetra-chloro-meta-xylene (TCX) at 200,000 ppb each in acetone.

12. Pest MS stock – Restek catalog #32292. Contains all single component pesticides in the TCL and PPL organochlorine lists.

13. EVAL stock – Ultra Scientific Cat. #CLP-250. Equivalent to CLP performance evaluation mix (PEM).

14. ICV stocks – These must be from a second source than those used for working calibration standards.

Accustandard M-8081-SC and P-064S-10x for Mix A; Accustandard Cat. # S-5833 for Mix E; Agilent part# EPA-1161-1 for Toxaphene; Accustandard #P017S-10x for Chlordane.

15. Instrument Blank (IBLK) – surrogate stock (SS) – Restek catalog# 32000 containing Decachlorobiphenyl (DCB) and Tetrachlorometaxylene (TCX) at 200,000 ppb each in acetone.

16. Prepare working standards using the electronic standard database as a guide.

a. In the database, choose the category (ie working spike, surrogate, intermediate, etc) and the required standard.

b. The database contains the following information: solution description (ex. MIXA1), parent solution name, aliquot used, final volume, solvent used, concentration or each compound in the solution, and the expiration date. The working standards have an expiration date of 6 months.

c. The calibration scheme begins at or near the reporting limit through a 20 fold of the initial calibration level.

d. See below for the preparation of the matrix spike and the surrogate spike solution used during the extraction process.

Standard Name	Parent Solution	Aliquot (mL)	Final Vol. (mL)	Solvent	Description	Expiration Date
SW-846 SS	SS Stock	1.5	1000	acetone or methanol	SW-846 Water Surrogate - identical to that prepared for PCB analyses	6 months
SW-846 MS	MS Stock	1.25	100	acetone or methanol	SW-846 Water Spike for single component organochlorines in the	6 months

				TCL/PPL list	

17. Standards for the PCBs are run during this analysis since some of the PCB peaks may coelute or overlap with the pesticide peaks of interest. The information is used for proper identification and interpretation of the peaks observed for each sample. Quantitation of the same peak as a pesticide and PCB can be avoided.

Extraction Procedure

Samples are extracted according to *T-OE-PEST-WI10920* with possible extract clean-ups performed per *T-OE-PEST-WI10281*.

Gas Chromatographic Conditions

Detector:	ECD
Detector Temp:	330°C
Oven Temp:	150°C, no hold, 45°C/min to 200°C, then 15°C/min to 230°C, then 30°C/min to 330°C. Hold 1.5 min
Carrier:	Hydrogen at constant flow of 3.4 ml/min Helium may also be substituted
Makeup Gas:	N2 at 55 mL/min
Injection Size:	1 µL, direct injection
Injector Temp:	225°C

The conditions listed serve as a guideline only and are typically the optimum operating conditions. The analyst may make changes to the chromatographic conditions to improve the speed of analysis, linearity, sensitivity, and/or improve the separation if initial and continuing calibration criteria and quality assurance criteria listed within this analysis document are met.

Calibration

A. The pesticide analysis is run as a dual column approach. One injection is split onto two analytical columns. All initial and continuing calibration criteria listed below applies to both analytical columns.

B. Fill the autosampler rinse vials with clean solvent or replace vials that appear dirty.

C. Prepare a sequence using the following order of injections. NOTE: If the IBLK is to be reported or included in a data deliverable, it must follow the EVALX analysis in the ICAL sequence.

1. Conditioner
2. IBLK (instrument blank)
3. EVALX
4. MIXA1
5. MIXA2
6. MIXA3
7. MIXA4
8. MIX A5
9. MIXA6
10. ICMAX (ICV)
11. MIXE1*

12. MIXE2*
13. MIXE3*
14. MIXE4*
15. MIXE5*
16. MIXE6*
17. ICMEX (ICV)
18. TOXA1
19. TOXA2
20. TOXA3
21. TOXA4
22. TOXA5
23. TOXA6
24. ICTX (ICV toxaphene)
25. CHLD1
26. CHLD2
27. CHLD3
28. CHLD4
29. CHLD5
30. CHLD6
31. ICCH (ICV chlordane)
32. AR164
33. AR2154
34. AR484
35. MDLA (MDL std for Mix A)
36. MDLE (MDL std for Mix E)
37. MDTX (MDL std for toxaphene)
38. MDCH (MDL std for chlordane)
39. Blank
40. LCS
41. 1234567
42. 1234567ms
43. 1234567msd
44.– 54 Continue running samples for a 12-hour period from last standard
55. EVALX
56. MIXA4 (CCV)
57. MIXE4* (CCV)
58. TOXA4 (CCV)
59. CHLD4 (CCV)

D. Run a breakdown evaluation standard (EVAL) at the start of an ICAL to ensure the breakdown of DDT and endrin meets the method acceptance criteria.

1. Evaluates the system for the breakdown of DDT and Endrin before sample analysis can begin.
2. Breakdown check is run ongoing throughout the run after every 12 hours.
3. Sample analysis cannot be performed if the breakdown exceeds 15% for either compound.

E. *MIX E is only needed when analyzing for additional pesticides including 2,4-DDD, 2,4-DDE, 2,4-DDT, kepone, mirex, HCB, and telodrin.

F. The order of injections for the multi-components is not critical as long as they are all run before sample analysis.

1. Aroclors are only used to identify possible PCB patterns which may interfere with the pesticide

detections.

G. The conditioner injection is usually a standard or sample that has already been injected.

1. The conditioner is used to prime the system.

2. It is best utilized when the GC has not been running and there is a gap in time prior to starting a set of injections.

H. Hexane blanks may also be run to allow the GC to go through some temperature programs and/or to check the cleanliness of the system.

I. Instrument blanks (IBLK) may also be run with the continuing check standards - this is optional but frequently requested for projects.

1. The instrument blank (IBLK) is injected after the conditioners but before the initial calibration.

2. It is used to determine that the instrument is free of background noise or contamination.

J. Initial Calibration (ICAL)

1. Calibrate using the 6 levels of the single component pesticides contained in MIX A and E. Calibrate using 6 levels for chlordane and toxaphene .

2. An external standard calibration is used with average response factor (AVGRF) for all analytes where the % RSD is ≤20%.

3. If the RSD is > 20%, use a calibration curve.

a. Attempt a linear fit first. Use this fit if the correlation coefficient is >0.99.

b. If the correlation coefficient is less than 0.99, a quadratic fit will be tried. (all six calibration points must be used to use a quadratic fit)

(1) Typically the pesticides in this method will not require a quadratic fit.

(2) Quadratic fit cannot be used to extend the calibration range or bypass instrument maintenance

NOTE: For samples from South Carolina, a quadratic fit may not be used.

c. For either curve type, extrapolate or force to zero is not allowed. Set the zero to ignore. See *T-PEST-WI10016* for more details.

d. If the 0.99 curve coefficient cannot be met:

(1) Inspect the data points to see if one or more calibration levels appear to be off.

(2) Reinject or remake the standard if a specific calibration level has concentrated due to solvent evaporation, or degraded over time.

(3) Perform instrument maintenance as needed. See *T-PEST-WI10007* for troubleshooting linearity problems.

e. Curve types and criteria can be altered to meet client or project specific requirements as well as any regulatory agency requirements that may differ from those listed here.

4. Set up the aroclor data in the custom "datalog" program.

a. The retention times of the peaks used for identifying the aroclors are entered into the calibration file along with the corresponding peak heights and concentrations.

b. This calibration is only used to help identify potential aroclor patterns and peaks that may overlap or interfere with target pesticides.

5. Set up the toxaphene and chlordane calibration data in the custom "datalog" program.

a. The retention times of the peaks used for identifying and quantifying these multi-component pesticides are entered into the calibration file along with the corresponding peak heights and concentrations.

b. An external standard calibration is used with average response factor (AVGRF) for each individual peaks for the chlordane and the toxaphene pattern where the %RSD is ≤20%.

c. See *T-PEST-WI10022* for details on this program.

d. If the RSD is > 20%, use a calibration curve.

(a). Attempt a linear fit first. Use this fit if the correlation coefficient is >0.99.

(b.) If the correlation coefficient is less than 0.99, a quadratic fit will be tried. (all six calibration points must be used to use a quadratic fit)

(1) Typically the pesticides in this method will not require a quadratic fit.

(2) Quadratic fit cannot be used to extend the calibration range or bypass instrument maintenance

NOTE: For samples from South Carolina, a quadratic fit may not be used.

(c). For either curve type, extrapolate or force to zero is not allowed. Set the zero to ignore. See *T-PEST-WI10016* for more details.

(d). If the 0.99 curve coefficient cannot be met:

(1) Inspect the data points to see if one or more calibration levels appear to be off.

(2) Reinject or remake the standard if a specific calibration level has concentrated due to solvent evaporation, or degraded over time.

(3) Perform instrument maintenance as needed. See *T-PEST-WI10007* for troubleshooting linearity problems.

e. Curve types and criteria can be altered to meet client or project specific requirements as well as any regulatory agency requirements that may differ from those listed here.

6. Ensure the peaks in the standards are labeled properly, including the surrogates in all injections that contain them.

7. Set the scaling of chromatograms and peak integration parameters so that the peaks for each compound of interest are detected and integrated at the concentration of the MDL. This ensures that the LOQ and MDL can be met.

8. When 8000D is referenced and curve fits are used in the initial calibration, percent error (%E) must be calculated for each calibration level. Standard levels at or below the LOQ must meet +/- 50%, standards above the LOQ must meet +/-30%. (%error = (true concentration - calculated concentration)/true concentration)*100)

L. Initial Calibration Verification (ICV)

1. Verify the calibration curve using the ICV mixtures injected directly after their respective curves.

2. The % difference of the concentrations for these must be within 20% difference of the nominal concentration.

M. Continuing Calibration Verification (CCV)

1. Analyze a set of check standards after each set of injections in a 12-hour period, or 20 samples, whichever comes first (samples, QC, blanks, etc.).

a. Use a mid level single component standard (Level 4) to evaluate the response of single component analytes.

b. Use a mid level for toxaphene and chlordane (Level 4).

c. Run the breakdown evaluation mix (EVAL). Analysis cannot proceed if either compound exceed 15%.

2. The concentration quantitated for the continuing calibration check standards must be within 20% difference (%D) of the nominal concentration.

3. Samples must be bracketed by compliant standards.

4. When confirmation of target analytes is needed, the initial calibration criteria must be met and the second column must meet the 20% continuing calibration criteria.

5. When a CCV fails to meet the QC criteria, all samples that were injected after the last CCV that passed must be re-injected.

Exception: If the CCV fails high and those targets are not detected in the associated samples, the samples can be reported. A comment must be added to the analytical report.

If two consecutive/sequential CCVs fail, corrective action must be taken, which can include performing injection port maintenance, baking the instrument or other types of maintenance. Two consecutive/sequential CCVs must meet the criteria or an initial calibration must be performed before sample analysis can continue.

6. The instrument blank (IBLK) may be injected after each set of continuing calibration verifications.

a. This is optional but frequently requested for projects.

b. It must be evaluated as a water matrix against the water MDL/LOQs.

c. The IBLK must not have any target compounds above the reporting limits.

(1) If a target analyte is detected in the IBLK, any associated samples with a detection for that same target must be evaluated.

(2) Unless the concentration in the sample is more than 10x the IBLK value, the sample must be reinjected after another compliant IBLK.

(3) Instrument maintenance, like baking the system or injection port maintenance is usually necessary to clean up the instrument. .

7. Retention time (RT) windows

a. Established as 3× the standard deviation determined over 72 hours, or at no less than .02 minutes, applied to the initial calibration standard, usually Level 4.

b. If the RTs for a continuing calibration standard fall outside the RT window, update the midpoint RT using that standard.

(1) Save this under the appropriate name to indicate an update has occurred.

(2) RTs cannot be updated more than once per day. All subsequent standards run within a 24-hour period must be within this window.

(3) If RTs are not consistent, the cause must be investigated and corrective action taken.

Procedure

1. Make injections via an auto sampler.

2. Samples are analyzed according to the sequence in the calibration section above.

3. Retention times of peaks in the samples are compared to the standard RT windows. Peaks present on both columns (and that are also in the correct ratios to represent an aroclor) are quantitated and the high value is reported unless there are chromatographic anomalies. See *T-PEST-WI9954*.

4. Continue running groups of samples/injections followed by check standards every 12 hours or every 20 injections, whichever comes first.

5. If significant interference is present, schedule florisil cleanup. If elemental sulfur is present, copper cleanup the extract or have it put through GPC cleanup. If these techniques do not reduce the matrix problems, dilute the extract, analyze, and adjust the LOQs accordingly.

6. Report the results for the least dilute sample where the concentration measured is within the acceptable calibration range.

Calculations

A. See *T-PEST-WI9847* for details on all calculations/equations used to evaluate the initial and continuing calibration.

B. Calculation of results is performed according to the following procedures:

1. Single-component compounds

a. Using AVGCF from initial calibration

$$\frac{Sample\ Height}{AVGCF} \times \frac{FV}{IV} \times DF = \mu g/L \quad as\ received$$

b. Using linear curve from initial calibration:

$$[(Sample\ Height - Y - intercept)/Slope] \times \frac{FV}{IV} \times DF = \mu g/L\ as\ received$$

Where:

FV (final volume) = volume in mLs

IV (initial volume) = volume in mLs

DF (dilution factor) = as needed

2. Multi-component compounds

The peak heights generated by the integration system are used to calculate the Calibration Factors (CF) for peaks of interest for each quantitation peak used for toxaphene and chlordane.

Usually the six major peaks that are unique toxaphene and chlordane (include alph chlordane, gamma chlordane and heptachlor) are chosen for quantitation. Sample concentrations are calculated per peak using Average Calibration Factor (AVGCF).

$$\frac{Sample\ Height}{AVG\ CF\ (CF)} \times \frac{FV}{IV} \times DF = \mu g/L\ as\ received$$

Where:

FV (final volume) = volume in mLs

IV (initial volume) = volume in mLs

DF (dilution factor) = as needed

The final result that is reported is determined as the average of the result for each peak chosen for quantitation:

$$(Result\ 1 + Result\ 2 + \ldots + Result\ n) / n = Average\ Result$$

3. A breakdown mix (EVALX) containing p,p¢-DDT and Endrin is run to check for breakdown. The breakdown must not exceed 15% for either compound. Breakdown is calculated as:

$$\frac{\%\ Breakdown}{for\ p,p'\text{-}DDT} = \frac{pk\ ht\ (area)\ of\ p,p'\text{-}DDE + p,p'\text{-}DDD}{pk\ ht\ (area)\ of\ p,p'\text{-}DDE + p,p'\text{-}DDD + p,p'\text{-}DDT} \times 100$$

$$\frac{\%\ Breakdown}{for\ Endrin} = \frac{pk\ ht\ (area)\ of\ Endrin\ Aldehyde + Endrin\ Ketone}{pk\ ht\ (area)\ of\ Endrin\ Aldehyde + Endrin\ Ketone + Endrin} \times 100$$

If breakdown fails, injector maintenance must be performed. Analysis cannot proceed until breakdown check passes.

Statistical Information/Method Performance

LCS, MS, and RPD are compared to the limits stored in the LIMS. The limits for LCS and MS are statistically derived. Historical data for MS/Ds, LCS/Ds, measurement of uncertainty, is reviewed at least annually. Acceptance limits are generated according to *T-PEST-WI9980*. Reporting limits including method detection limits (MDLs) and limits of quantitation (LOQs) are set according to EPA method requirements and are evaluated annually. Refer to *QA-SOP11892* for specific guidelines and procedures. Updates to the LIMS are made as needed by the QA Department and only as directed by the manager. The department database is updated via a download from the LIMS.

When 8000D is referenced an annual lower limit of quantification (LLOQ) verification is required annually on at least one instrument. All instruments must have one at least every three years.

Quality Assurance/Quality Control

Each extraction batch (up to 20 samples) must contain a method blank, a laboratory control spike sample (LCS), and either an unspiked background sample (US), a matrix spike (MS), a matrix spike duplicate (MSD) or an LCS/LCSD.

The TCL single-component pesticides of interest for each analysis are routinely spiked. Mirex, o,p-DDE/DDD/DDT, telodrin, and HCB are not spiked since this would result in co-elution with the other spiked compounds. These can be spiked at a client's request for special projects, within our scope of accreditation.

DCB and TCX are added as surrogates to each sample and QC to monitor the efficiency of the extraction, the operation of the autosampler, and to monitor retention times throughout the GC run.

See *T-PEST-WI10011* for details on QC acceptance criteria and corrective action.

If any client, agency, or state has more stringent QC or batch requirements, these must be followed.

QA-SOP11178 Demonstrations of Capability
QA-SOP11892 Determining Method Detection Limits and Limits of Quantitation
T-OE-PEST-WI10281 Cleanup Procedures for the Extraction of Pesticides and Polychlorinated Biphenyls (PCBs)
T-OE-PEST-WI10920 Separatory Funnel Extraction by Method 3510C, 608, 608.3 or 622 for Pesticides and PCBs in a Wastewater
T-PEST-WI10007 Preventative and Corrective GC Maintenance
T-PEST-WI10011 QC Data Acceptability and Corrective Action
T-PEST-WI10016 Setting Up Single Component Initial Calibrations
T-PEST-WI10022 Using "Datalog" Software for Data Acquisition of Multicomponent Pesticides/PCBs
T-PEST-WI11971 Polychlorinated Biphenyls (PCBs) by Method 608 or 8082 in Waters

T-PEST-WI9847 Common Equations Used During Chromatographic Analyses
T-PEST-WI9954 Interpretation of Chromatographic Data
T-PEST-WI9980 Monitoring QC Data Acceptance Limits

End of document

Version history

Version	Approval	Revision information
6	25.MAR.2018	
7	29.MAR.2018	
8	24.NOV.2020	

eurofins	Always check on-line for validity.	Level:
Document number: **T-MET-WI11933**	**Metals by Inductively Coupled Plasma Mass Spectrometry for SW-846 Methods 6020/6020A/6020B(aqueous, solid, tissue) and EPA 200.8 (aqueous)**	**Work Instruction**
Old Reference: **1-P-QM-WI-9018443**		
Version: **11**		Organisation level: **5-Sub-BU**
Approved by: **XL3S** Effective Date **12-NOV-2020**	Document users: **6_EUUSLA_Metals_ICP-MS Analysis, 6_EUUSLA_Metals_ICP-MS Analysis Verifiers, 6_EUUSLA_Metals_Management**	Responsible: **5_EUUSLA_Metals_Manager**

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Revision Log

Revision: 11	**Effective Date:**	This version
Section	**Justification**	**Changes**
Revision Log	Formatting requirement	Removed revision logs up to the previous version
Reference	Reflects current protocol	Removed 7500 information
Cross Reference	Enhancement	Added *T-MET-WI35797* Metals Data Verification Process
Routine Methods	Added/Deleted	Removed old LIMs analysis numbers
Basic Principles	Reflects current protocol	Corrected instrument and equipment information. Removed 7500 information, added 7900 information. Corrected gas mode order.

Revision: 11	**Effective Date:**	This version
Section	**Justification**	**Changes**
Interferences	Reflects current protocol	Removed 7500 and 7700 references.
Safety Precautions and Waste Handling	Reflects current protocol	Removed responsibilities for chemical spills that are now taken care of by the ERT.
Apparatus and Equipment	Reflects current protocol	Removed 7500 information, added 7900 information. Corrected instrument/equipment information. Removed references to Parallax and updated to reflect procedures for TALS. Removed adjustable pipette information.
Reagents and Standards	Reflects current protocol	Corrected standard/reagent name(s) from Parallax to TALS formatting.
Calibration	Reflects current protocol	Corrected standard/reagent name(s) from Parallax to TALS formatting. Added LRC
Procedure	Reflects current protocol	Removed procedure for old LIMS. Added the procedure for new LIMS. Corrected standard/reagent and QC name(s) from Parallax to TALS formatting.
Quality Assurance/Quality Control	Reflects current protocol	Corrected QC name(s) from Parallax to TALS formatting. Removed 7500 information and added 7900 information. Updated 7700 usage. Removed verification process and added cross reference to *T-MET-WI35797*
Figure 1	Enhancement	Removed erroneous information and replaced with correct tuning parameters/concentration(s).
Table I	Enhancement	Removed table and cross referenced to *T-MET-WI35797*.
Table II	Enhancement	Removed table and cross referenced to *T-MET-WI35797*.

Revision:10	**Effective Date:**	05.JUL.2019
Section	**Justification**	**Changes**
Revision Log	Formatting requirement	Removed revision logs up to the previous version
Table II - ICPMS Metals by EPA 6020/6020A/6020B	Update to method requirements	Internal standard requirements

Reference

1. Method 200.8 (rev 5.4), Determination of Metals and Trace Metals in Water and Wastes by Inductively Coupled Plasma-Mass Spectrometry, USEPA 600/R-94/111 May 1994.

2. Test Methods for Evaluating Solid Wastes, SW-846 Method 6020, September 1994.

3. Test Methods for Evaluating Solid Wastes, SW-846 Method 6020A, February 2007.

4. Test Methods for Evaluating Solid Wastes, SW-846 Method 6020B, Rev. 2, July 2014.

5. ESI SC Manual.

6. Agilent 7700 and 7900 Series ICP-MS MassHunter Workstation Guide and Hardware Maintenance Manual.

7. *Chemical Hygiene Plan*, current version.

Cross Reference

Document	Document Title
Q-EQA-FRM6869	Nonconformance Form
T-MET-WI12065	Working Instructions for Preparation of ICP-MS Solutions and Standards
S-SS-WI10695	Liquid Sample Preservation, Sample Splitting, and Turbidity for metals by EPA Methods 200.7 and 200.8
QA-SOP11892	Determining Method Detection Limits and Limits of Quantitation
QA-SOP11896	Establishing Control Limits
QA-SOP11901	Instrument Maintenance and Calibration
T-MET-WI18027	Instrument Operations for Agilent 7700
T-MET-WI18029	Instrument Maintenance for Agilent 7700
T-MET-WI21589	Instrument Operations for Agilent 7900
T-MET-WI21590	Instrument Maintenance for Agilent 7900
T-MET-WI35797	Metals Data Verification Process

Scope

This procedure applies to analyses performed at Eurofins Lancaster Laboratories Environmental (ELLE) using ICP-MS for identification and quantitation of metallic constituents.

Aqueous undigested samples and digestates (aqueous and solid matrices) are analyzed via this SOP.

Limits of Quantitation (LOQs), Method Detection Limits (MDLs) and linear ranges are maintained in the LIMS. These are subject to change without notification.

Routine Methods

Analyte	Mass
Be	9
B	11
Na	23
Mg	24
Al	27
K	39
Ca	44
Ti	47
V	51
Cr	52
Mn	55
Fe	57
Co	59
Ni	60
Cu	63
Zn	66
As	75
Se*	78
Se**	82

Sr	88
Mo	98
Ag	107
Cd	111
Sn	120
Sb	121
Ba	137
Tl	203
Pb 206	206
Pb 207	207
Pb 208***	208
U	238
*Se 78 is the mass reported from collision cell ICPMS only **Se 82 is the mass reported from non-collision cell ICPMS only ***For Pb masses 206, 207 and 208 are summed for calibration and analysis	

Basic Principles

ICP-MS is an analytical instrument that uses the energy of inductively coupled plasma to generate ions to be analyzed in the mass spectrometer.

The instruments use a discrete sampling system that first loads the sample into a Teflon sample loop. The sample is then pushed by a carrier solution using a computer controlled peristaltic pump that delivers the sample from the loop into the nebulizer attached to a cooled Scott double pass spray chamber.

The Agilent 7700 (E05) and 7900 (E07/E08/E09) can analyze samples in 3 different modes of operation, although typically analysis is done in 3 mode or No Gas mode only:

1. Mode 1 – no gas. This mode does not use a collision or reaction gas. Elements with a low atomic mass or that have no interferences can be analyzed using the "no gas" mode.

2. Mode 2 – Hydrogen (H_2) mode. This mode uses H_2 as a reaction gas, since it reacts quickly and efficiently with the Argon-based interfering species, but reacts slowly or not at all with the analyte(s) of interest. In this mode, interferences can be reduced to the level of baseline noise, allowing lower detection limits to be achieved for some difficult elements.

3. Mode 3 – Helium (He) mode. This mode uses He as a collision gas for reliable, predictable removal of unknown matrix interferences. No new interferences are formed in the cell, and no analytes are lost by a reaction.

Interferences

ICP-MS interferences include isobaric elemental interferences and polyatomic ion interferences derived from the plasma gas, reagents, and/or sample matrix. The Agilent 7900 utilize helium as an inert collision gas to reduce or eliminate many types of polyatomic ion interferences.

Physical interferences caused by the change in sample matrix affecting sample transport and/or nebulization must be compensated for using internal standardization.

Memory interference is the contribution of analyte signal from a previous sample onto the next sample analysis. Adequate rinse time with an appropriate rinse solution of the sample introduction system overcomes any memory interference.

Safety Precautions and Waste Handling

All laboratory waste is accumulated, managed, and disposed of in accordance with all federal, state and local laws and regulations.
See the *Chemical Hygiene Plan* for general information regarding employee safety, waste management, and pollution prevention.

Preparing samples for inorganic analysis involves working with concentrated acids and other chemicals which are dangerous if not handled carefully:

Hydrochloric acid (HCl) – This acid can cause skin burns. Only mix with approved solutions. Always use this chemical in a fume hood.

Hydrofluoric acid (HF) – This acid is very toxic and absorbs through the skin without pain. This acid is found at trace levels in standard solutions.
Hydrogen Peroxide 30% (H2O2) **-** This oxidizer can cause skin burns. Always use in a fume hood.

Nitric acid (HNO3) – This acid can cause skin burns and burning of the respiratory tract. Add nitric acid to samples in a fume hood to avoid exposure to toxic fumes.

When diluting strong acids, never add water to acid; always add acid to water.
Store concentrated acids in the prep room acid cabinets. Only acids are to be stored in these cabinets. Flammable solvents are stored in flammable liquid storage cabinets. Some concentrated acids are kept in the acid reagent bottles on prep room counters. Fill reagent bottles in an operating fume hood using caution to avoid spills.

Large spills are cleaned by HSE. For large spills of concentrated acid, immediately evacuate the area and dial 1-1-1. HSE will use spill pillows to absorb large acid spills (small spills are cleaned with wet paper towels.)

Dispose of acid waste properly. Collect all acid digestions, waste solutions, and expired reagent solutions in waste containers. When the acid waste containers are full, a designated acid waste handler transfers the waste to the acid neutralization tank.

Personnel Training and Qualifications

All personnel performing this procedure must have documentation of reading, understanding, and agreeing to follow the current version of this SOP and an annual documented Demonstration of Capability (DOC) which is maintained in the analyst's training records.

Initially, each analyst performing the instrumental analysis must work with an experienced analyst for a period of time until they can independently calibrate the instrument, use the sequence editor to set up the run, perform calculations, interpret raw data, and enter/transfer data into the LIMS. Proficiency is measured through documented audits of the tasks listed, and checking of data as well as an IDOC (Initial Demonstration of Capability) and continued DOCs (Demonstration of Capability) as defined in *QA-SOP11178*.

Sample Collection, Preservation, and Handling

Aqueous undigested samples, aqueous digestates, and solid digestates are analyzed via this SOP. Samples must be analyzed within 6 months of collection for all methods in this SOP.

Aqueous samples are collected in plastic or glass containers. Drinking Water samples are collected in 1-L plastic or glass containers. Aqueous samples are preserved with nitric acid with a pH of < 2 and stored at 0° to 6°C, not frozen.

Aqueous digestates are digested per the method in SOP *T-MET-WI11939* (aqueous samples). Aqueous samples are stored in 50 ml plastic vials at room temperature.

Solid samples are collected in glass containers and stored at 0° to 6°C, not frozen. Refer to the protocols in the digestion SOP T-MET-WI8636. Solid samples are stored in 100 ml plastic vials at room temperature.

Store standards and digestates separately.

The general practice in the metals group is to discard the digestions after all the required metals from a batch of samples have been analyzed and verified in the LIMS. Samples which require the digestate to be held for long term storage are periodically evaluated for discard.

Apparatus and Equipment

A. The following is a list of the hardware used in the Agilent 7700 and 7900 ICP-MS systems.

1. Inductively Coupled Plasma Mass Spectrometers (ICP-MS)

a. The Agilent 7700 and 7900 - The sample introduction system consists of an ESI FAST discrete sampling system, Teflon nebulizer and cooled spray chamber attached to a concentric quartz tube plasma torch.

2. Autosampler

a. The Agilent 7700 and 7900 (E08) systems use an ESI SC-8 FAST autosampler. The Agilent 7900 (E07 & E09) systems use an ESI SC-14 FAST autosampler. The autosampler parameters for each automated run are entered into the Sample List in MassHunter software.

3. Coolflow

a. The Agilent 7700 and 7900 G3292A Recirculating Chillers are set up to deliver cooling liquid to the ICP-MS at a regulated pressure of ~40 psi.

4. Computer

a.The Agilent 7700 and 7900 are controlled by a Windows-based IBM compatible PC with MassHunter software installed.

5. Vacuum Pumps

a. The Agilent 7700 and 7900 both have a 2-stage vacuum system. A rotary pump evacuates the interface chamber; a turbo molecular pump evacuates the ion lens chamber and the analyzer chamber.

B. The following is a list of the apparatus necessary for the setup of an ICP-MS run for analysis:

1. ICP-MS prep batch sheets.
2. Test tube racks
3. Graduated 15-mL polypropylene tubes and caps
4. 50-mL polypropylene screw cap tubes
5. FilterMate 2 µm filters and plungers
6. 10-mL sterile disposable syringes
7. 25-mm syringe filters, PTFE, 0.45µm
8. 30-mL polypropylene medicine cups
9. Fixed volume hand-held pipettes (25 – 2000 µL) - Eppendorf or equivalent.

NOTE: For routine operation, calibration, and maintenance of fixed-volume, hand-held pipettes, see *QA-SOP11880*.

Reagents and Standards

Refer to Form *T-MET-WI12065* for reagent and standard information and the preparation of the following standards and solutions

1. ICP-MS Calibration Standards and ICP-MS LOQ Check Standard Solution (CRI)
2. ICP-MS Initial and Continuing Calibration Verification Standards
3. Interference Check Solutions
4. Rinse/Carrier, Tuning, and Calibration Solutions
5. Internal Standard Solution
6. PDS Solutions
7. General Acids and Chemicals

Calibration

Before calibration is performed, allow the instrument to warm up for the recommended time, usually at least 15 minutes, if the plasma has been off for 15 minutes or less, or at least 30 minutes if the plasma has been off for more than 15 minutes. Daily tuning requirements must be performed prior to calibration of the instrument and after warm up occurs. Refer to forms *T-MET-WI18027*, and *T-MET-WI21589* for detailed tuning and calibration information. Full Tuning and Optimization is done as needed, or when required by the Group Leader.

Calibration is performed daily. Calibrations consist of a blank and one to three standards, followed by analysis of an ICV, ICB, CCV, CRI, ICSA/ICSAB, LRC, CCV, and CCB.

A single point calibration, consisting of a blank and one standard, is used for all analysis except samples requiring a multi-point calibration (either MA MCP or CT RCP protocol or a lab note indicating a multi-point calibration is needed). For samples requiring a multi-point calibration the calibration consists of a blank, “S1”, “S2”, and “S3” standards. The concentrations of the calibration standards are defined in *T-MET-WI12065*.

For acceptance criteria and corrective action, see *T-MET-WI35797*.

Procedure

A. Setting up an ICP-MS run

The procedure is the same for the Agilent 7700 (E05) and 7900 (E07/E08/E09) instruments.

1. In MassHunter open the method batch file used for analysis.

2. Enter the calibration standards and lot numbers in the order of:
ICV/ICB/CRI/ICSA/ICSAB/LRC(s)/Rinse(s)/CCV/CCB

3. Scan all samples into the sample list and add PDS/SD and/or dilutions as needed.

4. Add a CCV/CCB block after every 10 samples (or ending the run) as well as an ending CRI/ICSA/ICSAB as needed.

5. Enter the locations of the samples to match the rack in which they will loaded onto the auto-sampler. Ensure that the order of the samples on the batch paperwork/re-read sheet match the order in which they are loaded.

6. Right click on the sample list and print a copy.

7. Use the print out to confirm the sample ID(s) and locations of the samples on the auto-sampler.

8. Load the auto-sampler based off of the printed out sample list. Sign off on the sample list with your initials, employee number and the date.

9. Keep the sample list with the batch(es) paperwork until the batch is imported into the LIMS. Note the analytical and prep batch(es) numbers on the sample list and give to the Group Leader.

B. Pouring an ICP-MS run (Waters only in 50 mL digestion tubes):

The procedure is the same for the Agilent 7700 (E05) and 7900 (E07/E08/E09) instruments.

It is important to minimize any chance of contamination, to both yourself and the samples. Keep your hands and the work area clean at all times. Wear appropriate PPE at all times to prevent exposure to chemicals and samples.

NOTE: See Form *T-MET-WI12065* for standards and solutions used during the analytical run.

1. Choose the appropriate prep batch sheet.

NOTE: When retrieving the batch from the shelf for the first time, record the batch location on the cap of the prep blank in black sharpie. This saves time when returning the batch to the proper location after analysis and shows that the batch has been poured before and verified to be in the correct order. To prevent more than one batch from being assigned to the same location, the digestion trays all have the location written on the foam holder.

2. Verify that each digestion tube is in the correct order according to the prep sheet. If anything is missing, correct the prep sheet and notify PREP or the Group Leader to correct the LIMS and put the sample back in for digestion. If the order is incorrect, reorder the sample digestion tubes to match the paperwork.

3. For batches prepared in hot blocks in 50-mL digestion tubes:

a. The only tubes that typically need to be poured for the initial run are the post digestion spike (PDS) and serial dilution (SD)samples. These are prepared using the background sample (BKG) or the duplicate background sample (DUP) when limited sample volume is available.

b. All other samples remain in the 50-mL digestion tubes for analysis.

4. Samples that need to be poured into test tubes:

a. Obtain the appropriate number of tubes.

b. Write the last four digits of the sample number and the dilution factor if greater than 1 on each tube. If the MB or LCS must be in tubes, write MB/LCS and the prep batch number/location on the tubes.

c. Place tubes in test tube racks in the same order as the samples on the prep batch cover sheet and/or re-read.

d. The analyst must ensure that tubes are labeled correctly, that dilutions are performed accurately, and that the dilutions are recorded on the prep cover sheet and/or re-read.

5. Post-digest spike (PDS):

a. A PDS is required for each batch (sample volume permitting).

b. A PDS is prepared by pipetting 0.2 mL of the appropriate PDS solution into a 14-mL graduated test tube, and bringing it to a volume of 10 mL with the background sample, "BKG". If the PDS must be diluted, pipette 0.2 mL of the PDS solution into a 14 mL graduated test tube, add the appropriate amount of background sample, "BKG", and dilute to 10 mL using matrix rinse. If there is limited volume for the background sample, "BKG", then the "DUP" may be used for dilutions of the PDS or SD.

c. Record the lot number of PDS solution used on the prep batch cover sheet and/or re-read.

6. Serial dilution (SD)

a. Prepare the SD by diluting the background sample at a dilution that is equal to 5× the dilution factor of the PDS sample (i.e.if PDS= DF1, SD must = DF5; if PDS=DF5, SD must=DF25).

7. Filtering samples

a. Samples that are cloudy or have particulate suspended in solution must be filtered prior to analysis to prevent clogging of the sample introduction system, which causes run failures and instrument down time to correct the problem.

b. Samples that are digested using the 50-mL hotblock tubes need to be filtered using the FilterMate filtration devices and plunger.

c. Attach a filtration device to the plunger and very carefully insert the filter into the hotblock tube until the filter reaches the bottom of the digestion tube.

d. Remove and discard the plunger.

e. An alternative for samples in any type of vessel is to filter using a 10-mL sterile disposable syringe fitted with a 0.45µm PTFE syringe filter.

f. If any samples are filtered, the MB and LCS must also be filtered. If any QC sample is filtered (BKG, DUP, MS, or MSD), then all QC including the MB and LCS must be filtered.

g. Document all filtrations on the prep batch cover sheet.

NOTE: It is not necessary to filter all samples (in hotblock tubes only) that contain particulate, as long as all of the particulate is settled to the bottom of the tube below the 5-mL mark in 50-mL digestion vessels. The sampling

depth of the autosampler probe is set such that the tip of the probe is approximately 100 mm above the bottom of the digestion tube.

8. Verify that all samples in the hotblock tray are in the correct position and/or pour each sample (or sample filtrate) into the appropriate tube. Usually, the order of the batch QC is MB, LCS, (LCSD), Bkg, PDS, DUP, MS, (MSD), and SD. Most importantly, the actual positions of the samples in the tray must match the autosampler table used for analysis.

NOTE: Immediately prior to beginning analysis, the analyst must visually verify that each sample is in the position indicated in the autosampler table used for the run.

9. If not being analyzed immediately,cap any poured tubes to prevent contamination of the samples (hotblock tubes and dilutions prepared in graduated test tubes must be capped tightly except during pouring and/or analysis).

10. Return samples to sample storage, being sure to place the batch back into the location recorded on the prep batch sheet.

11. Record the following on the prep batch cover sheet: initials, employee number, and the date.

12. NOTES:

a. A PDS and a SD are performed on one sample in each digestion batch. Typically, the background sample is chosen. If the batch QC is split between two samples, the PDS is performed on the background sample accompanied by a matrix spike; the SD is performed on the background sample accompanied by a matrix duplicate. If sample volume is limited, it is acceptable to use the duplicate for the PDS and SD.

b. Batches with only field blanks or equipment blanks do not need a PDS or a SD.

c. Air filter batches need only a SD on one sample in the batch (a PDS is not required).

d. “As Received” samples are analyzed with a blank and LCS, LCSD (prepared by the analyst).

e. Documentation is of utmost importance. Verify all entries.

Calculations

1. Final Result

a. Water sample

$$\text{Instrument Reading} \times \frac{\text{Dilution Volume}}{\text{Aliquot Volume}} \times \frac{\text{Final Volume}}{\text{Sample Volume}}$$

b. Solid sample (mg/kg)

$$\text{Instrument Reading} \times \frac{\text{Dilution Volume}}{\text{Aliquot Volume}} \times \frac{\text{Final Volume}}{\text{Sample Weight (grams)}}$$

2. Relative percent different (RPD)

$$RPD = \frac{S - D}{(S + D)/2} \times 100$$

Where:

S = first sample value

D = duplicate sample value

3. Spike recovery

$$\%\ Recovery = \frac{SSR - SR}{SA} \times 100$$

Where:

SSR = spiked sample result

SR = sample result

SA = spike added

4. Correlation Coefficient

$$r = \frac{\sum XY - \frac{\sum X \sum Y}{N}}{\sqrt{\left(\sum X^2 - \frac{(\sum X)^2}{N}\right)\left(\sum Y^2 - \frac{(\sum Y)^2}{N}\right)}}$$

Where :

X = the known concentration

Y = the instrument response

N = the total number of data points

5. Serial Dilution

$$\%\ Difference = \frac{(5 \times SDR) - SR}{SR} \times 100$$

Where:

SDR = serial dilution result

SR = sample result

6. Methods of standard additions (MSA)
Take either 4 identical aliquots (for 3 point MSA) or 2 identical aliquots (for one point MSA) of the same sample. Leave one unspiked. Spike the other 3 aliquots with different levels of a standard solution (for 3 point MSA) and spike the other aliquot at approximately the indigenous concentration of the sample (for one point MSA). Add blank solution to sample aliquots so that the final volume is the same for all. Use small volumes of spiking solution to avoid diluting the sample more than 10%. Analyze the 4 aliquots or 2 aliquots and record the instrument readings in absorbance. Use the readings and spike values to find the slope and x- and y- intercepts. The x- intercept is the result.

$$\text{Slope} = m = \frac{\sum x_i y_i - (\sum x_i \sum y_i)/n}{\sum x_i^2 - (\sum x_i)^2/n}$$

$$\text{Y-Intercept} = b = \bar{y} - m\bar{x}$$

$$\text{Result} = -\frac{b}{m}$$

$$\text{Correlation Coefficient} = r = \frac{\sum\{(x_i - \bar{x})(y_i - \bar{y})\}}{\sqrt{\left[\sum (x_i - \bar{x})^2\right]\left[\sum (y_i - \bar{y})^2\right]}}$$

The correlation coefficient (r) for the least squares fit must be ³0.995. If the r value is <0.995, the MSA must be repeated at the same dilution. If the r value is again low, the result with the higher r value is verified and both are flagged with a "+" in the data package. If the r value is <0.990, the sample is run at an interference dilution to overcome matrix effects. This usually requires a raised limit of quantitation. If a client requests a particular limit of quantitation that prohibits further dilution, then the sample is repeated at the same dilution and the best of the two results is verified.

7. Average, Standard Deviation and Relative Standard Deviation

The average result, $\bar{x}$, is calculated by summing the individual results and dividing this sum by the number (n) of individual values:

$$\bar{x} = \frac{x_1 + x_2 + x_3 + x_4 + \ldots x_n}{n}$$

Standard deviation is a measure of how precise the average is or how well the individual numbers agree with each other.

$$\text{Standard deviation, } S = \sqrt{\frac{(x_1 - \bar{x})^2 + (x_2 - \bar{x})^2 + (x_3 - \bar{x})^2 + \ldots + (x_n - \bar{x})^2}{n-1}}$$

Relative standard deviation (RSD) is expressed in percent and is obtained by multiplying the standard deviation by 100 and dividing this product by the average.

$$\text{Relative standard deviation, RSD} = \frac{100 \times S}{\bar{x}}$$

Statistical Information/Method Performance

Generate MDLs and LOQs according to *QA-SOP11892*.

The department supervisor maintains annual study data. The department supervisor requests that a Quality Assurance Specialist update to the LIMS as needed. Update the department database via a download from the LIMS.

Refer to *QA-SOP11896* for statistical information.

Quality Assurance/Quality Control

A. For 6020, 6020A and 6020B, each digestion batch (up to 20 samples) must contain a method blank, LCS, and either an BKG, DUP, MS, MSD or an LCS/LCSD.

B. For 200.8, each digestion batch (up to 10 samples) must contain a method blank, LCS, and either an BKG, DUP, MS or an LCS/LCSD.

C. QC limits for MS/MSD, and LCS/LCSD are established through statistical analysis of historical data.

1. The limits are maintained in the LIMS for the relevant analysis numbers.

2. The limits are evaluated every 6 months and updated as needed.

3. The limits are subject to change without notification.

D. Batch Quality Control

1. For the preparation and concentrations of Batch Quality Control see *T-MET-WI12065*.

2. For the frequency, acceptance criteria and corrective action see Tables I and II.

E. Raw data quality checks

1. Make sure that the run is correctly labeled, and dated and that the corresponding prep sheet is attached to the run.

2. Verify that the appropriate Tuning Report is with the run.

3. For run and batch QC/Calibration frequency, acceptance criteria and corrective action, see Method Specific Tables I (EPA 200.8), and II (EPA 6020). For information on statistical windows refer to *QA-SOP11896*.

4. Spike levels of batch QC are available in the LIMS and on T-MET-WI9082.

5. LOQs are available to analysts in the LIMS.

6. Check to make sure that all results are not> 90% of the Linear Range. If a sample reading is above 90% of the linear range, then reread the sample at a dilution sufficient to bring the sample concentration to approximately the middle of the calibration range.

7. Check that the **absolute** value of all nondetected analytes is less than the LOQ. A technical decision must be made as to whether a reread is warranted for readings <|-LOQ|.

8. Check for carryover between samples. Sample RSD >20%, with a concentration > the LOQ decreasing progressively over time (i.e., Reading 3<2<1). Flag any suspect samples for reread.

NOTE: Whenever a sample is encountered that exceeds the calibration range, the following sample must be checked for carryover for the over range analyte (s) and any suspect results must be deselected and reanalyzed. During reanalysis the sample order must be modified as needed to avoid carryover from any over range sample(s).

9. For all EW (samples from public drinking water sources), check the results against the MCL (maximum contaminant level). If an analyte **exceeds** the MCL notify a verifier at once. An automated email is sent to the Client Service Representative and the state for the analytes listed below with the exception of Pb and Cu which follow the 90th percentile rule (the CSR tracks the lead and copper and notifies the supplier when necessary). Suppliers must be notified within 24 hours.

10. To avoid the risks associated with polyatomic interferences in wastewater and soil matrices all analytes must be analyzed on the collision cell ICP-MS instruments which include Agilent 7900, Equipment #27813, Equipment #30647, Equipment #30921).

a. Because EPA 200.8 rev. 5.4 does not currently allow the analysis of drinking water samples using collision cell ICP-MS all drinking water samples must be analyzed using a method with no gas mode for all analytes on the Agilent 7700, Equipment #19204.

11. Check the internal standard level for the entire run. If the internal standard reading for any sample is out of the acceptance range of the S0 reading, evaluate whether this is a result of the sample matrix or drift from other samples in the run. Only reread the sample at a dilution if the internal standard appears to be out of range due to the sample matrix. For samples where an internal standard is above the acceptance range it is acceptable to reprocess the data using an alternate internal standard. This is the preferred approach in order to avoid raised reporting limits. The acceptance criteria differ based on the method being used. Refer to Table I, and II for the method acceptance criteria.

NOTE: The internal standard is added in equal concentration to all of the samples and standards via a dedicated line on the peristaltic pump. The analytical lines referenced to an internal standard report a corrected concentration value based on the ratio of analyte to internal standard intensities. All the calculations for determining concentration are based on Intensity Ratio (IR). The IR is defined as the background corrected intensity signal of the analyte line (Ia) divided by the internal standard value (Iis). IR= Ia/Iis.

12. For TCLP and SPLP samples, an MSA (method of standard additions) is required if:

a. The sample concentration falls between 80% and 100% of the regulatory limit.

b. If the TCLP or SPLP matrix spike (QA) recovers <20%, all samples in the leachate batch must be reanalyzed using the method of standard additions for that analyte.

13. When items 1 – 12 are complete, check the following:

a. All samples requiring reread/redigestion are listed on the reread/redigestion schedule forms.

b. The data are uploaded to LIMS via IDAT by the reviewer.

Figure I - Daily Performance Acceptance Criteria and Tuning Solution Concentrations

Be (9)	10 or 100 PPB
Mg (24)	10 or 100 PPB
Co (59)	10 or 100 PPB
In (115)	10 or 100 PPB
Pb (208)	10 or 100 PPB
CeO/Ce	<3%
Ce++/Ce	<3%

Background	<30 cps @ Mass 220
RSD	<5%
Peak Width at 10% Peak Height	<0.9 AMU
Res/Axis	< +/- 0.1 AMU from unit mass

Q-EQA-FRM6869 Nonconformance Form
QA-SOP11178 Demonstrations of Capability
QA-SOP11880 Balance, Syringe, Pipette, Weights and Labware Verification
QA-SOP11892 Determining Method Detection Limits and Limits of Quantitation
QA-SOP11896 Establishing Control Limits
QA-SOP11901 Instrument Maintenance and Calibration
S-SS-WI10695 Liquid Sample Preservation, Sample Splitting, and Turbidity for metals by EPA Methods 200.7 and 200.8
T-MET-FRM8822 ICPMS Analysis
T-MET-WI11939 Digestion by EPA 200.8 for the Analysis of Total Recoverable Metals in Water by ICPMS
T-MET-WI12065 Working Instructions for Preparation of ICP-MS Solutions and Standards
T-MET-WI18026 Instrument Operations for Agilent 7500
T-MET-WI18027 Instrument Operations for Agilent 7700
T-MET-WI18028 Instrument Maintenance for Agilent 7500
T-MET-WI18029 Instrument Maintenance for Agilent 7700
T-MET-WI21589 Instrument Operations for Agilent 7900
T-MET-WI21590 Instrument Maintenance for Agilent 7900
T-MET-WI35797 Metals Data Verification Process

End of document

Version history

Version	Approval	Revision information
9	21.MAR.2019	
10	05.JUL.2019	
11	12.NOV.2020	

eurofins	Always check on-line for validity.	Level:
Document number: **T-OE-SVOA-WI10935**	**Separatory Funnel Extraction (Method 3510C) of Base Neutrals and Acid Extractables in Leachates**	**Work Instruction**
Old Reference: **1-P-QM-WI -9015149**		
Version: **15**		Organisation level: **5-Sub-BU**
Approved by: **X6TJ** Effective Date **28-FEB-2021**	Document users: **5_EUUSLA_GC/MS Semivolatiles_Manager, 5_EUUSLA_Organic Extraction_Manager, 6_EUUSLA_ Organic Extraction_Semivolatile Waters, 6_EUUSLA_GC/MS Semivolatiles_Analysts**	Responsible: **5_EUUSLA_Organic Extraction_Manager**

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Revision Log
Reference
Cross Reference
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Reference Modifications
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Personnel Training and Qualifications
Sample Collection, Preservation, and Handling
Apparatus and Equipment
Reagents and Standards
Preparation of Glassware
Calibration
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Statistical Information/Method Performance
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Revision Log

Revision: 15	**Effective Date:**	This version
Section	**Justification**	**Changes**
Revision Log	Formatting requirement	Removed revision logs up to the previous version
Title	Clarification	Removed waste dilution from title
LIMS ID	New LIMS	Added TALS LIMS ID
Throughout Procedure	New LIMS	Changed documentation from 'on the extraction log' to 'in the LIMS' Added TALS reagent names

Revision: 14	**Effective Date:**	10-JAN-2020
Section	**Justification**	**Changes**
Revision Log	Formatting requirement	Removed revision logs up to the previous version
Cross Reference	Formatting requirement	Updated document number to use D4 nomenclature, added reference to *T-SVOA-WI11998*, and updated title of *T-OE-SVOA-WI10936*
Reference Modifications	Unnecessary	Removed statement regarding acid compound spike concentration as it is not applicable and not a

		reference modification
Safety Precautions and Waste Handling	Reflects current practice	Changed steam bath to rapid-vap
Apparatus and Equipment	Reflects current practice	Removed equipment used for 2L separatory funnel extraction as it no longer applies and re-numbered section
Reagents and Standards	Reflects correct document	Referred the reader to *T-SVOA-WI11998* for standard preparation instructions
Procedure 3	Enhancement	Added that 50mL of extraction fluid is brought to 250mL using reagent water
Procedure 10/13	Reflects current practice	Removed Procedure 10.a. and 13.a.
Procedure	Reflects current practice	Added a step to rinse the evaporator tube with 5-7 mL methylene chloride and repeat step 15, re-numbered remaining steps
Procedure 15	Reflects current practice	Changed temperature from 80ºC to 90ºC

Reference

1. Test Methods for Evaluating Solid Wastes, SW-846 Method 3580A, July 1992
2. Test Methods for Evaluating Solid Wastes, SW-846 Method 3510C, December 1996.
3. *Federal Register*, Friday, June 29, 1990, pp. 26986-26998.
4. *Chemical Hygiene Plan,*current version.

Cross Reference

Document	Document Title
T-OE-GEN-WI10864	Glassware Cleaning for Organic Extractions
T-OE-GEN-WI10876	Organic Extraction Standards Storage and Handling
T-OE-SVOA-WI10936	Waste Dilution Procedure for the Determination of Acid Extractables and Base-Neutrals in a Non-Water Soluble Leachate Matrix by Method 3580A
T-SVOA-WI11998	Semivolatile Spiking and Calibration Standards
T-SVOA-WI9617	Semivolatile Organic Compounds by Method 8270D/E in Aqueous and Non-Aqueous Matrices using GC-MS
T-SVOA-WI9623	Semivolatile Organic Compounds by Method 8270C in Aqueous and Non-Aqueous Matrices Using GC-MS

Scope

This method is suitable for the extraction of semivolatile organic compounds (base neutral and acid extractables) from the toxicity characteristic leachate (TCLP) of liquid, solid, or multi-phase wastes.

Basic Principles

A 50-mL portion of sample to be analyzed is placed into a separatory funnel. Surrogate standards are added to each sample to monitor the extraction process. The pH of the sample is then adjusted to >11 and the sample is serially extracted with methylene chloride. The pH is then adjusted to <2 and the sample is again extracted with methylene chloride. The solvent fractions are combined, and the extract is dried and concentrated to 1.0 mL.

Reference Modifications

Surrogate and matrix spiking solutions are not added before the transfer to the separatory funnel for several reasons:

1. Samples must be poured from the amber bottles to determine the matrix and volume of sample to use for each extraction.
2. Many sample bottles have no headspace and there is no room to add surrogate to the sample in the bottle.
3. Due to the volume of samples extracted, a separate graduated cylinder for each sample is unrealistic.
4. To maintain consistency with all extractions, no samples are spiked in the bottle or graduated cylinders.

Interferences

High levels of organic compounds in the sample lead to interferences with normal detection limits.

Impurities in solvents, reagents, glassware, or other hardware used in sample processing lead to interferences with the method. All glassware must be rinsed with solvent before use. A method blank is performed with each batch of samples to demonstrate that the extraction system is free of contaminants.

Safety Precautions and Waste Handling

All laboratory waste is accumulated, managed, and disposed of in accordance with all federal, state, and local laws and regulations.

See *Chemical Hygiene Plan* for general information regarding employee safety, waste management, and pollution prevention.

The toxicity or carcinogenicity of each reagent used in this method has not been precisely defined. Therefore, each chemical compound must be treated as a potential health hazard. Exposure to these chemicals must be reduced to the lowest possible level by whatever means available such as fume hoods, lab coats, safety glasses, and gloves.

Extracts are concentrated on a rapid-vap; caution must be exercised while working around this apparatus.

All solvent waste generated from this preparation must be collected for recycling (if applicable) or disposed of in the designated containers. These are transferred to the lab-wide disposal facility. Any solid waste material (disposable pipettes, broken glassware, pH paper) is disposed of in the normal solid waste collection containers.

Personnel Training and Qualifications

All personnel performing this procedure must have documentation of reading, understanding, and agreeing to

follow the current version of this SOP and an annual documented Demonstration of Capability (DOC) which is maintained in the employee's training records.

Initially, each technician performing the extraction must work with an experienced employee for a period of time until they can independently perform the extraction. Proficiency is measured through a documented Initial Demonstration of Capability (IDOC).

The IDOC and the DOC consists of four laboratory control samples that are carried through all steps of the extraction and analysis and meet the defined acceptance criteria. The criteria include the calculation of mean accuracy and standard deviation. Various options are available for a DOC and can include four laboratory control samples, or one blind sample.

Sample Collection, Preservation, and Handling

Samples are collected in amber glass bottles with PTFE-lined lids and stored at 0° to 6°C, not frozen, prior to extraction. Samples must be extracted within 7 days of completion of the leachate. The extract is stored in an amber autosampler vial in the freezer at ≤-10 °C for up to 40 days prior to analysis.

Apparatus and Equipment

1. Separatory funnel for extracting organic components from an aqueous matrix
2. Graduated Cylinders – Class A, assorted sizes
3. Pipettes – Class A, assorted sizes
4. Pipettes – Disposable
5. Solvent pumps – Beckman or equivalent
6. Balance – Capable of weighing to 0.01g
7. Centrifuge – Beckman GS-6 or equivalent
8. Sodium sulfate columns with extra course frits
9. Wash bottles – Teflon™
10. Vials – assorted sizes
11. Automated Water Extraction Bench – capable of holding separatory funnels for 250-mL extractions.
12. Rapid-Vap Evaporators – for concentration of 250-mL extractions
13. Rapid-Vap Evaporator Tubes – Class A

Reagents and Standards

1. Methylene chloride ($MeCl_2$ or CH_2Cl_2) – Pesticide grade or equivalent. Store at room temperature for up to 1 year.

2. 10N Sodium hydroxide (NaOH) – Lab Chem or equivalent. Store at room temperature for up to 1 year.

3. Sulfuric acid (H_2SO_4) – ACS grade or equivalent. Store at room temperature for up to 1 year.

4. Sodium sulfate (Na_2SO_4), reagent grade or equivalent – Bake at approximately 400°C for a minimum of 4 hours in a shallow pan prior to use to remove organic contaminants. After baking, store in a glass jar at room temperature for up to 1 year.

5. Extraction Fluid – Prepared and delivered by Department 4028. Store refrigerated in an amber glass bottle at 0° to 6°C, not frozen, for up to seven days.

6. All QC standards added during extraction process are prepared by Department 4036 using instructions generated by the reagents module. Detailed instructions can be found in *T-SVOA-WI11998*.

Preparation of Glassware

See *T-OE-GEN-WI10864*

Calibration

Not applicable to this procedure.

Procedure

NOTE: If a sample is an oil and needs a waste dilution, refer to *T-OE-SVOA-WI10936*.

1. If the sample bottle contains at least 200 mL of sample:

   a. Shake the bottle vigorously.

   b. Use a clean graduated cylinder to measure 50 mL of sample and pour it into a separatory funnel.

   c. Add 200 mL of reagent water.

   d. Rinse the graduated cylinder with methylene chloride and add the rinseate to the separatory funnel.

   e. Record the initial sample volume and any comments about the sample in the LIMS.

2. If required, the background (BKG), matrix spike (MS), and matrix spike duplicate (MSD) are performed on three separate aliquots of a field sample.

   a. If an MS or MS/MSD is required for the sample and 200 mL of sample is available, use 50 mL for each.

   b. If an MS or MS/MSD is required for the sample and there is <200 mL of sample, evenly split half of the volume available between the sample and spikes.

      (1) Add enough reagent water to bring the volume in the separatory funnel to 250 mL.

      (2) Rinse the graduated cylinder with methylene chloride and add the rinseate to the separatory funnel.

(3) Record the initial volume and any comments about the sample in the LIMS.

3. The blank, LCS, and laboratory control sample duplicate (LCSD) (if applicable) are prepared using 50 mL of extraction fluid measured into the separatory funnel. Reagent water is added to the separatory funnel for a total volume of 250mL.

4. Use pipettes to add surrogate and spiking solutions

   a. Ensure the standard drips directly into the aqueous sample without touching the glass side of the separatory funnel to avoid poor recoveries.

   b. Surrogates – Add 1.0 mL of BNA surrogate (OP_MINIBNA_SS) to all samples, blanks, and spikes.

   c. Spiking solutions – Add 1.0 mL of mini LCS #1 (OP_MINLCS1_MS) matrix spiking solution to the LCS, LCSD (if applicable), MS, and MSD.

      (1) If the sample requires any compounds in addition to the priority pollutant semivolatile compounds, add 1.0 mL of the appropriate spiking solution(s) at this time.

      (2) See *T-SVOA-WI11998* for spike details.

      (3) See *T-OE-GEN-WI10876* for storage and handling of spikes.

5. Add 10N sodium hydroxide with a disposable pipette to adjust the pH to >11.

6. Use a solvent pump to measure 15 mL of methylene chloride and add the solvent directly to the separatory funnel.

7. Cap the funnel, invert it, and vent immediately. Handshake and vent frequently until the pressure is stable.

8. Separatory funnels remain on the Automated Water Extraction bench. Press the green "start" button to lower the hood and activate the Automated Water Extraction Bench. The bench will tumble for 2 minutes. The sash will rise after the samples have tumbled.

9. The separatory funnel will sit undisturbed on the Automated Water Extraction Bench. The time required for extracts to set undisturbed is based upon visual confirmation that the layers are adequately separated. Additional time may be necessary for samples with unusual high density (i.e. high salt content).

   a. If an emulsion forms and is >1/3 of the volume of the solvent layer, mechanical techniques such as stirring and centrifugation must be employed to complete the separation.

10. Drain the solvent layer directly into the sodium sulfate column containing approximately 10 cm of sodium sulfate. This drains into a Rapid-Vap evaporator tube.

11. Use a solvent pump to add 15 mL of methylene chloride to the separatory funnel and repeat Procedure Steps 8 through 10 two more times, venting only as necessary. The acid extract is also added to this Rapid-Vap evaporator tube.

12. Add sulfuric acid with a disposable pipette to adjust the sample pH to <2.

13. Using three 15-mL aliquots of methylene chloride, serially extract the sample as described in Procedure Steps 8 through 10, venting only as necessary, and collect the solvent in a Rapid-Vap evaporator tube.

14. Use a wash bottle to rinse the sodium sulfate column with approximately 5 mL of methylene chloride. Use a

hand held bulb to gently squeeze excess methylene chloride from the sodium sulfate column.

15. Place the evaporator tube containing the solvent extract into the pre-heated (approximately 90°C) Rapid-Vap Evaporator. Set the timer for 10 minutes, and set the speed at 75% (the speed is the rotation within the unit while the sample is evaporating). Confirm that the nitrogen is set at 15 PSI (this is adjusted on the regulator attached to the nitrogen line). Allow samples to concentrate to around 0.5 mL.

    NOTE: The temperature, timer, and speed settings can be adjusted as necessary to accommodate difficult sample matrices, etc.

16. Rinse the evaporator tube with 5-7 mL of methylene chloride and repeat step 15.

17. Quantitatively transfer the sample from the Concentrator Tube to an amber autosampler vial.

    a. Determine the final volume (1.0 mL) by placing the extract into an amber-autosampler vial and comparing the level in the vial to a vial containing the targeted final volume.

    b. Add methylene chloride to the extract using a disposable pipette until exactly the same level is in both vials.

    c. If too much solvent is added to the sample vial, remove the extract from the vial, concentrate it to slightly less than the targeted final volume, and rebottle.

18. Cap the vial securely and store it in the freezer at ≤-10°C. Record the final volume in the LIMS.

Calculations

See analysis method.

Statistical Information/Method Performance

See analysis method.

Quality Assurance/Quality Control

A batch is defined as the samples to be extracted on any given day but not to exceed 20 field samples. If more than 20 samples are prepared in a day, an additional batch must be prepared.

Each extraction batch must contain a method blank, an LCS, and any matrix type spike samples that are specified on the TCLP nonvolatiles batch sheet must be prepared. In addition, one of the matrix spike samples specified on the TCLP nonvolatile batch sheet must be extracted as MS/MSD. If no matrix spike samples are designated on the TCLP nonvolatile batch sheet, an LCSD must be prepared instead.

If the batch contains only field or equipment blank samples, the LCS/LCSD QC pairing should be used.

If any client, state, or agency has more stringent QC or batching requirements, these must be followed instead.

a Non-Water Soluble Leachate Matrix by Method 3580A
T-SVOA-WI11998 Semivolatile Spiking and Calibration Standards
T-SVOA-WI9617 Semivolatile Organic Compounds by Method 8270D/E in Aqueous and Non-Aqueous Matrices using GC-MS
T-SVOA-WI9623 Semivolatile Organic Compounds by Method 8270C in Aqueous and Non-Aqueous Matrices Using GC/MS

End of document

Version history

Version	Approval	Revision information
13	18.APR.2018	
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eurofins	Always check on-line for validity.	Level:
Document number: **T-MET-WI11941**	**Sample Preparation of Wastewater and Leachates for Analysis of Total Metals by Inductively Coupled Plasma Atomic Emission Spectrometry (ICP) and Inductively Coupled Plasma Mass Spectrometer (ICP-MS)**	**Work Instruction**
Old Reference: **1-P-QM-WI-9015159**		
Version: **13**		Organisation level: **5-Sub-BU**
Approved by: **UDM6** Effective Date **14-DEC-2020**	Document users: **6_EUUSLA_Metals_ICP Prep, 6_EUUSLA_Metals_ICP Prep Verifiers, 6_EUUSLA_Metals_Management**	Responsible: **5_EUUSLA_Metals_Manager**

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Revision Log

Revision:	13	**Effective Date:**	This version
Section	**Justification**	**Changes**	
Revision Log	Formatting requirement per 1-P-QM-QMA-9017356	Removed revision logs up to the previous version	
LIMs ID	Update to current practice	Added new LIMs method IDs	
Cross Reference	Update to current practice	Updated Document number and added Document 11933	
Purpose	Update to current practice	Added information for ICPMS	

Revision:	13	**Effective Date:**	This version
Throughout Document	Clarification		Updated terminology to new LIMs terminology

Revision:	12	**Effective Date:**	19-JAN-2015
Section	**Justification**		**Changes**
Revision Log	Formatting requirement per 1-P-QM-QMA-9017356		Removed revision logs up to the previous version
Reference Modifications	To be consistent with EPA procedure 3010A		Removed 3 and 4
Procedure A and B	Clarification		Reworded numbers 2, 5 and 6 to clarify steps found in the EPA procedure for 3010A

Reference

1. Test Methods for Evaluating Solid Wastes, SW-846 Method 3010A, July 1992

2. *Chemical Hygiene Plan*, current version.

Cross Reference

Document	Document Title
T-MET-WI11931	Metals by Inductively Coupled Plasma Atomic Emissions Spectroscopy for SW-846 Methods 6010B/C (aqueous, solid, tissue) and EPA 200.7(aqueous)
T-MET-WI11933	Metals by Inductively Coupled Plasma Mass Spectrometry for SW-846 Methods 6020/6020A/6020B (aqueous, solid, tissue) and EPA 200.8 (aqueous)
1-P-QM-FOR-9009182	Working Instructions for Prep Solutions and Standards
1-P-QM-QMA-9015390	Demonstrations of Capability

Purpose

This digestion procedure is used to prepare wastewater and leachate samples for measurement of total/total recoverable metals by ICP and ICP-MS following SW-846

Scope

This digestion procedure is used by the Metals department of the Environmental Sciences division.

Basic Principles

A mixture of nitric acid and the sample is refluxed in a covered beaker or a covered polypropylene container (digestion vessel) at low volume. Then it is refluxed with hydrochloric acid and brought up to volume with reagent water.

Reference Modifications

1. A 50-mL final volume is used instead of 100-mL to improve digestion throughout, conserve sample usage, and limit waste generation. Because all reagents are also adjusted so that concentrations are

equivalent to a 100-mL aliquot, there is no impact on the data.

2. Ribbed watch glasses are not used; samples are evaporated without watch glasses in nonmetallic hoods to speed evaporation. No contamination trends have been observed in prep blanks evaporated without using watch glasses.

Definitions

1. ACS – American Chemical Society
2. ASTM – American Society of Testing and Materials
3. DUP – Sample Duplicate
4. DOC – Demonstration of Capability
5. IDOC – Initial Demonstration of Capability
6. LCS/LCSD – Laboratory Control Sample/ Laboratory Control Sample Duplicate
7. LIMS – Laboratory Information Management Systems
8. LOQ – Limit of Quantitation
9. MDL – Method Detection Limit
10. MS – Matrix Spike
11. MSD – Matrix spike duplicate
12. MB– Method Blank equivalent to a Preparation Blank. A designated sample designed to monitor for sample contamination during the analysis process. A volume of reagent laboratory water is typically used to monitor water sample analysis, while solids blanks consist of a purified solid matrix or just the reagents used in the test. The blank demonstrates that no artifacts were introduced during the analysis process.
13. QC – Quality Control
14. SOP – Standard Operating Procedure
15. SPLP – Synthetic Precipitation Leaching Procedure
16. STLC – Soluble Threshold Limit Concentration
17. TCLP – Toxicity Characteristic Leaching Procedure
18. BKG – unspiked background sample

Interferences

Not applicable to this procedure

Safety Precautions and Waste Handling

All laboratory waste is accumulated, managed, and disposed of in accordance with all federal, state, and local laws and regulations.

See *Chemical Hygiene Plan* for general information regarding employee safety, waste management, and pollution prevention.

Preparing samples for inorganic analysis involves working with concentrated acids and other chemicals which are dangerous if not handled carefully:

> **Nitric acid (HNO_3)** – This acid can cause skin burns. Add nitric acid to samples in a hood or use the designated dispensing equipment to avoid exposure to toxic fumes.
>
> **Hydrochloric acid (HCl)** – This acid can cause skin burns. Never mix HCl with c oncentrated H_2SO_4 to avoid a violent reaction. Always use in a fume hood or use the designated dispensing equipment.

When diluting strong acids, never add water to acid; always add acid to water.

Store concentrated acids in the prep room acid lockers. Only acids are to be stored in these lockers. (Store solvents in the flammable liquid storage cabinet.) Some concentrated acids are kept in the acid reagent bottles on prep room counters. Fill reagent bottles in an operating fume hood using caution to avoid spills.

Perform acid digestions in hoods that are turned on and have active alarms. Notify a supervisor immediately if the hood is malfunctioning or the alarm sounds.

Samples that contain dust may be hazardous. Open in a fume hood.

When a hazardous flag is added indicating possible cyanide, special precautions are required to avoid exposure to hydrogen cyanide gas. Contact your supervisor prior to adding acid. Always open these samples and add the acid in a hood.

Use spill pillows to absorb large acid spills (small spills are cleaned with wet paper towels.) Use SPILL-X-A powder or equivalent to neutralize any remaining acid and then rinse the area thoroughly with water. Spill pillows and SPILL-X-A are stored on the prep room shelf.

Dispose of acid waste properly. Collect all acid digestions, waste solutions, and expired reagent solutions in waste containers. When the acid waste containers are full, a designated acid waste handler transfers the waste to the acid neutralization tank.

Personnel Training and Qualifications

All personnel performing this procedure must have documentation of reading, understanding, and agreeing to follow the current version of this SOP and a documented Demonstration of Capability for this or an equivalent procedure.

Initially, each employee performing this digestion procedure must work with an experienced employee for a period of time until they can independently set up batches and perform the necessary steps outlined in this procedure. Proficiency is measured through documentation of the critical steps in this procedure, over checking of data as well as an IDOC.

The IDOC and the DOC consists of four laboratory control samples that are carried through all steps of the analysis and meet the defined acceptance criteria. The criteria include the calculation of mean accuracy and standard deviation. Refer to 1-P-QM-QMA-9015390, for specific requirements. A DOC is performed annually and is maintained in the analyst's training records.

Sample Collection, Preservation, and Handling

Samples are collected in plastic containers and preserved to a pH of < 2 with HNO3 (samples submitted for soluble metals that are to be lab filtered must be unpreserved. The sample is run through a 0.45 micron filter within 5 days of receipt and then preserved.) The pH is checked upon receipt and adjusted as necessary by Sample Support; samples that are pH adjusted at the lab must not be digested for a minimum of 24 hours. If samples fail to maintain a pH of < 2 the Client Service Representative is notified for further direction. Samples are stored at 0° to 6°C, but not frozen, prior to digestion. Sample must be digested within 6 months of collection. Digested samples are stored in plastic at room temperature and have a 6 month holding time.

Apparatus and Equipment

1. Polypropylene containers (digestion vessels) – certified clean and Class A equivalent
2. Watch glasses or reflux caps
3. 50-mL graduated cylinders or other appropriate graduated cylinders if necessary
4. 50–mL volumetric flasks or other appropriate Class A volumetric flasks if necessary
5. 250-mL beakers, or other appropriate beakers
6. Hotblocks or hot plates, adjustable and capable of maintaining a temperature of 90° to 95°C

Reagents and Standards

For reagent preparation, shelf life, and storage conditions, see Form 1-P-QM-FOR-9009182.

1. Nitric Acid, HNO_3 - Fisher, Trace Metal Grade, or equivalent. Store at room temperature and re-evaluate annually.

2. Hydrochloric acid - Fisher, Trace Metal Grade, or equivalent. Store at room temperature and re-evaluate annually.

3. Hydrochloric Acid (1:1) – Add 500 mL of HCl to 500 mL of reagent water. Store at room temperature. Expires in 6 months.

NOTE: It is acceptable to prepare solutions using multiples of indicated volumes if exact ratios are maintained.

Calibration

Not applicable to this procedure

Procedure

This SOP has been set up to outline the procedures for both hot plate and hotblock digestions (see below). Choose the procedure that corresponds to the sample heating technique being used for sample digestion.

A. Hotblocks

NOTE: When insoluble matter is present in the digested sample, allow it to settle by gravity or filter prior to introduction to the instrument. If any samples are filtered, the prep blank and LCS must also be filtered.

NOTE: For soluble metals analysis, filter unpreserved sample through 0.45–micron filter paper. Adjust the filtered sample to pH <2 with nitric acid preserving solution. Measure the volume of sample, as stated in this procedure, and digest as normal. The prep blank and spiked LCS must also be prepared with filtered reagent water.

NOTE: If the sample contains high solids, use a smaller aliquot of the sample and bring sample to final volume as stated in this procedure. Make appropriate acid, reagent, and spike volume adjustments based on sample final volume.

NOTE: It is acceptable to reduce the volume of sample being analyzed as long as the sample reagent ratios are maintained.

1. Shake sample well. Transfer 50 mL of well-mixed sample to a 68-mL digestion vessel. After the sample has been poured, add the spiking solution. For sample batch spiking procedures see Form 1-P-QM-FOR-9009182.

NOTE: For leachate samples, use the appropriate extraction fluid for the MB and LCS/D. The extraction fluid are as follows: TCLP, SPLP, STLC, ASTM, Filtration, and Elutriate.

2. Add 1.5 mL of concentrated HNO_3. Place the digestion vessel in a hotblock at 90° to 95°C, and cautiously evaporate to low volume (about 5 mL), making certain that the sample does not boil and that no portion of the bottom of the digestion vessel is allowed to go dry.

3. Allow the digestion vessel to cool then add another 1.5-mL portion of concentrated HNO_3.

4. Cover the digestion vessel with a reflux cap and return to the hotblock. Increase the temperature of the hotblock so that a gentle reflux action occurs.

NOTE: If a sample is allowed to go to dryness, low recoveries result. If this occurs, discard the sample and re-prepare in a new batch.

5. Continue heating (refluxing), adding additional acid as necessary, until the digestion is complete (generally indicated when the digestate is light in color or does not change in appearance with continued refluxing).

6. When digestion is complete, uncover the digestion vessel and evaporate to low volume (about 3 mL). Do not allow any portion of the bottom of the digestion vessel to go dry. Allow the digestion vessel to cool.

7. Add 5 mL (1:1) HCl, cover the digestion vessel, and reflux for an additional 15 minutes to dissolve any precipitate or residue from evaporation. Allow the digestion vessel to cool.

8. Adjust sample volume to 50 mL mark on the certified digestion vessel with reagent water, cap and mix.

9. The sample is now ready for analysis.

B. Hotplates

NOTE: If boron (B) is requested on a sample, use Teflon vessels.

NOTE: When insoluble matter is present in the digested sample, allow it to settle by gravity or filter prior to introduction to the instrument. If any samples are filtered, the prep blank and LCS must also be filtered.

NOTE: For soluble metals analysis, filter unpreserved sample through 0.45–micron filter paper. Adjust the filtered sample to pH <2 with nitric acid preserving solution. Measure the volume of sample, as stated in this procedure, and digest as normal. The prep blank and spiked LCS must also be prepared with filtered reagent water.

NOTE: If the sample contains high solids, use a smaller aliquot of the sample and bring sample to final volume as stated in this procedure. Make appropriate acid, reagent, and spike volume adjustments based on sample final volume.

NOTE: It is acceptable to reduce the volume of sample being analyzed as long as the sample reagent ratios are maintained.

1. Shake sample well. Use a 50-mL graduated cylinder to transfer 50 mL of well-mixed sample to a 250-mL beaker. After the sample has been poured, add the spiking solution. For sample batch spiking procedures see Form 1-P-QM-FOR-9009182.

NOTE: For leachate samples, use the appropriate extraction fluid for the MB and LCS/D. The extraction fluids are as follows: TCLP, SPLP, STLC, ASTM, Filtration, and Elutriate.

2. Add 1.5 mL of concentrated HNO_3. Place the beaker on a hot plate and cautiously evaporate to low volume (about 5 mL), making certain that the sample does not boil and that no portion of the bottom of the beaker is allowed to go dry.

3. Allow the beaker to cool then add another 1.5-mL portion of concentrated HNO_3.

4. Cover the beaker with a watch glass and return to the hot plate. Increase the temperature of the hot plate so that a gentle reflux action occurs.

NOTE: If a sample is allowed to go to dryness, low recoveries result. If this occurs, discard the sample and re-prepare in a new batch.

5. Continue heating (refluxing), adding additional acid as necessary, until the digestion is complete (generally indicated when the digestate is light in color or does not change in appearance with continued refluxing).

6. When digestion is complete, uncover the beaker and evaporate to low volume (about 3 mL). Do not allow any portion of the bottom of the beaker to go dry. Allow the beaker to cool.

7. Add 5 mL (1:1) HCl, cover the beaker, and reflux for an additional 15 minutes to dissolve any precipitate or residue from evaporation. Allow the beaker to cool.

8. Transfer the solution to a 50–mL volumetric flask. Adjust sample volume to the 50 mL mark with reagent water and mix.

9. Pour the mixed sample into a polypropylene container and cap.

10. The sample is now ready for analysis.

Block Digestion Instructions

1. Turn block digestor on by pressing rocker switch located on the cord.

2. Wait about 8 seconds until controller display indicates current block temperature.

3. PRESS and hold STAR (*) key.

4. The display shows the Set Point Temperature.

5. The digits can be changed to the desired value by pressing the up and down arrow keys while holding the (*) key.

6. Confirm Control Point temperature is set to the block temperature that provides 90° to 95°C.

NOTE: See HotBlock Control Point Temperature Logbook to obtain control point temperature setting for the HotBlock being used for digestion. If necessary, adjust Control Point temperature to the proper setting.

NOTE: Polypropylene containers must not be heated above 130°C.

Calculations

Not applicable to this procedure.

Statistical Information/Method Performance

Not applicable to this procedure.

Quality Assurance/Quality Control

Perform a method blank, sample duplicate, sample matrix spike, sample matrix spike duplicate, and laboratory control sample with every digestion batch (20 samples or less). Each piece of batch QC is digested following the procedure in this SOP.

End of document

Version history

Version	Approval	Revision information
12	19.JAN.2015	
13	30.NOV.2020	

eurofins	Always check on-line for validity. **Environmental Quality Policy Manual**	Level: **Quality Manual**
Document number: **QA-QM11872**		
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Version: **18**		Organisation level: **5-Sub-BU**
Approved by: **UDM6, XL3S** Effective Date **17-SEP-2020**	Document users: **4_EUUSLA_ELLE_All_Support, 4_EUUSLA_ELLE_All_Technical**	Responsible: **5_EUUSLA_Env Quality Assurance_All**

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Title Page

Environmental Quality Policy Manual

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Revision Log

	Revision: 18	**Effective Date**: This Version
Section	**Justification**	**Changes**
Revision Log	Formatting requirement	Removed revision logs up to the previous version
Section 1.2 & 2.4-2.6	Revised Quality Statement	Inserted text from the revised 2020 Eurofins Quality Policy Statement; added wording to address impartiality and risk evaluation
Section 1.5, 11.4 & 11.5	New process	Added allowance for remote assessments.

	Revision: 18	**Effective Date**: This Version
Section 2.12 & 11.3	Deactivated GLP	Removed references to GLP as this is not currently offered
Section 3	Campus changes	Added new buildings to the facilities description
Throughout document	Process changes related to new LIMS	Changes made in how sample and data handling, qualification, report generation, approvals, signatures occur to reflect change to new LIMS
Appendices	Current information	Updated with current content

	Revision: 17	**Effective Date**: 7/17/2019
Section	**Justification**	**Changes**
Revision Log	Formatting requirement	Removed revision logs up to the previous version
Section 2.2	Correction	Changed timeline for deputies and notification to agencies
Section 2.5	Correction	Notification timelines are dictated by regulatory authority.
Section 6.3.4	Clarification	Calibration/verification is at least annual

1.0 INTRODUCTION

This *Quality Policy Manual* is based upon Eurofins Lancaster Laboratories Environmental LLC's (herein referred to as the laboratory) overall business and management philosophies, mission, and goals. This manual is written to present the policies employed by the laboratory as well as the support departments that serve the environmental laboratories and to comply with the requirements of the National Environmental Laboratory Accreditation Program (also referred to as NELAP or TNI), ISO 17025, the Department of Defense (DoD), Quebec Accreditation Program for Analytical Laboratories (PALA) as well as individual state agency requirements. These policies define the "what" we do with emphasis on management's responsibilities and commitment to quality.

Governing SOPs are in place within the organization, to ensure the proper execution of this policy document (refer to Appendix A). This manual is required reading for laboratory personnel. The most recent and up-to-date *Quality Policy Manual* and all referenced documents are available to all laboratory personnel who work in or support the laboratory. As described within this document, the laboratory actively strives for continuous improvement of its quality systems to better serve our clients.

1.1 Mission Statement

The laboratory offers analytical and consulting services in the chemical and biological sciences with comprehensive expertise in environmental laboratory applications. The company mission statement describes the corporate philosophy:

At Eurofins Lancaster Laboratories Environmental LLC we are people working together to serve the health and environmental needs of society through science and technology. We strive to be the recognized leader in all that we do.

Our mission is to provide independent laboratory services in the chemical and biological sciences with excellent quality and service. As a corporate community, we:

- Deliver quality by fully understanding and always meeting the requirements of those we serve.
- Live our values by relating to our clients, coworkers, shareholders, suppliers, and community in a fair and ethical manner.
- Manage our growth and financial resources so we can serve our clients well, provide a satisfactory return to shareholders, and maintain our meaningful and enriching workplace.

1.2 Quality Policy

The Executive Management Group recognizes quality as a key element of the laboratory's standard of service. The group supports the laboratory's commitment to quality as defined by NELAP, ISO 17025, DoD, PALA and other regulatory agencies (i.e. states) through the strict adherence to the Quality Policy Statement. The policy cannot be revised without their approval of Eurofins US QA Directors.

The Quality Policy Statement gives employees clear requirements for the production of analytical data. Employees are trained on the components of the Quality Policy Statement during their first day of orientation. Each employee signs the statement upon hire as agreement to implement the policy in all aspects of their work. Employee agreement to any subsequent revisions of the statement is obtained by documented reading and understanding of an agreement to follow the Quality Manual, which contains the current version of the statement. The statement is as follows:

As an organization, all personnel are committed to high quality professional practice, testing and data, and service to our clients.

We strive to provide the highest quality data achievable by:

- Reading and understanding all of the quality documents applicable to each position and implementing the process in our work.
- Following all recordkeeping requirements; describing clearly and accurately all activities performed; recording "real time" as the task is carried out; understanding that it is never acceptable to "back date" entries and should additional information be required at a later date, the actual date and by whom the notation is made must be documented.
- Ensuring data integrity through the completeness, consistency, impartiality and accuracy of the data generated. Data is attributable, legible, contemporaneously recorded, original or a true copy, and accurate (ALCOA). This applies to manual paper documentation and electronic records.
- Providing accountability and traceability for each sample analyzed through proper sample handling, labeling, preparation, instrument calibration/qualification/validation, analysis, and reporting; establishing an audit trail (the who, what, when, and why) that identifies date, time, analyst,

instrument used, instrument conditions, quality control samples (where appropriate and/or required by the method), and associated standard material.

- Emphasizing a total quality management process which provides impartiality, accuracy, and strict compliance with agency regulations and client requirements, giving the highest degree of confidence; understanding that meeting the requirements of the next employee in the work flow process is just as important as meeting the needs of the external client.

- Providing thorough documentation and explanation to qualify reported data that may not meet all requirements and specifications, but is still of use to the client; understanding this occurs only after discussion with the client on the data limitations and acceptability of this approach.

- Responding immediately to indications of questionable data, out-of-specification occurrences, equipment malfunctions, and other types of laboratory problems, with investigation and applicable corrective action; documenting these activities completely, including the reasons for the decisions made.

- Providing a work environment that ensures accessibility to all levels of management and encourages questions and expression of concern on quality issues to management. Eurofins recognizes that the implementation of a quality assurance program requires management's commitment and support as well as the involvement of the entire staff.

- Continually improve systems and manage risk to support quality improvement efforts in laboratory, administrative and managerial activities.

We each take personal responsibility to provide this quality product while meeting the company's high standards of integrity and ethics, understanding that improprieties, such as failure to conduct the required test, manipulation of test procedures or data, or inaccurate documentation will not be tolerated. Intentional misrepresentation of the activities performed is considered fraud and is grounds for termination.

I understand the expectations and commit to implementation of all applicable policies and procedures and to providing quality data.

1.3 Statement of Values

Eurofins Lancaster Laboratories Environmental is a team of people who work together to serve the health and environmental needs of society through science and technology.

At Eurofins Lancaster Laboratories Environmental, our mission is to provide independent laboratory services in the chemical and biological sciences with excellent quality and service. We fulfill our mission by incorporating our values into our work every day.

As a corporate community, we embrace our heritage of integrity and strive to live by the following principles:

- Fairness and honesty in all our relationships

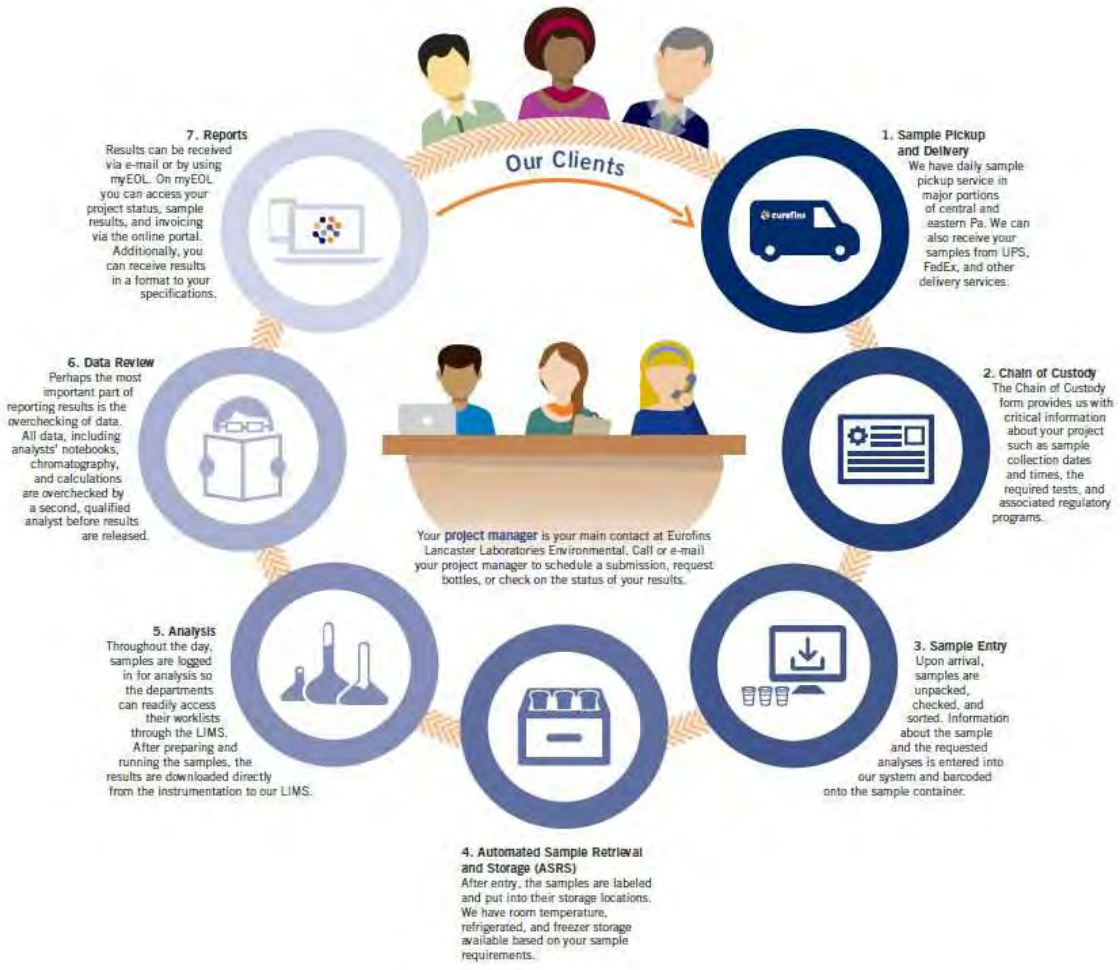
- Mutual trust
- A respect for ourselves and others
- A sense of caring that leads us to act responsibly toward each other and society, now and in the future
- Loyalty to our clients and one another
- A spirit of open-mindedness as we deal with all
- Dedication to service
- Good stewardship of our resources
- A commitment to flexibility and continuous improvement

We are committed to:

- Delivering quality by fully understanding and always meeting the requirements of those we serve.
- Living our values by relating to our clients, coworkers, shareholders, suppliers and community in a fair and ethical manner.
- Managing our growth and financial resources so we can serve our clients well, provide a satisfactory return to shareholders and maintain our meaningful and enriching workplace.

At Eurofins Lancaster Laboratories Environmental, we each take personal responsibility to live these values in all of our dealings, knowing full well that our pledge may involve difficult choices, hard work and courage.

1.4 Sample Flow-Through Diagram



1.5 Certifications, Accreditations, and Registrations

Accreditation/Certification is the process by which an agency or organization evaluates and recognizes a laboratory as meeting certain predetermined qualifications and/or standards. It is the one generally accepted method by which a laboratory such as ours can demonstrate its capability of generating acceptable, professional, quality test results in those areas in which it claims competence. To this end, we have actively sought accreditation by organizations offering it in those areas relevant to our technical expertise. We strive to ensure that the facilities, equipment, procedures, records, and methods used by the laboratory in the testing of environmental samples are in compliance with the requirements of these standards.

Although organizations offering accreditation differ somewhat in the details of their programs, they generally evaluate laboratories in four basic areas: personnel (adequate staffing, education, training, and experience), physical facilities, instrumentation/equipment, and quality assurance program. This evaluation is performed by one or more of the following procedures: periodic on-site and/or remote inspections of the laboratory by assessors experienced in technical operations, quality systems, and management; periodic analysis of proficiency test samples; and periodic updating of the laboratory's file to reflect changes in personnel, equipment, or services offered. Some agencies offer reciprocity with other agency programs.

Appendix B lists accreditations and registrations held by the laboratory in support of environmental work. Current copies of all scopes of accreditation are available on the laboratory website https://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratories-environmental/ and are kept on file in the Quality Assurance Department.

2.0 ORGANIZATION AND PERSONNEL

2.1 Company Overview and History

The laboratory was founded in 1961 by Dr. Earl Hess in response to a need for high quality technical services by the agricultural and industrial communities in southeastern Pennsylvania. Nourished in a culture of quality and caring about all those associated with the business, the corporation became an industry leader known for innovative business practices and people-friendly policies. The company was independently owned until the retirement of Dr. Hess in 1995. At that time, the laboratory was acquired by a publicly held company, Thermo TerraTech, Inc., a Thermo Electron company. Ownership changed in September 2000, when the laboratory was acquired by Goldner, Hawn, Johnson, and Morrison, Inc. (GHJ&M), a private equity investment firm. In August 2005, the laboratory was acquired by Fisher Scientific under their BioPharma Division. On November 9, 2006, Thermo Electron and Fisher Scientific merged to form Thermo Fisher Scientific. In April 2011, Thermo Fisher Scientific sold the laboratory to Eurofins Scientific. Effective July 1, 2013, the Pharmaceutical and Environmental Divisions were split into separate business entities and the company name became Eurofins Lancaster Laboratories Environmental, LLC. The laboratory continues to operate as an independent laboratory and is incorporated by the State of Delaware.

The laboratory provides a wide array of laboratory services to clients working in environmental industries. We strive to offer high quality technical services in the chemical and biological sciences with personal attention to client needs. These services include chemical analyses and analytical method development. We are, therefore, a technical service company and do not manufacture or distribute goods. Our "product" is accurate and timely technical information and our continued existence depends on the quality of the services we offer and efficiency with which we deliver them.

2.1.1 Business Continuity and Contigency Plans

Various policies and practices are in place to address continuity of business and contingency plans to ensure continued operations or minimal disruption in operations should unplanned events (natural disasters, unexpected management changes, etc.) occur.

Section 2.2 of this document explains the identification of deputies for key management positions. Section 3.3 discusses the disaster recovery plan. Section 6.4 addresses the security and backup of our computer systems. Section 10.8 addresses handling of client records should the company have a change in ownership or go out of business.

2.2 Organizational Structure

The laboratory President, in conjunction with the Director of Operations and senior management staff, is responsible for the daily operations of the laboratory. Duane Luckenbill is designated as the laboratory's Technical Director relative to accreditations.

The Executive Management Group is defined as the President and laboratory directors.

The management staff includes directors, managers and group leaders. Organizational charts of the management staff are presented in Appendix C. Individual departmental staff lists are maintained in the company's internal intranet. The Technical Director and Quality Assurance (QA) Director have identified deputies for all key management personnel. Deputies would temporarily fill a role if the primary is absent for more than 15 consecutive calendar days. The deputies must meet the same qualifications as the primary person should they be required to take on the responsibilities. Notification to agencies is performed as noted in section 2.5.

2.2.1 Technical Director

The Technical Director ensures that the laboratory's policies and objectives for quality of testing services are documented in this quality manual. The Technical Director must assure that the manual is communicated to, understood, and implemented by all personnel concerned.

2.2.2 Quality Assurance Director

The Quality Assurance Director ensures that the quality system is followed at all times. The QA Director reports directly to the President thus ensuring corrective actions to quality issues are taken promptly and are separate from business decisions. The QA Director has no direct supervisory responsibility for the generation of technical data to avoid any conflict of interest in administrating the QA program. The QA Director has the final authority to stop work that compromises our integrity or data quality. The situation must be investigated and appropriate corrective action must be put in place before the QA Director will authorize the resumption of work. The specific duties of the QA Director are communicated in the position qualification description (PQD).

2.3 Management Responsibilities

Laboratory management duties are outlined for supervisory personnel using a job plan format, which details each individual's responsibilities along with expected results. Typically, management duties include, but are not limited to:

- Personnel hiring and training
- Supervision of personnel
- Providing resources to ensure a work environment free from commercial, financial, and other undue pressures that may adversely affect the quality of their work
- Providing resources to ensure a safe work environment
- Directing daily work operations, including scheduling of work

- Ensuring compliance with the TNI Standards, ISO 17025, Department of Defense Quality Systems Manual, regulatory programs, analytical methods, and client requirements.

- Assessing laboratory capacity and workload

- Resource allocation

- Ensuring quality of data produced

- Contributing to the continuous improvement of the laboratory operation

- Ensuring that corrective actions are carried out in an appropriate and agreed upon time-frame.

- Communicating problems, risks, and concerns to Senior and Executive Management to enlist a higher level of support for corrections and continuous improvements.

- Maintaining awareness of technical developments and regulatory requirements

2.4 Overview of the Quality Assurance Program

Quality Assurance (QA) is responsible for developing planned activities whose purpose is to provide assurance to all levels of management that a quality program is in place within the laboratory, and that it is functioning in an effective manner that is consistent with the requirements of NELAP, ISO 17025, DoD, PALA, and any other regulatory agencies (i.e. states) in which we hold accreditation. Although the laboratory is a wholly owned subsidiary of Eurofins Scientific, the Quality Assurance and Quality Systems operations described in this manual are specific to the Lancaster site and associated service centers.

The administration of the QA program is the responsibility of the QA Director in cooperation with all levels of management.

The QA program, as directed by executive management, was established to:

- Ensure accountability, accuracy, traceability, and impartiality for all analytical data generated.

- Ensure that current regulatory, agency, and client requirements are being met.

- Ensure that operating procedures are in place to minimize risk, the possible loss, damage, and tampering with data, in addition to ensuring that raw data is stored in a secured area and is maintained by designated archivists and/or system administrators.

- Ensure that curriculum vitae (CVs) and training records are maintained to document that staff members have the necessary education, training, and experience to perform their job responsibilities and functions.

- Ensure that regulatory training is provided to applicable employees on a routine and ongoing basis.

- Ensure that all procedures are available, controlled, and current.

- Ensure that documentation demonstrates that procedures are carried out in a compliant and effective manner.

- Ensure that all equipment and instrumentation is qualified, maintained, and calibrated, as appropriate, in accordance with written standard operating procedures.

- Ensure that all significant laboratory problems are investigated, evaluated for root cause and corrective action is put in place as documented

- Ensure that an internal audit program is in place to provide on-going monitoring, evaluate areas of risk, and confirm that laboratory personnel are adhering to standard operating procedures and applicable regulations.

- Ensure that quality issues are brought to the attention of management in a timely manner.

2.5 Quality Assurance Responsibilities

The QA Director assigns tasks with input from the company President. The primary responsibilities of QA include, but are not limited to the following:

- Oversee the laboratories' internal audit program which consists of various audit types and applies to all laboratory activities (technical and administrative).

- Review and approve standard operating procedures and analytical methods.

- Review and approve validation documentation.

- Review non-conforming quality control data

- Perform tracking and trending of quality measurements and report the status, effectiveness, and potential risk areas of the quality system to management.

- Review and approve investigation and corrective action reports (ICARs) and audit responses to ensure that they are completed in a timely manner, evaluated for root cause, that corrective actions are implemented as needed and to monitor corrective action for effectiveness.

- Host client and regulatory agencies during facility audits and follow-up to any cited deficiencies.

- Provide regulatory guidance to the laboratory and support areas.

- Communicate quality issues to management in a timely manner

- Provide and/or coordinate on-going regulatory training (e.g., Ethics).

- Participate in the vendor and supplier approval process, including subcontractors.

- Review analytical data for compliance with our procedures.
- Prepare and review QA project plans (QAPPs) as required by EPA and client projects.
- Maintain and update this *Quality Policy Manual*.
- Maintenance of the Laboratory's accreditations, including but not limited to, administration of the proficiency test sample programs.
- Communication to the relevant regulatory authorities is required when there are management or facility changes that impact the laboratory. Changes in the technical director must be communicated within a period of time and in the manner dictated by each regulatory authority.

2.6 Communication of Quality Issues to Management

The QA Department is responsible for preparing reports to Management to keep them apprised of outstanding quality issues. Reports to management foster communication, review, and refinement of QA activities to ensure that the QA program is adequate to meet regulatory and the laboratory's quality objectives. The following reports are used to communicate quality issues, potential risk, and include, but are not limited to:

- Internal, client, and agency audit reports and corrective action plans
- Proficiency test reports
- Investigation and corrective action reports
- Monthly management system status reports
- Quarterly quality metrics submitted to Eurofins global QA team
- Plans for corrective action

Upon review of quality issues, management and/or QA may issue a stop work notice if an issue indicates the risk for a problem on a broader scale with an analysis. The investigation would need to be completed and the issue resolved before work could continue. The information is tracked through our Investigation and Corrective Action Report (ICAR) process.

2.7 Personnel Qualifications and Responsibilities

The position qualification descriptions (PQDs) for senior staff (Technical Director, QA Director, Laboratory Operations Director, Science Officer, Technical Manager and Support Manager) are provided in Appendix D.

PQDs for all positions are maintained in the laboratory's document control system. Resumes (curricula vitae or CVs) are maintained on file for all staff in the training record system. Responsibilities are outlined in the PQD at the position level. Individual responsibilities and expectations are documented in each employee's job plan. The job plan is evaluated and discussed with each employee on an annual basis. The job plan is a confidential personnel record.

2.8 Relationship of Functional Groups and Quality Assurance Program

In addition to this *Quality Policy Manual*, aspects of the QA program are documented in a series of standard operating procedures that support the proper execution of this document. Technical operation procedures with required quality components are also in place. A list of the titles of relevant SOPs is provided in Appendix E. There are a variety of mechanisms used to communicate requirements and verify compliance with the QA program, including:

- Management requires that all employees read and be trained in the policies and SOPs that are pertinent to their jobs.

- Employee job plans define individual responsibilities. All job plans include data quality aspects, and performance is reviewed annually.

- Laboratory audit findings are communicated to management and require a response and follow-up to items needing corrective action.

- Cross-functional meetings, including representatives from QA, Client Services, Business Development, management, and technical operations are held as needed to review specific projects and quality issues.

2.9 Balancing Laboratory Capacity and Workload

Evaluating laboratory capacity to perform specific projects is the responsibility of the laboratory Operations Director, in conjunction with the President, and management team. Input from business development, sample registration, and client services management is also evaluated. These responsibilities are documented in the individual job plans for these positions.

The laboratory facilities and staff size are very large compared to other laboratories serving the environmental industry. Many analysts are cross-trained to perform a variety of tests, and there is redundant equipment available in case of malfunctions. This minimizes the need to evaluate small and medium size projects against capacity available to complete them. Large projects are reviewed against capacity estimates before bids are submitted to ensure that the client's analysis schedule is met.

Regularly scheduled meetings are held with upper management, laboratory middle management, Client Services and QA personnel to review progress with current projects, as well as special requirements of new work scheduled for the laboratory.

Laboratory capacity and backlog is tracked on a continuous basis using information from the Laboratory Sample Information System (LIMS) including turnaround time, and work in progress.

2.10 Identification of Approved Signatories

All data is reviewed and verified by a second level reviewer at the department level prior to release to the client. The signature of the assigned project manager (PM) is applied to the Analysis Report. The PM performs a basic content check of the report. The authorization of the data is stipulated by the technical reviews performed and documented in the LIMS (1st and 2nd level reviews).

Based on complexity or regulatory needs, some projects are designated for additional QA review of the Analysis Reports and/or data deliverables. Designated QA staff are the "approved signatories" for these secondary reviews. Completion of the QA review is documented in the LIMS job tasks.

Note: "signatures" are attached through the LIMS interface and employee login.

2.11 Personnel Training

The experience and training received by personnel is of great importance to our company, our clients and regulatory agencies. Curricula Vitae (CVs) and on-going training documentation are available to demonstrate how personnel have been prepared for the tasks they routinely perform. To ensure the highest quality of services at the laboratory, training programs and plans are developed to match skills with job functions. Accurate training documentation is the responsibility of both the employee and their supervisor. On a routine basis, the supervisor reviews and approves training documentation to verify that it is complete and current.

Training requirements can be met through education, prior job experience, internal and external training classes, on-the-job training, training modules, procedure reading, or any combination thereof, to enable the person to perform assigned job functions and meet regulatory compliance.

Each analyst training to perform a new analysis is required to perform an initial demonstration of capability and meet the requirements for accuracy and precision before working independently on the test method. Typically, this is accomplished by the successful analysis of four known samples (i.e. a quad study). However, there are certain tests performed that are not required by the mandated test method or regulation to perform the above procedure since they are not conducive to spiking . In this case, the analyst's documentation of proficiency is achieved by documentation of having read, understood, and agreed to follow the SOP as written, on-the-job training and observation by a senior analyst.

Management personnel are responsible for planning ongoing professional growth and development activities for an employee through on-the–job training and/or internal and external training courses so an employee can maintain a current skill set to match job responsibilities.

An annual performance review based on job responsibilities, accountabilities, objective measures, and pre-defined standards is completed by management personnel for each employee. This assessment is documented and maintained. Input is obtained from other managerial personnel as needed. Performance reviews are maintained in the employee's personnel file and are confidential.

2.11.1 New Hire Training

New employees are oriented as part of a year-long process that is designed to make the employee feel welcome and comfortable by defining our culture, traditions, philosophies, and work practices. During the orientation process an employee learns about personnel and safety policies and business strategies in addition to quality, ethics, and customer satisfaction expectations through a formal process administered by collaboration of our Human Resources staff, QA, and the management of the employee's assigned department.

New employees are required to attend "core" technical orientation, as applicable, which can entail the participation in training module exercises, short session attendance, and/or other skill training specific to their assigned department or

job function. Additional job-specific training required for an employee is based upon their assigned duties and is identified by their supervisor. Technical orientation occurs during the first few weeks of employment.

Note: Seasonal and temporary employees have reduced “core” training requirements based on the assigned tasks and as defined by QA, Safety, and the assigned department management.

The orientation process is designed to enable employees to initiate and take responsibility for their personal and professional career growth at the laboratory. The orientation process is conducted without regard to employee race, color, creed, national origin, sex, age, or disability in accordance with the laboratory’s Employee Equal Opportunity (EEO) policy.

2.11.2 Ongoing Training

Refresher and ongoing training occurs through various means, which include but are not limited to, training in or independent review of new/updated standard operating procedures and work instructions; on-going regulatory training; in-house or off-site classes or seminars. The goal of this training is to ensure that employees remain current with changes to laboratory systems and practices, as applicable to their job function. Retraining and re-qualification activities occur as directed by procedures or regulations. Employees are retrained if an issue or investigation warrants that retraining is a necessary corrective action. Management directs when employee re-training is required, and the extent of the re-training.

2.12 Regulatory Training

The QA Department is responsible for coordinating and conducting initial and ongoing regulatory training (e.g., Ethics) for all applicable laboratory and support personnel. It is the responsibility of management within each department to ensure that personnel attend the required training sessions.

The choice of training format and topics covered for ongoing regulatory training is left to the discretion of QA and the trainer. All training sessions reinforce the concepts in the regulations as they are relevant to the laboratory.

Whenever possible, after training is completed, a demonstration of proficiency of the training topic is given. The demonstration of proficiency is generally in the form of a quiz although other demonstrations of proficiency are acceptable depending on the scope and content of the training. If necessary, training is presented and/or repeated one -on-one with individuals who do not demonstrate proficiency in the training topic. This is performed by QA in conjunction with applicable laboratory management personnel.

2.13 Employee Safety

The laboratory, being mindful of its responsibilities as an employer and active corporate citizen, has established the following objectives of its safety program:

- Provide a safe environment for its employees, visitors, and the community surrounding its place of business.
- Provide ongoing safety training for employees.
- Provide all necessary facilities and equipment to ensure the safety of its employees and to minimize all chemical exposure during the normal performance of their required tasks, and to take all necessary precautions to safeguard the surrounding environment.

- Provide periodic health physicals for employees.

- Foster and encourage safe operations and a proper safety attitude on the part of our employees through general operations and systems, training, and the *Chemical Hygiene Plan* (CHP).

The CHP addresses various aspects of our safety program in greater detail.

A Safety Committee works to enhance our overall safety program. The committee meets on a routine and ongoing basis and its specific responsibilities are detailed below:

- Review accident and incident reports. Make recommendations for methods of prevention to eliminate further accidents.

- Promote safety awareness and distribute safety information by various means (e.g., posters, videotapes, pamphlets, and books). Use internal communication channels to promote safety awareness.

- Enhance and recommend safety-training programs for all employees, as necessary.

- Maintain up-to-date information on employee concerns that are safety related. Offer input and information to the Chemical Hygiene Officer and/or Safety Officer, as needed.

2.14 Client Services/Project Management Responsibilities

Members of the laboratory Client Services/Project Management Group are responsible for organizing and managing client projects. Clients are assigned a project manager (a.k.a. “CSR” or "PM") who serves as their primary contact at the laboratory. It is the project manager’s responsibility to act as the client advocate by communicating client requirements to laboratory personnel and ensuring that clients provide complete information needed by the laboratory to meet those requirements. While most communication occurs and is stored via email, all client verbal communications are documented by the project manager in a controlled notebook. In addition to information management, Project Management responsibilities include:

- Coordinating and preparing proposals in conjunction with technical staff.

- Confirming certification status.

- Assisting QA with hosting client visits and audits.

- Coordinating and communicating turnaround time (TAT) requirements for high priority samples/projects.

- Answering common technical questions, facilitating problem resolution.

- Providing clients with sample status report or results (partial reports) prior to receipt of the final Analysis Reports.

- Scheduling sample submissions, sample containers orders, and sample pick-up via the laboratory courier service.

- Informing the client of deviation from their contract.

- Documenting client concerns in the LIMS; directing priority or high risk concerns to QA when formal investigation is needed.

2.15 Confidentiality

Strict confidentiality is maintained in all of our dealings with clients. Confidentiality agreements, therefore, are willingly provided.

All employees are required to protect company data, including client names and test results from disclosure to any third party. This policy, as described in the *Eurofins Lancaster Laboratories Employee Handbook*, is provided and presented to employees during their orientation period and whenever revisions are made.

Intellectual property associated with the testing that we perform under contract for a client is the property of the client.

In an attempt to ensure the confidentiality of our systems and procedures within our laboratory, it is our policy to restrict the distribution of our internal procedures to clients. Requests for copies of SOPs to be provided to clients must be approved through QA. Audit and investigation reports are considered company confidential. Audit or investigation summaries will be generated as needed for a client. Personnel files are strictly confidential and facility floor plans may only be viewed on site.

2.16 Business Conduct

Our business conduct policy applies to all operations of the company. All employees must avoid involvement in any activities that would diminish confidence in their competence, impartiality, judgment, or operational integrity. All employees must further avoid any relationship with other individuals or organizations that might impair, or even appear to impair, the proper performance of their company-related responsibilities. Employees must avoid any situation that might affect their independence of judgment with respect to any business dealings between the company and any other organization or individual. Any employee who believes that they have such a conflict, whether actual or potential, or who is aware of any conflict involving any other employee must report all pertinent details to the President, QA Director, and/or Operations Director of the company. The company's management vigorously enforces this policy and takes prompt and appropriate action, including termination, against any employee found to be in violation.

2.17 Operational Integrity

All employees review and sign the Employee Ethics Statement on their first day of employment and annually thereafter. All employees are instructed in regard to how ethics and data integrity are relevant to every position in the company. Employees responsible for generating, handling, or reviewing laboratory data understand that the laboratory mission is to perform all sample processing and testing with the highest level of integrity. Under no circumstances are shortcuts or generating results to suit a client's purpose rather than good scientific practice considered acceptable. Any violation of the laboratory ethics policy results in a detailed investigation that could lead to termination.

All levels of management consider the following activities unacceptable:

- Knowingly recording inaccurate data.

- Fabrication of data without performing the work needed to generate the information. This includes creating any type of fictitious data or documentation.

- Time travel or adjusting clocks on computerized systems to make it appear that data was acquired at some time other than the actual time.

- Manipulation of data for the express purpose of passing system suitability or quality control criteria.

- Selective use of data generated, or not using data that was legitimately generated and has an impact on the outcome of the test.

- Executing significant deviations from approved test methods and procedures without prior approval from the laboratory management, QA, and/or the client.

If an issue does arise which could compromise data integrity, personnel are instructed to perform the following activities:

- Clearly document the situation and maintain all data generated. There is a big difference between poor judgment and fraud. Fraud usually involves intent to conceal an action taken. Therefore, the more documentation that is maintained, the less likely an action is considered fraudulent if further scrutinized.

- When out-of-specification results or quality type issues are detected, all supporting data and relative background information must be documented and presented for management review. Problem resolution and client contact, as applicable, must also be documented.

- Review any questionable situations and decisions with a supervisor.

- Bring a questionable or uncomfortable issue directly to the QA Director or a member of the QA Department as part of our QA open door policy.

- Utilize the company's anonymous Ethics hotline service. See Section 12.4 of this manual.

3.0 BUILDING AND FACILITIES

3.1 Facility

The laboratory is located at 2425 New Holland Pike, Lancaster PA. The facility consists of two campuses with multiple buildings located on the North and South sides of Route 23. The two campuses are connected by a pedestrian bridge that spans Route 23.

Building A resides on a commercial plot measuring 13.6 acres on the north side of Route 23. Building A is a three-story building of concrete and steel construction which houses both laboratory space and administrative offices. It is approximately 108,000 square feet and consists of approximately 47,000

square feet of laboratory space; 29,000 square feet of office space; and 32,000 square feet of storage, mechanical, and common areas. On this parcel, adjacent to Building A, sit two chemical storage buildings (Buildings I and L) with a total space of 2500 square feet. In addition, a 10,500 square foot storage building houses stability chambers (Building J). The bottles packing area, which includes preservation of bottles being sent to clients for sampling, is located in a separate 3100 square foot building (Building K). In addition, there are two other buildings (Buildings G and H) with a total square footage of 20,000 square feet that host recycling, storage, workshop and facilities maintenance areas.

The remaining buildings reside on a commercial plot measuring 35.7 acres on the south side of Route 23. These building are connected to the north campus buildings via a pedestrian walkway over the highway.

Building B is a three-story building of steel and concrete construction. It is approximately 56,000 square feet and consists of approximately 17,000 square feet of laboratory space; 14,000 square feet of office space; and 25,000 square feet of storage, mechanical, and common areas.

Building C resides between buildings B and D and consists of a three-story building of steel and concrete construction. It is approximately 47,000 square feet and consists of approximately 25,000 square feet of laboratory space; 6,900 square feet of office space; and 15,100 square feet of storage, mechanical, and common areas. The first floor houses the main lobby and visitor's entrance.

Building D is connected to building C. It is a 78,000 square foot, four-story building of steel and concrete construction and provides approximately 35,000 square feet of laboratory space, 19,000 square feet of office space, and 24,000 square feet of storage, mechanical, common area.

Building M is a four-story laboratory and office building constructed of steel and concrete located over a ground-level parking garage. The building is approximately 163,700 square feet, 46,000 square feet of office space, 34, 000 square feet of office space, and 65,000 square feet of support area including conference rooms, restrooms, hallways, cafeteria, dining, shipping dock, and mechanical spaces.

Building R is a single-story 920 square-foot masonry building adjacent to building "M" that housed chilled water pumps and cooling towers.

Buildings "V,W,X" are storage buildings adjacent to building "M" that support new chemical storage and waste storage operations. Total space is approximately 1850 square feet.

Building N is a two-story, masonry, 18,800 square-foot building that houses administrative services for Eurofins US operations. This building is located in a nearby condominium complex. Services provided include accounting, purchasing and human resource operations.

Building S is a two-story stone, masonry, and wood-frame barn consisting of approximately 13,700 square feet. This building is used for storage of facility materials and equipment.

Building T, located on an adjacent parcel, consists of a single-story, 21,000 square-foot, pre-engineered metal building hosting storage, pharmaceutical medical device testing, and training facilities.

Two small support buildings (Buildings E and F) with a combined space of approximately 800 square feet are used for chemical and waste storage on the south campus.

Building U is a 18,000 square foot stability storage building.

There is an automatic fire alarm and security system hooked up at the facility. This system is monitored offsite by Choice Security. The entire campus and all exterior doors are monitored by video surveillance.

All facilities are serviced by public sewer. Drinking water and the facility sprinkler system is fed by the public water supply. Laboratory process water is supplied via on-site wells. The closest surface water is the Conestoga River.

3.2 Security

The laboratory is considered a secure facility. All outside doors except the main lobby entrance are locked during normal business hours to prevent unauthorized entry. An attendant monitors this entrance at all times.

During evenings, weekends, and holidays, all doors are locked and Security personnel are on site to prevent unauthorized entry into the building. Video cameras are utilized by Security personnel to monitor the facility grounds.

Every employee is issued a photo ID badge which also serves as a building access card. This badge must be worn at all times while on laboratory property so that employees are easily identified. Access to secured/designated areas within the building is limited to only applicable employees through the building security system. This system is administered by Security staff.

All visitors must register with the lobby attendant and are issued a visitor badge. A staff person must accompany visitors while in the facility. Additional visitor rules are outlined in the *Visitor Security and Safety Rules* pamphlet which is provided to all guests.

Building access cards are issued on a temporary basis to contractors or service technicians (e.g., electricians and plumbers) who need access to the building to work on a project. These cards provide the contractor with limited access during the normal workday and must be returned when the work is complete.

3.3 Disaster Recovery

A disaster recovery plan is in place to provide direction for situations where normal operations of the laboratory are not possible. In the event that the building or information technology (IT) systems would be severely challenged, a designated disaster recovery team, which includes Physical Services, Maintenance, Safety, Corporate Management, Public Relations, IT, QA and other applicable personnel depending on the scope of the disaster, would assemble at a designated area to assess the situation and formulate a plan.

The plan addresses, in general terms, how to approach the following issues: electrical failures, heating/air conditioning failures, fire/building evacuation, computer failures, hazardous material spills, injury to employees, pandemic flu, disruption of phone service, and stability chamber failures.

3.4 Environmental Monitoring

The air handling system for the main laboratory is specially designed to protect sensitive instruments from harmful vapors to ensure that samples are not contaminated. The Physical Services/Maintenance Group is responsible for maintaining the HVAC and exhaust hood systems. This is particularly important in our instrumentation rooms and computer center where a controlled environment, positive pressure system is maintained.

Most refrigerators, freezers, incubators, and ovens used for analysis are monitored by a computerized system equipped with stationary thermometer temperature probes linked to a master panel that is accessed through a computer. If a unit is outside of a predefined temperature range for a specified period of time, the system alarms. Units not on the computerized system must be monitored manually by recording thermometer temperature readings twice daily.

The laboratory is set up so that there is effective separation between neighboring areas in which there is potential for contamination. Laboratory storage blanks are also used to evaluate conditions under which samples for volatile analysis are stored to monitor for cross-contamination potential. QA provides oversight of the environmental monitoring system.

QA and technical management, in consultation with facilities management as needed, evaluate any issues with environmental conditions that could have adverse effects on data to determine if alternative operational plans (moving testing to alternate laboratories, temporary shutdowns, etc.) need to be employed.

3.5 Water Systems

Well water and the public sewer system service the facility. The water system is monitored to meet the permit requirements of the Pennsylvania Department of Environmental Protection.

Reagent water is available to analysts for sample preparation (including dilution) and glassware cleaning. Two reverse-osmosis deionized water systems deliver highly purified water to a sealed fiberglass storage tank. From the storage tank the water is delivered to an ion-exchange-carbon filter system for further polishing. The water is also exposed to an in-line ultraviolet sterilization lamp before being circulated to taps throughout the laboratory.

Daily monitoring and preventive maintenance for the system is the responsibility of the Physical Services Department. Monthly and annual testing is performed as required by regulatory guidance. QA provides oversight of the water system monitoring. In addition, method blanks are tested with each batch (=20) of samples.

3.6 Housekeeping/Cleaning

The laboratory is dedicated to providing a clean workplace. A third party professional cleaning service provides routine cleaning of "common areas" that include lavatories, drinking fountains, floors, and windows. Technical staff are responsible for the cleaning (or the contract of cleaning) of specific laboratory work areas.

Detergents used for cleaning contain no to very low levels of metals, pesticides/herbicides/ fungicides, or volatile solvents.

3.7 Insect & Rodent Control

Steps are taken to prevent, monitor, and control insect and rodent infestation. The coordination of this program is the responsibility of the Physical Services Department under the direction of QA. An outside service firm is contracted to perform routine and ongoing monitoring of the facility to ensure that preventive measures which are in place are effective and are working as intended.

No insect or rodent control chemical agents in a liquid or vapor form are applied or sprayed in any laboratory building, unless there is no other option, in which case department management must be contacted for approval.

3.8 Emergency Power Supply

The laboratory is located at the junction of two power grids that supply electrical service to the facility. If one of the power grids fails, we have the ability to work with the power company to have service switched to the other grid. Various types of diesel and natural gas generators are also available on a standby basis to supply power to selected areas of the laboratory in case of a power outage.

To reduce spikes and spurious line voltage changes to laboratory instruments that can affect results or damage electronic equipment, "conditional power" is fed to these sensitive instruments. All essential computer systems are on uninterrupted power supply (UPS) which is a battery system that provides continuous conditional power for a limited time period in the event of a short power outage.

3.9 Facility Changes

Procedures are in place to manage change, ensure communication, and to minimize negative consequences through active participation of personnel involved in a facility change. The goal is to ensure that physical and environmental condition changes are adequately evaluated for impact and reduction of risk to quality, safety, health, employee, environment, property, analytical services, and business operations before and after the change is implemented.

4.0 DOCUMENT CONTROL

The administration of the document control system including tracking, filing, updating, and archiving of inactive copies is managed by the laboratory and QA staff using an electronic record keeping system. All documents are maintained and accessed through the electronic system. If an employee or department uses hardcopy versions of the documents, they are responsible to ensure that they are using the active version of the document.

It is our policy to restrict the distribution of our internal procedures to clients and we discourage the distribution of company confidential documents outside of the facility. Clients are permitted to review our procedures while on-site as part of an audit or visit. Any documents that are distributed are only sent with the approval of QA and are considered "Uncontrolled".

The goals of the document control process are:

- Format documents according to consistent and defined standards
- Review and approve new documents
- Schedule review of existing documents
- Control of document versions and effective dates
- Review and approval of document changes
- Communicate and track employee training on SOPs
- Control document distribution and removal of obsolete documents
- Archive obsolete documents

4.1 Hierarchy of Internal Operating Procedures

The hierarchy of controlled procedures at the laboratory is defined. The levels (e.g. Policy, SOPs, work instructions, forms) are identified for each document in the document control system. These procedures and documentation are made available to promote consistency throughout the organization and to meet regulatory requirements. A list of relevant methods and procedures is located in Appendix E. The development of new procedures and the review and updating of current procedures is ongoing based on laboratory changes, new method development and regular review cycles.

4.1.1 Level 1 - Quality Policy Manual and Company Policies

The intent of these documents is to define "what" we do with emphasis on Executive and Management's responsibility for quality.

The purpose of the Quality Policy Manual is to provide a framework to outline the quality systems at the laboratory. Information on key quality system processes is described within the manual. Organizational

charts, list of SOPs, a list of equipment, instrumentation, and PQDs for senior personnel are included as attachments to this manual.

- Executive Management is responsible for ensuring that adequate personnel, resources, and support are available to carry out the requirements of this Quality Policy Manual.

- Management is responsible for ensuring that SOPs, Work Instructions, or other appropriate documents are written and available to personnel to define the practices and systems which support these policies.

- All employees are responsible for conducting business in a manner which is compliant with quality and company policies and associated SOPs, Work Instructions, or other appropriate documents. Review of these policies and procedures must be documented.

Additional company policies are written to support and expand upon this Quality Policy Manual. These policies contain more detailed information about a subject with approval signatures executed at the Executive and/or Management level.

4.1.2 Level 2 - Standard Operating Procedures

The intent of these standard operating procedures is to define "who, what, where, and when." These procedures provide specific information for a process or topic so that the requirements outlined in this *Quality Policy Manual* and company policies can be achieved. The review and approval of these SOPs is performed at the director/manager/group leader level, including QA review and signoff, and the responsibility of these SOPs lies with the area or person directing the operation.

SOPs can apply to site-wide operations, the entire company, across multiple departments, or a specific operating area.

4.1.3 Level 3 - Work Instructions (at a department level)

The intent of these procedures or documents is to define in greater detail the specific "how to". The level of detail in these documents must be sufficient so any appropriately trained person can perform the task accurately. Examples include, but are not limited to departmental standard operating procedures (SOPs); maintenance and calibration procedures; and the laboratory analytical methods. Departmental level procedures/documents are reviewed and approved at the manager or group leader level including QA review and signoff.

4.1.4 Level 4 - Quality Records

The intent of these documents is to provide documented evidence to support our quality systems and operations. Examples include but are not limited to, data notebooks/logbooks, and preformatted data recording forms.

4.2 Document Approval, Issue, Control, and Maintenance

The document control process ensures that documents are approved and adequate for use. It ensures that documents are readily available to personnel and at locations where essential operations are performed.

Procedures are available to all employees in electronic form through our document management system. The laboratory management and QA staff is responsible for ensuring the documents in this system are in a current and accurate state. These procedures can be printed from this system for reference by employees as the corresponding task is being performed. Prior to using a printed document, the employee **must** ensure that it is the current version.

Each procedure is uniquely identified and includes effective date, version identification, designated user groups and the "approved by" employee. Document editors and reviewers are recorded in the electronic system for each version of a document. All documents are searchable and uniquely identified in the document management system.

Controlled policies, procedures, and work instructions are reviewed and approved by appropriate individuals and are formally issued and administered through the electronic document management system. The editor, reviewer and approval personnel are recorded within the document as through the document control interface. The recording of these steps is through the employee's secure network log -in and password. Designated personnel are assigned the editor, reviewer, and approval roles. Administration of the role assignments is managed by QA.

Procedures undergo scheduled annual review to ensure that they are accurate, current, and compliant. QA is the final approver and publisher on procedures which gives QA the authority to implement the procedure. Forms may be approved and published by department management. Upon the effective date of new or updated documents, all copies of obsolete documents are removed from service.

Interim amendments to procedures are not allowed. Any needed changes require a revision to the document. The document management system has a feedback function which enables information to be given to the assigned document editors. If minor edits (e.g. typos) are identified that can wait until the next review cycle, these can be communicated through the feedback function.

Forms are frequently used in logbooks. The logbooks are created by the Office Services group. The appropriate form is provided to Office Services to be made into a logbook. The logbook is given a unique identification number and is tracked by Office Services in regard to issuance to the associated department and through to subsequent archival.

4.3 Client-Supplied Methods and Documentation

Client documentation to support environmental testing at the laboratory is maintained in a centralized area. This information is organized by client/project in the Client Services/Project Management Group. Client documentation includes the following information depending on project size and scope:

- Client supplied analyte lists

- Client supplied project plans
- Client contract quality manuals with specified limits, QC criteria, etc.
- Communication/correspondence records which relate to testing requirements, interpretation of results, or reporting formats

4.4 Laboratory Notebooks, Logbooks, and Forms

Procedures are in place to ensure that all data is traceable, authentic, complete, and retrievable. Most documentation and records are maintained within the LIMS. For data that requires a physical log, the following general requirements outline our system for the issuing, control, and archival of laboratory notebook and logbooks.

- The administration of notebooks and logbooks is controlled by the Office Services Group. They maintain a master index to uniquely number and identify each book distributed.
- Notebooks and logbooks can contain blank or preformatted pages.
- Notebooks and logbooks are bound, uniquely identified and have sequentially pre-numbered pages.
- If notebooks or logbooks contain preprinted laboratory form pages:
    - A unique identification number is assigned to each form
    - Forms are approved through the electronic document management system by appropriate management personnel before they are put into use
    - Forms are reviewed on a routine basis to ensure they are still accurate and current
- Completed notebooks are returned to an archivist. Incomplete books are returned to the Office Services group:
    - Two years from the issue date
    - For employee specific notebooks – when the employee leaves the company
    - For project specific notebooks – when the project for which it was used is complete
- In specific situations, records may be bound to create books at the time of archival (e.g., temperature charts).

- At the time of archival any page(s) in the notebook or logbook that does not contain data documentation is crossed-out or a statement is written on the last page used to note that the book is complete to prevent data from being entered at a later date.

- Notebooks and logbooks identified as requiring permanent archival are assigned a designated qualifier.

4.5 Control of External Documents

Hard copy versions of external documents are controlled using an inventory form in the document management system. Any external document that is maintained in the laboratory are inventoried and listed on a department specific controlled form.

External documents such as copies of the 40 CFR and ASTM methods are stored exclusively in the QA Department. QA also keeps applicable agency documents on file, these include, but are not limited to, the TNI (The NELAC Institute) and ISO 17025 Standards.

Environmental methods from the EPA or Standard Methods are available in the QA Department, but the technical areas also have copies that pertain to the tests that they perform. Some methods are available on-line and are accessed through the Internet.

It is the laboratory's understanding that the need to control external documents is to ensure that the most current version of a method is referenced or appropriate manual is being used. Regulatory methods are used as references by the laboratory and testing is performed as per written SOPs that fall under our existing document control system and have scheduled reviews. The scheduled review of SOPs is used to ensure that the proper version of a method is referenced. While using the most current version of an analytical method is our typical practice, there are specific client needs and accreditation rules that require previous versions of a method to be used.

The technical areas are responsible for ensuring that all manufacturers' manuals are current and available to analysts. The vendor provides instrument manuals when new equipment is purchased or existing instruments are updated. These manuals are kept with the instruments to which they are associated.

5.0 SAMPLE HANDLING

5.1 Sample Collection

It is the responsibility of the client to send us representative and/or homogeneous and properly preserved samples of the system from which they are drawn. The laboratory assumes that all multiple sample containers with the same designator/description and bottle type contain a homogeneous, representative sample. We also assume that it is acceptable to deplete one container and move to the next, without implications unless otherwise indicated by the client.

The laboratory provides the appropriate sample containers, required preservative, chain-of-custody (COC) forms, shipping containers, labels, and custody seals. The laboratory also provides trip blanks

and analyte-free water for field blanks. Preparation of methanol containers for field preservation of volatile soil samples is available.

Sample containers are purchased pre-cleaned by the supplier. For pre-preserved bottles, each lot of preservative is checked for contaminants before use. This also serves as a check on the associated containers. An annual bottle lot check is performed to evaluate the cleanliness of any containers not already covered by the preservative checks. The evaluation is to assess cleanliness to the laboratories' detection limits. These checks are processed through the LIMS as samples. Results are documented through the LIMS Analysis Report.

The laboratory provides instructions with all bottle orders that define how to sample, preserve, store, and ship the samples prior to their delivery at the laboratory. These instructions inform the client of the importance of proper sampling and advise them that non-compliant samples are rejected or reported with a qualifier.

As samples are analyzed at the laboratory, there are times when additional sample volume is necessary to complete testing or perform retesting. If this situation arises, "additional sample" is requested by the laboratory and/or submitted by a client to supplement current work being performed within our facility. Additional sample received is either assigned a new laboratory sample ID number and/or a comment noted on the final report to state that additional sample was received, depending on the situation. It is our goal to provide accurate traceability between sample submission and when testing is performed.

5.2 Sample Receipt and Entry

5.2.1 Sample Entry

Samples can be received at the laboratory 24 hours a day, 7 days a week, 365 days of the year. Receipt can occur in one of three ways:

- The laboratory courier services (i.e., Transportation Department
- Personal delivery
- Commercial courier

All samples received for testing are delivered to the Sample Registration group immediately upon arrival. This group is responsible for the unpacking and organizing of the samples. This process includes checking custody seals if present, paperwork agreement, signing the chain of custody, recording cooler temperatures, documenting the condition of containers, accounting for all sample bottles, and observing any safety hazards, and reporting any problems to Client Services for communication to the client. This receipt process is documented in the LIMS.

5.2.2 Sample Entry

As soon as practical after sample receipt, all samples are entered into our LIMS. Samples awaiting log-in are stored in temporary holding areas, at appropriate storage conditions to maintain sample

integrity. Samples scheduled for Volatile analysis are stored separately. If there is doubt about the suitability of items received or if items do not conform to the description provided or the testing required is not clear or specified, the client is contacted and the conversation documented.

At the time of entry, the LIMS assigns a unique laboratory job and sample number to each sample. This job number is sequentially assigned and a label is generated and is attached to the sample container. Each sample container is uniquely identified with a container descriptor and unique container letter designation. The sample number and container used are documented on laboratory data records to ensure traceability from the test data to the sample container that was used. The label includes a barcode that can be used to confirm/enter the sample identification information throughout sample processing.

Sample receipt is documented to the minute. Sample entry and subsequent analysis times are documented in the LIMS.

A sample acknowledgement is generated from the LIMS per sample entry group. Upon request, a copy of the Acknowledgement may be sent to the client on the day following sample log-in to confirm sample receipt and entry. Internally, appropriate personnel audit all applicable sample entries against the client paperwork.

5.2.3 Sample Preservation Check

Sample Registration personnel check and document preservation of non-volatile liquid samples after the samples have been entered into the LIMS and before they are released to the laboratory for testing or placed into storage. Any checks of volatile samples are performed and documented at the time of analysis.

5.2.4 Sample Rejection Policy

Regulated (e.g. drinking water, NPDES) samples are rejected if receipt requirements are not met. The laboratory's Sample Acceptance Policy is communicated to clients with each bottle order. Any time a sample is received in a condition that does not meet the method, regulatory, or client requirements, the condition of the sample is clearly documented through the LIMS using a sample registration receipt checklist and receipt comments. This information is communicated to the CSR and the client is contacted to discuss the best course of action. The client is given the option to resample or have the sample analyzed and reported with a qualifying comment. Some regulatory programs do not allow qualification. Details are provided in the Sample Acceptance Policy.

5.3 Sample Identification and Tracking

A sample label is generated for each sample and, in addition to the assigned unique sample number, the following information is displayed on the label: unique container identification, container type, storage location, client sample designation. The label includes a unique barcode that is used to track this information about the sample/container and to trace each container's storage location.

To ensure accountability of results, the unique sample number assigned is used to identify the sample in all laboratory data documentation, including notebooks, instrument printouts, and final reports. The

sample number is also used to identify additional containers of the sample that are created during sample preparation and analysis (e.g., subsamples, extracts, digests). Each container for a sample is tracked through the sample number and container designator code when there are multiple containers of the same type received. This is used to identify which specific container was used for testing.

Routine sample tracking is documented using the Laboratory Chronicle which captures the date, time and analyst for each sample preparation and analysis. The information is compiled in the LIMS using electronic record tracking from the data upload and entry functions. This displays, per sample, on each Analysis Report.

5.4 Sample Storage

After sample registration is complete, samples are placed in an assigned and identified storage location until needed for analysis. Room temperature, refrigerated, and frozen storage are available and samples are stored in accordance with regulatory, method, or client direction. The LIMS is used to assign storage locations, which assists in the orderly storage of samples. Sample storage locations are secured and monitored for accurate temperature control. Samples are stored separately from standards and reagents.

The central locked storage facility contains 3430 square feet of refrigerated space, including 2740 square feet equipped for automated sample retrieval. Samples are stored in the laboratory's automated storage and retrieval system (ASRS) or other assigned storage locations (separate volatiles areas) within the laboratory until completion of all analytical work.

When a sample is scheduled for analysis, the analyst requisitions it through the LIMS from the storage area. Barcode readers are used for LIMS documentation of the movement of the samples between storage and the laboratories. To maintain the integrity and security of the sample(s), the aliquot needed for analysis is removed and the sample(s) returned to storage as soon as possible.

5.5 Sample Return/Disposal

Samples remain in the storage area following analysis until the testing results have been verified and the analysis report has been generated. On a regular basis, a list is generated from the LIMS that summarizes samples that can be removed from the storage area. At a minimum, water samples are held for 1 week and soil samples for 2 weeks after reporting before they would be eligible for disposal. Samples are either returned to the client or disposed of in accordance with local, state, and federal regulations. Removal of the containers from storage for permanent discard is also documented in the LIMS using the barcode reader.

Due to the variety of waste generated at the laboratory, several general categories of wastes and waste streams have been identified. Identification of waste occurs through information provided by the client, historical information, and/or analytical testing. The laboratory uses a sophisticated, computerized LIMS, which includes programming to assist in the identification of hazardous wastes at time of discard.

For reasons of environmental liability, client confidentiality, proprietary product formulation protection, etc., wastes generated by the laboratory are disposed of via incineration at EPA licensed facilities. The three exceptions include bulk neutralized acid waste, COD analysis waste, and lab pack waste containing mercury. None of these exceptions involve containers with client information.

5.6 Legal Chain of Custody

Samples being tested for litigation require locked storage and documentation of the time and personnel responsible when the sample was not in storage. This level of documentation is available upon client request and procedures to define these activities are in place and include the following:

- A chain-of-custody document is initiated for each bottle type submitted by the client.
- The chain of custody is signed each time the sample is stored, removed from storage, or changes hands.
- Clients requesting legal internal chain-of-custody documentation receive the completed forms after the analysis is complete.

5.7 Representativeness of Samples

Each analytical method provides specific procedures to ensure that a representative aliquot of the sample is used for testing. These procedures include shaking water samples and mixing solid samples prior to removing the aliquot for testing. Analysts are also instructed in sampling techniques that prevent contamination of samples and for handling volatile samples to minimize loss of volatiles.

6.0 TECHNICAL REQUIREMENTS - TRACEABILITY OF MEASUREMENTS

6.1 Reagents and Solvents

The reliability of our analytical results can be directly affected by the quality of reagents used in the laboratory. Procedures are in place to address labeling, storage, and evaluation of these materials. Reagents and solvents include acids, bases, indicators, buffer solutions, colorimetric solutions (CS), test solutions (TS), and volumetric solutions (VS). The *Chemical Hygiene Plan* provides safety information in regard to the storage and handling of laboratory chemicals. All reagents are stored separately from samples.

Each analytical method includes a list of reagents needed to perform the test. Reagents/solvents are fully described, including chemical name, purity, and description of preparation. Where applicable, shelf life and storage conditions are also listed. The laboratory is responsible for checking that new supplies meet the method requirements. These checks are documented and maintained.

Departmental management ensures that an adequate inventory of reagents needed to perform testing is maintained. Reagents received at the laboratory funnel through the Shipping and Receiving Department and deliveries are verified and labeled with the date of receipt. Large volume reagents (e.g., solvents, acids) are stored in a building outside of the laboratory until needed for use.

In addition to the name and concentration of the reagent, all reagents are labeled with the manufacturer/vendor, storage conditions, the date opened, and an expiration or re-evaluation date. Before using any reagent, the analyst must ensure that the material was properly stored and labeled. If a reagent has passed its expiration date or shows signs of deterioration, the material is not to be used in the laboratory and must be discarded or segregated as expired. In some method development or research work, expired reagents may be used. These must be labeled as such or stored in a designated location.

If a re-evaluation date is reached before a reagent is completely consumed, the reagent will be inspected by physical observation for signs of degradation. Physical signs include, but are not limited to, color changes, clumping or other texture changes for solids and formation of precipitate in solutions. This evaluation is performed by an experienced chemist.

Subsequent reagent solutions or mixtures prepared at the laboratory are fully documented in a log and labeled to include: unique name, concentration, date prepared, name of analyst who prepared the reagent, storage conditions or reference to the log containing these details, and expiration/re-evaluation date. The information recorded allows these solutions to be traced to the original stock solution. The reference to the log is intended for use on containers that are too small to clearly document all of the information. The "log" may be a LIMS identifier for reagents/standards with preparation tracked via the LIMS.

All reagent certificates and MSDSs are retained by the laboratory.

6.2 Calibration Standards

Written calibration procedures are required, where applicable, for all instruments and equipment used in the laboratory. The source and accuracy of standards used for calibration purposes are integral to obtaining quality data. Requirements for calibration are provided in each analytical method including specifications for the standards used. Where available and practicable, calibration measurements made by the laboratory must be traceable to national standards of measurement (e.g., NIST). Certificates of Analysis (C of As) are maintained for each material, as applicable.

The laboratory's ISO 17025 and DoD accreditations require calibration materials to be certified and purchased from a reference material producer accredited to ISO Guide 34 and ISO 17025, when available. A list of accredited suppliers is maintained by QA. This is applicable to the tests under these scopes of accreditation and can be met through the stock standards used for calibration; a standard processed under the calibration such as an ICV or LCS; or comparison to a separate reference material at a frequency defined by at the test level (i.e. annually).

Standards are usually purchased from commercial supply houses either as neat compounds or as solutions with certified concentrations. Upon receipt at the laboratory, the material must be labeled with the date of receipt. The accuracy and quality of these purchased standards is documented on a C of A and these certificates are maintained on file in the laboratory.

Most solutions and all neat materials require subsequent dilution to an appropriate working range. Records of all standard preparations include the dilution(s) made and a reference to the original and any intermediate mixtures. Solutions are labeled according to laboratory procedures and assigned unique names or code numbers that provide traceability to the original components.

All standards are stored separately from samples and in conditions as stipulated by the method or vendor (refrigerator, freezer, room temperature, etc.).

Each new preparation of standard is tested for integrity by comparison to standards from another source or previously prepared solutions. Standards are not used for sample analyses in the laboratory past their expiration date. In some method development or research work, expired standards may be used. These must be labeled as such or stored in a designated location.

6.3 Equipment and Instrumentation

The laboratory is equipped with all equipment and instrumentation required for testing the scope of work which it supports. All equipment and instrumentation is maintained in proper working order. A master list of our equipment and instruments is maintained by our accounting department and includes the date received and the condition at receipt (new v. used). Our major equipment and instrumentation capabilities are summarized in Appendix F. In addition, we have numerous other instruments including pH meters along with support equipment such as ovens, incubators, centrifuges, balances, etc.

6.3.1 General Requirements

Equipment/instrumentation is assigned a unique designation. This unique number or system identification is used to track the equipment or instrument within data documentation.

A maintenance logbook is established in conjunction with installation and is readily available to document all incidents and/or routine maintenance processes that pertain to the equipment or instrument as they occur. The corrective action taken, the date that the equipment/instrument is returned to service, and performance checks performed is documented.

All test, measuring, and inspection of laboratory systems, equipment, and instrumentation used at the laboratory is routinely calibrated and maintained in accordance with applicable standard operating procedures.

A member of the technical group, or designated individual, performs routinely scheduled maintenance and calibration of laboratory equipment and instruments as required by laboratory procedures. These activities are documented.

If appropriate standards or expertise for calibration or maintenance are not available in-house, the operation is conducted by an outside service firm, with appropriate accreditation. Certificates or other data generated by the service firm are reviewed by applicable the laboratory personnel to verify acceptability. This information is maintained on file.

All equipment or instruments taken out of service are tagged "DO NOT USE". The following minimum information is documented on the tag:

- Date taken out of service
- Employee who took the equipment/instrument out of service
- Reason for tag-out

6.3.2 Standard Operating Procedures

Information regarding operation, maintenance, and calibration of equipment and instrumentation is found in the respective SOPs. The procedures include, where applicable, a routine schedule for preventive maintenance and calibration along with acceptance criteria and remedial action to be taken in the event of failure. These procedures are maintained in the document control system and reviewed on a regular basis to verify they remain current and accurate. Vendor supplied manuals are also available to provide additional information in regard to operation and maintenance.

6.3.3 Maintenance

Instrument and equipment maintenance is performed as either a preventive or corrective operation. These processes and schedules are defined in the corresponding SOPs and Work Instruction documents.

Preventive maintenance procedures and schedules are developed for each instrument or piece of equipment, where applicable. Preventive maintenance operations are performed by an analyst, equipment maintenance specialist, or contracted (manufacturer's representative or service firm personnel). Documentation is maintained in the associated maintenance log for the procedure(s) performed as part of the preventive maintenance operation. It is the responsibility of departmental management to ensure that a preventive maintenance schedule is addressed by a procedure where appropriate and is followed.

Corrective maintenance is performed by an analyst, equipment maintenance specialist, or contracted (manufacturer's representative or service firm personnel) in response to indications of equipment or instrument malfunctions. The unit must be clearly tagged as out of service. All corrective actions taken to bring the unit back into service are documented in the associated maintenance log. After repair, further notation is made in the log regarding the functional status. Calibration activities are performed, as applicable, and documented in the log before the unit is placed back into service.

A supply of commonly needed replacement parts is maintained by the laboratory.

6.3.4 Calibration

Calibration is the establishment of, under specified conditions, the relationship between the values/response indicated by a measuring instrument or system and the corresponding known/certified

values associated with the standards used. Some types of calibrations are performed with a set frequency (e.g. daily) while others provide intermediate checks to ensure that the instrument response has not changed significantly.

All measuring and testing instruments and equipment having an effect on the accuracy, precision, or validity of calibrations and tests are calibrated and/or verified at least annually. Methods for calibration of instruments and equipment vary widely with the nature of the device and the direction given by analytical procedures, departmental procedures, manufacturer recommendations, or regulatory requirements. Frequency of calibration can also depend on additional factors including ruggedness of the instrument or equipment and the frequency of use. The calibration procedures, schedules, and acceptance criteria are defined in the corresponding SOPs and Work Instruction documents.

Departmental management is responsible for developing or acquiring written calibration procedures for the types of instruments and equipment employed within their area, as applicable. Procedures address the following aspects: description of the calibration method, frequency/schedule for calibration, acceptance criteria, and corrective actions if failure occurs.

Calibration information is recorded in a logbook that is associated with the instrument/equipment and/or a calibration certificate is maintained and/or data is generated and filed to document the activity.

Calibration measurements are traceable to national standards of measurement (e.g., NIST) where available. Physical standards, such as NIST certified weights or thermometers are re-certified on a routine basis. Calibration certificates are maintained on file, where applicable, to indicate the traceability to national standards of measurement. These physical standards are used for no other purpose than calibration.

Calibration failures are documented in the associated logbook and/or within the data generated from the instruments or equipment. Management personnel perform an evaluation and review of failures and assess any potential impact the failure might have on previously generated data. The laboratory utilizes "real-time" controls to ensure the accuracy of the data. These controls are used to assist in assessing the impact of the situation.

After repair, adjustments, or relocation that could affect instrument response, calibration/verification activities are performed, as applicable, before the unit is returned to service.

Analytical data is not reported from instrumentation or equipment with noncompliant calibration unless the client has agreed to receipt of the data and appropriate qualifiers or comments are applied to the final Analysis Report.

6.4 Computerized Systems and Computer Software

6.4.1 Computer Usage

The laboratory provides computer equipment for employees to use as a tool in performing their work. Computer equipment is the property of the laboratory and used in accordance with defined terms and conditions. Our goal is to provide standard hardware and software that meets the needs of the user. The majority of desktop PCs and laptops in use are standardized using cloning software.

6.4.1.1 Physical Security of Computer Systems

It is company policy to protect computer hardware, software and data documentation from misuse, theft, unauthorized access and environmental hazards. The corporate computer area and computer "Hot-Site" is locked and requires identification/building card access. All vendors, contractors, or other visitors must be escorted into this area. Controlled access of the laboratory buildings is outlined in Section 3.2.

6.4.1.2 Passwords

Passwords are important for the security of company data and resources. The laboratory's primary network operating system is Windows and each employee must have a user ID and password combination to access the system. Other computer systems also require a user ID password combination for access. The following procedures apply regardless of which system(s) is being utilized:

- Passwords must be created as strong passwords in accordance with Eurofins Password Policy and must be kept confidential.
- Users must log-out of a system when not in use to prevent unauthorized access. In addition, the network access will automatically timeout after a set period of inactivity, requiring a user to log-in to access the system.
- Forgotten passwords can only be reset by the IT Department or by an appropriate System Administrator.
- Network and LIMS passwords automatically expire at designated intervals. The computer prompts a user to change the password when the expiration date nears. If the password is not changed, the user will be locked out of the system.

6.4.1.3 Viruses

The laboratory centrally and continuously monitors the computer network for computer viruses. Employees are prohibited from using the company's computer equipment to propagate any virus. Anti-virus software is employed to detect viruses on the Windows network. A notification is sent when there is a particularly dangerous or virulent data destructive program that employees need to be aware of. However, employees are instructed to always be cautious and observant even if there are no current warnings. Employees must report any virus concerns to the anti-virus administrator or IT Management as soon as possible. Employees who share files between their home computer and the laboratory should install anti-virus software on their home computer. If an employee does not have such software, the laboratory can suggest various no-cost anti-virus software products.

6.4.1.4 Internet and E-mail Systems

The e-mail system is used primarily for the laboratory's business purposes. The *Eurofins Lancaster Laboratories' Employee Handbook* provides additional information in regard to system usage. Employee access to the internet is restricted to those employees who have a business need for it. All employees have access to e-mail. Access to the internet is configured through a user's Windows network account. All internet and e-mail activity is subject to monitoring. All messages created, sent or received over the internet are company property and can be regarded as public information. E-mail and website filtering software is utilized.

6.4.1.5 The Laboratory's Intranet (LabLinks)

The Intranet is designed to be a useful tool for employees to acquire company information and to provide a company communication system. The *Eurofins Lancaster Laboratories' Employee Handbook* provides additional information in regard to usage.

6.4.1.6 Software Policy

Copyright laws protect software, and the laboratory's intent is to abide by all software agreements.

Software purchases must be formally requested and approved by management and/or validation personnel, as necessary.

All software is used in accordance with applicable license agreements.

Employees are not to install any software on computer(s) unless authorized by the IT Department.

Software upgrades must occur in accordance with applicable change control procedures.

Employees must not give software to outsiders (e.g., clients, contractors), unless approval is granted by management.

Users must not make copies of any licensed software or related documentation without permission. Any user that illegally reproduces software is subject to civil and criminal penalties including fines and imprisonment.

6.4.1.7 Computer System Backup, Data Restoration, and Data Archival

Mission critical data is stored on several computers throughout the laboratory. These computers are connected through the local area network. Selected files on these computers are backed up using an enterprise-level backup software program. The objective of this backup is to have the ability to restore data after a total loss (e.g., theft, fire, natural disaster). Procedures are in place to perform data backups and restores.

6.4.1.8 Remote Access to Computer Systems

Designated employees are able to remotely connect to the laboratory computer systems through an encrypted (SSL) login. When logging in, users are authenticated with their Windows Active Directory

account and password.

6.4.1.9 Electronic Data

Instrument software used for processing data must, when available, have password access and audit trails enabled. All data processed through the LIMS includes tracking features to document who and when data was entered and/or changed.

6.4.2 System and Software Verification

The laboratory LIMS is an in-house developed program. The design and updates to the system are written following typical Software Development Life Cycle (SDLC) processes for initial planning through testing and implementation. Before a new computer system/program or significant modification of an existing system/program is implemented in our laboratory, it is necessary to generate a plan to specify the level of documentation required for the new or updated application. Developers, affected area management, and QA personnel review and approve the documentation.

The following are the typical documents that are compiled for these updates:

- System Change Request document – used for documenting/tracking changes in the programming
- Requirements documents – Describe the required system functionality and specifications
- Design documents – System overview, screen design, report layout, data description, system configuration, file structure and module design
- Testing documentation for system development/verification – Structural testing of the internal mechanisms and user testing of the installation and system qualification
- Periodic Review documents – periodic retesting of the programs is performed to ensure that the systems remain in a validated state.
- Retirement documents – used for documenting when a program is taken out of service
- Standard operating procedures and/or manuals

6.5 Change Control

Procedures are in place to define how to maintain facilities, processes, instrumentation, equipment, computerized systems, and computer software in a validated or controlled state through a plan of change control. Successful changes require a thorough evaluation and testing for potential consequences prior to implementation. Planning, authorizing, testing, and reviewing of proposed changes are documented throughout the change process. Changes are planned or could be made in response to an emergency situation. The following "general" elements apply to changes, as appropriate:

- Request to perform a change
- Evaluation of a change
- Authorization of a change request
- Preparation for an authorized change
- Execution and testing of the change
- Documentation of the change
- Approval of the change
- Change implementation and follow-up (Formal approval of the change is performed by designated responsible individuals and QA.)

Note: The DoD will be notified in advance of the migration to a new LIMS platform and/or relocation of the data center from the Lancaster site.

6.6 Labware Cleaning

Dedicated washroom personnel support the laboratory operations in regard to labware preparation, washing, rinsing, and drying. Labware can include, but is not limited to glassware, plastic ware, utensils, and pipettes. Procedures are in place to outline the washing process for each type of labware. Most labware is cleaned using a Miele glass washing machine. Some labware is still washed by hand and either air-dried or dried in specifically designed ovens.

Most of the labware used in the laboratory is "common or non-dedicated" labware (common to a department), but some of the labware used in the laboratory may be identified as "dedicated" labware and exclusively used for certain analyses. This labware is isolated and cleaned only with "like" labware.

All glassware is class A and 100% visually inspected for breakage (e.g., cracks, chips), cleanliness, and dryness before being returned to the laboratory for use.

Generally, each test has controls in place to ensure that results are not adversely affected by unclean labware. These controls include blanks to detect positive interferences and recovery controls to detect negative interferences.

7 PURCHASING EQUIPMENT AND SUPPLIES

7.1 Procurement

It is the responsibility of management personnel within each department to ensure that the appropriate supplies are available and/or ordered with sufficient lead-time to perform analytical testing or to provide support to the testing areas. The individual technical departments have trained personnel who

enter the supply order into the company's purchasing system. The selection of these products is based on technical input at the analyst level and authorized by technical departmental management. The Purchasing Department maintains an ordering system in which purchase requisitions are managed. Common laboratory items (e.g., beakers, flasks, reagents) are ordered directly through the purchasing system. Purchase orders over a specified dollar amount require approval from the appropriate member (s) of the Executive Management Group before an order can be placed.

Upon receipt of an order, the Shipping and Receiving Department checks the order to ensure that all items were received as specified. Products that have specific storage requirements are taken to the technical area upon receipt. It is the technical area's responsibility to ensure that the product is stored in the appropriate manner. Any checks on the quality of the materials received for use in a specific test are the responsibility of the laboratory using them. This is based upon the experience of the laboratory with the usability of the product. Generally, each test has controls in place to ensure that test results are not adversely affected by the materials.

Any problems encountered when using a material in the laboratory must be brought to the attention of the Purchasing Department and/or Quality Assurance, as applicable, to ensure that follow-up and corrective action occur.

7.2 Supplier Evaluation

Procedures are in place to evaluate vendors who supply us with: new equipment, instrumentation, computerized systems and computer software; commercially purchased glassware, including sample bottleware, reagents, chemicals, solvents, gases, media, and standards; and contracted and subcontracted services.

The laboratory strives to ensure that our suppliers continually improve their quality systems and we reserve the right to purchase from suppliers of our choice in order to best fulfill the needs of our clients and our business. When directed by a client to purchase from a specific supplier, we will do so. In this instance it is the client's responsibility to "qualify" the specified supplier. We attempt to purchase from businesses that we have an established purchase history or have previously acquired information regarding the supplier's quality programs.

The laboratory does not evaluate every supplier. Risk assessment is taken into consideration when making this decision. The risk assessment analysis includes system, material, services, and number of samples or operations the purchase may affect or support. Evaluations are not required for computer operating systems, utilities, toolsets, or systems software. They also are not required for any off-the-shelf configurable software package that has an extensive market performance history (e.g., Microsoft Word, Excel, Access).

Additional quality systems are also in place within the laboratory to further verify and support the materials used:

- C of A for every lot of purchased chemicals, where available, are reviewed and maintained on file.

- For most chemical analyses a blank and a recovery check are routinely analyzed and serve as real time suitability testing of the reagent being used.

8 ANALYTICAL METHODS

8.1 Scope of Testing

Samples are analyzed in accordance with official published methods, standard methods, client-supplied methodology, or validated in-house methods. We recognize the importance of providing verifiable results and, therefore, use methods accepted and approved by a broad range of federal and state regulatory agencies. The laboratory can also assist in developing and validating analytical methods for specific products and matrices. All methods submitted for our review, as well as all analytical results, are considered confidential.

The laboratory performs a wide variety of environmental testing in support of the Safe Drinking Water Act (SDWA); Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA); Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA/Superfund); and the Clean Air Act (CAA). Methods approved by ASTM are also used in testing. Potable water, wastewater, soil, sediment, sludge, oils, biota, tissue, soil gas, and air are among the matrices typically analyzed.

Our areas of expertise include:

Standard Services	**Specialty Services**
• Volatiles • Semivolatiles • Metals • Pesticides/PCBs/Herbicides • Petroleum Analysis • Waste Characterization • Non-potable Water Testing • Drinking Water • Soil and Surface Water Testing • Vapor and Air Analysis • Sediment and Tissue Testing • Method Development • Shale Oil & Gas Analysis	• Dioxins & Furans • Hydrazines and NDMAs • Perchlorate • 1,4-Dioxane • Pharmaceutical Manufacturing Industry (PMI) Wastewater • EPA Method 25D • PCB Congeners • Explosives • Alkyl PAHs, Alkanes, Biomarkers • PFAS • Organic Acids • Aldehydes

All current certificates and scopes of accreditation are available on the laboratory's website https://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratories-environmental/. A complete list of the tests routinely performed by the laboratory can be found in the *Schedule of Services*.

8.2 Analytical Test Methods

Each laboratory is required to establish and maintain analytical procedures for all the methods referenced in standard testing. The sources for these methods include the most recent versions of these compendia:

- Test Methods for Evaluating Solid Waste, SW-846
- Standard Methods for the Examination of Water and Waste
- Code of Federal Regulations, Chapter 40
- EPA 100 through 600 and 1600 series methods
- ASTM

The test methods used are re-written into a laboratory standard format, which provides consistency in content and allows the analysts to locate the information they need quickly. Procedures are in place to define the format, required approvals, and the control system for these method documents. Elements to address in SOPs are based on TNI and DoD required sections. The format requirements include, but are not limited to, the following:

- LIMS defined method designation, which is used extensively for scheduling and documentation purposes.
- Reference to the original source of the method (e.g. SW-846)
- Scope
- Basic Principles
- Apparatus and Reagents
- Personnel Training and Qualifications
- Safety and Waste Disposal
- Detailed procedure (including any method modifications)
- Calculations
- QA/Quality Control
- Revision Log
- Review and approval by technical management and QA personnel

Analytical methods are maintained as controlled documents to ensure that analysts are always working with the most current version and are reviewed periodically for accuracy.

8.3 Client Supplied Methods

Most of the client-supplied method requirements presented to us involve achieving specific quality control criteria, limits of quantitation (LOQ), and/or method detection limits (MDL) using standard EPA methods. These requirements are communicated to the appropriate technical groups prior to the project start up. Each technical group evaluates the scope of work and the requirements to ensure the criteria can be met using the standard EPA method. The data is monitored to ensure the criteria are met throughout the project. The CSR notifies the client if there is a more appropriate method available or if the client's criteria cannot be achieved on a certain sample matrix (i.e., due to matrix or dilutions).

Occasionally, we are asked to transfer a non-standardized method from a client into our lab or to develop a new method, when one is not available. In the case of a method transfer, we set up the client's method and perform some initial evaluation. After the initial evaluation, we may make recommendations on how to improve method performance. If the method appears to be adequate, we determine linearity, specificity, precision, accuracy, MDL, and LOQ by performing calibrations, analyzing method blanks, and carrying out method detection limit and quad studies.

In the case of method development, we work with the client and/or data user to determine the level of validation required ensuring that the method meets its intended purpose. In addition to the elements above, we also determine standard and sample stability and robustness depending on the scope of the project. Typically, a standard operating procedure is written and submitted to the client with the results of the validation. These steps are completed prior to analysis of field samples. Data related to the setup of the method are archived.

8.4 Method Validation

Before new or revised analytical methods are authorized for routine use in the laboratory, validation data is required to demonstrate that the method as performed in our laboratory and analysts performing it are capable of meeting data quality objectives for precision and accuracy. A procedure is in place to outline this process.

Many methods published by USEPA include instructions for performing an initial demonstration of capability, which typically consist of determining the method detection limit and analyzing fortified samples in quadruplicate (i.e. a quad study). This demonstration is performed and compared to acceptance limits for precision, accuracy, and detection limits, when available.

Methods that do not include specific validation requirements are validated by analyzing fortified samples or standard reference materials in replicate. The results of these analyses are used to assess accuracy and precision. Results of validation studies are documented and subject to review and approval by technical and QA management.

8.5 Procedural Deviation

Analysts are required to follow a documented method for all tests performed. Procedures are in place to ensure that deviations from analytical methods are documented, approved, and justified in an appropriate and consistent manner. We classify method deviations as either being a planned deviation or an unplanned deviation. In general, the following information is captured to document both types of situations:

- Description of the deviation
- Reason or justification for the deviation
- Impact the deviation had on the testing
- Signature/date of analyst performing the test
- Signature/date of Quality Assurance and Laboratory Management approving the deviation
- Signature/date of client approval, if necessary

Deviations to written procedures are documented in raw data records or through the ICAR (Investigation and Corrective Action Report) system. Both types of documentation require management and QA review and approval.

NOTE: Deviations to analytical methods are not permitted by PALA . If samples are analyzed for compliance to a regulatory program, deviations may be allowed with approval from the appropriate compliance officer and/or program.

9 INTERNAL QUALITY CONTROL CHECKS

9.1 Laboratory Quality Control Samples and Acceptance Criteria

Quality control (QC) samples are analyzed with each batch of samples to demonstrate that all aspects of the analysis are in control within established limits of precision and accuracy. Management is responsible for ensuring that QC is analyzed as required by the referenced method. Each analytical SOP specifies (or cross-references another procedure) the type of QC sample, frequency of analysis, acceptance criteria for QC sample results, and corrective action to be taken if QC sample results fall outside of the acceptable range.

The laboratory provides additional bottleware to the client for matrix QC sampling as determined by the method or regulatory requirements.

QA staff, at the direction of the technical department, must program the LIMS with the acceptance criteria for each QC type (other than blanks). The acceptance criteria are based on statistically

generated limits from historical laboratory data, on method defined limits, government agency recommendations, or on client/project specific limits.

These limits are used to flag samples that are out of specification.

The types of QC samples and the information each provides are discussed in the following paragraphs.

9.1.1 Method Blanks

A method blank is a designated sample designed to monitor for sample contamination during the laboratory testing processes. The method blank consists of a clean matrix (i.e. reagent water, Ottawa sand, glass beads, Teflon chips) taken through the entire sample preparation and analysis process. The method blank and field samples are treated with the same reagents, internal standards, and surrogate standards. Ideally, method blanks demonstrate that no artifacts were introduced during the testing processes. The specific acceptance criteria for each test are usually based on the required reporting limit (MDL or LOQ).

9.1.2 Surrogates

Surrogates are organic compounds, which are chemically similar to the analytes of interest but are not naturally occurring in environmental samples. When required by the analytical method, surrogates are spiked into all the field and QC samples to monitor analytical efficiency by measuring recovery on an individual sample basis. The percent recovery is determined and compared to the acceptance criteria.

Isotope dilutions analyses use labeled isotopes, not surrogates, in each field and QC sample.

9.1.3 Matrix Spikes

A matrix spike sample is created by fortifying a second aliquot of a water or soil sample with some or all of the analytes of interest. Blanks are not used for matrix spike QC. The concentration added is known and compared to the amount recovered to determine percent recovery. Matrix spike recoveries provide information about the potential matrix effects on the data relative to the parent sample. Matrix effects can cause results to be outside of the acceptance criteria. Matrix QC is reported only on the Analysis Report for the job that includes the parent sample. Batch acceptance is not dependent on matrix QC. Unless stipulated in a method or by the client, corrective actions are not applied to matrix QC outliers.

9.1.4 Laboratory Control Samples

Laboratory control samples (LCS) are samples of known composition that are analyzed with each batch of samples to demonstrate laboratory accuracy. Laboratory fortified blank (LFB) is another term used to describe a LCS. The samples are clean samples fortified with known concentrations. Percent recovery is calculated and compared to acceptance limits.

9.1.5 Duplicates and Matrix Spike Duplicates and Laboratory Control Sample Duplicates

A duplicate is a second aliquot of a sample that is treated identically to the original to determine

precision of the test. To compare the values for each analyte, the relative percent difference (RPD) is calculated by dividing the difference between the numbers by their average. Precision for analytes that are not typically found in environmental samples (i.e., organic contaminants) is determined by analyzing a pair of matrix spike duplicates, defined as two spiked samples and comparing the RPD for the spiked compounds. The acceptance criteria are described as a maximum for the RPD value.

9.1.6 Internal Standards

Internal standards are organic compounds, which are chemically similar to the analytes of interest but are not naturally occurring in environmental samples. When required by the method, internal standards are added to every field and QC sample after extraction but prior to analysis. Comparison of the peak areas of the internal standards is used for quantitation of target analytes. Internal standard peak area and retention time also provide a check for changes in the instrument response. The acceptance criteria are stipulated in the analytical method.

9.1.7 Serial Dilutions

A serial dilution is the dilution of a sample with sufficiently high concentration by a factor of five to check for the influence of interferents. This QC check is performed for inorganics analyzed by ICP or ICP -MS. When corrected by the dilution factor, the diluted sample result must agree with the original sample within method specified limits.

9.1.8 Interelement Correction Standard

This QC check is performed for inorganics analyzed by ICP to verify interelement and background correction factors. A solution containing both interfering and analyte elements of known concentration is analyzed at the beginning and end of each analytical run or a minimum of twice per 8 hours.

9.1.9 Second Source Check

A second source check is analyzed using either the LCS and/or an Initial Calibration Verification (ICV). The second source is a standard that is made from a solution or neat purchased from a different vendor than that used for the calibration standards. For some custom mixes, the same vendor but a different lot and preparation is used. This ensures that potential problems with a vendor supply would be evident in the analysis. Some tests use the continuing calibration verification standards as a second source from the initial calibration.

9.2 Quality Control Sample Frequency and Corrective Action

Each analytical method defines the frequency for the required QC samples and the corrective action required when a QC result fails to meet the acceptance criteria.

The QC acceptance criteria are available to analysts in the laboratory through their SOPs or Work Instructions and the LIMS. If the method reference requires the use of specific limits then the laboratory uses the published limits that are documented as part of the analytical method. Many

methods require that each laboratory determine their own acceptance criteria based on statistical data obtained from performance of the method. In these cases, the limits are available to the analysts and are entered into the LIMS described below. Statistically determined acceptance criteria are subject to change as the laboratory recalculates its control limits. Due to their dynamic nature, acceptance criteria are not included in this manual.

The results of all quality control samples are entered into the LIMS in the same way as the results of client samples. The LIMS compares the individual values with the acceptance limits and identifies quality control sample results that are out of specification. If the results are not within the acceptance criteria, corrective action suitable to the situation must be taken. This includes, but is not limited to, checking calculations, examining other quality control analyzed with the same batch of samples, qualifying results with a flag and/or comment stating the observed deviation, and actions applied to the samples in the batch (e.g. reprep, reanalysis).
Qualifiers are applied to the data report, but additional comments are **not** needed for the following scenarios:

- QC with high bias and nondetects in the associated samples.
- Matrix QC outliers
- Surrogate outliers due to dilution effects
- Blank detections where the associated sample is nondetect or has the analyte detected at >10x the blank level

The laboratory allows for marginal exceedances based on the number of analytes in the LCS. The exceedances are carefully monitored so that any systemic problems would be identified and corrective action taken. If the LCS is being reported based on the marginal exceedance allowance, a comment is added to the analytical report.

9.3 Quality Control Charts

The LIMS quality control system is used to report QC data to clients, to collect data for assessment of precision and accuracy statistical limits, and to generate control charts. Control charts are accessible to all employees through the LIMS interface. The system charts results from blanks, surrogates, matrix spike/matrix spike duplicates, duplicates, and laboratory control samples/laboratory control sample duplicates. These charts provide a graphical method for monitoring precision and bias over time. They can be used to detect quality problems by observation of patterns. The QA staff uses the charts to evaluate potential data trends.

9.4 Measurement Uncertainty

Per ISO 17025-2017 section 7.6.1 "Laboratories shall identify the contributions to measurement uncertainty. When evaluating measurement uncertainty, all contributions that are of significance, including those arising from sampling, shall be taken into account using appropriate methods of analysis." This means the laboratory must determine the uncertainty contribution of all steps in the testing process such as equipment, calibration, standards, reagents, preparation, cleanups, etc. Since, in most methods, the laboratory control sample (LCS) goes through the entire process of preparation to analysis; all factors that would contribute to uncertainty is evident through the LCS results. LCSs are performed with every batch of samples where appropriate for the method. Tests that do not have LCSs

(i.e. TCLP; paint filter test), are evaluated on a case-by-case basis by taking into account the uncertainty of each of the steps taken to perform the test. Our laboratory does not perform field sampling so our ability to assess uncertainty is limited to the processes that we perform. Thoroughly mixing samples prior to taking the testing aliquot minimizes the uncertainty risk with our aliquot.

Measurement Uncertainty reports are generated by each technical department on an annual basis using a LIMS program and submitted to QA. Measurement Uncertainty is calculated as two times the standard deviation of the LCS recoveries for the group and date range of data points selected for all applicable methods. This is reported as a percentage. It is not necessary to apply or report the uncertainty value with sample results. When a client requests the measurement uncertainty it is applied by multiplying the determined analyte concentration by the uncertainty percentage.

10 ASSURING QUALITY OF TEST RESULTS

10.1 Data Management

At a minimum, data management is initiated when the laboratory receives the samples from the client. More often the process begins with client communication of their needs and requirements for a specific project and/or testing. When requested, bottle orders for the client's sampling efforts are generated through the LIMS by the CSR. The CSRs are responsible for entering the information in the sample set up function of the LIMS. Upon receipt of the samples a unique tracking number for the sample group and the samples within the group is generated based on this information. At this point, the LIMS becomes an integral part of tracking the samples through laboratory operations. The flow of data from the time samples enter the laboratory until the data is reported is summarized in the following table:

Sample and Data Flow

Action	Personnel Involved
Bottle orders generated upon request · Bottles packed and shipped to the client under chain of custody documentation	Client Service Representative Bottles Preparation
Sample received at Lancaster Labs · Unpacked and reconciled against the client paper work or COC · Sample Entry Documentation log completed	Sample Registration
Sample is entered into the LIMS · Lab ID number assigned · Analyses entered · Storage location assigned · Electronic record of sample number · Labels generated · Acknowledgement generated (record of samples received and analyses entered)	Sample Registration
Preservation checks performed Sample stored in assigned location (refrigerator, freezer, etc.)	Sample Registration

Action	Personnel Involved
· Electronic record of sample #, container type, and location	
Acknowledgment sent to client (when requested)	Client Service Representative
Samples requisitioned and removed from storage for analysis · Electronic requisition of sample number by container type · Necessary aliquot taken · Remaining sample returned to storage	Sample Registration Technical Personnel
Analysis is performed according to selected analytical method and applicable Project Notes* · Raw data recorded · Data Reviewed · Data uploaded to the LIMS from the instrument or manually entered by the analyst* (This is tracked by the unique sample number and batch number.)	Technical Personnel
LIMS performs calculations as programmed according to methods	Data Processing
Designated analyst or supervisor verifies raw data	Technical Personnel
Generation/release of reports	Client Service Representative or designee
Data package deliverables are assembled, reviewed and released to client Electronic copy saved in the LIMS	Client Service Representative or desginee
Electronic Data Deliverables (EDDs) are generated	EDD staff
Designated Data packages are overchecked by QA prior to release	QA
Hard copy of raw data is archived Electronic data files and records are backed up and archived	Technical Personnel, Office Services, IT

*Project Notes contain client- and agency-specific requirements (i.e. DoD, PALA, NJ DKQP, CT RCP, MA MCP)
**Analyses requiring the analyst's interpretation may involve manual data reduction before entry into the LIMS.

10.2 Data Documentation

Most data are acquired, documented, and stored in the LIMS. In some cases, data are documented in bound notebooks. Analysts review data as it is generated to determine that the instruments/systems are performing within specifications. If any problems are observed during an analytical run or the testing process, corrective action is taken and documented.

Procedures are in place to ensure that all data is traceable, authentic, and complete. Electronic data records are maintained and tracked through the LIMS, requiring authorized, password protected user access. The following general requirements outline our system for notebook, logbook, and electronic documentation recording:

- Observations, data, and calculations are recorded at the time they are made and are identifiable to the specific task.
- Entries must be legible, signed, and dated. The signature may be a wet or electronic signature.
- Errors are corrected in a manner that does not obliterate the original entry, initialed and dated, and coded with an explanatory identifier. Changes to electronic data are tracked through audit trail functions.
- Blank pages or substantial portions of pages which are left blank are crossed-out to eliminate the possibility of data entry at a later date.
- Notebook pages and instrument printouts are signed/dated to indicate second party data review; this may be a wet or electronic signature.
- At periodic intervals a supervisor or data reviewer checks equipment/instrument logbook entries and temperature recordings for completeness, legibility, and conformance to procedures.
- At a minimum, the following information is recorded as part of data documentation:
  - Date of analysis/operation
  - Signature/date of analyst performing test/operation
  - Identification of client sample(s) and material(s) analyzed
  - Materials, reagents, standards used to perform the testing/operation
  - Method used to perform testing/operation (including version number and/or effective date)
  - Equipment/instrumentation used to perform testing/operation
  - Calculations and how they were derived
  - Departures, planned or unplanned, from the analytical method
  - Signature/date of person reviewing data documentation
- For computer generated data, the following information is recorded:
  - Sample(s) analyzed/operations performed

- Date of analysis/operation
- Unique instrument identification
- Name/date of person operating the instrument
- Name/date of person reviewing data
- Any manual notations made on instrument printouts are signed, dated, and reviewed

10.3 Data Calculations

Most instruments either include or are connected to a data system programmed to perform calculations to reduce the raw data to a reportable form. All calculations are maintained in the instrument manuals and/or as part of the analytical method.

In many cases, the data from the local instrument system are uploaded directly to the LIMS for review and reporting. This direct upload eliminates the need to retype data and an associated source of transcription errors from the analytical scheme.

Some instruments report data that require application of additional factors before the data is in final form. For example, an extract concentration may be reported by the instrumental data system, but additional dilution and preparation factors may be needed before the result represents the concentration of analyte in the sample. Analysts input these additional factors into the LIMS, where final calculations are performed.

Analysts manually enter collected data, such as titration data, into the LIMS, which is programmed to perform calculations for final reporting. Documentation of the programming for each calculation performed by the LIMS is maintained.

10.4 Reporting Limits

It is important to ascertain the reporting limit (RL), also referred to as the limit of quantitation (LOQ), that can be achieved by a given method, particularly when the method is commonly used to determine trace levels of an analyte. The Environmental Protection Agency has set forth one method for determining method detection limits (MDLs) from which RLs/LOQs can be extrapolated. This process is summarized in a laboratory procedure.

MDLs are determined annually using quarterly MDL analyses performed for each method across all instruments used for that method. The MDL is the basis for the RL/LOQ used in the default reporting format. Because MDLs change each time they are re-evaluated, they are not included in this manual, but are maintained in the LIMS and available to clients upon request.

The reporting limit used to determine whether a result is significant and reported as detectable is dependent upon agency and client requirements. A variety of formats are available and include use of

the MDL, RL/LOQ, method specified limits, and project specific limits. The MDL and RL/LOQ for each analyte are programmed into the LIMS for reporting purposes.

Under the DoD program, the laboratory must establish a Detection Limit (DL) and Limit of Detection (LOD). As defined by the DoD program, the DL is the smallest analyte concentration that can be demonstrated to be different from zero or a blank concentration with 99% confidence. The laboratory determines the DL using the calculated value from the MDL Study. The DL can be derived from pooled MDL values obtained across instruments. The LOD is the smallest amount of a substance that must be present in a sample in order to be detected at the DL with 99% confidence. It is established by spiking a quality system matrix at a concentration of 2-4 times the DL and must be less than the RL/LOQ. The LOD must be verified on a quarterly basis or with each batch of samples.

10.5 Data Review

Final review and verification of the data are performed by designated employees using the sample results, quality control information, method criteria and Project Notes entered into the LIMS. Data are initially evaluated by the analyst and then a second designated employee knowledgeable in the test, other than the employee responsible for performing the test, reviews the data. The reviews include checks for correct transcription, calculations, passing calibrations, compliant quality control results, holding time compliance, and project specific requirements. Any issues or errors identified during this stage are addressed, corrected, and reviewed with the responsible person.

After determining that all necessary requirements for valid data and for the project are met, the reviewer electronically approves the data by changing the LIMS status of the data from "1st level reviewed" to "2nd level reviewed". The lab has designated personnel to perform 2nd level review. The system is password protected to ensure traceability.

Designated projects require further review by QA prior to release of the Analysis Report and/or data package to the client. These projects are identified in the LIMS through QA review task assignment.

10.6 Data Qualification

Data qualifiers are used to provide additional information about the results reported. The most typical use for data qualifiers is for results that fall below the quantitation limit, in the region where it becomes more difficult to distinguish a positive result from the background instrument signal. The data systems used to generate and report results are programmed to flag values in this range as estimates.

Other qualifiers are applied to advise data users of any validation issues associated with the data. The laboratory makes every effort to meet all of the requirements for generation of data. Occasionally, generation of data that does not meet all the method requirements occurs due to sample matrix or other analytical problems. If the test cannot be repeated or reanalysis would not yield better quality data, qualified data is reported. Qualifiers can be in the form of comments on the analytical report or flags applied to the results.

Qualifications for regulated samples (e.g. drinking water, NPDES) may not be permissible. The process for evaluating regulatory sample qualifications is detailed in *QA-SOP11886 Processing Regulatory Compliance (i.e. SDWA, NPDES) Samples.*

10.7 Data Reporting

When all analyses are completed and overchecked, the Analysis Report is generated and released from the LIMS. The client receives a copy of the report containing the results of the analysis and, where necessary, qualifier flags and/or explanatory comments to address non-conformances. A QC Results section is included in the default Level 2 report. To avoid ambiguity in interpreting results, a summary page that contains an explanation of all symbols and units used in reporting data is included with the Analysis Report submitted to clients. Certification status information, Sample Summary list and Method Summary are provided as well in the default Level 2 report. Copies of reports and associated supporting raw data are retained in our archives. The report contains the signature of the assigned client service representative who is the key contact for any questions concerning the results. Data release authorization is managed and tracked through the individual analysis first and second lever reviews documented in the LIMS.

The laboratory offers a variety of data reporting levels and formats, from a basic report of sample and QC results only, to a comprehensive data package of QC/calibration information and raw data. The client and any agency involved direct the selection of report type. A summary of report formats and data packages types is provided in the laboratory *Schedule of Services*. Various electronic formats are also available formatted to client-specified file structure and sent via e-mail, direct upload, secure web-site access, or common courier. The secure web-site access is used for clients that require secure transfer of electronic data.

Client confidentiality of web-site data is ensured by the use of a secured firewall internet environment coupled with the use of a user ID and password to gain login access to the system. User accounts are configured to only allow access to specific data associated with the user's business account number.

Amendments to a final report after issue are in the form of an additional document or data transfer and include a reference to the original report. When a completely new final report is required, it is uniquely identified and includes a reference to the original report it replaces.

Analytical reports are generated with a cover page that identifies the laboratory contact person's name and phone number if there is a question about the report. Within this package, each page is uniquely identified and paginated. Analytical test results for methods listed on the laboratory's accreditation scope meet all requirements of the relevant regulatory body accreditation, NELAP accreditation and ISO 17025 unless noted otherwise.

10.8 Data Storage, Security, and Archival

The laboratory has documented procedures and instructions for the identification, collection, access, indexing, filing, storage, maintenance, and disposition of data records. Records are in the form of paper records, electronic data files, magnetic tape, and CD-ROMs.

All data records are maintained in a confidential manner in an environment to minimize deterioration or damage and to prevent loss. Some records are stored in off-site facilities, in such a way that they are readily retrievable. Retention time for records is in accordance with specific procedures or instructions. Prior to the destruction of data/records, and if requested by a client or agency, the laboratory will notify the client/agency that their data is scheduled for destruction so arrangements can be made to have the original data sent to the client.

If specified in client contract(s), archived records are transferred according to their instructions in the event of a change in laboratory ownership or if the laboratory goes out of business. If not specified by the client, the sale agreement must require that archived records be maintained as scheduled by the new owners. In the case of bankruptcy, appropriate regulatory and state legal requirements concerning laboratory records must be followed.

The laboratory maintains all documentation which is necessary for historical reconstruction of data:

- Analysis reports
- Data notebooks
- Data logbooks
- Instrument output
- Correspondence and client files
- Instrument and equipment logbooks
- QA records
- Corporate documents
- Electronic records

11 AUDITS AND INSPECTIONS

11.1 Internal Quality Assurance Audits

The QA Department, which is independent of laboratory activities, performs routine and on-going system, traceability, and observation audits to objectively review current systems, operations, and procedures as well as automated data integrity audits of electronic data records. The goal of the audits is to ensure that the quality system activities are effective and in compliance with regulatory programs, including NELAP, ISO 17025, DoD, PALA, and state agencies, as well as internal policies and procedures. Audits are documented and tracked in a QA database.

Audits are scheduled and conducted following a predefined schedule, based on criticality of operation and prior audit results, with the goal of evaluating systems and technologies across the operation to identify issues or potential risks as well as best practices. If warranted, additional audits are performed to follow up on promised corrective action or areas of concern.

Results of an audit are documented in a report format and distributed to applicable management personnel responsible for the area(s) under audit. Management is responsible to address all non-conformances found during an audit with root cause analysis and application of a corrective action plan.

Audit reports and responses are circulated to Management to communicate the outcome of the audit and the proposed plan(s) for corrective action, if warranted. If any of the audit findings cast doubt on the validity of the results, the clients must be notified within one business day from confirmation of the issue. Should an audit issue present a major concern regarding validity of laboratory methods, QA personnel can issue a stop work notice.

All records maintained as part of an audit are kept on file for five years.

On an annual basis, an audit of the QA Department is performed as directed by the laboratory's Executive Management. The auditors assigned to carry out this operation are qualified staff members independent of the QA Department.

The specific content and findings of internal audits are considered company confidential and are not shared with clients.

11.2 Review of the Quality Assurance Program

All levels of management are continually updated on the status of quality and compliance by circulation of pertinent documents. Management review is documented by signatures on the documents, electronic records of each person's review, along with any comments or request for additional follow-up. The types of documents circulated real-time include:

- Internal, client, and agency audit reports and responses
- Proficiency test results
- Investigation and corrective action reports
- Monthly QA status reports

Executive management reviews the elements of the total quality program on an annual basis to ensure its continuing suitability and effectiveness in meeting the stated objectives outlined in Section 2.4 of this manual. The evaluation entails review of reports to management, all audit findings, client complaints, laboratory investigations, staff adequacy and training, and projected growth in workload. Patterns or trends in any of these areas are reviewed as a means to continually improve the quality

system. This review also includes an evaluation of any audit findings resulting from the audit of the QA Department. At the conclusion of this quality system review, executive management determines the need to introduce changes or improvements into the quality systems at the laboratory. The minutes from the meeting and any recommendations for improvement are documented and a copy is forwarded to the QA staff for review and follow-up.

11.3 Good Laboratory Practice Critical Phase Inspections

The laboratory no longer performs formal GLP compliance testing.

11.4 Client Audits

Because clients place great importance on compliance with applicable regulations, data quality, and project requirements, they may audit our facility as assurance that their objectives are being met. QA, management staff, CSRs, and the analytical laboratories play a key role in these audits. Visits by clients can range anywhere from a tour (to verify laboratory facilities and instrumentation) to an intensive inspection of technical operations, procedures, regulatory compliance, and/or review of specific project(s). The option for a remote audit via Skype or MSTeams types of interfacing is available.

Audits are scheduled directly with the CSR or QA. The request to audit is communicated to all applicable laboratory departments. An escort (designated laboratory employee) remains with an auditor at all times. In accordance with our policy on client confidentiality, a client is permitted to review only data and results that apply to their work, or which have been approved by laboratory management.

Responsibilities are assigned to the following groups in regard to client audits:

11.4.1 QA Department

- Research previous audit reports and laboratory responses to past deficiencies.
- Follow-up with the applicable analytical laboratory areas to ensure action items were completed from the last audit, as necessary.
- Work with client to set audit agenda.
- Function as an escort during the audit
- Answer questions the auditor has in regard to laboratory and quality systems.
- Take notes of areas where corrective action or suggestions are recommended during the audit.
- Communicate audit issues to management at the completion of the audit.
- Respond to client audit reports.

- Ensure follow-up to cited items are addressed in a timely manner.

11.4.2 CSRs

- Gather and organize relevant information (e.g., client correspondence, analysis/project requests, copies of analytical data from archives).
- Be knowledgeable about client-specific project requirements and issues.
- Function as an escort during the audit.
- Communicate issues/problems to appropriate personnel.

11.4.3 Laboratories

- Gather and organize laboratory data and documentation in preparation for client review.
- Assure corrective action was implemented from past audit findings, if necessary.
- Be prepared to discuss project data/testing results during the audit.
- Be familiar with client-specific project requirements and be prepared to answer client questions.
- Be familiar with the location of routine laboratory information and equipment (e.g., SOPs, data notebooks, calibration data, etc.).
- Be prepared to answer specific technical questions in regard to laboratory procedures and instrumentation within the area.
- Functions as an audit escort within the department during the audit.
- Laboratory managers may function as an escort during the audit.

11.5 Agency Inspections

It is laboratory policy to cooperate to the fullest extent and maintain cordial relations with all government agencies. The QA Department is assigned the responsibility of hosting and working with agency representatives. The QA role includes, escorting the investigator(s); ensuring all questions are answered promptly and accurately; making note of all unresolved issues; informing management of the audit status and outcome; responding to the audit report and ensuring that appropriate corrective action is completed. CSRs and laboratory staff responsibilities are similar to those noted above for client audits.

Inspections can be performed by investigators or auditors from the EPA, states, third-party accreditation bodies (i.e. A2LA, United States Department of Agriculture (USDA)), or other regulatory agencies.

Government agencies have the right to investigate and inspect the laboratory during normal business hours and permission to inspect is granted by Executive Management. The option for a remote audit via Skype or MSTeams types of interfacing is available.

Designated members of the QA Department are primary contacts for announced inspections. The QA Director is the primary contact for all unannounced agency inspections. If the QA Director is unavailable, Executive Management is notified, in addition to a member of the QA Department. The QA Director, or their designee, must obtain evidence of the investigator's authority either in the form of a letter or examination/explanation of credentials.

Inspections include the examination of records or the inspection of facilities. Investigators are usually concerned only with the records relating to their responsibilities. As a general rule, they are given copies of records and documents, if requested. The laboratory must have a record of all items provided to an investigator.

Investigators must be escorted through the laboratory. The laboratory is not obligated to show an investigator the following types of information: sales, financial or pricing information, or any personnel data other than training or qualification documentation. On a case-by-case basis, internal QA audit reports and investigation reports are made available for agency review. Any questions or concerns about a request made by an investigator in regard to recording devices or photographs must be reviewed with legal counsel.

The laboratory personnel are not permitted to sign affidavits. If an affidavit is presented during an inspection, all personnel are directed not to sign it, read it, nor listen to it being read. The only document that is acceptable to sign is an acknowledgement that an inspection report has been received. If there is any doubt as to what should be signed, legal counsel must be consulted.

11.6 Proficiency Testing

Many of the organizations that certify our laboratory to perform various analyses require proof of our competency. Laboratory performance is checked regularly by participation in a variety of proficiency testing (PT) programs. When available, blind samples are obtained from vendors that are accredited to provide PT samples under the TNI, ISO 17025, and/or other applicable agency standards for all test and matrices routinely tested at the laboratory. In addition, some individual certification programs require analysis of specific sets of proficiency samples.

Generally, the PT programs consist of samples or ampulated spiking solutions used to fortify laboratory samples. The laboratories analyze the samples in the same manner as a client sample and the data is sent to the agency or vendor for evaluation. After the study results are returned to the laboratory, any data falling outside the acceptance criteria is investigated, root cause is identified, and corrective action

is implemented, if needed. Results are circulated to management. No PT samples or portion of a PT sample are sent to another laboratory for analysis.

Double blind samples are submitted to the laboratories with some client projects so that the laboratory is not aware that the samples are PTs. The acceptance criteria for these double blind samples are developed statistically using data from participating laboratories, providing a source of inter-laboratory comparison. The clients will provide the results to the laboratory. Results are reviewed, investigated as needed with response to the client.

If a trend in PT failures is identified, additional blind or QC check samples are ordered for that specific test as corrective action.

12 CORRECTIVE AND PREVENTATIVE ACTION

12.1 Laboratory Investigation and Corrective Actions

Due to the technical nature of laboratory work and the broad scope of our QA program, a wide variety of laboratory issues can require investigation, root cause analysis, documentation, and corrective action. Prompt investigation and implementation of corrective action ensure that only data of known quality are reported and prevent the recurrence of errors. The following list provides "examples" of the type of issues that warrant investigation:

- Noncompliant QC results*
- Failed PT samples
- Reporting incorrect results
- Contamination issues
- Client technical complaints
- Procedural errors
- Missed holding times
- Systematic problems that compromise the accuracy or compliance of the data generated
- Problems with instrumentation and equipment which could compromise the data generated

These investigations must include the following:

- Identification of the problem
- Steps taken to investigate the problem

- Explanation of probable root cause(s) of the problem
- Steps taken to prevent future occurrence
- Determination of samples or systems affected by the problem

*Note: individual QC noncompliance does not require in depth investigation. Actions are taken as defined in the corresponding method and documented in the data. An adverse trend with noncompliance would be investigated.

Management is informed of problem situations. The QA staff track documentation, the status of the investigation activities, evaluates investigations for completeness and appropriateness, and monitors corrective action for follow-up/closure. Technical management and/or QA may issue a stop work notice if issues indicate the potential for problems on a broad scale or present a critical concern regarding the validity of the laboratory methods. The goal is to identify root cause, have the corrective action implemented promptly, and to the degree appropriate for the magnitude and risk of the problem. Tracking and trending of laboratory issues is performed by QA staff and reported to management on a monthly basis or immediately upon detection of a trend with potential for putting the laboratory or our clients at risk.

12.2 Investigation Process

All results from quality control (QC) samples are logged into the LIMS quality control system, which is programmed to alert analysts to unacceptable results. Analysts are required to review the results and determine the source of the problem. The source of the problem and proposed action must be documented. Action for QC outliers may include, but is not limited to, re-analysis, re-extraction or re-digestion, instrument maintenance, or re-calibration. If these actions do not yield compliant data within the required hold time, a Nonconformance Form is initiated to document actions and communication with the client. The original form is archived with the associated raw data. Nonconformance Forms are reviewed by the technical department's management, or designee. A copy of the form is reviewed by QA.

Missed holding times are investigated and documented using a Missed Holding Time form. The form includes documentation of the affected samples, reason the hold was missed and corrective actions taken, if applicable. Each form also has documented review and approval by the department manager, department director and the QA Director. Clients are informed of any problems involving holding time.

Other types of problems having potential impact on data quality or involve deviations to our processes are investigated and documented using an Investigation and Corrective Action Report (ICAR). This process was developed to ensure that laboratory problems are investigated, evaluated for root cause, corrective action is put into place to prevent recurrence, laboratory management review and QA approval occurs, and all steps are documented. These investigations are initiated and managed through a workflow interface (Jira). Any employee can initiate an ICAR through this system to document a laboratory problem. The investigation must be completed by designated members of

management and approved/closed by QA. Each investigation has a unique tracking number assigned by Jira. Closed investigations are routed to the laboratory President, associated laboratory Director and the QA Director. Follow-up to ensure effective corrective action is managed by QA staff.

If a laboratory error is identified from the outcome of the investigation that impacts validity of client data, the client must be notified in writing of the situation and corrected data provided as soon as possible. If the root cause of the problem has affected any other client sample results, all affected clients are notified of the problem.

12.3 Client Feedback

The laboratory is in the business of providing high quality analytical testing services. The data that we supply to our clients must be technically complete, accurate, and compliant with applicable regulations. Complaints can be received via letter, phone call, e-mail, or face-to-face meeting.

When a complaint is received, it is our responsibility to determine, to the best of our ability, the extent of the issue and what data is in question. The person receiving the complaint documents this information and promptly forwards it to the appropriate management personnel where the work in question was performed. If a data reporting error is discovered, the final report and/or data must be regenerated with the correct value(s).

The CSR is responsible for entering client concerns into the LIMS. QA reviews these issues on a monthly basis to evaluate for trends and potential risks to laboratory data/systems. In some cases, an ICAR is initiated to address and document the situation. While an individual issue may not warrant a formal investigation, QA monitors these issues for potential trends and will issue an ICAR if a trend is evident. If the client requires a formal investigation, then the CSR notifies QA so the ICAR can be initiated.
On a regular basis, the laboratory sends a client satisfaction survey to clients. The results of these surveys are compiled, routed to the laboratory executive management and the QA Director, and used to identify areas of improvement for the laboratory.

12.4 Preventative Actions

All employees are empowered and encouraged to use the concept of Preventive Action to avoid a problematic situation. The company supports, embraces and drives the process for continuous quality improvement by several means, such as: Ethics Hotline, the Suggestion Box (accessible to all employees via email to !US19_Suggestion_Box@eurofins.local), and training classes that include new hire orientation and Ethics. If an employee identifies a potential problem or an area of concern or it should be brought to the attention of his/her supervisor, Human Resources, QA Director or the Ethics Hotline.

The laboratory also utilizes a formal program to encourage preventive action through development of Lean processes. The goal of this program is to optimize processes to ensure efficiency and operational improvements while maintaining compliance. The efficiency gains are inherently coupled with minimizing errors and rework. Teams of employees learn the tools and techniques to evaluate a process, identify potential sources of errors, delays or problems in an operation, determine system

changes that will minimize these and work to implement the improvements. Each project includes thorough documentation of the evaluation, measurement, and implementation phases. The process is continually monitored to ensure that the anticipated results are sustained.

Employees are also encouraged to communicate to their supervisor any area(s) or operation(s) that they believe could be streamlined, make their job easier, would provide a quality improvement, or could provide a cost savings to the company.

Described below are some of the systems available to employees to assist with building quality and efficiency into their daily jobs. They stress a proactive approach/environment to problem solving and to review quality systems and operational efficiencies.

- "Ethics" is a course required for all employees to teach the laboratory's Statement of Values by examining how it translates to our everyday jobs and ethical decision making. Topics discussed include: Statement of Values, data integrity, ethics, confidentiality, etc.. Mandatory ethics training refresher is scheduled on an annual basis.

- The laboratory has contracted with an Ethics Hotline to provide an anonymous means of reporting ethics concerns or issues. The issue is forwarded by the service to the QA Director who will communicate internally with those who need to address the issue. All communication and actions are documented in a secure web interface managed by the hotline service company.

- The QA staff prepares monthly program status reports for management. The reports include a variety of metrics and graphs which are used to evaluate trends in laboratory performance across all quality and compliance areas. Management responds to any negative trends by developing a corrective action plan.

- The laboratory uses a Project Cycle process (further described in section 13.2) to proactively review and prepare for client projects in an effort to ensure full understanding by all laboratory staff of the client's needs and resolve any concerns in advance of receiving the work.

13 SERVICE TO CLIENTS

13.1 Service to Clients

We value our client relationships and support these partnerships through the following principles:

- Honesty and Fairness – Our corporate culture is founded on the principles of professionalism and high ethical standards in dealing with our clients. This may mean declining to provide the service requested (if we are convinced that to do so would be meaningless) or it may mean referring clients outside of our laboratory if we believe that another company can better meet their needs.

- Complete Service – We will give our clients full value on every service provided. We will provide detailed information on our methods, procedures, and QA programs if requested, and take a personal interest and initiative in helping solve our client's problems within the area of our professional expertise.

- Trustworthiness – All data and information developed for a client will be held confidential and not disclosed to a third party except on written request of the client. If information is subpoenaed, we must, by law, release it, but the client will be informed of the release.

- Commitment to Quality – We constantly strive to improve our service in quality, flexibility, and dependability, to keep our competitive edge. We will achieve this through: meeting the requirements of those we serve, staying apprised of regulatory and industry expectations, and providing prompt responses to client concerns.

- Basics of Superlative Service – Our focus is on our client's success. Through proactive collaborative communication, our leadership ensures we understand our client's expectations and strives to exceed them. We foster a service culture in our training, reward and recognition, and performance management process so each employee takes ownership to deliver superlative service to our clients. Feedback from clients, whether positive or negative, is an important part of our continuous improvement system. Ways in which feedback is gathered can include, but is not limited to, customer satisfaction surveys, client audits, and the customer complaint system, which is described within section 12.3.

We also view our fellow employees as our clients since they frequently receive the results of our labor. Meeting the requirements of the next employee in the workflow process is just as important as meeting the needs of an external client.

13.2 Review of Work Requests, Tenders, and Contracts

The laboratory places great importance on understanding and meeting client requirements for a project. We ensure, to the best of our ability, that client/project requirements are identified and communicated through the laboratory. Project evaluation can be achieved in various ways, including the review of analytical methods, protocols, business contracts, and quality project plans (QAPPs). The project review encompasses our Project Cycle process and individual topics to be evaluated for a project include, but are not limited to: scope of testing; required accreditations (i.e. individual state agencies, PALA, NELAP, DoD, and ISO 17025) held by the laboratory; appropriate and current testing methods; ability to meet project required reporting limits and QC (if applicable); inconsistencies clarified; and nonstandard work requests.

Project kick-off meetings can be arranged through the CSR or Business Development Group. These meetings allow the client and key technical personnel to discuss project issues and requirements prior to project initiation. Any differences between laboratory processes and the project requirements are discussed and addressed with the client and the laboratory staff before the project is accepted and samples arrive. Project-specific requirements are communicated to the laboratory through use of Project Notes (PNs). Accreditation-specific requirements (i.e. NJ DKQP, MA MCP, CT RCP, PALA, NELAP, DoD, and ISO 17025) have template PNs maintained by QA, and these are used to add to the project's PNs. Testing that cannot be performed at the laboratory may be subcontracted to another laboratory (see 13.4).

A key client contact, the CSR, is assigned to oversee the project. Communication between the client and laboratory staff is available and is coordinated through the CSR.

As a project continues, the CSRs provide continuous communication and status reports (if requested) about the project to the client. The CSR relays any project changes or modifications to the technical groups. If the client submits revised project documents (QAPPs, etc.) then the Project Cycle review process is repeated. The CSR also communicates any issues encountered by the technical laboratories back to the client and vice-versa.

13.3 Timely Delivery

Evaluating laboratory capacity and ability to perform specific projects is a joint responsibility between the laboratory President, Operations Director, Business Development, and the laboratory managers. We recognize that one of the most important aspects of the service we offer is turnaround time.

Many analysts are cross-trained to perform a variety of tests, and there is redundant equipment available in the laboratory area creating operation flexibility for routine work. Larger projects are reviewed against capacity estimates before bids are submitted to ensure that the client's schedule is met. Turnaround time is continually measured.

Regularly scheduled meetings are held with technical and support management, and project management personnel to review progress with current projects, as well as special requirements of new work scheduled for the laboratory.

Management receives a daily report of the status of all samples in the lab, including those with priority status or those that have exceeded a preset turnaround time. This enables the planning and organizing of the workload through efficient scheduling.

Any changes to the established timeline by the client or the laboratory must be communicated to the client or laboratory as soon as possible. Upon communication of changes, a new timeline is established and agreed upon by both parties. If a client requires a change in the scope of the project (e.g., number of samples submitted, change in analyses, revised protocol) the laboratory must be informed in writing and a new timeline and cost estimate is be provided.

13.4 Subcontracting

The laboratory may subcontract tests to other laboratories if the requested testing is not routinely performed in our laboratory. To a lesser extent, samples may need to be subcontracted to an overflow laboratory to ensure hold times and/or turn-around-times (TAT) are met.

Testing is only subcontracted with the client's knowledge and approval. The CSR must notify the client in writing (email is acceptable) when any of their requested analyses will be subcontracted to another lab. Client approval must be obtained in writing (email is acceptable) before samples are shipped.

Subcontract laboratories are selected based on their qualifications and accreditations. The subcontractor is requested to sign a Laboratory Analytical Services Subcontract. See form *Q-EQA-FRM6867* to review details of the contract terms and information requested from the subcontract laboratory. If projects require a specific agency certification (i.e. individual state agencies, NELAP, DoD, PALA, ISO 17025), only an appropriately accredited laboratory is used. The client may also have a list of laboratories to be used for subcontracting. In these cases, the evaluation of the subcontract laboratory is made by the client.

Data obtained from subcontract laboratories is clearly marked as such when reported by the laboratory. The data are submitted to the client in the format obtained from the subcontractor.

13.5 Use of NELAP and A2LA Logo

It is not laboratory policy to use these logos on any company letterhead, including analytical reports.

Q-EQA-FRM6867 Laboratory Analytical Services Subcontract (ELLE)
QA-SOP11886 Processing Regulatory Compliance (i.e. SDWA, NPDES) Samples

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Attachment:
Appendix A - Procedure Cross Reference
Appendix B – Certifications, Accreditations, Registrations, and Contracts
Appendix C – Organizational Charts
Appendix D – Personnel Qualifications and Responsibilities
Appendix E – SOPs and Analytical Methods
Appendix F – Instrument and Equipment List

End of document

Version history

Version	Approval	Revision information
16	18.MAR.2019	
17	11.JUL.2019	
18	03.SEP.2020	

NOTE: SOPs and Forms are indicated in the table with the unique D4 document number. The topic of the document is given in parentheses.

EQPM Section #	ISO 17025 2017	Title	Procedure(s)
1	5.3	Introduction	
1.1.	NA	Mission Statement	Employee Handbook
1.2.	5.7	Quality Policy	11197 (Quality Statement) Employee Handbook
1.3.	NA	Statement of Values	Employee Handbook
1.5.	NA	Certifications, Accreditations, and Registrations	Form 6840 (Cert Summary) Company website
2	5.4	Organization and Personnel	
2.1	5.1	Company Overview and History	
2.1.1		Business Continuity and Contingency Plans	13101 (Incident Response Plan) 14735 (Preparedness, Contingency) 12233 (Archiving SOP) Form 6843 (Deputies form)
2.2.	5.2	Organizational Structure	Organization Charts
2.3.	5.5	Management Responsibilities	PQDs (job descriptions) PMDs (individual job plans)
2.4.		Overview of the Quality Assurance Program	Dept 4052 SOP Series
2.5.		Quality Assurance Responsibilities	Dept 4052 SOP Series
2.6.	5.7	Communication of Quality Issues to Management	11912 (QA Reports)
2.7.	5.3	Personnel Qualifications and Responsibilities	16134 (Employee Training) PQDs (job descriptions) 16196 (PQDs and EJFs) PMDs (individual job plans) Task Specific Training
2.8.		Relationship of Functional Groups and the Quality Assurance Program	Quality Orientation TQM Training PMDs (individual job plans) Dept 4052 SOP Series 11895 (Project Cycle)
2.9.		Balancing Laboratory Capacity and Workload	PMDs (individual job plans) LIMS reports for mgt
2.10.		Identification of Approved Signatories	11186 (Date Entry, Verification and Reporting)
2.11.	5.6	Personnel Training	16134 (Employee Training) 11178 (DOCs) PQDs (job descriptions) PMDs (individual job plans) Task Specific Training
2.12.	5.6	Regulatory Training	
2.13.		Employee Safety	Analytical Methods Chemical Hygiene Plan 14735 (Preparedness) Dept 6098 SOP Series PMDs (individual job plans)

EQPM Section #	ISO 17025 2017	Title	Procedure(s)
2.14.	5.5	Client Services/Project Management Responsibilities	Dept 4039 SOP Series 11895 (Project Cycle)
2.15.	4.2	Confidentiality	Employee Handbook 16221 (E-mail System) 6824 (Client and Agency Audits)
2.16.	4.1	Business Conduct	Employee Handbook
2.17.	4.1	Operational Integrity	11176 (Manual Integration) 11882 (Chromatographic Integration) 11177 (Ethics Policy) 11197 (Quality Statement)
3		Buildings and Facilities	
3.1.		Facility	Floor Plans
3.2.		Security	12733 (Building Security)
3.3.		Disaster Recovery	13101 (Incident Response Plan) 14735 (Contingency Plan)
3.4.		Environmental Monitoring	11919 (VOA Storage) 11191 (ETM)
3.5.		Water Systems	11916 (Reagent Water)
3.6.		Housekeeping/Cleaning	15553 (Housekeeping)
3.7.		Insect & Rodent Control	16117 (Insect & Rodent Control)
3.8.		Emergency Power Supply	13101 (Incident Response Plan)
3.9.		Facility Changes	14744 (Facility Change Control) 11195 (Change Control)
4		Document Control	
4.1.		Hierarchy of Internal Operating Procedures	6823 (Writing SOPs)
4.2.		Document Approval, Issue, Control, and Maintenance	16131 (Document Control) 11189 (Method Validation)
4.3.		Client-Supplied Methods and Documentation	11193 Analytical Decision Making) 6825 (QA review of QAPPs) 11895 (Project Cycle) 12039 (Auditing Paperwork)
4.4.		Laboratory Notebooks, Logbooks, and Forms	16131 (Document Control) 11913 (Notebooks)
4.5.		Control of External Documents	16131 (Document Control) Departmental "Controlled Documents" forms
5		Sample Handling	
5.1.		Sample Collection	6830 (Sampling Instructions Form)
5.2.		Sample Receipt and Entry	Dept 6042 SOP Series
5.3.		Sample Identification and Tracking	Dept 6042 SOP Series 11184 (LSAR)
5.4.		Sample Storage	Dept 6055 SOP Series
5.5.		Sample Return/Disposal	12042 (Sample Discard) 15553 (Hazardous Wastes - Lab) 9017756 (Hazardous Wastes – Storage) 11915 (Quarantine Soils)

EQPM Section #	ISO 17025 2017	Title	Procedure(s)
5.6.		Legal Chain of Custody	11914 (Legal COC)
5.7.		Representativeness of Samples	Analytical Methods 11190 (Representative Solid Samples)
6		Technical Requirements - Traceability of Measurements	
6.1.		Reagents and Solvents	11188 (Reagents and Standards) Analytical Methods
6.2.		Calibration Standards	11188 (Reagents and Standards) Analytical Methods
6.3.		Equipment and Instrumentation	11901 (Inst. & Equip M&C) 11880 (Balance, Syringe, Pipette Verification) 11893 (Thermometers)
6.4.		Computerized Systems and Computer Software	11195 (Change Control) 11186 (Network Accounts) 16221 (E-mail System) 20940 (Computer Backup) Employee Handbook 16227 (Computer Viruses)
6.5.		Change Control	11195 (Change Control)
6.6.		Labware Cleaning	Departmental Procedures
7		Purchasing Equipment and Supplies	
7.1		Procurement	11192 (Procurement) 9018236 (Receipt of Lab Supplies)
7.2		Supplier Evaluation	11192 (Procurement) 11181 (Subcontracting) 11188 (Reagents and Standards) 6826 Preservative Checks)
8		Analytical Methods	
8.1.		Scope of Testing	Schedule of Services Company website
8.2.		Analytical Test Methods	11189 (Method Validation) 6853 (Writing Procedure Guidance)
8.3.		Client Supplied Methods	11189 (Method Validation)
8.4.		Method Validation	11189 (Method Validation)
8.5.		Procedural Deviations	11912 (ICARs)
9		Internal Quality Control Checks	
9.1.		Laboratory Quality Control Samples and Acceptance Criteria	11896 (QC Limits) Analytical Methods
9.2.		Quality Control Sample Frequency and Corrective Action	11912 (Noncompliant Data) Analytical Methods
9.3.		Quality Control Charts	6817 (End of Month QC Reports)
9.4.		Measurement Uncertainty	11896 (QC Limits)
10		Assuring Quality of Test Results	
10.1.		Data Management	11913 (Notebooks)

EQPM Section #	ISO 17025 2017	Title	Procedure(s)
10.2.		Data Documentation	11913 (Notebooks) 11186 (Date Entry, Verification and Reporting) 11197 (Quality Statement)
10.3.		Data Calculations	11186 (Date Entry, Verification and Reporting) Analytical Methods
10.4.		Reporting Limits	11892 (MDLs & LOQs)
10.5.		Data Review	11913 (Notebooks) 11186 (Date Entry, Verification and Reporting)
10.6.		Data Qualification	11912 (Noncompliant Data)
10.7.		Data Reporting	11186 (Date Entry, Verification and Reporting) 11886 (MCL Exceedance)
10.8.		Data Storage, Security, and Archival	12233 (Data Archiving) 20940 (Computer Backup)
11		Audits and Inspections	
11.1.		Internal Quality Assurance Audits	7547 (Internal Audits) 6859 (Internal Audit Checklist) 6819 (Electronic Data Audits)
11.2.		Review of the Quality Assurance Program	7547 (Internal Audits) 6822 (QA Reports)
11.3.		Good Laboratory Practice Critical Phase Inspections	N/A
11.4.		Client Audits	Employee Handbook 6824 (Client and Agency Audits)
11.5.		Agency Inspections	Employee Handbook 6824 (Client and Agency Audits)
11.6.		Proficiency Testing	11185 (PT Program) 6816 (PT Entry)
12		Corrective and Preventive Action	
12.1.		Laboratory Investigations and Corrective Action	11912 (Noncompliant Data), ICARs, Client Complaints) 26968 (Root Cause Process)
12.2.		Investigation Processes	10401 Missed Hold Procedure) 6832 (Missed Hold form) 11912 (ICARs)
12.3.		Client Feedback	11912 (Client Complaints) Annual Client Survey
12.4.		Preventive Actions	Corporate Training Lean Projects 11895 (Project Cycle) 1195 (Change Control) 7547 (Internal Audits)
13		Service to Clients	
13.1.		Service to Clients	Employee Handbook Ethics Statement 11197 (Quality Policy)

EQPM Section #	ISO 17025 2017	Title	Procedure(s)
13.2.		Review of Work Requests, Tenders, and Contracts	12039 (Client Paperwork) 11895 (Project Cycle) 6825 (QAPP Review)
13.3.		Timely Delivery	11166 (Tracking Rush Samples) 11160 (Scheduling Rush Samples) Departmental LIMS reports
13.4.		Subcontracting	11181 (Subcontractor Checklist) 11181 Subcontracting) 11895 (Project Cycle)

Agency	Parameter	Applicable Matrices	Lab ID No.
Federal Programs:			
American Association for Laboratory Accreditation (A2LA)	Dioxin, KY UST, Inorganics, Organics, PFAS, and WY Storage Tank Program, Food and Feed	Air and Emissions, Biological Tissue, Nonpotable Water, Potable Water and Solid and Hazardous Waste	0001.01
USDA Quarantine Soil Permit	All	Solid	P330-13-00350
State Programs:			
State of Alaska, Department of Environmental Conservation Drinking Water Laboratory Certification Program	Inorganics, Organics and PFAS	Potable Water	PA00009
State of Alaska, Department of Environmental Conservation Contaminated Sites Program	Inorganics, Organics, PFAS and UST analysis	Nonpotable Water and Solid and Chemical Materials	17-027
State of Arizona, Department of Health Services	Dioxin and PFAS	Nonpotable Water, Potable Water and Solid and Chemical Materials	AZ0780
State of Arkansas, Department of Environmental Quality	Dioxin, Inorganics and Organics	Nonpotable Water and Solid and Chemical Materials	88-0660
State of California, Department of Health ELAP	Dioxin, Inorganics ,Organics and PFAS	Nonpotable Water, Potable Water and Solid and Chemicals Materials	2792
State of Colorado, Department of Public Health and Environment	Dioxin, Inorganics and Organics	Potable Water	PA00009
State of Connecticut, Department of Public Health	Dioxin, Inorganics, Organics and PFAS	Nonpotable Water, Potable Water and Solid and Chemical Materials	PH-0746
State of Delaware, Health and Social Services	Dioxin, Inorganics and Organics	Potable Water	None
[3]State of Florida, Department of Health	Dioxin, Inorganics, Organics and PFAS	Air and Emissions, Nonpotable Water, Potable Water and Solid and Chemical Materials	E87997
State of Georgia, Department of Natural Resources	PFAS	Potable Water	C048
State of Hawaii	Dioxin, Inorganics, Organics and PFAS	Potable Water	None
[3]State of Illinois, Environmental Protection Agency	Dioxin, Inorganics and Organics	Nonpotable Water and Solid and Chemical Materials	200027
State of Iowa, Department of Natural Resources	Inorganics, Organics and UST analysis	Nonpotable Water and Solid and Chemical Materials	361
[3]State of Kansas, Department of Health and Environment	Dioxin, Inorganics, Organics and PFAS	Nonpotable Water, Potable Water, and Solid and Chemical Materials	E-10151
Commonwealth of Kentucky, Department of Environmental Protection, Drinking Water Laboratory Certification Program	Dioxin, Inorganics and Organics	Potable Water	90088
Commonwealth of Kentucky, Department of Environmental Protection, Wastewater Laboratory Certification Program	Dioxin, Inorganics and Organics	Nonpotable Water	90088
[4]Commonwealth of Kentucky, Department for Environmental Protection – UST Branch	Organics, Metals and UST analysis	Nonpotable Water and Solids	108139
[1, 3, 5] State of Louisiana, Department of Environmental Quality	Dioxin, Inorganics, Organics and PFAS	Air Emissions, Biological Tissue (direct accreditation), Nonpotable Water and Solid Chemical Materials	30729 02055
State of Maine, Department of Health and Human Services	PFAS	Potable Water	PA00009
State of Maryland, Department of the Environment	Dioxin, Inorganics and Organics	Potable Water	100

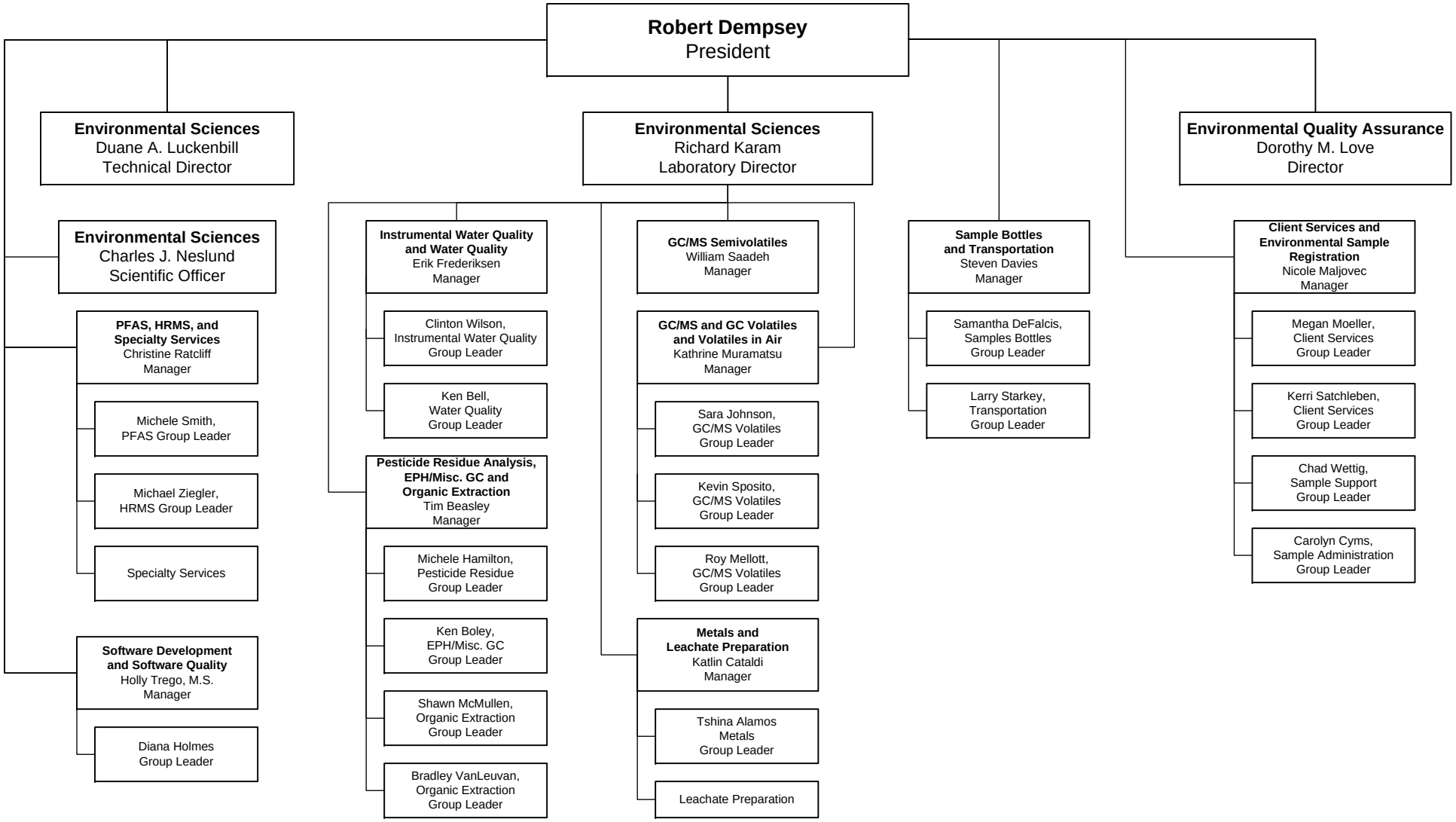
Agency	Parameter	Applicable Matrices	Lab ID No.
Commonwealth of Massachusetts, Department of Environmental Protection	Inorganics, Organics and PFAS	Nonpotable Water and Potable Water	M-PA009
State of Michigan, Department of Environmental Quality	Dioxin, Inorganics, Organics and PFAS	Potable Water	9930
State of Missouri, Department of Natural Resources	Dioxin, Inorganics and Organics	Potable Water	450
State of Montana, Department of Public Health and Human Services	Dioxin, Inorganics, Organics and PFAS	Potable Water	CERT0098
State of Montana, Department of Environmental Quality	Organics, UST analysis	Nonpotable Water and Solid and Chemical Materials	None
State of Nebraska, Department of Health and Human Services	Dioxin, Inorganics, Organics and PFAS	Potable Water	NE-OS-32-17
[3]State of Nevada, Department of Conservation and Natural Resources	Dioxin, Inorganics , Organics and PFAS	Nonpotable Water, Potable Water and Solid and Chemical Materials	PA00009
[3]State of New Hampshire, Department of Environmental Services	Dioxin, Inorganics, Organics and PFAS	Nonpotable Water, Potable Water and Solid and Chemical Materials	2730
[3]State of New Jersey, Department of Environmental Protection (NJDEP)	Dioxin, Inorganics, Organics and PFAS	Air and Emissions, Biological Tissue, Potable Water, Nonpotable Water, and Solid and Chemical Materials	PA011
[3]State of New York, Department of Health	Dioxin, Inorganics, Organics and PFAS	Air and Emissions, Nonpotable Water, Potable Water and Solid and Chemical Materials	10670
State of North Carolina, Department of the Environment and Natural Resources	Inorganics and Organics	Nonpotable Water	521
State of North Carolina, Department of Health and Human Services	Organics	Potable Water	42705
State of North Dakota, Department of Environmental Quality	Dioxin, Inorganics, Organics and PFAS	Nonpotable Water, Potable Water and Solid and Chemical Materials	R-205
[3] State of Oklahoma, Department of Environmental Quality	Dioxin, Inorganics and Organics	Nonpotable Water and Solid and Chemical Materials	9804
[3]State of Oregon, Public Health Laboratory	Dioxin, Inorganics, Organics and PFAS	Air and Emissions, Nonpotable Water, Potable Water and Solid and Chemical Materials	PA200001
[2]Commonwealth of Pennsylvania, Department of Environmental Protection (Bureau of Laboratories)	Dioxin, Inorganics, Organics and PFAS	Nonpotable Water, Potable Water and Solid and Chemical Materials (direct accreditation)	36-00037
State of Rhode Island, Department of Health	Inorganics, Organics and PFAS	Nonpotable Water and Potable Water	LAO00338
State of South Carolina, Department of Health and Environmental Control	Dioxin, Inorganics and Organics	Nonpotable Water and Solid and Chemical Materials	89002
State of Tennessee, Department of Environment & Conservation	Dioxin, Inorganics and Organics	Potable Water	02838
[3] State of Texas, Commission on Environmental Quality	Dioxin, Inorganics and Organics	Air and Emissions, Biological Tissue, Nonpotable Water, Potable Water and Solid and Chemical Materials	T104704194
[3]State of Utah, Department of Health	Dioxin, Inorganics, Organics and PFAS	Nonpotable Water, Potable Water and Solid and Chemical Materials	PA00009
State of Vermont, Department of Health	Dioxin, Inorganics, Organics and PFAS	Potable Water	VT 36037
[3] Commonwealth of Virginia, Department of General Services	Dioxin, Inorganics and Organics	Air and Emissions, Nonpotable Water, Potable Water and Solid and Chemical Materials	460182
State of Washington, Department of Ecology	Dioxin, Inorganics, Organics and PFAS	Air and Emissions, Nonpotable Water and Solid and Chemical Materials	C457
State of West Virginia, Department of Health and Human Resources	Inorganics and Organics	Potable Water	9906C

Agency	Parameter	Applicable Matrices	Lab ID No.
State of West Virginia, Department of Environmental Protection	Dioxin, Inorganics, Organics and PFAS	Nonpotable Water and Solid and Chemical Materials	055
State of Wyoming and all Tribal Public Water Systems in Region 8	Dioxin, Inorganics and Organics	Potable Water	8TMS-L
[4]State of Wyoming – UST Branch	Organics, metals, UST analysis	Nonpotable Water and Solid and Chemical Materials	None

[1] NELAP Primary AB: Air and Emissions
[2] NELAP Primary AB: Potable Water, Nonpotable water, solid and chemical materials
[3] NELAP Secondary AB
[4] Approval for UST work by A2LA
[5] NELAP Primary AB: Biological Tissue

NOTE: Current copies of all scopes of accreditation are available on the laboratory website https://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratories-environmental/ and are kept on file in the Quality Assurance Department.

Eurofins Lancaster Laboratories Environmental



Job Title:	Technical Director, Eurofins Lancaster Laboratories Environmental	
Reports To:	President	
Position Location:	Lancaster, PA	
Day/Shift:	Varies	
FLSA Status:	Exempt	(Exempt/Non-Exempt)

Position Summary:	Leading departments in accordance with vision, values, and strategic goals of company; overseeing and facilitating efficient operations and systems, sound business practices, consistent client service, and motivated staff

Essential Duties and Responsibilities:

- Demonstrates and promotes the company vision
- Regular attendance and punctuality
- Does everything reasonably possible to meet the annual budget
- Ensure that the quality policy/program is understood, implemented, and maintained at all levels of the organization; identify, prevent, or correct any departures from the quality system
- Oversee operations in accordance with policies set forth in the Key Group Documents
- Develop efficient and effective operations and systems that support the strategic goals of the company
- Utilize management operating system to track key performance indicators and drive continuous improvement
- Coach and develop individual and team to maximize performance
- Interact with clients as necessary to maintain and grow the business
- Build strategic relationships within the organization to achieve company goals
- Identify and evaluate issues and explore continuous improvement initiatives
- Perform administrative functions as needed, e.g., attend meetings and share information; prepare reports, job plans, and performance reviews
- Stay technologically current in field; attend seminars and/or training courses; publicize technical expertise through writing an article, presenting a poster session, or speaking at a seminar or technical meeting
- Perform other duties as requested by President
- Perform all functions in support of and in compliance with all state and federal employment regulations
- Conducts all activities in a safe and efficient manner
- Performs other duties as assigned

Basic Minimum Qualifications (BMQ):	To perform this job successfully, the individual must be able to perform each essential duty satisfactorily. The requirements below are representative of the knowledge, skill or ability required. (List three to five key quantifiable skills or position requirements that the candidate must have to be considered for this position.)
Education/Experience (BMQ):	At least fifteen years related experience at ELLE or equivalent experience elsewhere
Additional preferences:	Bachelor's degree in appropriate field or equivalent experience; graduate courses are recommended; experience in a variety of technical areas
Certificates and/or Licenses (BMQ):	N/A
Additional preferences:	
Supervisory Responsibility:	Responsible for the direct management of Directors, Managers, and other leadership employees
Ability and/or Skills (BMQ):	Demonstrated expertise in laboratory operations and leadership skills; communicate effectively and to relate well to people in direct communication, as well as formal presentation; manage the work of other personnel; understand and promote company policy; excellent business sense; motivation to excel, both in technical matters and in management; professional appearance and conduct; consciousness of and a positive attitude toward quality, service, and safety procedures; sound reasoning and decision making; technical expertise; organization and problem-solving skills; good judgement, versatility and flexibility in dealing with people; ability to coordinate multiple priorities; foresight and planning; ability to synthesize and retain information; computer skills; ability to communicate effectively in written and oral forms; leadership skills
Additional preferences:	
Other Factors:	N/A

Disclaimer:

This position description is written as a guideline to inform employees of what is generally expected of them at each job level. The description is not intended to be all encompassing or limiting in any manner; rather, it is hoped it will add understanding and better reflect the work performed at all levels of employment. Duties and responsibilities other than those listed may be included as needed within the work group or the company as a whole.

The above information may not be used or duplicated by others without written consent.

Job Title:	Operations Director, Eurofins Lancaster Laboratories Environmental	
Reports To:	President	
Position Location:	Lancaster, PA	
Day/Shift:	Varies	
FLSA Status:	Exempt	(Exempt/Non-Exempt)

Position Summary:	Leading departments in accordance with vision, values, and strategic goals of company; overseeing and facilitating efficient operations and systems, sound business practices, consistent client service, and motivated staff

Essential Duties and Responsibilities:

- Applies GMP/GLP in all areas of responsibility, as appropriate
- Demonstrates and promotes the company vision
- Regular attendance and punctuality
- Does everything reasonably possible to meet the annual budget
- Ensure that the quality policy/program is understood, implemented, and maintained at all levels of the organization; identify, prevent, or correct any departures from the quality system
- Develop efficient and effective operations and systems that support the strategic goals of the company
- Utilize management operating system to track key performance indicators and drive continuous improvement
- Coach and develop individual and team to maximize performance
- Interact with clients as necessary to maintain and grow the business
- Build strategic relationships within the organization to achieve company goals
- Identify and evaluate issues and explore continuous improvement initiatives
- Perform administrative functions as needed, e.g., attend meetings and share information; prepare reports, job plans, and performance reviews
- Stay technologically current in field; attend seminars and/or training courses; publicize technical expertise through writing an article, presenting a poster session, or speaking at a seminar or technical meeting
- Perform other duties as requested by President or designee
- Perform all functions in support of and in compliance with all state and federal employment regulations
- Conducts all activities in a safe and efficient manner
- Performs other duties as assigned

Basic Minimum Qualifications (BMQ):	To perform this job successfully, the individual must be able to perform each essential duty satisfactorily. The requirements below are representative of the knowledge, skill or ability required. (List three to five key quantifiable skills or position requirements that the candidate must have to be considered for this position.)
Education/Experience (BMQ):	At least five years related experience at ELLE or equivalent experience elsewhere
Additional preferences:	Bachelor's degree in appropriate field or equivalent experience; graduate courses are recommended; experience in a variety of technical areas
Certificates and/or Licenses (BMQ):	N/A
Additional preferences:	
Supervisory Responsibility:	Responsible for the direct management of Managers and other leadership employees
Ability and/or Skills (BMQ):	Demonstrated expertise in laboratory operations and leadership skills; communicate effectively and to relate well to people in direct communication, as well as formal presentation; manage the work of other personnel; understand and promote company policy; excellent business sense; motivation to excel, both in technical matters and in management; professional appearance and conduct; consciousness of and a positive attitude toward quality, service, and safety procedures; sound reasoning and decision making; technical expertise; organization and problem-solving skills; good judgement, versatility and flexibility in dealing with people; ability to coordinate multiple priorities; foresight and planning; ability to synthesize and retain information; computer skills; ability to communicate effectively in written and oral forms; leadership skills
Additional preferences:	
Other Factors:	N/A

Disclaimer:

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Job Title:	Quality Assurance Director	
Reports To:	President and/or designee	
Position Location:	Lancaster, PA	
Day/Shift:	Varies	
FLSA Status:	Exempt	(Exempt/Non-Exempt)

Position Summary:

Overseeing all managerial and quality operations of the company; providing leadership and mentoring/coaching to QA staff; participating in short-term and long-term planning and goal setting for the company; facilitating adherence to government regulations; sustaining quality improvement and providing quality policy development; providing sound consultation to laboratories and clients on problems or interpretation of quality/compliance issues; keeping abreast of evolving regulatory and industry quality assurance requirements

Essential Duties and Responsibilities:

- Applies GMP/GLP in all areas of responsibility, as appropriate
- Demonstrates and promotes the company vision
- Regular attendance and punctuality
- Ensure that the quality policy program is understood, implemented, and maintained at all levels of the organization; identify, prevent, or correct any departures from the quality system
- Ensure that corrective action is appropriate; ensure that follow-up requirements are completed
- Encourage employee participation in process improvement initiatives
- Interview and make recommendations for new hires; train and develop staff; maintain job plans; handle personnel issues
- Handle agency audits, client audits, visits, and phone calls; prepare letters to clients; attendance at some local and national industry meetings
- Keep abreast of regulatory climate; assist technical operations with interpretation; advise on adjustment of lab policy as appropriate
- Perform all functions in support of and in compliance with all state and federal employment regulations
- Coach/mentor other members of the quality team
- Oversee regulatory training program; assist with, and present departmental and corporate training at a frequency to meet regulatory expectations and ensure compliance
- Work with operations and clients to drive challenging/complex resolutions and/or negotiate appropriate position or compromise; offer compliance options
- Identify and drive system improvements; diagnose complex issues
- Conducts all activities in a safe and efficient manner
- Performs other duties as assigned

Basic Minimum Qualifications (BMQ):	To perform this job successfully, the individual must be able to perform each essential duty satisfactorily. The requirements below are representative of the knowledge, skill or ability required. (List three to five key quantifiable skills or position requirements that the candidate must have to be considered for this position.)
Education/Experience (BMQ):	At least six years' experience with QA
Additional preferences:	Bachelor's degree in chemistry or biology
Certificates and/or Licenses (BMQ):	N/A
Additional preferences:	
Supervisory Responsibility:	Provide leadership and direct management of any Group Leaders (if applicable) and other non-management employees in the department
Ability and/or Skills (BMQ):	Exhibit self-confidence and leadership; expertise in laboratory quality operations and regulatory environment; sound reasoning, decision making and problem-solving skills; good judgment and flexibility in dealing with others; ability to coordinate multiple priorities; communicate effectively in written and oral form; ability to manage the work of others and see projects through to completion; translate government regulations into laboratory policy/processes; utilize planning, organization and work management tools; ability to manage stress in self and others; dedication to quality, ethics, and customer service
Additional preferences:	
Other Factors:	N/A

Disclaimer:

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Job Title:	Technical Department Manager	
Reports To:	Director or designee	
Position Location:	Lancaster, PA	
Day/Shift:	Varies	
FLSA Status:	Exempt	(Exempt/Non-Exempt)

Position Summary:	Performing a variety of technical and administrative tasks to develop, evaluate, and supervise staff; planning and monitoring work flow; designing, implementing, and utilizing departmental operations systems; promoting safety; remaining current on technical developments; communicating with clients; maintaining a strong commitment to quality

Essential Duties and Responsibilities:

- Applies GMP/GLP in all areas of responsibility, as appropriate
- Demonstrates and promotes the company vision
- Regular attendance and punctuality
- Ensure that the quality policy program is understood, implemented, and maintained at all levels of the organization; identify, prevent, or correct any departures from the quality system
- Utilize the MOS to track key performance indicators and drive continuous improvement
- Produce motivated and satisfied employees
- Encourage employee participation in process improvement initiatives
- Oversee inventory, maintenance, and repair of departmental machines, tools, equipment, materials, and/or products
- Manage scheduling of personnel; evaluate personnel performance
- Participate in interview process, make recommendations for new hires; train and develop staff
- Review, prepare, and approve methods, data, and SOPs
- Communicate with clients on technical matters; meet with clients to discuss operations and conduct tours and audits
- Maintain client confidentiality
- Investigate and solve laboratory problems
- Perform all functions in support of and in compliance with all state and federal employment regulations
- Conducts all activities in a safe and efficient manner
- Performs other duties as assigned

Basic Minimum Qualifications (BMQ):	To perform this job successfully, the individual must be able to perform each essential duty satisfactorily. The requirements below are representative of the knowledge, skill or ability required. (List three to five key quantifiable skills or position requirements that the candidate must have to be considered for this position.)
Education/Experience (BMQ):	At least five years related experience
Additional preferences:	Bachelor's degree in chemistry or related science; supervisory experience preferred
Certificates and/or Licenses (BMQ):	N/A
Additional preferences:	
Supervisory Responsibility:	Responsible for the direct management of the departmental Group Leaders
Ability and/or Skills (BMQ):	Knowledge of departmental techniques; manage personnel, resolve conflicts, and correct poor performance; attention to detail; tolerance for stress; integrity; computer skills; communicate effectively (verbally and written); perform multiple tasks simultaneously; logical thought; make decisions for self and others; independently develop solutions to complex problems
Additional preferences:	
Other Factors:	N/A

Disclaimer:

This position description is written as a guideline to inform employees of what is generally expected of them at each job level. The description is not intended to be all encompassing or limiting in any manner; rather, it is hoped it will add understanding and better reflect the work performed at all levels of employment. Duties and responsibilities other than those listed may be included as needed within the work group or the company as a whole.

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Job Title:	Support Department Manager	
Reports To:	Director	
Position Location:	Lancaster, PA	
Day/Shift:	Varies	
FLSA Status:	Exempt	(Exempt/Non-Exempt)

Position Summary:	Overseeing all managerial operations of the department, managing the department in an efficient and financially sound manner; providing leadership and coaching to assigned individuals; participating in long- and short-term planning and goal-setting for the group; coordinating functions and responsibilities of assigned department members to provide consistent service; coordinating internal efforts between departments; relaying corporate information appropriately

Essential Duties and Responsibilities:

- Applies GMP/GLP in all areas of responsibility, as appropriate
- Demonstrates and promotes the company vision
- Regular attendance and punctuality
- Ensure that the quality policy program is understood, implemented, and maintained at all levels of the organization; identify, prevent, or correct any departures from the quality system
- Administrative including human resource interviews, job plans, performance reviews, personnel issues, group meetings, and sharing of corporate information
- Training of and delegation to members of the department to provide consistent service to internal and external clients
- Work with other departments to set goals, develop pricing strategies, manage workload, and resolve problems
- Create, implement, and oversee budgets and goals for the department in the context of corporate philosophy
- Evaluate, plan for, and provide adequate staffing, equipment, consumables, etc., for the department to function in an effective manner
- Communicate verbally, in writing, and face-to-face with clients to discuss and resolve problems, build strong relationships, and increase sales
- Perform all functions in support of and in compliance with all state and federal employment regulations
- Administrative activities (photocopying, word processing, paperwork delivery, etc.)
- Assist with financial and purchase order issues as needed
- Help coordinate interdepartmental cross-training and/or assistance as needed to balance workload
- Conducts all activities in a safe and efficient manner
- Performs other duties as assigned

Basic Minimum Qualifications (BMQ):	To perform this job successfully, the individual must be able to perform each essential duty satisfactorily. The requirements below are representative of the knowledge, skill or ability required. (List three to five key quantifiable skills or position requirements that the candidate must have to be considered for this position.)
Education/Experience (BMQ):	Five years of related experience at LL or demonstrated equivalent experience elsewhere; computer skills in a variety of software; supervisory experience
Additional preferences:	Bachelor's degree in science (chemistry preferred)
Certificates and/or Licenses (BMQ):	N/A
Additional preferences:	
Supervisory Responsibility:	Responsible for the direct management of the Group Leaders of the department
Ability and/or Skills (BMQ):	Self confidence and leadership, ability to reason, make sound decisions, and delegate; empathy and sensitivity towards others; motivation to excel and inspire excellence in others; ability to develop strong relationships with clients resulting in client satisfaction and additional sales; ability to manage the work of others and see projects through to completion; strong communication including verbal, writing, and presentation skills; ability to communicate effectively and relate well to people; mental and emotional stability and maturity, ability to handle personal stress and diffuse stress in others; strong organizational and financial skills, ability to handle multiple priorities; good judgement and tact recognizing and solving problems; recognized as understanding, interpreting, and following company policy; sets example for others; dedication to quality, ethics, and customer service; pride in appearance, conduct, and company; sound persuasion and negotiation abilities; ability to view situations from a variety of perspectives; foresight and planning ability
Additional preferences:	
Other Factors:	N/A

Disclaimer:

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APPENDIX D
COMPLETE ANALYTICAL RESULTS

CHEMTECH

DATA PACKAGE

VOLATILE ORGANICS
METALS

PROJECT NAME : CAMP EVANS AREA, FT. MONMOUTH

WATERMARK

175 Cabot Street

Lowell, MA - 01854

Phone No: 9784529696

ORDER ID : K2902

ATTENTION : Olaf Westphalen

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5) VOCMS Group1 Data 10

6) Metals-AES Data 244

7) Shipping Document 306

7.1) CHAIN OF CUSTODY 307

7.2) Lab Certificate 309

7.3) Internal COC 310

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Cover Page

Order ID : K2902

Project ID : Camp Evans Area, Ft. Monmouth

Client : Watermark

Lab Sample Number	Client Sample Number
K2902-01	FM-EA-3MW05-051519
K2902-02	FM-EA-3MW01-051519
K2902-03	FM-EA-3MW01-051519MS
K2902-04	FM-EA-3MW01-051519MSD
K2902-05	DUP-01
K2902-06	FM-EA-3MW06-051519
K2902-07	FM-EA-3MW06-051519MS
K2902-08	FM-EA-3MW06-051519MSD
K2902-09	DUP-02
K2902-10	FM-EA-RB01-051519
K2902-11	FM-EA-3MW09-051619
K2902-12	FM-EA-3MW08-051619
K2902-13	FM-EA-RB02-051619
K2902-14	FM-EA-3MW07-051619
K2902-15	TRIP-BLANK

I certify that the data package is in compliance with the terms and conditions of the contract,both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature : Mildred V Reyes

APPROVED Date: 6/15/2019

By Mildred V Reyes, QAQC Supervisor at 6:06 am, Jun 17, 2019

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CASE NARRATIVE

Watermark
Project Name: Camp Evans Area, Ft. Monmouth
Project # N/A
Chemtech Project # K2902
Test Name: VOCMS Group1

A. Number of Samples and Date of Receipt:
15 Water samples were received on 05/16/2019.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: Metals Group3, Metals Group4, Metals Group5 and VOCMS Group1. This data package contains results for VOCMS Group1.

C. Analytical Techniques:
The analysis performed on instrument MSVOA_N were done using GC column RXI-624SIL MS 30m 0.25mm 1.4 um. Cat#13868.The analysis performed on instrument MSVOA_X were done using GC column DB-624UI 20m 0.18mm 1.0 um. Cat#121-1324UIThe analysis of VOCMS Group1 was based on method 8260-Low.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria.
The Internal Standards Areas met the acceptable requirements.
The Retention Times were acceptable for all samples.
The MS recoveries met the requirements for all compounds .
The MSD recoveries met the acceptable requirements .
The RPD met criteria .
The Blank Spike met requirements for all samples .
The Blank analysis did not indicate the presence of lab contamination.
The %RSD is greater than 15% in the Initial Calibration (Method 82N051719W.M) for Isopropylbenzene, 1,1,2,2-Tetrachloroethane, these compounds are passing on Linear regression.
The %RSD is greater than 15% in the Initial Calibration (Method 82X042919W.M) for Bromochloromethane these compound is passing on Linear regression.
The Continuous Calibration File ID VX009770.D met the requirements except for Bromochloromethane .
The Tuning criteria met requirements.

E. Additional Comments:
The data package has been revised due to reporting changed.

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Please use %D calculated based on Avg RF and CCRF for all compounds using Average Response Factor when the %RSD value for a compound is <15% for the Initial Calibration curve and use %D calculated based on Amount added and Calculated amount for all compounds using Linear Regression when the %RSD value for a compound is > 15% for the Initial Calibration curve for SW-846 analysis.

F. Manual Integration Comments:
Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature_Mildred V Reyes

APPROVED
By Mildred V Reyes, QAQC Supervisor at 6:06 am, Jun 17, 2019

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CASE NARRATIVE

Watermark
Project Name: Camp Evans Area, Ft. Monmouth
Project # N/A
Chemtech Project # K2902
Test Name: Metals Group3,Metals Group4,Metals Group5

A. Number of Samples and Date of Receipt:
15 Water samples were received on 05/16/2019.

B. Parameters:
According to the Chain of Custody document, the following analyses were requested: Metals Group3, Metals Group4, Metals Group5 and VOCMS Group1. This data package contains results for Metals Group3,Metals Group4,Metals Group5.

C. Analytical Techniques:
The analysis of Metals Group3,Metals Group4,Metals Group5 was based on method 6010D and digestion based on method 3010 (waters).

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Blank Spike met requirements for all samples.
The Duplicate analysis met criteria for all samples.
The Matrix Spike analysis met criteria for all samples.
The Matrix Spike Duplicate analysis met criteria for all samples.
The Blank analysis did not indicate the presence of lab contamination.
The Calibration met the requirements.
The Serial Dilution met the acceptable requirements.

E. Additional Comments:
The data package has been revised due to reporting changed.

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature_Mildred V Reyes

APPROVED
By Mildred V Reyes, QAQC Supervisor at 6:06 am, Jun 17, 2019

DATA REPORTING QUALIFIERS- INORGANIC

For reporting results, the following " Results Qualifiers" are used:

J	Indicates the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL), but greater than or equal to the Instrument Detection Limit (IDL).
U	Indicates the analyte was analyzed for, but not detected.
ND	Indicates the analyte was analyzed for, but not detected
E	Indicates the reported value is estimated because of the presence of interference
M	Indicates Duplicate injection precision not met.
N	Indicates the spiked sample recovery is not within control limits.
S	Indicates the reported value was determined by the Method of Standard Addition (MSA).
*	Indicates that the duplicate analysis is not within control limits.
+	Indicates the correlation coefficient for the MSA is less than 0.995.
D	Indicates the reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the calibration range.
M	Method qualifiers **"P"** for ICP instrument **"PM"** for ICP when Microwave Digestion is used **"CV"** for Manual Cold Vapor AA **"AV"** for automated Cold Vapor AA **"CA"** for MIDI-Distillation Spectrophotometric **"AS"** for Semi –Automated Spectrophotometric **"C"** for Manual Spectrophotometric **"T"** for Titrimetric **"NR"** for analyte not required to be analyzed
OR	Indicates the analyte's concentration exceeds the calibrated range of the instrument for that specific analysis.
Q	Indicates the LCS did not meet the control limits requirements
H	Sample Analysis Out Of Hold Time

DATA REPORTING QUALIFIERS- ORGANIC

For reporting results, the following " Results Qualifiers" are used:

Value	If the result is a value greater than or equal to the detection limit, report the value
U	Indicates the compound was analyzed for but was not detected. Report the minimum detection limit for the sample with the U, i.e. "10 U". This is not necessarily the instrument detection limit attainable for this particular sample based on any concentration or dilution that may have been required.
ND	Indicates the analyte was analyzed for, but not detected
J	Indicates an estimated value**.** This flag is used: (1) When estimating a concentration for a tentatively identified compound (library search hits, where a 1:1 response is assumed.) (2) When the mass spectral data indicated the identification, however the result was less than the specified detection limit greater than zero. If the detection limit was 10ug/L and a concentration of 3 ug/L was calculated report as 3 J. This is flag is used when similar situation arise on any organic parameter i.e. Pest, PCB and others.
B	Indicates the analyte was found in the blank as well as the sample report as "12 B".
E	Indicates the analyte 's concentration exceeds the calibrated range of the instrument for that specific analysis.
D	This flag identifies all compounds identified in an analysis at a secondary dilution factor.
P	This flag is used for Pesticide/PCB target analyte when there is >25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on Form 1 and flagged with a "P".
N	This flag indicates presumptive evidence of a compound. This is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It applies to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the flag is not used.
A	This flag indicates that a Tentatively Identified Compound is a suspected aldol-condensation product.
Q	Indicates the LCS did not meet the control limits requirements

APPENDIX A

QA REVIEW GENERAL DOCUMENTATION

Project #: K2902

	Completed
For thorough review, the report must have the following:	
GENERAL:	
Are all original paperwork present (chain of custody, record of communication,airbill, sample management lab chronicle, login page)	✓
Check chain-of-custody for proper relinquish/return of samples	✓
Is the chain of custody signed and complete	✓
Check internal chain-of-custody for proper relinquish/return of samples /sample extracts	✓
Collect information for each project id from server. Were all requirements followed	✓
COVER PAGE:	
Do numbers of samples correspond to the number of samples in the Chain of Custody on login page	✓
Do lab numbers and client Ids on cover page agree with the Chain of Custody	✓
CHAIN OF CUSTODY:	
Do requested analyses on Chain of Custody agree with form I results	✓
Do requested analyses on Chain of Custody agree with the log-in page	✓
Were the correct method log-in for analysis according to the Analytical Request and Chain of Castody	✓
Were the samples received within hold time	✓
Were any problems found with the samples at arrival recorded in the Sample Management Laboratory Chronicle	✓
ANALYTICAL:	
Was method requirement followed?	✓
Was client requirement followed?	✓
Does the case narrative summarize all QC failure?	✓
All runlogs and manual integration are reviewed for requirements	✓
All manual calculations and /or hand notations verified	✓

1st Level QA Review Signature: ASHA PATEL **Date:** 06/15/2019

2nd Level QA Review Signature: Mildred V Reyes **Date:**

APPROVED
By Mildred V Reyes, QAQC Supervisor at 6:06 am, Jun 17, 2019

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Hit Summary Sheet
SW-846

SDG No.: K2902

Client: Watermark

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	LOD	RDL	Units
Client ID:	**FM-EA-RB01-051519**								
K2902-10	FM-EA-RB01-051519	Water	Acetone	4.10	J	0.9	2.5	5	ug/L
			Total Voc :	4.1					
			Total Concentration:	4.1					
Client ID:	**FM-EA-RB02-051619**								
K2902-13	FM-EA-RB02-051619	Water	Acetone	6.90		0.9	2.5	5	ug/L
			Total Voc :	6.9					
			Total Concentration:	6.9					
Client ID:	**FM-EA-3MW07-051619**								
K2902-14	FM-EA-3MW07-051619	Water	Methyl tert-butyl Ether	0.69	J	0.07	0.25	1	ug/L
K2902-14	FM-EA-3MW07-051619	Water	cis-1,2-Dichloroethene	0.36	J	0.3	0.75	1	ug/L
K2902-14	FM-EA-3MW07-051619	Water	Trichloroethene	17.70		0.27	0.75	1	ug/L
			Total Voc :	18.75					
			Total Concentration:	18.75					

SAMPLE DATA

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Report of Analysis

Client:	Watermark	Date Collected:	05/15/19
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	05/16/19
Client Sample ID:	FM-EA-3MW05-051519	SDG No.:	K2902
Lab Sample ID:	K2902-01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN055621.D	1		05/17/19 19:31	VN051719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L

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Report of Analysis

Client:	Watermark	Date Collected:	05/15/19
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	05/16/19
Client Sample ID:	FM-EA-3MW05-051519	SDG No.:	K2902
Lab Sample ID:	K2902-01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN055621.D	1		05/17/19 19:31	VN051719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
123-91-1	1,4-Dioxane	50	U	13.8	50	100	ug/L
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	43		81 - 118		86%	SPK: 50
1868-53-7	Dibromofluoromethane	48.7		80 - 119		97%	SPK: 50
2037-26-5	Toluene-d8	47.9		89 - 112		96%	SPK: 50
460-00-4	4-Bromofluorobenzene	44.4		85 - 114		89%	SPK: 50
INTERNAL STANDARDS							
363-72-4	Pentafluorobenzene	419438	7.67				
540-36-3	1,4-Difluorobenzene	590933	8.59				
3114-55-4	Chlorobenzene-d5	491941	11.41				
3855-82-1	1,4-Dichlorobenzene-d4	193544	13.35				

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Report of Analysis

Client:	Watermark	Date Collected:	05/15/19
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	05/16/19
Client Sample ID:	FM-EA-3MW05-051519	SDG No.:	K2902
Lab Sample ID:	K2902-01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN055621.D	1		05/17/19 19:31	VN051719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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Report of Analysis

Client:	Watermark	Date Collected:	05/15/19
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	05/16/19
Client Sample ID:	FM-EA-3MW01-051519	SDG No.:	K2902
Lab Sample ID:	K2902-02	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN055630.D	1		05/17/19 23:03	VN051719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L

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Report of Analysis

Client:	Watermark	Date Collected:	05/15/19
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	05/16/19
Client Sample ID:	FM-EA-3MW01-051519	SDG No.:	K2902
Lab Sample ID:	K2902-02	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN055630.D	1		05/17/19 23:03	VN051719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
123-91-1	1,4-Dioxane	50	U	13.8	50	100	ug/L
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	42.5		81 - 118		85%	SPK: 50
1868-53-7	Dibromofluoromethane	48		80 - 119		96%	SPK: 50
2037-26-5	Toluene-d8	47.9		89 - 112		96%	SPK: 50
460-00-4	4-Bromofluorobenzene	43.6		85 - 114		87%	SPK: 50
INTERNAL STANDARDS							
363-72-4	Pentafluorobenzene	400097	7.67				
540-36-3	1,4-Difluorobenzene	563218	8.59				
3114-55-4	Chlorobenzene-d5	463924	11.41				
3855-82-1	1,4-Dichlorobenzene-d4	184569	13.35				

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Report of Analysis

Client:	Watermark	Date Collected:	05/15/19
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	05/16/19
Client Sample ID:	FM-EA-3MW01-051519	SDG No.:	K2902
Lab Sample ID:	K2902-02	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN055630.D	1		05/17/19 23:03	VN051719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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Report of Analysis

Client:	Watermark	Date Collected:	05/15/19
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	05/16/19
Client Sample ID:	DUP-01	SDG No.:	K2902
Lab Sample ID:	K2902-05	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN055620.D	1		05/17/19 19:07	VN051719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L

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Report of Analysis

Client:	Watermark	Date Collected:	05/15/19
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	05/16/19
Client Sample ID:	DUP-01	SDG No.:	K2902
Lab Sample ID:	K2902-05	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN055620.D	1		05/17/19 19:07	VN051719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
123-91-1	1,4-Dioxane	50	U	13.8	50	100	ug/L
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	43		81 - 118		86%	SPK: 50
1868-53-7	Dibromofluoromethane	48		80 - 119		96%	SPK: 50
2037-26-5	Toluene-d8	48.1		89 - 112		96%	SPK: 50
460-00-4	4-Bromofluorobenzene	45		85 - 114		90%	SPK: 50
INTERNAL STANDARDS							
363-72-4	Pentafluorobenzene	416197	7.67				
540-36-3	1,4-Difluorobenzene	592627	8.59				
3114-55-4	Chlorobenzene-d5	500206	11.41				
3855-82-1	1,4-Dichlorobenzene-d4	197399	13.35				

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Report of Analysis

Client:	Watermark	Date Collected:	05/15/19
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	05/16/19
Client Sample ID:	DUP-01	SDG No.:	K2902
Lab Sample ID:	K2902-05	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN055620.D	1		05/17/19 19:07	VN051719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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Report of Analysis

Client:	Watermark	Date Collected:	05/15/19
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	05/16/19
Client Sample ID:	FM-EA-RB01-051519	SDG No.:	K2902
Lab Sample ID:	K2902-10	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN055616.D	1		05/17/19 17:33	VN051719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
67-64-1	Acetone	4.1	J	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L

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Report of Analysis

Client:	Watermark	Date Collected:	05/15/19
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	05/16/19
Client Sample ID:	FM-EA-RB01-051519	SDG No.:	K2902
Lab Sample ID:	K2902-10	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN055616.D	1		05/17/19 17:33	VN051719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
123-91-1	1,4-Dioxane	50	U	13.8	50	100	ug/L
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	42.5		81 - 118		85%	SPK: 50
1868-53-7	Dibromofluoromethane	48.2		80 - 119		96%	SPK: 50
2037-26-5	Toluene-d8	47.8		89 - 112		96%	SPK: 50
460-00-4	4-Bromofluorobenzene	42.7		85 - 114		85%	SPK: 50
INTERNAL STANDARDS							
363-72-4	Pentafluorobenzene	397765	7.67				
540-36-3	1,4-Difluorobenzene	561028	8.59				
3114-55-4	Chlorobenzene-d5	458131	11.41				
3855-82-1	1,4-Dichlorobenzene-d4	176438	13.34				

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Report of Analysis

Client:	Watermark	Date Collected:	05/15/19
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	05/16/19
Client Sample ID:	FM-EA-RB01-051519	SDG No.:	K2902
Lab Sample ID:	K2902-10	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN055616.D	1		05/17/19 17:33	VN051719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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Report of Analysis

Client:	Watermark	Date Collected:	05/16/19
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	05/16/19
Client Sample ID:	FM-EA-3MW09-051619	SDG No.:	K2902
Lab Sample ID:	K2902-11	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN055622.D	1		05/17/19 19:55	VN051719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L

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Report of Analysis

Client:	Watermark	Date Collected:	05/16/19
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	05/16/19
Client Sample ID:	FM-EA-3MW09-051619	SDG No.:	K2902
Lab Sample ID:	K2902-11	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN055622.D	1		05/17/19 19:55	VN051719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
123-91-1	1,4-Dioxane	50	U	13.8	50	100	ug/L
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	42.8		81 - 118		86%	SPK: 50
1868-53-7	Dibromofluoromethane	48.2		80 - 119		96%	SPK: 50
2037-26-5	Toluene-d8	48.5		89 - 112		97%	SPK: 50
460-00-4	4-Bromofluorobenzene	43.4		85 - 114		87%	SPK: 50
INTERNAL STANDARDS							
363-72-4	Pentafluorobenzene	407634	7.67				
540-36-3	1,4-Difluorobenzene	573800	8.59				
3114-55-4	Chlorobenzene-d5	478852	11.41				
3855-82-1	1,4-Dichlorobenzene-d4	183266	13.35				

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Report of Analysis

Client:	Watermark	Date Collected:	05/16/19
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	05/16/19
Client Sample ID:	FM-EA-3MW09-051619	SDG No.:	K2902
Lab Sample ID:	K2902-11	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN055622.D	1		05/17/19 19:55	VN051719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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Report of Analysis

Client:	Watermark	Date Collected:	05/16/19
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	05/16/19
Client Sample ID:	FM-EA-3MW08-051619	SDG No.:	K2902
Lab Sample ID:	K2902-12	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN055623.D	1		05/17/19 20:18	VN051719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L

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Report of Analysis

Client:	Watermark	Date Collected:	05/16/19
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	05/16/19
Client Sample ID:	FM-EA-3MW08-051619	SDG No.:	K2902
Lab Sample ID:	K2902-12	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN055623.D	1		05/17/19 20:18	VN051719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
123-91-1	1,4-Dioxane	50	U	13.8	50	100	ug/L
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	43.1		81 - 118		86%	SPK: 50
1868-53-7	Dibromofluoromethane	48.5		80 - 119		97%	SPK: 50
2037-26-5	Toluene-d8	48		89 - 112		96%	SPK: 50
460-00-4	4-Bromofluorobenzene	42.9		85 - 114		86%	SPK: 50
INTERNAL STANDARDS							
363-72-4	Pentafluorobenzene	425105	7.67				
540-36-3	1,4-Difluorobenzene	601944	8.59				
3114-55-4	Chlorobenzene-d5	495720	11.41				
3855-82-1	1,4-Dichlorobenzene-d4	187237	13.35				

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Report of Analysis

Client:	Watermark	Date Collected:	05/16/19
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	05/16/19
Client Sample ID:	FM-EA-3MW08-051619	SDG No.:	K2902
Lab Sample ID:	K2902-12	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN055623.D	1		05/17/19 20:18	VN051719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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Report of Analysis

Client:	Watermark	Date Collected:	05/16/19
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	05/16/19
Client Sample ID:	FM-EA-RB02-051619	SDG No.:	K2902
Lab Sample ID:	K2902-13	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN055617.D	1		05/17/19 17:56	VN051719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
67-64-1	Acetone	6.9		0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L

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Report of Analysis

Client:	Watermark	Date Collected:	05/16/19
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	05/16/19
Client Sample ID:	FM-EA-RB02-051619	SDG No.:	K2902
Lab Sample ID:	K2902-13	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN055617.D	1		05/17/19 17:56	VN051719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
123-91-1	1,4-Dioxane	50	U	13.8	50	100	ug/L
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	43.2		81 - 118		86%	SPK: 50
1868-53-7	Dibromofluoromethane	49.2		80 - 119		98%	SPK: 50
2037-26-5	Toluene-d8	48.2		89 - 112		96%	SPK: 50
460-00-4	4-Bromofluorobenzene	43.6		85 - 114		87%	SPK: 50
INTERNAL STANDARDS							
363-72-4	Pentafluorobenzene	419784	7.67				
540-36-3	1,4-Difluorobenzene	591096	8.59				
3114-55-4	Chlorobenzene-d5	491528	11.41				
3855-82-1	1,4-Dichlorobenzene-d4	188688	13.34				

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Report of Analysis

Client:	Watermark	Date Collected:	05/16/19
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	05/16/19
Client Sample ID:	FM-EA-RB02-051619	SDG No.:	K2902
Lab Sample ID:	K2902-13	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN055617.D	1		05/17/19 17:56	VN051719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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Report of Analysis

Client:	Watermark	Date Collected:	05/16/19
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	05/16/19
Client Sample ID:	FM-EA-3MW07-051619	SDG No.:	K2902
Lab Sample ID:	K2902-14	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN055624.D	1		05/17/19 20:42	VN051719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.69	J	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.36	J	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	17.7		0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L

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Report of Analysis

Client:	Watermark	Date Collected:	05/16/19
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	05/16/19
Client Sample ID:	FM-EA-3MW07-051619	SDG No.:	K2902
Lab Sample ID:	K2902-14	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN055624.D	1		05/17/19 20:42	VN051719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
123-91-1	1,4-Dioxane	50	U	13.8	50	100	ug/L
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	42.4		81 - 118		85%	SPK: 50
1868-53-7	Dibromofluoromethane	48.3		80 - 119		97%	SPK: 50
2037-26-5	Toluene-d8	48.2		89 - 112		96%	SPK: 50
460-00-4	4-Bromofluorobenzene	43.9		85 - 114		88%	SPK: 50
INTERNAL STANDARDS							
363-72-4	Pentafluorobenzene	412511	7.67				
540-36-3	1,4-Difluorobenzene	577881	8.59				
3114-55-4	Chlorobenzene-d5	482712	11.41				
3855-82-1	1,4-Dichlorobenzene-d4	185860	13.35				

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Report of Analysis

Client:	Watermark	Date Collected:	05/16/19
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	05/16/19
Client Sample ID:	FM-EA-3MW07-051619	SDG No.:	K2902
Lab Sample ID:	K2902-14	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN055624.D	1		05/17/19 20:42	VN051719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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Report of Analysis

Client:	Watermark	Date Collected:	05/09/19
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	05/16/19
Client Sample ID:	TRIP-BLANK	SDG No.:	K2902
Lab Sample ID:	K2902-15	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX009790.D	1		05/22/19 08:54	VX052119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L

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Report of Analysis

Client:	Watermark	Date Collected:	05/09/19
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	05/16/19
Client Sample ID:	TRIP-BLANK	SDG No.:	K2902
Lab Sample ID:	K2902-15	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX009790.D	1		05/22/19 08:54	VX052119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
123-91-1	1,4-Dioxane	50	U	13.8	50	100	ug/L
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	50.4		81 - 118		101%	SPK: 50
1868-53-7	Dibromofluoromethane	49		80 - 119		98%	SPK: 50
2037-26-5	Toluene-d8	49.5		89 - 112		99%	SPK: 50
460-00-4	4-Bromofluorobenzene	45.9		85 - 114		92%	SPK: 50
INTERNAL STANDARDS							
363-72-4	Pentafluorobenzene	173037	5.67				
540-36-3	1,4-Difluorobenzene	279572	6.86				
3114-55-4	Chlorobenzene-d5	250261	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	106839	12.08				

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Report of Analysis

Client:	Watermark	Date Collected:	05/09/19
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	05/16/19
Client Sample ID:	TRIP-BLANK	SDG No.:	K2902
Lab Sample ID:	K2902-15	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX009790.D	1		05/22/19 08:54	VX052119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

QC SUMMARY

Surrogate Summary

SDG No.: K2902

Client: Watermark

Analytical Method: SW8260-Low

Lab Sample ID	Client ID	Parameter	Spike	Result	RecoveryQual	Limits Low	Limits High
K2902-01	FM-EA-3MW05-051519	1,2-Dichloroethane-d4	50	42.98	86	81	118
		Dibromofluoromethane	50	48.67	97	80	119
		Toluene-d8	50	47.92	96	89	112
		4-Bromofluorobenzene	50	44.35	89	85	114
K2902-02	FM-EA-3MW01-051519	1,2-Dichloroethane-d4	50	42.54	85	81	118
		Dibromofluoromethane	50	47.98	96	80	119
		Toluene-d8	50	47.89	96	89	112
		4-Bromofluorobenzene	50	43.56	87	85	114
K2902-03MS	FM-EA-3MW01-051519MS	1,2-Dichloroethane-d4	50	50.68	101	81	118
		Dibromofluoromethane	50	51.58	103	80	119
		Toluene-d8	50	50.76	102	89	112
		4-Bromofluorobenzene	50	51.68	103	85	114
K2902-04MSD	FM-EA-3MW01-051519MSD	1,2-Dichloroethane-d4	50	49.62	99	81	118
		Dibromofluoromethane	50	51.06	102	80	119
		Toluene-d8	50	50.1	100	89	112
		4-Bromofluorobenzene	50	50.34	101	85	114
K2902-05	DUP-01	1,2-Dichloroethane-d4	50	42.98	86	81	118
		Dibromofluoromethane	50	48.04	96	80	119
		Toluene-d8	50	48.1	96	89	112
		4-Bromofluorobenzene	50	45.05	90	85	114
K2902-10	FM-EA-RB01-051519	1,2-Dichloroethane-d4	50	42.54	85	81	118
		Dibromofluoromethane	50	48.21	96	80	119
		Toluene-d8	50	47.77	96	89	112
		4-Bromofluorobenzene	50	42.71	85	85	114
K2902-11	FM-EA-3MW09-051619	1,2-Dichloroethane-d4	50	42.82	86	81	118
		Dibromofluoromethane	50	48.23	96	80	119
		Toluene-d8	50	48.46	97	89	112
		4-Bromofluorobenzene	50	43.41	87	85	114
K2902-12	FM-EA-3MW08-051619	1,2-Dichloroethane-d4	50	43.13	86	81	118
		Dibromofluoromethane	50	48.49	97	80	119
		Toluene-d8	50	48.04	96	89	112
		4-Bromofluorobenzene	50	42.93	86	85	114
K2902-13	FM-EA-RB02-051619	1,2-Dichloroethane-d4	50	43.21	86	81	118
		Dibromofluoromethane	50	49.2	98	80	119
		Toluene-d8	50	48.2	96	89	112
		4-Bromofluorobenzene	50	43.59	87	85	114
K2902-14	FM-EA-3MW07-051619	1,2-Dichloroethane-d4	50	42.42	85	81	118
		Dibromofluoromethane	50	48.33	97	80	119
		Toluene-d8	50	48.17	96	89	112
		4-Bromofluorobenzene	50	43.91	88	85	114
K2902-15	TRIP-BLANK	1,2-Dichloroethane-d4	50	50.35	101	81	118
		Dibromofluoromethane	50	49	98	80	119
		Toluene-d8	50	49.52	99	89	112
		4-Bromofluorobenzene	50	45.87	92	85	114
VN0517WBL01	VN0517WBL01	1,2-Dichloroethane-d4	50	43.92	88	81	118
		Dibromofluoromethane	50	48.33	97	80	119
		Toluene-d8	50	48.29	97	89	112
		4-Bromofluorobenzene	50	44.58	89	85	114
VN0517WBS01	VN0517WBS01	1,2-Dichloroethane-d4	50	50.06	100	81	118
		Dibromofluoromethane	50	50.72	101	80	119
		Toluene-d8	50	49.45	99	89	112
		4-Bromofluorobenzene	50	48.74	97	85	114

Surrogate Summary

SDG No.: K2902

Client: Watermark

Analytical Method: SW8260-Low

Lab Sample ID	Client ID	Parameter	Spike	Result	RecoveryQual	Limits Low	Limits High
VX0521WBL02	VX0521WBL02	1,2-Dichloroethane-d4	50	49.78	100	81	118
		Dibromofluoromethane	50	48.26	97	80	119
		Toluene-d8	50	49.48	99	89	112
		4-Bromofluorobenzene	50	46.09	92	85	114
VX0521WBS04	VX0521WBS04	1,2-Dichloroethane-d4	50	54.9	110	81	118
		Dibromofluoromethane	50	50.22	100	80	119
		Toluene-d8	50	52.09	104	89	112
		4-Bromofluorobenzene	50	50.91	102	85	114

CHEMTECH

Matrix Spike/Matrix Spike Duplicate Summary
SW-846

SDG No.: K2902

Client: Watermark

Analytical Method: SW8260-Low

Lab Sample ID : K2902-03MS **Client Sample ID :** FM-EA-3MW01-051519MS **Datafile :** VN055631.D

Parameter	Spike	Sample Result	Result	Units	Rec	Rec Qual	RPD	RPD Qual	Limits Low	Limits High	Limits RPD
Dichlorodifluoromethane	50	0	46.7	ug/L	93				32	152	
Chloromethane	50	0	47.6	ug/L	95				50	139	
Vinyl chloride	50	0	48.1	ug/L	96				58	137	
Bromomethane	50	0	48.5	ug/L	97				53	141	
Chloroethane	50	0	49.7	ug/L	99				60	138	
Trichlorofluoromethane	50	0	48.5	ug/L	97				65	141	
1,1,2-Trichlorotrifluoroethane	50	0	47.5	ug/L	95				70	136	
1,1-Dichloroethene	50	0	47.7	ug/L	95				71	131	
Acetone	250	0	210	ug/L	84				39	160	
Carbon disulfide	50	0	46.7	ug/L	93				64	133	
Methyl tert-butyl Ether	50	0	48.8	ug/L	98				71	124	
Methyl Acetate	50	0	40.7	ug/L	81				56	136	
Methylene Chloride	50	0	48	ug/L	96				74	124	
trans-1,2-Dichloroethene	50	0	47.7	ug/L	95				75	124	
1,1-Dichloroethane	50	0	49	ug/L	98				77	125	
Cyclohexane	50	0	45.7	ug/L	91				71	130	
2-Butanone	250	0	250	ug/L	100				56	143	
Carbon Tetrachloride	50	0	46.1	ug/L	92				72	136	
cis-1,2-Dichloroethene	50	0	48.1	ug/L	96				78	123	
Bromochloromethane	50	0	50.8	ug/L	102				78	123	
Chloroform	50	0	47.7	ug/L	95				79	124	
1,1,1-Trichloroethane	50	0	47.6	ug/L	95				74	131	
Methylcyclohexane	50	0	44.9	ug/L	90				72	132	
Benzene	50	0	48.5	ug/L	97				79	120	
1,2-Dichloroethane	50	0	49.2	ug/L	98				73	128	
Trichloroethene	50	0	49.5	ug/L	99				79	123	
1,2-Dichloropropane	50	0	48	ug/L	96				78	122	
Bromodichloromethane	50	0	47.6	ug/L	95				79	125	
4-Methyl-2-Pentanone	250	0	250	ug/L	100				67	130	
Toluene	50	0	48.7	ug/L	97				80	121	
t-1,3-Dichloropropene	50	0	46.7	ug/L	93				73	127	
cis-1,3-Dichloropropene	50	0	46.8	ug/L	94				75	124	
1,1,2-Trichloroethane	50	0	48.5	ug/L	97				80	119	
2-Hexanone	250	0	250	ug/L	100				57	139	
Dibromochloromethane	50	0	49.6	ug/L	99				74	126	
1,2-Dibromoethane	50	0	49.9	ug/L	100				77	121	
Tetrachloroethene	50	0	46	ug/L	92				74	129	
Chlorobenzene	50	0	47.9	ug/L	96				82	118	
Ethyl Benzene	50	0	46.9	ug/L	94				79	121	
m/p-Xylenes	100	0	94.5	ug/L	95				80	121	
o-Xylene	50	0	47.3	ug/L	95				78	122	
Styrene	50	0	48.2	ug/L	96				78	123	
Bromoform	50	0	49.5	ug/L	99				66	130	
Isopropylbenzene	50	0	50.2	ug/L	100				72	131	
1,1,2,2-Tetrachloroethane	50	0	51.2	ug/L	102				71	121	
1,3-Dichlorobenzene	50	0	46.4	ug/L	93				80	119	
1,4-Dichlorobenzene	50	0	47.8	ug/L	96				79	118	

CHEMTECH

Matrix Spike/Matrix Spike Duplicate Summary
SW-846

SDG No.: K2902

Client: Watermark

Analytical Method: SW8260-Low

Parameter	Spike	Sample Result	Result	Units	Rec	Rec Qual	RPD	RPD Qual	Limits Low	Limits High	Limits RPD
1,2-Dichlorobenzene	50	0	46.5	ug/L	93				80	119	
1,2-Dibromo-3-Chloropropane	50	0	48.7	ug/L	97				62	128	
1,2,4-Trichlorobenzene	50	0	51.5	ug/L	103				69	130	
1,2,3-Trichlorobenzene	50	0	49.1	ug/L	98				69	129	
1,4-Dioxane	1000	0	1100	ug/L	110				59	139	

CHEMTECH

Matrix Spike/Matrix Spike Duplicate Summary
SW-846

SDG No.: K2902

Client: Watermark

Analytical Method: SW8260-Low

Parameter	Spike	Sample Result	Result	Units	Rec	Rec Qual	RPD	RPD Qual	Limits Low	Limits High	Limits RPD
Lab Sample ID : K2902-04MSD	**Client Sample ID : FM-EA-3MW01-051519MSD**							**Datafile :** VN055632.D			
Dichlorodifluoromethane	50	0	46.3	ug/L	93		1		32	152	20
Chloromethane	50	0	45.4	ug/L	91		5		50	139	20
Vinyl chloride	50	0	47.3	ug/L	95		2		58	137	20
Bromomethane	50	0	48.4	ug/L	97		0		53	141	20
Chloroethane	50	0	49	ug/L	98		1		60	138	20
Trichlorofluoromethane	50	0	48.5	ug/L	97		0		65	141	20
1,1,2-Trichlorotrifluoroethane	50	0	48.6	ug/L	97		2		70	136	20
1,1-Dichloroethene	50	0	48.2	ug/L	96		1		71	131	20
Acetone	250	0	210	ug/L	84		0		39	160	20
Carbon disulfide	50	0	47.2	ug/L	94		1		64	133	20
Methyl tert-butyl Ether	50	0	48.7	ug/L	97		0		71	124	20
Methyl Acetate	50	0	44.4	ug/L	89		9		56	136	20
Methylene Chloride	50	0	47.2	ug/L	94		2		74	124	20
trans-1,2-Dichloroethene	50	0	48.2	ug/L	96		1		75	124	20
1,1-Dichloroethane	50	0	48.2	ug/L	96		2		77	125	20
Cyclohexane	50	0	45.7	ug/L	91		0		71	130	20
2-Butanone	250	0	240	ug/L	96		4		56	143	20
Carbon Tetrachloride	50	0	46.4	ug/L	93		1		72	136	20
cis-1,2-Dichloroethene	50	0	47.9	ug/L	96		0		78	123	20
Bromochloromethane	50	0	50.5	ug/L	101		1		78	123	20
Chloroform	50	0	48	ug/L	96		1		79	124	20
1,1,1-Trichloroethane	50	0	47.6	ug/L	95		0		74	131	20
Methylcyclohexane	50	0	46	ug/L	92		2		72	132	20
Benzene	50	0	48.6	ug/L	97		0		79	120	20
1,2-Dichloroethane	50	0	50.1	ug/L	100		2		73	128	20
Trichloroethene	50	0	50.2	ug/L	100		1		79	123	20
1,2-Dichloropropane	50	0	48.6	ug/L	97		1		78	122	20
Bromodichloromethane	50	0	47.8	ug/L	96		0		79	125	20
4-Methyl-2-Pentanone	250	0	250	ug/L	100		0		67	130	20
Toluene	50	0	48.7	ug/L	97		0		80	121	20
t-1,3-Dichloropropene	50	0	47.1	ug/L	94		1		73	127	20
cis-1,3-Dichloropropene	50	0	46.9	ug/L	94		0		75	124	20
1,1,2-Trichloroethane	50	0	48.4	ug/L	97		0		80	119	20
2-Hexanone	250	0	250	ug/L	100		0		57	139	20
Dibromochloromethane	50	0	50.2	ug/L	100		1		74	126	20
1,2-Dibromoethane	50	0	50.1	ug/L	100		0		77	121	20
Tetrachloroethene	50	0	47.1	ug/L	94		2		74	129	20
Chlorobenzene	50	0	48.9	ug/L	98		2		82	118	20
Ethyl Benzene	50	0	47.9	ug/L	96		2		79	121	20
m/p-Xylenes	100	0	95.7	ug/L	96		1		80	121	20
o-Xylene	50	0	47.5	ug/L	95		0		78	122	20
Styrene	50	0	48.8	ug/L	98		1		78	123	20
Bromoform	50	0	50.7	ug/L	101		2		66	130	20
Isopropylbenzene	50	0	51.3	ug/L	103		2		72	131	20
1,1,2,2-Tetrachloroethane	50	0	51.7	ug/L	103		1		71	121	20
1,3-Dichlorobenzene	50	0	47.4	ug/L	95		2		80	119	20
1,4-Dichlorobenzene	50	0	48.2	ug/L	96		1		79	118	20

CHEMTECH

Matrix Spike/Matrix Spike Duplicate Summary
SW-846

SDG No.: K2902

Client: Watermark

Analytical Method: SW8260-Low

Parameter	Spike	Sample Result	Result	Units	Rec	Rec Qual	RPD	RPD Qual	Limits Low	Limits High	Limits RPD
1,2-Dichlorobenzene	50	0	46.9	ug/L	94		1		80	119	20
1,2-Dibromo-3-Chloropropane	50	0	48.3	ug/L	97		1		62	128	20
1,2,4-Trichlorobenzene	50	0	54	ug/L	108		5		69	130	20
1,2,3-Trichlorobenzene	50	0	51.6	ug/L	103		5		69	129	20
1,4-Dioxane	1000	0	1100	ug/L	110		0		59	139	20

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary
SW-846

SDG No.: K2902

Client: Watermark

Analytical Method: SW8260-Low **Datafile :** VN055615.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	Limits Low	Limits High	RPD
VN0517WBS01	Dichlorodifluoromethane	20	18.3	ug/L	92			32	152	
	Chloromethane	20	18.2	ug/L	91			50	139	
	Vinyl chloride	20	18.8	ug/L	94			58	137	
	Bromomethane	20	21.2	ug/L	106			53	141	
	Chloroethane	20	19.3	ug/L	97			60	138	
	Trichlorofluoromethane	20	19.4	ug/L	97			65	141	
	1,1,2-Trichlorotrifluoroethane	20	19	ug/L	95			70	136	
	1,1-Dichloroethene	20	19.1	ug/L	96			71	131	
	Acetone	100	88.8	ug/L	89			39	160	
	Carbon disulfide	20	18.6	ug/L	93			64	133	
	Methyl tert-butyl Ether	20	19.7	ug/L	99			71	124	
	Methyl Acetate	20	20	ug/L	100			56	136	
	Methylene Chloride	20	18.8	ug/L	94			74	124	
	trans-1,2-Dichloroethene	20	19.2	ug/L	96			75	124	
	1,1-Dichloroethane	20	19.6	ug/L	98			77	125	
	Cyclohexane	20	19	ug/L	95			71	130	
	2-Butanone	100	98.9	ug/L	99			56	143	
	Carbon Tetrachloride	20	18.7	ug/L	94			72	136	
	cis-1,2-Dichloroethene	20	19.3	ug/L	97			78	123	
	Bromochloromethane	20	20.1	ug/L	101			78	123	
	Chloroform	20	19.1	ug/L	96			79	124	
	1,1,1-Trichloroethane	20	19	ug/L	95			74	131	
	Methylcyclohexane	20	18.3	ug/L	92			72	132	
	Benzene	20	19.4	ug/L	97			79	120	
	1,2-Dichloroethane	20	20.2	ug/L	101			73	128	
	Trichloroethene	20	19.5	ug/L	98			79	123	
	1,2-Dichloropropane	20	19.1	ug/L	96			78	122	
	Bromodichloromethane	20	18.8	ug/L	94			79	125	
	4-Methyl-2-Pentanone	100	99.4	ug/L	99			67	130	
	Toluene	20	19	ug/L	95			80	121	
	t-1,3-Dichloropropene	20	18.9	ug/L	95			73	127	
	cis-1,3-Dichloropropene	20	19.1	ug/L	96			75	124	
	1,1,2-Trichloroethane	20	19.3	ug/L	97			80	119	
	2-Hexanone	100	97.7	ug/L	98			57	139	
	Dibromochloromethane	20	19.2	ug/L	96			74	126	
	1,2-Dibromoethane	20	19.5	ug/L	98			77	121	
	Tetrachloroethene	20	19.2	ug/L	96			74	129	
	Chlorobenzene	20	18.9	ug/L	95			82	118	
	Ethyl Benzene	20	18.9	ug/L	95			79	121	
	m/p-Xylenes	40	37.7	ug/L	94			80	121	
	o-Xylene	20	18.7	ug/L	94			78	122	
	Styrene	20	18.9	ug/L	95			78	123	
	Bromoform	20	19.4	ug/L	97			66	130	
	Isopropylbenzene	20	20.4	ug/L	102			72	131	
	1,1,2,2-Tetrachloroethane	20	20.6	ug/L	103			71	121	
	1,3-Dichlorobenzene	20	18.6	ug/L	93			80	119	
	1,4-Dichlorobenzene	20	19	ug/L	95			79	118	
	1,2-Dichlorobenzene	20	18.7	ug/L	94			80	119	
	1,2-Dibromo-3-Chloropropane	20	20.6	ug/L	103			62	128	

CHEMTECH

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary
SW-846

SDG No.: K2902

Client: Watermark

Analytical Method: SW8260-Low **Datafile :** VN055615.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	Limits Low	Limits High	Limits RPD
VN0517WBS01	1,2,4-Trichlorobenzene	20	19	ug/L	95			69	130	
	1,2,3-Trichlorobenzene	20	19.4	ug/L	97			69	129	
	1,4-Dioxane	400	430	ug/L	108			59	139	

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary
SW-846

SDG No.: K2902

Client: Watermark

Analytical Method: SW8260-Low **Datafile :** VX009772.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	Limits Low	Limits High	RPD
VX0521WBS04	Dichlorodifluoromethane	20	18.2	ug/L	91			32	152	
	Chloromethane	20	20.9	ug/L	104			50	139	
	Vinyl chloride	20	20.3	ug/L	102			58	137	
	Bromomethane	20	21.3	ug/L	106			53	141	
	Chloroethane	20	21.2	ug/L	106			60	138	
	Trichlorofluoromethane	20	20.2	ug/L	101			65	141	
	1,1,2-Trichlorotrifluoroethane	20	19.1	ug/L	96			70	136	
	1,1-Dichloroethene	20	19.7	ug/L	99			71	131	
	Acetone	100	93.9	ug/L	94			39	160	
	Carbon disulfide	20	20.7	ug/L	104			64	133	
	Methyl tert-butyl Ether	20	19.5	ug/L	98			71	124	
	Methyl Acetate	20	19.2	ug/L	96			56	136	
	Methylene Chloride	20	19	ug/L	95			74	124	
	trans-1,2-Dichloroethene	20	19.4	ug/L	97			75	124	
	1,1-Dichloroethane	20	19.8	ug/L	99			77	125	
	Cyclohexane	20	20	ug/L	100			71	130	
	2-Butanone	100	100	ug/L	100			56	143	
	Carbon Tetrachloride	20	19.2	ug/L	96			72	136	
	cis-1,2-Dichloroethene	20	19.5	ug/L	98			78	123	
	Bromochloromethane	20	22.7	ug/L	114			78	123	
	Chloroform	20	19.9	ug/L	100			79	124	
	1,1,1-Trichloroethane	20	19.8	ug/L	99			74	131	
	Methylcyclohexane	20	18.7	ug/L	94			72	132	
	Benzene	20	19.4	ug/L	97			79	120	
	1,2-Dichloroethane	20	20.1	ug/L	101			73	128	
	Trichloroethene	20	18.7	ug/L	94			79	123	
	1,2-Dichloropropane	20	19.6	ug/L	98			78	122	
	Bromodichloromethane	20	18.7	ug/L	94			79	125	
	4-Methyl-2-Pentanone	100	100	ug/L	100			67	130	
	Toluene	20	19.6	ug/L	98			80	121	
	t-1,3-Dichloropropene	20	18.3	ug/L	92			73	127	
	cis-1,3-Dichloropropene	20	18.3	ug/L	92			75	124	
	1,1,2-Trichloroethane	20	19.4	ug/L	97			80	119	
	2-Hexanone	100	100	ug/L	100			57	139	
	Dibromochloromethane	20	18.7	ug/L	94			74	126	
	1,2-Dibromoethane	20	19.6	ug/L	98			77	121	
	Tetrachloroethene	20	19.5	ug/L	98			74	129	
	Chlorobenzene	20	19.1	ug/L	96			82	118	
	Ethyl Benzene	20	19.3	ug/L	97			79	121	
	m/p-Xylenes	40	38.5	ug/L	96			80	121	
	o-Xylene	20	18.9	ug/L	95			78	122	
	Styrene	20	19	ug/L	95			78	123	
	Bromoform	20	18.3	ug/L	92			66	130	
	Isopropylbenzene	20	19.2	ug/L	96			72	131	
	1,1,2,2-Tetrachloroethane	20	19.4	ug/L	97			71	121	
	1,3-Dichlorobenzene	20	18.6	ug/L	93			80	119	
	1,4-Dichlorobenzene	20	18.7	ug/L	94			79	118	
	1,2-Dichlorobenzene	20	18.6	ug/L	93			80	119	
	1,2-Dibromo-3-Chloropropane	20	19.3	ug/L	97			62	128	

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary
SW-846

SDG No.: K2902

Client: Watermark

Analytical Method: SW8260-Low **Datafile :** VX009772.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	Limits Low	Limits High	Limits RPD
VX0521WBS04	1,2,4-Trichlorobenzene	20	18.5	ug/L	93			69	130	
	1,2,3-Trichlorobenzene	20	18.7	ug/L	94			69	129	
	1,4-Dioxane	400	390	ug/L	98			59	139	

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VN0517WBL01

Lab Name: CHEMTECH Contract: WATE05

Lab Code: CHEM Case No.: K2902 SAS No.: K2902 SDG NO.: K2902

Lab File ID: VN055608.D Lab Sample ID: VN0517WBL01

Date Analyzed: 05/17/2019 Time Analyzed: 14:26

GC Column: RXI-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

Instrument ID: MSVOA_N

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
VN0517WBS01	VN0517WBS01	VN055615.D	05/17/2019
FM-EA-RB01-051519	K2902-10	VN055616.D	05/17/2019
FM-EA-RB02-051619	K2902-13	VN055617.D	05/17/2019
DUP-01	K2902-05	VN055620.D	05/17/2019
FM-EA-3MW05-051519	K2902-01	VN055621.D	05/17/2019
FM-EA-3MW09-051619	K2902-11	VN055622.D	05/17/2019
FM-EA-3MW08-051619	K2902-12	VN055623.D	05/17/2019
FM-EA-3MW07-051619	K2902-14	VN055624.D	05/17/2019
FM-EA-3MW01-051519	K2902-02	VN055630.D	05/17/2019
FM-EA-3MW01-051519MS	K2902-03MS	VN055631.D	05/17/2019
FM-EA-3MW01-051519MSD	K2902-04MSD	VN055632.D	05/17/2019

COMMENTS:

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VX0521WBL02

Lab Name: CHEMTECH Contract: WATE05

Lab Code: CHEM Case No.: K2902 SAS No.: K2902 SDG NO.: K2902

Lab File ID: VX009771.D Lab Sample ID: VX0521WBL02

Date Analyzed: 05/22/2019 Time Analyzed: 01:31

GC Column: DB-624UI ID: 0.18 (mm) Heated Purge: (Y/N) N

Instrument ID: MSVOA_X

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
VX0521WBS04	VX0521WBS04	VX009772.D	05/22/2019
TRIP-BLANK	K2902-15	VX009790.D	05/22/2019

COMMENTS:

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: CHEMTECH Contract: WATE05

Lab Code: CHEM Case No.: K2902 SAS No.: K2902 SDG NO.: K2902

Lab File ID: VN055597.D BFB Injection Date: 05/17/2019

Instrument ID: MSVOA_N BFB Injection Time: 08:33

GC Column: RXI-624 ID: 0.25 (mm) Heated Purge: Y/N N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	17
75	30.0 - 60.0% of mass 95	45.7
95	Base Peak, 100% relative abundance	100
96	5.0 - 9.0% of mass 95	6.4
173	Less than 2.0% of mass 174	1 (1.1) 1
174	50.0 - 100.0% of mass 95	92
175	5.0 - 9.0% of mass 174	6.5 (7.1) 1
176	95.0 - 101.0% of mass 174	89.5 (97.2) 1
177	5.0 - 9.0% of mass 176	6 (6.8) 2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
VSTDICC001	VSTDICC001	VN055598.D	05/17/2019	09:29
VSTDICC005	VSTDICC005	VN055599.D	05/17/2019	09:53
VSTDICC020	VSTDICC020	VN055600.D	05/17/2019	10:16
VSTDICCC050	VSTDICCC050	VN055601.D	05/17/2019	10:39
VSTDICC100	VSTDICC100	VN055602.D	05/17/2019	11:03
VSTDICC150	VSTDICC150	VN055603.D	05/17/2019	11:26

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VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: CHEMTECH Contract: WATE05

Lab Code: CHEM Case No.: K2902 SAS No.: K2902 SDG NO.: K2902

Lab File ID: VN055605.D BFB Injection Date: 05/17/2019

Instrument ID: MSVOA_N BFB Injection Time: 12:32

GC Column: RXI-624 ID: 0.25 (mm) Heated Purge: Y/N N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	16.8
75	30.0 - 60.0% of mass 95	45.8
95	Base Peak, 100% relative abundance	100
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.0 (0.0) 1
174	50.0 - 100.0% of mass 95	87.1
175	5.0 - 9.0% of mass 174	6.6 (7.6) 1
176	95.0 - 101.0% of mass 174	85.8 (98.5) 1
177	5.0 - 9.0% of mass 176	5.7 (6.6) 2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
VSTDCCC050	VSTDCCC050	VN055606.D	05/17/2019	13:06
VN0517WBL01	VN0517WBL01	VN055608.D	05/17/2019	14:26
VN0517WBS01	VN0517WBS01	VN055615.D	05/17/2019	17:09
FM-EA-RB01-051519	K2902-10	VN055616.D	05/17/2019	17:33
FM-EA-RB02-051619	K2902-13	VN055617.D	05/17/2019	17:56
DUP-01	K2902-05	VN055620.D	05/17/2019	19:07
FM-EA-3MW05-051519	K2902-01	VN055621.D	05/17/2019	19:31
FM-EA-3MW09-051619	K2902-11	VN055622.D	05/17/2019	19:55
FM-EA-3MW08-051619	K2902-12	VN055623.D	05/17/2019	20:18
FM-EA-3MW07-051619	K2902-14	VN055624.D	05/17/2019	20:42
FM-EA-3MW01-051519	K2902-02	VN055630.D	05/17/2019	23:03
FM-EA-3MW01-051519MS	K2902-03MS	VN055631.D	05/17/2019	23:27
FM-EA-3MW01-051519MSD	K2902-04MSD	VN055632.D	05/17/2019	23:50
VSTDCCC050EC	VSTDCCC050	VN055633.D	05/18/2019	00:14

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VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: CHEMTECH Contract: WATE05

Lab Code: CHEM Case No.: K2902 SAS No.: K2902 SDG NO.: K2902

Lab File ID: VX009197.D BFB Injection Date: 04/29/2019

Instrument ID: MSVOA_X BFB Injection Time: 09:14

GC Column: DB-624UI ID: 0.18 (mm) Heated Purge: Y/N N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.1
75	30.0 - 60.0% of mass 95	50.6
95	Base Peak, 100% relative abundance	100
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.3 (0.3) 1
174	50.0 - 100.0% of mass 95	80.6
175	5.0 - 9.0% of mass 174	6.2 (7.8) 1
176	95.0 - 101.0% of mass 174	77.4 (96) 1
177	5.0 - 9.0% of mass 176	5.4 (7) 2

1-Value is % mass 174

2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
VSTDICC001	VSTDICC001	VX009200.D	04/29/2019	11:47
VSTDICC005	VSTDICC005	VX009201.D	04/29/2019	12:10
VSTDICC020	VSTDICC020	VX009202.D	04/29/2019	12:33
VSTDICCC050	VSTDICCC050	VX009203.D	04/29/2019	12:57
VSTDICC100	VSTDICC100	VX009204.D	04/29/2019	13:20
VSTDICC150	VSTDICC150	VX009205.D	04/29/2019	13:43

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VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: CHEMTECH Contract: WATE05

Lab Code: CHEM Case No.: K2902 SAS No.: K2902 SDG NO.: K2902

Lab File ID: VX009769.D BFB Injection Date: 05/21/2019

Instrument ID: MSVOA_X BFB Injection Time: 23:58

GC Column: DB-624UI ID: 0.18 (mm) Heated Purge: Y/N N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	21.3
75	30.0 - 60.0% of mass 95	52.7
95	Base Peak, 100% relative abundance	100
96	5.0 - 9.0% of mass 95	7
173	Less than 2.0% of mass 174	0.2 (0.3) 1
174	50.0 - 100.0% of mass 95	80.2
175	5.0 - 9.0% of mass 174	6 (7.5) 1
176	95.0 - 101.0% of mass 174	77.3 (96.4) 1
177	5.0 - 9.0% of mass 176	5.4 (7) 2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
VSTDCCC050	VSTDCCC050	VX009770.D	05/22/2019	00:44
VX0521WBL02	VX0521WBL02	VX009771.D	05/22/2019	01:31
VX0521WBS04	VX0521WBS04	VX009772.D	05/22/2019	01:54
TRIP-BLANK	K2902-15	VX009790.D	05/22/2019	08:54
VSTDCCC050EC	VSTDCCC050	VX009791.D	05/22/2019	09:17

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VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH Contract: WATE05

Lab Code: CHEM Case No.: K2902 SAS No.: K2902 SDG NO.: K2902

Lab File ID: VN055606.D Date Analyzed: 05/17/2019

Instrument ID: MSVOA_N Time Analyzed: 13:06

GC Column: RXI-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

	IS1 AREA #	RT #	IS2 AREA #	RT #	IS3 AREA #	RT #
12 HOUR STD	345837	7.66	502676	8.59	442986	11.41
UPPER LIMIT	691674	8.16	1005350	9.09	885972	11.91
LOWER LIMIT	172919	7.16	251338	8.09	221493	10.91
EPA SAMPLE NO.						
FM-EA-3MW05-051519	419438	7.67	590933	8.59	491941	11.41
FM-EA-3MW01-051519	400097	7.67	563218	8.59	463924	11.41
FM-EA-3MW01-051519MS	330533	7.67	505196	8.59	449092	11.41
FM-EA-3MW01-051519MSD	335792	7.67	509566	8.59	444917	11.41
DUP-01	416197	7.67	592627	8.59	500206	11.41
FM-EA-RB01-051519	397765	7.67	561028	8.59	458131	11.41
FM-EA-3MW09-051619	407634	7.67	573800	8.59	478852	11.41
FM-EA-3MW08-051619	425105	7.67	601944	8.59	495720	11.41
FM-EA-RB02-051619	419784	7.67	591096	8.59	491528	11.41
FM-EA-3MW07-051619	412511	7.67	577881	8.59	482712	11.41
VN0517WBL01	399651	7.67	569555	8.59	479654	11.41
VN0517WBS01	324787	7.67	493997	8.59	427699	11.41

IS1 = Pentafluorobenzene
IS2 = 1,4-Difluorobenzene
IS3 = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH Contract: WATE05

Lab Code: CHEM Case No.: K2902 SAS No.: K2902 SDG NO.: K2902

Lab File ID: VN055606.D Date Analyzed: 05/17/2019

Instrument ID: MSVOA_N Time Analyzed: 13:06

GC Column: RXI-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

	IS4 AREA #	RT #				
12 HOUR STD	210845	13.34				
UPPER LIMIT	421690	13.84				
LOWER LIMIT	105423	12.84				
EPA SAMPLE NO.						
FM-EA-3MW05-051519	193544	13.35				
FM-EA-3MW01-051519	184569	13.35				
FM-EA-3MW01-051519MS	209912	13.34				
FM-EA-3MW01-051519MSD	206773	13.34				
DUP-01	197399	13.35				
FM-EA-RB01-051519	176438	13.34				
FM-EA-3MW09-051619	183266	13.35				
FM-EA-3MW08-051619	187237	13.35				
FM-EA-RB02-051619	188688	13.34				
FM-EA-3MW07-051619	185860	13.35				
VN0517WBL01	183878	13.34				
VN0517WBS01	187003	13.34				

IS4 = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH Contract: WATE05

Lab Code: CHEM Case No.: K2902 SAS No.: K2902 SDG NO.: K2902

Lab File ID: VX009770.D Date Analyzed: 05/22/2019

Instrument ID: MSVOA_X Time Analyzed: 00:44

GC Column: DB-624UI ID: 0.18 (mm) Heated Purge: (Y/N) N

	IS1 AREA #	RT #	IS2 AREA #	RT #	IS3 AREA #	RT #
12 HOUR STD	154928	5.66	255301	6.86	232504	10.11
UPPER LIMIT	309856	6.16	510602	7.36	465008	10.61
LOWER LIMIT	77464	5.16	127651	6.36	116252	9.61
EPA SAMPLE NO.						
TRIP-BLANK	173037	5.67	279572	6.86	250261	10.11
VX0521WBL02	174962	5.67	284123	6.86	255384	10.11
VX0521WBS04	152534	5.67	251689	6.86	229121	10.11

IS1 = Pentafluorobenzene
IS2 = 1,4-Difluorobenzene
IS3 = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH Contract: WATE05

Lab Code: CHEM Case No.: K2902 SAS No.: K2902 SDG NO.: K2902

Lab File ID: VX009770.D Date Analyzed: 05/22/2019

Instrument ID: MSVOA_X Time Analyzed: 00:44

GC Column: DB-624UI ID: 0.18 (mm) Heated Purge: (Y/N) N

	IS4 AREA #	RT #				
12 HOUR STD	115760	12.08				
UPPER LIMIT	231520	12.58				
LOWER LIMIT	57880	11.58				
EPA SAMPLE NO.						
TRIP-BLANK	106839	12.08				
VX0521WBL02	113607	12.08				
VX0521WBS04	109770	12.08				

IS4 = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = -50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

 # Column used to flag values outside QC limits with an asterisk.
*** Values outside of QC limits.**

QC SAMPLE DATA

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Report of Analysis

Client:	Watermark	Date Collected:	
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	
Client Sample ID:	VN0517WBL01	SDG No.:	K2902
Lab Sample ID:	VN0517WBL01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN055608.D	1		05/17/19 14:26	VN051719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L

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Report of Analysis

Client:	Watermark	Date Collected:	
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	
Client Sample ID:	VN0517WBL01	SDG No.:	K2902
Lab Sample ID:	VN0517WBL01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN055608.D	1		05/17/19 14:26	VN051719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
123-91-1	1,4-Dioxane	50	U	13.8	50	100	ug/L
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	43.9		81 - 118		88%	SPK: 50
1868-53-7	Dibromofluoromethane	48.3		80 - 119		97%	SPK: 50
2037-26-5	Toluene-d8	48.3		89 - 112		97%	SPK: 50
460-00-4	4-Bromofluorobenzene	44.6		85 - 114		89%	SPK: 50
INTERNAL STANDARDS							
363-72-4	Pentafluorobenzene	399651	7.67				
540-36-3	1,4-Difluorobenzene	569555	8.59				
3114-55-4	Chlorobenzene-d5	479654	11.41				
3855-82-1	1,4-Dichlorobenzene-d4	183878	13.34				

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Report of Analysis

Client:	Watermark	Date Collected:	
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	
Client Sample ID:	VN0517WBL01	SDG No.:	K2902
Lab Sample ID:	VN0517WBL01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN055608.D	1		05/17/19 14:26	VN051719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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Report of Analysis

Client:	Watermark	Date Collected:	
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	
Client Sample ID:	VX0521WBL02	SDG No.:	K2902
Lab Sample ID:	VX0521WBL02	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX009771.D	1		05/22/19 01:31	VX052119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
75-71-8	Dichlorodifluoromethane	0.5	U	0.22	0.5	1	ug/L
74-87-3	Chloromethane	0.75	U	0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	0.5	U	0.16	0.5	1	ug/L
74-83-9	Bromomethane	3.8	U	2.1	3.8	5	ug/L
75-00-3	Chloroethane	0.75	U	0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	0.5	U	0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	0.5	U	0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	0.5	U	0.18	0.5	1	ug/L
67-64-1	Acetone	2.5	U	0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	0.5	U	0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	0.25	U	0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	0.75	U	0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	0.75	U	0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	0.5	U	0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	0.5	U	0.17	0.5	1	ug/L
110-82-7	Cyclohexane	2.5	U	1.2	2.5	5	ug/L
78-93-3	2-Butanone	2.5	U	0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	0.5	U	0.22	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	0.75	U	0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	0.75	U	0.31	0.75	1	ug/L
67-66-3	Chloroform	0.5	U	0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	0.5	U	0.17	0.5	1	ug/L
71-43-2	Benzene	0.25	U	0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	0.5	U	0.13	0.5	1	ug/L
79-01-6	Trichloroethene	0.75	U	0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	0.5	U	0.14	0.5	1	ug/L
75-27-4	Bromodichloromethane	0.25	U	0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	2.5	U	0.85	2.5	5	ug/L
108-88-3	Toluene	0.25	U	0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	0.25	U	0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	0.5	U	0.16	0.5	1	ug/L

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Report of Analysis

Client:	Watermark	Date Collected:	
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	
Client Sample ID:	VX0521WBL02	SDG No.:	K2902
Lab Sample ID:	VX0521WBL02	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX009771.D	1		05/22/19 01:31	VX052119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	0.25	U	0.12	0.25	1	ug/L
591-78-6	2-Hexanone	3.8	U	1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	0.5	U	0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	0.5	U	0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	0.5	U	0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	0.25	U	0.08	0.25	1	ug/L
100-41-4	Ethyl Benzene	0.25	U	0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	0.5	U	0.2	0.5	2	ug/L
95-47-6	o-Xylene	0.5	U	0.13	0.5	1	ug/L
100-42-5	Styrene	0.25	U	0.11	0.25	1	ug/L
75-25-2	Bromoform	0.5	U	0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	0.5	U	0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	0.5	U	0.15	0.5	1	ug/L
541-73-1	1,3-Dichlorobenzene	0.5	U	0.14	0.5	1	ug/L
106-46-7	1,4-Dichlorobenzene	0.5	U	0.2	0.5	1	ug/L
95-50-1	1,2-Dichlorobenzene	0.25	U	0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	U	0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	0.5	U	0.24	0.5	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	0.75	U	0.26	0.75	1	ug/L
123-91-1	1,4-Dioxane	50	U	13.8	50	100	ug/L
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	49.8		81 - 118		100%	SPK: 50
1868-53-7	Dibromofluoromethane	48.3		80 - 119		97%	SPK: 50
2037-26-5	Toluene-d8	49.5		89 - 112		99%	SPK: 50
460-00-4	4-Bromofluorobenzene	46.1		85 - 114		92%	SPK: 50
INTERNAL STANDARDS							
363-72-4	Pentafluorobenzene	174962	5.67				
540-36-3	1,4-Difluorobenzene	284123	6.86				
3114-55-4	Chlorobenzene-d5	255384	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	113607	12.08				

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Report of Analysis

Client:	Watermark	Date Collected:	
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	
Client Sample ID:	VX0521WBL02	SDG No.:	K2902
Lab Sample ID:	VX0521WBL02	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX009771.D	1		05/22/19 01:31	VX052119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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Report of Analysis

Client:	Watermark	Date Collected:	
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	
Client Sample ID:	VN0517WBS01	SDG No.:	K2902
Lab Sample ID:	VN0517WBS01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN055615.D	1		05/17/19 17:09	VN051719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
75-71-8	Dichlorodifluoromethane	18.3		0.22	0.5	1	ug/L
74-87-3	Chloromethane	18.2		0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	18.8		0.16	0.5	1	ug/L
74-83-9	Bromomethane	21.2		2.1	3.8	5	ug/L
75-00-3	Chloroethane	19.3		0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	19.4		0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	19		0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	19.1		0.18	0.5	1	ug/L
67-64-1	Acetone	88.8		0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	18.6		0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	19.7		0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	20		0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	18.8		0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	19.2		0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	19.6		0.17	0.5	1	ug/L
110-82-7	Cyclohexane	19		1.2	2.5	5	ug/L
78-93-3	2-Butanone	98.9		0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	18.7		0.22	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	19.3		0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	20.1		0.31	0.75	1	ug/L
67-66-3	Chloroform	19.1		0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	19		0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	18.3		0.17	0.5	1	ug/L
71-43-2	Benzene	19.4		0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	20.2		0.13	0.5	1	ug/L
79-01-6	Trichloroethene	19.5		0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	19.1		0.14	0.5	1	ug/L
75-27-4	Bromodichloromethane	18.8		0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	99.4		0.85	2.5	5	ug/L
108-88-3	Toluene	19		0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	18.9		0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	19.1		0.16	0.5	1	ug/L

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Report of Analysis

Client:	Watermark	Date Collected:	
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	
Client Sample ID:	VN0517WBS01	SDG No.:	K2902
Lab Sample ID:	VN0517WBS01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN055615.D	1		05/17/19 17:09	VN051719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	19.3		0.12	0.25	1	ug/L
591-78-6	2-Hexanone	97.7		1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	19.2		0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	19.5		0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	19.2		0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	18.9		0.08	0.25	1	ug/L
100-41-4	Ethyl Benzene	18.9		0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	37.7		0.2	0.5	2	ug/L
95-47-6	o-Xylene	18.7		0.13	0.5	1	ug/L
100-42-5	Styrene	18.9		0.11	0.25	1	ug/L
75-25-2	Bromoform	19.4		0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	20.4		0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	20.6		0.15	0.5	1	ug/L
541-73-1	1,3-Dichlorobenzene	18.6		0.14	0.5	1	ug/L
106-46-7	1,4-Dichlorobenzene	19		0.2	0.5	1	ug/L
95-50-1	1,2-Dichlorobenzene	18.7		0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	20.6		0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	19		0.24	0.5	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	19.4		0.26	0.75	1	ug/L
123-91-1	1,4-Dioxane	430		13.8	50	100	ug/L
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	50.1		81 - 118		100%	SPK: 50
1868-53-7	Dibromofluoromethane	50.7		80 - 119		101%	SPK: 50
2037-26-5	Toluene-d8	49.5		89 - 112		99%	SPK: 50
460-00-4	4-Bromofluorobenzene	48.7		85 - 114		97%	SPK: 50
INTERNAL STANDARDS							
363-72-4	Pentafluorobenzene	324787	7.67				
540-36-3	1,4-Difluorobenzene	493997	8.59				
3114-55-4	Chlorobenzene-d5	427699	11.41				
3855-82-1	1,4-Dichlorobenzene-d4	187003	13.34				

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Report of Analysis

Client:	Watermark	Date Collected:	
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	
Client Sample ID:	VN0517WBS01	SDG No.:	K2902
Lab Sample ID:	VN0517WBS01	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN055615.D	1		05/17/19 17:09	VN051719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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Report of Analysis

Client:	Watermark	Date Collected:	
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	
Client Sample ID:	VX0521WBS04	SDG No.:	K2902
Lab Sample ID:	VX0521WBS04	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX009772.D	1		05/22/19 01:54	VX052119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
75-71-8	Dichlorodifluoromethane	18.2		0.22	0.5	1	ug/L
74-87-3	Chloromethane	20.9		0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	20.3		0.16	0.5	1	ug/L
74-83-9	Bromomethane	21.3		2.1	3.8	5	ug/L
75-00-3	Chloroethane	21.2		0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	20.2		0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	19.1		0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	19.7		0.18	0.5	1	ug/L
67-64-1	Acetone	93.9		0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	20.7		0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	19.5		0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	19.2		0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	19		0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	19.4		0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	19.8		0.17	0.5	1	ug/L
110-82-7	Cyclohexane	20		1.2	2.5	5	ug/L
78-93-3	2-Butanone	100		0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	19.2		0.22	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	19.5		0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	22.7		0.31	0.75	1	ug/L
67-66-3	Chloroform	19.9		0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	19.8		0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	18.7		0.17	0.5	1	ug/L
71-43-2	Benzene	19.4		0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	20.1		0.13	0.5	1	ug/L
79-01-6	Trichloroethene	18.7		0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	19.6		0.14	0.5	1	ug/L
75-27-4	Bromodichloromethane	18.7		0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	100		0.85	2.5	5	ug/L
108-88-3	Toluene	19.6		0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	18.3		0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	18.3		0.16	0.5	1	ug/L

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Report of Analysis

Client:	Watermark	Date Collected:	
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	
Client Sample ID:	VX0521WBS04	SDG No.:	K2902
Lab Sample ID:	VX0521WBS04	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX009772.D	1		05/22/19 01:54	VX052119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	19.4		0.12	0.25	1	ug/L
591-78-6	2-Hexanone	100		1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	18.7		0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	19.6		0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	19.5		0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	19.1		0.08	0.25	1	ug/L
100-41-4	Ethyl Benzene	19.3		0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	38.5		0.2	0.5	2	ug/L
95-47-6	o-Xylene	18.9		0.13	0.5	1	ug/L
100-42-5	Styrene	19		0.11	0.25	1	ug/L
75-25-2	Bromoform	18.3		0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	19.2		0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	19.4		0.15	0.5	1	ug/L
541-73-1	1,3-Dichlorobenzene	18.6		0.14	0.5	1	ug/L
106-46-7	1,4-Dichlorobenzene	18.7		0.2	0.5	1	ug/L
95-50-1	1,2-Dichlorobenzene	18.6		0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	19.3		0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	18.5		0.24	0.5	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	18.7		0.26	0.75	1	ug/L
123-91-1	1,4-Dioxane	390		13.8	50	100	ug/L
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	54.9		81 - 118		110%	SPK: 50
1868-53-7	Dibromofluoromethane	50.2		80 - 119		100%	SPK: 50
2037-26-5	Toluene-d8	52.1		89 - 112		104%	SPK: 50
460-00-4	4-Bromofluorobenzene	50.9		85 - 114		102%	SPK: 50
INTERNAL STANDARDS							
363-72-4	Pentafluorobenzene	152534	5.67				
540-36-3	1,4-Difluorobenzene	251689	6.86				
3114-55-4	Chlorobenzene-d5	229121	10.11				
3855-82-1	1,4-Dichlorobenzene-d4	109770	12.08				

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Report of Analysis

Client:	Watermark	Date Collected:	
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	
Client Sample ID:	VX0521WBS04	SDG No.:	K2902
Lab Sample ID:	VX0521WBS04	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX009772.D	1		05/22/19 01:54	VX052119

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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Report of Analysis

Client:	Watermark	Date Collected:	05/15/19
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	05/16/19
Client Sample ID:	FM-EA-3MW01-051519MS	SDG No.:	K2902
Lab Sample ID:	K2902-03MS	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN055631.D	1		05/17/19 23:27	VN051719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
75-71-8	Dichlorodifluoromethane	46.7		0.22	0.5	1	ug/L
74-87-3	Chloromethane	47.6		0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	48.1		0.16	0.5	1	ug/L
74-83-9	Bromomethane	48.5		2.1	3.8	5	ug/L
75-00-3	Chloroethane	49.7		0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	48.5		0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	47.5		0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	47.7		0.18	0.5	1	ug/L
67-64-1	Acetone	210		0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	46.7		0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	48.8		0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	40.7		0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	48		0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	47.7		0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	49		0.17	0.5	1	ug/L
110-82-7	Cyclohexane	45.7		1.2	2.5	5	ug/L
78-93-3	2-Butanone	250		0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	46.1		0.22	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	48.1		0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	50.8		0.31	0.75	1	ug/L
67-66-3	Chloroform	47.7		0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	47.6		0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	44.9		0.17	0.5	1	ug/L
71-43-2	Benzene	48.5		0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	49.2		0.13	0.5	1	ug/L
79-01-6	Trichloroethene	49.5		0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	48		0.14	0.5	1	ug/L
75-27-4	Bromodichloromethane	47.6		0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	250		0.85	2.5	5	ug/L
108-88-3	Toluene	48.7		0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	46.7		0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	46.8		0.16	0.5	1	ug/L

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Report of Analysis

Client:	Watermark	Date Collected:	05/15/19
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	05/16/19
Client Sample ID:	FM-EA-3MW01-051519MS	SDG No.:	K2902
Lab Sample ID:	K2902-03MS	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN055631.D	1		05/17/19 23:27	VN051719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	48.5		0.12	0.25	1	ug/L
591-78-6	2-Hexanone	250		1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	49.6		0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	49.9		0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	46		0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	47.9		0.08	0.25	1	ug/L
100-41-4	Ethyl Benzene	46.9		0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	94.5		0.2	0.5	2	ug/L
95-47-6	o-Xylene	47.3		0.13	0.5	1	ug/L
100-42-5	Styrene	48.2		0.11	0.25	1	ug/L
75-25-2	Bromoform	49.5		0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	50.2		0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	51.2		0.15	0.5	1	ug/L
541-73-1	1,3-Dichlorobenzene	46.4		0.14	0.5	1	ug/L
106-46-7	1,4-Dichlorobenzene	47.8		0.2	0.5	1	ug/L
95-50-1	1,2-Dichlorobenzene	46.5		0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	48.7		0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	51.5		0.24	0.5	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	49.1		0.26	0.75	1	ug/L
123-91-1	1,4-Dioxane	1100		13.8	50	100	ug/L
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	50.7		81 - 118		101%	SPK: 50
1868-53-7	Dibromofluoromethane	51.6		80 - 119		103%	SPK: 50
2037-26-5	Toluene-d8	50.8		89 - 112		102%	SPK: 50
460-00-4	4-Bromofluorobenzene	51.7		85 - 114		103%	SPK: 50
INTERNAL STANDARDS							
363-72-4	Pentafluorobenzene	330533	7.67				
540-36-3	1,4-Difluorobenzene	505196	8.59				
3114-55-4	Chlorobenzene-d5	449092	11.41				
3855-82-1	1,4-Dichlorobenzene-d4	209912	13.34				

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Report of Analysis

Client:	Watermark	Date Collected:	05/15/19
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	05/16/19
Client Sample ID:	FM-EA-3MW01-051519MS	SDG No.:	K2902
Lab Sample ID:	K2902-03MS	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN055631.D	1		05/17/19 23:27	VN051719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
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E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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Report of Analysis

Client:	Watermark	Date Collected:	05/15/19
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	05/16/19
Client Sample ID:	FM-EA-3MW01-051519MSD	SDG No.:	K2902
Lab Sample ID:	K2902-04MSD	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN055632.D	1		05/17/19 23:50	VN051719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
TARGETS							
75-71-8	Dichlorodifluoromethane	46.3		0.22	0.5	1	ug/L
74-87-3	Chloromethane	45.4		0.3	0.75	1	ug/L
75-01-4	Vinyl Chloride	47.3		0.16	0.5	1	ug/L
74-83-9	Bromomethane	48.4		2.1	3.8	5	ug/L
75-00-3	Chloroethane	49		0.34	0.75	1	ug/L
75-69-4	Trichlorofluoromethane	48.5		0.16	0.5	1	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	48.6		0.21	0.5	1	ug/L
75-35-4	1,1-Dichloroethene	48.2		0.18	0.5	1	ug/L
67-64-1	Acetone	210		0.9	2.5	5	ug/L
75-15-0	Carbon Disulfide	47.2		0.23	0.5	1	ug/L
1634-04-4	Methyl tert-butyl Ether	48.7		0.07	0.25	1	ug/L
79-20-9	Methyl Acetate	44.4		0.65	0.75	1	ug/L
75-09-2	Methylene Chloride	47.2		0.33	0.75	1	ug/L
156-60-5	trans-1,2-Dichloroethene	48.2		0.24	0.5	1	ug/L
75-34-3	1,1-Dichloroethane	48.2		0.17	0.5	1	ug/L
110-82-7	Cyclohexane	45.7		1.2	2.5	5	ug/L
78-93-3	2-Butanone	240		0.71	2.5	5	ug/L
56-23-5	Carbon Tetrachloride	46.4		0.22	0.5	1	ug/L
156-59-2	cis-1,2-Dichloroethene	47.9		0.3	0.75	1	ug/L
74-97-5	Bromochloromethane	50.5		0.31	0.75	1	ug/L
67-66-3	Chloroform	48		0.14	0.5	1	ug/L
71-55-6	1,1,1-Trichloroethane	47.6		0.12	0.25	1	ug/L
108-87-2	Methylcyclohexane	46		0.17	0.5	1	ug/L
71-43-2	Benzene	48.6		0.1	0.25	1	ug/L
107-06-2	1,2-Dichloroethane	50.1		0.13	0.5	1	ug/L
79-01-6	Trichloroethene	50.2		0.27	0.75	1	ug/L
78-87-5	1,2-Dichloropropane	48.6		0.14	0.5	1	ug/L
75-27-4	Bromodichloromethane	47.8		0.1	0.25	1	ug/L
108-10-1	4-Methyl-2-Pentanone	250		0.85	2.5	5	ug/L
108-88-3	Toluene	48.7		0.12	0.25	1	ug/L
10061-02-6	t-1,3-Dichloropropene	47.1		0.19	0.25	1	ug/L
10061-01-5	cis-1,3-Dichloropropene	46.9		0.16	0.5	1	ug/L

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Report of Analysis

Client:	Watermark	Date Collected:	05/15/19
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	05/16/19
Client Sample ID:	FM-EA-3MW01-051519MSD	SDG No.:	K2902
Lab Sample ID:	K2902-04MSD	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN055632.D	1		05/17/19 23:50	VN051719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	48.4		0.12	0.25	1	ug/L
591-78-6	2-Hexanone	250		1.4	3.8	5	ug/L
124-48-1	Dibromochloromethane	50.2		0.16	0.5	1	ug/L
106-93-4	1,2-Dibromoethane	50.1		0.14	0.5	1	ug/L
127-18-4	Tetrachloroethene	47.1		0.15	0.5	1	ug/L
108-90-7	Chlorobenzene	48.9		0.08	0.25	1	ug/L
100-41-4	Ethyl Benzene	47.9		0.08	0.25	1	ug/L
179601-23-1	m/p-Xylenes	95.7		0.2	0.5	2	ug/L
95-47-6	o-Xylene	47.5		0.13	0.5	1	ug/L
100-42-5	Styrene	48.8		0.11	0.25	1	ug/L
75-25-2	Bromoform	50.7		0.15	0.5	1	ug/L
98-82-8	Isopropylbenzene	51.3		0.13	0.5	1	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	51.7		0.15	0.5	1	ug/L
541-73-1	1,3-Dichlorobenzene	47.4		0.14	0.5	1	ug/L
106-46-7	1,4-Dichlorobenzene	48.2		0.2	0.5	1	ug/L
95-50-1	1,2-Dichlorobenzene	46.9		0.12	0.25	1	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	48.3		0.54	0.75	1	ug/L
120-82-1	1,2,4-Trichlorobenzene	54		0.24	0.5	1	ug/L
87-61-6	1,2,3-Trichlorobenzene	51.6		0.26	0.75	1	ug/L
123-91-1	1,4-Dioxane	1100		13.8	50	100	ug/L
SURROGATES							
17060-07-0	1,2-Dichloroethane-d4	49.6		81 - 118		99%	SPK: 50
1868-53-7	Dibromofluoromethane	51.1		80 - 119		102%	SPK: 50
2037-26-5	Toluene-d8	50.1		89 - 112		100%	SPK: 50
460-00-4	4-Bromofluorobenzene	50.3		85 - 114		101%	SPK: 50
INTERNAL STANDARDS							
363-72-4	Pentafluorobenzene	335792	7.67				
540-36-3	1,4-Difluorobenzene	509566	8.59				
3114-55-4	Chlorobenzene-d5	444917	11.41				
3855-82-1	1,4-Dichlorobenzene-d4	206773	13.34				

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Report of Analysis

Client:	Watermark	Date Collected:	05/15/19
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	05/16/19
Client Sample ID:	FM-EA-3MW01-051519MSD	SDG No.:	K2902
Lab Sample ID:	K2902-04MSD	Matrix:	Water
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOCMS Group1
GC Column:	RXI-624 ID : 0.25	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN055632.D	1		05/17/19 23:50	VN051719

CAS Number	Parameter	Conc.	Qualifier	MDL	LOD	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CALIBRATION SUMMARY

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: CHEMTECH Contract: WATE05

Lab Code: CHEM Case No.: K2902 SAS No.: K2902 SDG No.: K2902

Instrument ID: MSVOA_N Calibration Date(s): 05/17/2019 05/17/2019

Heated Purge: (Y/N) N Calibration Time(s): 09:29 11:26

GC Column: RXI-624 ID: 0.25 (mm)

LAB FILE ID: RRF001 = VN055598.D RRF005 = VN055599.D RRF020 = VN055600.D
RRF050 = VN055601.D RRF100 = VN055602.D RRF150 = VN055603.D

COMPOUND	RRF001	RRF005	RRF020	RRF050	RRF100	RRF150	$\overline{RRF}$	% RSD
Dichlorodifluoromethane	0.464	0.407	0.374	0.360	0.351	0.352	0.385	11.5
Chloromethane	0.608	0.531	0.496	0.480	0.482	0.481	0.513	9.8
Vinyl Chloride	0.637	0.585	0.545	0.521	0.526	0.519	0.556	8.4
Bromomethane		0.388	0.354	0.339	0.342	0.348	0.354	5.5
Chloroethane	0.320	0.314	0.307	0.303	0.305	0.301	0.309	2.4
Trichlorofluoromethane	0.769	0.746	0.722	0.688	0.677	0.670	0.712	5.6
1,1,2-Trichlorotrifluoroethane	0.471	0.453	0.439	0.421	0.410	0.411	0.434	5.6
1,1-Dichloroethene	0.511	0.483	0.457	0.435	0.430	0.424	0.457	7.5
Acetone	0.244	0.227	0.229	0.220	0.215	0.207	0.224	5.8
Carbon Disulfide	1.416	1.315	1.258	1.212	1.208	1.207	1.269	6.6
Methyl tert-butyl Ether	1.612	1.530	1.531	1.476	1.468	1.448	1.511	4
Methyl Acetate	0.515	0.484	0.460	0.470	0.476	0.473	0.480	4
Methylene Chloride	0.587	0.524	0.504	0.486	0.482	0.479	0.510	8.1
trans-1,2-Dichloroethene	0.524	0.507	0.487	0.469	0.467	0.464	0.486	5
1,1-Dichloroethane	0.887	0.876	0.873	0.846	0.838	0.819	0.856	3.1
Cyclohexane		0.974	0.821	0.764	0.750	0.756	0.813	11.6
2-Butanone	0.305	0.306	0.314	0.315	0.320	0.316	0.313	1.9
Carbon Tetrachloride	0.579	0.483	0.466	0.449	0.444	0.437	0.476	11.1
cis-1,2-Dichloroethene	0.617	0.585	0.567	0.546	0.545	0.539	0.566	5.4
Bromochloromethane	0.358	0.381	0.393	0.381	0.366	0.357	0.373	3.9
Chloroform	0.979	0.904	0.882	0.841	0.841	0.828	0.879	6.5
1,1,1-Trichloroethane	0.904	0.807	0.783	0.751	0.747	0.740	0.789	7.8
Methylcyclohexane	0.605	0.553	0.523	0.517	0.513	0.514	0.537	6.7
Benzene	1.383	1.335	1.326	1.283	1.282	1.258	1.311	3.5
1,2-Dichloroethane	0.423	0.437	0.426	0.422	0.426	0.414	0.425	1.7
Trichloroethene	0.389	0.372	0.370	0.364	0.367	0.358	0.370	2.8
1,2-Dichloropropane	0.360	0.351	0.352	0.339	0.339	0.332	0.345	3
Bromodichloromethane	0.535	0.473	0.465	0.461	0.461	0.448	0.474	6.5
4-Methyl-2-Pentanone	0.415	0.406	0.407	0.403	0.417	0.416	0.410	1.5
Toluene	0.892	0.805	0.805	0.803	0.820	0.810	0.822	4.2
t-1,3-Dichloropropene	0.485	0.494	0.507	0.515	0.532	0.527	0.510	3.6
cis-1,3-Dichloropropene	0.548	0.548	0.566	0.562	0.568	0.560	0.559	1.6
1,1,2-Trichloroethane	0.388	0.337	0.334	0.325	0.326	0.321	0.339	7.4

* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: CHEMTECH Contract: WATE05

Lab Code: CHEM Case No.: K2902 SAS No.: K2902 SDG No.: K2902

Instrument ID: MSVOA_N Calibration Date(s): 05/17/2019 05/17/2019

Heated Purge: (Y/N) N Calibration Time(s): 09:29 11:26

GC Column: RXI-624 ID: 0.25 (mm)

LAB FILE ID: RRF001 = VN055598.D RRF005 = VN055599.D RRF020 = VN055600.D
RRF050 = VN055601.D RRF100 = VN055602.D RRF150 = VN055603.D

COMPOUND	RRF001	RRF005	RRF020	RRF050	RRF100	RRF150	$\overline{RRF}$	% RSD
2-Hexanone	0.270	0.269	0.283	0.293	0.309	0.310	0.289	6.3
Dibromochloromethane	0.386	0.376	0.381	0.382	0.391	0.386	0.384	1.4
1,2-Dibromoethane	0.338	0.325	0.339	0.339	0.347	0.346	0.339	2.3
Tetrachloroethene	0.416	0.425	0.397	0.382	0.376	0.369	0.394	5.8
Chlorobenzene	1.094	1.015	0.999	0.990	0.990	0.981	1.011	4.1
Ethyl Benzene	1.989	1.830	1.786	1.735	1.737	1.733	1.802	5.5
m/p-Xylenes	0.731	0.695	0.673	0.660	0.660	0.662	0.680	4.2
o-Xylene	0.735	0.674	0.671	0.639	0.636	0.639	0.665	5.7
Styrene	1.100	1.073	1.103	1.101	1.125	1.136	1.106	2
Bromoform	0.337	0.335	0.347	0.346	0.351	0.351	0.345	2
Isopropylbenzene	5.326	4.711	4.007	3.584	3.461	3.368	4.076	19.3
1,1,2,2-Tetrachloroethane	1.676	1.395	1.217	1.114	1.090	1.062	1.259	18.9
1,3-Dichlorobenzene	1.943	1.722	1.686	1.620	1.621	1.595	1.698	7.6
1,4-Dichlorobenzene	1.725	1.603	1.627	1.586	1.597	1.588	1.621	3.3
1,2-Dichlorobenzene	1.989	1.782	1.695	1.597	1.560	1.533	1.692	10.2
1,2-Dibromo-3-Chloropropane	0.229	0.247	0.237	0.225	0.213	0.211	0.227	6.3
1,2,4-Trichlorobenzene	0.680	0.737	0.903	0.935	0.946	0.968	0.862	14.1
1,2,3-Trichlorobenzene	0.843	0.809	0.954	0.924	0.929	0.946	0.901	6.6
1,2-Dichloroethane-d4		0.535	0.593	0.545	0.534	0.533	0.548	4.7
Dibromofluoromethane		0.301	0.340	0.322	0.316	0.309	0.318	4.7
Toluene-d8		1.120	1.278	1.208	1.200	1.198	1.201	4.6
4-Bromofluorobenzene		0.354	0.430	0.420	0.430	0.440	0.415	8.4
1,4-Dioxane	5.913	5.712	6.349	6.708	6.361	6.245	6.215	5.7

* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: CHEMTECH Contract: WATE05

Lab Code: CHEM Case No.: K2902 SAS No.: K2902 SDG No.: K2902

Instrument ID: MSVOA_X Calibration Date(s): 04/29/2019 04/29/2019

Heated Purge: (Y/N) N Calibration Time(s): 11:47 13:43

GC Column: DB-624UI ID: 0.18 (mm)

LAB FILE ID: RRF001 = VX009200.D RRF005 = VX009201.D RRF020 = VX009202.D
RRF050 = VX009203.D RRF100 = VX009204.D RRF150 = VX009205.D

COMPOUND	RRF001	RRF005	RRF020	RRF050	RRF100	RRF150	$\overline{RRF}$	% RSD
Dichlorodifluoromethane	0.482	0.419	0.458	0.453	0.484	0.469	0.461	5.2
Chloromethane	0.719	0.588	0.615	0.607	0.626	0.618	0.629	7.3
Vinyl Chloride	0.641	0.583	0.598	0.603	0.633	0.623	0.613	3.7
Bromomethane		0.365	0.331	0.346	0.389	0.410	0.368	8.8
Chloroethane	0.437	0.373	0.383	0.379	0.396	0.395	0.394	5.8
Trichlorofluoromethane	0.811	0.713	0.720	0.728	0.760	0.741	0.746	4.9
1,1,2-Trichlorotrifluoroethane	0.482	0.465	0.457	0.458	0.477	0.470	0.468	2.2
1,1-Dichloroethene	0.471	0.442	0.468	0.467	0.488	0.479	0.469	3.4
Acetone	0.415	0.363	0.367	0.350	0.362	0.343	0.367	7
Carbon Disulfide	1.434	1.088	1.280	1.320	1.405	1.376	1.317	9.5
Methyl tert-butyl Ether	1.924	1.795	1.753	1.779	1.858	1.821	1.822	3.4
Methyl Acetate	0.961	0.932	0.824	0.817	0.857	0.839	0.872	6.9
Methylene Chloride	0.725	0.573	0.558	0.562	0.579	0.564	0.593	10.9
trans-1,2-Dichloroethene	0.549	0.488	0.488	0.500	0.520	0.508	0.509	4.5
1,1-Dichloroethane	1.180	1.089	1.037	1.043	1.087	1.071	1.085	4.7
Cyclohexane		0.974	1.000	1.004	1.042	1.026	1.009	2.6
2-Butanone	0.570	0.559	0.568	0.559	0.593	0.568	0.570	2.2
Carbon Tetrachloride	0.453	0.399	0.402	0.413	0.433	0.433	0.422	5
cis-1,2-Dichloroethene	0.651	0.602	0.584	0.585	0.616	0.605	0.607	4.1
Bromochloromethane	0.607	0.543	0.435	0.491	0.435	0.411	0.487	15.6
Chloroform	1.034	0.994	0.946	0.948	0.990	0.973	0.981	3.4
1,1,1-Trichloroethane	0.886	0.777	0.782	0.792	0.835	0.827	0.817	5.1
Methylcyclohexane	0.607	0.528	0.541	0.565	0.592	0.591	0.571	5.5
Benzene	1.553	1.403	1.385	1.405	1.451	1.433	1.438	4.2
1,2-Dichloroethane	0.585	0.499	0.496	0.493	0.515	0.507	0.516	6.8
Trichloroethene	0.399	0.336	0.319	0.334	0.349	0.349	0.348	7.9
1,2-Dichloropropane	0.440	0.391	0.387	0.399	0.415	0.412	0.407	4.8
Bromodichloromethane	0.506	0.443	0.443	0.462	0.489	0.486	0.472	5.5
4-Methyl-2-Pentanone	0.668	0.681	0.646	0.665	0.709	0.692	0.677	3.2
Toluene	0.951	0.844	0.832	0.853	0.892	0.874	0.874	4.9
t-1,3-Dichloropropene	0.491	0.487	0.499	0.538	0.588	0.592	0.533	9
cis-1,3-Dichloropropene	0.585	0.536	0.556	0.598	0.632	0.629	0.589	6.5
1,1,2-Trichloroethane	0.368	0.366	0.343	0.348	0.359	0.356	0.357	2.8

* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

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VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: CHEMTECH Contract: WATE05

Lab Code: CHEM Case No.: K2902 SAS No.: K2902 SDG No.: K2902

Instrument ID: MSVOA_X Calibration Date(s): 04/29/2019 04/29/2019

Heated Purge: (Y/N) N Calibration Time(s): 11:47 13:43

GC Column: DB-624UI ID: 0.18 (mm)

LAB FILE ID: RRF001 = VX009200.D RRF005 = VX009201.D RRF020 = VX009202.D
RRF050 = VX009203.D RRF100 = VX009204.D RRF150 = VX009205.D

COMPOUND	RRF001	RRF005	RRF020	RRF050	RRF100	RRF150	$\overline{RRF}$	% RSD
2-Hexanone	0.529	0.537	0.513	0.529	0.548	0.534	0.532	2.2
Dibromochloromethane	0.337	0.316	0.329	0.349	0.376	0.382	0.348	7.5
1,2-Dibromoethane	0.380	0.341	0.342	0.355	0.372	0.370	0.360	4.6
Tetrachloroethene	0.392	0.345	0.329	0.332	0.336	0.324	0.343	7.3
Chlorobenzene	1.055	0.998	0.952	0.981	1.015	1.000	1.000	3.5
Ethyl Benzene	1.947	1.801	1.761	1.818	1.886	1.832	1.841	3.6
m/p-Xylenes	0.689	0.658	0.643	0.672	0.694	0.680	0.673	2.9
o-Xylene	0.687	0.668	0.634	0.650	0.680	0.664	0.664	2.9
Styrene	1.162	1.099	1.089	1.159	1.215	1.197	1.154	4.4
Bromoform	0.297	0.256	0.267	0.295	0.325	0.328	0.295	9.9
Isopropylbenzene	4.025	3.637	3.553	3.540	3.575	3.485	3.636	5.4
1,1,2,2-Tetrachloroethane	1.507	1.437	1.297	1.311	1.306	1.274	1.355	6.9
1,3-Dichlorobenzene	1.754	1.623	1.518	1.561	1.608	1.589	1.609	5
1,4-Dichlorobenzene	1.786	1.638	1.533	1.563	1.621	1.590	1.622	5.5
1,2-Dichlorobenzene	1.894	1.659	1.537	1.583	1.585	1.572	1.639	8
1,2-Dibromo-3-Chloropropane	0.301	0.311	0.294	0.307	0.306	0.305	0.304	1.9
1,2,4-Trichlorobenzene	1.153	1.066	1.078	1.123	1.153	1.151	1.121	3.5
1,2,3-Trichlorobenzene	1.197	1.092	1.123	1.126	1.135	1.141	1.136	3
1,2-Dichloroethane-d4		0.737	0.658	0.687	0.661	0.670	0.683	4.8
Dibromofluoromethane		0.333	0.305	0.317	0.306	0.311	0.314	3.7
Toluene-d8		1.285	1.253	1.299	1.245	1.262	1.269	1.8
4-Bromofluorobenzene		0.437	0.436	0.470	0.476	0.486	0.461	5
1,4-Dioxane	11.730	10.995	9.885	9.932	10.080	9.893	10.419	7.4

* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: WATE05

Lab Code: CHEM Case No.: K2902 SAS No.: K2902 SDG No.: K2902

Instrument ID: MSVOA_N Calibration Date/Time: 05/17/2019 13:06

Lab File ID: VN055606.D Init. Calib. Date(s): 05/17/2019 05/17/2019

Heated Purge: (Y/N) N Init. Calib. Time(s): 09:29 11:26

GC Column: RXI-624 ID: 0.25 (mm)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX%D
Dichlorodifluoromethane	0.385	0.350		-9.09	20
Chloromethane	0.513	0.454	0.1	-11.5	20
Vinyl Chloride	0.556	0.495		-10.97	20
Bromomethane	0.354	0.330		-6.78	20
Chloroethane	0.309	0.285		-7.77	20
Trichlorofluoromethane	0.712	0.662		-7.02	20
1,1,2-Trichlorotrifluoroethane	0.434	0.414		-4.61	20
1,1-Dichloroethene	0.457	0.415		-9.19	20
Acetone	0.224	0.224		0	20
Carbon Disulfide	1.269	1.151		-9.3	20
Methyl tert-butyl Ether	1.511	1.371		-9.27	20
Methyl Acetate	0.480	0.435		-9.38	20
Methylene Chloride	0.510	0.449		-11.96	20
trans-1,2-Dichloroethene	0.486	0.446		-8.23	20
1,1-Dichloroethane	0.856	0.791	0.1	-7.59	20
Cyclohexane	0.813	0.740		-8.98	20
2-Butanone	0.313	0.303		-3.19	20
Carbon Tetrachloride	0.476	0.441		-7.35	20
cis-1,2-Dichloroethene	0.566	0.513		-9.36	20
Bromochloromethane	0.373	0.361		-3.22	20
Chloroform	0.879	0.796		-9.44	20
1,1,1-Trichloroethane	0.789	0.708		-10.27	20
Methylcyclohexane	0.537	0.533		-0.75	20
Benzene	1.311	1.253		-4.42	20
1,2-Dichloroethane	0.425	0.411		-3.29	20
Trichloroethene	0.370	0.361		-2.43	20
1,2-Dichloropropane	0.345	0.331		-4.06	20
Bromodichloromethane	0.474	0.447		-5.7	20
4-Methyl-2-Pentanone	0.410	0.393		-4.15	20
Toluene	0.822	0.796		-3.16	20
t-1,3-Dichloropropene	0.510	0.509		-0.2	20
cis-1,3-Dichloropropene	0.559	0.550		-1.61	20
1,1,2-Trichloroethane	0.339	0.317		-6.49	20
2-Hexanone	0.289	0.290		0.35	20
Dibromochloromethane	0.384	0.371		-3.38	20
1,2-Dibromoethane	0.339	0.328		-3.24	20
Tetrachloroethene	0.394	0.373		-5.33	20
Chlorobenzene	1.011	0.963	0.3	-4.75	20
Ethyl Benzene	1.802	1.720		-4.55	20

All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

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VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: WATE05

Lab Code: CHEM Case No.: K2902 SAS No.: K2902 SDG No.: K2902

Instrument ID: MSVOA_N Calibration Date/Time: 05/17/2019 13:06

Lab File ID: VN055606.D Init. Calib. Date(s): 05/17/2019 05/17/2019

Heated Purge: (Y/N) N Init. Calib. Time(s): 09:29 11:26

GC Column: RXI-624 ID: 0.25 (mm)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX%D
m/p-Xylenes	0.680	0.659		-3.09	20
o-Xylene	0.665	0.636		-4.36	20
Styrene	1.106	1.090		-1.45	20
Bromoform	0.345	0.335	0.1	-2.9	20
Isopropylbenzene	4.076	3.538		-13.2	20
1,1,2,2-Tetrachloroethane	1.259	1.067	0.3	-15.25	20
1,3-Dichlorobenzene	1.698	1.613		-5.01	20
1,4-Dichlorobenzene	1.621	1.580		-2.53	20
1,2-Dichlorobenzene	1.692	1.574		-6.97	20
1,2-Dibromo-3-Chloropropane	0.227	0.214		-5.73	20
1,2,4-Trichlorobenzene	0.862	0.939		8.93	20
1,2,3-Trichlorobenzene	0.901	0.924		2.55	20
1,2-Dichloroethane-d4	0.548	0.520		-5.11	20
Dibromofluoromethane	0.318	0.319		0.31	20
Toluene-d8	1.201	1.207		0.5	20
4-Bromofluorobenzene	0.415	0.427		2.89	20
1,4-Dioxane	6.215	6.288	0.05	1.17	50

All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: WATE05

Lab Code: CHEM Case No.: K2902 SAS No.: K2902 SDG No.: K2902

Instrument ID: MSVOA_N Calibration Date/Time: 05/18/2019 00:14

Lab File ID: VN055633.D Init. Calib. Date(s): 05/17/2019 05/17/2019

Heated Purge: (Y/N) N Init. Calib. Time(s): 09:29 11:26

GC Column: RXI-624 ID: 0.25 (mm)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX%D
Dichlorodifluoromethane	0.385	0.346		-10.13	50
Chloromethane	0.513	0.451	0.1	-12.09	50
Vinyl Chloride	0.556	0.523		-5.93	50
Bromomethane	0.354	0.344		-2.83	50
Chloroethane	0.309	0.298		-3.56	50
Trichlorofluoromethane	0.712	0.684		-3.93	50
1,1,2-Trichlorotrifluoroethane	0.434	0.410		-5.53	50
1,1-Dichloroethene	0.457	0.430		-5.91	50
Acetone	0.224	0.189		-15.63	50
Carbon Disulfide	1.269	1.170		-7.8	50
Methyl tert-butyl Ether	1.511	1.467		-2.91	50
Methyl Acetate	0.480	0.483		0.63	50
Methylene Chloride	0.510	0.478		-6.28	50
trans-1,2-Dichloroethene	0.486	0.466		-4.11	50
1,1-Dichloroethane	0.856	0.824	0.1	-3.74	50
Cyclohexane	0.813	0.743		-8.61	50
2-Butanone	0.313	0.308		-1.6	50
Carbon Tetrachloride	0.476	0.440		-7.56	50
cis-1,2-Dichloroethene	0.566	0.548		-3.18	50
Bromochloromethane	0.373	0.374		0.27	50
Chloroform	0.879	0.838		-4.66	50
1,1,1-Trichloroethane	0.789	0.739		-6.34	50
Methylcyclohexane	0.537	0.478		-10.99	50
Benzene	1.311	1.265		-3.51	50
1,2-Dichloroethane	0.425	0.414		-2.59	50
Trichloroethene	0.370	0.368		-0.54	50
1,2-Dichloropropane	0.345	0.330		-4.35	50
Bromodichloromethane	0.474	0.452		-4.64	50
4-Methyl-2-Pentanone	0.410	0.407		-0.73	50
Toluene	0.822	0.792		-3.65	50
t-1,3-Dichloropropene	0.510	0.486		-4.71	50
cis-1,3-Dichloropropene	0.559	0.528		-5.55	50
1,1,2-Trichloroethane	0.339	0.326		-3.84	50
2-Hexanone	0.289	0.288		-0.35	50
Dibromochloromethane	0.384	0.386		0.52	50
1,2-Dibromoethane	0.339	0.339		0	50
Tetrachloroethene	0.394	0.391		-0.76	50
Chlorobenzene	1.011	0.978	0.3	-3.26	50
Ethyl Benzene	1.802	1.705		-5.38	50

All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

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VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: WATE05

Lab Code: CHEM Case No.: K2902 SAS No.: K2902 SDG No.: K2902

Instrument ID: MSVOA_N Calibration Date/Time: 05/18/2019 00:14

Lab File ID: VN055633.D Init. Calib. Date(s): 05/17/2019 05/17/2019

Heated Purge: (Y/N) N Init. Calib. Time(s): 09:29 11:26

GC Column: RXI-624 ID: 0.25 (mm)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX%D
m/p-Xylenes	0.680	0.646		-5	50
o-Xylene	0.665	0.629		-5.41	50
Styrene	1.106	1.087		-1.72	50
Bromoform	0.345	0.352	0.1	2.03	50
Isopropylbenzene	4.076	3.627		-11.02	50
1,1,2,2-Tetrachloroethane	1.259	1.140	0.3	-9.45	50
1,3-Dichlorobenzene	1.698	1.613		-5.01	50
1,4-Dichlorobenzene	1.621	1.586		-2.22	50
1,2-Dichlorobenzene	1.692	1.577		-6.8	50
1,2-Dibromo-3-Chloropropane	0.227	0.221		-2.64	50
1,2,4-Trichlorobenzene	0.862	0.925		7.31	50
1,2,3-Trichlorobenzene	0.901	0.932		3.44	50
1,2-Dichloroethane-d4	0.548	0.544		-0.73	50
Dibromofluoromethane	0.318	0.321		0.94	50
Toluene-d8	1.201	1.195		-0.5	50
4-Bromofluorobenzene	0.415	0.412		-0.72	50
1,4-Dioxane	6.215	6.645	0.05	6.92	50

All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

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VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: WATE05

Lab Code: CHEM Case No.: K2902 SAS No.: K2902 SDG No.: K2902

Instrument ID: MSVOA_X Calibration Date/Time: 05/22/2019 00:44

Lab File ID: VX009770.D Init. Calib. Date(s): 04/29/2019 04/29/2019

Heated Purge: (Y/N) N Init. Calib. Time(s): 11:47 13:43

GC Column: DB-624UI ID: 0.18 (mm)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX%D
Dichlorodifluoromethane	0.461	0.432		-6.29	20
Chloromethane	0.629	0.638	0.1	1.43	20
Vinyl Chloride	0.613	0.640		4.41	20
Bromomethane	0.368	0.413		12.23	20
Chloroethane	0.394	0.427		8.38	20
Trichlorofluoromethane	0.746	0.754		1.07	20
1,1,2-Trichlorotrifluoroethane	0.468	0.452		-3.42	20
1,1-Dichloroethene	0.469	0.477		1.71	20
Acetone	0.367	0.348		-5.18	20
Carbon Disulfide	1.317	1.423		8.05	20
Methyl tert-butyl Ether	1.822	1.847		1.37	20
Methyl Acetate	0.872	0.854		-2.06	20
Methylene Chloride	0.593	0.579		-2.36	20
trans-1,2-Dichloroethene	0.509	0.525		3.14	20
1,1-Dichloroethane	1.085	1.090	0.1	0.46	20
Cyclohexane	1.009	1.060		5.05	20
2-Butanone	0.570	0.599		5.09	20
Carbon Tetrachloride	0.422	0.427		1.18	20
cis-1,2-Dichloroethene	0.607	0.609		0.33	20
Bromochloromethane	0.487	0.563		15.61	20
Chloroform	0.981	0.994		1.33	20
1,1,1-Trichloroethane	0.817	0.826		1.1	20
Methylcyclohexane	0.571	0.563		-1.4	20
Benzene	1.438	1.435		-0.21	20
1,2-Dichloroethane	0.516	0.522		1.16	20
Trichloroethene	0.348	0.335		-3.74	20
1,2-Dichloropropane	0.407	0.411		0.98	20
Bromodichloromethane	0.472	0.474		0.42	20
4-Methyl-2-Pentanone	0.677	0.733		8.27	20
Toluene	0.874	0.873		-0.11	20
t-1,3-Dichloropropene	0.533	0.539		1.13	20
cis-1,3-Dichloropropene	0.589	0.589		0	20
1,1,2-Trichloroethane	0.357	0.355		-0.56	20
2-Hexanone	0.532	0.567		6.58	20
Dibromochloromethane	0.348	0.356		2.3	20
1,2-Dibromoethane	0.360	0.365		1.39	20
Tetrachloroethene	0.343	0.344		0.29	20
Chlorobenzene	1.000	0.999	0.3	-0.1	20
Ethyl Benzene	1.841	1.868		1.47	20

All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: WATE05

Lab Code: CHEM Case No.: K2902 SAS No.: K2902 SDG No.: K2902

Instrument ID: MSVOA_X Calibration Date/Time: 05/22/2019 00:44

Lab File ID: VX009770.D Init. Calib. Date(s): 04/29/2019 04/29/2019

Heated Purge: (Y/N) N Init. Calib. Time(s): 11:47 13:43

GC Column: DB-624UI ID: 0.18 (mm)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX%D
m/p-Xylenes	0.673	0.682		1.34	20
o-Xylene	0.664	0.667		0.45	20
Styrene	1.154	1.185		2.69	20
Bromoform	0.295	0.303	0.1	2.71	20
Isopropylbenzene	3.636	3.577		-1.62	20
1,1,2,2-Tetrachloroethane	1.355	1.319	0.3	-2.66	20
1,3-Dichlorobenzene	1.609	1.579		-1.87	20
1,4-Dichlorobenzene	1.622	1.591		-1.91	20
1,2-Dichlorobenzene	1.639	1.577		-3.78	20
1,2-Dibromo-3-Chloropropane	0.304	0.310		1.97	20
1,2,4-Trichlorobenzene	1.121	1.089		-2.86	20
1,2,3-Trichlorobenzene	1.136	1.123		-1.14	20
1,2-Dichloroethane-d4	0.683	0.709		3.81	20
Dibromofluoromethane	0.314	0.312		-0.64	20
Toluene-d8	1.269	1.282		1.02	20
4-Bromofluorobenzene	0.461	0.468		1.52	20
1,4-Dioxane	10.419	10.325	0.05	-0.91	50

All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: WATE05

Lab Code: CHEM Case No.: K2902 SAS No.: K2902 SDG No.: K2902

Instrument ID: MSVOA_X Calibration Date/Time: 05/22/2019 09:17

Lab File ID: VX009791.D Init. Calib. Date(s): 04/29/2019 04/29/2019

Heated Purge: (Y/N) N Init. Calib. Time(s): 11:47 13:43

GC Column: DB-624UI ID: 0.18 (mm)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX%D
Dichlorodifluoromethane	0.461	0.434		-5.86	50
Chloromethane	0.629	0.664	0.1	5.56	50
Vinyl Chloride	0.613	0.645		5.22	50
Bromomethane	0.368	0.373		1.36	50
Chloroethane	0.394	0.414		5.08	50
Trichlorofluoromethane	0.746	0.785		5.23	50
1,1,2-Trichlorotrifluoroethane	0.468	0.453		-3.2	50
1,1-Dichloroethene	0.469	0.480		2.35	50
Acetone	0.367	0.353		-3.82	50
Carbon Disulfide	1.317	1.407		6.83	50
Methyl tert-butyl Ether	1.822	1.875		2.91	50
Methyl Acetate	0.872	0.861		-1.26	50
Methylene Chloride	0.593	0.594		0.17	50
trans-1,2-Dichloroethene	0.509	0.525		3.14	50
1,1-Dichloroethane	1.085	1.114	0.1	2.67	50
Cyclohexane	1.009	1.077		6.74	50
2-Butanone	0.570	0.596		4.56	50
Carbon Tetrachloride	0.422	0.420		-0.47	50
cis-1,2-Dichloroethene	0.607	0.613		0.99	50
Bromochloromethane	0.487	0.589		20.94	50
Chloroform	0.981	1.012		3.16	50
1,1,1-Trichloroethane	0.817	0.838		2.57	50
Methylcyclohexane	0.571	0.552		-3.33	50
Benzene	1.438	1.440		0.14	50
1,2-Dichloroethane	0.516	0.528		2.33	50
Trichloroethene	0.348	0.334		-4.02	50
1,2-Dichloropropane	0.407	0.407		0	50
Bromodichloromethane	0.472	0.475		0.64	50
4-Methyl-2-Pentanone	0.677	0.720		6.35	50
Toluene	0.874	0.876		0.23	50
t-1,3-Dichloropropene	0.533	0.503		-5.63	50
cis-1,3-Dichloropropene	0.589	0.559		-5.09	50
1,1,2-Trichloroethane	0.357	0.349		-2.24	50
2-Hexanone	0.532	0.565		6.2	50
Dibromochloromethane	0.348	0.353		1.44	50
1,2-Dibromoethane	0.360	0.363		0.83	50
Tetrachloroethene	0.343	0.354		3.21	50
Chlorobenzene	1.000	0.977	0.3	-2.3	50
Ethyl Benzene	1.841	1.840		-0.05	50

All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: WATE05

Lab Code: CHEM Case No.: K2902 SAS No.: K2902 SDG No.: K2902

Instrument ID: MSVOA_X Calibration Date/Time: 05/22/2019 09:17

Lab File ID: VX009791.D Init. Calib. Date(s): 04/29/2019 04/29/2019

Heated Purge: (Y/N) N Init. Calib. Time(s): 11:47 13:43

GC Column: DB-624UI ID: 0.18 (mm)

COMPOUND	RRF	RRF050	MIN RRF	%D	MAX%D
m/p-Xylenes	0.673	0.677		0.59	50
o-Xylene	0.664	0.660		-0.6	50
Styrene	1.154	1.157		0.26	50
Bromoform	0.295	0.297	0.1	0.68	50
Isopropylbenzene	3.636	3.516		-3.3	50
1,1,2,2-Tetrachloroethane	1.355	1.309	0.3	-3.39	50
1,3-Dichlorobenzene	1.609	1.536		-4.54	50
1,4-Dichlorobenzene	1.622	1.560		-3.82	50
1,2-Dichlorobenzene	1.639	1.574		-3.97	50
1,2-Dibromo-3-Chloropropane	0.304	0.299		-1.64	50
1,2,4-Trichlorobenzene	1.121	1.062		-5.26	50
1,2,3-Trichlorobenzene	1.136	1.084		-4.58	50
1,2-Dichloroethane-d4	0.683	0.716		4.83	50
Dibromofluoromethane	0.314	0.310		-1.27	50
Toluene-d8	1.269	1.249		-1.65	50
4-Bromofluorobenzene	0.461	0.456		-1.09	50
1,4-Dioxane	10.419	10.443	0.05	0.23	50

All other compounds must meet a minimum RRF of 0.010.
RRF of 1,4-Dioxane = Value should be divide by 1000.

SAMPLE RAW DATA

Quantitation Report (QT Reviewed)

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055621.D
Acq On : 17 May 2019 19:31
Operator : JC/SP
Sample : K2902-01
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 26 Sample Multiplier: 1

Instrument : MSVOA_N
ClientSampleId : FM-EA-3MW05-051519

Quant Time: May 18 04:01:11 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260
QLast Update : Fri May 17 23:54:12 2019
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene	7.67	168	419438	50.00	ug/l	0.00
34) 1,4-Difluorobenzene	8.59	114	590933	50.00	ug/l	0.00
63) Chlorobenzene-d5	11.41	117	491941	50.00	ug/l	0.00
72) 1,4-Dichlorobenzene-d4	13.35	152	193544	50.00	ug/l	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4	8.03	65	197600	42.98	ug/l	0.00
Spiked Amount 50.000			Recovery =	85.96%		
35) Dibromofluoromethane	7.59	113	182712	48.67	ug/l	0.00
Spiked Amount 50.000			Recovery =	97.34%		
50) Toluene-d8	10.09	98	680217	47.92	ug/l	0.00
Spiked Amount 50.000			Recovery =	95.84%		
62) 4-Bromofluorobenzene	12.40	95	217375	44.35	ug/l	0.00
Spiked Amount 50.000			Recovery =	88.70%		

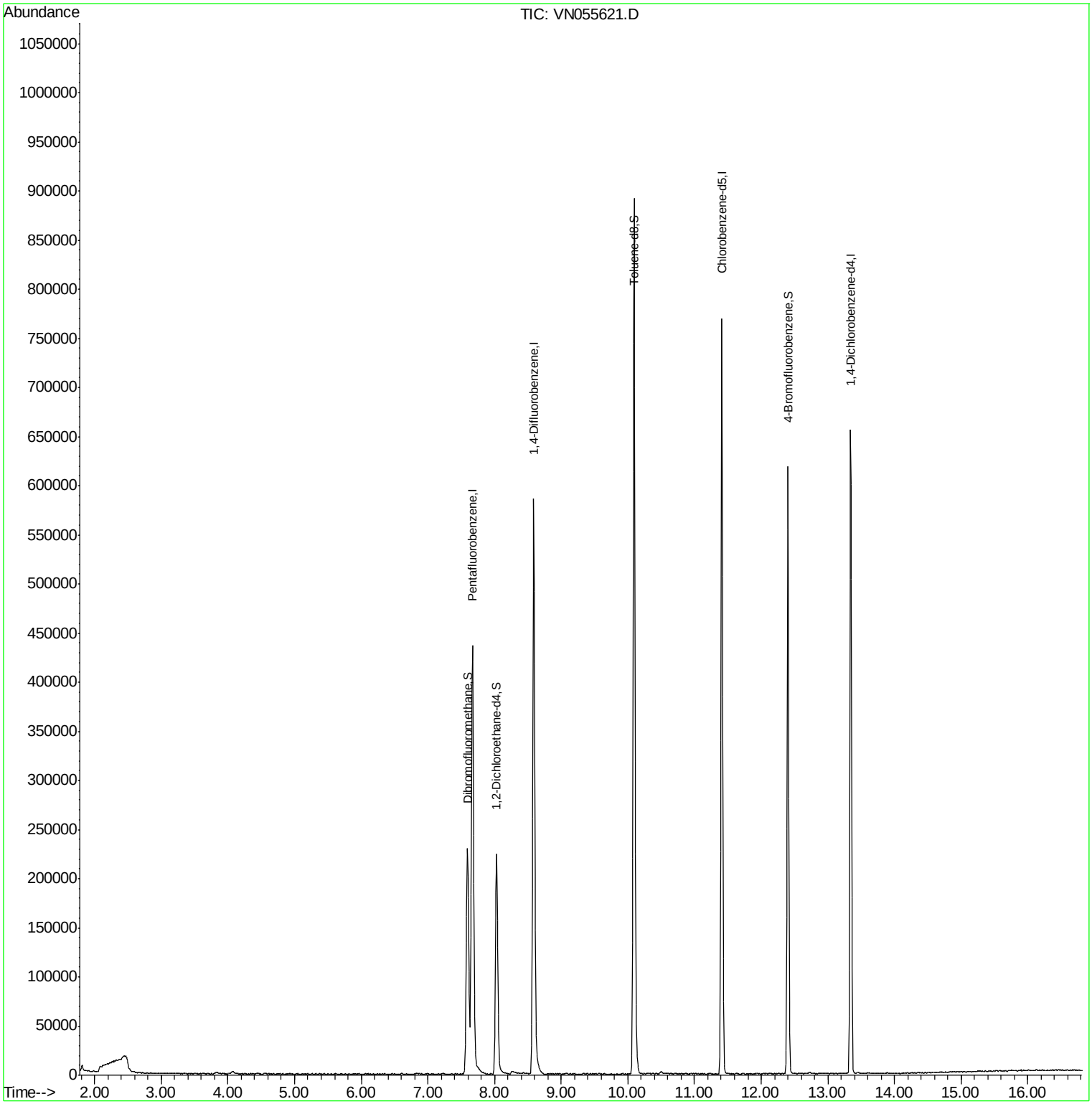
Target Compounds	Qvalue

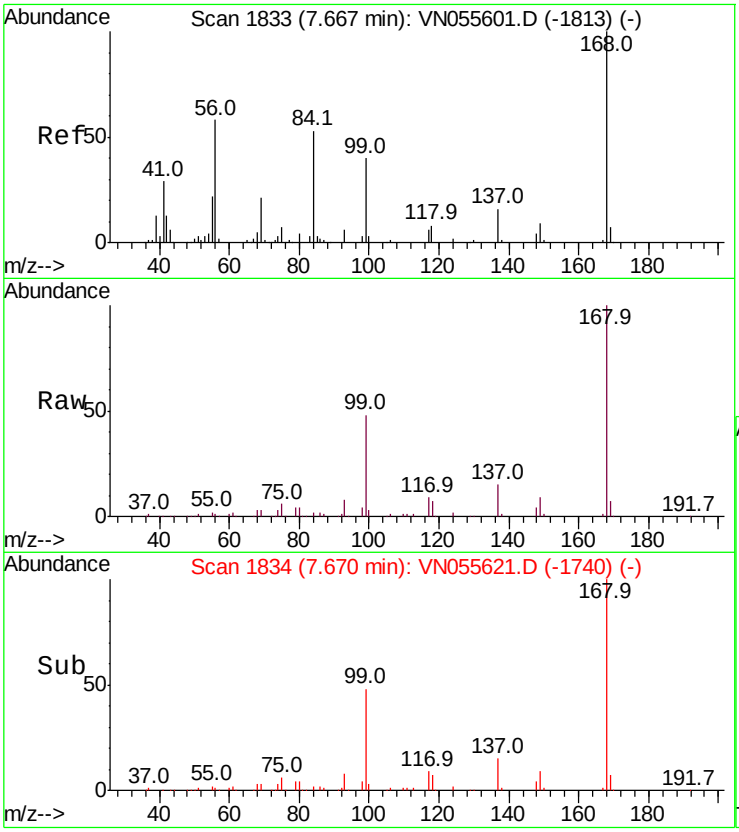
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055621.D
Acq On : 17 May 2019 19:31
Operator : JC/SP
Sample : K2902-01
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 26 Sample Multiplier: 1

Quant Time: May 18 04:01:11 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260
QLast Update : Fri May 17 23:54:12 2019
Response via : Initial Calibration

Instrument :
MSVOA_N
ClientSampleId :
FM-EA-3MW05-051519

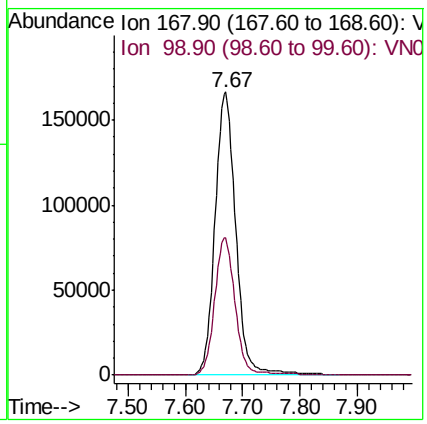


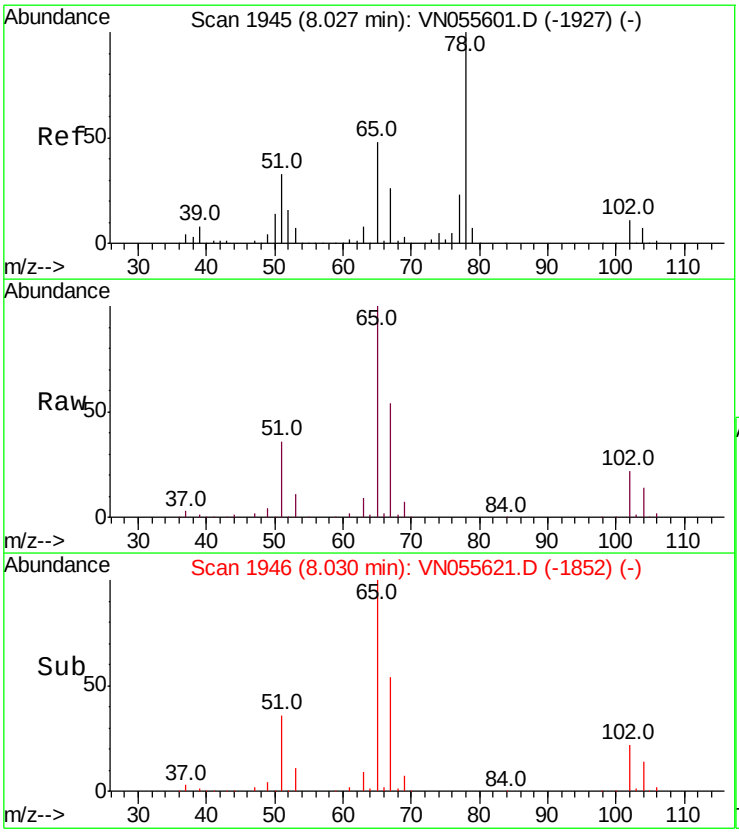


#1
Pentafluorobenzene
Concen: 50.000 ug/l
RT: 7.67 min Scan# 1834
Delta R.T. 0.00 min
Lab File: VN055621.D
Acq: 17 May 2019 19:31

Tgt Ion:168 Resp: 419438

Ion	Ratio	Lower	Upper
168	100		
99	48.4	40.2	60.2

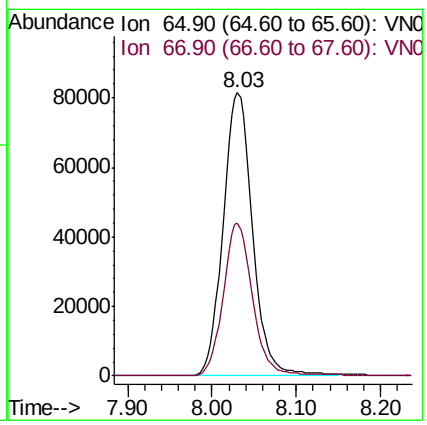


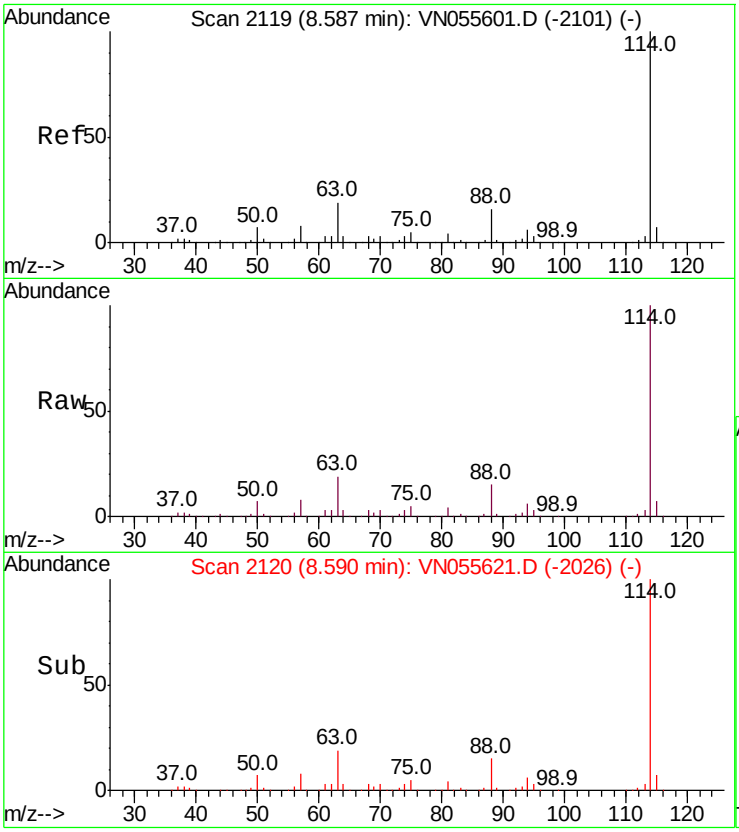


#33
1,2-Dichloroethane-d4
Concen: 42.976 ug/l
RT: 8.03 min Scan# 1946
Delta R.T. 0.00 min
Lab File: VN055621.D
Acq: 17 May 2019 19:31

Tgt Ion: 65 Resp: 197600

Ion	Ratio	Lower	Upper
65	100		
67	53.2	0.0	108.6

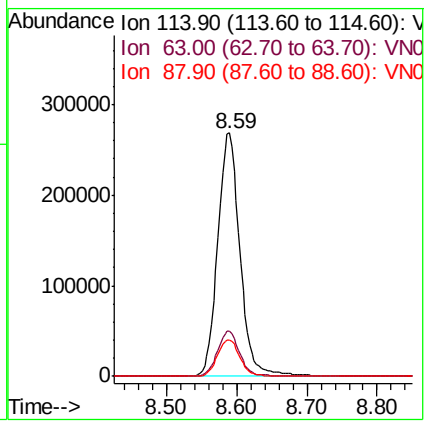


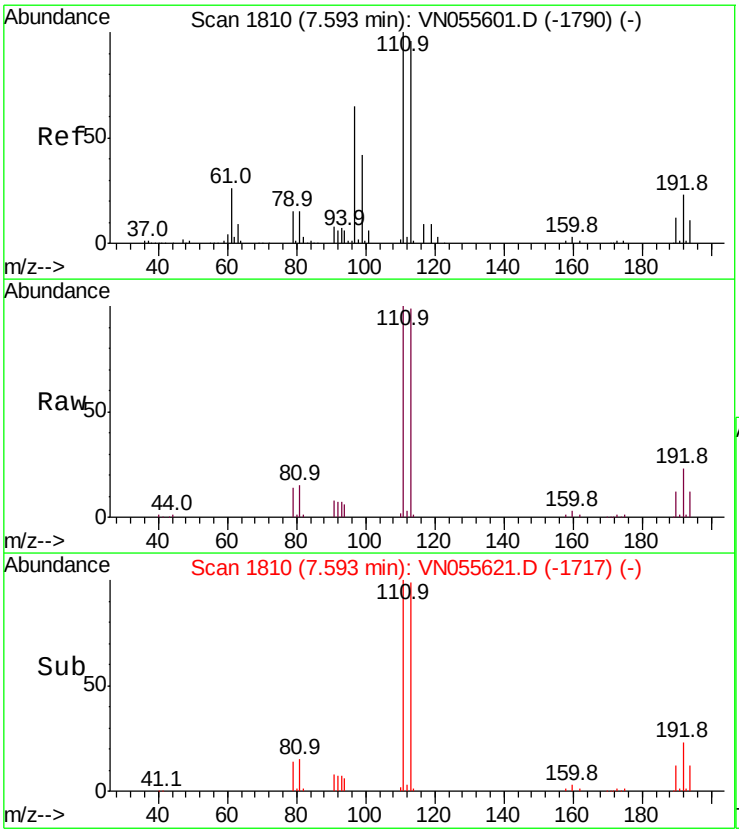


#34
1,4-Difluorobenzene
Concen: 50.000 ug/l
RT: 8.59 min Scan# 2120
Delta R.T. 0.00 min
Lab File: VN055621.D
Acq: 17 May 2019 19:31

Tgt Ion:114 Resp: 590933

Ion	Ratio	Lower	Upper
114	100		
63	18.8	0.0	38.2
88	15.1	0.0	31.0

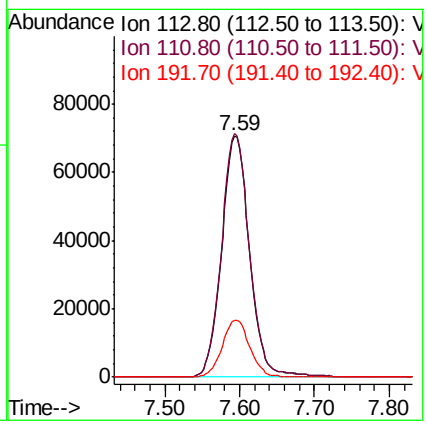


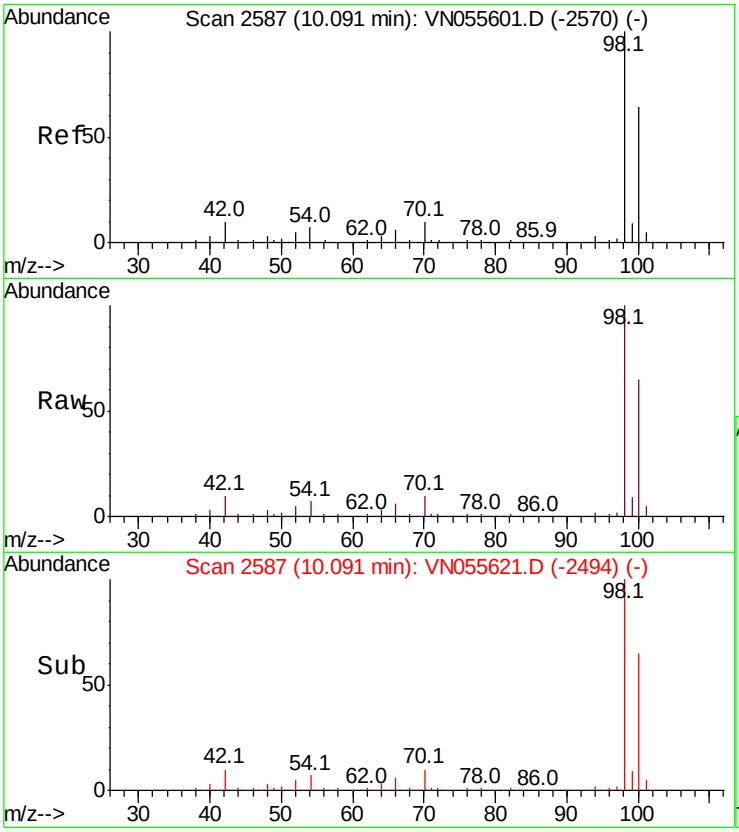


#35
Dibromofluoromethane
Concen: 48.673 ug/l
RT: 7.59 min Scan# 1810
Delta R.T. -0.00 min
Lab File: VN055621.D
Acq: 17 May 2019 19:31

Tgt Ion:113 Resp: 182712

Ion	Ratio	Lower	Upper
113	100		
111	101.3	82.5	123.7
192	23.5	18.7	28.1

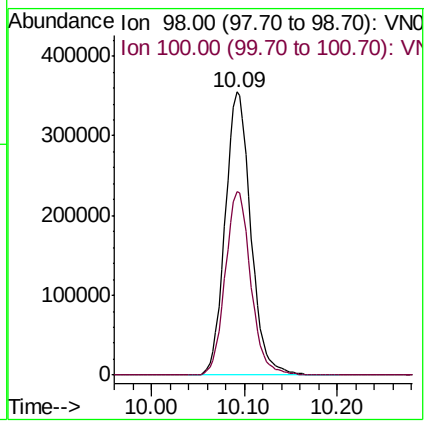


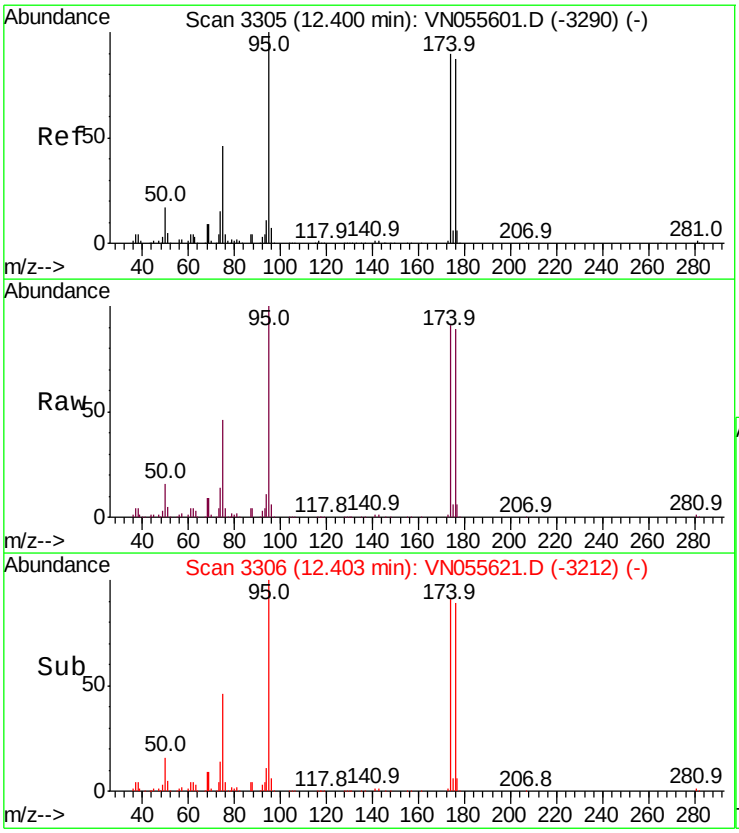


#50
Toluene-d8
Concen: 47.923 ug/l
RT: 10.09 min Scan# 2587
Delta R.T. -0.00 min
Lab File: VN055621.D
Acq: 17 May 2019 19:31

Tgt Ion: 98 Resp: 680217

Ion	Ratio	Lower	Upper
98	100		
100	64.5	51.9	77.9

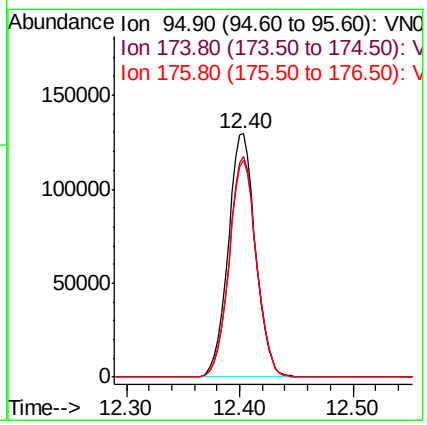


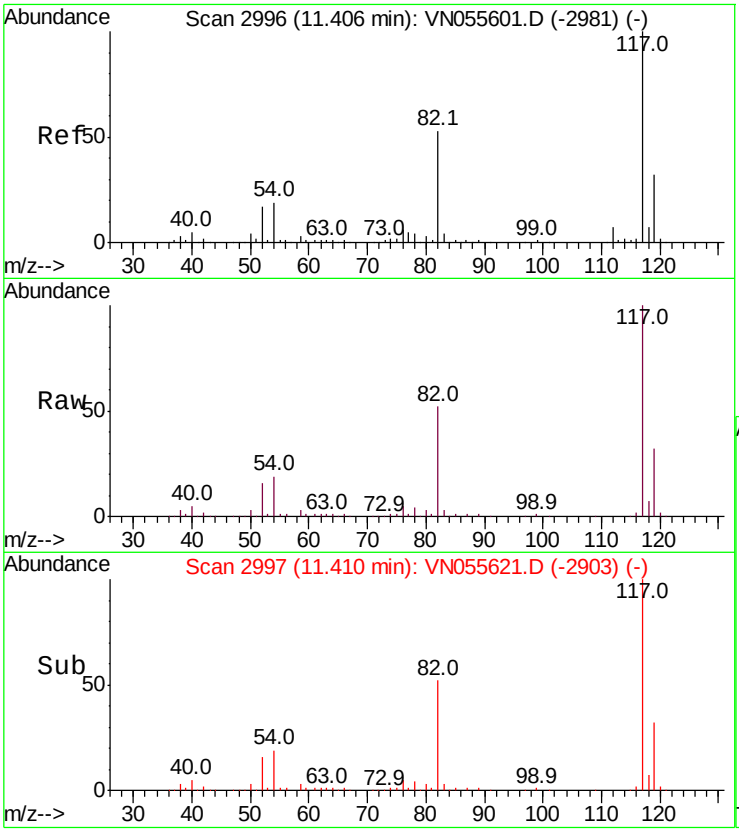


#62
4-Bromofluorobenzene
Concen: 44.350 ug/l
RT: 12.40 min Scan# 3306
Delta R.T. 0.00 min
Lab File: VN055621.D
Acq: 17 May 2019 19:31

Tgt Ion: 95 Resp: 217375

Ion	Ratio	Lower	Upper
95	100		
174	90.4	0.0	180.6
176	89.0	0.0	177.4

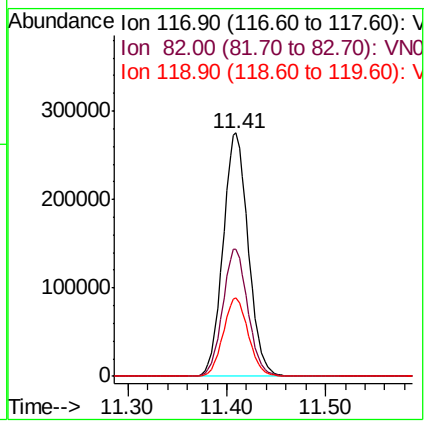


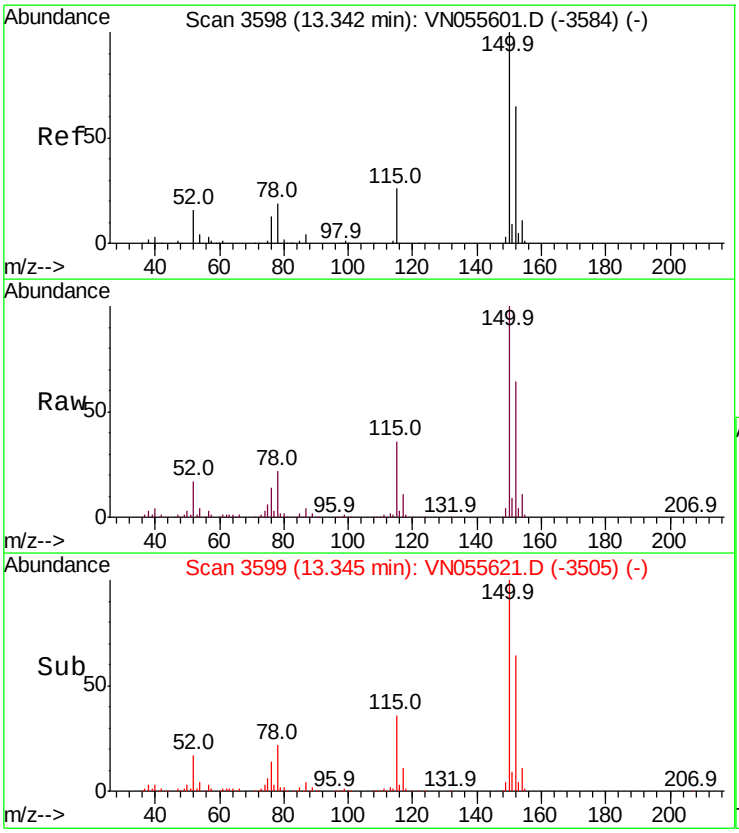


#63
Chlorobenzene-d5
Concen: 50.000 ug/l
RT: 11.41 min Scan# 2997
Delta R.T. 0.00 min
Lab File: VN055621.D
Acq: 17 May 2019 19:31

Tgt Ion:117 Resp: 491941

Ion	Ratio	Lower	Upper
117	100		
82	52.3	42.3	63.5
119	32.0	25.4	38.2

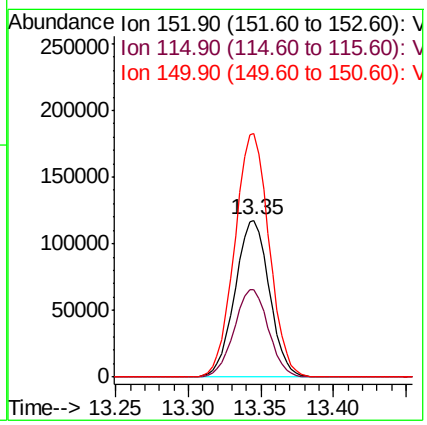




#72
1,4-Dichlorobenzene-d4
Concen: 50.000 ug/l
RT: 13.35 min Scan# 3599
Delta R.T. 0.00 min
Lab File: VN055621.D
Acq: 17 May 2019 19:31

Tgt Ion:152 Resp: 193544

Ion	Ratio	Lower	Upper
152	100		
115	55.7	28.1	84.2
150	156.0	0.0	348.0



LSC Area Percent Report

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055621.D
Acq On : 17 May 2019 19:31
Operator : JC/SP
Sample : K2902-01
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 26 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 3 % of largest Peak
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Title : SW846 8260

Signal : TIC

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	7.593	1792	1810	1821	rBV	229925	572693	33.40%	6.605%
2	7.670	1822	1834	1864	rVB	432610	1057305	61.67%	12.194%
3	8.030	1929	1946	1973	rBV	223769	536740	31.31%	6.190%
4	8.587	2102	2119	2160	rBV	585425	1283870	74.88%	14.807%
5	10.091	2572	2587	2621	rVB	891056	1714526	100.00%	19.774%
6	11.410	2983	2997	3019	rBV	769265	1378669	80.41%	15.901%
7	12.403	3292	3306	3322	rBV	617781	1037639	60.52%	11.967%
8	13.342	3585	3598	3617	rBV	655422	1089090	63.52%	12.561%

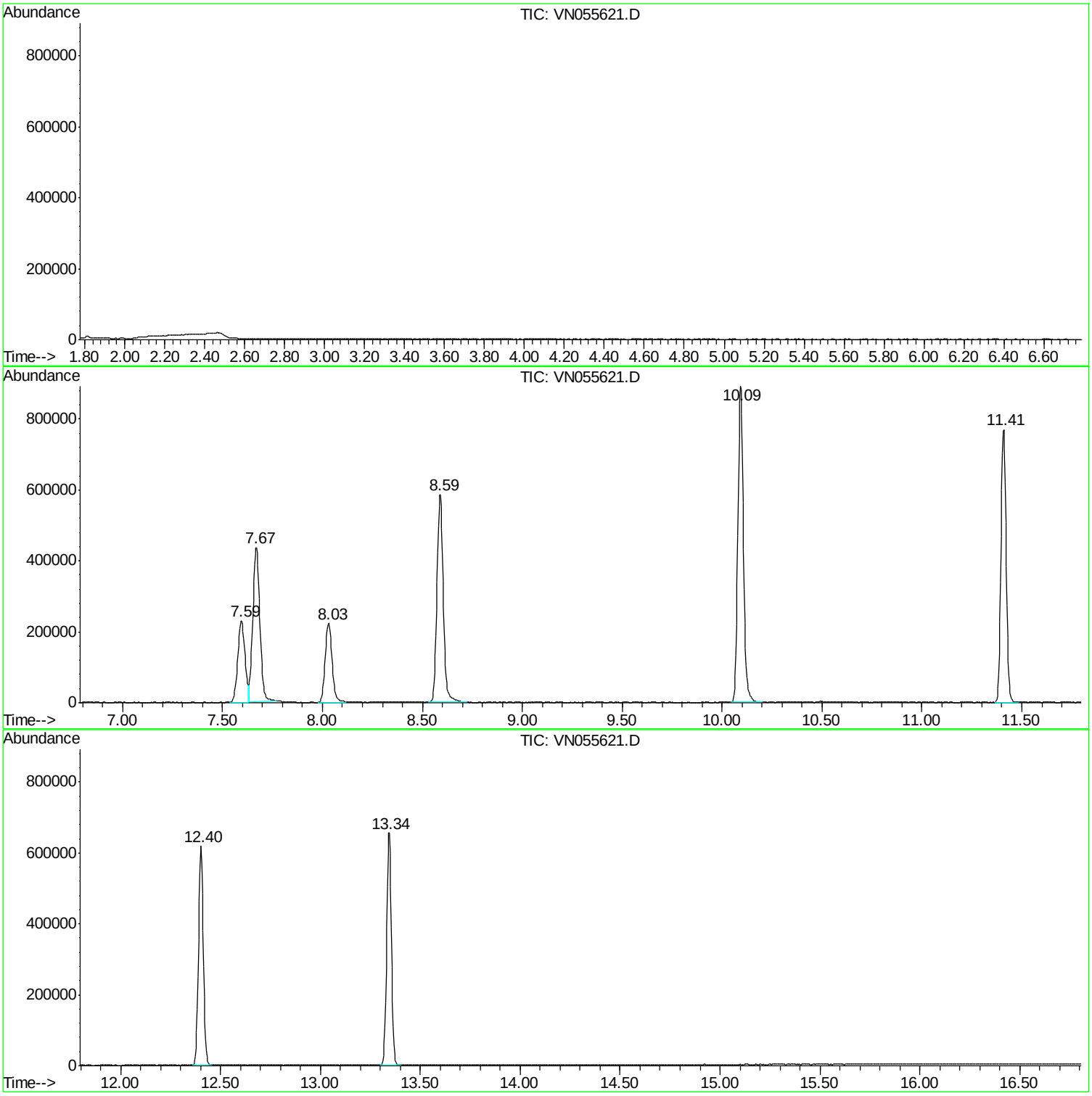
Sum of corrected areas: 8670532

Data Path : Z:\VOASRV\HPCHEM1\MSVOA N\DATA\VN051719\
Data File : VN055621.D
Acq On : 17 May 2019 19:31
Operator : JC/SP
Sample : K2902-01
Misc : 5.00mL/MSVOA N/WATER
ALS Vial : 26 Sample Multiplier: 1

Instrument :
MSVOA_N
ClientSampleId :
FM-EA-3MW05-051519

Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260

TIC Library : C:\DATABASE\NIST11.L
TIC Integration Parameters: LSCINT.P



5

Instrument :
MSVOA_N
ClientSampleId :
FM-EA-3MW05-051519

A B C D E F G H I J

Library Search Compound Report

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055621.D
Acq On : 17 May 2019 19:31
Operator : JC/SP
Sample : K2902-01
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 26 Sample Multiplier: 1

Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260

TIC Library : C:\DATABASE\NIST11.L
TIC Integration Parameters: LSCINT.P

No Library Search Compounds Detected

****

Tentatively Identified Compound (LSC) summary

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055621.D
Acq On : 17 May 2019 19:31
Operator : JC/SP
Sample : K2902-01
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 26 Sample Multiplier: 1

Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260

TIC Library : C:\DATABASE\NIST11.L
TIC Integration Parameters: LSCINT.P

					Internal Standard			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

Quantitation Report (QT Reviewed)

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055630.D
Acq On : 17 May 2019 23:03
Operator : JC/SP
Sample : K2902-02
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 35 Sample Multiplier: 1

Instrument : MSVOA_N
ClientSampleId : FM-EA-3MW01-051519

Quant Time: May 20 09:41:49 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260
QLast Update : Fri May 17 23:54:12 2019
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene	7.67	168	400097	50.00	ug/l	0.00
34) 1,4-Difluorobenzene	8.59	114	563218	50.00	ug/l	0.00
63) Chlorobenzene-d5	11.41	117	463924	50.00	ug/l	0.00
72) 1,4-Dichlorobenzene-d4	13.35	152	184569	50.00	ug/l	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4	8.03	65	186591	42.54	ug/l	0.00
Spiked Amount 50.000			Recovery =	85.08%		
35) Dibromofluoromethane	7.59	113	171654	47.98	ug/l	0.00
Spiked Amount 50.000			Recovery =	95.96%		
50) Toluene-d8	10.09	98	647920	47.89	ug/l	0.00
Spiked Amount 50.000			Recovery =	95.78%		
62) 4-Bromofluorobenzene	12.40	95	203483	43.56	ug/l	0.00
Spiked Amount 50.000			Recovery =	87.12%		

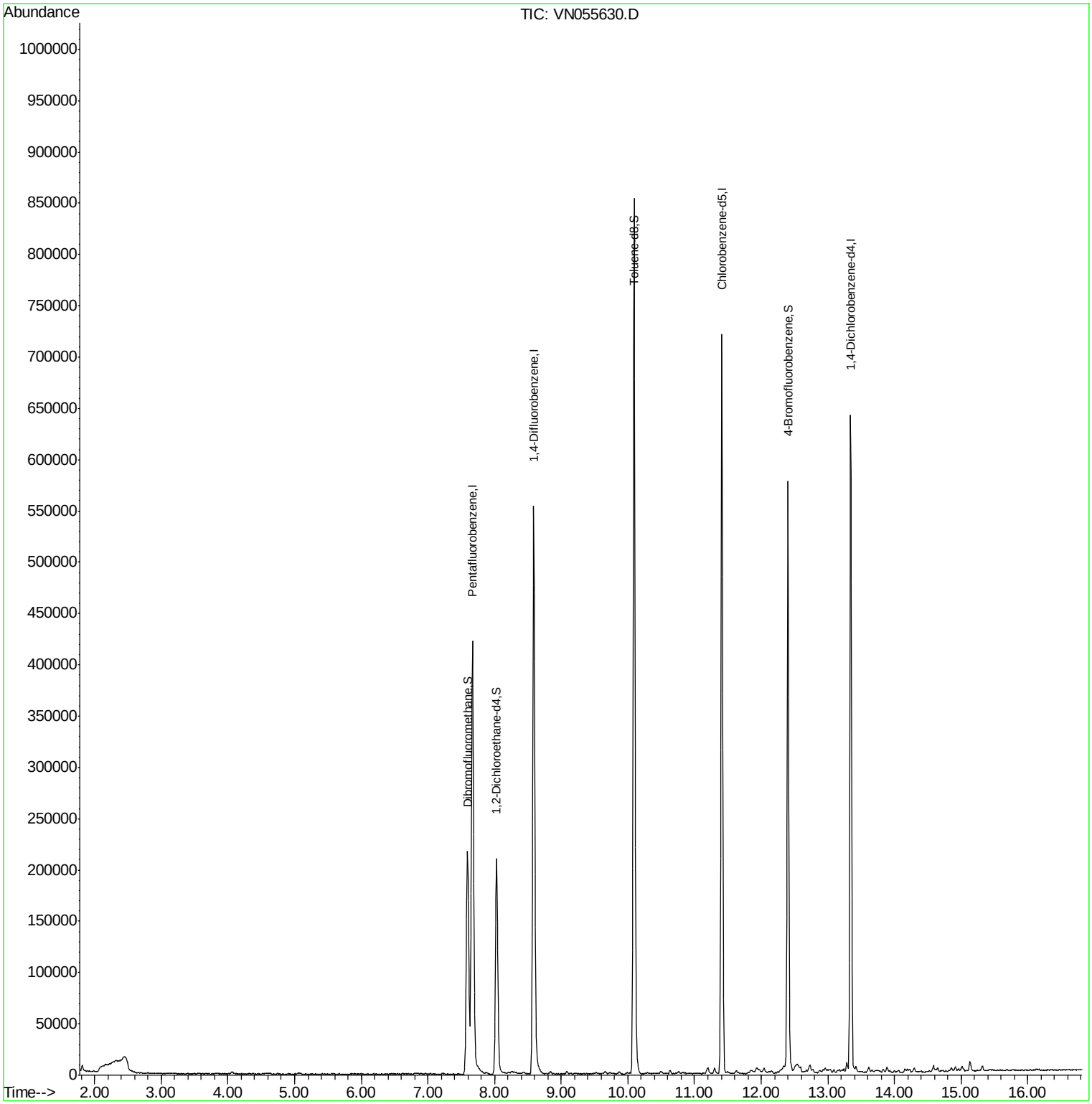
Target Compounds	Qvalue

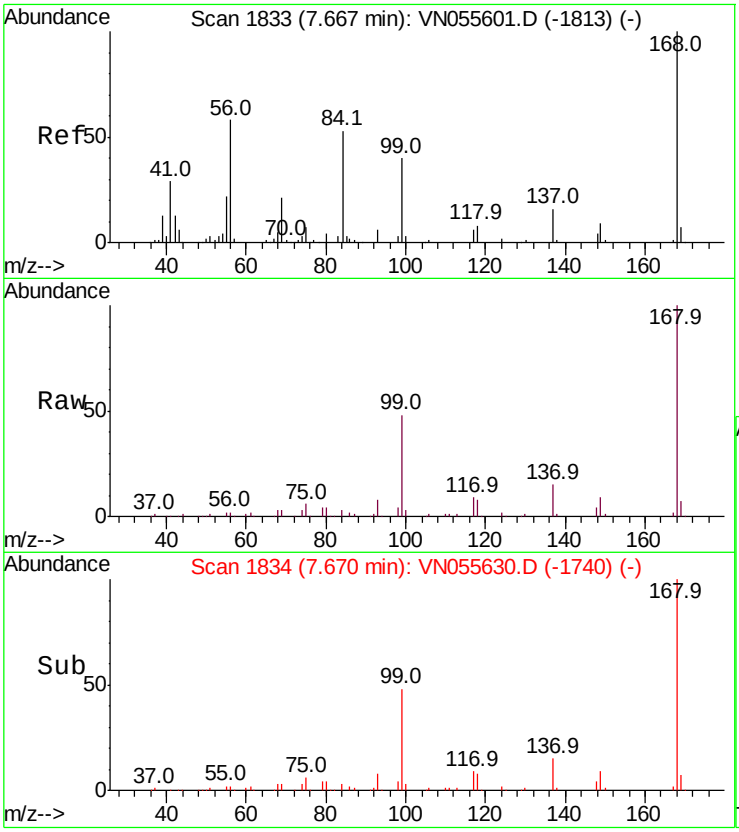
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055630.D
Acq On : 17 May 2019 23:03
Operator : JC/SP
Sample : K2902-02
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 35 Sample Multiplier: 1

Quant Time: May 20 09:41:49 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260
QLast Update : Fri May 17 23:54:12 2019
Response via : Initial Calibration

Instrument :
MSVOA_N
ClientSampleId :
FM-EA-3MW01-051519

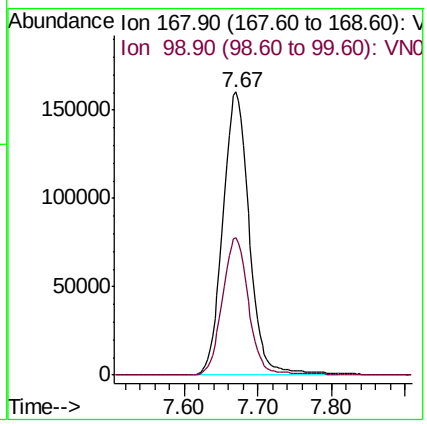


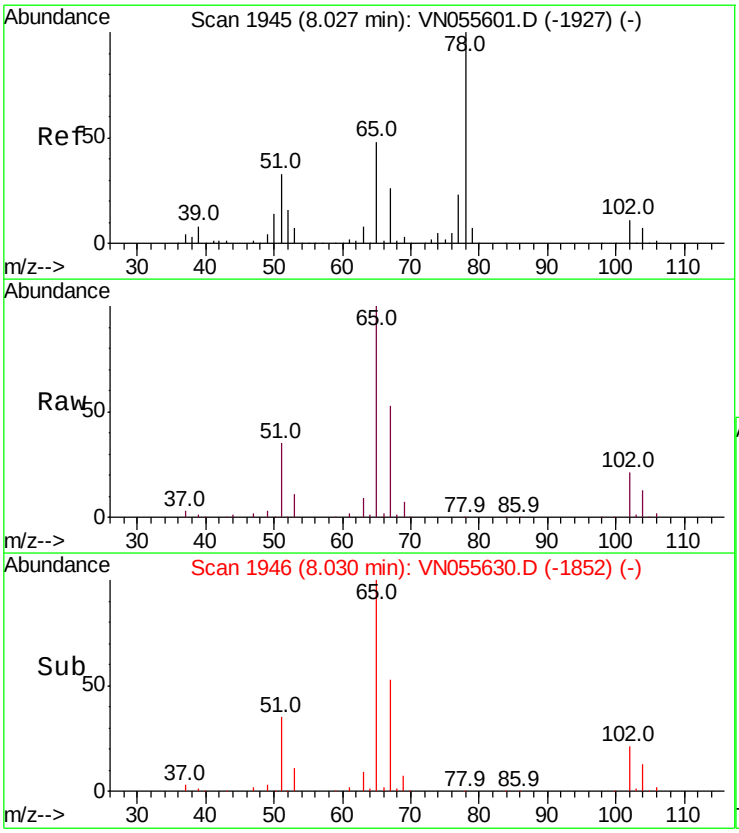


#1
Pentafluorobenzene
Concen: 50.000 ug/l
RT: 7.67 min Scan# 1834
Delta R.T. 0.00 min
Lab File: VN055630.D
Acq: 17 May 2019 23:03

Tgt Ion:168 Resp: 400097

Ion	Ratio	Lower	Upper
168	100		
99	48.3	40.2	60.2

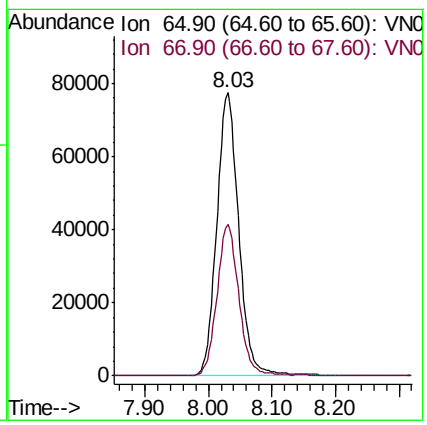


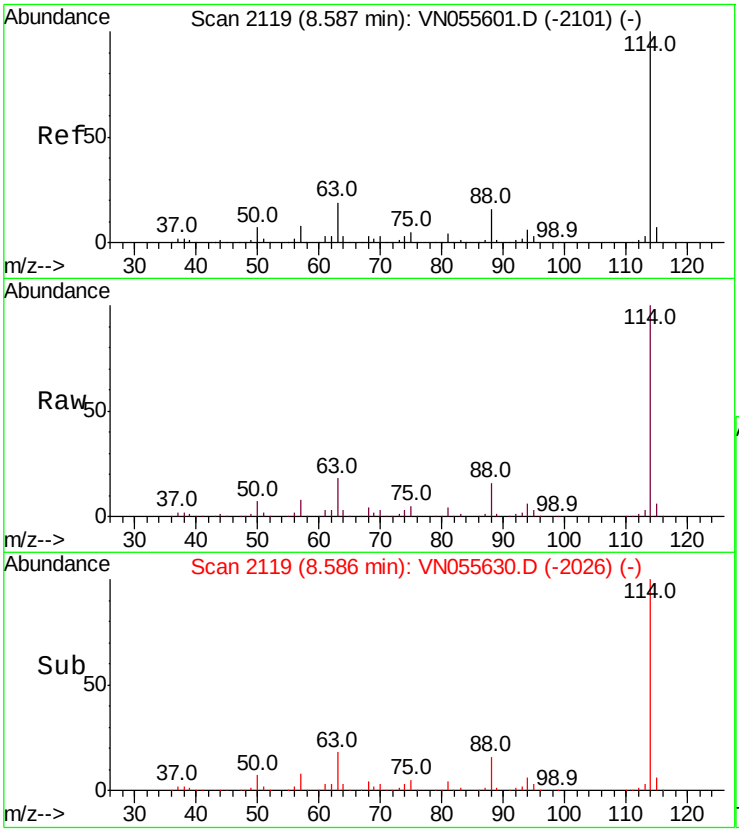


#33
1,2-Dichloroethane-d4
Concen: 42.544 ug/l
RT: 8.03 min Scan# 1946
Delta R.T. 0.00 min
Lab File: VN055630.D
Acq: 17 May 2019 23:03

Tgt Ion: 65 Resp: 186591

Ion	Ratio	Lower	Upper
65	100		
67	53.0	0.0	108.6

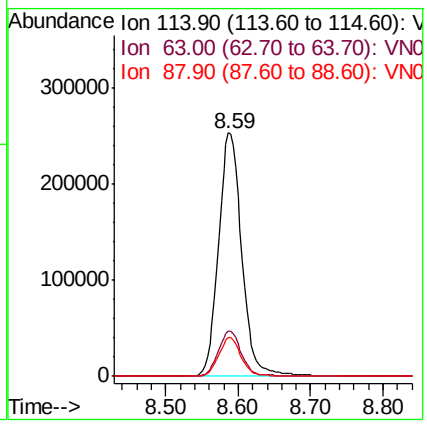


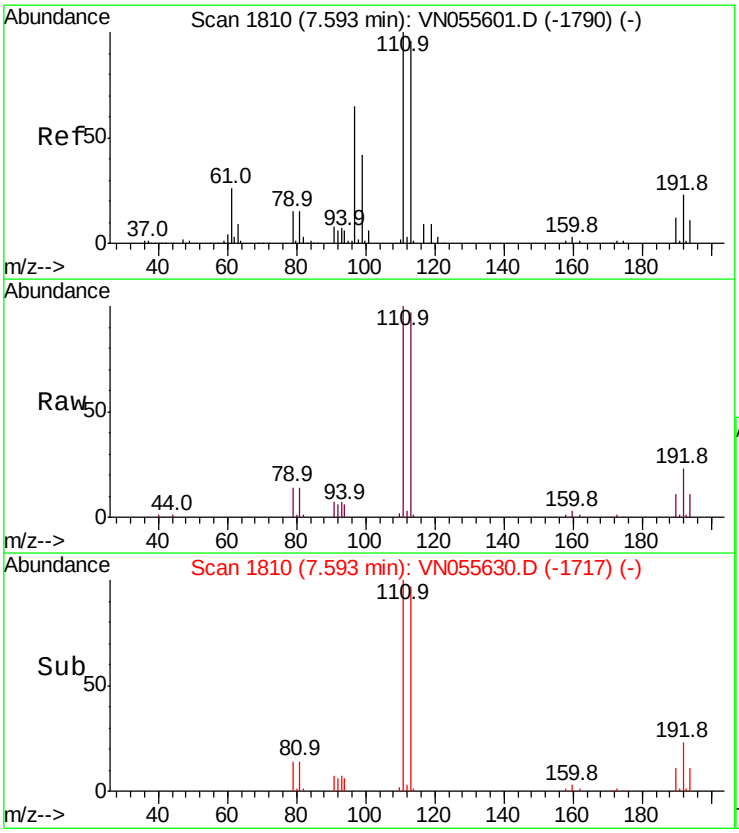


#34
1,4-Difluorobenzene
Concen: 50.000 ug/l
RT: 8.59 min Scan# 2119
Delta R.T. -0.00 min
Lab File: VN055630.D
Acq: 17 May 2019 23:03

Tgt Ion:114 Resp: 563218

Ion	Ratio	Lower	Upper
114	100		
63	18.5	0.0	38.2
88	15.9	0.0	31.0

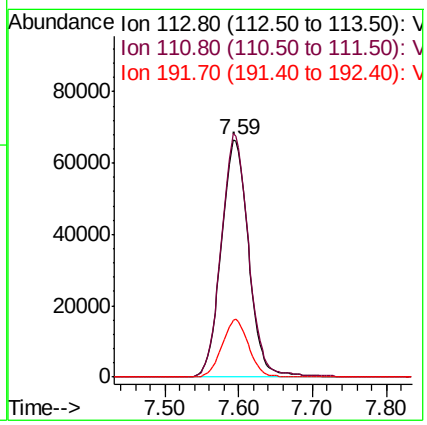


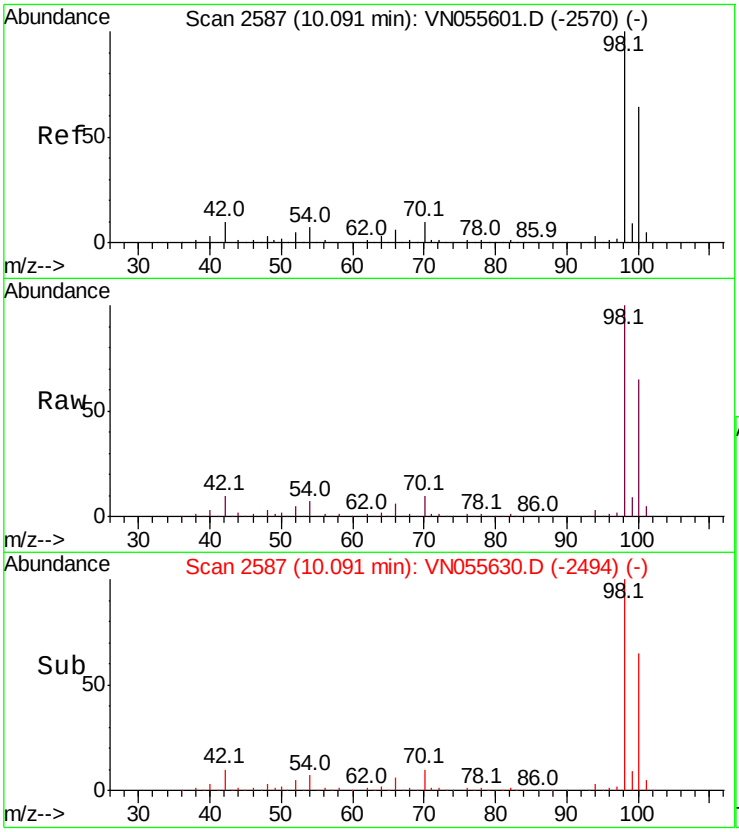


#35
Dibromofluoromethane
Concen: 47.977 ug/l
RT: 7.59 min Scan# 1810
Delta R.T. -0.00 min
Lab File: VN055630.D
Acq: 17 May 2019 23:03

Tgt Ion:113 Resp: 171654

Ion	Ratio	Lower	Upper
113	100		
111	102.1	82.5	123.7
192	23.5	18.7	28.1

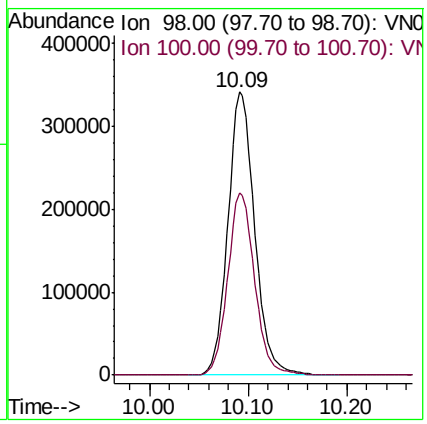


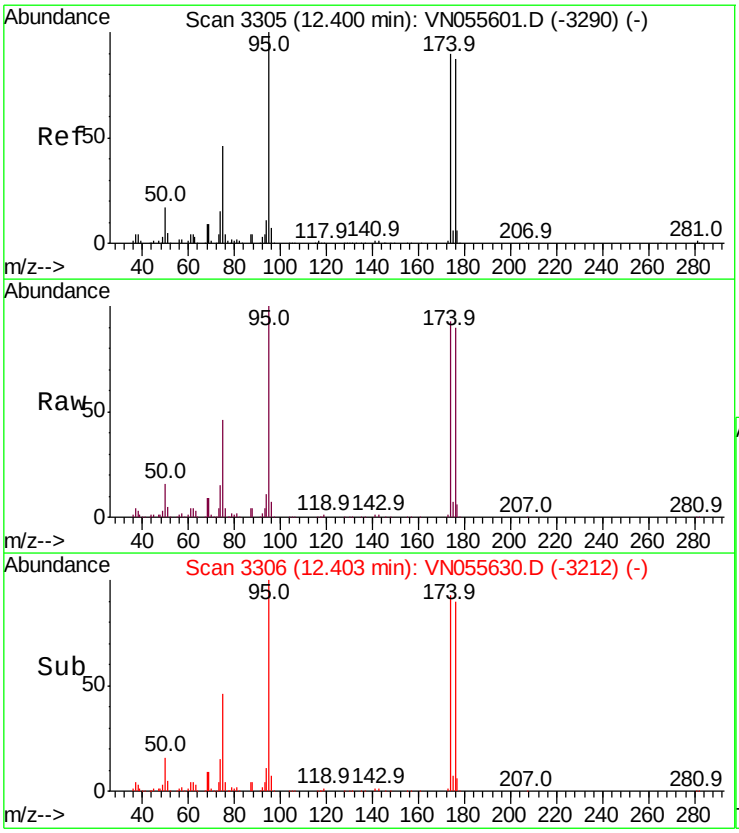


#50
Toluene-d8
Concen: 47.894 ug/l
RT: 10.09 min Scan# 2587
Delta R.T. -0.00 min
Lab File: VN055630.D
Acq: 17 May 2019 23:03

Tgt Ion: 98 Resp: 647920

Ion	Ratio	Lower	Upper
98	100		
100	64.8	51.9	77.9

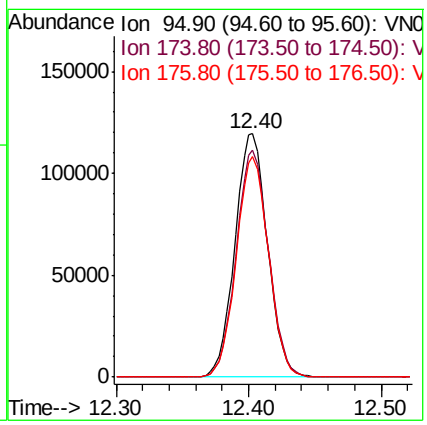


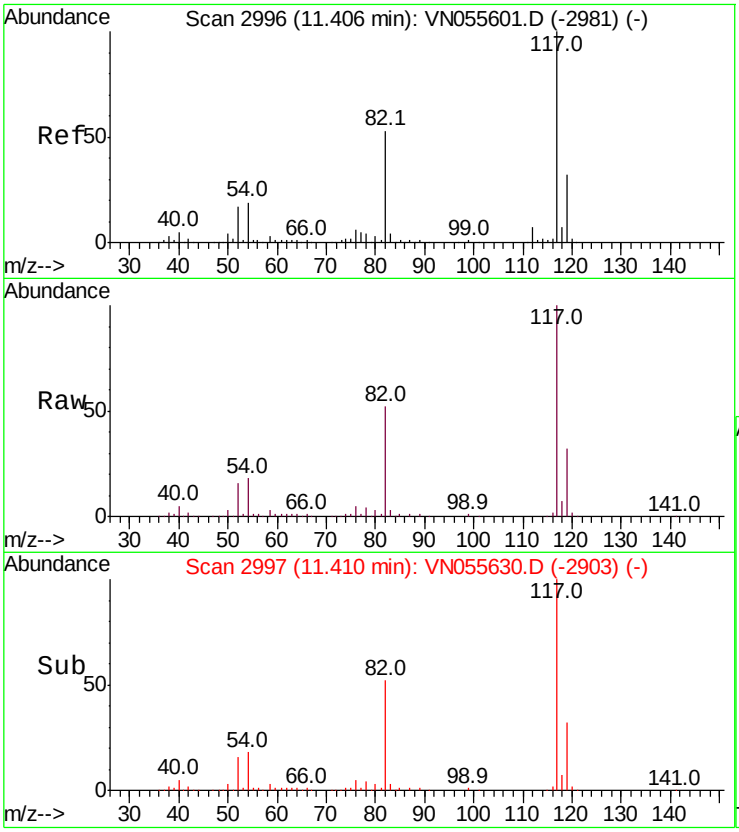


#62
4-Bromofluorobenzene
Concen: 43.559 ug/l
RT: 12.40 min Scan# 3306
Delta R.T. 0.00 min
Lab File: VN055630.D
Acq: 17 May 2019 23:03

Tgt Ion: 95 Resp: 203483

Ion	Ratio	Lower	Upper
95	100		
174	92.7	0.0	180.6
176	89.6	0.0	177.4

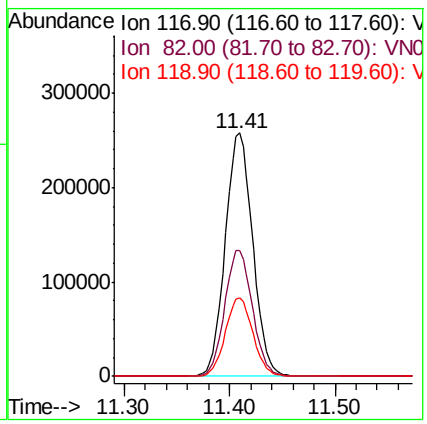


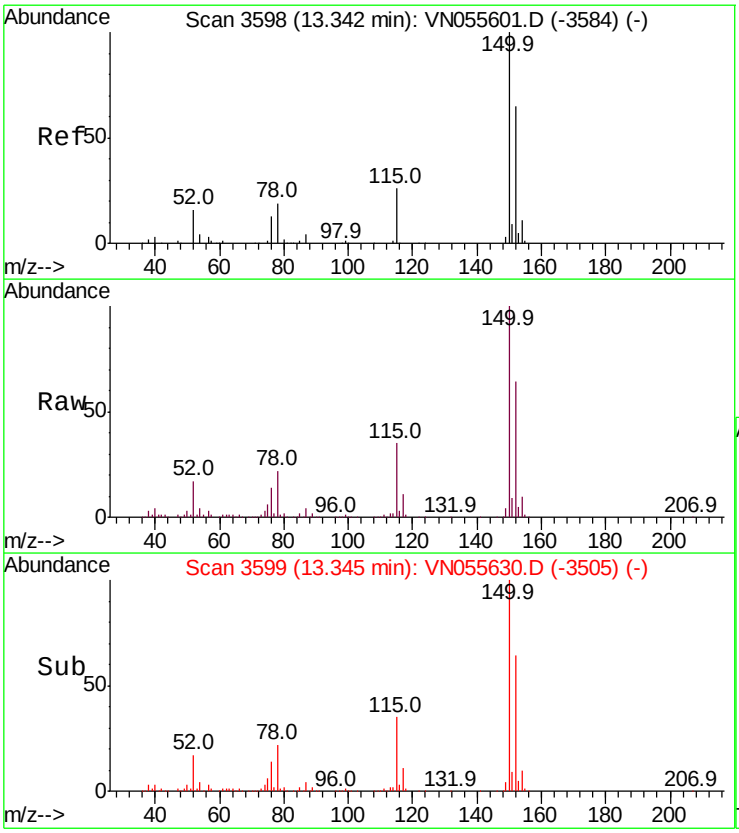


#63
Chlorobenzene-d5
Concen: 50.000 ug/l
RT: 11.41 min Scan# 2997
Delta R.T. 0.00 min
Lab File: VN055630.D
Acq: 17 May 2019 23:03

Tgt Ion:117 Resp: 463924

Ion	Ratio	Lower	Upper
117	100		
82	51.6	42.3	63.5
119	32.1	25.4	38.2

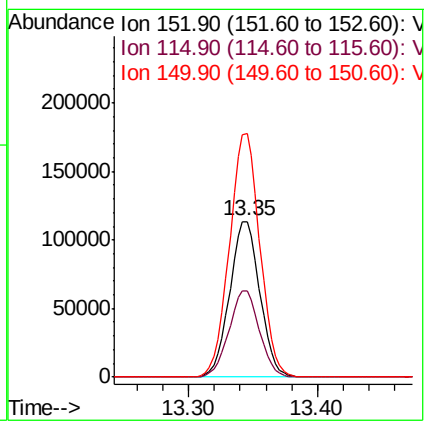




#72
1,4-Dichlorobenzene-d4
Concen: 50.000 ug/l
RT: 13.35 min Scan# 3599
Delta R.T. 0.00 min
Lab File: VN055630.D
Acq: 17 May 2019 23:03

Tgt Ion:152 Resp: 184569

Ion	Ratio	Lower	Upper
152	100		
115	56.0	28.1	84.2
150	157.3	0.0	348.0



LSC Area Percent Report

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055630.D
Acq On : 17 May 2019 23:03
Operator : JC/SP
Sample : K2902-02
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 35 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 3 % of largest Peak
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Title : SW846 8260

Signal : TIC

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	7.593	1790	1810	1821	rBV	217309	543228	33.23%	6.553%
2	7.670	1821	1834	1872	rVB	420211	1043088	63.80%	12.582%
3	8.030	1926	1946	1977	rBV	210468	506255	30.96%	6.107%
4	8.586	2102	2119	2157	rBV	553794	1221905	74.73%	14.739%
5	10.091	2573	2587	2619	rBV	853387	1634987	100.00%	19.722%
6	11.410	2983	2997	3015	rBV	720393	1300891	79.57%	15.692%
7	12.403	3291	3306	3326	rVB	574902	991595	60.65%	11.961%
8	13.342	3586	3598	3613	rVV	638059	1048383	64.12%	12.646%

Sum of corrected areas: 8290332

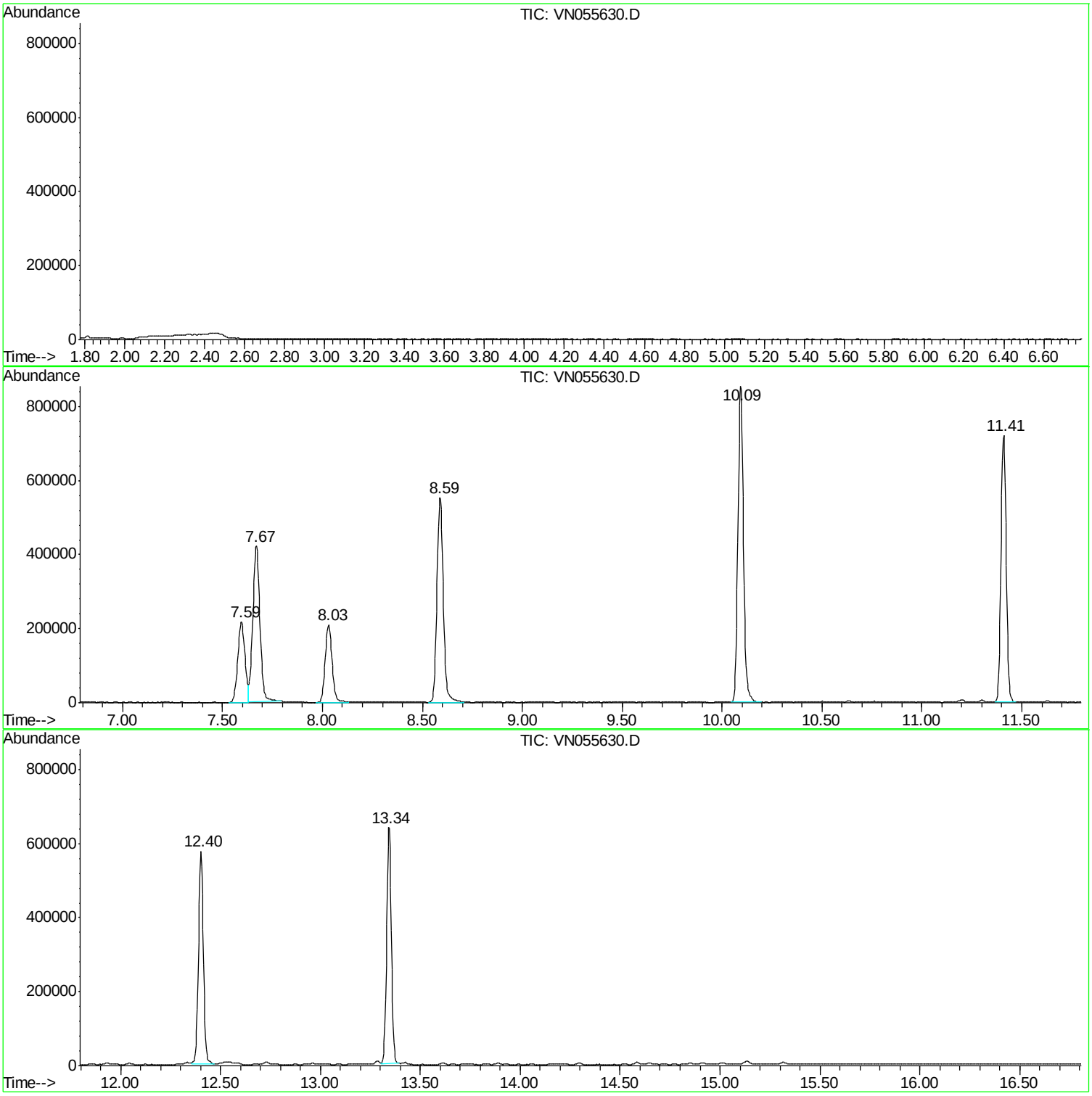
LSC Report - Integrated Chromatogram

Data Path : Z:\VOASRV\HPCHEM1\MSVOA N\DATA\VN051719\
Data File : VN055630.D
Acq On : 17 May 2019 23:03
Operator : JC/SP
Sample : K2902-02
Misc : 5.00mL/MSVOA N/WATER
ALS Vial : 35 Sample Multiplier: 1

Instrument : MSVOA_N
ClientSampleId : FM-EA-3MW01-051519

Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260

TIC Library : C:\DATABASE\NIST11.L
TIC Integration Parameters: LSCINT.P



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Instrument :
MSVOA_N
ClientSampleId :
FM-EA-3MW01-051519

A B C D E F G H I J

Library Search Compound Report

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055630.D
Acq On : 17 May 2019 23:03
Operator : JC/SP
Sample : K2902-02
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 35 Sample Multiplier: 1

Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260

TIC Library : C:\DATABASE\NIST11.L
TIC Integration Parameters: LSCINT.P

No Library Search Compounds Detected

****

Instrument :
MSVOA_N
ClientSampleId :
FM-EA-3MW01-051519

Tentatively Identified Compound (LSC) summary

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055630.D
Acq On : 17 May 2019 23:03
Operator : JC/SP
Sample : K2902-02
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 35 Sample Multiplier: 1

Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260

TIC Library : C:\DATABASE\NIST11.L
TIC Integration Parameters: LSCINT.P

					--Internal Standard---			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055620.D
Acq On : 17 May 2019 19:07
Operator : JC/SP
Sample : K2902-05
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 25 Sample Multiplier: 1

Instrument : MSVOA_N
ClientSampleId : DUP-01

Quant Time: May 18 03:59:43 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260
QLast Update : Fri May 17 23:54:12 2019
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene	7.67	168	416197	50.00	ug/l	0.00
34) 1,4-Difluorobenzene	8.59	114	592627	50.00	ug/l	0.00
63) Chlorobenzene-d5	11.41	117	500206	50.00	ug/l	0.00
72) 1,4-Dichlorobenzene-d4	13.35	152	197399	50.00	ug/l	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4	8.03	65	196102	42.98	ug/l	0.00
Spiked Amount 50.000			Recovery =	85.96%		
35) Dibromofluoromethane	7.59	113	180868	48.04	ug/l	0.00
Spiked Amount 50.000			Recovery =	96.08%		
50) Toluene-d8	10.09	98	684723	48.10	ug/l	0.00
Spiked Amount 50.000			Recovery =	96.20%		
62) 4-Bromofluorobenzene	12.40	95	221422	45.05	ug/l	0.00
Spiked Amount 50.000			Recovery =	90.10%		

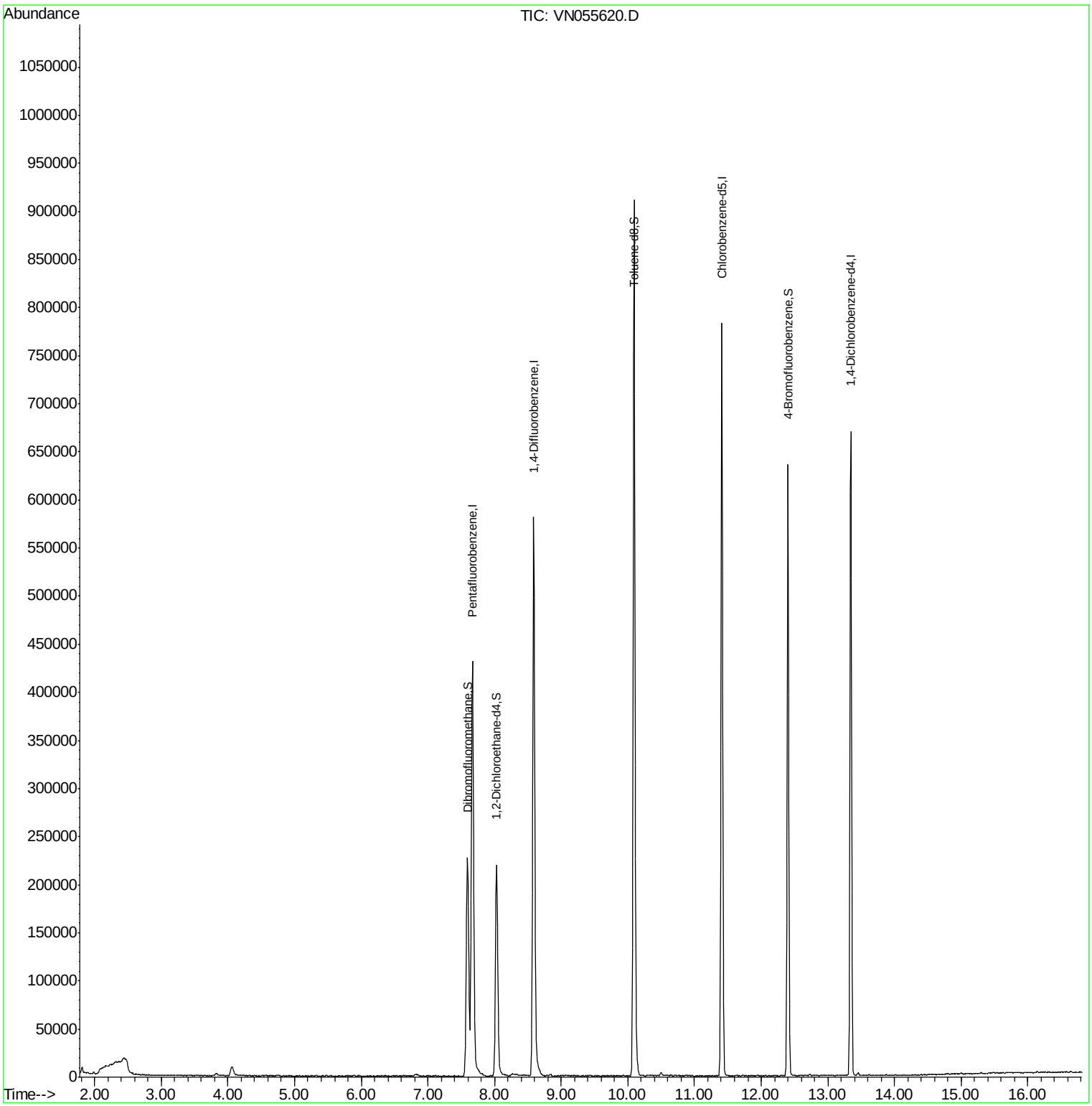
Target Compounds	Qvalue

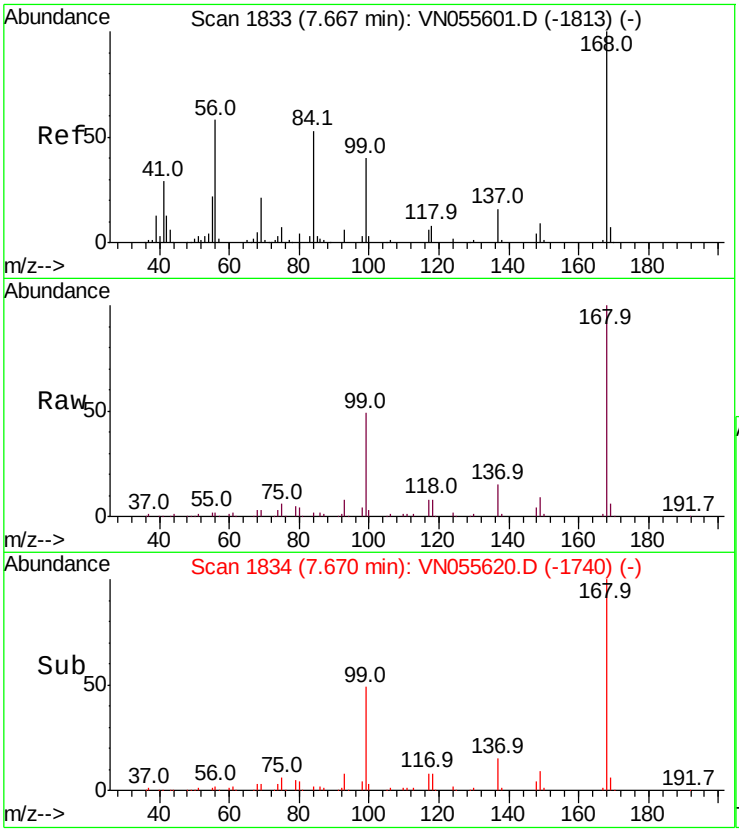
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055620.D
Acq On : 17 May 2019 19:07
Operator : JC/SP
Sample : K2902-05
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 25 Sample Multiplier: 1

Quant Time: May 18 03:59:43 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260
QLast Update : Fri May 17 23:54:12 2019
Response via : Initial Calibration

Instrument :
MSVOA_N
ClientSampleId :
DUP-01

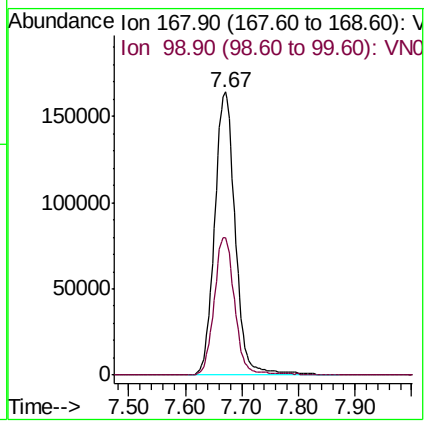


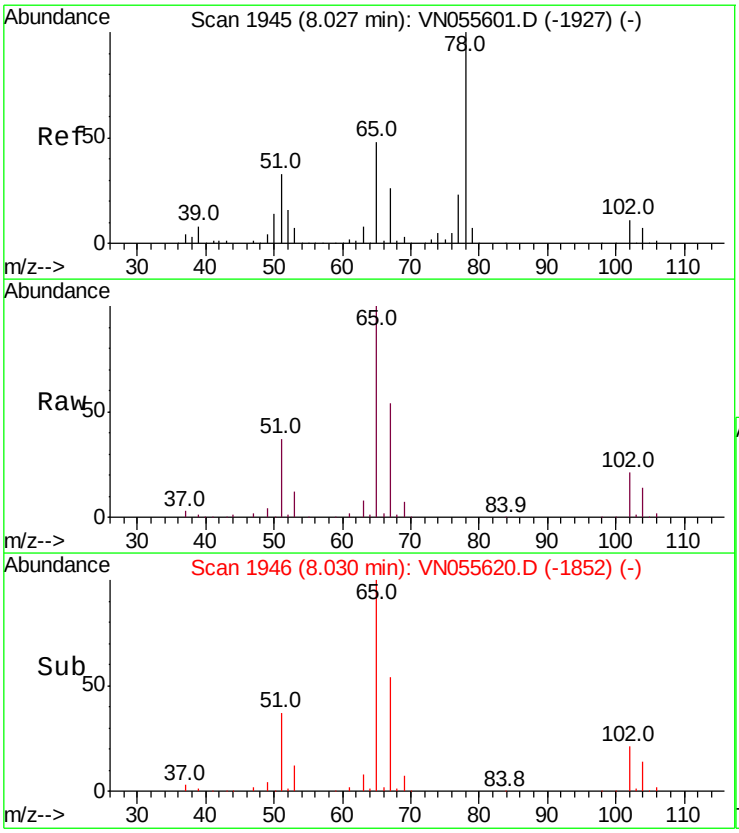


#1
Pentafluorobenzene
Concen: 50.000 ug/l
RT: 7.67 min Scan# 1834
Delta R.T. 0.00 min
Lab File: VN055620.D
Acq: 17 May 2019 19:07

Tgt Ion:168 Resp: 416197

Ion	Ratio	Lower	Upper
168	100		
99	48.5	40.2	60.2

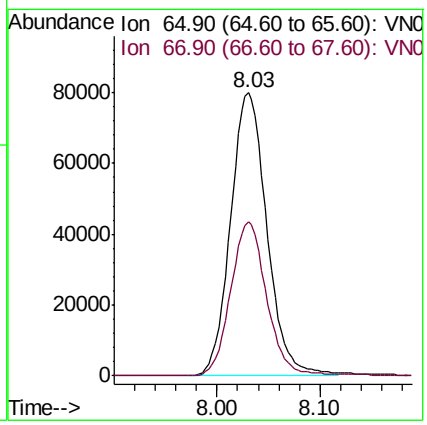


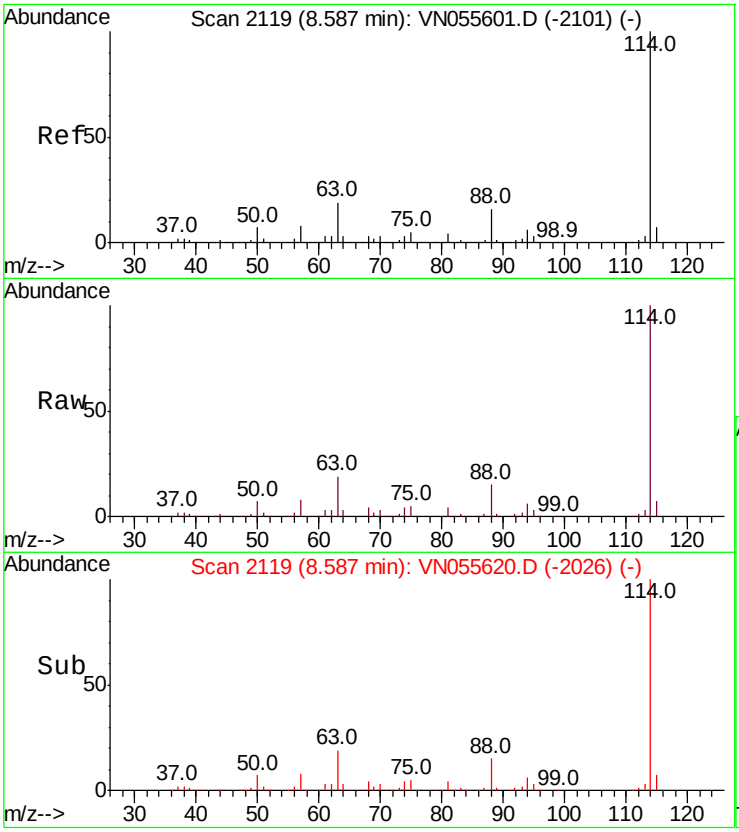


#33
1,2-Dichloroethane-d4
Concen: 42.983 ug/l
RT: 8.03 min Scan# 1946
Delta R.T. 0.00 min
Lab File: VN055620.D
Acq: 17 May 2019 19:07

Tgt Ion: 65 Resp: 196102

Ion	Ratio	Lower	Upper
65	100		
67	53.9	0.0	108.6

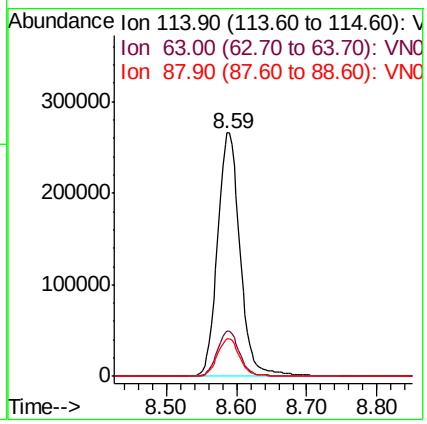


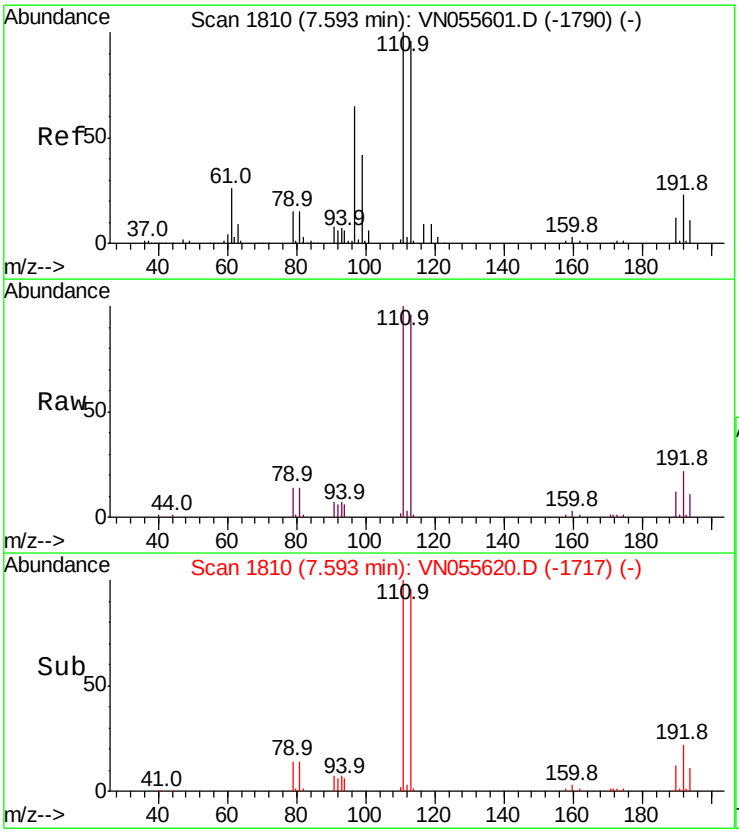


#34
1,4-Difluorobenzene
Concen: 50.000 ug/l
RT: 8.59 min Scan# 2119
Delta R.T. 0.00 min
Lab File: VN055620.D
Acq: 17 May 2019 19:07

Tgt Ion:114 Resp: 592627

Ion	Ratio	Lower	Upper
114	100		
63	18.7	0.0	38.2
88	15.3	0.0	31.0

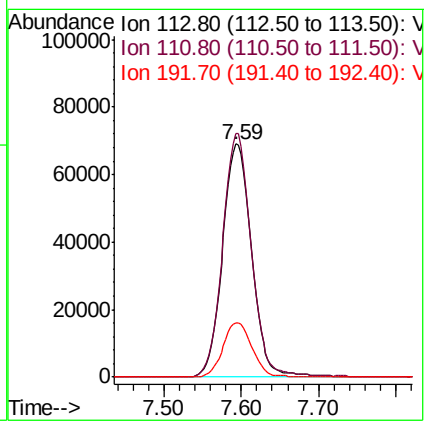


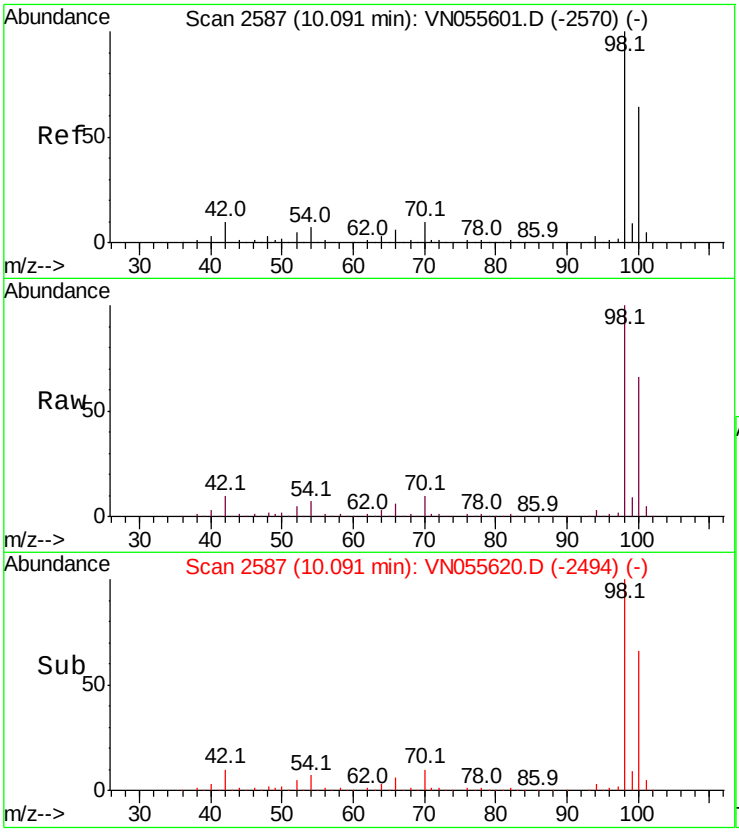


#35
Dibromofluoromethane
Concen: 48.044 ug/l
RT: 7.59 min Scan# 1810
Delta R.T. 0.00 min
Lab File: VN055620.D
Acq: 17 May 2019 19:07

Tgt Ion:113 Resp: 180868

Ion	Ratio	Lower	Upper
113	100		
111	102.6	82.5	123.7
192	23.4	18.7	28.1

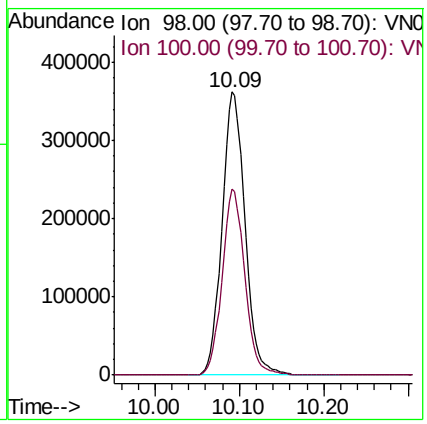


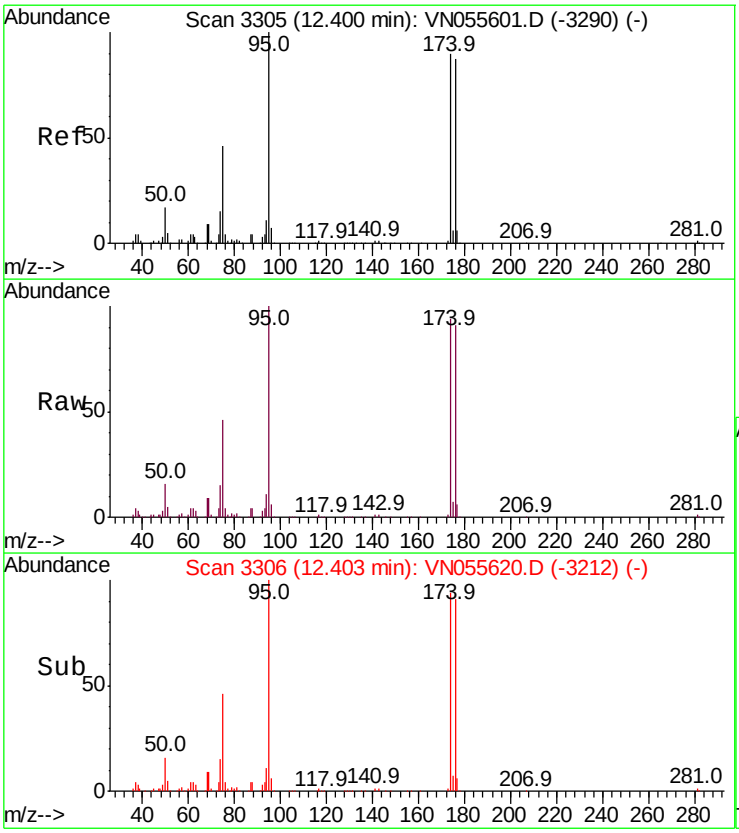


#50
Toluene-d8
Concen: 48.103 ug/l
RT: 10.09 min Scan# 2587
Delta R.T. 0.00 min
Lab File: VN055620.D
Acq: 17 May 2019 19:07

Tgt Ion: 98 Resp: 684723

Ion	Ratio	Lower	Upper
98	100		
100	64.9	51.9	77.9

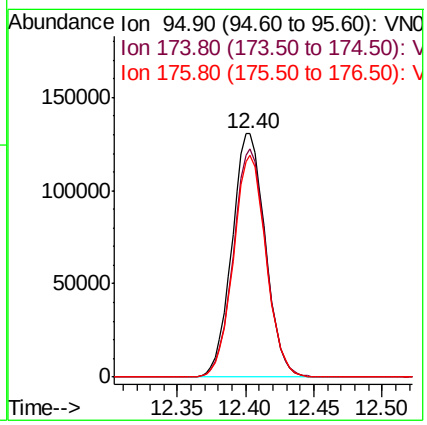


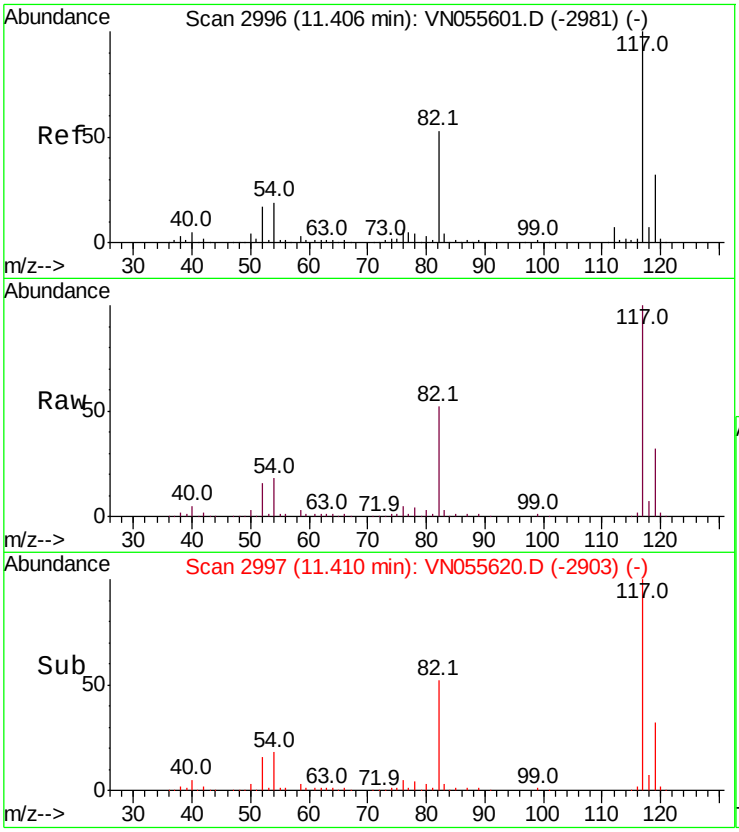


#62
4-Bromofluorobenzene
Concen: 45.047 ug/l
RT: 12.40 min Scan# 3306
Delta R.T. 0.00 min
Lab File: VN055620.D
Acq: 17 May 2019 19:07

Tgt Ion: 95 Resp: 221422

Ion	Ratio	Lower	Upper
95	100		
174	91.9	0.0	180.6
176	89.2	0.0	177.4

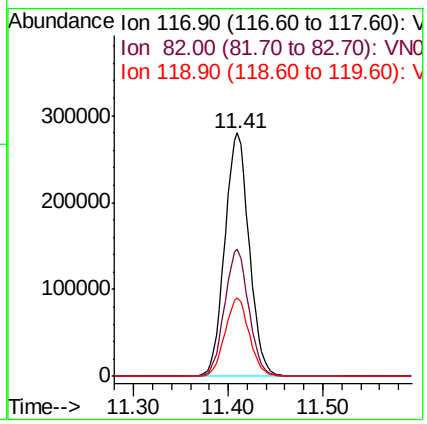


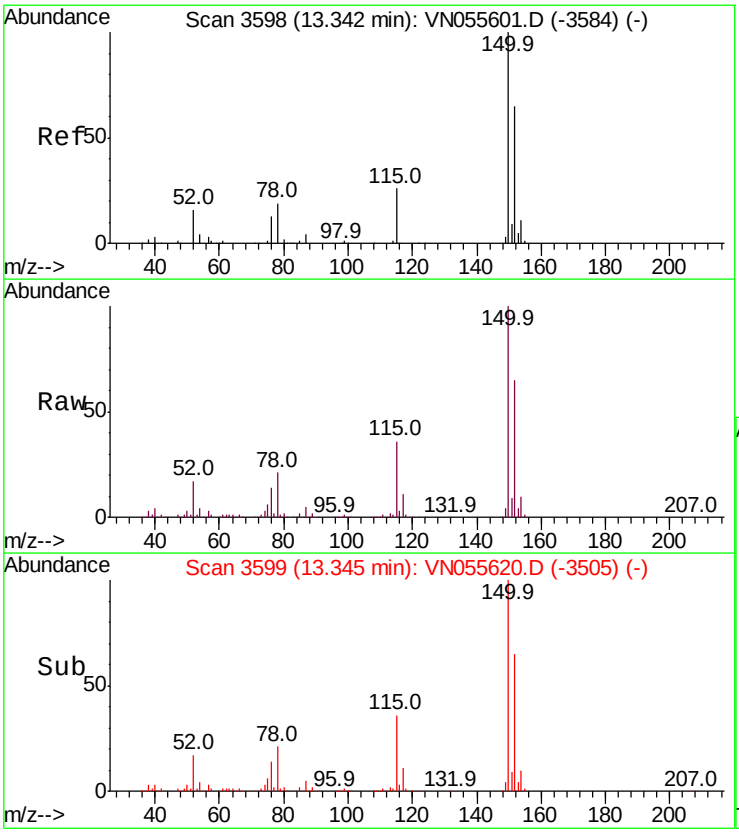


#63
Chlorobenzene-d5
Concen: 50.000 ug/l
RT: 11.41 min Scan# 2997
Delta R.T. 0.00 min
Lab File: VN055620.D
Acq: 17 May 2019 19:07

Tgt Ion:117 Resp: 500206

Ion	Ratio	Lower	Upper
117	100		
82	52.0	42.3	63.5
119	32.3	25.4	38.2

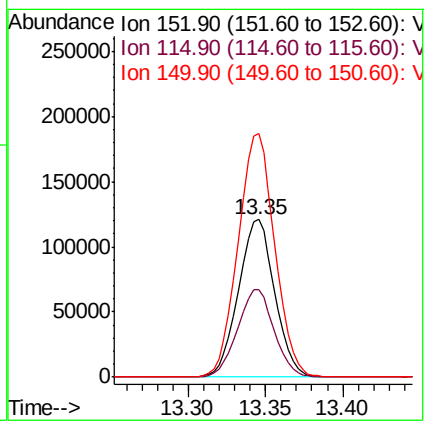




#72
1,4-Dichlorobenzene-d4
Concen: 50.000 ug/l
RT: 13.35 min Scan# 3599
Delta R.T. 0.00 min
Lab File: VN055620.D
Acq: 17 May 2019 19:07

Tgt Ion:152 Resp: 197399

Ion	Ratio	Lower	Upper
152	100		
115	55.7	28.1	84.2
150	155.9	0.0	348.0



LSC Area Percent Report

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055620.D
Acq On : 17 May 2019 19:07
Operator : JC/SP
Sample : K2902-05
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 25 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 3 % of largest Peak
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Title : SW846 8260

Signal : TIC

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	4.060	694	711	723	rBV2	9468	28125	1.62%	0.320%
2	7.596	1791	1811	1821	rBV	227467	570312	32.93%	6.497%
3	7.670	1822	1834	1860	rVB	426606	1045121	60.34%	11.906%
4	8.030	1928	1946	1978	rBV	219878	539051	31.12%	6.141%
5	8.587	2102	2119	2163	rBV	580667	1289279	74.43%	14.687%
6	10.091	2571	2587	2617	rBV	910645	1732094	100.00%	19.732%
7	11.410	2983	2997	3021	rBV	782162	1399371	80.79%	15.941%
8	12.403	3293	3306	3330	rBV	635714	1068083	61.66%	12.167%
9	13.345	3585	3599	3617	rBV	669547	1106752	63.90%	12.608%

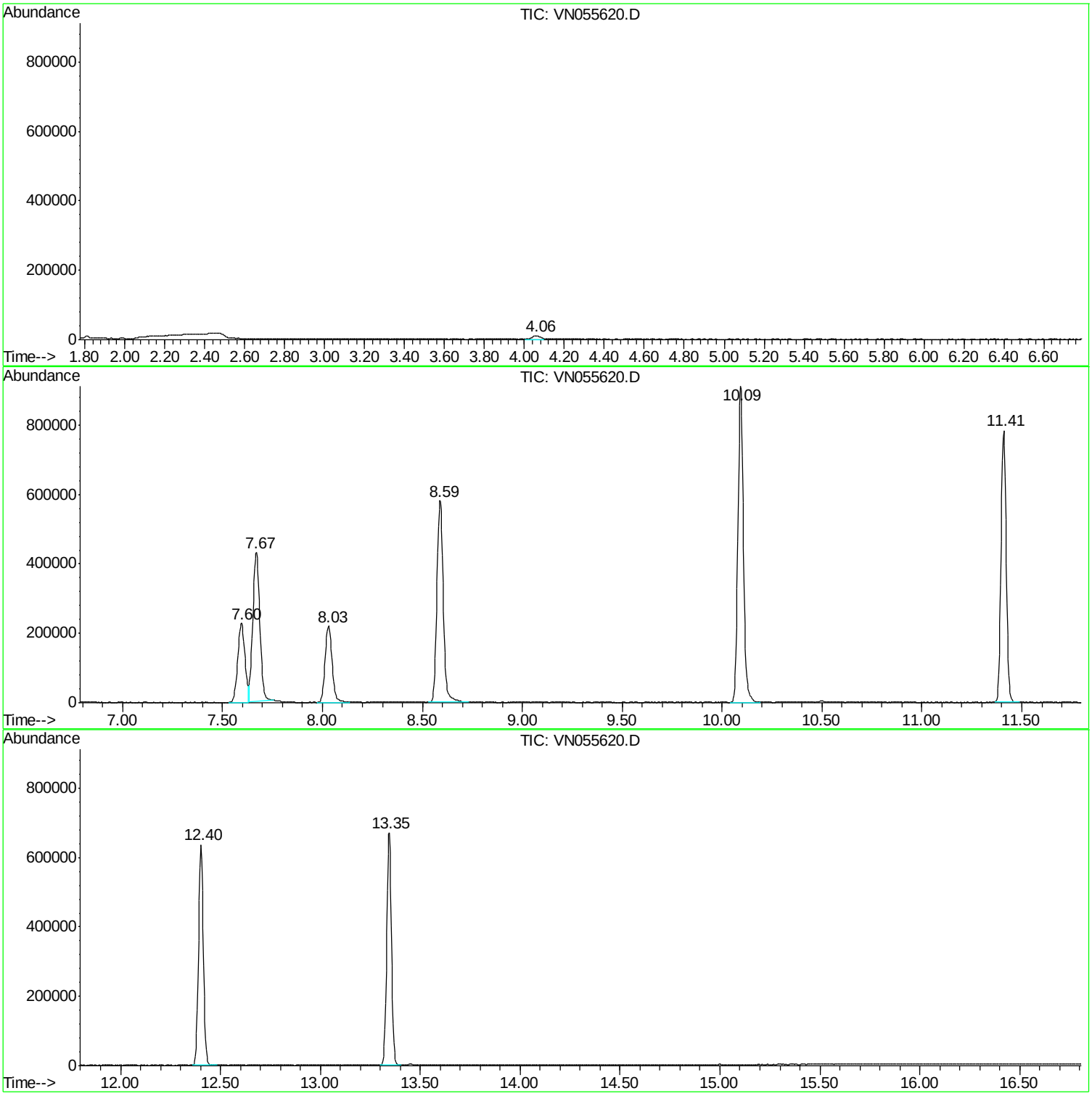
Sum of corrected areas: 8778188

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055620.D
Acq On : 17 May 2019 19:07
Operator : JC/SP
Sample : K2902-05
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 25 Sample Multiplier: 1

Instrument : MSVOA_N
ClientSampleId : DUP-01

Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260

TIC Library : C:\DATABASE\NIST11.L
TIC Integration Parameters: LSCINT.P



Library Search Compound Report

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055620.D
Acq On : 17 May 2019 19:07
Operator : JC/SP
Sample : K2902-05
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 25 Sample Multiplier: 1

Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260

TIC Library : C:\DATABASE\NIST11.L
TIC Integration Parameters: LSCINT.P

No Library Search Compounds Detected

****

Tentatively Identified Compound (LSC) summary

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055620.D
Acq On : 17 May 2019 19:07
Operator : JC/SP
Sample : K2902-05
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 25 Sample Multiplier: 1

Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260

TIC Library : C:\DATABASE\NIST11.L
TIC Integration Parameters: LSCINT.P

					Internal Standard			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

Quantitation Report (QT Reviewed)

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055616.D
Acq On : 17 May 2019 17:33
Operator : JC/SP
Sample : K2902-10
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 21 Sample Multiplier: 1

Instrument : MSVOA_N
ClientSampleId : FM-EA-RB01-051519

Quant Time: May 20 09:32:55 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260
QLast Update : Fri May 17 23:54:12 2019
Response via : Initial Calibration

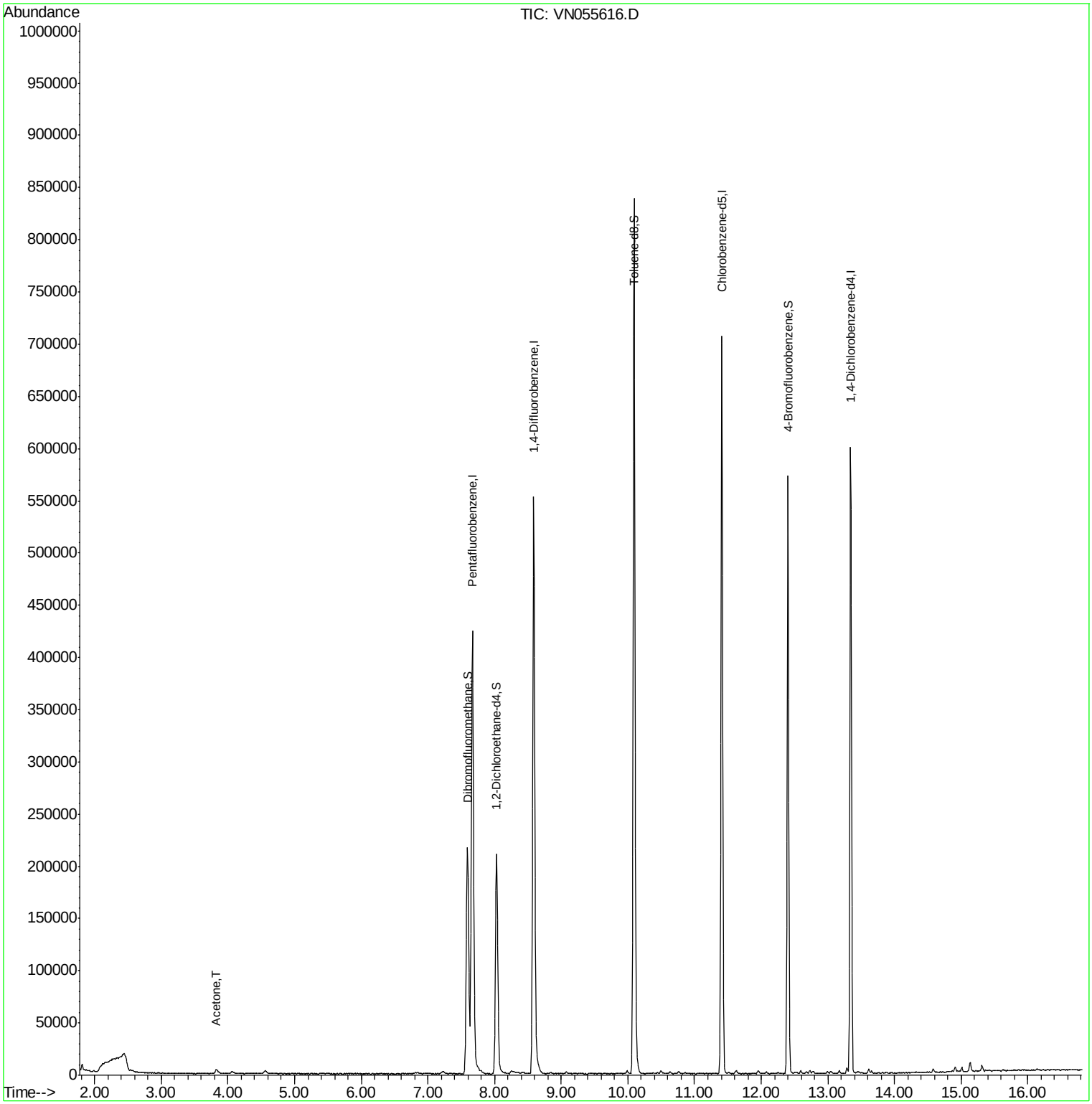
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene	7.67	168	397765	50.00	ug/l	0.00
34) 1,4-Difluorobenzene	8.59	114	561028	50.00	ug/l	0.00
63) Chlorobenzene-d5	11.41	117	458131	50.00	ug/l	0.00
72) 1,4-Dichlorobenzene-d4	13.34	152	176438	50.00	ug/l	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4	8.03	65	185487	42.54	ug/l	0.00
Spiked Amount 50.000			Recovery = 85.08%			
35) Dibromofluoromethane	7.59	113	171810	48.21	ug/l	0.00
Spiked Amount 50.000			Recovery = 96.42%			
50) Toluene-d8	10.09	98	643797	47.78	ug/l	0.00
Spiked Amount 50.000			Recovery = 95.56%			
62) 4-Bromofluorobenzene	12.40	95	198730	42.71	ug/l	0.00
Spiked Amount 50.000			Recovery = 85.42%			
Target Compounds						Qvalue
16) Acetone	3.82	43	7241	4.069	ug/l	96

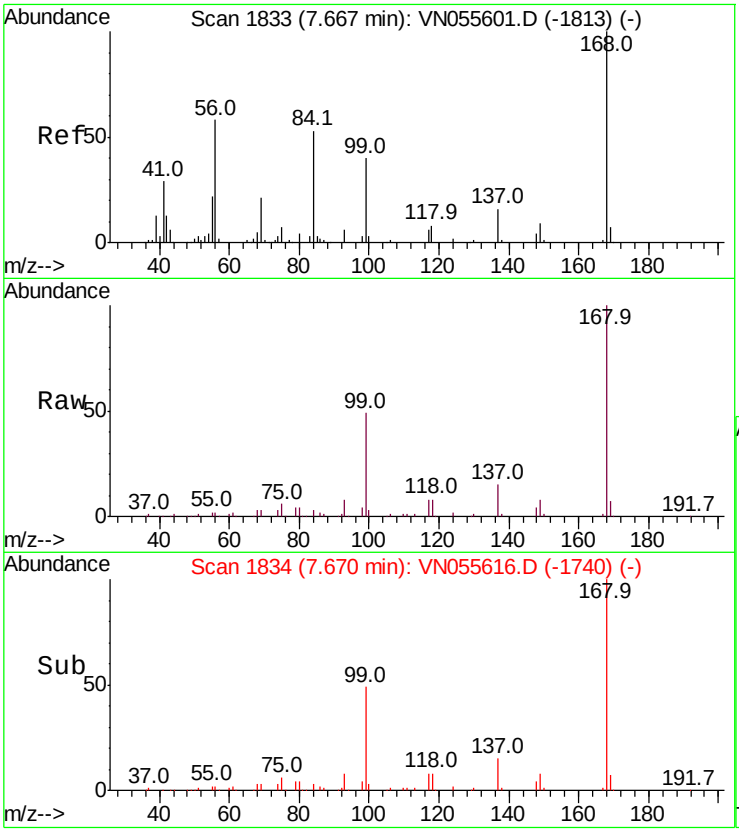
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055616.D
Acq On : 17 May 2019 17:33
Operator : JC/SP
Sample : K2902-10
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 21 Sample Multiplier: 1

Quant Time: May 20 09:32:55 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260
QLast Update : Fri May 17 23:54:12 2019
Response via : Initial Calibration

Instrument :
MSVOA_N
ClientSampleId :
FM-EA-RB01-051519

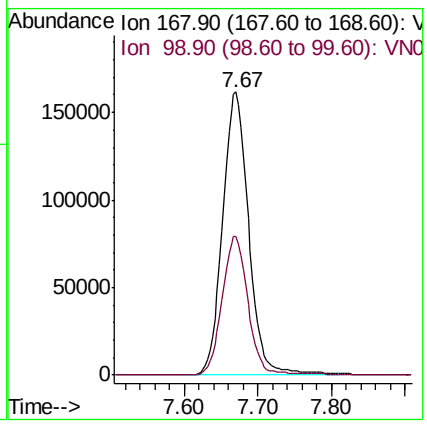


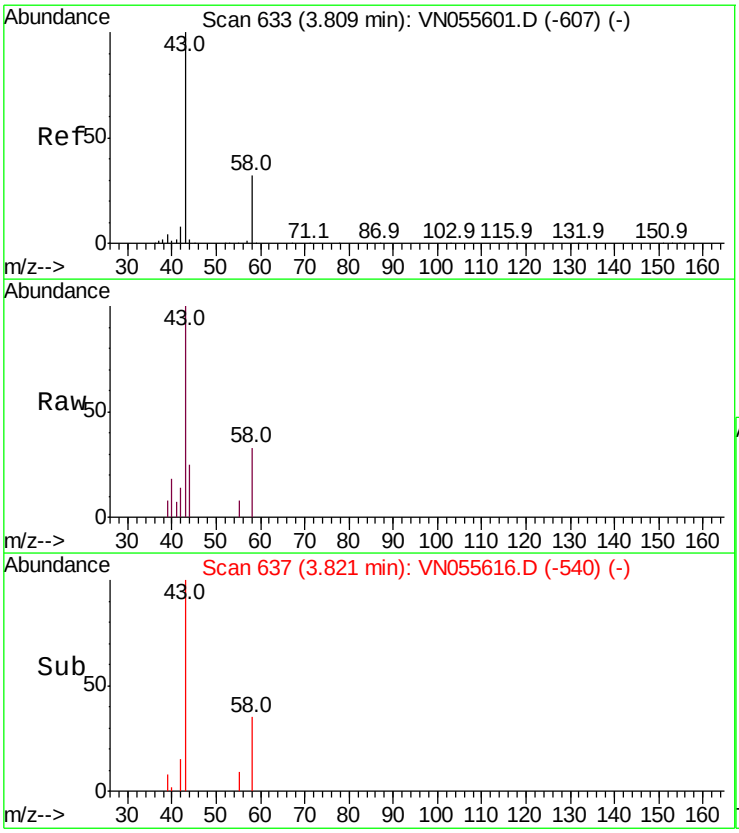


#1
Pentafluorobenzene
Concen: 50.000 ug/l
RT: 7.67 min Scan# 1834
Delta R.T. 0.00 min
Lab File: VN055616.D
Acq: 17 May 2019 17:33

Tgt Ion:168 Resp: 397765

Ion	Ratio	Lower	Upper
168	100		
99	48.8	40.2	60.2

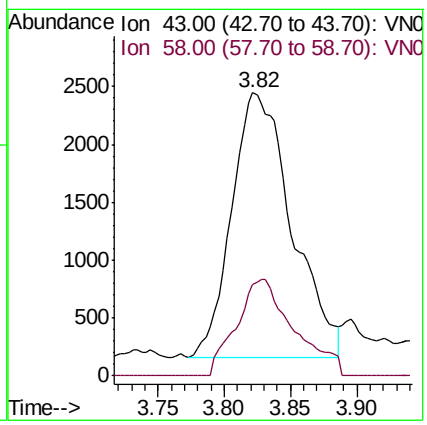


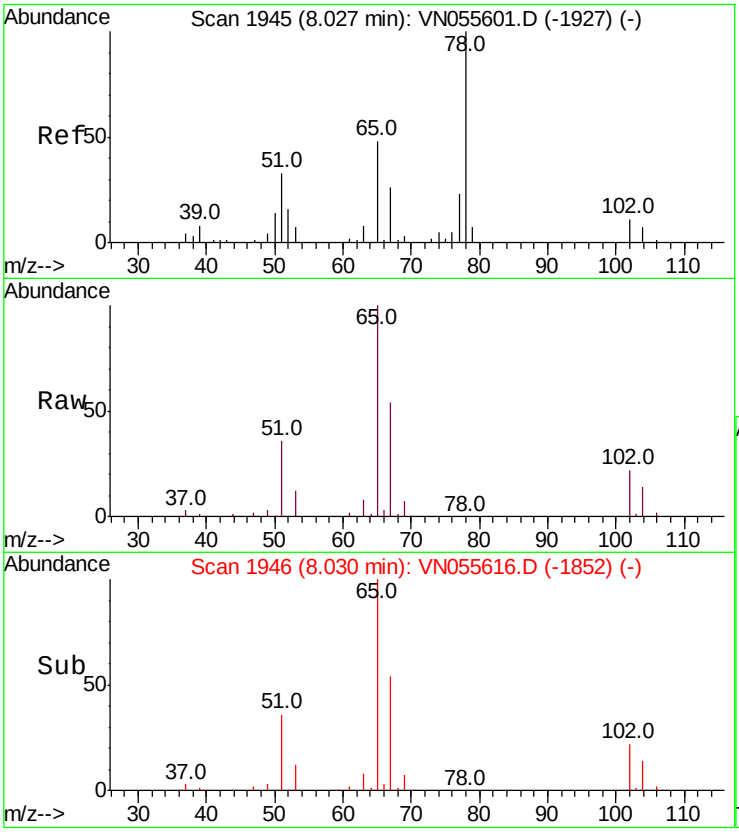


#16
Acetone
Concen: 4.069 ug/l
RT: 3.82 min Scan# 637
Delta R.T. 0.01 min
Lab File: VN055616.D
Acq: 17 May 2019 17:33

Tgt Ion: 43 Resp: 7241

Ion	Ratio	Lower	Upper
43	100		
58	34.7	26.0	39.0

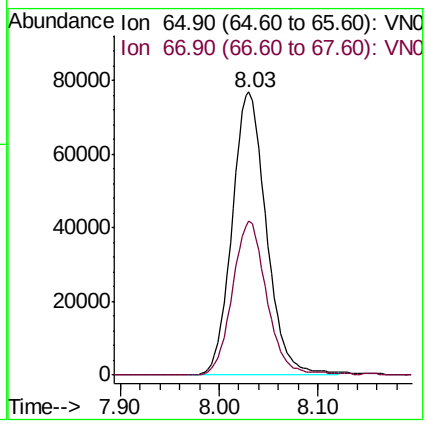


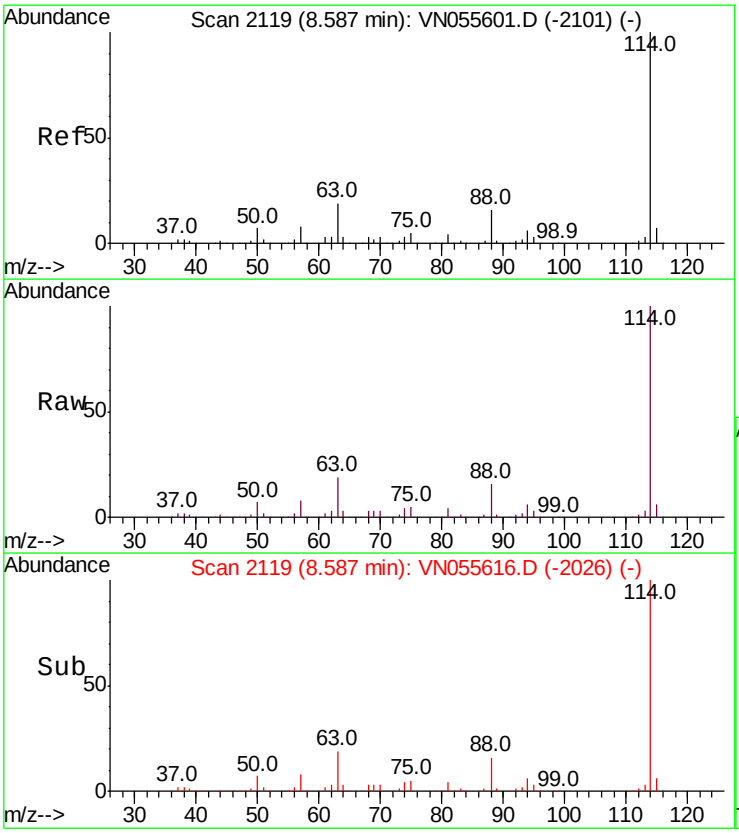


#33
1,2-Dichloroethane-d4
Concen: 42.540 ug/l
RT: 8.03 min Scan# 1946
Delta R.T. 0.00 min
Lab File: VN055616.D
Acq: 17 May 2019 17:33

Tgt Ion: 65 Resp: 185487

Ion	Ratio	Lower	Upper
65	100		
67	54.7	0.0	108.6

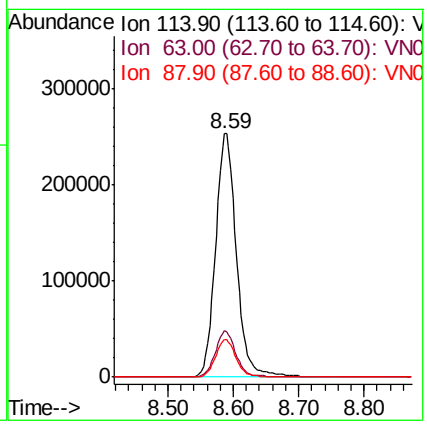


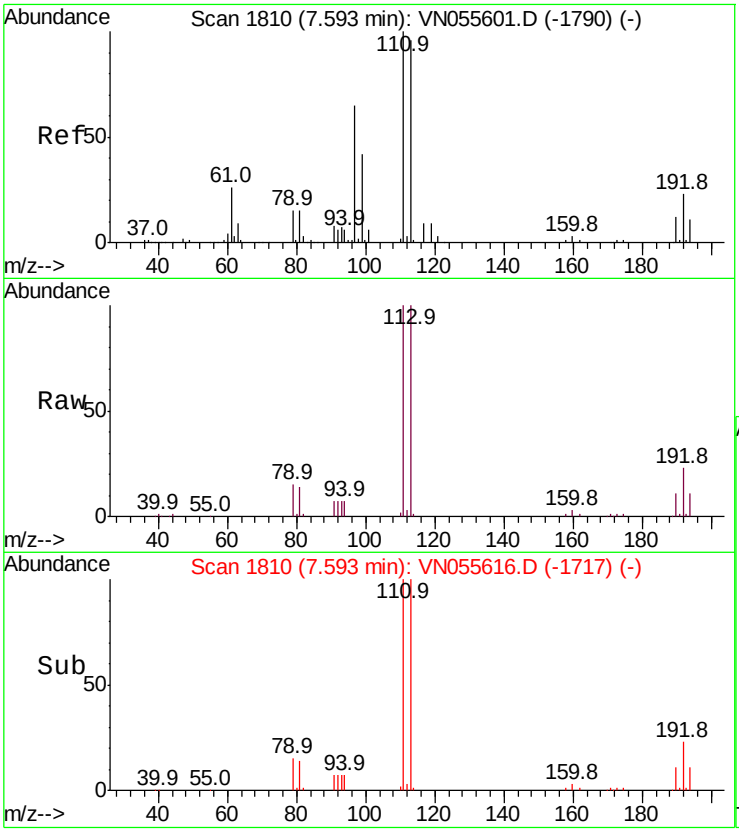


#34
1,4-Difluorobenzene
Concen: 50.000 ug/l
RT: 8.59 min Scan# 2119
Delta R.T. -0.00 min
Lab File: VN055616.D
Acq: 17 May 2019 17:33

Tgt Ion:114 Resp: 561028

Ion	Ratio	Lower	Upper
114	100		
63	18.9	0.0	38.2
88	15.6	0.0	31.0

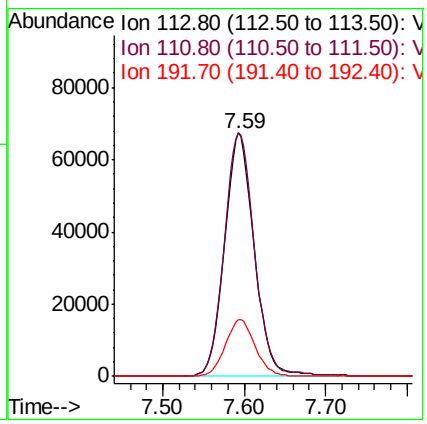


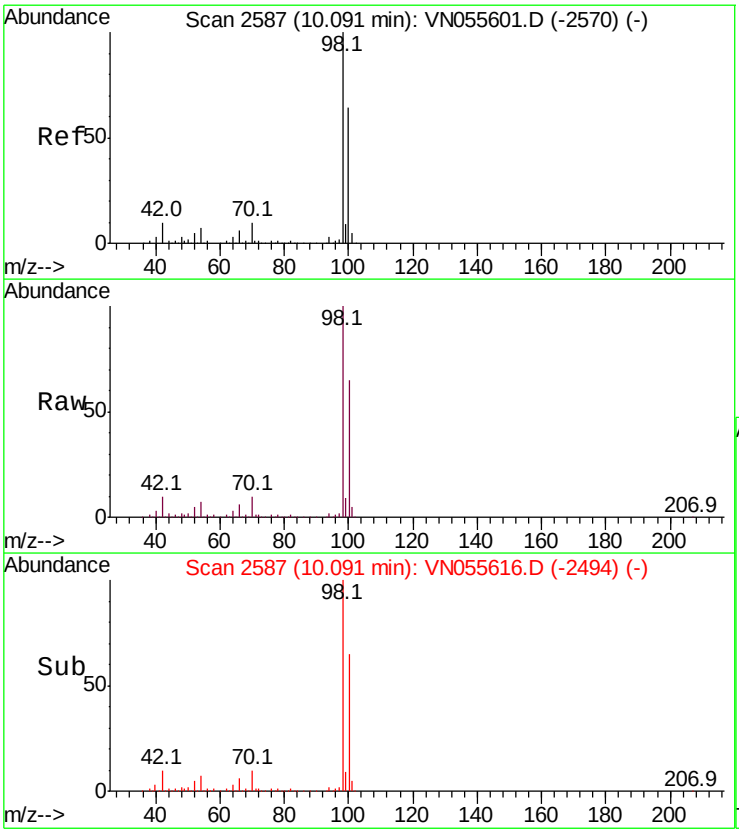


#35
Dibromofluoromethane
Concen: 48.208 ug/l
RT: 7.59 min Scan# 1810
Delta R.T. -0.00 min
Lab File: VN055616.D
Acq: 17 May 2019 17:33

Tgt Ion:113 Resp: 171810

Ion	Ratio	Lower	Upper
113	100		
111	102.6	82.5	123.7
192	23.5	18.7	28.1

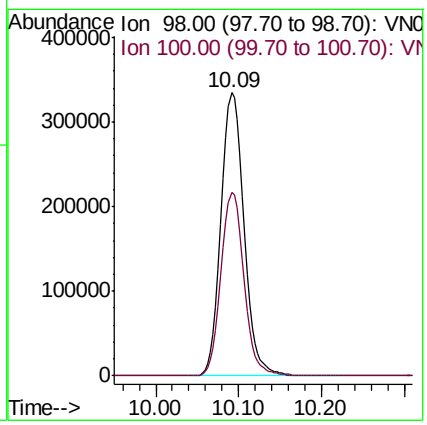


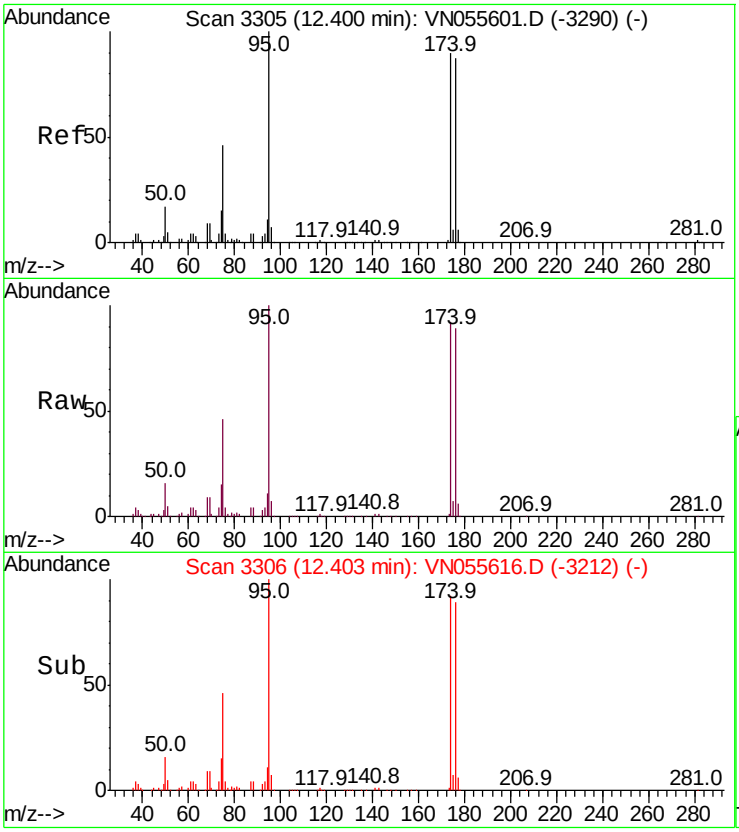


#50
Toluene-d8
Concen: 47.775 ug/l
RT: 10.09 min Scan# 2587
Delta R.T. -0.00 min
Lab File: VN055616.D
Acq: 17 May 2019 17:33

Tgt Ion: 98 Resp: 643797

Ion	Ratio	Lower	Upper
98	100		
100	64.8	51.9	77.9

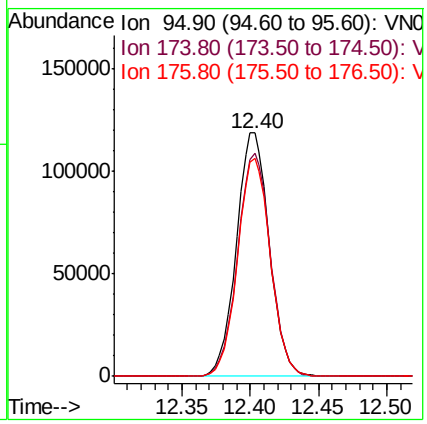


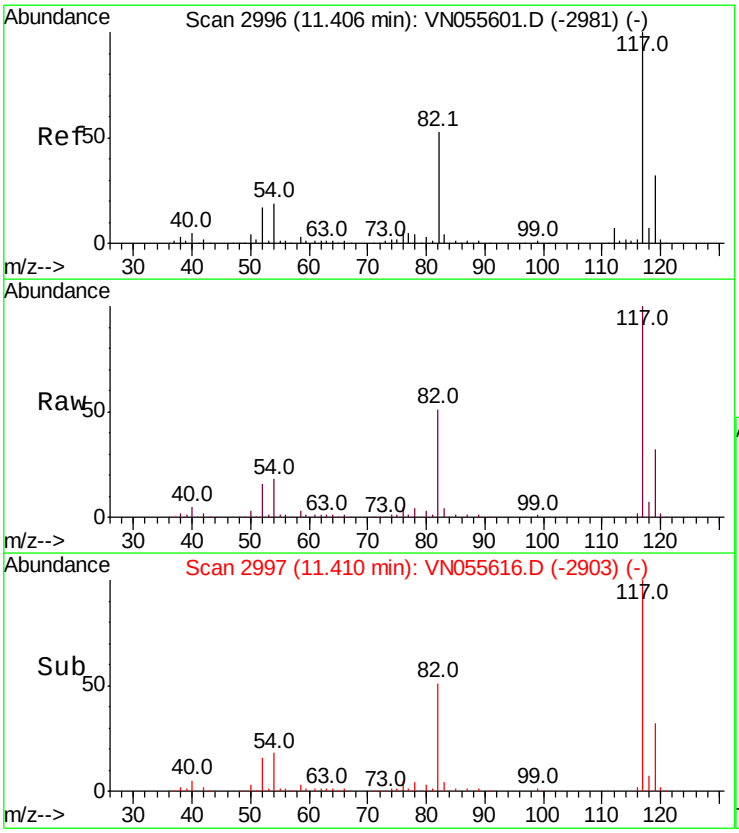


#62
4-Bromofluorobenzene
Concen: 42.707 ug/l
RT: 12.40 min Scan# 3306
Delta R.T. 0.00 min
Lab File: VN055616.D
Acq: 17 May 2019 17:33

Tgt Ion: 95 Resp: 198730

Ion	Ratio	Lower	Upper
95	100		
174	91.3	0.0	180.6
176	89.2	0.0	177.4

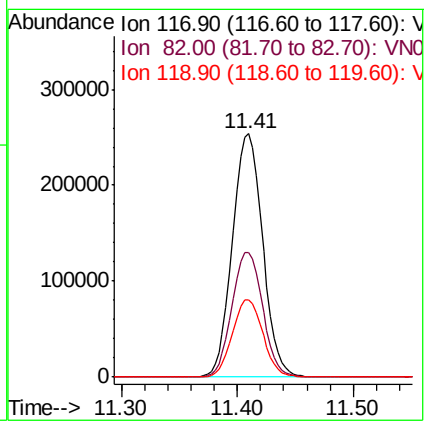




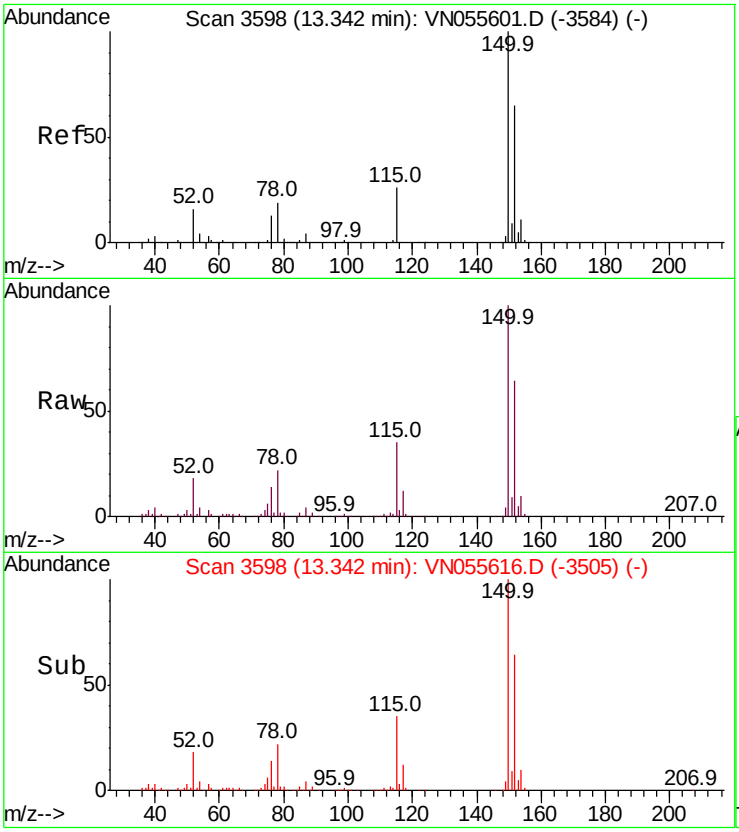
#63
Chlorobenzene-d5
Concen: 50.000 ug/l
RT: 11.41 min Scan# 2997
Delta R.T. 0.00 min
Lab File: VN055616.D
Acq: 17 May 2019 17:33

Tgt Ion:117 Resp: 458131

Ion	Ratio	Lower	Upper
117	100		
82	51.4	42.3	63.5
119	31.7	25.4	38.2



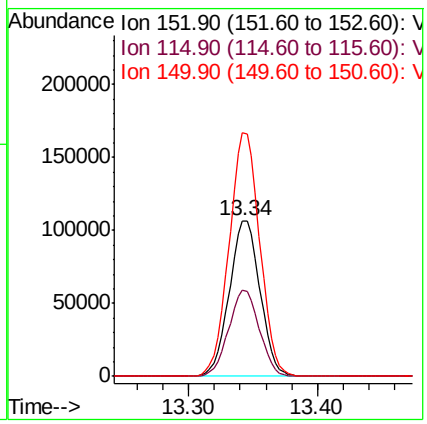
Instrument :
MSVOA_N
ClientSampleId :
FM-EA-RB01-051519



#72
1,4-Dichlorobenzene-d4
Concen: 50.000 ug/l
RT: 13.34 min Scan# 3598
Delta R.T. -0.00 min
Lab File: VN055616.D
Acq: 17 May 2019 17:33

Tgt Ion:152 Resp: 176438

Ion	Ratio	Lower	Upper
152	100		
115	55.2	28.1	84.2
150	155.7	0.0	348.0



LSC Area Percent Report

Data Path : Z:\VOASRV\HPCHEM1\MSVOA N\DATA\VN051719\
Data File : VN055616.D
Acq On : 17 May 2019 17:33
Operator : JC/SP
Sample : K2902-10
Misc : 5.00mL/MSVOA N/WATER
ALS Vial : 21 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 3 % of largest Peak
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Title : SW846 8260

Signal : TIC

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	7.593	1791	1810	1821	rBV	217232	545083	33.41%	6.667%
2	7.667	1821	1833	1867	rVB	421802	1033793	63.37%	12.644%
3	8.030	1924	1946	1977	rBV	210718	512881	31.44%	6.273%
4	8.587	2103	2119	2161	rVB	552536	1220861	74.84%	14.932%
5	10.091	2570	2587	2614	rBV	838293	1631281	100.00%	19.952%
6	11.410	2982	2997	3015	rBV	705944	1284547	78.74%	15.711%
7	12.403	3293	3306	3320	rBV	572847	956236	58.62%	11.696%
8	13.342	3586	3598	3620	rVB	599641	991281	60.77%	12.124%

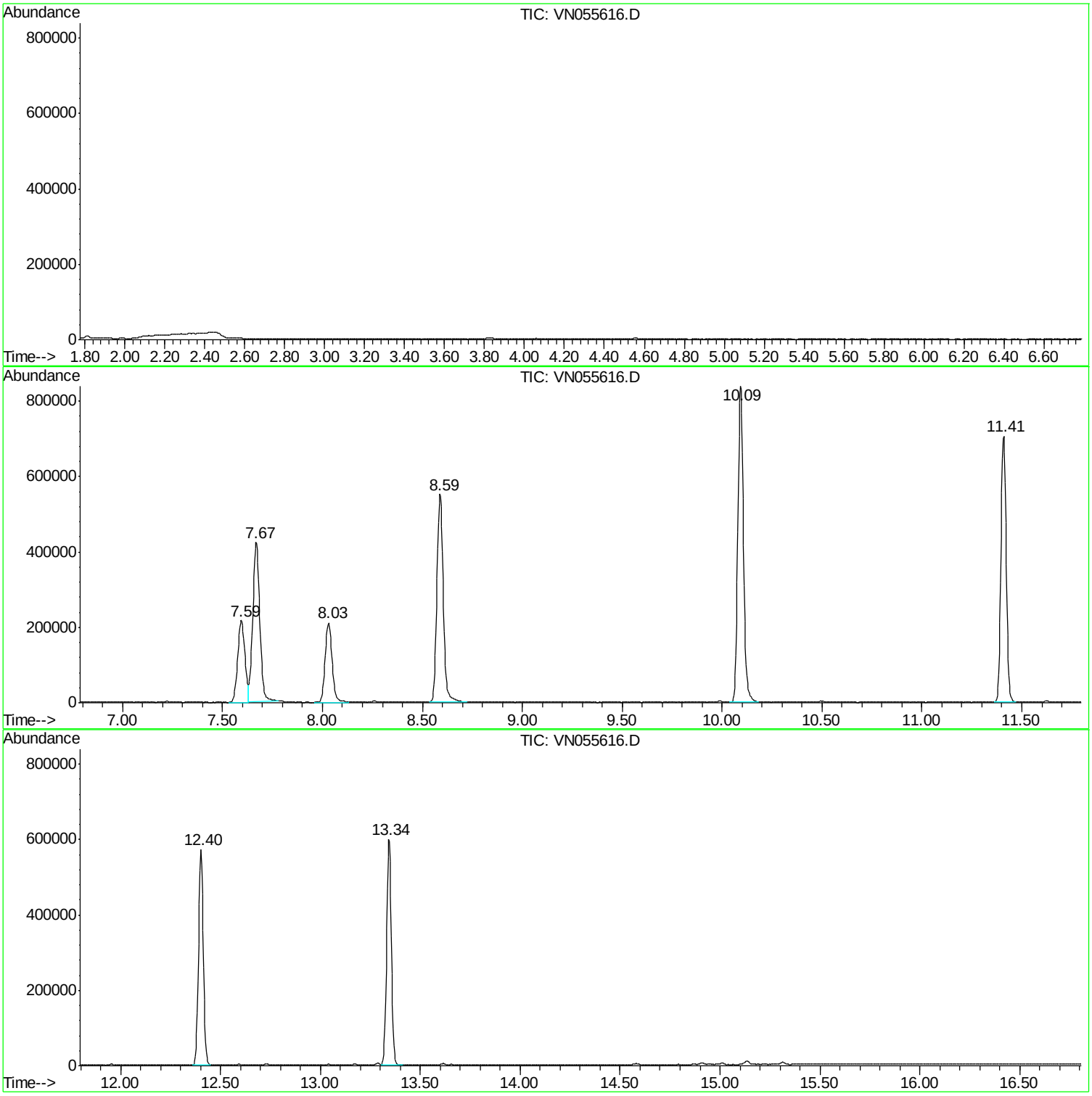
Sum of corrected areas: 8175963

Data Path : Z:\VOASRV\HPCHEM1\MSVOA N\DATA\VN051719\
Data File : VN055616.D
Acq On : 17 May 2019 17:33
Operator : JC/SP
Sample : K2902-10
Misc : 5.00mL/MSVOA N/WATER
ALS Vial : 21 Sample Multiplier: 1

Instrument :
MSVOA_N
ClientSampleId :
FM-EA-RB01-051519

Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260

TIC Library : C:\DATABASE\NIST11.L
TIC Integration Parameters: LSCINT.P



Instrument :
MSVOA_N
ClientSampleId :
FM-EA-RB01-051519

Library Search Compound Report

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055616.D
Acq On : 17 May 2019 17:33
Operator : JC/SP
Sample : K2902-10
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 21 Sample Multiplier: 1

Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260

TIC Library : C:\DATABASE\NIST11.L
TIC Integration Parameters: LSCINT.P

No Library Search Compounds Detected

****

Tentatively Identified Compound (LSC) summary

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055616.D
Acq On : 17 May 2019 17:33
Operator : JC/SP
Sample : K2902-10
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 21 Sample Multiplier: 1

Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260

TIC Library : C:\DATABASE\NIST11.L
TIC Integration Parameters: LSCINT.P

					Internal Standard			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

Quantitation Report (QT Reviewed)

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055622.D
Acq On : 17 May 2019 19:55
Operator : JC/SP
Sample : K2902-11
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 27 Sample Multiplier: 1

Instrument : MSVOA_N
ClientSampleId : FM-EA-3MW09-051619

Quant Time: May 18 04:02:47 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260
QLast Update : Fri May 17 23:54:12 2019
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene	7.67	168	407634	50.00	ug/l	0.00
34) 1,4-Difluorobenzene	8.59	114	573800	50.00	ug/l	0.00
63) Chlorobenzene-d5	11.41	117	478852	50.00	ug/l	0.00
72) 1,4-Dichlorobenzene-d4	13.35	152	183266	50.00	ug/l	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4	8.03	65	191361	42.82	ug/l	0.00
Spiked Amount 50.000			Recovery =	85.64%		
35) Dibromofluoromethane	7.59	113	175780	48.22	ug/l	0.00
Spiked Amount 50.000			Recovery =	96.44%		
50) Toluene-d8	10.09	98	667940	48.46	ug/l	0.00
Spiked Amount 50.000			Recovery =	96.92%		
62) 4-Bromofluorobenzene	12.40	95	206621	43.41	ug/l	0.00
Spiked Amount 50.000			Recovery =	86.82%		

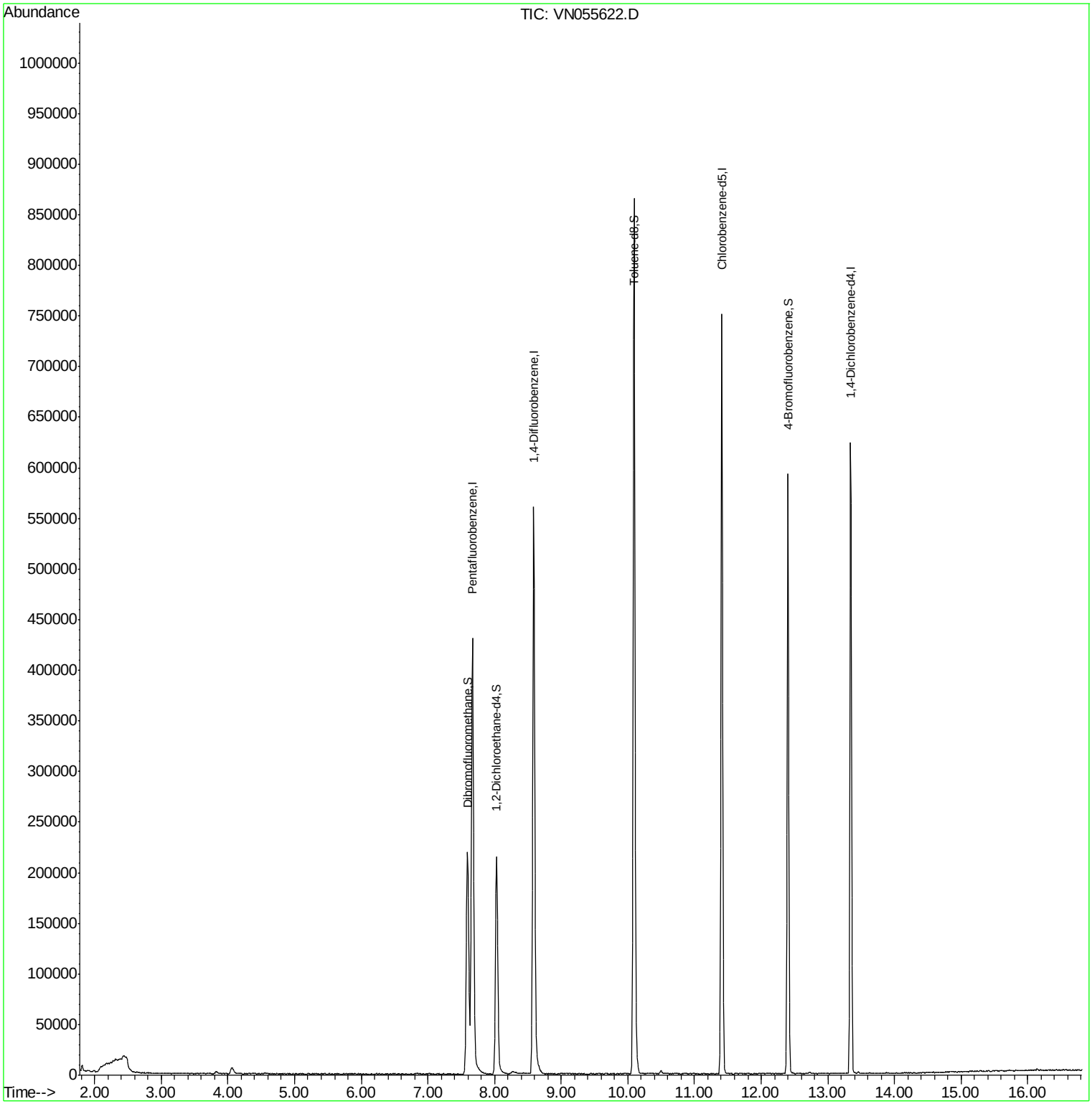
Target Compounds	Qvalue

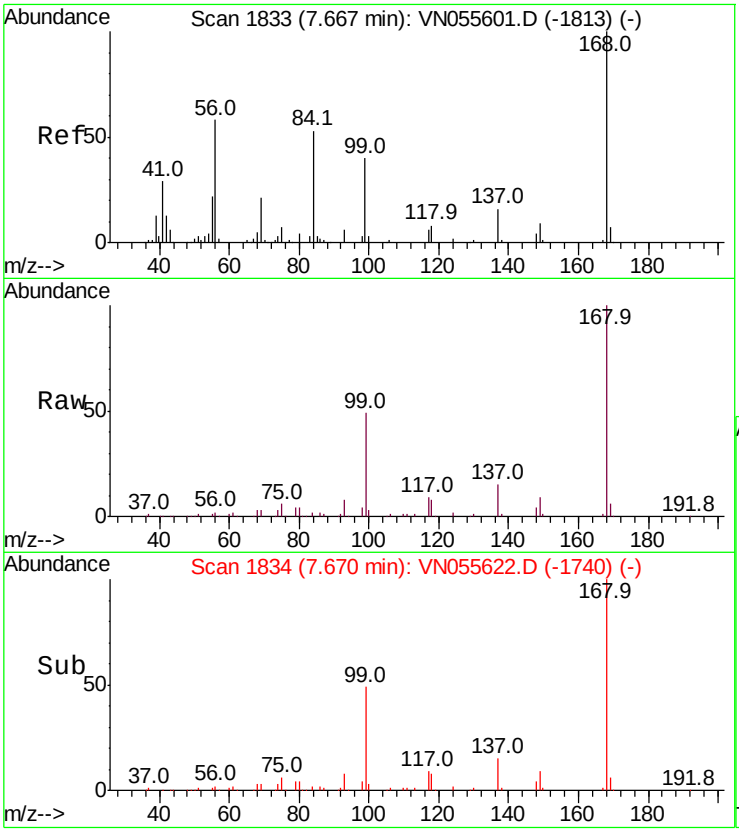
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055622.D
Acq On : 17 May 2019 19:55
Operator : JC/SP
Sample : K2902-11
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 27 Sample Multiplier: 1

Quant Time: May 18 04:02:47 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260
QLast Update : Fri May 17 23:54:12 2019
Response via : Initial Calibration

Instrument :
MSVOA_N
ClientSampleId :
FM-EA-3MW09-051619

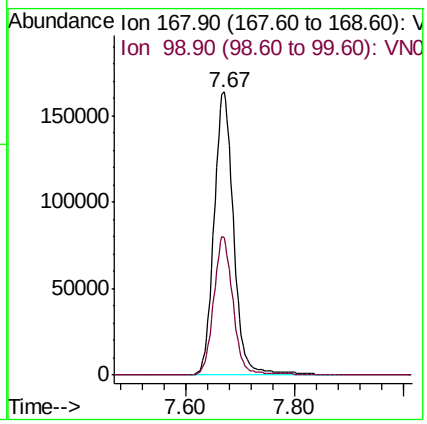


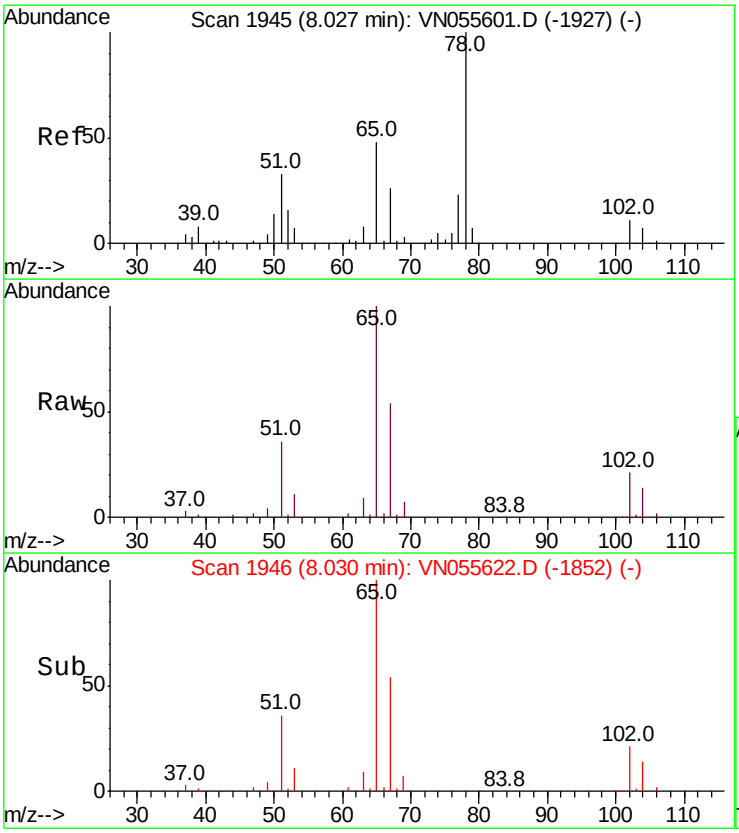


#1
Pentafluorobenzene
Concen: 50.000 ug/l
RT: 7.67 min Scan# 1834
Delta R.T. 0.00 min
Lab File: VN055622.D
Acq: 17 May 2019 19:55

Tgt Ion:168 Resp: 407634

Ion	Ratio	Lower	Upper
168	100		
99	48.6	40.2	60.2

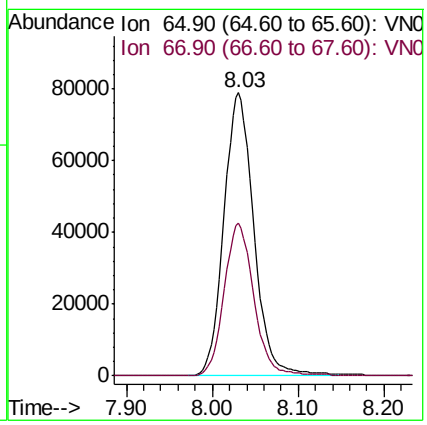


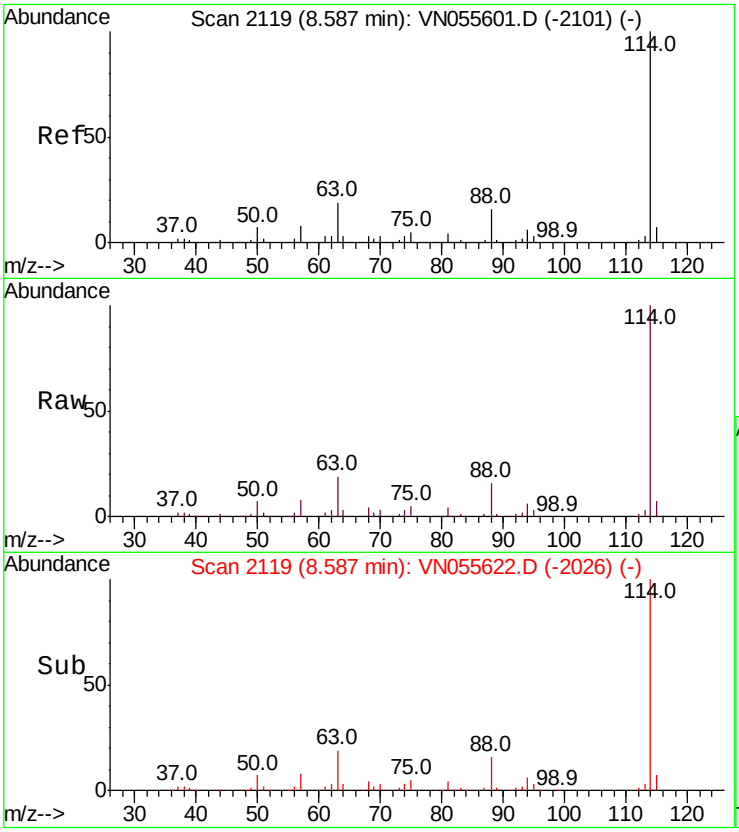


#33
1,2-Dichloroethane-d4
Concen: 42.824 ug/l
RT: 8.03 min Scan# 1946
Delta R.T. 0.00 min
Lab File: VN055622.D
Acq: 17 May 2019 19:55

Tgt Ion: 65 Resp: 191361

Ion	Ratio	Lower	Upper
65	100		
67	53.6	0.0	108.6

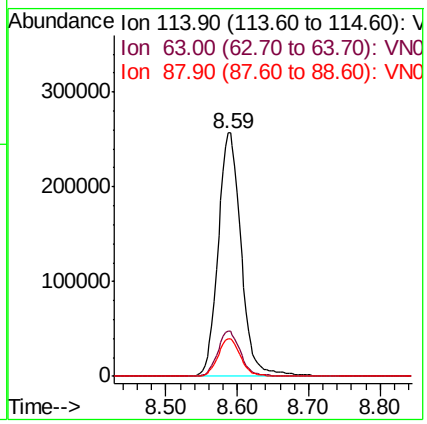


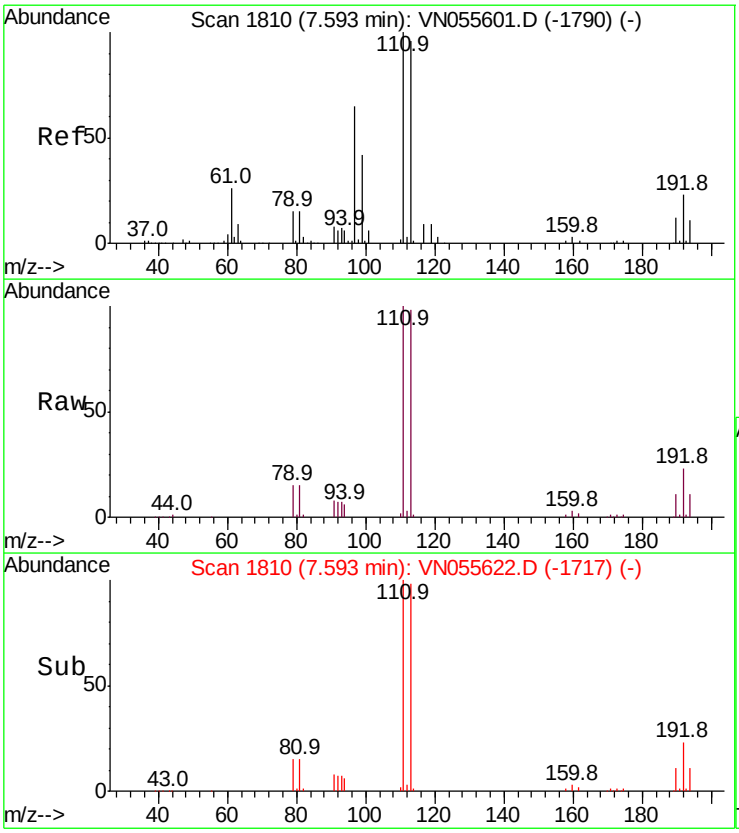


#34
1,4-Difluorobenzene
Concen: 50.000 ug/l
RT: 8.59 min Scan# 2119
Delta R.T. 0.00 min
Lab File: VN055622.D
Acq: 17 May 2019 19:55

Tgt Ion:114 Resp: 573800

Ion	Ratio	Lower	Upper
114	100		
63	18.7	0.0	38.2
88	15.5	0.0	31.0

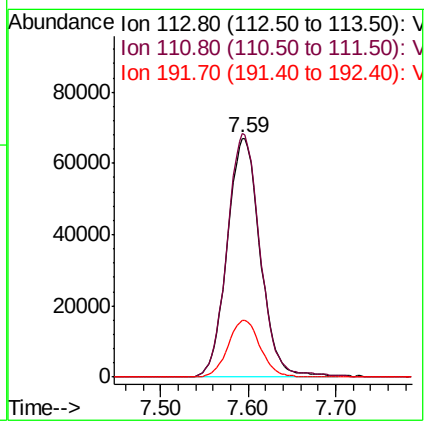


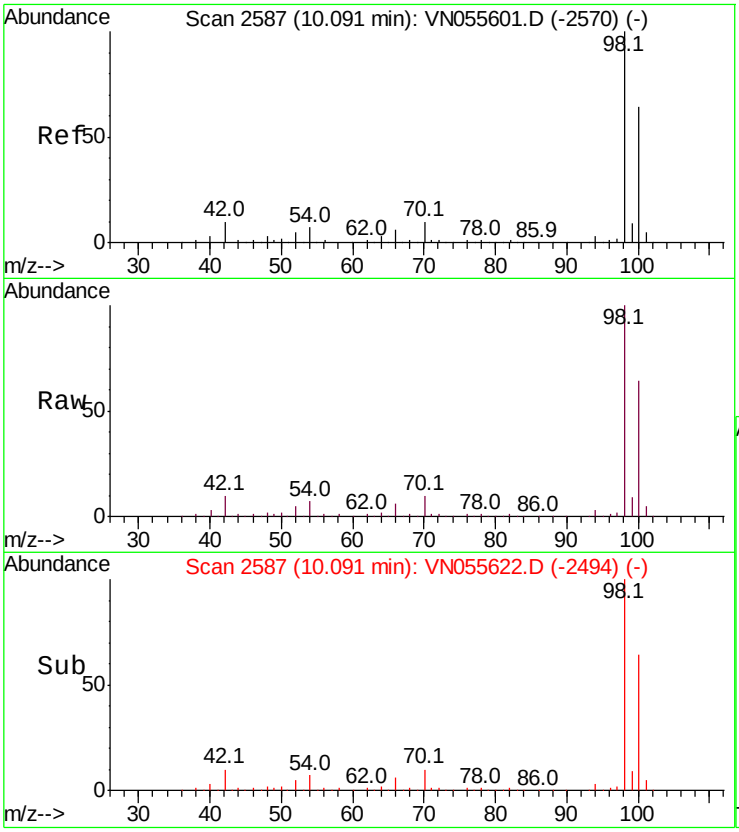


#35
Dibromofluoromethane
Concen: 48.225 ug/l
RT: 7.59 min Scan# 1810
Delta R.T. 0.00 min
Lab File: VN055622.D
Acq: 17 May 2019 19:55

Tgt Ion:113 Resp: 175780

Ion	Ratio	Lower	Upper
113	100		
111	102.0	82.5	123.7
192	23.4	18.7	28.1

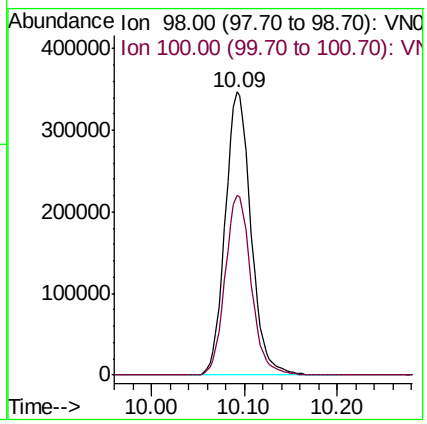


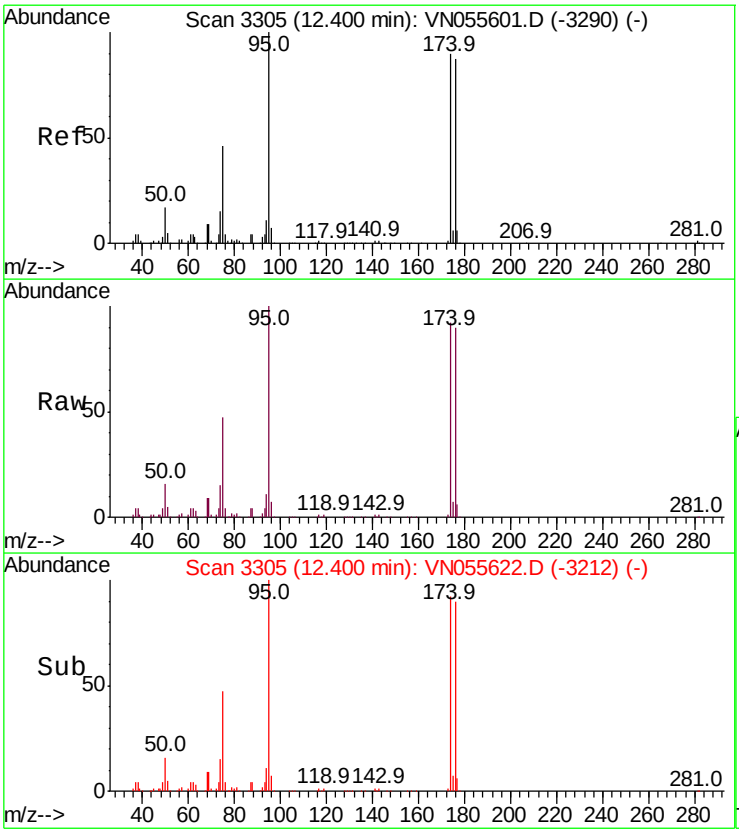


#50
Toluene-d8
Concen: 48.463 ug/l
RT: 10.09 min Scan# 2587
Delta R.T. 0.00 min
Lab File: VN055622.D
Acq: 17 May 2019 19:55

Tgt Ion: 98 Resp: 667940

Ion	Ratio	Lower	Upper
98	100		
100	64.0	51.9	77.9

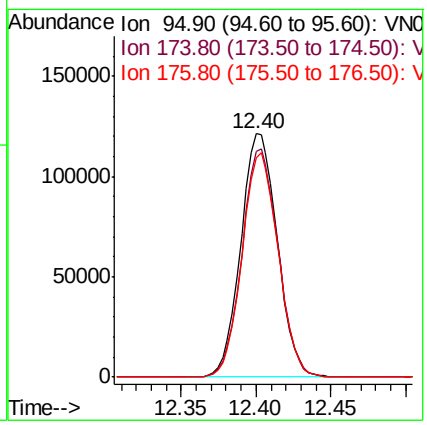


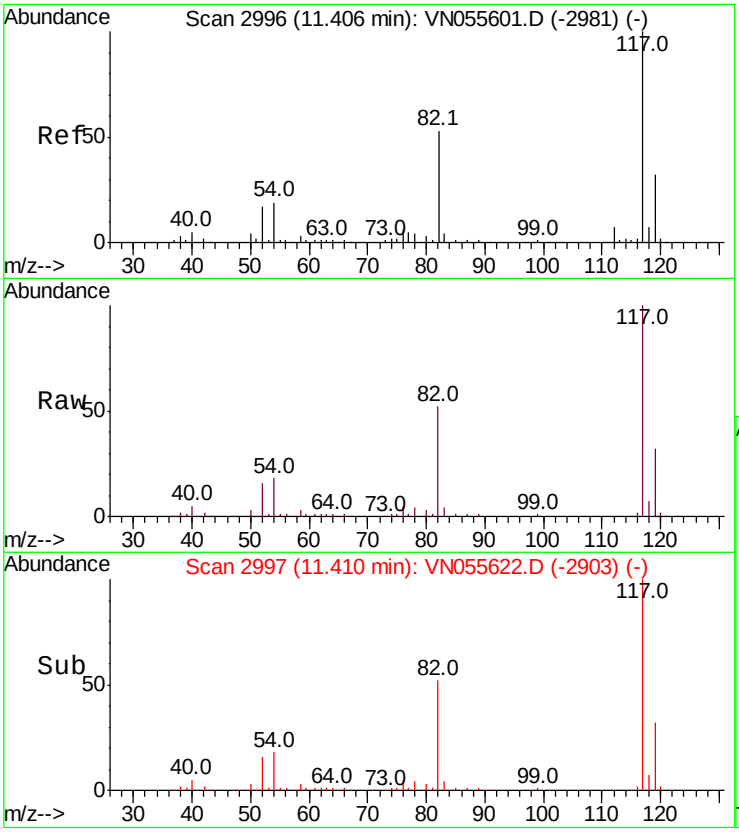


#62
4-Bromofluorobenzene
Concen: 43.415 ug/l
RT: 12.40 min Scan# 3305
Delta R.T. 0.00 min
Lab File: VN055622.D
Acq: 17 May 2019 19:55

Tgt Ion: 95 Resp: 206621

Ion	Ratio	Lower	Upper
95	100		
174	92.6	0.0	180.6
176	90.6	0.0	177.4

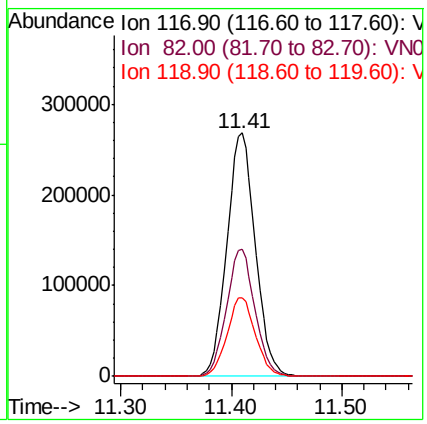


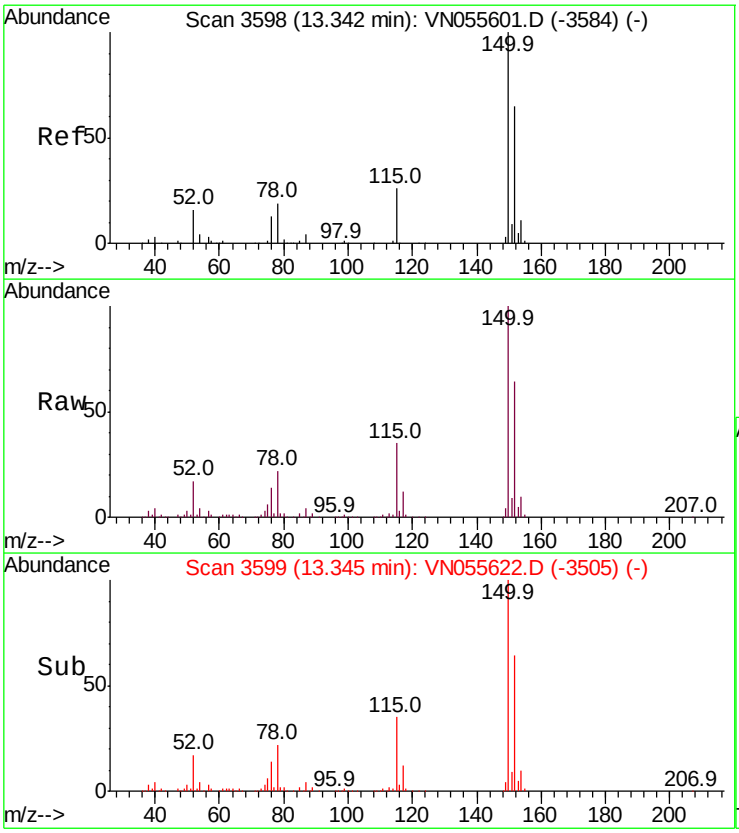


#63
Chlorobenzene-d5
Concen: 50.000 ug/l
RT: 11.41 min Scan# 2997
Delta R.T. 0.00 min
Lab File: VN055622.D
Acq: 17 May 2019 19:55

Tgt Ion:117 Resp: 478852

Ion	Ratio	Lower	Upper
117	100		
82	52.2	42.3	63.5
119	32.4	25.4	38.2

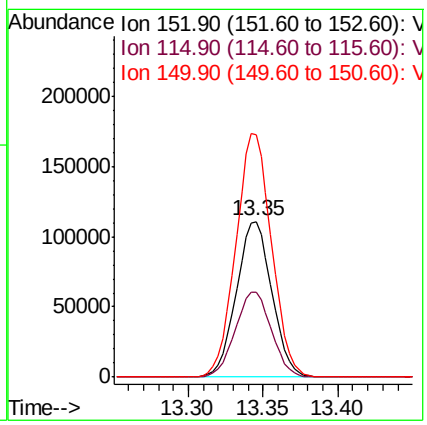




#72
1,4-Dichlorobenzene-d4
Concen: 50.000 ug/l
RT: 13.35 min Scan# 3599
Delta R.T. 0.00 min
Lab File: VN055622.D
Acq: 17 May 2019 19:55

Tgt Ion:152 Resp: 183266

Ion	Ratio	Lower	Upper
152	100		
115	55.4	28.1	84.2
150	157.2	0.0	348.0



LSC Area Percent Report

Data Path : Z:\VOASRV\HPCHEM1\MSVOA N\DATA\VN051719\
Data File : VN055622.D
Acq On : 17 May 2019 19:55
Operator : JC/SP
Sample : K2902-11
Misc : 5.00mL/MSVOA N/WATER
ALS Vial : 27 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 3 % of largest Peak
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Title : SW846 8260

Signal : TIC

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	4.060	696	711	728	rBV2	6221	19025	1.13%	0.225%
2	7.593	1792	1810	1821	rBV	219320	554175	33.05%	6.568%
3	7.667	1822	1833	1871	rVB	428329	1042626	62.19%	12.356%
4	8.030	1929	1946	1975	rBV	215234	523102	31.20%	6.199%
5	8.587	2103	2119	2151	rBV	559657	1242515	74.11%	14.725%
6	10.091	2572	2587	2617	rBV	864714	1676630	100.00%	19.870%
7	11.410	2983	2997	3024	rBV	750819	1343083	80.11%	15.917%
8	12.403	3290	3306	3324	rBV	592408	1002999	59.82%	11.887%
9	13.342	3586	3598	3614	rBV	622902	1033785	61.66%	12.252%

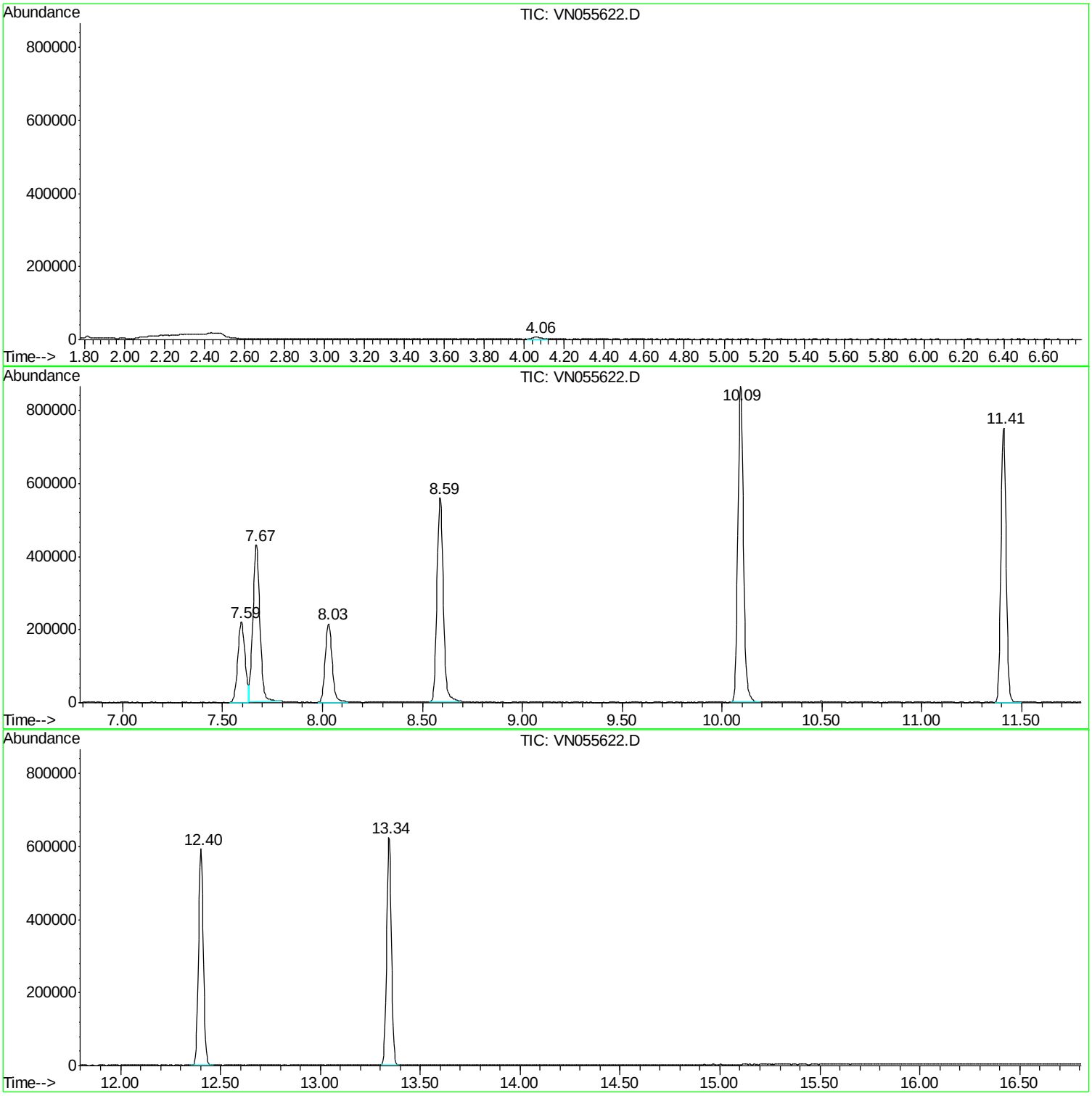
Sum of corrected areas: 8437940

Data Path : Z:\VOASRV\HPCHEM1\MSVOA N\DATA\VN051719\
Data File : VN055622.D
Acq On : 17 May 2019 19:55
Operator : JC/SP
Sample : K2902-11
Misc : 5.00mL/MSVOA N/WATER
ALS Vial : 27 Sample Multiplier: 1

Instrument :
MSVOA_N
ClientSampleId :
FM-EA-3MW09-051619

Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260

TIC Library : C:\DATABASE\NIST11.L
TIC Integration Parameters: LSCINT.P



Instrument :
MSVOA_N
ClientSampleId :
FM-EA-3MW09-051619

Library Search Compound Report

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055622.D
Acq On : 17 May 2019 19:55
Operator : JC/SP
Sample : K2902-11
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 27 Sample Multiplier: 1

Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260

TIC Library : C:\DATABASE\NIST11.L
TIC Integration Parameters: LSCINT.P

No Library Search Compounds Detected

****

Tentatively Identified Compound (LSC) summary

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055622.D
Acq On : 17 May 2019 19:55
Operator : JC/SP
Sample : K2902-11
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 27 Sample Multiplier: 1

Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260

TIC Library : C:\DATABASE\NIST11.L
TIC Integration Parameters: LSCINT.P

					Internal Standard			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

Quantitation Report (QT Reviewed)

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055623.D
Acq On : 17 May 2019 20:18
Operator : JC/SP
Sample : K2902-12
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 28 Sample Multiplier: 1

Instrument : MSVOA_N
ClientSampleId : FM-EA-3MW08-051619

Quant Time: May 18 04:04:28 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260
QLast Update : Fri May 17 23:54:12 2019
Response via : Initial Calibration

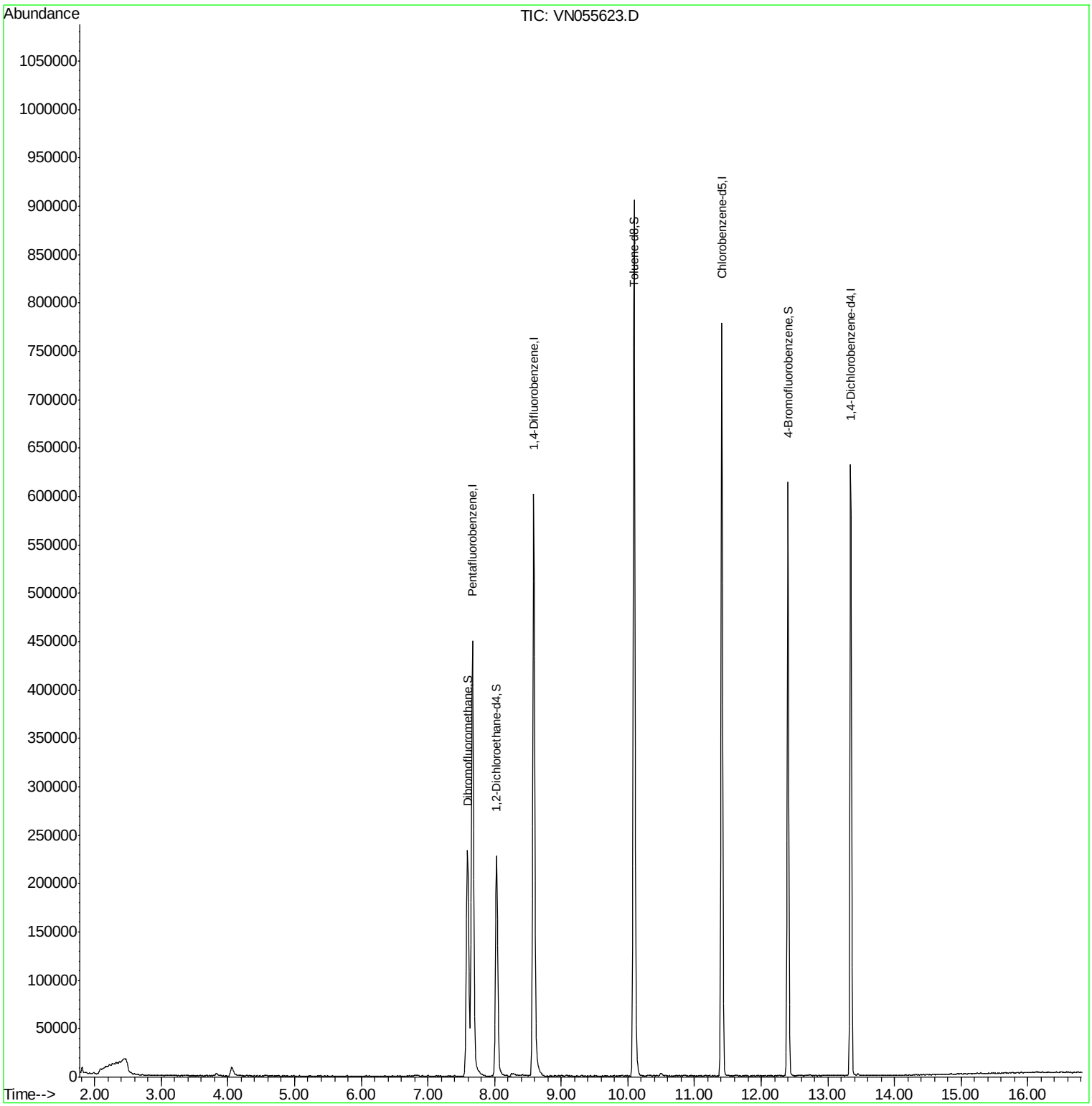
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene	7.67	168	425105	50.00	ug/l	0.00
34) 1,4-Difluorobenzene	8.59	114	601944	50.00	ug/l	0.00
63) Chlorobenzene-d5	11.41	117	495720	50.00	ug/l	0.00
72) 1,4-Dichlorobenzene-d4	13.35	152	187237	50.00	ug/l	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4	8.03	65	200975	43.13	ug/l	0.00
Spiked Amount 50.000			Recovery =	86.26%		
35) Dibromofluoromethane	7.60	113	185419	48.49	ug/l	0.00
Spiked Amount 50.000			Recovery =	96.98%		
50) Toluene-d8	10.09	98	694639	48.04	ug/l	0.00
Spiked Amount 50.000			Recovery =	96.08%		
62) 4-Bromofluorobenzene	12.40	95	214358	42.93	ug/l	0.00
Spiked Amount 50.000			Recovery =	85.86%		
Target Compounds						Qvalue

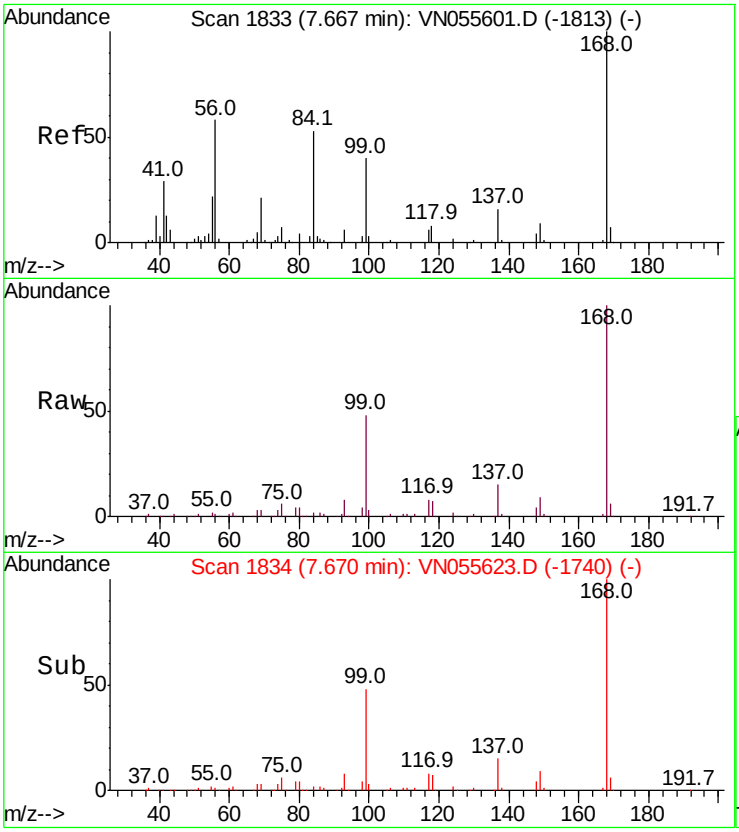
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055623.D
Acq On : 17 May 2019 20:18
Operator : JC/SP
Sample : K2902-12
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 28 Sample Multiplier: 1

Quant Time: May 18 04:04:28 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260
QLast Update : Fri May 17 23:54:12 2019
Response via : Initial Calibration

Instrument :
MSVOA_N
ClientSampleId :
FM-EA-3MW08-051619

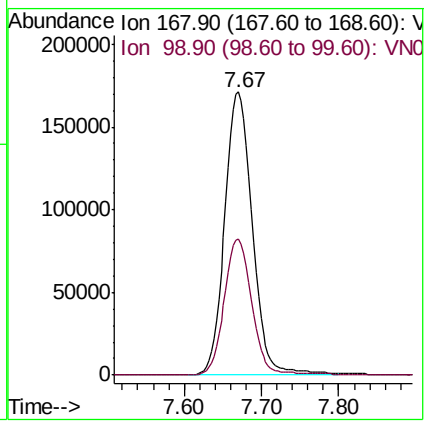


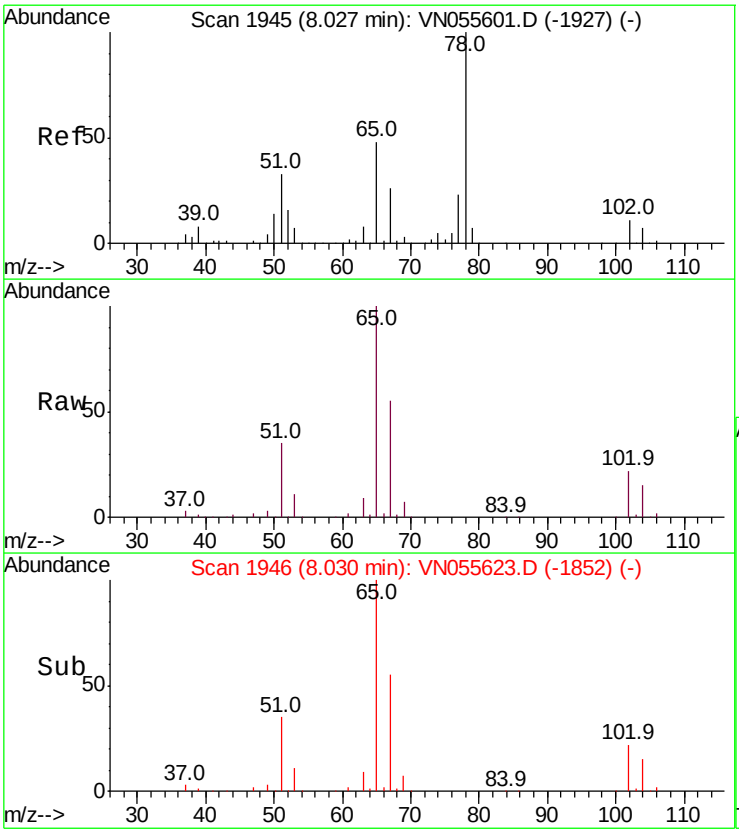


#1
Pentafluorobenzene
Concen: 50.000 ug/l
RT: 7.67 min Scan# 1834
Delta R.T. 0.00 min
Lab File: VN055623.D
Acq: 17 May 2019 20:18

Tgt Ion:168 Resp: 425105

Ion	Ratio	Lower	Upper
168	100		
99	47.9	40.2	60.2

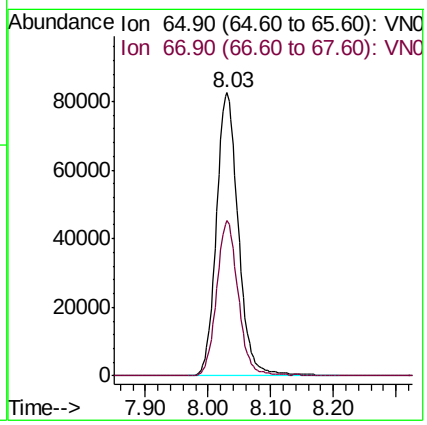


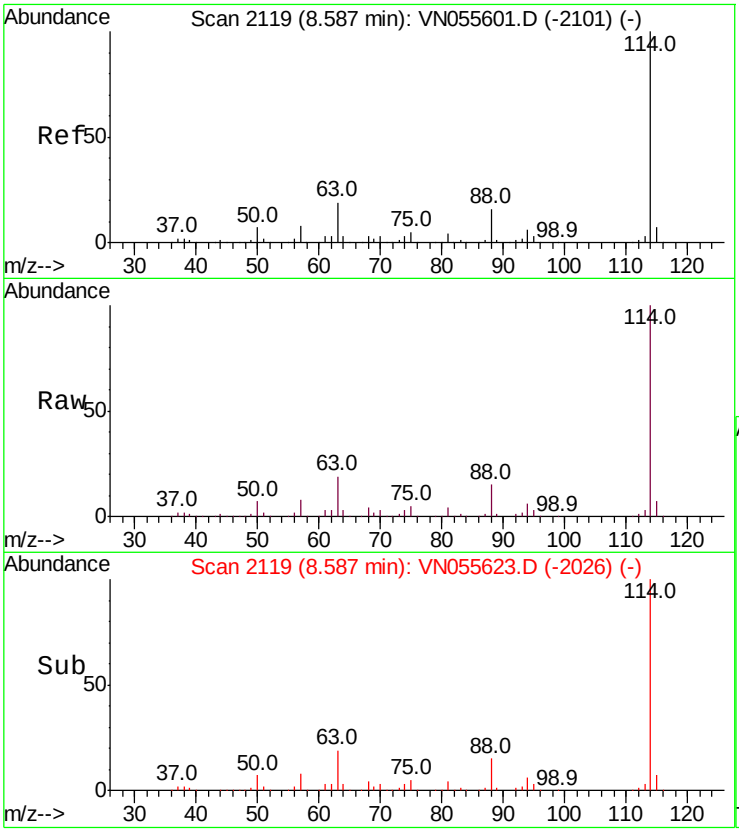


#33
1,2-Dichloroethane-d4
Concen: 43.128 ug/l
RT: 8.03 min Scan# 1946
Delta R.T. 0.00 min
Lab File: VN055623.D
Acq: 17 May 2019 20:18

Tgt Ion: 65 Resp: 200975

Ion	Ratio	Lower	Upper
65	100		
67	53.8	0.0	108.6

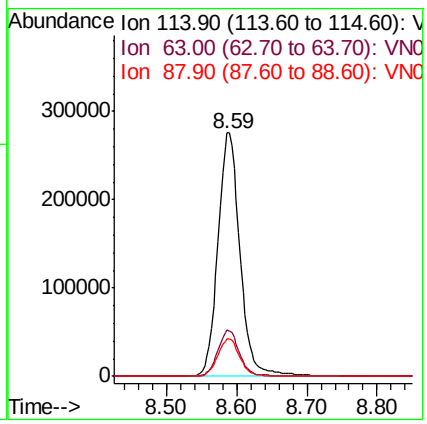


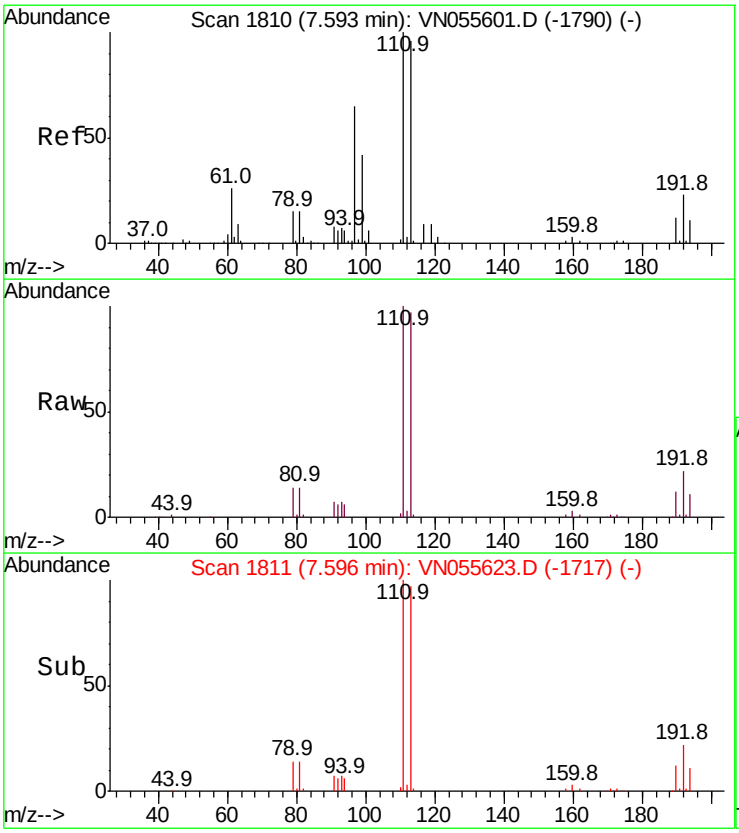


#34
1,4-Difluorobenzene
Concen: 50.000 ug/l
RT: 8.59 min Scan# 2119
Delta R.T. -0.00 min
Lab File: VN055623.D
Acq: 17 May 2019 20:18

Tgt Ion:114 Resp: 601944

Ion	Ratio	Lower	Upper
114	100		
63	19.0	0.0	38.2
88	15.2	0.0	31.0

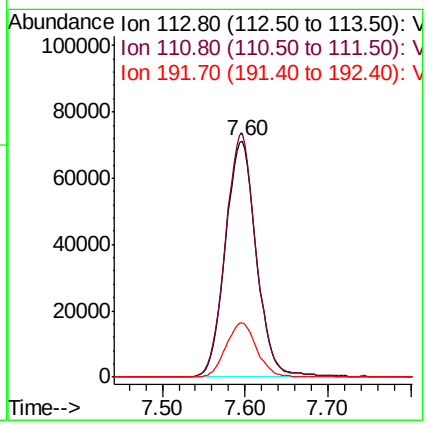


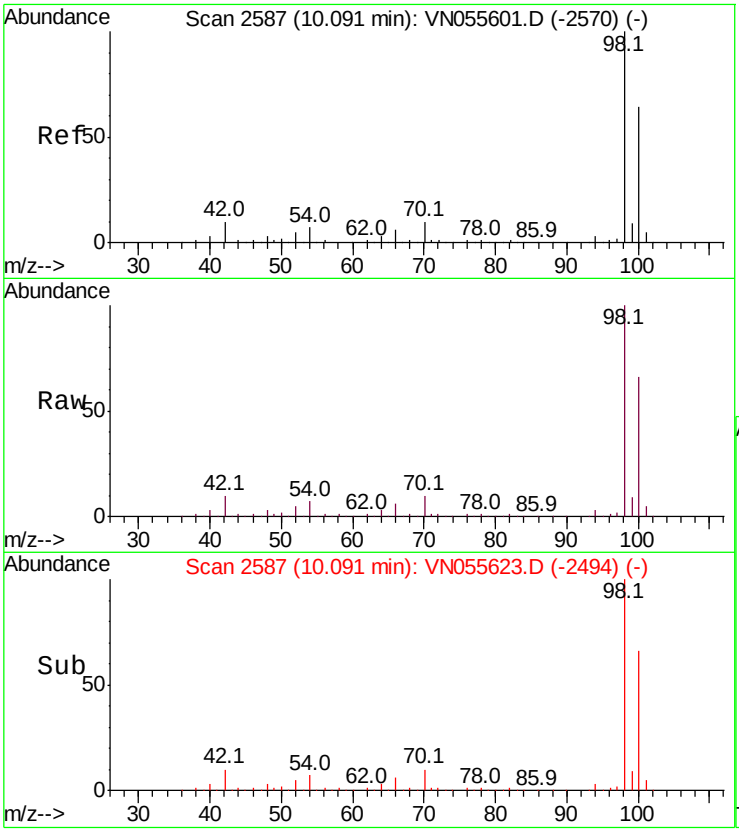


#35
Dibromofluoromethane
Concen: 48.491 ug/l
RT: 7.60 min Scan# 1811
Delta R.T. 0.00 min
Lab File: VN055623.D
Acq: 17 May 2019 20:18

Tgt Ion:113 Resp: 185419

Ion	Ratio	Lower	Upper
113	100		
111	101.9	82.5	123.7
192	22.9	18.7	28.1

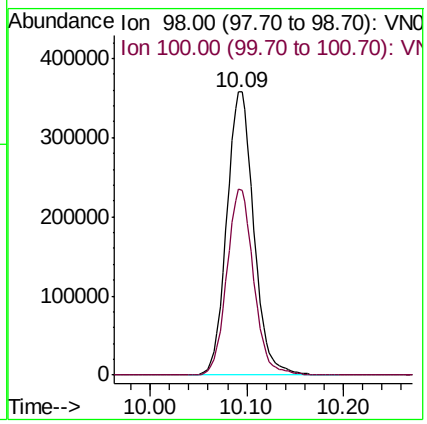


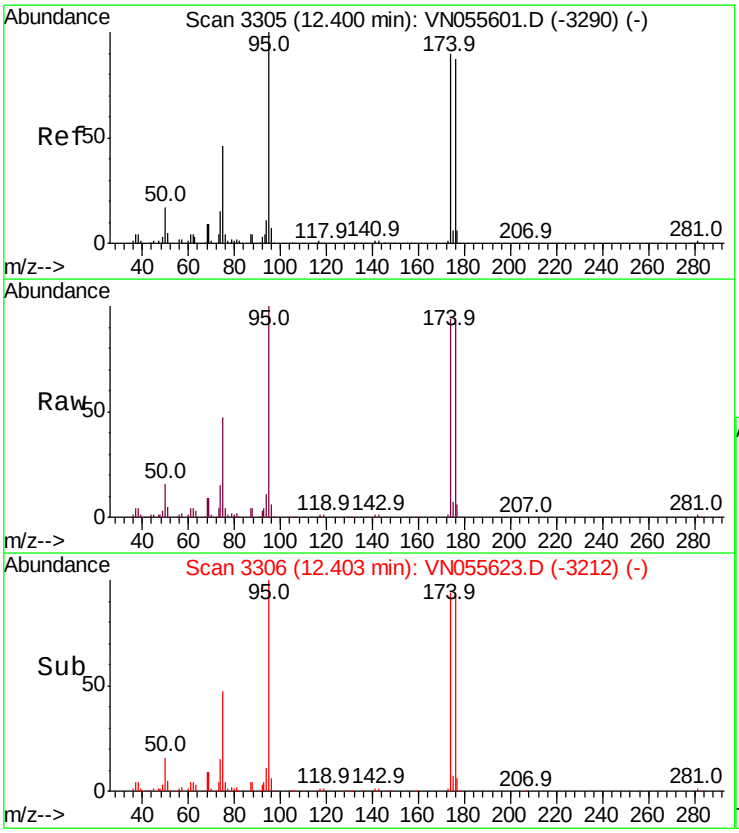


#50
Toluene-d8
Concen: 48.044 ug/l
RT: 10.09 min Scan# 2587
Delta R.T. -0.00 min
Lab File: VN055623.D
Acq: 17 May 2019 20:18

Tgt Ion: 98 Resp: 694639

Ion	Ratio	Lower	Upper
98	100		
100	65.1	51.9	77.9

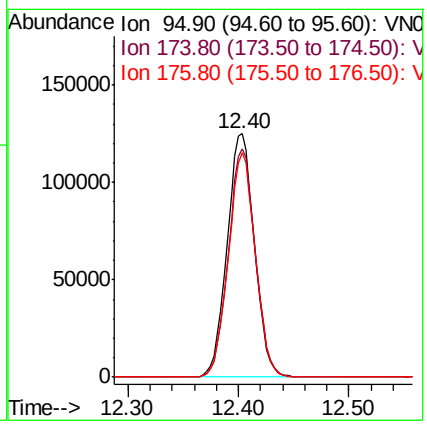


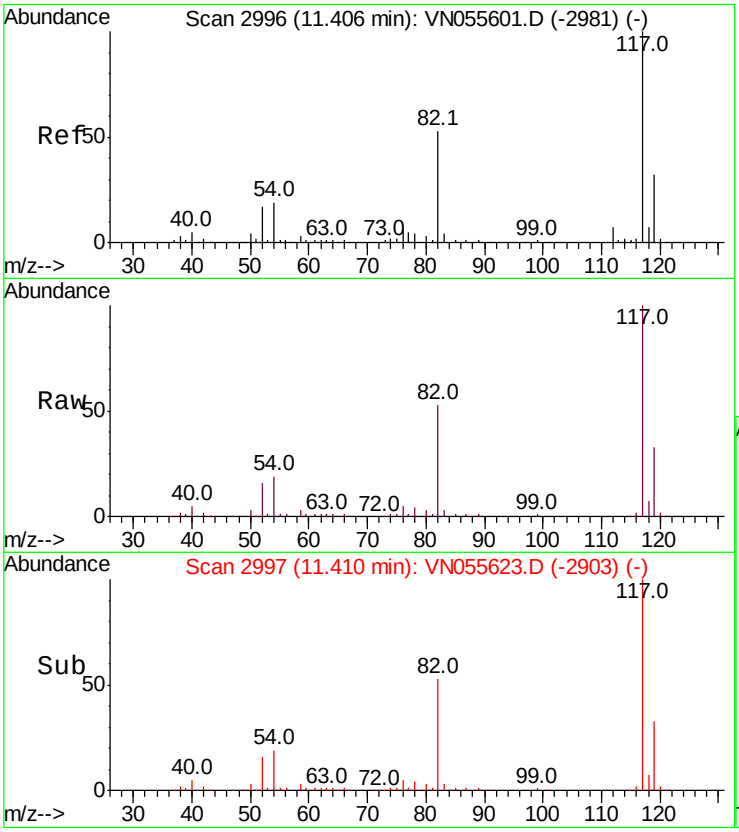


#62
4-Bromofluorobenzene
Concen: 42.934 ug/l
RT: 12.40 min Scan# 3306
Delta R.T. 0.00 min
Lab File: VN055623.D
Acq: 17 May 2019 20:18

Tgt Ion: 95 Resp: 214358

Ion	Ratio	Lower	Upper
95	100		
174	92.6	0.0	180.6
176	90.8	0.0	177.4

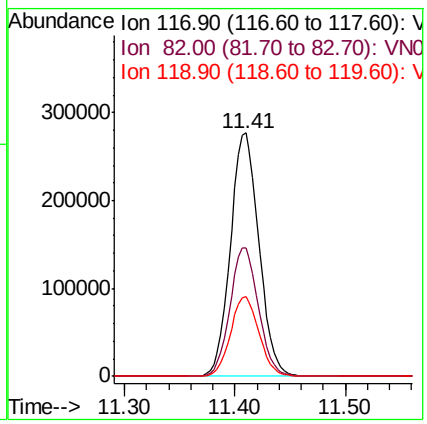


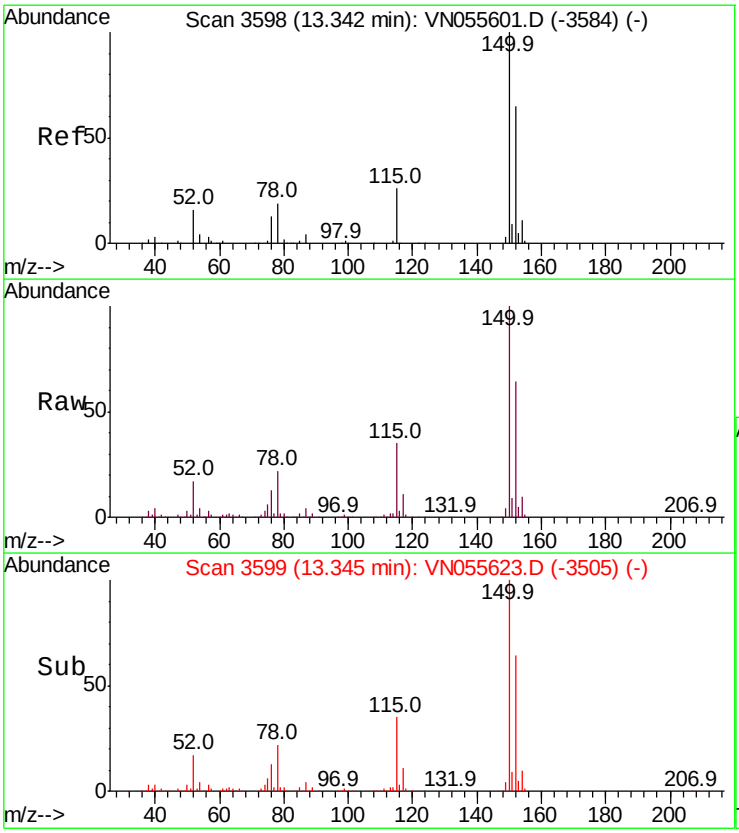


#63
Chlorobenzene-d5
Concen: 50.000 ug/l
RT: 11.41 min Scan# 2997
Delta R.T. 0.00 min
Lab File: VN055623.D
Acq: 17 May 2019 20:18

Tgt Ion:117 Resp: 495720

Ion	Ratio	Lower	Upper
117	100		
82	52.7	42.3	63.5
119	32.6	25.4	38.2

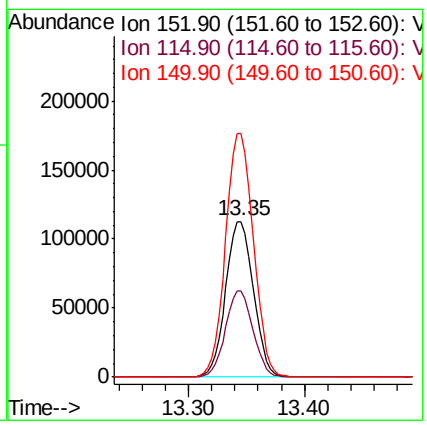




#72
1,4-Dichlorobenzene-d4
Concen: 50.000 ug/l
RT: 13.35 min Scan# 3599
Delta R.T. 0.00 min
Lab File: VN055623.D
Acq: 17 May 2019 20:18

Tgt Ion:152 Resp: 187237

Ion	Ratio	Lower	Upper
152	100		
115	54.8	28.1	84.2
150	157.2	0.0	348.0



LSC Area Percent Report

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055623.D
Acq On : 17 May 2019 20:18
Operator : JC/SP
Sample : K2902-12
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 28 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 3 % of largest Peak
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Title : SW846 8260

Signal : TIC

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	4.056	695	710	735	rBV3	8833	28406	1.61%	0.323%
2	7.596	1790	1811	1821	rBV	233216	583304	33.11%	6.630%
3	7.670	1822	1834	1860	rVB	445089	1077210	61.14%	12.244%
4	8.030	1928	1946	1972	rBV	227358	543026	30.82%	6.172%
5	8.587	2101	2119	2153	rBV	601107	1308307	74.25%	14.871%
6	10.091	2571	2587	2618	rBV	905192	1761969	100.00%	20.028%
7	11.410	2981	2997	3016	rBV	778184	1398498	79.37%	15.896%
8	12.403	3292	3306	3335	rVB	613779	1041320	59.10%	11.836%
9	13.342	3585	3598	3617	rBV	631610	1055646	59.91%	11.999%

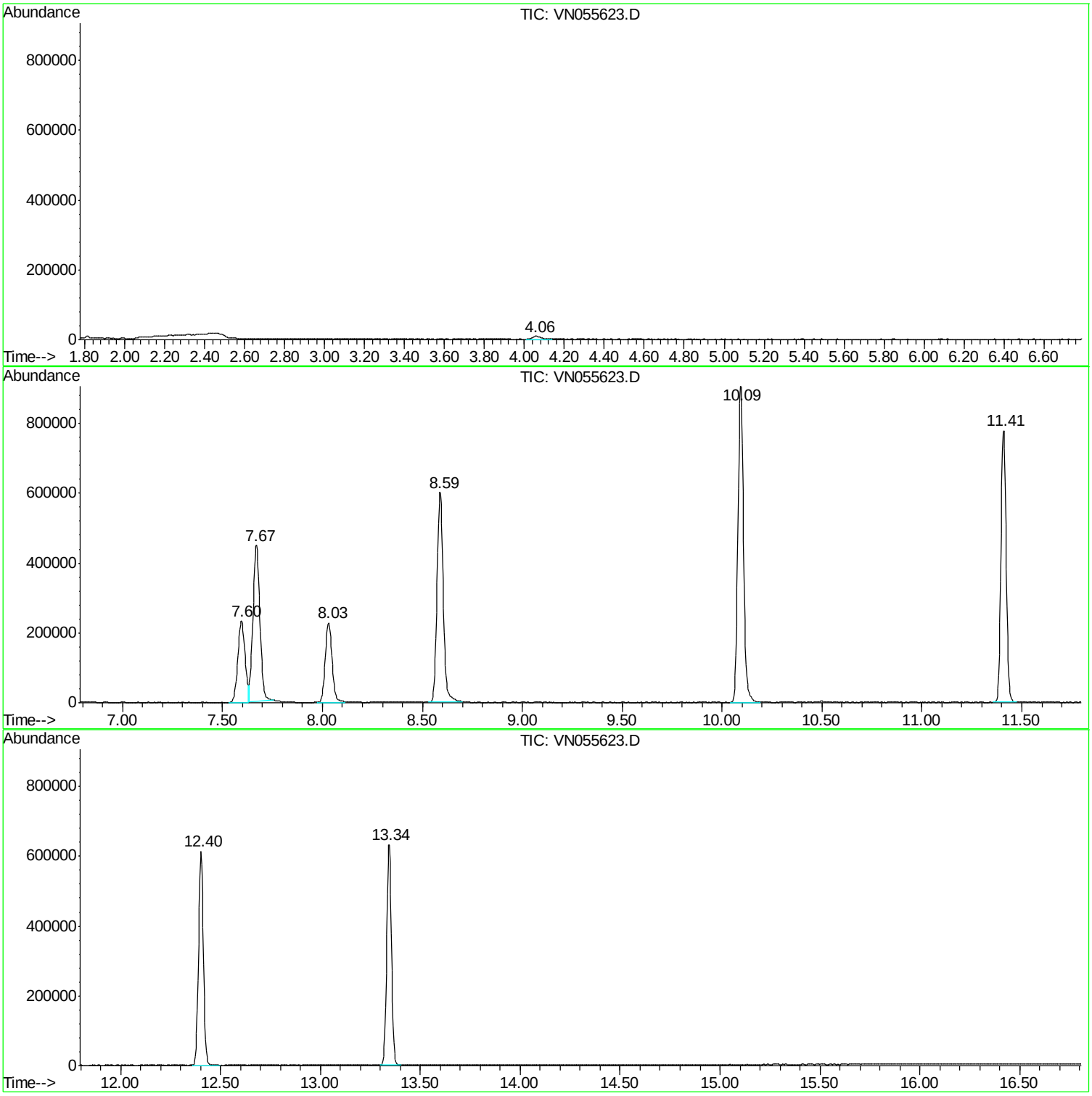
Sum of corrected areas: 8797686

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055623.D
Acq On : 17 May 2019 20:18
Operator : JC/SP
Sample : K2902-12
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 28 Sample Multiplier: 1

Instrument :
MSVOA_N
ClientSampleId :
FM-EA-3MW08-051619

Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260

TIC Library : C:\DATABASE\NIST11.L
TIC Integration Parameters: LSCINT.P



Instrument :
MSVOA_N
ClientSampleId :
FM-EA-3MW08-051619

Library Search Compound Report

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055623.D
Acq On : 17 May 2019 20:18
Operator : JC/SP
Sample : K2902-12
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 28 Sample Multiplier: 1

Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260

TIC Library : C:\DATABASE\NIST11.L
TIC Integration Parameters: LSCINT.P

No Library Search Compounds Detected

****

5

Instrument :
MSVOA_N
ClientSampleId :
FM-EA-3MW08-051619

A B C D E F G H I J

Tentatively Identified Compound (LSC) summary

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055623.D
Acq On : 17 May 2019 20:18
Operator : JC/SP
Sample : K2902-12
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 28 Sample Multiplier: 1

Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260

TIC Library : C:\DATABASE\NIST11.L
TIC Integration Parameters: LSCINT.P

					Internal Standard			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

Quantitation Report (QT Reviewed)

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055617.D
Acq On : 17 May 2019 17:56
Operator : JC/SP
Sample : K2902-13
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 22 Sample Multiplier: 1

Quant Time: May 20 09:30:45 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260
QLast Update : Fri May 17 23:54:12 2019
Response via : Initial Calibration

Instrument :
MSVOA_N
ClientSampleId :
FM-EA-RB02-051619

Manual Integrations APPROVED
MMDadoda
5/20/2019 9:08:55 AM

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene	7.67	168	419784	50.00	ug/l	0.00
34) 1,4-Difluorobenzene	8.59	114	591096	50.00	ug/l	0.00
63) Chlorobenzene-d5	11.41	117	491528	50.00	ug/l	0.00
72) 1,4-Dichlorobenzene-d4	13.34	152	188688	50.00	ug/l	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4	8.03	65	198844	43.21	ug/l	0.00
Spiked Amount 50.000			Recovery =	86.42%		
35) Dibromofluoromethane	7.59	113	184727	49.20	ug/l	0.00
Spiked Amount 50.000			Recovery =	98.40%		
50) Toluene-d8	10.09	98	684342	48.20	ug/l	0.00
Spiked Amount 50.000			Recovery =	96.40%		
62) 4-Bromofluorobenzene	12.40	95	213704	43.59	ug/l	0.00
Spiked Amount 50.000			Recovery =	87.18%		
Target Compounds						Qvalue
16) Acetone	3.83	43	13042	6.945	ug/l	96

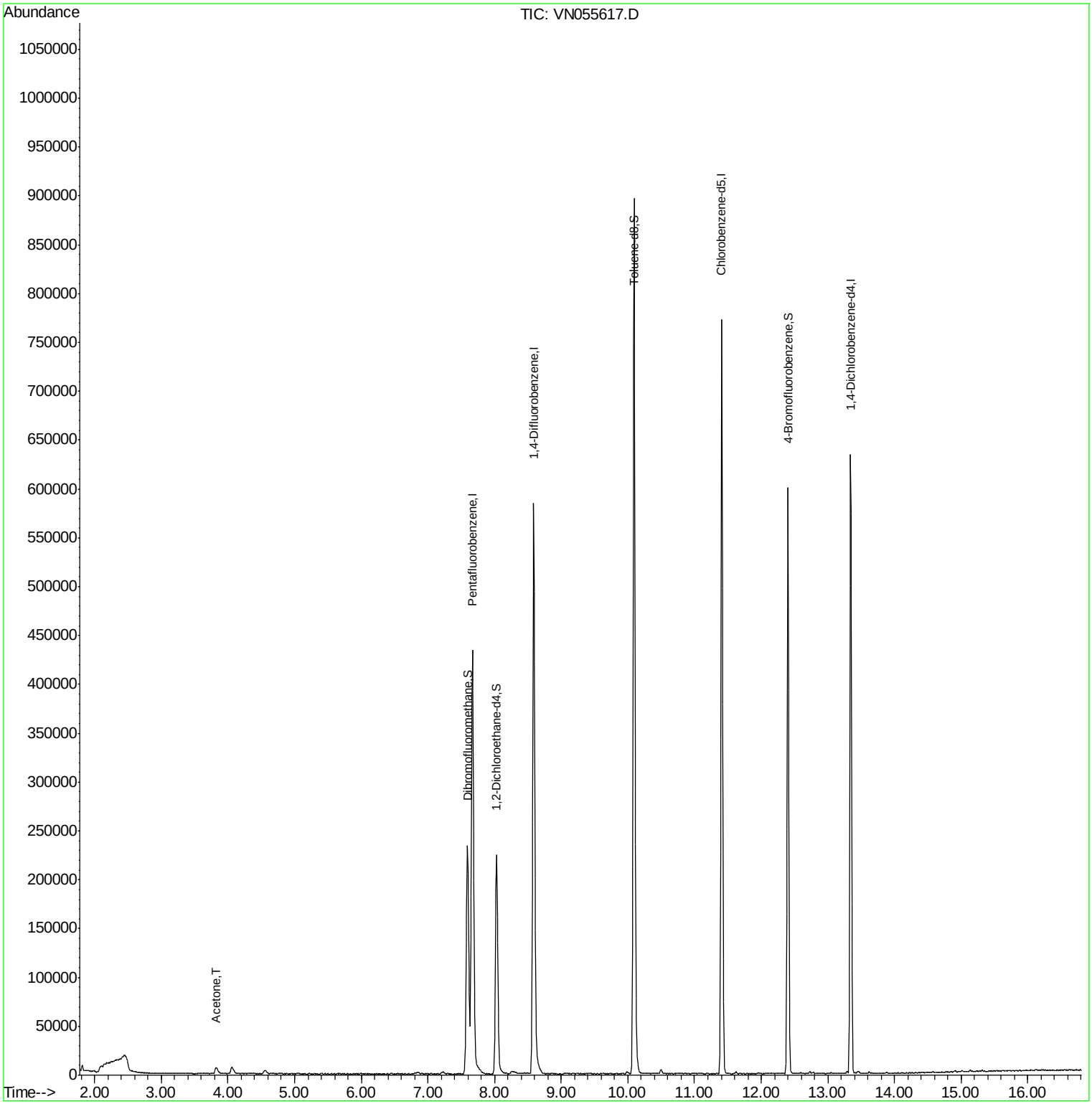
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055617.D
Acq On : 17 May 2019 17:56
Operator : JC/SP
Sample : K2902-13
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 22 Sample Multiplier: 1

Quant Time: May 20 09:30:45 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260
QLast Update : Fri May 17 23:54:12 2019
Response via : Initial Calibration

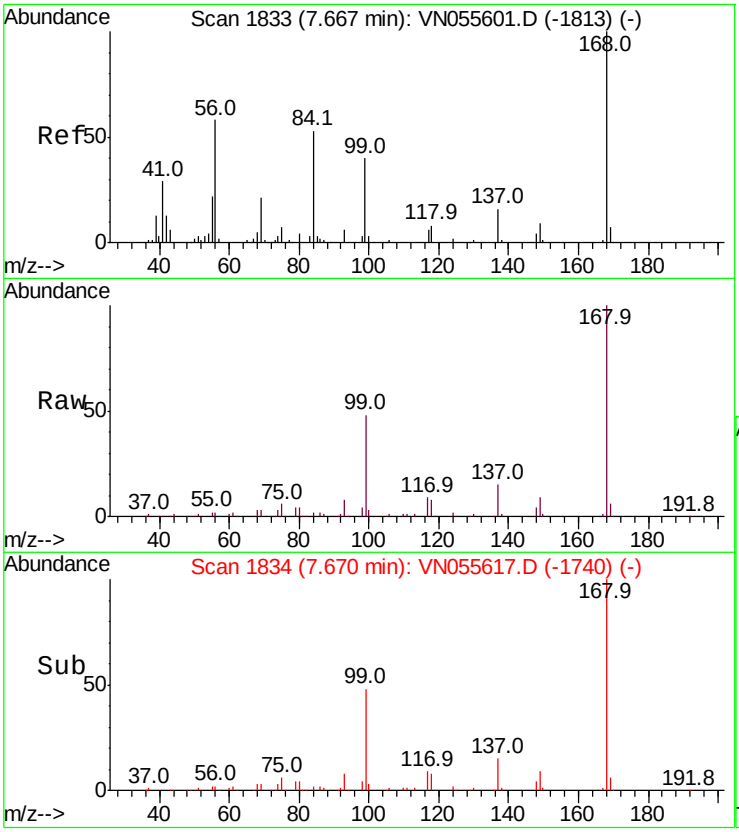
Instrument :
MSVOA_N
ClientSampleId :
FM-EA-RB02-051619

Manual Integrations APPROVED
MMDadoda
5/20/2019 9:08:55 AM



Instrument :
MSVOA_N
ClientSampleId :
FM-EA-RB02-051619

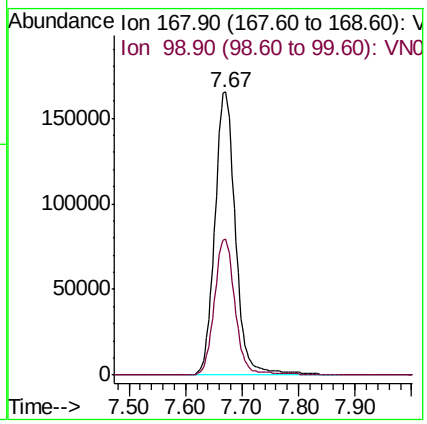
Manual Integrations APPROVED
MMDadoda
5/20/2019 9:08:55 AM

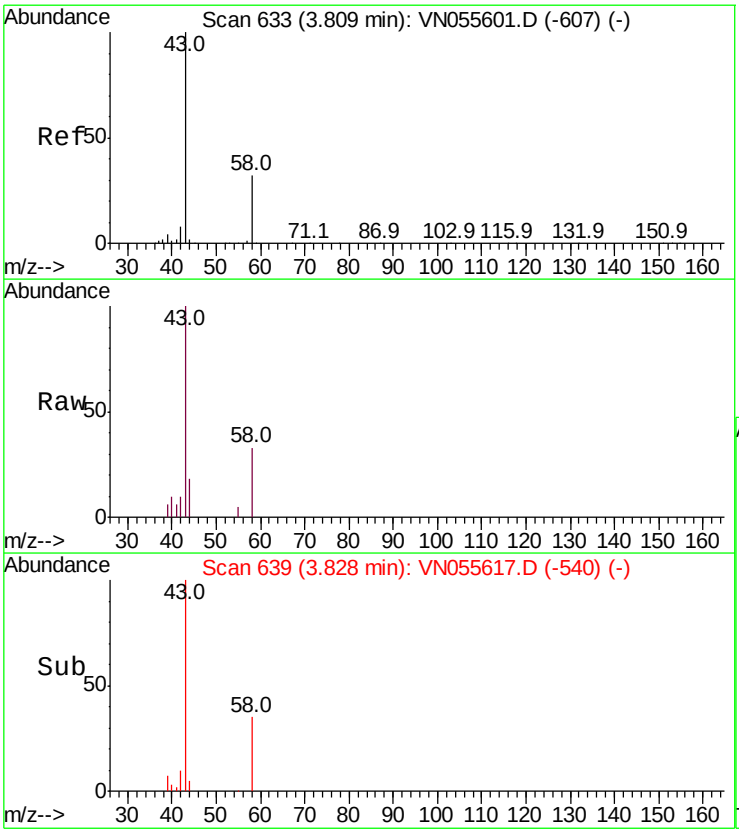


#1
Pentafluorobenzene
Concen: 50.000 ug/l
RT: 7.67 min Scan# 1834
Delta R.T. 0.00 min
Lab File: VN055617.D
Acq: 17 May 2019 17:56

Tgt Ion:168 Resp: 419784

Ion	Ratio	Lower	Upper
168	100		
99	47.9	40.2	60.2

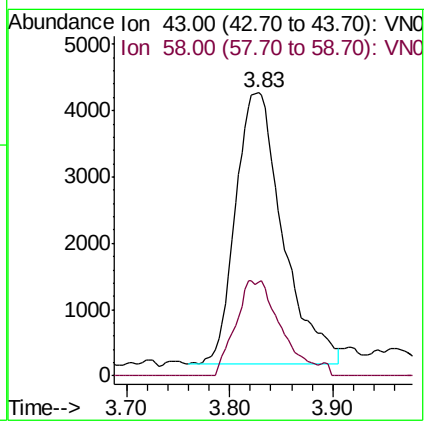


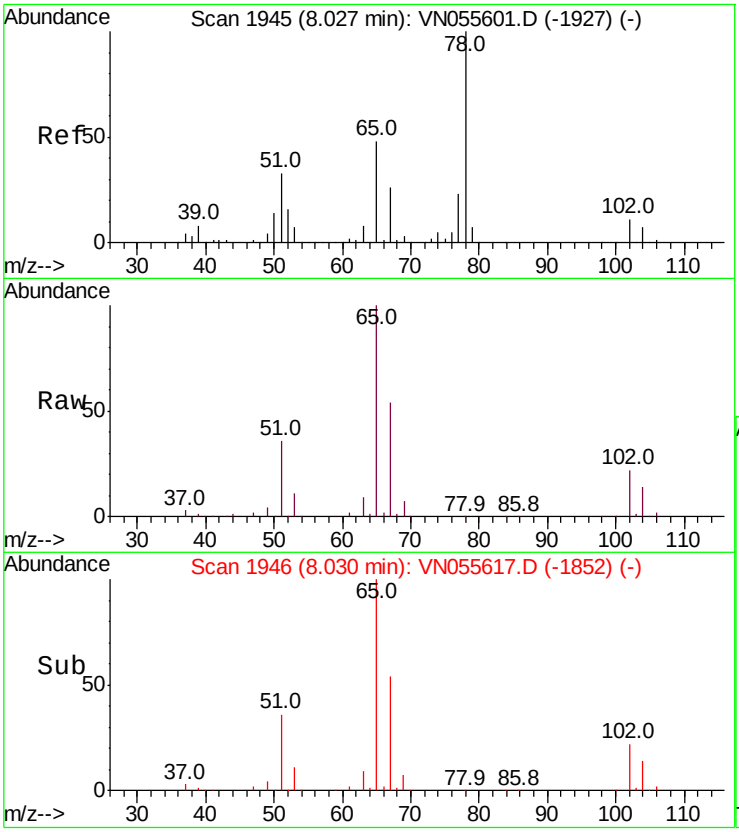


#16
Acetone
Concen: 6.945 ug/l
RT: 3.83 min Scan# 639
Delta R.T. 0.02 min
Lab File: VN055617.D
Acq: 17 May 2019 17:56

Tgt Ion: 43 Resp: 13042

Ion	Ratio	Lower	Upper
43	100		
58	34.8	26.0	39.0

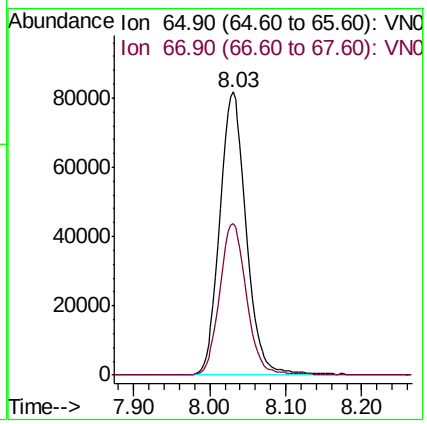


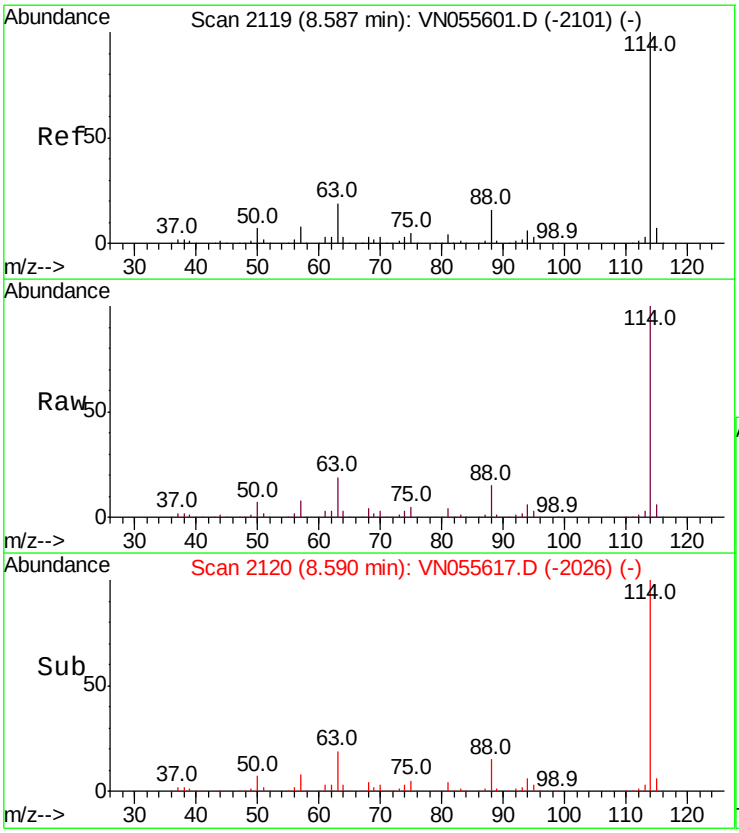


#33
1,2-Dichloroethane-d4
Concen: 43.211 ug/l
RT: 8.03 min Scan# 1946
Delta R.T. 0.00 min
Lab File: VN055617.D
Acq: 17 May 2019 17:56

Tgt Ion: 65 Resp: 198844

Ion	Ratio	Lower	Upper
65	100		
67	54.3	0.0	108.6

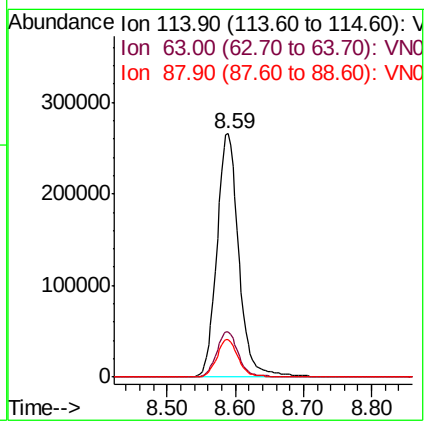




#34
1,4-Difluorobenzene
Concen: 50.000 ug/l
RT: 8.59 min Scan# 2120
Delta R.T. 0.00 min
Lab File: VN055617.D
Acq: 17 May 2019 17:56

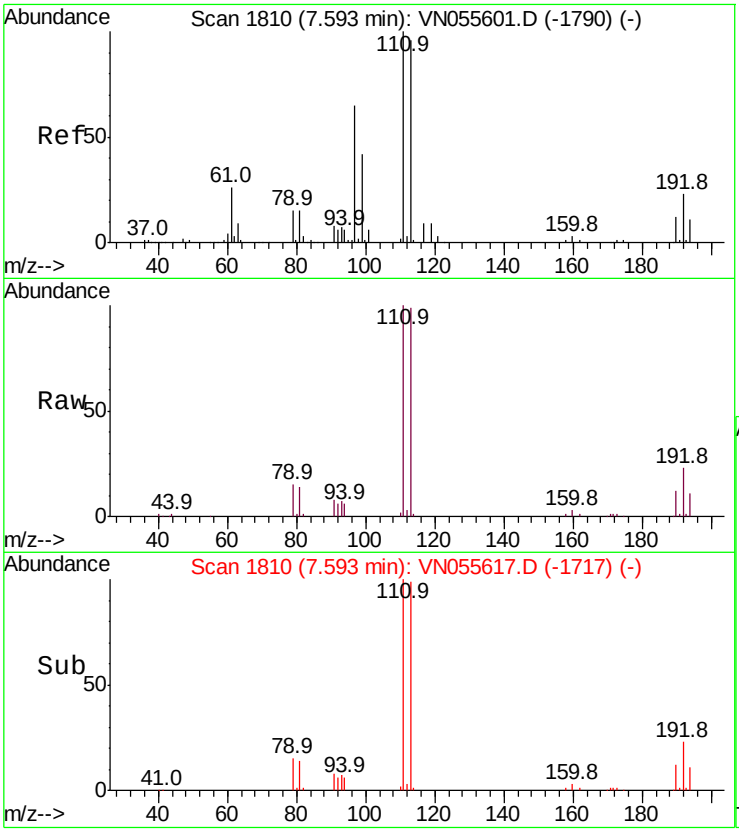
Tgt Ion:114 Resp: 591096

Ion	Ratio	Lower	Upper
114	100		
63	18.7	0.0	38.2
88	15.4	0.0	31.0



Instrument :
MSVOA_N
ClientSampleId :
FM-EA-RB02-051619

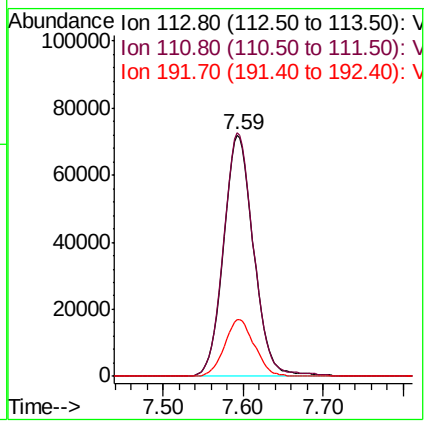
Manual Integrations APPROVED
MMDadoda
5/20/2019 9:08:55 AM

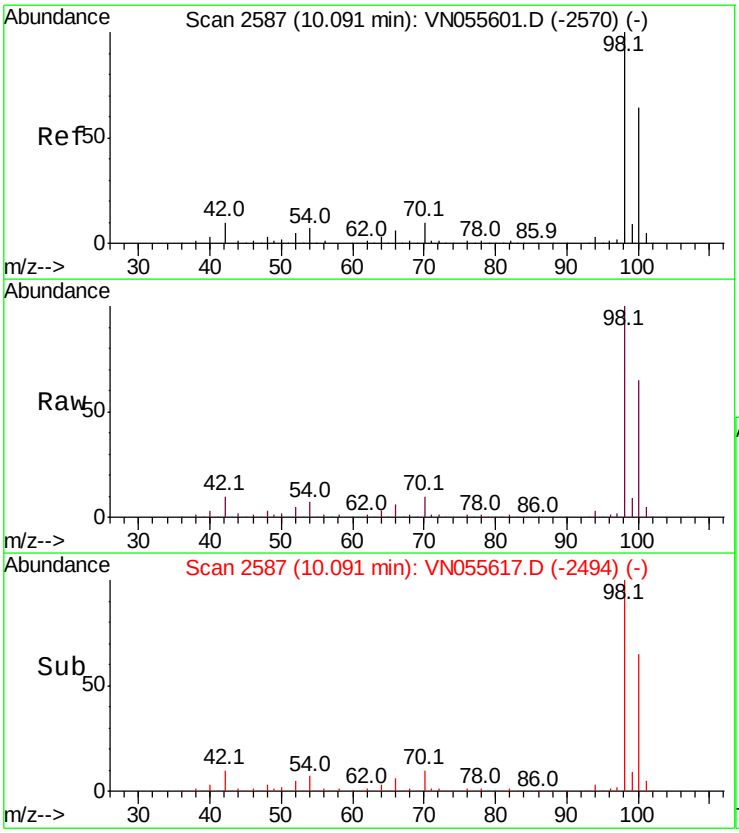


#35
Dibromofluoromethane
Concen: 49.196 ug/l
RT: 7.59 min Scan# 1810
Delta R.T. -0.00 min
Lab File: VN055617.D
Acq: 17 May 2019 17:56

Tgt Ion:113 Resp: 184727

Ion	Ratio	Lower	Upper
113	100		
111	101.2	82.5	123.7
192	23.3	18.7	28.1

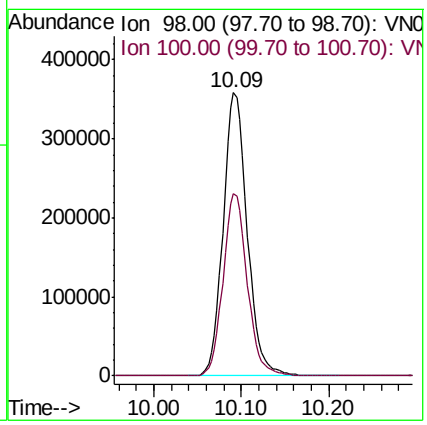


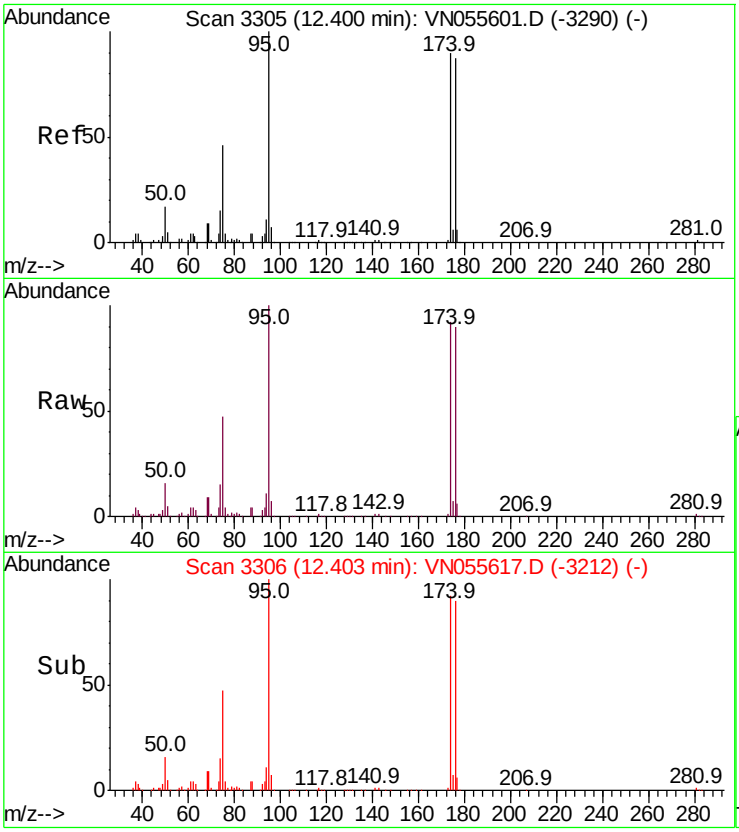


#50
Toluene-d8
Concen: 48.201 ug/l
RT: 10.09 min Scan# 2587
Delta R.T. -0.00 min
Lab File: VN055617.D
Acq: 17 May 2019 17:56

Tgt Ion: 98 Resp: 684342

Ion	Ratio	Lower	Upper
98	100		
100	64.5	51.9	77.9

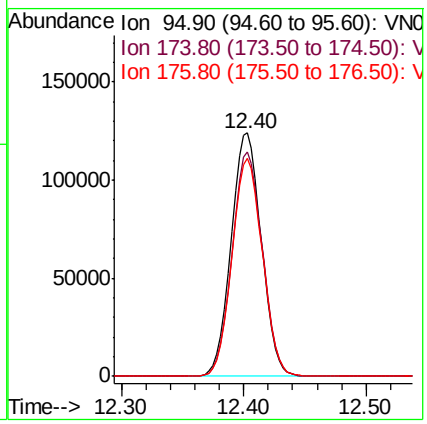




#62
4-Bromofluorobenzene
Concen: 43.589 ug/l
RT: 12.40 min Scan# 3306
Delta R.T. 0.00 min
Lab File: VN055617.D
Acq: 17 May 2019 17:56

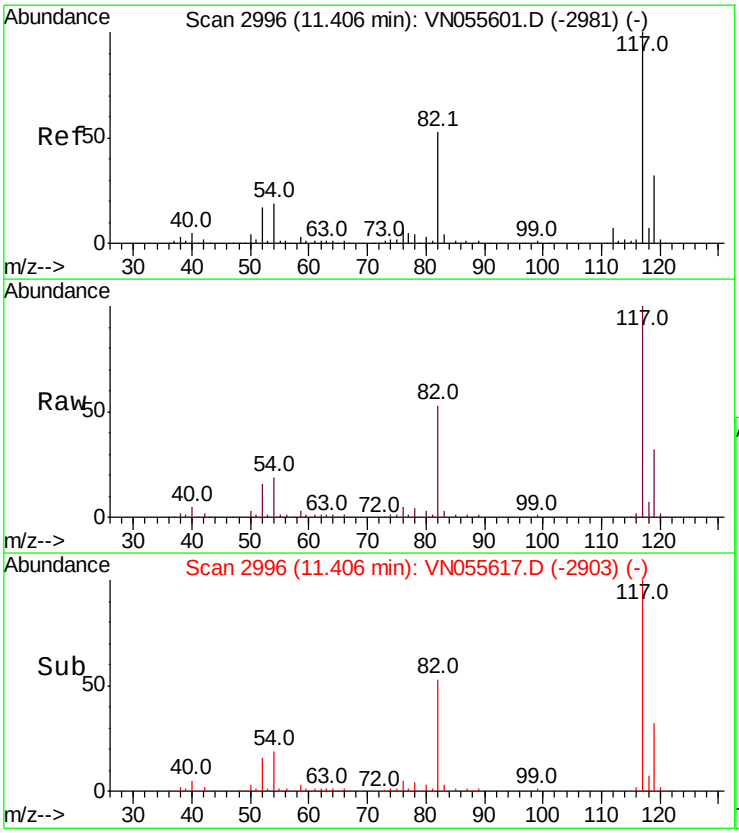
Tgt Ion: 95 Resp: 213704

Ion	Ratio	Lower	Upper
95	100		
174	91.7	0.0	180.6
176	89.6	0.0	177.4



Instrument :
MSVOA_N
ClientSampleId :
FM-EA-RB02-051619

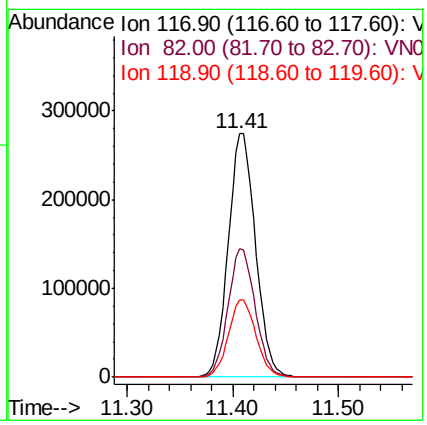
Manual Integrations APPROVED
MMDadoda
5/20/2019 9:08:55 AM

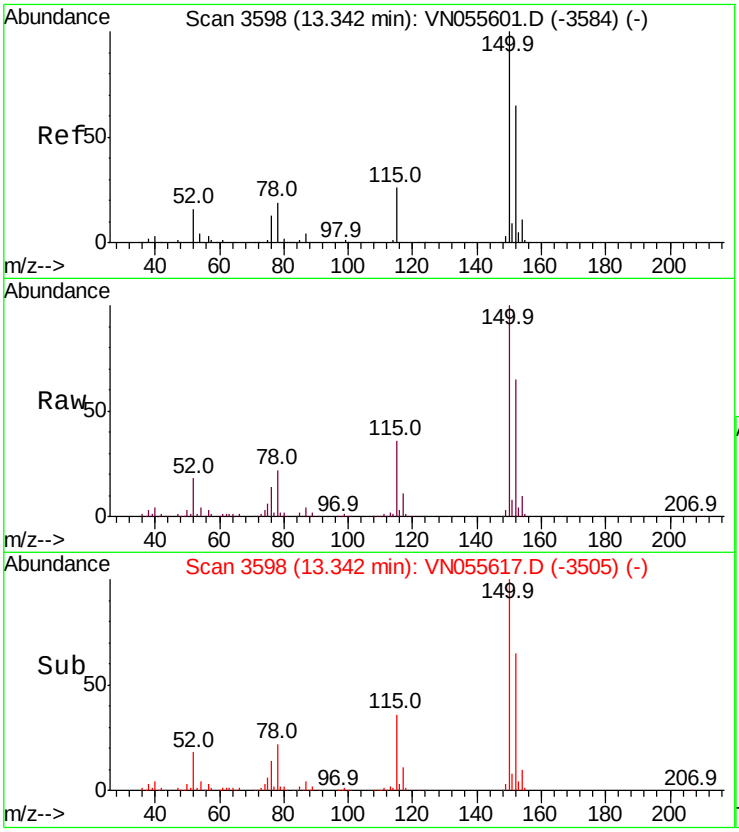


#63
Chlorobenzene-d5
Concen: 50.000 ug/l
RT: 11.41 min Scan# 2996
Delta R.T. -0.00 min
Lab File: VN055617.D
Acq: 17 May 2019 17:56

Tgt Ion:117 Resp: 491528

Ion	Ratio	Lower	Upper
117	100		
82	52.7	42.3	63.5
119	31.8	25.4	38.2

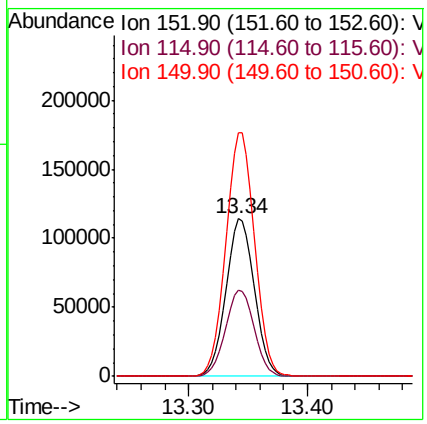




#72
1,4-Dichlorobenzene-d4
Concen: 50.000 ug/l
RT: 13.34 min Scan# 3598
Delta R.T. -0.00 min
Lab File: VN055617.D
Acq: 17 May 2019 17:56

Tgt Ion:152 Resp: 188688

Ion	Ratio	Lower	Upper
152	100		
115	55.3	28.1	84.2
150	156.1	0.0	348.0



Instrument :
MSVOA_N
ClientSampleId :
FM-EA-RB02-051619

Manual Integrations APPROVED
MMDadoda
5/20/2019 9:08:55 AM

LSC Area Percent Report

Data Path : Z:\VOASRV\HPCHEM1\MSVOA N\DATA\VN051719\
Data File : VN055617.D
Acq On : 17 May 2019 17:56
Operator : JC/SP
Sample : K2902-13
Misc : 5.00mL/MSVOA N/WATER
ALS Vial : 22 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 3 % of largest Peak
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Title : SW846 8260

Signal : TIC

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	4.059	698	711	729	rBV3	6701	19991	1.16%	0.230%
2	7.593	1790	1810	1821	rBV	234097	581263	33.64%	6.675%
3	7.670	1822	1834	1867	rVB	430504	1068376	61.83%	12.269%
4	8.030	1929	1946	1979	rBV	224288	545607	31.57%	6.266%
5	8.587	2098	2119	2164	rBV	584136	1290213	74.67%	14.817%
6	10.091	2571	2587	2615	rBV	896065	1727976	100.00%	19.844%
7	11.406	2980	2996	3019	rBV	772250	1381826	79.97%	15.869%
8	12.403	3291	3306	3327	rBV	600114	1035846	59.95%	11.896%
9	13.342	3586	3598	3615	rBV	633071	1056664	61.15%	12.135%

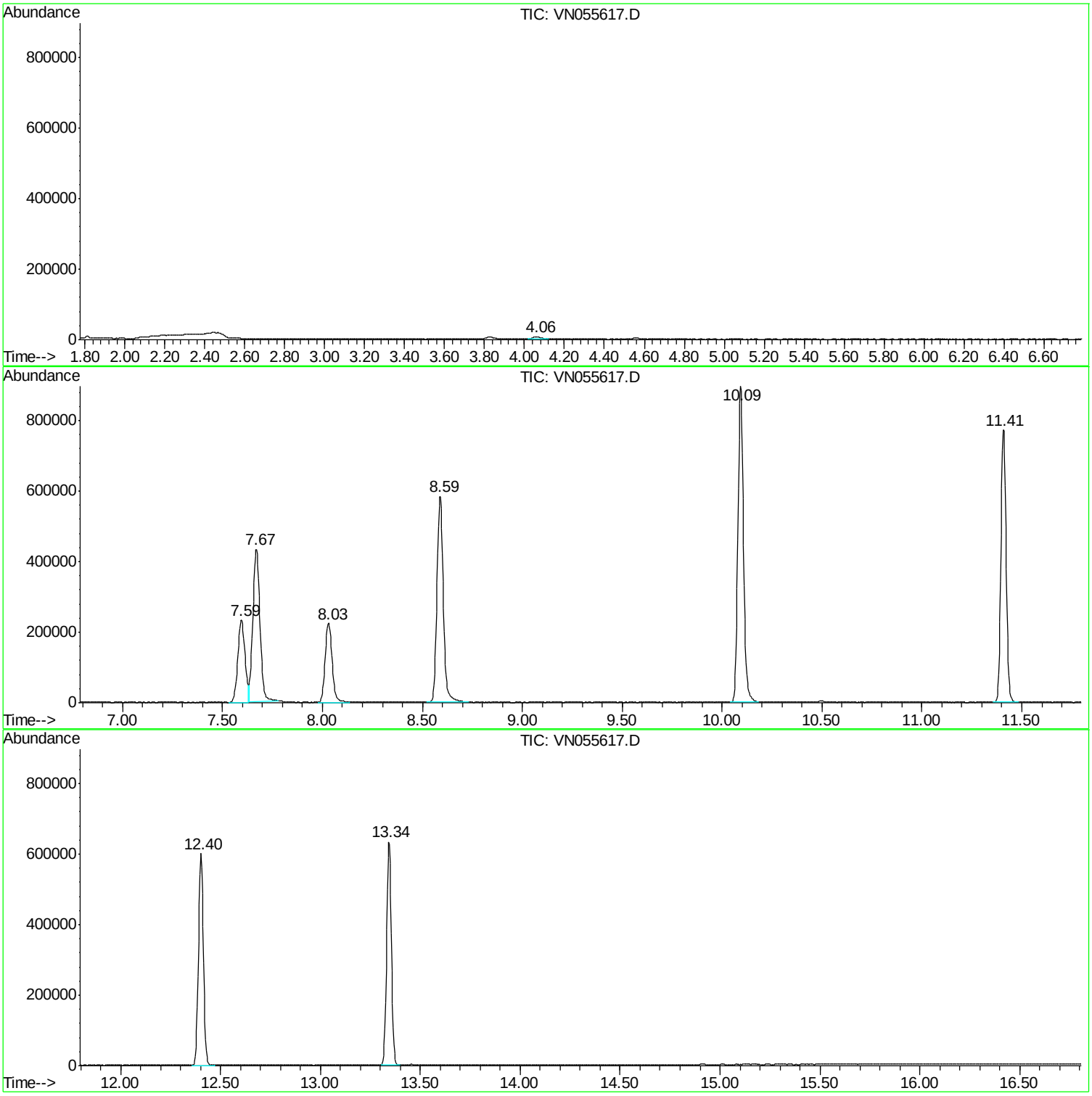
Sum of corrected areas: 8707762

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055617.D
Acq On : 17 May 2019 17:56
Operator : JC/SP
Sample : K2902-13
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 22 Sample Multiplier: 1

Instrument :
MSVOA_N
ClientSampleId :
FM-EA-RB02-051619

Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260

TIC Library : C:\DATABASE\NIST11.L
TIC Integration Parameters: LSCINT.P



5

Instrument :
MSVOA_N
ClientSampleId :
FM-EA-RB02-051619

A B C D E F G H I J

Library Search Compound Report

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055617.D
Acq On : 17 May 2019 17:56
Operator : JC/SP
Sample : K2902-13
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 22 Sample Multiplier: 1

Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260

TIC Library : C:\DATABASE\NIST11.L
TIC Integration Parameters: LSCINT.P

No Library Search Compounds Detected

****

Tentatively Identified Compound (LSC) summary

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055617.D
Acq On : 17 May 2019 17:56
Operator : JC/SP
Sample : K2902-13
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 22 Sample Multiplier: 1

Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260

TIC Library : C:\DATABASE\NIST11.L
TIC Integration Parameters: LSCINT.P

					Internal Standard			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

Quantitation Report (QT Reviewed)

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055624.D
Acq On : 17 May 2019 20:42
Operator : JC/SP
Sample : K2902-14
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 29 Sample Multiplier: 1

Instrument : MSVOA_N
ClientSampleId : FM-EA-3MW07-051619

Quant Time: May 18 04:06:12 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260
QLast Update : Fri May 17 23:54:12 2019
Response via : Initial Calibration

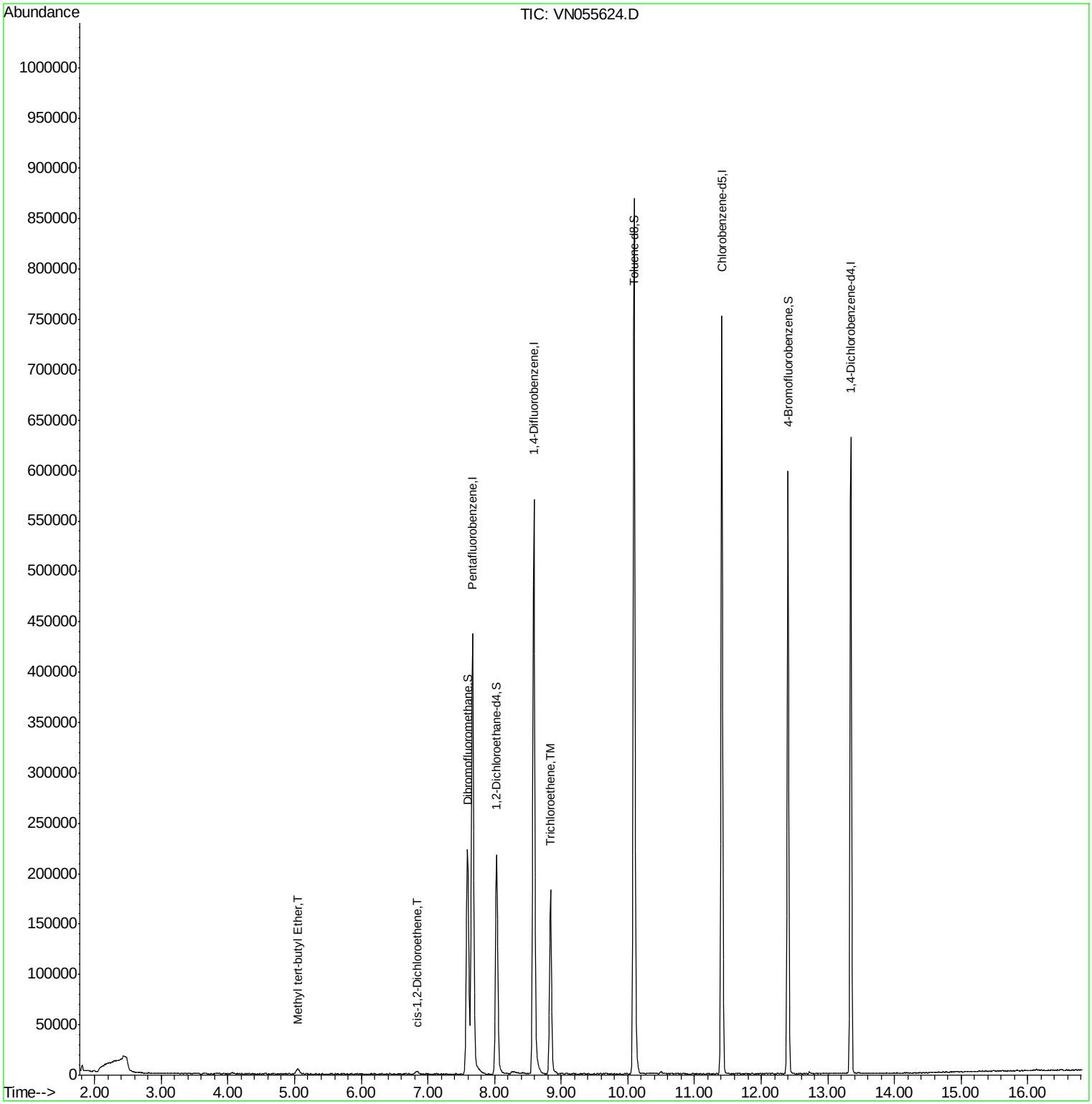
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene	7.67	168	412511	50.00	ug/l	0.00
34) 1,4-Difluorobenzene	8.59	114	577881	50.00	ug/l	0.00
63) Chlorobenzene-d5	11.41	117	482712	50.00	ug/l	0.00
72) 1,4-Dichlorobenzene-d4	13.35	152	185860	50.00	ug/l	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4	8.03	65	191835	42.42	ug/l	0.00
Spiked Amount 50.000			Recovery = 84.84%			
35) Dibromofluoromethane	7.59	113	177409	48.33	ug/l	0.00
Spiked Amount 50.000			Recovery = 96.66%			
50) Toluene-d8	10.09	98	668575	48.17	ug/l	0.00
Spiked Amount 50.000			Recovery = 96.34%			
62) 4-Bromofluorobenzene	12.40	95	210472	43.91	ug/l	0.00
Spiked Amount 50.000			Recovery = 87.82%			
Target Compounds						Qvalue
19) Methyl tert-butyl Ether	5.04	73	8586	0.689	ug/l	95
27) cis-1,2-Dichloroethene	6.83	96	1670	0.357	ug/l	75
44) Trichloroethene	8.84	130	75705	17.704	ug/l	98

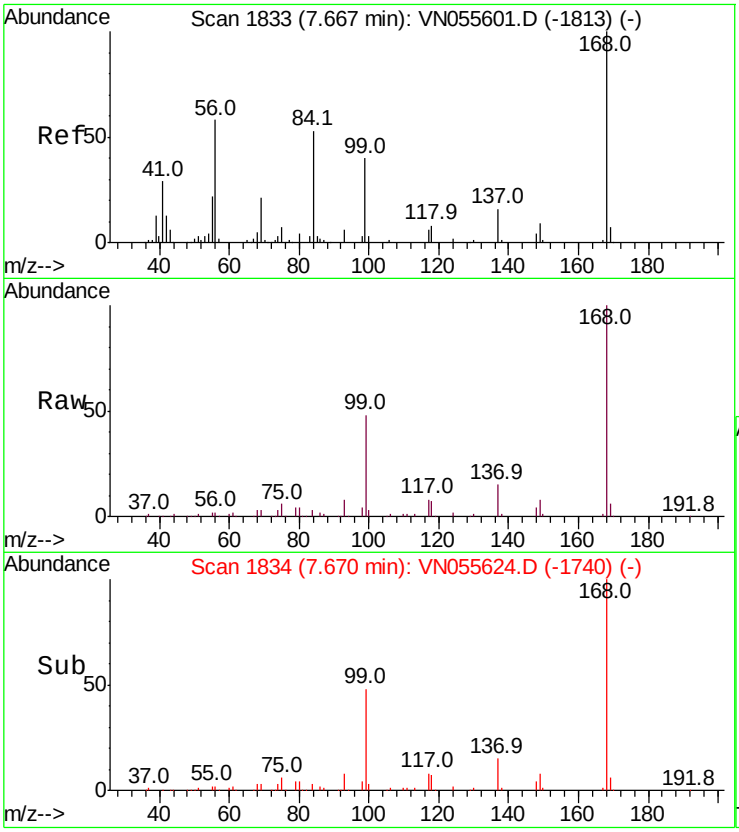
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055624.D
Acq On : 17 May 2019 20:42
Operator : JC/SP
Sample : K2902-14
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 29 Sample Multiplier: 1

Quant Time: May 18 04:06:12 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260
QLast Update : Fri May 17 23:54:12 2019
Response via : Initial Calibration

Instrument :
MSVOA_N
ClientSampleId :
FM-EA-3MW07-051619

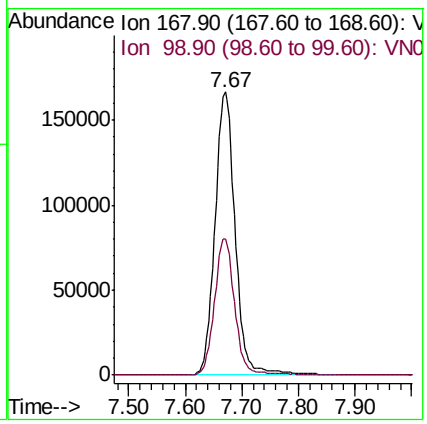


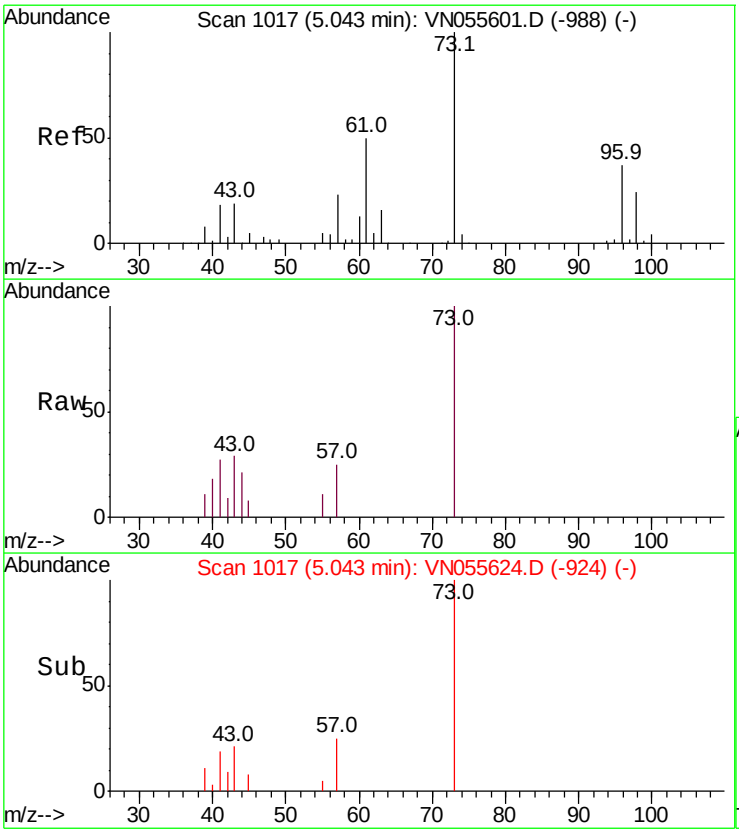


#1
Pentafluorobenzene
Concen: 50.000 ug/l
RT: 7.67 min Scan# 1834
Delta R.T. 0.00 min
Lab File: VN055624.D
Acq: 17 May 2019 20:42

Tgt Ion:168 Resp: 412511

Ion	Ratio	Lower	Upper
168	100		
99	48.3	40.2	60.2

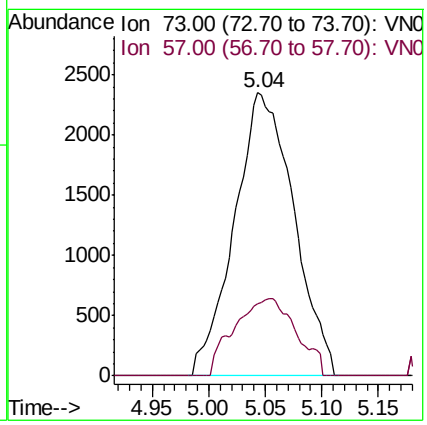


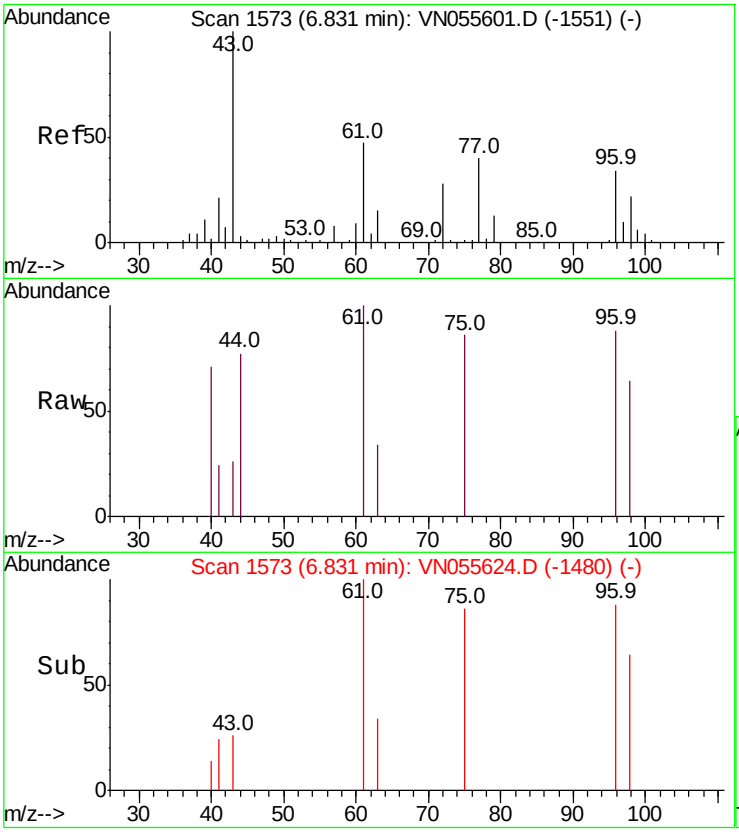


#19
Methyl tert-butyl Ether
Concen: 0.689 ug/l
RT: 5.04 min Scan# 1017
Delta R.T. 0.00 min
Lab File: VN055624.D
Acq: 17 May 2019 20:42

Tgt Ion: 73 Resp: 8586

Ion	Ratio	Lower	Upper
73	100		
57	25.3	18.2	27.2

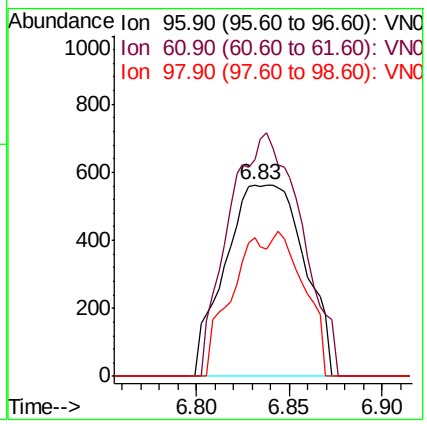


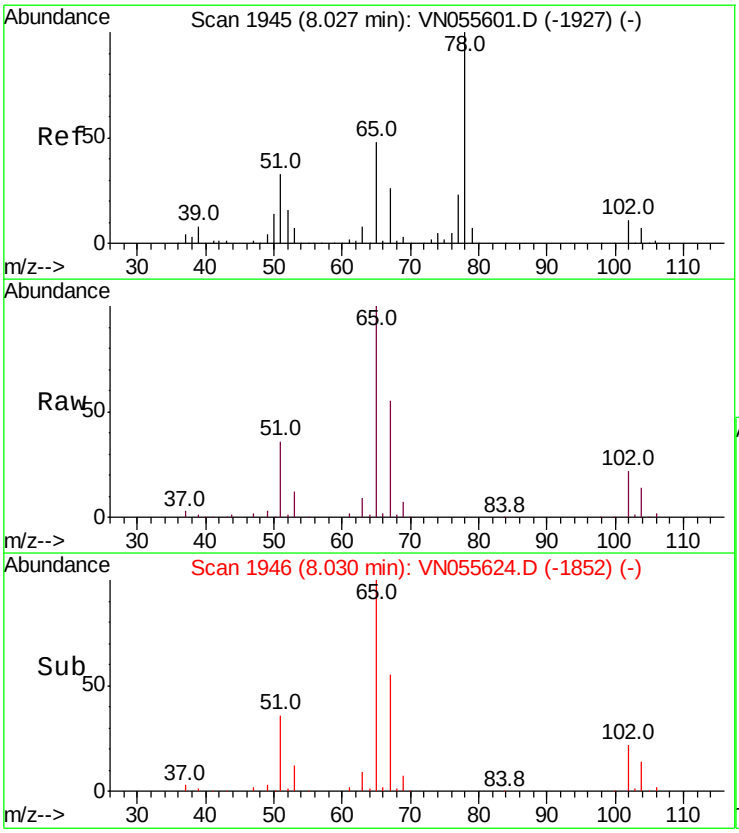


#27
cis-1,2-Dichloroethene
Concen: 0.357 ug/l
RT: 6.83 min Scan# 1573
Delta R.T. 0.00 min
Lab File: VN055624.D
Acq: 17 May 2019 20:42

Tgt Ion: 96 Resp: 1670

Ion	Ratio	Lower	Upper
96	100		
61	117.0	0.0	279.0
98	34.0	0.0	131.6

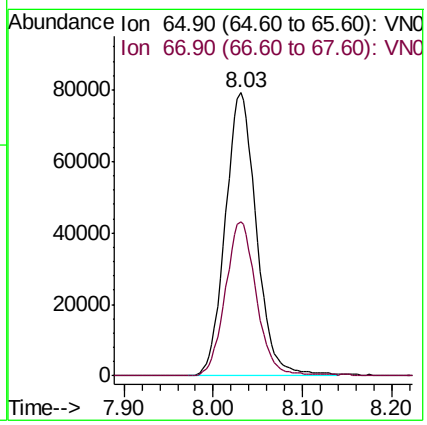


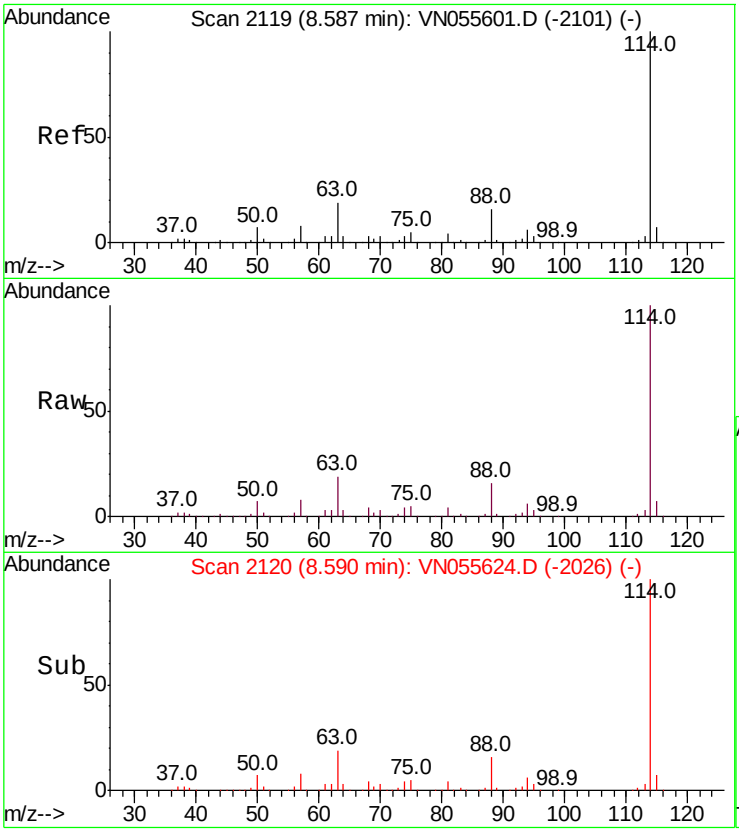


#33
1,2-Dichloroethane-d4
Concen: 42.423 ug/l
RT: 8.03 min Scan# 1946
Delta R.T. 0.00 min
Lab File: VN055624.D
Acq: 17 May 2019 20:42

Tgt Ion: 65 Resp: 191835

Ion	Ratio	Lower	Upper
65	100		
67	54.3	0.0	108.6

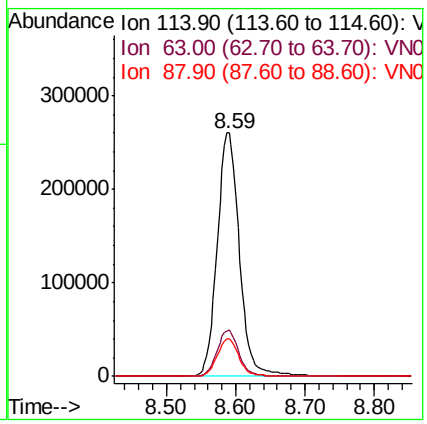


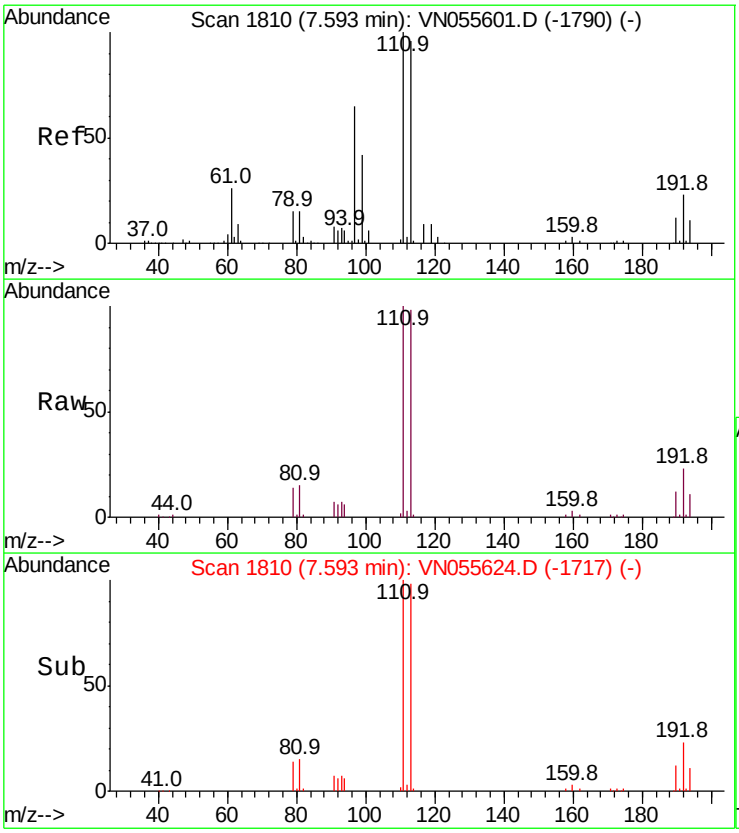


#34
1,4-Difluorobenzene
Concen: 50.000 ug/l
RT: 8.59 min Scan# 2120
Delta R.T. 0.00 min
Lab File: VN055624.D
Acq: 17 May 2019 20:42

Tgt Ion:114 Resp: 577881

Ion	Ratio	Lower	Upper
114	100		
63	18.9	0.0	38.2
88	15.6	0.0	31.0

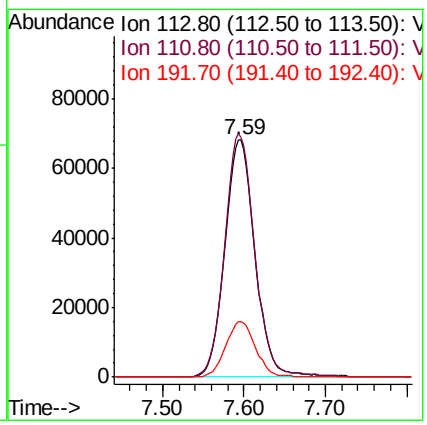


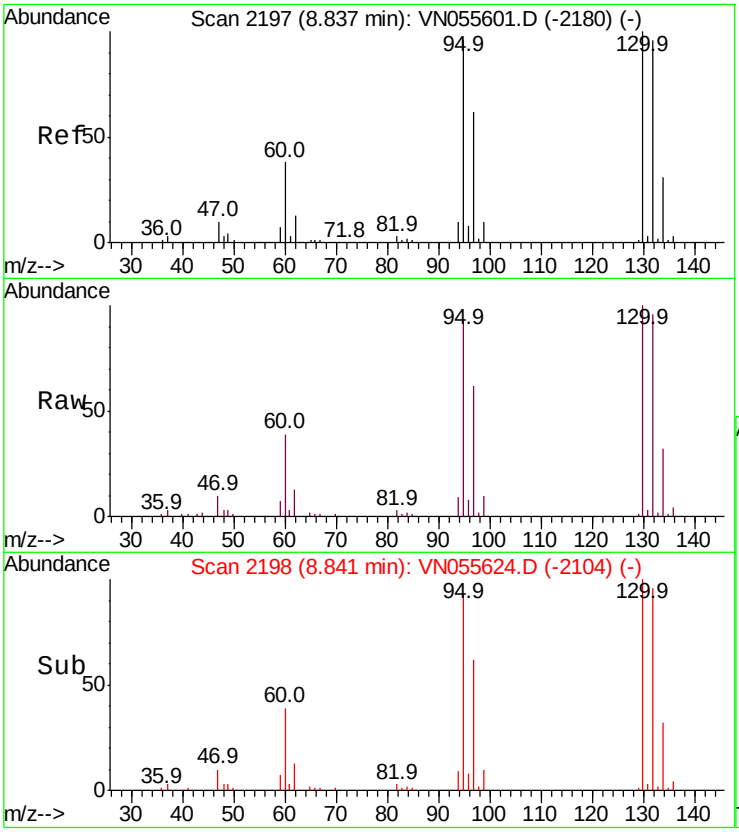


#35
Dibromofluoromethane
Concen: 48.328 ug/l
RT: 7.59 min Scan# 1810
Delta R.T. 0.00 min
Lab File: VN055624.D
Acq: 17 May 2019 20:42

Tgt Ion:113 Resp: 177409

Ion	Ratio	Lower	Upper
113	100		
111	102.5	82.5	123.7
192	23.0	18.7	28.1

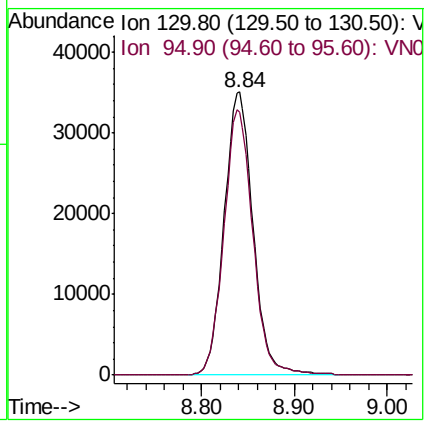


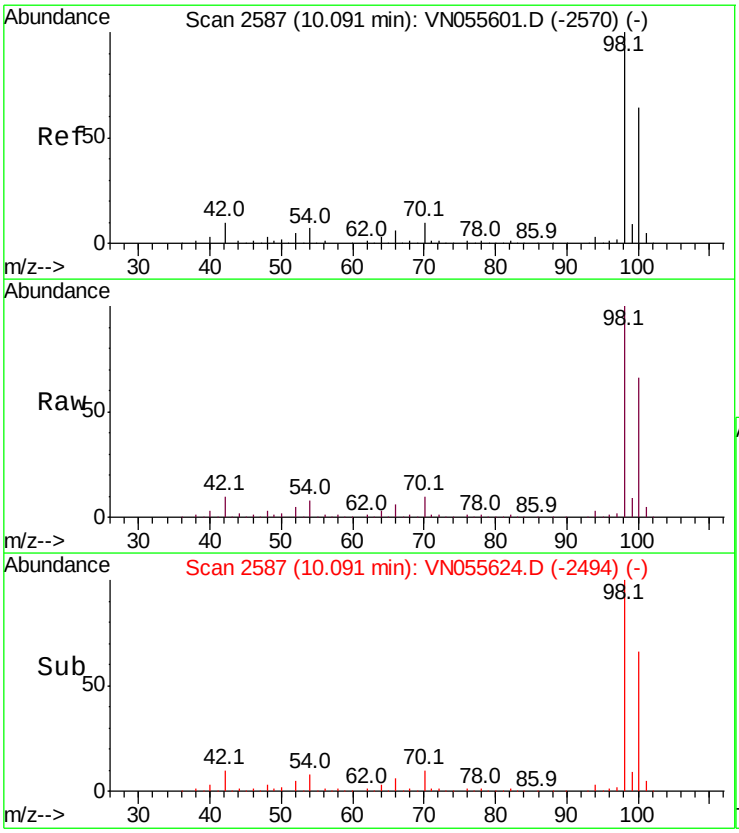


#44
Trichloroethene
Concen: 17.704 ug/l
RT: 8.84 min Scan# 2198
Delta R.T. 0.00 min
Lab File: VN055624.D
Acq: 17 May 2019 20:42

Tgt Ion:130 Resp: 75705

Ion	Ratio	Lower	Upper
130	100		
95	93.1	0.0	191.0

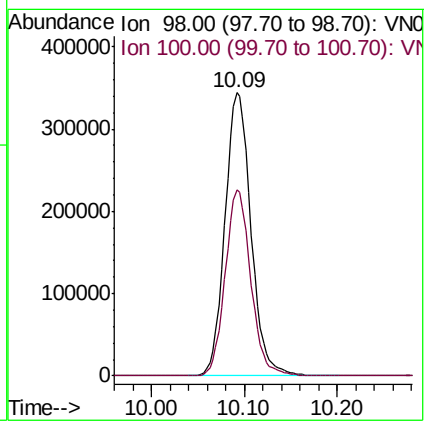


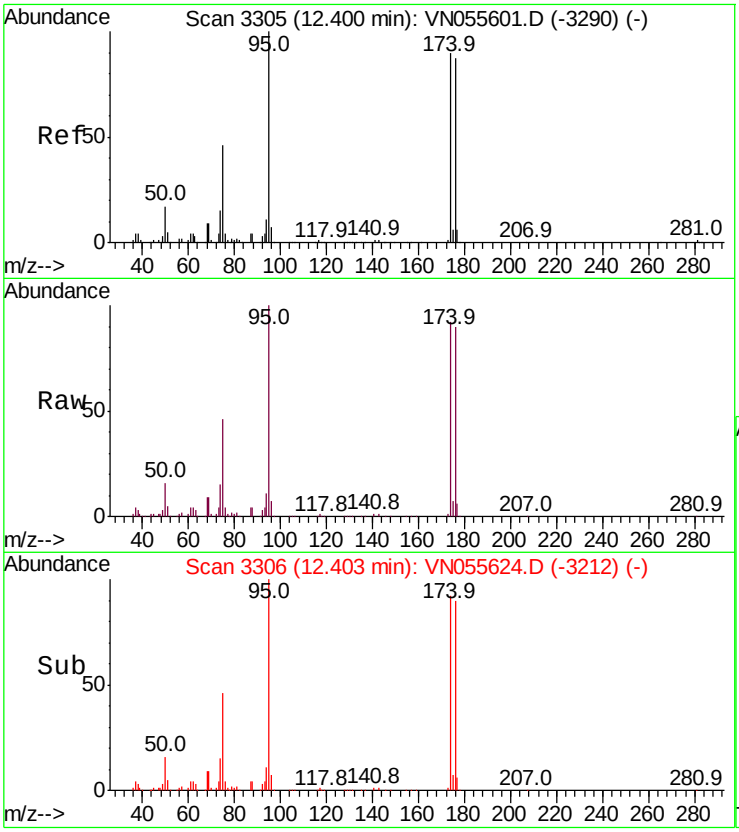


#50
Toluene-d8
Concen: 48.167 ug/l
RT: 10.09 min Scan# 2587
Delta R.T. 0.00 min
Lab File: VN055624.D
Acq: 17 May 2019 20:42

Tgt Ion: 98 Resp: 668575

Ion	Ratio	Lower	Upper
98	100		
100	64.6	51.9	77.9

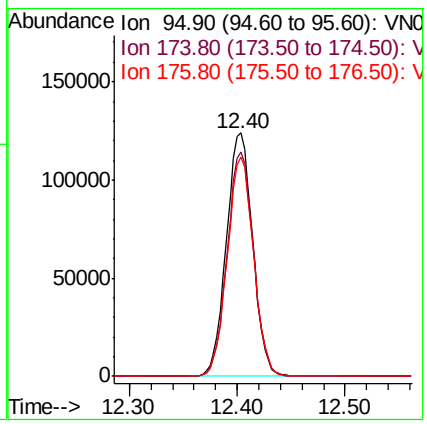


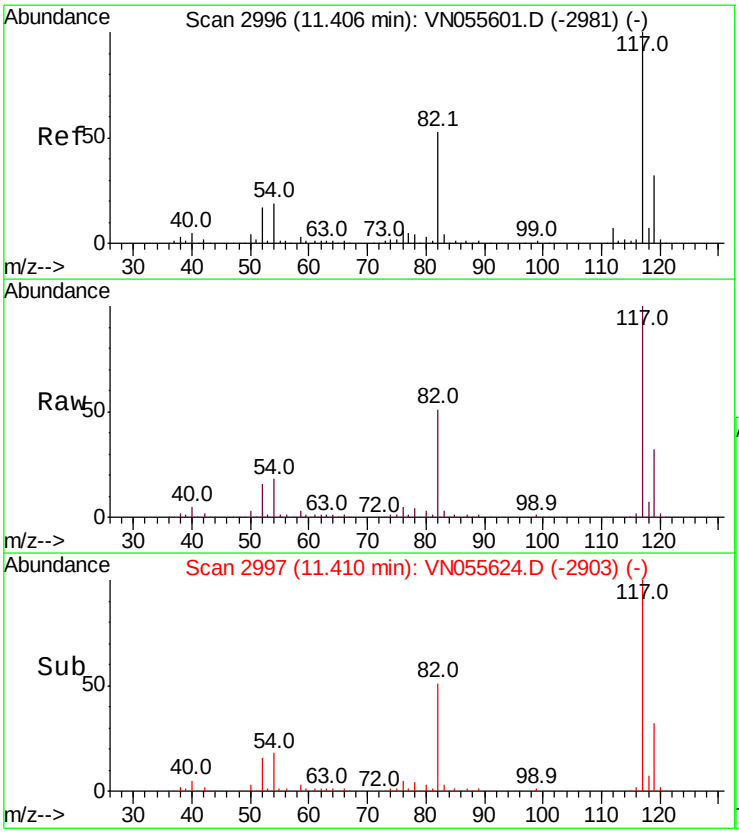


#62
4-Bromofluorobenzene
Concen: 43.911 ug/l
RT: 12.40 min Scan# 3306
Delta R.T. 0.00 min
Lab File: VN055624.D
Acq: 17 May 2019 20:42

Tgt Ion: 95 Resp: 210472

Ion	Ratio	Lower	Upper
95	100		
174	91.5	0.0	180.6
176	89.7	0.0	177.4

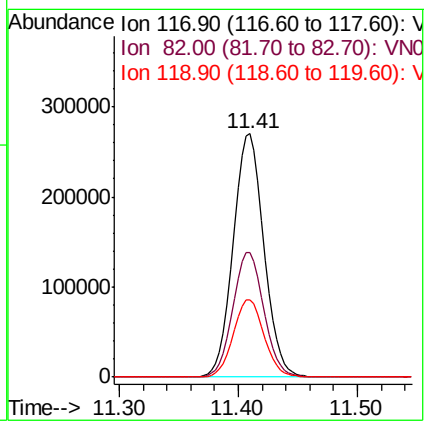




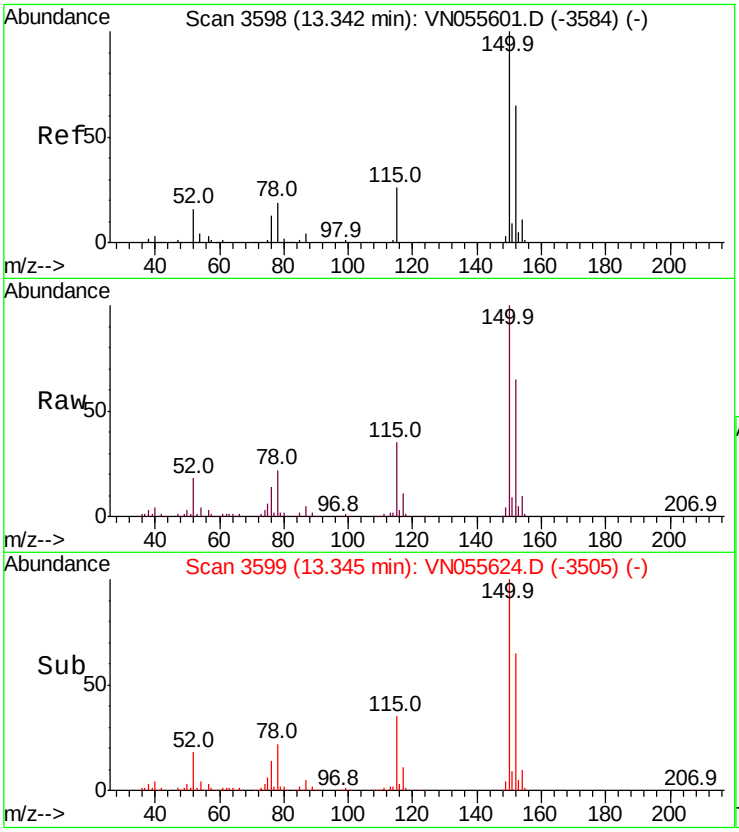
#63
Chlorobenzene-d5
Concen: 50.000 ug/l
RT: 11.41 min Scan# 2997
Delta R.T. 0.00 min
Lab File: VN055624.D
Acq: 17 May 2019 20:42

Tgt Ion:117 Resp: 482712

Ion	Ratio	Lower	Upper
117	100		
82	51.4	42.3	63.5
119	31.8	25.4	38.2



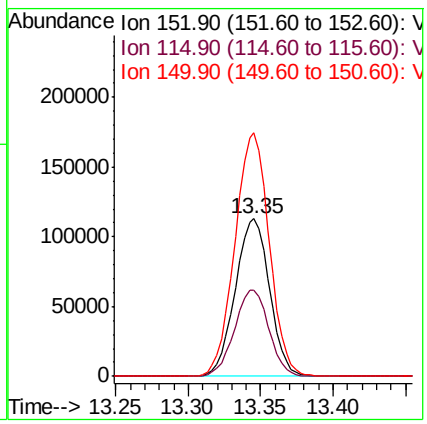
Instrument :
MSVOA_N
ClientSampleId :
FM-EA-3MW07-051619



#72
1,4-Dichlorobenzene-d4
Concen: 50.000 ug/l
RT: 13.35 min Scan# 3599
Delta R.T. 0.00 min
Lab File: VN055624.D
Acq: 17 May 2019 20:42

Tgt Ion:152 Resp: 185860

Ion	Ratio	Lower	Upper
152	100		
115	54.9	28.1	84.2
150	154.4	0.0	348.0



5

Instrument :
MSVOA_N
ClientSampleId :
FM-EA-3MW07-051619

A B C D E F G H I J

LSC Area Percent Report

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055624.D
Acq On : 17 May 2019 20:42
Operator : JC/SP
Sample : K2902-14
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 29 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 3 % of largest Peak
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Title : SW846 8260

Signal : TIC

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	5.043	1003	1017	1038	rVB4	4845	17596	1.04%	0.198%
2	7.593	1790	1810	1822	rBV	223269	569510	33.76%	6.404%
3	7.670	1822	1834	1863	rVB	433388	1042728	61.81%	11.725%
4	8.030	1926	1946	1976	rBV	217739	524070	31.07%	5.893%
5	8.590	2103	2120	2163	rBV	570402	1257358	74.53%	14.138%
6	8.838	2182	2197	2228	rBV	182796	392310	23.26%	4.411%
7	10.091	2569	2587	2617	rBV	869153	1686953	100.00%	18.969%
8	11.410	2981	2997	3020	rBV	752303	1349399	79.99%	15.173%
9	12.403	3292	3306	3328	rBV	598050	1012745	60.03%	11.388%
10	13.345	3585	3599	3613	rBV	631619	1040542	61.68%	11.700%

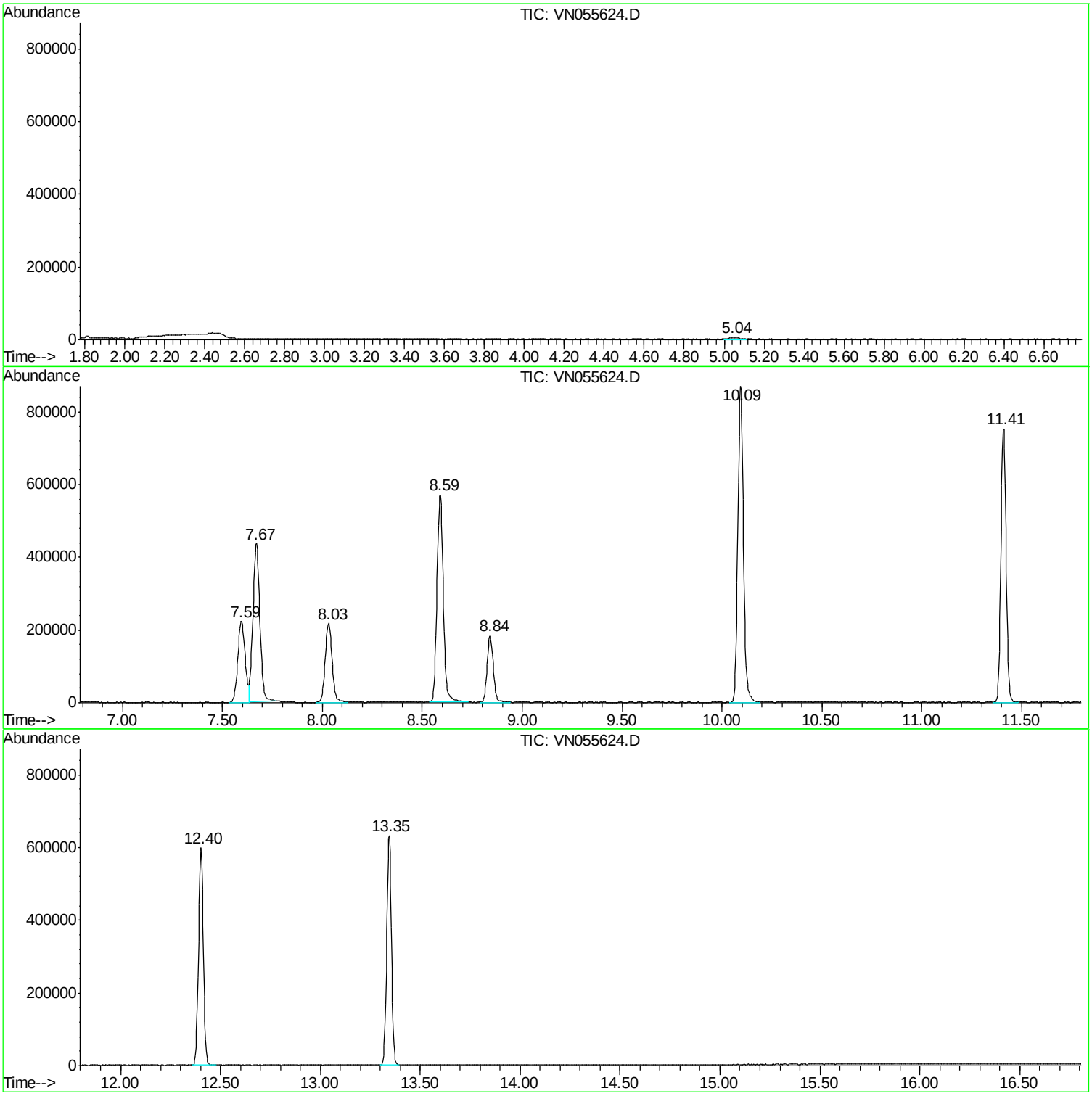
Sum of corrected areas: 8893211

Data Path : Z:\VOASRV\HPCHEM1\MSVOA N\DATA\VN051719\
Data File : VN055624.D
Acq On : 17 May 2019 20:42
Operator : JC/SP
Sample : K2902-14
Misc : 5.00mL/MSVOA N/WATER
ALS Vial : 29 Sample Multiplier: 1

Instrument :
MSVOA_N
ClientSampleId :
FM-EA-3MW07-051619

Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260

TIC Library : C:\DATABASE\NIST11.L
TIC Integration Parameters: LSCINT.P



Instrument :
MSVOA_N
ClientSampleId :
FM-EA-3MW07-051619

Library Search Compound Report

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055624.D
Acq On : 17 May 2019 20:42
Operator : JC/SP
Sample : K2902-14
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 29 Sample Multiplier: 1

Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260

TIC Library : C:\DATABASE\NIST11.L
TIC Integration Parameters: LSCINT.P

No Library Search Compounds Detected

****

Tentatively Identified Compound (LSC) summary

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055624.D
Acq On : 17 May 2019 20:42
Operator : JC/SP
Sample : K2902-14
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 29 Sample Multiplier: 1

Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260

TIC Library : C:\DATABASE\NIST11.L
TIC Integration Parameters: LSCINT.P

					Internal Standard			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

Quantitation Report (QT Reviewed)

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_X\DATA\VX052119\
Data File : VX009790.D
Acq On : 22 May 2019 08:54
Operator : JC/SP
Sample : K2902-15
Misc : 5.0mL/MSVOA_X/WATER
ALS Vial : 53 Sample Multiplier: 1

Instrument : MSVOA_X
ClientSampleId : TRIP-BLANK

Quant Time: May 22 10:37:48 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_X\METHOD\82X042919W.M
Quant Title : SW846 8260
QLast Update : Thu May 09 07:31:15 2019
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene	5.67	168	173037	50.00	ug/l	0.00
34) 1,4-Difluorobenzene	6.86	114	279572	50.00	ug/l	0.00
63) Chlorobenzene-d5	10.11	117	250261	50.00	ug/l	0.00
72) 1,4-Dichlorobenzene-d4	12.08	152	106839	50.00	ug/l	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4	6.06	65	118940	50.35	ug/l	0.00
Spiked Amount 50.000			Recovery =	100.70%		
35) Dibromofluoromethane	5.50	113	86121	49.00	ug/l	0.00
Spiked Amount 50.000			Recovery =	98.00%		
50) Toluene-d8	8.71	98	351386	49.52	ug/l	0.00
Spiked Amount 50.000			Recovery =	99.04%		
62) 4-Bromofluorobenzene	11.13	95	118273	45.87	ug/l	0.00
Spiked Amount 50.000			Recovery =	91.74%		

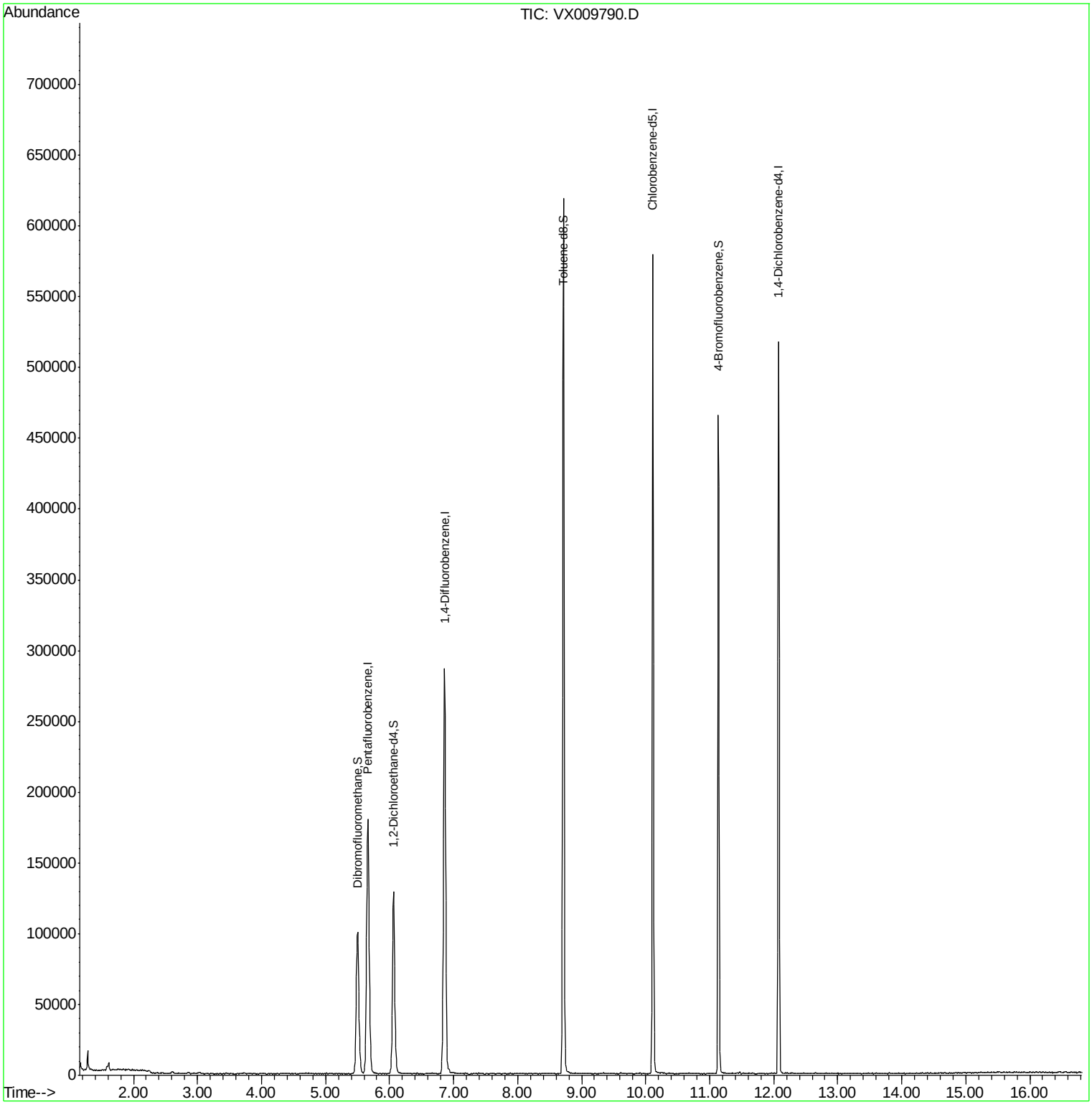
Target Compounds	Qvalue

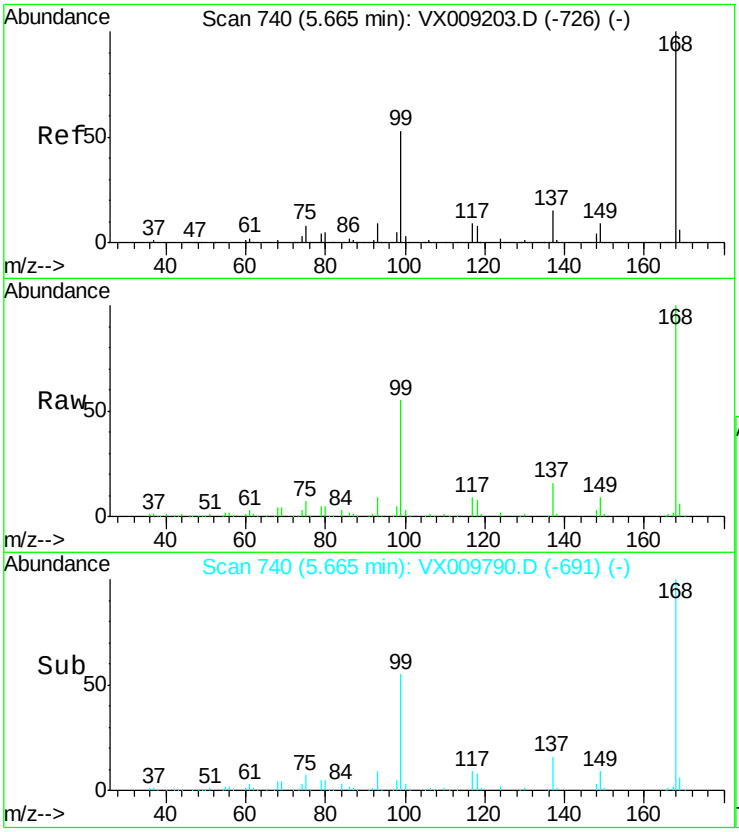
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_X\DATA\VX052119\
Data File : VX009790.D
Acq On : 22 May 2019 08:54
Operator : JC/SP
Sample : K2902-15
Misc : 5.0mL/MSVOA_X/WATER
ALS Vial : 53 Sample Multiplier: 1

Quant Time: May 22 10:37:48 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_X\METHOD\82X042919W.M
Quant Title : SW846 8260
QLast Update : Thu May 09 07:31:15 2019
Response via : Initial Calibration

Instrument :
MSVOA_X
ClientSampleId :
TRIP-BLANK

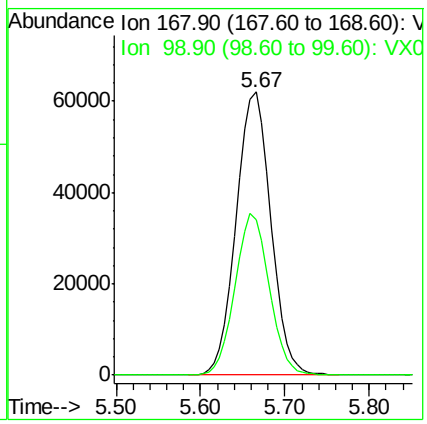


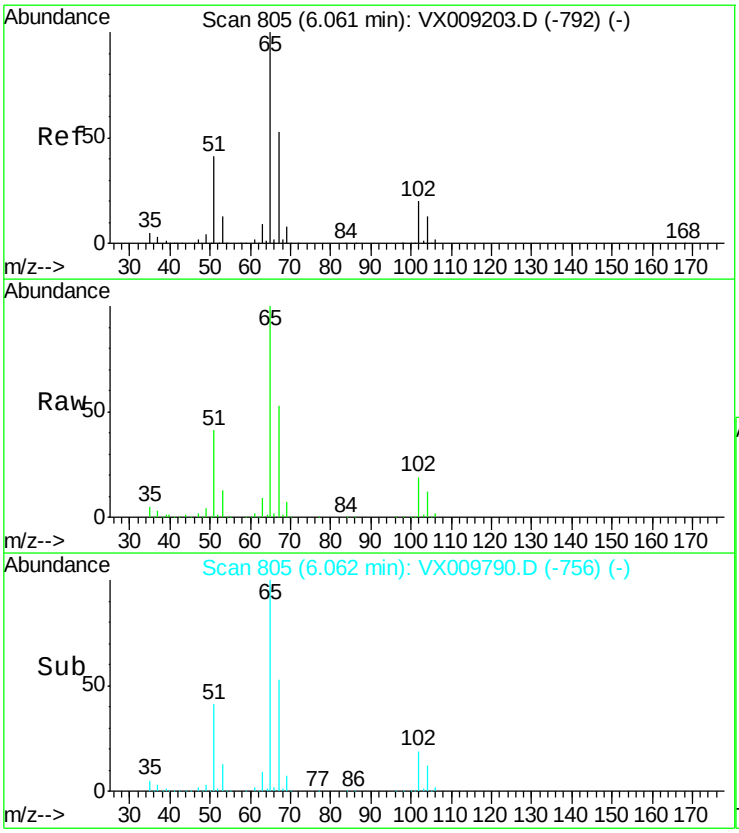


#1
Pentafluorobenzene
Concen: 50.000 ug/l
RT: 5.67 min Scan# 740
Delta R.T. 0.00 min
Lab File: VX009790.D
Acq: 22 May 2019 08:54

Tgt Ion:168 Resp: 173037

Ion	Ratio	Lower	Upper
168	100		
99	54.7	42.3	63.5

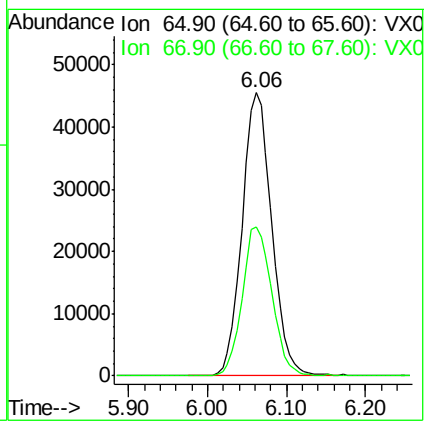


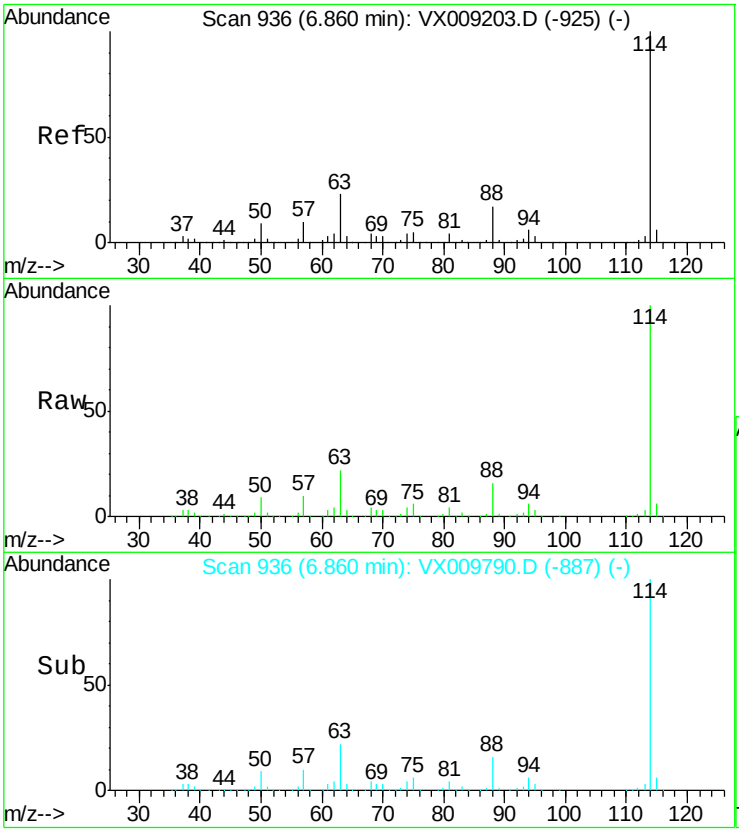


#33
1,2-Dichloroethane-d4
Concen: 50.352 ug/l
RT: 6.06 min Scan# 805
Delta R.T. 0.00 min
Lab File: VX009790.D
Acq: 22 May 2019 08:54

Tgt Ion: 65 Resp: 118940

Ion	Ratio	Lower	Upper
65	100		
67	53.1	0.0	106.6

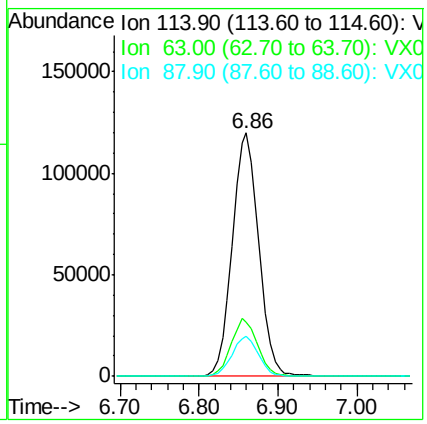


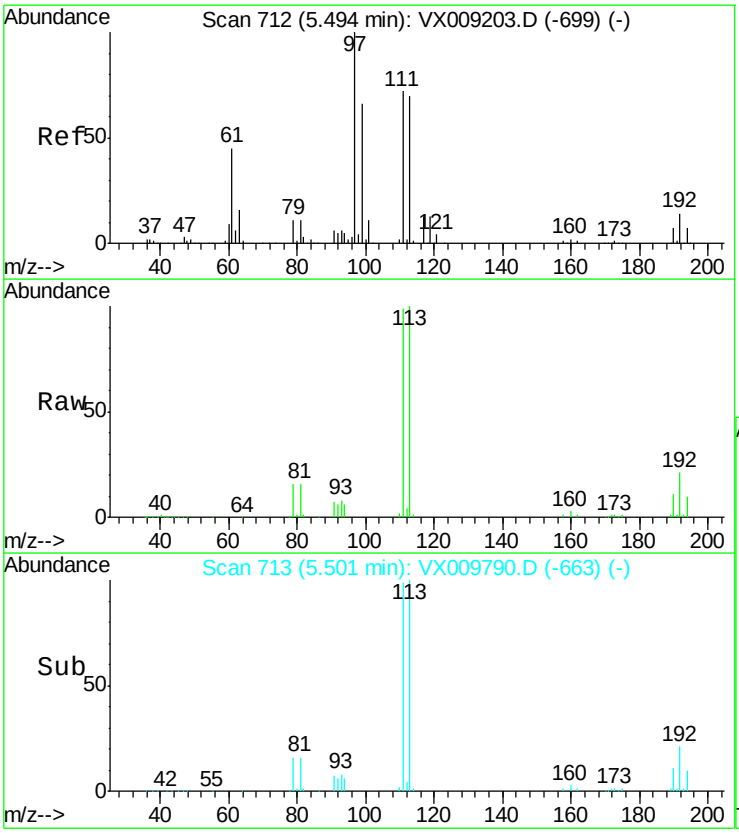


#34
1,4-Difluorobenzene
Concen: 50.000 ug/l
RT: 6.86 min Scan# 936
Delta R.T. 0.00 min
Lab File: VX009790.D
Acq: 22 May 2019 08:54

Tgt Ion:114 Resp: 279572

Ion	Ratio	Lower	Upper
114	100		
63	22.5	0.0	45.6
88	16.2	0.0	33.2

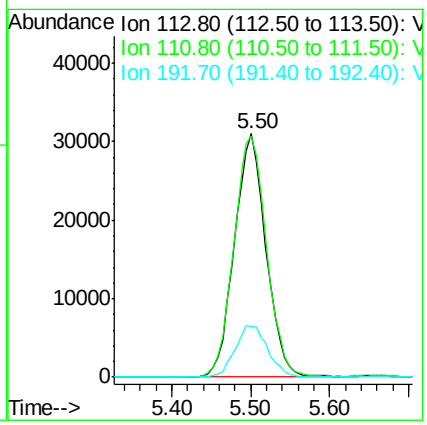


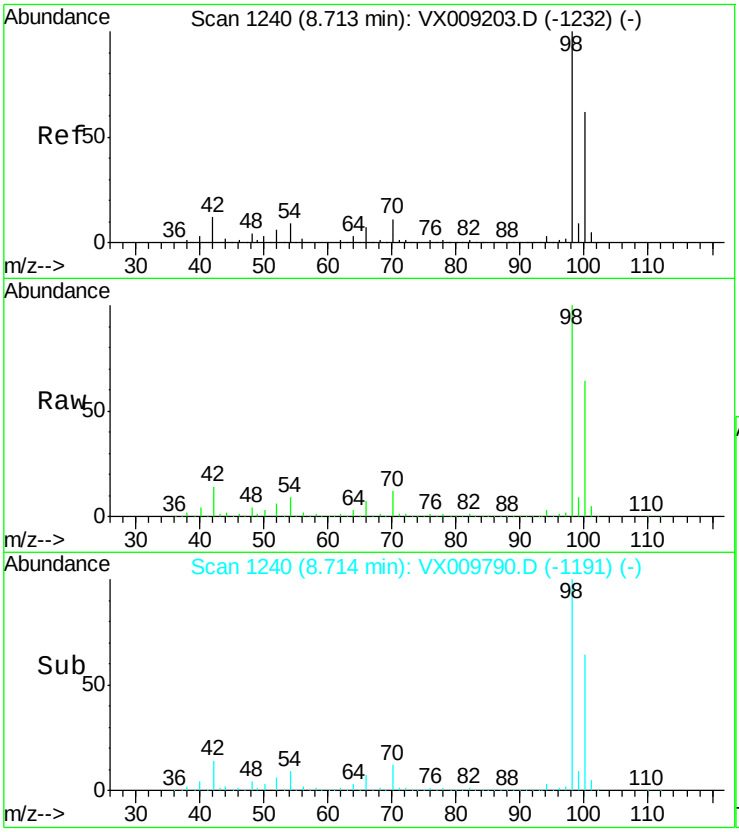


#35
Dibromofluoromethane
Concen: 49.002 ug/l
RT: 5.50 min Scan# 713
Delta R.T. 0.01 min
Lab File: VX009790.D
Acq: 22 May 2019 08:54

Tgt Ion:113 Resp: 86121

Ion	Ratio	Lower	Upper
113	100		
111	102.6	82.8	124.2
192	21.9	17.0	25.6

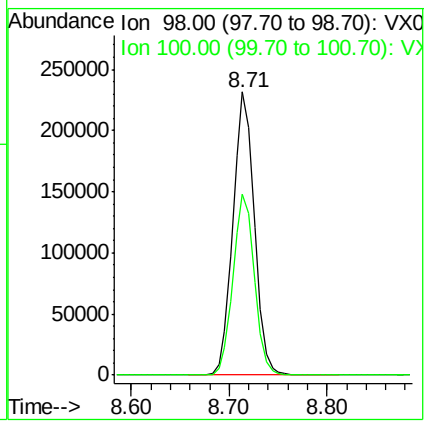


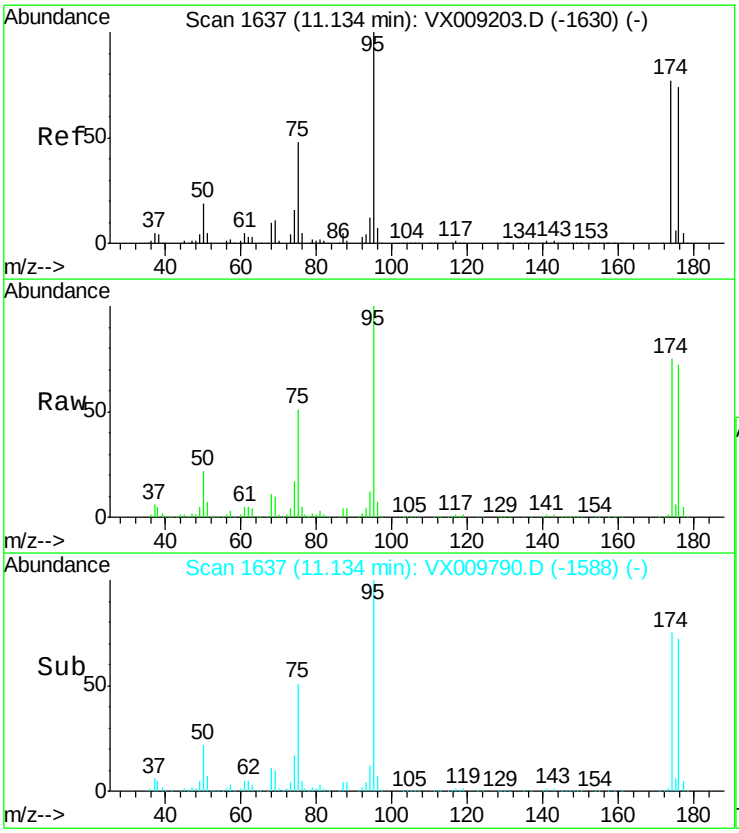


#50
Toluene-d8
Concen: 49.523 ug/l
RT: 8.71 min Scan# 1240
Delta R.T. 0.00 min
Lab File: VX009790.D
Acq: 22 May 2019 08:54

Tgt Ion: 98 Resp: 351386

Ion	Ratio	Lower	Upper
98	100		
100	64.3	51.2	76.8

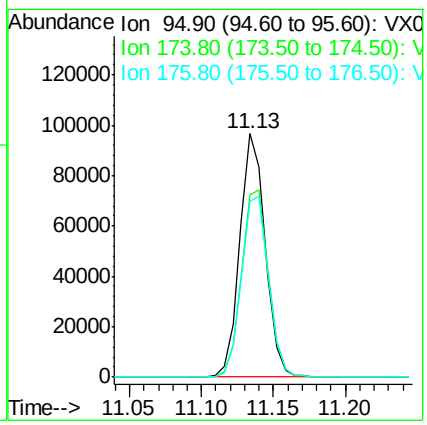


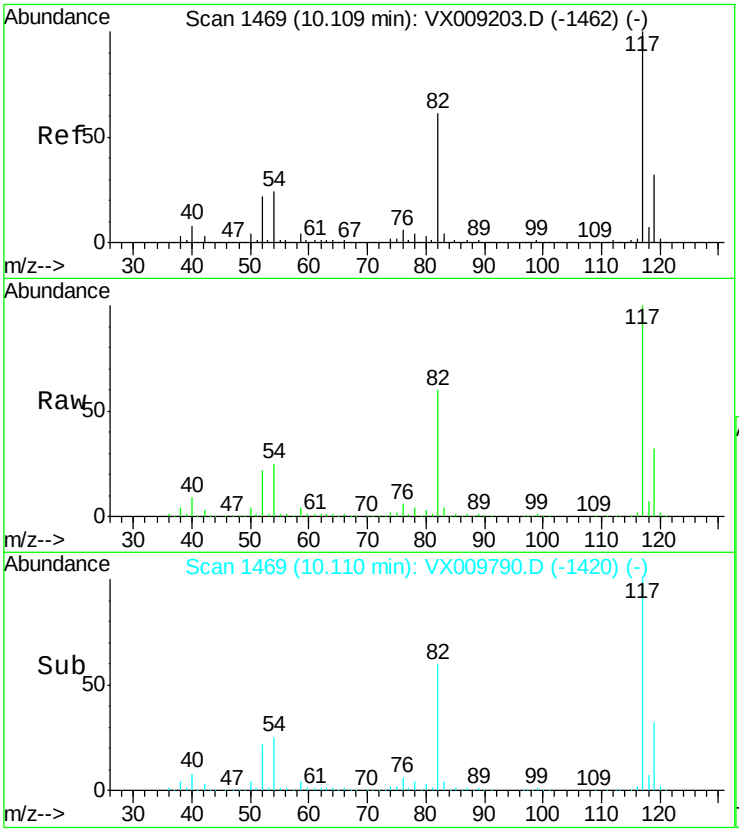


#62
4-Bromofluorobenzene
Concen: 45.874 ug/l
RT: 11.13 min Scan# 1637
Delta R.T. 0.00 min
Lab File: VX009790.D
Acq: 22 May 2019 08:54

Tgt Ion: 95 Resp: 118273

Ion	Ratio	Lower	Upper
95	100		
174	81.2	0.0	161.6
176	78.7	0.0	159.2

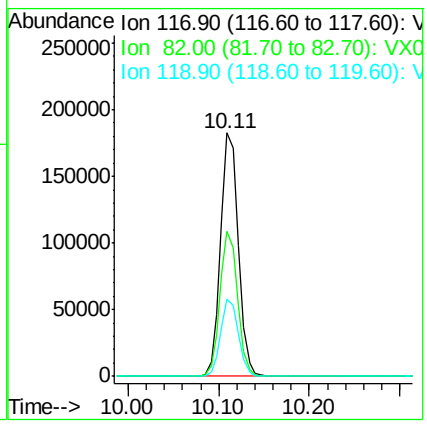


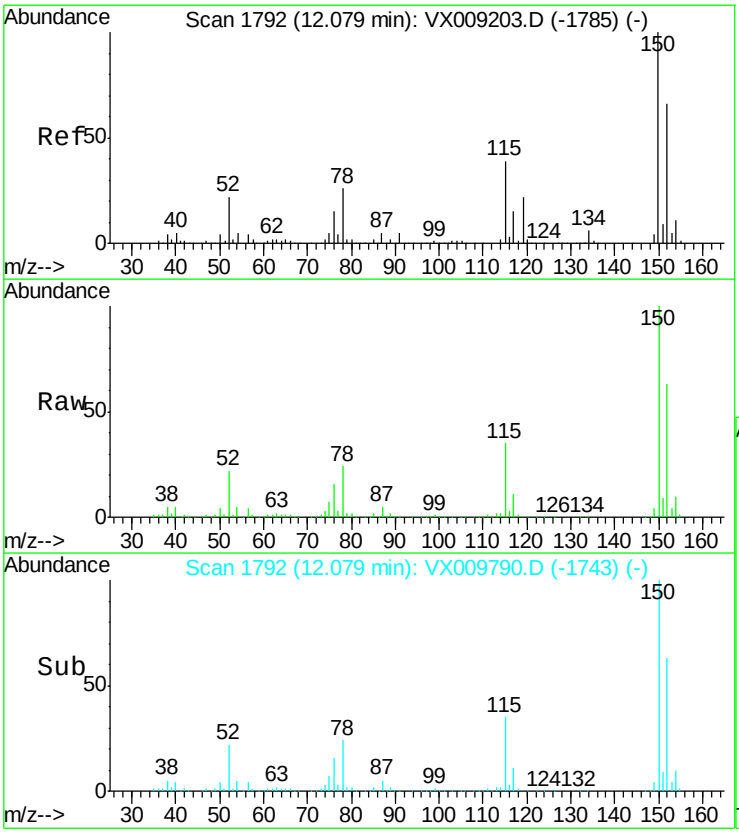


#63
Chlorobenzene-d5
Concen: 50.000 ug/l
RT: 10.11 min Scan# 1469
Delta R.T. 0.00 min
Lab File: VX009790.D
Acq: 22 May 2019 08:54

Tgt Ion:117 Resp: 250261

Ion	Ratio	Lower	Upper
117	100		
82	59.8	48.8	73.2
119	31.8	25.8	38.6

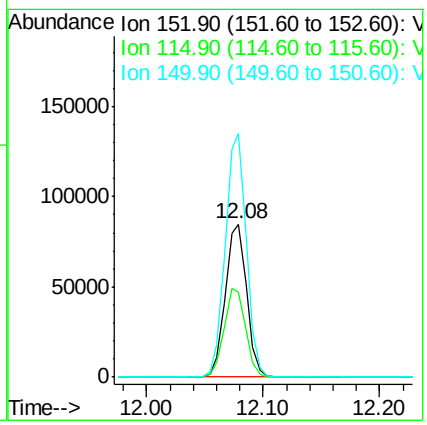




#72
1,4-Dichlorobenzene-d4
Concen: 50.000 ug/l
RT: 12.08 min Scan# 1792
Delta R.T. 0.00 min
Lab File: VX009790.D
Acq: 22 May 2019 08:54

Tgt Ion:152 Resp: 106839

Ion	Ratio	Lower	Upper
152	100		
115	58.5	41.2	123.6
150	158.0	0.0	346.4



5

Instrument :
MSVOA_X
ClientSampleId :
TRIP-BLANK

A B C D E F G H I J

LSC Area Percent Report

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_X\DATA\VX052119\
Data File : VX009790.D
Acq On : 22 May 2019 08:54
Operator : JC/SP
Sample : K2902-15
Misc : 5.0mL/MSVOA_X/WATER
ALS Vial : 53 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 3 % of largest Peak
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : Z:\VOASRV\HPCHEM1\MSVOA_X\METHOD\82X042919W.M
Title : SW846 8260

Signal : TIC

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	1.282	17	21	28	rVB	13512	15269	1.60%	0.315%
2	1.617	67	76	80	rVB10	5598	11904	1.24%	0.245%
3	5.501	700	713	727	rBV	99934	288150	30.11%	5.943%
4	5.659	727	739	753	rVV	179610	507715	53.06%	10.471%
5	6.062	794	805	817	rBV	128472	330880	34.58%	6.824%
6	6.860	923	936	951	rBV	286602	688920	72.00%	14.208%
7	8.714	1232	1240	1254	rBV	618454	956855	100.00%	19.733%
8	10.110	1463	1469	1483	rBV	578332	787976	82.35%	16.251%
9	11.134	1632	1637	1647	rBV	465035	587118	61.36%	12.108%
10	12.073	1786	1791	1802	rBV	516826	674100	70.45%	13.902%

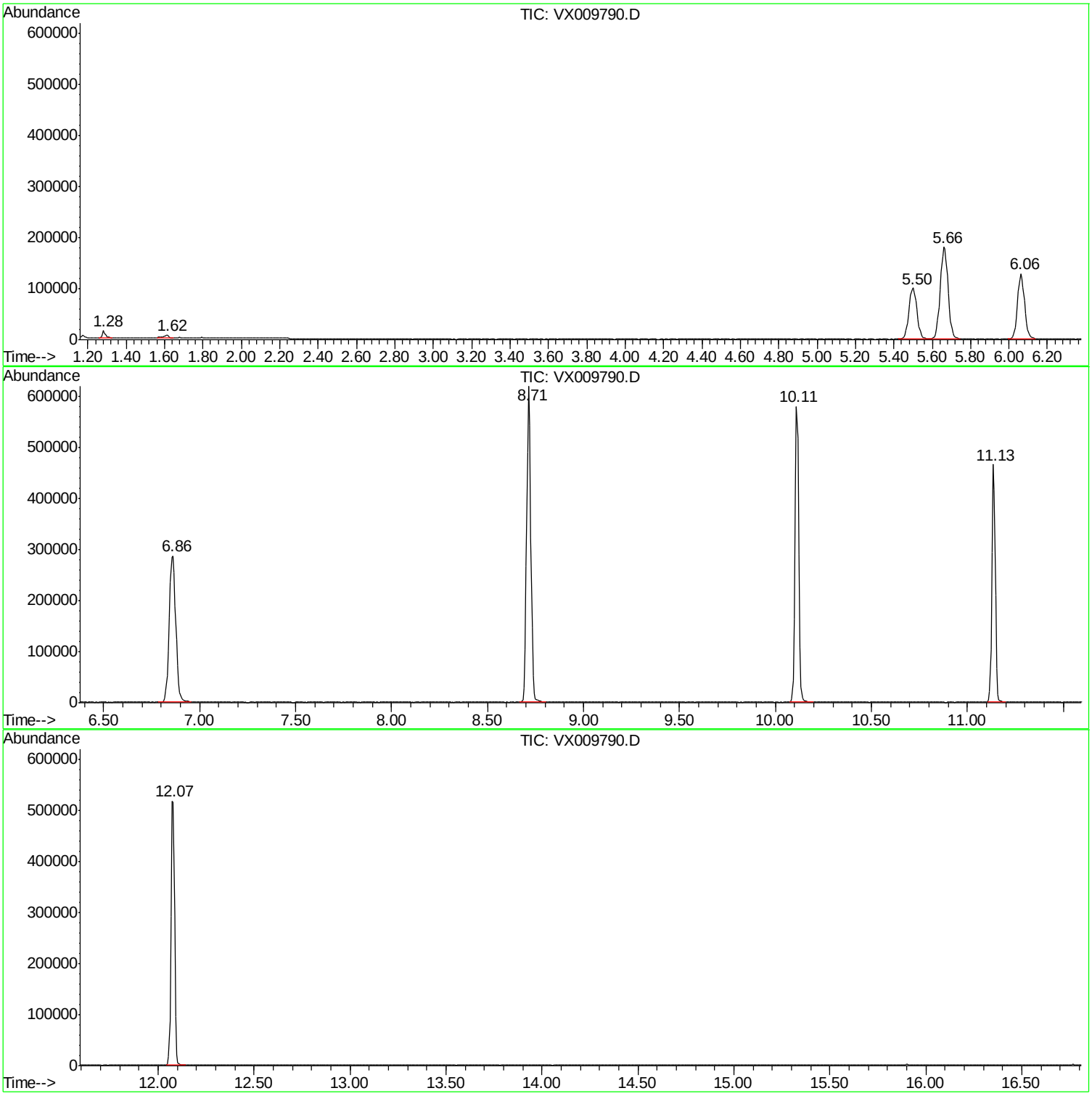
Sum of corrected areas: 4848887

Data Path : Z:\VOASRV\HPCHEM1\MSVOA X\DATA\VX052119\
Data File : VX009790.D
Acq On : 22 May 2019 08:54
Operator : JC/SP
Sample : K2902-15
Misc : 5.0mL/MSVOA X/WATER
ALS Vial : 53 Sample Multiplier: 1

Instrument : MSVOA_X
ClientSampleId : TRIP-BLANK

Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_X\METHOD\82X042919W.M
Quant Title : SW846 8260

TIC Library : C:\DATABASE\NIST11.L
TIC Integration Parameters: LSCINT.P



Library Search Compound Report

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_X\DATA\VX052119\
Data File : VX009790.D
Acq On : 22 May 2019 08:54
Operator : JC/SP
Sample : K2902-15
Misc : 5.0mL/MSVOA_X/WATER
ALS Vial : 53 Sample Multiplier: 1

Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_X\METHOD\82X042919W.M
Quant Title : SW846 8260

TIC Library : C:\DATABASE\NIST11.L
TIC Integration Parameters: LSCINT.P

No Library Search Compounds Detected

Instrument :
MSVOA_X
ClientSampleId :
TRIP-BLANK

****

Tentatively Identified Compound (LSC) summary

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_X\DATA\VX052119\
Data File : VX009790.D
Acq On : 22 May 2019 08:54
Operator : JC/SP
Sample : K2902-15
Misc : 5.0mL/MSVOA_X/WATER
ALS Vial : 53 Sample Multiplier: 1

Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_X\METHOD\82X042919W.M
Quant Title : SW846 8260

TIC Library : C:\DATABASE\NIST11.L
TIC Integration Parameters: LSCINT.P

					Internal Standard			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

Quantitation Report (QT Reviewed)

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055608.D
Acq On : 17 May 2019 14:26
Operator : JC/SP
Sample : VN0517WBL01
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 13 Sample Multiplier: 1

Instrument : MSVOA_N
ClientSampleId : VN0517WBL01

Quant Time: May 18 03:26:32 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260
QLast Update : Fri May 17 23:54:12 2019
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene	7.67	168	399651	50.00	ug/l	0.00
34) 1,4-Difluorobenzene	8.59	114	569555	50.00	ug/l	0.00
63) Chlorobenzene-d5	11.41	117	479654	50.00	ug/l	0.00
72) 1,4-Dichlorobenzene-d4	13.34	152	183878	50.00	ug/l	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4	8.03	65	192394	43.92	ug/l	0.00
Spiked Amount 50.000			Recovery =	87.84%		
35) Dibromofluoromethane	7.59	113	174877	48.33	ug/l	0.00
Spiked Amount 50.000			Recovery =	96.66%		
50) Toluene-d8	10.09	98	660584	48.29	ug/l	0.00
Spiked Amount 50.000			Recovery =	96.58%		
62) 4-Bromofluorobenzene	12.40	95	210597	44.58	ug/l	0.00
Spiked Amount 50.000			Recovery =	89.16%		

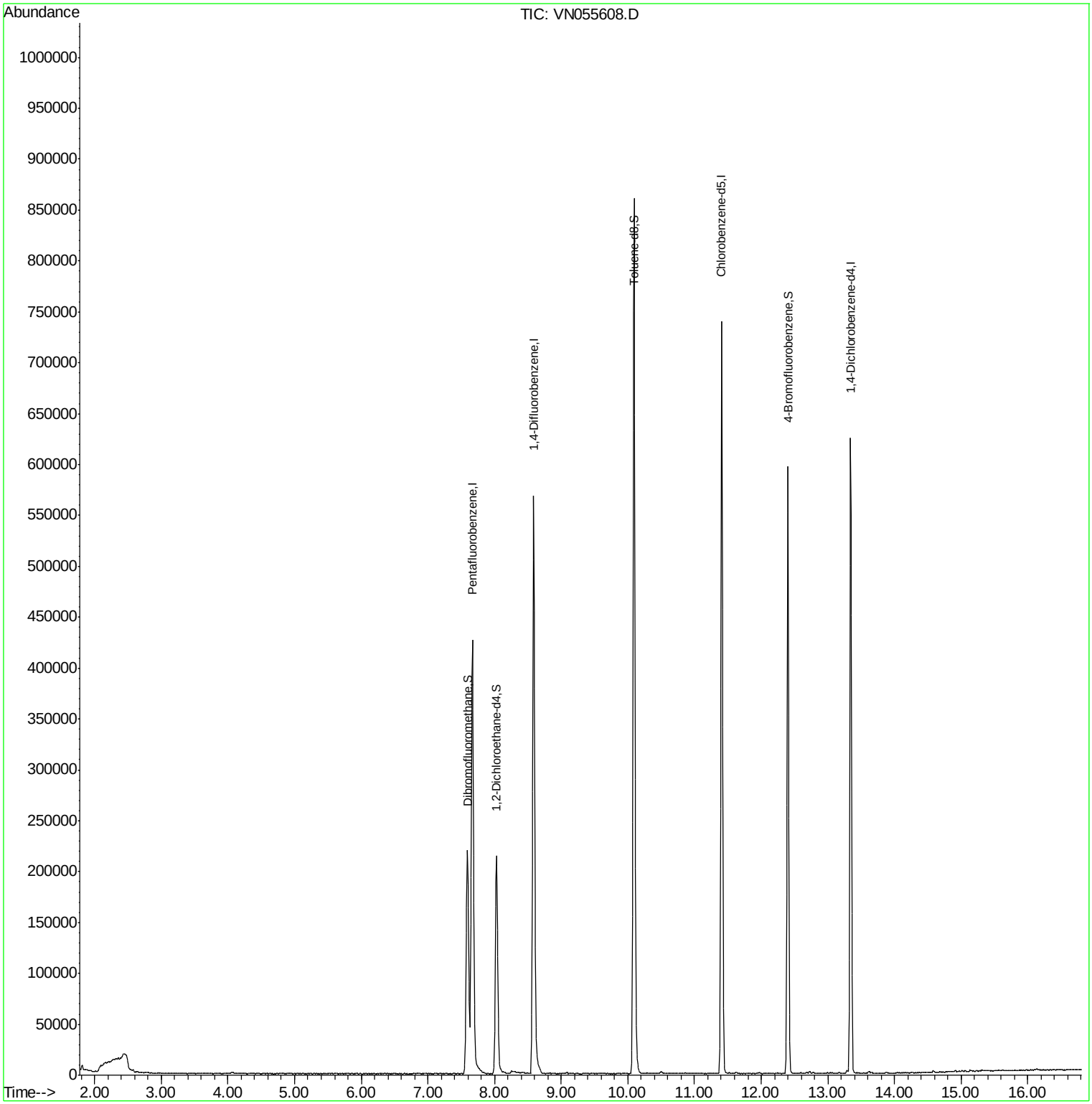
Target Compounds	Qvalue

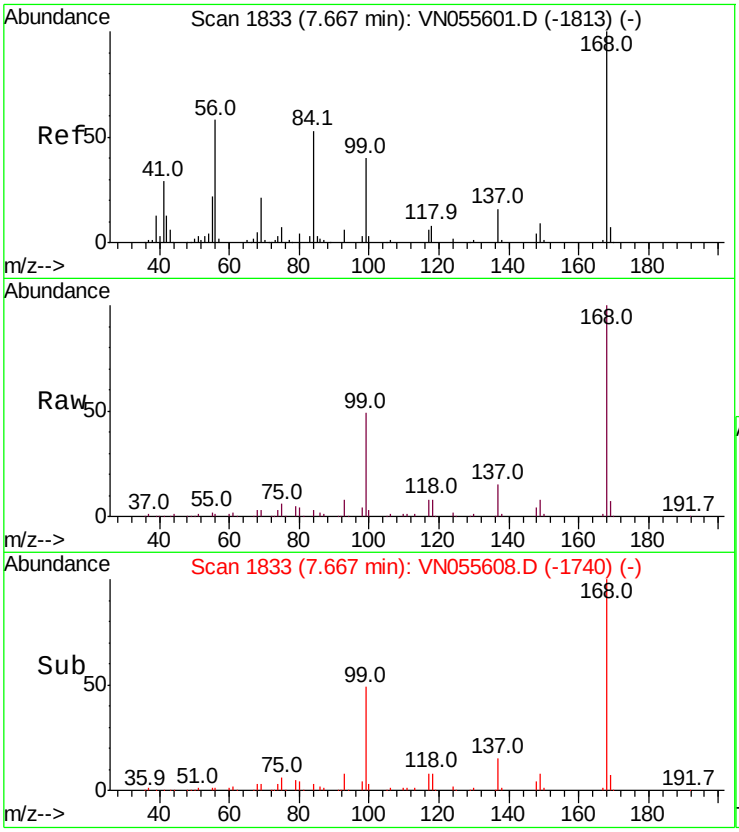
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055608.D
Acq On : 17 May 2019 14:26
Operator : JC/SP
Sample : VN0517WBL01
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 13 Sample Multiplier: 1

Quant Time: May 18 03:26:32 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260
QLast Update : Fri May 17 23:54:12 2019
Response via : Initial Calibration

Instrument :
MSVOA_N
ClientSampleId :
VN0517WBL01

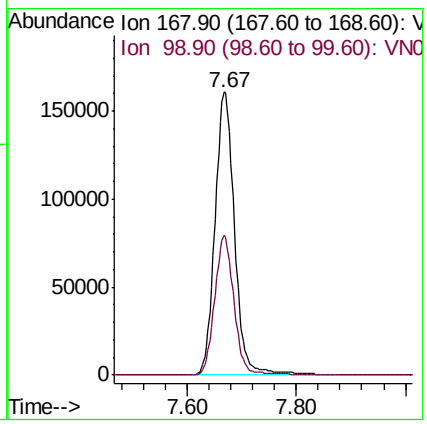


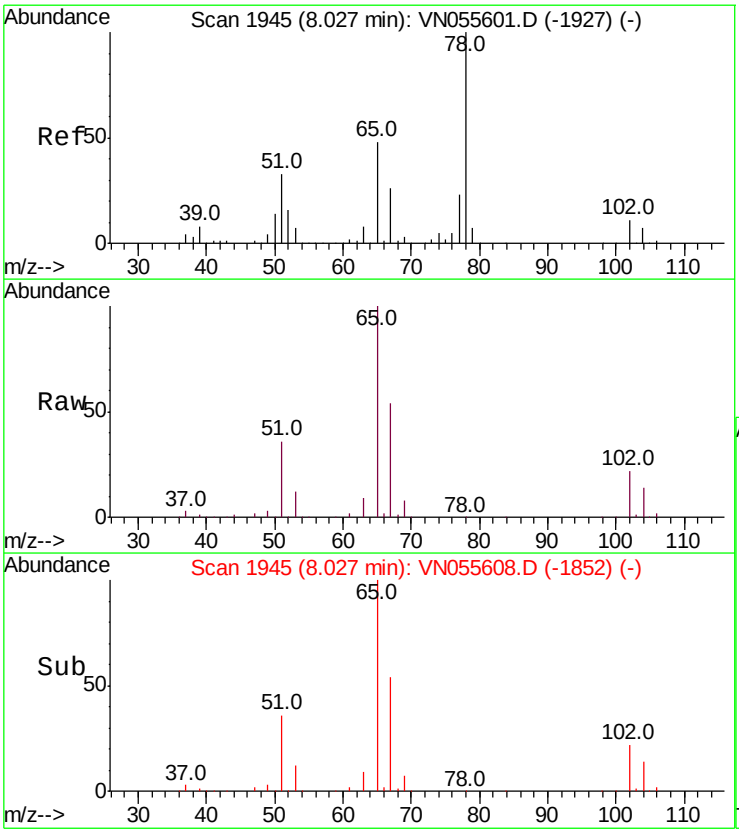


#1
Pentafluorobenzene
Concen: 50.000 ug/l
RT: 7.67 min Scan# 1833
Delta R.T. 0.00 min
Lab File: VN055608.D
Acq: 17 May 2019 14:26

Tgt Ion:168 Resp: 399651

Ion	Ratio	Lower	Upper
168	100		
99	49.3	40.2	60.2

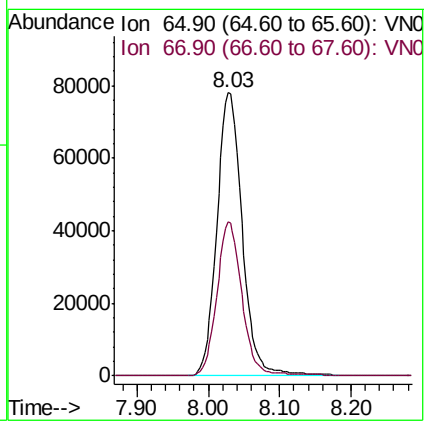


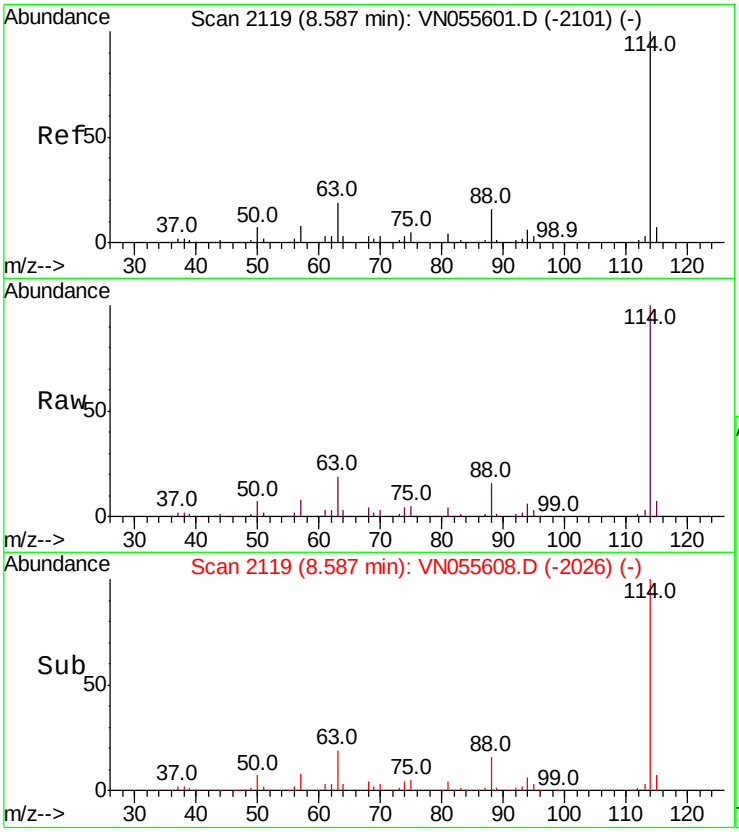


#33
1,2-Dichloroethane-d4
Concen: 43.916 ug/l
RT: 8.03 min Scan# 1945
Delta R.T. 0.00 min
Lab File: VN055608.D
Acq: 17 May 2019 14:26

Tgt Ion: 65 Resp: 192394

Ion	Ratio	Lower	Upper
65	100		
67	53.9	0.0	108.6

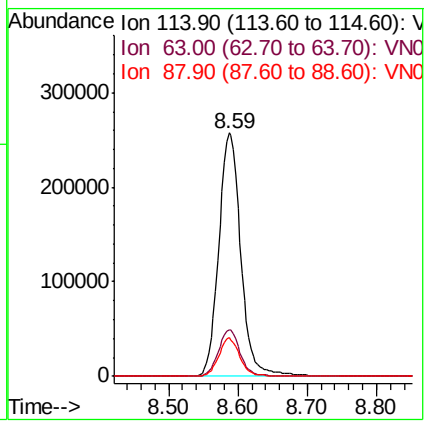


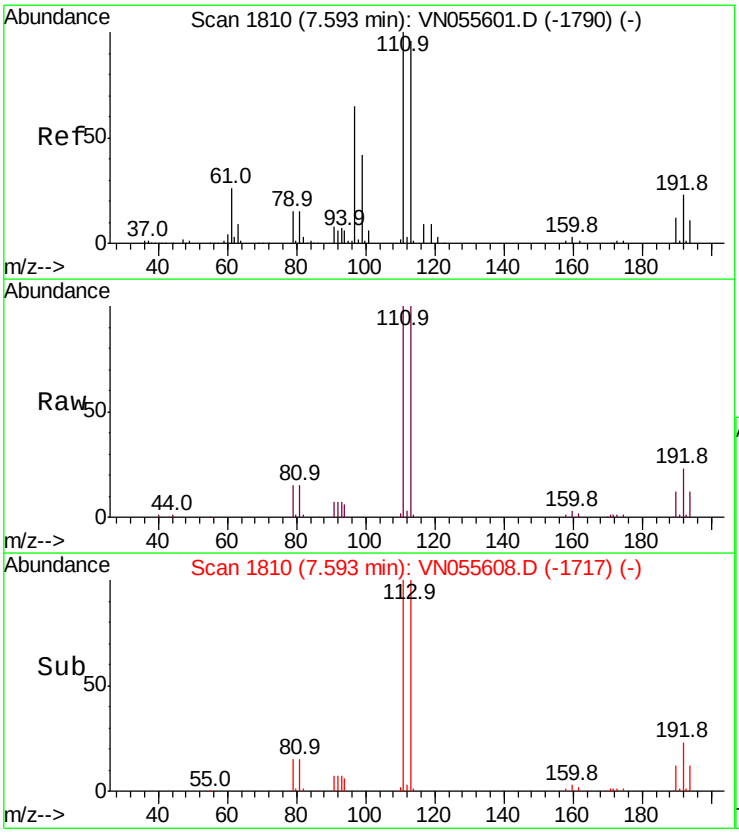


#34
1,4-Difluorobenzene
Concen: 50.000 ug/l
RT: 8.59 min Scan# 2119
Delta R.T. 0.00 min
Lab File: VN055608.D
Acq: 17 May 2019 14:26

Tgt Ion:114 Resp: 569555

Ion	Ratio	Lower	Upper
114	100		
63	19.2	0.0	38.2
88	15.7	0.0	31.0

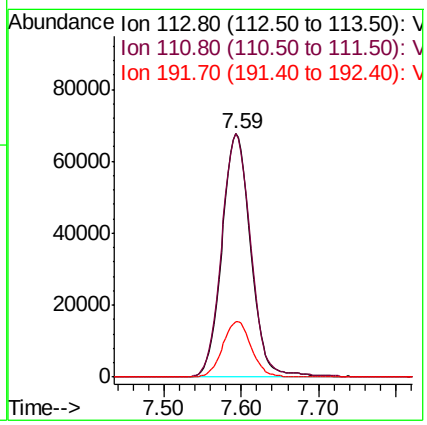


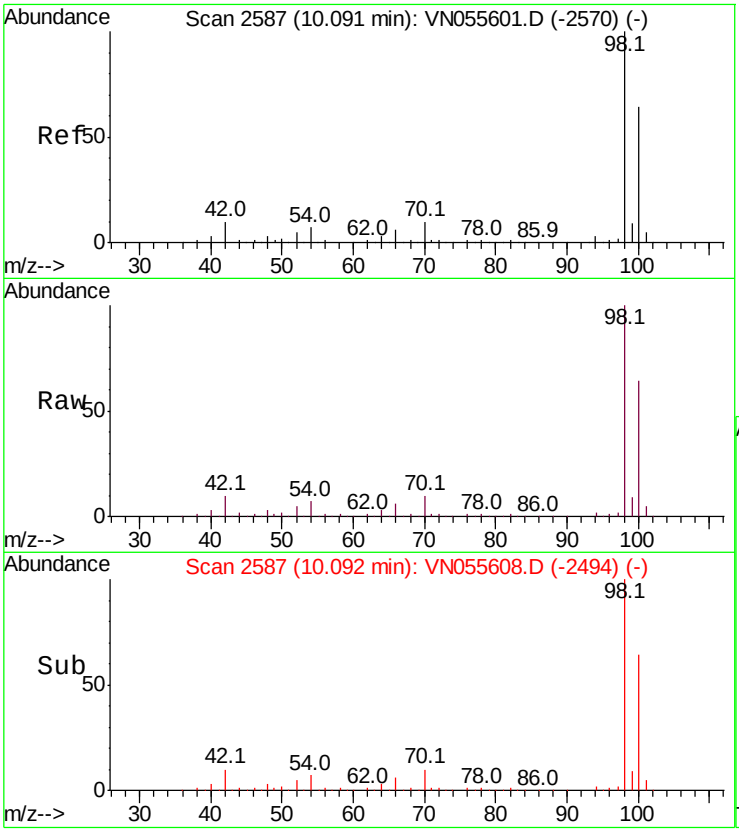


#35
Dibromofluoromethane
Concen: 48.334 ug/l
RT: 7.59 min Scan# 1810
Delta R.T. 0.00 min
Lab File: VN055608.D
Acq: 17 May 2019 14:26

Tgt Ion:113 Resp: 174877

Ion	Ratio	Lower	Upper
113	100		
111	101.8	82.5	123.7
192	22.7	18.7	28.1

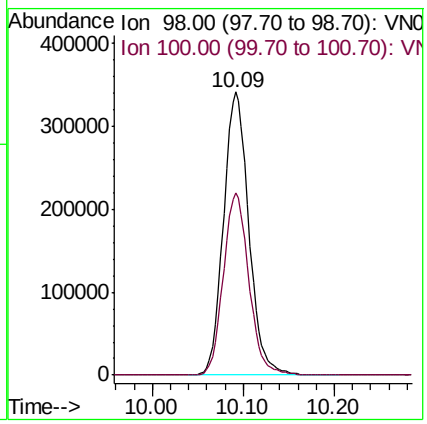


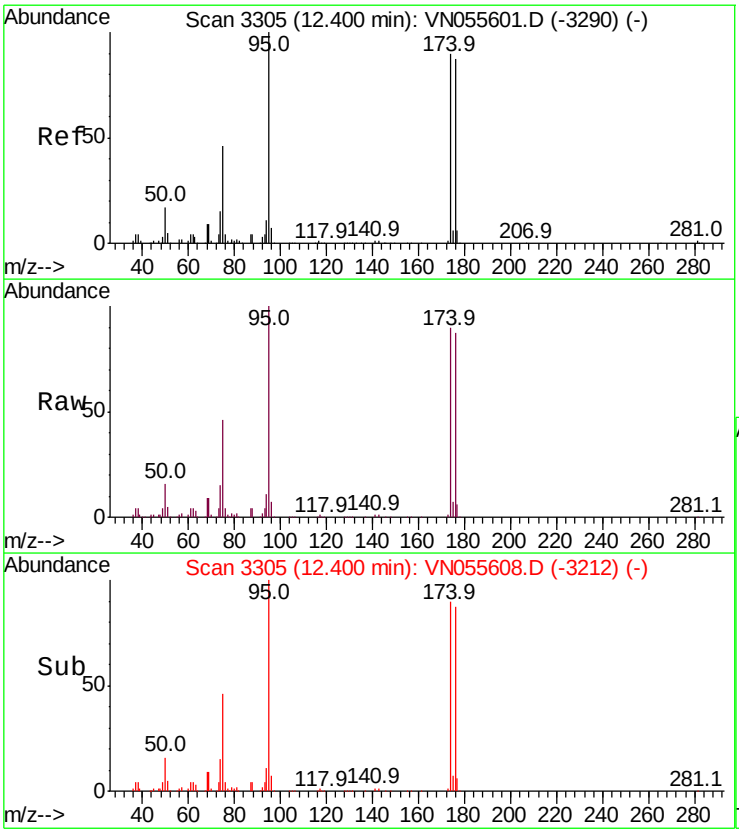


#50
Toluene-d8
Concen: 48.287 ug/l
RT: 10.09 min Scan# 2587
Delta R.T. 0.00 min
Lab File: VN055608.D
Acq: 17 May 2019 14:26

Tgt Ion: 98 Resp: 660584

Ion	Ratio	Lower	Upper
98	100		
100	64.8	51.9	77.9

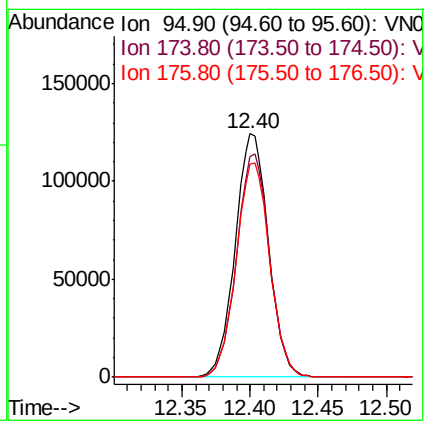


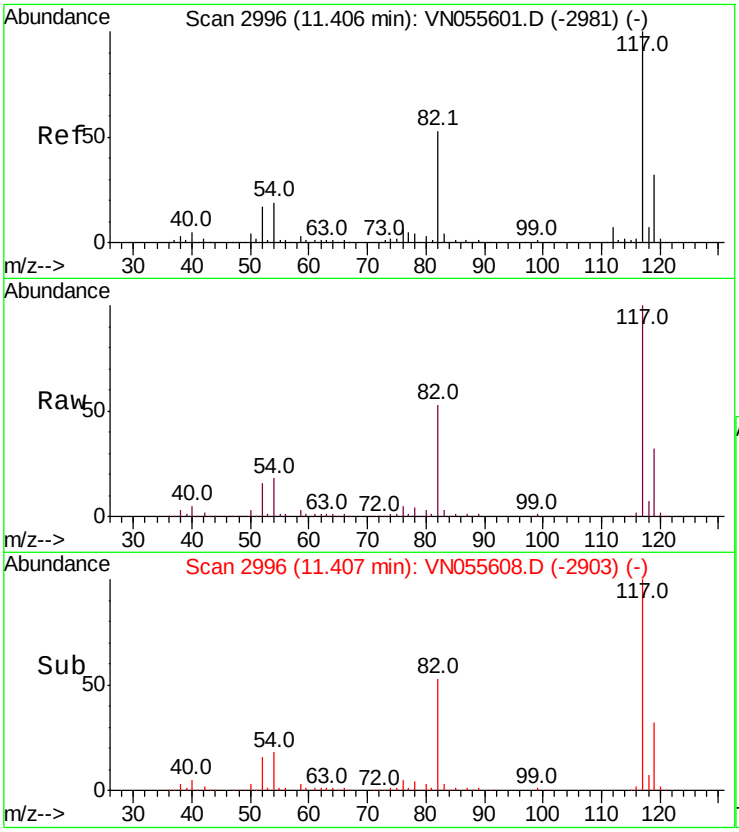


#62
4-Bromofluorobenzene
Concen: 44.580 ug/l
RT: 12.40 min Scan# 3305
Delta R.T. 0.00 min
Lab File: VN055608.D
Acq: 17 May 2019 14:26

Tgt Ion: 95 Resp: 210597

Ion	Ratio	Lower	Upper
95	100		
174	90.6	0.0	180.6
176	88.8	0.0	177.4

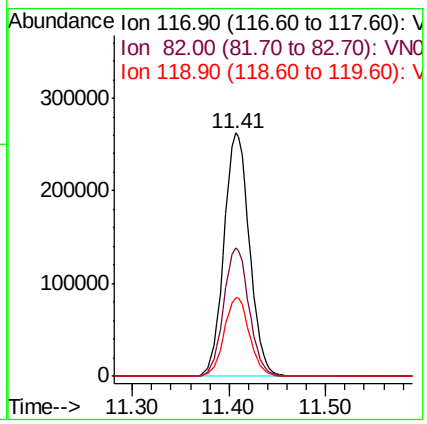


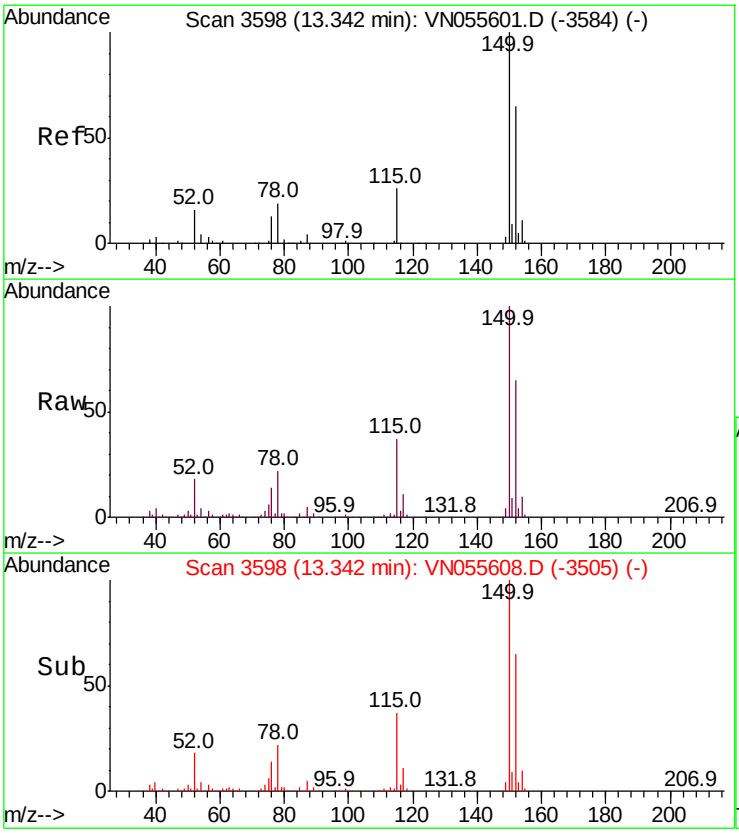


#63
Chlorobenzene-d5
Concen: 50.000 ug/l
RT: 11.41 min Scan# 2996
Delta R.T. 0.00 min
Lab File: VN055608.D
Acq: 17 May 2019 14:26

Tgt Ion:117 Resp: 479654

Ion	Ratio	Lower	Upper
117	100		
82	52.7	42.3	63.5
119	32.4	25.4	38.2

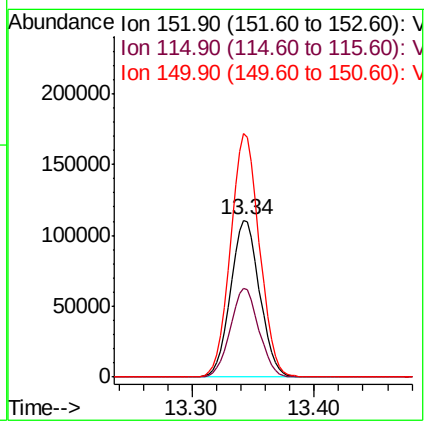




#72
1,4-Dichlorobenzene-d4
Concen: 50.000 ug/l
RT: 13.34 min Scan# 3598
Delta R.T. 0.00 min
Lab File: VN055608.D
Acq: 17 May 2019 14:26

Tgt Ion:152 Resp: 183878

Ion	Ratio	Lower	Upper
152	100		
115	55.3	28.1	84.2
150	153.8	0.0	348.0



LSC Area Percent Report

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055608.D
Acq On : 17 May 2019 14:26
Operator : JC/SP
Sample : VN0517WBL01
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 13 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 3 % of largest Peak
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Title : SW846 8260

Signal : TIC

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	7.593	1787	1810	1821	rBV2	219570	553182	33.07%	6.583%
2	7.667	1821	1833	1865	rVB	423180	1027276	61.41%	12.224%
3	8.027	1928	1945	1974	rBV	214026	519162	31.03%	6.178%
4	8.587	2103	2119	2161	rBV	568172	1243525	74.33%	14.797%
5	10.092	2569	2587	2618	rBV	860176	1672874	100.00%	19.906%
6	11.407	2981	2996	3015	rBV	738843	1347945	80.58%	16.040%
7	12.400	3291	3305	3327	rBV	596707	1011000	60.43%	12.030%
8	13.342	3586	3598	3615	rVB	623952	1028789	61.50%	12.242%

Sum of corrected areas: 8403753

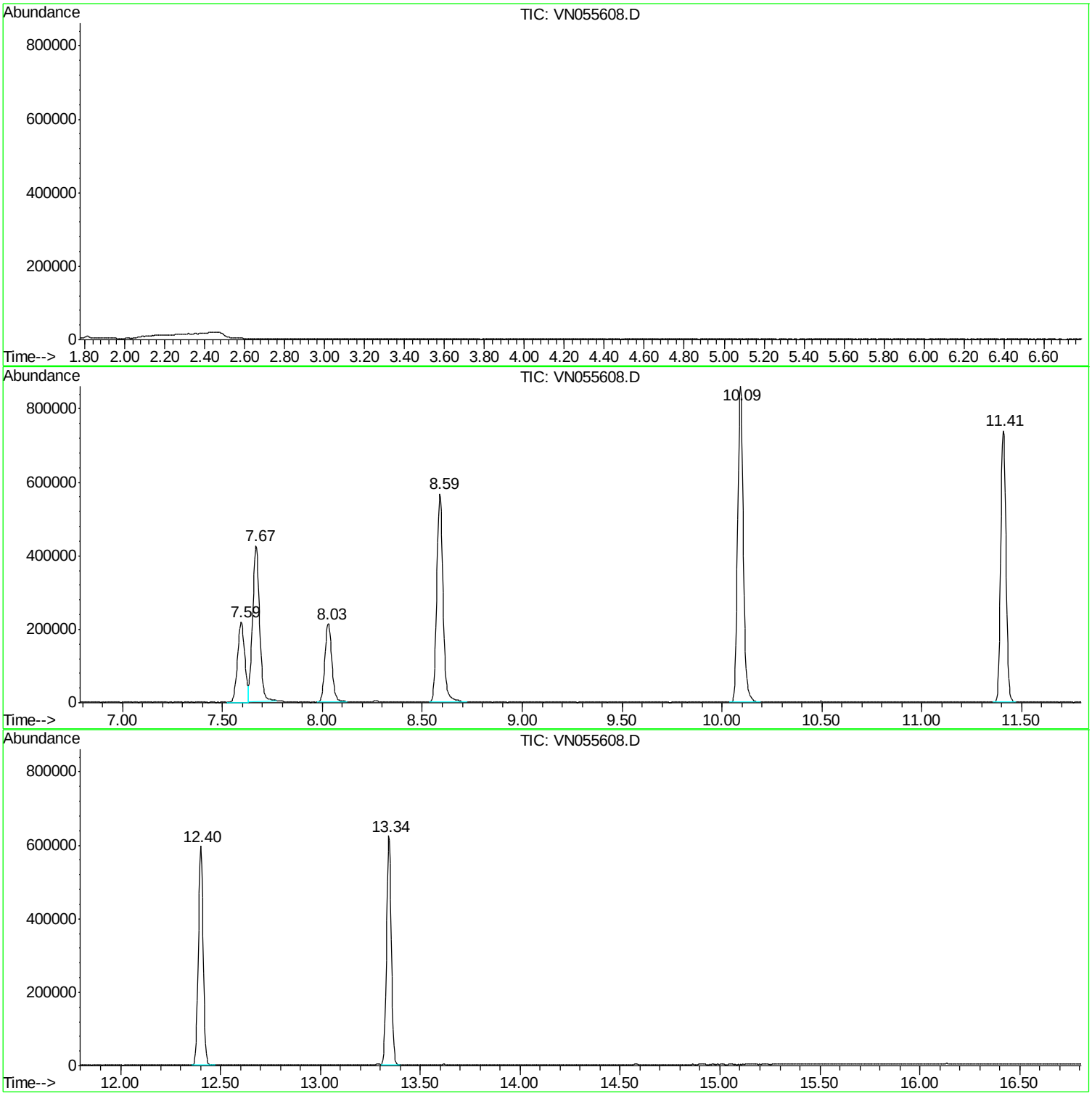
LSC Report - Integrated Chromatogram

Data Path : Z:\VOASRV\HPCHEM1\MSVOA N\DATA\VN051719\
Data File : VN055608.D
Acq On : 17 May 2019 14:26
Operator : JC/SP
Sample : VN0517WBL01
Misc : 5.00mL/MSVOA N/WATER
ALS Vial : 13 Sample Multiplier: 1

Instrument : MSVOA_N
ClientSampleId : VN0517WBL01

Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260

TIC Library : C:\DATABASE\NIST11.L
TIC Integration Parameters: LSCINT.P



Instrument :
MSVOA_N
ClientSampleId :
VN0517WBL01

Library Search Compound Report

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055608.D
Acq On : 17 May 2019 14:26
Operator : JC/SP
Sample : VN0517WBL01
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 13 Sample Multiplier: 1

Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260

TIC Library : C:\DATABASE\NIST11.L
TIC Integration Parameters: LSCINT.P

No Library Search Compounds Detected

****

Tentatively Identified Compound (LSC) summary

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055608.D
Acq On : 17 May 2019 14:26
Operator : JC/SP
Sample : VN0517WBL01
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 13 Sample Multiplier: 1

Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260

TIC Library : C:\DATABASE\NIST11.L
TIC Integration Parameters: LSCINT.P

					Internal Standard			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

Quantitation Report (QT Reviewed)

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_X\DATA\VX052119\
Data File : VX009771.D
Acq On : 22 May 2019 01:31
Operator : JC/SP
Sample : VX0521WBL02
Misc : 5.0mL/MSVOA_X/WATER
ALS Vial : 34 Sample Multiplier: 1

Instrument : MSVOA_X
ClientSampleId : VX0521WBL02

Quant Time: May 22 08:37:54 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_X\METHOD\82X042919W.M
Quant Title : SW846 8260
QLast Update : Thu May 09 07:31:15 2019
Response via : Initial Calibration

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene	5.67	168	174962	50.00	ug/l	0.00
34) 1,4-Difluorobenzene	6.86	114	284123	50.00	ug/l	0.00
63) Chlorobenzene-d5	10.11	117	255384	50.00	ug/l	0.00
72) 1,4-Dichlorobenzene-d4	12.08	152	113607	50.00	ug/l	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4	6.06	65	118903	49.78	ug/l	0.00
Spiked Amount 50.000			Recovery = 99.56%			
35) Dibromofluoromethane	5.50	113	86189	48.26	ug/l	0.00
Spiked Amount 50.000			Recovery = 96.52%			
50) Toluene-d8	8.71	98	356787	49.48	ug/l	0.00
Spiked Amount 50.000			Recovery = 98.96%			
62) 4-Bromofluorobenzene	11.13	95	120763	46.09	ug/l	0.00
Spiked Amount 50.000			Recovery = 92.18%			

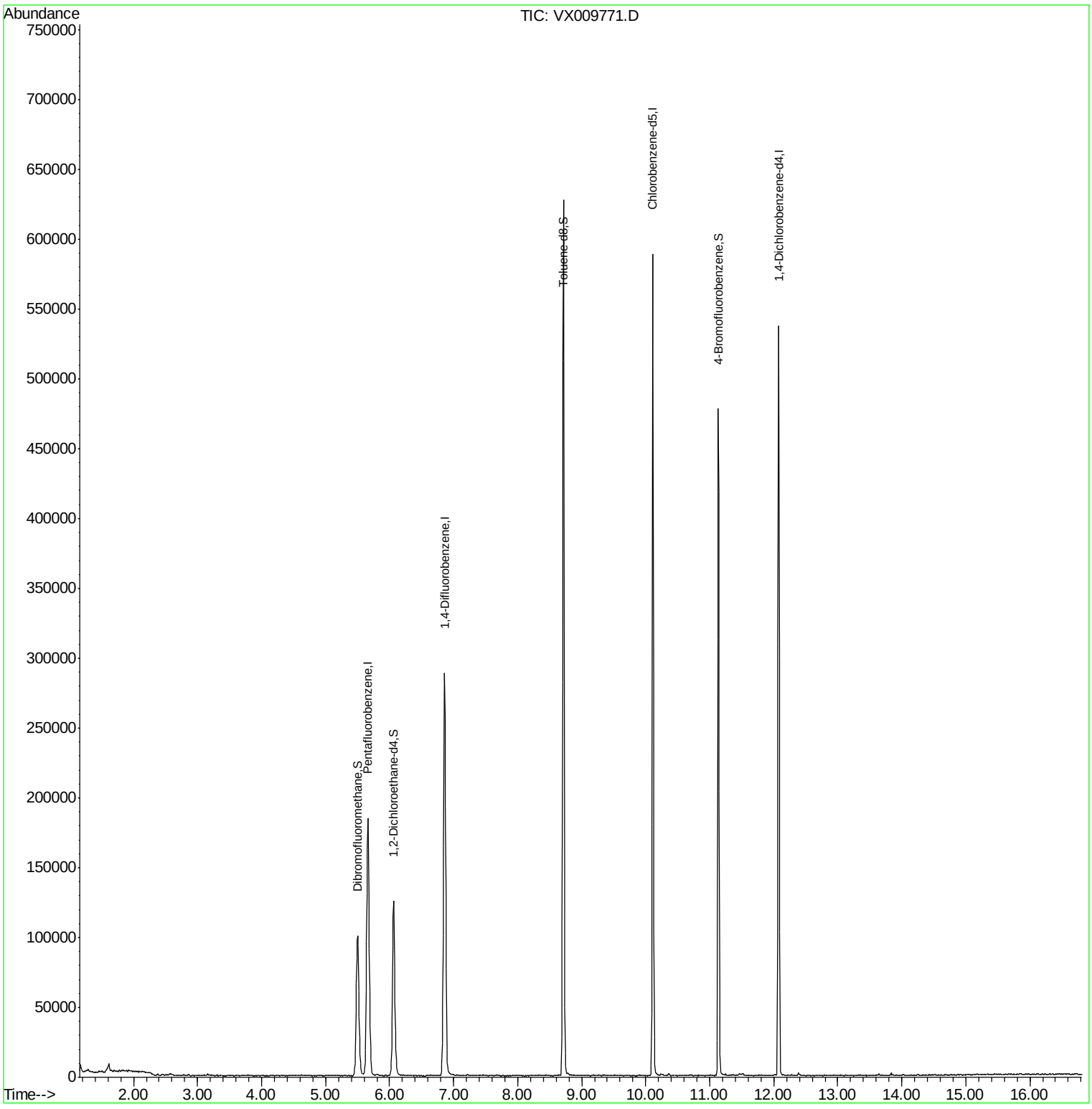
Target Compounds	Qvalue

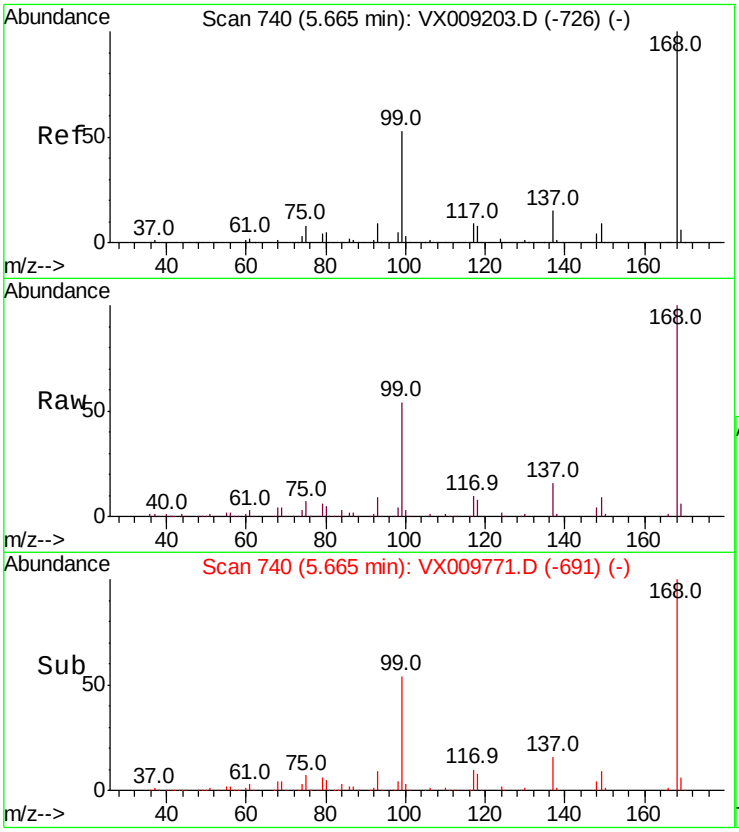
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_X\DATA\VX052119\
Data File : VX009771.D
Acq On : 22 May 2019 01:31
Operator : JC/SP
Sample : VX0521WBL02
Misc : 5.0mL/MSVOA_X/WATER
ALS Vial : 34 Sample Multiplier: 1

Quant Time: May 22 08:37:54 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_X\METHOD\82X042919W.M
Quant Title : SW846 8260
QLast Update : Thu May 09 07:31:15 2019
Response via : Initial Calibration

Instrument :
MSVOA_X
ClientSampleId :
VX0521WBL02

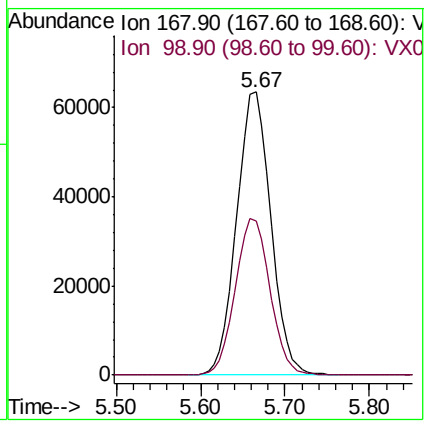


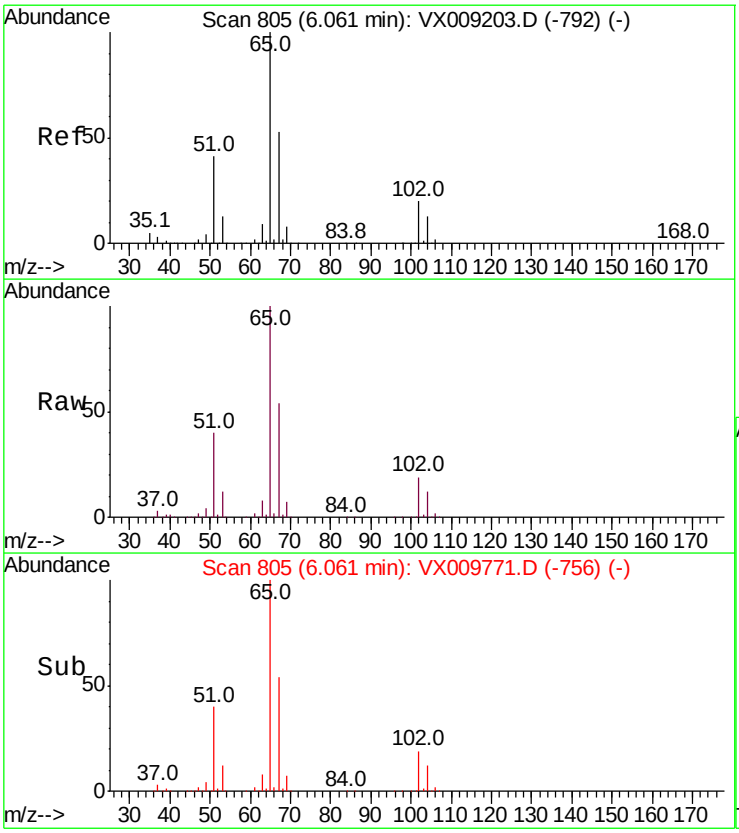


#1
Pentafluorobenzene
Concen: 50.000 ug/l
RT: 5.67 min Scan# 740
Delta R.T. 0.00 min
Lab File: VX009771.D
Acq: 22 May 2019 01:31

Tgt Ion:168 Resp: 174962

Ion	Ratio	Lower	Upper
168	100		
99	54.5	42.3	63.5

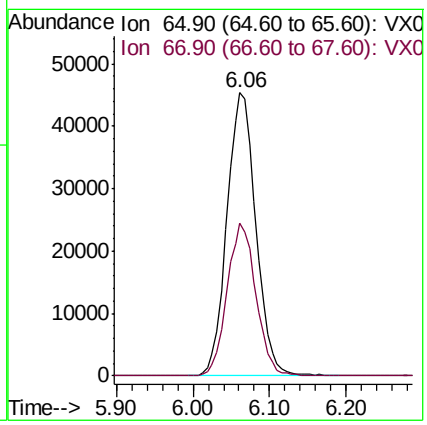


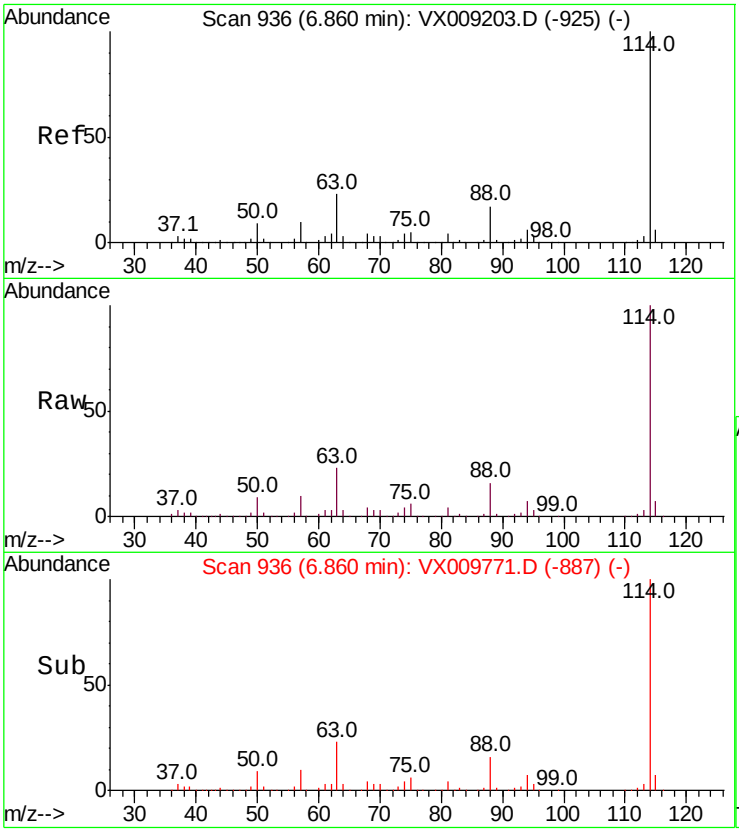


#33
1,2-Dichloroethane-d4
Concen: 49.783 ug/l
RT: 6.06 min Scan# 805
Delta R.T. 0.00 min
Lab File: VX009771.D
Acq: 22 May 2019 01:31

Tgt Ion: 65 Resp: 118903

Ion	Ratio	Lower	Upper
65	100		
67	53.6	0.0	106.6

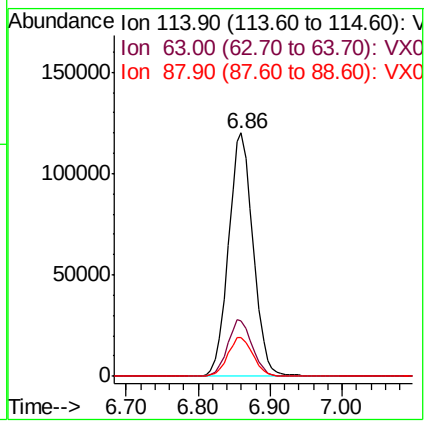


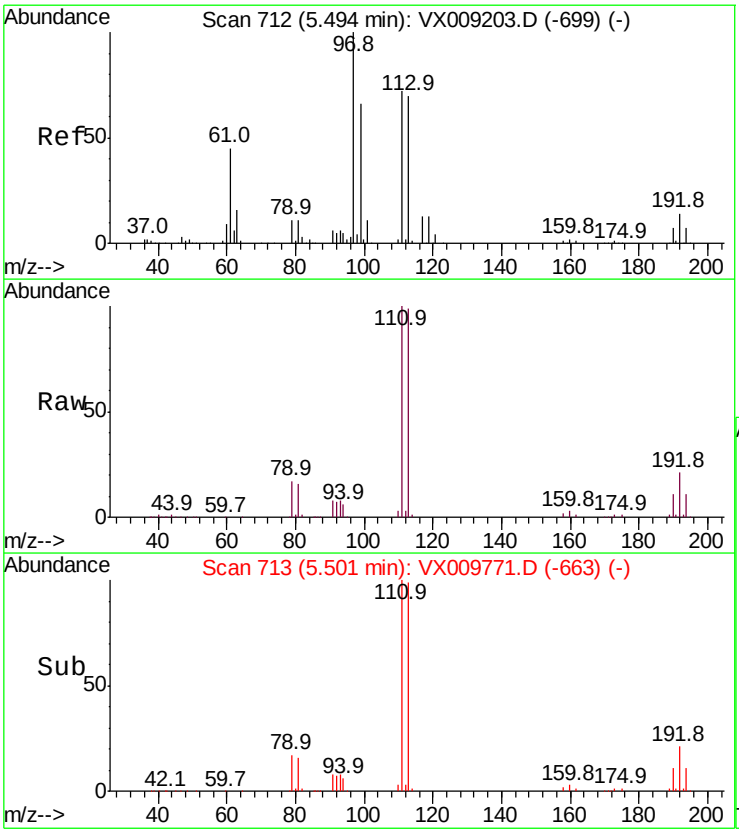


#34
1,4-Difluorobenzene
Concen: 50.000 ug/l
RT: 6.86 min Scan# 936
Delta R.T. 0.00 min
Lab File: VX009771.D
Acq: 22 May 2019 01:31

Tgt Ion:114 Resp: 284123

Ion	Ratio	Lower	Upper
114	100		
63	22.7	0.0	45.6
88	16.2	0.0	33.2

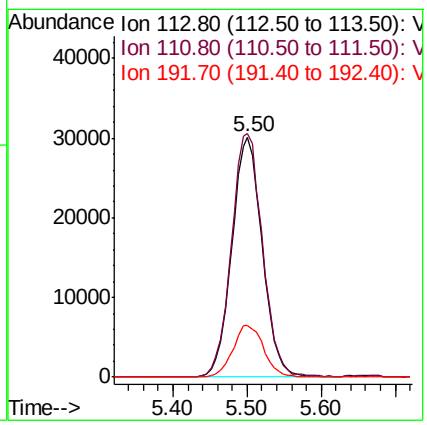


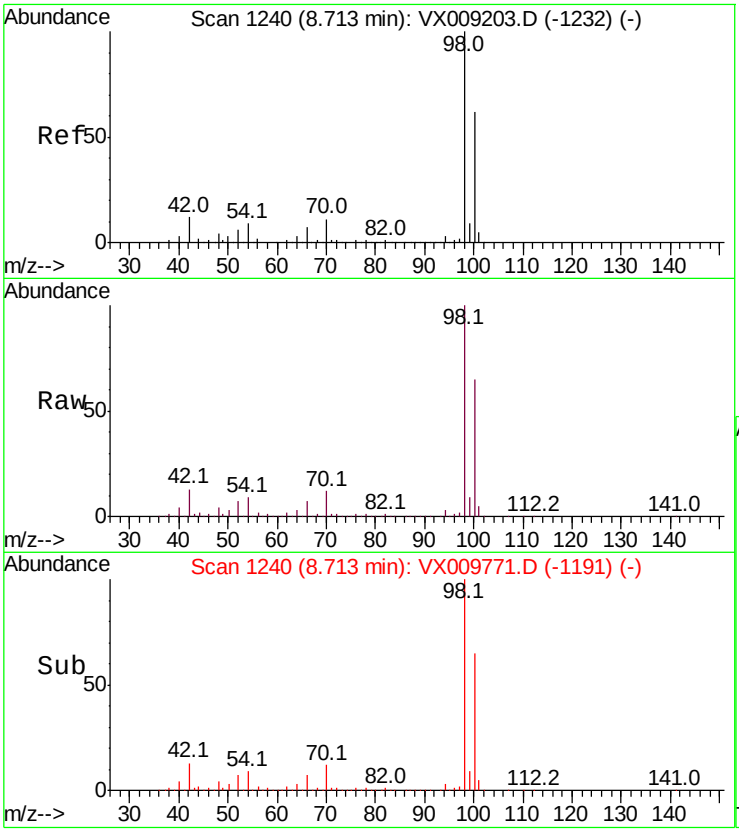


#35
Dibromofluoromethane
Concen: 48.255 ug/l
RT: 5.50 min Scan# 713
Delta R.T. 0.01 min
Lab File: VX009771.D
Acq: 22 May 2019 01:31

Tgt Ion:113 Resp: 86189

Ion	Ratio	Lower	Upper
113	100		
111	103.9	82.8	124.2
192	21.8	17.0	25.6

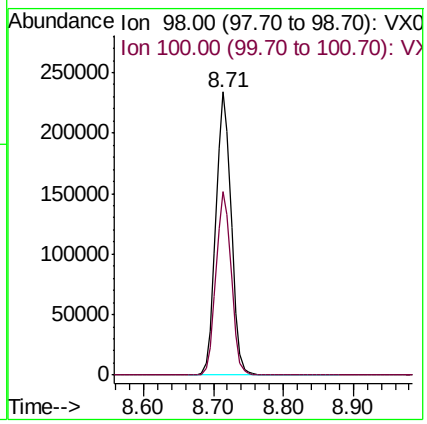


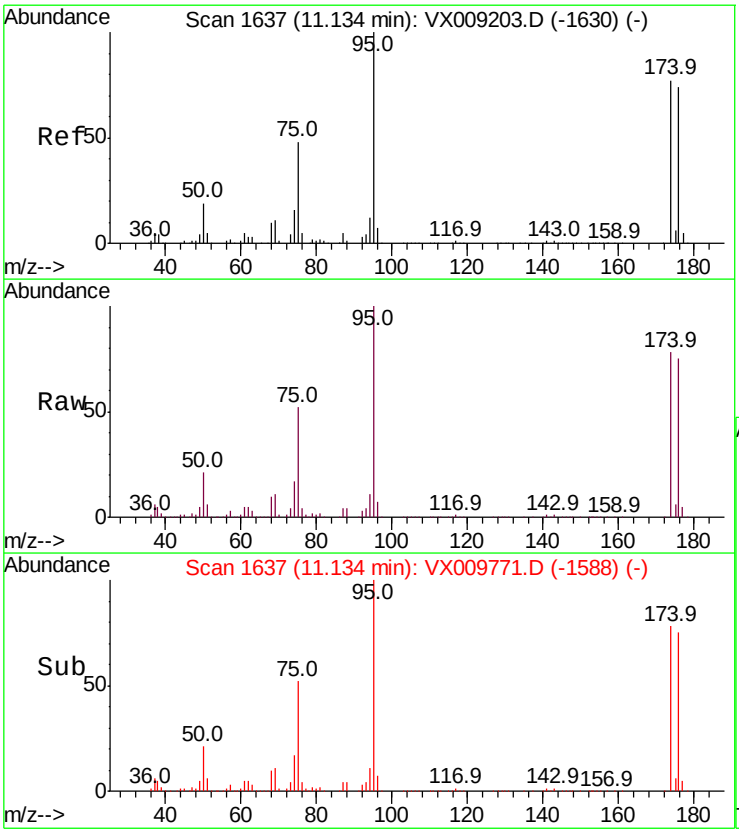


#50
Toluene-d8
Concen: 49.478 ug/l
RT: 8.71 min Scan# 1240
Delta R.T. 0.00 min
Lab File: VX009771.D
Acq: 22 May 2019 01:31

Tgt Ion: 98 Resp: 356787

Ion	Ratio	Lower	Upper
98	100		
100	64.5	51.2	76.8

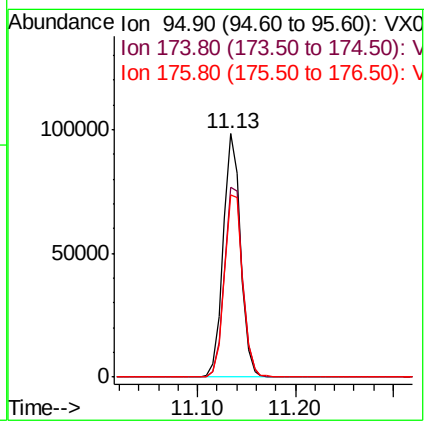


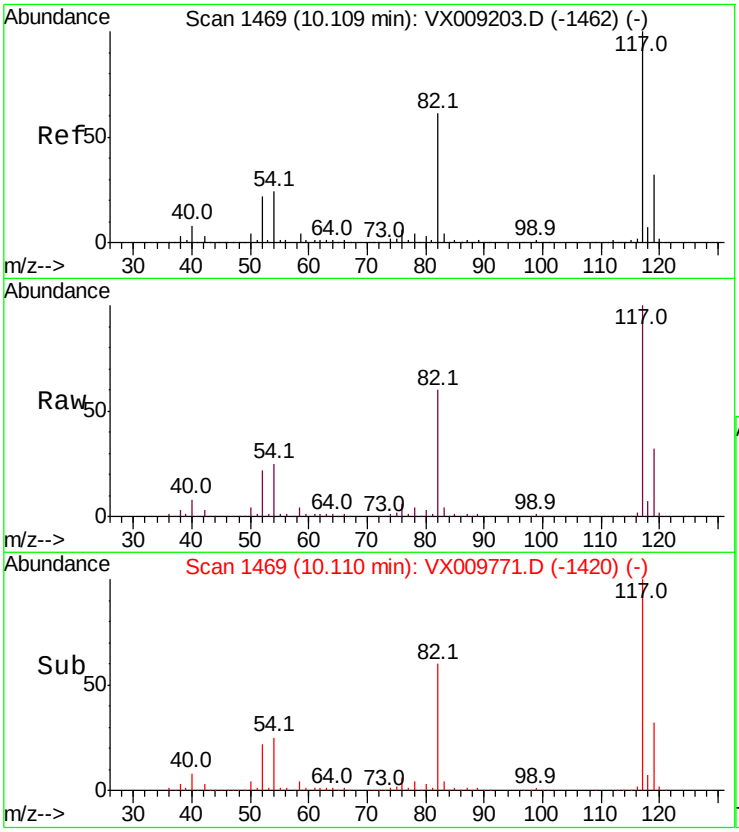


#62
4-Bromofluorobenzene
Concen: 46.089 ug/l
RT: 11.13 min Scan# 1637
Delta R.T. 0.00 min
Lab File: VX009771.D
Acq: 22 May 2019 01:31

Tgt Ion: 95 Resp: 120763

Ion	Ratio	Lower	Upper
95	100		
174	81.9	0.0	161.6
176	79.5	0.0	159.2

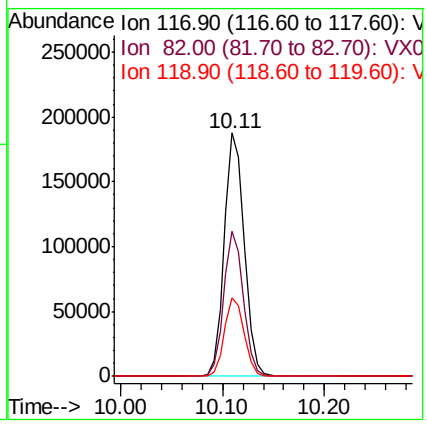


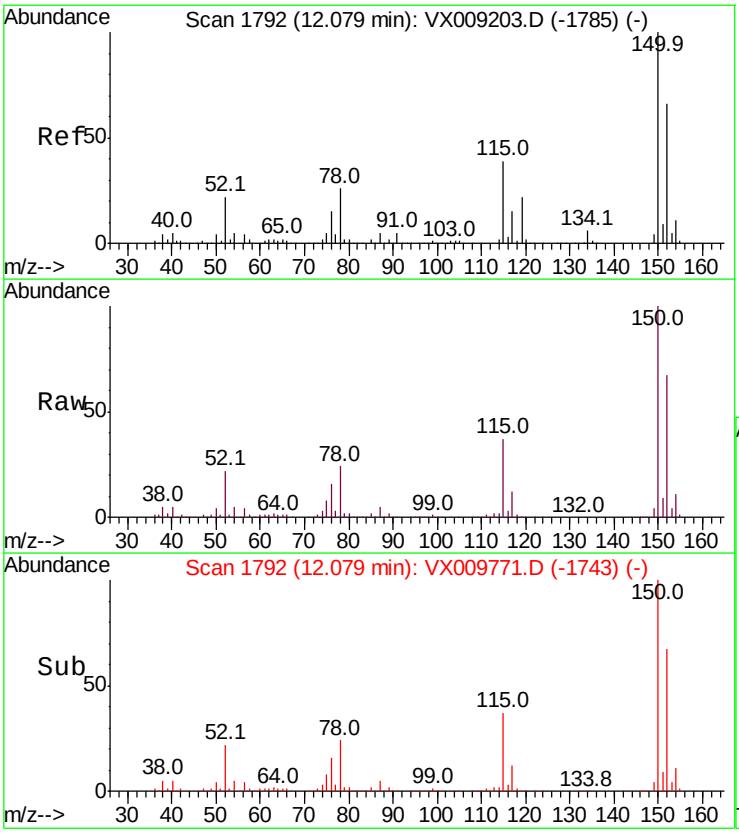


#63
Chlorobenzene-d5
Concen: 50.000 ug/l
RT: 10.11 min Scan# 1469
Delta R.T. 0.00 min
Lab File: VX009771.D
Acq: 22 May 2019 01:31

Tgt Ion:117 Resp: 255384

Ion	Ratio	Lower	Upper
117	100		
82	59.8	48.8	73.2
119	32.1	25.8	38.6

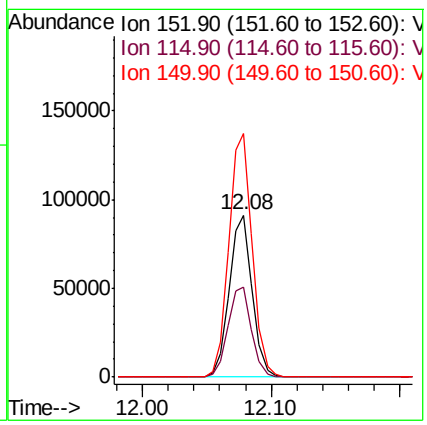




#72
1,4-Dichlorobenzene-d4
Concen: 50.000 ug/l
RT: 12.08 min Scan# 1792
Delta R.T. 0.00 min
Lab File: VX009771.D
Acq: 22 May 2019 01:31

Tgt Ion:152 Resp: 113607

Ion	Ratio	Lower	Upper
152	100		
115	57.1	41.2	123.6
150	153.7	0.0	346.4



Instrument :
MSVOA_X
ClientSampleId :
VX0521WBL02

LSC Area Percent Report

Data Path : Z:\VOASRV\HPCHEM1\MSVOA X\DATA\VX052119\
Data File : VX009771.D
Acq On : 22 May 2019 01:31
Operator : JC/SP
Sample : VX0521WBL02
Misc : 5.0mL/MSVOA X/WATER
ALS Vial : 34 Sample Multiplier: 1

Integration Parameters: RTEINT.P
Integrator: RTE
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 3 % of largest Peak
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Method : Z:\VOASRV\HPCHEM1\MSVOA_X\METHOD\82X042919W.M
Title : SW846 8260

Signal : TIC

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	5.501	700	713	728	rBV	100189	292795	30.26%	5.971%
2	5.659	728	739	756	rVB	183927	514834	53.21%	10.499%
3	6.061	794	805	821	rBV	125265	334119	34.53%	6.814%
4	6.860	926	936	949	rBV	288247	689608	71.27%	14.063%
5	8.713	1233	1240	1250	rBV	626887	967594	100.00%	19.733%
6	10.110	1463	1469	1482	rBV	588014	798845	82.56%	16.291%
7	11.134	1631	1637	1650	rBV	477233	601205	62.13%	12.261%
8	12.079	1785	1792	1802	rBV	536384	704544	72.81%	14.368%

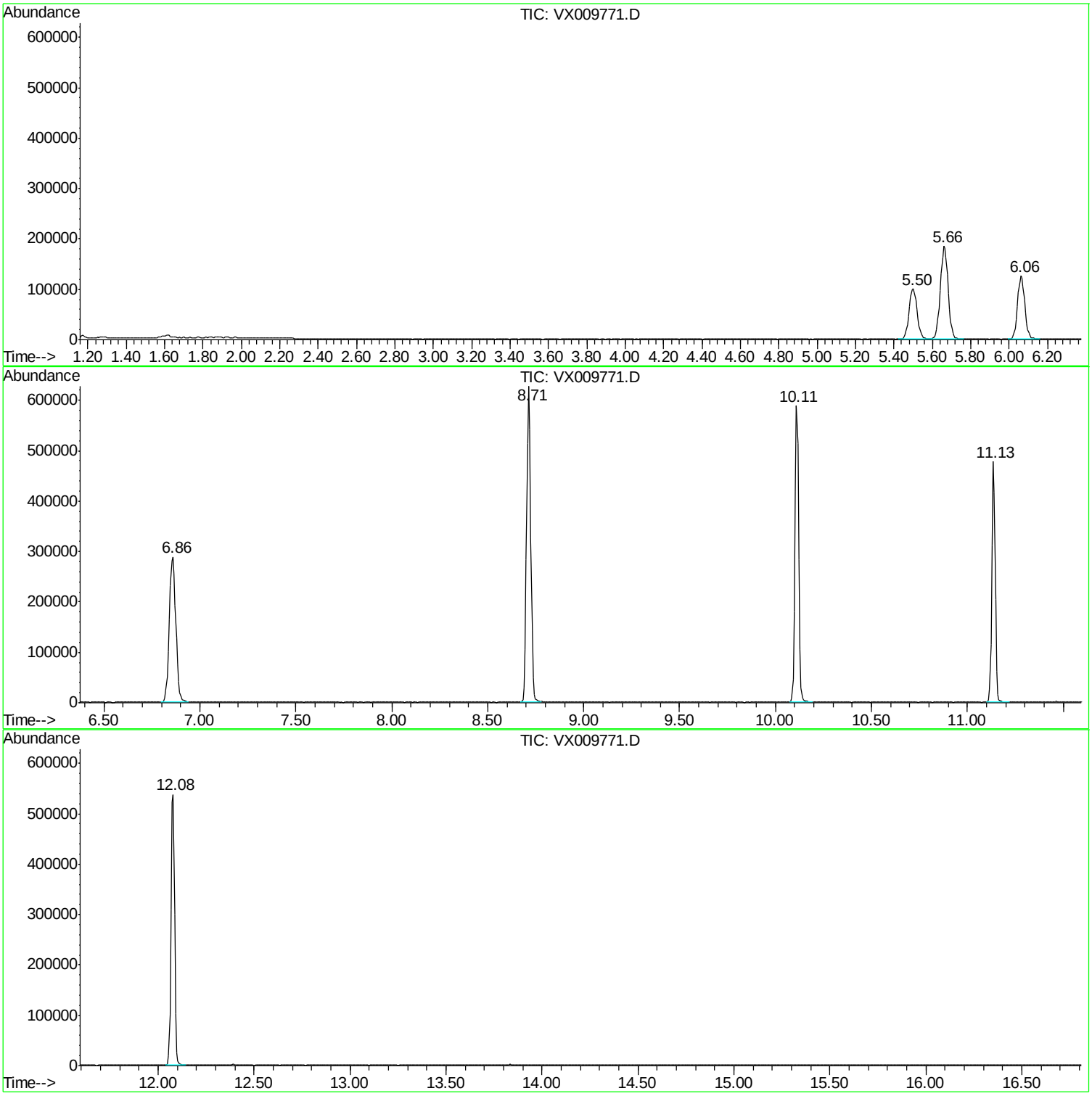
Sum of corrected areas: 4903544

Data Path : Z:\VOASRV\HPCHEM1\MSVOA X\DATA\VX052119\
Data File : VX009771.D
Acq On : 22 May 2019 01:31
Operator : JC/SP
Sample : VX0521WBL02
Misc : 5.0mL/MSVOA X/WATER
ALS Vial : 34 Sample Multiplier: 1

Instrument :
MSVOA_X
ClientSampleId :
VX0521WBL02

Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_X\METHOD\82X042919W.M
Quant Title : SW846 8260

TIC Library : C:\DATABASE\NIST11.L
TIC Integration Parameters: LSCINT.P



Instrument :
MSVOA_X
ClientSampleId :
VX0521WBL02

Library Search Compound Report

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_X\DATA\VX052119\
Data File : VX009771.D
Acq On : 22 May 2019 01:31
Operator : JC/SP
Sample : VX0521WBL02
Misc : 5.0mL/MSVOA_X/WATER
ALS Vial : 34 Sample Multiplier: 1

Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_X\METHOD\82X042919W.M
Quant Title : SW846 8260

TIC Library : C:\DATABASE\NIST11.L
TIC Integration Parameters: LSCINT.P

No Library Search Compounds Detected

****

Tentatively Identified Compound (LSC) summary

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_X\DATA\VX052119\
Data File : VX009771.D
Acq On : 22 May 2019 01:31
Operator : JC/SP
Sample : VX0521WBL02
Misc : 5.0mL/MSVOA_X/WATER
ALS Vial : 34 Sample Multiplier: 1

Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_X\METHOD\82X042919W.M
Quant Title : SW846 8260

TIC Library : C:\DATABASE\NIST11.L
TIC Integration Parameters: LSCINT.P

					Internal Standard			
TIC Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

Quantitation Report (QT Reviewed)

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055615.D
Acq On : 17 May 2019 17:09
Operator : JC/SP
Sample : VN0517WBS01
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 20 Sample Multiplier: 1

Quant Time: May 18 03:40:39 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260
QLast Update : Fri May 17 23:54:12 2019
Response via : Initial Calibration

Instrument : MSVOA_N
ClientSampleId : VN0517WBS01

Manual Integrations APPROVED
MMDadoda
5/20/2019 9:08:50 AM

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene	7.67	168	324787	50.00	ug/l	0.00
34) 1,4-Difluorobenzene	8.59	114	493997	50.00	ug/l	0.00
63) Chlorobenzene-d5	11.41	117	427699	50.00	ug/l	0.00
72) 1,4-Dichlorobenzene-d4	13.34	152	187003	50.00	ug/l	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4	8.03	65	178231	50.06	ug/l	0.00
Spiked Amount 50.000			Recovery = 100.12%			
35) Dibromofluoromethane	7.59	113	159165	50.72	ug/l	0.00
Spiked Amount 50.000			Recovery = 101.44%			
50) Toluene-d8	10.09	98	586771	49.45	ug/l	0.00
Spiked Amount 50.000			Recovery = 98.90%			
62) 4-Bromofluorobenzene	12.40	95	199700	48.74	ug/l	0.00
Spiked Amount 50.000			Recovery = 97.48%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.85	85	45770	18.316	ug/l	98
3) Chloromethane	2.06	50	60629	18.190	ug/l	99
4) Vinyl Chloride	2.19	62	67768	18.776	ug/l	99
5) Bromomethane	2.57	94	48742	21.190	ug/l	100
6) Chloroethane	2.71	64	38618	19.270	ug/l	99
7) Trichlorofluoromethane	3.03	101	89630	19.379	ug/l	100
8) Diethyl Ether	3.41	74	37500	20.183	ug/l	98
9) 1,1,2-Trichlorotrifluoroet	3.77	101	53576	19.000	ug/l	99
10) Methyl Iodide	3.96	142	62245	15.312	ug/l	98
11) Tert butyl alcohol	4.77	59	69487	104.659	ug/l	96
12) 1,1-Dichloroethene	3.74	96	56528	19.058	ug/l	98
13) Acrolein	3.61	56	32672	97.308	ug/l	98
14) Allyl chloride	4.33	41	91946	19.202	ug/l	99
15) Acrylonitrile	4.99	53	151481	102.550	ug/l	99
16) Acetone	3.82	43	129027	88.804	ug/l	99
17) Carbon Disulfide	4.06	76	153312	18.593	ug/l	100
18) Methyl Acetate	4.33	43	62187	19.964	ug/l	99
19) Methyl tert-butyl Ether	5.04	73	193261	19.695	ug/l	97
20) Methylene Chloride	4.56	84	62220	18.764	ug/l	97
21) trans-1,2-Dichloroethene	5.05	96	60709	19.213	ug/l	98
22) Diisopropyl ether	5.95	45	179116	18.877	ug/l	92
23) Vinyl Acetate	5.90	43	789246	98.028	ug/l	100
24) 1,1-Dichloroethane	5.85	63	109165	19.621	ug/l	100
25) 2-Butanone	6.83	43	200986	98.933	ug/l	100
26) 2,2-Dichloropropane	6.83	77	85919	17.400	ug/l	98
27) cis-1,2-Dichloroethene	6.83	96	71184	19.347	ug/l	97
28) Bromochloromethane	7.20	49	48650	20.100	ug/l	97
29) Tetrahydrofuran	7.21	42	137919	102.473	ug/l	99
30) Chloroform	7.37	83	109340	19.146	ug/l	98
31) Cyclohexane	7.66	56	100266	18.989	ug/l	98
32) 1,1,1-Trichloroethane	7.57	97	97070	18.950	ug/l	99
36) 1,1-Dichloropropene	7.80	75	81508	18.507	ug/l	99
37) Ethyl Acetate	6.93	43	84722	21.317	ug/l	98
38) Carbon Tetrachloride	7.78	117	87873	18.671	ug/l	99

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055615.D
Acq On : 17 May 2019 17:09
Operator : JC/SP
Sample : VN0517WBS01
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 20 Sample Multiplier: 1

Quant Time: May 18 03:40:39 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260
QLast Update : Fri May 17 23:54:12 2019
Response via : Initial Calibration

Instrument :
MSVOA_N
ClientSampleId :
VN0517WBS01

Manual Integrations APPROVED
MMDadoda
5/20/2019 9:08:50 AM

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
39) Methylcyclohexane	9.08	83	96950	18.260	ug/l		100
40) Benzene	8.04	78	250888	19.367	ug/l		99
41) Methacrylonitrile	7.18	41	33647m	19.802	ug/l		
42) 1,2-Dichloroethane	8.13	62	84884	20.235	ug/l		99
43) Isopropyl Acetate	8.16	43	136843	19.794	ug/l		99
44) Trichloroethene	8.84	130	71416	19.537	ug/l		98
45) 1,2-Dichloropropane	9.12	63	65283	19.129	ug/l		99
46) Dibromomethane	9.21	93	43878	19.644	ug/l		98
47) Bromodichloromethane	9.40	83	88016	18.802	ug/l		98
48) Methyl methacrylate	9.20	41	61609	19.938	ug/l		97
49) 1,4-Dioxane	9.20	88	26570	432.729	ug/l		100
51) 4-Methyl-2-Pentanone	9.99	43	403062	99.393	ug/l		99
52) Toluene	10.16	92	154244	18.983	ug/l		100
53) t-1,3-Dichloropropene	10.38	75	95018	18.859	ug/l		100
54) cis-1,3-Dichloropropene	9.84	75	105280	19.074	ug/l		99
55) 1,1,2-Trichloroethane	10.56	97	64577	19.306	ug/l		99
56) Ethyl methacrylate	10.43	69	97962	18.761	ug/l		99
57) 1,3-Dichloropropane	10.71	76	101889	19.232	ug/l		100
58) 2-Chloroethyl Vinyl ether	9.70	63	219296	98.841	ug/l		99
59) 2-Hexanone	10.75	43	278930	97.696	ug/l		100
60) Dibromochloromethane	10.90	129	72954	19.243	ug/l		100
61) 1,2-Dibromoethane	11.01	107	65118	19.456	ug/l		99
64) Tetrachloroethene	10.63	164	64823	19.216	ug/l		100
65) Chlorobenzene	11.44	112	163532	18.904	ug/l		100
66) 1,1,1,2-Tetrachloroethane	11.51	131	66968	19.243	ug/l		99
67) Ethyl Benzene	11.51	91	290686	18.863	ug/l		100
68) m/p-Xylenes	11.62	106	219258	37.676	ug/l		98
69) o-Xylene	11.95	106	106602	18.728	ug/l		99
70) Styrene	11.96	104	179308	18.946	ug/l		99
71) Bromoform	12.13	173	57285	19.424	ug/l	#	100
73) Isopropylbenzene	12.25	105	286577	20.412	ug/l		100
74) N-amyl acetate	12.07	43	100747	19.186	ug/l		99
75) 1,1,2,2-Tetrachloroethane	12.50	83	89244	20.590	ug/l		98
76) 1,2,3-Trichloropropane	12.55	75	74879m	19.623	ug/l		
77) Bromobenzene	12.53	156	73636	19.173	ug/l		96
78) n-propylbenzene	12.59	91	305234	18.380	ug/l		100
79) 2-Chlorotoluene	12.67	91	186721	20.001	ug/l		99
80) 1,3,5-Trimethylbenzene	12.73	105	233475	19.585	ug/l		100
81) trans-1,4-Dichloro-2-buten	12.30	75	27299	18.390	ug/l		98
82) 4-Chlorotoluene	12.77	91	178805	18.274	ug/l		100
83) tert-Butylbenzene	12.99	119	205065	19.885	ug/l		100
84) 1,2,4-Trimethylbenzene	13.04	105	233633	19.819	ug/l		100
85) sec-Butylbenzene	13.17	105	263378	19.774	ug/l		100
86) p-Isopropyltoluene	13.29	119	238497	19.421	ug/l		99
87) 1,3-Dichlorobenzene	13.28	146	118252	18.622	ug/l		99
88) 1,4-Dichlorobenzene	13.36	146	115111	18.986	ug/l		99
89) n-Butylbenzene	13.61	91	188958	18.414	ug/l		100
90) Hexachloroethane	13.87	117	47015	19.838	ug/l		97
91) 1,2-Dichlorobenzene	13.65	146	118354	18.697	ug/l		99
92) 1,2-Dibromo-3-Chloropropan	14.27	75	17469	20.584	ug/l		100

Quantitation Report (QT Reviewed)

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055615.D
Acq On : 17 May 2019 17:09
Operator : JC/SP
Sample : VN0517WBS01
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 20 Sample Multiplier: 1

Quant Time: May 18 03:40:39 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260
QLast Update : Fri May 17 23:54:12 2019
Response via : Initial Calibration

Instrument :
MSVOA_N
ClientSampleId :
VN0517WBS01

Manual Integrations APPROVED
MMDadoda
5/20/2019 9:08:50 AM

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
93) 1,2,4-Trichlorobenzene	14.91	180	61107	18.965	ug/l	99
94) Hexachlorobutadiene	15.01	225	39830	18.654	ug/l	99
95) Naphthalene	15.13	128	170923	18.721	ug/l	100
96) 1,2,3-Trichlorobenzene	15.31	180	65253	19.369	ug/l	99

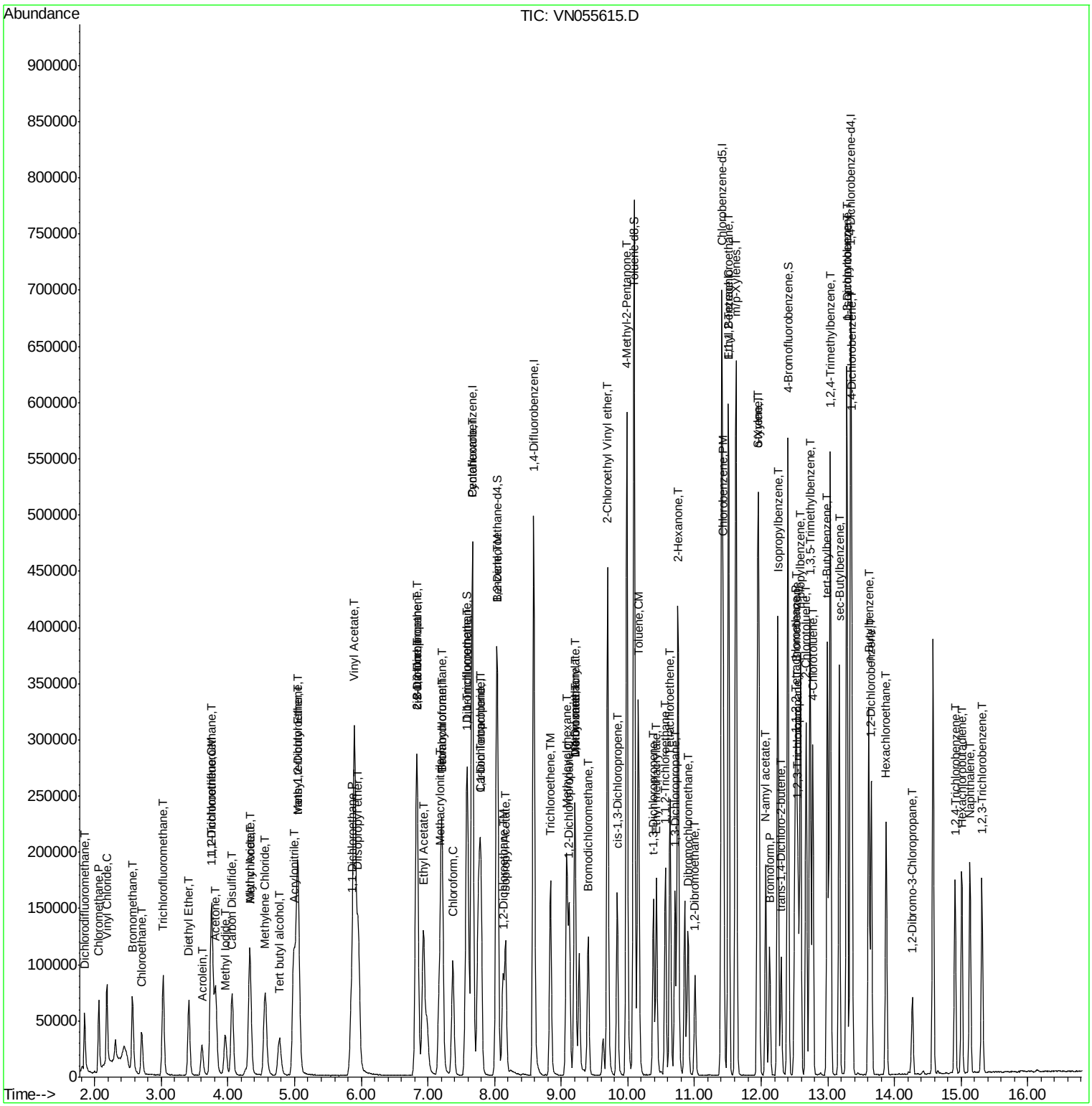
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055615.D
Acq On : 17 May 2019 17:09
Operator : JC/SP
Sample : VN0517WBS01
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 20 Sample Multiplier: 1

Quant Time: May 18 03:40:39 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260
QLast Update : Fri May 17 23:54:12 2019
Response via : Initial Calibration

Instrument :
MSVOA_N
ClientSampleId :
VN0517WBS01

Manual Integrations APPROVED
MMDadoda
5/20/2019 9:08:50 AM



Quantitation Report (QT Reviewed)

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_X\DATA\VX052119\
Data File : VX009772.D
Acq On : 22 May 2019 01:54
Operator : JC/SP
Sample : VX0521WBS04
Misc : 5.0mL/MSVOA_X/WATER
ALS Vial : 35 Sample Multiplier: 1

Quant Time: May 22 08:39:07 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_X\METHOD\82X042919W.M
Quant Title : SW846 8260
QLast Update : Thu May 09 07:31:15 2019
Response via : Initial Calibration

Instrument : MSVOA_X
ClientSampleId : VX0521WBS04

Manual Integrations APPROVED
MMDadoda
5/22/2019 9:37:31 AM

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene	5.67	168	152534	50.00	ug/l	0.00
34) 1,4-Difluorobenzene	6.86	114	251689	50.00	ug/l	0.00
63) Chlorobenzene-d5	10.11	117	229121	50.00	ug/l	0.00
72) 1,4-Dichlorobenzene-d4	12.08	152	109770	50.00	ug/l	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4	6.06	65	114318	54.90	ug/l	0.00
Spiked Amount 50.000			Recovery = 109.80%			
35) Dibromofluoromethane	5.49	113	79451	50.21	ug/l	0.00
Spiked Amount 50.000			Recovery = 100.42%			
50) Toluene-d8	8.71	98	332727	52.09	ug/l	0.00
Spiked Amount 50.000			Recovery = 104.18%			
62) 4-Bromofluorobenzene	11.13	95	118179	50.92	ug/l	0.00
Spiked Amount 50.000			Recovery = 101.84%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.20	85	25609	18.219	ug/l	98
3) Chloromethane	1.32	50	40198	20.947	ug/l	98
4) Vinyl Chloride	1.41	62	37993	20.303	ug/l	100
5) Bromomethane	1.64	94	23954	21.327	ug/l	95
6) Chloroethane	1.72	64	25456	21.188	ug/l	95
7) Trichlorofluoromethane	1.93	101	46032	20.237	ug/l	97
8) Diethyl Ether	2.19	74	21363	19.827	ug/l	95
9) 1,1,2-Trichlorotrifluoroet	2.39	101	27338	19.139	ug/l	98
10) Methyl Iodide	2.51	142	21863	16.557	ug/l	98
11) Tert butyl alcohol	3.05	59	48427	100.472	ug/l	100
12) 1,1-Dichloroethene	2.37	96	28204	19.706	ug/l	99
13) Acrolein	2.29	56	35025	80.239	ug/l	99
14) Allyl chloride	2.73	41	67387	19.320	ug/l	99
15) Acrylonitrile	3.14	53	118550	100.593	ug/l	99
16) Acetone	2.44	43	105002	93.911	ug/l	95
17) Carbon Disulfide	2.57	76	83129	20.688	ug/l	99
18) Methyl Acetate	2.78	43	51058	19.202	ug/l	99
19) Methyl tert-butyl Ether	3.20	73	108236	19.475	ug/l	95
20) Methylene Chloride	2.85	84	34442	19.025	ug/l	93
21) trans-1,2-Dichloroethene	3.17	96	30076	19.377	ug/l	97
22) Diisopropyl ether	3.85	45	135063	20.136	ug/l	95
23) Vinyl Acetate	3.82	43	598305	104.166	ug/l	98
24) 1,1-Dichloroethane	3.70	63	65439	19.777	ug/l	99
25) 2-Butanone	4.67	43	176643	101.666	ug/l	98
26) 2,2-Dichloropropane	4.59	77	35527	14.425	ug/l	98
27) cis-1,2-Dichloroethene	4.60	96	36089	19.479	ug/l	98
28) Bromochloromethane	5.01	49	32200	22.676	ug/l	95
29) Tetrahydrofuran	5.13	42	117960	105.503	ug/l	98
30) Chloroform	5.21	83	59427	19.857	ug/l	99
31) Cyclohexane	5.58	56	61648	20.025	ug/l	100
32) 1,1,1-Trichloroethane	5.49	97	49395	19.827	ug/l	98
36) 1,1-Dichloropropene	5.81	75	44089	18.850	ug/l	98
37) Ethyl Acetate	4.83	43	67280	20.645	ug/l	99
38) Carbon Tetrachloride	5.79	117	40776	19.188	ug/l	97

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_X\DATA\VX052119\
Data File : VX009772.D
Acq On : 22 May 2019 01:54
Operator : JC/SP
Sample : VX0521WBS04
Misc : 5.0mL/MSVOA_X/WATER
ALS Vial : 35 Sample Multiplier: 1

Quant Time: May 22 08:39:07 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_X\METHOD\82X042919W.M
Quant Title : SW846 8260
QLast Update : Thu May 09 07:31:15 2019
Response via : Initial Calibration

Instrument :
MSVOA_X
ClientSampleId :
VX0521WBS04

Manual Integrations APPROVED
MMDadoda
5/22/2019 9:37:31 AM

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
39) Methylcyclohexane	7.46	83	53678	18.687 ug/l	98
40) Benzene	6.15	78	140254	19.375 ug/l	100
41) Methacrylonitrile	5.05	41	37373	19.265 ug/l	99
42) 1,2-Dichloroethane	6.20	62	52092	20.061 ug/l	99
43) Isopropyl Acetate	6.45	43	105227	20.186 ug/l	98
44) Trichloroethene	7.21	130	32768	18.725 ug/l	95
45) 1,2-Dichloropropane	7.51	63	40086	19.557 ug/l	99
46) Dibromomethane	7.66	93	22878	19.221 ug/l	100
47) Bromodichloromethane	7.90	83	44456	18.724 ug/l	100
48) Methyl methacrylate	7.77	41	51886	20.063 ug/l	97
49) 1,4-Dioxane	7.74	88	20489	390.658 ug/l	97
51) 4-Methyl-2-Pentanone	8.64	43	348094	102.165 ug/l	99
52) Toluene	8.78	92	86372	19.629 ug/l	99
53) t-1,3-Dichloropropene	9.04	75	49147	18.334 ug/l	99
54) cis-1,3-Dichloropropene	8.43	75	54306	18.303 ug/l	94
55) 1,1,2-Trichloroethane	9.21	97	34831	19.403 ug/l	97
56) Ethyl methacrylate	9.18	69	61927	19.325 ug/l	97
57) 1,3-Dichloropropane	9.37	76	60813	19.250 ug/l	100
58) 2-Chloroethyl Vinyl ether	8.31	63	157718	92.777 ug/l	99
59) 2-Hexanone	9.49	43	269147	100.580 ug/l	98
60) Dibromochloromethane	9.58	129	32791	18.702 ug/l	99
61) 1,2-Dibromoethane	9.67	107	35521	19.602 ug/l	98
64) Tetrachloroethene	9.34	164	30628	19.488 ug/l	97
65) Chlorobenzene	10.14	112	87341	19.056 ug/l	99
66) 1,1,1,2-Tetrachloroethane	10.22	131	30556	18.388 ug/l	100
67) Ethyl Benzene	10.25	91	162437	19.257 ug/l	100
68) m/p-Xylenes	10.36	106	118567	38.464 ug/l	98
69) o-Xylene	10.69	106	57485	18.901 ug/l	99
70) Styrene	10.71	104	100298	18.974 ug/l	99
71) Bromoform	10.85	173	24683	18.279 ug/l	100
73) Isopropylbenzene	11.02	105	152920	19.157 ug/l	99
74) N-amyl acetate	10.90	43	91766	19.719 ug/l	99
75) 1,1,2,2-Tetrachloroethane	11.27	83	57734	19.402 ug/l	100
76) 1,2,3-Trichloropropane	11.29	75	50586m	19.867 ug/l	
77) Bromobenzene	11.26	156	37881	19.120 ug/l	98
78) n-propylbenzene	11.36	91	174098	19.098 ug/l	99
79) 2-Chlorotoluene	11.42	91	106168	18.877 ug/l	99
80) 1,3,5-Trimethylbenzene	11.51	105	128349	19.096 ug/l	99
81) trans-1,4-Dichloro-2-buten	11.07	75	16430	16.510 ug/l	92
82) 4-Chlorotoluene	11.51	91	121205	19.076 ug/l	99
83) tert-Butylbenzene	11.77	119	122330	18.710 ug/l	99
84) 1,2,4-Trimethylbenzene	11.80	105	128533	19.052 ug/l	99
85) sec-Butylbenzene	11.94	105	146965	18.959 ug/l	99
86) p-Isopropyltoluene	12.06	119	130917	18.786 ug/l	99
87) 1,3-Dichlorobenzene	12.02	146	65551	18.559 ug/l	98
88) 1,4-Dichlorobenzene	12.10	146	66596	18.702 ug/l	99
89) n-Butylbenzene	12.38	91	113649	18.044 ug/l	99
90) Hexachloroethane	12.60	117	21438	18.057 ug/l	96
91) 1,2-Dichlorobenzene	12.39	146	66783	18.564 ug/l	100
92) 1,2-Dibromo-3-Chloropropan	13.00	75	12876	19.289 ug/l	97

Quantitation Report (QT Reviewed)

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_X\DATA\VX052119\
Data File : VX009772.D
Acq On : 22 May 2019 01:54
Operator : JC/SP
Sample : VX0521WBS04
Misc : 5.0mL/MSVOA_X/WATER
ALS Vial : 35 Sample Multiplier: 1

Quant Time: May 22 08:39:07 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_X\METHOD\82X042919W.M
Quant Title : SW846 8260
QLast Update : Thu May 09 07:31:15 2019
Response via : Initial Calibration

Instrument :
MSVOA_X
ClientSampleId :
VX0521WBS04

Manual Integrations APPROVED
MMDadoda
5/22/2019 9:37:31 AM

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
93) 1,2,4-Trichlorobenzene	13.65	180	45557	18.519	ug/l	98
94) Hexachlorobutadiene	13.78	225	23012	18.318	ug/l	99
95) Naphthalene	13.83	128	147854	18.473	ug/l	99
96) 1,2,3-Trichlorobenzene	14.02	180	46663	18.713	ug/l	100

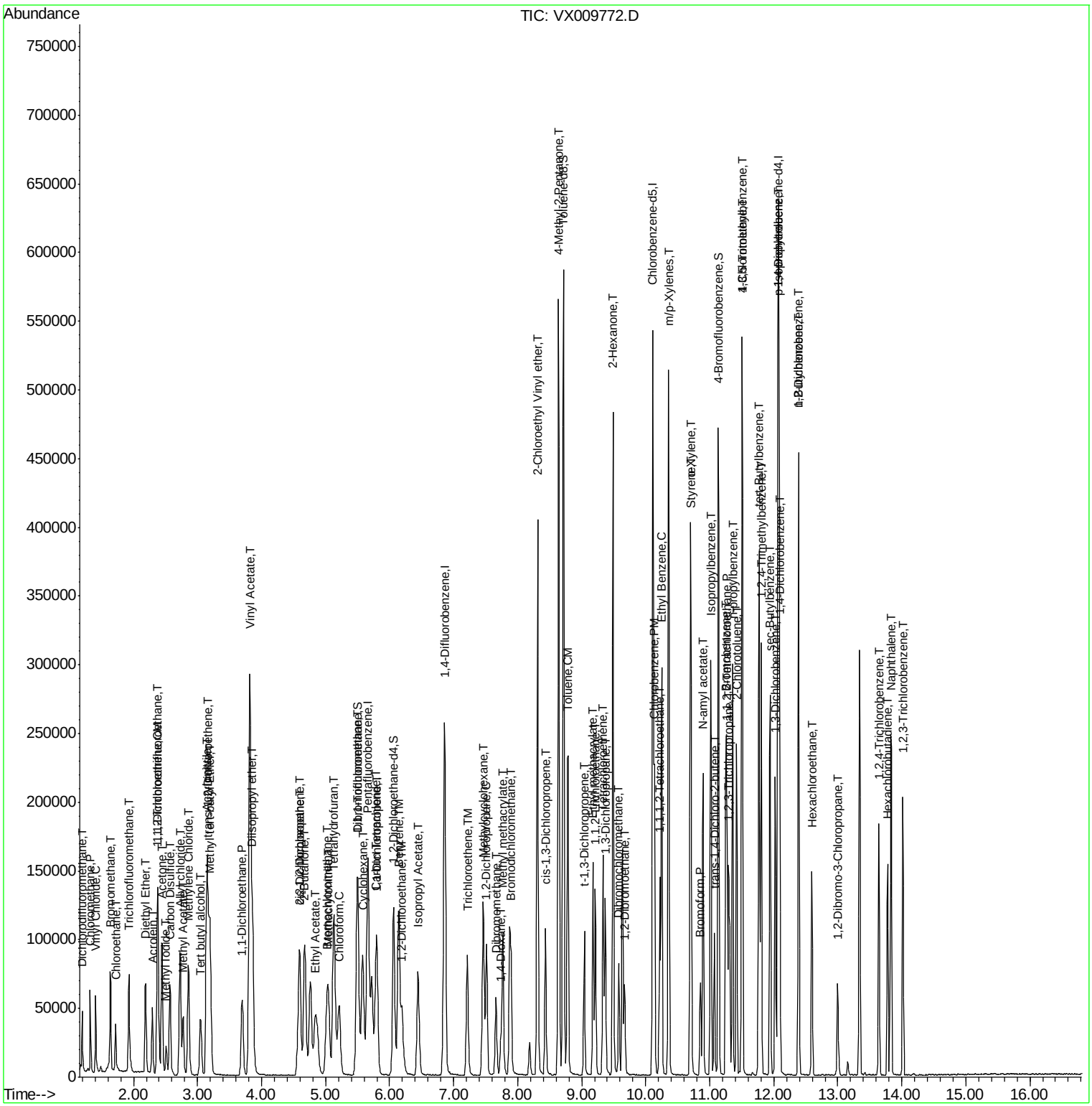
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_X\DATA\VX052119\
Data File : VX009772.D
Acq On : 22 May 2019 01:54
Operator : JC/SP
Sample : VX0521WBS04
Misc : 5.0mL/MSVOA_X/WATER
ALS Vial : 35 Sample Multiplier: 1

Quant Time: May 22 08:39:07 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_X\METHOD\82X042919W.M
Quant Title : SW846 8260
QLast Update : Thu May 09 07:31:15 2019
Response via : Initial Calibration

Instrument :
MSVOA_X
ClientSampleId :
VX0521WBS04

Manual Integrations APPROVED
MMDadoda
5/22/2019 9:37:31 AM



Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055631.D
Acq On : 17 May 2019 23:27
Operator : JC/SP
Sample : K2902-03MS
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 36 Sample Multiplier: 1

Quant Time: May 18 04:24:15 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260
QLast Update : Fri May 17 23:54:12 2019
Response via : Initial Calibration

Instrument : MSVOA_N
ClientSampleId : FM-EA-3MW01-051519MS

Manual Integrations APPROVED
MMDadoda
5/20/2019 9:09:14 AM

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene	7.67	168	330533	50.00	ug/l	0.00
34) 1,4-Difluorobenzene	8.59	114	505196	50.00	ug/l	0.00
63) Chlorobenzene-d5	11.41	117	449092	50.00	ug/l	0.00
72) 1,4-Dichlorobenzene-d4	13.34	152	209912	50.00	ug/l	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4	8.03	65	183619	50.68	ug/l	0.00
Spiked Amount 50.000			Recovery = 101.36%			
35) Dibromofluoromethane	7.59	113	165518	51.58	ug/l	0.00
Spiked Amount 50.000			Recovery = 103.16%			
50) Toluene-d8	10.09	98	615910	50.76	ug/l	0.00
Spiked Amount 50.000			Recovery = 101.52%			
62) 4-Bromofluorobenzene	12.40	95	216555	51.68	ug/l	0.00
Spiked Amount 50.000			Recovery = 103.36%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.85	85	118820	46.722	ug/l	98
3) Chloromethane	2.06	50	161521	47.617	ug/l	99
4) Vinyl Chloride	2.18	62	176800	48.133	ug/l	99
5) Bromomethane	2.56	94	113630	48.541	ug/l	99
6) Chloroethane	2.71	64	101331	49.685	ug/l	99
7) Trichlorofluoromethane	3.03	101	228372	48.518	ug/l	99
8) Diethyl Ether	3.41	74	94725	50.095	ug/l	98
9) 1,1,2-Trichlorotrifluoroet	3.77	101	136262	47.485	ug/l	99
10) Methyl Iodide	3.96	142	197293	47.690	ug/l	99
11) Tert butyl alcohol	4.77	59	177445	262.616	ug/l	97
12) 1,1-Dichloroethene	3.74	96	144125	47.745	ug/l	99
13) Acrolein	3.61	56	79980	232.153	ug/l	100
14) Allyl chloride	4.33	41	229671	47.130	ug/l	100
15) Acrylonitrile	4.99	53	387570	257.816	ug/l	100
16) Acetone	3.81	43	314041	212.383	ug/l	100
17) Carbon Disulfide	4.06	76	392189	46.736	ug/l	100
18) Methyl Acetate	4.32	43	129077	40.718	ug/l	100
19) Methyl tert-butyl Ether	5.05	73	487796	48.846	ug/l	99
20) Methylene Chloride	4.56	84	161892	47.975	ug/l	98
21) trans-1,2-Dichloroethene	5.05	96	153301	47.673	ug/l	99
22) Diisopropyl ether	5.95	45	460286	47.666	ug/l	95
23) Vinyl Acetate	5.90	43	1606638	196.083	ug/l	99
24) 1,1-Dichloroethane	5.85	63	277615	49.031	ug/l	100
25) 2-Butanone	6.83	43	509726	246.546	ug/l	100
26) 2,2-Dichloropropane	6.83	77	166569	33.147	ug/l	96
27) cis-1,2-Dichloroethene	6.83	96	179995	48.069	ug/l	96
28) Bromochloromethane	7.20	49	125178	50.818	ug/l	100
29) Tetrahydrofuran	7.21	42	341780	249.525	ug/l	99
30) Chloroform	7.37	83	277457	47.739	ug/l	100
31) Cyclohexane	7.66	56	245583	45.701	ug/l	98
32) 1,1,1-Trichloroethane	7.57	97	248149	47.602	ug/l	99
36) 1,1-Dichloropropene	7.80	75	210767	46.794	ug/l	99
37) Ethyl Acetate	6.93	43	174787	43.004	ug/l	99
38) Carbon Tetrachloride	7.78	117	222104	46.146	ug/l	99

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055631.D
Acq On : 17 May 2019 23:27
Operator : JC/SP
Sample : K2902-03MS
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 36 Sample Multiplier: 1

Quant Time: May 18 04:24:15 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260
QLast Update : Fri May 17 23:54:12 2019
Response via : Initial Calibration

Instrument :
MSVOA_N
ClientSampleId :
FM-EA-3MW01-051519MS

Manual Integrations APPROVED
MMDadoda
5/20/2019 9:09:14 AM

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
39) Methylcyclohexane	9.08	83	243794	44.901 ug/l		99
40) Benzene	8.04	78	641897	48.452 ug/l		100
41) Methacrylonitrile	7.18	41	88434m	50.892 ug/l		
42) 1,2-Dichloroethane	8.13	62	211025	49.190 ug/l		100
43) Isopropyl Acetate	8.16	43	308366	43.616 ug/l		99
44) Trichloroethene	8.84	130	185219	49.547 ug/l		99
45) 1,2-Dichloropropane	9.12	63	167507	47.995 ug/l		99
46) Dibromomethane	9.21	93	111815	48.951 ug/l		98
47) Bromodichloromethane	9.40	83	227893	47.602 ug/l		99
48) Methyl methacrylate	9.20	41	158448	50.140 ug/l		98
49) 1,4-Dioxane	9.20	88	70182	1117.673 ug/l		97
51) 4-Methyl-2-Pentanone	9.99	43	1031877	248.815 ug/l		100
52) Toluene	10.16	92	404772	48.713 ug/l		100
53) t-1,3-Dichloropropene	10.38	75	240829	46.739 ug/l		100
54) cis-1,3-Dichloropropene	9.84	75	263959	46.761 ug/l		99
55) 1,1,2-Trichloroethane	10.56	97	165892	48.495 ug/l		99
56) Ethyl methacrylate	10.43	69	256214	47.980 ug/l		99
57) 1,3-Dichloropropane	10.71	76	265418	48.989 ug/l		99
59) 2-Hexanone	10.75	43	730423	250.161 ug/l		99
60) Dibromochloromethane	10.90	129	192399	49.625 ug/l		100
61) 1,2-Dibromoethane	11.01	107	170773	49.893 ug/l		99
64) Tetrachloroethene	10.63	164	162978	46.011 ug/l		99
65) Chlorobenzene	11.43	112	435437	47.938 ug/l		100
66) 1,1,1,2-Tetrachloroethane	11.51	131	173733	47.543 ug/l		99
67) Ethyl Benzene	11.51	91	759700	46.949 ug/l		99
68) m/p-Xylenes	11.62	106	577167	94.452 ug/l		100
69) o-Xylene	11.95	106	282854	47.326 ug/l		98
70) Styrene	11.96	104	479153	48.216 ug/l		99
71) Bromoform	12.13	173	153144	49.453 ug/l	#	99
73) Isopropylbenzene	12.25	105	739172	50.189 ug/l		99
74) N-amyl acetate	12.07	43	226591	38.443 ug/l		99
75) 1,1,2,2-Tetrachloroethane	12.50	83	235784	51.182 ug/l		100
76) 1,2,3-Trichloropropane	12.55	75	190491m	44.473 ug/l		
77) Bromobenzene	12.53	156	202238	46.912 ug/l		95
78) n-propylbenzene	12.59	91	809748	43.439 ug/l		99
79) 2-Chlorotoluene	12.67	91	491300	49.221 ug/l		99
80) 1,3,5-Trimethylbenzene	12.73	105	618733	49.133 ug/l		100
81) trans-1,4-Dichloro-2-buten	12.30	75	68739	41.253 ug/l		98
82) 4-Chlorotoluene	12.77	91	489549	44.573 ug/l		99
83) tert-Butylbenzene	12.99	119	537166	50.298 ug/l		100
84) 1,2,4-Trimethylbenzene	13.04	105	610989	48.578 ug/l		100
85) sec-Butylbenzene	13.17	105	688224	48.998 ug/l		100
86) p-Isopropyltoluene	13.29	119	628415	48.026 ug/l		100
87) 1,3-Dichlorobenzene	13.28	146	330668	46.391 ug/l		99
88) 1,4-Dichlorobenzene	13.36	146	325166	47.778 ug/l		99
89) n-Butylbenzene	13.61	91	505996	43.928 ug/l		100
90) Hexachloroethane	13.87	117	123327	49.375 ug/l		98
91) 1,2-Dichlorobenzene	13.65	146	330268	46.481 ug/l		100
92) 1,2-Dibromo-3-Chloropropan	14.27	75	46434	48.743 ug/l		96
93) 1,2,4-Trichlorobenzene	14.91	180	186385	51.533 ug/l		100

Quantitation Report (QT Reviewed)

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055631.D
Acq On : 17 May 2019 23:27
Operator : JC/SP
Sample : K2902-03MS
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 36 Sample Multiplier: 1

Quant Time: May 18 04:24:15 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260
QLast Update : Fri May 17 23:54:12 2019
Response via : Initial Calibration

Instrument :
MSVOA_N
ClientSampleId :
FM-EA-3MW01-051519MS

Manual Integrations APPROVED
MMDadoda
5/20/2019 9:09:14 AM

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
94) Hexachlorobutadiene	15.01	225	102466	46.750	ug/l	99
95) Naphthalene	15.13	128	517723	47.521	ug/l	100
96) 1,2,3-Trichlorobenzene	15.31	180	185635	49.088	ug/l	100

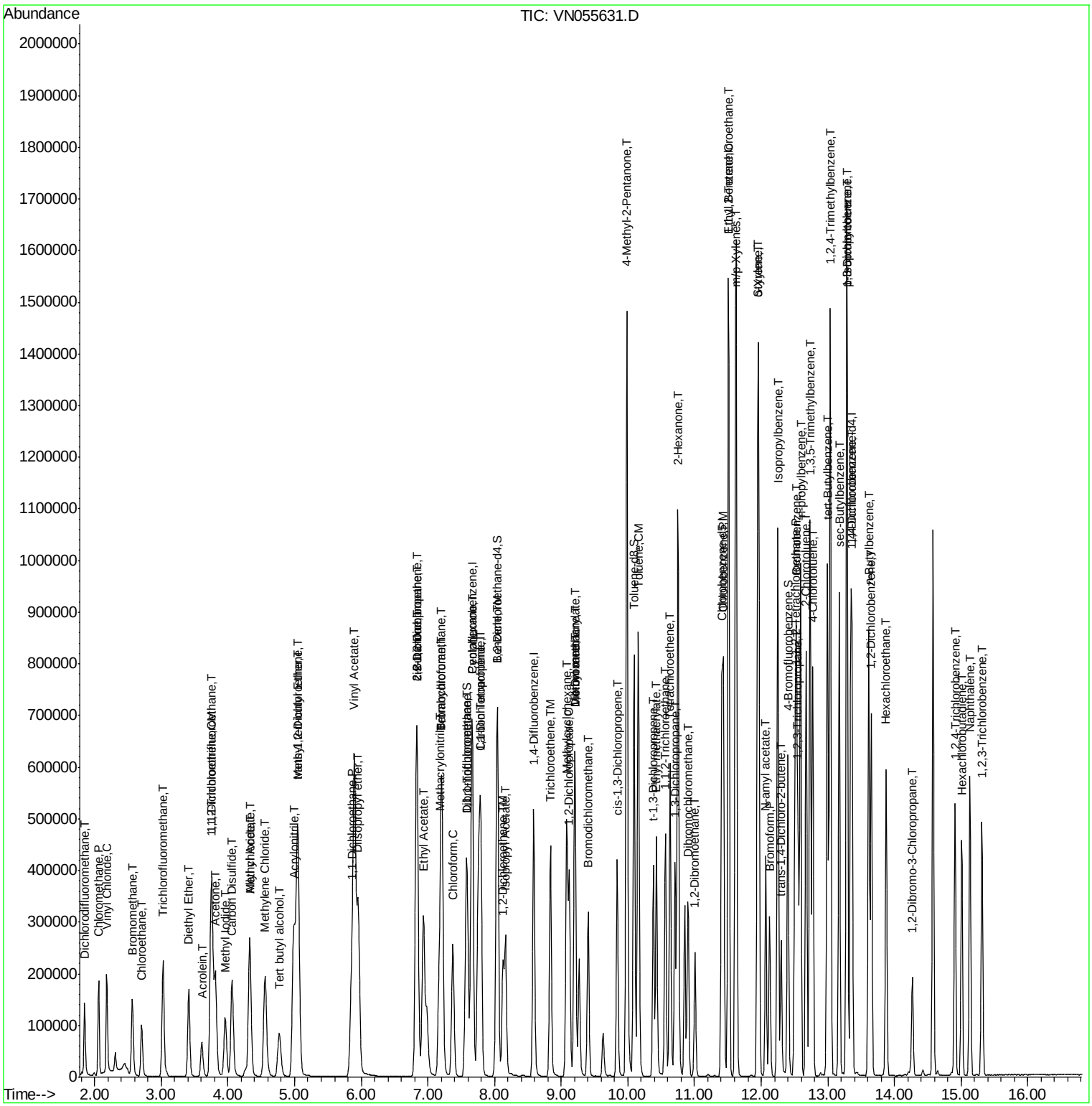
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055631.D
Acq On : 17 May 2019 23:27
Operator : JC/SP
Sample : K2902-03MS
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 36 Sample Multiplier: 1

Quant Time: May 18 04:24:15 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260
QLast Update : Fri May 17 23:54:12 2019
Response via : Initial Calibration

Instrument :
MSVOA_N
ClientSampleId :
FM-EA-3MW01-051519MS

Manual Integrations APPROVED
MMDadoda
5/20/2019 9:09:14 AM



Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055632.D
Acq On : 17 May 2019 23:50
Operator : JC/SP
Sample : K2902-04MSD
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 37 Sample Multiplier: 1

Quant Time: May 18 04:27:36 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260
QLast Update : Fri May 17 23:54:12 2019
Response via : Initial Calibration

Instrument :
MSVOA_N
ClientSampleId :
FM-EA-3MW01-051519MSD

Manual Integrations APPROVED
MMDadoda
5/20/2019 9:09:20 AM

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene	7.67	168	335792	50.00	ug/l	0.00
34) 1,4-Difluorobenzene	8.59	114	509566	50.00	ug/l	0.00
63) Chlorobenzene-d5	11.41	117	444917	50.00	ug/l	0.00
72) 1,4-Dichlorobenzene-d4	13.34	152	206773	50.00	ug/l	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4	8.03	65	182659	49.62	ug/l	0.00
Spiked Amount 50.000			Recovery = 99.24%			
35) Dibromofluoromethane	7.59	113	165284	51.06	ug/l	0.00
Spiked Amount 50.000			Recovery = 102.12%			
50) Toluene-d8	10.09	98	613211	50.10	ug/l	0.00
Spiked Amount 50.000			Recovery = 100.20%			
62) 4-Bromofluorobenzene	12.40	95	212758	50.34	ug/l	0.00
Spiked Amount 50.000			Recovery = 100.68%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.85	85	119500	46.253	ug/l	98
3) Chloromethane	2.06	50	156563	45.432	ug/l	99
4) Vinyl Chloride	2.18	62	176618	47.331	ug/l	99
5) Bromomethane	2.56	94	115107	48.402	ug/l	100
6) Chloroethane	2.71	64	101556	49.015	ug/l	100
7) Trichlorofluoromethane	3.03	101	231966	48.509	ug/l	98
8) Diethyl Ether	3.41	74	95588	49.760	ug/l	99
9) 1,1,2-Trichlorotrifluoroet	3.77	101	141658	48.592	ug/l	99
10) Methyl Iodide	3.96	142	203126	48.331	ug/l	99
11) Tert butyl alcohol	4.77	59	178203	259.607	ug/l	98
12) 1,1-Dichloroethene	3.74	96	147875	48.220	ug/l	98
13) Acrolein	3.61	56	84446	241.223	ug/l	99
14) Allyl chloride	4.33	41	210240	42.467	ug/l	93
15) Acrylonitrile	4.99	53	392245	256.839	ug/l	100
16) Acetone	3.82	43	319313	212.567	ug/l	99
17) Carbon Disulfide	4.06	76	402317	47.192	ug/l	100
18) Methyl Acetate	4.33	43	142894	44.371	ug/l	98
19) Methyl tert-butyl Ether	5.05	73	493709	48.664	ug/l	98
20) Methylene Chloride	4.56	84	161705	47.169	ug/l	97
21) trans-1,2-Dichloroethene	5.05	96	157386	48.177	ug/l	98
22) Diisopropyl ether	5.95	45	467224	47.627	ug/l	97
23) Vinyl Acetate	5.90	43	1802910	216.591	ug/l	99
24) 1,1-Dichloroethane	5.85	63	277441	48.233	ug/l	99
25) 2-Butanone	6.84	43	512347	243.932	ug/l	99
26) 2,2-Dichloropropane	6.83	77	166878	32.689	ug/l	96
27) cis-1,2-Dichloroethene	6.83	96	182290	47.920	ug/l	96
28) Bromochloromethane	7.20	49	126291	50.467	ug/l	98
29) Tetrahydrofuran	7.21	42	345158	248.045	ug/l	99
30) Chloroform	7.37	83	283701	48.049	ug/l	99
31) Cyclohexane	7.66	56	249539	45.710	ug/l	100
32) 1,1,1-Trichloroethane	7.57	97	252167	47.616	ug/l	99
36) 1,1-Dichloropropene	7.80	75	216508	47.657	ug/l	99
37) Ethyl Acetate	6.93	43	191950	46.822	ug/l	100
38) Carbon Tetrachloride	7.78	117	225411	46.431	ug/l	99

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055632.D
Acq On : 17 May 2019 23:50
Operator : JC/SP
Sample : K2902-04MSD
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 37 Sample Multiplier: 1

Quant Time: May 18 04:27:36 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260
QLast Update : Fri May 17 23:54:12 2019
Response via : Initial Calibration

Instrument :
MSVOA_N
ClientSampleId :
FM-EA-3MW01-051519MSD

Manual Integrations APPROVED
MMDadoda
5/20/2019 9:09:20 AM

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
39) Methylcyclohexane	9.08	83	251947	46.004 ug/l	100
40) Benzene	8.04	78	649923	48.637 ug/l	100
41) Methacrylonitrile	7.18	41	80657m	46.018 ug/l	
42) 1,2-Dichloroethane	8.13	62	216823	50.108 ug/l	100
43) Isopropyl Acetate	8.16	43	327433	45.916 ug/l	98
44) Trichloroethene	8.84	130	189259	50.194 ug/l	97
45) 1,2-Dichloropropane	9.12	63	170948	48.561 ug/l	100
46) Dibromomethane	9.21	93	113676	49.338 ug/l	99
47) Bromodichloromethane	9.40	83	230715	47.778 ug/l	98
48) Methyl methacrylate	9.20	41	159630	50.081 ug/l	97
49) 1,4-Dioxane	9.20	88	68156	1076.099 ug/l	99
51) 4-Methyl-2-Pentanone	9.99	43	1038240	248.202 ug/l	100
52) Toluene	10.16	92	408391	48.727 ug/l	100
53) t-1,3-Dichloropropene	10.38	75	244702	47.083 ug/l	99
54) cis-1,3-Dichloropropene	9.84	75	267206	46.931 ug/l	99
55) 1,1,2-Trichloroethane	10.56	97	167037	48.411 ug/l	99
56) Ethyl methacrylate	10.43	69	258889	48.065 ug/l	98
57) 1,3-Dichloropropane	10.71	76	268669	49.164 ug/l	100
59) 2-Hexanone	10.75	43	737404	250.386 ug/l	98
60) Dibromochloromethane	10.90	129	196352	50.210 ug/l	100
61) 1,2-Dibromoethane	11.01	107	172930	50.090 ug/l	100
64) Tetrachloroethene	10.63	164	165286	47.101 ug/l	99
65) Chlorobenzene	11.43	112	439818	48.874 ug/l	100
66) 1,1,1,2-Tetrachloroethane	11.51	131	176592	48.779 ug/l	99
67) Ethyl Benzene	11.51	91	767335	47.866 ug/l	98
68) m/p-Xylenes	11.62	106	579446	95.715 ug/l	99
69) o-Xylene	11.95	106	281110	47.476 ug/l	98
70) Styrene	11.96	104	480133	48.768 ug/l	99
71) Bromoform	12.13	173	155672	50.741 ug/l	99
73) Isopropylbenzene	12.25	105	743513	51.304 ug/l	100
74) N-amyl acetate	12.07	43	248717	42.837 ug/l	99
75) 1,1,2,2-Tetrachloroethane	12.50	83	234309	51.652 ug/l	98
76) 1,2,3-Trichloropropane	12.55	75	194290m	46.049 ug/l	
77) Bromobenzene	12.53	156	201987	47.565 ug/l	96
78) n-propylbenzene	12.59	91	814086	44.335 ug/l	99
79) 2-Chlorotoluene	12.67	91	491462	50.012 ug/l	99
80) 1,3,5-Trimethylbenzene	12.73	105	618707	49.909 ug/l	100
81) trans-1,4-Dichloro-2-buten	12.30	75	68794	41.913 ug/l	99
82) 4-Chlorotoluene	12.77	91	491532	45.433 ug/l	99
83) tert-Butylbenzene	12.99	119	529851	50.371 ug/l	98
84) 1,2,4-Trimethylbenzene	13.04	105	616310	49.788 ug/l	99
85) sec-Butylbenzene	13.17	105	684052	49.461 ug/l	100
86) p-Isopropyltoluene	13.29	119	630400	48.943 ug/l	100
87) 1,3-Dichlorobenzene	13.28	146	332835	47.404 ug/l	100
88) 1,4-Dichlorobenzene	13.36	146	323178	48.206 ug/l	99
89) n-Butylbenzene	13.61	91	514290	45.326 ug/l	100
90) Hexachloroethane	13.87	117	123896	50.401 ug/l	98
91) 1,2-Dichlorobenzene	13.65	146	328239	46.897 ug/l	99
92) 1,2-Dibromo-3-Chloropropan	14.27	75	45328	48.304 ug/l	95
93) 1,2,4-Trichlorobenzene	14.91	180	192347	53.989 ug/l	100

Quantitation Report (QT Reviewed)

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
Data File : VN055632.D
Acq On : 17 May 2019 23:50
Operator : JC/SP
Sample : K2902-04MSD
Misc : 5.00mL/MSVOA_N/WATER
ALS Vial : 37 Sample Multiplier: 1

Quant Time: May 18 04:27:36 2019
Quant Method : Z:\VOASRV\HPCHEM1\MSVOA_N\METHODS\82N051719W.M
Quant Title : SW846 8260
QLast Update : Fri May 17 23:54:12 2019
Response via : Initial Calibration

Instrument :
MSVOA_N
ClientSampleId :
FM-EA-3MW01-051519MSD

Manual Integrations APPROVED
MMDadoda
5/20/2019 9:09:20 AM

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
94) Hexachlorobutadiene	15.01	225	101873	47.214	ug/l	99
95) Naphthalene	15.13	128	544013	50.574	ug/l	100
96) 1,2,3-Trichlorobenzene	15.31	180	192056	51.557	ug/l	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : Z:\VOASRV\HPCHEM1\MSVOA_N\DATA\VN051719\
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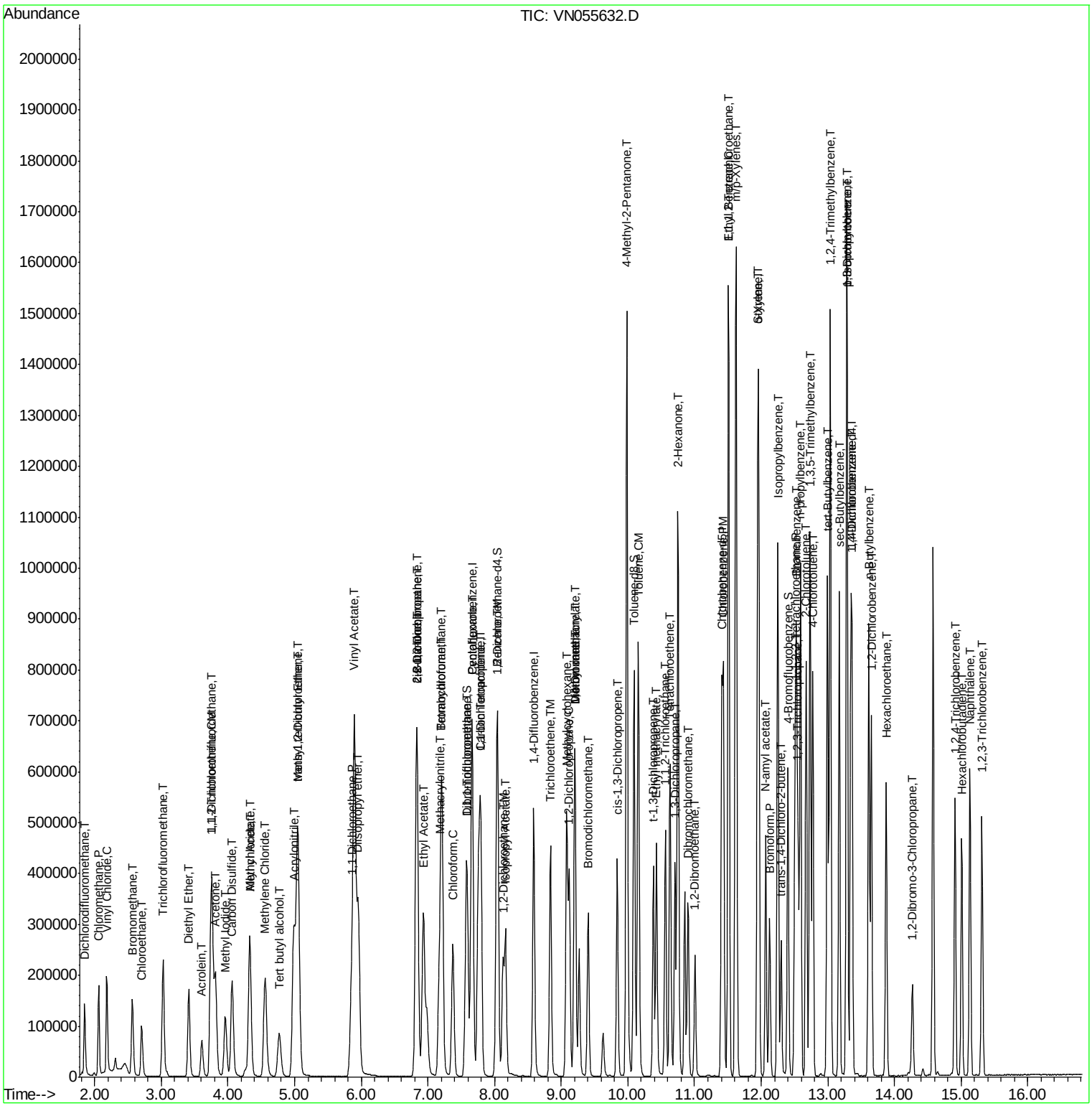
Instrument :
MSVOA_N
ClientSampleId :
FM-EA-3MW01-051519MSD

Manual Integrations APPROVED
MMDadoda
5/20/2019 9:09:20 AM



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Manual Integration Report

Sequence:	vn051719	Instrument	MSVOA_n

Sample ID	File ID	Parameter	Review By	Review On	Supervised By	Supervised On	Reason
VSTDICC001	VN055598.D	1,1-Dichloroethane	Sweetuben	5/20/2019 8:55:29 AM	MMDadoda	5/20/2019 9:09:45 AM	Peak Integrated by Software incorrectly
VSTDICC001	VN055598.D	1,2,3-Trichloropropane	Sweetuben	5/20/2019 8:55:29 AM	MMDadoda	5/20/2019 9:09:45 AM	Peak Integrated by Software incorrectly
VSTDICC001	VN055598.D	1,4-Dichlorobenzene	Sweetuben	5/20/2019 8:55:29 AM	MMDadoda	5/20/2019 9:09:45 AM	Peak Integrated by Software incorrectly
VSTDICC001	VN055598.D	Carbon Tetrachloride	Sweetuben	5/20/2019 8:55:29 AM	MMDadoda	5/20/2019 9:09:45 AM	Peak Integrated by Software incorrectly
VSTDICC005	VN055599.D	1,2,3-Trichloropropane	Sweetuben	5/20/2019 8:55:33 AM	MMDadoda	5/20/2019 9:09:50 AM	Peak Integrated by Software incorrectly
VSTDICC005	VN055599.D	Methacrylonitrile	Sweetuben	5/20/2019 8:55:33 AM	MMDadoda	5/20/2019 9:09:50 AM	Peak Integrated by Software incorrectly
VSTDICC020	VN055600.D	1,2,3-Trichloropropane	Sweetuben	5/20/2019 8:55:37 AM	MMDadoda	5/20/2019 9:09:57 AM	Peak Integrated by Software incorrectly
VSTDICC020	VN055600.D	Methacrylonitrile	Sweetuben	5/20/2019 8:55:37 AM	MMDadoda	5/20/2019 9:09:57 AM	Peak Integrated by Software incorrectly
VSTDICCC050	VN055601.D	1,2,3-Trichloropropane	Sweetuben	5/20/2019 8:55:41 AM	MMDadoda	5/20/2019 9:10:02 AM	Peak Integrated by Software incorrectly
VSTDICCC050	VN055601.D	Methacrylonitrile	Sweetuben	5/20/2019 8:55:41 AM	MMDadoda	5/20/2019 9:10:02 AM	Peak Integrated by Software incorrectly
VSTDICC100	VN055602.D	1,2,3-Trichloropropane	Sweetuben	5/20/2019 8:55:44 AM	MMDadoda	5/20/2019 9:10:07 AM	Peak Integrated by Software incorrectly
VSTDICC100	VN055602.D	Methacrylonitrile	Sweetuben	5/20/2019 8:55:44 AM	MMDadoda	5/20/2019 9:10:07 AM	Peak Integrated by Software incorrectly
VSTDICC150	VN055603.D	1,2,3-Trichloropropane	Sweetuben	5/20/2019 8:55:48 AM	MMDadoda	5/20/2019 9:10:16 AM	Peak Integrated by Software incorrectly

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Manual Integration Report

Sequence:	vn051719	Instrument	MSVOA_n

Sample ID	File ID	Parameter	Review By	Review On	Supervised By	Supervised On	Reason
VSTDICC150	VN055603.D	Bromomethane	Sweetuben	5/20/2019 8:55:48 AM	MMDadoda	5/20/2019 9:10:16 AM	Peak Integrated by Software incorrectly
VSTDICC150	VN055603.D	Methacrylonitrile	Sweetuben	5/20/2019 8:55:48 AM	MMDadoda	5/20/2019 9:10:16 AM	Peak Integrated by Software incorrectly
VSTDICV050	VN055604.D	1,2,3-Trichloropropane	Sweetuben	5/20/2019 8:55:52 AM	MMDadoda	5/20/2019 9:10:23 AM	Peak Integrated by Software incorrectly
VSTDICV050	VN055604.D	Methacrylonitrile	Sweetuben	5/20/2019 8:55:52 AM	MMDadoda	5/20/2019 9:10:23 AM	Peak Integrated by Software incorrectly
VSTDCCC050	VN055606.D	1,2,3-Trichloropropane	Sweetuben	5/20/2019 8:56:00 AM	MMDadoda	5/20/2019 9:08:45 AM	Peak Integrated by Software incorrectly
VSTDCCC050	VN055606.D	Methacrylonitrile	Sweetuben	5/20/2019 8:56:00 AM	MMDadoda	5/20/2019 9:08:45 AM	Peak Integrated by Software incorrectly
VN0517WBS01	VN055615.D	1,2,3-Trichloropropane	Sweetuben	5/20/2019 8:56:08 AM	MMDadoda	5/20/2019 9:08:50 AM	Peak Integrated by Software incorrectly
VN0517WBS01	VN055615.D	Methacrylonitrile	Sweetuben	5/20/2019 8:56:08 AM	MMDadoda	5/20/2019 9:08:50 AM	Peak Integrated by Software incorrectly
K2902-03MS	VN055631.D	1,2,3-Trichloropropane	Sweetuben	5/20/2019 8:56:52 AM	MMDadoda	5/20/2019 9:09:14 AM	Peak Integrated by Software incorrectly
K2902-03MS	VN055631.D	Methacrylonitrile	Sweetuben	5/20/2019 8:56:52 AM	MMDadoda	5/20/2019 9:09:14 AM	Peak Integrated by Software incorrectly
K2902-04MSD	VN055632.D	1,2,3-Trichloropropane	Sweetuben	5/20/2019 8:56:56 AM	MMDadoda	5/20/2019 9:09:20 AM	Peak Integrated by Software incorrectly
K2902-04MSD	VN055632.D	Methacrylonitrile	Sweetuben	5/20/2019 8:56:56 AM	MMDadoda	5/20/2019 9:09:20 AM	Peak Integrated by Software incorrectly
VSTDCCC050	VN055633.D	1,2,3-Trichloropropane	Sweetuben	5/20/2019 8:57:00 AM	MMDadoda	5/20/2019 9:09:26 AM	Peak Integrated by Software incorrectly

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Manual Integration Report

Sequence:	vn051719	Instrument	MSVOA_n

Sample ID	File ID	Parameter	Review By	Review On	Supervised By	Supervised On	Reason
VSTDCCC050	VN055633.D	Methacrylonitrile	Sweetuben	5/20/2019 8:57:00 AM	MMDadoda	5/20/2019 9:09:26 AM	Peak Integrated by Software incorrectly
VSTDCCC050	VN055635.D	1,2,3-Trichloropropane	Sweetuben	5/20/2019 8:57:03 AM	MMDadoda	5/20/2019 9:08:27 AM	Peak Integrated by Software incorrectly
VSTDCCC050	VN055635.D	Methacrylonitrile	Sweetuben	5/20/2019 8:57:03 AM	MMDadoda	5/20/2019 9:08:27 AM	Peak Integrated by Software incorrectly
VSTDCCC050	VN055658.D	1,2,3-Trichloropropane	Sweetuben	5/20/2019 8:57:25 AM	MMDadoda	5/20/2019 9:08:07 AM	Peak Integrated by Software incorrectly
VSTDCCC050	VN055658.D	Methacrylonitrile	Sweetuben	5/20/2019 8:57:25 AM	MMDadoda	5/20/2019 9:08:07 AM	Peak Integrated by Software incorrectly

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Manual Integration Report

Sequence:	VX042919	Instrument	MSVOA_x

Sample ID	File ID	Parameter	Review By	Review On	Supervised By	Supervised On	Reason
VSTDICCC050	VX009203.D	1,2,3-Trichloropropane	john	4/30/2019 9:42:52 AM	MMDadoda	4/30/2019 11:03:30 AM	Peak Integrated by Software incorrectly
VSTDICC100	VX009204.D	1,2,3-Trichloropropane	john	4/30/2019 9:42:56 AM	MMDadoda	4/30/2019 11:03:35 AM	Peak Integrated by Software incorrectly
VSTDICC150	VX009205.D	1,2,3-Trichloropropane	john	4/30/2019 9:43:00 AM	MMDadoda	4/30/2019 11:03:39 AM	Peak Integrated by Software incorrectly
VSTDICV050	VX009206.D	1,2,3-Trichloropropane	john	4/30/2019 9:43:04 AM	MMDadoda	4/30/2019 11:03:43 AM	Peak Integrated by Software incorrectly
VSTDCCC050	VX009208.D	1,2,3-Trichloropropane	john	4/30/2019 9:43:08 AM	MMDadoda	4/30/2019 11:03:47 AM	Peak Integrated by Software incorrectly
VSTDICC020	VX009202.D	1,2,3-Trichloropropane	john	4/30/2019 9:42:48 AM	MMDadoda	4/30/2019 11:03:26 AM	Peak Integrated by Software incorrectly
VSTDICC005	VX009201.D	1,2,3-Trichloropropane	john	4/30/2019 9:42:44 AM	MMDadoda	4/30/2019 11:03:22 AM	Peak Integrated by Software incorrectly
VSTDICC001	VX009200.D	1,2,3-Trichloropropane	john	4/30/2019 9:42:40 AM	MMDadoda	4/30/2019 11:03:18 AM	Peak Integrated by Software incorrectly
VSTDICC001	VX009200.D	1,4-Dichlorobenzene	john	4/30/2019 9:42:40 AM	MMDadoda	4/30/2019 11:03:18 AM	Peak Integrated by Software incorrectly
VSTDCCC050	VX009231.D	1,2,3-Trichloropropane	john	4/30/2019 9:43:45 AM	MMDadoda	4/30/2019 11:04:12 AM	Peak Integrated by Software incorrectly

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Manual Integration Report

Sequence:	VX052119	Instrument	MSVOA_x

Sample ID	File ID	Parameter	Review By	Review On	Supervised By	Supervised On	Reason
VSTDCCC050	VX009742.D	1,2,3-Trichloropropane	john	5/22/2019 9:23:29 AM	MMDadoda	5/22/2019 9:40:25 AM	Peak Integrated by Software incorrectly
VSTDCCC050	VX009768.D	1,2,3-Trichloropropane	john	5/22/2019 9:24:16 AM	MMDadoda	5/22/2019 11:39:39 AM	Peak Integrated by Software incorrectly
VSTDCCC050	VX009770.D	1,2,3-Trichloropropane	john	5/22/2019 9:24:20 AM	MMDadoda	5/22/2019 9:37:27 AM	Peak Integrated by Software incorrectly
VX0521WBS04	VX009772.D	1,2,3-Trichloropropane	john	5/22/2019 9:24:25 AM	MMDadoda	5/22/2019 9:37:31 AM	Peak Integrated by Software incorrectly
VSTDCCC050	VX009791.D	1,2,3-Trichloropropane	john	5/22/2019 11:18:47 AM	MMDadoda	5/22/2019 11:39:46 AM	Peak Integrated by Software incorrectly

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Instrument ID: MSVOA_N

Daily Analysis Runlog For Sequence/QCBatch ID # VN051719

Review By	Sweetuben	Review On	5/20/2019 9:03:48 AM		
Supervise By	MMDadoda	Supervise On	5/20/2019 9:47:12 AM		
SubDirectory	VN051719	HP Acquire Method	MSVOA_N	HP Processing Method	82n051719w.m

STD. NAME	STD REF.#
Tune/Reschk	VP82808
Initial Calibration Stds	VP82811,VP82812,VP82813,VP82814,VP82815,VP82816
CCC	VP82818,VP82819,VP82820,VP82821
Internal Standard/PEM	VP81774
ICV/I.BLK	VP82817

Sr#	SampleId	Data File Name	Date-Time	Operator	Status
1	BFB	VN055597.D	17 May 2019 8:33	JC/SP	Ok
2	VSTDICC001	VN055598.D	17 May 2019 9:29	JC/SP	Ok,M
3	VSTDICC005	VN055599.D	17 May 2019 9:53	JC/SP	Ok,M
4	VSTDICC020	VN055600.D	17 May 2019 10:16	JC/SP	Ok,M
5	VSTDICCC050	VN055601.D	17 May 2019 10:39	JC/SP	Ok,M
6	VSTDICC100	VN055602.D	17 May 2019 11:03	JC/SP	Ok,M
7	VSTDICC150	VN055603.D	17 May 2019 11:26	JC/SP	Ok,M
8	VSTDICV050	VN055604.D	17 May 2019 12:05	JC/SP	Ok,M
9	BFB	VN055605.D	17 May 2019 12:32	JC/SP	Ok
10	VSTDCCC050	VN055606.D	17 May 2019 13:06	JC/SP	Ok,M
11	VN0517MBL01	VN055607.D	17 May 2019 14:03	JC/SP	Ok
12	VN0517WBL01	VN055608.D	17 May 2019 14:26	JC/SP	Ok
13	K2902-15	VN055609.D	17 May 2019 14:48	JC/SP	ReRun
14	K2918-01	VN055610.D	17 May 2019 15:11	JC/SP	Ok
15	K2918-02	VN055611.D	17 May 2019 15:35	JC/SP	Ok
16	K2918-03	VN055612.D	17 May 2019 15:59	JC/SP	Ok
17	K2918-04	VN055613.D	17 May 2019 16:22	JC/SP	Ok
18	K2822-03	VN055614.D	17 May 2019 16:46	JC/SP	Not Ok
19	VN0517WBS01	VN055615.D	17 May 2019 17:09	JC/SP	Ok,M
20	K2902-10	VN055616.D	17 May 2019 17:33	JC/SP	Ok
21	K2902-13	VN055617.D	17 May 2019 17:56	JC/SP	Ok
22	K2903-03	VN055618.D	17 May 2019 18:20	JC/SP	Ok
23	K2903-04	VN055619.D	17 May 2019 18:44	JC/SP	Ok
24	K2902-05	VN055620.D	17 May 2019 19:07	JC/SP	Ok
25	K2902-01	VN055621.D	17 May 2019 19:31	JC/SP	Ok
26	K2902-11	VN055622.D	17 May 2019 19:55	JC/SP	Ok

Instrument ID: MSVOA_N

Daily Analysis Runlog For Sequence/QCBatch ID # VN051719

Review By	Sweetuben	Review On	5/20/2019 9:03:48 AM		
Supervise By	MMDadoda	Supervise On	5/20/2019 9:47:12 AM		
SubDirectory	VN051719	HP Acquire Method	MSVOA_N	HP Processing Method	82n051719w.m

STD. NAME	STD REF.#
Tune/Reschk	VP82808
Initial Calibration Stds	VP82811,VP82812,VP82813,VP82814,VP82815,VP82816
CCC	VP82818,VP82819,VP82820,VP82821
Internal Standard/PEM	VP81774
ICV/I.BLK	VP82817

27	K2902-12	VN055623.D	17 May 2019 20:18	JC/SP	Ok
28	K2902-14	VN055624.D	17 May 2019 20:42	JC/SP	Ok
29	VN0517MBS01	VN055625.D	17 May 2019 21:05	JC/SP	Ok,M
30	K2823-04	VN055626.D	17 May 2019 21:29	JC/SP	Ok
31	K2637-01	VN055627.D	17 May 2019 21:52	JC/SP	Ok
32	K2823-06ME	VN055628.D	17 May 2019 22:16	JC/SP	Ok
33	VN0517MBSD01	VN055629.D	17 May 2019 22:40	JC/SP	Ok,M
34	K2902-02	VN055630.D	17 May 2019 23:03	JC/SP	Ok
35	K2902-03MS	VN055631.D	17 May 2019 23:27	JC/SP	Ok,M
36	K2902-04MSD	VN055632.D	17 May 2019 23:50	JC/SP	Ok,M
37	VSTDCCC050	VN055633.D	18 May 2019 00:14	JC/SP	Ok,M
38	BFB	VN055634.D	18 May 2019 1:01	JC/SP	Ok
39	VSTDCCC050	VN055635.D	18 May 2019 1:48	JC/SP	Ok,M
40	VN0517WBL02	VN055636.D	18 May 2019 2:35	JC/SP	Ok
41	PB119798TB	VN055637.D	18 May 2019 2:59	JC/SP	Ok
42	VN0517WBS02	VN055638.D	18 May 2019 3:22	JC/SP	Ok,M
43	K2903-01	VN055639.D	18 May 2019 3:46	JC/SP	Ok,M
44	K2903-02	VN055640.D	18 May 2019 4:09	JC/SP	Ok
45	K2903-05	VN055641.D	18 May 2019 4:33	JC/SP	Ok
46	K2903-06	VN055642.D	18 May 2019 4:56	JC/SP	Ok
47	K2903-07	VN055643.D	18 May 2019 5:20	JC/SP	Ok
48	K2903-08	VN055644.D	18 May 2019 5:43	JC/SP	Ok
49	K2903-09	VN055645.D	18 May 2019 6:07	JC/SP	Ok
50	K2903-10	VN055646.D	18 May 2019 6:30	JC/SP	Ok
51	K2896-09	VN055647.D	18 May 2019 6:54	JC/SP	Ok
52	K2643-08	VN055648.D	18 May 2019 7:17	JC/SP	Ok
53	K2648-02	VN055649.D	18 May 2019 7:40	JC/SP	Ok

Daily Analysis Runlog For Sequence/QCBatch ID # VN051719

Review By	Sweetuben	Review On	5/20/2019 9:03:48 AM		
Supervise By	MMDadoda	Supervise On	5/20/2019 9:47:12 AM		
SubDirectory	VN051719	HP Acquire Method	MSVOA_N	HP Processing Method	82n051719w.m

STD. NAME	STD REF.#
Tune/Reschk	VP82808
Initial Calibration Stds	VP82811,VP82812,VP82813,VP82814,VP82815,VP82816
CCC	VP82818,VP82819,VP82820,VP82821
Internal Standard/PEM	VP81774
ICV/I.BLK	VP82817

54	K2869-12	VN055650.D	18 May 2019 8:04	JC/SP	Ok
55	K2880-03	VN055651.D	18 May 2019 8:27	JC/SP	Ok
56	K2896-04	VN055652.D	18 May 2019 8:51	JC/SP	Ok
57	K2896-08	VN055653.D	18 May 2019 9:14	JC/SP	Ok
58	K2643-06	VN055654.D	18 May 2019 9:38	JC/SP	Ok
59	K2899-01	VN055655.D	18 May 2019 10:01	JC/SP	Ok
60	VN0517WBSD02	VN055656.D	18 May 2019 10:24	JC/SP	Ok,M
61	K2913-05	VN055657.D	18 May 2019 10:48	JC/SP	Ok
62	VSTDCCC050	VN055658.D	18 May 2019 11:11	JC/SP	Ok,M

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Instrument ID: MSVOA_X

Daily Analysis Runlog For Sequence/QCBatch ID # VX042919

Review By	john	Review On	4/30/2019 10:44:58 AM		
Supervise By	MMDadoda	Supervise On	4/30/2019 11:25:59 AM		
SubDirectory	VX042919	HP Acquire Method	MSVOA_X	HP Processing Method	82X042919W.M

STD. NAME	STD REF.#
Tune/Reschk	VP82092,VP82094
Initial Calibration Stds	VP82096,VP82097,VP82098,VP82101,VP82102,VP82103
CCC	VP82093,VP82095
Internal Standard/PEM	VP81774
ICV/I.BLK	VP82104

Sr#	SampleId	Data File Name	Date-Time	Operator	Status
1	BFB	VX009197.D	29 Apr 2019 09:14	JC/SP	Ok
2	VSTDCCC050	VX009198.D	29 Apr 2019 10:26	JC/SP	Not Ok
3	VX0429WBL01	VX009199.D	29 Apr 2019 11:13	JC/SP	Not Ok
4	VSTDICC001	VX009200.D	29 Apr 2019 11:47	JC/SP	Ok,M
5	VSTDICC005	VX009201.D	29 Apr 2019 12:10	JC/SP	Ok,M
6	VSTDICC020	VX009202.D	29 Apr 2019 12:33	JC/SP	Ok,M
7	VSTDICCC050	VX009203.D	29 Apr 2019 12:57	JC/SP	Ok,M
8	VSTDICC100	VX009204.D	29 Apr 2019 13:20	JC/SP	Ok,M
9	VSTDICC150	VX009205.D	29 Apr 2019 13:43	JC/SP	Ok,M
10	VSTDICV050	VX009206.D	29 Apr 2019 14:32	JC/SP	Ok,M
11	BFB	VX009207.D	29 Apr 2019 15:02	JC/SP	Ok
12	VSTDCCC050	VX009208.D	29 Apr 2019 15:25	JC/SP	Ok,M
13	VX0429WBL02	VX009209.D	29 Apr 2019 15:52	JC/SP	Ok
14	K2581-03	VX009210.D	29 Apr 2019 16:22	JC/SP	Ok
15	VX0429WBS01	VX009211.D	29 Apr 2019 16:46	JC/SP	Ok,M
16	K2594-01	VX009212.D	29 Apr 2019 17:09	JC/SP	Ok
17	K2594-03	VX009213.D	29 Apr 2019 17:32	JC/SP	Ok
18	K2594-06	VX009214.D	29 Apr 2019 17:56	JC/SP	Ok
19	K2594-07	VX009215.D	29 Apr 2019 18:19	JC/SP	Ok
20	K2594-08	VX009216.D	29 Apr 2019 18:42	JC/SP	Ok,M
21	K2594-09	VX009217.D	29 Apr 2019 19:06	JC/SP	Ok
22	K2594-11	VX009218.D	29 Apr 2019 19:29	JC/SP	ReRun
23	K2594-15	VX009219.D	29 Apr 2019 19:52	JC/SP	Ok
24	K2594-16	VX009220.D	29 Apr 2019 20:16	JC/SP	Ok
25	K2594-17	VX009221.D	29 Apr 2019 20:39	JC/SP	Dilution
26	K2594-18	VX009222.D	29 Apr 2019 21:02	JC/SP	Ok

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Instrument ID: MSVOA_X

Daily Analysis Runlog For Sequence/QCBatch ID # VX042919

Review By	john	Review On	4/30/2019 10:44:58 AM		
Supervise By	MMDadoda	Supervise On	4/30/2019 11:25:59 AM		
SubDirectory	VX042919	HP Acquire Method	MSVOA_X	HP Processing Method	82X042919W.M

STD. NAME	STD REF.#
Tune/Reschk	VP82092,VP82094
Initial Calibration Stds	VP82096,VP82097,VP82098,VP82101,VP82102,VP82103
CCC	VP82093,VP82095
Internal Standard/PEM	VP81774
ICV/I.BLK	VP82104

27	K2594-19	VX009223.D	29 Apr 2019 21:26	JC/SP	Ok
28	K2594-13DL	VX009224.D	29 Apr 2019 21:49	JC/SP	Ok
29	K2594-14	VX009225.D	29 Apr 2019 22:12	JC/SP	Not Ok
30	K2594-10	VX009226.D	29 Apr 2019 22:36	JC/SP	Ok
31	K2594-12	VX009227.D	29 Apr 2019 22:59	JC/SP	Dilution
32	K2594-02	VX009228.D	29 Apr 2019 23:22	JC/SP	Dilution
33	K2594-04MS	VX009229.D	29 Apr 2019 23:46	JC/SP	Ok,M
34	K2594-05MSD	VX009230.D	30 Apr 2019 00:09	JC/SP	Ok,M
35	VSTDCCC050	VX009231.D	30 Apr 2019 00:32	JC/SP	Ok,M

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Instrument ID: MSVOA_X

Daily Analysis Runlog For Sequence/QCBatch ID # VX052119

Review By	john	Review On	5/22/2019 11:56:49 AM		
Supervise By	MMDadoda	Supervise On	5/23/2019 5:12:13 PM		
SubDirectory	VX052119	HP Acquire Method	MSVOA_X	HP Processing Method	82X042919W.M

STD. NAME	STD REF.#
Tune/Reschk	VP82942,VP82944
Initial Calibration Stds	VP82096,VP82097,VP82098,VP82101,VP82102,VP82103
CCC	VP82943,VP82945,VP82951,VP82952
Internal Standard/PEM	VP81774
ICV/I.BLK	VP82104

Sr#	SampleId	Data File Name	Date-Time	Operator	Status
1	BFB	VX009741.D	21 May 2019 11:36	JC/SP	Ok
2	VSTDCCC050	VX009742.D	21 May 2019 12:12	JC/SP	Ok,M
3	VX0521WBL01	VX009743.D	21 May 2019 13:26	JC/SP	Ok
4	K2953-16	VX009744.D	21 May 2019 13:50	JC/SP	Ok
5	K2953-01	VX009745.D	21 May 2019 14:14	JC/SP	Ok
6	VX0521WBS01	VX009746.D	21 May 2019 14:37	JC/SP	Not Ok
7	K2974-02	VX009747.D	21 May 2019 15:00	JC/SP	Ok
8	K2974-04	VX009748.D	21 May 2019 15:24	JC/SP	ReRun
9	VX0521WBS02	VX009749.D	21 May 2019 15:47	JC/SP	Not Ok
10	K2974-03	VX009750.D	21 May 2019 16:11	JC/SP	Ok
11	VX0521WBS03	VX009751.D	21 May 2019 16:34	JC/SP	Ok,M
12	K2910-09	VX009752.D	21 May 2019 16:57	JC/SP	Ok
13	K2910-03	VX009753.D	21 May 2019 17:21	JC/SP	Ok
14	K2910-20	VX009754.D	21 May 2019 17:44	JC/SP	Ok
15	K2966-08	VX009755.D	21 May 2019 18:07	JC/SP	ReRun
16	K2966-07	VX009756.D	21 May 2019 18:31	JC/SP	Ok
17	K2973-07	VX009757.D	21 May 2019 18:54	JC/SP	Ok
18	K2973-04	VX009758.D	21 May 2019 19:18	JC/SP	Ok
19	K2973-05	VX009759.D	21 May 2019 19:41	JC/SP	Ok,M
20	K2973-06	VX009760.D	21 May 2019 20:04	JC/SP	Ok
21	K2973-08	VX009761.D	21 May 2019 20:28	JC/SP	Ok
22	K2973-09	VX009762.D	21 May 2019 20:51	JC/SP	Ok
23	K2973-01	VX009763.D	21 May 2019 21:15	JC/SP	Ok
24	K2973-02MS	VX009764.D	21 May 2019 21:38	JC/SP	Ok,M
25	K2973-03MSD	VX009765.D	21 May 2019 22:01	JC/SP	Ok,M
26	K2910-10MS	VX009766.D	21 May 2019 22:25	JC/SP	Ok,M

Daily Analysis Runlog For Sequence/QCBatch ID # VX052119

Review By	john	Review On	5/22/2019 11:56:49 AM		
Supervise By	MMDadoda	Supervise On	5/23/2019 5:12:13 PM		
SubDirectory	VX052119	HP Acquire Method	MSVOA_X	HP Processing Method	82X042919W.M

STD. NAME	STD REF.#
Tune/Reschk	VP82942,VP82944
Initial Calibration Stds	VP82096,VP82097,VP82098,VP82101,VP82102,VP82103
CCC	VP82943,VP82945,VP82951,VP82952
Internal Standard/PEM	VP81774
ICV/I.BLK	VP82104

27	K2910-11MSD	VX009767.D	21 May 2019 22:48	JC/SP	Ok,M
28	VSTDCCC050	VX009768.D	21 May 2019 23:11	JC/SP	Ok,M
29	BFB	VX009769.D	21 May 2019 23:58	JC/SP	Ok
30	VSTDCCC050	VX009770.D	22 May 2019 00:44	JC/SP	Ok,M
31	VX0521WBL02	VX009771.D	22 May 2019 01:31	JC/SP	Ok
32	VX0521WBS04	VX009772.D	22 May 2019 01:54	JC/SP	Ok,M
33	VX0521WBSD04	VX009773.D	22 May 2019 02:17	JC/SP	Ok,M
34	K2953-03	VX009774.D	22 May 2019 02:41	JC/SP	Ok
35	K2953-04	VX009775.D	22 May 2019 03:04	JC/SP	Ok
36	K2953-05	VX009776.D	22 May 2019 03:27	JC/SP	Ok
37	K2953-06	VX009777.D	22 May 2019 03:51	JC/SP	Ok
38	K2953-07	VX009778.D	22 May 2019 04:14	JC/SP	Ok
39	K2953-08	VX009779.D	22 May 2019 04:37	JC/SP	Ok
40	K2953-09	VX009780.D	22 May 2019 05:01	JC/SP	Ok
41	K2953-10	VX009781.D	22 May 2019 05:24	JC/SP	Ok
42	K2953-11	VX009782.D	22 May 2019 05:47	JC/SP	Ok
43	K2953-12	VX009783.D	22 May 2019 06:10	JC/SP	Ok
44	K2953-13	VX009784.D	22 May 2019 06:34	JC/SP	Ok
45	K2953-14	VX009785.D	22 May 2019 06:57	JC/SP	Ok
46	K2953-15	VX009786.D	22 May 2019 07:20	JC/SP	Ok
47	K2953-18	VX009787.D	22 May 2019 07:44	JC/SP	Ok
48	K2953-02	VX009788.D	22 May 2019 08:07	JC/SP	Ok
49	K2910-04	VX009789.D	22 May 2019 08:30	JC/SP	Ok
50	K2902-15	VX009790.D	22 May 2019 08:54	JC/SP	Ok
51	VSTDCCC050	VX009791.D	22 May 2019 09:17	JC/SP	Ok,M

Instrument ID: MSVOA_N

Daily Analysis Runlog For Sequence/QCBatch ID # VN051719

Review By	Sweetuben	Review On	5/20/2019 9:03:48 AM		
Supervise By	MMDadoda	Supervise On	5/20/2019 9:47:12 AM		
SubDirectory	VN051719	HP Acquire Method	MSVOA_N	HP Processing Method	82n051719w.m

STD. NAME	STD REF.#
Tune/Reschk	VP82808
Initial Calibration Stds	VP82811,VP82812,VP82813,VP82814,VP82815,VP82816
CCC	VP82818,VP82819,VP82820,VP82821
Internal Standard/PEM	VP81774
ICV/I.BLK	VP82817

Sr#	SampleId	ClientID	Data File Name	Date-Time	Comment	Operator	Status
1	BFB	BFB	VN055597.D	17 May 2019 8:33	pH#LOT#V9653	JC/SP	Ok
2	VSTDICC001	VSTDICC001	VN055598.D	17 May 2019 9:29		JC/SP	Ok,M
3	VSTDICC005	VSTDICC005	VN055599.D	17 May 2019 9:53	Method pass for DOD	JC/SP	Ok,M
4	VSTDICC020	VSTDICC020	VN055600.D	17 May 2019 10:16	LR used comp# 13,73,75,79,80,83,84,85,86,90, 94,95	JC/SP	Ok,M
5	VSTDICCC050	VSTDICCC050	VN055601.D	17 May 2019 10:39		JC/SP	Ok,M
6	VSTDICC100	VSTDICC100	VN055602.D	17 May 2019 11:03		JC/SP	Ok,M
7	VSTDICC150	VSTDICC150	VN055603.D	17 May 2019 11:26		JC/SP	Ok,M
8	VSTDICV050	ICVVN051719	VN055604.D	17 May 2019 12:05		JC/SP	Ok,M
9	BFB	BFB	VN055605.D	17 May 2019 12:32		JC/SP	Ok
10	VSTDCCC050	VSTDCCC050	VN055606.D	17 May 2019 13:06		JC/SP	Ok,M
11	VN0517MBL01	VN0517MBL01	VN055607.D	17 May 2019 14:03		JC/SP	Ok
12	VN0517WBL01	VN0517WBL01	VN055608.D	17 May 2019 14:26		JC/SP	Ok
13	K2902-15	TRIP-BLANK	VN055609.D	17 May 2019 14:48	TB,HIT of comp# 16, Vial A pH<2	JC/SP	ReRun
14	K2918-01	STORAGE-BLANK-SO	VN055610.D	17 May 2019 15:11	Vial A pH<2	JC/SP	Ok
15	K2918-02	STORAGE-BLANK-WA	VN055611.D	17 May 2019 15:35	Vial A pH<2	JC/SP	Ok
16	K2918-03	STORAGE-BLANK-WA	VN055612.D	17 May 2019 15:59	Vial A pH<2	JC/SP	Ok
17	K2918-04	STORAGE-BLANK-SA	VN055613.D	17 May 2019 16:22	Vial A pH<2	JC/SP	Ok
18	K2822-03	S-3	VN055614.D	17 May 2019 16:46	Not needed	JC/SP	Not Ok
19	VN0517WBS01	VN0517WBS01	VN055615.D	17 May 2019 17:09		JC/SP	Ok,M
20	K2902-10	FM-EA-RB01-051519	VN055616.D	17 May 2019 17:33	Vial A pH<2	JC/SP	Ok

Instrument ID: MSVOA_N

Daily Analysis Runlog For Sequence/QCBatch ID # VN051719

Review By	Sweetuben	Review On	5/20/2019 9:03:48 AM		
Supervise By	MMDadoda	Supervise On	5/20/2019 9:47:12 AM		
SubDirectory	VN051719	HP Acquire Method	MSVOA_N	HP Processing Method	82n051719w.m

STD. NAME	STD REF.#
Tune/Reschk	VP82808
Initial Calibration Stds	VP82811,VP82812,VP82813,VP82814,VP82815,VP82816
CCC	VP82818,VP82819,VP82820,VP82821
Internal Standard/PEM	VP81774
ICV/I.BLK	VP82817

21	K2902-13	FM-EA-RB02-051619	VN055617.D	17 May 2019 17:56	Vial A pH<2	JC/SP	Ok
22	K2903-03	TB-051519	VN055618.D	17 May 2019 18:20	TB, HIT of comp# 16,(J flag)Vial A pH<2	JC/SP	Ok
23	K2903-04	FB-190516	VN055619.D	17 May 2019 18:44	FB,Vial A pH<2	JC/SP	Ok
24	K2902-05	DUP-01	VN055620.D	17 May 2019 19:07	Vial A pH<2	JC/SP	Ok
25	K2902-01	FM-EA-3MW05-051519	VN055621.D	17 May 2019 19:31	Vial A pH<2	JC/SP	Ok
26	K2902-11	FM-EA-3MW09-051619	VN055622.D	17 May 2019 19:55	Vial A pH<2	JC/SP	Ok
27	K2902-12	FM-EA-3MW08-051619	VN055623.D	17 May 2019 20:18	Vial A pH<2	JC/SP	Ok
28	K2902-14	FM-EA-3MW07-051619	VN055624.D	17 May 2019 20:42	Vial A pH<2	JC/SP	Ok
29	VN0517MBS01	VN0517MBS01	VN055625.D	17 May 2019 21:05		JC/SP	Ok,M
30	K2823-04	11-B2	VN055626.D	17 May 2019 21:29		JC/SP	Ok
31	K2637-01	HR-06-051519-A	VN055627.D	17 May 2019 21:52		JC/SP	Ok
32	K2823-06ME	12-B2ME	VN055628.D	17 May 2019 22:16		JC/SP	Ok
33	VN0517MBSD01	VN0517MBSD01	VN055629.D	17 May 2019 22:40		JC/SP	Ok,M
34	K2902-02	FM-EA-3MW01-051519	VN055630.D	17 May 2019 23:03	Vial A pH<2	JC/SP	Ok
35	K2902-03MS	FM-EA-3MW01-051519	VN055631.D	17 May 2019 23:27	Vial A pH<2	JC/SP	Ok,M
36	K2902-04MSD	FM-EA-3MW01-051519	VN055632.D	17 May 2019 23:50	Vial A pH<2	JC/SP	Ok,M
37	VSTDCCC050	VSTDCCC050EC	VN055633.D	18 May 2019 00:14		JC/SP	Ok,M
38	BFB	BFB	VN055634.D	18 May 2019 1:01		JC/SP	Ok
39	VSTDCCC050	VSTDCCC050	VN055635.D	18 May 2019 1:48		JC/SP	Ok,M
40	VN0517WBL02	VN0517WBL02	VN055636.D	18 May 2019 2:35		JC/SP	Ok
41	PB119798TB	PB119798TB	VN055637.D	18 May 2019 2:59		JC/SP	Ok
42	VN0517WBS02	VN0517WBS02	VN055638.D	18 May 2019 3:22		JC/SP	Ok,M

Instrument ID: MSVOA_N

Daily Analysis Runlog For Sequence/QCBatch ID # VN051719

Review By	Sweetuben	Review On	5/20/2019 9:03:48 AM		
Supervise By	MMDadoda	Supervise On	5/20/2019 9:47:12 AM		
SubDirectory	VN051719	HP Acquire Method	MSVOA_N	HP Processing Method	82n051719w.m

STD. NAME	STD REF.#
Tune/Reschk	VP82808
Initial Calibration Stds	VP82811,VP82812,VP82813,VP82814,VP82815,VP82816
CCC	VP82818,VP82819,VP82820,VP82821
Internal Standard/PEM	VP81774
ICV/I.BLK	VP82817

43	K2903-01	MW-04B_R2	VN055639.D	18 May 2019 3:46	Vial A pH<2	JC/SP	Ok,M
44	K2903-02	MW-01A_R2	VN055640.D	18 May 2019 4:09	Vial A pH<2	JC/SP	Ok
45	K2903-05	MW-17A_R2	VN055641.D	18 May 2019 4:33	Vial A pH<2	JC/SP	Ok
46	K2903-06	DUP3-190516	VN055642.D	18 May 2019 4:56	Vial A pH<2	JC/SP	Ok
47	K2903-07	MW-16A_R2	VN055643.D	18 May 2019 5:20	Vial A pH<2	JC/SP	Ok
48	K2903-08	MW-16B_R2	VN055644.D	18 May 2019 5:43	Vial A pH<2	JC/SP	Ok
49	K2903-09	MW-17B_R2	VN055645.D	18 May 2019 6:07	Vial A pH<2	JC/SP	Ok
50	K2903-10	MW-16C_R2	VN055646.D	18 May 2019 6:30	Vial A pH<2	JC/SP	Ok
51	K2896-09	TP-20	VN055647.D	18 May 2019 6:54	Vial A pH<2	JC/SP	Ok
52	K2643-08	OR-02-051619-B	VN055648.D	18 May 2019 7:17	pH#7.0 vial A	JC/SP	Ok
53	K2648-02	TR-05-051619	VN055649.D	18 May 2019 7:40	pH#7.0 vial A	JC/SP	Ok
54	K2869-12	ROCKY-SOIL	VN055650.D	18 May 2019 8:04	pH#7.0 vial A	JC/SP	Ok
55	K2880-03	339-RBR-251608	VN055651.D	18 May 2019 8:27	pH#7.0 vial A	JC/SP	Ok
56	K2896-04	TP-18-S	VN055652.D	18 May 2019 8:51	pH#7.0 vial A	JC/SP	Ok
57	K2896-08	TP-20-S	VN055653.D	18 May 2019 9:14	pH#7.0 vial A	JC/SP	Ok
58	K2643-06	OR-02-051619-A	VN055654.D	18 May 2019 9:38	pH#7.0 vial A	JC/SP	Ok
59	K2899-01	OIL-WATER-SEPERAT	VN055655.D	18 May 2019 10:01	pH#7.0 vial A	JC/SP	Ok
60	VN0517WBSD02	VN0517WBSD02	VN055656.D	18 May 2019 10:24		JC/SP	Ok,M
61	K2913-05	TP-17	VN055657.D	18 May 2019 10:48	Vial A pH<2	JC/SP	Ok
62	VSTDCCC050	VSTDCCC050EC	VN055658.D	18 May 2019 11:11		JC/SP	Ok,M

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Instrument ID: MSVOA_X

Daily Analysis Runlog For Sequence/QCBatch ID # VX042919

Review By	john	Review On	4/30/2019 10:44:58 AM		
Supervise By	MMDadoda	Supervise On	4/30/2019 11:25:59 AM		
SubDirectory	VX042919	HP Acquire Method	MSVOA_X	HP Processing Method	82X042919W.M

STD. NAME	STD REF.#
Tune/Reschk	VP82092,VP82094
Initial Calibration Stds	VP82096,VP82097,VP82098,VP82101,VP82102,VP82103
CCC	VP82093,VP82095
Internal Standard/PEM	VP81774
ICV/I.BLK	VP82104

Sr#	SampleId	ClientID	Data File Name	Date-Time	Comment	Operator	Status
1	BFB	BFB	VX009197.D	29 Apr 2019 09:14		JC/SP	Ok
2	VSTDCCC050	VSTDCCC050	VX009198.D	29 Apr 2019 10:26	Need ICAL	JC/SP	Not Ok
3	VX0429WBL01	VX0429WBL01	VX009199.D	29 Apr 2019 11:13	Need ICAL	JC/SP	Not Ok
4	VSTDICC001	VSTDICC001	VX009200.D	29 Apr 2019 11:47		JC/SP	Ok,M
5	VSTDICC005	VSTDICC005	VX009201.D	29 Apr 2019 12:10		JC/SP	Ok,M
6	VSTDICC020	VSTDICC020	VX009202.D	29 Apr 2019 12:33	Method pass for DOD	JC/SP	Ok,M
7	VSTDICCC050	VSTDICCC050	VX009203.D	29 Apr 2019 12:57		JC/SP	Ok,M
8	VSTDICC100	VSTDICC100	VX009204.D	29 Apr 2019 13:20	LR used comp# 10,28	JC/SP	Ok,M
9	VSTDICC150	VSTDICC150	VX009205.D	29 Apr 2019 13:43		JC/SP	Ok,M
10	VSTDICV050	ICVVX042919	VX009206.D	29 Apr 2019 14:32	pH#Lot#V9368	JC/SP	Ok,M
11	BFB	BFB	VX009207.D	29 Apr 2019 15:02		JC/SP	Ok
12	VSTDCCC050	VSTDCCC050	VX009208.D	29 Apr 2019 15:25		JC/SP	Ok,M
13	VX0429WBL02	VX0429WBL02	VX009209.D	29 Apr 2019 15:52		JC/SP	Ok
14	K2581-03	TRIP-BLANK	VX009210.D	29 Apr 2019 16:22	vial B pH<2,HIT of comp# 16	JC/SP	Ok
15	VX0429WBS01	VX0429WBS01	VX009211.D	29 Apr 2019 16:46		JC/SP	Ok,M
16	K2594-01	WP021RW244-190423	VX009212.D	29 Apr 2019 17:09	vial A pH<2	JC/SP	Ok
17	K2594-03	WP021MW038-190423	VX009213.D	29 Apr 2019 17:32	vial A pH<2	JC/SP	Ok
18	K2594-06	WP021MW348-190423	VX009214.D	29 Apr 2019 17:56	vial A pH<2	JC/SP	Ok
19	K2594-07	WP021MW011-190423	VX009215.D	29 Apr 2019 18:19	vial A pH<2	JC/SP	Ok
20	K2594-08	WP021MW037-190423	VX009216.D	29 Apr 2019 18:42	vial A pH<2	JC/SP	Ok,M
21	K2594-09	WP021MW173-190423	VX009217.D	29 Apr 2019 19:06	vial A pH<2	JC/SP	Ok

Instrument ID: MSVOA_X

Daily Analysis Runlog For Sequence/QCBatch ID # VX042919

Review By	john	Review On	4/30/2019 10:44:58 AM		
Supervise By	MMDadoda	Supervise On	4/30/2019 11:25:59 AM		
SubDirectory	VX042919	HP Acquire Method	MSVOA_X	HP Processing Method	82X042919W.M

STD. NAME	STD REF.#
Tune/Reschk	VP82092,VP82094
Initial Calibration Stds	VP82096,VP82097,VP82098,VP82101,VP82102,VP82103
CCC	VP82093,VP82095
Internal Standard/PEM	VP81774
ICV/I.BLK	VP82104

22	K2594-11	WP021MW174-190423	VX009218.D	29 Apr 2019 19:29	vial A pH<2 Surrogate fail	JC/SP	ReRun
23	K2594-15	WP021MW351-190425	VX009219.D	29 Apr 2019 19:52	vial A pH<2	JC/SP	Ok
24	K2594-16	WP021MW002-190425	VX009220.D	29 Apr 2019 20:16	vial A pH<2	JC/SP	Ok
25	K2594-17	WP021MW346-190425	VX009221.D	29 Apr 2019 20:39	vial A pH<2,Need 100X,	JC/SP	Dilution
26	K2594-18	WP021MW345-190425	VX009222.D	29 Apr 2019 21:02	vial A pH<2	JC/SP	Ok
27	K2594-19	WP021MW347-190425	VX009223.D	29 Apr 2019 21:26	vial A pH<2	JC/SP	Ok
28	K2594-13DL	DUP-0514-190423DL	VX009224.D	29 Apr 2019 21:49		JC/SP	Ok
29	K2594-14	DUP-0515-190423	VX009225.D	29 Apr 2019 22:12	Run Straight	JC/SP	Not Ok
30	K2594-10	WP021RW245-190423	VX009226.D	29 Apr 2019 22:36	vial A pH<2	JC/SP	Ok
31	K2594-12	WP021RW246-190423	VX009227.D	29 Apr 2019 22:59	vial A pH<2 , Need 50X	JC/SP	Dilution
32	K2594-02	WP021MW352-190423	VX009228.D	29 Apr 2019 23:22	vial A pH<2 ,Need 40X	JC/SP	Dilution
33	K2594-04MS	WP021MW038-190423	VX009229.D	29 Apr 2019 23:46	vial A pH<2	JC/SP	Ok,M
34	K2594-05MSD	WP021MW038-190423	VX009230.D	30 Apr 2019 00:09	vial A pH<2	JC/SP	Ok,M
35	VSTDCCC050	VSTDCCC050EC	VX009231.D	30 Apr 2019 00:32		JC/SP	Ok,M

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Instrument ID: MSVOA_X

Daily Analysis Runlog For Sequence/QCBatch ID # VX052119

Review By	john	Review On	5/22/2019 11:56:49 AM		
Supervise By	MMDadoda	Supervise On	5/23/2019 5:12:13 PM		
SubDirectory	VX052119	HP Acquire Method	MSVOA_X	HP Processing Method	82X042919W.M

STD. NAME	STD REF.#
Tune/Reschk	VP82942,VP82944
Initial Calibration Stds	VP82096,VP82097,VP82098,VP82101,VP82102,VP82103
CCC	VP82943,VP82945,VP82951,VP82952
Internal Standard/PEM	VP81774
ICV/I.BLK	VP82104

Sr#	SampleId	ClientID	Data File Name	Date-Time	Comment	Operator	Status
1	BFB	BFB	VX009741.D	21 May 2019 11:36		JC/SP	Ok
2	VSTDCCC050	VSTDCCC050	VX009742.D	21 May 2019 12:12		JC/SP	Ok,M
3	VX0521WBL01	VX0521WBL01	VX009743.D	21 May 2019 13:26		JC/SP	Ok
4	K2953-16	TB	VX009744.D	21 May 2019 13:50	vial B pH<2	JC/SP	Ok
5	K2953-01	FB-051719	VX009745.D	21 May 2019 14:14	vial B pH<2	JC/SP	Ok
6	VX0521WBS01	VX0521WBS01	VX009746.D	21 May 2019 14:37	surrogate fail	JC/SP	Not Ok
7	K2974-02	BP-VPB202-TB-201905	VX009747.D	21 May 2019 15:00	vial A pH<2	JC/SP	Ok
8	K2974-04	BP-VPB202-EB-201905	VX009748.D	21 May 2019 15:24	vial A pH<2 ,confirm hit	JC/SP	ReRun
9	VX0521WBS02	VX0521WBS02	VX009749.D	21 May 2019 15:47	surrogate fail	JC/SP	Not Ok
10	K2974-03	BP-VPB202-GW-798-8	VX009750.D	21 May 2019 16:11	vial A pH<2	JC/SP	Ok
11	VX0521WBS03	VX0521WBS03	VX009751.D	21 May 2019 16:34		JC/SP	Ok,M
12	K2910-09	S73-0229	VX009752.D	21 May 2019 16:57	vial A pH<2	JC/SP	Ok
13	K2910-03	S73-0226	VX009753.D	21 May 2019 17:21	vial A pH<2	JC/SP	Ok
14	K2910-20	S73-0230	VX009754.D	21 May 2019 17:44	vial A pH<2	JC/SP	Ok
15	K2966-08	FB-20190520	VX009755.D	21 May 2019 18:07	vial A pH<2 ,confirm hit	JC/SP	ReRun
16	K2966-07	TB	VX009756.D	21 May 2019 18:31	vial A pH<2	JC/SP	Ok
17	K2973-07	S36-TB-2019-1	VX009757.D	21 May 2019 18:54	vial A pH<2	JC/SP	Ok
18	K2973-04	S36-0151	VX009758.D	21 May 2019 19:18	vial A pH<2	JC/SP	Ok
19	K2973-05	S36-0152	VX009759.D	21 May 2019 19:41	vial A pH<2	JC/SP	Ok,M
20	K2973-06	S36-0159	VX009760.D	21 May 2019 20:04	vial A pH<2	JC/SP	Ok
21	K2973-08	S36-0158	VX009761.D	21 May 2019 20:28	vial A pH<2	JC/SP	Ok

Instrument ID: MSVOA_X

Daily Analysis Runlog For Sequence/QCBatch ID # VX052119

Review By	john	Review On	5/22/2019 11:56:49 AM		
Supervise By	MMDadoda	Supervise On	5/23/2019 5:12:13 PM		
SubDirectory	VX052119	HP Acquire Method	MSVOA_X	HP Processing Method	82X042919W.M

STD. NAME	STD REF.#
Tune/Reschk	VP82942,VP82944
Initial Calibration Stds	VP82096,VP82097,VP82098,VP82101,VP82102,VP82103
CCC	VP82943,VP82945,VP82951,VP82952
Internal Standard/PEM	VP81774
ICV/I.BLK	VP82104

22	K2973-09	S36-ER-2019-1	VX009762.D	21 May 2019 20:51	vial A pH<2	JC/SP	Ok
23	K2973-01	S36-0153	VX009763.D	21 May 2019 21:15	vial A pH<2	JC/SP	Ok
24	K2973-02MS	S36-0153MS	VX009764.D	21 May 2019 21:38	vial A pH<2	JC/SP	Ok,M
25	K2973-03MSD	S36-0153MSD	VX009765.D	21 May 2019 22:01	vial A pH<2	JC/SP	Ok,M
26	K2910-10MS	S73-0229MS	VX009766.D	21 May 2019 22:25	vial A pH<2	JC/SP	Ok,M
27	K2910-11MSD	S73-0229MSD	VX009767.D	21 May 2019 22:48	vial A pH<2	JC/SP	Ok,M
28	VSTDCCC050	VSTDCCC050EC	VX009768.D	21 May 2019 23:11		JC/SP	Ok,M
29	BFB	BFB	VX009769.D	21 May 2019 23:58		JC/SP	Ok
30	VSTDCCC050	VSTDCCC050	VX009770.D	22 May 2019 00:44		JC/SP	Ok,M
31	VX0521WBL02	VX0521WBL02	VX009771.D	22 May 2019 01:31		JC/SP	Ok
32	VX0521WBS04	VX0521WBS04	VX009772.D	22 May 2019 01:54		JC/SP	Ok,M
33	VX0521WBSD04	VX0521WBSD04	VX009773.D	22 May 2019 02:17		JC/SP	Ok,M
34	K2953-03	MW-5B_R2	VX009774.D	22 May 2019 02:41	vial A pH<2	JC/SP	Ok
35	K2953-04	MW-13A_R2	VX009775.D	22 May 2019 03:04	vial A pH<2	JC/SP	Ok
36	K2953-05	MW-13B_R2	VX009776.D	22 May 2019 03:27	vial A pH<2	JC/SP	Ok
37	K2953-06	MW-14A_R2	VX009777.D	22 May 2019 03:51	vial A pH<2	JC/SP	Ok
38	K2953-07	MW-14B_R2	VX009778.D	22 May 2019 04:14	vial A pH<2	JC/SP	Ok
39	K2953-08	MW-14C_R2	VX009779.D	22 May 2019 04:37	vial A pH<2	JC/SP	Ok
40	K2953-09	MW-14D_R2	VX009780.D	22 May 2019 05:01	vial A pH<2	JC/SP	Ok
41	K2953-10	MW-14E_R2	VX009781.D	22 May 2019 05:24	vial A pH<2	JC/SP	Ok
42	K2953-11	MW-16D_R2	VX009782.D	22 May 2019 05:47	vial A pH<2	JC/SP	Ok
43	K2953-12	MW-17D_R2	VX009783.D	22 May 2019 06:10	vial A pH<2	JC/SP	Ok

Instrument ID: MSVOA_X

Daily Analysis Runlog For Sequence/QCBatch ID # VX052119

Review By	john	Review On	5/22/2019 11:56:49 AM		
Supervise By	MMDadoda	Supervise On	5/23/2019 5:12:13 PM		
SubDirectory	VX052119	HP Acquire Method	MSVOA_X	HP Processing Method	82X042919W.M

STD. NAME	STD REF.#
Tune/Reschk	VP82942,VP82944
Initial Calibration Stds	VP82096,VP82097,VP82098,VP82101,VP82102,VP82103
CCC	VP82943,VP82945,VP82951,VP82952
Internal Standard/PEM	VP81774
ICV/I.BLK	VP82104

44	K2953-13	MW-11A_R2	VX009784.D	22 May 2019 06:34	vial A pH<2	JC/SP	Ok
45	K2953-14	MW-12A_R2	VX009785.D	22 May 2019 06:57	vial A pH<2	JC/SP	Ok
46	K2953-15	MW-12B_R2	VX009786.D	22 May 2019 07:20	vial A pH<2	JC/SP	Ok
47	K2953-18	MW-17C_R2	VX009787.D	22 May 2019 07:44	vial A pH<2	JC/SP	Ok
48	K2953-02	MW-5A_R2	VX009788.D	22 May 2019 08:07	vial B pH<2	JC/SP	Ok
49	K2910-04	S73-0224	VX009789.D	22 May 2019 08:30	vial A pH<2	JC/SP	Ok
50	K2902-15	TRIP-BLANK	VX009790.D	22 May 2019 08:54	Vial B pH<2,TB	JC/SP	Ok
51	VSTDCCC050	VSTDCCC050EC	VX009791.D	22 May 2019 09:17		JC/SP	Ok,M

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LAB CHRONICLE

OrderID:	K2902	**OrderDate:**	5/16/2019 2:12:24 PM
Client:	Watermark	**Project:**	Camp Evans Area, Ft. Monmouth
Contact:	Olaf Westphalen	**Location:**	O41

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
K2902-01	**FM-EA-3MW05-051519**	**Water**			**05/15/19**			**05/16/19**
			VOCMS Group1	8260-Low			05/17/19	
K2902-02	**FM-EA-3MW01-051519**	**Water**			**05/15/19**			**05/16/19**
			VOCMS Group1	8260-Low			05/17/19	
K2902-05	**DUP-01**	**Water**			**05/15/19**			**05/16/19**
			VOCMS Group1	8260-Low			05/17/19	
K2902-10	**FM-EA-RB01-051519**	**Water**			**05/15/19**			**05/16/19**
			VOCMS Group1	8260-Low			05/17/19	
K2902-11	**FM-EA-3MW09-051619**	**Water**			**05/16/19**			**05/16/19**
			VOCMS Group1	8260-Low			05/17/19	
K2902-12	**FM-EA-3MW08-051619**	**Water**			**05/16/19**			**05/16/19**
			VOCMS Group1	8260-Low			05/17/19	
K2902-13	**FM-EA-RB02-051619**	**Water**			**05/16/19**			**05/16/19**
			VOCMS Group1	8260-Low			05/17/19	
K2902-14	**FM-EA-3MW07-051619**	**Water**			**05/16/19**			**05/16/19**
			VOCMS Group1	8260-Low			05/17/19	
K2902-15	**TRIP-BLANK**	**Water**			**05/09/19**			**05/16/19**
			VOCMS Group1	8260-Low			05/22/19	

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Hit Summary Sheet
SW-846

SDG No.:	K2902	**Order ID:**	K2902
Client:	Watermark	**Project ID:**	Camp Evans Area, Ft. Monmouth

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	LOD	RDL	Units
Client ID : FM-EA-3MW01-051519									
K2902-02	FM-EA-3MW01-051519	Water	Cadmium	7.820		0.173	1.5	3	ug/L
Client ID : DUP-01									
K2902-05	DUP-01	Water	Cadmium	8.320		0.173	1.5	3	ug/L

SAMPLE DATA

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Report of Analysis

Client:	Watermark	Date Collected:	05/15/19
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	05/16/19
Client Sample ID:	FM-EA-3MW01-051519	SDG No.:	K2902
Lab Sample ID:	K2902-02	Matrix:	Water
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-43-9	Cadmium	7.82		1	0.173	1.5	3	ug/L	05/20/19 10:02	05/21/19 15:11	SW6010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	Metals Group5				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

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Report of Analysis

Client:	Watermark	Date Collected:	05/15/19
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	05/16/19
Client Sample ID:	DUP-01	SDG No.:	K2902
Lab Sample ID:	K2902-05	Matrix:	Water
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-43-9	Cadmium	8.32		1	0.173	1.5	3	ug/L	05/20/19 10:02	05/21/19 18:15	SW6010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	Metals Group5				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

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Report of Analysis

Client:	Watermark	Date Collected:	05/15/19
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	05/16/19
Client Sample ID:	FM-EA-3MW06-051519	SDG No.:	K2902
Lab Sample ID:	K2902-06	Matrix:	Water
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7439-92-1	Lead	3	U	1	1.43	3.0	6	ug/L	05/20/19 10:02	05/23/19 15:44	SW6010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	Metals Group4				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

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Report of Analysis

Client:	Watermark	Date Collected:	05/15/19
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	05/16/19
Client Sample ID:	DUP-02	SDG No.:	K2902
Lab Sample ID:	K2902-09	Matrix:	Water
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7439-92-1	Lead	3	U	1	1.43	3.0	6	ug/L	05/20/19 10:02	05/21/19 18:29	SW6010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	Metals Group4				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

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Report of Analysis

Client:	Watermark	Date Collected:	05/15/19
Project:	Camp Evans Area, Ft. Monmouth	Date Received:	05/16/19
Client Sample ID:	FM-EA-RB01-051519	SDG No.:	K2902
Lab Sample ID:	K2902-10	Matrix:	Water
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOD	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-43-9	Cadmium	1.5	U	1	0.173	1.5	3	ug/L	05/20/19 10:02	05/21/19 18:33	SW6010
7439-92-1	Lead	3	U	1	1.43	3.0	6	ug/L	05/20/19 10:02	05/21/19 18:33	SW6010

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	Metals Group3				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

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Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Watermark **SDG No.:** K2902

Contract: WATE05 **Lab Code:** CHEM **Case No.:** K2902 **SAS No.:** K2902

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB01	Cadmium	6.0	+/-6.0	U	3.0	6.0	P	05/21/2019	12:07	LB102904
	Lead	12.0	+/-12.0	U	6.0	12.0	P	05/21/2019	12:07	LB102904

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Watermark **SDG No.:** K2902

Contract: WATE05 **Lab Code:** CHEM **Case No.:** K2902 **SAS No.:** K2902

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB01	Cadmium	6.0	+/-6.0	U	3.0	6.0	P	05/21/2019	12:41	LB102904
	Lead	12.0	+/-12.0	U	6.0	12.0	P	05/21/2019	12:41	LB102904
CCB02	Cadmium	6.0	+/-6.0	U	3.0	6.0	P	05/21/2019	13:46	LB102904
	Lead	12.0	+/-12.0	U	6.0	12.0	P	05/21/2019	13:46	LB102904
CCB03	Cadmium	6.0	+/-6.0	U	3.0	6.0	P	05/21/2019	14:44	LB102904
	Lead	5.87	+/-12.0	J	6.0	12.0	P	05/21/2019	14:44	LB102904
CCB04	Cadmium	6.0	+/-6.0	U	3.0	6.0	P	05/21/2019	16:04	LB102904
	Lead	12.0	+/-12.0	U	6.0	12.0	P	05/21/2019	16:04	LB102904
CCB05	Cadmium	6.0	+/-6.0	U	3.0	6.0	P	05/21/2019	17:09	LB102904
	Lead	12.0	+/-12.0	U	6.0	12.0	P	05/21/2019	17:09	LB102904
CCB06	Cadmium	6.0	+/-6.0	U	3.0	6.0	P	05/21/2019	18:02	LB102904
	Lead	3.51	+/-12.0	J	6.0	12.0	P	05/21/2019	18:02	LB102904
CCB07	Cadmium	6.0	+/-6.0	U	3.0	6.0	P	05/21/2019	19:04	LB102904
	Lead	12.0	+/-12.0	U	6.0	12.0	P	05/21/2019	19:04	LB102904
CCB08	Cadmium	6.0	+/-6.0	U	3.0	6.0	P	05/21/2019	19:57	LB102904
	Lead	12.0	+/-12.0	U	6.0	12.0	P	05/21/2019	19:57	LB102904

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Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Watermark **SDG No.:** K2902

Contract: WATE05 **Lab Code:** CHEM **Case No.:** K2902 **SAS No.:** K2902

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
ICB01	Cadmium	6.0	+/-6.0	U	3.0	6.0	P	05/23/2019	12:40	LB102957
	Lead	12.0	+/-12.0	U	6.0	12.0	P	05/23/2019	12:40	LB102957

Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Watermark **SDG No.:** K2902

Contract: WATE05 **Lab Code:** CHEM **Case No.:** K2902 **SAS No.:** K2902

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB01	Cadmium	6.0	+/-6.0	U	3.0	6.0	P	05/23/2019	13:30	LB102957
	Lead	12.0	+/-12.0	U	6.0	12.0	P	05/23/2019	13:30	LB102957
CCB02	Cadmium	6.0	+/-6.0	U	3.0	6.0	P	05/23/2019	14:48	LB102957
	Lead	12.0	+/-12.0	U	6.0	12.0	P	05/23/2019	14:48	LB102957
CCB03	Cadmium	6.0	+/-6.0	U	3.0	6.0	P	05/23/2019	15:40	LB102957
	Lead	12.0	+/-12.0	U	6.0	12.0	P	05/23/2019	15:40	LB102957
CCB04	Cadmium	6.0	+/-6.0	U	3.0	6.0	P	05/23/2019	17:00	LB102957
	Lead	12.0	+/-12.0	U	6.0	12.0	P	05/23/2019	17:00	LB102957
CCB05	Cadmium	6.0	+/-6.0	U	3.0	6.0	P	05/23/2019	17:54	LB102957
	Lead	12.0	+/-12.0	U	6.0	12.0	P	05/23/2019	17:54	LB102957
CCB06	Cadmium	6.0	+/-6.0	U	3.0	6.0	P	05/23/2019	18:47	LB102957
	Lead	12.0	+/-12.0	U	6.0	12.0	P	05/23/2019	18:47	LB102957
CCB07	Cadmium	6.0	+/-6.0	U	3.0	6.0	P	05/23/2019	19:41	LB102957
	Lead	12.0	+/-12.0	U	6.0	12.0	P	05/23/2019	19:41	LB102957
CCB08	Cadmium	6.0	+/-6.0	U	3.0	6.0	P	05/23/2019	20:33	LB102957
	Lead	12.0	+/-12.0	U	6.0	12.0	P	05/23/2019	20:33	LB102957
CCB09	Cadmium	6.0	+/-6.0	U	3.0	6.0	P	05/23/2019	21:26	LB102957
	Lead	12.0	+/-12.0	U	6.0	12.0	P	05/23/2019	21:26	LB102957
CCB10	Cadmium	6.0	+/-6.0	U	3.0	6.0	P	05/23/2019	22:20	LB102957
	Lead	12.0	+/-12.0	U	6.0	12.0	P	05/23/2019	22:20	LB102957
CCB11	Cadmium	6.0	+/-6.0	U	3.0	6.0	P	05/23/2019	23:13	LB102957
	Lead	12.0	+/-12.0	U	6.0	12.0	P	05/23/2019	23:13	LB102957
CCB12	Cadmium	6.0	+/-6.0	U	3.0	6.0	P	05/24/2019	00:07	LB102957
	Lead	12.0	+/-12.0	U	6.0	12.0	P	05/24/2019	00:07	LB102957
CCB13	Cadmium	6.0	+/-6.0	U	3.0	6.0	P	05/24/2019	00:43	LB102957
	Lead	12.0	+/-12.0	U	6.0	12.0	P	05/24/2019	00:43	LB102957

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Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Watermark **SDG No.:** K2902

Contract: WATE05 **Lab Code:** CHEM **Case No.:** K2902 **SAS No.:** K2902

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	LOD	CRQL	M	Analysis Date	Analysis Time	Run Number

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Metals
- 3b -
PREPARATION BLANK SUMMARY

Client: Watermark **SDG No.:** K2902

Instrument: P4

Sample ID	Analyte	Result (ug/L)	Acceptance Limit	Conc Qual	LOD ug/L	CRQL ug/L	M	Analysis Date	Analysis Time	Run
PB119881BL		**WATER**		**Batch Number:**		**PB119881**		**Prep Date:**	**05/20/2019**	
	Cadmium	3.0	<3.0	U	1.5	3.0	P	05/21/2019	12:46	LB102904
	Lead	6.0	<6.0	U	3.0	6.0	P	05/21/2019	12:46	LB102904

METAL CALIBRATION DATA

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Watermark **SDG No.:** K2902

Contract: WATE05 **Lab Code:** CHEM **Case No.:** K2902 **SAS No.:** K2902

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
ICV01	Cadmium	479.94	496	96.8	95 - 105	P	05/21/2019	11:59	LB102904
	Lead	983.69	1002	98.2	95 - 105	P	05/21/2019	11:59	LB102904

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Watermark **SDG No.:** K2902

Contract: WATE05 **Lab Code:** CHEM **Case No.:** K2902 **SAS No.:** K2902

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
LLICV01	Cadmium	6.22	6.0	103.7	80 - 120	P	05/21/2019	12:03	LB102904
	Lead	12.39	12.0	103.3	80 - 120	P	05/21/2019	12:03	LB102904

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Watermark **SDG No.:** K2902

Contract: WATE05 **Lab Code:** CHEM **Case No.:** K2902 **SAS No.:** K2902

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV01	Cadmium	2416.5	2500	96.7	90 - 110	P	05/21/2019	12:25	LB102904
	Lead	4844.6	5000	96.9	90 - 110	P	05/21/2019	12:25	LB102904

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Watermark **SDG No.:** K2902

Contract: WATE05 **Lab Code:** CHEM **Case No.:** K2902 **SAS No.:** K2902

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
LLCCV01	Cadmium	6.22	6.0	103.7	80 - 120	P	05/21/2019	12:37	LB102904
	Lead	11.64	12.0	97	80 - 120	P	05/21/2019	12:37	LB102904

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Watermark **SDG No.:** K2902

Contract: WATE05 **Lab Code:** CHEM **Case No.:** K2902 **SAS No.:** K2902

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV02	Cadmium	2457.1	2500	98.3	90 - 110	P	05/21/2019	13:42	LB102904
	Lead	4931.9	5000	98.6	90 - 110	P	05/21/2019	13:42	LB102904
CCV03	Cadmium	2438.9	2500	97.6	90 - 110	P	05/21/2019	14:35	LB102904
	Lead	4926.1	5000	98.5	90 - 110	P	05/21/2019	14:35	LB102904
CCV04	Cadmium	2455.2	2500	98.2	90 - 110	P	05/21/2019	15:59	LB102904
	Lead	4942.4	5000	98.8	90 - 110	P	05/21/2019	15:59	LB102904
CCV05	Cadmium	2453.4	2500	98.1	90 - 110	P	05/21/2019	17:04	LB102904
	Lead	4935	5000	98.7	90 - 110	P	05/21/2019	17:04	LB102904
CCV06	Cadmium	2483.5	2500	99.3	90 - 110	P	05/21/2019	17:58	LB102904
	Lead	4990.4	5000	99.8	90 - 110	P	05/21/2019	17:58	LB102904
CCV07	Cadmium	2461.8	2500	98.5	90 - 110	P	05/21/2019	19:00	LB102904
	Lead	4942.6	5000	98.9	90 - 110	P	05/21/2019	19:00	LB102904
CCV08	Cadmium	2411.1	2500	96.4	90 - 110	P	05/21/2019	19:53	LB102904
	Lead	4825.7	5000	96.5	90 - 110	P	05/21/2019	19:53	LB102904

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Watermark **SDG No.:** K2902

Contract: WATE05 **Lab Code:** CHEM **Case No.:** K2902 **SAS No.:** K2902

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
ICV01	Cadmium	486.23	496	98	90 - 110	P	05/23/2019	12:24	LB102957
	Lead	995.23	1002	99.3	90 - 110	P	05/23/2019	12:24	LB102957

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Watermark **SDG No.:** K2902

Contract: WATE05 **Lab Code:** CHEM **Case No.:** K2902 **SAS No.:** K2902

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
LLICV01	Cadmium	6.1	6.0	101.7	80 - 120	P	05/23/2019	12:34	LB102957
	Lead	11.6	12.0	96.7	80 - 120	P	05/23/2019	12:34	LB102957

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Watermark **SDG No.:** K2902

Contract: WATE05 **Lab Code:** CHEM **Case No.:** K2902 **SAS No.:** K2902

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV01	Cadmium	2465.8	2500	98.6	90 - 110	P	05/23/2019	13:10	LB102957
	Lead	4917.8	5000	98.4	90 - 110	P	05/23/2019	13:10	LB102957

Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Watermark **SDG No.:** K2902

Contract: WATE05 **Lab Code:** CHEM **Case No.:** K2902 **SAS No.:** K2902

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
LLCCV01	Cadmium	6.26	6.0	104.3	80 - 120	P	05/23/2019	13:14	LB102957
	Lead	11.41	12.0	95.1	80 - 120	P	05/23/2019	13:14	LB102957

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Metals

- 2a -

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: Watermark **SDG No.:** K2902

Contract: WATE05 **Lab Code:** CHEM **Case No.:** K2902 **SAS No.:** K2902

Initial Calibration Source: EPA

Continuing Calibration Source: Inorganic Ventures

Sample ID	Analyte	Result ug/L	True Value	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CCV02	Cadmium	2498.1	2500	99.9	90 - 110	P	05/23/2019	14:44	LB102957
	Lead	4949.3	5000	99	90 - 110	P	05/23/2019	14:44	LB102957
CCV03	Cadmium	2480.3	2500	99.2	90 - 110	P	05/23/2019	15:36	LB102957
	Lead	4892.2	5000	97.8	90 - 110	P	05/23/2019	15:36	LB102957
CCV04	Cadmium	2483.2	2500	99.3	90 - 110	P	05/23/2019	16:56	LB102957
	Lead	4891.1	5000	97.8	90 - 110	P	05/23/2019	16:56	LB102957
CCV05	Cadmium	2497.7	2500	99.9	90 - 110	P	05/23/2019	17:50	LB102957
	Lead	4900	5000	98	90 - 110	P	05/23/2019	17:50	LB102957
CCV06	Cadmium	2499.1	2500	100	90 - 110	P	05/23/2019	18:43	LB102957
	Lead	4898.1	5000	98	90 - 110	P	05/23/2019	18:43	LB102957
CCV07	Cadmium	2497.7	2500	99.9	90 - 110	P	05/23/2019	19:37	LB102957
	Lead	4892.8	5000	97.9	90 - 110	P	05/23/2019	19:37	LB102957
CCV08	Cadmium	2492.2	2500	99.7	90 - 110	P	05/23/2019	20:29	LB102957
	Lead	4888.2	5000	97.8	90 - 110	P	05/23/2019	20:29	LB102957
CCV09	Cadmium	2401	2500	96	90 - 110	P	05/23/2019	21:22	LB102957
	Lead	4680.7	5000	93.6	90 - 110	P	05/23/2019	21:22	LB102957
CCV10	Cadmium	2418.2	2500	96.7	90 - 110	P	05/23/2019	22:16	LB102957
	Lead	4710	5000	94.2	90 - 110	P	05/23/2019	22:16	LB102957
CCV11	Cadmium	2432.8	2500	97.3	90 - 110	P	05/23/2019	23:09	LB102957
	Lead	4722.8	5000	94.5	90 - 110	P	05/23/2019	23:09	LB102957
CCV12	Cadmium	2399.7	2500	96	90 - 110	P	05/24/2019	00:03	LB102957
	Lead	4666.7	5000	93.3	90 - 110	P	05/24/2019	00:03	LB102957
CCV13	Cadmium	2459.5	2500	98.4	90 - 110	P	05/24/2019	00:38	LB102957
	Lead	4785.8	5000	95.7	90 - 110	P	05/24/2019	00:38	LB102957

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Metals

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CRDL STANDARD FOR AA & ICP

Client: Watermark **SDG No.:** K2902

Contract: WATE05 **Lab Code:** CHEM **Case No.:** K2902 **SAS No.:** K2902

Initial Calibration Source:

Continuing Calibration Source:

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Acceptance Window (%R)	M	Analysis Date	Analysis Time	Run Number
CRI01	Cadmium	6.27	6.0	104.5	40 - 160	P	05/21/2019	12:12	LB102904
	Lead	12.02	12.0	100.2	40 - 160	P	05/21/2019	12:12	LB102904
CRI01	Cadmium	6.19	6.0	103.2	40 - 160	P	05/23/2019	12:44	LB102957
	Lead	11.11	12.0	92.6	40 - 160	P	05/23/2019	12:44	LB102957

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Metals
- 4 -
INTERFERENCE CHECK SAMPLE

Client: Watermark **SDG No.:** K2902

Contract: WATE05 **Lab Code:** CHEM **Case No.:** K2902 **SAS No.:** K2902

ICS Source: EPA **Instrument ID:** P4

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Low Limit (ug/L)	High Limit (ug/L)	Analysis Date	Analysis Time	Run Number
ICSA01	Cadmium	-1.65	1.0	165	-5	7	05/21/2019	12:16	LB102904
	Lead	-11			-12	12	05/21/2019	12:16	LB102904
ICSAB01	Cadmium	1060	972	109.1	778	1166	05/21/2019	12:21	LB102904
	Lead	44.1	49.0	90	39	59	05/21/2019	12:21	LB102904
ICSA01	Cadmium	-1.36	1.0	136	-5	7	05/23/2019	12:49	LB102957
	Lead	1.66			-12	12	05/23/2019	12:49	LB102957
ICSAB01	Cadmium	1010	972	103.9	778	1166	05/23/2019	13:06	LB102957
	Lead	52.4	49.0	106.9	39	59	05/23/2019	13:06	LB102957

METAL QC DATA

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metals
- 5a -
MATRIX SPIKE SUMMARY

client: Watermark **level:** low **sdg no.:** K2902

contract: WATE05 **lab code:** CHEM **case no.:** K2902 **sas no.:** K2902

matrix: Water **sample id:** K2902-02 **client id:** FM-EA-3MW01-051519MS

Percent Solids for Sample: NA **Spiked ID:** K2902-03 **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Cadmium	ug/L	88 - 113	95.7		7.82		100	88		P
Lead	ug/L	86 - 113	446		2.68	J	500	89		P

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metals
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MATRIX SPIKE DUPLICATE SUMMARY

client: Watermark **level:** low **sdg no.:** K2902

contract: WATE05 **lab code:** CHEM **case no.:** K2902 **sas no.:** K2902

matrix: Water **sample id:** K2902-02 **client id:** FM-EA-3MW01-051519MSD

Percent Solids for Sample: NA **Spiked ID:** K2902-04 **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit %R	MSD Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Cadmium	ug/L	88 - 113	96.3		7.82		100	89		P
Lead	ug/L	86 - 113	447		2.68	J	500	89		P

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metals
- 5a -
MATRIX SPIKE SUMMARY

client: Watermark **level:** low **sdg no.:** K2902

contract: WATE05 **lab code:** CHEM **case no.:** K2902 **sas no.:** K2902

matrix: Water **sample id:** K2902-06 **client id:** FM-EA-3MW06-051519MS

Percent Solids for Sample: NA **Spiked ID:** K2902-07 **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit %R	Spiked Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Cadmium	ug/L	88 - 113	97.6		3.0	U	100	97.6		P
Lead	ug/L	86 - 113	483		6.0	U	500	96.6		P

metals
- 5a -
MATRIX SPIKE DUPLICATE SUMMARY

client: Watermark **level:** low **sdg no.:** K2902

contract: WATE05 **lab code:** CHEM **case no.:** K2902 **sas no.:** K2902

matrix: Water **sample id:** K2902-06 **client id:** FM-EA-3MW06-051519MSD

Percent Solids for Sample: NA **Spiked ID:** K2902-08 **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit %R	MSD Result	C	Sample Result	C	Spike Added	% Recovery	Qual	M
Cadmium	ug/L	88 - 113	97.2		3.0	U	100	97.2		P
Lead	ug/L	86 - 113	483		6.0	U	500	96.6		P

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Metals
- 5b -

Client: Watermark **SDG No.:** K2902

Contract: WATE05 **Lab Code:** CHEM **Case No.:** K2902 **SAS No.:** K2902

Matrix: **Level:** LOW **Client ID:**

Sample ID: **Spiked ID:**

Analyte	Units	Acceptance Limit %R	C	Sample Result	C	Spike Added	% Recovery	Qual	M

Metals

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DUPLICATE SAMPLE SUMMARY

Client: Watermark **Level:** LOW **SDG No.:** K2902

Contract: WATE05 **Lab Code:** CHEM **Case No.:** K2902 **SAS No.:** K2902

Matrix: Water **Sample ID:** K2902-02 **Client ID:** FM-EA-3MW01-051519DUP

Percent Solids for Sample: NA **Duplicate ID** K2902-02DUP **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Cadmium	ug/L	20	7.82		7.84		0		P
Lead	ug/L	20	2.68	J	2.28	J	16		P

"A control limit of ±20% RPD for each matrix applies for sample values greater than 10 times Detection Limit"

Metals

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DUPLICATE SAMPLE SUMMARY

Client: Watermark **Level:** LOW **SDG No.:** K2902

Contract: WATE05 **Lab Code:** CHEM **Case No.:** K2902 **SAS No.:** K2902

Matrix: Water **Sample ID:** K2902-03 **Client ID:** FM-EA-3MW01-051519MSD

Percent Solids for Sample: NA **Duplicate ID** K2902-04 **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Cadmium	ug/L	20	95.7		96.3		1		P
Lead	ug/L	20	446		447		0		P

"A control limit of ±20% RPD for each matrix applies for sample values greater than 10 times Detection Limit"

Metals

- 6 -

DUPLICATE SAMPLE SUMMARY

Client: Watermark **Level:** LOW **SDG No.:** K2902

Contract: WATE05 **Lab Code:** CHEM **Case No.:** K2902 **SAS No.:** K2902

Matrix: Water **Sample ID:** K2902-07 **Client ID:** FM-EA-3MW06-051519MSD

Percent Solids for Sample: NA **Duplicate ID** K2902-08 **Percent Solids for Spike Sample:** NA

Analyte	Units	Acceptance Limit	Sample Result	C	Duplicate Result	C	RPD	Qual	M
Cadmium	ug/L	20	97.6		97.2		0		P
Lead	ug/L	20	483		483		0		P

"A control limit of ±20% RPD for each matrix applies for sample values greater than 10 times Detection Limit"

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Metals

LABORATORY CONTROL SAMPLE SUMMARY

Client: Watermark **SDG No.:** K2902

Contract: WATE05 **Lab Code:** CHEM **Case No.:** K2902 **SAS No.:** K2902

Analyte	Units	True Value	Result	C	% Recovery	Acceptance Limits	M
PB119881BS							
Cadmium	ug/L	100	92.7		92.7	88 - 113	P
Lead	ug/L	500	473		94.6	86 - 113	P

Metals

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ICP SERIAL DILUTIONS

SAMPLE NO.

FM-EA-3MW01-051519L

Lab Name: Chemtech Consulting Group **Contract:** WATE05

Lab Code: CHEM **Lb No.:** lb102904 **Lab Sample ID :** K2902-02L **SDG No.:** K2902

Matrix (soil/water): Water **Level (low/med):** LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Cadmium	7.82		8.05	J	3		P
Lead	2.68	J	8.6	J	221		P

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metals
- 14 -
ANALYSIS RUN LOG

Client: Watermark **Contract:** WATE05

Lab code: CHEM **Case no.:** K2902 **Sas no.:** K2902 **Sdg no.:** K2902

Instrument id number: **Method:** **Run number:** LB102904

Start date: 05/21/2019 **End date:** 05/21/2019

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1133	Cd,Pb
S1	S1	1	1137	Cd,Pb
S2	S2	1	1142	,
S3	S3	1	1146	Cd,Pb
S4	S4	1	1150	Cd,Pb
S5	S5	1	1154	Cd,Pb
ICV01	ICV01	1	1159	Cd,Pb
LLICV01	LLICV01	1	1203	Cd,Pb
ICB01	ICB01	1	1207	Cd,Pb
CRI01	CRI01	1	1212	Cd,Pb
ICSA01	ICSA01	1	1216	Cd,Pb
ICSAB01	ICSAB01	1	1221	Cd,Pb
CCV01	CCV01	1	1225	Cd,Pb
LLCCV01	LLCCV01	1	1237	Cd,Pb
CCB01	CCB01	1	1241	Cd,Pb
PB119881BL	PB119881BL	1	1246	Cd,Pb
PB119881BS	PB119881BS	1	1250	Cd,Pb
CCV02	CCV02	1	1342	Cd,Pb
CCB02	CCB02	1	1346	Cd,Pb
CCV03	CCV03	1	1435	Cd,Pb
CCB03	CCB03	1	1444	Cd,Pb
K2902-02	FM-EA-3MW01-051519	1	1511	Cd
K2902-02DUP	FM-EA-3MW01-051519DUP	1	1516	Cd,Pb
K2902-02L	FM-EA-3MW01-051519L	5	1520	Cd,Pb
K2902-03	FM-EA-3MW01-051519MS	1	1524	Cd,Pb
K2902-04	FM-EA-3MW01-051519MSD	1	1551	Cd,Pb
CCV04	CCV04	1	1559	Cd,Pb
CCB04	CCB04	1	1604	Cd,Pb
CCV05	CCV05	1	1704	Cd,Pb
CCB05	CCB05	1	1709	Cd,Pb
CCV06	CCV06	1	1758	Cd,Pb
CCB06	CCB06	1	1802	Cd,Pb
K2902-05	DUP-01	1	1815	Cd
K2902-09	DUP-02	1	1829	Pb
K2902-10	FM-EA-RB01-051519	1	1833	Cd,Pb
CCV07	CCV07	1	1900	Cd,Pb
CCB07	CCB07	1	1904	Cd,Pb
CCV08	CCV08	1	1953	Cd,Pb
CCB08	CCB08	1	1957	Cd,Pb

metals
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ANALYSIS RUN LOG

Client: Watermark **Contract:** WATE05

Lab code: CHEM **Case no.:** K2902 **Sas no.:** K2902 **Sdg no.:** K2902

Instrument id number: **Method:** **Run number:** LB102957

Start date: 05/23/2019 **End date:** 05/24/2019

Lab sample id.	Client Sample Id	d/f	Time	Parameter list
S0	S0	1	1153	Cd,Pb
S1	S1	1	1157	Cd,Pb
S2	S2	1	1202	,
S3	S3	1	1206	Cd,Pb
S4	S4	1	1210	Cd,Pb
S5	S5	1	1214	Cd,Pb
ICV01	ICV01	1	1224	Cd,Pb
LLICV01	LLICV01	1	1234	Cd,Pb
ICB01	ICB01	1	1240	Cd,Pb
CRI01	CRI01	1	1244	Cd,Pb
ICSA01	ICSA01	1	1249	Cd,Pb
ICSAB01	ICSAB01	1	1306	Cd,Pb
CCV01	CCV01	1	1310	Cd,Pb
LLCCV01	LLCCV01	1	1314	Cd,Pb
CCB01	CCB01	1	1330	Cd,Pb
CCV02	CCV02	1	1444	Cd,Pb
CCB02	CCB02	1	1448	Cd,Pb
CCV03	CCV03	1	1536	Cd,Pb
CCB03	CCB03	1	1540	Cd,Pb
K2902-06	FM-EA-3MW06-051519	1	1544	Pb
K2902-07	FM-EA-3MW06-051519MS	1	1636	Cd,Pb
K2902-08	FM-EA-3MW06-051519MSD	1	1640	Cd,Pb
CCV04	CCV04	1	1656	Cd,Pb
CCB04	CCB04	1	1700	Cd,Pb
CCV05	CCV05	1	1750	Cd,Pb
CCB05	CCB05	1	1754	Cd,Pb
CCV06	CCV06	1	1843	Cd,Pb
CCB06	CCB06	1	1847	Cd,Pb
CCV07	CCV07	1	1937	Cd,Pb
CCB07	CCB07	1	1941	Cd,Pb
CCV08	CCV08	1	2029	Cd,Pb
CCB08	CCB08	1	2033	Cd,Pb
CCV09	CCV09	1	2122	Cd,Pb
CCB09	CCB09	1	2126	Cd,Pb
CCV10	CCV10	1	2216	Cd,Pb
CCB10	CCB10	1	2220	Cd,Pb
CCV11	CCV11	1	2309	Cd,Pb
CCB11	CCB11	1	2313	Cd,Pb
CCV12	CCV12	1	0003	Cd,Pb
CCB12	CCB12	1	0007	Cd,Pb
CCV13	CCV13	1	0038	Cd,Pb
CCB13	CCB13	1	0043	Cd,Pb

METAL PREPARATION & INSTRUMENT DATA

Metals

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Client: Watermark **SDG No.:** K2902

Contract: WATE05 **Lab Code:** CHEM **Case No.:** K2902 **SAS No.:** K2902

Instrument ID: P4 **Preparation Method:**

Analyte	Wave- length (nm)	MDL	LOD	LOQ/CRQL	Date:
LIQUID					
Method:	**6010D**				
Cadmium	226.50	0.173	1.5	3	
Lead	220.35	1.43	3.0	6	

Metals
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ICP INTERELEMENT CORRECTION FACTORS

Client: Watermark **SDG No.:** K2902

Contract: WATE05 **Lab Code:** CHEM **Case No.:** K2902 **SAS No.:** K2902

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: Al	Ca	Fe	Mg	Ag
Cadmium	226.502	0.0000000	0.0000000	0.0000840	0.0000000	0.0000000
Lead	220.353	-0.0001070	0.0000000	0.0000280	0.0000000	0.0000000

Metals
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ICP INTERELEMENT CORRECTION FACTORS

Client: Watermark **SDG No.:** K2902

Contract: WATE05 **Lab Code:** CHEM **Case No.:** K2902 **SAS No.:** K2902

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: As	Ba	Be	Cd	Co
Cadmium	226.502	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.353	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

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Metals
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ICP INTERELEMENT CORRECTION FACTORS

Client: Watermark **SDG No.:** K2902

Contract: WATE05 **Lab Code:** CHEM **Case No.:** K2902 **SAS No.:** K2902

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: Cr	Cu	K	Mn	Mo
Cadmium	226.502	0.0000000	0.0000000	0.0000000	0.0000000	-0.0000600
Lead	220.353	-0.0003060	0.0000000	0.0000000	0.0001250	-0.0013650

Metals
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ICP INTERELEMENT CORRECTION FACTORS

Client: Watermark **SDG No.:** K2902

Contract: WATE05 **Lab Code:** CHEM **Case No.:** K2902 **SAS No.:** K2902

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: Na	Ni	Pb	Sb	Se
Cadmium	226.502	0.0000000	-0.0000930	0.0000000	0.0000000	0.0000000
Lead	220.353	0.0000000	0.0002444	0.0000000	0.0000000	0.0000000

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Metals
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ICP INTERELEMENT CORRECTION FACTORS

Client: Watermark **SDG No.:** K2902

Contract: WATE05 **Lab Code:** CHEM **Case No.:** K2902 **SAS No.:** K2902

Instrument ID: **Date:**

Interelement Correction Factors (apparent ppb analyte/ppm interferent)

Analyte	Wave-Length (nm)	ICP Interelement Correction Factors For: Sn	Ti	Tl	V	Zn
Cadmium	226.502	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000
Lead	220.353	0.0000000	0.0000000	0.0000000	0.0000000	0.0000000

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LAB CHRONICLE

OrderID:	K2902	**OrderDate:**	5/16/2019 2:12:24 PM
Client:	Watermark	**Project:**	Camp Evans Area, Ft. Monmouth
Contact:	Olaf Westphalen	**Location:**	O41

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
K2902-02	**FM-EA-3MW01-051519**	**Water**			**05/15/19**			**05/16/19**
			Metals Group5	6010D		05/20/19	05/21/19	
K2902-05	**DUP-01**	**Water**			**05/15/19**			**05/16/19**
			Metals Group5	6010D		05/20/19	05/21/19	
K2902-06	**FM-EA-3MW06-051519**	**Water**			**05/15/19**			**05/16/19**
			Metals Group4	6010D		05/20/19	05/23/19	
K2902-09	**DUP-02**	**Water**			**05/15/19**			**05/16/19**
			Metals Group4	6010D		05/20/19	05/21/19	
K2902-10	**FM-EA-RB01-051519**	**Water**			**05/15/19**			**05/16/19**
			Metals Group3	6010D		05/20/19	05/21/19	

METAL PREPARATION & ANALYICAL SUMMARY

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Metals
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SAMPLE PREPARATION SUMMARY

Client: Watermark **SDG No.:** K2902

Contract: WATE05 **Lab Code:** CHEM **Method:**

Case No.: K2902 **SAS No.:** K2902

Sample ID	Client ID	Sample Type	Matrix	Prep Date	Initial Sample Size(mL)	Final Sample Volume (mL)	Percent Solids
Batch Number:	**PB119881**						
K2902-02	FM-EA-3MW01-051519	SAM	WATER	05/20/2019	50.0	25.0	
K2902-02DUP	FM-EA-3MW01-051519DUP	DUP	WATER	05/20/2019	50.0	25.0	
K2902-03	FM-EA-3MW01-051519MS	MS	WATER	05/20/2019	50.0	25.0	
K2902-04	FM-EA-3MW01-051519MSD	MSD	WATER	05/20/2019	50.0	25.0	
K2902-05	DUP-01	SAM	WATER	05/20/2019	50.0	25.0	
K2902-06	FM-EA-3MW06-051519	SAM	WATER	05/20/2019	50.0	25.0	
K2902-07	FM-EA-3MW06-051519MS	MS	WATER	05/20/2019	50.0	25.0	
K2902-08	FM-EA-3MW06-051519MSD	MSD	WATER	05/20/2019	50.0	25.0	
K2902-09	DUP-02	SAM	WATER	05/20/2019	50.0	25.0	
K2902-10	FM-EA-RB01-051519	SAM	WATER	05/20/2019	50.0	25.0	
PB119881BL	PB119881BL	MB	WATER	05/20/2019	50.0	25.0	
PB119881BS	PB119881BS	LCS	WATER	05/20/2019	50.0	25.0	

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Instrument ID: P4

Daily Analysis Runlog For Sequence/QCBatch ID # LB102904

Review By	Bin	Review On	5/22/2019 9:56:02 AM
Supervise By	Jaswal	Supervise On	5/22/2019 11:38:52 AM

STD. NAME	STD REF.#
ICAL Standard	MP52052,MP52028,MP52029,MP52030,MP52031,MP52034
ICV Standard	MP52027,MP52034
CCV Standard	MP52032
ICSA Standard	MP52025,MP52026
CRI Standard	
Chk Standard	MP52023,MP52024,MP52035,MP52036

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	05/21/19 11:33		Bin He	OK
2	S1	S1	CAL2	05/21/19 11:37		Bin He	OK
3	S2	S2	CAL3	05/21/19 11:42		Bin He	OK
4	S3	S3	CAL4	05/21/19 11:46		Bin He	OK
5	S4	S4	CAL5	05/21/19 11:50		Bin He	OK
6	S5	S5	CAL6	05/21/19 11:54		Bin He	OK
7	ICV01	ICV01	ICV	05/21/19 11:59	fail for Cu, Zn(2007)	Bin He	OK
8	LLICV01	LLICV01	LLICV	05/21/19 12:03		Bin He	OK
9	ICB01	ICB01	ICB	05/21/19 12:07		Bin He	OK
10	CRI01	CRI01	CRDL	05/21/19 12:12		Bin He	OK
11	ICSA01	ICSA01	ICSA	05/21/19 12:16		Bin He	OK
12	ICSAB01	ICSAB01	ICSAB	05/21/19 12:21		Bin He	OK
13	CCV01	CCV01	CCV	05/21/19 12:25		Bin He	OK
14	LLCCV01	LLCCV01	LLCCV	05/21/19 12:37		Bin He	OK
15	CCB01	CCB01	CCB	05/21/19 12:41		Bin He	OK
16	PB119881BL	PB119881BL	MB	05/21/19 12:46		Bin He	OK
17	PB119881BS	PB119881BS	LCS	05/21/19 12:50		Bin He	OK
18	PB119907BL	PB119907BL	MB	05/21/19 12:59		Bin He	OK
19	PB119900BL	PB119900BL	MB	05/21/19 13:08		Bin He	OK
20	PB119894BL	PB119894BL	MB	05/21/19 13:17		Bin He	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QCBatch ID # LB102904

Review By	Bin	Review On	5/22/2019 9:56:02 AM
Supervise By	Jaswal	Supervise On	5/22/2019 11:38:52 AM

STD. NAME	STD REF.#
ICAL Standard	MP52052,MP52028,MP52029,MP52030,MP52031,MP52034
ICV Standard	MP52027,MP52034
CCV Standard	MP52032
ICSA Standard	MP52025,MP52026
CRI Standard	
Chk Standard	MP52023,MP52024,MP52035,MP52036

21	PB119894BS	PB119894BS	LCS	05/21/19 13:21		Bin He	OK
22	K2541-04	CHRT-26835	SAM	05/21/19 13:25	sam missing on login	Bin He	Not Ok
23	PB119907BS	PB119907BS	LCS	05/21/19 13:30		Bin He	OK
24	PB119900BS	PB119900BS	LCS	05/21/19 13:34		Bin He	OK
25	K2866-03	RO-COMP-1	SAM	05/21/19 13:38		Bin He	OK
26	CCV02	CCV02	CCV	05/21/19 13:42		Bin He	OK
27	CCB02	CCB02	CCB	05/21/19 13:46		Bin He	OK
28	LR CHECK 1	LR CHECK 1	SAM	05/21/19 13:51		Bin He	OK
29	LR CHECK 2	LR CHECK 2	SAM	05/21/19 13:56		Bin He	OK
30	K2935-04	PURGE-WATER-MUD	SAM	05/21/19 14:00		Bin He	OK
31	K2951-03	TP-12-S	SAM	05/21/19 14:05		Bin He	OK
32	K2951-03DUP	TP-12-SDUP	DUP	05/21/19 14:09		Bin He	OK
33	K2951-03L	TP-12-SL	SD	05/21/19 14:13		Bin He	OK
34	K2951-03MS	TP-12-SMS	MS	05/21/19 14:18		Bin He	OK
35	K2951-03MSD	TP-12-SMSD	MSD	05/21/19 14:22		Bin He	OK
36	K2951-03A	TP-12-SA	PS	05/21/19 14:26	0.1 ml of LFS-1(M4312) and LF	Bin He	OK
37	K2951-09	TP-14-S	SAM	05/21/19 14:30		Bin He	OK
38	CCV03	CCV03	CCV	05/21/19 14:35		Bin He	OK
39	CCB03	CCB03	CCB	05/21/19 14:44		Bin He	OK
40	PB119925BS	PB119925BS	LCS	05/21/19 15:07		Bin He	OK
41	K2902-02	FM-EA-3MW01-0515	SAM	05/21/19 15:11		Bin He	OK
42	K2902-02DUP	FM-EA-3MW01-0515	DUP	05/21/19 15:16		Bin He	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QCBatch ID # LB102904

Review By	Bin	Review On	5/22/2019 9:56:02 AM
Supervise By	Jaswal	Supervise On	5/22/2019 11:38:52 AM

STD. NAME	STD REF.#
ICAL Standard	MP52052,MP52028,MP52029,MP52030,MP52031,MP52034
ICV Standard	MP52027,MP52034
CCV Standard	MP52032
ICSA Standard	MP52025,MP52026
CRI Standard	
Chk Standard	MP52023,MP52024,MP52035,MP52036

43	K2902-02L	FM-EA-3MW01-0515	SD	05/21/19 15:20		Bin He	OK
44	K2902-03	FM-EA-3MW01-0515	MS	05/21/19 15:24		Bin He	OK
45	K2902-06	FM-EA-3MW06-0515	SAM	05/21/19 15:28	ms/msd fail for 50% parameters	Bin He	Not Ok
46	K2902-07	FM-EA-3MW06-0515	MS	05/21/19 15:33	ms/msd fail for 50% parameters	Bin He	Not Ok
47	PB119946BL	PB119946BL	MB	05/21/19 15:47		Bin He	OK
48	K2902-04	FM-EA-3MW01-0515	MSD	05/21/19 15:51		Bin He	OK
49	K2902-02A	FM-EA-3MW01-0515	PS	05/21/19 15:55	0.1 ml of LFS-1(M4312) and LF	Bin He	OK
50	CCV04	CCV04	CCV	05/21/19 15:59		Bin He	OK
51	CCB04	CCB04	CCB	05/21/19 16:04		Bin He	OK
52	K2902-08	FM-EA-3MW06-0515	MSD	05/21/19 16:08	ms/msd fail for 50% parameters	Bin He	Not Ok
53	K2902-06A	FM-EA-3MW06-0515	PS	05/21/19 16:12	ms/msd fail for 50% parameters	Bin He	Not Ok
54	PB119927BL	PB119927BL	MB	05/21/19 16:16		Bin He	OK
55	PB119927TB	PB119927TB	MB	05/21/19 16:25		Bin He	OK
56	PB119928BL	PB119928BL	MB	05/21/19 16:30		Bin He	OK
57	PB119928BS	PB119928BS	LCS	05/21/19 16:34		Bin He	OK
58	PB119928TB	PB119928TB	MB	05/21/19 16:38		Bin He	OK
59	PB119925BL	PB119925BL	MB	05/21/19 16:43		Bin He	OK
60	PB119927BS	PB119927BS	LCS	05/21/19 16:47		Bin He	OK
61	PB119946BS	PB119946BS	LCS	05/21/19 16:57		Bin He	OK
62	CCV05	CCV05	CCV	05/21/19 17:04		Bin He	OK
63	CCB05	CCB05	CCB	05/21/19 17:09		Bin He	OK
64	K2951-13	TP-15-S	SAM	05/21/19 17:13	Zn high	Bin He	Dilution

Instrument ID: P4

Daily Analysis Runlog For Sequence/QCBatch ID # LB102904

Review By	Bin	Review On	5/22/2019 9:56:02 AM
Supervise By	Jaswal	Supervise On	5/22/2019 11:38:52 AM

STD. NAME	STD REF.#
ICAL Standard	MP52052,MP52028,MP52029,MP52030,MP52031,MP52034
ICV Standard	MP52027,MP52034
CCV Standard	MP52032
ICSA Standard	MP52025,MP52026
CRI Standard	
Chk Standard	MP52023,MP52024,MP52035,MP52036

65	K2954-01	20190405-COMP-CH-	SAM	05/21/19 17:18		Bin He	OK
66	K2954-02	20190406-COMP-CH-	SAM	05/21/19 17:22		Bin He	OK
67	K2954-03	20190332A-GLP-1	SAM	05/21/19 17:26		Bin He	OK
68	K2954-04	20190333A-GLP-2	SAM	05/21/19 17:31		Bin He	OK
69	K2954-05	20190334A-GLP-3	SAM	05/21/19 17:35		Bin He	OK
70	K2962-01	CONCRETE-BUS	SAM	05/21/19 17:40		Bin He	OK
71	K2962-02	DB-2	SAM	05/21/19 17:44		Bin He	OK
72	K2962-06	DB-3	SAM	05/21/19 17:49		Bin He	OK
73	K2962-10	DB-4	SAM	05/21/19 17:53	bed injection	Bin He	Not Ok
74	CCV06	CCV06	CCV	05/21/19 17:58		Bin He	OK
75	CCB06	CCB06	CCB	05/21/19 18:02		Bin He	OK
76	K2895-01	MH-6	SAM	05/21/19 18:07		Bin He	OK
77	K2896-09	TP-20	SAM	05/21/19 18:11		Bin He	OK
78	K2902-05	DUP-01	SAM	05/21/19 18:15		Bin He	OK
79	K2902-09	DUP-02	SAM	05/21/19 18:29		Bin He	OK
80	K2902-10	FM-EA-RB01-051519	SAM	05/21/19 18:33		Bin He	OK
81	K2906-05	FEQC-FB-051619	SAM	05/21/19 18:38		Bin He	OK
82	K2908-01	DEWATERING-TREA	SAM	05/21/19 18:42		Bin He	OK
83	K2909-01	20190350-FIELD-BLA	SAM	05/21/19 18:47		Bin He	OK
84	K2913-05	TP-17	SAM	05/21/19 18:51		Bin He	OK
85	K2951-15	TP-14	SAM	05/21/19 18:55		Bin He	OK
86	CCV07	CCV07	CCV	05/21/19 19:00		Bin He	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QCBatch ID # LB102904

Review By	Bin	Review On	5/22/2019 9:56:02 AM
Supervise By	Jaswal	Supervise On	5/22/2019 11:38:52 AM

STD. NAME	STD REF.#
ICAL Standard	MP52052,MP52028,MP52029,MP52030,MP52031,MP52034
ICV Standard	MP52027,MP52034
CCV Standard	MP52032
ICSA Standard	MP52025,MP52026
CRI Standard	
Chk Standard	MP52023,MP52024,MP52035,MP52036

87	CCB07	CCB07	CCB	05/21/19 19:04		Bin He	OK
88	K2951-15DUP	TP-14DUP	DUP	05/21/19 19:08		Bin He	OK
89	K2951-15L	TP-14L	SD	05/21/19 19:13		Bin He	OK
90	K2951-15MS	TP-14MS	MS	05/21/19 19:17		Bin He	OK
91	K2951-15MSD	TP-14MSD	MSD	05/21/19 19:21		Bin He	OK
92	K2951-15A	TP-14A	PS	05/21/19 19:26	0.1 ml of LFS-1(M4312) and LF	Bin He	OK
93	K2954-06	20190407-FIELD-BLA	SAM	05/21/19 19:30		Bin He	OK
94	K2956-01	FM5210	SAM	05/21/19 19:34		Bin He	OK
95	K2964-01	COMP-1	SAM	05/21/19 19:39		Bin He	OK
96	K2964-02	COMP-2	SAM	05/21/19 19:44		Bin He	OK
97	K2964-03	COMP-3	SAM	05/21/19 19:48		Bin He	OK
98	CCV08	CCV08	CCV	05/21/19 19:53		Bin He	OK
99	CCB08	CCB08	CCB	05/21/19 19:57		Bin He	OK

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Instrument ID: P4

Daily Analysis Runlog For Sequence/QCBatch ID # LB102957

Review By	bin	Review On	5/24/2019 10:16:49 AM
Supervise By	Jaswal	Supervise On	5/24/2019 12:22:43 PM

STD. NAME	STD REF.#
ICAL Standard	MP52052,MP52028,MP52029,MP52030,MP52031,MP52034
ICV Standard	MP52027,MP52034
CCV Standard	MP52032
ICSA Standard	MP52025,MP52026
CRI Standard	
Chk Standard	MP52023,MP52024,MP52035,MP52036

Sr#	SampleId	ClientID	QcType	Date	Comment	Operator	Status
1	S0	S0	CAL1	05/23/19 11:53		Bin He	OK
2	S1	S1	CAL2	05/23/19 11:57		Bin He	OK
3	S2	S2	CAL3	05/23/19 12:02		Bin He	OK
4	S3	S3	CAL4	05/23/19 12:06		Bin He	OK
5	S4	S4	CAL5	05/23/19 12:10		Bin He	OK
6	S5	S5	CAL6	05/23/19 12:14		Bin He	OK
7	ICV01	ICV01	ICV	05/23/19 12:24		Bin He	OK
8	LLICV01	LLICV01	LLICV	05/23/19 12:34		Bin He	OK
9	ICB01	ICB01	ICB	05/23/19 12:40		Bin He	OK
10	CRI01	CRI01	CRDL	05/23/19 12:44		Bin He	OK
11	ICSA01	ICSA01	ICSA	05/23/19 12:49		Bin He	OK
12	ICSAB01	ICSAB01	ICSAB	05/23/19 13:06		Bin He	OK
13	CCV01	CCV01	CCV	05/23/19 13:10		Bin He	OK
14	LLCCV01	LLCCV01	LLCCV	05/23/19 13:14		Bin He	OK
15	CCB01	CCB01	CCB	05/23/19 13:30		Bin He	OK
16	LLOQ-WATER	LLOQ-WATER	LOQ	05/23/19 13:43		Bin He	OK
17	PBS	PBS	MB	05/23/19 13:47		Bin He	OK
18	LLOQ-SOIL	LLOQ-SOIL	LOQ	05/23/19 13:56		Bin He	OK
19	PB119428BL	PB119428BL	MB	05/23/19 14:00		Bin He	OK
20	PB119428BS	PB119428BS	LCS	05/23/19 14:04		Bin He	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QCBatch ID # LB102957

Review By	bin	Review On	5/24/2019 10:16:49 AM
Supervise By	Jaswal	Supervise On	5/24/2019 12:22:43 PM

STD. NAME	STD REF.#
ICAL Standard	MP52052,MP52028,MP52029,MP52030,MP52031,MP52034
ICV Standard	MP52027,MP52034
CCV Standard	MP52032
ICSA Standard	MP52025,MP52026
CRI Standard	
Chk Standard	MP52023,MP52024,MP52035,MP52036

21	LCSW	LCSW	LCS	05/23/19 14:13		Bin He	OK
22	PBW	PBW	MB	05/23/19 14:18		Bin He	OK
23	K2551-11	PT-MET-SOIL	SAM	05/23/19 14:26	Be, Cr, Co, Si high	Bin He	Dilution
24	LCSS	LCSS	LCS	05/23/19 14:33		Bin He	OK
25	K2551-11DL	PT-MET-SOILDL	SAM	05/23/19 14:39	2X for Be, Cr, Co, Si but still Be	Bin He	Dilution
26	CCV02	CCV02	CCV	05/23/19 14:44		Bin He	OK
27	CCB02	CCB02	CCB	05/23/19 14:48		Bin He	OK
28	K2551-11DL2	PT-MET-SOILDL2	SAM	05/23/19 14:52	5X for Be, Si but still Be high	Bin He	Dilution
29	K2551-11DL3	PT-MET-SOILDL3	SAM	05/23/19 14:56	10X for Be	Bin He	Confirms
30	PB119987BL	PB119987BL	MB	05/23/19 15:01		Bin He	OK
31	PB119987BS	PB119987BS	LCS	05/23/19 15:05		Bin He	OK
32	PB119988BL	PB119988BL	MB	05/23/19 15:09		Bin He	OK
33	PB119988BS	PB119988BS	LCS	05/23/19 15:14		Bin He	OK
34	K2962-10	DB-4	SAM	05/23/19 15:18		Bin He	OK
35	K2964-04	51030	SAM	05/23/19 15:22		Bin He	OK
36	K2964-05	13818	SAM	05/23/19 15:27		Bin He	OK
37	K2966-08	FB-20190520	SAM	05/23/19 15:31		Bin He	OK
38	CCV03	CCV03	CCV	05/23/19 15:36		Bin He	OK
39	CCB03	CCB03	CCB	05/23/19 15:40		Bin He	OK
40	K2902-06	FM-EA-3MW06-0515	SAM	05/23/19 15:44		Bin He	OK
41	LR CHECK 1	LR CHECK 1	HIGH STD	05/23/19 16:01		Bin He	OK
42	LR CHRCK 2	LR CHRCK 2	HIGH STD	05/23/19 16:06		Bin He	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QCBatch ID # LB102957

Review By	bin	Review On	5/24/2019 10:16:49 AM
Supervise By	Jaswal	Supervise On	5/24/2019 12:22:43 PM

STD. NAME	STD REF.#
ICAL Standard	MP52052,MP52028,MP52029,MP52030,MP52031,MP52034
ICV Standard	MP52027,MP52034
CCV Standard	MP52032
ICSA Standard	MP52025,MP52026
CRI Standard	
Chk Standard	MP52023,MP52024,MP52035,MP52036

43	PB120002BS	PB120002BS	LCS	05/23/19 16:11		Bin He	OK
44	K2647-11	SU-03-052219-A	SAM	05/23/19 16:29		Bin He	OK
45	K2902-07	FM-EA-3MW06-0515	MS	05/23/19 16:36		Bin He	OK
46	K2902-08	FM-EA-3MW06-0515	MSD	05/23/19 16:40		Bin He	OK
47	PB120003BS	PB120003BS	LCS	05/23/19 16:44		Bin He	OK
48	PB120004BS	PB120004BS	LCS	05/23/19 16:48		Bin He	OK
49	K2902-06A	FM-EA-3MW06-0515	PS	05/23/19 16:52	0.1 ml of LFS-1(M4312) and LF	Bin He	OK
50	CCV04	CCV04	CCV	05/23/19 16:56		Bin He	OK
51	CCB04	CCB04	CCB	05/23/19 17:00		Bin He	OK
52	PB120002BL	PB120002BL	MB	05/23/19 17:05		Bin He	OK
53	PB120004BL	PB120004BL	MB	05/23/19 17:09		Bin He	OK
54	PB120004TB	PB120004TB	MB	05/23/19 17:14		Bin He	OK
55	PB120003BL	PB120003BL	MB	05/23/19 17:18		Bin He	OK
56	PB120003TB	PB120003TB	MB	05/23/19 17:23		Bin He	OK
57	K2647-13	SU-03-052219-B	SAM	05/23/19 17:27		Bin He	OK
58	K2994-03	TP-8-S	SAM	05/23/19 17:32	Cr high	Bin He	Dilution
59	K2994-07	TP-8-D	SAM	05/23/19 17:36		Bin He	OK
60	K2994-15	TP-6-S	SAM	05/23/19 17:41		Bin He	OK
61	K2998-01	EWING-SP	SAM	05/23/19 17:45		Bin He	OK
62	CCV05	CCV05	CCV	05/23/19 17:50		Bin He	OK
63	CCB05	CCB05	CCB	05/23/19 17:54		Bin He	OK
64	K3002-01	COMP-Z1-20190418	SAM	05/23/19 17:58		Bin He	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QCBatch ID # LB102957

Review By	bin	Review On	5/24/2019 10:16:49 AM
Supervise By	Jaswal	Supervise On	5/24/2019 12:22:43 PM

STD. NAME	STD REF.#
ICAL Standard	MP52052,MP52028,MP52029,MP52030,MP52031,MP52034
ICV Standard	MP52027,MP52034
CCV Standard	MP52032
ICSA Standard	MP52025,MP52026
CRI Standard	
Chk Standard	MP52023,MP52024,MP52035,MP52036

65	K3002-02	COMP-Z2-20190419	SAM	05/23/19 18:03		Bin He	OK
66	K3002-03	COMP-Z3-20190420	SAM	05/23/19 18:07		Bin He	OK
67	K3002-03DUP	COMP-Z3-20190420D	DUP	05/23/19 18:12		Bin He	OK
68	K3002-03L	COMP-Z3-20190420L	SD	05/23/19 18:16		Bin He	OK
69	K3002-03MS	COMP-Z3-20190420M	MS	05/23/19 18:21		Bin He	OK
70	K3002-03MSD	COMP-Z3-20190420M	MSD	05/23/19 18:25		Bin He	OK
71	K3002-03A	COMP-Z3-20190420A	PS	05/23/19 18:29	0.1 ml of LFS-1(M4312) and LF	Bin He	OK
72	K3008-01	COMP-19	SAM	05/23/19 18:34		Bin He	OK
73	K3008-03	COMP-20	SAM	05/23/19 18:38		Bin He	OK
74	CCV06	CCV06	CCV	05/23/19 18:43		Bin He	OK
75	CCB06	CCB06	CCB	05/23/19 18:47		Bin He	OK
76	K3008-05	COMP-21	SAM	05/23/19 18:52		Bin He	OK
77	K2993-16	COMP-1	SAM	05/23/19 18:56		Bin He	OK
78	K2993-17	COMP-2	SAM	05/23/19 19:01		Bin He	OK
79	K2993-18	COMP-3	SAM	05/23/19 19:05		Bin He	OK
80	K2993-18DUP	COMP-3DUP	DUP	05/23/19 19:10		Bin He	OK
81	K2993-18L	COMP-3L	SD	05/23/19 19:14		Bin He	OK
82	K2993-18MS	COMP-3MS	MS	05/23/19 19:19		Bin He	OK
83	K2993-18MSD	COMP-3MSD	MSD	05/23/19 19:23		Bin He	OK
84	K2993-18A	COMP-3A	PS	05/23/19 19:28	0.1 ml of LFS-1(M4312) and LF	Bin He	OK
85	K3004-01	CHRT-26835	SAM	05/23/19 19:32		Bin He	OK
86	CCV07	CCV07	CCV	05/23/19 19:37		Bin He	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QCBatch ID # LB102957

Review By	bin	Review On	5/24/2019 10:16:49 AM
Supervise By	Jaswal	Supervise On	5/24/2019 12:22:43 PM

STD. NAME	STD REF.#
ICAL Standard	MP52052,MP52028,MP52029,MP52030,MP52031,MP52034
ICV Standard	MP52027,MP52034
CCV Standard	MP52032
ICSA Standard	MP52025,MP52026
CRI Standard	
Chk Standard	MP52023,MP52024,MP52035,MP52036

87	CCB07	CCB07	CCB	05/23/19 19:41		Bin He	OK
88	K2970-17	TP-10	SAM	05/23/19 19:45	Na high	Bin He	Dilution
89	K2994-17	TP-7	SAM	05/23/19 19:50		Bin He	OK
90	K3005-01	MW-1	SAM	05/23/19 19:54		Bin He	OK
91	K3005-01DUP	MW-1DUP	DUP	05/23/19 19:59		Bin He	OK
92	K3005-01L	MW-1L	SD	05/23/19 20:03		Bin He	OK
93	K3005-01MS	MW-1MS	MS	05/23/19 20:08		Bin He	OK
94	K3005-01MSD	MW-1MSD	MSD	05/23/19 20:12		Bin He	OK
95	K3005-01A	MW-1A	PS	05/23/19 20:16	0.1 ml of LFS-1(M4312) and LF	Bin He	OK
96	K3005-02	FB052119	SAM	05/23/19 20:20		Bin He	OK
97	K2968-01	EFFL-5B	SAM	05/23/19 20:25		Bin He	OK
98	CCV08	CCV08	CCV	05/23/19 20:29		Bin He	OK
99	CCB08	CCB08	CCB	05/23/19 20:33		Bin He	OK
100	K2647-12	SU-03-052219-A	SAM	05/23/19 20:38		Bin He	OK
101	K2647-12DUP	SU-03-052219-ADUP	DUP	05/23/19 20:42		Bin He	OK
102	K2647-12L	SU-03-052219-AL	SD	05/23/19 20:47		Bin He	OK
103	K2647-12MS	SU-03-052219-AMS	MS	05/23/19 20:51		Bin He	OK
104	K2647-12MSD	SU-03-052219-AMSD	MSD	05/23/19 20:56		Bin He	OK
105	K2647-12A	SU-03-052219-AA	PS	05/23/19 21:00	0.1 ml of LFS-1(M4312) and LF	Bin He	OK
106	K2647-14	SU-03-052219-B	SAM	05/23/19 21:04		Bin He	OK
107	K2994-04	TP-8-S	SAM	05/23/19 21:09		Bin He	OK
108	K2994-08	TP-8-D	SAM	05/23/19 21:13		Bin He	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QCBatch ID # LB102957

Review By	bin	Review On	5/24/2019 10:16:49 AM
Supervise By	Jaswal	Supervise On	5/24/2019 12:22:43 PM

STD. NAME	STD REF.#
ICAL Standard	MP52052,MP52028,MP52029,MP52030,MP52031,MP52034
ICV Standard	MP52027,MP52034
CCV Standard	MP52032
ICSA Standard	MP52025,MP52026
CRI Standard	
Chk Standard	MP52023,MP52024,MP52035,MP52036

109	K2994-16	TP-6-S	SAM	05/23/19 21:18		Bin He	OK
110	CCV09	CCV09	CCV	05/23/19 21:22		Bin He	OK
111	CCB09	CCB09	CCB	05/23/19 21:26		Bin He	OK
112	K2997-01	DPC-81626-FB-01	SAM	05/23/19 21:31		Bin He	OK
113	K2997-02	DPC-81626-FB-02	SAM	05/23/19 21:35		Bin He	OK
114	K2997-03	DPC-81626-FB-03	SAM	05/23/19 21:40		Bin He	OK
115	K2997-04	DPC-81626-FB-04	SAM	05/23/19 21:44		Bin He	OK
116	K2997-05	DPC-81626-FB-05	SAM	05/23/19 21:49		Bin He	OK
117	K3008-07	COMP-19	SAM	05/23/19 21:54		Bin He	OK
118	K3008-08	COMP-20	SAM	05/23/19 21:58		Bin He	OK
119	K3008-09	COMP-21	SAM	05/23/19 22:03		Bin He	OK
120	K2970-18	TP-10	SAM	05/23/19 22:07		Bin He	OK
121	K2970-18DUP	TP-10DUP	DUP	05/23/19 22:12		Bin He	OK
122	CCV10	CCV10	CCV	05/23/19 22:16		Bin He	OK
123	CCB10	CCB10	CCB	05/23/19 22:20		Bin He	OK
124	K2970-18L	TP-10L	SD	05/23/19 22:25		Bin He	OK
125	K2970-18MS	TP-10MS	MS	05/23/19 22:29		Bin He	OK
126	K2970-18MSD	TP-10MSD	MSD	05/23/19 22:33		Bin He	OK
127	K2970-18A	TP-10A	PS	05/23/19 22:38	0.1 ml of LFS-1(M4312) and LF	Bin He	OK
128	K2994-18	TP-7	SAM	05/23/19 22:42		Bin He	OK
129	K2993-01	SB-1_2.0-2.5	SAM	05/23/19 22:46		Bin He	OK
130	K2993-02	SB-2_1.5-2.0	SAM	05/23/19 22:51		Bin He	OK

Instrument ID: P4

Daily Analysis Runlog For Sequence/QCBatch ID # LB102957

Review By	bin	Review On	5/24/2019 10:16:49 AM
Supervise By	Jaswal	Supervise On	5/24/2019 12:22:43 PM

STD. NAME	STD REF.#
ICAL Standard	MP52052,MP52028,MP52029,MP52030,MP52031,MP52034
ICV Standard	MP52027,MP52034
CCV Standard	MP52032
ICSA Standard	MP52025,MP52026
CRI Standard	
Chk Standard	MP52023,MP52024,MP52035,MP52036

131	K2993-03	SB-3_1.5-2.0	SAM	05/23/19 22:55		Bin He	OK
132	K2993-04	SB-4_1.5-2.0	SAM	05/23/19 23:00		Bin He	OK
133	K2993-05	SB-5_1.5-2.0	SAM	05/23/19 23:05		Bin He	OK
134	CCV11	CCV11	CCV	05/23/19 23:09		Bin He	OK
135	CCB11	CCB11	CCB	05/23/19 23:13		Bin He	OK
136	K2993-06	SB-6_1.5-2.0	SAM	05/23/19 23:18		Bin He	OK
137	K2993-07	SB-7_1.0-1.5	SAM	05/23/19 23:22		Bin He	OK
138	K2993-08	SB-8_2.0-2.5	SAM	05/23/19 23:27		Bin He	OK
139	K2993-09	SB-9_1.0-1.5	SAM	05/23/19 23:31		Bin He	OK
140	K2993-10	SB-10_1.5-2.0	SAM	05/23/19 23:36		Bin He	OK
141	K2993-11	SB-11_2.0-2.5	SAM	05/23/19 23:40		Bin He	OK
142	K2993-12	SB-12_1.0-1.5	SAM	05/23/19 23:45		Bin He	OK
143	K2993-13	SB-13_2.0-2.5	SAM	05/23/19 23:50		Bin He	OK
144	K2993-14	SB-14_2.0-2.5	SAM	05/23/19 23:54		Bin He	OK
145	K2993-15	SB-15_1.5-2.0	SAM	05/23/19 23:59		Bin He	OK
146	CCV12	CCV12	CCV	05/24/19 00:03		Bin He	OK
147	CCB12	CCB12	CCB	05/24/19 00:07		Bin He	OK
148	K2753-03DL	CONCRETE-3DL	SAM	05/24/19 00:12	10X for Ca	Bin He	Confirms
149	K2753-04DL	CONCRETE-4DL	SAM	05/24/19 00:16	10X for Ca	Bin He	Confirms
150	K2970-15DL	TP-9-SDL	SAM	05/24/19 00:21	10X for Cr	Bin He	Confirms
151	K2983-03DL	OILY-DEBRISDL	SAM	05/24/19 00:25	Not Required	Bin He	Not Ok
152	K2985-02DL	05-21-19-BDL	SAM	05/24/19 00:30	10X for Zn	Bin He	Confirms

Instrument ID: P4

Daily Analysis Runlog For Sequence/QCBatch ID # LB102957

Review By	bin	Review On	5/24/2019 10:16:49 AM
Supervise By	Jaswal	Supervise On	5/24/2019 12:22:43 PM

STD. NAME	STD REF.#
ICAL Standard	MP52052,MP52028,MP52029,MP52030,MP52031,MP52034
ICV Standard	MP52027,MP52034
CCV Standard	MP52032
ICSA Standard	MP52025,MP52026
CRI Standard	
Chk Standard	MP52023,MP52024,MP52035,MP52036

153	K2985-03DL	05-21-19-CDL	SAM	05/24/19 00:34	10X for Zn	Bin He	Confirms
154	CCV13	CCV13	CCV	05/24/19 00:38		Bin He	OK
155	CCB13	CCB13	CCB	05/24/19 00:43		Bin He	OK

SHIPPING DOCUMENTS

CHEMTECH
CHAIN OF CUSTODY RECORD

284 Sheffield Street, Mountainside, NJ 07092
(908) 789-8900 Fax (908) 789-8922
www.chemtech.net

Chemtech Project Number: K2902
COC Number: 2023126

CLIENT INFORMATION

Report to be sent to:
COMPANY: Watermark
ADDRESS: 175 Cabot Street
CITY: Lowell STATE: MA ZIP: 01854
ATTENTION: Olaf Westphalen
PHONE: 978-452-9696 FAX: 978-453-9988

PROJECT INFORMATION

PROJECT NAME: Fort Monmouth - Evans Area
PROJECT #: 10464-12 LOCATION: Wall Twp, NJ
PROJECT MANAGER: Olaf Westphalen
E-MAIL: olaf.westphalen@watermarkenv.com
PHONE: 978-452-9696 FAX: 978-453-9988

BILLING INFORMATION

BILL TO: Same as Client info PO# ~~Mid-55~~ SMC
ADDRESS:
CITY: STATE: ZIP:
ATTENTION:
PHONE:

DATA TURNAROUND INFORMATION

FAX (RUSH) 10 Business DAYS*
HARDCOPY (DATA PACKAGE): DAYS*
EDD: DAYS*
*TO BE APPROVED BY CHEMTECH
STANDARD HARDCOPY TURNAROUND TIME IS 10 BUSINESS DAYS

DATA DELIVERABLE INFORMATION

☐ Level 1 (Results Only)
☐ Level 2 (Results + QC)
☐ Level 3 (Results + QC + Raw Data)
☒ Level 4 (QC + Full Raw Data)
☐ NJ Reduced ☐ US EPA CLP
☐ NYS ASP A ☐ NYS ASP B
☐ Other
☒ EDD FORMAT NJAC

ANALYSIS

1 VOCs + TICs
2 Cadmium
3 Lead
4 Cadmium / Lead
5
6
7
8
9

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	SAMPLE COLLECTION DATE	SAMPLE COLLECTION TIME	# of Bottles	PRESERVATIVES 1 A/E	2 B/E	3 B/E	4 B/E	5	6	7	8	9	COMMENTS
1.	FM-EA-3MW05-051519	GW		X	5/15/19	13:45	2	X									
2.	FM-EA-3MW01-051519	GW		X	5/15/19	14:00	8	X	X								(MS/MSD)
3.	DUP-01	GW		X	5/15/19	—	3	X	X								
4.	FM-EA-3MW06-051519	GW		X	5/15/19	16:10	2			X							(MS/MSD)
5.	DUP-02	GW		X	5/15/19	—	1			X							
6.	FM-EA-RB01-051519	AQ		X	5/15/19	16:30	3	X			X						
7.	FM-EA-3MW09-051619	GW		X	5/16/19	9:10	2	X									
8.	FM-EA-3MW08-051619	GW		X	5/16/19	9:20	2	X									
9.	FM-EA-RB02-051619	AQ		X	5/16/19	9:55	2	X									
10.	FM-EA-3MW07-051619	GW		X	5/16/19	10:55	2	X									

PRESERVATIVES: <—Specify Preservatives
A-HCl D-NaOH
B-HNO3 E-ICE
C-H2SO4 F-OTHER

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE PROSSESSION INCLUDING COURIER DELIVERY

	DATE/TIME		
RELINQUISHED BY SAMPLER 1.	5/16/19 12:30	RECEIVED BY 1.	Paul Gulak
RELINQUISHED BY 2.	DATE/TIME	RECEIVED BY 2.	
RELINQUISHED BY 3. Paul Gulak	DATE/TIME 16:10 5-16-19	RECEIVED FOR LAB BY 3.	SC

Conditions of bottles or coolers at receipt: ☐ COMPLIANT ☐ NON COMPLIANT ☐ COOLER TEMP 2.4°
Comments:

Page 1 of 2

CLIENT: ☐ Hand Delivered ☐ Other:
CHEMTECH: ☒ Picked Up

Shipment Complete ☒ YES ☐ NO

10/2018

WHITE - CHEMTECH COPY FOR RETURN TO CLIENT **YELLOW** - CHEMTECH COPY **PINK** - SAMPLER COPY

CHEMTECH
CHAIN OF CUSTODY RECORD

284 Sheffield Street, Mountainside, NJ 07092
(908) 789-8900 Fax (908) 789-8922
www.chemtech.net

Chemtech Project Number: K2902
COC Number: 2023125

CLIENT INFORMATION

Report to be sent to:
COMPANY: Watermark
ADDRESS: 175 Cabot Street
CITY: Lowell STATE: MA ZIP: 01854
ATTENTION: Olaf Westphalen
PHONE: 978-453-9696 FAX: 978-453-9988

PROJECT INFORMATION

PROJECT NAME: Fort Monmouth
PROJECT #: 10404-17 LOCATION: Wall Twp, NJ
PROJECT MANAGER: Olaf Westphalen
E-MAIL: olaf.westphalen@watermarkenv.com
PHONE: 978-453-9696 FAX: 978-453-9988

BILLING INFORMATION

BILL TO: Same as Client info PO#
ADDRESS:
CITY: STATE: ZIP:
ATTENTION:
PHONE:

DATA TURNAROUND INFORMATION

FAX (RUSH) 10 Business DAYS*
HARDCOPY (DATA PACKAGE): DAYS*
EDD: DAYS*
*TO BE APPROVED BY CHEMTECH
STANDARD HARDCOPY TURNAROUND TIME IS 10 BUSINESS DAYS

DATA DELIVERABLE INFORMATION

- ☐ Level 1 (Results Only)
- ☐ Level 2 (Results + QC)
- ☐ Level 3 (Results + QC + Raw Data)
- ☒ Level 4 (QC + Full Raw Data)
- ☐ NJ Reduced ☐ US EPA CLP
- ☐ NYS ASP A ☐ NYS ASP B
- ☐ Other
- ☒ EDD FORMAT NJ-EC

ANALYSIS

1 VOCs+TICs; 2 Cadmium; 3 Lead; 4 Cadmium+Lead; 5; 6; 7; 8; 9

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE COMP	SAMPLE TYPE GRAB	SAMPLE COLLECTION DATE	SAMPLE COLLECTION TIME	# of Bottles	PRESERVATIVES 1	2	3	4	5	6	7	8	9	COMMENTS
								A/E	B/E	B/E	B/E						<—Specify Preservatives
1.	Trip Blank	AQ		X	5/9/19	—	2	X									A-HCl D-NaOH
2.																	B-HNO3 E-ICE
3.																	C-H2SO4 F-OTHER
4.																	
5.																	
6.																	
7.																	
8.																	
9.																	
10.																	

5/16/19

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE PROSSESSION INCLUDING COURIER DELIVERY

	RELINQUISHED BY SAMPLER	DATE/TIME	RECEIVED BY
1.		5/16/19 12:30	Paul Gulak
2.	RELINQUISHED BY	DATE/TIME	RECEIVED BY
3.	RELINQUISHED BY Paul Gulak	DATE/TIME 16:10 5-16-19	RECEIVED FOR LAB BY SC

Conditions of bottles or coolers at receipt: ☐ COMPLIANT ☐ NON COMPLIANT ☐ COOLER TEMP 2.4°
Comments:

Page 2 of 2

CLIENT: ☐ Hand Delivered ☐ Other:
CHEMTECH: ☒ Picked Up

Shipment Complete ☒ YES ☐ NO

10/2018

WHITE - CHEMTECH COPY FOR RETURN TO CLIENT **YELLOW** - CHEMTECH COPY **PINK** - SAMPLER COPY

Laboratory Certification

Certified By	License No.
CAS EPA CLP Contract	EP-W-14-030
Connecticut	PH-0649
DOD ELAP (L-A-B)	L2219
Florida	E87935
Maine	2012025
Maryland	296
New Hampshire	255413
New Jersey	20012
New York	11376
Pennsylvania	68-00548
Soil Permit	P330-13-00380
Texas	T104704488-13-5

CHEMTECH

LOGIN REPORT/SAMPLE TRANSFER

Order ID :	K2902 WATE05	**Order Date :**	05/16/2019	**Project Mgr :**	
Client Name :	Watermark	**Project Name :**	Camp Evans Area, Ft. Moni	**Report Type :**	Level 4
Client Contact :	Olaf Westphalen	**Receive DateTime :**	5/16/2019 4:10:00 PM	**EDD Type :**	HAZ/EXCEL
Invoice Name :	Watermark	**Purchase Order :**		**Hard Copy Date :**	
Invoice Contact :	Olaf Westphalen	**Login Tech :**	ankit	**Date Signoff :**	

LAB ID	CLIENT ID	MATRIX	SAMPLE DATE	SAMPLE TIME	TEST	TEST GROUP	METHOD	COMMET	FAX DATE	DUE DATES
K2902-01	I-EA-3MW05-0515	Water	05/15/2019	13:45						
					VOCMS Group1		8260-Low	10 Bus. Days		
K2902-02	I-EA-3MW01-0515	Water	05/15/2019	14:00						
					VOCMS Group1		8260-Low	10 Bus. Days		
K2902-03	K2902-02MS	Water	05/15/2019	14:00						
					VOCMS Group1		8260-Low	10 Bus. Days		
K2902-04	K2902-02MSD	Water	05/15/2019	14:00						
					VOCMS Group1		8260-Low	10 Bus. Days		
K2902-05	DUP-01	Water	05/15/2019	00:00						
					VOCMS Group1		8260-Low	10 Bus. Days		
K2902-10	M-EA-RB01-05151	Water	05/15/2019	16:30						
					VOCMS Group1		8260-Low	10 Bus. Days		
K2902-11	I-EA-3MW09-0516	Water	05/16/2019	09:10						
					VOCMS Group1		8260-Low	10 Bus. Days		
K2902-12	I-EA-3MW08-0516	Water	05/16/2019	09:10						
					VOCMS Group1		8260-Low	10 Bus. Days		
K2902-13	M-EA-RB02-05161	Water	05/16/2019	09:55						

CHEMTECH

LOGIN REPORT/SAMPLE TRANSFER

Order ID :	K2902 WATE05	**Order Date :**	05/16/2019	**Project Mgr :**	
Client Name :	Watermark	**Project Name :**	Camp Evans Area, Ft. Moni	**Report Type :**	Level 4
Client Contact :	Olaf Westphalen	**Receive DateTime :**	5/16/2019 4:10:00 PM	**EDD Type :**	HAZ/EXCEL
Invoice Name :	Watermark	**Purchase Order :**		**Hard Copy Date :**	
Invoice Contact :	Olaf Westphalen	**Login Tech :**	ankit	**Date Signoff :**	

LAB ID	CLIENT ID	MATRIX	SAMPLE DATE	SAMPLE TIME	TEST	TEST GROUP	METHOD	COMMET	FAX DATE	DUE DATES
					VOCMS Group1		8260-Low	10 Bus. Days		
K2902-14	I-EA-3MW07-0516	Water	05/16/2019	10:56						
					VOCMS Group1		8260-Low	10 Bus. Days		
K2902-15	TRIP-BLANK	Water	05/16/2019	00:00						
					VOCMS Group1		8260-Low	10 Bus. Days		

Relinguished By : _____

Date / Time : 5/17/19 0830

Received By : _____

Date / Time : 5/17/19 8:30

Storage Area : VOA Refridgerator Room

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-60870-1
Client Project/Site: Fort Monmouth NJ

For:
ARCADIS U.S., Inc.
10 Friends Lane
Suite 100
Newtown, Pennsylvania 18940

Attn: Mrs. Kimberly Panhorst

Barb Weyandt

Authorized for release by:
11/9/2021 1:04:17 PM

Barbara Weyandt, Project Manager
(717)556-7264
Barbara.Weyandt@eurofinset.com

LINKS

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Have a Question? Ask The Expert

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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Barb Weyandt

Barbara Weyandt
Project Manager
11/9/2021 1:04:17 PM

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Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
M	Manual integrated compound.
Q	One or more quality control criteria failed.
U	Undetected at the Limit of Detection.

Metals

Qualifier	Qualifier Description
J1	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
U	Undetected at the Limit of Detection.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-60870-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-60870-1

Receipt

The samples were received on 10/27/2021 5:29 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.8°C

GC/MS VOA

Method 8260D_DOD5: The response for Cyclohexane and Methylcyclohexane in the continuing calibration verification (CCV) marginally exceeds, low-biased, the DoD acceptance criteria on batch 410-191072. Due to the marginal nature of the outlier(s), the data is reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Fort Monmouth NJ

Job ID: 410-60870-1

Client Sample ID: 3MW05R-102621 — Lab Sample ID: 410-60870-1

No Detections.

Client Sample ID: 3MW01-102621 — Lab Sample ID: 410-60870-2

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.32	J M	1.0	0.30	ug/L	1		8260D	Total/NA
Trichloroethene	6.2		1.0	0.30	ug/L	1		8260D	Total/NA
Cadmium	3.5	J1	0.50	0.15	ug/L	1		6020B	Total Recoverable

Client Sample ID: 3MW01-102621D — Lab Sample ID: 410-60870-3

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.33	J	1.0	0.30	ug/L	1		8260D	Total/NA
Trichloroethene	5.8		1.0	0.30	ug/L	1		8260D	Total/NA
Cadmium	3.6		0.50	0.15	ug/L	1		6020B	Total Recoverable

Client Sample ID: 3MW08-102721 — Lab Sample ID: 410-60870-4

No Detections.

Client Sample ID: 3MW07-102721 — Lab Sample ID: 410-60870-5

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.60	J M	1.0	0.30	ug/L	1		8260D	Total/NA
Methyl tert-butyl ether	1.1		1.0	0.20	ug/L	1		8260D	Total/NA
Trichloroethene	26		1.0	0.30	ug/L	1		8260D	Total/NA

Client Sample ID: 3MW09-102721 — Lab Sample ID: 410-60870-6

No Detections.

Client Sample ID: FB-102621 — Lab Sample ID: 410-60870-7

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Chloroform	2.5		1.0	0.30	ug/L	1		8260D	Total/NA

Client Sample ID: FB-102721 — Lab Sample ID: 410-60870-8

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Chloroform	2.7		1.0	0.30	ug/L	1		8260D	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 410-60870-9

No Detections.

This Detection Summary does not include radiochemical test results.

Client: ARCADIS U.S., Inc.
Project/Site: Fort Monmouth NJ

Job ID: 410-60870-1

Client Sample ID: 3MW05R-102621
Date Collected: 10/26/21 14:25
Date Received: 10/27/21 17:29

Lab Sample ID: 410-60870-1
Matrix: Ground Water

Method: 8260D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 03:29	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 03:29	1
Ethylbenzene	0.80	U	1.0	0.40	ug/L			11/05/21 03:29	1
Styrene	0.60	U	5.0	0.30	ug/L			11/05/21 03:29	1
1,4-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 03:29	1
1,2-Dibromoethane (EDB)	0.50	U	1.0	0.20	ug/L			11/05/21 03:29	1
1,2-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
4-Methyl-2-pentanone	1.0	U	10	0.50	ug/L			11/05/21 03:29	1
Methylcyclohexane	1.0	U Q	5.0	0.50	ug/L			11/05/21 03:29	1
Toluene	0.50	U	1.0	0.20	ug/L			11/05/21 03:29	1
Chlorobenzene	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
Cyclohexane	2.0	U Q	5.0	1.0	ug/L			11/05/21 03:29	1
1,2,4-Trichlorobenzene	1.0	U	5.0	0.30	ug/L			11/05/21 03:29	1
Dibromochloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 03:29	1
Xylenes, Total	0.80	U	1.0	0.40	ug/L			11/05/21 03:29	1
Tetrachloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
cis-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
trans-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
Methyl tert-butyl ether	0.50	U	1.0	0.20	ug/L			11/05/21 03:29	1
1,3-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 03:29	1
Carbon tetrachloride	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
2-Hexanone	1.0	U	10	0.40	ug/L			11/05/21 03:29	1
Acetone	2.0	U	20	0.70	ug/L			11/05/21 03:29	1
Chloroform	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
Benzene	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
1,1,1-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
Bromomethane	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
Chloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 03:29	1
Chloroethane	0.50	U	1.0	0.20	ug/L			11/05/21 03:29	1
Vinyl chloride	0.50	U	1.0	0.20	ug/L			11/05/21 03:29	1
Methylene Chloride	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
Carbon disulfide	0.60	U	5.0	0.30	ug/L			11/05/21 03:29	1
Bromoform	2.0	U	4.0	1.0	ug/L			11/05/21 03:29	1
Bromodichloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 03:29	1
1,1-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
1,1-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
Trichlorofluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 03:29	1
Dichlorodifluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 03:29	1
Freon 113	0.60	U	10	0.30	ug/L			11/05/21 03:29	1
1,2-Dichloropropane	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
2-Butanone	1.0	U	10	0.50	ug/L			11/05/21 03:29	1
1,1,2-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
Trichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
Methyl acetate	0.60	U	5.0	0.30	ug/L			11/05/21 03:29	1
1,1,2,2-Tetrachloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
1,2-Dichlorobenzene	0.50	U	5.0	0.20	ug/L			11/05/21 03:29	1
1,2-Dibromo-3-Chloropropane	1.0	U	5.0	0.30	ug/L			11/05/21 03:29	1
Isopropylbenzene	0.50	U	5.0	0.20	ug/L			11/05/21 03:29	1

Client Sample ID: 3MW05R-102621
Lab Sample ID: 410-60870-1

Date Collected: 10/26/21 14:25
Matrix: Ground Water
Date Received: 10/27/21 17:29

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L					11/05/21 03:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		81 - 118		11/05/21 03:29	1
Dibromofluoromethane (Surr)	105		80 - 119		11/05/21 03:29	1
4-Bromofluorobenzene (Surr)	102		85 - 114		11/05/21 03:29	1
Toluene-d8 (Surr)	104		89 - 112		11/05/21 03:29	1

Client Sample ID: 3MW01-102621
Lab Sample ID: 410-60870-2

Date Collected: 10/26/21 15:55
Matrix: Ground Water
Date Received: 10/27/21 17:29

Method: 8260D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 00:52	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 00:52	1
Ethylbenzene	0.80	U	1.0	0.40	ug/L			11/05/21 00:52	1
Styrene	0.60	U	5.0	0.30	ug/L			11/05/21 00:52	1
1,4-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 00:52	1
1,2-Dibromoethane (EDB)	0.50	U	1.0	0.20	ug/L			11/05/21 00:52	1
1,2-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
4-Methyl-2-pentanone	1.0	U	10	0.50	ug/L			11/05/21 00:52	1
Methylcyclohexane	1.0	U Q	5.0	0.50	ug/L			11/05/21 00:52	1
Toluene	0.50	U	1.0	0.20	ug/L			11/05/21 00:52	1
Chlorobenzene	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
Cyclohexane	2.0	U Q	5.0	1.0	ug/L			11/05/21 00:52	1
1,2,4-Trichlorobenzene	1.0	U	5.0	0.30	ug/L			11/05/21 00:52	1
Dibromochloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:52	1
Xylenes, Total	0.80	U	1.0	0.40	ug/L			11/05/21 00:52	1
Tetrachloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
cis-1,2-Dichloroethene	**0.32**	**J M**	1.0	0.30	ug/L			11/05/21 00:52	1
trans-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
Methyl tert-butyl ether	0.50	U	1.0	0.20	ug/L			11/05/21 00:52	1
1,3-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 00:52	1
Carbon tetrachloride	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
2-Hexanone	1.0	U	10	0.40	ug/L			11/05/21 00:52	1
Acetone	2.0	U	20	0.70	ug/L			11/05/21 00:52	1
Chloroform	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
Benzene	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
1,1,1-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
Bromomethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
Chloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:52	1
Chloroethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:52	1
Vinyl chloride	0.50	U	1.0	0.20	ug/L			11/05/21 00:52	1
Methylene Chloride	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
Carbon disulfide	0.60	U	5.0	0.30	ug/L			11/05/21 00:52	1
Bromoform	2.0	U	4.0	1.0	ug/L			11/05/21 00:52	1
Bromodichloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:52	1
1,1-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
1,1-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
Trichlorofluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:52	1

Client Sample ID: 3MW01-102621

Date Collected: 10/26/21 15:55
Date Received: 10/27/21 17:29

Lab Sample ID: 410-60870-2

Matrix: Ground Water

Method: 8260D - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:52	1
Freon 113	0.60	U	10	0.30	ug/L			11/05/21 00:52	1
1,2-Dichloropropane	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
2-Butanone	1.0	U	10	0.50	ug/L			11/05/21 00:52	1
1,1,2-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
Trichloroethene	**6.2**		1.0	0.30	ug/L			11/05/21 00:52	1
Methyl acetate	0.60	U	5.0	0.30	ug/L			11/05/21 00:52	1
1,1,2,2-Tetrachloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
1,2-Dichlorobenzene	0.50	U	5.0	0.20	ug/L			11/05/21 00:52	1
1,2-Dibromo-3-Chloropropane	1.0	U	5.0	0.30	ug/L			11/05/21 00:52	1
Isopropylbenzene	0.50	U	5.0	0.20	ug/L			11/05/21 00:52	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*11/05/21 00:52*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*81 - 118*		*11/05/21 00:52*	*1*
Dibromofluoromethane (Surr)	*105*		*80 - 119*		*11/05/21 00:52*	*1*
4-Bromofluorobenzene (Surr)	*99*		*85 - 114*		*11/05/21 00:52*	*1*
Toluene-d8 (Surr)	*102*		*89 - 112*		*11/05/21 00:52*	*1*

Method: 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	**3.5**	**J1**	0.50	0.15	ug/L		11/04/21 15:51	11/05/21 14:42	1

Client Sample ID: 3MW01-102621D

Date Collected: 10/26/21 00:00
Date Received: 10/27/21 17:29

Lab Sample ID: 410-60870-3

Matrix: Ground Water

Method: 8260D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 03:48	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 03:48	1
Ethylbenzene	0.80	U	1.0	0.40	ug/L			11/05/21 03:48	1
Styrene	0.60	U	5.0	0.30	ug/L			11/05/21 03:48	1
1,4-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 03:48	1
1,2-Dibromoethane (EDB)	0.50	U	1.0	0.20	ug/L			11/05/21 03:48	1
1,2-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
4-Methyl-2-pentanone	1.0	U	10	0.50	ug/L			11/05/21 03:48	1
Methylcyclohexane	1.0	U Q	5.0	0.50	ug/L			11/05/21 03:48	1
Toluene	0.50	U	1.0	0.20	ug/L			11/05/21 03:48	1
Chlorobenzene	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
Cyclohexane	2.0	U Q	5.0	1.0	ug/L			11/05/21 03:48	1
1,2,4-Trichlorobenzene	1.0	U	5.0	0.30	ug/L			11/05/21 03:48	1
Dibromochloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 03:48	1
Xylenes, Total	0.80	U	1.0	0.40	ug/L			11/05/21 03:48	1
Tetrachloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
cis-1,2-Dichloroethene	**0.33**	**J**	1.0	0.30	ug/L			11/05/21 03:48	1
trans-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
Methyl tert-butyl ether	0.50	U	1.0	0.20	ug/L			11/05/21 03:48	1
1,3-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 03:48	1

Client Sample ID: 3MW01-102621D
Lab Sample ID: 410-60870-3

Date Collected: 10/26/21 00:00
Matrix: Ground Water
Date Received: 10/27/21 17:29

Method: 8260D - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon tetrachloride	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
2-Hexanone	1.0	U	10	0.40	ug/L			11/05/21 03:48	1
Acetone	2.0	U	20	0.70	ug/L			11/05/21 03:48	1
Chloroform	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
Benzene	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
1,1,1-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
Bromomethane	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
Chloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 03:48	1
Chloroethane	0.50	U	1.0	0.20	ug/L			11/05/21 03:48	1
Vinyl chloride	0.50	U	1.0	0.20	ug/L			11/05/21 03:48	1
Methylene Chloride	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
Carbon disulfide	0.60	U	5.0	0.30	ug/L			11/05/21 03:48	1
Bromoform	2.0	U	4.0	1.0	ug/L			11/05/21 03:48	1
Bromodichloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 03:48	1
1,1-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
1,1-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
Trichlorofluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 03:48	1
Dichlorodifluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 03:48	1
Freon 113	0.60	U	10	0.30	ug/L			11/05/21 03:48	1
1,2-Dichloropropane	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
2-Butanone	1.0	U	10	0.50	ug/L			11/05/21 03:48	1
1,1,2-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
Trichloroethene	**5.8**		1.0	0.30	ug/L			11/05/21 03:48	1
Methyl acetate	0.60	U	5.0	0.30	ug/L			11/05/21 03:48	1
1,1,2,2-Tetrachloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
1,2-Dichlorobenzene	0.50	U	5.0	0.20	ug/L			11/05/21 03:48	1
1,2-Dibromo-3-Chloropropane	1.0	U	5.0	0.30	ug/L			11/05/21 03:48	1
Isopropylbenzene	0.50	U	5.0	0.20	ug/L			11/05/21 03:48	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*11/05/21 03:48*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*81 - 118*		*11/05/21 03:48*	*1*
Dibromofluoromethane (Surr)	*107*		*80 - 119*		*11/05/21 03:48*	*1*
4-Bromofluorobenzene (Surr)	*101*		*85 - 114*		*11/05/21 03:48*	*1*
Toluene-d8 (Surr)	*103*		*89 - 112*		*11/05/21 03:48*	*1*

Method: 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	**3.6**		0.50	0.15	ug/L		11/04/21 05:27	11/04/21 14:15	1

Client Sample ID: 3MW08-102721
Lab Sample ID: 410-60870-4

Date Collected: 10/27/21 10:35
Matrix: Ground Water
Date Received: 10/27/21 17:29

Method: 8260D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 04:08	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 04:08	1
Ethylbenzene	0.80	U	1.0	0.40	ug/L			11/05/21 04:08	1

Client: ARCADIS U.S., Inc.
Project/Site: Fort Monmouth NJ

Job ID: 410-60870-1

Client Sample ID: 3MW08-102721
Date Collected: 10/27/21 10:35
Date Received: 10/27/21 17:29

Lab Sample ID: 410-60870-4
Matrix: Ground Water

Method: 8260D - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Styrene	0.60	U	5.0	0.30	ug/L			11/05/21 04:08	1
1,4-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 04:08	1
1,2-Dibromoethane (EDB)	0.50	U	1.0	0.20	ug/L			11/05/21 04:08	1
1,2-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
4-Methyl-2-pentanone	1.0	U	10	0.50	ug/L			11/05/21 04:08	1
Methylcyclohexane	1.0	U Q	5.0	0.50	ug/L			11/05/21 04:08	1
Toluene	0.50	U	1.0	0.20	ug/L			11/05/21 04:08	1
Chlorobenzene	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
Cyclohexane	2.0	U Q	5.0	1.0	ug/L			11/05/21 04:08	1
1,2,4-Trichlorobenzene	1.0	U	5.0	0.30	ug/L			11/05/21 04:08	1
Dibromochloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:08	1
Xylenes, Total	0.80	U	1.0	0.40	ug/L			11/05/21 04:08	1
Tetrachloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
cis-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
trans-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
Methyl tert-butyl ether	0.50	U	1.0	0.20	ug/L			11/05/21 04:08	1
1,3-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 04:08	1
Carbon tetrachloride	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
2-Hexanone	1.0	U	10	0.40	ug/L			11/05/21 04:08	1
Acetone	2.0	U	20	0.70	ug/L			11/05/21 04:08	1
Chloroform	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
Benzene	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
1,1,1-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
Bromomethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
Chloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:08	1
Chloroethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:08	1
Vinyl chloride	0.50	U	1.0	0.20	ug/L			11/05/21 04:08	1
Methylene Chloride	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
Carbon disulfide	0.60	U	5.0	0.30	ug/L			11/05/21 04:08	1
Bromoform	2.0	U	4.0	1.0	ug/L			11/05/21 04:08	1
Bromodichloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:08	1
1,1-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
1,1-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
Trichlorofluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:08	1
Dichlorodifluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:08	1
Freon 113	0.60	U	10	0.30	ug/L			11/05/21 04:08	1
1,2-Dichloropropane	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
2-Butanone	1.0	U	10	0.50	ug/L			11/05/21 04:08	1
1,1,2-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
Trichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
Methyl acetate	0.60	U	5.0	0.30	ug/L			11/05/21 04:08	1
1,1,2,2-Tetrachloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
1,2-Dichlorobenzene	0.50	U	5.0	0.20	ug/L			11/05/21 04:08	1
1,2-Dibromo-3-Chloropropane	1.0	U	5.0	0.30	ug/L			11/05/21 04:08	1
Isopropylbenzene	0.50	U	5.0	0.20	ug/L			11/05/21 04:08	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*11/05/21 04:08*	*1*

Client Sample ID: 3MW08-102721

Lab Sample ID: 410-60870-4

Date Collected: 10/27/21 10:35

Matrix: Ground Water

Date Received: 10/27/21 17:29

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*81 - 118*		*11/05/21 04:08*	*1*
Dibromofluoromethane (Surr)	*106*		*80 - 119*		*11/05/21 04:08*	*1*
4-Bromofluorobenzene (Surr)	*101*		*85 - 114*		*11/05/21 04:08*	*1*
Toluene-d8 (Surr)	*102*		*89 - 112*		*11/05/21 04:08*	*1*

Client Sample ID: 3MW07-102721

Lab Sample ID: 410-60870-5

Date Collected: 10/27/21 11:15

Matrix: Ground Water

Date Received: 10/27/21 17:29

Method: 8260D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 04:28	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 04:28	1
Ethylbenzene	0.80	U	1.0	0.40	ug/L			11/05/21 04:28	1
Styrene	0.60	U	5.0	0.30	ug/L			11/05/21 04:28	1
1,4-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 04:28	1
1,2-Dibromoethane (EDB)	0.50	U	1.0	0.20	ug/L			11/05/21 04:28	1
1,2-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
4-Methyl-2-pentanone	1.0	U	10	0.50	ug/L			11/05/21 04:28	1
Methylcyclohexane	1.0	U Q	5.0	0.50	ug/L			11/05/21 04:28	1
Toluene	0.50	U	1.0	0.20	ug/L			11/05/21 04:28	1
Chlorobenzene	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
Cyclohexane	2.0	U Q	5.0	1.0	ug/L			11/05/21 04:28	1
1,2,4-Trichlorobenzene	1.0	U	5.0	0.30	ug/L			11/05/21 04:28	1
Dibromochloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:28	1
Xylenes, Total	0.80	U	1.0	0.40	ug/L			11/05/21 04:28	1
Tetrachloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
cis-1,2-Dichloroethene	**0.60**	**J M**	1.0	0.30	ug/L			11/05/21 04:28	1
trans-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
Methyl tert-butyl ether	**1.1**		1.0	0.20	ug/L			11/05/21 04:28	1
1,3-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 04:28	1
Carbon tetrachloride	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
2-Hexanone	1.0	U	10	0.40	ug/L			11/05/21 04:28	1
Acetone	2.0	U	20	0.70	ug/L			11/05/21 04:28	1
Chloroform	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
Benzene	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
1,1,1-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
Bromomethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
Chloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:28	1
Chloroethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:28	1
Vinyl chloride	0.50	U	1.0	0.20	ug/L			11/05/21 04:28	1
Methylene Chloride	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
Carbon disulfide	0.60	U	5.0	0.30	ug/L			11/05/21 04:28	1
Bromoform	2.0	U	4.0	1.0	ug/L			11/05/21 04:28	1
Bromodichloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:28	1
1,1-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
1,1-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
Trichlorofluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:28	1
Dichlorodifluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:28	1
Freon 113	0.60	U	10	0.30	ug/L			11/05/21 04:28	1

Client Sample ID: 3MW07-102721

Lab Sample ID: 410-60870-5

Date Collected: 10/27/21 11:15

Matrix: Ground Water

Date Received: 10/27/21 17:29

Method: 8260D - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloropropane	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
2-Butanone	1.0	U	10	0.50	ug/L			11/05/21 04:28	1
1,1,2-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
Trichloroethene	**26**		1.0	0.30	ug/L			11/05/21 04:28	1
Methyl acetate	0.60	U	5.0	0.30	ug/L			11/05/21 04:28	1
1,1,2,2-Tetrachloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
1,2-Dichlorobenzene	0.50	U	5.0	0.20	ug/L			11/05/21 04:28	1
1,2-Dibromo-3-Chloropropane	1.0	U	5.0	0.30	ug/L			11/05/21 04:28	1
Isopropylbenzene	0.50	U	5.0	0.20	ug/L			11/05/21 04:28	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*11/05/21 04:28*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*	*M*	*81 - 118*		*11/05/21 04:28*	*1*
Dibromofluoromethane (Surr)	*107*		*80 - 119*		*11/05/21 04:28*	*1*
4-Bromofluorobenzene (Surr)	*102*		*85 - 114*		*11/05/21 04:28*	*1*
Toluene-d8 (Surr)	*103*		*89 - 112*		*11/05/21 04:28*	*1*

Client Sample ID: 3MW09-102721

Lab Sample ID: 410-60870-6

Date Collected: 10/27/21 11:55

Matrix: Ground Water

Date Received: 10/27/21 17:29

Method: 8260D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 04:47	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 04:47	1
Ethylbenzene	0.80	U	1.0	0.40	ug/L			11/05/21 04:47	1
Styrene	0.60	U	5.0	0.30	ug/L			11/05/21 04:47	1
1,4-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 04:47	1
1,2-Dibromoethane (EDB)	0.50	U	1.0	0.20	ug/L			11/05/21 04:47	1
1,2-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
4-Methyl-2-pentanone	1.0	U	10	0.50	ug/L			11/05/21 04:47	1
Methylcyclohexane	1.0	U Q	5.0	0.50	ug/L			11/05/21 04:47	1
Toluene	0.50	U	1.0	0.20	ug/L			11/05/21 04:47	1
Chlorobenzene	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
Cyclohexane	2.0	U Q	5.0	1.0	ug/L			11/05/21 04:47	1
1,2,4-Trichlorobenzene	1.0	U	5.0	0.30	ug/L			11/05/21 04:47	1
Dibromochloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:47	1
Xylenes, Total	0.80	U	1.0	0.40	ug/L			11/05/21 04:47	1
Tetrachloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
cis-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
trans-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
Methyl tert-butyl ether	0.50	U	1.0	0.20	ug/L			11/05/21 04:47	1
1,3-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 04:47	1
Carbon tetrachloride	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
2-Hexanone	1.0	U	10	0.40	ug/L			11/05/21 04:47	1
Acetone	2.0	U	20	0.70	ug/L			11/05/21 04:47	1
Chloroform	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
Benzene	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1

Client Sample ID: 3MW09-102721

Lab Sample ID: 410-60870-6

Date Collected: 10/27/21 11:55

Matrix: Ground Water

Date Received: 10/27/21 17:29

Method: 8260D - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
Bromomethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
Chloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:47	1
Chloroethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:47	1
Vinyl chloride	0.50	U	1.0	0.20	ug/L			11/05/21 04:47	1
Methylene Chloride	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
Carbon disulfide	0.60	U	5.0	0.30	ug/L			11/05/21 04:47	1
Bromoform	2.0	U	4.0	1.0	ug/L			11/05/21 04:47	1
Bromodichloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:47	1
1,1-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
1,1-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
Trichlorofluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:47	1
Dichlorodifluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:47	1
Freon 113	0.60	U	10	0.30	ug/L			11/05/21 04:47	1
1,2-Dichloropropane	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
2-Butanone	1.0	U	10	0.50	ug/L			11/05/21 04:47	1
1,1,2-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
Trichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
Methyl acetate	0.60	U	5.0	0.30	ug/L			11/05/21 04:47	1
1,1,2,2-Tetrachloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
1,2-Dichlorobenzene	0.50	U	5.0	0.20	ug/L			11/05/21 04:47	1
1,2-Dibromo-3-Chloropropane	1.0	U	5.0	0.30	ug/L			11/05/21 04:47	1
Isopropylbenzene	0.50	U	5.0	0.20	ug/L			11/05/21 04:47	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*11/05/21 04:47*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*81 - 118*		*11/05/21 04:47*	*1*
Dibromofluoromethane (Surr)	*106*		*80 - 119*		*11/05/21 04:47*	*1*
4-Bromofluorobenzene (Surr)	*101*		*85 - 114*		*11/05/21 04:47*	*1*
Toluene-d8 (Surr)	*103*		*89 - 112*		*11/05/21 04:47*	*1*

Client Sample ID: FB-102621

Lab Sample ID: 410-60870-7

Date Collected: 10/26/21 16:00

Matrix: Water

Date Received: 10/27/21 17:29

Method: 8260D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/04/21 23:53	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/04/21 23:53	1
Ethylbenzene	0.80	U	1.0	0.40	ug/L			11/04/21 23:53	1
Styrene	0.60	U	5.0	0.30	ug/L			11/04/21 23:53	1
1,4-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/04/21 23:53	1
1,2-Dibromoethane (EDB)	0.50	U	1.0	0.20	ug/L			11/04/21 23:53	1
1,2-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
4-Methyl-2-pentanone	1.0	U	10	0.50	ug/L			11/04/21 23:53	1
Methylcyclohexane	1.0	U Q	5.0	0.50	ug/L			11/04/21 23:53	1
Toluene	0.50	U	1.0	0.20	ug/L			11/04/21 23:53	1
Chlorobenzene	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1

Client Sample ID: FB-102621
Date Collected: 10/26/21 16:00
Date Received: 10/27/21 17:29

Lab Sample ID: 410-60870-7
Matrix: Water

Method: 8260D - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cyclohexane	2.0	U Q	5.0	1.0	ug/L			11/04/21 23:53	1
1,2,4-Trichlorobenzene	1.0	U	5.0	0.30	ug/L			11/04/21 23:53	1
Dibromochloromethane	0.50	U	1.0	0.20	ug/L			11/04/21 23:53	1
Xylenes, Total	0.80	U	1.0	0.40	ug/L			11/04/21 23:53	1
Tetrachloroethene	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
cis-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
trans-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
Methyl tert-butyl ether	0.50	U	1.0	0.20	ug/L			11/04/21 23:53	1
1,3-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/04/21 23:53	1
Carbon tetrachloride	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
2-Hexanone	1.0	U	10	0.40	ug/L			11/04/21 23:53	1
Acetone	2.0	U	20	0.70	ug/L			11/04/21 23:53	1
Chloroform	**2.5**		1.0	0.30	ug/L			11/04/21 23:53	1
Benzene	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
1,1,1-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
Bromomethane	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
Chloromethane	0.50	U	1.0	0.20	ug/L			11/04/21 23:53	1
Chloroethane	0.50	U	1.0	0.20	ug/L			11/04/21 23:53	1
Vinyl chloride	0.50	U	1.0	0.20	ug/L			11/04/21 23:53	1
Methylene Chloride	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
Carbon disulfide	0.60	U	5.0	0.30	ug/L			11/04/21 23:53	1
Bromoform	2.0	U	4.0	1.0	ug/L			11/04/21 23:53	1
Bromodichloromethane	0.50	U	1.0	0.20	ug/L			11/04/21 23:53	1
1,1-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
1,1-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
Trichlorofluoromethane	0.50	U	1.0	0.20	ug/L			11/04/21 23:53	1
Dichlorodifluoromethane	0.50	U	1.0	0.20	ug/L			11/04/21 23:53	1
Freon 113	0.60	U	10	0.30	ug/L			11/04/21 23:53	1
1,2-Dichloropropane	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
2-Butanone	1.0	U	10	0.50	ug/L			11/04/21 23:53	1
1,1,2-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
Trichloroethene	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
Methyl acetate	0.60	U	5.0	0.30	ug/L			11/04/21 23:53	1
1,1,2,2-Tetrachloroethane	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
1,2-Dichlorobenzene	0.50	U	5.0	0.20	ug/L			11/04/21 23:53	1
1,2-Dibromo-3-Chloropropane	1.0	U	5.0	0.30	ug/L			11/04/21 23:53	1
Isopropylbenzene	0.50	U	5.0	0.20	ug/L			11/04/21 23:53	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*11/04/21 23:53*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*81 - 118*		*11/04/21 23:53*	*1*
Dibromofluoromethane (Surr)	*105*		*80 - 119*		*11/04/21 23:53*	*1*
4-Bromofluorobenzene (Surr)	*101*		*85 - 114*		*11/04/21 23:53*	*1*
Toluene-d8 (Surr)	*103*		*89 - 112*		*11/04/21 23:53*	*1*

Method: 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.40	U	0.50	0.15	ug/L		11/04/21 05:27	11/04/21 14:09	1

Client: ARCADIS U.S., Inc.
Project/Site: Fort Monmouth NJ

Job ID: 410-60870-1

Client Sample ID: FB-102721
Date Collected: 10/27/21 09:00
Date Received: 10/27/21 17:29

Lab Sample ID: 410-60870-8
Matrix: Water

Method: 8260D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 00:13	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 00:13	1
Ethylbenzene	0.80	U	1.0	0.40	ug/L			11/05/21 00:13	1
Styrene	0.60	U	5.0	0.30	ug/L			11/05/21 00:13	1
1,4-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 00:13	1
1,2-Dibromoethane (EDB)	0.50	U	1.0	0.20	ug/L			11/05/21 00:13	1
1,2-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
4-Methyl-2-pentanone	1.0	U	10	0.50	ug/L			11/05/21 00:13	1
Methylcyclohexane	1.0	U Q	5.0	0.50	ug/L			11/05/21 00:13	1
Toluene	0.50	U	1.0	0.20	ug/L			11/05/21 00:13	1
Chlorobenzene	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
Cyclohexane	2.0	U Q	5.0	1.0	ug/L			11/05/21 00:13	1
1,2,4-Trichlorobenzene	1.0	U	5.0	0.30	ug/L			11/05/21 00:13	1
Dibromochloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:13	1
Xylenes, Total	0.80	U	1.0	0.40	ug/L			11/05/21 00:13	1
Tetrachloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
cis-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
trans-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
Methyl tert-butyl ether	0.50	U	1.0	0.20	ug/L			11/05/21 00:13	1
1,3-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 00:13	1
Carbon tetrachloride	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
2-Hexanone	1.0	U	10	0.40	ug/L			11/05/21 00:13	1
Acetone	2.0	U	20	0.70	ug/L			11/05/21 00:13	1
Chloroform	**2.7**		1.0	0.30	ug/L			11/05/21 00:13	1
Benzene	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
1,1,1-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
Bromomethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
Chloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:13	1
Chloroethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:13	1
Vinyl chloride	0.50	U	1.0	0.20	ug/L			11/05/21 00:13	1
Methylene Chloride	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
Carbon disulfide	0.60	U	5.0	0.30	ug/L			11/05/21 00:13	1
Bromoform	2.0	U	4.0	1.0	ug/L			11/05/21 00:13	1
Bromodichloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:13	1
1,1-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
1,1-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
Trichlorofluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:13	1
Dichlorodifluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:13	1
Freon 113	0.60	U	10	0.30	ug/L			11/05/21 00:13	1
1,2-Dichloropropane	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
2-Butanone	1.0	U	10	0.50	ug/L			11/05/21 00:13	1
1,1,2-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
Trichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
Methyl acetate	0.60	U	5.0	0.30	ug/L			11/05/21 00:13	1
1,1,2,2-Tetrachloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
1,2-Dichlorobenzene	0.50	U	5.0	0.20	ug/L			11/05/21 00:13	1
1,2-Dibromo-3-Chloropropane	1.0	U	5.0	0.30	ug/L			11/05/21 00:13	1
Isopropylbenzene	0.50	U	5.0	0.20	ug/L			11/05/21 00:13	1

Client Sample ID: FB-102721

Lab Sample ID: 410-60870-8

Date Collected: 10/27/21 09:00

Matrix: Water

Date Received: 10/27/21 17:29

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L					11/05/21 00:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		81 - 118		11/05/21 00:13	1
Dibromofluoromethane (Surr)	107		80 - 119		11/05/21 00:13	1
4-Bromofluorobenzene (Surr)	99		85 - 114		11/05/21 00:13	1
Toluene-d8 (Surr)	102		89 - 112		11/05/21 00:13	1

Method: 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.40	U	0.50	0.15	ug/L		11/04/21 13:13	11/05/21 13:51	1

Client Sample ID: Trip Blank

Lab Sample ID: 410-60870-9

Date Collected: 10/26/21 00:00

Matrix: Water

Date Received: 10/27/21 17:29

Method: 8260D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 00:32	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 00:32	1
Ethylbenzene	0.80	U	1.0	0.40	ug/L			11/05/21 00:32	1
Styrene	0.60	U	5.0	0.30	ug/L			11/05/21 00:32	1
1,4-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 00:32	1
1,2-Dibromoethane (EDB)	0.50	U	1.0	0.20	ug/L			11/05/21 00:32	1
1,2-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
4-Methyl-2-pentanone	1.0	U	10	0.50	ug/L			11/05/21 00:32	1
Methylcyclohexane	1.0	U Q	5.0	0.50	ug/L			11/05/21 00:32	1
Toluene	0.50	U	1.0	0.20	ug/L			11/05/21 00:32	1
Chlorobenzene	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
Cyclohexane	2.0	U Q	5.0	1.0	ug/L			11/05/21 00:32	1
1,2,4-Trichlorobenzene	1.0	U	5.0	0.30	ug/L			11/05/21 00:32	1
Dibromochloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:32	1
Xylenes, Total	0.80	U	1.0	0.40	ug/L			11/05/21 00:32	1
Tetrachloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
cis-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
trans-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
Methyl tert-butyl ether	0.50	U	1.0	0.20	ug/L			11/05/21 00:32	1
1,3-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 00:32	1
Carbon tetrachloride	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
2-Hexanone	1.0	U	10	0.40	ug/L			11/05/21 00:32	1
Acetone	2.0	U	20	0.70	ug/L			11/05/21 00:32	1
Chloroform	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
Benzene	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
1,1,1-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
Bromomethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
Chloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:32	1
Chloroethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:32	1
Vinyl chloride	0.50	U	1.0	0.20	ug/L			11/05/21 00:32	1
Methylene Chloride	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
Carbon disulfide	0.60	U	5.0	0.30	ug/L			11/05/21 00:32	1
Bromoform	2.0	U	4.0	1.0	ug/L			11/05/21 00:32	1

Client Sample ID: Trip Blank
Date Collected: 10/26/21 00:00
Date Received: 10/27/21 17:29

Lab Sample ID: 410-60870-9
Matrix: Water

Method: 8260D - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:32	1
1,1-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
1,1-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
Trichlorofluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:32	1
Dichlorodifluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:32	1
Freon 113	0.60	U	10	0.30	ug/L			11/05/21 00:32	1
1,2-Dichloropropane	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
2-Butanone	1.0	U	10	0.50	ug/L			11/05/21 00:32	1
1,1,2-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
Trichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
Methyl acetate	0.60	U	5.0	0.30	ug/L			11/05/21 00:32	1
1,1,2,2-Tetrachloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
1,2-Dichlorobenzene	0.50	U	5.0	0.20	ug/L			11/05/21 00:32	1
1,2-Dibromo-3-Chloropropane	1.0	U	5.0	0.30	ug/L			11/05/21 00:32	1
Isopropylbenzene	0.50	U	5.0	0.20	ug/L			11/05/21 00:32	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*11/05/21 00:32*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*81 - 118*		*11/05/21 00:32*	*1*
Dibromofluoromethane (Surr)	*106*		*80 - 119*		*11/05/21 00:32*	*1*
4-Bromofluorobenzene (Surr)	*102*		*85 - 114*		*11/05/21 00:32*	*1*
Toluene-d8 (Surr)	*103*		*89 - 112*		*11/05/21 00:32*	*1*

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Fort Monmouth NJ

Job ID: 410-60870-1

Method: 8260D - Volatile Organic Compounds (GC/MS)

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	DBFM	BFB	TOL
Lab Sample ID	Client Sample ID	(81-118)	(80-119)	(85-114)	(89-112)
410-60870-1	3MW05R-102621	103	105	102	104
410-60870-2	3MW01-102621	104	105	99	102
410-60870-2 MS	3MW01-102621MS	103	106	102	104
410-60870-2 MSD	3MW01-102621MSD	103	105	103	103
410-60870-3	3MW01-102621D	104	107	101	103
410-60870-4	3MW08-102721	102	106	101	102
410-60870-5	3MW07-102721	102 M	107	102	103
410-60870-6	3MW09-102721	103	106	101	103

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260D - Volatile Organic Compounds (GC/MS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	DBFM	BFB	TOL
Lab Sample ID	Client Sample ID	(81-118)	(80-119)	(85-114)	(89-112)
410-60870-7	FB-102621	103	105	101	103
410-60870-8	FB-102721	105	107	99	102
410-60870-9	Trip Blank	103	106	102	103
LCS 410-191072/4	Lab Control Sample	104	105	103	104
MB 410-191072/6	Method Blank	106	105	102	103

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260D - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-191072/6
Matrix: Water
Analysis Batch: 191072

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/04/21 22:15	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/04/21 22:15	1
Ethylbenzene	0.80	U	1.0	0.40	ug/L			11/04/21 22:15	1
Styrene	0.60	U	5.0	0.30	ug/L			11/04/21 22:15	1
1,4-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/04/21 22:15	1
1,2-Dibromoethane (EDB)	0.50	U	1.0	0.20	ug/L			11/04/21 22:15	1
1,2-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/04/21 22:15	1
4-Methyl-2-pentanone	1.0	U	10	0.50	ug/L			11/04/21 22:15	1
Methylcyclohexane	1.0	U	5.0	0.50	ug/L			11/04/21 22:15	1
Toluene	0.50	U	1.0	0.20	ug/L			11/04/21 22:15	1
Chlorobenzene	0.60	U	1.0	0.30	ug/L			11/04/21 22:15	1
Cyclohexane	2.0	U	5.0	1.0	ug/L			11/04/21 22:15	1
1,2,4-Trichlorobenzene	1.0	U	5.0	0.30	ug/L			11/04/21 22:15	1
Dibromochloromethane	0.50	U	1.0	0.20	ug/L			11/04/21 22:15	1
Xylenes, Total	0.80	U	1.0	0.40	ug/L			11/04/21 22:15	1
Tetrachloroethene	0.60	U	1.0	0.30	ug/L			11/04/21 22:15	1
cis-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/04/21 22:15	1
trans-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/04/21 22:15	1
Methyl tert-butyl ether	0.50	U	1.0	0.20	ug/L			11/04/21 22:15	1
1,3-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/04/21 22:15	1
Carbon tetrachloride	0.60	U	1.0	0.30	ug/L			11/04/21 22:15	1
2-Hexanone	1.0	U	10	0.40	ug/L			11/04/21 22:15	1
Acetone	2.0	U	20	0.70	ug/L			11/04/21 22:15	1
Chloroform	0.60	U	1.0	0.30	ug/L			11/04/21 22:15	1
Benzene	0.60	U	1.0	0.30	ug/L			11/04/21 22:15	1
1,1,1-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/04/21 22:15	1
Bromomethane	0.60	U	1.0	0.30	ug/L			11/04/21 22:15	1
Chloromethane	0.50	U	1.0	0.20	ug/L			11/04/21 22:15	1
Chloroethane	0.50	U	1.0	0.20	ug/L			11/04/21 22:15	1
Vinyl chloride	0.50	U	1.0	0.20	ug/L			11/04/21 22:15	1
Methylene Chloride	0.60	U	1.0	0.30	ug/L			11/04/21 22:15	1
Carbon disulfide	0.60	U	5.0	0.30	ug/L			11/04/21 22:15	1
Bromoform	2.0	U	4.0	1.0	ug/L			11/04/21 22:15	1
Bromodichloromethane	0.50	U	1.0	0.20	ug/L			11/04/21 22:15	1
1,1-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/04/21 22:15	1
1,1-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/04/21 22:15	1
Trichlorofluoromethane	0.50	U	1.0	0.20	ug/L			11/04/21 22:15	1
Dichlorodifluoromethane	0.50	U	1.0	0.20	ug/L			11/04/21 22:15	1
Freon 113	0.60	U	10	0.30	ug/L			11/04/21 22:15	1
1,2-Dichloropropane	0.60	U	1.0	0.30	ug/L			11/04/21 22:15	1
2-Butanone	1.0	U	10	0.50	ug/L			11/04/21 22:15	1
1,1,2-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/04/21 22:15	1
Trichloroethene	0.60	U	1.0	0.30	ug/L			11/04/21 22:15	1
Methyl acetate	0.60	U	5.0	0.30	ug/L			11/04/21 22:15	1
1,1,2,2-Tetrachloroethane	0.60	U	1.0	0.30	ug/L			11/04/21 22:15	1
1,2-Dichlorobenzene	0.50	U	5.0	0.20	ug/L			11/04/21 22:15	1
1,2-Dibromo-3-Chloropropane	1.0	U	5.0	0.30	ug/L			11/04/21 22:15	1
Isopropylbenzene	0.50	U	5.0	0.20	ug/L			11/04/21 22:15	1

Method: 8260D - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 410-191072/6
Matrix: Water
Analysis Batch: 191072

Client Sample ID: Method Blank
Prep Type: Total/NA

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L					11/04/21 22:15	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		81 - 118		11/04/21 22:15	1
Dibromofluoromethane (Surr)	105		80 - 119		11/04/21 22:15	1
4-Bromofluorobenzene (Surr)	102		85 - 114		11/04/21 22:15	1
Toluene-d8 (Surr)	103		89 - 112		11/04/21 22:15	1

Lab Sample ID: LCS 410-191072/4
Matrix: Water
Analysis Batch: 191072

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,3-Dichloropropene	20.0	19.3		ug/L		97	75 - 124
trans-1,3-Dichloropropene	20.0	19.7		ug/L		99	73 - 127
Ethylbenzene	20.0	18.9		ug/L		94	79 - 121
Styrene	20.0	19.0		ug/L		95	78 - 123
1,4-Dichlorobenzene	20.0	19.1		ug/L		95	79 - 118
1,2-Dibromoethane (EDB)	20.0	20.0		ug/L		100	77 - 121
1,2-Dichloroethane	20.0	20.0		ug/L		100	73 - 128
4-Methyl-2-pentanone	250	272		ug/L		109	67 - 130
Methylcyclohexane	20.0	17.6		ug/L		88	72 - 132
Toluene	20.0	18.7		ug/L		94	80 - 121
Chlorobenzene	20.0	19.2		ug/L		96	82 - 118
Cyclohexane	20.0	17.2		ug/L		86	71 - 130
1,2,4-Trichlorobenzene	20.0	19.0		ug/L		95	69 - 130
Dibromochloromethane	20.0	20.0		ug/L		100	74 - 126
Xylenes, Total	60.0	56.6		ug/L		94	79 - 121
Tetrachloroethene	20.0	18.7		ug/L		94	74 - 129
cis-1,2-Dichloroethene	20.0	19.5		ug/L		98	78 - 123
trans-1,2-Dichloroethene	20.0	19.2		ug/L		96	75 - 124
Methyl tert-butyl ether	20.0	19.3		ug/L		97	71 - 124
1,3-Dichlorobenzene	20.0	19.1		ug/L		95	80 - 119
Carbon tetrachloride	20.0	19.0		ug/L		95	72 - 136
2-Hexanone	250	274		ug/L		110	57 - 139
Acetone	250	254		ug/L		102	39 - 160
Chloroform	20.0	20.1		ug/L		100	79 - 124
Benzene	20.0	19.1		ug/L		96	79 - 120
1,1,1-Trichloroethane	20.0	19.2		ug/L		96	74 - 131
Bromomethane	20.0	17.6		ug/L		88	53 - 141
Chloromethane	20.0	19.0		ug/L		95	50 - 139
Chloroethane	20.0	18.1		ug/L		91	60 - 138
Vinyl chloride	20.0	17.5		ug/L		87	58 - 137
Methylene Chloride	20.0	19.8		ug/L		99	74 - 124
Carbon disulfide	20.0	18.2		ug/L		91	64 - 133
Bromoform	20.0	19.8		ug/L		99	66 - 130
Bromodichloromethane	20.0	20.0		ug/L		100	79 - 125
1,1-Dichloroethane	20.0	19.3		ug/L		96	77 - 125

Method: 8260D - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-191072/4
Matrix: Water
Analysis Batch: 191072

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	20.0	19.5		ug/L		97	71 - 131
Trichlorofluoromethane	20.0	18.3		ug/L		91	65 - 141
Dichlorodifluoromethane	20.0	20.3		ug/L		101	32 - 152
Freon 113	20.0	18.9		ug/L		94	70 - 136
1,2-Dichloropropane	20.0	19.9		ug/L		99	78 - 122
2-Butanone	250	268		ug/L		107	56 - 143
1,1,2-Trichloroethane	20.0	20.1		ug/L		100	80 - 119
Trichloroethene	20.0	18.6		ug/L		93	79 - 123
Methyl acetate	20.0	25.1		ug/L		126	56 - 136
1,1,2,2-Tetrachloroethane	20.0	20.7		ug/L		103	71 - 121
1,2-Dichlorobenzene	20.0	19.1		ug/L		96	80 - 119
1,2-Dibromo-3-Chloropropane	20.0	19.9		ug/L		99	62 - 128
Isopropylbenzene	20.0	19.2		ug/L		96	72 - 131

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*81 - 118*
Dibromofluoromethane (Surr)	*105*		*80 - 119*
4-Bromofluorobenzene (Surr)	*103*		*85 - 114*
Toluene-d8 (Surr)	*104*		*89 - 112*

Lab Sample ID: 410-60870-2 MS
Matrix: Ground Water
Analysis Batch: 191072

Client Sample ID: 3MW01-102621MS
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,3-Dichloropropene	0.50	U	20.0	19.8		ug/L		99	75 - 124
trans-1,3-Dichloropropene	0.50	U	20.0	20.2		ug/L		101	73 - 127
Ethylbenzene	0.80	U	20.0	20.8		ug/L		104	79 - 121
Styrene	0.60	U	20.0	20.2		ug/L		101	78 - 123
1,4-Dichlorobenzene	0.60	U	20.0	20.0		ug/L		100	79 - 118
1,2-Dibromoethane (EDB)	0.50	U	20.0	20.3		ug/L		102	77 - 121
1,2-Dichloroethane	0.60	U	20.0	20.8		ug/L		104	73 - 128
4-Methyl-2-pentanone	1.0	U	250	264		ug/L		106	67 - 130
Methylcyclohexane	1.0	U Q	20.0	21.5		ug/L		107	72 - 132
Toluene	0.50	U	20.0	20.6		ug/L		103	80 - 121
Chlorobenzene	0.60	U	20.0	20.6		ug/L		103	82 - 118
Cyclohexane	2.0	U Q	20.0	20.7		ug/L		104	71 - 130
1,2,4-Trichlorobenzene	1.0	U	20.0	18.9		ug/L		94	69 - 130
Dibromochloromethane	0.50	U	20.0	20.4		ug/L		102	74 - 126
Xylenes, Total	0.80	U	60.0	61.9		ug/L		103	79 - 121
Tetrachloroethene	0.60	U	20.0	21.5		ug/L		108	74 - 129
cis-1,2-Dichloroethene	0.32	J M	20.0	22.1		ug/L		109	78 - 123
trans-1,2-Dichloroethene	0.60	U	20.0	21.5		ug/L		107	75 - 124
Methyl tert-butyl ether	0.50	U	20.0	19.2		ug/L		96	71 - 124
1,3-Dichlorobenzene	0.60	U	20.0	20.0		ug/L		100	80 - 119
Carbon tetrachloride	0.60	U	20.0	22.3		ug/L		111	72 - 136
2-Hexanone	1.0	U	250	265		ug/L		106	57 - 139
Acetone	2.0	U	250	256		ug/L		102	39 - 160

Method: 8260D - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 410-60870-2 MS
Matrix: Ground Water
Analysis Batch: 191072

Client Sample ID: 3MW01-102621MS
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloroform	0.60	U	20.0	21.9		ug/L		109	79 - 124
Benzene	0.60	U	20.0	21.2		ug/L		106	79 - 120
1,1,1-Trichloroethane	0.60	U	20.0	22.1		ug/L		111	74 - 131
Bromomethane	0.60	U	20.0	20.0		ug/L		100	53 - 141
Chloromethane	0.50	U	20.0	21.2		ug/L		106	50 - 139
Chloroethane	0.50	U	20.0	21.2		ug/L		106	60 - 138
Vinyl chloride	0.50	U	20.0	20.0		ug/L		100	58 - 137
Methylene Chloride	0.60	U	20.0	21.0		ug/L		105	74 - 124
Carbon disulfide	0.60	U	20.0	21.2		ug/L		106	64 - 133
Bromoform	2.0	U	20.0	20.3		ug/L		102	66 - 130
Bromodichloromethane	0.50	U	20.0	20.9		ug/L		104	79 - 125
1,1-Dichloroethane	0.60	U	20.0	20.5		ug/L		103	77 - 125
1,1-Dichloroethene	0.60	U	20.0	22.5		ug/L		112	71 - 131
Trichlorofluoromethane	0.50	U	20.0	22.0		ug/L		110	65 - 141
Dichlorodifluoromethane	0.50	U	20.0	24.9		ug/L		125	32 - 152
Freon 113	0.60	U	20.0	22.8		ug/L		114	70 - 136
1,2-Dichloropropane	0.60	U	20.0	20.4		ug/L		102	78 - 122
2-Butanone	1.0	U	250	264		ug/L		105	56 - 143
1,1,2-Trichloroethane	0.60	U	20.0	20.6		ug/L		103	80 - 119
Trichloroethene	6.2		20.0	26.7		ug/L		102	79 - 123
Methyl acetate	0.60	U	20.0	22.5		ug/L		113	56 - 136
1,1,2,2-Tetrachloroethane	0.60	U	20.0	19.8		ug/L		99	71 - 121
1,2-Dichlorobenzene	0.50	U	20.0	20.0		ug/L		100	80 - 119
1,2-Dibromo-3-Chloropropane	1.0	U	20.0	18.8		ug/L		94	62 - 128
Isopropylbenzene	0.50	U	20.0	21.1		ug/L		106	72 - 131

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*81 - 118*
Dibromofluoromethane (Surr)	*106*		*80 - 119*
4-Bromofluorobenzene (Surr)	*102*		*85 - 114*
Toluene-d8 (Surr)	*104*		*89 - 112*

Lab Sample ID: 410-60870-2 MSD
Matrix: Ground Water
Analysis Batch: 191072

Client Sample ID: 3MW01-102621MSD
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
cis-1,3-Dichloropropene	0.50	U	20.0	19.4		ug/L		97	75 - 124	2	20
trans-1,3-Dichloropropene	0.50	U	20.0	19.8		ug/L		99	73 - 127	2	20
Ethylbenzene	0.80	U	20.0	20.4		ug/L		102	79 - 121	2	20
Styrene	0.60	U	20.0	19.8		ug/L		99	78 - 123	2	20
1,4-Dichlorobenzene	0.60	U	20.0	20.0		ug/L		100	79 - 118	0	20
1,2-Dibromoethane (EDB)	0.50	U	20.0	19.6		ug/L		98	77 - 121	3	20
1,2-Dichloroethane	0.60	U	20.0	20.5		ug/L		102	73 - 128	1	20
4-Methyl-2-pentanone	1.0	U	250	259		ug/L		104	67 - 130	2	20
Methylcyclohexane	1.0	U Q	20.0	21.0		ug/L		105	72 - 132	2	20
Toluene	0.50	U	20.0	20.2		ug/L		101	80 - 121	2	20
Chlorobenzene	0.60	U	20.0	20.2		ug/L		101	82 - 118	2	20

Method: 8260D - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 410-60870-2 MSD
Matrix: Ground Water
Analysis Batch: 191072

Client Sample ID: 3MW01-102621MSD
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyclohexane	2.0	U Q	20.0	20.7		ug/L		103	71 - 130	0	20
1,2,4-Trichlorobenzene	1.0	U	20.0	18.9		ug/L		95	69 - 130	0	20
Dibromochloromethane	0.50	U	20.0	19.4		ug/L		97	74 - 126	5	20
Xylenes, Total	0.80	U	60.0	60.1		ug/L		100	79 - 121	3	20
Tetrachloroethene	0.60	U	20.0	21.1		ug/L		105	74 - 129	2	20
cis-1,2-Dichloroethene	0.32	J M	20.0	21.7		ug/L		107	78 - 123	2	20
trans-1,2-Dichloroethene	0.60	U	20.0	21.0		ug/L		105	75 - 124	2	20
Methyl tert-butyl ether	0.50	U	20.0	18.9		ug/L		95	71 - 124	1	20
1,3-Dichlorobenzene	0.60	U	20.0	20.0		ug/L		100	80 - 119	0	20
Carbon tetrachloride	0.60	U	20.0	22.0		ug/L		110	72 - 136	1	20
2-Hexanone	1.0	U	250	260		ug/L		104	57 - 139	2	20
Acetone	2.0	U	250	243		ug/L		97	39 - 160	5	20
Chloroform	0.60	U	20.0	21.2		ug/L		106	79 - 124	3	20
Benzene	0.60	U	20.0	20.7		ug/L		103	79 - 120	2	20
1,1,1-Trichloroethane	0.60	U	20.0	21.9		ug/L		110	74 - 131	1	20
Bromomethane	0.60	U	20.0	19.5		ug/L		98	53 - 141	3	20
Chloromethane	0.50	U	20.0	21.5		ug/L		108	50 - 139	2	20
Chloroethane	0.50	U	20.0	20.7		ug/L		104	60 - 138	2	20
Vinyl chloride	0.50	U	20.0	20.3		ug/L		101	58 - 137	1	20
Methylene Chloride	0.60	U	20.0	20.2		ug/L		101	74 - 124	4	20
Carbon disulfide	0.60	U	20.0	21.1		ug/L		106	64 - 133	0	20
Bromoform	2.0	U	20.0	19.6		ug/L		98	66 - 130	3	20
Bromodichloromethane	0.50	U	20.0	20.5		ug/L		102	79 - 125	2	20
1,1-Dichloroethane	0.60	U	20.0	20.8		ug/L		104	77 - 125	1	20
1,1-Dichloroethene	0.60	U	20.0	22.2		ug/L		111	71 - 131	1	20
Trichlorofluoromethane	0.50	U	20.0	22.0		ug/L		110	65 - 141	0	20
Dichlorodifluoromethane	0.50	U	20.0	24.4		ug/L		122	32 - 152	2	20
Freon 113	0.60	U	20.0	22.6		ug/L		113	70 - 136	1	20
1,2-Dichloropropane	0.60	U	20.0	20.3		ug/L		101	78 - 122	1	20
2-Butanone	1.0	U	250	261		ug/L		105	56 - 143	1	20
1,1,2-Trichloroethane	0.60	U	20.0	19.8		ug/L		99	80 - 119	4	20
Trichloroethene	6.2		20.0	26.5		ug/L		102	79 - 123	0	20
Methyl acetate	0.60	U	20.0	24.4		ug/L		122	56 - 136	8	20
1,1,2,2-Tetrachloroethane	0.60	U	20.0	19.9		ug/L		99	71 - 121	0	20
1,2-Dichlorobenzene	0.50	U	20.0	19.8		ug/L		99	80 - 119	1	20
1,2-Dibromo-3-Chloropropane	1.0	U	20.0	19.2		ug/L		96	62 - 128	2	20
Isopropylbenzene	0.50	U	20.0	20.8		ug/L		104	72 - 131	2	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*81 - 118*
Dibromofluoromethane (Surr)	*105*		*80 - 119*
4-Bromofluorobenzene (Surr)	*103*		*85 - 114*
Toluene-d8 (Surr)	*103*		*89 - 112*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 410-190591/1-A
Matrix: Water
Analysis Batch: 190933

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 190591

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.40	U	0.50	0.15	ug/L		11/04/21 05:27	11/04/21 13:37	1

Lab Sample ID: LCS 410-190591/2-A
Matrix: Water
Analysis Batch: 190933

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 190591

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	50.0	51.9		ug/L		104	87 - 115

Lab Sample ID: MB 410-190873/1-A
Matrix: Water
Analysis Batch: 191437

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 190873

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.40	U	0.50	0.15	ug/L		11/04/21 13:13	11/05/21 13:15	1

Lab Sample ID: LCS 410-190873/2-A
Matrix: Water
Analysis Batch: 191437

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 190873

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	50.0	50.4		ug/L		101	87 - 115

Lab Sample ID: MB 410-190955/1-A
Matrix: Water
Analysis Batch: 191445

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 190955

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.40	U	0.50	0.15	ug/L		11/04/21 15:51	11/05/21 14:38	1

Lab Sample ID: LCS 410-190955/2-A
Matrix: Water
Analysis Batch: 191445

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 190955

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	50.0	50.0		ug/L		100	87 - 115

Lab Sample ID: 410-60870-2 MS
Matrix: Ground Water
Analysis Batch: 191445

Client Sample ID: 3MW01-102621MS
Prep Type: Total Recoverable
Prep Batch: 190955

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	3.5	J1	50.0	54.8		ug/L		103	87 - 115

Lab Sample ID: 410-60870-2 MSD
Matrix: Ground Water
Analysis Batch: 191445

Client Sample ID: 3MW01-102621MSD
Prep Type: Total Recoverable
Prep Batch: 190955

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cadmium	3.5	J1	50.0	53.8		ug/L		101	87 - 115	2	20

Client: ARCADIS U.S., Inc.
Project/Site: Fort Monmouth NJ

Job ID: 410-60870-1

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: 410-60870-2 DU
Matrix: Ground Water
Analysis Batch: 191445

Client Sample ID: 3MW01-102621
Prep Type: Total Recoverable
Prep Batch: 190955

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Cadmium	3.5	J1		3.49		ug/L				1	20

GC/MS VOA

Analysis Batch: 191072

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60870-1	3MW05R-102621	Total/NA	Ground Water	8260D	
410-60870-2	3MW01-102621	Total/NA	Ground Water	8260D	
410-60870-3	3MW01-102621D	Total/NA	Ground Water	8260D	
410-60870-4	3MW08-102721	Total/NA	Ground Water	8260D	
410-60870-5	3MW07-102721	Total/NA	Ground Water	8260D	
410-60870-6	3MW09-102721	Total/NA	Ground Water	8260D	
410-60870-7	FB-102621	Total/NA	Water	8260D	
410-60870-8	FB-102721	Total/NA	Water	8260D	
410-60870-9	Trip Blank	Total/NA	Water	8260D	
MB 410-191072/6	Method Blank	Total/NA	Water	8260D	
LCS 410-191072/4	Lab Control Sample	Total/NA	Water	8260D	
410-60870-2 MS	3MW01-102621MS	Total/NA	Ground Water	8260D	
410-60870-2 MSD	3MW01-102621MSD	Total/NA	Ground Water	8260D	

Metals

Prep Batch: 190591

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60870-3	3MW01-102621D	Total Recoverable	Ground Water	3005A	
410-60870-7	FB-102621	Total Recoverable	Water	3005A	
MB 410-190591/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-190591/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 190873

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60870-8	FB-102721	Total Recoverable	Water	3005A	
MB 410-190873/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-190873/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 190933

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60870-3	3MW01-102621D	Total Recoverable	Ground Water	6020B	190591
410-60870-7	FB-102621	Total Recoverable	Water	6020B	190591
MB 410-190591/1-A	Method Blank	Total Recoverable	Water	6020B	190591
LCS 410-190591/2-A	Lab Control Sample	Total Recoverable	Water	6020B	190591

Prep Batch: 190955

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60870-2	3MW01-102621	Total Recoverable	Ground Water	3005A	
MB 410-190955/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-190955/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
410-60870-2 MS	3MW01-102621MS	Total Recoverable	Ground Water	3005A	
410-60870-2 MSD	3MW01-102621MSD	Total Recoverable	Ground Water	3005A	
410-60870-2 DU	3MW01-102621	Total Recoverable	Ground Water	3005A	

Analysis Batch: 191437

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60870-8	FB-102721	Total Recoverable	Water	6020B	190873
MB 410-190873/1-A	Method Blank	Total Recoverable	Water	6020B	190873
LCS 410-190873/2-A	Lab Control Sample	Total Recoverable	Water	6020B	190873

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Fort Monmouth NJ

Job ID: 410-60870-1

Metals

Analysis Batch: 191445

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60870-2	3MW01-102621	Total Recoverable	Ground Water	6020B	190955
MB 410-190955/1-A	Method Blank	Total Recoverable	Water	6020B	190955
LCS 410-190955/2-A	Lab Control Sample	Total Recoverable	Water	6020B	190955
410-60870-2 MS	3MW01-102621MS	Total Recoverable	Ground Water	6020B	190955
410-60870-2 MSD	3MW01-102621MSD	Total Recoverable	Ground Water	6020B	190955
410-60870-2 DU	3MW01-102621	Total Recoverable	Ground Water	6020B	190955

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Fort Monmouth NJ

Job ID: 410-60870-1

Client Sample ID: 3MW05R-102621
Lab Sample ID: 410-60870-1
Date Collected: 10/26/21 14:25
Matrix: Ground Water
Date Received: 10/27/21 17:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	191072	11/05/21 03:29	K4WN	ELLE

Client Sample ID: 3MW01-102621
Lab Sample ID: 410-60870-2
Date Collected: 10/26/21 15:55
Matrix: Ground Water
Date Received: 10/27/21 17:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	191072	11/05/21 00:52	K4WN	ELLE
Total Recoverable	Prep	3005A			190955	11/04/21 15:51	UAMX	ELLE
Total Recoverable	Analysis	6020B		1	191445	11/05/21 14:42	S8DY	ELLE

Client Sample ID: 3MW01-102621D
Lab Sample ID: 410-60870-3
Date Collected: 10/26/21 00:00
Matrix: Ground Water
Date Received: 10/27/21 17:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	191072	11/05/21 03:48	K4WN	ELLE
Total Recoverable	Prep	3005A			190591	11/04/21 05:27	UAMX	ELLE
Total Recoverable	Analysis	6020B		1	190933	11/04/21 14:15	S8DY	ELLE

Client Sample ID: 3MW08-102721
Lab Sample ID: 410-60870-4
Date Collected: 10/27/21 10:35
Matrix: Ground Water
Date Received: 10/27/21 17:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	191072	11/05/21 04:08	K4WN	ELLE

Client Sample ID: 3MW07-102721
Lab Sample ID: 410-60870-5
Date Collected: 10/27/21 11:15
Matrix: Ground Water
Date Received: 10/27/21 17:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	191072	11/05/21 04:28	K4WN	ELLE

Client Sample ID: 3MW09-102721
Lab Sample ID: 410-60870-6
Date Collected: 10/27/21 11:55
Matrix: Ground Water
Date Received: 10/27/21 17:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	191072	11/05/21 04:47	K4WN	ELLE

Lab Chronicle

Client: ARCADIS U.S., Inc.
Job ID: 410-60870-1
Project/Site: Fort Monmouth NJ

Client Sample ID: FB-102621
Lab Sample ID: 410-60870-7
Date Collected: 10/26/21 16:00
Matrix: Water
Date Received: 10/27/21 17:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	191072	11/04/21 23:53	K4WN	ELLE
Total Recoverable	Prep	3005A			190591	11/04/21 05:27	UAMX	ELLE
Total Recoverable	Analysis	6020B		1	190933	11/04/21 14:09	S8DY	ELLE

Client Sample ID: FB-102721
Lab Sample ID: 410-60870-8
Date Collected: 10/27/21 09:00
Matrix: Water
Date Received: 10/27/21 17:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	191072	11/05/21 00:13	K4WN	ELLE
Total Recoverable	Prep	3005A			190873	11/04/21 13:13	UJLA	ELLE
Total Recoverable	Analysis	6020B		1	191437	11/05/21 13:51	S8DY	ELLE

Client Sample ID: Trip Blank
Lab Sample ID: 410-60870-9
Date Collected: 10/26/21 00:00
Matrix: Water
Date Received: 10/27/21 17:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	191072	11/05/21 00:32	K4WN	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: ARCADIS U.S., Inc.
Job ID: 410-60870-1
Project/Site: Fort Monmouth NJ

Laboratory: Eurofins Lancaster Laboratories Env, LLC

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	1.01	11-30-22
New Jersey	NELAP	PA011	06-30-22

Method Summary

Client: ARCADIS U.S., Inc.
Job ID: 410-60870-1
Project/Site: Fort Monmouth NJ

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds (GC/MS)	SW846	ELLE
6020B	Metals (ICP/MS)	SW846	ELLE
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Fort Monmouth NJ

Job ID: 410-60870-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-60870-1	3MW05R-102621	Ground Water	10/26/21 14:25	10/27/21 17:29
410-60870-2	3MW01-102621	Ground Water	10/26/21 15:55	10/27/21 17:29
410-60870-3	3MW01-102621D	Ground Water	10/26/21 00:00	10/27/21 17:29
410-60870-4	3MW08-102721	Ground Water	10/27/21 10:35	10/27/21 17:29
410-60870-5	3MW07-102721	Ground Water	10/27/21 11:15	10/27/21 17:29
410-60870-6	3MW09-102721	Ground Water	10/27/21 11:55	10/27/21 17:29
410-60870-7	FB-102621	Water	10/26/21 16:00	10/27/21 17:29
410-60870-8	FB-102721	Water	10/27/21 09:00	10/27/21 17:29
410-60870-9	Trip Blank	Water	10/26/21 00:00	10/27/21 17:29

LLC

Chain of Custody Record

eurofins Environment Testing America

Client Contact: Accounts Payable	Sampler: G. Basalyga / T. Taye	Lab PM: Weyandt, Barbara A	Carrier Tracking No(s):	COC No: 410-35626-11140 1
Company: ARCADIS U S , Inc.	Phone: 570-362-2585	E-Mail: Barbara.Weyandt@eurofinset.com	State of Origin: NJ	Page: Page 1 of 2
Address: 630 Plaza Drive Suite 600	PWSID:	Analysis Requested		Job #:
City: Highlands Ranch	Due Date Requested:			
State, Zip: CO, 80129-2377	TAT Requested (days): Std			
Phone: 267-685-1844(Tel)	Compliance Project: Δ Yes Δ No			
Email: accountspayable.administration@arcadis.com	PO #: Purchase Order Requested			
Project Name: Fort Monmouth NJ	WO #: 30061472			
Site: Evans Area	Project #: 41008116			
	SSOW#:			

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260D_DOD5 - VOCs	6020B_DOD5 - Cadmium	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	D		
3MW05R-102621	10/26/21	1425	G		N		X			
3MW01-102621	10/26/21	1555	G			X	X	X		
3MW01-102621 MS	10/26/21	1555	G			X	X	X		MS
3MW01-102621 MSD	10/26/21	1555	G			X	X	X		MSD
~~3MW~~ 3MW01-102621D	10/26/21	—	G				X	X		
3MW06-102721	10/27/21	1035	G				X			
3MW07-102721	10/27/21	1115	G				X			
3MW09-102721	10/27/21	1155	G				X			
FB-102621	10/26/21	1600	G	W			X	X		
FB-102721	10/27/21	0900	G	W			X	X		
Trip Blank				W			X			

Possible Hazard Identification

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:	
Relinquished by:	Date/Time: 10/27/21 1430	Company	Received by:	Date/Time: 10/27/21 1442	Company		
Relinquished by:	Date/Time: 10.27.21 1716	Company	Received by:	Date/Time:	Company		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 10-27-21 1729	Company: ECLG		

Custody Seals Intact: Δ Yes (Δ No) | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 5.8

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 410-60870-1

Login Number: 60870

List Source: Eurofins Lancaster Laboratories Env, LLC

List Number: 1

Creator: Bryan, Debra A

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	True	

ANALYTICAL REPORT

Job Number: 410-60870-1

Job Description: Fort Monmouth NJ

For:
ARCADIS U.S., Inc.
10 Friends Lane
Suite 100
Newtown, PA 18940

Attention: Mrs. Kimberly Panhorst

Approved for release.
Barbara A Weyandt
Project Manager
11/10/2021 9:35 AM

Barbara A Weyandt, Project Manager
2425 New Holland Pike, Lancaster, PA, 17601
(717)556-7264
Barbara.Weyandt@eurofinset.com
11/10/2021

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Job Number: 410-60870-1

Job Description: Fort Monmouth NJ

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

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Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
M	Manual integrated compound.
Q	One or more quality control criteria failed.
U	Undetected at the Limit of Detection.

Metals

Qualifier	Qualifier Description
D	The reported value is from a dilution.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
J1	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
U	Undetected at the Limit of Detection.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job Narrative
410-60870-1

Receipt
The samples were received on 10/27/2021 5:29 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.8°C

GC/MS VOA
Method 8260D_DOD5: The response for Cyclohexane and Methylcyclohexane in the continuing calibration verification (CCV) marginally exceeds, low-biased, the DoD acceptance criteria on batch 410-191072. Due to the marginal nature of the outlier(s), the data is reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
Method 6020B_DOD5: The NJ DKQP analyte list requirement was not met for Method 6020B. The client requested analyte list was reported for this job.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Fort Monmouth NJ

Job ID: 410-60870-1

Client Sample ID: 3MW05R-102621 — Lab Sample ID: 410-60870-1

No Detections.

Client Sample ID: 3MW01-102621 — Lab Sample ID: 410-60870-2

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.32	J M	1.0	0.30	ug/L	1		8260D	Total/NA
Trichloroethene	6.2		1.0	0.30	ug/L	1		8260D	Total/NA
Cadmium	3.5	J1	0.50	0.15	ug/L	1		6020B	Total Recoverable

Client Sample ID: 3MW01-102621D — Lab Sample ID: 410-60870-3

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.33	J	1.0	0.30	ug/L	1		8260D	Total/NA
Trichloroethene	5.8		1.0	0.30	ug/L	1		8260D	Total/NA
Cadmium	3.6		0.50	0.15	ug/L	1		6020B	Total Recoverable

Client Sample ID: 3MW08-102721 — Lab Sample ID: 410-60870-4

No Detections.

Client Sample ID: 3MW07-102721 — Lab Sample ID: 410-60870-5

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.60	J M	1.0	0.30	ug/L	1		8260D	Total/NA
Methyl tert-butyl ether	1.1		1.0	0.20	ug/L	1		8260D	Total/NA
Trichloroethene	26		1.0	0.30	ug/L	1		8260D	Total/NA

Client Sample ID: 3MW09-102721 — Lab Sample ID: 410-60870-6

No Detections.

Client Sample ID: FB-102621 — Lab Sample ID: 410-60870-7

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Chloroform	2.5		1.0	0.30	ug/L	1		8260D	Total/NA

Client Sample ID: FB-102721 — Lab Sample ID: 410-60870-8

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Chloroform	2.7		1.0	0.30	ug/L	1		8260D	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 410-60870-9

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: 3MW05R-102621
Date Collected: 10/26/21 14:25
Date Received: 10/27/21 17:29

Lab Sample ID: 410-60870-1
Matrix: Ground Water

Method: 8260D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 03:29	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 03:29	1
Ethylbenzene	0.80	U	1.0	0.40	ug/L			11/05/21 03:29	1
Styrene	0.60	U	5.0	0.30	ug/L			11/05/21 03:29	1
1,4-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 03:29	1
1,2-Dibromoethane (EDB)	0.50	U	1.0	0.20	ug/L			11/05/21 03:29	1
1,2-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
4-Methyl-2-pentanone	1.0	U	10	0.50	ug/L			11/05/21 03:29	1
Methylcyclohexane	1.0	U Q	5.0	0.50	ug/L			11/05/21 03:29	1
Toluene	0.50	U	1.0	0.20	ug/L			11/05/21 03:29	1
Chlorobenzene	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
Cyclohexane	2.0	U Q	5.0	1.0	ug/L			11/05/21 03:29	1
1,2,4-Trichlorobenzene	1.0	U	5.0	0.30	ug/L			11/05/21 03:29	1
Dibromochloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 03:29	1
Xylenes, Total	0.80	U	1.0	0.40	ug/L			11/05/21 03:29	1
Tetrachloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
cis-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
trans-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
Methyl tert-butyl ether	0.50	U	1.0	0.20	ug/L			11/05/21 03:29	1
1,3-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 03:29	1
Carbon tetrachloride	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
2-Hexanone	1.0	U	10	0.40	ug/L			11/05/21 03:29	1
Acetone	2.0	U	20	0.70	ug/L			11/05/21 03:29	1
Chloroform	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
Benzene	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
1,1,1-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
Bromomethane	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
Chloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 03:29	1
Chloroethane	0.50	U	1.0	0.20	ug/L			11/05/21 03:29	1
Vinyl chloride	0.50	U	1.0	0.20	ug/L			11/05/21 03:29	1
Methylene Chloride	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
Carbon disulfide	0.60	U	5.0	0.30	ug/L			11/05/21 03:29	1
Bromoform	2.0	U	4.0	1.0	ug/L			11/05/21 03:29	1
Bromodichloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 03:29	1
1,1-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
1,1-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
Trichlorofluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 03:29	1
Dichlorodifluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 03:29	1
Freon 113	0.60	U	10	0.30	ug/L			11/05/21 03:29	1
1,2-Dichloropropane	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
2-Butanone	1.0	U	10	0.50	ug/L			11/05/21 03:29	1
1,1,2-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
Trichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
Methyl acetate	0.60	U	5.0	0.30	ug/L			11/05/21 03:29	1
1,1,2,2-Tetrachloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
1,2-Dichlorobenzene	0.50	U	5.0	0.20	ug/L			11/05/21 03:29	1
1,2-Dibromo-3-Chloropropane	1.0	U	5.0	0.30	ug/L			11/05/21 03:29	1
Isopropylbenzene	0.50	U	5.0	0.20	ug/L			11/05/21 03:29	1

Client Sample ID: 3MW05R-102621
Lab Sample ID: 410-60870-1

Date Collected: 10/26/21 14:25
Matrix: Ground Water
Date Received: 10/27/21 17:29

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L					11/05/21 03:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		81 - 118		11/05/21 03:29	1
Dibromofluoromethane (Surr)	105		80 - 119		11/05/21 03:29	1
4-Bromofluorobenzene (Surr)	102		85 - 114		11/05/21 03:29	1
Toluene-d8 (Surr)	104		89 - 112		11/05/21 03:29	1

Client Sample ID: 3MW01-102621
Lab Sample ID: 410-60870-2

Date Collected: 10/26/21 15:55
Matrix: Ground Water
Date Received: 10/27/21 17:29

Method: 8260D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 00:52	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 00:52	1
Ethylbenzene	0.80	U	1.0	0.40	ug/L			11/05/21 00:52	1
Styrene	0.60	U	5.0	0.30	ug/L			11/05/21 00:52	1
1,4-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 00:52	1
1,2-Dibromoethane (EDB)	0.50	U	1.0	0.20	ug/L			11/05/21 00:52	1
1,2-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
4-Methyl-2-pentanone	1.0	U	10	0.50	ug/L			11/05/21 00:52	1
Methylcyclohexane	1.0	U Q	5.0	0.50	ug/L			11/05/21 00:52	1
Toluene	0.50	U	1.0	0.20	ug/L			11/05/21 00:52	1
Chlorobenzene	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
Cyclohexane	2.0	U Q	5.0	1.0	ug/L			11/05/21 00:52	1
1,2,4-Trichlorobenzene	1.0	U	5.0	0.30	ug/L			11/05/21 00:52	1
Dibromochloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:52	1
Xylenes, Total	0.80	U	1.0	0.40	ug/L			11/05/21 00:52	1
Tetrachloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
cis-1,2-Dichloroethene	**0.32**	**J M**	1.0	0.30	ug/L			11/05/21 00:52	1
trans-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
Methyl tert-butyl ether	0.50	U	1.0	0.20	ug/L			11/05/21 00:52	1
1,3-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 00:52	1
Carbon tetrachloride	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
2-Hexanone	1.0	U	10	0.40	ug/L			11/05/21 00:52	1
Acetone	2.0	U	20	0.70	ug/L			11/05/21 00:52	1
Chloroform	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
Benzene	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
1,1,1-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
Bromomethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
Chloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:52	1
Chloroethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:52	1
Vinyl chloride	0.50	U	1.0	0.20	ug/L			11/05/21 00:52	1
Methylene Chloride	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
Carbon disulfide	0.60	U	5.0	0.30	ug/L			11/05/21 00:52	1
Bromoform	2.0	U	4.0	1.0	ug/L			11/05/21 00:52	1
Bromodichloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:52	1
1,1-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
1,1-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
Trichlorofluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:52	1

Client Sample ID: 3MW01-102621

Date Collected: 10/26/21 15:55
Date Received: 10/27/21 17:29

Lab Sample ID: 410-60870-2

Matrix: Ground Water

Method: 8260D - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:52	1
Freon 113	0.60	U	10	0.30	ug/L			11/05/21 00:52	1
1,2-Dichloropropane	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
2-Butanone	1.0	U	10	0.50	ug/L			11/05/21 00:52	1
1,1,2-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
Trichloroethene	**6.2**		1.0	0.30	ug/L			11/05/21 00:52	1
Methyl acetate	0.60	U	5.0	0.30	ug/L			11/05/21 00:52	1
1,1,2,2-Tetrachloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
1,2-Dichlorobenzene	0.50	U	5.0	0.20	ug/L			11/05/21 00:52	1
1,2-Dibromo-3-Chloropropane	1.0	U	5.0	0.30	ug/L			11/05/21 00:52	1
Isopropylbenzene	0.50	U	5.0	0.20	ug/L			11/05/21 00:52	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*11/05/21 00:52*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*81 - 118*		*11/05/21 00:52*	*1*
Dibromofluoromethane (Surr)	*105*		*80 - 119*		*11/05/21 00:52*	*1*
4-Bromofluorobenzene (Surr)	*99*		*85 - 114*		*11/05/21 00:52*	*1*
Toluene-d8 (Surr)	*102*		*89 - 112*		*11/05/21 00:52*	*1*

Method: 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	**3.5**	**J1**	0.50	0.15	ug/L		11/04/21 15:51	11/05/21 14:42	1

Client Sample ID: 3MW01-102621D

Date Collected: 10/26/21 00:00
Date Received: 10/27/21 17:29

Lab Sample ID: 410-60870-3

Matrix: Ground Water

Method: 8260D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 03:48	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 03:48	1
Ethylbenzene	0.80	U	1.0	0.40	ug/L			11/05/21 03:48	1
Styrene	0.60	U	5.0	0.30	ug/L			11/05/21 03:48	1
1,4-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 03:48	1
1,2-Dibromoethane (EDB)	0.50	U	1.0	0.20	ug/L			11/05/21 03:48	1
1,2-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
4-Methyl-2-pentanone	1.0	U	10	0.50	ug/L			11/05/21 03:48	1
Methylcyclohexane	1.0	U Q	5.0	0.50	ug/L			11/05/21 03:48	1
Toluene	0.50	U	1.0	0.20	ug/L			11/05/21 03:48	1
Chlorobenzene	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
Cyclohexane	2.0	U Q	5.0	1.0	ug/L			11/05/21 03:48	1
1,2,4-Trichlorobenzene	1.0	U	5.0	0.30	ug/L			11/05/21 03:48	1
Dibromochloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 03:48	1
Xylenes, Total	0.80	U	1.0	0.40	ug/L			11/05/21 03:48	1
Tetrachloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
cis-1,2-Dichloroethene	**0.33**	**J**	1.0	0.30	ug/L			11/05/21 03:48	1
trans-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
Methyl tert-butyl ether	0.50	U	1.0	0.20	ug/L			11/05/21 03:48	1
1,3-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 03:48	1

Client Sample ID: 3MW01-102621D
Lab Sample ID: 410-60870-3

Date Collected: 10/26/21 00:00
Matrix: Ground Water
Date Received: 10/27/21 17:29

Method: 8260D - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon tetrachloride	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
2-Hexanone	1.0	U	10	0.40	ug/L			11/05/21 03:48	1
Acetone	2.0	U	20	0.70	ug/L			11/05/21 03:48	1
Chloroform	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
Benzene	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
1,1,1-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
Bromomethane	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
Chloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 03:48	1
Chloroethane	0.50	U	1.0	0.20	ug/L			11/05/21 03:48	1
Vinyl chloride	0.50	U	1.0	0.20	ug/L			11/05/21 03:48	1
Methylene Chloride	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
Carbon disulfide	0.60	U	5.0	0.30	ug/L			11/05/21 03:48	1
Bromoform	2.0	U	4.0	1.0	ug/L			11/05/21 03:48	1
Bromodichloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 03:48	1
1,1-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
1,1-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
Trichlorofluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 03:48	1
Dichlorodifluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 03:48	1
Freon 113	0.60	U	10	0.30	ug/L			11/05/21 03:48	1
1,2-Dichloropropane	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
2-Butanone	1.0	U	10	0.50	ug/L			11/05/21 03:48	1
1,1,2-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
Trichloroethene	**5.8**		1.0	0.30	ug/L			11/05/21 03:48	1
Methyl acetate	0.60	U	5.0	0.30	ug/L			11/05/21 03:48	1
1,1,2,2-Tetrachloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
1,2-Dichlorobenzene	0.50	U	5.0	0.20	ug/L			11/05/21 03:48	1
1,2-Dibromo-3-Chloropropane	1.0	U	5.0	0.30	ug/L			11/05/21 03:48	1
Isopropylbenzene	0.50	U	5.0	0.20	ug/L			11/05/21 03:48	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*11/05/21 03:48*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*81 - 118*		*11/05/21 03:48*	*1*
Dibromofluoromethane (Surr)	*107*		*80 - 119*		*11/05/21 03:48*	*1*
4-Bromofluorobenzene (Surr)	*101*		*85 - 114*		*11/05/21 03:48*	*1*
Toluene-d8 (Surr)	*103*		*89 - 112*		*11/05/21 03:48*	*1*

Method: 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	**3.6**		0.50	0.15	ug/L		11/04/21 05:27	11/04/21 14:15	1

Client Sample ID: 3MW08-102721
Lab Sample ID: 410-60870-4

Date Collected: 10/27/21 10:35
Matrix: Ground Water
Date Received: 10/27/21 17:29

Method: 8260D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 04:08	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 04:08	1
Ethylbenzene	0.80	U	1.0	0.40	ug/L			11/05/21 04:08	1

Client Sample ID: 3MW08-102721

Date Collected: 10/27/21 10:35
Date Received: 10/27/21 17:29

Lab Sample ID: 410-60870-4

Matrix: Ground Water

Method: 8260D - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Styrene	0.60	U	5.0	0.30	ug/L			11/05/21 04:08	1
1,4-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 04:08	1
1,2-Dibromoethane (EDB)	0.50	U	1.0	0.20	ug/L			11/05/21 04:08	1
1,2-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
4-Methyl-2-pentanone	1.0	U	10	0.50	ug/L			11/05/21 04:08	1
Methylcyclohexane	1.0	U Q	5.0	0.50	ug/L			11/05/21 04:08	1
Toluene	0.50	U	1.0	0.20	ug/L			11/05/21 04:08	1
Chlorobenzene	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
Cyclohexane	2.0	U Q	5.0	1.0	ug/L			11/05/21 04:08	1
1,2,4-Trichlorobenzene	1.0	U	5.0	0.30	ug/L			11/05/21 04:08	1
Dibromochloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:08	1
Xylenes, Total	0.80	U	1.0	0.40	ug/L			11/05/21 04:08	1
Tetrachloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
cis-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
trans-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
Methyl tert-butyl ether	0.50	U	1.0	0.20	ug/L			11/05/21 04:08	1
1,3-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 04:08	1
Carbon tetrachloride	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
2-Hexanone	1.0	U	10	0.40	ug/L			11/05/21 04:08	1
Acetone	2.0	U	20	0.70	ug/L			11/05/21 04:08	1
Chloroform	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
Benzene	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
1,1,1-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
Bromomethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
Chloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:08	1
Chloroethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:08	1
Vinyl chloride	0.50	U	1.0	0.20	ug/L			11/05/21 04:08	1
Methylene Chloride	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
Carbon disulfide	0.60	U	5.0	0.30	ug/L			11/05/21 04:08	1
Bromoform	2.0	U	4.0	1.0	ug/L			11/05/21 04:08	1
Bromodichloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:08	1
1,1-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
1,1-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
Trichlorofluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:08	1
Dichlorodifluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:08	1
Freon 113	0.60	U	10	0.30	ug/L			11/05/21 04:08	1
1,2-Dichloropropane	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
2-Butanone	1.0	U	10	0.50	ug/L			11/05/21 04:08	1
1,1,2-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
Trichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
Methyl acetate	0.60	U	5.0	0.30	ug/L			11/05/21 04:08	1
1,1,2,2-Tetrachloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
1,2-Dichlorobenzene	0.50	U	5.0	0.20	ug/L			11/05/21 04:08	1
1,2-Dibromo-3-Chloropropane	1.0	U	5.0	0.30	ug/L			11/05/21 04:08	1
Isopropylbenzene	0.50	U	5.0	0.20	ug/L			11/05/21 04:08	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*11/05/21 04:08*	*1*

Client Sample ID: 3MW08-102721
Lab Sample ID: 410-60870-4

Date Collected: 10/27/21 10:35
Matrix: Ground Water
Date Received: 10/27/21 17:29

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*81 - 118*		*11/05/21 04:08*	*1*
Dibromofluoromethane (Surr)	*106*		*80 - 119*		*11/05/21 04:08*	*1*
4-Bromofluorobenzene (Surr)	*101*		*85 - 114*		*11/05/21 04:08*	*1*
Toluene-d8 (Surr)	*102*		*89 - 112*		*11/05/21 04:08*	*1*

Client Sample ID: 3MW07-102721
Lab Sample ID: 410-60870-5

Date Collected: 10/27/21 11:15
Matrix: Ground Water
Date Received: 10/27/21 17:29

Method: 8260D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 04:28	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 04:28	1
Ethylbenzene	0.80	U	1.0	0.40	ug/L			11/05/21 04:28	1
Styrene	0.60	U	5.0	0.30	ug/L			11/05/21 04:28	1
1,4-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 04:28	1
1,2-Dibromoethane (EDB)	0.50	U	1.0	0.20	ug/L			11/05/21 04:28	1
1,2-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
4-Methyl-2-pentanone	1.0	U	10	0.50	ug/L			11/05/21 04:28	1
Methylcyclohexane	1.0	U Q	5.0	0.50	ug/L			11/05/21 04:28	1
Toluene	0.50	U	1.0	0.20	ug/L			11/05/21 04:28	1
Chlorobenzene	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
Cyclohexane	2.0	U Q	5.0	1.0	ug/L			11/05/21 04:28	1
1,2,4-Trichlorobenzene	1.0	U	5.0	0.30	ug/L			11/05/21 04:28	1
Dibromochloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:28	1
Xylenes, Total	0.80	U	1.0	0.40	ug/L			11/05/21 04:28	1
Tetrachloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
cis-1,2-Dichloroethene	**0.60**	**J M**	1.0	0.30	ug/L			11/05/21 04:28	1
trans-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
Methyl tert-butyl ether	**1.1**		1.0	0.20	ug/L			11/05/21 04:28	1
1,3-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 04:28	1
Carbon tetrachloride	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
2-Hexanone	1.0	U	10	0.40	ug/L			11/05/21 04:28	1
Acetone	2.0	U	20	0.70	ug/L			11/05/21 04:28	1
Chloroform	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
Benzene	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
1,1,1-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
Bromomethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
Chloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:28	1
Chloroethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:28	1
Vinyl chloride	0.50	U	1.0	0.20	ug/L			11/05/21 04:28	1
Methylene Chloride	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
Carbon disulfide	0.60	U	5.0	0.30	ug/L			11/05/21 04:28	1
Bromoform	2.0	U	4.0	1.0	ug/L			11/05/21 04:28	1
Bromodichloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:28	1
1,1-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
1,1-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
Trichlorofluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:28	1
Dichlorodifluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:28	1
Freon 113	0.60	U	10	0.30	ug/L			11/05/21 04:28	1

Client Sample ID: 3MW07-102721
Lab Sample ID: 410-60870-5

Date Collected: 10/27/21 11:15
Matrix: Ground Water
Date Received: 10/27/21 17:29

Method: 8260D - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloropropane	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
2-Butanone	1.0	U	10	0.50	ug/L			11/05/21 04:28	1
1,1,2-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
Trichloroethene	**26**		1.0	0.30	ug/L			11/05/21 04:28	1
Methyl acetate	0.60	U	5.0	0.30	ug/L			11/05/21 04:28	1
1,1,2,2-Tetrachloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
1,2-Dichlorobenzene	0.50	U	5.0	0.20	ug/L			11/05/21 04:28	1
1,2-Dibromo-3-Chloropropane	1.0	U	5.0	0.30	ug/L			11/05/21 04:28	1
Isopropylbenzene	0.50	U	5.0	0.20	ug/L			11/05/21 04:28	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*11/05/21 04:28*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*	*M*	*81 - 118*		*11/05/21 04:28*	*1*
Dibromofluoromethane (Surr)	*107*		*80 - 119*		*11/05/21 04:28*	*1*
4-Bromofluorobenzene (Surr)	*102*		*85 - 114*		*11/05/21 04:28*	*1*
Toluene-d8 (Surr)	*103*		*89 - 112*		*11/05/21 04:28*	*1*

Client Sample ID: 3MW09-102721
Lab Sample ID: 410-60870-6

Date Collected: 10/27/21 11:55
Matrix: Ground Water
Date Received: 10/27/21 17:29

Method: 8260D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 04:47	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 04:47	1
Ethylbenzene	0.80	U	1.0	0.40	ug/L			11/05/21 04:47	1
Styrene	0.60	U	5.0	0.30	ug/L			11/05/21 04:47	1
1,4-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 04:47	1
1,2-Dibromoethane (EDB)	0.50	U	1.0	0.20	ug/L			11/05/21 04:47	1
1,2-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
4-Methyl-2-pentanone	1.0	U	10	0.50	ug/L			11/05/21 04:47	1
Methylcyclohexane	1.0	U Q	5.0	0.50	ug/L			11/05/21 04:47	1
Toluene	0.50	U	1.0	0.20	ug/L			11/05/21 04:47	1
Chlorobenzene	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
Cyclohexane	2.0	U Q	5.0	1.0	ug/L			11/05/21 04:47	1
1,2,4-Trichlorobenzene	1.0	U	5.0	0.30	ug/L			11/05/21 04:47	1
Dibromochloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:47	1
Xylenes, Total	0.80	U	1.0	0.40	ug/L			11/05/21 04:47	1
Tetrachloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
cis-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
trans-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
Methyl tert-butyl ether	0.50	U	1.0	0.20	ug/L			11/05/21 04:47	1
1,3-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 04:47	1
Carbon tetrachloride	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
2-Hexanone	1.0	U	10	0.40	ug/L			11/05/21 04:47	1
Acetone	2.0	U	20	0.70	ug/L			11/05/21 04:47	1
Chloroform	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
Benzene	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1

Client Sample ID: 3MW09-102721
Lab Sample ID: 410-60870-6

Date Collected: 10/27/21 11:55
Matrix: Ground Water
Date Received: 10/27/21 17:29

Method: 8260D - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
Bromomethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
Chloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:47	1
Chloroethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:47	1
Vinyl chloride	0.50	U	1.0	0.20	ug/L			11/05/21 04:47	1
Methylene Chloride	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
Carbon disulfide	0.60	U	5.0	0.30	ug/L			11/05/21 04:47	1
Bromoform	2.0	U	4.0	1.0	ug/L			11/05/21 04:47	1
Bromodichloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:47	1
1,1-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
1,1-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
Trichlorofluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:47	1
Dichlorodifluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:47	1
Freon 113	0.60	U	10	0.30	ug/L			11/05/21 04:47	1
1,2-Dichloropropane	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
2-Butanone	1.0	U	10	0.50	ug/L			11/05/21 04:47	1
1,1,2-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
Trichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
Methyl acetate	0.60	U	5.0	0.30	ug/L			11/05/21 04:47	1
1,1,2,2-Tetrachloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
1,2-Dichlorobenzene	0.50	U	5.0	0.20	ug/L			11/05/21 04:47	1
1,2-Dibromo-3-Chloropropane	1.0	U	5.0	0.30	ug/L			11/05/21 04:47	1
Isopropylbenzene	0.50	U	5.0	0.20	ug/L			11/05/21 04:47	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*11/05/21 04:47*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*81 - 118*		*11/05/21 04:47*	*1*
Dibromofluoromethane (Surr)	*106*		*80 - 119*		*11/05/21 04:47*	*1*
4-Bromofluorobenzene (Surr)	*101*		*85 - 114*		*11/05/21 04:47*	*1*
Toluene-d8 (Surr)	*103*		*89 - 112*		*11/05/21 04:47*	*1*

Client Sample ID: FB-102621
Lab Sample ID: 410-60870-7

Date Collected: 10/26/21 16:00
Matrix: Water
Date Received: 10/27/21 17:29

Method: 8260D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/04/21 23:53	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/04/21 23:53	1
Ethylbenzene	0.80	U	1.0	0.40	ug/L			11/04/21 23:53	1
Styrene	0.60	U	5.0	0.30	ug/L			11/04/21 23:53	1
1,4-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/04/21 23:53	1
1,2-Dibromoethane (EDB)	0.50	U	1.0	0.20	ug/L			11/04/21 23:53	1
1,2-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
4-Methyl-2-pentanone	1.0	U	10	0.50	ug/L			11/04/21 23:53	1
Methylcyclohexane	1.0	U Q	5.0	0.50	ug/L			11/04/21 23:53	1
Toluene	0.50	U	1.0	0.20	ug/L			11/04/21 23:53	1
Chlorobenzene	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1

Client Sample ID: FB-102621

Date Collected: 10/26/21 16:00
Date Received: 10/27/21 17:29

Lab Sample ID: 410-60870-7

Matrix: Water

Method: 8260D - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cyclohexane	2.0	U Q	5.0	1.0	ug/L			11/04/21 23:53	1
1,2,4-Trichlorobenzene	1.0	U	5.0	0.30	ug/L			11/04/21 23:53	1
Dibromochloromethane	0.50	U	1.0	0.20	ug/L			11/04/21 23:53	1
Xylenes, Total	0.80	U	1.0	0.40	ug/L			11/04/21 23:53	1
Tetrachloroethene	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
cis-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
trans-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
Methyl tert-butyl ether	0.50	U	1.0	0.20	ug/L			11/04/21 23:53	1
1,3-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/04/21 23:53	1
Carbon tetrachloride	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
2-Hexanone	1.0	U	10	0.40	ug/L			11/04/21 23:53	1
Acetone	2.0	U	20	0.70	ug/L			11/04/21 23:53	1
Chloroform	**2.5**		1.0	0.30	ug/L			11/04/21 23:53	1
Benzene	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
1,1,1-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
Bromomethane	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
Chloromethane	0.50	U	1.0	0.20	ug/L			11/04/21 23:53	1
Chloroethane	0.50	U	1.0	0.20	ug/L			11/04/21 23:53	1
Vinyl chloride	0.50	U	1.0	0.20	ug/L			11/04/21 23:53	1
Methylene Chloride	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
Carbon disulfide	0.60	U	5.0	0.30	ug/L			11/04/21 23:53	1
Bromoform	2.0	U	4.0	1.0	ug/L			11/04/21 23:53	1
Bromodichloromethane	0.50	U	1.0	0.20	ug/L			11/04/21 23:53	1
1,1-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
1,1-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
Trichlorofluoromethane	0.50	U	1.0	0.20	ug/L			11/04/21 23:53	1
Dichlorodifluoromethane	0.50	U	1.0	0.20	ug/L			11/04/21 23:53	1
Freon 113	0.60	U	10	0.30	ug/L			11/04/21 23:53	1
1,2-Dichloropropane	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
2-Butanone	1.0	U	10	0.50	ug/L			11/04/21 23:53	1
1,1,2-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
Trichloroethene	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
Methyl acetate	0.60	U	5.0	0.30	ug/L			11/04/21 23:53	1
1,1,2,2-Tetrachloroethane	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
1,2-Dichlorobenzene	0.50	U	5.0	0.20	ug/L			11/04/21 23:53	1
1,2-Dibromo-3-Chloropropane	1.0	U	5.0	0.30	ug/L			11/04/21 23:53	1
Isopropylbenzene	0.50	U	5.0	0.20	ug/L			11/04/21 23:53	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*11/04/21 23:53*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*81 - 118*		*11/04/21 23:53*	*1*
Dibromofluoromethane (Surr)	*105*		*80 - 119*		*11/04/21 23:53*	*1*
4-Bromofluorobenzene (Surr)	*101*		*85 - 114*		*11/04/21 23:53*	*1*
Toluene-d8 (Surr)	*103*		*89 - 112*		*11/04/21 23:53*	*1*

Method: 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.40	U	0.50	0.15	ug/L		11/04/21 05:27	11/04/21 14:09	1

Client Sample ID: FB-102721

Date Collected: 10/27/21 09:00
Date Received: 10/27/21 17:29

Lab Sample ID: 410-60870-8

Matrix: Water

Method: 8260D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 00:13	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 00:13	1
Ethylbenzene	0.80	U	1.0	0.40	ug/L			11/05/21 00:13	1
Styrene	0.60	U	5.0	0.30	ug/L			11/05/21 00:13	1
1,4-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 00:13	1
1,2-Dibromoethane (EDB)	0.50	U	1.0	0.20	ug/L			11/05/21 00:13	1
1,2-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
4-Methyl-2-pentanone	1.0	U	10	0.50	ug/L			11/05/21 00:13	1
Methylcyclohexane	1.0	U Q	5.0	0.50	ug/L			11/05/21 00:13	1
Toluene	0.50	U	1.0	0.20	ug/L			11/05/21 00:13	1
Chlorobenzene	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
Cyclohexane	2.0	U Q	5.0	1.0	ug/L			11/05/21 00:13	1
1,2,4-Trichlorobenzene	1.0	U	5.0	0.30	ug/L			11/05/21 00:13	1
Dibromochloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:13	1
Xylenes, Total	0.80	U	1.0	0.40	ug/L			11/05/21 00:13	1
Tetrachloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
cis-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
trans-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
Methyl tert-butyl ether	0.50	U	1.0	0.20	ug/L			11/05/21 00:13	1
1,3-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 00:13	1
Carbon tetrachloride	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
2-Hexanone	1.0	U	10	0.40	ug/L			11/05/21 00:13	1
Acetone	2.0	U	20	0.70	ug/L			11/05/21 00:13	1
Chloroform	**2.7**		1.0	0.30	ug/L			11/05/21 00:13	1
Benzene	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
1,1,1-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
Bromomethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
Chloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:13	1
Chloroethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:13	1
Vinyl chloride	0.50	U	1.0	0.20	ug/L			11/05/21 00:13	1
Methylene Chloride	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
Carbon disulfide	0.60	U	5.0	0.30	ug/L			11/05/21 00:13	1
Bromoform	2.0	U	4.0	1.0	ug/L			11/05/21 00:13	1
Bromodichloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:13	1
1,1-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
1,1-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
Trichlorofluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:13	1
Dichlorodifluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:13	1
Freon 113	0.60	U	10	0.30	ug/L			11/05/21 00:13	1
1,2-Dichloropropane	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
2-Butanone	1.0	U	10	0.50	ug/L			11/05/21 00:13	1
1,1,2-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
Trichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
Methyl acetate	0.60	U	5.0	0.30	ug/L			11/05/21 00:13	1
1,1,2,2-Tetrachloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
1,2-Dichlorobenzene	0.50	U	5.0	0.20	ug/L			11/05/21 00:13	1
1,2-Dibromo-3-Chloropropane	1.0	U	5.0	0.30	ug/L			11/05/21 00:13	1
Isopropylbenzene	0.50	U	5.0	0.20	ug/L			11/05/21 00:13	1

Client Sample ID: FB-102721

Lab Sample ID: 410-60870-8

Date Collected: 10/27/21 09:00

Matrix: Water

Date Received: 10/27/21 17:29

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L					11/05/21 00:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		81 - 118		11/05/21 00:13	1
Dibromofluoromethane (Surr)	107		80 - 119		11/05/21 00:13	1
4-Bromofluorobenzene (Surr)	99		85 - 114		11/05/21 00:13	1
Toluene-d8 (Surr)	102		89 - 112		11/05/21 00:13	1

Method: 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.40	U	0.50	0.15	ug/L		11/04/21 13:13	11/05/21 13:51	1

Client Sample ID: Trip Blank

Lab Sample ID: 410-60870-9

Date Collected: 10/26/21 00:00

Matrix: Water

Date Received: 10/27/21 17:29

Method: 8260D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 00:32	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 00:32	1
Ethylbenzene	0.80	U	1.0	0.40	ug/L			11/05/21 00:32	1
Styrene	0.60	U	5.0	0.30	ug/L			11/05/21 00:32	1
1,4-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 00:32	1
1,2-Dibromoethane (EDB)	0.50	U	1.0	0.20	ug/L			11/05/21 00:32	1
1,2-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
4-Methyl-2-pentanone	1.0	U	10	0.50	ug/L			11/05/21 00:32	1
Methylcyclohexane	1.0	U Q	5.0	0.50	ug/L			11/05/21 00:32	1
Toluene	0.50	U	1.0	0.20	ug/L			11/05/21 00:32	1
Chlorobenzene	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
Cyclohexane	2.0	U Q	5.0	1.0	ug/L			11/05/21 00:32	1
1,2,4-Trichlorobenzene	1.0	U	5.0	0.30	ug/L			11/05/21 00:32	1
Dibromochloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:32	1
Xylenes, Total	0.80	U	1.0	0.40	ug/L			11/05/21 00:32	1
Tetrachloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
cis-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
trans-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
Methyl tert-butyl ether	0.50	U	1.0	0.20	ug/L			11/05/21 00:32	1
1,3-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 00:32	1
Carbon tetrachloride	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
2-Hexanone	1.0	U	10	0.40	ug/L			11/05/21 00:32	1
Acetone	2.0	U	20	0.70	ug/L			11/05/21 00:32	1
Chloroform	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
Benzene	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
1,1,1-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
Bromomethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
Chloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:32	1
Chloroethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:32	1
Vinyl chloride	0.50	U	1.0	0.20	ug/L			11/05/21 00:32	1
Methylene Chloride	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
Carbon disulfide	0.60	U	5.0	0.30	ug/L			11/05/21 00:32	1
Bromoform	2.0	U	4.0	1.0	ug/L			11/05/21 00:32	1

Client Sample ID: Trip Blank
Lab Sample ID: 410-60870-9

Date Collected: 10/26/21 00:00
Matrix: Water

Date Received: 10/27/21 17:29

Method: 8260D - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:32	1
1,1-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
1,1-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
Trichlorofluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:32	1
Dichlorodifluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:32	1
Freon 113	0.60	U	10	0.30	ug/L			11/05/21 00:32	1
1,2-Dichloropropane	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
2-Butanone	1.0	U	10	0.50	ug/L			11/05/21 00:32	1
1,1,2-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
Trichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
Methyl acetate	0.60	U	5.0	0.30	ug/L			11/05/21 00:32	1
1,1,2,2-Tetrachloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
1,2-Dichlorobenzene	0.50	U	5.0	0.20	ug/L			11/05/21 00:32	1
1,2-Dibromo-3-Chloropropane	1.0	U	5.0	0.30	ug/L			11/05/21 00:32	1
Isopropylbenzene	0.50	U	5.0	0.20	ug/L			11/05/21 00:32	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*11/05/21 00:32*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*81 - 118*		*11/05/21 00:32*	*1*
Dibromofluoromethane (Surr)	*106*		*80 - 119*		*11/05/21 00:32*	*1*
4-Bromofluorobenzene (Surr)	*102*		*85 - 114*		*11/05/21 00:32*	*1*
Toluene-d8 (Surr)	*103*		*89 - 112*		*11/05/21 00:32*	*1*

Default Detection Limits

Client: ARCADIS U.S., Inc.
Project/Site: Fort Monmouth NJ

Job ID: 410-60870-1

Method: 8260D - Volatile Organic Compounds (GC/MS)

Analyte	LOQ	DL	Units
1,1,1-Trichloroethane	1.0	0.30	ug/L
1,1,2,2-Tetrachloroethane	1.0	0.30	ug/L
1,1,2-Trichloroethane	1.0	0.30	ug/L
1,1-Dichloroethane	1.0	0.30	ug/L
1,1-Dichloroethene	1.0	0.30	ug/L
1,2,4-Trichlorobenzene	5.0	0.30	ug/L
1,2-Dibromo-3-Chloropropane	5.0	0.30	ug/L
1,2-Dibromoethane (EDB)	1.0	0.20	ug/L
1,2-Dichlorobenzene	5.0	0.20	ug/L
1,2-Dichloroethane	1.0	0.30	ug/L
1,2-Dichloropropane	1.0	0.30	ug/L
1,3-Dichlorobenzene	5.0	0.30	ug/L
1,4-Dichlorobenzene	5.0	0.30	ug/L
2-Butanone	10	0.50	ug/L
2-Hexanone	10	0.40	ug/L
4-Methyl-2-pentanone	10	0.50	ug/L
Acetone	20	0.70	ug/L
Benzene	1.0	0.30	ug/L
Bromodichloromethane	1.0	0.20	ug/L
Bromoform	4.0	1.0	ug/L
Bromomethane	1.0	0.30	ug/L
Carbon disulfide	5.0	0.30	ug/L
Carbon tetrachloride	1.0	0.30	ug/L
Chlorobenzene	1.0	0.30	ug/L
Chloroethane	1.0	0.20	ug/L
Chloroform	1.0	0.30	ug/L
Chloromethane	1.0	0.20	ug/L
cis-1,2-Dichloroethene	1.0	0.30	ug/L
cis-1,3-Dichloropropene	1.0	0.20	ug/L
Cyclohexane	5.0	1.0	ug/L
Dibromochloromethane	1.0	0.20	ug/L
Dichlorodifluoromethane	1.0	0.20	ug/L
Ethylbenzene	1.0	0.40	ug/L
Freon 113	10	0.30	ug/L
Isopropylbenzene	5.0	0.20	ug/L
Methyl acetate	5.0	0.30	ug/L
Methyl tert-butyl ether	1.0	0.20	ug/L
Methylcyclohexane	5.0	0.50	ug/L
Methylene Chloride	1.0	0.30	ug/L
Styrene	5.0	0.30	ug/L
Tetrachloroethene	1.0	0.30	ug/L
Toluene	1.0	0.20	ug/L
trans-1,2-Dichloroethene	1.0	0.30	ug/L
trans-1,3-Dichloropropene	1.0	0.20	ug/L
Trichloroethene	1.0	0.30	ug/L
Trichlorofluoromethane	1.0	0.20	ug/L
Vinyl chloride	1.0	0.20	ug/L
Xylenes, Total	1.0	0.40	ug/L

Method: 6020B - Metals (ICP/MS) - Total Recoverable

Prep: 3005A

Default Detection Limits

Client: ARCADIS U.S., Inc.
Job ID: 410-60870-1
Project/Site: Fort Monmouth NJ

Method: 6020B - Metals (ICP/MS) - Total Recoverable

Prep: 3005A

Analyte	LOQ	DL	Units
Cadmium	0.50	0.15	ug/L

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Fort Monmouth NJ

Job ID: 410-60870-1

Method: 8260D - Volatile Organic Compounds (GC/MS)

Matrix: Ground Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	DBFM	BFB	TOL
Lab Sample ID	Client Sample ID	(81-118)	(80-119)	(85-114)	(89-112)
410-60870-1	3MW05R-102621	103	105	102	104
410-60870-2	3MW01-102621	104	105	99	102
410-60870-2 MS	3MW01-102621MS	103	106	102	104
410-60870-2 MSD	3MW01-102621MSD	103	105	103	103
410-60870-3	3MW01-102621D	104	107	101	103
410-60870-4	3MW08-102721	102	106	101	102
410-60870-5	3MW07-102721	102 M	107	102	103
410-60870-6	3MW09-102721	103	106	101	103

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260D - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	DBFM	BFB	TOL
Lab Sample ID	Client Sample ID	(81-118)	(80-119)	(85-114)	(89-112)
410-60870-7	FB-102621	103	105	101	103
410-60870-8	FB-102721	105	107	99	102
410-60870-9	Trip Blank	103	106	102	103
LCS 410-191072/4	Lab Control Sample	104	105	103	104
MB 410-191072/6	Method Blank	106	105	102	103

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
DBFM = Dibromofluoromethane (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260D - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-191072/6
Matrix: Water
Analysis Batch: 191072

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/04/21 22:15	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/04/21 22:15	1
Ethylbenzene	0.80	U	1.0	0.40	ug/L			11/04/21 22:15	1
Styrene	0.60	U	5.0	0.30	ug/L			11/04/21 22:15	1
1,4-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/04/21 22:15	1
1,2-Dibromoethane (EDB)	0.50	U	1.0	0.20	ug/L			11/04/21 22:15	1
1,2-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/04/21 22:15	1
4-Methyl-2-pentanone	1.0	U	10	0.50	ug/L			11/04/21 22:15	1
Methylcyclohexane	1.0	U	5.0	0.50	ug/L			11/04/21 22:15	1
Toluene	0.50	U	1.0	0.20	ug/L			11/04/21 22:15	1
Chlorobenzene	0.60	U	1.0	0.30	ug/L			11/04/21 22:15	1
Cyclohexane	2.0	U	5.0	1.0	ug/L			11/04/21 22:15	1
1,2,4-Trichlorobenzene	1.0	U	5.0	0.30	ug/L			11/04/21 22:15	1
Dibromochloromethane	0.50	U	1.0	0.20	ug/L			11/04/21 22:15	1
Xylenes, Total	0.80	U	1.0	0.40	ug/L			11/04/21 22:15	1
Tetrachloroethene	0.60	U	1.0	0.30	ug/L			11/04/21 22:15	1
cis-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/04/21 22:15	1
trans-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/04/21 22:15	1
Methyl tert-butyl ether	0.50	U	1.0	0.20	ug/L			11/04/21 22:15	1
1,3-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/04/21 22:15	1
Carbon tetrachloride	0.60	U	1.0	0.30	ug/L			11/04/21 22:15	1
2-Hexanone	1.0	U	10	0.40	ug/L			11/04/21 22:15	1
Acetone	2.0	U	20	0.70	ug/L			11/04/21 22:15	1
Chloroform	0.60	U	1.0	0.30	ug/L			11/04/21 22:15	1
Benzene	0.60	U	1.0	0.30	ug/L			11/04/21 22:15	1
1,1,1-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/04/21 22:15	1
Bromomethane	0.60	U	1.0	0.30	ug/L			11/04/21 22:15	1
Chloromethane	0.50	U	1.0	0.20	ug/L			11/04/21 22:15	1
Chloroethane	0.50	U	1.0	0.20	ug/L			11/04/21 22:15	1
Vinyl chloride	0.50	U	1.0	0.20	ug/L			11/04/21 22:15	1
Methylene Chloride	0.60	U	1.0	0.30	ug/L			11/04/21 22:15	1
Carbon disulfide	0.60	U	5.0	0.30	ug/L			11/04/21 22:15	1
Bromoform	2.0	U	4.0	1.0	ug/L			11/04/21 22:15	1
Bromodichloromethane	0.50	U	1.0	0.20	ug/L			11/04/21 22:15	1
1,1-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/04/21 22:15	1
1,1-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/04/21 22:15	1
Trichlorofluoromethane	0.50	U	1.0	0.20	ug/L			11/04/21 22:15	1
Dichlorodifluoromethane	0.50	U	1.0	0.20	ug/L			11/04/21 22:15	1
Freon 113	0.60	U	10	0.30	ug/L			11/04/21 22:15	1
1,2-Dichloropropane	0.60	U	1.0	0.30	ug/L			11/04/21 22:15	1
2-Butanone	1.0	U	10	0.50	ug/L			11/04/21 22:15	1
1,1,2-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/04/21 22:15	1
Trichloroethene	0.60	U	1.0	0.30	ug/L			11/04/21 22:15	1
Methyl acetate	0.60	U	5.0	0.30	ug/L			11/04/21 22:15	1
1,1,2,2-Tetrachloroethane	0.60	U	1.0	0.30	ug/L			11/04/21 22:15	1
1,2-Dichlorobenzene	0.50	U	5.0	0.20	ug/L			11/04/21 22:15	1
1,2-Dibromo-3-Chloropropane	1.0	U	5.0	0.30	ug/L			11/04/21 22:15	1
Isopropylbenzene	0.50	U	5.0	0.20	ug/L			11/04/21 22:15	1

Method: 8260D - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 410-191072/6
Matrix: Water
Analysis Batch: 191072

Client Sample ID: Method Blank
Prep Type: Total/NA

Tentatively Identified Compound	MB Est. Result	MB Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L					11/04/21 22:15	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		81 - 118		11/04/21 22:15	1
Dibromofluoromethane (Surr)	105		80 - 119		11/04/21 22:15	1
4-Bromofluorobenzene (Surr)	102		85 - 114		11/04/21 22:15	1
Toluene-d8 (Surr)	103		89 - 112		11/04/21 22:15	1

Lab Sample ID: LCS 410-191072/4
Matrix: Water
Analysis Batch: 191072

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,3-Dichloropropene	20.0	19.3		ug/L		97	75 - 124
trans-1,3-Dichloropropene	20.0	19.7		ug/L		99	73 - 127
Ethylbenzene	20.0	18.9		ug/L		94	79 - 121
Styrene	20.0	19.0		ug/L		95	78 - 123
1,4-Dichlorobenzene	20.0	19.1		ug/L		95	79 - 118
1,2-Dibromoethane (EDB)	20.0	20.0		ug/L		100	77 - 121
1,2-Dichloroethane	20.0	20.0		ug/L		100	73 - 128
4-Methyl-2-pentanone	250	272		ug/L		109	67 - 130
Methylcyclohexane	20.0	17.6		ug/L		88	72 - 132
Toluene	20.0	18.7		ug/L		94	80 - 121
Chlorobenzene	20.0	19.2		ug/L		96	82 - 118
Cyclohexane	20.0	17.2		ug/L		86	71 - 130
1,2,4-Trichlorobenzene	20.0	19.0		ug/L		95	69 - 130
Dibromochloromethane	20.0	20.0		ug/L		100	74 - 126
Xylenes, Total	60.0	56.6		ug/L		94	79 - 121
Tetrachloroethene	20.0	18.7		ug/L		94	74 - 129
cis-1,2-Dichloroethene	20.0	19.5		ug/L		98	78 - 123
trans-1,2-Dichloroethene	20.0	19.2		ug/L		96	75 - 124
Methyl tert-butyl ether	20.0	19.3		ug/L		97	71 - 124
1,3-Dichlorobenzene	20.0	19.1		ug/L		95	80 - 119
Carbon tetrachloride	20.0	19.0		ug/L		95	72 - 136
2-Hexanone	250	274		ug/L		110	57 - 139
Acetone	250	254		ug/L		102	39 - 160
Chloroform	20.0	20.1		ug/L		100	79 - 124
Benzene	20.0	19.1		ug/L		96	79 - 120
1,1,1-Trichloroethane	20.0	19.2		ug/L		96	74 - 131
Bromomethane	20.0	17.6		ug/L		88	53 - 141
Chloromethane	20.0	19.0		ug/L		95	50 - 139
Chloroethane	20.0	18.1		ug/L		91	60 - 138
Vinyl chloride	20.0	17.5		ug/L		87	58 - 137
Methylene Chloride	20.0	19.8		ug/L		99	74 - 124
Carbon disulfide	20.0	18.2		ug/L		91	64 - 133
Bromoform	20.0	19.8		ug/L		99	66 - 130
Bromodichloromethane	20.0	20.0		ug/L		100	79 - 125
1,1-Dichloroethane	20.0	19.3		ug/L		96	77 - 125

Method: 8260D - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 410-191072/4
Matrix: Water
Analysis Batch: 191072

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	20.0	19.5		ug/L		97	71 - 131
Trichlorofluoromethane	20.0	18.3		ug/L		91	65 - 141
Dichlorodifluoromethane	20.0	20.3		ug/L		101	32 - 152
Freon 113	20.0	18.9		ug/L		94	70 - 136
1,2-Dichloropropane	20.0	19.9		ug/L		99	78 - 122
2-Butanone	250	268		ug/L		107	56 - 143
1,1,2-Trichloroethane	20.0	20.1		ug/L		100	80 - 119
Trichloroethene	20.0	18.6		ug/L		93	79 - 123
Methyl acetate	20.0	25.1		ug/L		126	56 - 136
1,1,2,2-Tetrachloroethane	20.0	20.7		ug/L		103	71 - 121
1,2-Dichlorobenzene	20.0	19.1		ug/L		96	80 - 119
1,2-Dibromo-3-Chloropropane	20.0	19.9		ug/L		99	62 - 128
Isopropylbenzene	20.0	19.2		ug/L		96	72 - 131

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*104*		*81 - 118*
Dibromofluoromethane (Surr)	*105*		*80 - 119*
4-Bromofluorobenzene (Surr)	*103*		*85 - 114*
Toluene-d8 (Surr)	*104*		*89 - 112*

Lab Sample ID: 410-60870-2 MS
Matrix: Ground Water
Analysis Batch: 191072

Client Sample ID: 3MW01-102621MS
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,3-Dichloropropene	0.50	U	20.0	19.8		ug/L		99	75 - 124
trans-1,3-Dichloropropene	0.50	U	20.0	20.2		ug/L		101	73 - 127
Ethylbenzene	0.80	U	20.0	20.8		ug/L		104	79 - 121
Styrene	0.60	U	20.0	20.2		ug/L		101	78 - 123
1,4-Dichlorobenzene	0.60	U	20.0	20.0		ug/L		100	79 - 118
1,2-Dibromoethane (EDB)	0.50	U	20.0	20.3		ug/L		102	77 - 121
1,2-Dichloroethane	0.60	U	20.0	20.8		ug/L		104	73 - 128
4-Methyl-2-pentanone	1.0	U	250	264		ug/L		106	67 - 130
Methylcyclohexane	1.0	U Q	20.0	21.5		ug/L		107	72 - 132
Toluene	0.50	U	20.0	20.6		ug/L		103	80 - 121
Chlorobenzene	0.60	U	20.0	20.6		ug/L		103	82 - 118
Cyclohexane	2.0	U Q	20.0	20.7		ug/L		104	71 - 130
1,2,4-Trichlorobenzene	1.0	U	20.0	18.9		ug/L		94	69 - 130
Dibromochloromethane	0.50	U	20.0	20.4		ug/L		102	74 - 126
Xylenes, Total	0.80	U	60.0	61.9		ug/L		103	79 - 121
Tetrachloroethene	0.60	U	20.0	21.5		ug/L		108	74 - 129
cis-1,2-Dichloroethene	0.32	J M	20.0	22.1		ug/L		109	78 - 123
trans-1,2-Dichloroethene	0.60	U	20.0	21.5		ug/L		107	75 - 124
Methyl tert-butyl ether	0.50	U	20.0	19.2		ug/L		96	71 - 124
1,3-Dichlorobenzene	0.60	U	20.0	20.0		ug/L		100	80 - 119
Carbon tetrachloride	0.60	U	20.0	22.3		ug/L		111	72 - 136
2-Hexanone	1.0	U	250	265		ug/L		106	57 - 139
Acetone	2.0	U	250	256		ug/L		102	39 - 160

Method: 8260D - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 410-60870-2 MS
Matrix: Ground Water
Analysis Batch: 191072

Client Sample ID: 3MW01-102621MS
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloroform	0.60	U	20.0	21.9		ug/L		109	79 - 124
Benzene	0.60	U	20.0	21.2		ug/L		106	79 - 120
1,1,1-Trichloroethane	0.60	U	20.0	22.1		ug/L		111	74 - 131
Bromomethane	0.60	U	20.0	20.0		ug/L		100	53 - 141
Chloromethane	0.50	U	20.0	21.2		ug/L		106	50 - 139
Chloroethane	0.50	U	20.0	21.2		ug/L		106	60 - 138
Vinyl chloride	0.50	U	20.0	20.0		ug/L		100	58 - 137
Methylene Chloride	0.60	U	20.0	21.0		ug/L		105	74 - 124
Carbon disulfide	0.60	U	20.0	21.2		ug/L		106	64 - 133
Bromoform	2.0	U	20.0	20.3		ug/L		102	66 - 130
Bromodichloromethane	0.50	U	20.0	20.9		ug/L		104	79 - 125
1,1-Dichloroethane	0.60	U	20.0	20.5		ug/L		103	77 - 125
1,1-Dichloroethene	0.60	U	20.0	22.5		ug/L		112	71 - 131
Trichlorofluoromethane	0.50	U	20.0	22.0		ug/L		110	65 - 141
Dichlorodifluoromethane	0.50	U	20.0	24.9		ug/L		125	32 - 152
Freon 113	0.60	U	20.0	22.8		ug/L		114	70 - 136
1,2-Dichloropropane	0.60	U	20.0	20.4		ug/L		102	78 - 122
2-Butanone	1.0	U	250	264		ug/L		105	56 - 143
1,1,2-Trichloroethane	0.60	U	20.0	20.6		ug/L		103	80 - 119
Trichloroethene	6.2		20.0	26.7		ug/L		102	79 - 123
Methyl acetate	0.60	U	20.0	22.5		ug/L		113	56 - 136
1,1,2,2-Tetrachloroethane	0.60	U	20.0	19.8		ug/L		99	71 - 121
1,2-Dichlorobenzene	0.50	U	20.0	20.0		ug/L		100	80 - 119
1,2-Dibromo-3-Chloropropane	1.0	U	20.0	18.8		ug/L		94	62 - 128
Isopropylbenzene	0.50	U	20.0	21.1		ug/L		106	72 - 131

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*81 - 118*
Dibromofluoromethane (Surr)	*106*		*80 - 119*
4-Bromofluorobenzene (Surr)	*102*		*85 - 114*
Toluene-d8 (Surr)	*104*		*89 - 112*

Lab Sample ID: 410-60870-2 MSD
Matrix: Ground Water
Analysis Batch: 191072

Client Sample ID: 3MW01-102621MSD
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
cis-1,3-Dichloropropene	0.50	U	20.0	19.4		ug/L		97	75 - 124	2	20
trans-1,3-Dichloropropene	0.50	U	20.0	19.8		ug/L		99	73 - 127	2	20
Ethylbenzene	0.80	U	20.0	20.4		ug/L		102	79 - 121	2	20
Styrene	0.60	U	20.0	19.8		ug/L		99	78 - 123	2	20
1,4-Dichlorobenzene	0.60	U	20.0	20.0		ug/L		100	79 - 118	0	20
1,2-Dibromoethane (EDB)	0.50	U	20.0	19.6		ug/L		98	77 - 121	3	20
1,2-Dichloroethane	0.60	U	20.0	20.5		ug/L		102	73 - 128	1	20
4-Methyl-2-pentanone	1.0	U	250	259		ug/L		104	67 - 130	2	20
Methylcyclohexane	1.0	U Q	20.0	21.0		ug/L		105	72 - 132	2	20
Toluene	0.50	U	20.0	20.2		ug/L		101	80 - 121	2	20
Chlorobenzene	0.60	U	20.0	20.2		ug/L		101	82 - 118	2	20

Method: 8260D - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 410-60870-2 MSD
Matrix: Ground Water
Analysis Batch: 191072

Client Sample ID: 3MW01-102621MSD
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyclohexane	2.0	U Q	20.0	20.7		ug/L		103	71 - 130	0	20
1,2,4-Trichlorobenzene	1.0	U	20.0	18.9		ug/L		95	69 - 130	0	20
Dibromochloromethane	0.50	U	20.0	19.4		ug/L		97	74 - 126	5	20
Xylenes, Total	0.80	U	60.0	60.1		ug/L		100	79 - 121	3	20
Tetrachloroethene	0.60	U	20.0	21.1		ug/L		105	74 - 129	2	20
cis-1,2-Dichloroethene	0.32	J M	20.0	21.7		ug/L		107	78 - 123	2	20
trans-1,2-Dichloroethene	0.60	U	20.0	21.0		ug/L		105	75 - 124	2	20
Methyl tert-butyl ether	0.50	U	20.0	18.9		ug/L		95	71 - 124	1	20
1,3-Dichlorobenzene	0.60	U	20.0	20.0		ug/L		100	80 - 119	0	20
Carbon tetrachloride	0.60	U	20.0	22.0		ug/L		110	72 - 136	1	20
2-Hexanone	1.0	U	250	260		ug/L		104	57 - 139	2	20
Acetone	2.0	U	250	243		ug/L		97	39 - 160	5	20
Chloroform	0.60	U	20.0	21.2		ug/L		106	79 - 124	3	20
Benzene	0.60	U	20.0	20.7		ug/L		103	79 - 120	2	20
1,1,1-Trichloroethane	0.60	U	20.0	21.9		ug/L		110	74 - 131	1	20
Bromomethane	0.60	U	20.0	19.5		ug/L		98	53 - 141	3	20
Chloromethane	0.50	U	20.0	21.5		ug/L		108	50 - 139	2	20
Chloroethane	0.50	U	20.0	20.7		ug/L		104	60 - 138	2	20
Vinyl chloride	0.50	U	20.0	20.3		ug/L		101	58 - 137	1	20
Methylene Chloride	0.60	U	20.0	20.2		ug/L		101	74 - 124	4	20
Carbon disulfide	0.60	U	20.0	21.1		ug/L		106	64 - 133	0	20
Bromoform	2.0	U	20.0	19.6		ug/L		98	66 - 130	3	20
Bromodichloromethane	0.50	U	20.0	20.5		ug/L		102	79 - 125	2	20
1,1-Dichloroethane	0.60	U	20.0	20.8		ug/L		104	77 - 125	1	20
1,1-Dichloroethene	0.60	U	20.0	22.2		ug/L		111	71 - 131	1	20
Trichlorofluoromethane	0.50	U	20.0	22.0		ug/L		110	65 - 141	0	20
Dichlorodifluoromethane	0.50	U	20.0	24.4		ug/L		122	32 - 152	2	20
Freon 113	0.60	U	20.0	22.6		ug/L		113	70 - 136	1	20
1,2-Dichloropropane	0.60	U	20.0	20.3		ug/L		101	78 - 122	1	20
2-Butanone	1.0	U	250	261		ug/L		105	56 - 143	1	20
1,1,2-Trichloroethane	0.60	U	20.0	19.8		ug/L		99	80 - 119	4	20
Trichloroethene	6.2		20.0	26.5		ug/L		102	79 - 123	0	20
Methyl acetate	0.60	U	20.0	24.4		ug/L		122	56 - 136	8	20
1,1,2,2-Tetrachloroethane	0.60	U	20.0	19.9		ug/L		99	71 - 121	0	20
1,2-Dichlorobenzene	0.50	U	20.0	19.8		ug/L		99	80 - 119	1	20
1,2-Dibromo-3-Chloropropane	1.0	U	20.0	19.2		ug/L		96	62 - 128	2	20
Isopropylbenzene	0.50	U	20.0	20.8		ug/L		104	72 - 131	2	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*81 - 118*
Dibromofluoromethane (Surr)	*105*		*80 - 119*
4-Bromofluorobenzene (Surr)	*103*		*85 - 114*
Toluene-d8 (Surr)	*103*		*89 - 112*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 410-190591/1-A
Matrix: Water
Analysis Batch: 190933

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 190591

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.40	U	0.50	0.15	ug/L		11/04/21 05:27	11/04/21 13:37	1

Lab Sample ID: LCS 410-190591/2-A
Matrix: Water
Analysis Batch: 190933

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 190591

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	50.0	51.9		ug/L		104	87 - 115

Lab Sample ID: MB 410-190873/1-A
Matrix: Water
Analysis Batch: 191437

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 190873

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.40	U	0.50	0.15	ug/L		11/04/21 13:13	11/05/21 13:15	1

Lab Sample ID: LCS 410-190873/2-A
Matrix: Water
Analysis Batch: 191437

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 190873

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	50.0	50.4		ug/L		101	87 - 115

Lab Sample ID: MB 410-190955/1-A
Matrix: Water
Analysis Batch: 191445

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 190955

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.40	U	0.50	0.15	ug/L		11/04/21 15:51	11/05/21 14:38	1

Lab Sample ID: LCS 410-190955/2-A
Matrix: Water
Analysis Batch: 191445

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 190955

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	50.0	50.0		ug/L		100	87 - 115

Lab Sample ID: 410-60870-2 MS
Matrix: Ground Water
Analysis Batch: 191445

Client Sample ID: 3MW01-102621MS
Prep Type: Total Recoverable
Prep Batch: 190955

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	3.5	J1	50.0	54.8		ug/L		103	87 - 115

Lab Sample ID: 410-60870-2 MSD
Matrix: Ground Water
Analysis Batch: 191445

Client Sample ID: 3MW01-102621MSD
Prep Type: Total Recoverable
Prep Batch: 190955

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cadmium	3.5	J1	50.0	53.8		ug/L		101	87 - 115	2	20

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: 410-60870-2 DU
Matrix: Ground Water
Analysis Batch: 191445

Client Sample ID: 3MW01-102621
Prep Type: Total Recoverable
Prep Batch: 190955

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Cadmium	3.5	J1		3.49		ug/L				1	20

Lab Sample ID: LRC 410-190933/9
Matrix: Water
Analysis Batch: 190933

Client Sample ID: Lab Control Sample

Analyte			Spike Added	LRC Result	LRC Qualifier	Unit	D	%Rec	%Rec. Limits		
Cadmium			503	488		ug/L		97			

Lab Sample ID: LRC 410-191437/8
Matrix: Water
Analysis Batch: 191437

Client Sample ID: Lab Control Sample

Analyte			Spike Added	LRC Result	LRC Qualifier	Unit	D	%Rec	%Rec. Limits		
Cadmium			503	494		ug/L		98			

Lab Sample ID: LRC 410-191445/8
Matrix: Water
Analysis Batch: 191445

Client Sample ID: Lab Control Sample

Analyte			Spike Added	LRC Result	LRC Qualifier	Unit	D	%Rec	%Rec. Limits		
Cadmium			503	480		ug/L		95			

GC/MS VOA

Analysis Batch: 191072

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60870-1	3MW05R-102621	Total/NA	Ground Water	8260D	
410-60870-2	3MW01-102621	Total/NA	Ground Water	8260D	
410-60870-3	3MW01-102621D	Total/NA	Ground Water	8260D	
410-60870-4	3MW08-102721	Total/NA	Ground Water	8260D	
410-60870-5	3MW07-102721	Total/NA	Ground Water	8260D	
410-60870-6	3MW09-102721	Total/NA	Ground Water	8260D	
410-60870-7	FB-102621	Total/NA	Water	8260D	
410-60870-8	FB-102721	Total/NA	Water	8260D	
410-60870-9	Trip Blank	Total/NA	Water	8260D	
MB 410-191072/6	Method Blank	Total/NA	Water	8260D	
LCS 410-191072/4	Lab Control Sample	Total/NA	Water	8260D	
410-60870-2 MS	3MW01-102621MS	Total/NA	Ground Water	8260D	
410-60870-2 MSD	3MW01-102621MSD	Total/NA	Ground Water	8260D	

Metals

Prep Batch: 190591

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60870-3	3MW01-102621D	Total Recoverable	Ground Water	3005A	
410-60870-7	FB-102621	Total Recoverable	Water	3005A	
MB 410-190591/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-190591/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Prep Batch: 190873

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60870-8	FB-102721	Total Recoverable	Water	3005A	
MB 410-190873/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-190873/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Analysis Batch: 190933

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60870-3	3MW01-102621D	Total Recoverable	Ground Water	6020B	190591
410-60870-7	FB-102621	Total Recoverable	Water	6020B	190591
MB 410-190591/1-A	Method Blank	Total Recoverable	Water	6020B	190591
LCS 410-190591/2-A	Lab Control Sample	Total Recoverable	Water	6020B	190591
LRC 410-190933/9	Lab Control Sample		Water	6020B	

Prep Batch: 190955

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60870-2	3MW01-102621	Total Recoverable	Ground Water	3005A	
MB 410-190955/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 410-190955/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
410-60870-2 MS	3MW01-102621MS	Total Recoverable	Ground Water	3005A	
410-60870-2 MSD	3MW01-102621MSD	Total Recoverable	Ground Water	3005A	
410-60870-2 DU	3MW01-102621	Total Recoverable	Ground Water	3005A	

Analysis Batch: 191437

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60870-8	FB-102721	Total Recoverable	Water	6020B	190873
MB 410-190873/1-A	Method Blank	Total Recoverable	Water	6020B	190873
LCS 410-190873/2-A	Lab Control Sample	Total Recoverable	Water	6020B	190873

Metals (Continued)

Analysis Batch: 191437 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LRC 410-191437/8	Lab Control Sample		Water	6020B	

Analysis Batch: 191445

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-60870-2	3MW01-102621	Total Recoverable	Ground Water	6020B	190955
MB 410-190955/1-A	Method Blank	Total Recoverable	Water	6020B	190955
LCS 410-190955/2-A	Lab Control Sample	Total Recoverable	Water	6020B	190955
LRC 410-191445/8	Lab Control Sample		Water	6020B	
410-60870-2 MS	3MW01-102621MS	Total Recoverable	Ground Water	6020B	190955
410-60870-2 MSD	3MW01-102621MSD	Total Recoverable	Ground Water	6020B	190955
410-60870-2 DU	3MW01-102621	Total Recoverable	Ground Water	6020B	190955

Client Sample ID: 3MW05R-102621
Lab Sample ID: 410-60870-1
Date Collected: 10/26/21 14:25
Matrix: Ground Water
Date Received: 10/27/21 17:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	191072	11/05/21 03:29	K4WN	ELLE

Client Sample ID: 3MW01-102621
Lab Sample ID: 410-60870-2
Date Collected: 10/26/21 15:55
Matrix: Ground Water
Date Received: 10/27/21 17:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	191072	11/05/21 00:52	K4WN	ELLE
Total Recoverable	Prep	3005A			190955	11/04/21 15:51	UAMX	ELLE
Total Recoverable	Analysis	6020B		1	191445	11/05/21 14:42	S8DY	ELLE

Client Sample ID: 3MW01-102621D
Lab Sample ID: 410-60870-3
Date Collected: 10/26/21 00:00
Matrix: Ground Water
Date Received: 10/27/21 17:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	191072	11/05/21 03:48	K4WN	ELLE
Total Recoverable	Prep	3005A			190591	11/04/21 05:27	UAMX	ELLE
Total Recoverable	Analysis	6020B		1	190933	11/04/21 14:15	S8DY	ELLE

Client Sample ID: 3MW08-102721
Lab Sample ID: 410-60870-4
Date Collected: 10/27/21 10:35
Matrix: Ground Water
Date Received: 10/27/21 17:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	191072	11/05/21 04:08	K4WN	ELLE

Client Sample ID: 3MW07-102721
Lab Sample ID: 410-60870-5
Date Collected: 10/27/21 11:15
Matrix: Ground Water
Date Received: 10/27/21 17:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	191072	11/05/21 04:28	K4WN	ELLE

Client Sample ID: 3MW09-102721
Lab Sample ID: 410-60870-6
Date Collected: 10/27/21 11:55
Matrix: Ground Water
Date Received: 10/27/21 17:29

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	191072	11/05/21 04:47	K4WN	ELLE

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Fort Monmouth NJ

Job ID: 410-60870-1

Client Sample ID: FB-102621
Date Collected: 10/26/21 16:00
Date Received: 10/27/21 17:29

Lab Sample ID: 410-60870-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	191072	11/04/21 23:53	K4WN	ELLE
Total Recoverable	Prep	3005A			190591	11/04/21 05:27	UAMX	ELLE
Total Recoverable	Analysis	6020B		1	190933	11/04/21 14:09	S8DY	ELLE

Client Sample ID: FB-102721
Date Collected: 10/27/21 09:00
Date Received: 10/27/21 17:29

Lab Sample ID: 410-60870-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	191072	11/05/21 00:13	K4WN	ELLE
Total Recoverable	Prep	3005A			190873	11/04/21 13:13	UJLA	ELLE
Total Recoverable	Analysis	6020B		1	191437	11/05/21 13:51	S8DY	ELLE

Client Sample ID: Trip Blank
Date Collected: 10/26/21 00:00
Date Received: 10/27/21 17:29

Lab Sample ID: 410-60870-9
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	191072	11/05/21 00:32	K4WN	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: ARCADIS U.S., Inc.
Job ID: 410-60870-1
Project/Site: Fort Monmouth NJ

Laboratory: Eurofins Lancaster Laboratories Env, LLC

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	1.01	11-30-22
New Jersey	NELAP	PA011	06-30-22

Method Summary

Client: ARCADIS U.S., Inc.
Job ID: 410-60870-1
Project/Site: Fort Monmouth NJ

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds (GC/MS)	SW846	ELLE
6020B	Metals (ICP/MS)	SW846	ELLE
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	ELLE
5030C	Purge and Trap	SW846	ELLE

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Fort Monmouth NJ

Job ID: 410-60870-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-60870-1	3MW05R-102621	Ground Water	10/26/21 14:25	10/27/21 17:29
410-60870-2	3MW01-102621	Ground Water	10/26/21 15:55	10/27/21 17:29
410-60870-3	3MW01-102621D	Ground Water	10/26/21 00:00	10/27/21 17:29
410-60870-4	3MW08-102721	Ground Water	10/27/21 10:35	10/27/21 17:29
410-60870-5	3MW07-102721	Ground Water	10/27/21 11:15	10/27/21 17:29
410-60870-6	3MW09-102721	Ground Water	10/27/21 11:55	10/27/21 17:29
410-60870-7	FB-102621	Water	10/26/21 16:00	10/27/21 17:29
410-60870-8	FB-102721	Water	10/27/21 09:00	10/27/21 17:29
410-60870-9	Trip Blank	Water	10/26/21 00:00	10/27/21 17:29

GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins Lancaster Laborator Job No.: 410-60870-1

SDG No.:

Instrument ID: 26285 Analysis Batch Number: 155419

Lab Sample ID: IC 410-155419/11 Client Sample ID:

Date Analyzed: 08/02/21 16:48 Lab File ID: 5G02I11.D GC Column: R-624SilMS 30 ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,4-Dioxane	7.84	Incomplete Integration	mellingerc	08/03/21 08:58

Lab Sample ID: IC 410-155419/16 Client Sample ID:

Date Analyzed: 08/02/21 18:29 Lab File ID: 5G02I16.D GC Column: R-624SilMS 30 ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Benzene	6.47	Incomplete Integration	mellingerc	08/03/21 09:07
1,4-Dioxane	7.84	Incomplete Integration	mellingerc	08/03/21 09:08

Lab Sample ID: ICV 410-155419/18 Client Sample ID:

Date Analyzed: 08/02/21 19:09 Lab File ID: 5G02V11.D GC Column: R-624SilMS 30 ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,4-Dioxane	7.83	Split Peak	mellingerc	08/03/21 09:44

GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins Lancaster Laborator Job No.: 410-60870-1

SDG No.:

Instrument ID: 26285 Analysis Batch Number: 191072

Lab Sample ID: CCVIS 410-191072/3 Client Sample ID:

Date Analyzed: 11/04/21 21:16 Lab File ID: 5N04C31.D GC Column: R-624SilMS 30 ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,4-Dioxane	7.82	Incomplete Integration	campbellme	11/04/21 21:42

Lab Sample ID: 410-60870-2 Client Sample ID: 3MW01-102621

Date Analyzed: 11/05/21 00:52 Lab File ID: 5N04S38.D GC Column: R-624SilMS 30 ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
cis-1,2-Dichloroethene	5.19	Peak assignment corrected	kaewrungrueangp	11/05/21 13:26
Chlorobenzene-d5 (IS)	10.65	Peak assignment corrected	kaewrungrueangp	11/05/21 13:26

Lab Sample ID: 410-60870-5 Client Sample ID: 3MW07-102721

Date Analyzed: 11/05/21 04:28 Lab File ID: 5N04S49.D GC Column: R-624SilMS 30 ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
cis-1,2-Dichloroethene	5.22	Incomplete Integration	kaewrungrueangp	11/05/21 16:03
1,2-Dichloroethane-d4 (Surr)	6.41	Incomplete Integration	kaewrungrueangp	11/05/21 16:03
1,4-Dichlorobenzene-d4	12.66	Assign Peak	kaewrungrueangp	11/05/21 16:02

Lab Sample ID: CCVC 410-191072/30 Client Sample ID:

Date Analyzed: 11/05/21 06:06 Lab File ID: 5N04S54.D GC Column: R-624SilMS 30 ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,4-Dioxane	7.81	Incomplete Integration	mellingerc	11/05/21 08:40

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
MP_1:1HCl_00012	11/28/21	06/28/21	DI Water, Lot DI06282021	20000 mL	MT_HCl_JT_00005	10000 mL	Hydrogen Chloride	188500 ug/mL
.MT_HCl_JT_00005	09/15/24	J.T.Baker, Lot 0000243992			(Purchased Reagent)		Hydrogen Chloride	37.7 %
MP_1:1HCl_00016	02/09/22	09/29/21	DI Water, Lot DI09292021	20000 mL	MT_HCl_JT_00005	10000 mL	Hydrogen Chloride	188500 ug/mL
.MT_HCl_JT_00005	09/15/24	J.T.Baker, Lot 0000243992			(Purchased Reagent)		Hydrogen Chloride	37.7 %
MP_1:1HNO3_00016	11/25/21	05/25/21	DI Water, Lot DI05252021	20000 mL	MT_HNO3_JT_00006	10000 mL	Nitric acid	348500 ug/mL
.MT_HNO3_JT_00006	02/09/25	J.T.Baker, Lot 0000255830			(Purchased Reagent)		Nitric acid	69.7 %
MP_1:1HNO3_00022	04/04/22	10/04/21	DI Water, Lot DI10042021	20000 mL	MT_HNO3_JT_00009	10000 mL	Nitric acid	346500 ug/mL
.MT_HNO3_JT_00009	01/14/26	J.T.Baker, Lot 0000277202			(Purchased Reagent)		Nitric acid	69.3 %
MSV_4ppbEE_00230	08/03/21	08/02/21	DI Water, Lot DI 21214	1000 mL	MSV_CCV_2CEVE_00012	4 uL	2-Chloroethyl vinyl ether	0.004 ug/mL
					MSV_CCV_GASES_00049	2 uL	Bromomethane	0.004 ug/mL
							Chloroethane	0.004 ug/mL
							Chloromethane	0.004 ug/mL
							Dichlorodifluoromethane	0.004 ug/mL
							Dichlorofluoromethane	0.004 ug/mL
							Trichlorofluoromethane	0.004 ug/mL
							Vinyl chloride	0.004 ug/mL
					MSV_CCV_VOC#1_00013	4 uL	Ethyl methacrylate	0.00400018 ug/mL
							1,1,1,2-Tetrachloroethane	0.004 ug/mL
							1,1,1-Trichloroethane	0.004 ug/mL
							1,1,2,2-Tetrachloroethane	0.004 ug/mL
							1,1,2-Trichloroethane	0.004 ug/mL
							1,1-Dichloroethane	0.004 ug/mL
							1,1-Dichloroethene	0.004 ug/mL
							1,1-Dichloropropene	0.004 ug/mL
							1,2,3-Trichlorobenzene	0.004 ug/mL
							1,2,3-Trichloropropane	0.004 ug/mL
							1,2,4-Trichlorobenzene	0.004 ug/mL
							1,2,4-Trimethylbenzene	0.004 ug/mL
							1,2-Dibromo-3-Chloropropane	0.004 ug/mL
							1,2-Dibromoethane (EDB)	0.004 ug/mL
							1,2-Dichlorobenzene	0.004 ug/mL
							1,2-Dichloroethane	0.004 ug/mL
							1,2-Dichloropropane	0.004 ug/mL
							1,3,5-Trimethylbenzene	0.004 ug/mL
							1,3-Dichlorobenzene	0.004 ug/mL
							1,3-Dichloropropane	0.004 ug/mL
							1,4-Dichlorobenzene	0.004 ug/mL
							2,2-Dichloropropane	0.004 ug/mL
							2-Chlorotoluene	0.004 ug/mL
							4-Chlorotoluene	0.004 ug/mL
							4-Isopropyltoluene	0.004 ug/mL
							Benzene	0.004 ug/mL

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Bromobenzene	0.004 ug/mL
							Bromodichloromethane	0.004 ug/mL
							Bromoform	0.004 ug/mL
							Carbon tetrachloride	0.004 ug/mL
							Chlorobenzene	0.004 ug/mL
							Chlorobromomethane	0.004 ug/mL
							Chloroform	0.004 ug/mL
							cis-1,2-Dichloroethene	0.004 ug/mL
							cis-1,3-Dichloropropene	0.004 ug/mL
							Dibromochloromethane	0.004 ug/mL
							Dibromomethane	0.004 ug/mL
							Ethylbenzene	0.004 ug/mL
							Hexachlorobutadiene	0.004 ug/mL
							Isopropylbenzene	0.004 ug/mL
							m-Xylene & p-Xylene	0.008 ug/mL
							Methylene Chloride	0.004 ug/mL
							n-Butylbenzene	0.004 ug/mL
							N-Propylbenzene	0.004 ug/mL
							Naphthalene	0.004 ug/mL
							o-Xylene	0.004 ug/mL
							sec-Butylbenzene	0.004 ug/mL
							Styrene	0.004 ug/mL
							tert-Butylbenzene	0.004 ug/mL
							Tetrachloroethene	0.004 ug/mL
							Toluene	0.004 ug/mL
							trans-1,2-Dichloroethene	0.004 ug/mL
							trans-1,3-Dichloropropene	0.004 ug/mL
							Trichloroethene	0.004 ug/mL
							1,2,3-Trimethylbenzene	0.004 ug/mL
							1,3,5-Trichlorobenzene	0.004 ug/mL
							1,4-Dioxane	0.2 ug/mL
							1-Chlorohexane	0.004 ug/mL
							2-Chloro-1,3-butadiene	0.004 ug/mL
							2-ethoxy-2-methyl butane	0.004 ug/mL
							2-Methyl-2-propanol	0.08 ug/mL
							2-Nitropropane	0.02 ug/mL
							3-Chloro-1-propene	0.004 ug/mL
							Acrylonitrile	0.01 ug/mL
							Carbon disulfide	0.004 ug/mL
							Cyclohexane	0.004 ug/mL
							Freon 113	0.004 ug/mL
							Hexane	0.004 ug/mL
							Iodomethane	0.004 ug/mL
							Isobutyl alcohol	0.2 ug/mL
							Isopropyl alcohol	0.08 ug/mL
							Isopropyl ether	0.004 ug/mL
							Methacrylonitrile	0.04 ug/mL
							Methyl acetate	0.004 ug/mL

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Methyl methacrylate	0.004 ug/mL
							Methyl tert-butyl ether	0.004 ug/mL
							Methylcyclohexane	0.004 ug/mL
							n-Heptane	0.004 ug/mL
							Propionitrile	0.08 ug/mL
							Tert-amyl methyl ether	0.004 ug/mL
							Tert-butyl ethyl ether	0.004 ug/mL
							Tetrahydrofuran	0.02 ug/mL
							trans-1,4-Dichloro-2-butene	0.04 ug/mL
					MSV_CCV_VOC#3_00012	3.2 uL	2-Butanone	0.008 ug/mL
							2-Hexanone	0.008 ug/mL
							4-Methyl-2-pentanone	0.008 ug/mL
							Acetone	0.008 ug/mL
							Acrolein	0.0399988 ug/mL
					MSV_V_EE_00005	4 uL	Ethyl ether	0.00400028 ug/mL
					MSV_V_VOA2_00098	12 uL	1,4-Dioxane	0.2 ug/mL
							2-Methyl-2-propanol	0.08 ug/mL
							Isobutyl alcohol	0.2 ug/mL
							Isopropyl alcohol	0.08 ug/mL
							Methacrylonitrile	0.04 ug/mL
							Propionitrile	0.08 ug/mL
							trans-1,4-Dichloro-2-butene	0.04 ug/mL
					MSV_VCYC_00006	32 uL	Cyclohexanone	0.200002 ug/mL
.MSV_CCV_2CEVE_00012	09/01/21	08/02/21	Methanol, Lot DZ644	5 mL	MSV_V_2CLEVE_00012	1 mL	2-Chloroethyl vinyl ether	1000 ug/mL
..MSV_V_2CLEVE_00012	04/30/24		Restek, Lot A0171422		(Purchased Reagent)		2-Chloroethyl vinyl ether	5000 ug/mL
.MSV_CCV_GASES_00049	08/09/21		Restek, Lot A0172364		(Purchased Reagent)		Bromomethane	2000 ug/mL
							Chloroethane	2000 ug/mL
							Chloromethane	2000 ug/mL
							Dichlorodifluoromethane	2000 ug/mL
							Dichlorofluoromethane	2000 ug/mL
							Trichlorofluoromethane	2000 ug/mL
							Vinyl chloride	2000 ug/mL
.MSV_CCV_VOC#1_00013	09/01/21	08/02/21	Methanol, Lot DZ644	5 mL	MSV_EM_Work_00001	1 mL	Ethyl methacrylate	1000.04 ug/mL
					MSV_MegaMIX#1_00012	1 mL	1,1,1,2-Tetrachloroethane	1000 ug/mL
							1,1,1-Trichloroethane	1000 ug/mL
							1,1,2,2-Tetrachloroethane	1000 ug/mL
							1,1,2-Trichloroethane	1000 ug/mL
							1,1-Dichloroethane	1000 ug/mL
							1,1-Dichloroethene	1000 ug/mL
							1,1-Dichloropropene	1000 ug/mL
							1,2,3-Trichlorobenzene	1000 ug/mL
							1,2,3-Trichloropropane	1000 ug/mL
							1,2,4-Trichlorobenzene	1000 ug/mL
							1,2,4-Trimethylbenzene	1000 ug/mL
							1,2-Dibromo-3-Chloropropane	1000 ug/mL

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2-Dibromoethane (EDB)	1000 ug/mL
							1,2-Dichlorobenzene	1000 ug/mL
							1,2-Dichloroethane	1000 ug/mL
							1,2-Dichloropropane	1000 ug/mL
							1,3,5-Trimethylbenzene	1000 ug/mL
							1,3-Dichlorobenzene	1000 ug/mL
							1,3-Dichloropropane	1000 ug/mL
							1,4-Dichlorobenzene	1000 ug/mL
							2,2-Dichloropropane	1000 ug/mL
							2-Chlorotoluene	1000 ug/mL
							4-Chlorotoluene	1000 ug/mL
							4-Isopropyltoluene	1000 ug/mL
							Benzene	1000 ug/mL
							Bromobenzene	1000 ug/mL
							Bromodichloromethane	1000 ug/mL
							Bromoform	1000 ug/mL
							Carbon tetrachloride	1000 ug/mL
							Chlorobenzene	1000 ug/mL
							Chlorobromomethane	1000 ug/mL
							Chloroform	1000 ug/mL
							cis-1,2-Dichloroethene	1000 ug/mL
							cis-1,3-Dichloropropene	1000 ug/mL
							Dibromochloromethane	1000 ug/mL
							Dibromomethane	1000 ug/mL
							Ethylbenzene	1000 ug/mL
							Hexachlorobutadiene	1000 ug/mL
							Isopropylbenzene	1000 ug/mL
							m-Xylene & p-Xylene	2000 ug/mL
							Methylene Chloride	1000 ug/mL
							n-Butylbenzene	1000 ug/mL
							N-Propylbenzene	1000 ug/mL
							Naphthalene	1000 ug/mL
							o-Xylene	1000 ug/mL
							sec-Butylbenzene	1000 ug/mL
							Styrene	1000 ug/mL
							tert-Butylbenzene	1000 ug/mL
							Tetrachloroethene	1000 ug/mL
							Toluene	1000 ug/mL
							trans-1,2-Dichloroethene	1000 ug/mL
							trans-1,3-Dichloropropene	1000 ug/mL
							Trichloroethene	1000 ug/mL
					MSV_MegaMix#2_00012	1 mL	1,2,3-Trimethylbenzene	1000 ug/mL
							1,3,5-Trichlorobenzene	1000 ug/mL
							1,4-Dioxane	12500 ug/mL
							1-Chlorohexane	1000 ug/mL
							2-Chloro-1,3-butadiene	1000 ug/mL
							2-ethoxy-2-methyl butane	1000 ug/mL
							2-Methyl-2-propanol	5000 ug/mL

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							2-Nitropropane	5000 ug/mL
							3-Chloro-1-propene	1000 ug/mL
							Acrylonitrile	2500 ug/mL
							Carbon disulfide	1000 ug/mL
							Cyclohexane	1000 ug/mL
							Freon 113	1000 ug/mL
							Hexane	1000 ug/mL
							Iodomethane	1000 ug/mL
							Isobutyl alcohol	12500 ug/mL
							Isopropyl alcohol	5000 ug/mL
							Isopropyl ether	1000 ug/mL
							Methacrylonitrile	2500 ug/mL
							Methyl acetate	1000 ug/mL
							Methyl methacrylate	1000 ug/mL
							Methyl tert-butyl ether	1000 ug/mL
							Methylcyclohexane	1000 ug/mL
							n-Heptane	1000 ug/mL
							Propionitrile	5000 ug/mL
							Tert-amyl methyl ether	1000 ug/mL
							Tert-butyl ethyl ether	1000 ug/mL
							Tetrahydrofuran	5000 ug/mL
							trans-1,4-Dichloro-2-butene	2500 ug/mL
..MSV_EM_Work_00001	11/24/21	05/24/21	Methanol, Lot DZ644	50 mL	MSV_EthylM_St_00001	4.938 mL	Ethyl methacrylate	5000.22 ug/mL
...MSV_EthylM_St_00001	11/24/21	05/24/21	Methanol, Lot DZ644	10 mL	MSV_EthylMeth_00001	0.5063 g	Ethyl methacrylate	50630 ug/mL
....MSV_EthylMeth_00001	01/31/23	Chem Service, Lot 11325900			(Purchased Reagent)		Ethyl methacrylate	1 g/g
..MSV_MegaMIX#1_00012	09/01/21	Restek, Lot A0171634			(Purchased Reagent)		1,1,1,2-Tetrachloroethane	5000 ug/mL
							1,1,1-Trichloroethane	5000 ug/mL
							1,1,2,2-Tetrachloroethane	5000 ug/mL
							1,1,2-Trichloroethane	5000 ug/mL
							1,1-Dichloroethane	5000 ug/mL
							1,1-Dichloroethene	5000 ug/mL
							1,1-Dichloropropene	5000 ug/mL
							1,2,3-Trichlorobenzene	5000 ug/mL
							1,2,3-Trichloropropane	5000 ug/mL
							1,2,4-Trichlorobenzene	5000 ug/mL
							1,2,4-Trimethylbenzene	5000 ug/mL
							1,2-Dibromo-3-Chloropropane	5000 ug/mL
							1,2-Dibromoethane (EDB)	5000 ug/mL
							1,2-Dichlorobenzene	5000 ug/mL
							1,2-Dichloroethane	5000 ug/mL
							1,2-Dichloropropane	5000 ug/mL
							1,3,5-Trimethylbenzene	5000 ug/mL
							1,3-Dichlorobenzene	5000 ug/mL
							1,3-Dichloropropane	5000 ug/mL
							1,4-Dichlorobenzene	5000 ug/mL
							2,2-Dichloropropane	5000 ug/mL
							2-Chlorotoluene	5000 ug/mL
							4-Chlorotoluene	5000 ug/mL

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							4-Isopropyltoluene	5000 ug/mL
							Benzene	5000 ug/mL
							Bromobenzene	5000 ug/mL
							Bromodichloromethane	5000 ug/mL
							Bromoform	5000 ug/mL
							Carbon tetrachloride	5000 ug/mL
							Chlorobenzene	5000 ug/mL
							Chlorobromomethane	5000 ug/mL
							Chloroform	5000 ug/mL
							cis-1,2-Dichloroethene	5000 ug/mL
							cis-1,3-Dichloropropene	5000 ug/mL
							Dibromochloromethane	5000 ug/mL
							Dibromomethane	5000 ug/mL
							Ethylbenzene	5000 ug/mL
							Hexachlorobutadiene	5000 ug/mL
							Isopropylbenzene	5000 ug/mL
							m-Xylene & p-Xylene	10000 ug/mL
							Methylene Chloride	5000 ug/mL
							n-Butylbenzene	5000 ug/mL
							N-Propylbenzene	5000 ug/mL
							Naphthalene	5000 ug/mL
							o-Xylene	5000 ug/mL
							sec-Butylbenzene	5000 ug/mL
							Styrene	5000 ug/mL
							tert-Butylbenzene	5000 ug/mL
							Tetrachloroethene	5000 ug/mL
							Toluene	5000 ug/mL
							trans-1,2-Dichloroethene	5000 ug/mL
							trans-1,3-Dichloropropene	5000 ug/mL
							Trichloroethene	5000 ug/mL
..MSV_MegaMix#2_00012	09/01/21		Restek, Lot A0172089		(Purchased Reagent)		1,2,3-Trimethylbenzene	5000 ug/mL
							1,3,5-Trichlorobenzene	5000 ug/mL
							1,4-Dioxane	62500 ug/mL
							1-Chlorohexane	5000 ug/mL
							2-Chloro-1,3-butadiene	5000 ug/mL
							2-ethoxy-2-methyl butane	5000 ug/mL
							2-Methyl-2-propanol	25000 ug/mL
							2-Nitropropane	25000 ug/mL
							3-Chloro-1-propene	5000 ug/mL
							Acrylonitrile	12500 ug/mL
							Carbon disulfide	5000 ug/mL
							Cyclohexane	5000 ug/mL
							Freon 113	5000 ug/mL
							Hexane	5000 ug/mL
							Iodomethane	5000 ug/mL
							Isobutyl alcohol	62500 ug/mL
							Isopropyl alcohol	25000 ug/mL
							Isopropyl ether	5000 ug/mL

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added	Methacrylonitrile	12500 ug/mL
							Methyl acetate	5000 ug/mL
							Methyl methacrylate	5000 ug/mL
							Methyl tert-butyl ether	5000 ug/mL
							Methylcyclohexane	5000 ug/mL
							n-Heptane	5000 ug/mL
							Propionitrile	25000 ug/mL
							Tert-amyl methyl ether	5000 ug/mL
							Tert-butyl ethyl ether	5000 ug/mL
							Tetrahydrofuran	25000 ug/mL
							trans-1,4-Dichloro-2-butene	12500 ug/mL
.MSV_CCV_VOC#3_00012	09/01/21	08/02/21	Methanol, Lot DZ644	5 mL	MSV_V_Ketones_00012	1 mL	2-Butanone	2500 ug/mL
							2-Hexanone	2500 ug/mL
							4-Methyl-2-pentanone	2500 ug/mL
							Acetone	2500 ug/mL
					MSV_VACR_00018	0.5 mL	Acrolein	12499.6 ug/mL
..MSV_V_Ketones_00012	01/31/24	Restek, Lot A0168313			(Purchased Reagent)		2-Butanone	12500 ug/mL
							2-Hexanone	12500 ug/mL
							4-Methyl-2-pentanone	12500 ug/mL
							Acetone	12500 ug/mL
..MSV_VACR_00018	09/08/21	07/09/21	Methanol, Lot DZ644	10 mL	MSV_VACR_STK_00020	9.253 mL	Acrolein	124996 ug/mL
...MSV_VACR_STK_00020	09/08/21	07/09/21	Methanol, Lot DZ644	10 mL	MSV_ACROLEIN_00013	1.4417 g	Acrolein	135087 ug/mL
....MSV_ACROLEIN_00013	09/30/21	Chem Service, Lot 10804400			(Purchased Reagent)		Acrolein	0.937 g/g
.MSV_V_EE_00005	10/14/21	04/14/21	Methanol, Lot DZ644	100 mL	MSV_EE_MISCSK_00006	1.989 mL	Ethyl ether	1000.07 ug/mL
..MSV_EE_MISCSK_00006	10/14/21	04/14/21	Methanol, Lot DZ644	10 mL	MSV_EE_Neat_00005	0.5028 g	Ethyl ether	50280 ug/mL
...MSV_EE_Neat_00005	11/30/21	Chem Service, Lot 11028800			(Purchased Reagent)		Ethyl ether	1 g/g
.MSV_V_VOA2_00098	09/01/21	08/02/21	Methanol, Lot DZ644	5 mL	MSV_V#2B_00228	1 mL	1,4-Dioxane	12500 ug/mL
							2-Methyl-2-propanol	5000 ug/mL
							Isobutyl alcohol	12500 ug/mL
							Isopropyl alcohol	5000 ug/mL
							Methacrylonitrile	2500 ug/mL
							Propionitrile	5000 ug/mL
							trans-1,4-Dichloro-2-butene	2500 ug/mL
..MSV_V#2B_00228	04/30/22	Restek, Lot A0171518			(Purchased Reagent)		1,4-Dioxane	62500 ug/mL
							2-Methyl-2-propanol	25000 ug/mL
							Isobutyl alcohol	62500 ug/mL
							Isopropyl alcohol	25000 ug/mL
							Methacrylonitrile	12500 ug/mL
							Propionitrile	25000 ug/mL
							trans-1,4-Dichloro-2-butene	12500 ug/mL
.MSV_VCYC_00006	08/15/21	02/15/21	50/50 MeOH/Water, Lot DZ644	200 mL	MSV_VCYC_STK_00005	6.278 mL	Cyclohexanone	6250.06 ug/mL
..MSV_VCYC_STK_00005	08/15/21	02/15/21	50/50 MeOH/Water, Lot DZ644	10 mL	MSV_CYC_00004	1.9911 g	Cyclohexanone	199110 ug/mL
...MSV_CYC_00004	05/31/23	Chem Service, Lot 10974900			(Purchased Reagent)		Cyclohexanone	1 g/g
MSV_CCV_2CEVE_00012	09/01/21	08/02/21	Methanol, Lot DZ644	5 mL	MSV_V_2CLEVE_00012	1 mL	2-Chloroethyl vinyl ether	1000 ug/mL
.MSV_V_2CLEVE_00012	04/30/24	Restek, Lot A0171422			(Purchased Reagent)		2-Chloroethyl vinyl ether	5000 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
MSV_CCV_2CEVE_00030	12/04/21	11/04/21	Methanol, Lot EB679	5 mL	MSV_V_2CLEVE_00030	1 mL	2-Chloroethyl vinyl ether	1000 ug/mL
.MSV_V_2CLEVE_00030	04/30/24		Restek, Lot A0171422		(Purchased Reagent)		2-Chloroethyl vinyl ether	5000 ug/mL
MSV_CCV_GASES_00049	08/09/21		Restek, Lot A0172364		(Purchased Reagent)		Bromomethane	2000 ug/mL
							Chloroethane	2000 ug/mL
							Chloromethane	2000 ug/mL
							Dichlorodifluoromethane	2000 ug/mL
							Dichlorofluoromethane	2000 ug/mL
							Trichlorofluoromethane	2000 ug/mL
							Vinyl chloride	2000 ug/mL
MSV_CCV_GASES_00103	11/11/21		Restek, Lot A0172364		(Purchased Reagent)		Bromomethane	2000 ug/mL
							Chloroethane	2000 ug/mL
							Chloromethane	2000 ug/mL
							Dichlorodifluoromethane	2000 ug/mL
							Dichlorofluoromethane	2000 ug/mL
							Trichlorofluoromethane	2000 ug/mL
							Vinyl chloride	2000 ug/mL
MSV_CCV_VOC#1_00013	09/01/21	08/02/21	Methanol, Lot DZ644	5 mL	MSV_EM_Work_00001	1 mL	Ethyl methacrylate	1000.04 ug/mL
					MSV_MegaMIX#1_00012	1 mL	1,1,1,2-Tetrachloroethane	1000 ug/mL
							1,1,1-Trichloroethane	1000 ug/mL
							1,1,2,2-Tetrachloroethane	1000 ug/mL
							1,1,2-Trichloroethane	1000 ug/mL
							1,1-Dichloroethane	1000 ug/mL
							1,1-Dichloroethene	1000 ug/mL
							1,1-Dichloropropene	1000 ug/mL
							1,2,3-Trichlorobenzene	1000 ug/mL
							1,2,3-Trichloropropane	1000 ug/mL
							1,2,4-Trichlorobenzene	1000 ug/mL
							1,2,4-Trimethylbenzene	1000 ug/mL
							1,2-Dibromo-3-Chloropropane	1000 ug/mL
							1,2-Dibromoethane (EDB)	1000 ug/mL
							1,2-Dichlorobenzene	1000 ug/mL
							1,2-Dichloroethane	1000 ug/mL
							1,2-Dichloropropane	1000 ug/mL
							1,3,5-Trimethylbenzene	1000 ug/mL
							1,3-Dichlorobenzene	1000 ug/mL
							1,3-Dichloropropane	1000 ug/mL
							1,4-Dichlorobenzene	1000 ug/mL
							2,2-Dichloropropane	1000 ug/mL
							2-Chlorotoluene	1000 ug/mL
							4-Chlorotoluene	1000 ug/mL
							4-Isopropyltoluene	1000 ug/mL
							Benzene	1000 ug/mL
							Bromobenzene	1000 ug/mL
							Bromodichloromethane	1000 ug/mL
							Bromoform	1000 ug/mL
							Carbon tetrachloride	1000 ug/mL
							Chlorobenzene	1000 ug/mL

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Chlorobromomethane	1000 ug/mL
							Chloroform	1000 ug/mL
							cis-1,2-Dichloroethene	1000 ug/mL
							cis-1,3-Dichloropropene	1000 ug/mL
							Dibromochloromethane	1000 ug/mL
							Dibromomethane	1000 ug/mL
							Ethylbenzene	1000 ug/mL
							Hexachlorobutadiene	1000 ug/mL
							Isopropylbenzene	1000 ug/mL
							m-Xylene & p-Xylene	2000 ug/mL
							Methylene Chloride	1000 ug/mL
							n-Butylbenzene	1000 ug/mL
							N-Propylbenzene	1000 ug/mL
							Naphthalene	1000 ug/mL
							o-Xylene	1000 ug/mL
							sec-Butylbenzene	1000 ug/mL
							Styrene	1000 ug/mL
							tert-Butylbenzene	1000 ug/mL
							Tetrachloroethene	1000 ug/mL
							Toluene	1000 ug/mL
							trans-1,2-Dichloroethene	1000 ug/mL
							trans-1,3-Dichloropropene	1000 ug/mL
							Trichloroethene	1000 ug/mL
					MSV_MegaMix#2_00012	1 mL	1,2,3-Trimethylbenzene	1000 ug/mL
							1,3,5-Trichlorobenzene	1000 ug/mL
							1,4-Dioxane	12500 ug/mL
							1-Chlorohexane	1000 ug/mL
							2-Chloro-1,3-butadiene	1000 ug/mL
							2-ethoxy-2-methyl butane	1000 ug/mL
							2-Methyl-2-propanol	5000 ug/mL
							2-Nitropropane	5000 ug/mL
							3-Chloro-1-propene	1000 ug/mL
							Acrylonitrile	2500 ug/mL
							Carbon disulfide	1000 ug/mL
							Cyclohexane	1000 ug/mL
							Freon 113	1000 ug/mL
							Hexane	1000 ug/mL
							Iodomethane	1000 ug/mL
							Isobutyl alcohol	12500 ug/mL
							Isopropyl alcohol	5000 ug/mL
							Isopropyl ether	1000 ug/mL
							Methacrylonitrile	2500 ug/mL
							Methyl acetate	1000 ug/mL
							Methyl methacrylate	1000 ug/mL
							Methyl tert-butyl ether	1000 ug/mL
							Methylcyclohexane	1000 ug/mL
							n-Heptane	1000 ug/mL
							Propionitrile	5000 ug/mL

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Tert-amyl methyl ether	1000 ug/mL
							Tert-butyl ethyl ether	1000 ug/mL
							Tetrahydrofuran	5000 ug/mL
							trans-1,4-Dichloro-2-butene	2500 ug/mL
.MSV_EM_Work_00001	11/24/21	05/24/21	Methanol, Lot DZ644	50 mL	MSV_EthylM_St_00001	4.938 mL	Ethyl methacrylate	5000.22 ug/mL
..MSV_EthylM_St_00001	11/24/21	05/24/21	Methanol, Lot DZ644	10 mL	MSV_EthylMeth_00001	0.5063 g	Ethyl methacrylate	50630 ug/mL
...MSV_EthylMeth_00001	01/31/23	Chem Service, Lot 11325900			(Purchased Reagent)		Ethyl methacrylate	1 g/g
.MSV_MegaMIX#1_00012	09/01/21	Restek, Lot A0171634			(Purchased Reagent)		1,1,1,2-Tetrachloroethane	5000 ug/mL
							1,1,1-Trichloroethane	5000 ug/mL
							1,1,2,2-Tetrachloroethane	5000 ug/mL
							1,1,2-Trichloroethane	5000 ug/mL
							1,1-Dichloroethane	5000 ug/mL
							1,1-Dichloroethene	5000 ug/mL
							1,1-Dichloropropene	5000 ug/mL
							1,2,3-Trichlorobenzene	5000 ug/mL
							1,2,3-Trichloropropane	5000 ug/mL
							1,2,4-Trichlorobenzene	5000 ug/mL
							1,2,4-Trimethylbenzene	5000 ug/mL
							1,2-Dibromo-3-Chloropropane	5000 ug/mL
							1,2-Dibromoethane (EDB)	5000 ug/mL
							1,2-Dichlorobenzene	5000 ug/mL
							1,2-Dichloroethane	5000 ug/mL
							1,2-Dichloropropane	5000 ug/mL
							1,3,5-Trimethylbenzene	5000 ug/mL
							1,3-Dichlorobenzene	5000 ug/mL
							1,3-Dichloropropane	5000 ug/mL
							1,4-Dichlorobenzene	5000 ug/mL
							2,2-Dichloropropane	5000 ug/mL
							2-Chlorotoluene	5000 ug/mL
							4-Chlorotoluene	5000 ug/mL
							4-Isopropyltoluene	5000 ug/mL
							Benzene	5000 ug/mL
							Bromobenzene	5000 ug/mL
							Bromodichloromethane	5000 ug/mL
							Bromoform	5000 ug/mL
							Carbon tetrachloride	5000 ug/mL
							Chlorobenzene	5000 ug/mL
							Chlorobromomethane	5000 ug/mL
							Chloroform	5000 ug/mL
							cis-1,2-Dichloroethene	5000 ug/mL
							cis-1,3-Dichloropropene	5000 ug/mL
							Dibromochloromethane	5000 ug/mL
							Dibromomethane	5000 ug/mL
							Ethylbenzene	5000 ug/mL
							Hexachlorobutadiene	5000 ug/mL
							Isopropylbenzene	5000 ug/mL
							m-Xylene & p-Xylene	10000 ug/mL
							Methylene Chloride	5000 ug/mL

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							n-Butylbenzene	5000 ug/mL
							N-Propylbenzene	5000 ug/mL
							Naphthalene	5000 ug/mL
							o-Xylene	5000 ug/mL
							sec-Butylbenzene	5000 ug/mL
							Styrene	5000 ug/mL
							tert-Butylbenzene	5000 ug/mL
							Tetrachloroethene	5000 ug/mL
							Toluene	5000 ug/mL
							trans-1,2-Dichloroethene	5000 ug/mL
							trans-1,3-Dichloropropene	5000 ug/mL
							Trichloroethene	5000 ug/mL
.MSV_MegaMix#2_00012	09/01/21		Restek, Lot A0172089		(Purchased Reagent)		1,2,3-Trimethylbenzene	5000 ug/mL
							1,3,5-Trichlorobenzene	5000 ug/mL
							1,4-Dioxane	62500 ug/mL
							1-Chlorohexane	5000 ug/mL
							2-Chloro-1,3-butadiene	5000 ug/mL
							2-ethoxy-2-methyl butane	5000 ug/mL
							2-Methyl-2-propanol	25000 ug/mL
							2-Nitropropane	25000 ug/mL
							3-Chloro-1-propene	5000 ug/mL
							Acrylonitrile	12500 ug/mL
							Carbon disulfide	5000 ug/mL
							Cyclohexane	5000 ug/mL
							Freon 113	5000 ug/mL
							Hexane	5000 ug/mL
							Iodomethane	5000 ug/mL
							Isobutyl alcohol	62500 ug/mL
							Isopropyl alcohol	25000 ug/mL
							Isopropyl ether	5000 ug/mL
							Methacrylonitrile	12500 ug/mL
							Methyl acetate	5000 ug/mL
							Methyl methacrylate	5000 ug/mL
							Methyl tert-butyl ether	5000 ug/mL
							Methylcyclohexane	5000 ug/mL
							n-Heptane	5000 ug/mL
							Propionitrile	25000 ug/mL
							Tert-amyl methyl ether	5000 ug/mL
							Tert-butyl ethyl ether	5000 ug/mL
							Tetrahydrofuran	25000 ug/mL
							trans-1,4-Dichloro-2-butene	12500 ug/mL
MSV_CCV_VOC#1_00032	12/04/21	11/04/21	Methanol, Lot EB679	5 mL	MSV_MegaMIX#1_00030	1 mL	1,1,1-Trichloroethane	1000 ug/mL
							1,1,2,2-Tetrachloroethane	1000 ug/mL
							1,1,2-Trichloroethane	1000 ug/mL
							1,1-Dichloroethane	1000 ug/mL
							1,1-Dichloroethene	1000 ug/mL
							1,2,4-Trichlorobenzene	1000 ug/mL

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2-Dibromo-3-Chloropropane	1000 ug/mL
							1,2-Dibromoethane (EDB)	1000 ug/mL
							1,2-Dichlorobenzene	1000 ug/mL
							1,2-Dichloroethane	1000 ug/mL
							1,2-Dichloropropane	1000 ug/mL
							1,3-Dichlorobenzene	1000 ug/mL
							1,4-Dichlorobenzene	1000 ug/mL
							Benzene	1000 ug/mL
							Bromodichloromethane	1000 ug/mL
							Bromoform	1000 ug/mL
							Carbon tetrachloride	1000 ug/mL
							Chlorobenzene	1000 ug/mL
							Chloroform	1000 ug/mL
							cis-1,2-Dichloroethene	1000 ug/mL
							cis-1,3-Dichloropropene	1000 ug/mL
							Dibromochloromethane	1000 ug/mL
							Dibromomethane	1000 ug/mL
							Ethylbenzene	1000 ug/mL
							Isopropylbenzene	1000 ug/mL
							m-Xylene & p-Xylene	2000 ug/mL
							Methylene Chloride	1000 ug/mL
							Styrene	1000 ug/mL
							Tetrachloroethene	1000 ug/mL
							Toluene	1000 ug/mL
							trans-1,2-Dichloroethene	1000 ug/mL
							trans-1,3-Dichloropropene	1000 ug/mL
							Trichloroethene	1000 ug/mL
					MSV_MegaMix#2_00030	1 mL	1,4-Dioxane	12500 ug/mL
							2-Methyl-2-propanol	5000 ug/mL
							2-Nitropropane	5000 ug/mL
							Acrylonitrile	2500 ug/mL
							Carbon disulfide	1000 ug/mL
							Cyclohexane	1000 ug/mL
							Freon 113	1000 ug/mL
							Isobutyl alcohol	12500 ug/mL
							Isopropyl alcohol	5000 ug/mL
							Methacrylonitrile	2500 ug/mL
							Methyl acetate	1000 ug/mL
							Methyl tert-butyl ether	1000 ug/mL
							Methylcyclohexane	1000 ug/mL
							Propionitrile	5000 ug/mL
							Tetrahydrofuran	5000 ug/mL
							trans-1,4-Dichloro-2-butene	2500 ug/mL
.MSV_MegaMIX#1_00030	12/04/21		Restek, Lot A0171634		(Purchased Reagent)		1,1,1-Trichloroethane	5000 ug/mL
							1,1,2,2-Tetrachloroethane	5000 ug/mL
							1,1,2-Trichloroethane	5000 ug/mL
							1,1-Dichloroethane	5000 ug/mL
							1,1-Dichloroethene	5000 ug/mL

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2,4-Trichlorobenzene	5000 ug/mL
							1,2-Dibromo-3-Chloropropane	5000 ug/mL
							1,2-Dibromoethane (EDB)	5000 ug/mL
							1,2-Dichlorobenzene	5000 ug/mL
							1,2-Dichloroethane	5000 ug/mL
							1,2-Dichloropropane	5000 ug/mL
							1,3-Dichlorobenzene	5000 ug/mL
							1,4-Dichlorobenzene	5000 ug/mL
							Benzene	5000 ug/mL
							Bromodichloromethane	5000 ug/mL
							Bromoform	5000 ug/mL
							Carbon tetrachloride	5000 ug/mL
							Chlorobenzene	5000 ug/mL
							Chloroform	5000 ug/mL
							cis-1,2-Dichloroethene	5000 ug/mL
							cis-1,3-Dichloropropene	5000 ug/mL
							Dibromochloromethane	5000 ug/mL
							Dibromomethane	5000 ug/mL
							Ethylbenzene	5000 ug/mL
							Isopropylbenzene	5000 ug/mL
							m-Xylene & p-Xylene	10000 ug/mL
							Methylene Chloride	5000 ug/mL
							Styrene	5000 ug/mL
							Tetrachloroethene	5000 ug/mL
							Toluene	5000 ug/mL
							trans-1,2-Dichloroethene	5000 ug/mL
							trans-1,3-Dichloropropene	5000 ug/mL
							Trichloroethene	5000 ug/mL
.MSV_MegaMix#2_00030	12/04/21		Restek, Lot A0173454		(Purchased Reagent)		1,4-Dioxane	62500 ug/mL
							2-Methyl-2-propanol	25000 ug/mL
							2-Nitropropane	25000 ug/mL
							Acrylonitrile	12500 ug/mL
							Carbon disulfide	5000 ug/mL
							Cyclohexane	5000 ug/mL
							Freon 113	5000 ug/mL
							Isobutyl alcohol	62500 ug/mL
							Isopropyl alcohol	25000 ug/mL
							Methacrylonitrile	12500 ug/mL
							Methyl acetate	5000 ug/mL
							Methyl tert-butyl ether	5000 ug/mL
							Methylcyclohexane	5000 ug/mL
							Propionitrile	25000 ug/mL
							Tetrahydrofuran	25000 ug/mL
							trans-1,4-Dichloro-2-butene	12500 ug/mL
MSV_CCV_VOC#3_00012	09/01/21	08/02/21	Methanol, Lot DZ644	5 mL	MSV_V_Ketones_00012	1 mL	2-Butanone	2500 ug/mL
							2-Hexanone	2500 ug/mL
							4-Methyl-2-pentanone	2500 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Acetone	2500 ug/mL
					MSV_VACR_00018	0.5 mL	Acrolein	12499.6 ug/mL
.MSV_V_Ketones_00012	01/31/24		Restek, Lot A0168313		(Purchased Reagent)		2-Butanone	12500 ug/mL
							2-Hexanone	12500 ug/mL
							4-Methyl-2-pentanone	12500 ug/mL
							Acetone	12500 ug/mL
.MSV_VACR_00018	09/08/21	07/09/21	Methanol, Lot DZ644	10 mL	MSV_VACR_STK_00020	9.253 mL	Acrolein	124996 ug/mL
..MSV_VACR_STK_00020	09/08/21	07/09/21	Methanol, Lot DZ644	10 mL	MSV_ACROLEIN_00013	1.4417 g	Acrolein	135087 ug/mL
...MSV_ACROLEIN_00013	09/30/21		Chem Service, Lot 10804400		(Purchased Reagent)		Acrolein	0.937 g/g
MSV_CCV_VOC#3_00031	12/04/21	11/04/21	Methanol, Lot EB679	5 mL	MSV_V_Ketones_00030	1 mL	2-Butanone	2500 ug/mL
							2-Hexanone	2500 ug/mL
							4-Methyl-2-pentanone	2500 ug/mL
							Acetone	2500 ug/mL
					MSV_VACR_00020	0.5 mL	Acrolein	12526.9 ug/mL
.MSV_V_Ketones_00030	01/31/24		Restek, Lot A0168313		(Purchased Reagent)		2-Butanone	12500 ug/mL
							2-Hexanone	12500 ug/mL
							4-Methyl-2-pentanone	12500 ug/mL
							Acetone	12500 ug/mL
.MSV_VACR_00020	12/31/21	10/26/21	Methanol, Lot EB679	10 mL	MSV_VACR_STK_00022	9.252 mL	Acrolein	125269 ug/mL
..MSV_VACR_STK_00022	12/31/21	10/26/21	Methanol, Lot EB679	10 mL	MSV_ACROLEIN_00015	1.445 g	Acrolein	135397 ug/mL
...MSV_ACROLEIN_00015	12/31/21		Chem Service, Lot 12255200		(Purchased Reagent)		Acrolein	0.937 g/g
MSV_Cent_ISSS_00001	12/01/21	06/01/21	Methanol, Lot DZ644	50 mL	MSV_8260_SS_00372	1 mL	1,2-Dichloroethane-d4 (Surr)	50 ug/mL
							4-Bromofluorobenzene (Surr)	50 ug/mL
							Dibromofluoromethane (Surr)	50 ug/mL
							Toluene-d8 (Surr)	50 ug/mL
					MSV_Cus826_IS_00312	1 mL	1,4-Dichlorobenzene-d4	50 ug/mL
							Chlorobenzene-d5 (IS)	50 ug/mL
							Fluorobenzene (IS)	50 ug/mL
							t-Butyl alcohol-d10 (IS)	250 ug/mL
.MSV_8260_SS_00372	03/31/22		Restek, Lot A0146938		(Purchased Reagent)		1,2-Dichloroethane-d4 (Surr)	2500 ug/mL
							4-Bromofluorobenzene (Surr)	2500 ug/mL
							Dibromofluoromethane (Surr)	2500 ug/mL
							Toluene-d8 (Surr)	2500 ug/mL
.MSV_Cus826_IS_00312	05/31/23		Restek, Lot A0160586		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2500 ug/mL
							Chlorobenzene-d5 (IS)	2500 ug/mL
							Fluorobenzene (IS)	2500 ug/mL
							t-Butyl alcohol-d10 (IS)	12500 ug/mL
MSV_Cent_ISSS_00004	04/27/22	10/27/21	Methanol, Lot EB679	50 mL	MSV_Cus826_IS_00369	1 mL	1,4-Dichlorobenzene-d4	50 ug/mL
							Chlorobenzene-d5 (IS)	50 ug/mL
							Fluorobenzene (IS)	50 ug/mL
							t-Butyl alcohol-d10 (IS)	250 ug/mL
.MSV_Cus826_IS_00369	08/31/24		Restek, Lot A0175453		(Purchased Reagent)		1,4-Dichlorobenzene-d4	2500 ug/mL
							Chlorobenzene-d5 (IS)	2500 ug/mL
							Fluorobenzene (IS)	2500 ug/mL
							t-Butyl alcohol-d10 (IS)	12500 ug/mL
MSV_Cent_ISSS_00004	04/27/22	10/27/21	Methanol, Lot EB679	50 mL	MSV_8260_SS_00522	1 mL	1,2-Dichloroethane-d4 (Surr)	50 ug/mL
							4-Bromofluorobenzene (Surr)	50 ug/mL

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Dibromofluoromethane (Surr)	50 ug/mL
							Toluene-d8 (Surr)	50 ug/mL
.MSV_8260_SS_00522	04/30/24		Restek, Lot A0171410		(Purchased Reagent)		1,2-Dichloroethane-d4 (Surr)	2500 ug/mL
							4-Bromofluorobenzene (Surr)	2500 ug/mL
							Dibromofluoromethane (Surr)	2500 ug/mL
							Toluene-d8 (Surr)	2500 ug/mL
MSV_LCS_Gases_00050	11/11/21	11/04/21	Methanol, Lot EB679	25 mL	MSV_QC_2K_GAS_00053	0.5 mL	Bromomethane	40 ug/mL
							Chloroethane	40 ug/mL
							Chloromethane	40 ug/mL
							Dichlorodifluoromethane	40 ug/mL
							Trichlorofluoromethane	40 ug/mL
							Vinyl chloride	40 ug/mL
.MSV_QC_2K_GAS_00053	11/11/21		Restek, Lot A0172021		(Purchased Reagent)		Bromomethane	2000 ug/mL
							Chloroethane	2000 ug/mL
							Chloromethane	2000 ug/mL
							Dichlorodifluoromethane	2000 ug/mL
							Trichlorofluoromethane	2000 ug/mL
							Vinyl chloride	2000 ug/mL
MSV_LCS_VOC#1_00012	09/01/21	08/02/21	Methanol, Lot DZ644	25 mL	MSV_M_MIX1SEC_00015	1 mL	1,1,1-Trichloroethane	40 ug/mL
							1,1,2,2-Tetrachloroethane	40 ug/mL
							1,1,2-Trichloroethane	40 ug/mL
							1,1-Dichloroethane	40 ug/mL
							1,1-Dichloroethene	40 ug/mL
							1,2,4-Trichlorobenzene	40 ug/mL
							1,2-Dibromo-3-Chloropropane	40 ug/mL
							1,2-Dibromoethane (EDB)	40 ug/mL
							1,2-Dichlorobenzene	40 ug/mL
							1,2-Dichloroethane	40 ug/mL
							1,2-Dichloropropane	40 ug/mL
							1,3-Dichlorobenzene	40 ug/mL
							1,4-Dichlorobenzene	40 ug/mL
							Benzene	40 ug/mL
							Bromobenzene	40 ug/mL
							Bromodichloromethane	40 ug/mL
							Bromoform	40 ug/mL
							Carbon tetrachloride	40 ug/mL
							Chlorobenzene	40 ug/mL
							Chloroform	40 ug/mL
							cis-1,2-Dichloroethene	40 ug/mL
							cis-1,3-Dichloropropene	40 ug/mL
							Dibromochloromethane	40 ug/mL
							Ethylbenzene	40 ug/mL
							Isopropylbenzene	40 ug/mL
							m-Xylene & p-Xylene	80 ug/mL
							Methylene Chloride	40 ug/mL
							sec-Butylbenzene	40 ug/mL
							Styrene	40 ug/mL

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Tetrachloroethene	40 ug/mL
							Toluene	40 ug/mL
							trans-1,2-Dichloroethene	40 ug/mL
							trans-1,3-Dichloropropene	40 ug/mL
							Trichloroethene	40 ug/mL
					MSV_M_MIX2SEC_00015	1 mL	1,4-Dioxane	1000 ug/mL
							2-Methyl-2-propanol	400 ug/mL
							Acrylonitrile	200 ug/mL
							Carbon disulfide	40 ug/mL
							Cyclohexane	40 ug/mL
							Freon 113	40 ug/mL
							Isobutyl alcohol	1000 ug/mL
							Isopropyl alcohol	300 ug/mL
							Methacrylonitrile	300 ug/mL
							Methyl acetate	40 ug/mL
							Methyl tert-butyl ether	40 ug/mL
							Methylcyclohexane	40 ug/mL
							Propionitrile	300 ug/mL
							Tetrahydrofuran	200 ug/mL
							trans-1,4-Dichloro-2-butene	200 ug/mL
					MSV_Q_Ketones_00016	1 mL	2-Butanone	500 ug/mL
							2-Hexanone	500 ug/mL
							4-Methyl-2-pentanone	500 ug/mL
							Acetone	500 ug/mL
.MSV_M_MIX1SEC_00015	04/30/24		Restek, Lot A0171815		(Purchased Reagent)		1,1,1-Trichloroethane	1000 ug/mL
							1,1,2,2-Tetrachloroethane	1000 ug/mL
							1,1,2-Trichloroethane	1000 ug/mL
							1,1-Dichloroethane	1000 ug/mL
							1,1-Dichloroethene	1000 ug/mL
							1,2,4-Trichlorobenzene	1000 ug/mL
							1,2-Dibromo-3-Chloropropane	1000 ug/mL
							1,2-Dibromoethane (EDB)	1000 ug/mL
							1,2-Dichlorobenzene	1000 ug/mL
							1,2-Dichloroethane	1000 ug/mL
							1,2-Dichloropropane	1000 ug/mL
							1,3-Dichlorobenzene	1000 ug/mL
							1,4-Dichlorobenzene	1000 ug/mL
							Benzene	1000 ug/mL
							Bromobenzene	1000 ug/mL
							Bromodichloromethane	1000 ug/mL
							Bromoform	1000 ug/mL
							Carbon tetrachloride	1000 ug/mL
							Chlorobenzene	1000 ug/mL
							Chloroform	1000 ug/mL
							cis-1,2-Dichloroethene	1000 ug/mL
							cis-1,3-Dichloropropene	1000 ug/mL
							Dibromochloromethane	1000 ug/mL
							Ethylbenzene	1000 ug/mL

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Isopropylbenzene	1000 ug/mL
							m-Xylene & p-Xylene	2000 ug/mL
							Methylene Chloride	1000 ug/mL
							sec-Butylbenzene	1000 ug/mL
							Styrene	1000 ug/mL
							Tetrachloroethene	1000 ug/mL
							Toluene	1000 ug/mL
							trans-1,2-Dichloroethene	1000 ug/mL
							trans-1,3-Dichloropropene	1000 ug/mL
							Trichloroethene	1000 ug/mL
.MSV_M_MIX2SEC_00015	04/30/24		Restek, Lot A0171837		(Purchased Reagent)		1,4-Dioxane	25000 ug/mL
							2-Methyl-2-propanol	10000 ug/mL
							Acrylonitrile	5000 ug/mL
							Carbon disulfide	1000 ug/mL
							Cyclohexane	1000 ug/mL
							Freon 113	1000 ug/mL
							Isobutyl alcohol	25000 ug/mL
							Isopropyl alcohol	7500 ug/mL
							Methacrylonitrile	7500 ug/mL
							Methyl acetate	1000 ug/mL
							Methyl tert-butyl ether	1000 ug/mL
							Methylcyclohexane	1000 ug/mL
							Propionitrile	7500 ug/mL
							Tetrahydrofuran	5000 ug/mL
							trans-1,4-Dichloro-2-butene	5000 ug/mL
.MSV_Q_Ketones_00016	01/31/24		Restek, Lot A0167987		(Purchased Reagent)		2-Butanone	12500 ug/mL
							2-Hexanone	12500 ug/mL
							4-Methyl-2-pentanone	12500 ug/mL
							Acetone	12500 ug/mL
MSV_LCS_VOC#1_00025	12/01/21	11/01/21	Methanol, Lot EB679	25 mL	MSV_M_MIX1SEC_00031	1 mL	1,1,1-Trichloroethane	40 ug/mL
							1,1,2,2-Tetrachloroethane	40 ug/mL
							1,1,2-Trichloroethane	40 ug/mL
							1,1-Dichloroethane	40 ug/mL
							1,1-Dichloroethene	40 ug/mL
							1,2,4-Trichlorobenzene	40 ug/mL
							1,2-Dibromo-3-Chloropropane	40 ug/mL
							1,2-Dibromoethane (EDB)	40 ug/mL
							1,2-Dichlorobenzene	40 ug/mL
							1,2-Dichloroethane	40 ug/mL
							1,2-Dichloropropane	40 ug/mL
							1,3-Dichlorobenzene	40 ug/mL
							1,4-Dichlorobenzene	40 ug/mL
							Benzene	40 ug/mL
							Bromodichloromethane	40 ug/mL
							Bromoform	40 ug/mL
							Carbon tetrachloride	40 ug/mL
							Chlorobenzene	40 ug/mL

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Chloroform	40 ug/mL
							cis-1,2-Dichloroethene	40 ug/mL
							cis-1,3-Dichloropropene	40 ug/mL
							Dibromochloromethane	40 ug/mL
							Ethylbenzene	40 ug/mL
							Isopropylbenzene	40 ug/mL
							Methylene Chloride	40 ug/mL
							Styrene	40 ug/mL
							Tetrachloroethene	40 ug/mL
							Toluene	40 ug/mL
							trans-1,2-Dichloroethene	40 ug/mL
							trans-1,3-Dichloropropene	40 ug/mL
							Trichloroethene	40 ug/mL
					MSV_M_MIX2SEC_00033	1 mL	Carbon disulfide	40 ug/mL
							Cyclohexane	40 ug/mL
							Freon 113	40 ug/mL
							Methyl acetate	40 ug/mL
							Methyl tert-butyl ether	40 ug/mL
							Methylcyclohexane	40 ug/mL
					MSV_Q_Ketones_00032	1 mL	2-Butanone	500 ug/mL
							2-Hexanone	500 ug/mL
							4-Methyl-2-pentanone	500 ug/mL
							Acetone	500 ug/mL
.MSV_M_MIX1SEC_00031	04/30/24		Restek, Lot A0171815		(Purchased Reagent)		1,1,1-Trichloroethane	1000 ug/mL
							1,1,2,2-Tetrachloroethane	1000 ug/mL
							1,1,2-Trichloroethane	1000 ug/mL
							1,1-Dichloroethane	1000 ug/mL
							1,1-Dichloroethene	1000 ug/mL
							1,2,4-Trichlorobenzene	1000 ug/mL
							1,2-Dibromo-3-Chloropropane	1000 ug/mL
							1,2-Dibromoethane (EDB)	1000 ug/mL
							1,2-Dichlorobenzene	1000 ug/mL
							1,2-Dichloroethane	1000 ug/mL
							1,2-Dichloropropane	1000 ug/mL
							1,3-Dichlorobenzene	1000 ug/mL
							1,4-Dichlorobenzene	1000 ug/mL
							Benzene	1000 ug/mL
							Bromodichloromethane	1000 ug/mL
							Bromoform	1000 ug/mL
							Carbon tetrachloride	1000 ug/mL
							Chlorobenzene	1000 ug/mL
							Chloroform	1000 ug/mL
							cis-1,2-Dichloroethene	1000 ug/mL
							cis-1,3-Dichloropropene	1000 ug/mL
							Dibromochloromethane	1000 ug/mL
							Ethylbenzene	1000 ug/mL
							Isopropylbenzene	1000 ug/mL
							Methylene Chloride	1000 ug/mL

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Styrene	1000 ug/mL
							Tetrachloroethene	1000 ug/mL
							Toluene	1000 ug/mL
							trans-1,2-Dichloroethene	1000 ug/mL
							trans-1,3-Dichloropropene	1000 ug/mL
							Trichloroethene	1000 ug/mL
.MSV_M_MIX2SEC_00033	04/30/24	Restek, Lot A0171837			(Purchased Reagent)		Carbon disulfide	1000 ug/mL
							Cyclohexane	1000 ug/mL
							Freon 113	1000 ug/mL
							Methyl acetate	1000 ug/mL
							Methyl tert-butyl ether	1000 ug/mL
							Methylcyclohexane	1000 ug/mL
.MSV_Q_Ketones_00032	01/31/24	Restek, Lot A0167987			(Purchased Reagent)		2-Butanone	12500 ug/mL
							2-Hexanone	12500 ug/mL
							4-Methyl-2-pentanone	12500 ug/mL
							Acetone	12500 ug/mL
MSV_Q_EE_00004	10/14/21	04/14/21	Methanol, Lot DZ644	100 mL	MSV_QEE_MiscS_00005	0.108 mL	Ethyl ether	40.176 ug/mL
.MSV_QEE_MiscS_00005	10/14/21	04/14/21	Methanol, Lot DZ644	10 mL	MSV_EE_Neat_00005	0.372 g	Ethyl ether	37200 ug/mL
..MSV_EE_Neat_00005	11/30/21	Chem Service, Lot 11028800			(Purchased Reagent)		Ethyl ether	1 g/g
MSV_QC_2K_GAS_00023	08/09/21	Restek, Lot A0172021			(Purchased Reagent)		Bromomethane	2000 ug/mL
							Chloroethane	2000 ug/mL
							Chloromethane	2000 ug/mL
							Dichlorodifluoromethane	2000 ug/mL
							Trichlorofluoromethane	2000 ug/mL
							Vinyl chloride	2000 ug/mL
MSV_QCYC_00005	08/15/21	02/15/21	50/50 MeOH/Water, Lot DZ644	200 mL	MSV_QCYC_STK_00007	2.346 mL	Cyclohexanone	1000.1 ug/mL
.MSV_QCYC_STK_00007	08/15/21	02/15/21	50/50 MeOH/Water, Lot DZ644	10 mL	MSV_CYC_00003	0.8526 g	Cyclohexanone	85260 ug/mL
..MSV_CYC_00003	05/31/23	Chem Service, Lot 10135700			(Purchased Reagent)		Cyclohexanone	1 g/g
MSV_V_BFB_00006							1,2-Dichloroethene, Total	
							1,3-Dichloropropene, Total	
							Tentatively Identified Compound	
							Xylenes, Total	
					MSV_VBFB_STK_00006	0.129 mL	BFB	49.8611 ug/mL
.MSV_VBFB_STK_00006	01/07/22	07/07/21	Methanol, Lot DZ644	10 mL	MSV_4BFB_NEAT_00006	0.9663 g	BFB	96630 ug/mL
..MSV_4BFB_NEAT_00006	02/28/25	Chem Service, Lot 10727100			(Purchased Reagent)		BFB	1 g/g
MSV_V_EE_00005	10/14/21	04/14/21	Methanol, Lot DZ644	100 mL	MSV_EE_MISCSK_00006	1.989 mL	Ethyl ether	1000.07 ug/mL
.MSV_EE_MISCSK_00006	10/14/21	04/14/21	Methanol, Lot DZ644	10 mL	MSV_EE_Neat_00005	0.5028 g	Ethyl ether	50280 ug/mL
..MSV_EE_Neat_00005	11/30/21	Chem Service, Lot 11028800			(Purchased Reagent)		Ethyl ether	1 g/g
MSV_V_VOA2_00098	09/01/21	08/02/21	Methanol, Lot DZ644	5 mL	MSV_V#2B_00228	1 mL	1,4-Dioxane	12500 ug/mL
							2-Methyl-2-propanol	5000 ug/mL
							Isobutyl alcohol	12500 ug/mL
							Isopropyl alcohol	5000 ug/mL
							Methacrylonitrile	2500 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Propionitrile	5000 ug/mL
							trans-1,4-Dichloro-2-butene	2500 ug/mL
.MSV_V#2B_00228	04/30/22	Restek, Lot A0171518			(Purchased Reagent)		1,4-Dioxane	62500 ug/mL
							2-Methyl-2-propanol	25000 ug/mL
							Isobutyl alcohol	62500 ug/mL
							Isopropyl alcohol	25000 ug/mL
							Methacrylonitrile	12500 ug/mL
							Propionitrile	25000 ug/mL
							trans-1,4-Dichloro-2-butene	12500 ug/mL
MSV_VCYC_00006	08/15/21	02/15/21	50/50 MeOH/Water, Lot DZ644	200 mL	MSV_VCYC_STK_00005	6.278 mL	Cyclohexanone	6250.06 ug/mL
.MSV_VCYC_STK_00005	08/15/21	02/15/21	50/50 MeOH/Water, Lot DZ644	10 mL	MSV_CYC_00004	1.9911 g	Cyclohexanone	199110 ug/mL
..MSV_CYC_00004	05/31/23	Chem Service, Lot 10974900			(Purchased Reagent)		Cyclohexanone	1 g/g
MT_I_IV_PDS_00001	12/23/21	09/23/21	J, Lot 1742203	250 mL	MT_LCS-SPK-A_00006	50 mL	Cadmium	2.498 ug/mL
.MT_LCS-SPK-A_00006	09/13/22	Inorganic Ventures, Lot S2-MEB706054			(Purchased Reagent)		Cadmium	12.49 mg/L
MT_LCS-SPK-A_00001	06/15/22	Inorganic Ventures, Lot S2-MEB704929			(Purchased Reagent)		Ag	12.5 mg/L
							Al	1250 mg/L
							As	125 mg/L
							B	125 mg/L
							Ba	125 mg/L
							Be	12.51 mg/L
							Ca	1250 mg/L
							Cadmium	12.5 mg/L
							Co	125 mg/L
							Cr	125 mg/L
							Cu	125 mg/L
							Fe	1250 mg/L
							K	1250 mg/L
							Li	125 mg/L
							Mg	1250 mg/L
							Mn	125 mg/L
							Na	1250 mg/L
							Ni	125 mg/L
							P	125 mg/L
							Pb	12.5 mg/L
							Se	25.02 mg/L
							Sr	12.5 mg/L
							Sulfur	1250 mg/L
							Th	125 mg/L
							Tl	24.98 mg/L
							U	12.5 mg/L
							V	125 mg/L
							Zn	125 mg/L
MT_LCS-SPK-A_00007	10/08/22	Inorganic Ventures, Lot S2-MEB706054			(Purchased Reagent)		Ag	12.47 mg/L
							Al	1250 mg/L
							As	124.9 mg/L

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							B	125 mg/L
							Ba	125 mg/L
							Be	12.48 mg/L
							Ca	1250 mg/L
							Cadmium	12.49 mg/L
							Co	124.9 mg/L
							Cr	124.9 mg/L
							Cu	124.9 mg/L
							Fe	1250 mg/L
							K	1250 mg/L
							Li	125 mg/L
							Mg	1250 mg/L
							Mn	125.1 mg/L
							Na	1250 mg/L
							Ni	124.9 mg/L
							P	125 mg/L
							Pb	12.5 mg/L
							Se	25 mg/L
							Sr	12.51 mg/L
							Sulfur	1250 mg/L
							Th	124.9 mg/L
							Tl	24.99 mg/L
							U	12.51 mg/L
							V	125 mg/L
							Zn	125 mg/L
MT_LCS-SPK-B_00002	06/15/22	Inorganic Ventures, Lot S2-MEB704930			(Purchased Reagent)		Mo	12.5 mg/L
							Sb	24.99 mg/L
							Si	1250 mg/L
							Sn	25.01 mg/L
							Ti	125 mg/L
							W	125 mg/L
							Zr	125 mg/L
MT_LCS-SPK-B_00003	10/08/22	Inorganic Ventures, Lot S2-MEB706055			(Purchased Reagent)		Mo	12.5 mg/L
							Sb	25.01 mg/L
							Si	1250 mg/L
							Sn	24.98 mg/L
							Ti	125 mg/L
							W	125 mg/L
							Zr	125 mg/L
MT_MJ_CCV_00121	11/17/21	10/18/21	DI Water, Lot DI20211018	5 L	MT_S_C1001_SC_00004	7.5 mL	Cadmium	30 ppb
.MT_S_C1001_SC_00004	05/07/22	SCP Science, Lot S210419030			(Purchased Reagent)		Cadmium	20 ug/mL
MT_MJ_CRI-V_00064	12/04/21	11/04/21	J, Lot 2014932	1 L	MT_S_MWLLC_SC_00003	1 mL	Cadmium	0.5 ug/L
.MT_S_MWLLC_SC_00003	08/11/22	SCP Science, Lot S210714046			(Purchased Reagent)		Cadmium	0.5 ug/mL
MT_MJ_ICSA_00049	11/17/21	10/18/21	J, Lot 1942166	500 mL	MT_S_ICS2A_HP_00018	25 mL	Ag	0.0000805 ug/mL

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Al	99.8 ug/mL
							As	0.001405 ug/mL
							Ba	0.000345 ug/mL
							Ca	299.4 ug/mL
							Cadmium	0.0002655 ug/mL
							Co	0.001365 ug/mL
							Cr	0.001235 ug/mL
							Cu	0.00087 ug/mL
							Fe	249.5 ug/mL
							K	99.8 ug/mL
							Mg	99.8 ug/mL
							Mn	0.00131 ug/mL
							Mo	1.996 ug/mL
							Na	249.5 ug/mL
							Ni	0.001115 ug/mL
							Pb	0.0001755 ug/mL
							Sb	0.00056 ug/mL
							Se	0.00038 ug/mL
							Sr	0.0021 ug/mL
							Ti	1.996 ug/mL
							V	0.00017 ug/mL
							Zn	0.00155 ug/mL
					MT_S_ICS2A_IV_00002	25 mL	Ag	0.0000805 ug/mL
							Al	99.8 ug/mL
							As	0.001405 ug/mL
							Ba	0.000345 ug/mL
							Be	0.0000055 ug/mL
							Ca	299.4 ug/mL
							Cadmium	0.0002655 ug/mL
							Co	0.001365 ug/mL
							Cr	0.001235 ug/mL
							Cu	0.00087 ug/mL
							Fe	249.5 ug/mL
							K	99.8 ug/mL
							Mg	99.8 ug/mL

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Mn	0.00131 ug/mL
							Mo	1.996 ug/mL
							Na	249.5 ug/mL
							Ni	0.001115 ug/mL
							Pb	0.0001755 ug/mL
							Sb	0.00056 ug/mL
							Se	0.00038 ug/mL
							Sn	0.000235 ug/mL
							Sr	0.0021 ug/mL
							Ti	1.996 ug/mL
							Tl	0.0000055 ug/mL
							U	0.0000055 ug/mL
							V	0.00017 ug/mL
							Zn	0.00155 ug/mL
.MT_S_ICS2A_HP_00018	08/31/22	High-Purity Standards, Lot 2105704			(Purchased Reagent)		Ag	0.0011 ug/mL
							Al	1000 ug/mL
							As	0.0051 ug/mL
							Ba	0.0053 ug/mL
							Ca	3000 ug/mL
							Cadmium	0.00291 ug/mL
							Co	0.021 ug/mL
							Cr	0.015 ug/mL
							Cu	0.0077 ug/mL
							Fe	2500 ug/mL
							K	1000 ug/mL
							Mg	1000 ug/mL
							Mn	0.022 ug/mL
							Mo	20 ug/mL
							Na	2500 ug/mL
							Ni	0.017 ug/mL
							Pb	0.0032 ug/mL
							Sb	0.0019 ug/mL
							Se	0.0023 ug/mL
							Sr	0.015 ug/mL
							Ti	20 ug/mL
							V	0.0014 ug/mL
							Zn	0.016 ug/mL
.MT_S_ICS2A_IV_00002	09/07/22	Inorganic Ventures, Lot R2-MEB694449			(Purchased Reagent)		Ag	0.00051 ug/mL
							Al	996 ug/mL
							As	0.023 ug/mL
							Ba	0.0016 ug/mL
							Be	0.00011 ug/mL
							Ca	2988 ug/mL

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Cadmium	0.0024 ug/mL
							Co	0.0063 ug/mL
							Cr	0.0097 ug/mL
							Cu	0.0097 ug/mL
							Fe	2490 ug/mL
							K	996 ug/mL
							Mg	996 ug/mL
							Mn	0.0042 ug/mL
							Mo	19.92 ug/mL
							Na	2490 ug/mL
							Ni	0.0053 ug/mL
							Pb	0.00031 ug/mL
							Sb	0.0093 ug/mL
							Se	0.0053 ug/mL
							Sn	0.0047 ug/mL
							Sr	0.027 ug/mL
							Ti	19.92 ug/mL
							Tl	0.00011 ug/mL
							U	0.00011 ug/mL
							V	0.002 ug/mL
							Zn	0.015 ug/mL
MT_MJ_ICSAB_00039	11/17/21	10/18/21	J, Lot 1942147	500 mL	MT_S_ICS2A_HP_00018	25 mL	Ag	0.0501205 ug/mL
							Al	99.8 ug/mL
							As	0.101505 ug/mL
							Ba	0.000345 ug/mL
							Ca	299.4 ug/mL
							Cadmium	0.100366 ug/mL
							Co	0.201565 ug/mL
							Cr	0.201435 ug/mL
							Cu	0.20107 ug/mL
							Fe	249.5 ug/mL
							K	99.8 ug/mL
							Mg	99.8 ug/mL
							Mn	0.20151 ug/mL
							Mo	1.996 ug/mL
							Na	249.5 ug/mL
							Ni	0.201315 ug/mL
							Pb	0.0001755 ug/mL
							Sb	0.00056 ug/mL
							Se	0.10048 ug/mL

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Sr	0.0021 ug/mL
							Ti	1.996 ug/mL
							V	0.20037 ug/mL
							Zn	0.10165 ug/mL
					MT_S_ICS2A_IV_00002	25 mL	Ag	0.0501205 ug/mL
							Al	99.8 ug/mL
							As	0.101505 ug/mL
							Ba	0.000345 ug/mL
							Be	0.0000055 ug/mL
							Ca	299.4 ug/mL
							Cadmium	0.100366 ug/mL
							Co	0.201565 ug/mL
							Cr	0.201435 ug/mL
							Cu	0.20107 ug/mL
							Fe	249.5 ug/mL
							K	99.8 ug/mL
							Mg	99.8 ug/mL
							Mn	0.20151 ug/mL
							Mo	1.996 ug/mL
							Na	249.5 ug/mL
							Ni	0.201315 ug/mL
							Pb	0.0001755 ug/mL
							Sb	0.00056 ug/mL
							Se	0.10048 ug/mL
							Sn	0.000235 ug/mL
							Sr	0.0021 ug/mL
							Ti	1.996 ug/mL
							Tl	0.0000055 ug/mL
							U	0.0000055 ug/mL
							V	0.20037 ug/mL
							Zn	0.10165 ug/mL
					MT_S_ICS2B_IV_00001	5 mL	Ag	0.0501205 ug/mL
							As	0.101505 ug/mL
							Cadmium	0.100366 ug/mL

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Co	0.201565 ug/mL
							Cr	0.201435 ug/mL
							Cu	0.20107 ug/mL
							Mn	0.20151 ug/mL
							Ni	0.201315 ug/mL
							Se	0.10048 ug/mL
							V	0.20037 ug/mL
							Zn	0.10165 ug/mL
.MT_S_ICS2A_HP_00018	08/31/22		High-Purity Standards, Lot 2105704		(Purchased Reagent)		Ag	0.0011 ug/mL
							Al	1000 ug/mL
							As	0.0051 ug/mL
							Ba	0.0053 ug/mL
							Ca	3000 ug/mL
							Cadmium	0.00291 ug/mL
							Co	0.021 ug/mL
							Cr	0.015 ug/mL
							Cu	0.0077 ug/mL
							Fe	2500 ug/mL
							K	1000 ug/mL
							Mg	1000 ug/mL
							Mn	0.022 ug/mL
							Mo	20 ug/mL
							Na	2500 ug/mL
							Ni	0.017 ug/mL
							Pb	0.0032 ug/mL
							Sb	0.0019 ug/mL
							Se	0.0023 ug/mL
							Sr	0.015 ug/mL
							Ti	20 ug/mL
							V	0.0014 ug/mL
							Zn	0.016 ug/mL
.MT_S_ICS2A_IV_00002	09/07/22		Inorganic Ventures, Lot R2-MEB694449		(Purchased Reagent)		Ag	0.00051 ug/mL
							Al	996 ug/mL
							As	0.023 ug/mL
							Ba	0.0016 ug/mL
							Be	0.00011 ug/mL
							Ca	2988 ug/mL
							Cadmium	0.0024 ug/mL
							Co	0.0063 ug/mL
							Cr	0.0097 ug/mL
							Cu	0.0097 ug/mL
							Fe	2490 ug/mL
							K	996 ug/mL
							Mg	996 ug/mL
							Mn	0.0042 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added	Mo	19.92 ug/mL
							Na	2490 ug/mL
							Ni	0.0053 ug/mL
							Pb	0.00031 ug/mL
							Sb	0.0093 ug/mL
							Se	0.0053 ug/mL
							Sn	0.0047 ug/mL
							Sr	0.027 ug/mL
							Ti	19.92 ug/mL
							Tl	0.00011 ug/mL
							U	0.00011 ug/mL
							V	0.002 ug/mL
							Zn	0.015 ug/mL
.MT_S_ICS2B_IV_00001	06/28/22	Inorganic Ventures, Lot R2-MEB697446			(Purchased Reagent)		Ag	5.004 ug/mL
							As	10.01 ug/mL
							Cadmium	10.01 ug/mL
							Co	20.02 ug/mL
							Cr	20.02 ug/mL
							Cu	20.02 ug/mL
							Mn	20.02 ug/mL
							Ni	20.02 ug/mL
							Se	10.01 ug/mL
							V	20.02 ug/mL
							Zn	10.01 ug/mL
MT_MJ_ICV_00051	11/24/21	10/25/21	J, Lot 1942147	1 L	MT_S_MSCCV_SP_00005	1.5 mL	Cadmium	29.985 ppb
.MT_S_MSCCV_SP_00005	05/27/22	SCP Science, Lot S210504059			(Purchased Reagent)		Cadmium	19.99 ug/mL
MT_MJ_LRC_00050	11/15/21	10/15/21	J, Lot 1742203	1 L	MT_S_CCV2_SCP_00007	5 mL	Cadmium	502.5 ppb
.MT_S_CCV2_SCP_00007	08/11/22	SCP Science, Lot S210714043			(Purchased Reagent)		Cadmium	100.5 ug/mL
MT_MJ_S1_00053	11/27/21	10/28/21	J, Lot 1942147	500 mL	MT_S_C1001_SC_00004	2.5 mL	Cadmium	100 ppb
.MT_S_C1001_SC_00004	05/07/22	SCP Science, Lot S210419030			(Purchased Reagent)		Cadmium	20 ug/mL

Reagent

MSV_8260_SS_00372

RESTEK
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ACCREDITED
ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 55671 **Lot No.:** A0146938

Description : 8260A Surrogate Mix

8260A Surrogate Mix 2,500µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : March 31, 2022 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Dibromofluoromethane		2,505.2 µg/mL	+/- 14.5653	µg/mL	Gravimetric
	CAS # 1868-53-7	(Lot 0012016)		+/- 140.4622	µg/mL	Unstressed
	Purity 99%			+/- 143.7488	µg/mL	Stressed
2	1,2-Dichloroethane-d4		2,517.2 µg/mL	+/- 14.6350	µg/mL	Gravimetric
	CAS # 17060-07-0	(Lot PR-26748)		+/- 141.1350	µg/mL	Unstressed
	Purity 99%			+/- 144.4374	µg/mL	Stressed
3	Toluene-d8		2,507.7 µg/mL	+/- 14.5798	µg/mL	Gravimetric
	CAS # 2037-26-5	(Lot PR-27311)		+/- 140.6024	µg/mL	Unstressed
	Purity 99%			+/- 143.8923	µg/mL	Stressed
4	1-Bromo-4-fluorobenzene (BFB)		2,507.7 µg/mL	+/- 14.5798	µg/mL	Gravimetric
	CAS # 460-00-4	(Lot 20401KO)		+/- 140.6024	µg/mL	Unstressed
	Purity 99%			+/- 143.8923	µg/mL	Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

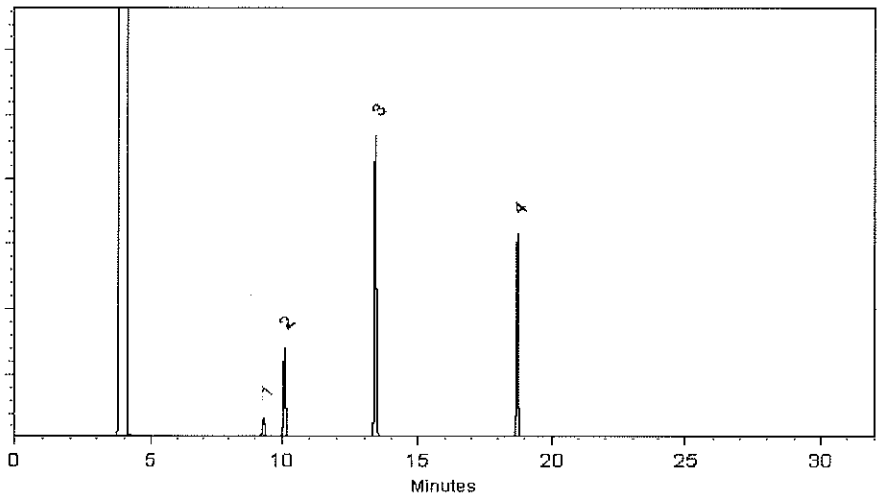
Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Maggie Wang
Maggie Wang - Operations Technician I

Date Mixed: 12-Mar-2019 **Balance:** 1128342314

Jennifer J Pollino
Jennifer Pollino - Operations Tech-ARM QC

Date Passed: 15-Mar-2019

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

MSV_8260_SS_00522

RESTEK®
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 55671 **Lot No.:** A0171410

Description : 8260A Surrogate Mix

8260A Surrogate Mix 2,500µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : April 30, 2024 **Storage:** 0°C or colder

Ship: Ambient

C E R T I F I E D V A L U E S

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	Dibromofluoromethane **CAS #** 1868-53-7 (Lot 0012016) **Purity** 99%	2,509.0 µg/mL	+/- 14.7242 µg/mL +/- 140.6914 µg/mL +/- 143.9827 µg/mL	Gravimetric Unstressed Stressed
2	1,2-Dichloroethane-d4 **CAS #** 17060-07-0 (Lot PR-29377) **Purity** 99%	2,503.0 µg/mL	+/- 14.6890 µg/mL +/- 140.3549 µg/mL +/- 143.6384 µg/mL	Gravimetric Unstressed Stressed
3	Toluene-d8 **CAS #** 2037-26-5 (Lot PR-31750) **Purity** 99%	2,501.5 µg/mL	+/- 14.6802 µg/mL +/- 140.2708 µg/mL +/- 143.5523 µg/mL	Gravimetric Unstressed Stressed
4	1-Bromo-4-fluorobenzene (BFB) **CAS #** 460-00-4 (Lot 20401KO) **Purity** 99%	2,520.0 µg/mL	+/- 14.7888 µg/mL +/- 141.3082 µg/mL +/- 144.6140 µg/mL	Gravimetric Unstressed Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

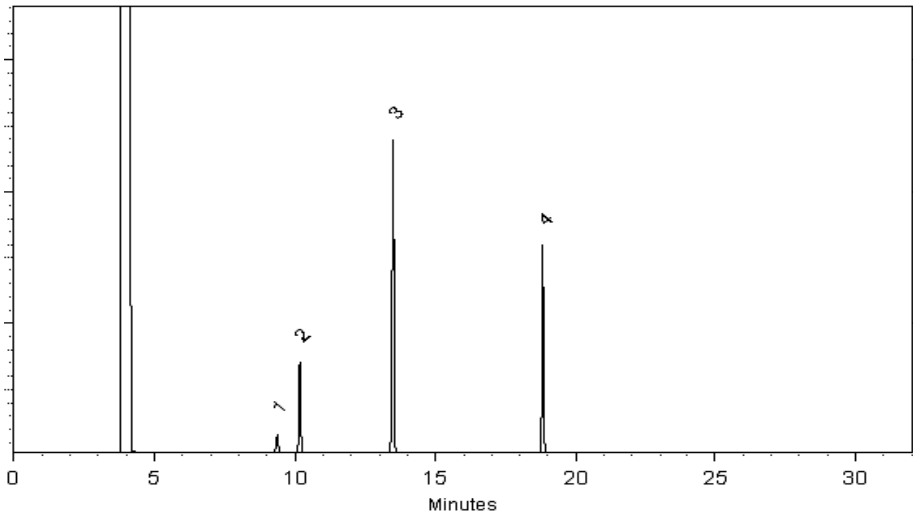
Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Sam Moodler - Operations Tech I

Date Mixed: 16-Apr-2021 **Balance:** B707717271

Alexis Shelow - Operations Tech I

Date Passed: 19-Apr-2021

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.

Reagent

MSV_ACROLEIN_00015

660 Tower Lane • P.O. Box 599 • West Chester, PA 19381-0599
1-800-452-9994 • 1-610-692-3026 • Fax 1-610-692-8729
info@chemservice.com • www.chemservice.com

CERTIFICATE OF ANALYSIS

Acrolein

CATALOG NUMBER	RPN-11030-1G
LOT NUMBER	12255200
DATE CERTIFIED	12/04/20
EXPIRATION DATE	12/31/21
CAS NUMBER	107-02-8
MOLECULAR FORMULA	C3H4O
MOLECULAR WEIGHT	56.06
STORAGE	Refrigerator storage (2 - 8 °C)
HANDLING	See Safety Data Sheet
INTENDED USE	For laboratory use only.
NOTES	Contains water and hydroquinone as an inhibitor.

Analytical Test	Value
% PURITY (GC/TCD)	93.5

COA Form
Revision 3 (3/2015)

PJLA Testing

Print Date: 08/18/21

660 Tower Lane • P.O. Box 599 • West Chester, PA 19381-0599
1-800-452-9994 • 1-610-692-3026 • Fax 1-610-692-8729
info@chemservice.com • www.chemservice.com

Chem Service, Inc. guarantees the purity to be +/- 0.5% deviation prior to the expiration date shown on the label and exclusive of any customer contamination.

Certified By:

Mary Beth O'Donnell

Mary Beth O'Donnell
CSM/TC

PJLA Testing

660 Tower Lane • P.O. Box 599 • West Chester, PA 19381-0599
1-800-452-9994 • 1-610-692-3026 • Fax 1-610-692-8729
info@chemservice.com • www.chemservice.com

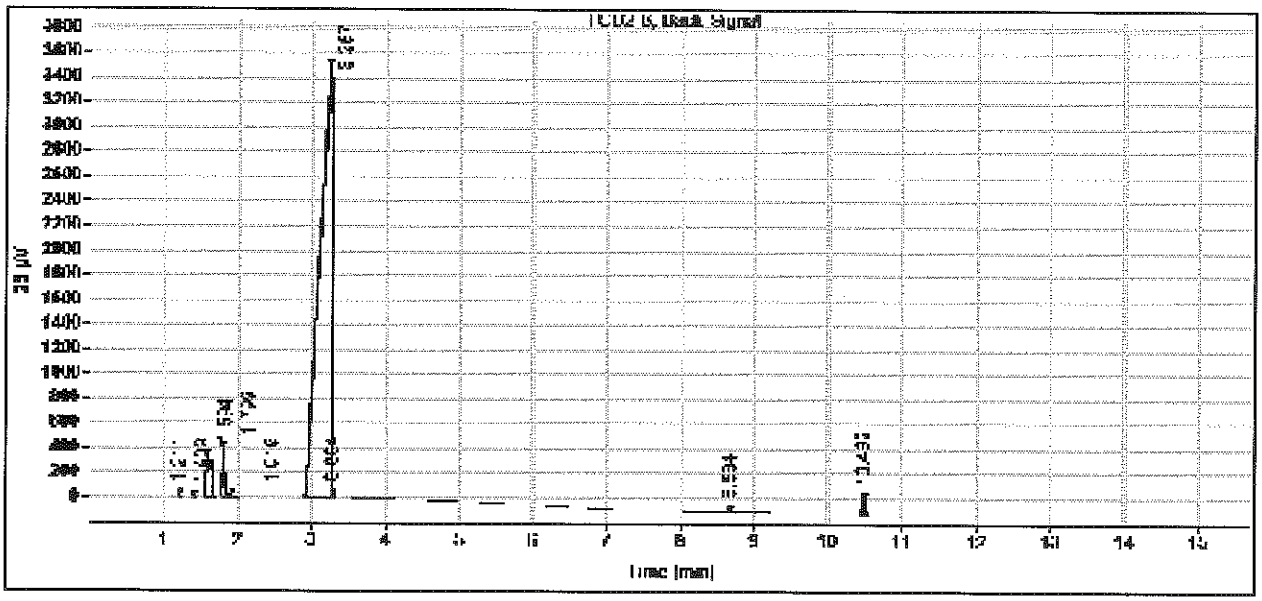
CERTIFICATE OF ANALYSIS

Gas Chromatography / Flame Ionization Detector (GC/FID)

Data file: C:\CHEM32\1\DATA\2020 DATA\1220\SIG2022772.D

Sample name: Acrolein

Instrument:	GC 1	**Sample type:**	Sample
Injection date:	12/4/2020 1:45:52 PM	**Location:**	Vial 31
Acq. method:	TCD SCREEN.M	**Injection volume:**	1.0uL
Column name:	DB-624 (30m x 0.53mm x 3.0um)		



Signal: TCD2 B, Back Signal

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1.409	BB	0.0247	7.6905	4.7989	0.0184
1.594	BB	0.0629	1551.1411	329.7883	3.7040
1.799	BB	0.0279	730.9922	389.9341	1.7456
1.919	BB	0.0458	50.7625	15.2495	0.1212
3.257	BV	0.1398	39170.9805	3495.0222	93.5384
3.304	VB	0.0206	34.7462	26.0533	0.0830
8.684	BB	0.0316	26.4009	13.0682	0.0630
10.492	BB	0.0367	280.9432	124.5451	0.6021

Sun

PJLA Testing

Reagent

MSV_CCV_GASES_00049

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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

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Certificate #3222.01

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Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 577488 **Lot No.:** A0172364

Description : Custom Gases Standard

Custom Gases Standard 2,000µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : May 31, 2024 **Storage:** 0°C or colder

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	Dichlorodifluoromethane (CFC-12)	2,001.0 µg/mL	+/- 15.5104 µg/mL	Gravimetric
	CAS # 75-71-8 (Lot 00012554)		+/- 112.6642 µg/mL	Unstressed
	Purity 99%		+/- 115.2788 µg/mL	Stressed
2	Chloromethane (methyl chloride)	2,000.2 µg/mL	+/- 19.3792 µg/mL	Gravimetric
	CAS # 74-87-3 (Lot SHBK6571)		+/- 113.2161 µg/mL	Unstressed
	Purity 99%		+/- 115.8161 µg/mL	Stressed
3	Vinyl chloride	2,003.2 µg/mL	+/- 20.1104 µg/mL	Gravimetric
	CAS # 75-01-4 (Lot 00015559)		+/- 113.5093 µg/mL	Unstressed
	Purity 99%		+/- 116.1105 µg/mL	Stressed
4	1,3-Butadiene	1,999.6 µg/mL	+/- 14.5225 µg/mL	Gravimetric
	CAS # 106-99-0 (Lot 00019375)		+/- 112.4545 µg/mL	Unstressed
	Purity 99%		+/- 115.0702 µg/mL	Stressed
5	Bromomethane (methyl bromide)	2,002.8 µg/mL	+/- 14.8201 µg/mL	Gravimetric
	CAS # 74-83-9 (Lot 101604)		+/- 112.6669 µg/mL	Unstressed
	Purity 99%		+/- 115.2859 µg/mL	Stressed
6	Chloroethane (ethyl chloride)	2,001.0 µg/mL	+/- 14.9955 µg/mL	Gravimetric
	CAS # 75-00-3 (Lot 107-401039114-1)		+/- 112.5912 µg/mL	Unstressed
	Purity 99%		+/- 115.2073 µg/mL	Stressed
7	Dichlorofluoromethane (CFC-21)	2,000.0 µg/mL	+/- 11.6282 µg/mL	Gravimetric
	CAS # 75-43-4 (Lot 11778600)		+/- 112.1380 µg/mL	Unstressed
	Purity 99%		+/- 114.7619 µg/mL	Stressed

8	Trichlorofluoromethane (CFC-11)		2,000.0	µg/mL	+/-	11.6282	µg/mL	Gravimetric
	CAS # 75-69-4	(Lot MKCJ8658)			+/-	112.1380	µg/mL	Unstressed
	Purity 99%				+/-	114.7619	µg/mL	Stressed
9	1,2-Dichloro-1,1,2-trifluoroethane (CFC-123a)		2,000.2	µg/mL	+/-	17.2773	µg/mL	Gravimetric
	CAS # 354-23-4	(Lot Q9B-64)			+/-	112.8726	µg/mL	Unstressed
	Purity 99%				+/-	115.4802	µg/mL	Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Tech Tips:
Raw material may contain trace amounts of tert-Butanol.

Column:
60m x 0.25mm x 1.4µm
Rtx-502.2 (cat.#10916)

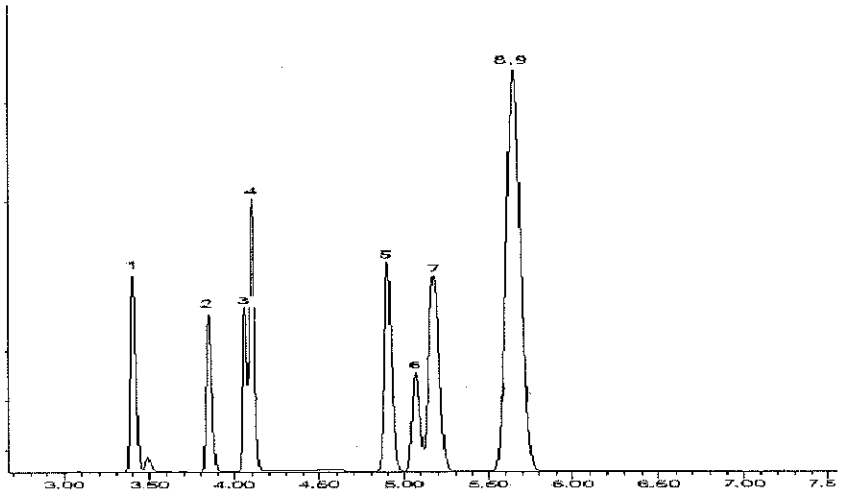
Carrier Gas:
helium-constant flow 2.0 mL/min.

Temp. Program:
40°C (hold 6 min.) to 100°C
@ 6°C/min.

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
MSD



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Tom Suckar - Mix Technician

Date Mixed: 13-May-2021 **Balance:** B251644995

Alexis Shelow - Operations Tech I

Date Passed: 17-May-2021

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.

Reagent

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Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 577488 **Lot No.:** A0172364

Description : Custom Gases Standard

Custom Gases Standard 2,000µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : May 31, 2024 **Storage:** 0°C or colder

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	Dichlorodifluoromethane (CFC-12)	2,001.0 µg/mL	+/- 15.5104 µg/mL	Gravimetric
	CAS # 75-71-8 (Lot 00012554)		+/- 112.6642 µg/mL	Unstressed
	Purity 99%		+/- 115.2788 µg/mL	Stressed
2	Chloromethane (methyl chloride)	2,000.2 µg/mL	+/- 19.3792 µg/mL	Gravimetric
	CAS # 74-87-3 (Lot SHBK6571)		+/- 113.2161 µg/mL	Unstressed
	Purity 99%		+/- 115.8161 µg/mL	Stressed
3	Vinyl chloride	2,003.2 µg/mL	+/- 20.1104 µg/mL	Gravimetric
	CAS # 75-01-4 (Lot 00015559)		+/- 113.5093 µg/mL	Unstressed
	Purity 99%		+/- 116.1105 µg/mL	Stressed
4	1,3-Butadiene	1,999.6 µg/mL	+/- 14.5225 µg/mL	Gravimetric
	CAS # 106-99-0 (Lot 00019375)		+/- 112.4545 µg/mL	Unstressed
	Purity 99%		+/- 115.0702 µg/mL	Stressed
5	Bromomethane (methyl bromide)	2,002.8 µg/mL	+/- 14.8201 µg/mL	Gravimetric
	CAS # 74-83-9 (Lot 101604)		+/- 112.6669 µg/mL	Unstressed
	Purity 99%		+/- 115.2859 µg/mL	Stressed
6	Chloroethane (ethyl chloride)	2,001.0 µg/mL	+/- 14.9955 µg/mL	Gravimetric
	CAS # 75-00-3 (Lot 107-401039114-1)		+/- 112.5912 µg/mL	Unstressed
	Purity 99%		+/- 115.2073 µg/mL	Stressed
7	Dichlorofluoromethane (CFC-21)	2,000.0 µg/mL	+/- 11.6282 µg/mL	Gravimetric
	CAS # 75-43-4 (Lot 11778600)		+/- 112.1380 µg/mL	Unstressed
	Purity 99%		+/- 114.7619 µg/mL	Stressed

8	Trichlorofluoromethane (CFC-11)		2,000.0	µg/mL	+/-	11.6282	µg/mL	Gravimetric
	CAS # 75-69-4	(Lot MKCJ8658)			+/-	112.1380	µg/mL	Unstressed
	Purity 99%				+/-	114.7619	µg/mL	Stressed
9	1,2-Dichloro-1,1,2-trifluoroethane (CFC-123a)		2,000.2	µg/mL	+/-	17.2773	µg/mL	Gravimetric
	CAS # 354-23-4	(Lot Q9B-64)			+/-	112.8726	µg/mL	Unstressed
	Purity 99%				+/-	115.4802	µg/mL	Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Tech Tips:
Raw material may contain trace amounts of tert-Butanol.

Column:
60m x 0.25mm x 1.4µm
Rtx-502.2 (cat.#10916)

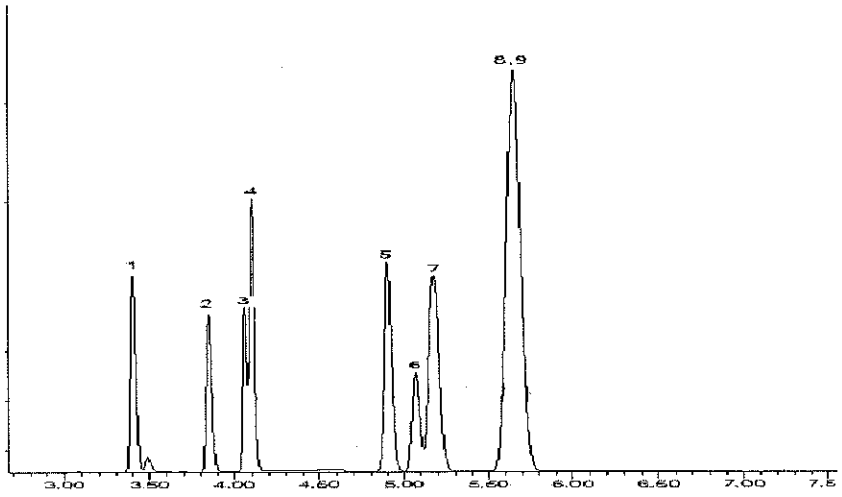
Carrier Gas:
helium-constant flow 2.0 mL/min.

Temp. Program:
40°C (hold 6 min.) to 100°C
@ 6°C/min.

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
MSD



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Tom Suckar - Mix Technician

Date Mixed: 13-May-2021 **Balance:** B251644995

Alexis Shelow - Operations Tech I

Date Passed: 17-May-2021

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.

Reagent

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Certificate #3222.01

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ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 558267 **Lot No.:** A0160586

Description : Custom 8260A IS Mix

Custom 8260A IS Mix 2,500-12,500µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : May 31, 2023 **Storage:** 0°C or colder

CERTIFIED VALUES

Elution Order	Compound		Grav. Conc. (weight/volume)		Expanded Uncertainty (95% C.L.; K=2)		
1	tert-Butyl Alcohol-d10		12,518.0 µg/mL		+/- 73.2956	µg/mL	Gravimetric
	CAS # 53001-22-2	(Lot PR-27803B)			+/- 268.1522	µg/mL	Unstressed
	Purity 99%				+/- 275.9398	µg/mL	Stressed
2	Fluorobenzene		2,506.0 µg/mL		+/- 14.7066	µg/mL	Gravimetric
	CAS # 462-06-6	(Lot BCBZ5549)			+/- 53.6910	µg/mL	Unstressed
	Purity 99%				+/- 55.2497	µg/mL	Stressed
3	Chlorobenzene-d5		2,512.0 µg/mL		+/- 14.7418	µg/mL	Gravimetric
	CAS # 3114-55-4	(Lot PR-29571)			+/- 53.8195	µg/mL	Unstressed
	Purity 99%				+/- 55.3820	µg/mL	Stressed
4	1,4-Dichlorobenzene-d4		2,520.0 µg/mL		+/- 14.7888	µg/mL	Gravimetric
	CAS # 3855-82-1	(Lot PR-30447)			+/- 53.9909	µg/mL	Unstressed
	Purity 99%				+/- 55.5584	µg/mL	Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

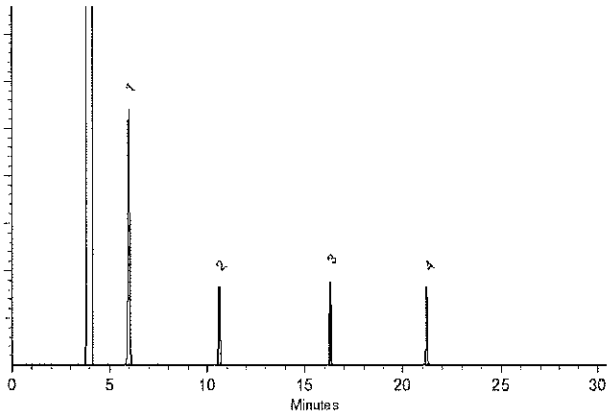
Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Kylie Struble - Operations Technician I

Date Mixed: 05-May-2020 **Balance:** B707717271

Justine Albertson - Operations Tech-ARM QC

Date Passed: 06-May-2020

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

MSV_CYC_00003

660 Tower Lane • P.O. Box 599 • West Chester, PA 19381-0599
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info@chemservice.com • www.chemservice.com

CERTIFICATE OF ANALYSIS

Cyclohexanone

CATALOG NUMBER	N-11531-1G
LOT NUMBER	10135700
DATE CERTIFIED	05/15/18
EXPIRATION DATE	05/31/23
CAS NUMBER	108-94-1
MOLECULAR FORMULA	C6H10O
MOLECULAR WEIGHT	98.16
STORAGE	Store at room temperature (20 - 25 °C).
HANDLING	See Safety Data Sheet
INTENDED USE	For laboratory use only.

Analytical Test	Value
% PURITY (GC/FID)	99.5
FT-IR SPECTROSCOPY	CONFORMS TO STRUCTURE
PHYSICAL APPEARANCE	COLORLESS LIQUID

LR 2032
7-1-20

Chem Service, Inc. guarantees the purity to be +/- 0.5% deviation prior to the expiration date shown on the label and exclusive of any customer contamination.

Certified By:

Mary Beth O'Donnell

Mary Beth O'Donnell
CSM/TC

Chem Service is accredited to ISO 17034:2016, ISO/IEC 17025:2017 and certified to ISO 9001:2015

COA Form
Revision 3 (3/2015)

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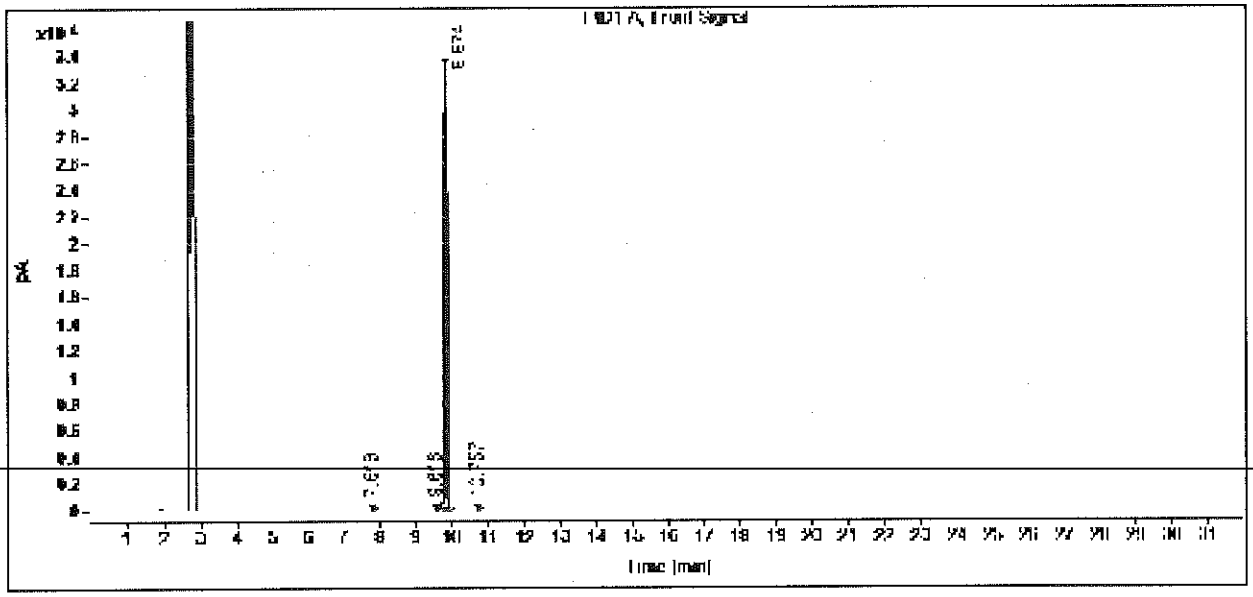
CERTIFICATE OF ANALYSIS

Gas Chromatography / Flame Ionization Detector (GC/FID)

Data file: C:\CHEM32\1\DATA\2018 DATA\0518\SIG1010143.D

Sample name: N-11531/ACETONE

Instrument:	GC 1	**Sample type:**	Sample
Injection date:	5/15/2018 8:14:17 AM	**Location:**	Vial 1
Acq. method:	MIX1.M	**Injection volume:**	1.0uL
Column name:	DB-624 (30m x 0.53mm x 3.0um)		



Signal: FID1 A, Front Signal

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7.818	BB	0.0567	12.4787	2.8831	0.0090
9.616	BB	0.0420	22.9558	6.9935	0.0165
9.874	BB S	0.0575	138838.7188	33378.9727	99.9600
10.757	BB	0.0524	20.1641	4.8068	0.0145
		Sum	138894.3173		

Chem Service is accredited to ISO 17034:2016, ISO/IEC 17025:2017 and certified to ISO 9001:2015

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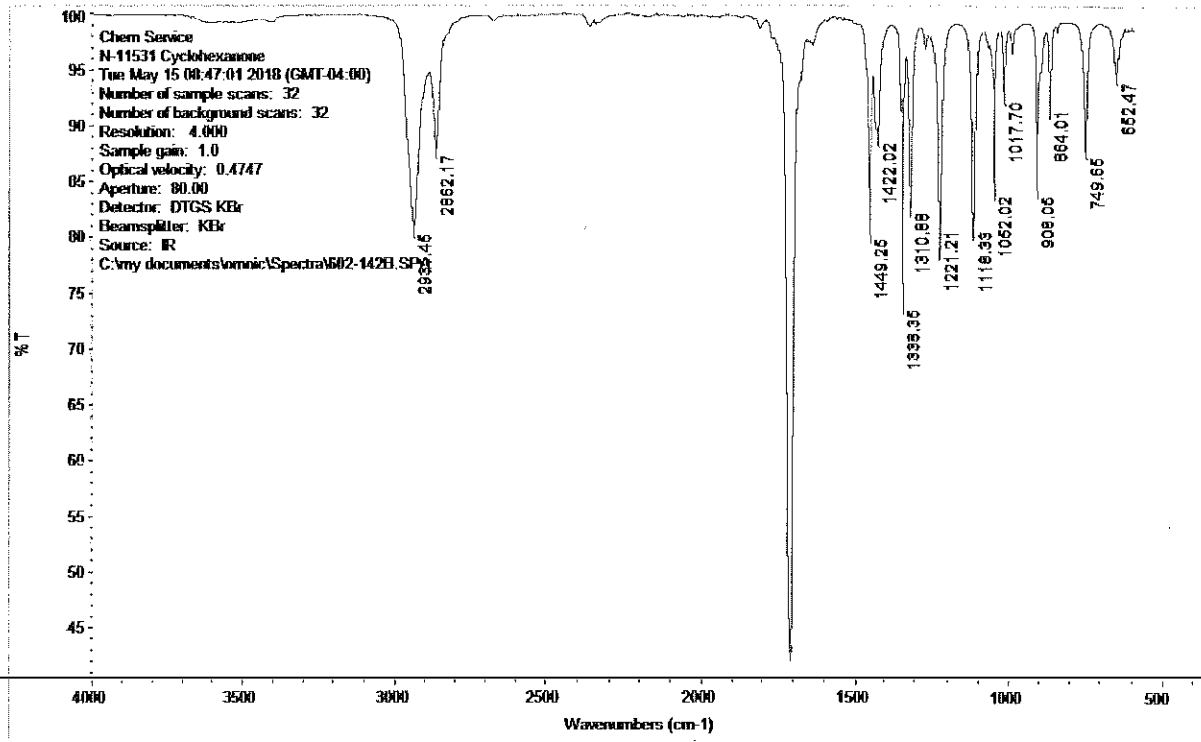
info@chemservice.com • www.chemservice.com

CERTIFICATE OF ANALYSIS

Analysis Method:

Catalog Number:	N-11531-1G
Description:	Cyclohexanone
Lot Number:	10135700
Expiration Date:	05/31/23



Chem Service is accredited to ISO 17034:2016 ISO/IEC 17025:2017 and certified to ISO 9001:2015

Reagent

MSV_CYC_00004

660 Tower Lane • P.O. Box 599 • West Chester, PA 19381-0599
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info@chemservice.com • www.chemservice.com

CERTIFICATE OF ANALYSIS

Cyclohexanone

CATALOG NUMBER	N-11531-1G
LOT NUMBER	10974900
DATE CERTIFIED	05/15/18
EXPIRATION DATE	05/31/23
CAS NUMBER	108-94-1
MOLECULAR FORMULA	C6H10O
MOLECULAR WEIGHT	98.16
STORAGE	Store at room temperature (20 - 25 °C).
HANDLING	See Safety Data Sheet
INTENDED USE	For laboratory use only.

Analytical Test	Value
% PURITY (GC/FID)	99.5
FT-IR SPECTROSCOPY	CONFORMS TO STRUCTURE
PHYSICAL APPEARANCE	COLORLESS LIQUID

Chem Service, Inc. guarantees the purity to be +/- 0.5% deviation prior to the expiration date shown on the label and exclusive of any customer contamination.

Certified By:

Mary Beth O'Donnell

Mary Beth O'Donnell
CSM/TC

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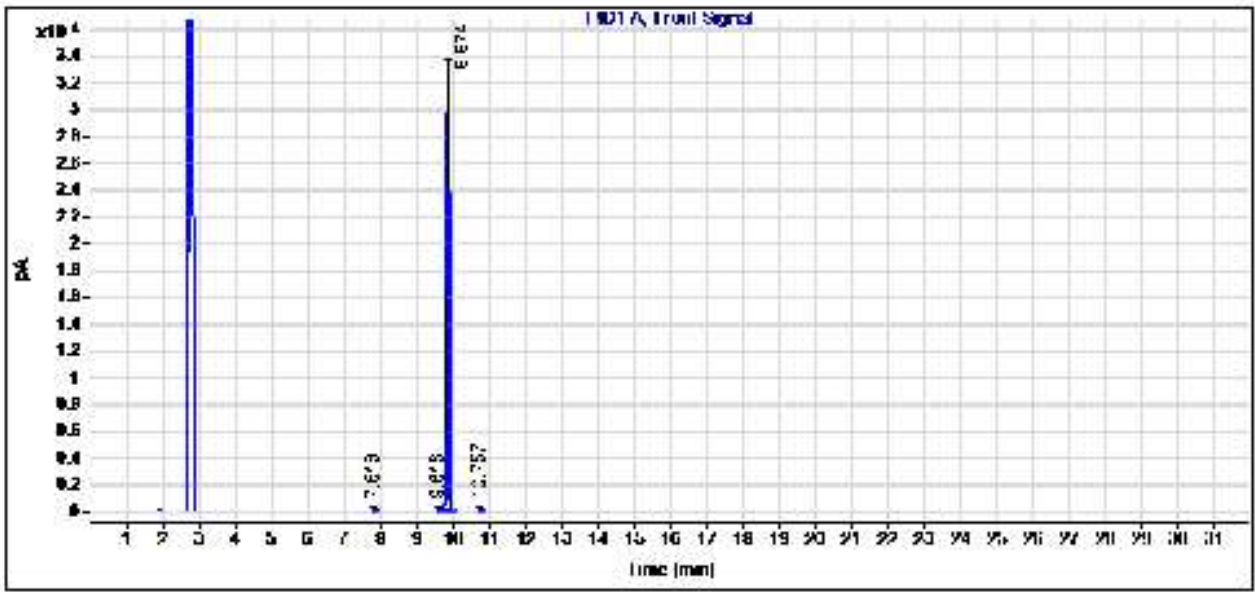
CERTIFICATE OF ANALYSIS

Gas Chromatography / Flame Ionization Detector (GC/FID)

Data file: C:\CHEM32\1\DATA\2018 DATA\0518\SIG1010143.D

Sample name: N-11531/ACETONE

Instrument:	GC 1	**Sample type:**	Sample
Injection date:	5/15/2018 8:14:17 AM	**Location:**	Vial 1
Acq. method:	MIX1.M	**Injection volume:**	1.0uL
Column name:	DB-624 (30m x 0.53mm x 3.0um)		



Signal: FID1 A, Front Signal

RT [min]	Type	Width [min]	Area	Height	Area%
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9.616	BB	0.0420	22.9558	6.9935	0.0165
9.874	BB S	0.0575	138838.7188	33378.9727	99.9600
10.757	BB	0.0524	20.1641	4.8068	0.0145
		Sum	138894.3173		

Chem Service is accredited to ISO 17034:2016, ISO/IEC 17025:2017 and certified to ISO 9001:2015

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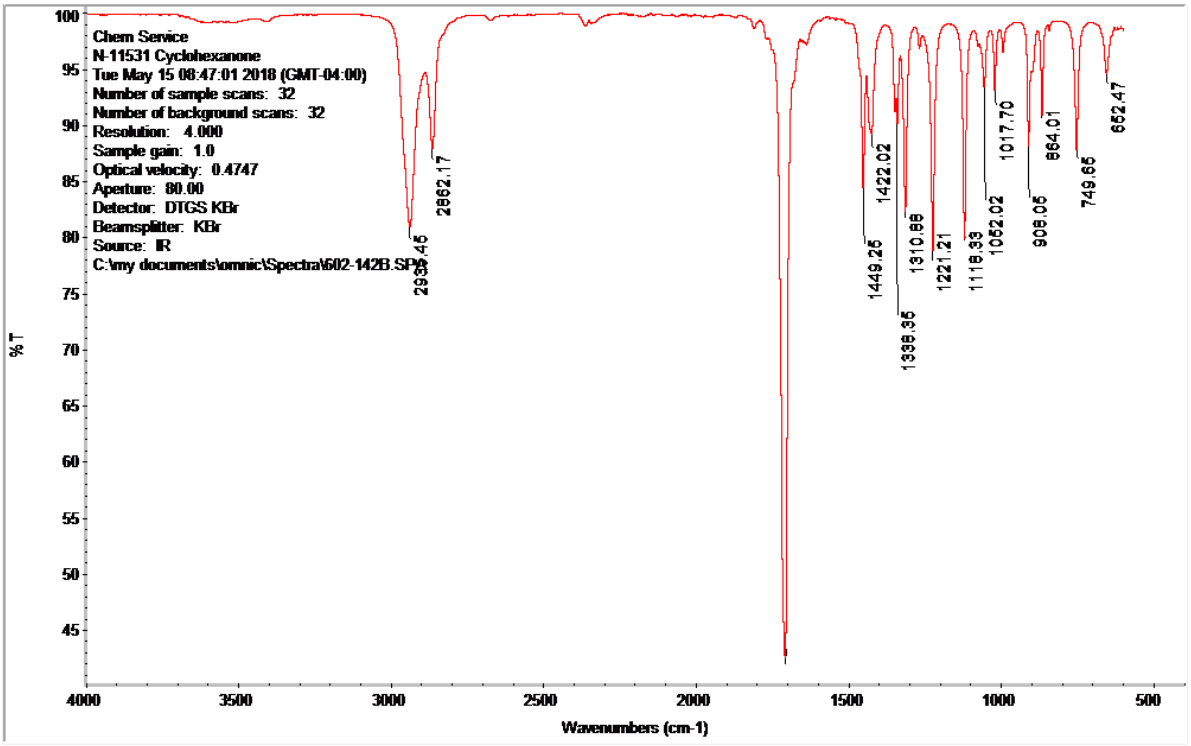
CERTIFICATE OF ANALYSIS

Analysis Method:

Catalog Number:	N-11531-1G
Description:	Cyclohexanone
Lot Number:	10974900
Expiration Date:	05/31/23



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CERTIFICATE OF ANALYSIS

Analysis Method:

Catalog Number:	N-11531-1G
Description:	Cyclohexanone
Lot Number:	10974900
Expiration Date:	05/31/23

Chem Service is accredited to ISO 17034:2016, ISO/IEC 17025:2017 and certified to ISO 9001:2015

Reagent

MSV_EthylMeth_00001

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CERTIFICATE OF ANALYSIS

Ethyl methacrylate

CATALOG NUMBER	N-11903-1G
LOT NUMBER	11325900
DATE CERTIFIED	01/03/19
EXPIRATION DATE	01/31/23
CAS NUMBER	97-63-2
MOLECULAR FORMULA	C6H10O2
MOLECULAR WEIGHT	114.16
STORAGE	Refrigerator storage (2 - 8 °C)
HANDLING	See Safety Data Sheet
INTENDED USE	For laboratory use only.

✓ Rec'd 5/21/2021 JMW

Analytical Test	Value
% PURITY (GC/FID)	99.5

Chem Service, Inc. guarantees the purity to be +/- 0.5% deviation prior to the expiration date shown on the label and exclusive of any customer contamination.

Certified By:

Mary Beth O'Donnell

Mary Beth O'Donnell
CSM/TC

COA Form
Revision 3 (3/2015)

PJLA Testing

Print Date: 05/20/21

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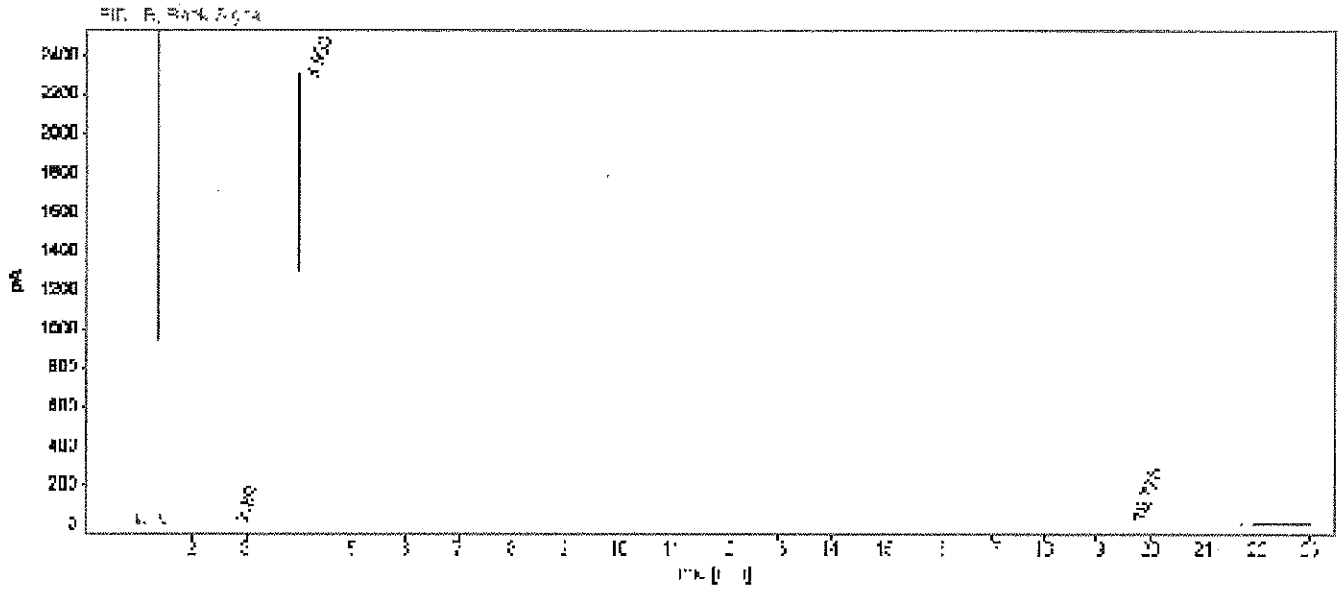
CERTIFICATE OF ANALYSIS

Gas Chromatography / Flame Ionization Detector (GC/FID)

Data file:	C:\CHEM32\1\DATA\2018 DATA\1118\N-11803.D		
Sample name:	ethyl methacrylate		
Description:			
Acq. method:	MIX1.M		
		Location:	201
Instrument:	GC3	**Injection Vol:**	1.000
Injection date:	1/3/2019 7:57:33 AM	**# Of Injections:**	1
Column name:	HP-5ms Ultra Inert	**Diameter** 250.000 **Length** 30.000	**Particle Size** 0.250



Signal: FID1 B, Back Signal

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3.983	BB	0.0236	3687.9575	2288.7249	99.8245
19.775	BB	0.0395	3.4535	1.2477	0.0935
		Sum	3694.4423		

PJLA Testing

Reagent

MSV_M_MIX1SEC_00015

RESTEK®
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 577493 **Lot No.:** A0171815

Description : Custom VOC MegaMix®.SEC #1 Standard

Custom VOC MegaMix®.SEC #1 Standard 1,000µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : April 30, 2024 **Storage:** 0°C or colder

Ship: Ambient

C E R T I F I E D V A L U E S

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	1,1-Dichloroethene	1,003.8 µg/mL	+/- 7.1628 µg/mL	Gravimetric
	CAS # 75-35-4.SEC (Lot 9201700)		+/- 56.4323 µg/mL	Unstressed
	Purity 99%		+/- 57.7457 µg/mL	Stressed
2	Methylene chloride (dichloromethane)	1,001.8 µg/mL	+/- 7.1486 µg/mL	Gravimetric
	CAS # 75-09-2.SEC (Lot FGM02)		+/- 56.3199 µg/mL	Unstressed
	Purity 99%		+/- 57.6306 µg/mL	Stressed
3	trans-1,2-Dichloroethene	1,000.3 µg/mL	+/- 7.1382 µg/mL	Gravimetric
	CAS # 156-60-5.SEC (Lot TS5UB)		+/- 56.2383 µg/mL	Unstressed
	Purity 99%		+/- 57.5472 µg/mL	Stressed
4	1,1-Dichloroethane	1,002.0 µg/mL	+/- 7.1503 µg/mL	Gravimetric
	CAS # 75-34-3.SEC (Lot 7482000)		+/- 56.3339 µg/mL	Unstressed
	Purity 99%		+/- 57.6450 µg/mL	Stressed
5	2,2-Dichloropropane	1,000.0 µg/mL	+/- 7.1026 µg/mL	Gravimetric
	CAS # 594-20-7.SEC (Lot I7E8E)		+/- 56.2188 µg/mL	Unstressed
	Purity 98%		+/- 57.5274 µg/mL	Stressed
6	cis-1,2-Dichloroethene	1,000.1 µg/mL	+/- 7.1028 µg/mL	Gravimetric
	CAS # 156-59-2.SEC (Lot YZO5O)		+/- 56.2207 µg/mL	Unstressed
	Purity 99%		+/- 57.5294 µg/mL	Stressed
7	Chloroform	1,000.8 µg/mL	+/- 7.1414 µg/mL	Gravimetric
	CAS # 67-66-3.SEC (Lot 1297547)		+/- 56.2636 µg/mL	Unstressed
	Purity 99%		+/- 57.5731 µg/mL	Stressed

8	Bromochloromethane		1,000.1	µg/mL	+/-	7.1033	µg/mL	Gravimetric
	CAS # 74-97-5.SEC	(Lot 8529200)			+/-	56.2242	µg/mL	Unstressed
	Purity 99%				+/-	57.5330	µg/mL	Stressed
9	1,1,1-trichloroethane		1,000.3	µg/mL	+/-	7.1383	µg/mL	Gravimetric
	CAS # 71-55-6	(Lot 190123CG)			+/-	56.2391	µg/mL	Unstressed
	Purity 98%				+/-	57.5479	µg/mL	Stressed
10	1,1-Dichloropropene		1,002.5	µg/mL	+/-	7.1204	µg/mL	Gravimetric
	CAS # 563-58-6.SEC	(Lot 8541600)			+/-	56.3597	µg/mL	Unstressed
	Purity 95%				+/-	57.6716	µg/mL	Stressed
11	Carbon tetrachloride		1,000.8	µg/mL	+/-	7.1414	µg/mL	Gravimetric
	CAS # 56-23-5.SEC	(Lot 11466)			+/-	56.2636	µg/mL	Unstressed
	Purity 99%				+/-	57.5731	µg/mL	Stressed
12	1,2-Dichloroethane		1,000.6	µg/mL	+/-	7.1407	µg/mL	Gravimetric
	CAS # 107-06-2.SEC	(Lot 00016165)			+/-	56.2576	µg/mL	Unstressed
	Purity 99%				+/-	57.5669	µg/mL	Stressed
13	Benzene		1,000.1	µg/mL	+/-	7.1031	µg/mL	Gravimetric
	CAS # 71-43-2.SEC	(Lot B28Y008)			+/-	56.2228	µg/mL	Unstressed
	Purity 99%				+/-	57.5315	µg/mL	Stressed
14	Trichloroethene		1,000.9	µg/mL	+/-	7.1423	µg/mL	Gravimetric
	CAS # 79-01-6.SEC	(Lot H04X050)			+/-	56.2708	µg/mL	Unstressed
	Purity 99%				+/-	57.5804	µg/mL	Stressed
15	1,2-Dichloropropane		1,000.1	µg/mL	+/-	7.1371	µg/mL	Gravimetric
	CAS # 78-87-5.SEC	(Lot ERRBI-RH)			+/-	56.2293	µg/mL	Unstressed
	Purity 99%				+/-	57.5380	µg/mL	Stressed
16	Bromodichloromethane		1,000.8	µg/mL	+/-	7.1418	µg/mL	Gravimetric
	CAS # 75-27-4.SEC	(Lot 13780)			+/-	56.2662	µg/mL	Unstressed
	Purity 99%				+/-	57.5757	µg/mL	Stressed
17	Dibromomethane		1,000.1	µg/mL	+/-	7.1033	µg/mL	Gravimetric
	CAS # 74-95-3.SEC	(Lot MOKKJ)			+/-	56.2242	µg/mL	Unstressed
	Purity 99%				+/-	57.5330	µg/mL	Stressed
18	cis-1,3-Dichloropropene		1,000.9	µg/mL	+/-	7.1425	µg/mL	Gravimetric
	CAS # 10061-01-5.SEC	(Lot 487OA)			+/-	56.2723	µg/mL	Unstressed
	Purity 98%				+/-	57.5819	µg/mL	Stressed
19	Toluene		1,000.0	µg/mL	+/-	7.1026	µg/mL	Gravimetric
	CAS # 108-88-3.SEC	(Lot YND2B-BD)			+/-	56.2193	µg/mL	Unstressed
	Purity 99%				+/-	57.5279	µg/mL	Stressed
20	trans-1,3-Dichloropropene		1,002.1	µg/mL	+/-	7.1513	µg/mL	Gravimetric
	CAS # 10061-02-6.SEC	(Lot ZDMSL)			+/-	56.3417	µg/mL	Unstressed
	Purity 96%				+/-	57.6530	µg/mL	Stressed
21	1,1,2-Trichloroethane		1,001.3	µg/mL	+/-	7.1450	µg/mL	Gravimetric
	CAS # 79-00-5.SEC	(Lot 7871500)			+/-	56.2917	µg/mL	Unstressed
	Purity 99%				+/-	57.6018	µg/mL	Stressed
22	1,3-Dichloropropane		1,000.1	µg/mL	+/-	7.1031	µg/mL	Gravimetric
	CAS # 142-28-9.SEC	(Lot AGN01-EFPC)			+/-	56.2228	µg/mL	Unstressed
	Purity 99%				+/-	57.5315	µg/mL	Stressed
23	Tetrachloroethene		1,000.2	µg/mL	+/-	7.1378	µg/mL	Gravimetric
	CAS # 127-18-4.SEC	(Lot F09W014)			+/-	56.2350	µg/mL	Unstressed
	Purity 99%				+/-	57.5437	µg/mL	Stressed

24	Dibromochloromethane		1,000.5	µg/mL	+/-	7.1396	µg/mL	Gravimetric
	CAS # 124-48-1.SEC	(Lot 10206360)			+/-	56.2489	µg/mL	Unstressed
	Purity 97%				+/-	57.5580	µg/mL	Stressed
25	1,2-Dibromoethane (EDB)		1,000.1	µg/mL	+/-	7.1032	µg/mL	Gravimetric
	CAS # 106-93-4.SEC	(Lot 7511900)			+/-	56.2235	µg/mL	Unstressed
	Purity 99%				+/-	57.5322	µg/mL	Stressed
26	Chlorobenzene		1,001.4	µg/mL	+/-	7.1460	µg/mL	Gravimetric
	CAS # 108-90-7.SEC	(Lot 1161936)			+/-	56.2995	µg/mL	Unstressed
	Purity 99%				+/-	57.6098	µg/mL	Stressed
27	1,1,1,2-Tetrachloroethane		1,000.1	µg/mL	+/-	7.1032	µg/mL	Gravimetric
	CAS # 630-20-6.SEC	(Lot GC01)			+/-	56.2235	µg/mL	Unstressed
	Purity 99%				+/-	57.5322	µg/mL	Stressed
28	Ethylbenzene		1,000.2	µg/mL	+/-	7.1035	µg/mL	Gravimetric
	CAS # 100-41-4.SEC	(Lot PI4SE)			+/-	56.2263	µg/mL	Unstressed
	Purity 99%				+/-	57.5351	µg/mL	Stressed
29	m-Xylene		1,000.2	µg/mL	+/-	7.1035	µg/mL	Gravimetric
	CAS # 108-38-3.SEC	(Lot 7ZV6F)			+/-	56.2263	µg/mL	Unstressed
	Purity 99%				+/-	57.5351	µg/mL	Stressed
30	p-Xylene		1,000.1	µg/mL	+/-	7.1027	µg/mL	Gravimetric
	CAS # 106-42-3.SEC	(Lot D6UOA)			+/-	56.2200	µg/mL	Unstressed
	Purity 99%				+/-	57.5286	µg/mL	Stressed
31	o-Xylene		1,000.1	µg/mL	+/-	7.1028	µg/mL	Gravimetric
	CAS # 95-47-6.SEC	(Lot FGL01)			+/-	56.2207	µg/mL	Unstressed
	Purity 99%				+/-	57.5294	µg/mL	Stressed
32	Styrene		1,000.1	µg/mL	+/-	7.1033	µg/mL	Gravimetric
	CAS # 100-42-5.SEC	(Lot OFIOL-IA)			+/-	56.2242	µg/mL	Unstressed
	Purity 99%				+/-	57.5330	µg/mL	Stressed
33	Isopropylbenzene (cumene)		1,000.0	µg/mL	+/-	7.1025	µg/mL	Gravimetric
	CAS # 98-82-8.SEC	(Lot JN4EC)			+/-	56.2179	µg/mL	Unstressed
	Purity 99%				+/-	57.5265	µg/mL	Stressed
34	Bromoform		1,001.7	µg/mL	+/-	7.1485	µg/mL	Gravimetric
	CAS # 75-25-2.SEC	(Lot 9170700)			+/-	56.3193	µg/mL	Unstressed
	Purity 99%				+/-	57.6300	µg/mL	Stressed
35	1,1,2,2-Tetrachloroethane		1,001.6	µg/mL	+/-	7.1478	µg/mL	Gravimetric
	CAS # 79-34-5.SEC	(Lot BCCB0724)			+/-	56.3139	µg/mL	Unstressed
	Purity 98%				+/-	57.6245	µg/mL	Stressed
36	1,2,3-Trichloropropane		1,000.0	µg/mL	+/-	7.1026	µg/mL	Gravimetric
	CAS # 96-18-4.SEC	(Lot GUHZN)			+/-	56.2193	µg/mL	Unstressed
	Purity 99%				+/-	57.5279	µg/mL	Stressed
37	n-Propylbenzene		1,000.1	µg/mL	+/-	7.1027	µg/mL	Gravimetric
	CAS # 103-65-1.SEC	(Lot T2HFC)			+/-	56.2200	µg/mL	Unstressed
	Purity 99%				+/-	57.5286	µg/mL	Stressed
38	Bromobenzene		1,000.2	µg/mL	+/-	7.1034	µg/mL	Gravimetric
	CAS # 108-86-1.SEC	(Lot 8DKWJ)			+/-	56.2256	µg/mL	Unstressed
	Purity 99%				+/-	57.5344	µg/mL	Stressed
39	1,3,5-Trimethylbenzene		1,000.1	µg/mL	+/-	7.1028	µg/mL	Gravimetric
	CAS # 108-67-8.SEC	(Lot TOOOF)			+/-	56.2207	µg/mL	Unstressed
	Purity 99%				+/-	57.5294	µg/mL	Stressed

40	2-Chlorotoluene		1,000.0	µg/mL	+/-	7.1025	µg/mL	Gravimetric
	CAS # 95-49-8.SEC	(Lot BRHPM)			+/-	56.2179	µg/mL	Unstressed
	Purity 99%				+/-	57.5265	µg/mL	Stressed
41	4-Chlorotoluene		1,000.1	µg/mL	+/-	7.1030	µg/mL	Gravimetric
	CAS # 106-43-4.SEC	(Lot S5SKD)			+/-	56.2221	µg/mL	Unstressed
	Purity 99%				+/-	57.5308	µg/mL	Stressed
42	tert-Butylbenzene		1,000.1	µg/mL	+/-	7.1029	µg/mL	Gravimetric
	CAS # 98-06-6.SEC	(Lot D6OHC)			+/-	56.2214	µg/mL	Unstressed
	Purity 99%				+/-	57.5301	µg/mL	Stressed
43	1,2,4-Trimethylbenzene		1,000.1	µg/mL	+/-	7.1031	µg/mL	Gravimetric
	CAS # 95-63-6.SEC	(Lot JMIYD)			+/-	56.2228	µg/mL	Unstressed
	Purity 99%				+/-	57.5315	µg/mL	Stressed
44	sec-Butylbenzene		1,000.1	µg/mL	+/-	7.1029	µg/mL	Gravimetric
	CAS # 135-98-8.SEC	(Lot O4HRF)			+/-	56.2214	µg/mL	Unstressed
	Purity 99%				+/-	57.5301	µg/mL	Stressed
45	4-Isopropyltoluene (p-cymene)		1,000.1	µg/mL	+/-	7.1029	µg/mL	Gravimetric
	CAS # 99-87-6.SEC	(Lot 8380000)			+/-	56.2214	µg/mL	Unstressed
	Purity 99%				+/-	57.5301	µg/mL	Stressed
46	1,3-Dichlorobenzene		1,000.1	µg/mL	+/-	7.1365	µg/mL	Gravimetric
	CAS # 541-73-1.SEC	(Lot FMDFD)			+/-	56.2251	µg/mL	Unstressed
	Purity 99%				+/-	57.5337	µg/mL	Stressed
47	1,4-Dichlorobenzene		1,002.5	µg/mL	+/-	7.1538	µg/mL	Gravimetric
	CAS # 106-46-7.SEC	(Lot YWKDC-MK)			+/-	56.3612	µg/mL	Unstressed
	Purity 99%				+/-	57.6729	µg/mL	Stressed
48	n-Butylbenzene		1,000.1	µg/mL	+/-	7.1031	µg/mL	Gravimetric
	CAS # 104-51-8.SEC	(Lot MMPGA)			+/-	56.2228	µg/mL	Unstressed
	Purity 99%				+/-	57.5315	µg/mL	Stressed
49	1,2-Dichlorobenzene		1,001.6	µg/mL	+/-	7.1475	µg/mL	Gravimetric
	CAS # 95-50-1.SEC	(Lot R6QDM)			+/-	56.3114	µg/mL	Unstressed
	Purity 99%				+/-	57.6220	µg/mL	Stressed
50	1,2-Dibromo-3-chloropropane		1,000.0	µg/mL	+/-	7.1025	µg/mL	Gravimetric
	CAS # 96-12-8.SEC	(Lot Q135-105)			+/-	56.2179	µg/mL	Unstressed
	Purity 99%				+/-	57.5265	µg/mL	Stressed
51	1,2,4-Trichlorobenzene		1,000.1	µg/mL	+/-	7.1027	µg/mL	Gravimetric
	CAS # 120-82-1.SEC	(Lot IGLFA)			+/-	56.2200	µg/mL	Unstressed
	Purity 99%				+/-	57.5286	µg/mL	Stressed
52	Hexachlorobutadiene		1,000.8	µg/mL	+/-	7.1079	µg/mL	Gravimetric
	CAS # 87-68-3.SEC	(Lot 8532700)			+/-	56.2614	µg/mL	Unstressed
	Purity 97%				+/-	57.5709	µg/mL	Stressed
53	Naphthalene		1,000.1	µg/mL	+/-	7.1031	µg/mL	Gravimetric
	CAS # 91-20-3.SEC	(Lot SKZ5N)			+/-	56.2228	µg/mL	Unstressed
	Purity 99%				+/-	57.5315	µg/mL	Stressed
54	1,2,3-Trichlorobenzene		1,000.7	µg/mL	+/-	7.1076	µg/mL	Gravimetric
	CAS # 87-61-6.SEC	(Lot A0043055)			+/-	56.2588	µg/mL	Unstressed
	Purity 98%				+/-	57.5683	µg/mL	Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

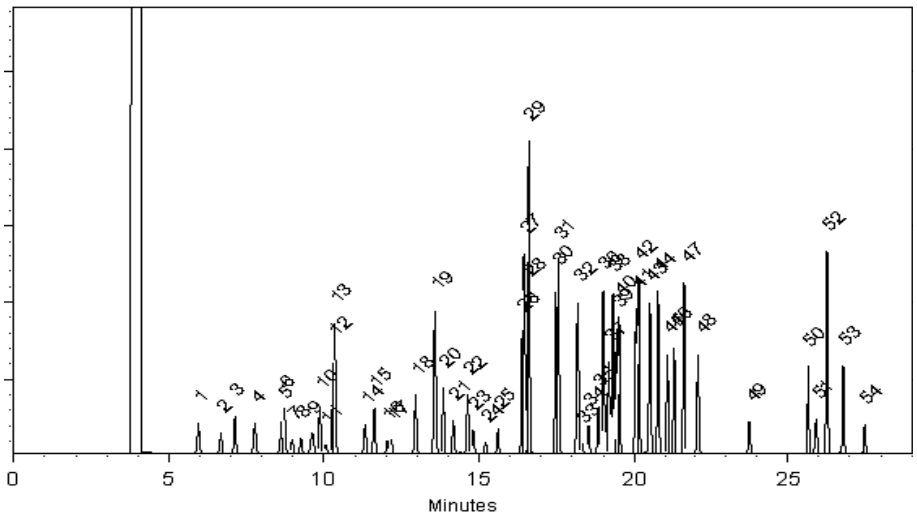
Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Bradley Meyer - Mix Technician

Date Mixed: 28-Apr-2021 **Balance:** 1127510105

Alexis Shelow - Operations Tech I

Date Passed: 30-Apr-2021

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.

Reagent

MSV_M_MIX1SEC_00031

RESTEK®
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 577493 **Lot No.:** A0171815

Description : Custom VOC MegaMix®.SEC #1 Standard

Custom VOC MegaMix®.SEC #1 Standard 1,000µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : April 30, 2024 **Storage:** 0°C or colder

Ship: Ambient

C E R T I F I E D V A L U E S

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	1,1-Dichloroethene	1,003.8 µg/mL	+/- 7.1628 µg/mL	Gravimetric
	CAS # 75-35-4.SEC (Lot 9201700)		+/- 56.4323 µg/mL	Unstressed
	Purity 99%		+/- 57.7457 µg/mL	Stressed
2	Methylene chloride (dichloromethane)	1,001.8 µg/mL	+/- 7.1486 µg/mL	Gravimetric
	CAS # 75-09-2.SEC (Lot FGM02)		+/- 56.3199 µg/mL	Unstressed
	Purity 99%		+/- 57.6306 µg/mL	Stressed
3	trans-1,2-Dichloroethene	1,000.3 µg/mL	+/- 7.1382 µg/mL	Gravimetric
	CAS # 156-60-5.SEC (Lot TS5UB)		+/- 56.2383 µg/mL	Unstressed
	Purity 99%		+/- 57.5472 µg/mL	Stressed
4	1,1-Dichloroethane	1,002.0 µg/mL	+/- 7.1503 µg/mL	Gravimetric
	CAS # 75-34-3.SEC (Lot 7482000)		+/- 56.3339 µg/mL	Unstressed
	Purity 99%		+/- 57.6450 µg/mL	Stressed
5	2,2-Dichloropropane	1,000.0 µg/mL	+/- 7.1026 µg/mL	Gravimetric
	CAS # 594-20-7.SEC (Lot I7E8E)		+/- 56.2188 µg/mL	Unstressed
	Purity 98%		+/- 57.5274 µg/mL	Stressed
6	cis-1,2-Dichloroethene	1,000.1 µg/mL	+/- 7.1028 µg/mL	Gravimetric
	CAS # 156-59-2.SEC (Lot YZO5O)		+/- 56.2207 µg/mL	Unstressed
	Purity 99%		+/- 57.5294 µg/mL	Stressed
7	Chloroform	1,000.8 µg/mL	+/- 7.1414 µg/mL	Gravimetric
	CAS # 67-66-3.SEC (Lot 1297547)		+/- 56.2636 µg/mL	Unstressed
	Purity 99%		+/- 57.5731 µg/mL	Stressed

8	Bromochloromethane		1,000.1	µg/mL	+/-	7.1033	µg/mL	Gravimetric
	CAS # 74-97-5.SEC	(Lot 8529200)			+/-	56.2242	µg/mL	Unstressed
	Purity 99%				+/-	57.5330	µg/mL	Stressed
9	1,1,1-trichloroethane		1,000.3	µg/mL	+/-	7.1383	µg/mL	Gravimetric
	CAS # 71-55-6	(Lot 190123CG)			+/-	56.2391	µg/mL	Unstressed
	Purity 98%				+/-	57.5479	µg/mL	Stressed
10	1,1-Dichloropropene		1,002.5	µg/mL	+/-	7.1204	µg/mL	Gravimetric
	CAS # 563-58-6.SEC	(Lot 8541600)			+/-	56.3597	µg/mL	Unstressed
	Purity 95%				+/-	57.6716	µg/mL	Stressed
11	Carbon tetrachloride		1,000.8	µg/mL	+/-	7.1414	µg/mL	Gravimetric
	CAS # 56-23-5.SEC	(Lot 11466)			+/-	56.2636	µg/mL	Unstressed
	Purity 99%				+/-	57.5731	µg/mL	Stressed
12	1,2-Dichloroethane		1,000.6	µg/mL	+/-	7.1407	µg/mL	Gravimetric
	CAS # 107-06-2.SEC	(Lot 00016165)			+/-	56.2576	µg/mL	Unstressed
	Purity 99%				+/-	57.5669	µg/mL	Stressed
13	Benzene		1,000.1	µg/mL	+/-	7.1031	µg/mL	Gravimetric
	CAS # 71-43-2.SEC	(Lot B28Y008)			+/-	56.2228	µg/mL	Unstressed
	Purity 99%				+/-	57.5315	µg/mL	Stressed
14	Trichloroethene		1,000.9	µg/mL	+/-	7.1423	µg/mL	Gravimetric
	CAS # 79-01-6.SEC	(Lot H04X050)			+/-	56.2708	µg/mL	Unstressed
	Purity 99%				+/-	57.5804	µg/mL	Stressed
15	1,2-Dichloropropane		1,000.1	µg/mL	+/-	7.1371	µg/mL	Gravimetric
	CAS # 78-87-5.SEC	(Lot ERRBI-RH)			+/-	56.2293	µg/mL	Unstressed
	Purity 99%				+/-	57.5380	µg/mL	Stressed
16	Bromodichloromethane		1,000.8	µg/mL	+/-	7.1418	µg/mL	Gravimetric
	CAS # 75-27-4.SEC	(Lot 13780)			+/-	56.2662	µg/mL	Unstressed
	Purity 99%				+/-	57.5757	µg/mL	Stressed
17	Dibromomethane		1,000.1	µg/mL	+/-	7.1033	µg/mL	Gravimetric
	CAS # 74-95-3.SEC	(Lot MOKKJ)			+/-	56.2242	µg/mL	Unstressed
	Purity 99%				+/-	57.5330	µg/mL	Stressed
18	cis-1,3-Dichloropropene		1,000.9	µg/mL	+/-	7.1425	µg/mL	Gravimetric
	CAS # 10061-01-5.SEC	(Lot 487OA)			+/-	56.2723	µg/mL	Unstressed
	Purity 98%				+/-	57.5819	µg/mL	Stressed
19	Toluene		1,000.0	µg/mL	+/-	7.1026	µg/mL	Gravimetric
	CAS # 108-88-3.SEC	(Lot YND2B-BD)			+/-	56.2193	µg/mL	Unstressed
	Purity 99%				+/-	57.5279	µg/mL	Stressed
20	trans-1,3-Dichloropropene		1,002.1	µg/mL	+/-	7.1513	µg/mL	Gravimetric
	CAS # 10061-02-6.SEC	(Lot ZDMSL)			+/-	56.3417	µg/mL	Unstressed
	Purity 96%				+/-	57.6530	µg/mL	Stressed
21	1,1,2-Trichloroethane		1,001.3	µg/mL	+/-	7.1450	µg/mL	Gravimetric
	CAS # 79-00-5.SEC	(Lot 7871500)			+/-	56.2917	µg/mL	Unstressed
	Purity 99%				+/-	57.6018	µg/mL	Stressed
22	1,3-Dichloropropane		1,000.1	µg/mL	+/-	7.1031	µg/mL	Gravimetric
	CAS # 142-28-9.SEC	(Lot AGN01-EFPC)			+/-	56.2228	µg/mL	Unstressed
	Purity 99%				+/-	57.5315	µg/mL	Stressed
23	Tetrachloroethene		1,000.2	µg/mL	+/-	7.1378	µg/mL	Gravimetric
	CAS # 127-18-4.SEC	(Lot F09W014)			+/-	56.2350	µg/mL	Unstressed
	Purity 99%				+/-	57.5437	µg/mL	Stressed

24	Dibromochloromethane		1,000.5	µg/mL	+/-	7.1396	µg/mL	Gravimetric
	CAS # 124-48-1.SEC	(Lot 10206360)			+/-	56.2489	µg/mL	Unstressed
	Purity 97%				+/-	57.5580	µg/mL	Stressed
25	1,2-Dibromoethane (EDB)		1,000.1	µg/mL	+/-	7.1032	µg/mL	Gravimetric
	CAS # 106-93-4.SEC	(Lot 7511900)			+/-	56.2235	µg/mL	Unstressed
	Purity 99%				+/-	57.5322	µg/mL	Stressed
26	Chlorobenzene		1,001.4	µg/mL	+/-	7.1460	µg/mL	Gravimetric
	CAS # 108-90-7.SEC	(Lot 1161936)			+/-	56.2995	µg/mL	Unstressed
	Purity 99%				+/-	57.6098	µg/mL	Stressed
27	1,1,1,2-Tetrachloroethane		1,000.1	µg/mL	+/-	7.1032	µg/mL	Gravimetric
	CAS # 630-20-6.SEC	(Lot GC01)			+/-	56.2235	µg/mL	Unstressed
	Purity 99%				+/-	57.5322	µg/mL	Stressed
28	Ethylbenzene		1,000.2	µg/mL	+/-	7.1035	µg/mL	Gravimetric
	CAS # 100-41-4.SEC	(Lot PI4SE)			+/-	56.2263	µg/mL	Unstressed
	Purity 99%				+/-	57.5351	µg/mL	Stressed
29	m-Xylene		1,000.2	µg/mL	+/-	7.1035	µg/mL	Gravimetric
	CAS # 108-38-3.SEC	(Lot 7ZV6F)			+/-	56.2263	µg/mL	Unstressed
	Purity 99%				+/-	57.5351	µg/mL	Stressed
30	p-Xylene		1,000.1	µg/mL	+/-	7.1027	µg/mL	Gravimetric
	CAS # 106-42-3.SEC	(Lot D6UOA)			+/-	56.2200	µg/mL	Unstressed
	Purity 99%				+/-	57.5286	µg/mL	Stressed
31	o-Xylene		1,000.1	µg/mL	+/-	7.1028	µg/mL	Gravimetric
	CAS # 95-47-6.SEC	(Lot FGL01)			+/-	56.2207	µg/mL	Unstressed
	Purity 99%				+/-	57.5294	µg/mL	Stressed
32	Styrene		1,000.1	µg/mL	+/-	7.1033	µg/mL	Gravimetric
	CAS # 100-42-5.SEC	(Lot OFIOL-IA)			+/-	56.2242	µg/mL	Unstressed
	Purity 99%				+/-	57.5330	µg/mL	Stressed
33	Isopropylbenzene (cumene)		1,000.0	µg/mL	+/-	7.1025	µg/mL	Gravimetric
	CAS # 98-82-8.SEC	(Lot JN4EC)			+/-	56.2179	µg/mL	Unstressed
	Purity 99%				+/-	57.5265	µg/mL	Stressed
34	Bromoform		1,001.7	µg/mL	+/-	7.1485	µg/mL	Gravimetric
	CAS # 75-25-2.SEC	(Lot 9170700)			+/-	56.3193	µg/mL	Unstressed
	Purity 99%				+/-	57.6300	µg/mL	Stressed
35	1,1,2,2-Tetrachloroethane		1,001.6	µg/mL	+/-	7.1478	µg/mL	Gravimetric
	CAS # 79-34-5.SEC	(Lot BCCB0724)			+/-	56.3139	µg/mL	Unstressed
	Purity 98%				+/-	57.6245	µg/mL	Stressed
36	1,2,3-Trichloropropane		1,000.0	µg/mL	+/-	7.1026	µg/mL	Gravimetric
	CAS # 96-18-4.SEC	(Lot GUHZN)			+/-	56.2193	µg/mL	Unstressed
	Purity 99%				+/-	57.5279	µg/mL	Stressed
37	n-Propylbenzene		1,000.1	µg/mL	+/-	7.1027	µg/mL	Gravimetric
	CAS # 103-65-1.SEC	(Lot T2HFC)			+/-	56.2200	µg/mL	Unstressed
	Purity 99%				+/-	57.5286	µg/mL	Stressed
38	Bromobenzene		1,000.2	µg/mL	+/-	7.1034	µg/mL	Gravimetric
	CAS # 108-86-1.SEC	(Lot 8DKWJ)			+/-	56.2256	µg/mL	Unstressed
	Purity 99%				+/-	57.5344	µg/mL	Stressed
39	1,3,5-Trimethylbenzene		1,000.1	µg/mL	+/-	7.1028	µg/mL	Gravimetric
	CAS # 108-67-8.SEC	(Lot TOOOF)			+/-	56.2207	µg/mL	Unstressed
	Purity 99%				+/-	57.5294	µg/mL	Stressed

40	2-Chlorotoluene		1,000.0	µg/mL	+/-	7.1025	µg/mL	Gravimetric
	CAS # 95-49-8.SEC	(Lot BRHPM)			+/-	56.2179	µg/mL	Unstressed
	Purity 99%				+/-	57.5265	µg/mL	Stressed
41	4-Chlorotoluene		1,000.1	µg/mL	+/-	7.1030	µg/mL	Gravimetric
	CAS # 106-43-4.SEC	(Lot S5SKD)			+/-	56.2221	µg/mL	Unstressed
	Purity 99%				+/-	57.5308	µg/mL	Stressed
42	tert-Butylbenzene		1,000.1	µg/mL	+/-	7.1029	µg/mL	Gravimetric
	CAS # 98-06-6.SEC	(Lot D6OHC)			+/-	56.2214	µg/mL	Unstressed
	Purity 99%				+/-	57.5301	µg/mL	Stressed
43	1,2,4-Trimethylbenzene		1,000.1	µg/mL	+/-	7.1031	µg/mL	Gravimetric
	CAS # 95-63-6.SEC	(Lot JMIYD)			+/-	56.2228	µg/mL	Unstressed
	Purity 99%				+/-	57.5315	µg/mL	Stressed
44	sec-Butylbenzene		1,000.1	µg/mL	+/-	7.1029	µg/mL	Gravimetric
	CAS # 135-98-8.SEC	(Lot O4HRF)			+/-	56.2214	µg/mL	Unstressed
	Purity 99%				+/-	57.5301	µg/mL	Stressed
45	4-Isopropyltoluene (p-cymene)		1,000.1	µg/mL	+/-	7.1029	µg/mL	Gravimetric
	CAS # 99-87-6.SEC	(Lot 8380000)			+/-	56.2214	µg/mL	Unstressed
	Purity 99%				+/-	57.5301	µg/mL	Stressed
46	1,3-Dichlorobenzene		1,000.1	µg/mL	+/-	7.1365	µg/mL	Gravimetric
	CAS # 541-73-1.SEC	(Lot FMDFD)			+/-	56.2251	µg/mL	Unstressed
	Purity 99%				+/-	57.5337	µg/mL	Stressed
47	1,4-Dichlorobenzene		1,002.5	µg/mL	+/-	7.1538	µg/mL	Gravimetric
	CAS # 106-46-7.SEC	(Lot YWKDC-MK)			+/-	56.3612	µg/mL	Unstressed
	Purity 99%				+/-	57.6729	µg/mL	Stressed
48	n-Butylbenzene		1,000.1	µg/mL	+/-	7.1031	µg/mL	Gravimetric
	CAS # 104-51-8.SEC	(Lot MMPGA)			+/-	56.2228	µg/mL	Unstressed
	Purity 99%				+/-	57.5315	µg/mL	Stressed
49	1,2-Dichlorobenzene		1,001.6	µg/mL	+/-	7.1475	µg/mL	Gravimetric
	CAS # 95-50-1.SEC	(Lot R6QDM)			+/-	56.3114	µg/mL	Unstressed
	Purity 99%				+/-	57.6220	µg/mL	Stressed
50	1,2-Dibromo-3-chloropropane		1,000.0	µg/mL	+/-	7.1025	µg/mL	Gravimetric
	CAS # 96-12-8.SEC	(Lot Q135-105)			+/-	56.2179	µg/mL	Unstressed
	Purity 99%				+/-	57.5265	µg/mL	Stressed
51	1,2,4-Trichlorobenzene		1,000.1	µg/mL	+/-	7.1027	µg/mL	Gravimetric
	CAS # 120-82-1.SEC	(Lot IGLFA)			+/-	56.2200	µg/mL	Unstressed
	Purity 99%				+/-	57.5286	µg/mL	Stressed
52	Hexachlorobutadiene		1,000.8	µg/mL	+/-	7.1079	µg/mL	Gravimetric
	CAS # 87-68-3.SEC	(Lot 8532700)			+/-	56.2614	µg/mL	Unstressed
	Purity 97%				+/-	57.5709	µg/mL	Stressed
53	Naphthalene		1,000.1	µg/mL	+/-	7.1031	µg/mL	Gravimetric
	CAS # 91-20-3.SEC	(Lot SKZ5N)			+/-	56.2228	µg/mL	Unstressed
	Purity 99%				+/-	57.5315	µg/mL	Stressed
54	1,2,3-Trichlorobenzene		1,000.7	µg/mL	+/-	7.1076	µg/mL	Gravimetric
	CAS # 87-61-6.SEC	(Lot A0043055)			+/-	56.2588	µg/mL	Unstressed
	Purity 98%				+/-	57.5683	µg/mL	Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

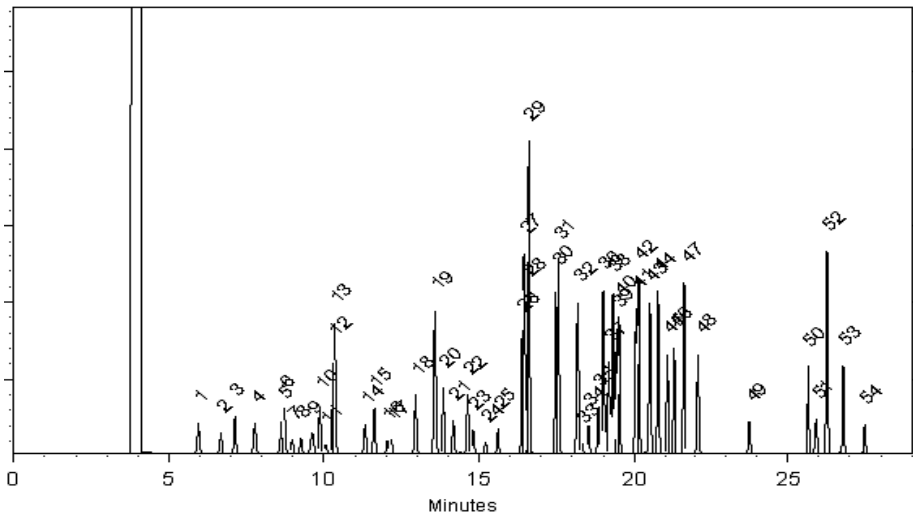
Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Bradley Meyer - Mix Technician

Date Mixed: 28-Apr-2021 **Balance:** 1127510105

Alexis Shelow - Operations Tech I

Date Passed: 30-Apr-2021

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.

Reagent

MSV_M_MIX2SEC_00015

RESTEK®
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 577494 **Lot No.:** A0171837

Description : Custom VOC MegaMix®.SEC #2 Standard

Custom VOC MegaMix®.SEC #2 Standard 1,000-50,000µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : April 30, 2024 **Storage:** 0°C or colder

Ship: Ambient

C E R T I F I E D V A L U E S

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	n-Pentane (C5)	1,002.0 µg/mL	+/- 5.8803 µg/mL	Gravimetric
	CAS # 109-66-0.SEC (Lot FGH02)		+/- 49.5732 µg/mL	Unstressed
	Purity 99%		+/- 50.8056 µg/mL	Stressed
2	2-Propanol (isopropanol)	7,501.5 µg/mL	+/- 43.9229 µg/mL	Gravimetric
	CAS # 67-63-0.SEC (Lot TFT5I)		+/- 371.1195 µg/mL	Unstressed
	Purity 99%		+/- 380.3459 µg/mL	Stressed
3	1,1,2-Trichlorotrifluoroethane (CFC-113)	1,002.0 µg/mL	+/- 5.8803 µg/mL	Gravimetric
	CAS # 76-13-1.SEC (Lot 18342)		+/- 49.5732 µg/mL	Unstressed
	Purity 99%		+/- 50.8056 µg/mL	Stressed
4	tert-Butanol (TBA)	10,001.0 µg/mL	+/- 58.5581 µg/mL	Gravimetric
	CAS # 75-65-0.SEC (Lot 5REPK)		+/- 494.7765 µg/mL	Unstressed
	Purity 99%		+/- 507.0771 µg/mL	Stressed
5	Methyl acetate	1,002.5 µg/mL	+/- 5.8832 µg/mL	Gravimetric
	CAS # 79-20-9.SEC (Lot YDGVD)		+/- 49.5980 µg/mL	Unstressed
	Purity 99%		+/- 50.8309 µg/mL	Stressed
6	Iodomethane (methyl iodide)	1,001.5 µg/mL	+/- 5.8774 µg/mL	Gravimetric
	CAS # 74-88-4.SEC (Lot Y25A027)		+/- 49.5485 µg/mL	Unstressed
	Purity 99%		+/- 50.7802 µg/mL	Stressed
7	Allyl chloride (3-chloropropene)	1,002.0 µg/mL	+/- 5.8803 µg/mL	Gravimetric
	CAS # 107-05-1.SEC (Lot H3HGC)		+/- 49.5732 µg/mL	Unstressed
	Purity 99%		+/- 50.8056 µg/mL	Stressed

8	Carbon disulfide		1,001.5	µg/mL	+/-	5.8774	µg/mL	Gravimetric
	CAS # 75-15-0.SEC	(Lot MKBL1376V)			+/-	49.5485	µg/mL	Unstressed
	Purity 99%				+/-	50.7802	µg/mL	Stressed
9	Acrylonitrile		5,000.5	µg/mL	+/-	29.2790	µg/mL	Gravimetric
	CAS # 107-13-1.SEC	(Lot V54AD)			+/-	247.3882	µg/mL	Unstressed
	Purity 99%				+/-	253.5386	µg/mL	Stressed
10	Methyl-tert-butyl ether (MTBE)		1,001.5	µg/mL	+/-	5.8774	µg/mL	Gravimetric
	CAS # 1634-04-4.SEC	(Lot ZHKYA)			+/-	49.5485	µg/mL	Unstressed
	Purity 99%				+/-	50.7802	µg/mL	Stressed
11	n-Hexane (C6)		1,001.0	µg/mL	+/-	5.8744	µg/mL	Gravimetric
	CAS # 110-54-3.SEC	(Lot 10188491)			+/-	49.5238	µg/mL	Unstressed
	Purity 99%				+/-	50.7549	µg/mL	Stressed
12	Diisopropyl ether (DIPE)		1,003.0	µg/mL	+/-	5.8862	µg/mL	Gravimetric
	CAS # 108-20-3.SEC	(Lot LL7TN-SH)			+/-	49.6227	µg/mL	Unstressed
	Purity 99%				+/-	50.8563	µg/mL	Stressed
13	Chloroprene (2-chloro-1,3-butadiene)		1,001.5	µg/mL	+/-	5.8774	µg/mL	Gravimetric
	CAS # 126-99-8	(Lot 210413JLM)			+/-	49.5485	µg/mL	Unstressed
	Purity 99%				+/-	50.7802	µg/mL	Stressed
14	Ethyl-tert-butyl ether (ETBE)		1,002.1	µg/mL	+/-	5.8806	µg/mL	Gravimetric
	CAS # 637-92-3.SEC	(Lot UCI5B)			+/-	49.5757	µg/mL	Unstressed
	Purity 98%				+/-	50.8081	µg/mL	Stressed
15	Propionitrile		7,501.5	µg/mL	+/-	43.9229	µg/mL	Gravimetric
	CAS # 107-12-0.SEC	(Lot N44LF)			+/-	371.1195	µg/mL	Unstressed
	Purity 99%				+/-	380.3459	µg/mL	Stressed
16	Methacrylonitrile		7,501.5	µg/mL	+/-	43.9229	µg/mL	Gravimetric
	CAS # 126-98-7	(Lot 1012014)			+/-	371.1195	µg/mL	Unstressed
	Purity 99%				+/-	380.3459	µg/mL	Stressed
17	Isobutanol (2-Methyl-1-propanol)		25,001.0	µg/mL	+/-	146.3864	µg/mL	Gravimetric
	CAS # 78-83-1.SEC	(Lot YNG3K)			+/-	1,236.8670	µg/mL	Unstressed
	Purity 99%				+/-	1,267.6168	µg/mL	Stressed
18	Tetrahydrofuran		5,000.5	µg/mL	+/-	29.2790	µg/mL	Gravimetric
	CAS # 109-99-9.SEC	(Lot 3NYHE)			+/-	247.3882	µg/mL	Unstressed
	Purity 99%				+/-	253.5386	µg/mL	Stressed
19	Cyclohexane		1,000.0	µg/mL	+/-	5.8686	µg/mL	Gravimetric
	CAS # 110-82-7.SEC	(Lot YADRA)			+/-	49.4743	µg/mL	Unstressed
	Purity 99%				+/-	50.7042	µg/mL	Stressed
20	1-Butanol		50,004.5	µg/mL	+/-	292.7722	µg/mL	Gravimetric
	CAS # 71-36-3.SEC	(Lot 6B6UL)			+/-	2,473.8558	µg/mL	Unstressed
	Purity 99%				+/-	2,535.3586	µg/mL	Stressed
21	tert-Amyl methyl ether (TAME)		1,001.0	µg/mL	+/-	5.8744	µg/mL	Gravimetric
	CAS # 994-05-8.SEC	(Lot 11010100)			+/-	49.5238	µg/mL	Unstressed
	Purity 99%				+/-	50.7549	µg/mL	Stressed
22	n-Heptane (C7)		1,002.5	µg/mL	+/-	5.8832	µg/mL	Gravimetric
	CAS # 142-82-5.SEC	(Lot TFHUC)			+/-	49.5980	µg/mL	Unstressed
	Purity 99%				+/-	50.8309	µg/mL	Stressed
23	tert-Amyl ethyl ether (TAEE)		1,000.5	µg/mL	+/-	5.8715	µg/mL	Gravimetric
	CAS # 919-94-8.SEC	(Lot 11370700)			+/-	49.4990	µg/mL	Unstressed
	Purity 99%				+/-	50.7295	µg/mL	Stressed

24	Methylcyclohexane		1,001.0	µg/mL	+/-	5.8744	µg/mL	Gravimetric
	CAS # 108-87-2.SEC	(Lot Q02QG)			+/-	49.5238	µg/mL	Unstressed
	Purity 99%				+/-	50.7549	µg/mL	Stressed
25	Methyl methacrylate		1,000.5	µg/mL	+/-	5.8715	µg/mL	Gravimetric
	CAS # 80-62-6.SEC	(Lot G01X021)			+/-	49.4990	µg/mL	Unstressed
	Purity 99%				+/-	50.7295	µg/mL	Stressed
26	1,4-Dioxane		25,004.0	µg/mL	+/-	146.4039	µg/mL	Gravimetric
	CAS # 123-91-1.SEC	(Lot KLE2K)			+/-	1,237.0154	µg/mL	Unstressed
	Purity 99%				+/-	1,267.7689	µg/mL	Stressed
27	2-Nitropropane		1,001.5	µg/mL	+/-	5.8774	µg/mL	Gravimetric
	CAS # 79-46-9.SEC	(Lot F43IA)			+/-	49.5485	µg/mL	Unstressed
	Purity 99%				+/-	50.7802	µg/mL	Stressed
28	Ethyl methacrylate		1,000.0	µg/mL	+/-	5.8686	µg/mL	Gravimetric
	CAS # 97-63-2.SEC	(Lot MLWYK-LS)			+/-	49.4743	µg/mL	Unstressed
	Purity 99%				+/-	50.7042	µg/mL	Stressed
29	1-Chlorohexane		1,001.0	µg/mL	+/-	5.8744	µg/mL	Gravimetric
	CAS # 544-10-5.SEC	(Lot 8171700)			+/-	49.5238	µg/mL	Unstressed
	Purity 99%				+/-	50.7549	µg/mL	Stressed
30	trans-1,4-Dichloro-2-butene		5,000.4	µg/mL	+/-	29.2781	µg/mL	Gravimetric
	CAS # 110-57-6.SEC	(Lot 100700-3)			+/-	247.3808	µg/mL	Unstressed
	Purity 97%				+/-	253.5310	µg/mL	Stressed
31	1,2,3-Trimethylbenzene		1,001.1	µg/mL	+/-	5.8748	µg/mL	Gravimetric
	CAS # 526-73-8.SEC	(Lot 11386600)			+/-	49.5272	µg/mL	Unstressed
	Purity 98%				+/-	50.7584	µg/mL	Stressed
32	1,3-Diethylbenzene		1,003.5	µg/mL	+/-	5.8891	µg/mL	Gravimetric
	CAS # 141-93-5.SEC	(Lot 113566-1)			+/-	49.6474	µg/mL	Unstressed
	Purity 99%				+/-	50.8816	µg/mL	Stressed
33	Benzyl chloride		1,001.0	µg/mL	+/-	5.8744	µg/mL	Gravimetric
	CAS # 100-44-7.SEC	(Lot H29N03)			+/-	49.5238	µg/mL	Unstressed
	Purity 99%				+/-	50.7549	µg/mL	Stressed
34	1,4-Diethylbenzene		1,002.1	µg/mL	+/-	5.8806	µg/mL	Gravimetric
	CAS # 105-05-5.SEC	(Lot FBQ02)			+/-	49.5757	µg/mL	Unstressed
	Purity 98%				+/-	50.8081	µg/mL	Stressed
35	1,2-Diethylbenzene		1,000.5	µg/mL	+/-	5.8715	µg/mL	Gravimetric
	CAS # 135-01-3.SEC	(Lot BCBF3667V)			+/-	49.4990	µg/mL	Unstressed
	Purity 99%				+/-	50.7295	µg/mL	Stressed
36	1,3,5-Trichlorobenzene		1,001.5	µg/mL	+/-	5.8774	µg/mL	Gravimetric
	CAS # 108-70-3.SEC	(Lot I28U021)			+/-	49.5485	µg/mL	Unstressed
	Purity 99%				+/-	50.7802	µg/mL	Stressed
37	2-Methylnaphthalene		1,000.0	µg/mL	+/-	5.8686	µg/mL	Gravimetric
	CAS # 91-57-6.SEC	(Lot 76023-1)			+/-	49.4743	µg/mL	Unstressed
	Purity 99%				+/-	50.7042	µg/mL	Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Column:
60m x 0.25mm x 1.4µm
Rtx-502.2 (cat.#10916)

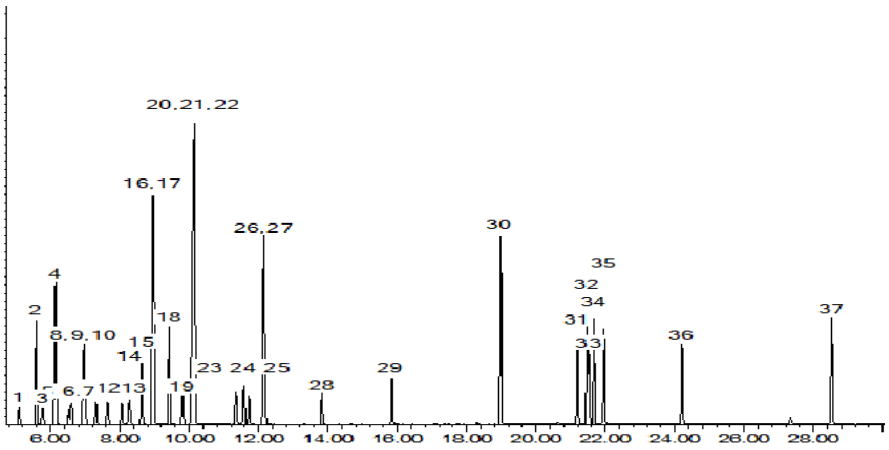
Carrier Gas:
helium-constant pressure 30 psi

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
MSD



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Date Mixed: 28-Apr-2021 **Balance:** 1128353505

Alexis Shelow - Operations Tech I

Date Passed: 04-May-2021

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.

Reagent

MSV_M_MIX2SEC_00033

RESTEK®
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 577494 **Lot No.:** A0171837

Description : Custom VOC MegaMix®.SEC #2 Standard

Custom VOC MegaMix®.SEC #2 Standard 1,000-50,000µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : April 30, 2024 **Storage:** 0°C or colder

Ship: Ambient

C E R T I F I E D V A L U E S

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	n-Pentane (C5) **CAS #** 109-66-0.SEC (Lot FGH02) **Purity** 99%	1,002.0 µg/mL	+/- 5.8803 µg/mL +/- 49.5732 µg/mL +/- 50.8056 µg/mL	Gravimetric Unstressed Stressed
2	2-Propanol (isopropanol) **CAS #** 67-63-0.SEC (Lot TFT5I) **Purity** 99%	7,501.5 µg/mL	+/- 43.9229 µg/mL +/- 371.1195 µg/mL +/- 380.3459 µg/mL	Gravimetric Unstressed Stressed
3	1,1,2-Trichlorotrifluoroethane (CFC-113) **CAS #** 76-13-1.SEC (Lot 18342) **Purity** 99%	1,002.0 µg/mL	+/- 5.8803 µg/mL +/- 49.5732 µg/mL +/- 50.8056 µg/mL	Gravimetric Unstressed Stressed
4	tert-Butanol (TBA) **CAS #** 75-65-0.SEC (Lot 5REPK) **Purity** 99%	10,001.0 µg/mL	+/- 58.5581 µg/mL +/- 494.7765 µg/mL +/- 507.0771 µg/mL	Gravimetric Unstressed Stressed
5	Methyl acetate **CAS #** 79-20-9.SEC (Lot YDGVD) **Purity** 99%	1,002.5 µg/mL	+/- 5.8832 µg/mL +/- 49.5980 µg/mL +/- 50.8309 µg/mL	Gravimetric Unstressed Stressed
6	Iodomethane (methyl iodide) **CAS #** 74-88-4.SEC (Lot Y25A027) **Purity** 99%	1,001.5 µg/mL	+/- 5.8774 µg/mL +/- 49.5485 µg/mL +/- 50.7802 µg/mL	Gravimetric Unstressed Stressed
7	Allyl chloride (3-chloropropene) **CAS #** 107-05-1.SEC (Lot H3HGC) **Purity** 99%	1,002.0 µg/mL	+/- 5.8803 µg/mL +/- 49.5732 µg/mL +/- 50.8056 µg/mL	Gravimetric Unstressed Stressed

8	Carbon disulfide		1,001.5	µg/mL	+/-	5.8774	µg/mL	Gravimetric
	CAS # 75-15-0.SEC	(Lot MKBL1376V)			+/-	49.5485	µg/mL	Unstressed
	Purity 99%				+/-	50.7802	µg/mL	Stressed
9	Acrylonitrile		5,000.5	µg/mL	+/-	29.2790	µg/mL	Gravimetric
	CAS # 107-13-1.SEC	(Lot V54AD)			+/-	247.3882	µg/mL	Unstressed
	Purity 99%				+/-	253.5386	µg/mL	Stressed
10	Methyl-tert-butyl ether (MTBE)		1,001.5	µg/mL	+/-	5.8774	µg/mL	Gravimetric
	CAS # 1634-04-4.SEC	(Lot ZHKYA)			+/-	49.5485	µg/mL	Unstressed
	Purity 99%				+/-	50.7802	µg/mL	Stressed
11	n-Hexane (C6)		1,001.0	µg/mL	+/-	5.8744	µg/mL	Gravimetric
	CAS # 110-54-3.SEC	(Lot 10188491)			+/-	49.5238	µg/mL	Unstressed
	Purity 99%				+/-	50.7549	µg/mL	Stressed
12	Diisopropyl ether (DIPE)		1,003.0	µg/mL	+/-	5.8862	µg/mL	Gravimetric
	CAS # 108-20-3.SEC	(Lot LL7TN-SH)			+/-	49.6227	µg/mL	Unstressed
	Purity 99%				+/-	50.8563	µg/mL	Stressed
13	Chloroprene (2-chloro-1,3-butadiene)		1,001.5	µg/mL	+/-	5.8774	µg/mL	Gravimetric
	CAS # 126-99-8	(Lot 210413JLM)			+/-	49.5485	µg/mL	Unstressed
	Purity 99%				+/-	50.7802	µg/mL	Stressed
14	Ethyl-tert-butyl ether (ETBE)		1,002.1	µg/mL	+/-	5.8806	µg/mL	Gravimetric
	CAS # 637-92-3.SEC	(Lot UCI5B)			+/-	49.5757	µg/mL	Unstressed
	Purity 98%				+/-	50.8081	µg/mL	Stressed
15	Propionitrile		7,501.5	µg/mL	+/-	43.9229	µg/mL	Gravimetric
	CAS # 107-12-0.SEC	(Lot N44LF)			+/-	371.1195	µg/mL	Unstressed
	Purity 99%				+/-	380.3459	µg/mL	Stressed
16	Methacrylonitrile		7,501.5	µg/mL	+/-	43.9229	µg/mL	Gravimetric
	CAS # 126-98-7	(Lot 1012014)			+/-	371.1195	µg/mL	Unstressed
	Purity 99%				+/-	380.3459	µg/mL	Stressed
17	Isobutanol (2-Methyl-1-propanol)		25,001.0	µg/mL	+/-	146.3864	µg/mL	Gravimetric
	CAS # 78-83-1.SEC	(Lot YNG3K)			+/-	1,236.8670	µg/mL	Unstressed
	Purity 99%				+/-	1,267.6168	µg/mL	Stressed
18	Tetrahydrofuran		5,000.5	µg/mL	+/-	29.2790	µg/mL	Gravimetric
	CAS # 109-99-9.SEC	(Lot 3NYHE)			+/-	247.3882	µg/mL	Unstressed
	Purity 99%				+/-	253.5386	µg/mL	Stressed
19	Cyclohexane		1,000.0	µg/mL	+/-	5.8686	µg/mL	Gravimetric
	CAS # 110-82-7.SEC	(Lot YADRA)			+/-	49.4743	µg/mL	Unstressed
	Purity 99%				+/-	50.7042	µg/mL	Stressed
20	1-Butanol		50,004.5	µg/mL	+/-	292.7722	µg/mL	Gravimetric
	CAS # 71-36-3.SEC	(Lot 6B6UL)			+/-	2,473.8558	µg/mL	Unstressed
	Purity 99%				+/-	2,535.3586	µg/mL	Stressed
21	tert-Amyl methyl ether (TAME)		1,001.0	µg/mL	+/-	5.8744	µg/mL	Gravimetric
	CAS # 994-05-8.SEC	(Lot 11010100)			+/-	49.5238	µg/mL	Unstressed
	Purity 99%				+/-	50.7549	µg/mL	Stressed
22	n-Heptane (C7)		1,002.5	µg/mL	+/-	5.8832	µg/mL	Gravimetric
	CAS # 142-82-5.SEC	(Lot TFHUC)			+/-	49.5980	µg/mL	Unstressed
	Purity 99%				+/-	50.8309	µg/mL	Stressed
23	tert-Amyl ethyl ether (TAEE)		1,000.5	µg/mL	+/-	5.8715	µg/mL	Gravimetric
	CAS # 919-94-8.SEC	(Lot 11370700)			+/-	49.4990	µg/mL	Unstressed
	Purity 99%				+/-	50.7295	µg/mL	Stressed

24	Methylcyclohexane		1,001.0	µg/mL	+/-	5.8744	µg/mL	Gravimetric
	CAS # 108-87-2.SEC	(Lot Q02QG)			+/-	49.5238	µg/mL	Unstressed
	Purity 99%				+/-	50.7549	µg/mL	Stressed
25	Methyl methacrylate		1,000.5	µg/mL	+/-	5.8715	µg/mL	Gravimetric
	CAS # 80-62-6.SEC	(Lot G01X021)			+/-	49.4990	µg/mL	Unstressed
	Purity 99%				+/-	50.7295	µg/mL	Stressed
26	1,4-Dioxane		25,004.0	µg/mL	+/-	146.4039	µg/mL	Gravimetric
	CAS # 123-91-1.SEC	(Lot KLE2K)			+/-	1,237.0154	µg/mL	Unstressed
	Purity 99%				+/-	1,267.7689	µg/mL	Stressed
27	2-Nitropropane		1,001.5	µg/mL	+/-	5.8774	µg/mL	Gravimetric
	CAS # 79-46-9.SEC	(Lot F43IA)			+/-	49.5485	µg/mL	Unstressed
	Purity 99%				+/-	50.7802	µg/mL	Stressed
28	Ethyl methacrylate		1,000.0	µg/mL	+/-	5.8686	µg/mL	Gravimetric
	CAS # 97-63-2.SEC	(Lot MLWYK-LS)			+/-	49.4743	µg/mL	Unstressed
	Purity 99%				+/-	50.7042	µg/mL	Stressed
29	1-Chlorohexane		1,001.0	µg/mL	+/-	5.8744	µg/mL	Gravimetric
	CAS # 544-10-5.SEC	(Lot 8171700)			+/-	49.5238	µg/mL	Unstressed
	Purity 99%				+/-	50.7549	µg/mL	Stressed
30	trans-1,4-Dichloro-2-butene		5,000.4	µg/mL	+/-	29.2781	µg/mL	Gravimetric
	CAS # 110-57-6.SEC	(Lot 100700-3)			+/-	247.3808	µg/mL	Unstressed
	Purity 97%				+/-	253.5310	µg/mL	Stressed
31	1,2,3-Trimethylbenzene		1,001.1	µg/mL	+/-	5.8748	µg/mL	Gravimetric
	CAS # 526-73-8.SEC	(Lot 11386600)			+/-	49.5272	µg/mL	Unstressed
	Purity 98%				+/-	50.7584	µg/mL	Stressed
32	1,3-Diethylbenzene		1,003.5	µg/mL	+/-	5.8891	µg/mL	Gravimetric
	CAS # 141-93-5.SEC	(Lot 113566-1)			+/-	49.6474	µg/mL	Unstressed
	Purity 99%				+/-	50.8816	µg/mL	Stressed
33	Benzyl chloride		1,001.0	µg/mL	+/-	5.8744	µg/mL	Gravimetric
	CAS # 100-44-7.SEC	(Lot H29N03)			+/-	49.5238	µg/mL	Unstressed
	Purity 99%				+/-	50.7549	µg/mL	Stressed
34	1,4-Diethylbenzene		1,002.1	µg/mL	+/-	5.8806	µg/mL	Gravimetric
	CAS # 105-05-5.SEC	(Lot FBQ02)			+/-	49.5757	µg/mL	Unstressed
	Purity 98%				+/-	50.8081	µg/mL	Stressed
35	1,2-Diethylbenzene		1,000.5	µg/mL	+/-	5.8715	µg/mL	Gravimetric
	CAS # 135-01-3.SEC	(Lot BCBF3667V)			+/-	49.4990	µg/mL	Unstressed
	Purity 99%				+/-	50.7295	µg/mL	Stressed
36	1,3,5-Trichlorobenzene		1,001.5	µg/mL	+/-	5.8774	µg/mL	Gravimetric
	CAS # 108-70-3.SEC	(Lot I28U021)			+/-	49.5485	µg/mL	Unstressed
	Purity 99%				+/-	50.7802	µg/mL	Stressed
37	2-Methylnaphthalene		1,000.0	µg/mL	+/-	5.8686	µg/mL	Gravimetric
	CAS # 91-57-6.SEC	(Lot 76023-1)			+/-	49.4743	µg/mL	Unstressed
	Purity 99%				+/-	50.7042	µg/mL	Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Column:
60m x 0.25mm x 1.4µm
Rtx-502.2 (cat.#10916)

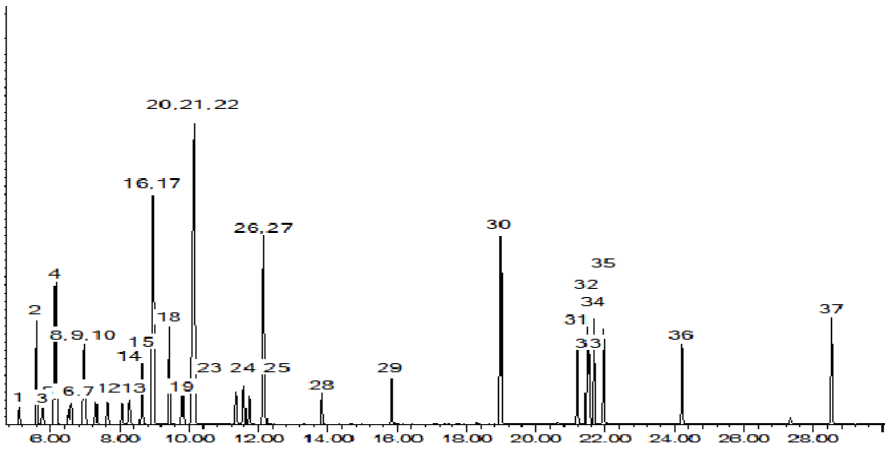
Carrier Gas:
helium-constant pressure 30 psi

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
MSD



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Date Mixed: 28-Apr-2021 **Balance:** 1128353505

Alexis Shelow - Operations Tech I

Date Passed: 04-May-2021

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.

Reagent

MSV_MegaMIX#1_00012

RESTEK®
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 577486 **Lot No.:** A0171634

Description : Custom VOC MegaMix® #1 Standard

Custom VOC MegaMix® #1 Standard 5,000µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : April 30, 2024 **Storage:** 0°C or colder

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	1,1-dichloroethene	5,000.3 µg/mL	+/- 31.7051 µg/mL	Gravimetric
	CAS # 75-35-4 (Lot SHBK2437)		+/- 280.6478 µg/mL	Unstressed
	Purity 99%		+/- 287.2014 µg/mL	Stressed
2	Methylene chloride (dichloromethane)	5,000.3 µg/mL	+/- 31.7051 µg/mL	Gravimetric
	CAS # 75-09-2 (Lot SHBL6169)		+/- 280.6478 µg/mL	Unstressed
	Purity 99%		+/- 287.2014 µg/mL	Stressed
3	trans-1,2-Dichloroethene	5,000.3 µg/mL	+/- 31.7051 µg/mL	Gravimetric
	CAS # 156-60-5 (Lot MKBH9850V)		+/- 280.6478 µg/mL	Unstressed
	Purity 99%		+/- 287.2014 µg/mL	Stressed
4	1,1-Dichloroethane	5,000.8 µg/mL	+/- 31.7079 µg/mL	Gravimetric
	CAS # 75-34-3 (Lot 580900)		+/- 280.6723 µg/mL	Unstressed
	Purity 99%		+/- 287.2265 µg/mL	Stressed
5	2,2-Dichloropropane	5,000.8 µg/mL	+/- 31.8970 µg/mL	Gravimetric
	CAS # 594-20-7 (Lot RD201111)		+/- 280.6965 µg/mL	Unstressed
	Purity 99%		+/- 287.2503 µg/mL	Stressed
6	cis-1,2-Dichloroethene	5,000.6 µg/mL	+/- 31.8957 µg/mL	Gravimetric
	CAS # 156-59-2 (Lot MKCK1803)		+/- 280.6853 µg/mL	Unstressed
	Purity 99%		+/- 287.2388 µg/mL	Stressed
7	chloroform	5,000.6 µg/mL	+/- 31.7067 µg/mL	Gravimetric
	CAS # 67-66-3 (Lot SHBL6923)		+/- 280.6618 µg/mL	Unstressed
	Purity 99%		+/- 287.2158 µg/mL	Stressed

8	Bromochloromethane		5,000.9	µg/mL	+/-	31.8976	µg/mL	Gravimetric
	CAS # 74-97-5	(Lot 00008541)			+/-	280.7022	µg/mL	Unstressed
	Purity 99%				+/-	287.2560	µg/mL	Stressed
9	1,1,1-trichloroethane		5,000.1	µg/mL	+/-	31.7041	µg/mL	Gravimetric
	CAS # 71-55-6	(Lot 190123CG)			+/-	280.6383	µg/mL	Unstressed
	Purity 98%				+/-	287.1917	µg/mL	Stressed
10	1,1-Dichloropropene		5,000.9	µg/mL	+/-	31.8976	µg/mL	Gravimetric
	CAS # 563-58-6	(Lot 201106JLM)			+/-	280.7022	µg/mL	Unstressed
	Purity 99%				+/-	287.2560	µg/mL	Stressed
11	carbon tetrachloride		5,000.5	µg/mL	+/-	31.7063	µg/mL	Gravimetric
	CAS # 56-23-5	(Lot SHBJ2110)			+/-	280.6583	µg/mL	Unstressed
	Purity 99%				+/-	287.2122	µg/mL	Stressed
12	1,2-Dichloroethane		5,000.4	µg/mL	+/-	31.7059	µg/mL	Gravimetric
	CAS # 107-06-2	(Lot MKCM8716)			+/-	280.6548	µg/mL	Unstressed
	Purity 99%				+/-	287.2086	µg/mL	Stressed
13	Benzene		5,001.0	µg/mL	+/-	31.8982	µg/mL	Gravimetric
	CAS # 71-43-2	(Lot SHBM3620)			+/-	280.7078	µg/mL	Unstressed
	Purity 99%				+/-	287.2618	µg/mL	Stressed
14	Trichloroethene		5,000.8	µg/mL	+/-	31.7079	µg/mL	Gravimetric
	CAS # 79-01-6	(Lot SHBL5816)			+/-	280.6723	µg/mL	Unstressed
	Purity 99%				+/-	287.2265	µg/mL	Stressed
15	1,2-Dichloropropane		5,001.1	µg/mL	+/-	31.7099	µg/mL	Gravimetric
	CAS # 78-87-5	(Lot BCBR0882V)			+/-	280.6899	µg/mL	Unstressed
	Purity 99%				+/-	287.2445	µg/mL	Stressed
16	bromodichloromethane		5,000.2	µg/mL	+/-	31.7043	µg/mL	Gravimetric
	CAS # 75-27-4	(Lot MKCK3742)			+/-	280.6408	µg/mL	Unstressed
	Purity 99%				+/-	287.1942	µg/mL	Stressed
17	Dibromomethane		5,000.2	µg/mL	+/-	31.8931	µg/mL	Gravimetric
	CAS # 74-95-3	(Lot 10215970)			+/-	280.6629	µg/mL	Unstressed
	Purity 99%				+/-	287.2158	µg/mL	Stressed
18	cis-1,3-Dichloropropene		5,001.9	µg/mL	+/-	31.7154	µg/mL	Gravimetric
	CAS # 10061-01-5	(Lot D26147-1217)			+/-	280.7390	µg/mL	Unstressed
	Purity 99%				+/-	287.2947	µg/mL	Stressed
19	Toluene		5,001.3	µg/mL	+/-	31.9001	µg/mL	Gravimetric
	CAS # 108-88-3	(Lot SHBM6128)			+/-	280.7246	µg/mL	Unstressed
	Purity 99%				+/-	287.2790	µg/mL	Stressed
20	trans-1,3-Dichloropropene		5,000.5	µg/mL	+/-	31.7063	µg/mL	Gravimetric
	CAS # 10061-02-6	(Lot RP201030)			+/-	280.6583	µg/mL	Unstressed
	Purity 99%				+/-	287.2122	µg/mL	Stressed
21	1,1,2-Trichloroethane		5,000.9	µg/mL	+/-	31.7087	µg/mL	Gravimetric
	CAS # 79-00-5	(Lot FGB01)			+/-	280.6794	µg/mL	Unstressed
	Purity 99%				+/-	287.2337	µg/mL	Stressed
22	1,3-Dichloropropane		5,000.5	µg/mL	+/-	31.8950	µg/mL	Gravimetric
	CAS # 142-28-9	(Lot BCBC6265)			+/-	280.6797	µg/mL	Unstressed
	Purity 99%				+/-	287.2331	µg/mL	Stressed
23	Tetrachloroethene		5,000.8	µg/mL	+/-	31.7079	µg/mL	Gravimetric
	CAS # 127-18-4	(Lot SHBJ7422)			+/-	280.6723	µg/mL	Unstressed
	Purity 99%				+/-	287.2265	µg/mL	Stressed

24	dibromochloromethane		5,001.1	µg/mL	+/-	31.7099	µg/mL	Gravimetric
	CAS # 124-48-1	(Lot MKCK6472)			+/-	280.6899	µg/mL	Unstressed
	Purity 99%				+/-	287.2445	µg/mL	Stressed
25	1,2-Dibromoethane (EDB)		5,000.5	µg/mL	+/-	31.8950	µg/mL	Gravimetric
	CAS # 106-93-4	(Lot BCBP2268V)			+/-	280.6797	µg/mL	Unstressed
	Purity 99%				+/-	287.2331	µg/mL	Stressed
26	Chlorobenzene		5,000.2	µg/mL	+/-	31.7043	µg/mL	Gravimetric
	CAS # 108-90-7	(Lot SHBL8110)			+/-	280.6408	µg/mL	Unstressed
	Purity 99%				+/-	287.1942	µg/mL	Stressed
27	1,1,1,2-Tetrachloroethane		5,000.9	µg/mL	+/-	31.8976	µg/mL	Gravimetric
	CAS # 630-20-6	(Lot GC01)			+/-	280.7022	µg/mL	Unstressed
	Purity 99%				+/-	287.2560	µg/mL	Stressed
28	Ethylbenzene		5,000.8	µg/mL	+/-	31.8970	µg/mL	Gravimetric
	CAS # 100-41-4	(Lot SHBL9192)			+/-	280.6965	µg/mL	Unstressed
	Purity 99%				+/-	287.2503	µg/mL	Stressed
29	m-Xylene		5,001.8	µg/mL	+/-	31.9033	µg/mL	Gravimetric
	CAS # 108-38-3	(Lot SHBM4841)			+/-	280.7527	µg/mL	Unstressed
	Purity 99%				+/-	287.3077	µg/mL	Stressed
30	p-Xylene		5,000.5	µg/mL	+/-	31.8950	µg/mL	Gravimetric
	CAS # 106-42-3	(Lot SHBJ7329)			+/-	280.6797	µg/mL	Unstressed
	Purity 99%				+/-	287.2331	µg/mL	Stressed
31	o-Xylene		5,001.8	µg/mL	+/-	31.9035	µg/mL	Gravimetric
	CAS # 95-47-6	(Lot SHBL3963)			+/-	280.7539	µg/mL	Unstressed
	Purity 98%				+/-	287.3090	µg/mL	Stressed
32	Styrene		5,001.7	µg/mL	+/-	31.9027	µg/mL	Gravimetric
	CAS # 100-42-5	(Lot MKCM3200)			+/-	280.7471	µg/mL	Unstressed
	Purity 99%				+/-	287.3020	µg/mL	Stressed
33	Isopropylbenzene (cumene)		5,001.0	µg/mL	+/-	31.8982	µg/mL	Gravimetric
	CAS # 98-82-8	(Lot P15E008)			+/-	280.7078	µg/mL	Unstressed
	Purity 99%				+/-	287.2618	µg/mL	Stressed
34	bromoform		5,000.4	µg/mL	+/-	31.7055	µg/mL	Gravimetric
	CAS # 75-25-2	(Lot SHBJ4835)			+/-	280.6513	µg/mL	Unstressed
	Purity 99%				+/-	287.2050	µg/mL	Stressed
35	1,1,2,2-Tetrachloroethane		5,000.4	µg/mL	+/-	31.7059	µg/mL	Gravimetric
	CAS # 79-34-5	(Lot CFA4D)			+/-	280.6548	µg/mL	Unstressed
	Purity 99%				+/-	287.2086	µg/mL	Stressed
36	1,2,3-Trichloropropane		5,000.0	µg/mL	+/-	31.8918	µg/mL	Gravimetric
	CAS # 96-18-4	(Lot BCBH8722V)			+/-	280.6516	µg/mL	Unstressed
	Purity 99%				+/-	287.2044	µg/mL	Stressed
37	n-Propylbenzene		5,001.6	µg/mL	+/-	31.9021	µg/mL	Gravimetric
	CAS # 103-65-1	(Lot MKCM4174)			+/-	280.7414	µg/mL	Unstressed
	Purity 99%				+/-	287.2963	µg/mL	Stressed
38	Bromobenzene		5,001.1	µg/mL	+/-	31.8989	µg/mL	Gravimetric
	CAS # 108-86-1	(Lot WXBC5147V)			+/-	280.7134	µg/mL	Unstressed
	Purity 99%				+/-	287.2675	µg/mL	Stressed
39	1,3,5-Trimethylbenzene		5,001.6	µg/mL	+/-	31.9021	µg/mL	Gravimetric
	CAS # 108-67-8	(Lot BCCD0427)			+/-	280.7414	µg/mL	Unstressed
	Purity 99%				+/-	287.2963	µg/mL	Stressed

40	2-Chlorotoluene		5,000.2	µg/mL	+/-	31.8931	µg/mL	Gravimetric
	CAS # 95-49-8	(Lot MKCF5243)			+/-	280.6629	µg/mL	Unstressed
	Purity 99%				+/-	287.2158	µg/mL	Stressed
41	4-Chlorotoluene		5,000.1	µg/mL	+/-	31.8925	µg/mL	Gravimetric
	CAS # 106-43-4	(Lot MKCC8496)			+/-	280.6572	µg/mL	Unstressed
	Purity 99%				+/-	287.2101	µg/mL	Stressed
42	tert-Butylbenzene		5,001.3	µg/mL	+/-	31.9001	µg/mL	Gravimetric
	CAS # 98-06-6	(Lot STBJ1937)			+/-	280.7246	µg/mL	Unstressed
	Purity 99%				+/-	287.2790	µg/mL	Stressed
43	1,2,4-Trimethylbenzene		5,000.6	µg/mL	+/-	31.8960	µg/mL	Gravimetric
	CAS # 95-63-6	(Lot WXBC9428V)			+/-	280.6879	µg/mL	Unstressed
	Purity 98%				+/-	287.2415	µg/mL	Stressed
44	sec-Butylbenzene		5,000.2	µg/mL	+/-	31.8931	µg/mL	Gravimetric
	CAS # 135-98-8	(Lot MKCN2920)			+/-	280.6629	µg/mL	Unstressed
	Purity 99%				+/-	287.2158	µg/mL	Stressed
45	p-Isopropyltoluene (p-Cymene)		5,001.1	µg/mL	+/-	31.8989	µg/mL	Gravimetric
	CAS # 99-87-6	(Lot MKCN1411)			+/-	280.7134	µg/mL	Unstressed
	Purity 99%				+/-	287.2675	µg/mL	Stressed
46	1,3-Dichlorobenzene		5,000.5	µg/mL	+/-	31.7063	µg/mL	Gravimetric
	CAS # 541-73-1	(Lot BCBZ7498)			+/-	280.6583	µg/mL	Unstressed
	Purity 99%				+/-	287.2122	µg/mL	Stressed
47	1,4-Dichlorobenzene		5,000.8	µg/mL	+/-	31.7083	µg/mL	Gravimetric
	CAS # 106-46-7	(Lot MKBS4401V)			+/-	280.6759	µg/mL	Unstressed
	Purity 99%				+/-	287.2301	µg/mL	Stressed
48	n-Butylbenzene		5,001.6	µg/mL	+/-	31.9021	µg/mL	Gravimetric
	CAS # 104-51-8	(Lot 09804AE)			+/-	280.7414	µg/mL	Unstressed
	Purity 99%				+/-	287.2963	µg/mL	Stressed
49	1,2-Dichlorobenzene		5,000.1	µg/mL	+/-	31.7036	µg/mL	Gravimetric
	CAS # 95-50-1	(Lot SHBK7741)			+/-	280.6338	µg/mL	Unstressed
	Purity 99%				+/-	287.1871	µg/mL	Stressed
50	1,2-Dibromo-3-chloropropane		5,000.3	µg/mL	+/-	31.8935	µg/mL	Gravimetric
	CAS # 96-12-8	(Lot FBL01)			+/-	280.6658	µg/mL	Unstressed
	Purity 97%				+/-	287.2189	µg/mL	Stressed
51	1,2,4-Trichlorobenzene		5,000.8	µg/mL	+/-	31.8970	µg/mL	Gravimetric
	CAS # 120-82-1	(Lot SHBJ9215)			+/-	280.6965	µg/mL	Unstressed
	Purity 99%				+/-	287.2503	µg/mL	Stressed
52	Hexachlorobutadiene		5,001.3	µg/mL	+/-	31.9001	µg/mL	Gravimetric
	CAS # 87-68-3	(Lot 664800)			+/-	280.7246	µg/mL	Unstressed
	Purity 99%				+/-	287.2790	µg/mL	Stressed
53	Naphthalene		5,000.8	µg/mL	+/-	31.8970	µg/mL	Gravimetric
	CAS # 91-20-3	(Lot MKBZ8680V)			+/-	280.6965	µg/mL	Unstressed
	Purity 99%				+/-	287.2503	µg/mL	Stressed
54	1,2,3-Trichlorobenzene		5,000.4	µg/mL	+/-	31.8944	µg/mL	Gravimetric
	CAS # 87-61-6	(Lot MKBX7627V)			+/-	280.6741	µg/mL	Unstressed
	Purity 99%				+/-	287.2273	µg/mL	Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

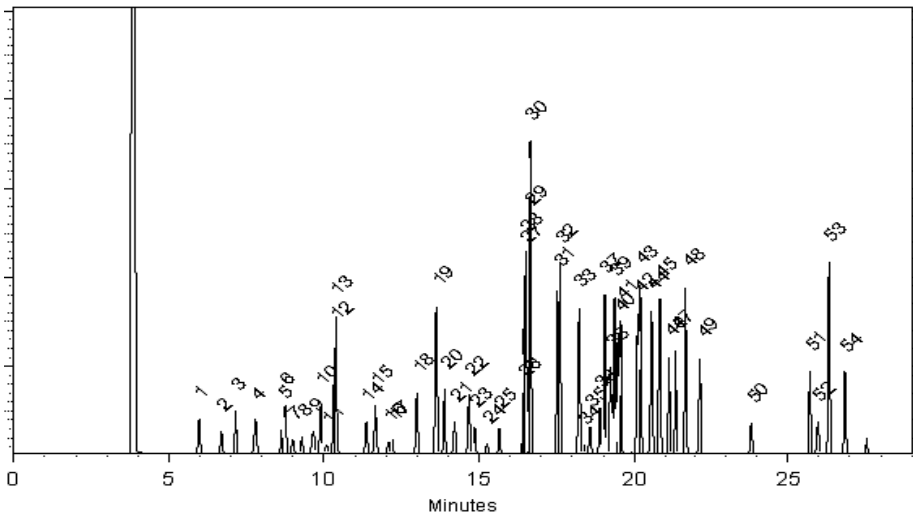
Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Walker Workman - Operations Technician I

Date Mixed: 22-Apr-2021 **Balance:** 1128360905

Alexis Shelow - Operations Tech I

Date Passed: 26-Apr-2021

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.

Reagent

MSV_MegaMIX#1_00030

RESTEK®
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 577486 **Lot No.:** A0171634

Description : Custom VOC MegaMix® #1 Standard

Custom VOC MegaMix® #1 Standard 5,000µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : April 30, 2024 **Storage:** 0°C or colder

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	1,1-dichloroethene	5,000.3 µg/mL	+/- 31.7051 µg/mL	Gravimetric
	CAS # 75-35-4 (Lot SHBK2437)		+/- 280.6478 µg/mL	Unstressed
	Purity 99%		+/- 287.2014 µg/mL	Stressed
2	Methylene chloride (dichloromethane)	5,000.3 µg/mL	+/- 31.7051 µg/mL	Gravimetric
	CAS # 75-09-2 (Lot SHBL6169)		+/- 280.6478 µg/mL	Unstressed
	Purity 99%		+/- 287.2014 µg/mL	Stressed
3	trans-1,2-Dichloroethene	5,000.3 µg/mL	+/- 31.7051 µg/mL	Gravimetric
	CAS # 156-60-5 (Lot MKBH9850V)		+/- 280.6478 µg/mL	Unstressed
	Purity 99%		+/- 287.2014 µg/mL	Stressed
4	1,1-Dichloroethane	5,000.8 µg/mL	+/- 31.7079 µg/mL	Gravimetric
	CAS # 75-34-3 (Lot 580900)		+/- 280.6723 µg/mL	Unstressed
	Purity 99%		+/- 287.2265 µg/mL	Stressed
5	2,2-Dichloropropane	5,000.8 µg/mL	+/- 31.8970 µg/mL	Gravimetric
	CAS # 594-20-7 (Lot RD201111)		+/- 280.6965 µg/mL	Unstressed
	Purity 99%		+/- 287.2503 µg/mL	Stressed
6	cis-1,2-Dichloroethene	5,000.6 µg/mL	+/- 31.8957 µg/mL	Gravimetric
	CAS # 156-59-2 (Lot MKCK1803)		+/- 280.6853 µg/mL	Unstressed
	Purity 99%		+/- 287.2388 µg/mL	Stressed
7	chloroform	5,000.6 µg/mL	+/- 31.7067 µg/mL	Gravimetric
	CAS # 67-66-3 (Lot SHBL6923)		+/- 280.6618 µg/mL	Unstressed
	Purity 99%		+/- 287.2158 µg/mL	Stressed

8	Bromochloromethane		5,000.9	µg/mL	+/-	31.8976	µg/mL	Gravimetric
	CAS # 74-97-5	(Lot 00008541)			+/-	280.7022	µg/mL	Unstressed
	Purity 99%				+/-	287.2560	µg/mL	Stressed
9	1,1,1-trichloroethane		5,000.1	µg/mL	+/-	31.7041	µg/mL	Gravimetric
	CAS # 71-55-6	(Lot 190123CG)			+/-	280.6383	µg/mL	Unstressed
	Purity 98%				+/-	287.1917	µg/mL	Stressed
10	1,1-Dichloropropene		5,000.9	µg/mL	+/-	31.8976	µg/mL	Gravimetric
	CAS # 563-58-6	(Lot 201106JLM)			+/-	280.7022	µg/mL	Unstressed
	Purity 99%				+/-	287.2560	µg/mL	Stressed
11	carbon tetrachloride		5,000.5	µg/mL	+/-	31.7063	µg/mL	Gravimetric
	CAS # 56-23-5	(Lot SHBJ2110)			+/-	280.6583	µg/mL	Unstressed
	Purity 99%				+/-	287.2122	µg/mL	Stressed
12	1,2-Dichloroethane		5,000.4	µg/mL	+/-	31.7059	µg/mL	Gravimetric
	CAS # 107-06-2	(Lot MKCM8716)			+/-	280.6548	µg/mL	Unstressed
	Purity 99%				+/-	287.2086	µg/mL	Stressed
13	Benzene		5,001.0	µg/mL	+/-	31.8982	µg/mL	Gravimetric
	CAS # 71-43-2	(Lot SHBM3620)			+/-	280.7078	µg/mL	Unstressed
	Purity 99%				+/-	287.2618	µg/mL	Stressed
14	Trichloroethene		5,000.8	µg/mL	+/-	31.7079	µg/mL	Gravimetric
	CAS # 79-01-6	(Lot SHBL5816)			+/-	280.6723	µg/mL	Unstressed
	Purity 99%				+/-	287.2265	µg/mL	Stressed
15	1,2-Dichloropropane		5,001.1	µg/mL	+/-	31.7099	µg/mL	Gravimetric
	CAS # 78-87-5	(Lot BCBR0882V)			+/-	280.6899	µg/mL	Unstressed
	Purity 99%				+/-	287.2445	µg/mL	Stressed
16	bromodichloromethane		5,000.2	µg/mL	+/-	31.7043	µg/mL	Gravimetric
	CAS # 75-27-4	(Lot MKCK3742)			+/-	280.6408	µg/mL	Unstressed
	Purity 99%				+/-	287.1942	µg/mL	Stressed
17	Dibromomethane		5,000.2	µg/mL	+/-	31.8931	µg/mL	Gravimetric
	CAS # 74-95-3	(Lot 10215970)			+/-	280.6629	µg/mL	Unstressed
	Purity 99%				+/-	287.2158	µg/mL	Stressed
18	cis-1,3-Dichloropropene		5,001.9	µg/mL	+/-	31.7154	µg/mL	Gravimetric
	CAS # 10061-01-5	(Lot D26147-1217)			+/-	280.7390	µg/mL	Unstressed
	Purity 99%				+/-	287.2947	µg/mL	Stressed
19	Toluene		5,001.3	µg/mL	+/-	31.9001	µg/mL	Gravimetric
	CAS # 108-88-3	(Lot SHBM6128)			+/-	280.7246	µg/mL	Unstressed
	Purity 99%				+/-	287.2790	µg/mL	Stressed
20	trans-1,3-Dichloropropene		5,000.5	µg/mL	+/-	31.7063	µg/mL	Gravimetric
	CAS # 10061-02-6	(Lot RP201030)			+/-	280.6583	µg/mL	Unstressed
	Purity 99%				+/-	287.2122	µg/mL	Stressed
21	1,1,2-Trichloroethane		5,000.9	µg/mL	+/-	31.7087	µg/mL	Gravimetric
	CAS # 79-00-5	(Lot FGB01)			+/-	280.6794	µg/mL	Unstressed
	Purity 99%				+/-	287.2337	µg/mL	Stressed
22	1,3-Dichloropropane		5,000.5	µg/mL	+/-	31.8950	µg/mL	Gravimetric
	CAS # 142-28-9	(Lot BCBC6265)			+/-	280.6797	µg/mL	Unstressed
	Purity 99%				+/-	287.2331	µg/mL	Stressed
23	Tetrachloroethene		5,000.8	µg/mL	+/-	31.7079	µg/mL	Gravimetric
	CAS # 127-18-4	(Lot SHBJ7422)			+/-	280.6723	µg/mL	Unstressed
	Purity 99%				+/-	287.2265	µg/mL	Stressed

24	dibromochloromethane		5,001.1	µg/mL	+/-	31.7099	µg/mL	Gravimetric
	CAS # 124-48-1	(Lot MKCK6472)			+/-	280.6899	µg/mL	Unstressed
	Purity 99%				+/-	287.2445	µg/mL	Stressed
25	1,2-Dibromoethane (EDB)		5,000.5	µg/mL	+/-	31.8950	µg/mL	Gravimetric
	CAS # 106-93-4	(Lot BCBP2268V)			+/-	280.6797	µg/mL	Unstressed
	Purity 99%				+/-	287.2331	µg/mL	Stressed
26	Chlorobenzene		5,000.2	µg/mL	+/-	31.7043	µg/mL	Gravimetric
	CAS # 108-90-7	(Lot SHBL8110)			+/-	280.6408	µg/mL	Unstressed
	Purity 99%				+/-	287.1942	µg/mL	Stressed
27	1,1,1,2-Tetrachloroethane		5,000.9	µg/mL	+/-	31.8976	µg/mL	Gravimetric
	CAS # 630-20-6	(Lot GC01)			+/-	280.7022	µg/mL	Unstressed
	Purity 99%				+/-	287.2560	µg/mL	Stressed
28	Ethylbenzene		5,000.8	µg/mL	+/-	31.8970	µg/mL	Gravimetric
	CAS # 100-41-4	(Lot SHBL9192)			+/-	280.6965	µg/mL	Unstressed
	Purity 99%				+/-	287.2503	µg/mL	Stressed
29	m-Xylene		5,001.8	µg/mL	+/-	31.9033	µg/mL	Gravimetric
	CAS # 108-38-3	(Lot SHBM4841)			+/-	280.7527	µg/mL	Unstressed
	Purity 99%				+/-	287.3077	µg/mL	Stressed
30	p-Xylene		5,000.5	µg/mL	+/-	31.8950	µg/mL	Gravimetric
	CAS # 106-42-3	(Lot SHBJ7329)			+/-	280.6797	µg/mL	Unstressed
	Purity 99%				+/-	287.2331	µg/mL	Stressed
31	o-Xylene		5,001.8	µg/mL	+/-	31.9035	µg/mL	Gravimetric
	CAS # 95-47-6	(Lot SHBL3963)			+/-	280.7539	µg/mL	Unstressed
	Purity 98%				+/-	287.3090	µg/mL	Stressed
32	Styrene		5,001.7	µg/mL	+/-	31.9027	µg/mL	Gravimetric
	CAS # 100-42-5	(Lot MKCM3200)			+/-	280.7471	µg/mL	Unstressed
	Purity 99%				+/-	287.3020	µg/mL	Stressed
33	Isopropylbenzene (cumene)		5,001.0	µg/mL	+/-	31.8982	µg/mL	Gravimetric
	CAS # 98-82-8	(Lot P15E008)			+/-	280.7078	µg/mL	Unstressed
	Purity 99%				+/-	287.2618	µg/mL	Stressed
34	bromoform		5,000.4	µg/mL	+/-	31.7055	µg/mL	Gravimetric
	CAS # 75-25-2	(Lot SHBJ4835)			+/-	280.6513	µg/mL	Unstressed
	Purity 99%				+/-	287.2050	µg/mL	Stressed
35	1,1,2,2-Tetrachloroethane		5,000.4	µg/mL	+/-	31.7059	µg/mL	Gravimetric
	CAS # 79-34-5	(Lot CFA4D)			+/-	280.6548	µg/mL	Unstressed
	Purity 99%				+/-	287.2086	µg/mL	Stressed
36	1,2,3-Trichloropropane		5,000.0	µg/mL	+/-	31.8918	µg/mL	Gravimetric
	CAS # 96-18-4	(Lot BCBH8722V)			+/-	280.6516	µg/mL	Unstressed
	Purity 99%				+/-	287.2044	µg/mL	Stressed
37	n-Propylbenzene		5,001.6	µg/mL	+/-	31.9021	µg/mL	Gravimetric
	CAS # 103-65-1	(Lot MKCM4174)			+/-	280.7414	µg/mL	Unstressed
	Purity 99%				+/-	287.2963	µg/mL	Stressed
38	Bromobenzene		5,001.1	µg/mL	+/-	31.8989	µg/mL	Gravimetric
	CAS # 108-86-1	(Lot WXBC5147V)			+/-	280.7134	µg/mL	Unstressed
	Purity 99%				+/-	287.2675	µg/mL	Stressed
39	1,3,5-Trimethylbenzene		5,001.6	µg/mL	+/-	31.9021	µg/mL	Gravimetric
	CAS # 108-67-8	(Lot BCCD0427)			+/-	280.7414	µg/mL	Unstressed
	Purity 99%				+/-	287.2963	µg/mL	Stressed

40	2-Chlorotoluene		5,000.2	µg/mL	+/-	31.8931	µg/mL	Gravimetric
	CAS # 95-49-8	(Lot MKCF5243)			+/-	280.6629	µg/mL	Unstressed
	Purity 99%				+/-	287.2158	µg/mL	Stressed
41	4-Chlorotoluene		5,000.1	µg/mL	+/-	31.8925	µg/mL	Gravimetric
	CAS # 106-43-4	(Lot MKCC8496)			+/-	280.6572	µg/mL	Unstressed
	Purity 99%				+/-	287.2101	µg/mL	Stressed
42	tert-Butylbenzene		5,001.3	µg/mL	+/-	31.9001	µg/mL	Gravimetric
	CAS # 98-06-6	(Lot STBJ1937)			+/-	280.7246	µg/mL	Unstressed
	Purity 99%				+/-	287.2790	µg/mL	Stressed
43	1,2,4-Trimethylbenzene		5,000.6	µg/mL	+/-	31.8960	µg/mL	Gravimetric
	CAS # 95-63-6	(Lot WXBC9428V)			+/-	280.6879	µg/mL	Unstressed
	Purity 98%				+/-	287.2415	µg/mL	Stressed
44	sec-Butylbenzene		5,000.2	µg/mL	+/-	31.8931	µg/mL	Gravimetric
	CAS # 135-98-8	(Lot MKCN2920)			+/-	280.6629	µg/mL	Unstressed
	Purity 99%				+/-	287.2158	µg/mL	Stressed
45	p-Isopropyltoluene (p-Cymene)		5,001.1	µg/mL	+/-	31.8989	µg/mL	Gravimetric
	CAS # 99-87-6	(Lot MKCN1411)			+/-	280.7134	µg/mL	Unstressed
	Purity 99%				+/-	287.2675	µg/mL	Stressed
46	1,3-Dichlorobenzene		5,000.5	µg/mL	+/-	31.7063	µg/mL	Gravimetric
	CAS # 541-73-1	(Lot BCBZ7498)			+/-	280.6583	µg/mL	Unstressed
	Purity 99%				+/-	287.2122	µg/mL	Stressed
47	1,4-Dichlorobenzene		5,000.8	µg/mL	+/-	31.7083	µg/mL	Gravimetric
	CAS # 106-46-7	(Lot MKBS4401V)			+/-	280.6759	µg/mL	Unstressed
	Purity 99%				+/-	287.2301	µg/mL	Stressed
48	n-Butylbenzene		5,001.6	µg/mL	+/-	31.9021	µg/mL	Gravimetric
	CAS # 104-51-8	(Lot 09804AE)			+/-	280.7414	µg/mL	Unstressed
	Purity 99%				+/-	287.2963	µg/mL	Stressed
49	1,2-Dichlorobenzene		5,000.1	µg/mL	+/-	31.7036	µg/mL	Gravimetric
	CAS # 95-50-1	(Lot SHBK7741)			+/-	280.6338	µg/mL	Unstressed
	Purity 99%				+/-	287.1871	µg/mL	Stressed
50	1,2-Dibromo-3-chloropropane		5,000.3	µg/mL	+/-	31.8935	µg/mL	Gravimetric
	CAS # 96-12-8	(Lot FBL01)			+/-	280.6658	µg/mL	Unstressed
	Purity 97%				+/-	287.2189	µg/mL	Stressed
51	1,2,4-Trichlorobenzene		5,000.8	µg/mL	+/-	31.8970	µg/mL	Gravimetric
	CAS # 120-82-1	(Lot SHBJ9215)			+/-	280.6965	µg/mL	Unstressed
	Purity 99%				+/-	287.2503	µg/mL	Stressed
52	Hexachlorobutadiene		5,001.3	µg/mL	+/-	31.9001	µg/mL	Gravimetric
	CAS # 87-68-3	(Lot 664800)			+/-	280.7246	µg/mL	Unstressed
	Purity 99%				+/-	287.2790	µg/mL	Stressed
53	Naphthalene		5,000.8	µg/mL	+/-	31.8970	µg/mL	Gravimetric
	CAS # 91-20-3	(Lot MKBZ8680V)			+/-	280.6965	µg/mL	Unstressed
	Purity 99%				+/-	287.2503	µg/mL	Stressed
54	1,2,3-Trichlorobenzene		5,000.4	µg/mL	+/-	31.8944	µg/mL	Gravimetric
	CAS # 87-61-6	(Lot MKBX7627V)			+/-	280.6741	µg/mL	Unstressed
	Purity 99%				+/-	287.2273	µg/mL	Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

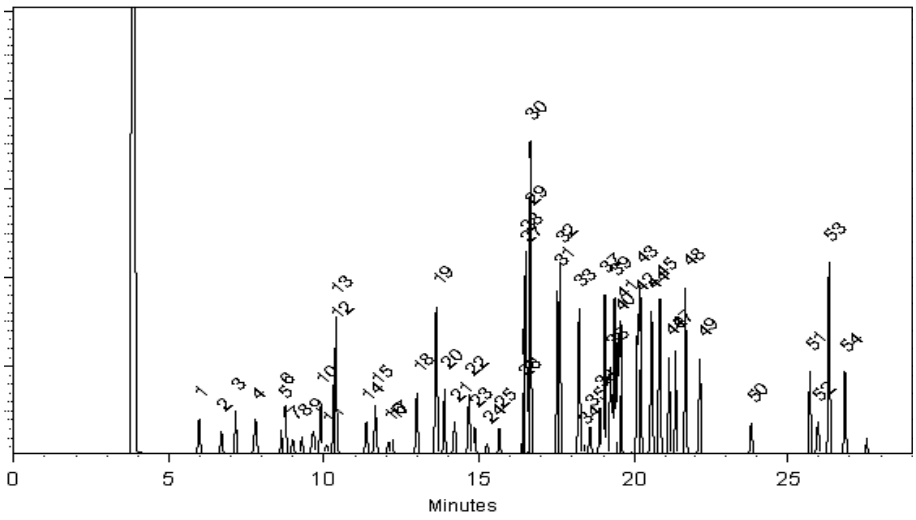
Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Walker Workman - Operations Technician I

Date Mixed: 22-Apr-2021 **Balance:** 1128360905

Alexis Shelow - Operations Tech I

Date Passed: 26-Apr-2021

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.

Reagent

MSV_MegaMix#2_00012

RESTEK®
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ACCREDITED
ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 577487 **Lot No.:** A0172089

Description : Custom VOC MegaMix® #2 Standard

Custom VOC MegaMix® #2 Standard 5000-62500µg/mL, P&T Methanol, 1mL/ampul

X8
5/12/21

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : May 31, 2024 **Storage:** 0°C or colder

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	n-Pentane (C5)	5,015.5 µg/mL	+/- 31.9907 µg/mL	Gravimetric
	CAS # 109-66-0 (Lot SHBM2439)		+/- 248.4545 µg/mL	Unstressed
	Purity 99%		+/- 254.6155 µg/mL	Stressed
2	2-Propanol (isopropanol)	25,058.5 µg/mL	+/- 146.7230 µg/mL	Gravimetric
	CAS # 67-63-0 (Lot SHBM4333)		+/- 1,239.7116 µg/mL	Unstressed
	Purity 99%		+/- 1,270.5322 µg/mL	Stressed
3	1,1,2-Trichlorotrifluoroethane (CFC-113)	5,011.5 µg/mL	+/- 31.9652 µg/mL	Gravimetric
	CAS # 76-13-1 (Lot 00016133)		+/- 248.2564 µg/mL	Unstressed
	Purity 99%		+/- 254.4124 µg/mL	Stressed
4	tert-Butanol (TBA)	25,047.5 µg/mL	+/- 146.6586 µg/mL	Gravimetric
	CAS # 75-65-0 (Lot SHBM7694)		+/- 1,239.1674 µg/mL	Unstressed
	Purity 99%		+/- 1,269.9744 µg/mL	Stressed
5	Methyl acetate	5,006.8 µg/mL	+/- 31.9354 µg/mL	Gravimetric
	CAS # 79-20-9 (Lot SHBK5436)		+/- 248.0252 µg/mL	Unstressed
	Purity 99%		+/- 254.1755 µg/mL	Stressed
6	Iodomethane (methyl iodide)	5,011.2 µg/mL	+/- 31.9631 µg/mL	Gravimetric
	CAS # 74-88-4 (Lot RD210503)		+/- 248.2399 µg/mL	Unstressed
	Purity 99%		+/- 254.3955 µg/mL	Stressed
7	Allyl chloride (3-chloropropene)	5,007.0 µg/mL	+/- 31.9365 µg/mL	Gravimetric
	CAS # 107-05-1 (Lot RD210402)		+/- 248.0335 µg/mL	Unstressed
	Purity 99%		+/- 254.1839 µg/mL	Stressed

8	Carbon disulfide		5,014.7	µg/mL	+/-	31.9854	µg/mL	Gravimetric
	CAS # 75-15-0	(Lot N28F701)			+/-	248.4132	µg/mL	Unstressed
	Purity 99%				+/-	254.5731	µg/mL	Stressed
9	Acrylonitrile		12,548.0	µg/mL	+/-	73.4713	µg/mL	Gravimetric
	CAS # 107-13-1	(Lot M25F024)			+/-	620.7834	µg/mL	Unstressed
	Purity 99%				+/-	636.2168	µg/mL	Stressed
10	Methyl-tert-butyl ether (MTBE)		5,010.0	µg/mL	+/-	31.9556	µg/mL	Gravimetric
	CAS # 1634-04-4	(Lot SHBM3541)			+/-	248.1821	µg/mL	Unstressed
	Purity 99%				+/-	254.3362	µg/mL	Stressed
11	n-Hexane (C6)		5,009.3	µg/mL	+/-	31.9514	µg/mL	Gravimetric
	CAS # 110-54-3	(Lot SHBL9879)			+/-	248.1490	µg/mL	Unstressed
	Purity 99%				+/-	254.3024	µg/mL	Stressed
12	Diisopropyl ether (DIPE)		5,015.0	µg/mL	+/-	31.9875	µg/mL	Gravimetric
	CAS # 108-20-3	(Lot SHBH1927V)			+/-	248.4298	µg/mL	Unstressed
	Purity 99%				+/-	254.5901	µg/mL	Stressed
13	Chloroprene (2-chloro-1,3-butadiene)		5,015.0	µg/mL	+/-	31.9875	µg/mL	Gravimetric
	CAS # 126-99-8	(Lot 210413JLM)			+/-	248.4298	µg/mL	Unstressed
	Purity 99%				+/-	254.5901	µg/mL	Stressed
14	Ethyl-tert-butyl ether (ETBE)		5,011.5	µg/mL	+/-	31.9652	µg/mL	Gravimetric
	CAS # 637-92-3	(Lot MKCM3774)			+/-	248.2564	µg/mL	Unstressed
	Purity 99%				+/-	254.4124	µg/mL	Stressed
15	Propionitrile		25,085.0	µg/mL	+/-	146.8782	µg/mL	Gravimetric
	CAS # 107-12-0	(Lot BCBW0865)			+/-	1,241.0227	µg/mL	Unstressed
	Purity 99%				+/-	1,271.8758	µg/mL	Stressed
16	Methacrylonitrile		12,528.0	µg/mL	+/-	73.3542	µg/mL	Gravimetric
	CAS # 126-98-7	(Lot 1012014)			+/-	619.7940	µg/mL	Unstressed
	Purity 99%				+/-	635.2027	µg/mL	Stressed
17	Isobutanol (2-Methyl-1-propanol)		62,555.0	µg/mL	+/-	366.2544	µg/mL	Gravimetric
	CAS # 78-83-1	(Lot SHBM4836)			+/-	3,094.7625	µg/mL	Unstressed
	Purity 99%				+/-	3,171.7016	µg/mL	Stressed
18	Tetrahydrofuran		25,050.5	µg/mL	+/-	146.6762	µg/mL	Gravimetric
	CAS # 109-99-9	(Lot SHBM0434)			+/-	1,239.3159	µg/mL	Unstressed
	Purity 99%				+/-	1,270.1266	µg/mL	Stressed
19	Cyclohexane		5,017.5	µg/mL	+/-	32.0035	µg/mL	Gravimetric
	CAS # 110-82-7	(Lot MKCF5831)			+/-	248.5536	µg/mL	Unstressed
	Purity 99%				+/-	254.7170	µg/mL	Stressed
20	1-Butanol		62,574.0	µg/mL	+/-	366.3656	µg/mL	Gravimetric
	CAS # 71-36-3	(Lot SHBM5061)			+/-	3,095.7025	µg/mL	Unstressed
	Purity 99%				+/-	3,172.6650	µg/mL	Stressed
21	tert-Amyl methyl ether (TAME)		5,012.5	µg/mL	+/-	31.9716	µg/mL	Gravimetric
	CAS # 994-05-8	(Lot HMBG7745V)			+/-	248.3059	µg/mL	Unstressed
	Purity 99%				+/-	254.4632	µg/mL	Stressed
22	n-Heptane (C7)		5,012.5	µg/mL	+/-	31.9716	µg/mL	Gravimetric
	CAS # 142-82-5	(Lot SHBL9221)			+/-	248.3059	µg/mL	Unstressed
	Purity 99%				+/-	254.4632	µg/mL	Stressed
23	tert-Amyl ethyl ether (TAEE)		5,012.7	µg/mL	+/-	31.9726	µg/mL	Gravimetric
	CAS # 919-94-8	(Lot 76U3A)			+/-	248.3142	µg/mL	Unstressed
	Purity 99%				+/-	254.4716	µg/mL	Stressed

24	Methylcyclohexane		5,015.2	µg/mL	+/-	31.9886	µg/mL	Gravimetric
	CAS # 108-87-2	(Lot SHBL0078)			+/-	248.4380	µg/mL	Unstressed
	Purity 99%				+/-	254.5985	µg/mL	Stressed
25	Methyl methacrylate		5,016.5	µg/mL	+/-	31.9971	µg/mL	Gravimetric
	CAS # 80-62-6	(Lot MKCN3027)			+/-	248.5041	µg/mL	Unstressed
	Purity 99%				+/-	254.6662	µg/mL	Stressed
26	1,4-Dioxane		62,582.5	µg/mL	+/-	366.4154	µg/mL	Gravimetric
	CAS # 123-91-1	(Lot SHBM5092)			+/-	3,096.1230	µg/mL	Unstressed
	Purity 99%				+/-	3,173.0960	µg/mL	Stressed
27	2-Nitropropane		25,020.2	µg/mL	+/-	146.4987	µg/mL	Gravimetric
	CAS # 79-46-9	(Lot BCCB9352)			+/-	1,237.8158	µg/mL	Unstressed
	Purity 97%				+/-	1,268.5893	µg/mL	Stressed
28	1-Chlorohexane		5,012.5	µg/mL	+/-	31.9718	µg/mL	Gravimetric
	CAS # 544-10-5	(Lot BCBS3368V)			+/-	248.3077	µg/mL	Unstressed
	Purity 98%				+/-	254.4650	µg/mL	Stressed
29	trans-1,4-dichloro-2-butene		12,532.9	µg/mL	+/-	73.3827	µg/mL	Gravimetric
	CAS # 110-57-6	(Lot RD210331)			+/-	620.0352	µg/mL	Unstressed
	Purity 95%				+/-	635.4499	µg/mL	Stressed
30	1,2,3-Trimethylbenzene		5,009.9	µg/mL	+/-	31.9551	µg/mL	Gravimetric
	CAS # 526-73-8	(Lot 8776.10-36)			+/-	248.1783	µg/mL	Unstressed
	Purity 98%				+/-	254.3323	µg/mL	Stressed
31	1,3-Diethylbenzene		5,010.6	µg/mL	+/-	31.9593	µg/mL	Gravimetric
	CAS # 141-93-5	(Lot BCBT8967)			+/-	248.2106	µg/mL	Unstressed
	Purity 98%				+/-	254.3655	µg/mL	Stressed
32	Benzyl chloride		5,011.7	µg/mL	+/-	31.9663	µg/mL	Gravimetric
	CAS # 100-44-7	(Lot SHBH2102V)			+/-	248.2646	µg/mL	Unstressed
	Purity 99%				+/-	254.4209	µg/mL	Stressed
33	1,4-Diethylbenzene		5,008.5	µg/mL	+/-	31.9458	µg/mL	Gravimetric
	CAS # 105-05-5	(Lot RLHJK)			+/-	248.1055	µg/mL	Unstressed
	Purity 98%				+/-	254.2577	µg/mL	Stressed
34	1,2-Diethylbenzene		5,010.2	µg/mL	+/-	31.9567	µg/mL	Gravimetric
	CAS # 135-01-3	(Lot ECH2970181)			+/-	248.1903	µg/mL	Unstressed
	Purity 99%				+/-	254.3447	µg/mL	Stressed
35	1,3,5-Trichlorobenzene		5,012.0	µg/mL	+/-	31.9684	µg/mL	Gravimetric
	CAS # 108-70-3	(Lot 11319AS)			+/-	248.2811	µg/mL	Unstressed
	Purity 99%				+/-	254.4378	µg/mL	Stressed
36	2-Methylnaphthalene		5,009.0	µg/mL	+/-	31.9493	µg/mL	Gravimetric
	CAS # 91-57-6	(Lot STBG8884)			+/-	248.1325	µg/mL	Unstressed
	Purity 99%				+/-	254.2855	µg/mL	Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Column:
60m x 0.25mm x 1.4µm
Rtx-502.2 (cat.#10916)

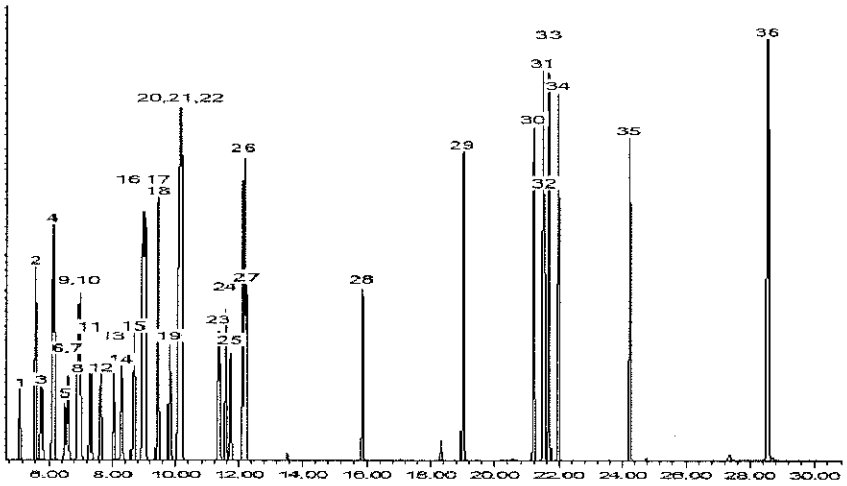
Carrier Gas:
hellum-constant pressure 30 psi

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
MSD



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Miranda Kline

Miranda Kline - Operations Technician I

Date Mixed: 05-May-2021 **Balance:** B251644995

Alexis Shelow - Operations Tech I

Date Passed: 11-May-2021

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.

Reagent

MSV_MegaMix#2_00030

RESTEK®
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: (800)356-1688
Fax: (814)353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 577487 **Lot No.:** A0173454

Description : Custom VOC MegaMix® #2 Standard

Custom VOC MegaMix® #2 Standard 5000-62500µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : June 30, 2024 **Storage:** 0°C or colder

Ship: Ambient

C E R T I F I E D V A L U E S

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	n-Pentane (C5)	5,000.8 µg/mL	+/- 34.9563 µg/mL	Gravimetric
	CAS # 109-66-0 (Lot SHBM6577)		+/- 248.1404 µg/mL	Unstressed
	Purity 99%		+/- 254.2734 µg/mL	Stressed
2	2-Propanol (isopropanol)	25,000.0 µg/mL	+/- 146.3805 µg/mL	Gravimetric
	CAS # 67-63-0 (Lot SHBH7211)		+/- 1,236.8175 µg/mL	Unstressed
	Purity 99%		+/- 1,267.5661 µg/mL	Stressed
3	1,1,2-Trichlorotrifluoroethane (CFC-113)	5,000.0 µg/mL	+/- 34.9505 µg/mL	Gravimetric
	CAS # 76-13-1 (Lot 00016133)		+/- 248.0991 µg/mL	Unstressed
	Purity 99%		+/- 254.2310 µg/mL	Stressed
4	tert-Butanol (TBA)	25,010.0 µg/mL	+/- 146.4390 µg/mL	Gravimetric
	CAS # 75-65-0 (Lot SHBM7694)		+/- 1,237.3122 µg/mL	Unstressed
	Purity 99%		+/- 1,268.0731 µg/mL	Stressed
5	Methyl acetate	5,000.2 µg/mL	+/- 34.9516 µg/mL	Gravimetric
	CAS # 79-20-9 (Lot SHBM1320)		+/- 248.1073 µg/mL	Unstressed
	Purity 99%		+/- 254.2395 µg/mL	Stressed
6	Iodomethane (methyl iodide)	5,001.7 µg/mL	+/- 34.9621 µg/mL	Gravimetric
	CAS # 74-88-4 (Lot RD210503)		+/- 248.1818 µg/mL	Unstressed
	Purity 99%		+/- 254.3157 µg/mL	Stressed
7	Allyl chloride (3-chloropropene)	5,000.7 µg/mL	+/- 34.9551 µg/mL	Gravimetric
	CAS # 107-05-1 (Lot RD210402)		+/- 248.1321 µg/mL	Unstressed
	Purity 99%		+/- 254.2649 µg/mL	Stressed

8	Carbon disulfide		5,004.2	µg/mL	+/-	34.9796	µg/mL	Gravimetric
	CAS # 75-15-0	(Lot N28F701)			+/-	248.3058	µg/mL	Unstressed
	Purity 99%				+/-	254.4428	µg/mL	Stressed
9	Acrylonitrile		12,506.0	µg/mL	+/-	73.2254	µg/mL	Gravimetric
	CAS # 107-13-1	(Lot M25F024)			+/-	618.7056	µg/mL	Unstressed
	Purity 99%				+/-	634.0873	µg/mL	Stressed
10	Methyl-tert-butyl ether (MTBE)		5,000.8	µg/mL	+/-	34.9563	µg/mL	Gravimetric
	CAS # 1634-04-4	(Lot SHBM3541)			+/-	248.1404	µg/mL	Unstressed
	Purity 99%				+/-	254.2734	µg/mL	Stressed
11	n-Hexane (C6)		5,000.5	µg/mL	+/-	34.9540	µg/mL	Gravimetric
	CAS # 110-54-3	(Lot SHBL9879)			+/-	248.1239	µg/mL	Unstressed
	Purity 99%				+/-	254.2564	µg/mL	Stressed
12	Diisopropyl ether (DIPE)		5,003.3	µg/mL	+/-	34.9738	µg/mL	Gravimetric
	CAS # 108-20-3	(Lot SHBH1927V)			+/-	248.2645	µg/mL	Unstressed
	Purity 99%				+/-	254.4005	µg/mL	Stressed
13	Chloroprene (2-chloro-1,3-butadiene)		5,001.2	µg/mL	+/-	34.9586	µg/mL	Gravimetric
	CAS # 126-99-8	(Lot 210413JLM)			+/-	248.1570	µg/mL	Unstressed
	Purity 99%				+/-	254.2903	µg/mL	Stressed
14	Ethyl-tert-butyl ether (ETBE)		5,001.7	µg/mL	+/-	34.9621	µg/mL	Gravimetric
	CAS # 637-92-3	(Lot MKCM3774)			+/-	248.1818	µg/mL	Unstressed
	Purity 99%				+/-	254.3157	µg/mL	Stressed
15	Propionitrile		25,006.7	µg/mL	+/-	146.4195	µg/mL	Gravimetric
	CAS # 107-12-0	(Lot BCCC1173)			+/-	1,237.1473	µg/mL	Unstressed
	Purity 99%				+/-	1,267.9041	µg/mL	Stressed
16	Methacrylonitrile		12,500.7	µg/mL	+/-	73.1942	µg/mL	Gravimetric
	CAS # 126-98-7	(Lot 1012020)			+/-	618.4417	µg/mL	Unstressed
	Purity 99%				+/-	633.8168	µg/mL	Stressed
17	Isobutanol (2-Methyl-1-propanol)		62,500.7	µg/mL	+/-	365.9551	µg/mL	Gravimetric
	CAS # 78-83-1	(Lot SHBM4836)			+/-	3,092.0767	µg/mL	Unstressed
	Purity 99%				+/-	3,168.9490	µg/mL	Stressed
18	Tetrahydrofuran		25,010.0	µg/mL	+/-	146.4390	µg/mL	Gravimetric
	CAS # 109-99-9	(Lot SHBM8962)			+/-	1,237.3122	µg/mL	Unstressed
	Purity 99%				+/-	1,268.0731	µg/mL	Stressed
19	Cyclohexane		5,001.7	µg/mL	+/-	34.9621	µg/mL	Gravimetric
	CAS # 110-82-7	(Lot MKCF5831)			+/-	248.1818	µg/mL	Unstressed
	Purity 99%				+/-	254.3157	µg/mL	Stressed
20	1-Butanol		62,504.0	µg/mL	+/-	365.9747	µg/mL	Gravimetric
	CAS # 71-36-3	(Lot SHBM5061)			+/-	3,092.2416	µg/mL	Unstressed
	Purity 99%				+/-	3,169.1180	µg/mL	Stressed
21	tert-Amyl methyl ether (TAME)		5,001.7	µg/mL	+/-	34.9621	µg/mL	Gravimetric
	CAS # 994-05-8	(Lot HMBG7745V)			+/-	248.1818	µg/mL	Unstressed
	Purity 99%				+/-	254.3157	µg/mL	Stressed
22	n-Heptane (C7)		5,002.3	µg/mL	+/-	34.9668	µg/mL	Gravimetric
	CAS # 142-82-5	(Lot SHBL9221)			+/-	248.2148	µg/mL	Unstressed
	Purity 99%				+/-	254.3496	µg/mL	Stressed
23	tert-Amyl ethyl ether (TAEE)		5,000.2	µg/mL	+/-	34.9516	µg/mL	Gravimetric
	CAS # 919-94-8	(Lot 76U3A)			+/-	248.1073	µg/mL	Unstressed
	Purity 99%				+/-	254.2395	µg/mL	Stressed

24	Methylcyclohexane		5,000.2	µg/mL	+/-	34.9516	µg/mL	Gravimetric
	CAS # 108-87-2	(Lot SHBL0078)			+/-	248.1073	µg/mL	Unstressed
	Purity 99%				+/-	254.2395	µg/mL	Stressed
25	Methyl methacrylate		5,001.0	µg/mL	+/-	34.9574	µg/mL	Gravimetric
	CAS # 80-62-6	(Lot MKCN3027)			+/-	248.1487	µg/mL	Unstressed
	Purity 99%				+/-	254.2818	µg/mL	Stressed
26	1,4-Dioxane		62,503.3	µg/mL	+/-	365.9708	µg/mL	Gravimetric
	CAS # 123-91-1	(Lot SHBM5092)			+/-	3,092.2086	µg/mL	Unstressed
	Purity 99%				+/-	3,169.0842	µg/mL	Stressed
27	2-Nitropropane		25,000.8	µg/mL	+/-	146.3851	µg/mL	Gravimetric
	CAS # 79-46-9	(Lot BCCB9352)			+/-	1,236.8561	µg/mL	Unstressed
	Purity 97%				+/-	1,267.6056	µg/mL	Stressed
28	Ethyl methacrylate		5,000.8	µg/mL	+/-	34.9563	µg/mL	Gravimetric
	CAS # 97-63-2	(Lot MKCL0907)			+/-	248.1404	µg/mL	Unstressed
	Purity 99%				+/-	254.2734	µg/mL	Stressed
29	1-Chlorohexane		5,000.0	µg/mL	+/-	34.9502	µg/mL	Gravimetric
	CAS # 544-10-5	(Lot BCBS3368V)			+/-	248.0971	µg/mL	Unstressed
	Purity 98%				+/-	254.2290	µg/mL	Stressed
30	trans-1,4-dichloro-2-butene		12,510.9	µg/mL	+/-	73.2539	µg/mL	Gravimetric
	CAS # 110-57-6	(Lot RD210617)			+/-	618.9463	µg/mL	Unstressed
	Purity 95%				+/-	634.3340	µg/mL	Stressed
31	1,2,3-Trimethylbenzene		5,000.0	µg/mL	+/-	34.9502	µg/mL	Gravimetric
	CAS # 526-73-8	(Lot 8776.10-36)			+/-	248.0971	µg/mL	Unstressed
	Purity 98%				+/-	254.2290	µg/mL	Stressed
32	1,3-Diethylbenzene		5,000.9	µg/mL	+/-	34.9570	µg/mL	Gravimetric
	CAS # 141-93-5	(Lot BCBT8967)			+/-	248.1457	µg/mL	Unstressed
	Purity 98%				+/-	254.2788	µg/mL	Stressed
33	Benzyl chloride		5,000.8	µg/mL	+/-	34.9563	µg/mL	Gravimetric
	CAS # 100-44-7	(Lot SHBH2102V)			+/-	248.1404	µg/mL	Unstressed
	Purity 99%				+/-	254.2734	µg/mL	Stressed
34	1,4-Diethylbenzene		5,001.4	µg/mL	+/-	34.9605	µg/mL	Gravimetric
	CAS # 105-05-5	(Lot RLHJK)			+/-	248.1700	µg/mL	Unstressed
	Purity 98%				+/-	254.3037	µg/mL	Stressed
35	1,2-Diethylbenzene		5,000.5	µg/mL	+/-	34.9540	µg/mL	Gravimetric
	CAS # 135-01-3	(Lot ECH2970181)			+/-	248.1239	µg/mL	Unstressed
	Purity 99%				+/-	254.2564	µg/mL	Stressed
36	1,3,5-Trichlorobenzene		5,000.2	µg/mL	+/-	34.9516	µg/mL	Gravimetric
	CAS # 108-70-3	(Lot 11319AS)			+/-	248.1073	µg/mL	Unstressed
	Purity 99%				+/-	254.2395	µg/mL	Stressed
37	2-Methylnaphthalene		5,001.0	µg/mL	+/-	34.9574	µg/mL	Gravimetric
	CAS # 91-57-6	(Lot STBG8884)			+/-	248.1487	µg/mL	Unstressed
	Purity 99%				+/-	254.2818	µg/mL	Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Column:
60m x 0.25mm x 1.4µm
Rtx-502.2 (cat.#10916)

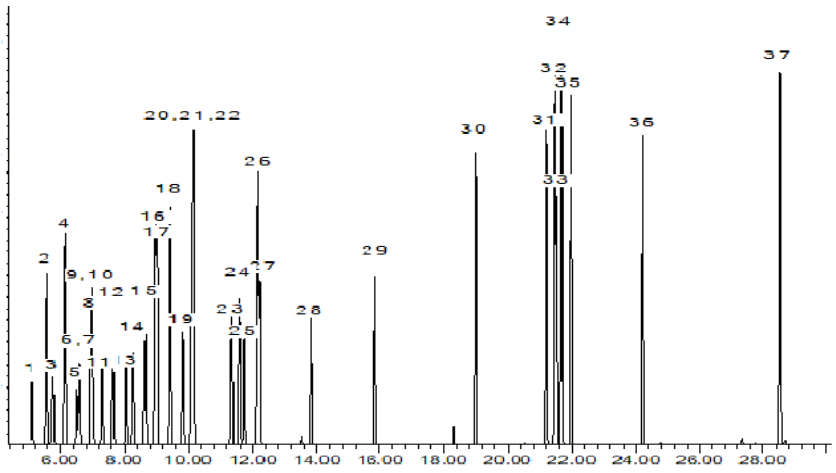
Carrier Gas:
helium-constant pressure 30 psi

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
MSD



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Russ Bookhamer - Operations Technician I

Date Mixed: 16-Jun-2021 **Balance:** B707717271

Alexis Shelow - Operations Tech I

Date Passed: 30-Jun-2021

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.

Reagent

MSV_Q_Ketones_00016

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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

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Certificate #3222.01

ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 569721.SEC **Lot No.:** A0167987

Description : 8260 List 1/ Std #2 Ketones (2015)

8260 List 1/ Std #2 Ketones (2015) 12,500µg/mL, P&T Methanol/Water (90:10), 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : January 31, 2024 **Storage:** 0°C or colder

Ship: Ambient

C E R T I F I E D V A L U E S

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	Acetone	12,567.5 µg/mL	+/- 73.5855 µg/mL	Gravimetric
	CAS # 67-64-1.SEC (Lot S25F025)		+/- 758.3030 µg/mL	Unstressed
	Purity 99%		+/- 760.1031 µg/mL	Stressed
2	2-Butanone (MEK)	12,553.0 µg/mL	+/- 73.5006 µg/mL	Gravimetric
	CAS # 78-93-3.SEC (Lot RGZ2A)		+/- 757.4280 µg/mL	Unstressed
	Purity 99%		+/- 759.2261 µg/mL	Stressed
3	4-Methyl-2-pentanone (MIBK)	12,563.5 µg/mL	+/- 73.5621 µg/mL	Gravimetric
	CAS # 108-10-1.SEC (Lot E29T040)		+/- 758.0616 µg/mL	Unstressed
	Purity 99%		+/- 759.8611 µg/mL	Stressed
4	2-Hexanone	12,527.8 µg/mL	+/- 73.3532 µg/mL	Gravimetric
	CAS # 591-78-6.SEC (Lot Y3TUO)		+/- 755.9093 µg/mL	Unstressed
	Purity 98%		+/- 757.7037 µg/mL	Stressed

Solvent: P&T Methanol/Water (90:10)
CAS # 67-56-1/7732-18-5
Purity 99%

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

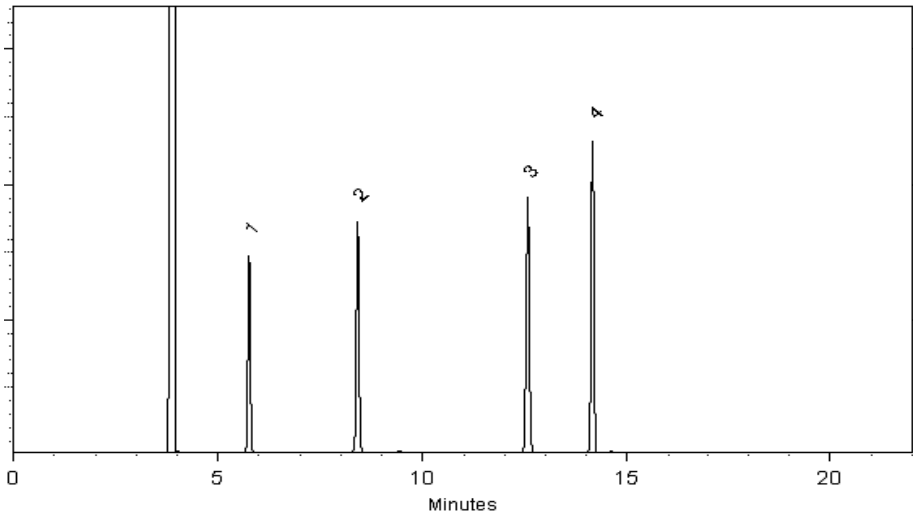
Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cory Meyer - Operations Tech I

Date Mixed: 11-Jan-2021 **Balance:** 1127510105

Marlina Cowan - Operations Tech I

Date Passed: 14-Jan-2021

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.

Reagent

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 569721.SEC **Lot No.:** A0167987

Description : 8260 List 1/ Std #2 Ketones (2015)

8260 List 1/ Std #2 Ketones (2015) 12,500µg/mL, P&T Methanol/Water (90:10), 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : January 31, 2024 **Storage:** 0°C or colder

Ship: Ambient

C E R T I F I E D V A L U E S

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	Acetone	12,567.5 µg/mL	+/- 73.5855 µg/mL	Gravimetric
	CAS # 67-64-1.SEC (Lot S25F025)		+/- 758.3030 µg/mL	Unstressed
	Purity 99%		+/- 760.1031 µg/mL	Stressed
2	2-Butanone (MEK)	12,553.0 µg/mL	+/- 73.5006 µg/mL	Gravimetric
	CAS # 78-93-3.SEC (Lot RGZ2A)		+/- 757.4280 µg/mL	Unstressed
	Purity 99%		+/- 759.2261 µg/mL	Stressed
3	4-Methyl-2-pentanone (MIBK)	12,563.5 µg/mL	+/- 73.5621 µg/mL	Gravimetric
	CAS # 108-10-1.SEC (Lot E29T040)		+/- 758.0616 µg/mL	Unstressed
	Purity 99%		+/- 759.8611 µg/mL	Stressed
4	2-Hexanone	12,527.8 µg/mL	+/- 73.3532 µg/mL	Gravimetric
	CAS # 591-78-6.SEC (Lot Y3TUO)		+/- 755.9093 µg/mL	Unstressed
	Purity 98%		+/- 757.7037 µg/mL	Stressed

Solvent: P&T Methanol/Water (90:10)
CAS # 67-56-1/7732-18-5
Purity 99%

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

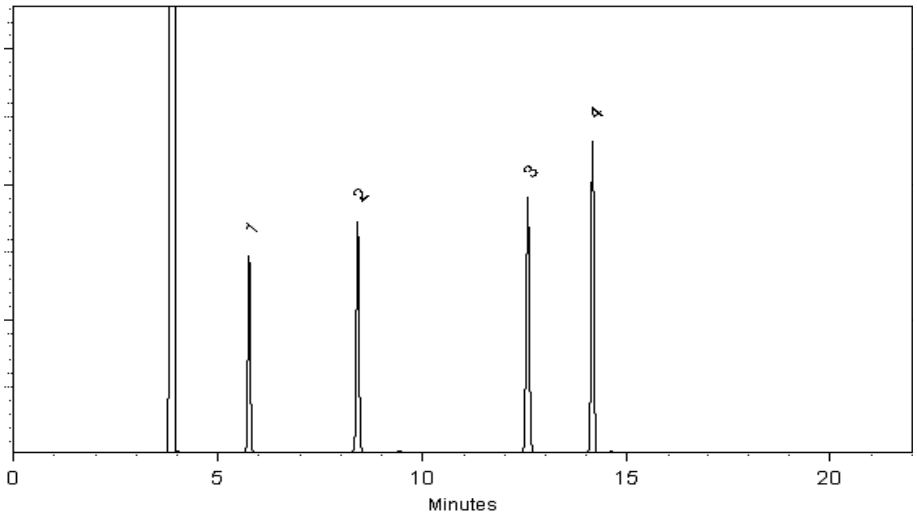
Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cory Meyer - Operations Tech I

Date Mixed: 11-Jan-2021 **Balance:** 1127510105

Marlina Cowan - Operations Tech I

Date Passed: 14-Jan-2021

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.

Reagent

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Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 577488.SEC **Lot No.:** A0172021

Description : Custom Gases.SEC Standard

Custom Gases.SEC Standard 2,000µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : May 31, 2024 **Storage:** 0°C or colder

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Dichlorodifluoromethane (CFC-12)	2,014.7 µg/mL	+/- 21.3347	µg/mL	Gravimetric
	CAS # 75-71-8.SEC (Lot 26871)		+/- 114.3626	µg/mL	Unstressed
	Purity 99%		+/- 116.9742	µg/mL	Stressed
2	Chloromethane (methyl chloride)	2,018.4 µg/mL	+/- 22.6573	µg/mL	Gravimetric
	CAS # 74-87-3.SEC (Lot 18343)		+/- 114.8157	µg/mL	Unstressed
	Purity 99%		+/- 117.4265	µg/mL	Stressed
3	Vinyl chloride	2,011.6 µg/mL	+/- 18.1502	µg/mL	Gravimetric
	CAS # 75-01-4.SEC (Lot MKBK6872V)		+/- 113.6387	µg/mL	Unstressed
	Purity 99%		+/- 116.2584	µg/mL	Stressed
4	1,3-Butadiene	2,020.9 µg/mL	+/- 15.6985	µg/mL	Gravimetric
	CAS # 106-99-0.SEC (Lot 26996)		+/- 113.7849	µg/mL	Unstressed
	Purity 99%		+/- 116.4253	µg/mL	Stressed
5	Bromomethane (methyl bromide)	2,014.3 µg/mL	+/- 52.5641	µg/mL	Gravimetric
	CAS # 74-83-9.SEC (Lot 00017022)		+/- 124.0186	µg/mL	Unstressed
	Purity 99%		+/- 126.4297	µg/mL	Stressed
6	Chloroethane (ethyl chloride)	2,009.7 µg/mL	+/- 28.6335	µg/mL	Gravimetric
	CAS # 75-00-3.SEC (Lot 00004202)		+/- 115.6738	µg/mL	Unstressed
	Purity 99%		+/- 118.2437	µg/mL	Stressed
7	Dichlorofluoromethane (CFC-21)	2,000.0 µg/mL	+/- 11.7371	µg/mL	Gravimetric
	CAS # 75-43-4 * (Lot 10930400)		+/- 112.1494	µg/mL	Unstressed
	Purity 99%		+/- 114.7730	µg/mL	Stressed

8	Trichlorofluoromethane (CFC-11)		2,010.6	µg/mL	+/-	32.3019	µg/mL	Gravimetric
	CAS # 75-69-4.SEC	(Lot 253600)			+/-	116.6827	µg/mL	Unstressed
	Purity 99%				+/-	119.2330	µg/mL	Stressed
9	1,2-Dichloro-1,1,2-trifluoroethane (CFC-123a)		2,020.4	µg/mL	+/-	21.8150	µg/mL	Gravimetric
	CAS # 354-23-4 *	(Lot Q9B-64)			+/-	114.7647	µg/mL	Unstressed
	Purity 99%				+/-	117.3819	µg/mL	Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

*** Restek is unable to identify a reliable and/or acceptable second source for this material - the same batch of neat material may have been used to produce both the primary and secondary standard. The primary and secondary standards were prepared using different equipment and personnel.**

Tech Tips:
Raw material may contain trace amounts of tert-Butanol.

Column:
60m x 0.25mm x 1.4µm
Rtx-502.2 (cat.#10916)

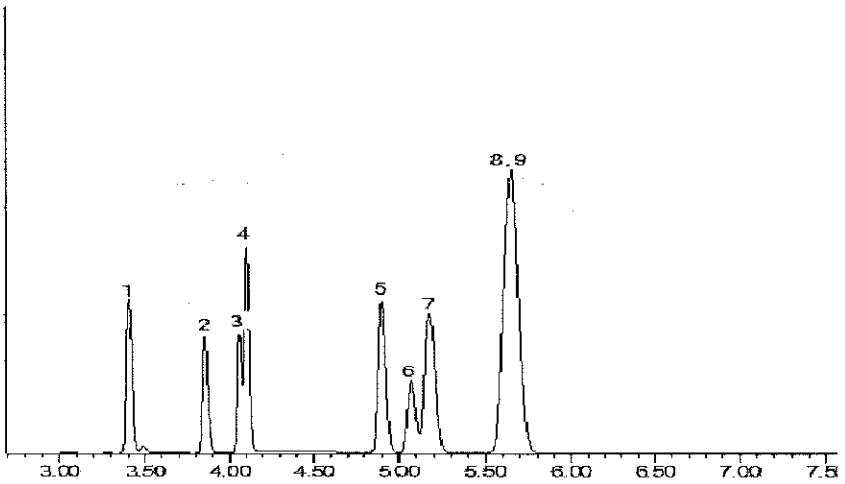
Carrier Gas:
helium-constant flow 2.0 mL/min.

Temp. Program:
40°C (hold 6 min.) to 100°C
@ 6°C/min.

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
MSD



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Lane Kibe - Mix Technician

Date Mixed: 04-May-2021 **Balance:** 1127510105

Alexis Shelow - Operations Tech I

Date Passed: 17-May-2021

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.

Reagent

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Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 577488.SEC **Lot No.:** A0172021

Description : Custom Gases.SEC Standard

Custom Gases.SEC Standard 2,000µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : May 31, 2024 **Storage:** 0°C or colder

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)		
1	Dichlorodifluoromethane (CFC-12)	2,014.7 µg/mL	+/- 21.3347	µg/mL	Gravimetric
	CAS # 75-71-8.SEC (Lot 26871)		+/- 114.3626	µg/mL	Unstressed
	Purity 99%		+/- 116.9742	µg/mL	Stressed
2	Chloromethane (methyl chloride)	2,018.4 µg/mL	+/- 22.6573	µg/mL	Gravimetric
	CAS # 74-87-3.SEC (Lot 18343)		+/- 114.8157	µg/mL	Unstressed
	Purity 99%		+/- 117.4265	µg/mL	Stressed
3	Vinyl chloride	2,011.6 µg/mL	+/- 18.1502	µg/mL	Gravimetric
	CAS # 75-01-4.SEC (Lot MKBK6872V)		+/- 113.6387	µg/mL	Unstressed
	Purity 99%		+/- 116.2584	µg/mL	Stressed
4	1,3-Butadiene	2,020.9 µg/mL	+/- 15.6985	µg/mL	Gravimetric
	CAS # 106-99-0.SEC (Lot 26996)		+/- 113.7849	µg/mL	Unstressed
	Purity 99%		+/- 116.4253	µg/mL	Stressed
5	Bromomethane (methyl bromide)	2,014.3 µg/mL	+/- 52.5641	µg/mL	Gravimetric
	CAS # 74-83-9.SEC (Lot 00017022)		+/- 124.0186	µg/mL	Unstressed
	Purity 99%		+/- 126.4297	µg/mL	Stressed
6	Chloroethane (ethyl chloride)	2,009.7 µg/mL	+/- 28.6335	µg/mL	Gravimetric
	CAS # 75-00-3.SEC (Lot 00004202)		+/- 115.6738	µg/mL	Unstressed
	Purity 99%		+/- 118.2437	µg/mL	Stressed
7	Dichlorofluoromethane (CFC-21)	2,000.0 µg/mL	+/- 11.7371	µg/mL	Gravimetric
	CAS # 75-43-4 * (Lot 10930400)		+/- 112.1494	µg/mL	Unstressed
	Purity 99%		+/- 114.7730	µg/mL	Stressed

8	Trichlorofluoromethane (CFC-11)		2,010.6	µg/mL	+/-	32.3019	µg/mL	Gravimetric
	CAS # 75-69-4.SEC	(Lot 253600)			+/-	116.6827	µg/mL	Unstressed
	Purity 99%				+/-	119.2330	µg/mL	Stressed
9	1,2-Dichloro-1,1,2-trifluoroethane (CFC-123a)		2,020.4	µg/mL	+/-	21.8150	µg/mL	Gravimetric
	CAS # 354-23-4 *	(Lot Q9B-64)			+/-	114.7647	µg/mL	Unstressed
	Purity 99%				+/-	117.3819	µg/mL	Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

*** Restek is unable to identify a reliable and/or acceptable second source for this material - the same batch of neat material may have been used to produce both the primary and secondary standard. The primary and secondary standards were prepared using different equipment and personnel.**

Tech Tips:
Raw material may contain trace amounts of tert-Butanol.

Column:
60m x 0.25mm x 1.4µm
Rtx-502.2 (cat.#10916)

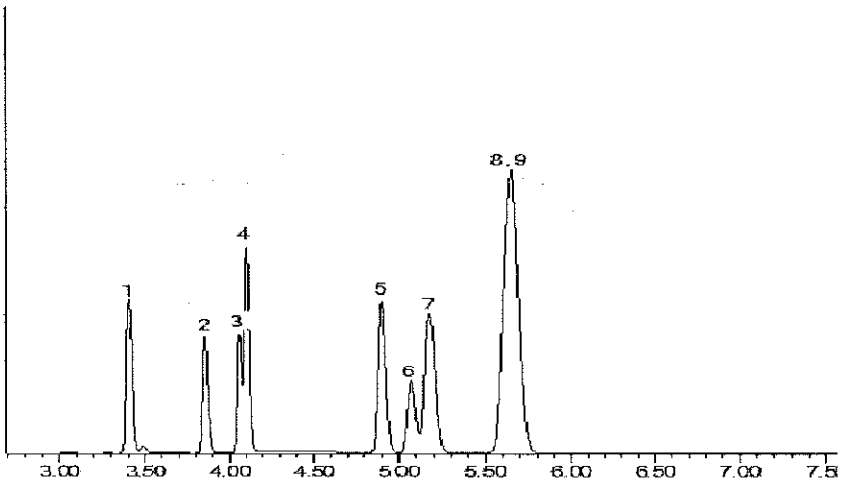
Carrier Gas:
helium-constant flow 2.0 mL/min.

Temp. Program:
40°C (hold 6 min.) to 100°C
@ 6°C/min.

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
MSD



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Lane Kibe - Mix Technician

Date Mixed: 04-May-2021 **Balance:** 1127510105

Alexis Shelow - Operations Tech I

Date Passed: 17-May-2021

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.

Reagent

MSV_V#2B_00228

110 Benner Circle
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Tel: (800)356-1688
Fax: (814)353-1309

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Certificate of Analysis

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 56734 **Lot No.:** A0171518

Description : Custom V # 2B Standard

Custom V #2B Standard 12,500-125,000µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : April 30, 2023 **Storage:** 0°C or colder

Ship: Ambient

Elution Order	Compound	CAS #	Percent Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	2-Propanol (isopropanol)	67-63-0	99%	25,038.0 µg/mL	+/- 146.6030 µg/mL
2	tert-Butanol (TBA)	75-65-0	99%	25,047.0 µg/mL	+/- 146.6557 µg/mL
3	Propionitrile	107-12-0	99%	25,015.0 µg/mL	+/- 146.4683 µg/mL
4	Methacrylonitrile	126-98-7	99%	12,515.0 µg/mL	+/- 73.2781 µg/mL
5	Isobutanol (2-Methyl-1-propanol)	78-83-1	99%	62,529.0 µg/mL	+/- 366.1210 µg/mL
6	1-Butanol	71-36-3	99%	125,072.0 µg/mL	+/- 732.2863 µg/mL
7	1,4-Dioxane	123-91-1	99%	62,509.0 µg/mL	+/- 366.0039 µg/mL
8	trans-1,4-dichloro-2-butene	110-57-6	95%	12,504.9 µg/mL	+/- 73.2186 µg/mL
Solvent:	P&T Methanol	67-56-1	99%		

Specific Reference Material Notes:

This RM (Reference Material) is not a CRM (Certified Reference Material) due to the 1-butanol concentration exceeding the maximum concentration on Restek's ISO Guide 34 scope of accreditation.

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

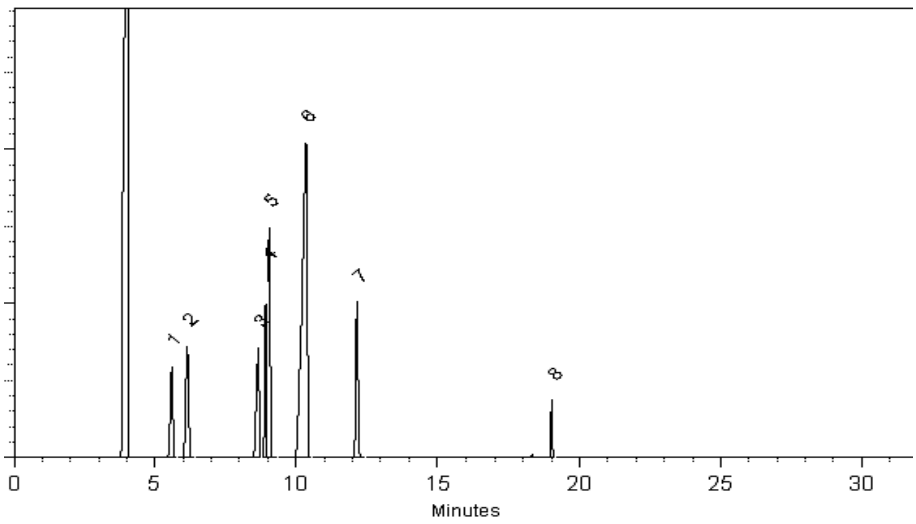
Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Erik Strommer - Operations Tech I

Date Mixed: 20-Apr-2021 **Balance:** B707717271

Marlina Cowan - Operations Tech I

Date Passed: 23-Apr-2021

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the RM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/µECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Uncertainty Value Notes:

- Uncertainties are determined using data from balances and glassware, raw material purity, and, when significant, equipment tolerances or calibration results.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

Reagent

MSV_V_2CLEVE_00012

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Bellefonte, PA 16823-8812
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Fax: (814)353-1309

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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 577492 **Lot No.:** A0171422

Description : Custom 2-CEVE Standard

Custom 2-CEVE Standard 5,000µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : April 30, 2024 **Storage:** 0°C or colder

Ship: Ambient

C E R T I F I E D V A L U E S

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	2-Chloroethyl vinyl ether	5,010.5 µg/mL	+/- 29.3376 µg/mL	Gravimetric
	CAS # 110-75-8 (Lot MKBS6526V)		+/- 107.3316 µg/mL	Unstressed
	Purity 99%		+/- 110.4487 µg/mL	Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Tech Tips:

Degradation of tetrachloroethylene to pentachloroethane may occur if solutions containing 2-chloroethyl vinyl ether are combined with solutions that contain tetrachloroethylene.

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

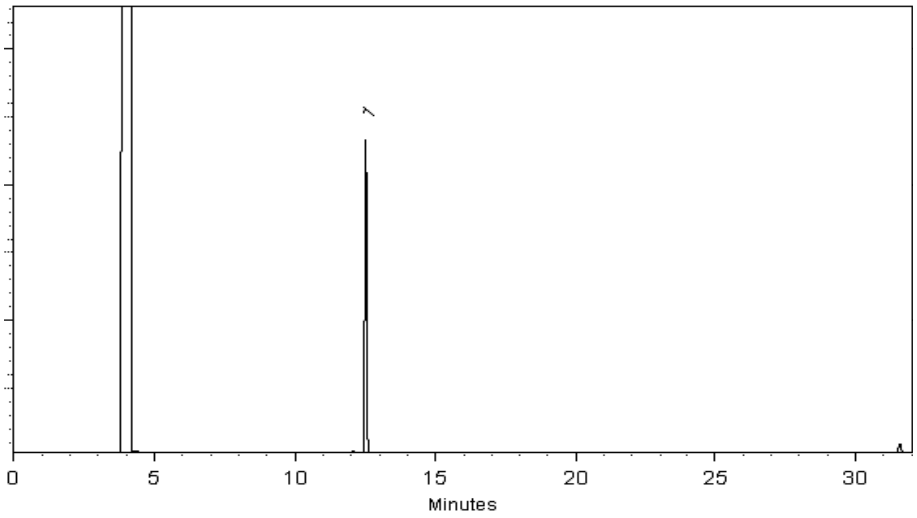
Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Russ Bookhamer - Operations Technician I

Date Mixed: 16-Apr-2021 **Balance:** 1128360905

Marlina Cowan - Operations Tech I

Date Passed: 26-Apr-2021

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.

Reagent

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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

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ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 577492 **Lot No.:** A0171422

Description : Custom 2-CEVE Standard

Custom 2-CEVE Standard 5,000µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : April 30, 2024 **Storage:** 0°C or colder

Ship: Ambient

C E R T I F I E D V A L U E S

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	2-Chloroethyl vinyl ether	5,010.5 µg/mL	+/- 29.3376 µg/mL	Gravimetric
	CAS # 110-75-8 (Lot MKBS6526V)		+/- 107.3316 µg/mL	Unstressed
	Purity 99%		+/- 110.4487 µg/mL	Stressed

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Tech Tips:

Degradation of tetrachloroethylene to pentachloroethane may occur if solutions containing 2-chloroethyl vinyl ether are combined with solutions that contain tetrachloroethylene.

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

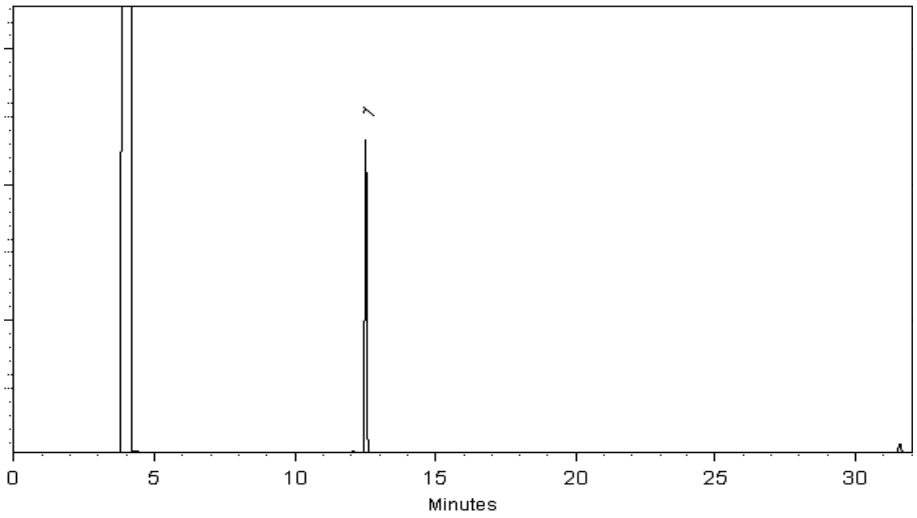
Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Russ Bookhamer - Operations Technician I

Date Mixed: 16-Apr-2021 **Balance:** 1128360905

Marlina Cowan - Operations Tech I

Date Passed: 26-Apr-2021

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.

Reagent

MSV_V_Ketones_00012

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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

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Reference Material Producer
Certificate #3222.01

ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 569721 **Lot No.:** A0168313

Description : 8260 List 1/ Std #2 Ketones (2015)

8260 List 1/ Std #2 Ketones (2015) 12,500µg/mL, P&T Methanol/Water (90:10), 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : January 31, 2024 **Storage:** 0°C or colder

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	Acetone	12,516.4 µg/mL	+/- 73.2863 µg/mL	Gravimetric
	CAS # 67-64-1 (Lot SHBM6699)		+/- 755.2197 µg/mL	Unstressed
	Purity 99%		+/- 757.0124 µg/mL	Stressed
2	2-Butanone (MEK)	12,515.2 µg/mL	+/- 73.2792 µg/mL	Gravimetric
	CAS # 78-93-3 (Lot SHBL6194)		+/- 755.1473 µg/mL	Unstressed
	Purity 99%		+/- 756.9399 µg/mL	Stressed
3	4-Methyl-2-pentanone (MIBK)	12,512.0 µg/mL	+/- 73.2605 µg/mL	Gravimetric
	CAS # 108-10-1 (Lot SHBM2797)		+/- 754.9542 µg/mL	Unstressed
	Purity 99%		+/- 756.7463 µg/mL	Stressed
4	2-Hexanone	12,504.4 µg/mL	+/- 73.2160 µg/mL	Gravimetric
	CAS # 591-78-6 (Lot MKCL1599)		+/- 754.4956 µg/mL	Unstressed
	Purity 99%		+/- 756.2867 µg/mL	Stressed

Solvent: P&T Methanol/Water (90:10)
CAS # 67-56-1/7732-18-5
Purity 99%

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

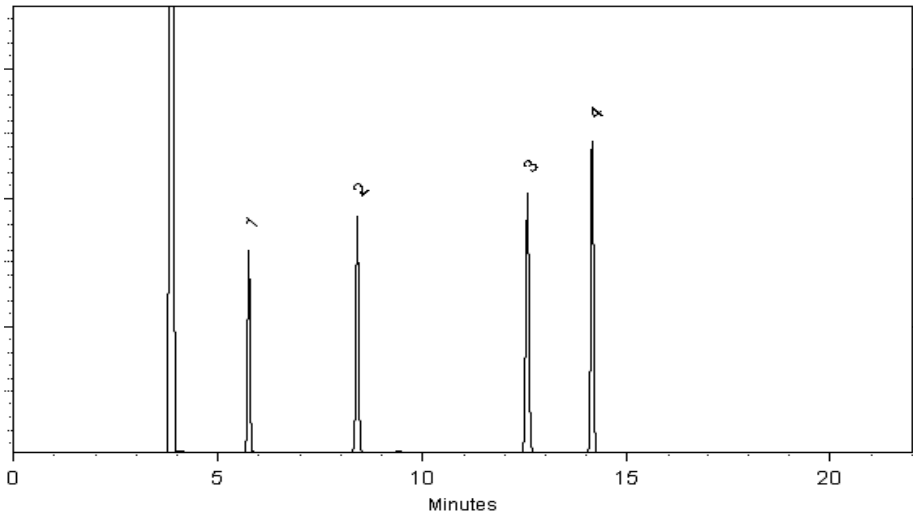
Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cathleen Soltis - Mix Technician

Date Mixed: 20-Jan-2021 **Balance:** B251644995

Alexis Shelow - Operations Tech I

Date Passed: 21-Jan-2021

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.

Reagent

MSV_V_Ketones_00030

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Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 569721 **Lot No.:** A0168313

Description : 8260 List 1/ Std #2 Ketones (2015)

8260 List 1/ Std #2 Ketones (2015) 12,500µg/mL, P&T Methanol/Water (90:10), 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : January 31, 2024 **Storage:** 0°C or colder

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)	
1	Acetone	12,516.4 µg/mL	+/- 73.2863 µg/mL	Gravimetric
	CAS # 67-64-1 (Lot SHBM6699)		+/- 755.2197 µg/mL	Unstressed
	Purity 99%		+/- 757.0124 µg/mL	Stressed
2	2-Butanone (MEK)	12,515.2 µg/mL	+/- 73.2792 µg/mL	Gravimetric
	CAS # 78-93-3 (Lot SHBL6194)		+/- 755.1473 µg/mL	Unstressed
	Purity 99%		+/- 756.9399 µg/mL	Stressed
3	4-Methyl-2-pentanone (MIBK)	12,512.0 µg/mL	+/- 73.2605 µg/mL	Gravimetric
	CAS # 108-10-1 (Lot SHBM2797)		+/- 754.9542 µg/mL	Unstressed
	Purity 99%		+/- 756.7463 µg/mL	Stressed
4	2-Hexanone	12,504.4 µg/mL	+/- 73.2160 µg/mL	Gravimetric
	CAS # 591-78-6 (Lot MKCL1599)		+/- 754.4956 µg/mL	Unstressed
	Purity 99%		+/- 756.2867 µg/mL	Stressed

Solvent: P&T Methanol/Water (90:10)
CAS # 67-56-1/7732-18-5
Purity 99%

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

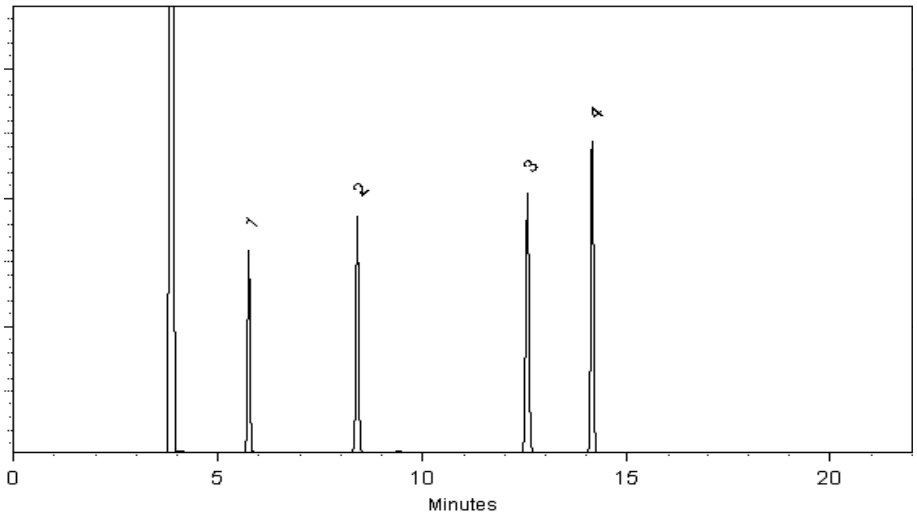
Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Cathleen Soltis - Mix Technician

Date Mixed: 20-Jan-2021 **Balance:** B251644995

Alexis Shelow - Operations Tech I

Date Passed: 21-Jan-2021

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value (includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k\sqrt{U^2_{gravimetric} + U^2_{homogeneity} + U^2_{storage\ stability} + U^2_{shipping\ stability}}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at www.restek.com/Contact-Us for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

Label Conditions	Standard Conditions	Non-Standard Conditions
25°C Nominal (Room Temperature)	< 60°C	≥ 60°C up to 7 days
10°C or colder (Refrigerate)	< 40°C	≥ 40°C up to 7 days
0°C or colder (Freezer) -20°C or colder (Deep Freezer)	< 25°C	≥ 25°C up to 7 days

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at www.restek.com/Contact-Us.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.

Reagent

MT_HCl_JT_00005

Hydrochloric Acid, 36.5-38.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis

Material No.: 9530-33
Batch No.: 0000243992
Manufactured Date: 2019/09/17
Retest Date: 2024/09/15
Revision No: 1

Certificate of Analysis

Test	Specification	Result
ACS - Assay (as HCl) (by acid-base titrn)	36.5 - 38.0 %	37.7
ACS - Color (APHA)	<= 10	5
ACS - Residue after Ignition	<= 3 ppm	< 1
ACS - Specific Gravity at 60°/60°F	1.185 - 1.192	1.191
ACS - Bromide (Br)	<= 0.005 %	< 0.005
ACS - Extractable Organic Substances	<= 5 ppm	< 1
ACS - Free Chlorine (as Cl_2)	<= 0.5 ppm	< 0.5
Phosphate (PO_4)	<= 0.05 ppm	< 0.03
Sulfate (SO_4)	<= 0.5 ppm	< 0.3
Sulfite (SO_3)	<= 0.8 ppm	0.3
Ammonium (NH_4)	<= 3 ppm	< 1
Trace Impurities - Arsenic (As)	<= 0.010 ppm	< 0.003
Trace Impurities - Aluminum (Al)	<= 10.0 ppb	< 5.0
Arsenic and Antimony (as As)	<= 5 ppb	< 3
Trace Impurities - Barium (Ba)	<= 1.0 ppb	< 0.2
Trace Impurities - Beryllium (Be)	<= 1.0 ppb	< 0.2
Trace Impurities - Bismuth (Bi)	<= 10.0 ppb	< 1.0
Trace Impurities - Boron (B)	<= 20.0 ppb	< 5.0
Trace Impurities - Cadmium (Cd)	<= 1.0 ppb	0.3
Trace Impurities - Calcium (Ca)	<= 50.0 ppb	8.3
Trace Impurities - Chromium (Cr)	<= 1.0 ppb	0.4
Trace Impurities - Cobalt (Co)	<= 1.0 ppb	< 0.3
Trace Impurities - Copper (Cu)	<= 1.0 ppb	< 0.1
Trace Impurities - Gallium (Ga)	<= 1.0 ppb	< 0.2

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials, LLC
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700

Test	Specification	Result
Trace Impurities - Germanium (Ge)	<= 3.0 ppb	< 2.0
Trace Impurities - Gold (Au)	<= 4.0 ppb	< 0.2
Heavy Metals (as Pb)	<= 100 ppb	< 50
Trace Impurities - Iron (Fe)	<= 15.0 ppb	4.0
Trace Impurities - Lead (Pb)	<= 1.0 ppb	< 0.5
Trace Impurities - Lithium (Li)	<= 1.0 ppb	< 0.2
Trace Impurities - Magnesium (Mg)	<= 10.0 ppb	0.4
Trace Impurities - Manganese (Mn)	<= 1.0 ppb	< 0.4
Trace Impurities - Mercury (Hg)	<= 0.5 ppb	0.1
Trace Impurities - Molybdenum (Mo)	<= 10.0 ppb	< 5.0
Trace Impurities - Nickel (Ni)	<= 4.0 ppb	< 0.3
Trace Impurities - Niobium (Nb)	<= 1.0 ppb	< 0.2
Trace Impurities - Potassium (K)	<= 9.0 ppb	< 2.0
Trace Impurities - Selenium (Se), For Information Only	ppb	1.1
Trace Impurities - Silicon (Si)	<= 100.0 ppb	< 10.0
Trace Impurities - Silver (Ag)	<= 1.0 ppb	< 0.3
Trace Impurities - Sodium (Na)	<= 100.0 ppb	< 5.0
Trace Impurities - Strontium (Sr)	<= 1.0 ppb	< 0.2
Trace Impurities - Tantalum (Ta)	<= 1.0 ppb	< 0.9
Trace Impurities - Thallium (Tl)	<= 5.0 ppb	< 2.0
Trace Impurities - Tin (Sn)	<= 5.0 ppb	< 0.8
Trace Impurities - Titanium (Ti)	<= 1.0 ppb	< 0.2
Trace Impurities - Vanadium (V)	<= 1.0 ppb	< 0.2
Trace Impurities - Zinc (Zn)	<= 5.0 ppb	0.3
Trace Impurities - Zirconium (Zr)	<= 1.0 ppb	< 0.1

For Laboratory, Research or Manufacturing Use
Product Information (not specifications):
Appearance (clear, fuming liquid)
Meets ACS Specifications

Country of Origin: US
Packaging Site: Phillipsburg Mfg Ctr & DC

James Ethier
Jamie Ethier
Vice President Global Quality

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Receipt Date in TALs Based off of Product Manufacture Date

Expiration Date in TALs Based off of Manufacture Suggested Retest Date

For Receipt, Open, and Expiration date; refer to individual bottle.

ELLE QA

ELLE Dept. 4022 Management

Reagent

MT_HNO3_JT_00006

Nitric Acid, 69.0-70.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis

Material No.: 9598-34
Batch No.: 0000255830
Manufactured Date: 2020/02/11
Retest Date: 2025/02/09
Revision No: 1

Certificate of Analysis

Test	Specification	Result
ACS - Assay (HNO_3)	69.0 - 70.0 %	69.7
Appearance	Passes Test	PT
ACS - Color (APHA)	<= 10	5
ACS - Residue after Ignition	<= 2 ppm	< 1
Chloride (Cl)	<= 0.04 ppm	< 0.03
Phosphate (PO_4)	<= 0.1 ppm	<0.01
Sulfate (SO_4)	<= 0.4 ppm	< 0.2
Trace Impurities - Aluminum (Al)	<= 30.0 ppb	< 0.2
Arsenic and Antimony (as As)	<= 5 ppb	< 2
Trace Impurities - Barium (Ba)	<= 1.0 ppb	< 0.2
Trace Impurities - Beryllium (Be)	<= 1.0 ppb	< 0.2
Trace Impurities - Bismuth (Bi)	<= 1.0 ppb	< 1.0
Trace Impurities - Boron (B)	<= 4.0 ppb	0.7
Trace Impurities - Cadmium (Cd)	<= 1.0 ppb	< 0.3
Trace Impurities - Calcium (Ca)	<= 50.0 ppb	4.0
Trace Impurities - Chromium (Cr)	<= 10.0 ppb	2.0
Trace Impurities - Cobalt (Co)	<= 1.0 ppb	< 0.3
Trace Impurities - Copper (Cu)	<= 1.0 ppb	< 0.1
Trace Impurities - Gallium (Ga)	<= 20.0 ppb	< 0.2
Trace Impurities - Germanium (Ge)	<= 4.0 ppb	< 2.0
Trace Impurities - Gold (Au)	<= 4.0 ppb	0.3
Heavy Metals (as Pb)	<= 100 ppb	< 50
Trace Impurities - Iron (Fe)	<= 10.0 ppb	2.0
Trace Impurities - Lead (Pb)	<= 0.5 ppb	< 0.5

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Avantor Performance Materials, LLC
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700

Material No.: 9598-34
Batch No.: 0000255830

Test	Specification	Result
Trace Impurities - Lithium (Li)	<= 1.0 ppb	< 0.2
Trace Impurities - Magnesium (Mg)	<= 7.0 ppb	< 1.0
Trace Impurities - Manganese (Mn)	<= 1.0 ppb	< 0.4
Trace Impurities - Mercury (Hg)	<= 0.5 ppb	< 0.1
Trace Impurities - Molybdenum (Mo)	<= 5.0 ppb	< 3.0
Trace Impurities - Nickel (Ni)	<= 1.0 ppb	< 0.3
Trace Impurities - Niobium (Nb)	<= 1.0 ppb	< 0.2
Trace Impurities - Potassium (K)	<= 5.0 ppb	< 2.0
Trace Impurities - Silicon (Si)	<= 20.0 ppb	0.8
Trace Impurities - Silver (Ag)	<= 1.0 ppb	< 0.3
Trace Impurities - Sodium (Na)	<= 200.0 ppb	0.5
Trace Impurities - Strontium (Sr)	<= 1.0 ppb	< 0.2
Trace Impurities - Tantalum (Ta)	<= 2.0 ppb	< 0.9
Trace Impurities - Thallium (Tl)	<= 5.0 ppb	< 2.0
Trace Impurities - Tin (Sn)	<= 5.0 ppb	< 0.8
Trace Impurities - Vanadium (V)	<= 1.0 ppb	< 0.2
Trace Impurities - Zinc (Zn)	<= 5.0 ppb	0.3
Trace Impurities - Zirconium (Zr)	<= 1.0 ppb	< 0.1

For Laboratory, Research or Manufacturing Use
Meets ACS Specifications

Country of Origin: US
Packaging Site: Phillipsburg Mfg Ctr & DC

Receipt Date in TALs Based off of Product Manufacture Date

Expiration Date in TALs Based off of Manufacture Suggested Retest Date

For Receipt, Open, and Expiration date; refer to individual bottle.

ELLE QA

ELLE Dept. 4022 Management

Reagent

MT_HNO3_JT_00009

Receipt Date in TALs Based off of Product Manufacture Date

Expiration Date in TALs Based off of Manufacture Suggested Retest Date

For Receipt, Open, and Expiration date; refer to individual bottle.

ELLE QA

ELLE Dept. 4022 Management

Nitric Acid, 69.0-70.0%
BAKER INSTRA-ANALYZED® Reagent
For Trace Metal Analysis

Material No.: 9598-34
Batch No.: 0000277202
Manufactured Date: 2021/01/15
Retest Date: 2026/01/14
Revision No: 1

Certificate of Analysis

Test	Specification	Result
ACS - Assay (HNO_3)	69.0 - 70.0 %	69.3
Appearance	Passes Test	PT
ACS - Color (APHA)	<= 10	5
ACS - Residue after Ignition	<= 2 ppm	1
Chloride (Cl)	<= 0.04 ppm	< 0.03
Phosphate (PO_4)	<= 0.1 ppm	<0.01
Sulfate (SO_4)	<= 0.4 ppm	< 0.2
Trace Impurities - Aluminum (Al)	<= 30.0 ppb	< 0.2
Arsenic and Antimony (as As)	<= 5 ppb	< 2
Trace Impurities - Barium (Ba)	<= 1.0 ppb	< 0.3
Trace Impurities - Beryllium (Be)	<= 1.0 ppb	< 0.2
Trace Impurities - Bismuth (Bi)	<= 1.0 ppb	< 1.0
Trace Impurities - Boron (B)	<= 4.0 ppb	1.1
Trace Impurities - Cadmium (Cd)	<= 1.0 ppb	< 0.3
Trace Impurities - Calcium (Ca)	<= 50.0 ppb	< 0.2
Trace Impurities - Chromium (Cr)	<= 10.0 ppb	1.6
Trace Impurities - Cobalt (Co)	<= 1.0 ppb	< 0.3
Trace Impurities - Copper (Cu)	<= 1.0 ppb	< 0.1
Trace Impurities - Gallium (Ga)	<= 20.0 ppb	< 0.2
Trace Impurities - Germanium (Ge)	<= 4.0 ppb	< 2.0
Trace Impurities - Gold (Au)	<= 4.0 ppb	< 0.2
Heavy Metals (as Pb)	<= 100 ppb	< 50
Trace Impurities - Iron (Fe)	<= 10.0 ppb	< 0.4
Trace Impurities - Lead (Pb)	<= 0.5 ppb	< 0.5

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Avantor Performance Materials, LLC
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700

Material No.: 9598-34
Batch No.: 0000277202

Test	Specification	Result
Trace Impurities - Lithium (Li)	<= 1.0 ppb	< 0.2
Trace Impurities - Magnesium (Mg)	<= 7.0 ppb	< 0.2
Trace Impurities - Manganese (Mn)	<= 1.0 ppb	< 0.4
Trace Impurities - Mercury (Hg)	<= 0.5 ppb	0.5
Trace Impurities - Molybdenum (Mo)	<= 5.0 ppb	< 3.0
Trace Impurities - Nickel (Ni)	<= 1.0 ppb	< 0.3
Trace Impurities - Niobium (Nb)	<= 1.0 ppb	< 0.2
Trace Impurities - Potassium (K)	<= 5.0 ppb	< 2.0
Trace Impurities - Silicon (Si)	<= 20.0 ppb	< 0.4
Trace Impurities - Silver (Ag)	<= 1.0 ppb	< 0.3
Trace Impurities - Sodium (Na)	<= 200.0 ppb	< 0.5
Trace Impurities - Strontium (Sr)	<= 1.0 ppb	< 0.2
Trace Impurities - Tantalum (Ta)	<= 2.0 ppb	< 0.9
Trace Impurities - Thallium (Tl)	<= 5.0 ppb	< 2.0
Trace Impurities - Tin (Sn)	<= 5.0 ppb	< 0.8
Trace Impurities - Vanadium (V)	<= 1.0 ppb	< 0.2
Trace Impurities - Zinc (Zn)	<= 5.0 ppb	< 0.3
Trace Impurities - Zirconium (Zr)	<= 1.0 ppb	< 0.1

For Laboratory, Research or Manufacturing Use
Meets ACS Specifications

Country of Origin: US
Packaging Site: Phillipsburg Mfg Ctr & DC

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Avantor Performance Materials, LLC
100 Matsonford Rd, Suite 200, Radnor, PA 19087. U.S.A. Phone: 610.386.1700

Reagent

MT_LCS-SPK-A_00001

INORGANIC VENTURES
Refine your results. Redefine your industry.

Certificate of Analysis

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

P: 800-669-6799/540-585-3030
F: 540-585-3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	35-TSPEURO-35A
Lot Number:	S2-MEB704929
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	1 250 µg/mL ea:

Aluminum, Calcium,
Iron, Potassium,
Magnesium, Sodium,
Sulfur,

125 µg/mL ea:

Thorium, Vanadium,
Zinc, Nickel,
Phosphorus, Manganese,
Lithium, Cobalt,
Chromium, Copper,
Arsenic, Boron,
Barium,

25 µg/mL ea:

Thallium, Selenium,

12.5 µg/mL ea:

Strontium, Uranium,
Silver, Beryllium,
Cadmium, Lead

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	1 250 ± 5 µg/mL	Arsenic, As	125.0 ± 0.8 µg/mL
Barium, Ba	125.0 ± 0.5 µg/mL	Beryllium, Be	12.51 ± 0.07 µg/mL
Boron, B	125.0 ± 0.9 µg/mL	Cadmium, Cd	12.50 ± 0.06 µg/mL
Calcium, Ca	1 250 ± 5 µg/mL	Chromium, Cr	125.0 ± 0.6 µg/mL
Cobalt, Co	125.0 ± 0.6 µg/mL	Copper, Cu	125.0 ± 0.5 µg/mL
Iron, Fe	1 250 ± 5 µg/mL	Lead, Pb	12.50 ± 0.05 µg/mL
Lithium, Li	125.0 ± 0.5 µg/mL	Magnesium, Mg	1 250 ± 5 µg/mL
Manganese, Mn	125.0 ± 0.5 µg/mL	Nickel, Ni	125.0 ± 0.5 µg/mL
Phosphorus, P	125.0 ± 0.6 µg/mL	Potassium, K	1 250 ± 5 µg/mL
Selenium, Se	25.02 ± 0.17 µg/mL	Silver, Ag	12.50 ± 0.05 µg/mL
Sodium, Na	1 250 ± 5 µg/mL	Strontium, Sr	12.50 ± 0.07 µg/mL
Sulfur, S	1 250 ± 6 µg/mL	Thallium, Tl	24.98 ± 0.15 µg/mL
Thorium, Th	125.0 ± 0.6 µg/mL	Uranium, U	12.50 ± 0.06 µg/mL
Vanadium, V	125.0 ± 0.5 µg/mL	Zinc, Zn	125.0 ± 0.5 µg/mL

Density: 1.062 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	160729
Ag	Volhard	999c	999c
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
As	ICP Assay	3103a	100818
B	ICP Assay	3107	110830
Ba	ICP Assay	3104a	140909
Ba	Calculated		See Sec. 4.2
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Be	Calculated		See Sec. 4.2
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Cd	ICP Assay	3108	130116
Cd	EDTA	928	928
Cd	Calculated		See Sec. 4.2
Co	ICP Assay	3113	190630
Co	EDTA	928	928
Co	Calculated		See Sec. 4.2
Cr	ICP Assay	3112a	170630
Cr	Calculated		See Sec. 4.2
Cu	ICP Assay	3114	121207
Cu	EDTA	928	928
Cu	Calculated		See Sec. 4.2
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Li	ICP Assay	3129a	100714
Li	Calculated		See Sec. 4.2
Li	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Mn	Calculated		See Sec. 4.2
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
Ni	Calculated		See Sec. 4.2
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
P	Calculated		See Sec. 4.2
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Pb	Calculated		See Sec. 4.2
S	Acidimetric	84L	84L
S	ICP Assay	traceable to 3154	M2-S657208

Se	ICP Assay	3149	100901
Se	Calculated		See Sec. 4.2
Sr	EDTA	928	928
Sr	ICP Assay	Traceable to 3153a	K2-SR650985
Sr	Calculated		See Sec. 4.2
Tl	ICP Assay	3158	151215
Tl	Calculated		See Sec. 4.2
U	ICP Assay	3164	080521
U	Calculated		See Sec. 4.2
V	ICP Assay	3165	160906
V	EDTA	928	928
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928
Zn	Calculated		See Sec. 4.2

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Certified Abundance:

IV's Certified Abundance

Isotope	Atom %
Uranium 238U	99.8 ± 0.1
Uranium 235U	0.24 ± 0.05

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Low Silver Note: This solution contains “LOW” levels of Silver. Please store this entire bottle inside a sealed glass jar.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

May 05, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **May 05, 2025**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

Reagent

MT_LCS-SPK-A_00006

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Refine your results. Redefine your industry.

Certificate of Analysis

300 Technology Drive
Christiansburg, VA 24073 USA
inorganicventures.com

P: 800-669-6799/540-585-3030
F: 540-585-3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	35-TSPEURO-35A
Lot Number:	S2-MEB706054
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	1 250 µg/mL ea:

Aluminum, Calcium,
Iron, Potassium,
Magnesium, Sodium,
Sulfur,

125 µg/mL ea:

Thorium, Vanadium,
Zinc, Nickel,
Phosphorus, Manganese,
Lithium, Cobalt,
Chromium, Copper,
Arsenic, Boron,
Barium,

25 µg/mL ea:

Thallium, Selenium,

12.5 µg/mL ea:

Strontium, Uranium,
Silver, Beryllium,
Cadmium, Lead

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	1 250 ± 5 µg/mL	Arsenic, As	124.9 ± 1.1 µg/mL
Barium, Ba	125.0 ± 0.5 µg/mL	Beryllium, Be	12.48 ± 0.08 µg/mL
Boron, B	125.0 ± 0.8 µg/mL	Cadmium, Cd	12.49 ± 0.05 µg/mL
Calcium, Ca	1 250 ± 5 µg/mL	Chromium, Cr	124.9 ± 0.9 µg/mL
Cobalt, Co	124.9 ± 0.6 µg/mL	Copper, Cu	124.9 ± 0.5 µg/mL
Iron, Fe	1 250 ± 5 µg/mL	Lead, Pb	12.50 ± 0.05 µg/mL
Lithium, Li	125.0 ± 0.5 µg/mL	Magnesium, Mg	1 250 ± 5 µg/mL
Manganese, Mn	125.1 ± 0.5 µg/mL	Nickel, Ni	124.9 ± 0.6 µg/mL
Phosphorus, P	125.0 ± 0.7 µg/mL	Potassium, K	1 250 ± 5 µg/mL
Selenium, Se	25.00 ± 0.20 µg/mL	Silver, Ag	12.47 ± 0.05 µg/mL
Sodium, Na	1 250 ± 5 µg/mL	Strontium, Sr	12.51 ± 0.05 µg/mL
Sulfur, S	1 250 ± 6 µg/mL	Thallium, Tl	24.99 ± 0.18 µg/mL
Thorium, Th	124.9 ± 0.6 µg/mL	Uranium, U	12.51 ± 0.06 µg/mL
Vanadium, V	125.0 ± 0.5 µg/mL	Zinc, Zn	125.0 ± 0.5 µg/mL

Density: 1.060 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	160729
Ag	Volhard	999c	999c
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
As	ICP Assay	3103a	100818
B	ICP Assay	3107	110830
Ba	ICP Assay	3104a	140909
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Cd	ICP Assay	3108	130116
Cd	EDTA	928	928
Cd	Calculated		See Sec. 4.2
Co	ICP Assay	3113	190630
Co	EDTA	928	928
Cr	ICP Assay	3112a	170630
Cu	ICP Assay	3114	121207
Cu	EDTA	928	928
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Li	ICP Assay	3129a	100714
Li	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Pb	Calculated		See Sec. 4.2
S	Acidimetric	84L	84L
S	ICP Assay	traceable to 3154	M2-S657208
Se	ICP Assay	3149	100901
Sr	EDTA	928	928
Sr	ICP Assay	Traceable to 3153a	K2-SR650985
Sr	Calculated		See Sec. 4.2
Th	EDTA	928	928
Tl	ICP Assay	3158	151215
U	ICP Assay	3164	080521
U	Calculated		See Sec. 4.2
V	ICP Assay	3165	160906
V	EDTA	928	928
Zn	ICP Assay	3168a	120629

Zn	EDTA	928	928

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\ (u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Certified Abundance:

IV's Certified Abundance

Isotope	Atom %
Uranium 238U	99.8 ± 0.1
Uranium 235U	0.24 ± 0.05

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Low Silver Note: This solution contains “LOW” levels of Silver. Please store this entire bottle inside a sealed glass jar.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 09, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **June 09, 2025**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

Reagent

MT_LCS-SPK-A_00007

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Certificate of Analysis

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F: 540-585-3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	35-TSPEURO-35A
Lot Number:	S2-MEB706054
Matrix:	5% (v/v) HNO3
Value / Analyte(s):	1 250 µg/mL ea:

Aluminum, Calcium,
Iron, Potassium,
Magnesium, Sodium,
Sulfur,

125 µg/mL ea:

Thorium, Vanadium,
Zinc, Nickel,
Phosphorus, Manganese,
Lithium, Cobalt,
Chromium, Copper,
Arsenic, Boron,
Barium,

25 µg/mL ea:

Thallium, Selenium,

12.5 µg/mL ea:

Strontium, Uranium,
Silver, Beryllium,
Cadmium, Lead

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	1 250 ± 5 µg/mL	Arsenic, As	124.9 ± 1.1 µg/mL
Barium, Ba	125.0 ± 0.5 µg/mL	Beryllium, Be	12.48 ± 0.08 µg/mL
Boron, B	125.0 ± 0.8 µg/mL	Cadmium, Cd	12.49 ± 0.05 µg/mL
Calcium, Ca	1 250 ± 5 µg/mL	Chromium, Cr	124.9 ± 0.9 µg/mL
Cobalt, Co	124.9 ± 0.6 µg/mL	Copper, Cu	124.9 ± 0.5 µg/mL
Iron, Fe	1 250 ± 5 µg/mL	Lead, Pb	12.50 ± 0.05 µg/mL
Lithium, Li	125.0 ± 0.5 µg/mL	Magnesium, Mg	1 250 ± 5 µg/mL
Manganese, Mn	125.1 ± 0.5 µg/mL	Nickel, Ni	124.9 ± 0.6 µg/mL
Phosphorus, P	125.0 ± 0.7 µg/mL	Potassium, K	1 250 ± 5 µg/mL
Selenium, Se	25.00 ± 0.20 µg/mL	Silver, Ag	12.47 ± 0.05 µg/mL
Sodium, Na	1 250 ± 5 µg/mL	Strontium, Sr	12.51 ± 0.05 µg/mL
Sulfur, S	1 250 ± 6 µg/mL	Thallium, Tl	24.99 ± 0.18 µg/mL
Thorium, Th	124.9 ± 0.6 µg/mL	Uranium, U	12.51 ± 0.06 µg/mL
Vanadium, V	125.0 ± 0.5 µg/mL	Zinc, Zn	125.0 ± 0.5 µg/mL

Density: 1.060 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	160729
Ag	Volhard	999c	999c
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
As	ICP Assay	3103a	100818
B	ICP Assay	3107	110830
Ba	ICP Assay	3104a	140909
Ba	Gravimetric		See Sec. 4.2
Be	ICP Assay	3105a	090514
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Cd	ICP Assay	3108	130116
Cd	EDTA	928	928
Cd	Calculated		See Sec. 4.2
Co	ICP Assay	3113	190630
Co	EDTA	928	928
Cr	ICP Assay	3112a	170630
Cu	ICP Assay	3114	121207
Cu	EDTA	928	928
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Li	ICP Assay	3129a	100714
Li	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
Pb	ICP Assay	3128	101026
Pb	EDTA	928	928
Pb	Calculated		See Sec. 4.2
S	Acidimetric	84L	84L
S	ICP Assay	traceable to 3154	M2-S657208
Se	ICP Assay	3149	100901
Sr	EDTA	928	928
Sr	ICP Assay	Traceable to 3153a	K2-SR650985
Sr	Calculated		See Sec. 4.2
Th	EDTA	928	928
Tl	ICP Assay	3158	151215
U	ICP Assay	3164	080521
U	Calculated		See Sec. 4.2
V	ICP Assay	3165	160906
V	EDTA	928	928
Zn	ICP Assay	3168a	120629

Zn	EDTA	928	928

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\ (u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Certified Abundance:

IV's Certified Abundance

Isotope	Atom %
Uranium 238U	99.8 ± 0.1
Uranium 235U	0.24 ± 0.05

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Low Silver Note: This solution contains “LOW” levels of Silver. Please store this entire bottle inside a sealed glass jar.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 09, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **June 09, 2025**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

Reagent

MT_LCS-SPK-B_00002

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Certificate of Analysis

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1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	35-TSPEURO-35B
Lot Number:	S2-MEB704930
Matrix:	5% (v/v) HNO3 1.5% (v/v) HF
Value / Analyte(s):	1 250 µg/mL ea: Silicon, 125 µg/mL ea: Titanium, Tungsten, Zirconium, 25 µg/mL ea: Tin, Antimony, 12.5 µg/mL ea: Molybdenum

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Antimony, Sb	**24.99 ± 0.19 µg/mL**	**Molybdenum, Mo**	**12.50 ± 0.08 µg/mL**
Silicon, Si	**1 250 ± 9 µg/mL**	**Tin, Sn**	**25.01 ± 0.19 µg/mL**
Titanium, Ti	**125.0 ± 0.7 µg/mL**	**Tungsten, W**	**125.0 ± 0.8 µg/mL**
Zirconium, Zr	**125.0 ± 0.9 µg/mL**		

Density: 1.032 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Mo	ICP Assay	3134	130418
Mo	Calculated		See Sec. 4.2
Sb	ICP Assay	3102a	140911
Si	ICP Assay	3150	130912
Sn	ICP Assay	3161a	140917
Ti	ICP Assay	3162a	130925
Ti	Calculated		See Sec. 4.2
W	ICP Assay	3163	140606
W	Calculated		See Sec. 4.2

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\,(u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

HF Note: This standard should not be prepared or stored in glass.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

May 05, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **May 05, 2025**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

Reagent

MT_LCS-SPK-B_00003

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ACCREDITED Testing Laboratory Certificate 883.01
ACCREDITED Reference Material Producer Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	35-TSPEURO-35B
Lot Number:	S2-MEB706055
Matrix:	5% (v/v) HNO3 1.5% (v/v) HF
Value / Analyte(s):	1 250 µg/mL ea: Silicon, 125 µg/mL ea: Titanium, Tungsten, Zirconium, 25 µg/mL ea: Tin, Antimony, 12.5 µg/mL ea: Molybdenum

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Antimony, Sb	**25.01 ± 0.19 µg/mL**	**Molybdenum, Mo**	**12.50 ± 0.06 µg/mL**
Silicon, Si	**1 250 ± 9 µg/mL**	**Tin, Sn**	**24.98 ± 0.19 µg/mL**
Titanium, Ti	**125.0 ± 0.8 µg/mL**	**Tungsten, W**	**125.0 ± 0.8 µg/mL**
Zirconium, Zr	**125.0 ± 1.1 µg/mL**		

Density: 1.031 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Mo	ICP Assay	3134	130418
Mo	Calculated		See Sec. 4.2
Sb	ICP Assay	3102a	140911
Si	ICP Assay	3150	130912
Sn	ICP Assay	3161a	140917
Ti	ICP Assay	3162a	130925
W	ICP Assay	3163	140606
Zr	ICP Assay	3169	130920

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2 (u_{char\ i})^2)]^{½}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)(u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{½}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

HF Note: This standard should not be prepared or stored in glass.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

June 09, 2021

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **June 09, 2025**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

Reagent

MT_S_C1001_SC_00004

SCP SCIENCE
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Certificate of Analysis

1.0 DESCRIPTION :

Plasma CAL – Custom Standard

Catalogue Number : **AQ0-140-655** **Custom Std. 1001**

Lot Number : **S210419030**

Matrix: **5.0% HNO3 Trace HF**

Expiration Date (End of month): **May 2022**

2.0 CERTIFIED VALUES AND ASSOCIATED UNCERTAINTY:

Method of Analysis: Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES)

Traceability: Applicable NIST Standard Reference Materials (see list below):

3101a	Al	3109a	Ca	3117a	Eu	3126a	Fe	3134	Mo	3142a	Pr	3151	Ag	3159	Th	3167a	Y
3102a	Sb	3110	Ce	3118a	Gd	3127a	La	3135a	Nd	3143	Re	3152a	Na	3160a	Tm	3168a	Zn
3103a	As	3111a	Cs	3119a	Ga	3128	Pb	3136	Ni	3144	Rh	3153a	Sr	3161a	Sn	3169	Zr
3104a	Ba	3112a	Cr	3120a	Ge	3129a	Li	3137	Nb	3145a	Rb	3154	S	3162a	Ti		
3105a	Be	3113	Co	3121	Au	3130a	Lu	3138	Pd	3147a	Sm	3155	Ta	3163	W		
3106	Bi	3114	Cu	3122	Hf	3131a	Mg	3139a	P	3148a	Sc	3156	Te	3164	U		
3107	B	3115a	Dy	3123a	Ho	3132	Mn	3140	Pt	3149	Se	3157a	Tb	3165	V		
3108	Cd	3116a	Er	3124a	In	3133	Hg	3141a	K	3150	Si	3158	Tl	3166a	Yb		

Certified Concentrations:

Ag	19.81 ± 0.20	µg/ml	Ni*	200.0 ± 2.0	µg/ml
As*	200.0 ± 2.0	µg/ml	Pb*	20.00 ± 0.20	µg/ml
B*	200.0 ± 2.0	µg/ml	Sb*	20.00 ± 0.20	µg/ml
Ba	197.7 ± 2.1	µg/ml	Se*	20.00 ± 0.20	µg/ml
Be*	20.00 ± 0.20	µg/ml	Sn*	20.00 ± 0.20	µg/ml
Cd*	20.00 ± 0.20	µg/ml	Sr	19.61 ± 0.21	µg/ml
Co*	200.0 ± 2.0	µg/ml	Ti*	200.0 ± 2.0	µg/ml
Cr*	200.0 ± 2.0	µg/ml	Tl*	20.00 ± 0.20	µg/ml
Cu	198.4 ± 1.8	µg/ml	V*	200.0 ± 2.0	µg/ml
Mn*	200.0 ± 2.0	µg/ml	Zn*	200.0 ± 2.0	µg/ml
Mo*	20.00 ± 0.20	µg/ml			

ACCREDITED
Reference Material Producer
CERTIFICATE # 2985.02

*Concentration value derived from v/v dilutions of certified, NIST-traceable starting materials

Note: The uncertainty of the certified value has been calculated from applicable uncertainty contributors (u_i) such as the SRM inherited uncertainty, weighing and dilution errors and instrument variability. The combined uncertainty ($u_c = \sqrt{\Sigma u_i^2}$) has been multiplied by a coverage factor (k) of 2 to provide a 95% confidence interval.

3.0 REFERENCE VALUES:

Density: **1.030 g/ml** @ **23.1 °C**

4.0 APPROVAL AND DATE OF CERTIFICATION:

Certification Approval: Yaling Sui, Chemist

Certification Date: **May 04, 2021**

Yaling Sui

Reagent

MT_S_CCV2_SCP_00007

SCP SCIENCE
Providing Innovative Solutions to Analytical Chemists

Certificate of Analysis

1.0 DESCRIPTION :

Plasma CAL – Custom Standard

Catalogue Number : **AQ0-150-005** **CCV-2**

Lot Number : **S210714043**

Matrix: **4.0% HNO3 0.2% HF Tr.Tartaric acid**

Expiration Date (End of month): **August 2022**

2.0 CERTIFIED VALUES AND ASSOCIATED UNCERTAINTY:

Method of Analysis: Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES)

Traceability: Applicable NIST Standard Reference Materials (see list below):

3101a	Al	3109a	Ca	3117a	Eu	3126a	Fe	3134	Mo	3142a	Pr	3151	Ag	3159	Th	3167a	Y
3102a	Sb	3110	Ce	3118a	Gd	3127a	La	3135a	Nd	3143	Re	3152a	Na	3160a	Tm	3168a	Zn
3103a	As	3111a	Cs	3119a	Ga	3128	Pb	3136	Ni	3144	Rh	3153a	Sr	3161a	Sn	3169	Zr
3104a	Ba	3112a	Cr	3120a	Ge	3129a	Li	3137	Nb	3145a	Rb	3154	S	3162a	Ti		
3105a	Be	3113	Co	3121	Au	3130a	Lu	3138	Pd	3147a	Sm	3155	Ta	3163	W		
3106	Bi	3114	Cu	3122	Hf	3131a	Mg	3139a	P	3148a	Sc	3156	Te	3164	U		
3107	B	3115a	Dy	3123a	Ho	3132	Mn	3140	Pt	3149	Se	3157a	Tb	3165	V		
3108	Cd	3116a	Er	3124a	In	3133	Hg	3141a	K	3150	Si	3158	Tl	3166a	Yb		

Certified Concentrations:

Ag	100.6 ± 0.7	µg/ml	Mo	100.4 ± 0.7	µg/ml	Zn	100.5 ± 0.8	µg/ml
As	99.7 ± 0.8	µg/ml	Ni	101.7 ± 0.6	µg/ml	Zr	100.1 ± 0.7	µg/ml
B	98.1 ± 0.8	µg/ml	P	99.9 ± 1.0	µg/ml			
Ba	101.2 ± 0.8	µg/ml	Pb*	100.0 ± 0.6	µg/ml			
Be	99.8 ± 0.6	µg/ml	Sb	100.5 ± 0.6	µg/ml			
Cd	100.5 ± 0.7	µg/ml	Se*	100.0 ± 0.7	µg/ml			
Co	101.0 ± 0.6	µg/ml	Sn	100.6 ± 0.7	µg/ml			
Cr	100.6 ± 0.7	µg/ml	Sr	100.3 ± 0.9	µg/ml			
Cu	100.9 ± 0.9	µg/ml	Ti	100.8 ± 0.7	µg/ml			
Li*	100.0 ± 0.7	µg/ml	Tl	101.4 ± 0.6	µg/ml			
Mn	100.7 ± 0.8	µg/ml	V	100.6 ± 0.8	µg/ml			

ACCREDITED
Reference Material Producer

*Concentration value derived from v/v dilutions of certified, NIST-traceable starting materials

Note: The uncertainty of the certified value has been calculated from applicable uncertainty contributors (u_i) such as the SRM inherited uncertainty, weighing and dilution errors and instrument variability. The combined uncertainty ($uc = v\Sigma u_i^2$) has been multiplied by a coverage factor (k) of 2 to provide a 95% confidence interval.

3.0 REFERENCE VALUES:

Density: **1.024 g/ml** @ **22.6 °C**

4.0 APPROVAL AND DATE OF CERTIFICATION:

Certification Approval: Yaling Sui, Chemist

Certification Date: **July 29, 2021**

Yaling Sui

Reagent

MT_S_ICS2A_HP_00018

7221 Investment Drive • North Charleston, SC 29418
843.767.7900 • info@highpuritystandards.com • www.highpuritystandards.com

Certificate of Analysis

Certified Reference Material

Product Description: ICP-MS- Interference Check Standard 2

Product Number: **ICP-MS-ICS-2-A-100**
Lot Number: **2105704-100**
Matrix: 5% HNO3 / Tr HF
Purity: 99.98%-99.9995%

ISO 17034:2016 (RMP) Accreditation Certificate Number AR-1436

ISO/IEC 17025:2005 Accreditation Certificate Number AT-1529

Certified Values:

Element	(mg/L)	SRM ID	Element	(mg/L)	SRM ID
Al	1000 ± 6	3101a	Mg	1000 ± 6	3131a
C†	2000†	*	Mo	20.0 ± 0.2	3134
Ca	3000 ± 18	3109a	Na	2500 ± 15	3152a
Cl	20000 ± 200	3182	P	1000 ± 15	3139a
Fe	2500 ± 15	3126a	S	1000 ± 15	3154
K	1000 ± 10	3141a	Ti	20.0 ± 0.2	3162a

Certified values are based on gravimetric and volumetric preparation, and verified against NIST SRM 3100 series when available via inductively coupled plasma optical emission spectrometry (ICP-OES) and ion chromatography (IC) using an internal laboratory-developed method. The uncertainty in the certified value is calculated for a 95% confidence interval and coverage factor k is about 2.
* Refer to Traceability Information, Section 4
† Carbon value is for reference only

Uncertified Values:

Trace Metal Impurity Scan: The data reported are based upon a scan of this specific lot via ICP-OES/ICP-MS analysis. The values are reported in µg/L.

Ag	1.1	Cd	<0.5	Mg	M	S	M	V	1.4
Al	M	Cl	M	Mn	22	Sb	1.9	W	2
As	5.1	Co	21	Mo	M	Se	2.3	Zn	16
Ba	5.3	Cr	15	Na	M	Sn	<3		
Be	<0.1	Cu	7.7	Ni	17	Sr	15		
C	M	Fe	M	P	M	Ti	M		
Ca	M	K	M	Pb	3.2	Tl	<0.1		

Packaging and Storage Conditions:

The standard is packaged in a pre-cleaned polyethylene bottle. To maintain the integrity of this product, the solution should be kept tightly capped and stored under normal laboratory conditions.

Expiration Information:

The expiry date is guaranteed to be valid for one year from the shipping date provided and is guaranteed through the month of expiration. For this reason, standards from the same lot may have different expiration dates.

Shipped Date: August 2021

Certificate Issue Date: June 28, 2021

Moven Mutuvari, Ph.D, VP Manufacturing

Reagent

MT_S_ICS2A_IV_00002

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

ACCREDITED
Testing Laboratory
Certificate 883.01

ACCREDITED
Reference Material Producer
Certificate 883.02

2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	6020ICS-9A
Lot Number:	R2-MEB694449
Matrix:	2% (v/v) HNO3
Value / Analyte(s):	21 215 µg/mL ea: Chloride,
	3 000 µg/mL ea: Calcium,
	2 500 µg/mL ea: Iron, Sodium,
	2 000 µg/mL ea: Carbon,
	1 000 µg/mL ea: Aluminum, Phosphorus, Sulfur, Potassium, Magnesium,
	20 µg/mL ea: Molybdenum, Titanium

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Aluminum, Al	996 ± 4 µg/mL	Calcium, Ca	2 988 ± 12 µg/mL
Carbon, C	1 992 ± 4 µg/mL	Chloride, Cl	21 130.0 ± 100.0 µg/mL
Iron, Fe	2 490 ± 10 µg/mL	Magnesium, Mg	996 ± 4 µg/mL
Molybdenum, Mo	19.92 ± 0.09 µg/mL	Phosphorus, P	996 ± 6 µg/mL
Potassium, K	996 ± 4 µg/mL	Sodium, Na	2 490 ± 9 µg/mL
Sulfur, S	996 ± 4 µg/mL	Titanium, Ti	19.92 ± 0.12 µg/mL

Density: 1.051 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Al	ICP Assay	3101a	140903
Al	EDTA	928	928
C	Acidimetric	84L	84L
Ca	ICP Assay	3109a	130213
Ca	EDTA	928	928
Cl	Acidimetric	84L	84L
Fe	ICP Assay	3126a	140812
Fe	EDTA	928	928
K	ICP Assay	3141a	140813
K	Gravimetric		See Sec. 4.2
Mg	ICP Assay	3131a	140110
Mg	EDTA	928	928
Mo	ICP Assay	3134	130418
Mo	Calculated		See Sec. 4.2
Na	ICP Assay	3152a	120715
Na	Gravimetric		See Sec. 4.2
P	ICP Assay	3139a	060717
P	Acidimetric	84L	84L
S	Acidimetric	84L	84L
S	ICP Assay	traceable to 3154	M2-S657208
Ti	ICP Assay	3162a	130925
Ti	Calculated		See Sec. 4.2

The following equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\ (u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

CRM/RMs are tested for trace metallic impurities by Axial ICP-OES and ICP-MS. The result from the most sensitive method for each element, is reported below. Solutions tested by ICP-MS were analyzed in an ULPA-Filtered Clean Room. An ULPA-Filter is 99.9985% efficient for the removal of particles down to 0.3 µm.

M	Ag	<	0.000510	M	Eu	<	0.000110	s	Na	<		M	Se	<	0.005300	M	Zn	0.015000
s	Al	<		s	Fe	<		M	Nb	<	0.000110	n	Si	<		M	Zr	< 0.000830
O	As	<	0.023000	M	Ga		0.024000	M	Nd	<	0.000110	M	Sm	<	0.000110			
M	Au	<	0.000100	M	Gd	<	0.000110	O	Ni		0.005300	M	Sn	<	0.004700			
M	B	<	0.017000	M	Ge	<	0.002300	M	Os	<	0.000100	O	Sr		0.027000			
M	Ba		0.001600	M	Hf	<	0.000110	s	P	<		M	Ta	<	0.000110			
M	Be	<	0.000110	M	Hg	<	0.000300	M	Pb	<	0.000310	M	Tb	<	0.000110			
M	Bi	<	0.000110	M	Ho	<	0.000110	M	Pd	<	0.000100	M	Te	<	0.003500			
s	Ca	<		M	In	<	0.000110	M	Pr	<	0.000110	M	Th	<	0.000110			
O	Cd		0.002400	M	Ir	<	0.000100	M	Pt	<	0.000110	s	Ti	<				
M	Ce	<	0.000110	s	K	<		M	Rb		0.049000	M	Tl	<	0.000110			
M	Co		0.006300	M	La	<	0.000210	M	Re	<	0.000910	M	Tm	<	0.000110			
O	Cr		0.009700	O	Li		0.004000	M	Rh	<	0.000210	M	U	<	0.000110			
M	Cs	<	0.000410	M	Lu	<	0.000110	M	Ru	<	0.000300	M	V	<	0.002000			
M	Cu		0.009700	s	Mg	<		s	S	<		M	W	<	0.005900			
M	Dy	<	0.000110	M	Mn		0.004200	M	Sb		0.009300	M	Y	<	0.000110			
M	Er	<	0.000110	s	Mo	<		M	Sc	<	0.000410	M	Yb	<	0.000110			

M - Checked by ICP-MS O - Checked by ICP-OES i - Spectral Interference
n - Not Checked For s - Solution Standard Element

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

Inorganic Ventures, 300 Technology Drive, Christiansburg, Va. 24073, USA; Telephone: 800.669.6799; 540.585.3030, Fax: 540.585.3012; inorganicventures.com; info@inorganicventures.com

11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

July 02, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **July 02, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

Reagent

MT_S_ICS2B_IV_00001

INORGANIC VENTURES
300 Technology Drive
Christiansburg, VA 24073 · USA
inorganicventures.com

CERTIFICATE OF ANALYSIS

tel: 800.669.6799 · 540.585.3030
fax: 540.585.3012
info@inorganicventures.com

1.0 ACCREDITATION / REGISTRATION

INORGANIC VENTURES is accredited to ISO 17034, "General Requirements for the Competence of Reference Material Producers" and ISO/IEC 17025, "General Requirements for the Competence of Testing and Calibration Laboratories". Inorganic Ventures is also an ISO 9001 registered manufacturer (QSR Certificate Number QSR-1034).

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2.0 PRODUCT DESCRIPTION

Product Code:	Multi Analyte Custom Grade Solution
Catalog Number:	6020ICS-9B
Lot Number:	R2-MEB697446
Matrix:	3% (v/v) HNO3
Value / Analyte(s):	20 µg/mL ea: Cobalt, Chromium, Copper, Manganese, Nickel, Vanadium, 10 µg/mL ea: Zinc, Arsenic, Cadmium, Selenium, 5 µg/mL ea: Silver

3.0 CERTIFIED VALUES AND UNCERTAINTIES

ANALYTE	CERTIFIED VALUE	ANALYTE	CERTIFIED VALUE
Arsenic, As	10.01 ± 0.06 µg/mL	Cadmium, Cd	10.01 ± 0.04 µg/mL
Chromium, Cr	20.02 ± 0.10 µg/mL	Cobalt, Co	20.02 ± 0.09 µg/mL
Copper, Cu	20.02 ± 0.09 µg/mL	Manganese, Mn	20.02 ± 0.09 µg/mL
Nickel, Ni	20.02 ± 0.09 µg/mL	Selenium, Se	10.01 ± 0.07 µg/mL
Silver, Ag	5.004 ± 0.022 µg/mL	Vanadium, V	20.02 ± 0.09 µg/mL
Zinc, Zn	10.01 ± 0.04 µg/mL		

Density: 1.015 g/mL (measured at 20 ± 4 ºC)

Assay Information:

ANALYTE	METHOD	NIST SRM#	SRM LOT#
Ag	ICP Assay	3151	160729
Ag	Volhard	999c	999c
As	ICP Assay	3103a	100818
Cd	ICP Assay	3108	130116
Cd	EDTA	928	928
Co	ICP Assay	3113	190630
Co	EDTA	928	928
Co	Calculated		See Sec. 4.2
Cr	ICP Assay	3112a	170630
Cr	Calculated		See Sec. 4.2
Cu	ICP Assay	3114	121207
Cu	EDTA	928	928
Cu	Calculated		See Sec. 4.2
Mn	ICP Assay	3132	050429
Mn	EDTA	928	928
Mn	Calculated		See Sec. 4.2
Ni	ICP Assay	3136	120619
Ni	EDTA	928	928
Ni	Calculated		See Sec. 4.2
Se	ICP Assay	3149	100901
Se	Calculated		See Sec. 4.2
V	ICP Assay	3165	160906
V	EDTA	928	928
Zn	ICP Assay	3168a	120629
Zn	EDTA	928	928
Zn	Calculated		See Sec. 4.2

The follow ing equations are used in the calculation of the certified value and the uncertainty. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Characterization of CRM/RM by Two or More Methods

Certified Value, $X_{CRM/RM}$, where two or more methods of characterization are used is the weighted mean of the results:

$X_{CRM/RM} = \Sigma(w_i)(X_i)$

X_i = mean of Assay Method i with standard uncertainty $u_{char\ i}$

w_i = the weighting factors for each method calculated using the inverse square of the variance:

$w_i = (1/u_{char\ i})^2 / (\Sigma(1/(u_{char\ i})^2)$

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char} = [\Sigma((w_i)^2\ (u_{char\ i})^2)]^{1/2}$ where $u_{char\ i}$ are the errors from each characterization method

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

Characterization of CRM/RM by One Method

Certified Value, $X_{CRM/RM}$, where one method of characterization is used is the mean of individual results:

$X_{CRM/RM} = (X_a)\ (u_{char\ a})$

X_a = mean of Assay Method A with

$u_{char\ a}$ = the standard uncertainty of characterization Method A

CRM/RM Expanded Uncertainty (±) = $U_{CRM/RM} = k\,(u^2_{char\ a} + u^2_{bb} + u^2_{lts} + u^2_{ts})^{1/2}$

k = coverage factor = 2

$u_{char\ a}$ = the errors from characterization

u_{bb} = bottle to bottle homogeneity standard uncertainty

u_{lts} = long term stability standard uncertainty (storage)

u_{ts} = transport stability standard uncertainty

4.0 TRACEABILITY TO NIST

- This product is traceable to NIST via an unbroken chain of comparisons. The uncertainties for each certified value are reported, taking into account the SRM/RM uncertainty error and the measurement, weighing and volume dilution errors. In rare cases where no NIST SRM/RM are available, the term 'in-house std.' is specified.

4.1 Thermometer Calibration

- All thermometers are NIST traceable through thermometers that are calibrated by an accredited calibration laboratory.

4.2 Balance Calibration

- All analytical balances are calibrated by an accredited calibration laboratory and procedure. The weights used for testing are annually compared to master weights and are traceable to NIST.

4.3 Glassware Calibration

- An in-house procedure is used to calibrate all Class A glassware used in the manufacturing and quality control of CRM/RMs.

5.0 TRACE METALLIC IMPURITIES (TMI) DETERMINED BY ICP-MS AND ICP-OES (µg/mL)

N/A

6.0 INTENDED USE

- For the calibration of analytical instruments and validation of analytical methods as appropriate.

7.0 INSTRUCTIONS FOR THE CORRECT USE OF THIS REFERENCE MATERIAL

7.1 Storage and Handling Recommendations

- Store between approximately 4° - 30° C while in sealed TCT bag.

- While stored in the sealed TCT bag, transpiration of this CRM/RM is negligible. After opening the sealed TCT bag transpiration of the CRM/RM will occur, resulting in a gradual increase in the analyte concentration(s). It is the responsibility of the user to account for this effect. When the bottle is weighed both before and after being placed in storage, the mass difference observed will be a measure of transpiration mass loss.

- After opening the sealed TCT bag, keep cap tightly sealed when not in use and store between 4° - 24° C to minimize the effects of transpiration. Use at 20° ± 4° C to minimize volumetric dilution error when using the reported density. Do not pipette from the container. Do not return removed aliquots to container.

- For more information, visit **www.inorganicventures.com/TCT**

Low Silver Note: This solution contains “LOW” levels of Silver. Please store this entire bottle inside a sealed glass jar.

8.0 HAZARDOUS INFORMATION

- Please refer to the Safety Data Sheet for information regarding this CRM/RM.

9.0 HOMOGENEITY

- This solution was mixed according to an in-house procedure and is guaranteed to be homogeneous. Homogeneity data indicate that the end user should take a minimum sample size of 0.2 mL to assure homogeneity.

10.0 QUALITY STANDARD DOCUMENTATION

10.1 ISO 9001 Quality Management System Registration

- QSR Certificate Number QSR-1034

10.2 ISO/IEC 17025 "General Requirements for the Competence of Testing and Calibration Laboratories"

- Chemical Testing - Accredited / A2LA Certificate Number 883.01

10.3 ISO 17034 "General Requirements for the Competence of Reference Material Producers"

- Reference Material Producer - Accredited / A2LA Certificate Number 883.02

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11.0 CERTIFICATION, LOT EXPIRATION AND PERIOD OF VALIDITY

11.1 Certification Issue Date

September 30, 2020

- The certification is valid within the measurement uncertainty specified provided the CRM/RM is stored and handled in accordance with instructions given in Sec 7.1. This certification is nullified if instructions in Sec 7.1 are not followed or if the CRM/RM is damaged, contaminated, or otherwise modified.

11.2 Lot Expiration Date

- **September 30, 2024**

- The date after which this CRM/RM should not be used.

- The lot expiration date reflects the period of time that the stability of a CRM/RM can be supported by long term stability studies conducted on properly stored and handled CRM/RMs. Lot expiration is limited primarily by transpiration (loss of water from the solution) and infrequently by chemical stability.

11.3 Period of Validity

- Sealed TCT Bag Open Date: _____

- This CRM/RM should not be used longer than one year (or six months in the case of a 30 mL bottle) from the date of opening the aluminized bag or after the date given in Sec. 11.2, whichever comes first. This is contingent upon the CRM/RM being stored and handled in accordance with the instructions given in Sec. 7.1.

12.0 NAMES AND SIGNATURES OF CERTIFYING OFFICERS

Certificate Approved By:

Michael Booth
Director, Quality Control

Certifying Officer:

Paul Gaines
Chairman / Senior Technical Director

Reagent

MT_S_MSCCV_SP_00005

SCP SCIENCE

Providing Innovative Solutions to Analytical Chemists

Certificate of Analysis

1.0 DESCRIPTION :

Plasma CAL – Custom Standard

Catalogue Number : **AQ0-140-645** **ICP-MS CCV**

Lot Number : **S210504059**

Matrix: **4.0% HNO3 Tr. HF**

Expiration Date (End of month): **May 2022**

2.0 CERTIFIED VALUES AND ASSOCIATED UNCERTAINTY:

Method of Analysis: Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES)

Traceability: Applicable NIST Standard Reference Materials (see list below):

3101a	Al	3109a	Ca	3117a	Eu	3126a	Fe	3134	Mo	3142a	Pr	3151	Ag	3159	Th	3167a	Y
3102a	Sb	3110	Ce	3118a	Gd	3127a	La	3135a	Nd	3143	Re	3152a	Na	3160a	Tm	3168a	Zn
3103a	As	3111a	Cs	3119a	Ga	3128	Pb	3136	Ni	3144	Rh	3153a	Sr	3161a	Sn	3169	Zr
3104a	Ba	3112a	Cr	3120a	Ge	3129a	Li	3137	Nb	3145a	Rb	3154	S	3162a	Ti		
3105a	Be	3113	Co	3121	Au	3130a	Lu	3138	Pd	3147a	Sm	3155	Ta	3163	W		
3106	Bi	3114	Cu	3122	Hf	3131a	Mg	3139a	P	3148a	Sc	3156	Te	3164	U		
3107	B	3115a	Dy	3123a	Ho	3132	Mn	3140	Pt	3149	Se	3157a	Tb	3165	V		
3108	Cd	3116a	Er	3124a	In	3133	Hg	3141a	K	3150	Si	3158	Tl	3166a	Yb		

Certified Concentrations:

Ag	20.05 ± 0.19	µg/ml	Pb	20.01 ± 0.20	µg/ml
As	200.5 ± 2.3	µg/ml	Sb	20.17 ± 0.18	µg/ml
B*	200.0 ± 2.0	µg/ml	Se	20.01 ± 0.18	µg/ml
Ba*	200.0 ± 2.0	µg/ml	Sn	20.13 ± 0.20	µg/ml
Be	20.03 ± 0.17	µg/ml	Sr*	20.00 ± 0.20	µg/ml
Cd	19.99 ± 0.17	µg/ml	Ti	201.1 ± 2.3	µg/ml
Co	200.3 ± 1.7	µg/ml	Tl*	20.00 ± 0.20	µg/ml
Cr	200.5 ± 1.6	µg/ml	U*	200.0 ± 2.0	µg/ml
Mn	200.5 ± 1.6	µg/ml	V	201.1 ± 2.2	µg/ml
Mo	20.13 ± 0.16	µg/ml	Zn	198.9 ± 1.5	µg/ml
Ni	199.9 ± 2.1	µg/ml			

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*Concentration value derived from v/v dilutions of certified, NIST-traceable starting materials

Note: The uncertainty of the certified value has been calculated from applicable uncertainty contributors (u_i) such as the SRM inherited uncertainty, weighing and dilution errors and instrument variability. The combined uncertainty ($u_c = \sqrt{\Sigma u_i^2}$) has been multiplied by a coverage factor (k) of 2 to provide a 95% confidence interval.

3.0 REFERENCE VALUES:

Density: **1.026 g/ml** @ **23.4 °C**

4.0 APPROVAL AND DATE OF CERTIFICATION:

Certification Approval: Yaling Sui, Chemist

Yaling Sui

Certification Date: **May 20, 2021**

Reagent

MT_S_MWLLC_SC_00003

SCP SCIENCE
Providing Innovative Solutions to Analytical Chemists

Certificate of Analysis

1.0 DESCRIPTION :

	Plasma CAL – Custom Standard
Catalogue Number :	AQ0-154-615 MW-LLC
Lot Number :	S210714046
Matrix:	2.0% HNO3 Tr. HF
Expiration Date (End of month):	August 2022

2.0 CERTIFIED VALUES AND ASSOCIATED UNCERTAINTY:

Method of Analysis: Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES)

Traceability: Applicable NIST Standard Reference Materials (see list below):

3101a	Al	3109a	Ca	3117a	Eu	3126a	Fe	3134	Mo	3142a	Pr	3151	Ag	3159	Th	3167a	Y
3102a	Sb	3110	Ce	3118a	Gd	3127a	La	3135a	Nd	3143	Re	3152a	Na	3160a	Tm	3168a	Zn
3103a	As	3111a	Cs	3119a	Ga	3128	Pb	3136	Ni	3144	Rh	3153a	Sr	3161a	Sn	3169	Zr
3104a	Ba	3112a	Cr	3120a	Ge	3129a	Li	3137	Nb	3145a	Rb	3154	S	3162a	Ti		
3105a	Be	3113	Co	3121	Au	3130a	Lu	3138	Pd	3147a	Sm	3155	Ta	3163	W		
3106	Bi	3114	Cu	3122	Hf	3131a	Mg	3139a	P	3148a	Sc	3156	Te	3164	U		
3107	B	3115a	Dy	3123a	Ho	3132	Mn	3140	Pt	3149	Se	3157a	Tb	3165	V		
3108	Cd	3116a	Er	3124a	In	3133	Hg	3141a	K	3150	Si	3158	Tl	3166a	Yb		

Certified Concentrations:

Ag*	0.499 ± 1%	µg/ml	K	201.1 ± 2.2	µg/ml	Ti	9.99 ± 0.07	µg/ml
Al	25.15 ± 0.19	µg/ml	Mg	50.1 ± 0.4	µg/ml	Tl*	0.498 ± 1%	µg/ml
As*	2.01 ± 0.02	µg/ml	Mn*	2.00 ± 0.02	µg/ml	U*	1.00 ± 0.01	µg/ml
Ba*	1.99 ± 0.02	µg/ml	Mo*	0.498 ± 1%	µg/ml	V*	0.501 ± 1%	µg/ml
Be*	0.503 ± 1%	µg/ml	Na	201.1 ± 2.3	µg/ml	Zn*	10.00 ± 0.07	µg/ml
Ca	100.2 ± 1.2	µg/ml	Ni*	1.01 ± 0.01	µg/ml			
Cd*	0.500 ± 1%	µg/ml	Pb*	0.497 ± 1%	µg/ml			
Co*	0.500 ± 1%	µg/ml	Sb*	0.996 ± 1%	µg/ml			
Cr*	2.00 ± 0.02	µg/ml	Se*	1.01 ± 0.01	µg/ml			
Cu*	0.999 ± 1%	µg/ml	Sn*	2.02 ± 0.02	µg/ml			
Fe	49.73 ± 0.31	µg/ml	Sr*	0.994 ± 1%	µg/ml			

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Reference Material Producer
ISO 17034:2016 ISO 9001:2015

*Concentration value derived from v/v dilutions of certified, NIST-traceable starting materials

Note: The uncertainty of the certified value has been calculated from applicable uncertainty contributors (u_i) such as the SRM inherited uncertainty, weighing and dilution errors and instrument variability. The combined uncertainty ($uc = \sqrt{\Sigma u_i^2}$) has been multiplied by a coverage factor (k) of 2 to provide a 95% confidence interval.

3.0 REFERENCE VALUES:

Density: **1.011 g/ml @ 23.4 °C**

4.0 APPROVAL AND DATE OF CERTIFICATION:

Certification Approval: Yaling Sui, Chemist

Yaling Sui

Certification Date: **July 26, 2021**

Sample Container Check Report

Client: ARCADIS U.S., Inc.
Project/Site: Fort Monmouth NJ

Job ID: 410-60870-1

Sample Container Checks and Verifications

Lab Sample ID: 410-60870-2 — Client Sample ID: 3MW01-102621

Bottle Code	Check Performed	By Employee	Date	Check Result	Expected Result	Adjusted Date	Reagent Lot #	Reagent Expires	Re-check Result	Re-check Date
D	pH Check, 24hr Adjustment Confirmation Required	UTL9	11/03/2021	<2	<2	N/A	N/A	N/A	N/A	N/A

Lab Sample ID: 410-60870-2 MS — Client Sample ID: 3MW01-102621MS

Bottle Code	Check Performed	By Employee	Date	Check Result	Expected Result	Adjusted Date	Reagent Lot #	Reagent Expires	Re-check Result	Re-check Date
D	pH Check, 24hr Adjustment Confirmation Required	X875	11/04/2021	<2	<2	N/A	N/A	N/A	N/A	N/A

Lab Sample ID: 410-60870-2 MSD — Client Sample ID: 3MW01-102621MSD

Bottle Code	Check Performed	By Employee	Date	Check Result	Expected Result	Adjusted Date	Reagent Lot #	Reagent Expires	Re-check Result	Re-check Date
D	pH Check, 24hr Adjustment Confirmation Required	X875	11/04/2021	<2	<2	N/A	N/A	N/A	N/A	N/A

Lab Sample ID: 410-60870-3 — Client Sample ID: 3MW01-102621D

Bottle Code	Check Performed	By Employee	Date	Check Result	Expected Result	Adjusted Date	Reagent Lot #	Reagent Expires	Re-check Result	Re-check Date
D	pH Check, 24hr Adjustment Confirmation Required	E9VJ	11/03/2021	<2	<2	N/A	N/A	N/A	N/A	N/A

Lab Sample ID: 410-60870-7 — Client Sample ID: FB-102621

Bottle Code	Check Performed	By Employee	Date	Check Result	Expected Result	Adjusted Date	Reagent Lot #	Reagent Expires	Re-check Result	Re-check Date
D	pH Check, 24hr Adjustment Confirmation Required	E9VJ	11/03/2021	<2	<2	N/A	N/A	N/A	N/A	N/A

Lab Sample ID: 410-60870-8 — Client Sample ID: FB-102721

Bottle Code	Check Performed	By Employee	Date	Check Result	Expected Result	Adjusted Date	Reagent Lot #	Reagent Expires	Re-check Result	Re-check Date
D	pH Check, 24hr Adjustment Confirmation Required	X875	11/04/2021	<2	<2	N/A	N/A	N/A	N/A	N/A

8260D_DOD5

Volatile Organic Compounds (GC/MS)

FORM II
GC/MS VOA SURROGATE RECOVERY

Lab Name: Eurofins Lancaster Laboratories Job No.: 410-60870-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): R-624SilMS ID: 0.25(mm)

Client Sample ID	Lab Sample ID	DBFM #	DCA #	TOL #	BFB #
3MW05R-102621	410-60870-1	105	103	104	102
3MW01-102621	410-60870-2	105	104	102	99
3MW01-102621D	410-60870-3	107	104	103	101
3MW08-102721	410-60870-4	106	102	102	101
3MW07-102721	410-60870-5	107	102 M	103	102
3MW09-102721	410-60870-6	106	103	103	101
FB-102621	410-60870-7	105	103	103	101
FB-102721	410-60870-8	107	105	102	99
Trip Blank	410-60870-9	106	103	103	102
	MB 410-191072/6	105	106	103	102
	LCS 410-191072/4	105	104	104	103
3MW01-102621MS MS	410-60870-2 MS	106	103	104	102
3MW01-102621MSD MSD	410-60870-2 MSD	105	103	103	103

	QC LIMITS
DBFM = Dibromofluoromethane (Surr)	80-119
DCA = 1,2-Dichloroethane-d4 (Surr)	81-118
TOL = Toluene-d8 (Surr)	89-112
BFB = 4-Bromofluorobenzene (Surr)	85-114

Column to be used to flag recovery values

FORM II 8260D

FORM III
GC/MS VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins Lancaster Laboratories Env, LLC Job No.: 410-60870-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 5N04L31.D

Lab ID: LCS 410-191072/4 Client ID:

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
cis-1,3-Dichloropropene	20.0	19.3	97	75-124	
trans-1,3-Dichloropropene	20.0	19.7	99	73-127	
Ethylbenzene	20.0	18.9	94	79-121	
Styrene	20.0	19.0	95	78-123	
1,4-Dichlorobenzene	20.0	19.1	95	79-118	
1,2-Dibromoethane (EDB)	20.0	20.0	100	77-121	
1,2-Dichloroethane	20.0	20.0	100	73-128	
4-Methyl-2-pentanone	250	272	109	67-130	
Methylcyclohexane	20.0	17.6	88	72-132	
Toluene	20.0	18.7	94	80-121	
Chlorobenzene	20.0	19.2	96	82-118	
Cyclohexane	20.0	17.2	86	71-130	
1,2,4-Trichlorobenzene	20.0	19.0	95	69-130	
Dibromochloromethane	20.0	20.0	100	74-126	
Xylenes, Total	60.0	56.6	94	79-121	
Tetrachloroethene	20.0	18.7	94	74-129	
cis-1,2-Dichloroethene	20.0	19.5	98	78-123	
trans-1,2-Dichloroethene	20.0	19.2	96	75-124	
Methyl tert-butyl ether	20.0	19.3	97	71-124	
1,3-Dichlorobenzene	20.0	19.1	95	80-119	
Carbon tetrachloride	20.0	19.0	95	72-136	
2-Hexanone	250	274	110	57-139	
Acetone	250	254	102	39-160	
Chloroform	20.0	20.1	100	79-124	
Benzene	20.0	19.1	96	79-120	
1,1,1-Trichloroethane	20.0	19.2	96	74-131	
Bromomethane	20.0	17.6	88	53-141	
Chloromethane	20.0	19.0	95	50-139	
Chloroethane	20.0	18.1	91	60-138	
Vinyl chloride	20.0	17.5	87	58-137	
Methylene Chloride	20.0	19.8	99	74-124	
Carbon disulfide	20.0	18.2	91	64-133	
Bromoform	20.0	19.8	99	66-130	
Bromodichloromethane	20.0	20.0	100	79-125	
1,1-Dichloroethane	20.0	19.3	96	77-125	
1,1-Dichloroethene	20.0	19.5	97	71-131	
Trichlorofluoromethane	20.0	18.3	91	65-141	
Dichlorodifluoromethane	20.0	20.3	101	32-152	
Freon 113	20.0	18.9	94	70-136	
1,2-Dichloropropane	20.0	19.9	99	78-122	
2-Butanone	250	268	107	56-143	

Column to be used to flag recovery and RPD values

FORM III 8260D

FORM III
GC/MS VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins Lancaster Laboratories Env, LLC Job No.: 410-60870-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 5N04L31.D

Lab ID: LCS 410-191072/4 Client ID:

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
1,1,2-Trichloroethane	20.0	20.1	100	80-119	
Trichloroethene	20.0	18.6	93	79-123	
Methyl acetate	20.0	25.1	126	56-136	
1,1,2,2-Tetrachloroethane	20.0	20.7	103	71-121	
1,2-Dichlorobenzene	20.0	19.1	96	80-119	
1,2-Dibromo-3-Chloropropane	20.0	19.9	99	62-128	
Isopropylbenzene	20.0	19.2	96	72-131	

Column to be used to flag recovery and RPD values

FORM III 8260D

FORM III
GC/MS VOA MATRIX SPIKE RECOVERY

Lab Name: Eurofins Lancaster Laboratories Env, LLC Job No.: 410-60870-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 5N04S39.D

Lab ID: 410-60870-2 MS Client ID: 3MW01-102621MS MS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	QC LIMITS REC	#
cis-1,3-Dichloropropene	20.0	0.50 U	19.8	99	75-124	
trans-1,3-Dichloropropene	20.0	0.50 U	20.2	101	73-127	
Ethylbenzene	20.0	0.80 U	20.8	104	79-121	
Styrene	20.0	0.60 U	20.2	101	78-123	
1,4-Dichlorobenzene	20.0	0.60 U	20.0	100	79-118	
1,2-Dibromoethane (EDB)	20.0	0.50 U	20.3	102	77-121	
1,2-Dichloroethane	20.0	0.60 U	20.8	104	73-128	
4-Methyl-2-pentanone	250	1.0 U	264	106	67-130	
Methylcyclohexane	20.0	1.0 U	21.5	107	72-132	
Toluene	20.0	0.50 U	20.6	103	80-121	
Chlorobenzene	20.0	0.60 U	20.6	103	82-118	
Cyclohexane	20.0	2.0 U	20.7	104	71-130	
1,2,4-Trichlorobenzene	20.0	1.0 U	18.9	94	69-130	
Dibromochloromethane	20.0	0.50 U	20.4	102	74-126	
Xylenes, Total	60.0	0.80 U	61.9	103	79-121	
Tetrachloroethene	20.0	0.60 U	21.5	108	74-129	
cis-1,2-Dichloroethene	20.0	0.32 J	22.1	109	78-123	
trans-1,2-Dichloroethene	20.0	0.60 U	21.5	107	75-124	
Methyl tert-butyl ether	20.0	0.50 U	19.2	96	71-124	
1,3-Dichlorobenzene	20.0	0.60 U	20.0	100	80-119	
Carbon tetrachloride	20.0	0.60 U	22.3	111	72-136	
2-Hexanone	250	1.0 U	265	106	57-139	
Acetone	250	2.0 U	256	102	39-160	
Chloroform	20.0	0.60 U	21.9	109	79-124	
Benzene	20.0	0.60 U	21.2	106	79-120	
1,1,1-Trichloroethane	20.0	0.60 U	22.1	111	74-131	
Bromomethane	20.0	0.60 U	20.0	100	53-141	
Chloromethane	20.0	0.50 U	21.2	106	50-139	
Chloroethane	20.0	0.50 U	21.2	106	60-138	
Vinyl chloride	20.0	0.50 U	20.0	100	58-137	
Methylene Chloride	20.0	0.60 U	21.0	105	74-124	
Carbon disulfide	20.0	0.60 U	21.2	106	64-133	
Bromoform	20.0	2.0 U	20.3	102	66-130	
Bromodichloromethane	20.0	0.50 U	20.9	104	79-125	
1,1-Dichloroethane	20.0	0.60 U	20.5	103	77-125	
1,1-Dichloroethene	20.0	0.60 U	22.5	112	71-131	
Trichlorofluoromethane	20.0	0.50 U	22.0	110	65-141	
Dichlorodifluoromethane	20.0	0.50 U	24.9	125	32-152	
Freon 113	20.0	0.60 U	22.8	114	70-136	
1,2-Dichloropropane	20.0	0.60 U	20.4	102	78-122	
2-Butanone	250	1.0 U	264	105	56-143	

Column to be used to flag recovery and RPD values

FORM III 8260D

FORM III
GC/MS VOA MATRIX SPIKE RECOVERY

Lab Name: Eurofins Lancaster Laboratories Env, LLC Job No.: 410-60870-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 5N04S39.D

Lab ID: 410-60870-2 MS Client ID: 3MW01-102621MS MS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	QC LIMITS REC	#
1,1,2-Trichloroethane	20.0	0.60 U	20.6	103	80-119	
Trichloroethene	20.0	6.2	26.7	102	79-123	
Methyl acetate	20.0	0.60 U	22.5	113	56-136	
1,1,2,2-Tetrachloroethane	20.0	0.60 U	19.8	99	71-121	
1,2-Dichlorobenzene	20.0	0.50 U	20.0	100	80-119	
1,2-Dibromo-3-Chloropropane	20.0	1.0 U	18.8	94	62-128	
Isopropylbenzene	20.0	0.50 U	21.1	106	72-131	

Column to be used to flag recovery and RPD values

FORM III 8260D

FORM III
GC/MS VOA MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Eurofins Lancaster Laboratories Env, LLC Job No.: 410-60870-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 5N04S40.D

Lab ID: 410-60870-2 MSD Client ID: 3MW01-102621MSD MSD

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
cis-1,3-Dichloropropene	20.0	19.4	97	2	20	75-124	
trans-1,3-Dichloropropene	20.0	19.8	99	2	20	73-127	
Ethylbenzene	20.0	20.4	102	2	20	79-121	
Styrene	20.0	19.8	99	2	20	78-123	
1,4-Dichlorobenzene	20.0	20.0	100	0	20	79-118	
1,2-Dibromoethane (EDB)	20.0	19.6	98	3	20	77-121	
1,2-Dichloroethane	20.0	20.5	102	1	20	73-128	
4-Methyl-2-pentanone	250	259	104	2	20	67-130	
Methylcyclohexane	20.0	21.0	105	2	20	72-132	
Toluene	20.0	20.2	101	2	20	80-121	
Chlorobenzene	20.0	20.2	101	2	20	82-118	
Cyclohexane	20.0	20.7	103	0	20	71-130	
1,2,4-Trichlorobenzene	20.0	18.9	95	0	20	69-130	
Dibromochloromethane	20.0	19.4	97	5	20	74-126	
Xylenes, Total	60.0	60.1	100	3	20	79-121	
Tetrachloroethene	20.0	21.1	105	2	20	74-129	
cis-1,2-Dichloroethene	20.0	21.7	107	2	20	78-123	
trans-1,2-Dichloroethene	20.0	21.0	105	2	20	75-124	
Methyl tert-butyl ether	20.0	18.9	95	1	20	71-124	
1,3-Dichlorobenzene	20.0	20.0	100	0	20	80-119	
Carbon tetrachloride	20.0	22.0	110	1	20	72-136	
2-Hexanone	250	260	104	2	20	57-139	
Acetone	250	243	97	5	20	39-160	
Chloroform	20.0	21.2	106	3	20	79-124	
Benzene	20.0	20.7	103	2	20	79-120	
1,1,1-Trichloroethane	20.0	21.9	110	1	20	74-131	
Bromomethane	20.0	19.5	98	3	20	53-141	
Chloromethane	20.0	21.5	108	2	20	50-139	
Chloroethane	20.0	20.7	104	2	20	60-138	
Vinyl chloride	20.0	20.3	101	1	20	58-137	
Methylene Chloride	20.0	20.2	101	4	20	74-124	
Carbon disulfide	20.0	21.1	106	0	20	64-133	
Bromoform	20.0	19.6	98	3	20	66-130	
Bromodichloromethane	20.0	20.5	102	2	20	79-125	
1,1-Dichloroethane	20.0	20.8	104	1	20	77-125	
1,1-Dichloroethene	20.0	22.2	111	1	20	71-131	
Trichlorofluoromethane	20.0	22.0	110	0	20	65-141	
Dichlorodifluoromethane	20.0	24.4	122	2	20	32-152	
Freon 113	20.0	22.6	113	1	20	70-136	
1,2-Dichloropropane	20.0	20.3	101	1	20	78-122	
2-Butanone	250	261	105	1	20	56-143	

Column to be used to flag recovery and RPD values

FORM III 8260D

FORM III
GC/MS VOA MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Eurofins Lancaster Laboratories Env, LLC Job No.: 410-60870-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 5N04S40.D

Lab ID: 410-60870-2 MSD Client ID: 3MW01-102621MSD MSD

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
1,1,2-Trichloroethane	20.0	19.8	99	4	20	80-119	
Trichloroethene	20.0	26.5	102	0	20	79-123	
Methyl acetate	20.0	24.4	122	8	20	56-136	
1,1,2,2-Tetrachloroethane	20.0	19.9	99	0	20	71-121	
1,2-Dichlorobenzene	20.0	19.8	99	1	20	80-119	
1,2-Dibromo-3-Chloropropane	20.0	19.2	96	2	20	62-128	
Isopropylbenzene	20.0	20.8	104	2	20	72-131	

Column to be used to flag recovery and RPD values

FORM III 8260D

FORM IV
GC/MS VOA METHOD BLANK SUMMARY

Lab Name: Eurofins Lancaster Laboratories Job No.: 410-60870-1

SDG No.:

Lab File ID: 5N04B31.D Lab Sample ID: MB 410-191072/6

Matrix: Water Heated Purge:(Y/N) N

Instrument ID: 26285 Date Analyzed: 11/04/2021 22:15

GC Column: R-624SilMS 30m ID: 0.25(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 410-191072/4	5N04L31.D	11/04/2021 21:36
FB-102621	410-60870-7	5N04S35.D	11/04/2021 23:53
FB-102721	410-60870-8	5N04S36.D	11/05/2021 00:13
Trip Blank	410-60870-9	5N04S37.D	11/05/2021 00:32
3MW01-102621	410-60870-2	5N04S38.D	11/05/2021 00:52
3MW01-102621MS MS	410-60870-2 MS	5N04S39.D	11/05/2021 01:11
3MW01-102621MSD MSD	410-60870-2 MSD	5N04S40.D	11/05/2021 01:31
3MW05R-102621	410-60870-1	5N04S46.D	11/05/2021 03:29
3MW01-102621D	410-60870-3	5N04S47.D	11/05/2021 03:48
3MW08-102721	410-60870-4	5N04S48.D	11/05/2021 04:08
3MW07-102721	410-60870-5	5N04S49.D	11/05/2021 04:28
3MW09-102721	410-60870-6	5N04S50.D	11/05/2021 04:47

FORM V
GC/MS VOA INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Lab File ID: 5G02T01.D BFB Injection Date: 08/02/2021

Instrument ID: 26285 BFB Injection Time: 13:32

Analysis Batch No.: 155419

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15.0 - 40.0 % of mass 95	16.4	
75	30.0 - 60.0 % of mass 95	43.9	
95	Base Peak, 100% relative abundance	100.0	
96	5.0 - 9.0 % of mass 95	6.5	
173	Less than 2.0 % of mass 174	0.0	(0.0) 1
174	Greater than 50% of mass 95	91.1	
175	5.0 - 9.0 % of mass 174	6.8	(7.5) 1
176	95.0 - 101.0 % of mass 174	88.5	(97.1) 1
177	5.0 - 9.0 % of mass 176	5.8	(6.6) 2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	IC 410-155419/11	5G02I11.D	08/02/2021	16:48
	IC 410-155419/12	5G02I12.D	08/02/2021	17:08
	ICIS 410-155419/13	5G02I13.D	08/02/2021	17:28
	IC 410-155419/14	5G02I14.D	08/02/2021	17:48
	IC 410-155419/15	5G02I15.D	08/02/2021	18:09
	IC 410-155419/16	5G02I16.D	08/02/2021	18:29
	IC 410-155419/17	5G02I17.D	08/02/2021	18:49
	ICV 410-155419/18	5G02V11.D	08/02/2021	19:09

FORM V
GC/MS VOA INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Lab File ID: 5N04T31.D BFB Injection Date: 11/04/2021

Instrument ID: 26285 BFB Injection Time: 20:43

Analysis Batch No.: 191072

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15.0 - 40.0 % of mass 95	16.6	
75	30.0 - 60.0 % of mass 95	44.6	
95	Base Peak, 100% relative abundance	100.0	
96	5.0 - 9.0 % of mass 95	6.6	
173	Less than 2.0 % of mass 174	0.0	(0.0) 1
174	Greater than 50% of mass 95	92.0	
175	5.0 - 9.0 % of mass 174	7.3	(8.0) 1
176	95.0 - 101.0 % of mass 174	90.0	(97.8) 1
177	5.0 - 9.0 % of mass 176	6.1	(6.7) 2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	CCVIS 410-191072/3	5N04C31.D	11/04/2021	21:16
	LCS 410-191072/4	5N04L31.D	11/04/2021	21:36
	MB 410-191072/6	5N04B31.D	11/04/2021	22:15
FB-102621	410-60870-7	5N04S35.D	11/04/2021	23:53
FB-102721	410-60870-8	5N04S36.D	11/05/2021	0:13
Trip Blank	410-60870-9	5N04S37.D	11/05/2021	0:32
3MW01-102621	410-60870-2	5N04S38.D	11/05/2021	0:52
3MW01-102621MS MS	410-60870-2 MS	5N04S39.D	11/05/2021	1:11
3MW01-102621MSD MSD	410-60870-2 MSD	5N04S40.D	11/05/2021	1:31
3MW05R-102621	410-60870-1	5N04S46.D	11/05/2021	3:29
3MW01-102621D	410-60870-3	5N04S47.D	11/05/2021	3:48
3MW08-102721	410-60870-4	5N04S48.D	11/05/2021	4:08
3MW07-102721	410-60870-5	5N04S49.D	11/05/2021	4:28
3MW09-102721	410-60870-6	5N04S50.D	11/05/2021	4:47
	CCVC 410-191072/30	5N04S54.D	11/05/2021	6:06

FORM VIII
GC/MS VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Sample No.: ICIS 410-155419/13 Date Analyzed: 08/02/2021 17:28

Instrument ID: 26285 GC Column: R-624SilMS 30m ID: 0.25(mm)

Lab File ID (Standard): 5G02I13.D Heated Purge: (Y/N) N

Calibration ID: 29420

		TBAd10		FB		CBZd5	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		255088	3.45	959902	6.90	743963	10.64
UPPER LIMIT		510176	3.95	1919804	7.40	1487926	11.14
LOWER LIMIT		127544	2.95	479951	6.40	371982	10.14
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICV 410-155419/18		255752	3.42	985332	6.89	753931	10.64
CCVIS 410-191072/3		303268	3.40	993408	6.87	772151	10.65

TBAd10 = t-Butyl alcohol-d10 (IS)
FB = Fluorobenzene (IS)
CBZd5 = Chlorobenzene-d5 (IS)

Area Limit = 50%-200% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8260D

FORM VIII
GC/MS VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Sample No.: ICIS 410-155419/13 Date Analyzed: 08/02/2021 17:28

Instrument ID: 26285 GC Column: R-624SilMS 30m ID: 0.25(mm)

Lab File ID (Standard): 5G02I13.D Heated Purge: (Y/N) N

Calibration ID: 29420

		DCBd4					
		AREA #	RT #	#	RT #	#	RT #
INITIAL CALIBRATION MID-POINT		402596	12.62				
UPPER LIMIT		805192	13.12				
LOWER LIMIT		201298	12.12				
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICV 410-155419/18		409122	12.63				
CCVIS 410-191072/3		431487	12.66				

DCBd4 = 1,4-Dichlorobenzene-d4

Area Limit = 50%-200% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8260D

FORM VIII
GC/MS VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Sample No.: CCVIS 410-191072/3 Date Analyzed: 11/04/2021 21:16

Instrument ID: 26285 GC Column: R-624SilMS 30m ID: 0.25(mm)

Lab File ID (Standard): 5N04C31.D Heated Purge: (Y/N) N

Calibration ID: 29420

		TBAd10		FB		CBZd5	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		303268	3.40	993408	6.87	772151	10.65
UPPER LIMIT		606536	3.90	1986816	7.37	1544302	11.15
LOWER LIMIT		151634	2.90	496704	6.37	386076	10.15
LAB SAMPLE ID	CLIENT SAMPLE ID						
LCS 410-191072/4		309801	3.41	1018252	6.87	783120	10.65
MB 410-191072/6		273697	3.41	1010728	6.87	777513	10.65
410-60870-7	FB-102621	280082	3.39	1014487	6.87	780941	10.65
410-60870-8	FB-102721	249251	3.41	952792	6.87	739165	10.65
410-60870-9	Trip Blank	272781	3.42	947206	6.87	719507	10.65
410-60870-2	3MW01-102621	246084	3.40	942822	6.87	728485	10.65
410-60870-2 MS	3MW01-102621MS MS	282462	3.41	970968	6.87	748856	10.65
410-60870-2 MSD	3MW01-102621MSD MSD	298953	3.40	988187	6.87	766865	10.65
410-60870-1	3MW05R-102621	303404	3.41	947360	6.87	727228	10.65
410-60870-3	3MW01-102621D	289121	3.41	941712	6.87	725295	10.65
410-60870-4	3MW08-102721	281063	3.40	945499	6.87	725872	10.65
410-60870-5	3MW07-102721	280499	3.41	930431	6.87	720480	10.65
410-60870-6	3MW09-102721	303135	3.39	1003751	6.87	772154	10.65
CCVC 410-191072/30		284607	3.40	987316	6.87	771871	10.65

TBAd10 = t-Butyl alcohol-d10 (IS)
FB = Fluorobenzene (IS)
CBZd5 = Chlorobenzene-d5 (IS)

Area Limit = 50%-200% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8260D

FORM VIII
GC/MS VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Sample No.: CCVIS 410-191072/3 Date Analyzed: 11/04/2021 21:16

Instrument ID: 26285 GC Column: R-624SilMS 30m ID: 0.25(mm)

Lab File ID (Standard): 5N04C31.D Heated Purge: (Y/N) N

Calibration ID: 29420

		DCBd4					
		AREA #	RT #	#	RT #	#	RT #
12/24 HOUR STD		431487	12.66				
UPPER LIMIT		862974	13.16				
LOWER LIMIT		215744	12.16				
LAB SAMPLE ID	CLIENT SAMPLE ID						
LCS 410-191072/4		436753	12.66				
MB 410-191072/6		432032	12.66				
410-60870-7	FB-102621	435216	12.66				
410-60870-8	FB-102721	413628	12.66				
410-60870-9	Trip Blank	407871	12.66				
410-60870-2	3MW01-102621	404616	12.66				
410-60870-2 MS	3MW01-102621MS MS	427556	12.66				
410-60870-2 MSD	3MW01-102621MSD MSD	430645	12.66				
410-60870-1	3MW05R-102621	408464	12.66				
410-60870-3	3MW01-102621D	403946	12.66				
410-60870-4	3MW08-102721	405789	12.66				
410-60870-5	3MW07-102721	399719	12.66				
410-60870-6	3MW09-102721	431428	12.66				
CCVC 410-191072/30		439491	12.66				

DCBd4 = 1,4-Dichlorobenzene-d4

Area Limit = 50%-200% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8260D

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Client Sample ID: 3MW05R-102621 Lab Sample ID: 410-60870-1

Matrix: Ground Water Lab File ID: 5N04S46.D

Analysis Method: 8260D Date Collected: 10/26/2021 14:25

Sample wt/vol: 5(mL) Date Analyzed: 11/05/2021 03:29

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: R-624SilMS 30m ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 191072 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
10061-01-5	cis-1,3-Dichloropropene	0.50	U	1.0	0.50	0.20
10061-02-6	trans-1,3-Dichloropropene	0.50	U	1.0	0.50	0.20
100-41-4	Ethylbenzene	0.80	U	1.0	0.80	0.40
100-42-5	Styrene	0.60	U	5.0	0.60	0.30
106-46-7	1,4-Dichlorobenzene	0.60	U	5.0	0.60	0.30
106-93-4	1,2-Dibromoethane (EDB)	0.50	U	1.0	0.50	0.20
107-06-2	1,2-Dichloroethane	0.60	U	1.0	0.60	0.30
108-10-1	4-Methyl-2-pentanone	1.0	U	10	1.0	0.50
108-87-2	Methylcyclohexane	1.0	U Q	5.0	1.0	0.50
108-88-3	Toluene	0.50	U	1.0	0.50	0.20
108-90-7	Chlorobenzene	0.60	U	1.0	0.60	0.30
110-82-7	Cyclohexane	2.0	U Q	5.0	2.0	1.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	5.0	1.0	0.30
124-48-1	Dibromochloromethane	0.50	U	1.0	0.50	0.20
1330-20-7	Xylenes, Total	0.80	U	1.0	0.80	0.40
127-18-4	Tetrachloroethene	0.60	U	1.0	0.60	0.30
156-59-2	cis-1,2-Dichloroethene	0.60	U	1.0	0.60	0.30
156-60-5	trans-1,2-Dichloroethene	0.60	U	1.0	0.60	0.30
1634-04-4	Methyl tert-butyl ether	0.50	U	1.0	0.50	0.20
541-73-1	1,3-Dichlorobenzene	0.60	U	5.0	0.60	0.30
56-23-5	Carbon tetrachloride	0.60	U	1.0	0.60	0.30
591-78-6	2-Hexanone	1.0	U	10	1.0	0.40
67-64-1	Acetone	2.0	U	20	2.0	0.70
67-66-3	Chloroform	0.60	U	1.0	0.60	0.30
71-43-2	Benzene	0.60	U	1.0	0.60	0.30
71-55-6	1,1,1-Trichloroethane	0.60	U	1.0	0.60	0.30
74-83-9	Bromomethane	0.60	U	1.0	0.60	0.30
74-87-3	Chloromethane	0.50	U	1.0	0.50	0.20
75-00-3	Chloroethane	0.50	U	1.0	0.50	0.20
75-01-4	Vinyl chloride	0.50	U	1.0	0.50	0.20
75-09-2	Methylene Chloride	0.60	U	1.0	0.60	0.30
75-15-0	Carbon disulfide	0.60	U	5.0	0.60	0.30
75-25-2	Bromoform	2.0	U	4.0	2.0	1.0
75-27-4	Bromodichloromethane	0.50	U	1.0	0.50	0.20
75-34-3	1,1-Dichloroethane	0.60	U	1.0	0.60	0.30
75-35-4	1,1-Dichloroethene	0.60	U	1.0	0.60	0.30

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Client Sample ID: 3MW05R-102621 Lab Sample ID: 410-60870-1

Matrix: Ground Water Lab File ID: 5N04S46.D

Analysis Method: 8260D Date Collected: 10/26/2021 14:25

Sample wt/vol: 5(mL) Date Analyzed: 11/05/2021 03:29

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: R-624SilMS 30m ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 191072 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
75-69-4	Trichlorofluoromethane	0.50	U	1.0	0.50	0.20
75-71-8	Dichlorodifluoromethane	0.50	U	1.0	0.50	0.20
76-13-1	Freon 113	0.60	U	10	0.60	0.30
78-87-5	1,2-Dichloropropane	0.60	U	1.0	0.60	0.30
78-93-3	2-Butanone	1.0	U	10	1.0	0.50
79-00-5	1,1,2-Trichloroethane	0.60	U	1.0	0.60	0.30
79-01-6	Trichloroethene	0.60	U	1.0	0.60	0.30
79-20-9	Methyl acetate	0.60	U	5.0	0.60	0.30
79-34-5	1,1,2,2-Tetrachloroethane	0.60	U	1.0	0.60	0.30
95-50-1	1,2-Dichlorobenzene	0.50	U	5.0	0.50	0.20
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U	5.0	1.0	0.30
98-82-8	Isopropylbenzene	0.50	U	5.0	0.50	0.20

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	103		81-118
1868-53-7	Dibromofluoromethane (Surr)	105		80-119
460-00-4	4-Bromofluorobenzene (Surr)	102		85-114
2037-26-5	Toluene-d8 (Surr)	104		89-112

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Client Sample ID: 3MW05R-102621 Lab Sample ID: 410-60870-1

Matrix: Ground Water Lab File ID: 5N04S46.D

Analysis Method: 8260D Date Collected: 10/26/2021 14:25

Sample wt/vol: 5(mL) Date Analyzed: 11/05/2021 03:29

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: R-624SilMS 30m ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 191072 Units: ug/L

Number TICs Found: 0 TIC Result Total: 0

CAS NO.	COMPOUND NAME	RT	RESULT	Q	MATCH QUALITY
	Tentatively Identified Compound		None		

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S46.D
Lims ID: 410-60870-A-1
Client ID: 3MW05R-102621
Sample Type: Client
Inject. Date: 05-Nov-2021 03:29:30 ALS Bottle#: 21 Worklist Smp#: 22
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 410-0043341-022
Operator ID: mec29284 Instrument ID: 26285

Method: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\MSVoa_26285a.m
Limit Group: MSV - 8260C DOD5
Last Update: 05-Nov-2021 01:51:03 Calib Date: 02-Aug-2021 18:49:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I17.D

Column 1 : Rxi-624Sil MS Capillary Column (0.25 mm) Det: MS Quad
Process Host: CTX1657

First Level Reviewer: kaewrungrueangp Date: 05-Nov-2021 14:55:45

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/l	Flags
2 Dichlorodifluoromethane	85		1.606				ND	
3 Chloromethane	50		1.771				ND	
5 Vinyl chloride	62		1.856				ND	
8 Bromomethane	94		2.137				ND	
9 Chloroethane	64		2.192				ND	
11 Trichlorofluoromethane	101		2.423				ND	
19 1,1-Dichloroethene	96		2.881				ND	
17 Acetone	58		2.899				ND	
18 112TCTFE	101		2.905				ND	
22 Carbon disulfide	76		3.137				ND	
23 Methyl acetate	43		3.228				ND	
* 27 t-Butyl alcohol-d10 (IS)	65	3.405	3.399	0.006	29	303404	250.0	
26 Methylene Chloride	84		3.417				ND	
30 Methyl tert-butyl ether	73		3.728				ND	
31 trans-1,2-Dichloroethene	96		3.740				ND	
33 1,1-Dichloroethane	63		4.338				ND	
39 2-Butanone (MEK)	43		5.173				ND	
38 cis-1,2-Dichloroethene	96		5.209				ND	
46 Chloroform	83		5.721				ND	
48 1,1,1-Trichloroethane	97		5.941				ND	
$ 47 Dibromofluoromethane (Surr)	113	5.941	5.947	-0.006	94	244224	52.7	
49 Cyclohexane	56		6.038				ND	
51 Carbon tetrachloride	117		6.160				ND	
$ 56 1,2-Dichloroethane-d4 (Surr)	102	6.416	6.410	0.006	50	54827	51.5	
53 Benzene	78		6.441				ND	
55 1,2-Dichloroethane	62		6.526				ND	
* 59 Fluorobenzene (IS)	96	6.868	6.874	-0.006	99	947360	50.0	
62 Trichloroethene	95		7.374				ND	
63 Methylcyclohexane	83		7.684				ND	
64 1,2-Dichloropropane	63		7.721				ND	
70 Dichlorobromomethane	83		8.093				ND	
73 cis-1,3-Dichloropropene	75		8.678				ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/l	Flags
75 4-Methyl-2-pentanone (MIBK)	43		8.892				ND	
$ 76 Toluene-d8 (Surr)	98	9.020	9.020	0.000	94	944514	52.0	
77 Toluene	92		9.111				ND	
78 trans-1,3-Dichloropropene	75		9.428				ND	
80 1,1,2-Trichloroethane	97		9.654				ND	
81 Tetrachloroethene	166		9.733				ND	
84 2-Hexanone	43		9.910				ND	
85 Chlorodibromomethane	129		10.062				ND	
87 Ethylene Dibromide	107		10.172				ND	
* 90 Chlorobenzene-d5 (IS)	117	10.653	10.653	0.000	86	727228	50.0	
88 Chlorobenzene	112		10.684				ND	
93 Ethylbenzene	91		10.788				ND	
94 m-Xylene & p-Xylene	106		10.916				ND	
S 130 Xylenes, Total	106		11.245				ND	7
95 o-Xylene	106		11.263				ND	
96 Styrene	104		11.281				ND	
97 Bromoform	173		11.440				ND	
98 Isopropylbenzene	105		11.586				ND	
$ 101 4-Bromofluorobenzene (Surr)	95	11.732	11.732	0.000	94	356498	50.8	
105 1,1,2,2-Tetrachloroethane	83		11.854				ND	
115 1,3-Dichlorobenzene	146		12.598				ND	
* 117 1,4-Dichlorobenzene-d4	152	12.659	12.659	0.000	94	408464	50.0	
118 1,4-Dichlorobenzene	146		12.677				ND	
125 1,2-Dichlorobenzene	146		12.946				ND	
127 1,2-Dibromo-3-Chloropropane	75		13.506				ND	
129 1,2,4-Trichlorobenzene	180		14.073				ND	

QC Flag Legend

Processing Flags

7 - Failed Limit of Detection

Reagents:

MSV_Cent_ISSS_00004 Amount Added: 5.00 Units: uL Run Reagent

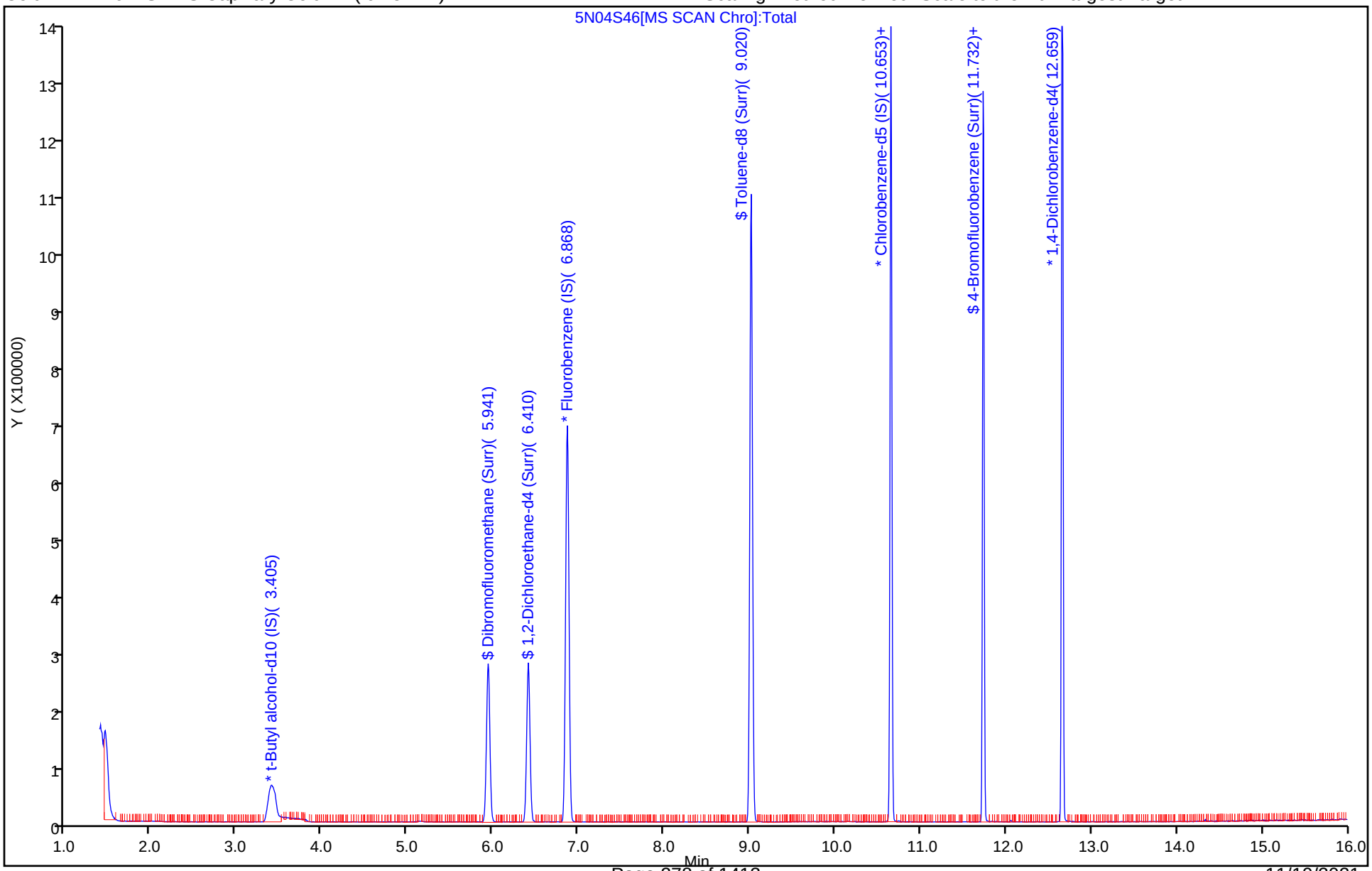
Report Date: 05-Nov-2021 14:55:45 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S46.D

Injection Date:	05-Nov-2021 03:29:30	Instrument ID:	26285	Operator ID:	mec29284
Lims ID:	410-60870-A-1	Lab Sample ID:	410-60870-1	Worklist Smp#:	22
Client ID:	3MW05R-102621				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	21
Method:	MSVoa_26285a	Limit Group:	MSV - 8260C DOD5		

Column: Rxi-624Sil MS Capillary Column (0.25 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins Lancaster Laboratories Env, LLC

Recovery Report

Data File:	\\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S46.D				
Lims ID:	410-60870-A-1				
Client ID:	3MW05R-102621				
Sample Type:	Client				
Inject. Date:	05-Nov-2021 03:29:30	ALS Bottle#:	21	Worklist Smp#:	22
Purge Vol:	5.000 mL	Dil. Factor:	1.0000		
Sample Info:	410-0043341-022				
Operator ID:	mec29284	Instrument ID:	26285		
Method:	\\chromfs\Lancaster\ChromData\26285\20211104-43341.b\MSVoa_26285a.m				
Limit Group:	MSV - 8260C DOD5				
Last Update:	05-Nov-2021 01:51:03	Calib Date:	02-Aug-2021 18:49:30		
Integrator:	RTE	ID Type:	Deconvolution ID		
Quant Method:	Internal Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I17.D				
Column 1 :	Rxi-624Sil MS Capillary Column (0.25 mm)		Det: MS Quad		
Process Host:	CTX1657				

First Level Reviewer: kaewrungrueangp Date: 05-Nov-2021 14:55:45

Compound	Amount Added	Amount Recovered	% Rec.
$ 47 Dibromofluoromethane (Surr)	50.0	52.7	105.44
$ 56 1,2-Dichloroethane-d4 (Surr)	50.0	51.5	102.99
$ 76 Toluene-d8 (Surr)	50.0	52.0	103.93
$ 101 4-Bromofluorobenzene (Surr)	50.0	50.8	101.68

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Client Sample ID: 3MW01-102621 Lab Sample ID: 410-60870-2

Matrix: Ground Water Lab File ID: 5N04S38.D

Analysis Method: 8260D Date Collected: 10/26/2021 15:55

Sample wt/vol: 5(mL) Date Analyzed: 11/05/2021 00:52

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: R-624SilMS 30m ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 191072 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
10061-01-5	cis-1,3-Dichloropropene	0.50	U	1.0	0.50	0.20
10061-02-6	trans-1,3-Dichloropropene	0.50	U	1.0	0.50	0.20
100-41-4	Ethylbenzene	0.80	U	1.0	0.80	0.40
100-42-5	Styrene	0.60	U	5.0	0.60	0.30
106-46-7	1,4-Dichlorobenzene	0.60	U	5.0	0.60	0.30
106-93-4	1,2-Dibromoethane (EDB)	0.50	U	1.0	0.50	0.20
107-06-2	1,2-Dichloroethane	0.60	U	1.0	0.60	0.30
108-10-1	4-Methyl-2-pentanone	1.0	U	10	1.0	0.50
108-87-2	Methylcyclohexane	1.0	U Q	5.0	1.0	0.50
108-88-3	Toluene	0.50	U	1.0	0.50	0.20
108-90-7	Chlorobenzene	0.60	U	1.0	0.60	0.30
110-82-7	Cyclohexane	2.0	U Q	5.0	2.0	1.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	5.0	1.0	0.30
124-48-1	Dibromochloromethane	0.50	U	1.0	0.50	0.20
1330-20-7	Xylenes, Total	0.80	U	1.0	0.80	0.40
127-18-4	Tetrachloroethene	0.60	U	1.0	0.60	0.30
156-59-2	cis-1,2-Dichloroethene	0.32	J M	1.0	0.60	0.30
156-60-5	trans-1,2-Dichloroethene	0.60	U	1.0	0.60	0.30
1634-04-4	Methyl tert-butyl ether	0.50	U	1.0	0.50	0.20
541-73-1	1,3-Dichlorobenzene	0.60	U	5.0	0.60	0.30
56-23-5	Carbon tetrachloride	0.60	U	1.0	0.60	0.30
591-78-6	2-Hexanone	1.0	U	10	1.0	0.40
67-64-1	Acetone	2.0	U	20	2.0	0.70
67-66-3	Chloroform	0.60	U	1.0	0.60	0.30
71-43-2	Benzene	0.60	U	1.0	0.60	0.30
71-55-6	1,1,1-Trichloroethane	0.60	U	1.0	0.60	0.30
74-83-9	Bromomethane	0.60	U	1.0	0.60	0.30
74-87-3	Chloromethane	0.50	U	1.0	0.50	0.20
75-00-3	Chloroethane	0.50	U	1.0	0.50	0.20
75-01-4	Vinyl chloride	0.50	U	1.0	0.50	0.20
75-09-2	Methylene Chloride	0.60	U	1.0	0.60	0.30
75-15-0	Carbon disulfide	0.60	U	5.0	0.60	0.30
75-25-2	Bromoform	2.0	U	4.0	2.0	1.0
75-27-4	Bromodichloromethane	0.50	U	1.0	0.50	0.20
75-34-3	1,1-Dichloroethane	0.60	U	1.0	0.60	0.30
75-35-4	1,1-Dichloroethene	0.60	U	1.0	0.60	0.30

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Client Sample ID: 3MW01-102621 Lab Sample ID: 410-60870-2

Matrix: Ground Water Lab File ID: 5N04S38.D

Analysis Method: 8260D Date Collected: 10/26/2021 15:55

Sample wt/vol: 5(mL) Date Analyzed: 11/05/2021 00:52

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: R-624SilMS 30m ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 191072 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
75-69-4	Trichlorofluoromethane	0.50	U	1.0	0.50	0.20
75-71-8	Dichlorodifluoromethane	0.50	U	1.0	0.50	0.20
76-13-1	Freon 113	0.60	U	10	0.60	0.30
78-87-5	1,2-Dichloropropane	0.60	U	1.0	0.60	0.30
78-93-3	2-Butanone	1.0	U	10	1.0	0.50
79-00-5	1,1,2-Trichloroethane	0.60	U	1.0	0.60	0.30
79-01-6	Trichloroethene	6.2		1.0	0.60	0.30
79-20-9	Methyl acetate	0.60	U	5.0	0.60	0.30
79-34-5	1,1,2,2-Tetrachloroethane	0.60	U	1.0	0.60	0.30
95-50-1	1,2-Dichlorobenzene	0.50	U	5.0	0.50	0.20
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U	5.0	1.0	0.30
98-82-8	Isopropylbenzene	0.50	U	5.0	0.50	0.20

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	104		81-118
1868-53-7	Dibromofluoromethane (Surr)	105		80-119
460-00-4	4-Bromofluorobenzene (Surr)	99		85-114
2037-26-5	Toluene-d8 (Surr)	102		89-112

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Client Sample ID: 3MW01-102621 Lab Sample ID: 410-60870-2

Matrix: Ground Water Lab File ID: 5N04S38.D

Analysis Method: 8260D Date Collected: 10/26/2021 15:55

Sample wt/vol: 5(mL) Date Analyzed: 11/05/2021 00:52

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: R-624SilMS 30m ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 191072 Units: ug/L

Number TICs Found: 0 TIC Result Total: 0

CAS NO.	COMPOUND NAME	RT	RESULT	Q	MATCH QUALITY
	Tentatively Identified Compound		None		

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S38.D
Lims ID: 410-60870-A-2
Client ID: 3MW01-102621
Sample Type: Client
Inject. Date: 05-Nov-2021 00:52:30 ALS Bottle#: 13 Worklist Smp#: 14
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 410-0043341-014
Operator ID: mec29284 Instrument ID: 26285

Method: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\MSVoa_26285a.m
Limit Group: MSV - 8260C DOD5
Last Update: 05-Nov-2021 13:27:33 Calib Date: 02-Aug-2021 18:49:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I17.D

Column 1 : Rxi-624Sil MS Capillary Column (0.25 mm) Det: MS Quad
Process Host: CTX1657

First Level Reviewer: kaewrungrueangp Date: 05-Nov-2021 13:27:33

	Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/l	Flags
1	Chlorotrifluoroethene	116		1.576				ND	
2	Dichlorodifluoromethane	85		1.606				ND	
6	Chlorodifluoromethane	51		1.625				ND	
3	Chloromethane	50		1.771				ND	
4	Butadiene	39		1.856				ND	
5	Vinyl chloride	62		1.856				ND	
7	2-Chloro-1,1,1-Trifluoroethane	118		1.917				ND	
8	Bromomethane	94		2.137				ND	
9	Chloroethane	64		2.192				ND	
10	Dichlorofluoromethane	67		2.387				ND	
11	Trichlorofluoromethane	101		2.423				ND	
12	Pentane	43		2.454				ND	
13	Ethanol	45		2.496				ND	
14	Ethyl ether	59		2.618				ND	
15	1,2-Dichloro-1,1,2-trifluoroetha	67		2.704				ND	
16	Acrolein	56		2.759				ND	
19	1,1-Dichloroethene	96		2.881				ND	
17	Acetone	58		2.899				ND	
18	112TCTFE	101		2.905				ND	
21	Isopropyl alcohol	45		3.027				ND	
20	Iodomethane	142		3.051				ND	
22	Carbon disulfide	76		3.137				ND	
24	Acetonitrile	41		3.185				ND	
23	Methyl acetate	43		3.228				ND	
25	3-Chloro-1-propene	41		3.252				ND	
* 27	t-Butyl alcohol-d10 (IS)	65	3.399	3.399	0.000	28	246084	250.0	
26	Methylene Chloride	84		3.417				ND	
28	2-Methyl-2-propanol	59		3.508				ND	
29	Acrylonitrile	53		3.679				ND	
30	Methyl tert-butyl ether	73		3.728				ND	
31	trans-1,2-Dichloroethene	96		3.740				ND	
32	Hexane	57		4.112				ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/l	Flags
33 1,1-Dichloroethane	63		4.338				ND	
34 Vinyl acetate	43		4.344				ND	
35 Isopropyl ether	45		4.405				ND	
36 2-Chloro-1,3-butadiene	53		4.447				ND	
37 Tert-butyl ethyl ether	59		4.959				ND	
39 2-Butanone (MEK)	43		5.173				ND	
38 cis-1,2-Dichloroethene	96	5.191	5.209	-0.018	1	2094	0.3209	a
40 2,2-Dichloropropane	77		5.215				ND	
42 Ethyl acetate	43		5.252				ND	
41 Propionitrile	54		5.276				ND	
43 Methacrylonitrile	67		5.502				ND	
44 Chlorobromomethane	128		5.551				ND	
45 Tetrahydrofuran	71		5.557				ND	
46 Chloroform	83		5.721				ND	
48 1,1,1-Trichloroethane	97		5.941				ND	
$ 47 Dibromofluoromethane (Surr)	113	5.947	5.947	0.000	93	242309	52.6	
49 Cyclohexane	56		6.038				ND	
S 74 1,2-Dichloroethene, Total	100				0		0.3209	
51 Carbon tetrachloride	117		6.160				ND	
50 1,1-Dichloropropene	75		6.166				ND	
52 Isobutyl alcohol	41		6.368				ND	
$ 56 1,2-Dichloroethane-d4 (Surr)	102	6.423	6.410	0.013	50	54973	51.9	
53 Benzene	78		6.441				ND	
55 1,2-Dichloroethane	62		6.526				ND	
57 Isopropyl acetate	43		6.563				ND	
58 Tert-amyl methyl ether	73		6.660				ND	
* 59 Fluorobenzene (IS)	96	6.874	6.874	0.000	99	942822	50.0	
60 n-Heptane	43		6.898				ND	
61 n-Butanol	56		7.300				ND	
62 Trichloroethene	95	7.367	7.374	-0.007	97	42035	6.24	
63 Methylcyclohexane	83		7.684				ND	
64 1,2-Dichloropropane	63		7.721				ND	
65 2-ethoxy-2-methyl butane	87		7.752				ND	
68 1,4-Dioxane	88		7.819				ND	
66 Dibromomethane	93		7.831				ND	
67 Methyl methacrylate	69		7.837				ND	
89 t-Amyl alcohol	73		7.842				ND	
69 n-Propyl acetate	61		7.928				ND	
70 Dichlorobromomethane	83		8.093				ND	
72 2-Nitropropane	41		8.386				ND	
71 2-Chloroethyl vinyl ether	63		8.489				ND	
73 cis-1,3-Dichloropropene	75		8.678				ND	
75 4-Methyl-2-pentanone (MIBK)	43		8.892				ND	
$ 76 Toluene-d8 (Surr)	98	9.020	9.020	0.000	93	928599	51.0	
77 Toluene	92		9.111				ND	
78 trans-1,3-Dichloropropene	75		9.428				ND	
79 Ethyl methacrylate	69		9.513				ND	
80 1,1,2-Trichloroethane	97		9.654				ND	
81 Tetrachloroethene	166		9.733				ND	
82 1,3-Dichloropropane	76		9.830				ND	
83 3,4-Dichloro-1-butene	75		9.873				ND	
84 2-Hexanone	43		9.910				ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/l	Flags
T 200 Ethylene oxide TIC	44		10.000				ND	
T 214 Propionaldehyde TIC	58		10.000				ND	U
T 213 Propane TIC	44		10.000				ND	U
T 183 Hexachloroethane TIC	117		10.000				ND	U
T 216 Isooctane TIC	57		10.000				ND	U
86 n-Butyl acetate	43		10.056				ND	
S 123 1,3-Dichloropropene, Total	100		10.060				ND	7
85 Chlorodibromomethane	129		10.062				ND	
87 Ethylene Dibromide	107		10.172				ND	
* 90 Chlorobenzene-d5 (IS)	117	10.653	10.653	0.000	84	728485	50.0	a
88 Chlorobenzene	112		10.684				ND	
91 1-Chlorohexane	91		10.684				ND	U
92 1,1,1,2-Tetrachloroethane	131		10.775				ND	
93 Ethylbenzene	91		10.788				ND	
94 m-Xylene & p-Xylene	106		10.916				ND	
S 130 Xylenes, Total	106		11.245				ND	7
95 o-Xylene	106		11.263				ND	
96 Styrene	104		11.281				ND	
97 Bromoform	173		11.440				ND	
98 Isopropylbenzene	105		11.586				ND	
99 cis-1,4-Dichloro-2-butene	88	11.732	11.641	0.091	95	15426	NC	
100 Cyclohexanone	55		11.659				ND	
$ 101 4-Bromofluorobenzene (Surr)	95	11.732	11.732	0.000	94	347678	49.5	
102 Bromobenzene	156		11.848				ND	
105 1,1,2,2-Tetrachloroethane	83		11.854				ND	
104 trans-1,4-Dichloro-2-butene	53		11.885				ND	
103 1,2,3-Trichloropropane	110		11.897				ND	
106 N-Propylbenzene	91		11.940				ND	
107 2-Chlorotoluene	126		12.007				ND	
108 1,3,5-Trimethylbenzene	105		12.086				ND	
109 4-Chlorotoluene	126		12.110				ND	
110 2,3,4-Trichlorobutene	109		12.129				ND	
111 tert-Butylbenzene	134		12.336				ND	
112 Pentachloroethane	167		12.360				ND	
113 1,2,4-Trimethylbenzene	105		12.379				ND	
114 sec-Butylbenzene	105		12.507				ND	
115 1,3-Dichlorobenzene	146		12.598				ND	
116 4-Isopropyltoluene	119		12.623				ND	
* 117 1,4-Dichlorobenzene-d4	152	12.659	12.659	0.000	94	404616	50.0	
118 1,4-Dichlorobenzene	146		12.677				ND	
119 1,2,3-Trimethylbenzene	105		12.696				ND	
120 Benzyl chloride	91		12.763				ND	
121 1,3-Diethylbenzene	119		12.830				ND	
122 p-Diethylbenzene	119		12.903				ND	
124 n-Butylbenzene	92		12.927				ND	
125 1,2-Dichlorobenzene	146		12.946				ND	
126 o-diethylbenzene	119		12.976				ND	
127 1,2-Dibromo-3-Chloropropane	75		13.506				ND	
135 Hexachloroethane	201		13.560				ND	
128 1,3,5-Trichlorobenzene	180		13.641				ND	
129 1,2,4-Trichlorobenzene	180		14.073				ND	
131 Hexachlorobutadiene	225		14.165				ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/l	Flags
132 Naphthalene	128		14.256				ND	
133 1,2,3-Trichlorobenzene	180		14.403				ND	
T 223 Tetranitromethane TIC	1		15.000				ND	
134 2-Methylnaphthalene	142		15.006				ND	
136 C4-C10	1		0.000				ND	
148 Diethoxymethane	1		0.000				ND	
146 2,3-Dichloro-1,3-butadiene	1		0.000				ND	
202 Bromoacetone (TIC)	1		0.000				ND	
143 trans-1,2,3-Trichlorobutene-2	1		0.000				ND	
195 1-Bromopropane TIC	1		0.000				ND	
161 Chloroacetonitrile	1		0.000				ND	
150 C5-C12	1		0.000				ND	
T 160 Ethyl bromide	1		0.000				ND	
158 tert-Butyl Formate	1		0.000				ND	
157 Methyl acrylate	1		0.000				ND	
208 Pentachloroethane TIC	1		0.000				ND	
209 Ethyl acrylate TIC	1		0.000				ND	
207 1-Bromo-2-chloroethane TIC	1		0.000				ND	
152 C6-C12	1		0.000				ND	
159 1,3-Divinylbenzene	1		0.000				ND	
151 1-Bromo-2-chloroethane	1		0.000				ND	
173 1,3-Dichloro-2-propanol TIC	1		0.000				ND	
141 1-Chlorobutane	1		0.000				ND	
192 Vinyl acetate (TIC)	1		0.000				ND	
199 Bis(2-chloroethyl)sulfide (TIC)	1		0.000				ND	
198 2-Bromo-3-chloropropene TIC	1		0.000				ND	
197 Pentafluorobenzene TIC	1		0.000				ND	
196 Epichlorohydrin TIC	1		0.000				ND	
S 162 divinyl benzene	1		0.000				ND	7
203 2,3-Dibromopropene TIC	1		0.000				ND	
163 Methylal	1		0.000				ND	
145 cis-1,2,3-Trichlorobutene-2	1		0.000				ND	
178 Propargyl alcohol TIC	1		0.000				ND	
S 154 Total Diethylbenzene	1		0.000				ND	7
156 C6-C10	1		0.000				ND	
144 1,1-Dichloro-1-fluoroethane	1		0.000				ND	
174 1-Methyl-2-pyrrilidinone TIC	1		0.000				ND	
165 n-Decane	57		0.000				ND	
176 beta-Propiolactone TIC	1		0.000				ND	
210 Ethanol TIC	1		0.000				ND	
175 n-Propylamine (TIC)	1		0.000				ND	
201 Paraldehyde TIC	1		0.000				ND	
155 3-chloro-1-Butene	1		0.000				ND	
187 2-Pentanone (TIC)	1		0.000				ND	
211 o-toluidine TIC	1		0.000				ND	
189 Epibromohydrin TIC	1		0.000				ND	
190 2-Picoline (TIC)	1		0.000				ND	
191 Chloroacetaldehyde TIC	1		0.000				ND	
142 1,4-Divinylbenzene	1		0.000				ND	
137 1,3-Dichlorobutene-2(total)	1		0.000				ND	
194 Vinyl bromide TIC	1		0.000				ND	
166 Dodecane	57		0.000				ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/l	Flags
179 Monochloroacetic acid TIC	1		0.000				ND	
180 Propanol TIC	1		0.000				ND	
181 Acetonitrile TIC	1		0.000				ND	
182 2-Chloroethanol TIC	1		0.000				ND	
138 Propene oxide	1		0.000				ND	
184 1,3-Dichlorobutene-2(total) TIC	1		0.000				ND	
185 Nitrobenzene TIC	1		0.000				ND	
219 Ethyl Acetate TIC	1		0.000				ND	
140 C4-C12	1		0.000				ND	
177 2-Bromoethanol TIC	1		0.000				ND	
224 Diethoxymethane TIC	1		0.000				ND	
188 Malononitrile (TIC)	1		0.000				ND	
205 Chloral hydrate (TIC)	1		0.000				ND	
172 2,3-Dibromo-1-propanol TIC	1		0.000				ND	
170 1,2,3,4-Diepoxybutane (TIC)	1		0.000				ND	
T 186 Bromoethane TIC	1		0.000				ND	
169 Ethyl acrylate	55		0.000				ND	
168 1,1,2,2-Tetrachloro-1,2-difluoro	1		0.000				ND	
167 Butane	1		0.000				ND	
206 3-Chloro-1,2-propanediol TIC	1		0.000				ND	
204 Methanol TIC	1		0.000				ND	
212 Propene oxide TIC	1		0.000				ND	
215 1-Chlorobutane TIC	1		0.000				ND	
217 n-butyl Acetate TIC	1		0.000				ND	
218 Ethyl ether TIC	1		0.000				ND	
171 N-Nitrosodi-n-butylamine TIC	1		0.000				ND	
220 Chlorodifluoromethane TIC	1		0.000				ND	
S 221 Total BTEX	1		0.000				ND	
222 2-Methylbutane TIC	1		0.000				ND	
193 Allyl Alcohol TIC	1		0.000				ND	
225 Butane TIC	1		0.000				ND	

QC Flag Legend

Processing Flags
- NC - Not Calibrated
- 7 - Failed Limit of Detection

Review Flags
- U - Marked Undetected
- a - User Assigned ID

Reagents:

MSV_Cent_ISSS_00004 Amount Added: 5.00 Units: uL Run Reagent

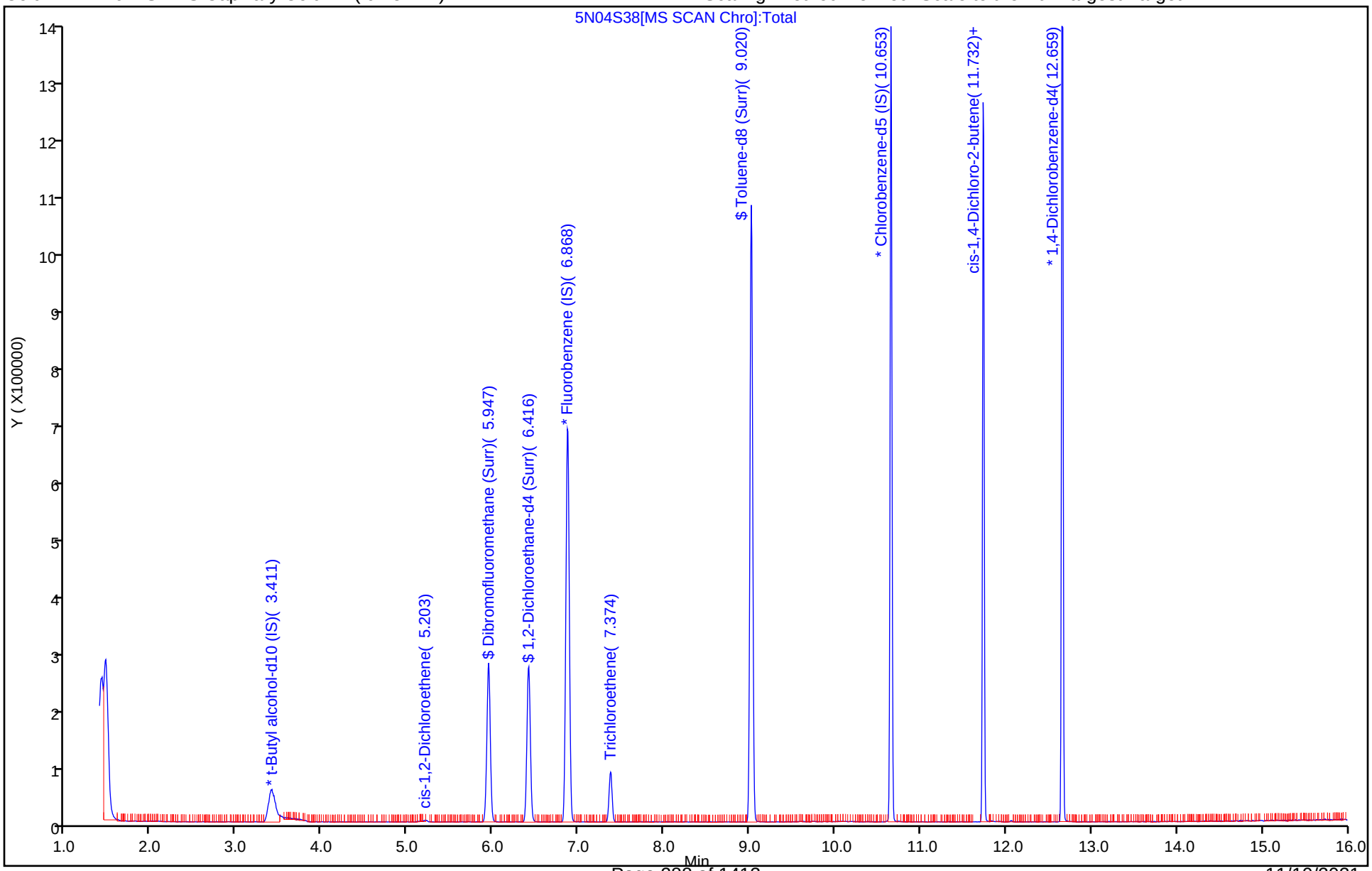
Report Date: 05-Nov-2021 13:27:34 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S38.D

Injection Date:	05-Nov-2021 00:52:30	Instrument ID:	26285	Operator ID:	mec29284
Lims ID:	410-60870-A-2	Lab Sample ID:	410-60870-2	Worklist Smp#:	14
Client ID:	3MW01-102621				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	13
Method:	MSVoa_26285a	Limit Group:	MSV - 8260C DOD5		

Column: Rxi-624Sil MS Capillary Column (0.25 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins Lancaster Laboratories Env, LLC

Recovery Report

Data File:	\\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S38.D				
Lims ID:	410-60870-A-2				
Client ID:	3MW01-102621				
Sample Type:	Client				
Inject. Date:	05-Nov-2021 00:52:30	ALS Bottle#:	13	Worklist Smp#:	14
Purge Vol:	5.000 mL	Dil. Factor:	1.0000		
Sample Info:	410-0043341-014				
Operator ID:	mec29284	Instrument ID:	26285		
Method:	\\chromfs\Lancaster\ChromData\26285\20211104-43341.b\MSVoa_26285a.m				
Limit Group:	MSV - 8260C DOD5				
Last Update:	05-Nov-2021 13:27:33	Calib Date:	02-Aug-2021 18:49:30		
Integrator:	RTE	ID Type:	Deconvolution ID		
Quant Method:	Internal Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I17.D				
Column 1 :	Rxi-624Sil MS Capillary Column (0.25 mm)		Det: MS Quad		
Process Host:	CTX1657				

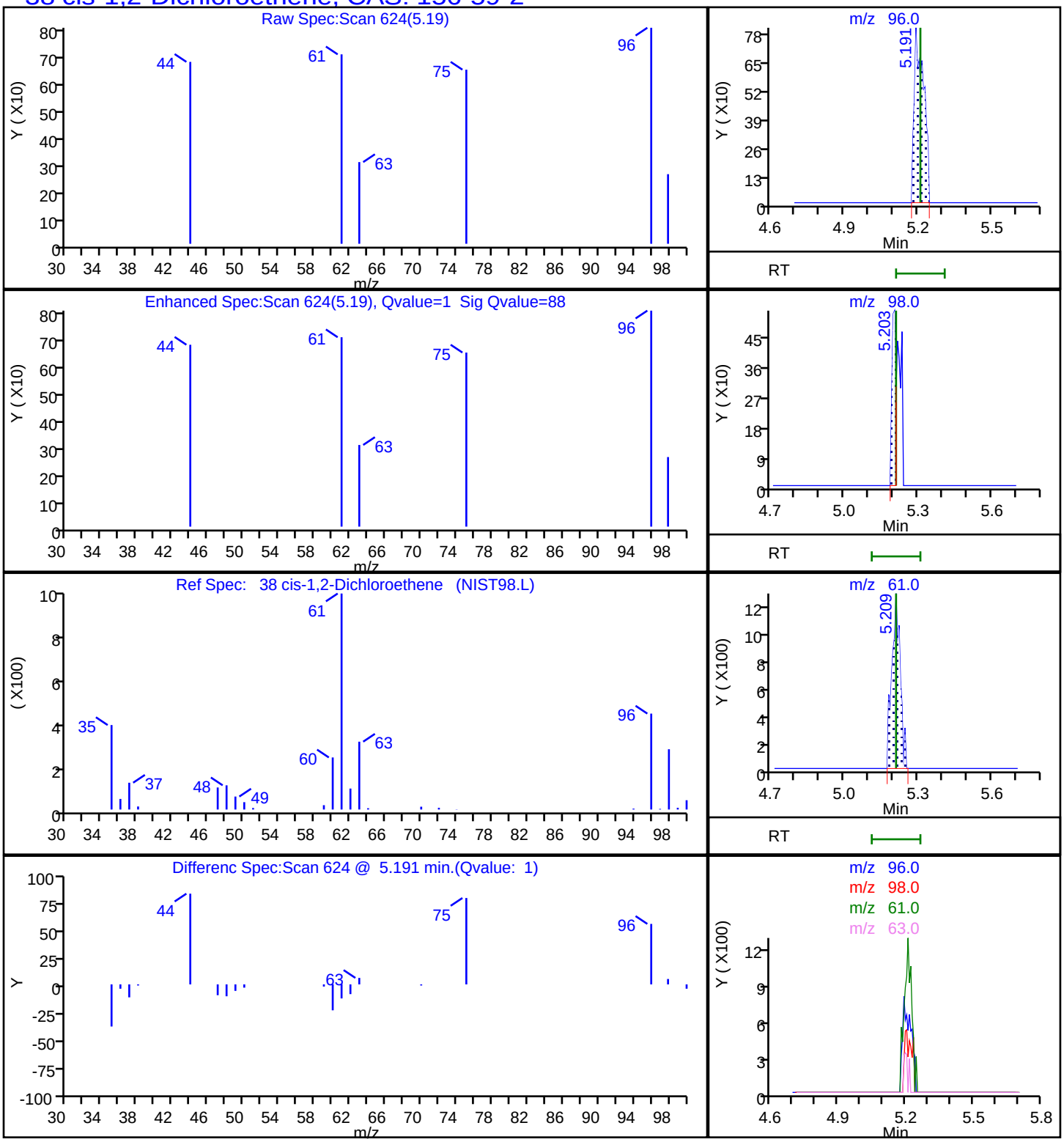
First Level Reviewer: kaewrungrueangp Date: 05-Nov-2021 13:27:33

Compound	Amount Added	Amount Recovered	% Rec.
$ 47 Dibromofluoromethane (Surr)	50.0	52.6	105.12
$ 56 1,2-Dichloroethane-d4 (Surr)	50.0	51.9	103.76
$ 76 Toluene-d8 (Surr)	50.0	51.0	102.00
$ 101 4-Bromofluorobenzene (Surr)	50.0	49.5	99.00

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S38.D
Injection Date: 05-Nov-2021 00:52:30 Instrument ID: 26285
Lims ID: 410-60870-A-2 Lab Sample ID: 410-60870-2
Client ID: 3MW01-102621
Operator ID: mec29284 ALS Bottle#: 13 Worklist Smp#: 14
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: MSVoa_26285a Limit Group: MSV - 8260C DOD5
Column: Rxi-624Sil MS Capillary Column (0.25 mm) Detector MS Quad

38 cis-1,2-Dichloroethene, CAS: 156-59-2

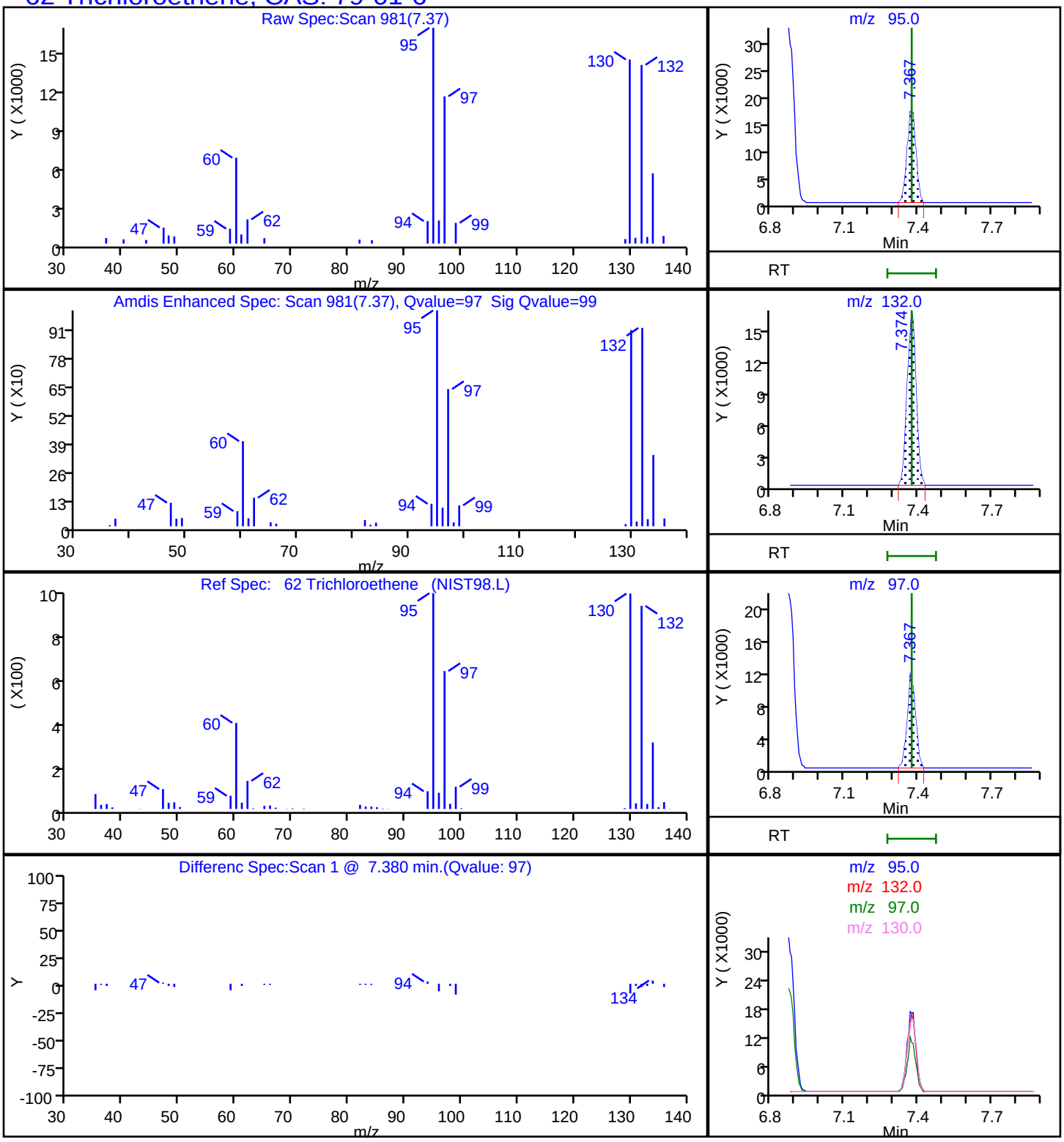


Report Date: 05-Nov-2021 13:27:34 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins Lancaster Laboratories Env, LLC

Data File:	\\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S38.D				
Injection Date:	05-Nov-2021 00:52:30	Instrument ID:	26285		
Lims ID:	410-60870-A-2	Lab Sample ID:	410-60870-2		
Client ID:	3MW01-102621				
Operator ID:	mec29284	ALS Bottle#:	13	Worklist Smp#:	14
Purge Vol:	5.000 mL	Dil. Factor:	1.0000		
Method:	MSVoa_26285a	Limit Group:	MSV - 8260C DOD5		
Column:	Rxi-624Sil MS Capillary Column (0.25 mm)	Detector	MS Quad		

62 Trichloroethene, CAS: 79-01-6



Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

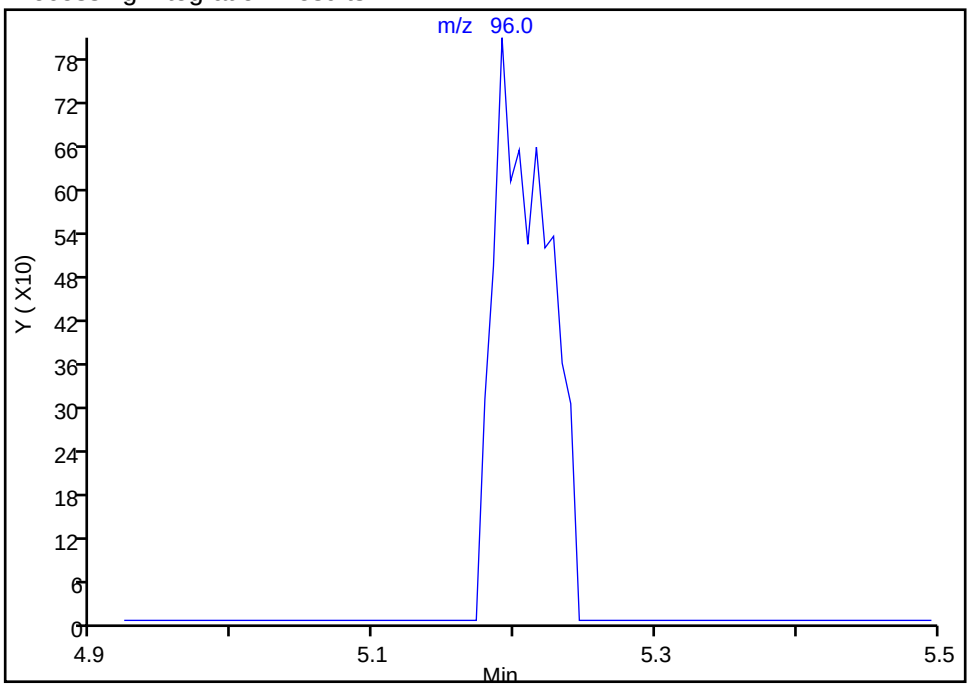
Data File:	\\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S38.D				
Injection Date:	05-Nov-2021 00:52:30	Instrument ID:	26285		
Lims ID:	410-60870-A-2	Lab Sample ID:	410-60870-2		
Client ID:	3MW01-102621				
Operator ID:	mec29284	ALS Bottle#:	13	Worklist Smp#:	14
Purge Vol:	5.000 mL	Dil. Factor:	1.0000		
Method:	MSVoa_26285a	Limit Group:	MSV - 8260C DOD5		
Column:	Rxi-624Sil MS Capillary Column (0.25 mm)	Detector	MS Quad		

38 cis-1,2-Dichloroethene, CAS: 156-59-2

Signal: 1

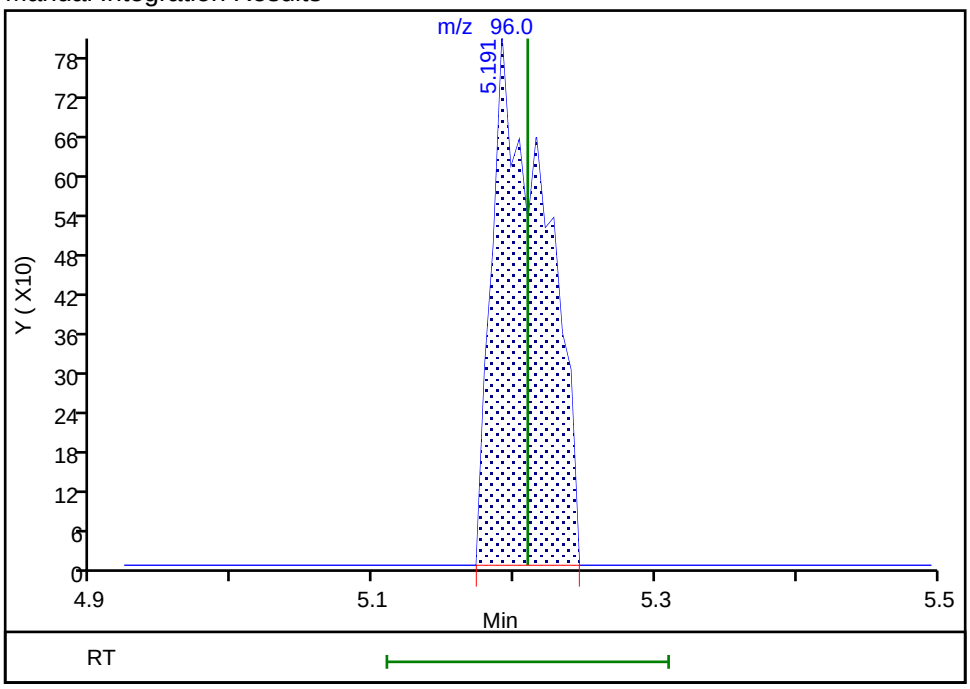
Not Detected
Expected RT: 5.21

Processing Integration Results



Manual Integration Results

RT: 5.19
Area: 2094
Amount: 0.320874
Amount Units: ug/l



Reviewer: kaewrungrueangp, 05-Nov-2021 13:26:33
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

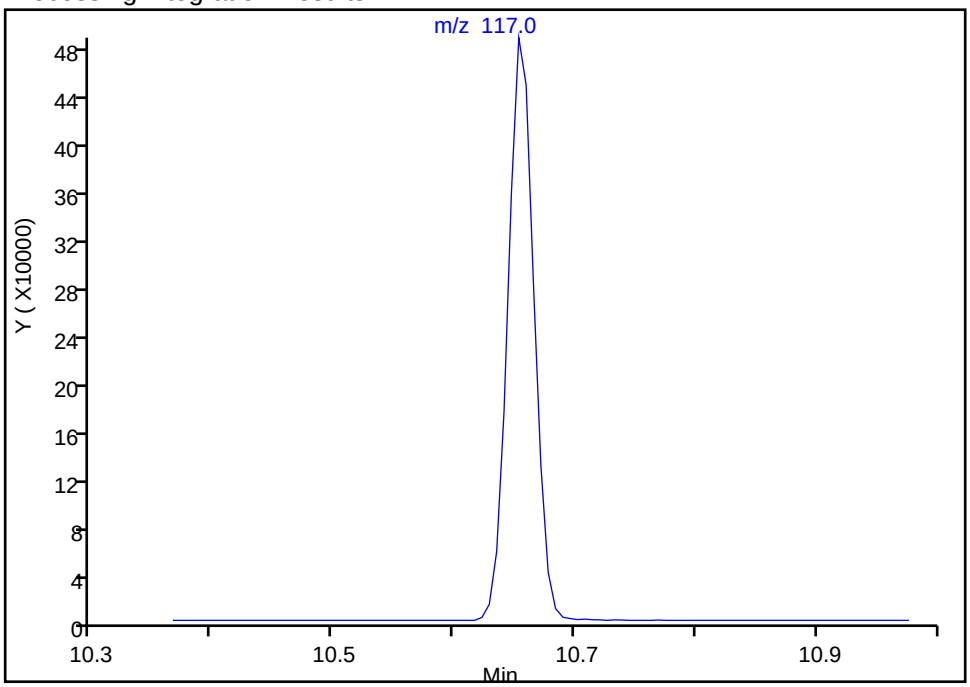
Data File:	\\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S38.D				
Injection Date:	05-Nov-2021 00:52:30	Instrument ID:	26285		
Lims ID:	410-60870-A-2	Lab Sample ID:	410-60870-2		
Client ID:	3MW01-102621				
Operator ID:	mec29284	ALS Bottle#:	13	Worklist Smp#:	14
Purge Vol:	5.000 mL	Dil. Factor:	1.0000		
Method:	MSVoa_26285a	Limit Group:	MSV - 8260C DOD5		
Column:	Rxi-624Sil MS Capillary Column (0.25mm)	Detector	MS Quad		

* 90 Chlorobenzene-d5 (IS), CAS: 3114-55-4

Signal: 1

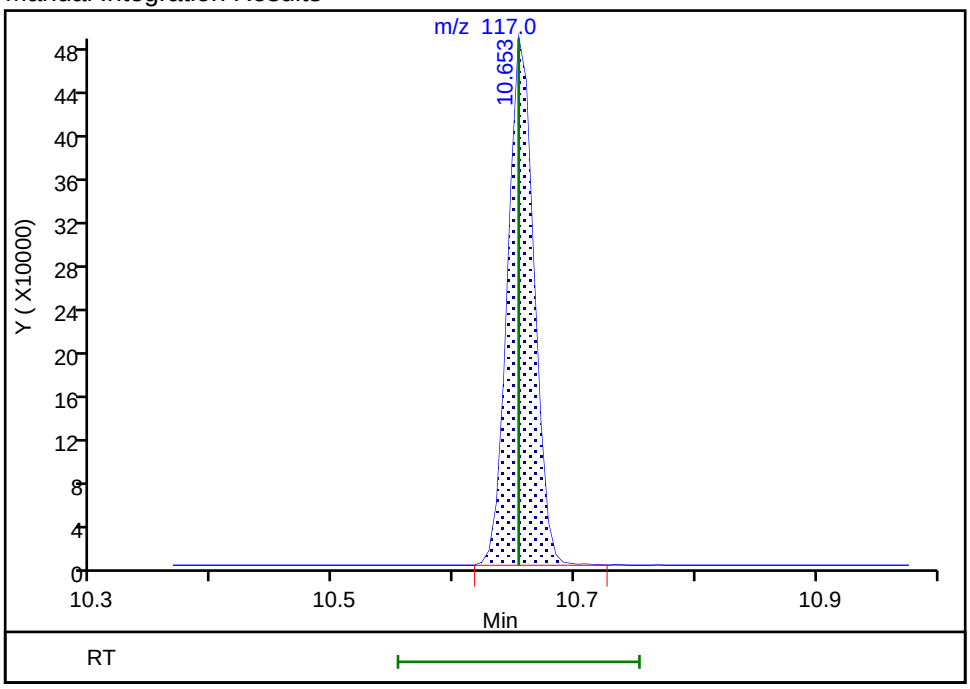
Not Detected
Expected RT: 10.65

Processing Integration Results



Manual Integration Results

RT: 10.65
Area: 728485
Amount: 50.000000
Amount Units: ug/l



Reviewer: kaewrungrueangp, 05-Nov-2021 13:26:13
Audit Action: Assigned Compound ID Audit Reason: Peak assignment corrected

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Client Sample ID: 3MW01-102621D Lab Sample ID: 410-60870-3

Matrix: Ground Water Lab File ID: 5N04S47.D

Analysis Method: 8260D Date Collected: 10/26/2021 00:00

Sample wt/vol: 5(mL) Date Analyzed: 11/05/2021 03:48

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: R-624SilMS 30m ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 191072 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
10061-01-5	cis-1,3-Dichloropropene	0.50	U	1.0	0.50	0.20
10061-02-6	trans-1,3-Dichloropropene	0.50	U	1.0	0.50	0.20
100-41-4	Ethylbenzene	0.80	U	1.0	0.80	0.40
100-42-5	Styrene	0.60	U	5.0	0.60	0.30
106-46-7	1,4-Dichlorobenzene	0.60	U	5.0	0.60	0.30
106-93-4	1,2-Dibromoethane (EDB)	0.50	U	1.0	0.50	0.20
107-06-2	1,2-Dichloroethane	0.60	U	1.0	0.60	0.30
108-10-1	4-Methyl-2-pentanone	1.0	U	10	1.0	0.50
108-87-2	Methylcyclohexane	1.0	U Q	5.0	1.0	0.50
108-88-3	Toluene	0.50	U	1.0	0.50	0.20
108-90-7	Chlorobenzene	0.60	U	1.0	0.60	0.30
110-82-7	Cyclohexane	2.0	U Q	5.0	2.0	1.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	5.0	1.0	0.30
124-48-1	Dibromochloromethane	0.50	U	1.0	0.50	0.20
1330-20-7	Xylenes, Total	0.80	U	1.0	0.80	0.40
127-18-4	Tetrachloroethene	0.60	U	1.0	0.60	0.30
156-59-2	cis-1,2-Dichloroethene	0.33	J	1.0	0.60	0.30
156-60-5	trans-1,2-Dichloroethene	0.60	U	1.0	0.60	0.30
1634-04-4	Methyl tert-butyl ether	0.50	U	1.0	0.50	0.20
541-73-1	1,3-Dichlorobenzene	0.60	U	5.0	0.60	0.30
56-23-5	Carbon tetrachloride	0.60	U	1.0	0.60	0.30
591-78-6	2-Hexanone	1.0	U	10	1.0	0.40
67-64-1	Acetone	2.0	U	20	2.0	0.70
67-66-3	Chloroform	0.60	U	1.0	0.60	0.30
71-43-2	Benzene	0.60	U	1.0	0.60	0.30
71-55-6	1,1,1-Trichloroethane	0.60	U	1.0	0.60	0.30
74-83-9	Bromomethane	0.60	U	1.0	0.60	0.30
74-87-3	Chloromethane	0.50	U	1.0	0.50	0.20
75-00-3	Chloroethane	0.50	U	1.0	0.50	0.20
75-01-4	Vinyl chloride	0.50	U	1.0	0.50	0.20
75-09-2	Methylene Chloride	0.60	U	1.0	0.60	0.30
75-15-0	Carbon disulfide	0.60	U	5.0	0.60	0.30
75-25-2	Bromoform	2.0	U	4.0	2.0	1.0
75-27-4	Bromodichloromethane	0.50	U	1.0	0.50	0.20
75-34-3	1,1-Dichloroethane	0.60	U	1.0	0.60	0.30
75-35-4	1,1-Dichloroethene	0.60	U	1.0	0.60	0.30

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Client Sample ID: 3MW01-102621D Lab Sample ID: 410-60870-3

Matrix: Ground Water Lab File ID: 5N04S47.D

Analysis Method: 8260D Date Collected: 10/26/2021 00:00

Sample wt/vol: 5(mL) Date Analyzed: 11/05/2021 03:48

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: R-624SilMS 30m ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 191072 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
75-69-4	Trichlorofluoromethane	0.50	U	1.0	0.50	0.20
75-71-8	Dichlorodifluoromethane	0.50	U	1.0	0.50	0.20
76-13-1	Freon 113	0.60	U	10	0.60	0.30
78-87-5	1,2-Dichloropropane	0.60	U	1.0	0.60	0.30
78-93-3	2-Butanone	1.0	U	10	1.0	0.50
79-00-5	1,1,2-Trichloroethane	0.60	U	1.0	0.60	0.30
79-01-6	Trichloroethene	5.8		1.0	0.60	0.30
79-20-9	Methyl acetate	0.60	U	5.0	0.60	0.30
79-34-5	1,1,2,2-Tetrachloroethane	0.60	U	1.0	0.60	0.30
95-50-1	1,2-Dichlorobenzene	0.50	U	5.0	0.50	0.20
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U	5.0	1.0	0.30
98-82-8	Isopropylbenzene	0.50	U	5.0	0.50	0.20

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	104		81-118
1868-53-7	Dibromofluoromethane (Surr)	107		80-119
460-00-4	4-Bromofluorobenzene (Surr)	101		85-114
2037-26-5	Toluene-d8 (Surr)	103		89-112

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Client Sample ID: 3MW01-102621D Lab Sample ID: 410-60870-3

Matrix: Ground Water Lab File ID: 5N04S47.D

Analysis Method: 8260D Date Collected: 10/26/2021 00:00

Sample wt/vol: 5(mL) Date Analyzed: 11/05/2021 03:48

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: R-624SilMS 30m ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 191072 Units: ug/L

Number TICs Found: 0 TIC Result Total: 0

CAS NO.	COMPOUND NAME	RT	RESULT	Q	MATCH QUALITY
	Tentatively Identified Compound		None		

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S47.D
Lims ID: 410-60870-A-3
Client ID: 3MW01-102621D
Sample Type: Client
Inject. Date: 05-Nov-2021 03:48:30 ALS Bottle#: 22 Worklist Smp#: 23
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 410-0043341-023
Operator ID: mec29284 Instrument ID: 26285

Method: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\MSVoa_26285a.m
Limit Group: MSV - 8260C DOD5
Last Update: 05-Nov-2021 02:30:59 Calib Date: 02-Aug-2021 18:49:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I17.D

Column 1 : Rxi-624Sil MS Capillary Column (0.25 mm) Det: MS Quad
Process Host: CTX1657

First Level Reviewer: kaewrungrueangp Date: 05-Nov-2021 15:44:15

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/l	Flags
2 Dichlorodifluoromethane	85		1.606				ND	
3 Chloromethane	50		1.771				ND	
5 Vinyl chloride	62		1.856				ND	
8 Bromomethane	94		2.137				ND	
9 Chloroethane	64		2.192				ND	
11 Trichlorofluoromethane	101		2.423				ND	
19 1,1-Dichloroethene	96		2.881				ND	
17 Acetone	58		2.899				ND	
18 112TCTFE	101		2.905				ND	
22 Carbon disulfide	76		3.137				ND	
23 Methyl acetate	43		3.228				ND	
* 27 t-Butyl alcohol-d10 (IS)	65	3.405	3.399	0.006	28	289121	250.0	
26 Methylene Chloride	84		3.417				ND	
30 Methyl tert-butyl ether	73		3.728				ND	
31 trans-1,2-Dichloroethene	96		3.740				ND	
33 1,1-Dichloroethane	63		4.338				ND	
39 2-Butanone (MEK)	43		5.173				ND	
38 cis-1,2-Dichloroethene	96	5.215	5.209	0.006	81	2133	0.3272	
46 Chloroform	83		5.721				ND	
48 1,1,1-Trichloroethane	97		5.941				ND	
$ 47 Dibromofluoromethane (Surr)	113	5.947	5.947	0.000	93	245630	53.3	
49 Cyclohexane	56		6.038				ND	
51 Carbon tetrachloride	117		6.160				ND	
$ 56 1,2-Dichloroethane-d4 (Surr)	102	6.410	6.410	0.000	50	54827	51.8	
53 Benzene	78		6.441				ND	
55 1,2-Dichloroethane	62		6.526				ND	
* 59 Fluorobenzene (IS)	96	6.874	6.874	0.000	99	941712	50.0	
62 Trichloroethene	95	7.373	7.374	-0.001	98	39267	5.83	
63 Methylcyclohexane	83		7.684				ND	
64 1,2-Dichloropropane	63		7.721				ND	
70 Dichlorobromomethane	83		8.093				ND	
73 cis-1,3-Dichloropropene	75		8.678				ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/l	Flags
75 4-Methyl-2-pentanone (MIBK)	43		8.892				ND	
$ 76 Toluene-d8 (Surr)	98	9.019	9.020	-0.001	93	935755	51.6	
77 Toluene	92		9.111				ND	
78 trans-1,3-Dichloropropene	75		9.428				ND	
80 1,1,2-Trichloroethane	97		9.654				ND	
81 Tetrachloroethene	166		9.733				ND	
84 2-Hexanone	43		9.910				ND	
85 Chlorodibromomethane	129		10.062				ND	
87 Ethylene Dibromide	107		10.172				ND	
* 90 Chlorobenzene-d5 (IS)	117	10.653	10.653	0.000	85	725295	50.0	
88 Chlorobenzene	112		10.684				ND	
93 Ethylbenzene	91		10.788				ND	
94 m-Xylene & p-Xylene	106		10.916				ND	
S 130 Xylenes, Total	106		11.245				ND	7
95 o-Xylene	106		11.263				ND	
96 Styrene	104		11.281				ND	
97 Bromoform	173		11.440				ND	
98 Isopropylbenzene	105		11.586				ND	
$ 101 4-Bromofluorobenzene (Surr)	95	11.732	11.732	0.000	94	353407	50.5	
105 1,1,2,2-Tetrachloroethane	83		11.854				ND	
115 1,3-Dichlorobenzene	146		12.598				ND	
* 117 1,4-Dichlorobenzene-d4	152	12.659	12.659	0.000	95	403946	50.0	
118 1,4-Dichlorobenzene	146		12.677				ND	
125 1,2-Dichlorobenzene	146		12.946				ND	
127 1,2-Dibromo-3-Chloropropane	75		13.506				ND	
129 1,2,4-Trichlorobenzene	180		14.073				ND	

QC Flag Legend

Processing Flags

7 - Failed Limit of Detection

Reagents:

MSV_Cent_ISSS_00004 Amount Added: 5.00 Units: uL Run Reagent

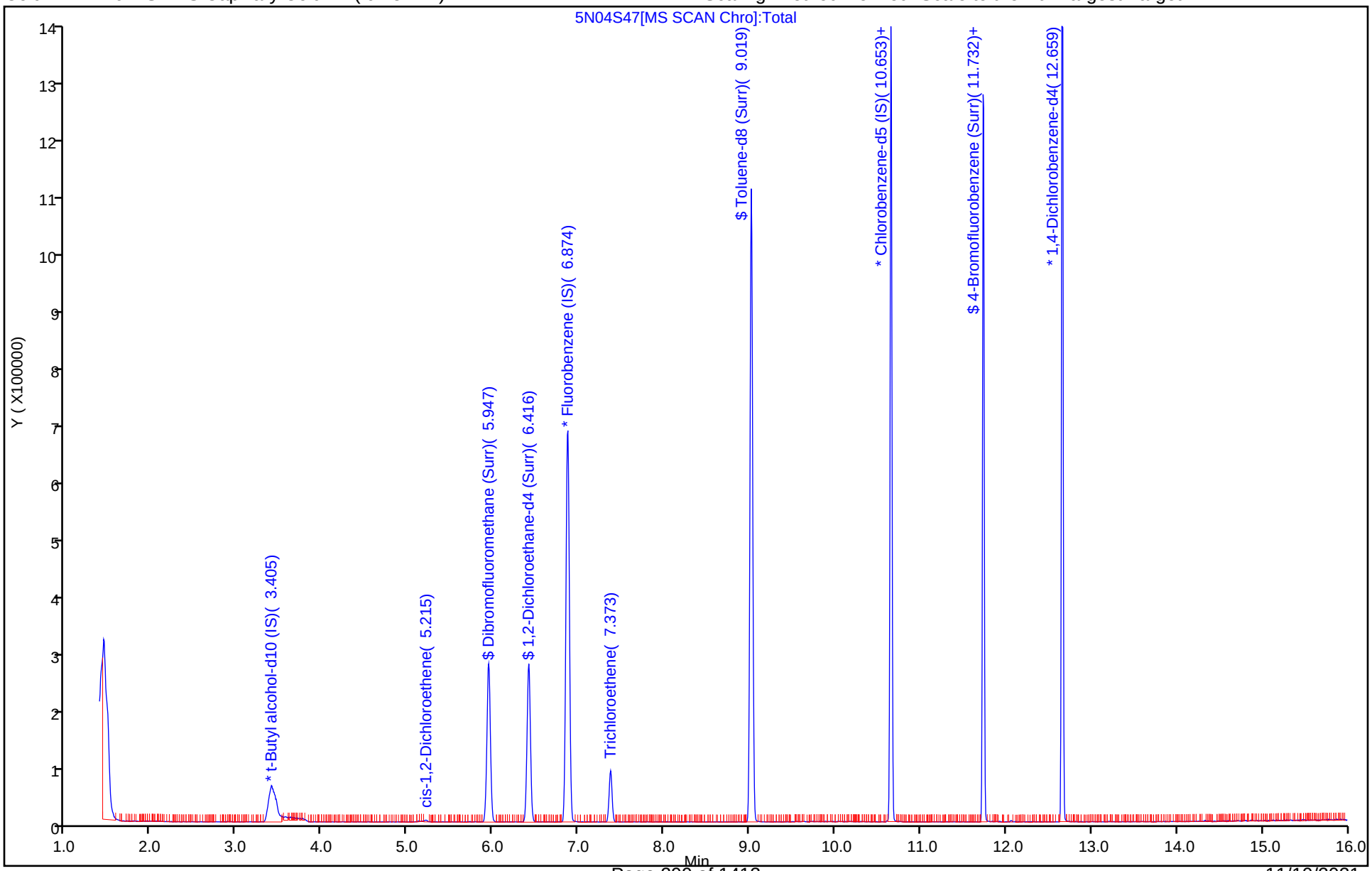
Report Date: 05-Nov-2021 15:44:16 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S47.D

Injection Date:	05-Nov-2021 03:48:30	Instrument ID:	26285	Operator ID:	mec29284
Lims ID:	410-60870-A-3	Lab Sample ID:	410-60870-3	Worklist Smp#:	23
Client ID:	3MW01-102621D				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	22
Method:	MSVoa_26285a	Limit Group:	MSV - 8260C DOD5		

Column: Rxi-624Sil MS Capillary Column (0.25 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins Lancaster Laboratories Env, LLC

Recovery Report

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S47.D
Lims ID: 410-60870-A-3
Client ID: 3MW01-102621D
Sample Type: Client
Inject. Date: 05-Nov-2021 03:48:30 ALS Bottle#: 22 Worklist Smp#: 23
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 410-0043341-023
Operator ID: mec29284 Instrument ID: 26285

Method: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\MSVoa_26285a.m
Limit Group: MSV - 8260C DOD5
Last Update: 05-Nov-2021 02:30:59 Calib Date: 02-Aug-2021 18:49:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I17.D

Column 1 : Rxi-624Sil MS Capillary Column (0.25 mm) Det: MS Quad
Process Host: CTX1657

First Level Reviewer: kaewrungrueangp Date: 05-Nov-2021 15:44:15

Compound	Amount Added	Amount Recovered	% Rec.
$ 47 Dibromofluoromethane (Surr)	50.0	53.3	106.69
$ 56 1,2-Dichloroethane-d4 (Surr)	50.0	51.8	103.61
$ 76 Toluene-d8 (Surr)	50.0	51.6	103.24
$ 101 4-Bromofluorobenzene (Surr)	50.0	50.5	101.07

Report Date: 05-Nov-2021 15:44:16 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S47.D

Injection Date: 05-Nov-2021 03:48:30 Instrument ID: 26285

Lims ID: 410-60870-A-3 Lab Sample ID: 410-60870-3

Client ID: 3MW01-102621D

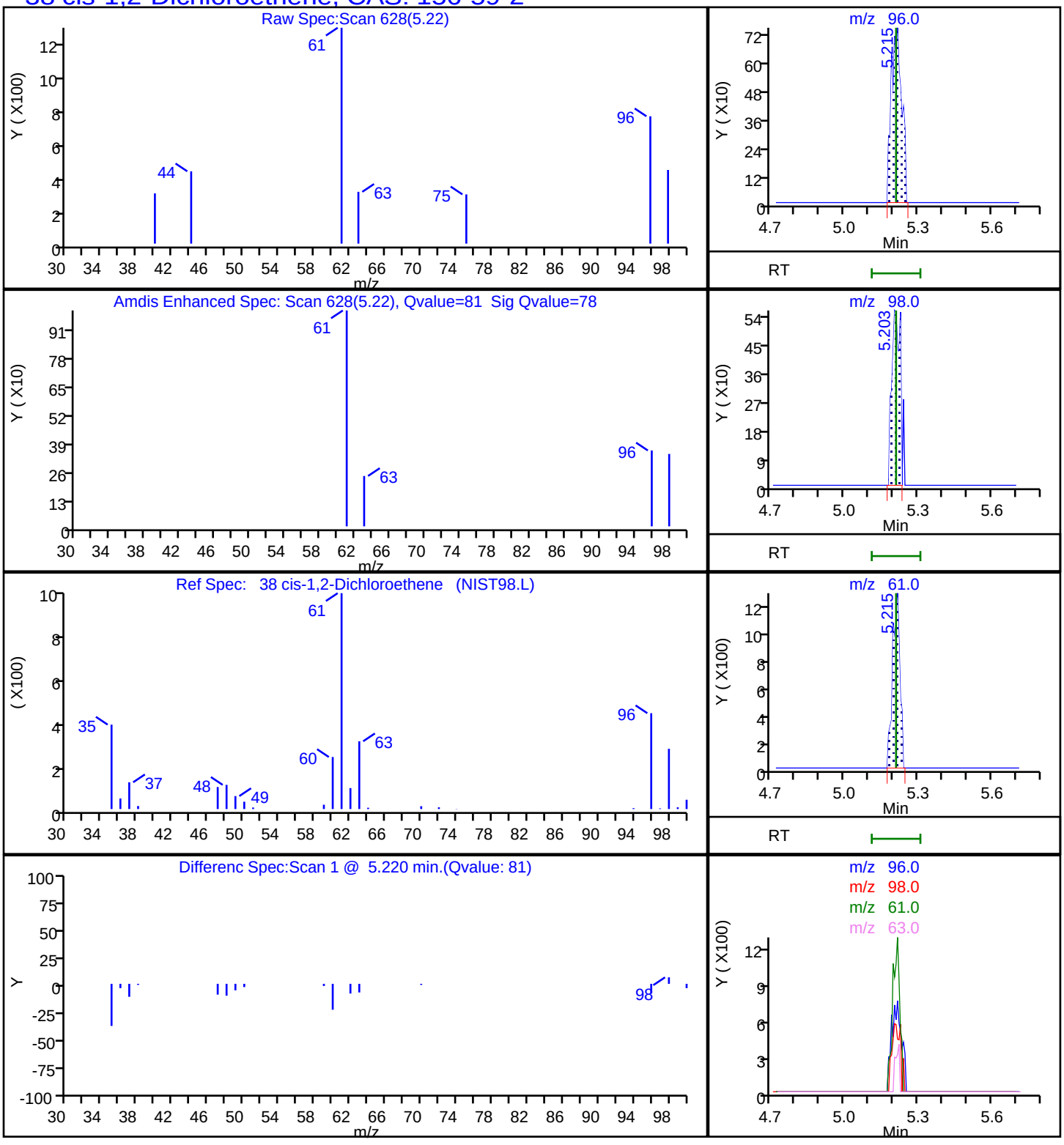
Operator ID: mec29284 ALS Bottle#: 22 Worklist Smp#: 23

Purge Vol: 5.000 mL Dil. Factor: 1.0000

Method: MSVoa_26285a Limit Group: MSV - 8260C DOD5

Column: Rxi-624Sil MS Capillary Column (0.25 mm) Detector MS Quad

38 cis-1,2-Dichloroethene, CAS: 156-59-2

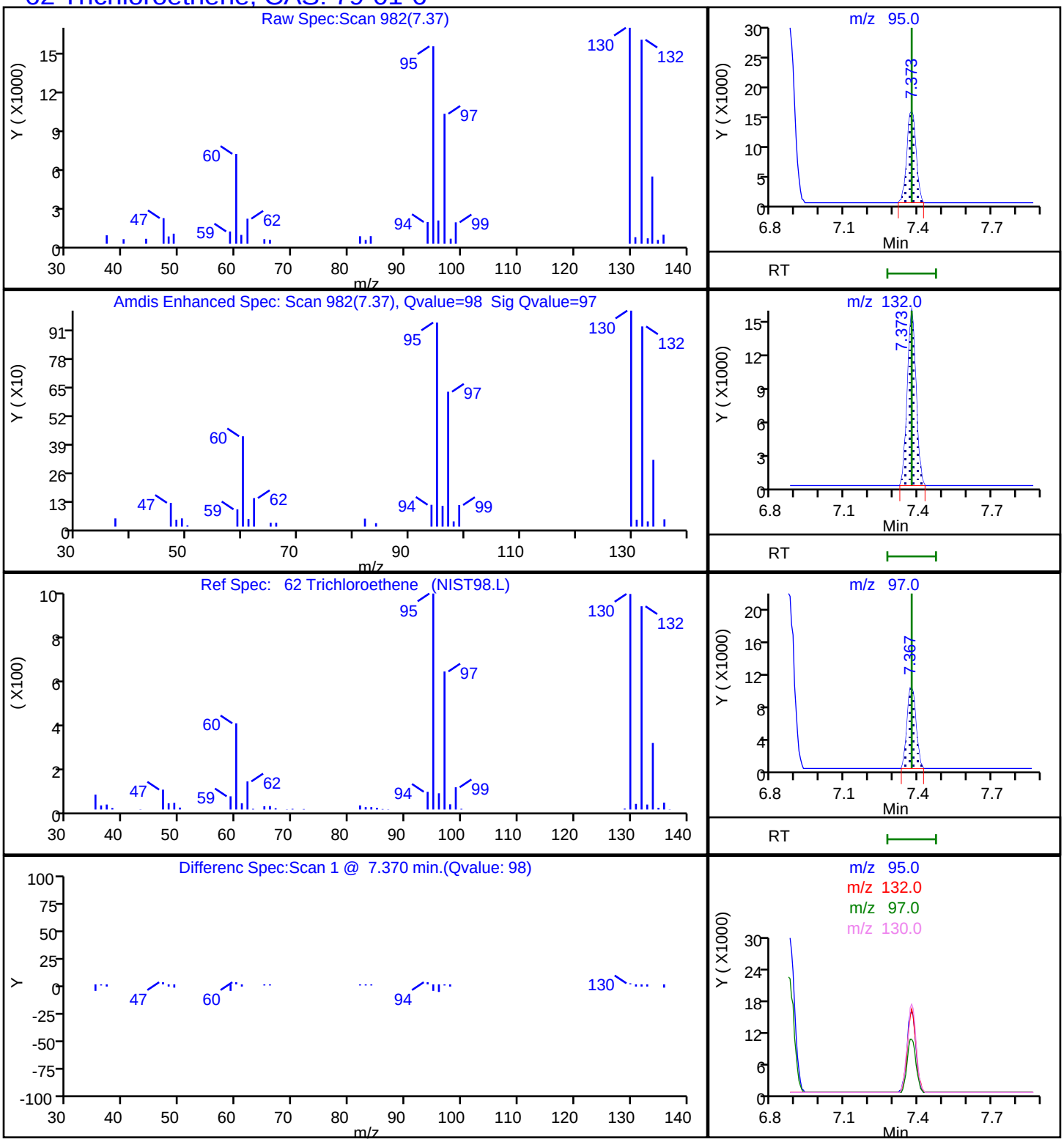


Report Date: 05-Nov-2021 15:44:16 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins Lancaster Laboratories Env, LLC

Data File:	\\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S47.D				
Injection Date:	05-Nov-2021 03:48:30	Instrument ID:	26285		
Lims ID:	410-60870-A-3	Lab Sample ID:	410-60870-3		
Client ID:	3MW01-102621D				
Operator ID:	mec29284	ALS Bottle#:	22	Worklist Smp#:	23
Purge Vol:	5.000 mL	Dil. Factor:	1.0000		
Method:	MSVoa_26285a	Limit Group:	MSV - 8260C DOD5		
Column:	Rxi-624Sil MS Capillary Column (0.25 mm)	Detector	MS Quad		

62 Trichloroethene, CAS: 79-01-6



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Client Sample ID: 3MW08-102721 Lab Sample ID: 410-60870-4

Matrix: Ground Water Lab File ID: 5N04S48.D

Analysis Method: 8260D Date Collected: 10/27/2021 10:35

Sample wt/vol: 5(mL) Date Analyzed: 11/05/2021 04:08

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: R-624SilMS 30m ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 191072 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
10061-01-5	cis-1,3-Dichloropropene	0.50	U	1.0	0.50	0.20
10061-02-6	trans-1,3-Dichloropropene	0.50	U	1.0	0.50	0.20
100-41-4	Ethylbenzene	0.80	U	1.0	0.80	0.40
100-42-5	Styrene	0.60	U	5.0	0.60	0.30
106-46-7	1,4-Dichlorobenzene	0.60	U	5.0	0.60	0.30
106-93-4	1,2-Dibromoethane (EDB)	0.50	U	1.0	0.50	0.20
107-06-2	1,2-Dichloroethane	0.60	U	1.0	0.60	0.30
108-10-1	4-Methyl-2-pentanone	1.0	U	10	1.0	0.50
108-87-2	Methylcyclohexane	1.0	U Q	5.0	1.0	0.50
108-88-3	Toluene	0.50	U	1.0	0.50	0.20
108-90-7	Chlorobenzene	0.60	U	1.0	0.60	0.30
110-82-7	Cyclohexane	2.0	U Q	5.0	2.0	1.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	5.0	1.0	0.30
124-48-1	Dibromochloromethane	0.50	U	1.0	0.50	0.20
1330-20-7	Xylenes, Total	0.80	U	1.0	0.80	0.40
127-18-4	Tetrachloroethene	0.60	U	1.0	0.60	0.30
156-59-2	cis-1,2-Dichloroethene	0.60	U	1.0	0.60	0.30
156-60-5	trans-1,2-Dichloroethene	0.60	U	1.0	0.60	0.30
1634-04-4	Methyl tert-butyl ether	0.50	U	1.0	0.50	0.20
541-73-1	1,3-Dichlorobenzene	0.60	U	5.0	0.60	0.30
56-23-5	Carbon tetrachloride	0.60	U	1.0	0.60	0.30
591-78-6	2-Hexanone	1.0	U	10	1.0	0.40
67-64-1	Acetone	2.0	U	20	2.0	0.70
67-66-3	Chloroform	0.60	U	1.0	0.60	0.30
71-43-2	Benzene	0.60	U	1.0	0.60	0.30
71-55-6	1,1,1-Trichloroethane	0.60	U	1.0	0.60	0.30
74-83-9	Bromomethane	0.60	U	1.0	0.60	0.30
74-87-3	Chloromethane	0.50	U	1.0	0.50	0.20
75-00-3	Chloroethane	0.50	U	1.0	0.50	0.20
75-01-4	Vinyl chloride	0.50	U	1.0	0.50	0.20
75-09-2	Methylene Chloride	0.60	U	1.0	0.60	0.30
75-15-0	Carbon disulfide	0.60	U	5.0	0.60	0.30
75-25-2	Bromoform	2.0	U	4.0	2.0	1.0
75-27-4	Bromodichloromethane	0.50	U	1.0	0.50	0.20
75-34-3	1,1-Dichloroethane	0.60	U	1.0	0.60	0.30
75-35-4	1,1-Dichloroethene	0.60	U	1.0	0.60	0.30

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Client Sample ID: 3MW08-102721 Lab Sample ID: 410-60870-4

Matrix: Ground Water Lab File ID: 5N04S48.D

Analysis Method: 8260D Date Collected: 10/27/2021 10:35

Sample wt/vol: 5(mL) Date Analyzed: 11/05/2021 04:08

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: R-624SilMS 30m ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 191072 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
75-69-4	Trichlorofluoromethane	0.50	U	1.0	0.50	0.20
75-71-8	Dichlorodifluoromethane	0.50	U	1.0	0.50	0.20
76-13-1	Freon 113	0.60	U	10	0.60	0.30
78-87-5	1,2-Dichloropropane	0.60	U	1.0	0.60	0.30
78-93-3	2-Butanone	1.0	U	10	1.0	0.50
79-00-5	1,1,2-Trichloroethane	0.60	U	1.0	0.60	0.30
79-01-6	Trichloroethene	0.60	U	1.0	0.60	0.30
79-20-9	Methyl acetate	0.60	U	5.0	0.60	0.30
79-34-5	1,1,2,2-Tetrachloroethane	0.60	U	1.0	0.60	0.30
95-50-1	1,2-Dichlorobenzene	0.50	U	5.0	0.50	0.20
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U	5.0	1.0	0.30
98-82-8	Isopropylbenzene	0.50	U	5.0	0.50	0.20

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	102		81-118
1868-53-7	Dibromofluoromethane (Surr)	106		80-119
460-00-4	4-Bromofluorobenzene (Surr)	101		85-114
2037-26-5	Toluene-d8 (Surr)	102		89-112

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Client Sample ID: 3MW08-102721 Lab Sample ID: 410-60870-4

Matrix: Ground Water Lab File ID: 5N04S48.D

Analysis Method: 8260D Date Collected: 10/27/2021 10:35

Sample wt/vol: 5(mL) Date Analyzed: 11/05/2021 04:08

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: R-624SilMS 30m ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 191072 Units: ug/L

Number TICs Found: 0 TIC Result Total: 0

CAS NO.	COMPOUND NAME	RT	RESULT	Q	MATCH QUALITY
	Tentatively Identified Compound		None		

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S48.D
Lims ID: 410-60870-A-4
Client ID: 3MW08-102721
Sample Type: Client
Inject. Date: 05-Nov-2021 04:08:30 ALS Bottle#: 23 Worklist Smp#: 24
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 410-0043341-024
Operator ID: mec29284 Instrument ID: 26285

Method: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\MSVoa_26285a.m
Limit Group: MSV - 8260C DOD5
Last Update: 05-Nov-2021 02:30:59 Calib Date: 02-Aug-2021 18:49:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I17.D

Column 1 : Rxi-624Sil MS Capillary Column (0.25 mm) Det: MS Quad
Process Host: CTX1657

First Level Reviewer: kaewrungrueangp Date: 05-Nov-2021 15:44:42

	Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/l	Flags
	2 Dichlorodifluoromethane	85		1.606				ND	
	3 Chloromethane	50		1.771				ND	
	5 Vinyl chloride	62		1.856				ND	
	8 Bromomethane	94		2.137				ND	
	9 Chloroethane	64		2.192				ND	
	11 Trichlorofluoromethane	101		2.423				ND	
	19 1,1-Dichloroethene	96		2.881				ND	
	17 Acetone	58		2.899				ND	
	18 112TCTFE	101		2.905				ND	
	22 Carbon disulfide	76		3.137				ND	7
	23 Methyl acetate	43		3.228				ND	
*	27 t-Butyl alcohol-d10 (IS)	65	3.399	3.399	0.000	29	281063	250.0	
	26 Methylene Chloride	84		3.417				ND	
	30 Methyl tert-butyl ether	73		3.728				ND	
	31 trans-1,2-Dichloroethene	96		3.740				ND	
	33 1,1-Dichloroethane	63		4.338				ND	
	39 2-Butanone (MEK)	43		5.173				ND	
	38 cis-1,2-Dichloroethene	96		5.209				ND	
	46 Chloroform	83		5.721				ND	
	48 1,1,1-Trichloroethane	97		5.941				ND	
$	47 Dibromofluoromethane (Surr)	113	5.947	5.947	0.000	93	244285	52.8	
	49 Cyclohexane	56		6.038				ND	
	51 Carbon tetrachloride	117		6.160				ND	
$	56 1,2-Dichloroethane-d4 (Surr)	102	6.410	6.410	0.000	50	54209	51.0	
	53 Benzene	78		6.441				ND	
	55 1,2-Dichloroethane	62		6.526				ND	
*	59 Fluorobenzene (IS)	96	6.867	6.874	-0.007	99	945499	50.0	
	62 Trichloroethene	95		7.374				ND	
	63 Methylcyclohexane	83		7.684				ND	
	64 1,2-Dichloropropane	63		7.721				ND	
	70 Dichlorobromomethane	83		8.093				ND	
	73 cis-1,3-Dichloropropene	75		8.678				ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/l	Flags
75 4-Methyl-2-pentanone (MIBK)	43		8.892				ND	
$ 76 Toluene-d8 (Surr)	98	9.020	9.020	0.000	94	928682	51.2	
77 Toluene	92		9.111				ND	
78 trans-1,3-Dichloropropene	75		9.428				ND	
80 1,1,2-Trichloroethane	97		9.654				ND	
81 Tetrachloroethene	166		9.733				ND	
84 2-Hexanone	43		9.910				ND	
85 Chlorodibromomethane	129		10.062				ND	
87 Ethylene Dibromide	107		10.172				ND	
* 90 Chlorobenzene-d5 (IS)	117	10.653	10.653	0.000	85	725872	50.0	
88 Chlorobenzene	112		10.684				ND	
93 Ethylbenzene	91		10.788				ND	
94 m-Xylene & p-Xylene	106		10.916				ND	
S 130 Xylenes, Total	106		11.245				ND	7
95 o-Xylene	106		11.263				ND	
96 Styrene	104		11.281				ND	
97 Bromoform	173		11.440				ND	
98 Isopropylbenzene	105		11.586				ND	
$ 101 4-Bromofluorobenzene (Surr)	95	11.732	11.732	0.000	94	353007	50.4	
105 1,1,2,2-Tetrachloroethane	83		11.854				ND	
115 1,3-Dichlorobenzene	146		12.598				ND	
* 117 1,4-Dichlorobenzene-d4	152	12.659	12.659	0.000	94	405789	50.0	
118 1,4-Dichlorobenzene	146		12.677				ND	
125 1,2-Dichlorobenzene	146		12.946				ND	
127 1,2-Dibromo-3-Chloropropane	75		13.506				ND	
129 1,2,4-Trichlorobenzene	180		14.073				ND	

QC Flag Legend

Processing Flags

7 - Failed Limit of Detection

Reagents:

MSV_Cent_ISSS_00004 Amount Added: 5.00 Units: uL Run Reagent

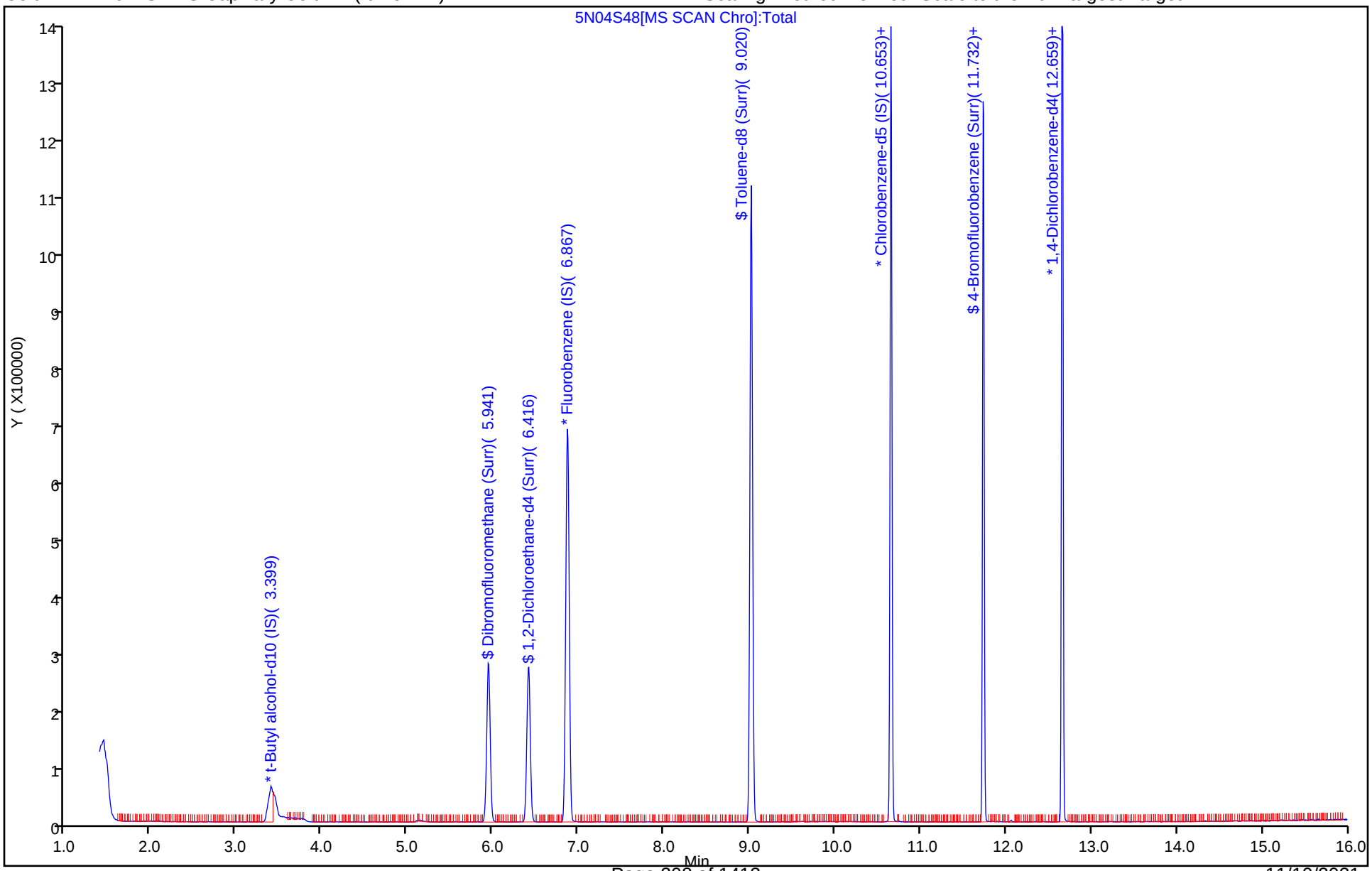
Report Date: 05-Nov-2021 15:44:43 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S48.D

Injection Date:	05-Nov-2021 04:08:30	Instrument ID:	26285	Operator ID:	mec29284
Lims ID:	410-60870-A-4	Lab Sample ID:	410-60870-4	Worklist Smp#:	24
Client ID:	3MW08-102721				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	23
Method:	MSVoa_26285a	Limit Group:	MSV - 8260C DOD5		

Column: Rxi-624Sil MS Capillary Column (0.25 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins Lancaster Laboratories Env, LLC

Recovery Report

Data File:	\\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S48.D				
Lims ID:	410-60870-A-4				
Client ID:	3MW08-102721				
Sample Type:	Client				
Inject. Date:	05-Nov-2021 04:08:30	ALS Bottle#:	23	Worklist Smp#:	24
Purge Vol:	5.000 mL	Dil. Factor:	1.0000		
Sample Info:	410-0043341-024				
Operator ID:	mec29284	Instrument ID:	26285		
Method:	\\chromfs\Lancaster\ChromData\26285\20211104-43341.b\MSVoa_26285a.m				
Limit Group:	MSV - 8260C DOD5				
Last Update:	05-Nov-2021 02:30:59	Calib Date:	02-Aug-2021 18:49:30		
Integrator:	RTE	ID Type:	Deconvolution ID		
Quant Method:	Internal Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I17.D				
Column 1 :	Rxi-624Sil MS Capillary Column (0.25 mm)		Det: MS Quad		
Process Host:	CTX1657				

First Level Reviewer: kaewrungrueangp Date: 05-Nov-2021 15:44:42

Compound	Amount Added	Amount Recovered	% Rec.
$ 47 Dibromofluoromethane (Surr)	50.0	52.8	105.68
$ 56 1,2-Dichloroethane-d4 (Surr)	50.0	51.0	102.03
$ 76 Toluene-d8 (Surr)	50.0	51.2	102.37
$ 101 4-Bromofluorobenzene (Surr)	50.0	50.4	100.88

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Client Sample ID: 3MW07-102721 Lab Sample ID: 410-60870-5

Matrix: Ground Water Lab File ID: 5N04S49.D

Analysis Method: 8260D Date Collected: 10/27/2021 11:15

Sample wt/vol: 5(mL) Date Analyzed: 11/05/2021 04:28

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: R-624SilMS 30m ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 191072 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
10061-01-5	cis-1,3-Dichloropropene	0.50	U	1.0	0.50	0.20
10061-02-6	trans-1,3-Dichloropropene	0.50	U	1.0	0.50	0.20
100-41-4	Ethylbenzene	0.80	U	1.0	0.80	0.40
100-42-5	Styrene	0.60	U	5.0	0.60	0.30
106-46-7	1,4-Dichlorobenzene	0.60	U	5.0	0.60	0.30
106-93-4	1,2-Dibromoethane (EDB)	0.50	U	1.0	0.50	0.20
107-06-2	1,2-Dichloroethane	0.60	U	1.0	0.60	0.30
108-10-1	4-Methyl-2-pentanone	1.0	U	10	1.0	0.50
108-87-2	Methylcyclohexane	1.0	U Q	5.0	1.0	0.50
108-88-3	Toluene	0.50	U	1.0	0.50	0.20
108-90-7	Chlorobenzene	0.60	U	1.0	0.60	0.30
110-82-7	Cyclohexane	2.0	U Q	5.0	2.0	1.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	5.0	1.0	0.30
124-48-1	Dibromochloromethane	0.50	U	1.0	0.50	0.20
1330-20-7	Xylenes, Total	0.80	U	1.0	0.80	0.40
127-18-4	Tetrachloroethene	0.60	U	1.0	0.60	0.30
156-59-2	cis-1,2-Dichloroethene	0.60	J M	1.0	0.60	0.30
156-60-5	trans-1,2-Dichloroethene	0.60	U	1.0	0.60	0.30
1634-04-4	Methyl tert-butyl ether	1.1		1.0	0.50	0.20
541-73-1	1,3-Dichlorobenzene	0.60	U	5.0	0.60	0.30
56-23-5	Carbon tetrachloride	0.60	U	1.0	0.60	0.30
591-78-6	2-Hexanone	1.0	U	10	1.0	0.40
67-64-1	Acetone	2.0	U	20	2.0	0.70
67-66-3	Chloroform	0.60	U	1.0	0.60	0.30
71-43-2	Benzene	0.60	U	1.0	0.60	0.30
71-55-6	1,1,1-Trichloroethane	0.60	U	1.0	0.60	0.30
74-83-9	Bromomethane	0.60	U	1.0	0.60	0.30
74-87-3	Chloromethane	0.50	U	1.0	0.50	0.20
75-00-3	Chloroethane	0.50	U	1.0	0.50	0.20
75-01-4	Vinyl chloride	0.50	U	1.0	0.50	0.20
75-09-2	Methylene Chloride	0.60	U	1.0	0.60	0.30
75-15-0	Carbon disulfide	0.60	U	5.0	0.60	0.30
75-25-2	Bromoform	2.0	U	4.0	2.0	1.0
75-27-4	Bromodichloromethane	0.50	U	1.0	0.50	0.20
75-34-3	1,1-Dichloroethane	0.60	U	1.0	0.60	0.30
75-35-4	1,1-Dichloroethene	0.60	U	1.0	0.60	0.30

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Client Sample ID: 3MW07-102721 Lab Sample ID: 410-60870-5

Matrix: Ground Water Lab File ID: 5N04S49.D

Analysis Method: 8260D Date Collected: 10/27/2021 11:15

Sample wt/vol: 5(mL) Date Analyzed: 11/05/2021 04:28

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: R-624SilMS 30m ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 191072 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
75-69-4	Trichlorofluoromethane	0.50	U	1.0	0.50	0.20
75-71-8	Dichlorodifluoromethane	0.50	U	1.0	0.50	0.20
76-13-1	Freon 113	0.60	U	10	0.60	0.30
78-87-5	1,2-Dichloropropane	0.60	U	1.0	0.60	0.30
78-93-3	2-Butanone	1.0	U	10	1.0	0.50
79-00-5	1,1,2-Trichloroethane	0.60	U	1.0	0.60	0.30
79-01-6	Trichloroethene	26		1.0	0.60	0.30
79-20-9	Methyl acetate	0.60	U	5.0	0.60	0.30
79-34-5	1,1,2,2-Tetrachloroethane	0.60	U	1.0	0.60	0.30
95-50-1	1,2-Dichlorobenzene	0.50	U	5.0	0.50	0.20
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U	5.0	1.0	0.30
98-82-8	Isopropylbenzene	0.50	U	5.0	0.50	0.20

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	102	M	81-118
1868-53-7	Dibromofluoromethane (Surr)	107		80-119
460-00-4	4-Bromofluorobenzene (Surr)	102		85-114
2037-26-5	Toluene-d8 (Surr)	103		89-112

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Client Sample ID: 3MW07-102721 Lab Sample ID: 410-60870-5

Matrix: Ground Water Lab File ID: 5N04S49.D

Analysis Method: 8260D Date Collected: 10/27/2021 11:15

Sample wt/vol: 5(mL) Date Analyzed: 11/05/2021 04:28

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: R-624SilMS 30m ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 191072 Units: ug/L

Number TICs Found: 0 TIC Result Total: 0

CAS NO.	COMPOUND NAME	RT	RESULT	Q	MATCH QUALITY
	Tentatively Identified Compound		None		

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S49.D
Lims ID: 410-60870-A-5
Client ID: 3MW07-102721
Sample Type: Client
Inject. Date: 05-Nov-2021 04:28:30 ALS Bottle#: 24 Worklist Smp#: 25
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 410-0043341-025
Operator ID: mec29284 Instrument ID: 26285

Method: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\MSVoa_26285a.m
Limit Group: MSV - 8260C DOD5
Last Update: 05-Nov-2021 16:03:48 Calib Date: 02-Aug-2021 18:49:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I17.D

Column 1 : Rxi-624Sil MS Capillary Column (0.25 mm) Det: MS Quad
Process Host: CTX1657

First Level Reviewer: kaewrungrueangp Date: 05-Nov-2021 16:03:48

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/l	Flags
2 Dichlorodifluoromethane	85		1.606				ND	
3 Chloromethane	50		1.771				ND	
5 Vinyl chloride	62		1.856				ND	
8 Bromomethane	94		2.137				ND	
9 Chloroethane	64		2.192				ND	
11 Trichlorofluoromethane	101		2.423				ND	
19 1,1-Dichloroethene	96		2.881				ND	
17 Acetone	58		2.899				ND	
18 112TCTFE	101		2.905				ND	
22 Carbon disulfide	76		3.137				ND	
23 Methyl acetate	43		3.228				ND	
* 27 t-Butyl alcohol-d10 (IS)	65	3.405	3.399	0.006	37	280499	250.0	
26 Methylene Chloride	84		3.417				ND	
30 Methyl tert-butyl ether	73	3.728	3.728	0.000	97	18801	1.11	
31 trans-1,2-Dichloroethene	96		3.740				ND	
33 1,1-Dichloroethane	63		4.338				ND	
39 2-Butanone (MEK)	43		5.173				ND	
38 cis-1,2-Dichloroethene	96	5.215	5.209	0.006	76	3879	0.6023	a
46 Chloroform	83		5.721				ND	
48 1,1,1-Trichloroethane	97		5.941				ND	
$ 47 Dibromofluoromethane (Surr)	113	5.941	5.947	-0.006	93	243028	53.4	
49 Cyclohexane	56		6.038				ND	
51 Carbon tetrachloride	117		6.160				ND	
$ 56 1,2-Dichloroethane-d4 (Surr)	102	6.410	6.410	0.000	50	53133	50.8	M
53 Benzene	78		6.441				ND	
55 1,2-Dichloroethane	62		6.526				ND	
* 59 Fluorobenzene (IS)	96	6.868	6.874	-0.006	99	930431	50.0	
62 Trichloroethene	95	7.367	7.374	-0.007	99	170922	25.7	
63 Methylcyclohexane	83		7.684				ND	
64 1,2-Dichloropropane	63		7.721				ND	
70 Dichlorobromomethane	83		8.093				ND	
73 cis-1,3-Dichloropropene	75		8.678				ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/l	Flags
75 4-Methyl-2-pentanone (MIBK)	43		8.892				ND	
$ 76 Toluene-d8 (Surr)	98	9.020	9.020	0.000	93	929159	51.6	
77 Toluene	92		9.111				ND	
78 trans-1,3-Dichloropropene	75		9.428				ND	
80 1,1,2-Trichloroethane	97		9.654				ND	
81 Tetrachloroethene	166		9.733				ND	
84 2-Hexanone	43		9.910				ND	
85 Chlorodibromomethane	129		10.062				ND	
87 Ethylene Dibromide	107		10.172				ND	
* 90 Chlorobenzene-d5 (IS)	117	10.653	10.653	0.000	85	720480	50.0	
88 Chlorobenzene	112		10.684				ND	
93 Ethylbenzene	91		10.788				ND	
94 m-Xylene & p-Xylene	106		10.916				ND	
S 130 Xylenes, Total	106		11.245				ND	7
95 o-Xylene	106		11.263				ND	
96 Styrene	104		11.281				ND	
97 Bromoform	173		11.440				ND	
98 Isopropylbenzene	105		11.586				ND	
$ 101 4-Bromofluorobenzene (Surr)	95	11.732	11.732	0.000	94	354149	51.0	
105 1,1,2,2-Tetrachloroethane	83		11.854				ND	
115 1,3-Dichlorobenzene	146		12.598				ND	
* 117 1,4-Dichlorobenzene-d4	152	12.659	12.659	0.000	95	399719	50.0	Ma
118 1,4-Dichlorobenzene	146		12.677				ND	
125 1,2-Dichlorobenzene	146		12.946				ND	
127 1,2-Dibromo-3-Chloropropane	75		13.506				ND	
129 1,2,4-Trichlorobenzene	180		14.073				ND	

QC Flag Legend

Processing Flags

7 - Failed Limit of Detection

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

MSV_Cent_ISSS_00004 Amount Added: 5.00 Units: uL Run Reagent

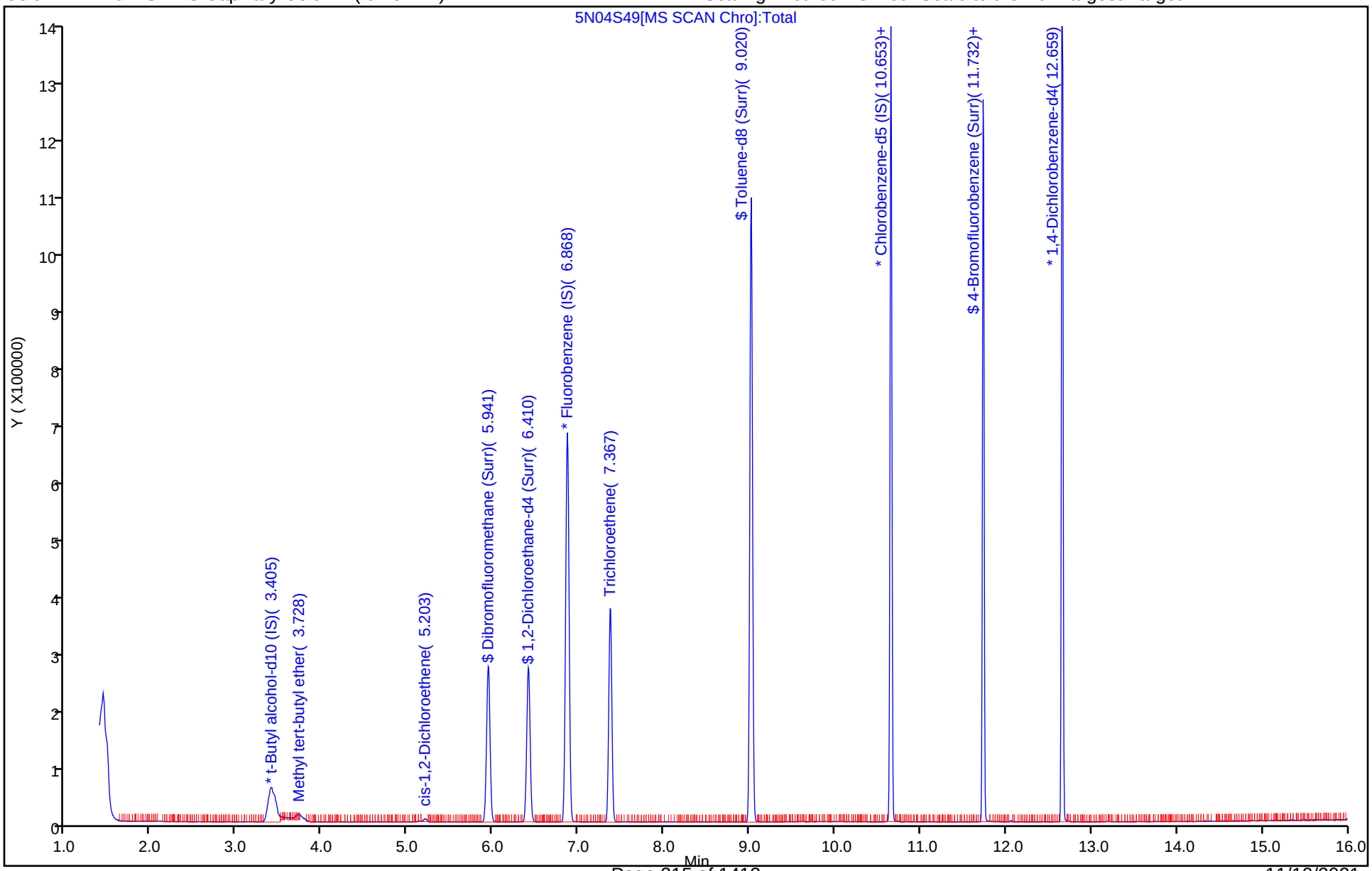
Report Date: 05-Nov-2021 16:03:48 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S49.D

Injection Date:	05-Nov-2021 04:28:30	Instrument ID:	26285	Operator ID:	mec29284
Lims ID:	410-60870-A-5	Lab Sample ID:	410-60870-5	Worklist Smp#:	25
Client ID:	3MW07-102721				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	24
Method:	MSVoa_26285a	Limit Group:	MSV - 8260C DOD5		

Column: Rxi-624Sil MS Capillary Column (0.25 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins Lancaster Laboratories Env, LLC

Recovery Report

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S49.D
Lims ID: 410-60870-A-5
Client ID: 3MW07-102721
Sample Type: Client
Inject. Date: 05-Nov-2021 04:28:30 ALS Bottle#: 24 Worklist Smp#: 25
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 410-0043341-025
Operator ID: mec29284 Instrument ID: 26285

Method: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\MSVoa_26285a.m
Limit Group: MSV - 8260C DOD5
Last Update: 05-Nov-2021 16:03:48 Calib Date: 02-Aug-2021 18:49:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I17.D

Column 1 : Rxi-624Sil MS Capillary Column (0.25 mm) Det: MS Quad
Process Host: CTX1657

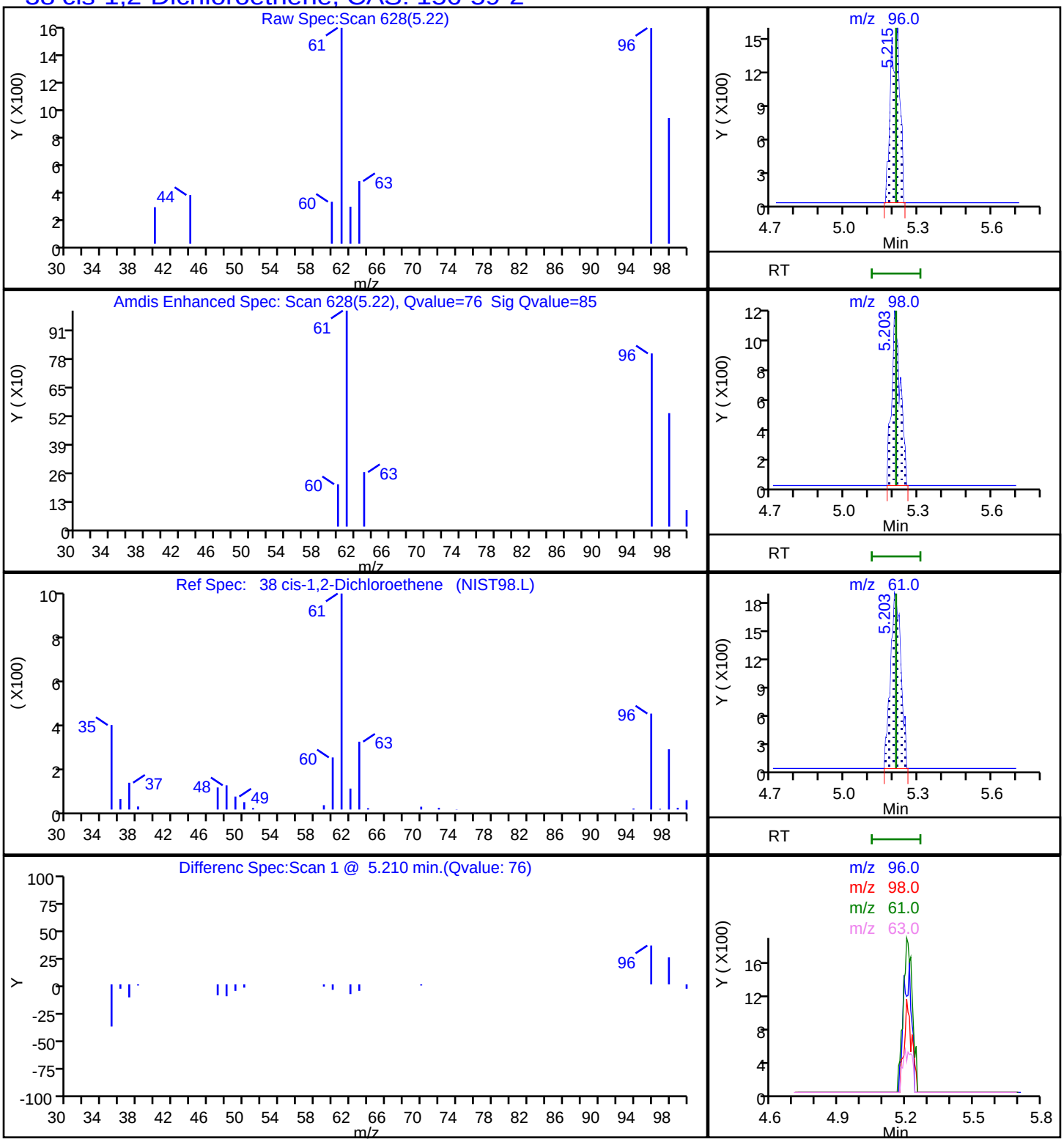
First Level Reviewer: kaewrungrueangp Date: 05-Nov-2021 16:03:48

Compound	Amount Added	Amount Recovered	% Rec.
$ 47 Dibromofluoromethane (Surr)	50.0	53.4	106.83
$ 56 1,2-Dichloroethane-d4 (Surr)	50.0	50.8	101.62
$ 76 Toluene-d8 (Surr)	50.0	51.6	103.19
$ 101 4-Bromofluorobenzene (Surr)	50.0	51.0	101.96

Eurofins Lancaster Laboratories Env, LLC

Data File:	\\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S49.D		
Injection Date:	05-Nov-2021 04:28:30	Instrument ID:	26285
Lims ID:	410-60870-A-5	Lab Sample ID:	410-60870-5
Client ID:	3MW07-102721		
Operator ID:	mec29284	ALS Bottle#:	24 Worklist Smp#: 25
Purge Vol:	5.000 mL	Dil. Factor:	1.0000
Method:	MSVoa_26285a	Limit Group:	MSV - 8260C DOD5
Column:	Rxi-624Sil MS Capillary Column (0.25 mm)	Detector	MS Quad

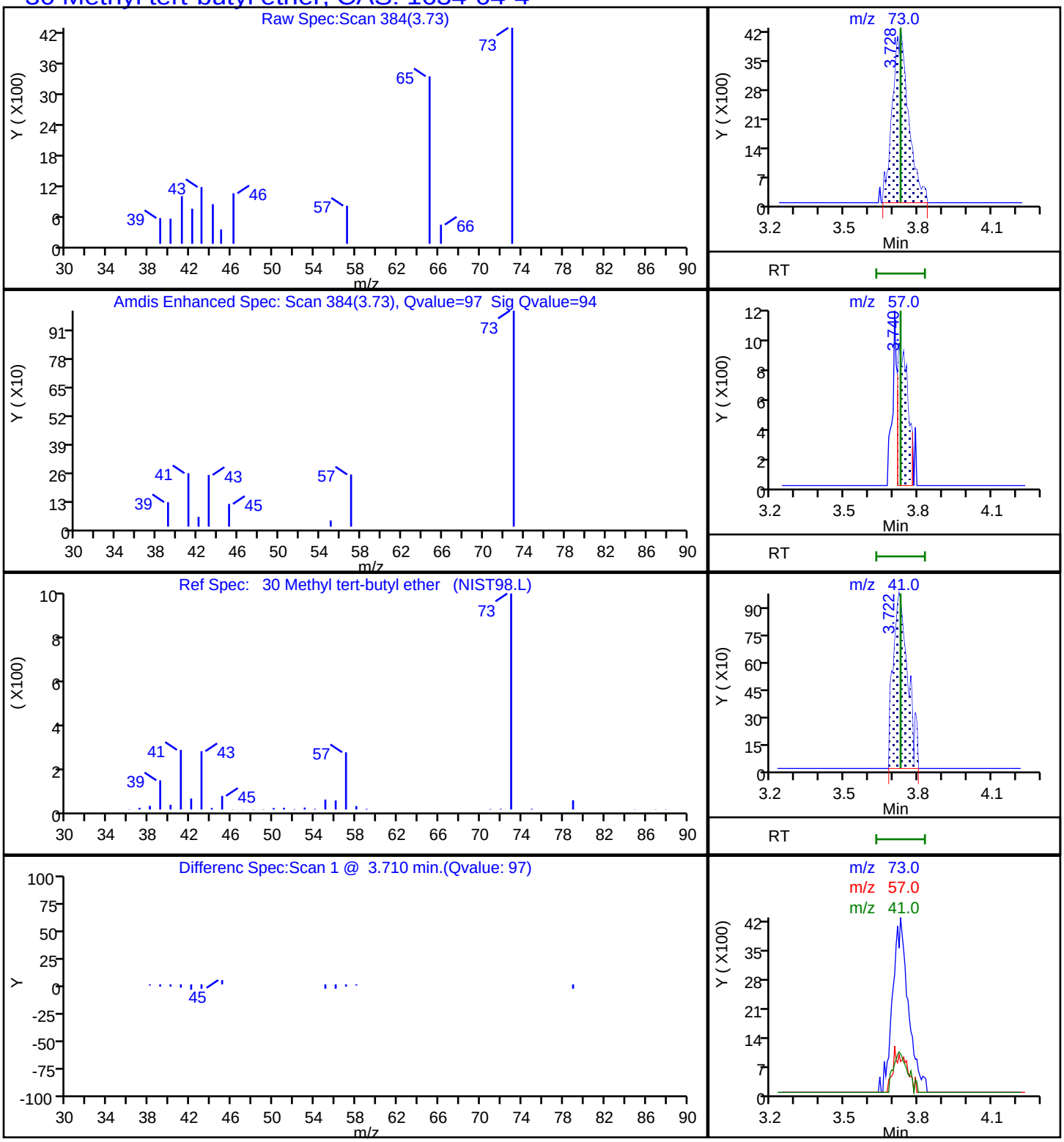
38 cis-1,2-Dichloroethene, CAS: 156-59-2



Eurofins Lancaster Laboratories Env, LLC

Data File:	\\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S49.D		
Injection Date:	05-Nov-2021 04:28:30	Instrument ID:	26285
Lims ID:	410-60870-A-5	Lab Sample ID:	410-60870-5
Client ID:	3MW07-102721		
Operator ID:	mec29284	ALS Bottle#:	24 Worklist Smp#: 25
Purge Vol:	5.000 mL	Dil. Factor:	1.0000
Method:	MSVoa_26285a	Limit Group:	MSV - 8260C DOD5
Column:	Rxi-624Sil MS Capillary Column (0.25 mm)	Detector	MS Quad

30 Methyl tert-butyl ether, CAS: 1634-04-4

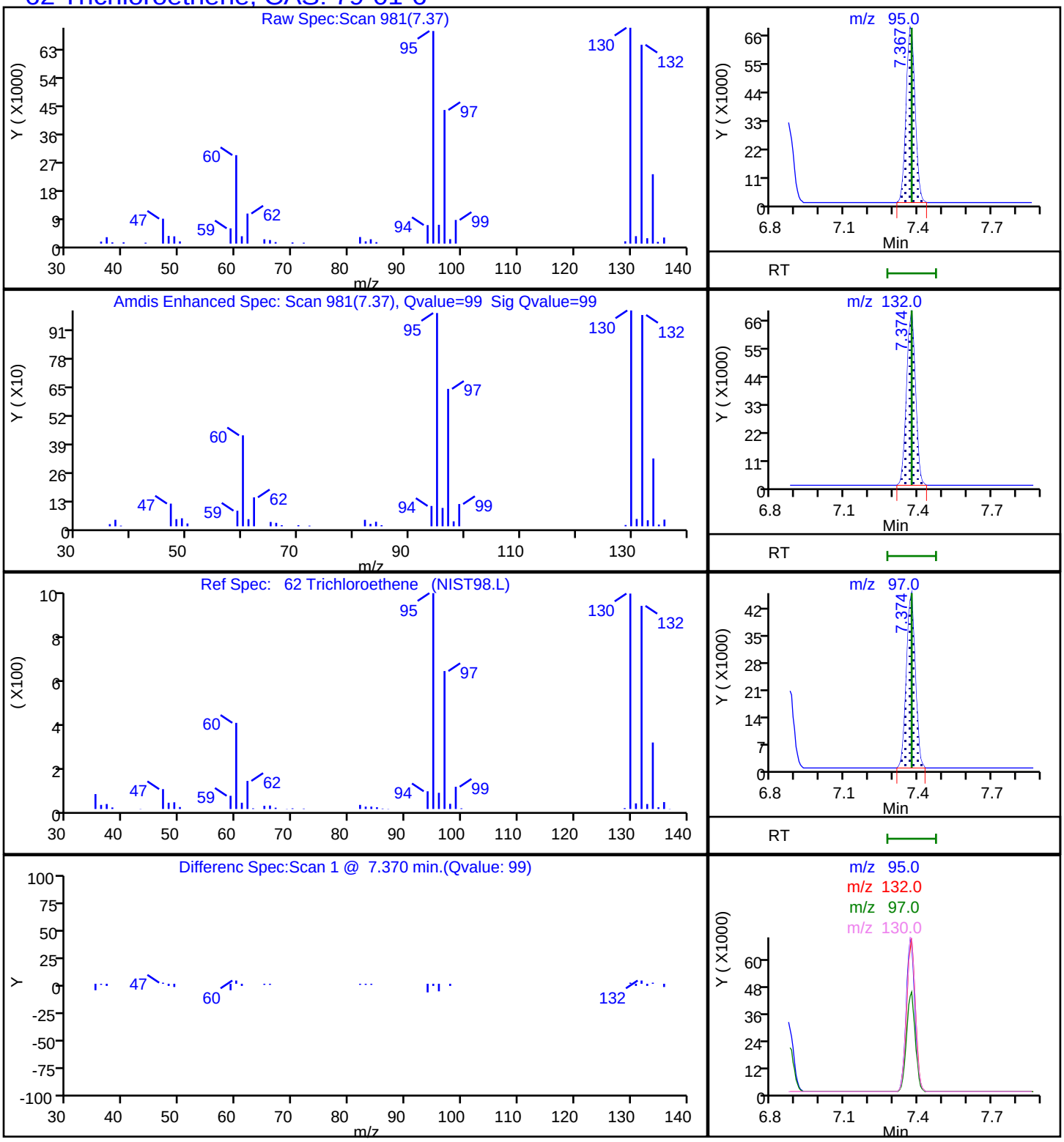


Report Date: 05-Nov-2021 16:03:48 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins Lancaster Laboratories Env, LLC

Data File:	\\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S49.D		
Injection Date:	05-Nov-2021 04:28:30	Instrument ID:	26285
Lims ID:	410-60870-A-5	Lab Sample ID:	410-60870-5
Client ID:	3MW07-102721		
Operator ID:	mec29284	ALS Bottle#:	24 Worklist Smp#: 25
Purge Vol:	5.000 mL	Dil. Factor:	1.0000
Method:	MSVoa_26285a	Limit Group:	MSV - 8260C DOD5
Column:	Rxi-624Sil MS Capillary Column (0.25mm)	Detector	MS Quad

62 Trichloroethene, CAS: 79-01-6



Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

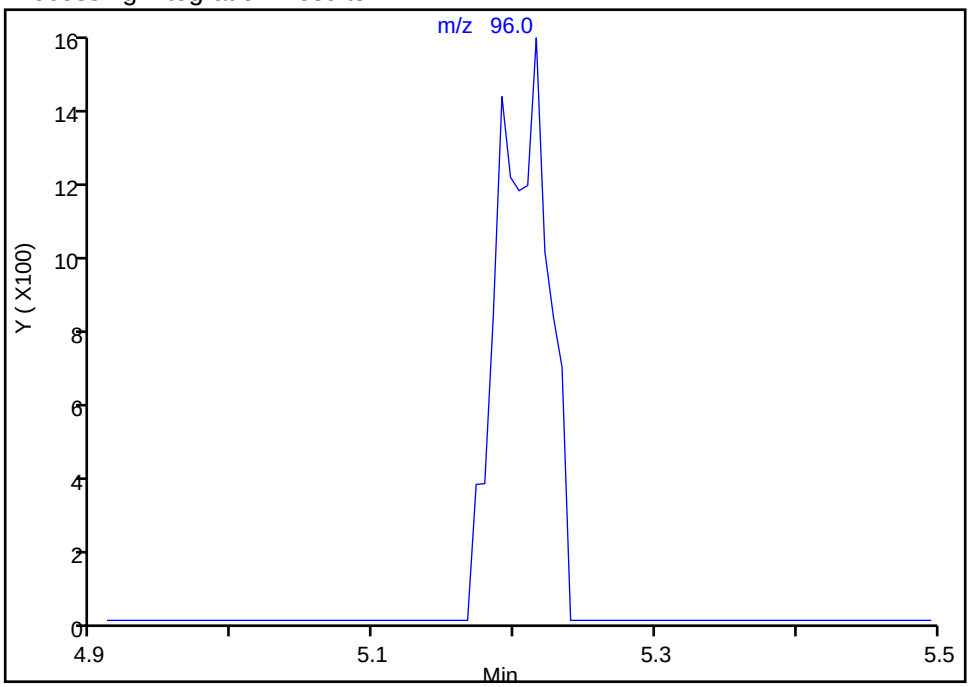
Data File:	\\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S49.D				
Injection Date:	05-Nov-2021 04:28:30	Instrument ID:	26285		
Lims ID:	410-60870-A-5	Lab Sample ID:	410-60870-5		
Client ID:	3MW07-102721				
Operator ID:	mec29284	ALS Bottle#:	24	Worklist Smp#:	25
Purge Vol:	5.000 mL	Dil. Factor:	1.0000		
Method:	MSVoa_26285a	Limit Group:	MSV - 8260C DOD5		
Column:	Rxi-624Sil MS Capillary Column (0.25mm)	Detector	MS Quad		

38 cis-1,2-Dichloroethene, CAS: 156-59-2

Signal: 1

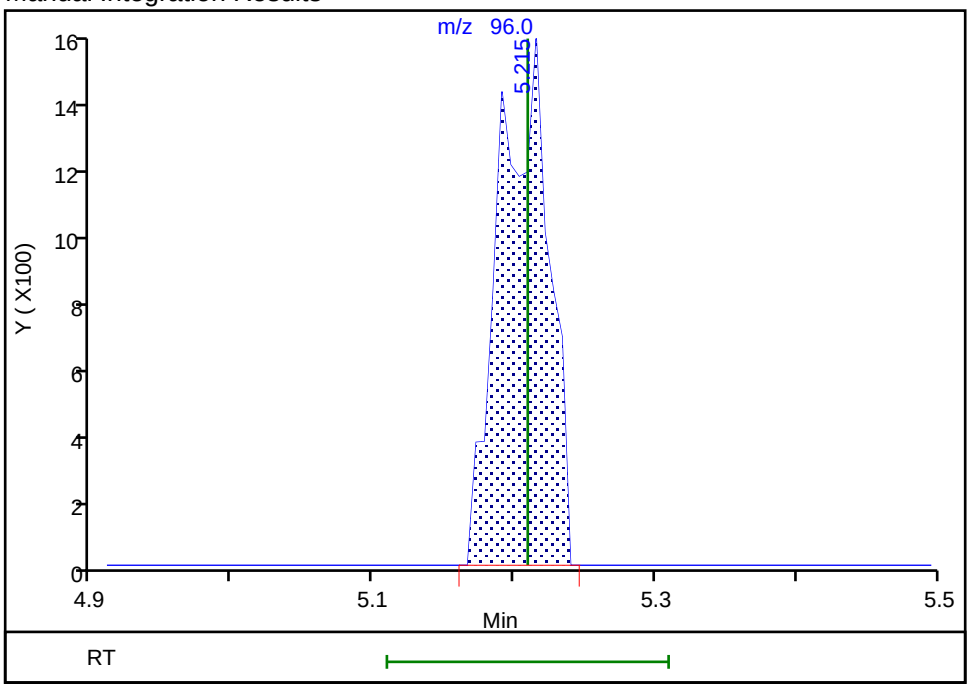
Not Detected
Expected RT: 5.21

Processing Integration Results



Manual Integration Results

RT: 5.22
Area: 3879
Amount: 0.602314
Amount Units: ug/l



Reviewer: kaewrungrueangp, 05-Nov-2021 16:03:29
Audit Action: Assigned Compound ID Audit Reason: Incomplete Integration

Eurofins Lancaster Laboratories Env, LLC

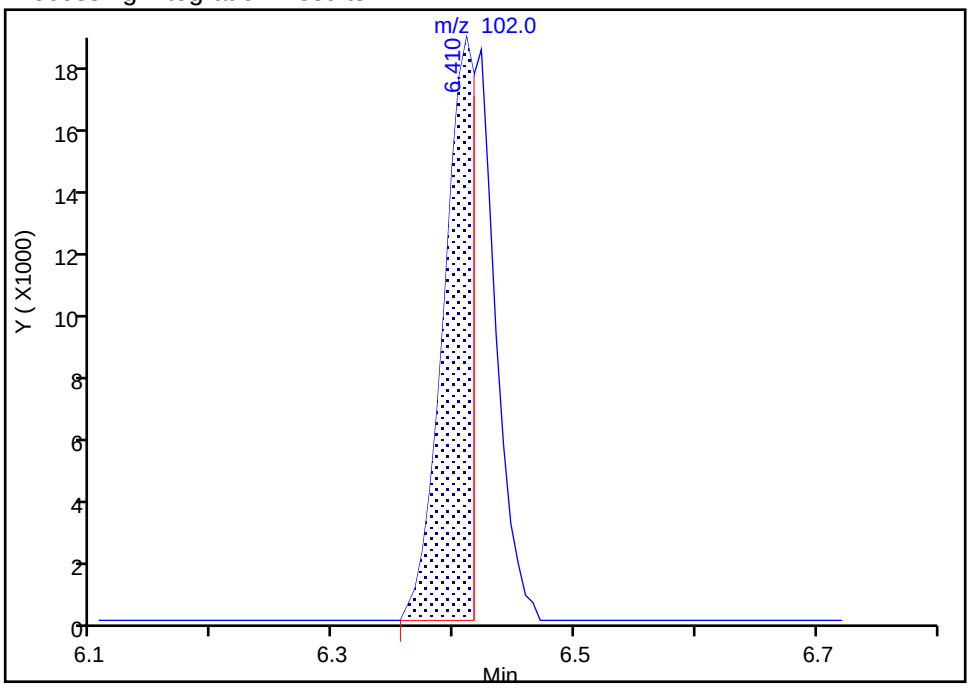
Data File:	\\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S49.D				
Injection Date:	05-Nov-2021 04:28:30	Instrument ID:	26285		
Lims ID:	410-60870-A-5	Lab Sample ID:	410-60870-5		
Client ID:	3MW07-102721				
Operator ID:	mec29284	ALS Bottle#:	24	Worklist Smp#:	25
Purge Vol:	5.000 mL	Dil. Factor:	1.0000		
Method:	MSVoa_26285a	Limit Group:	MSV - 8260C DOD5		
Column:	Rxi-624Sil MS Capillary Column (0.25mm)	Detector	MS Quad		

$ 56 1,2-Dichloroethane-d4 (Surr), CAS: 17060-07-0

Signal: 1

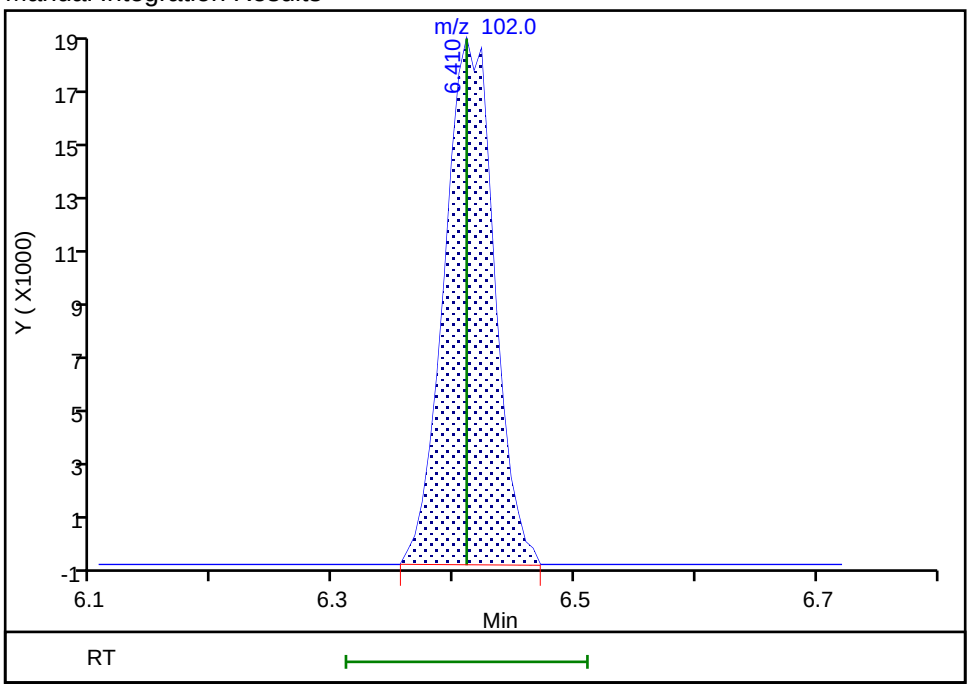
Processing Integration Results

RT: 6.41
Area: 33696
Amount: 32.224240
Amount Units: ug/l



Manual Integration Results

RT: 6.41
Area: 53133
Amount: 50.812279
Amount Units: ug/l



Reviewer: kaewrungrueangp, 05-Nov-2021 16:03:14
Audit Action: Manually Integrated Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

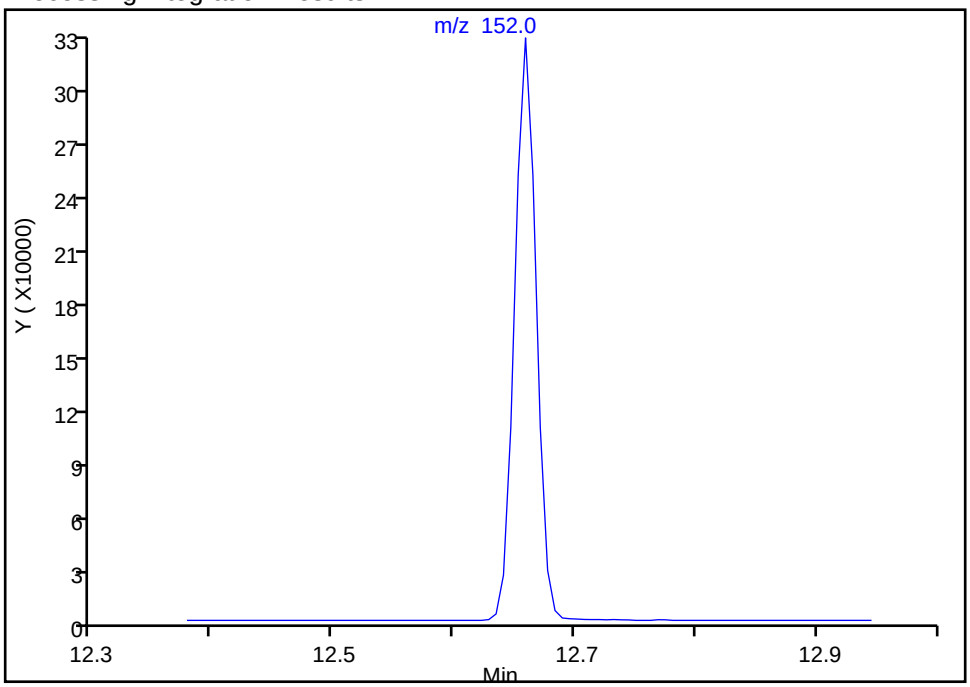
Data File:	\\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S49.D				
Injection Date:	05-Nov-2021 04:28:30	Instrument ID:	26285		
Lims ID:	410-60870-A-5	Lab Sample ID:	410-60870-5		
Client ID:	3MW07-102721				
Operator ID:	mec29284	ALS Bottle#:	24	Worklist Smp#:	25
Purge Vol:	5.000 mL	Dil. Factor:	1.0000		
Method:	MSVoa_26285a	Limit Group:	MSV - 8260C DOD5		
Column:	Rxi-624Sil MS Capillary Column (0.25mm)	Detector	MS Quad		

* 117 1,4-Dichlorobenzene-d4, CAS: 3855-82-1

Signal: 1

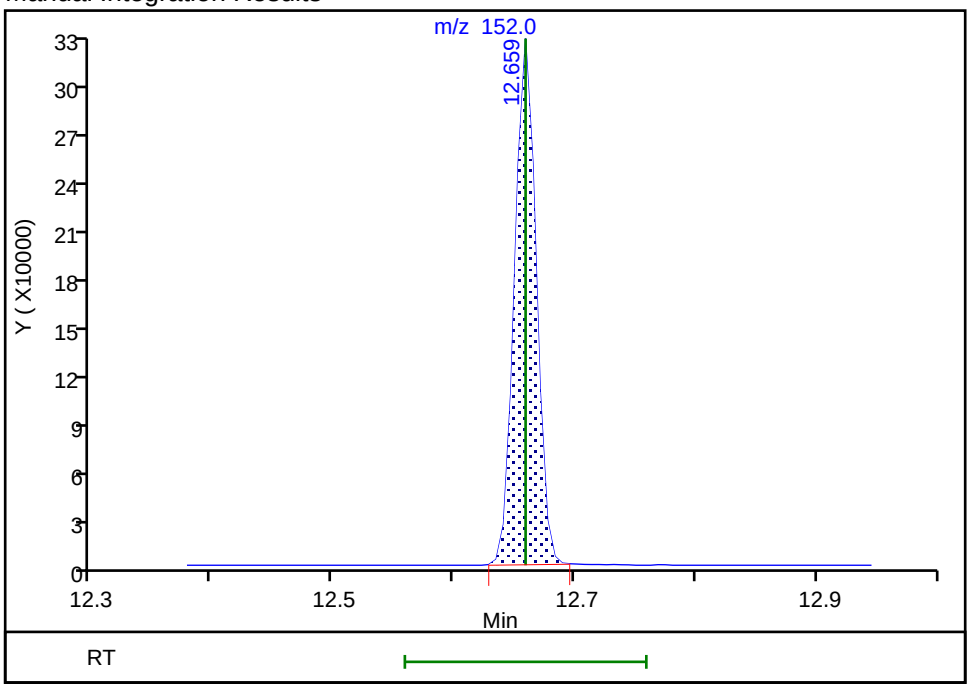
Not Detected
Expected RT: 12.66

Processing Integration Results



Manual Integration Results

RT: 12.66
Area: 399719
Amount: 50.000000
Amount Units: ug/l



Reviewer: kaewrungrueangp, 05-Nov-2021 16:02:52
Audit Action: Manually Integrated Audit Reason: Assign Peak

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Client Sample ID: 3MW09-102721 Lab Sample ID: 410-60870-6

Matrix: Ground Water Lab File ID: 5N04S50.D

Analysis Method: 8260D Date Collected: 10/27/2021 11:55

Sample wt/vol: 5(mL) Date Analyzed: 11/05/2021 04:47

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: R-624SilMS 30m ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 191072 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
10061-01-5	cis-1,3-Dichloropropene	0.50	U	1.0	0.50	0.20
10061-02-6	trans-1,3-Dichloropropene	0.50	U	1.0	0.50	0.20
100-41-4	Ethylbenzene	0.80	U	1.0	0.80	0.40
100-42-5	Styrene	0.60	U	5.0	0.60	0.30
106-46-7	1,4-Dichlorobenzene	0.60	U	5.0	0.60	0.30
106-93-4	1,2-Dibromoethane (EDB)	0.50	U	1.0	0.50	0.20
107-06-2	1,2-Dichloroethane	0.60	U	1.0	0.60	0.30
108-10-1	4-Methyl-2-pentanone	1.0	U	10	1.0	0.50
108-87-2	Methylcyclohexane	1.0	U Q	5.0	1.0	0.50
108-88-3	Toluene	0.50	U	1.0	0.50	0.20
108-90-7	Chlorobenzene	0.60	U	1.0	0.60	0.30
110-82-7	Cyclohexane	2.0	U Q	5.0	2.0	1.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	5.0	1.0	0.30
124-48-1	Dibromochloromethane	0.50	U	1.0	0.50	0.20
1330-20-7	Xylenes, Total	0.80	U	1.0	0.80	0.40
127-18-4	Tetrachloroethene	0.60	U	1.0	0.60	0.30
156-59-2	cis-1,2-Dichloroethene	0.60	U	1.0	0.60	0.30
156-60-5	trans-1,2-Dichloroethene	0.60	U	1.0	0.60	0.30
1634-04-4	Methyl tert-butyl ether	0.50	U	1.0	0.50	0.20
541-73-1	1,3-Dichlorobenzene	0.60	U	5.0	0.60	0.30
56-23-5	Carbon tetrachloride	0.60	U	1.0	0.60	0.30
591-78-6	2-Hexanone	1.0	U	10	1.0	0.40
67-64-1	Acetone	2.0	U	20	2.0	0.70
67-66-3	Chloroform	0.60	U	1.0	0.60	0.30
71-43-2	Benzene	0.60	U	1.0	0.60	0.30
71-55-6	1,1,1-Trichloroethane	0.60	U	1.0	0.60	0.30
74-83-9	Bromomethane	0.60	U	1.0	0.60	0.30
74-87-3	Chloromethane	0.50	U	1.0	0.50	0.20
75-00-3	Chloroethane	0.50	U	1.0	0.50	0.20
75-01-4	Vinyl chloride	0.50	U	1.0	0.50	0.20
75-09-2	Methylene Chloride	0.60	U	1.0	0.60	0.30
75-15-0	Carbon disulfide	0.60	U	5.0	0.60	0.30
75-25-2	Bromoform	2.0	U	4.0	2.0	1.0
75-27-4	Bromodichloromethane	0.50	U	1.0	0.50	0.20
75-34-3	1,1-Dichloroethane	0.60	U	1.0	0.60	0.30
75-35-4	1,1-Dichloroethene	0.60	U	1.0	0.60	0.30

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Client Sample ID: 3MW09-102721 Lab Sample ID: 410-60870-6

Matrix: Ground Water Lab File ID: 5N04S50.D

Analysis Method: 8260D Date Collected: 10/27/2021 11:55

Sample wt/vol: 5(mL) Date Analyzed: 11/05/2021 04:47

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: R-624SilMS 30m ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 191072 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
75-69-4	Trichlorofluoromethane	0.50	U	1.0	0.50	0.20
75-71-8	Dichlorodifluoromethane	0.50	U	1.0	0.50	0.20
76-13-1	Freon 113	0.60	U	10	0.60	0.30
78-87-5	1,2-Dichloropropane	0.60	U	1.0	0.60	0.30
78-93-3	2-Butanone	1.0	U	10	1.0	0.50
79-00-5	1,1,2-Trichloroethane	0.60	U	1.0	0.60	0.30
79-01-6	Trichloroethene	0.60	U	1.0	0.60	0.30
79-20-9	Methyl acetate	0.60	U	5.0	0.60	0.30
79-34-5	1,1,2,2-Tetrachloroethane	0.60	U	1.0	0.60	0.30
95-50-1	1,2-Dichlorobenzene	0.50	U	5.0	0.50	0.20
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U	5.0	1.0	0.30
98-82-8	Isopropylbenzene	0.50	U	5.0	0.50	0.20

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	103		81-118
1868-53-7	Dibromofluoromethane (Surr)	106		80-119
460-00-4	4-Bromofluorobenzene (Surr)	101		85-114
2037-26-5	Toluene-d8 (Surr)	103		89-112

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Client Sample ID: 3MW09-102721 Lab Sample ID: 410-60870-6

Matrix: Ground Water Lab File ID: 5N04S50.D

Analysis Method: 8260D Date Collected: 10/27/2021 11:55

Sample wt/vol: 5(mL) Date Analyzed: 11/05/2021 04:47

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: R-624SilMS 30m ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 191072 Units: ug/L

Number TICs Found: 0 TIC Result Total: 0

CAS NO.	COMPOUND NAME	RT	RESULT	Q	MATCH QUALITY
	Tentatively Identified Compound		None		

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S50.D
Lims ID: 410-60870-A-6
Client ID: 3MW09-102721
Sample Type: Client
Inject. Date: 05-Nov-2021 04:47:30 ALS Bottle#: 25 Worklist Smp#: 26
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 410-0043341-026
Operator ID: mec29284 Instrument ID: 26285

Method: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\MSVoa_26285a.m
Limit Group: MSV - 8260C DOD5
Last Update: 05-Nov-2021 08:40:57 Calib Date: 02-Aug-2021 18:49:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I17.D

Column 1 : Rxi-624Sil MS Capillary Column (0.25 mm) Det: MS Quad
Process Host: CTX1668

First Level Reviewer: mellingerc Date: 05-Nov-2021 08:35:32

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/l	Flags
2 Dichlorodifluoromethane	85		1.606				ND	
3 Chloromethane	50		1.771				ND	
5 Vinyl chloride	62		1.856				ND	
8 Bromomethane	94		2.137				ND	
9 Chloroethane	64		2.192				ND	
11 Trichlorofluoromethane	101		2.423				ND	
19 1,1-Dichloroethene	96		2.881				ND	
17 Acetone	58		2.899				ND	
18 112TCTFE	101		2.905				ND	
22 Carbon disulfide	76		3.137				ND	
23 Methyl acetate	43		3.228				ND	
* 27 t-Butyl alcohol-d10 (IS)	65	3.392	3.399	-0.007	29	303135	250.0	
26 Methylene Chloride	84		3.417				ND	
30 Methyl tert-butyl ether	73		3.728				ND	
31 trans-1,2-Dichloroethene	96		3.740				ND	
33 1,1-Dichloroethane	63		4.338				ND	
39 2-Butanone (MEK)	43		5.173				ND	
38 cis-1,2-Dichloroethene	96		5.209				ND	
46 Chloroform	83		5.721				ND	
48 1,1,1-Trichloroethane	97		5.941				ND	
$ 47 Dibromofluoromethane (Surr)	113	5.941	5.947	-0.006	94	259802	52.9	
49 Cyclohexane	56		6.038				ND	
51 Carbon tetrachloride	117		6.160				ND	
$ 56 1,2-Dichloroethane-d4 (Surr)	102	6.410	6.410	0.000	50	57896	51.3	
53 Benzene	78		6.441				ND	
55 1,2-Dichloroethane	62		6.526				ND	
* 59 Fluorobenzene (IS)	96	6.867	6.874	-0.007	99	1003751	50.0	
62 Trichloroethene	95		7.374				ND	
63 Methylcyclohexane	83		7.684				ND	
64 1,2-Dichloropropane	63		7.721				ND	
70 Dichlorobromomethane	83		8.093				ND	
73 cis-1,3-Dichloropropene	75		8.678				ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/l	Flags
75 4-Methyl-2-pentanone (MIBK)	43		8.892				ND	
$ 76 Toluene-d8 (Surr)	98	9.019	9.020	-0.001	94	989426	51.3	
77 Toluene	92		9.111				ND	
78 trans-1,3-Dichloropropene	75		9.428				ND	
80 1,1,2-Trichloroethane	97		9.654				ND	
81 Tetrachloroethene	166		9.733				ND	
84 2-Hexanone	43		9.910				ND	
85 Chlorodibromomethane	129		10.062				ND	
87 Ethylene Dibromide	107		10.172				ND	
* 90 Chlorobenzene-d5 (IS)	117	10.653	10.653	0.000	85	772154	50.0	
88 Chlorobenzene	112		10.684				ND	
93 Ethylbenzene	91		10.788				ND	
94 m-Xylene & p-Xylene	106		10.916				ND	
S 130 Xylenes, Total	106		11.245				ND	7
95 o-Xylene	106		11.263				ND	
96 Styrene	104		11.281				ND	
97 Bromoform	173		11.440				ND	
98 Isopropylbenzene	105		11.586				ND	
$ 101 4-Bromofluorobenzene (Surr)	95	11.732	11.732	0.000	94	374969	50.4	
105 1,1,2,2-Tetrachloroethane	83		11.854				ND	
115 1,3-Dichlorobenzene	146		12.598				ND	7
* 117 1,4-Dichlorobenzene-d4	152	12.659	12.659	0.000	94	431428	50.0	
118 1,4-Dichlorobenzene	146		12.677				ND	7
125 1,2-Dichlorobenzene	146		12.946				ND	
127 1,2-Dibromo-3-Chloropropane	75		13.506				ND	
129 1,2,4-Trichlorobenzene	180		14.073				ND	

QC Flag Legend

Processing Flags

7 - Failed Limit of Detection

Reagents:

MSV_Cent_ISSS_00004 Amount Added: 5.00 Units: uL Run Reagent

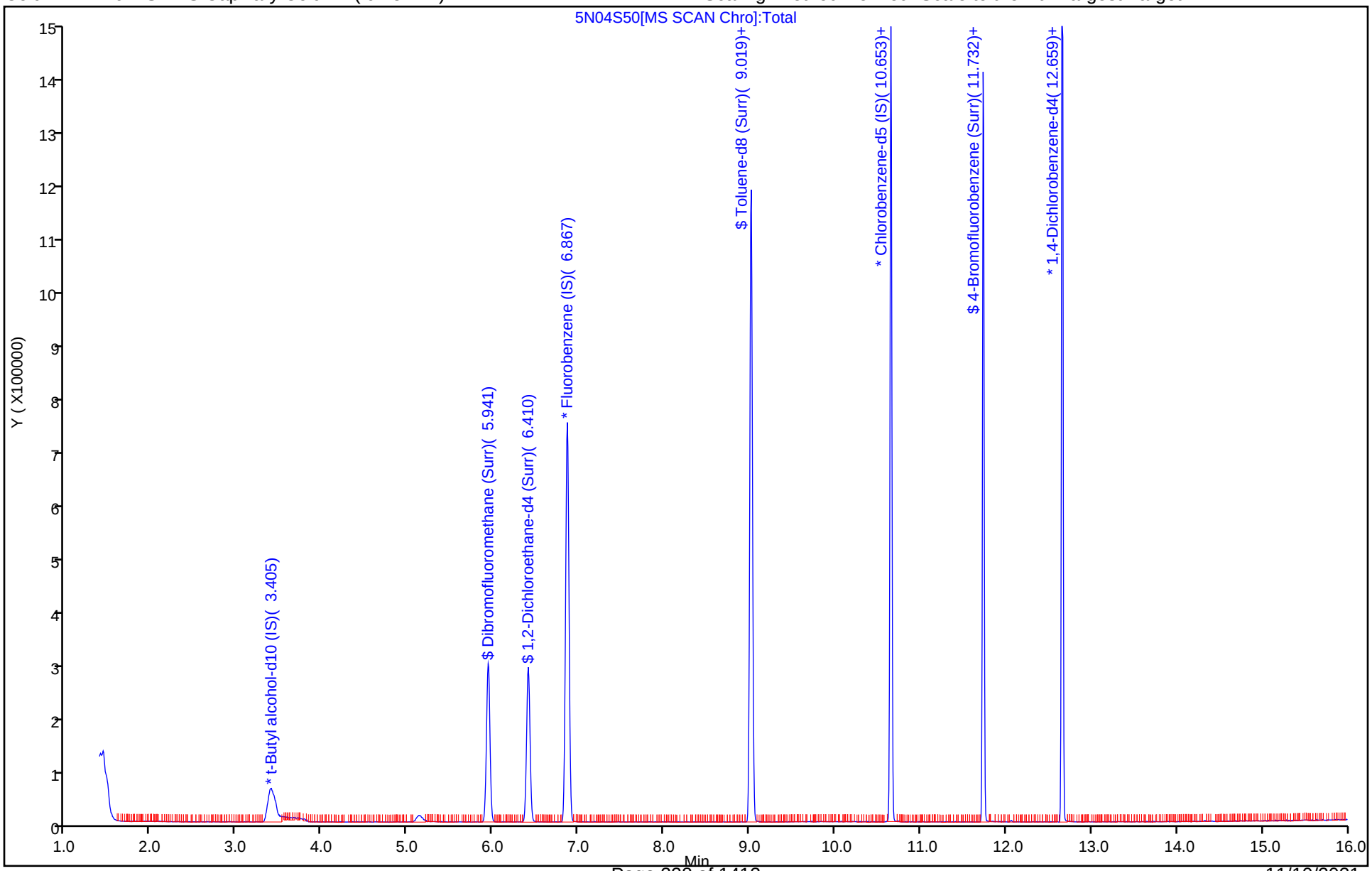
Report Date: 05-Nov-2021 08:41:57 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S50.D

Injection Date:	05-Nov-2021 04:47:30	Instrument ID:	26285	Operator ID:	mec29284
Lims ID:	410-60870-A-6	Lab Sample ID:	410-60870-6	Worklist Smp#:	26
Client ID:	3MW09-102721				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	25
Method:	MSVoa_26285a	Limit Group:	MSV - 8260C DOD5		

Column: Rxi-624Sil MS Capillary Column (0.25 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins Lancaster Laboratories Env, LLC

Recovery Report

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S50.D
Lims ID: 410-60870-A-6
Client ID: 3MW09-102721
Sample Type: Client
Inject. Date: 05-Nov-2021 04:47:30 ALS Bottle#: 25 Worklist Smp#: 26
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 410-0043341-026
Operator ID: mec29284 Instrument ID: 26285

Method: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\MSVoa_26285a.m
Limit Group: MSV - 8260C DOD5
Last Update: 05-Nov-2021 08:40:57 Calib Date: 02-Aug-2021 18:49:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I17.D

Column 1 : Rxi-624Sil MS Capillary Column (0.25 mm) Det: MS Quad
Process Host: CTX1668

First Level Reviewer: mellingerc Date: 05-Nov-2021 08:35:32

Compound	Amount Added	Amount Recovered	% Rec.
$ 47 Dibromofluoromethane (Surr)	50.0	52.9	105.87
$ 56 1,2-Dichloroethane-d4 (Surr)	50.0	51.3	102.65
$ 76 Toluene-d8 (Surr)	50.0	51.3	102.53
$ 101 4-Bromofluorobenzene (Surr)	50.0	50.4	100.73

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Client Sample ID: FB-102621 Lab Sample ID: 410-60870-7

Matrix: Water Lab File ID: 5N04S35.D

Analysis Method: 8260D Date Collected: 10/26/2021 16:00

Sample wt/vol: 5(mL) Date Analyzed: 11/04/2021 23:53

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: R-624SilMS 30m ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 191072 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
10061-01-5	cis-1,3-Dichloropropene	0.50	U	1.0	0.50	0.20
10061-02-6	trans-1,3-Dichloropropene	0.50	U	1.0	0.50	0.20
100-41-4	Ethylbenzene	0.80	U	1.0	0.80	0.40
100-42-5	Styrene	0.60	U	5.0	0.60	0.30
106-46-7	1,4-Dichlorobenzene	0.60	U	5.0	0.60	0.30
106-93-4	1,2-Dibromoethane (EDB)	0.50	U	1.0	0.50	0.20
107-06-2	1,2-Dichloroethane	0.60	U	1.0	0.60	0.30
108-10-1	4-Methyl-2-pentanone	1.0	U	10	1.0	0.50
108-87-2	Methylcyclohexane	1.0	U Q	5.0	1.0	0.50
108-88-3	Toluene	0.50	U	1.0	0.50	0.20
108-90-7	Chlorobenzene	0.60	U	1.0	0.60	0.30
110-82-7	Cyclohexane	2.0	U Q	5.0	2.0	1.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	5.0	1.0	0.30
124-48-1	Dibromochloromethane	0.50	U	1.0	0.50	0.20
1330-20-7	Xylenes, Total	0.80	U	1.0	0.80	0.40
127-18-4	Tetrachloroethene	0.60	U	1.0	0.60	0.30
156-59-2	cis-1,2-Dichloroethene	0.60	U	1.0	0.60	0.30
156-60-5	trans-1,2-Dichloroethene	0.60	U	1.0	0.60	0.30
1634-04-4	Methyl tert-butyl ether	0.50	U	1.0	0.50	0.20
541-73-1	1,3-Dichlorobenzene	0.60	U	5.0	0.60	0.30
56-23-5	Carbon tetrachloride	0.60	U	1.0	0.60	0.30
591-78-6	2-Hexanone	1.0	U	10	1.0	0.40
67-64-1	Acetone	2.0	U	20	2.0	0.70
67-66-3	Chloroform	2.5		1.0	0.60	0.30
71-43-2	Benzene	0.60	U	1.0	0.60	0.30
71-55-6	1,1,1-Trichloroethane	0.60	U	1.0	0.60	0.30
74-83-9	Bromomethane	0.60	U	1.0	0.60	0.30
74-87-3	Chloromethane	0.50	U	1.0	0.50	0.20
75-00-3	Chloroethane	0.50	U	1.0	0.50	0.20
75-01-4	Vinyl chloride	0.50	U	1.0	0.50	0.20
75-09-2	Methylene Chloride	0.60	U	1.0	0.60	0.30
75-15-0	Carbon disulfide	0.60	U	5.0	0.60	0.30
75-25-2	Bromoform	2.0	U	4.0	2.0	1.0
75-27-4	Bromodichloromethane	0.50	U	1.0	0.50	0.20
75-34-3	1,1-Dichloroethane	0.60	U	1.0	0.60	0.30
75-35-4	1,1-Dichloroethene	0.60	U	1.0	0.60	0.30

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Client Sample ID: FB-102621 Lab Sample ID: 410-60870-7

Matrix: Water Lab File ID: 5N04S35.D

Analysis Method: 8260D Date Collected: 10/26/2021 16:00

Sample wt/vol: 5(mL) Date Analyzed: 11/04/2021 23:53

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: R-624SilMS 30m ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 191072 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
75-69-4	Trichlorofluoromethane	0.50	U	1.0	0.50	0.20
75-71-8	Dichlorodifluoromethane	0.50	U	1.0	0.50	0.20
76-13-1	Freon 113	0.60	U	10	0.60	0.30
78-87-5	1,2-Dichloropropane	0.60	U	1.0	0.60	0.30
78-93-3	2-Butanone	1.0	U	10	1.0	0.50
79-00-5	1,1,2-Trichloroethane	0.60	U	1.0	0.60	0.30
79-01-6	Trichloroethene	0.60	U	1.0	0.60	0.30
79-20-9	Methyl acetate	0.60	U	5.0	0.60	0.30
79-34-5	1,1,2,2-Tetrachloroethane	0.60	U	1.0	0.60	0.30
95-50-1	1,2-Dichlorobenzene	0.50	U	5.0	0.50	0.20
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U	5.0	1.0	0.30
98-82-8	Isopropylbenzene	0.50	U	5.0	0.50	0.20

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	103		81-118
1868-53-7	Dibromofluoromethane (Surr)	105		80-119
460-00-4	4-Bromofluorobenzene (Surr)	101		85-114
2037-26-5	Toluene-d8 (Surr)	103		89-112

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Client Sample ID: FB-102621 Lab Sample ID: 410-60870-7

Matrix: Water Lab File ID: 5N04S35.D

Analysis Method: 8260D Date Collected: 10/26/2021 16:00

Sample wt/vol: 5(mL) Date Analyzed: 11/04/2021 23:53

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: R-624SilMS 30m ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 191072 Units: ug/L

Number TICs Found: 0 TIC Result Total: 0

CAS NO.	COMPOUND NAME	RT	RESULT	Q	MATCH QUALITY
	Tentatively Identified Compound		None		

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S35.D
Lims ID: 410-60870-A-7
Client ID: FB-102621
Sample Type: Client
Inject. Date: 04-Nov-2021 23:53:30 ALS Bottle#: 10 Worklist Smp#: 11
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 410-0043341-011
Operator ID: mec29284 Instrument ID: 26285

Method: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\MSVoa_26285a.m
Limit Group: MSV - 8260C DOD5
Last Update: 04-Nov-2021 22:38:20 Calib Date: 02-Aug-2021 18:49:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I17.D

Column 1 : Rxi-624Sil MS Capillary Column (0.25 mm) Det: MS Quad
Process Host: CTX1684

First Level Reviewer: innoonk Date: 05-Nov-2021 11:42:02

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/l	Flags
2 Dichlorodifluoromethane	85		1.606				ND	
3 Chloromethane	50		1.771				ND	
5 Vinyl chloride	62		1.856				ND	
8 Bromomethane	94		2.137				ND	
9 Chloroethane	64		2.192				ND	
11 Trichlorofluoromethane	101		2.423				ND	
19 1,1-Dichloroethene	96		2.881				ND	
17 Acetone	58		2.899				ND	
18 112TCTFE	101		2.905				ND	
22 Carbon disulfide	76		3.137				ND	
23 Methyl acetate	43		3.228				ND	
* 27 t-Butyl alcohol-d10 (IS)	65	3.392	3.399	-0.007	35	280082	250.0	
26 Methylene Chloride	84		3.417				ND	
30 Methyl tert-butyl ether	73		3.728				ND	
31 trans-1,2-Dichloroethene	96		3.740				ND	
33 1,1-Dichloroethane	63		4.338				ND	
39 2-Butanone (MEK)	43		5.173				ND	
38 cis-1,2-Dichloroethene	96		5.209				ND	
46 Chloroform	83	5.715	5.721	-0.006	92	27694	2.48	
48 1,1,1-Trichloroethane	97		5.941				ND	
$ 47 Dibromofluoromethane (Surr)	113	5.941	5.947	-0.006	94	260143	52.4	
49 Cyclohexane	56		6.038				ND	
51 Carbon tetrachloride	117		6.160				ND	
$ 56 1,2-Dichloroethane-d4 (Surr)	102	6.410	6.410	0.000	49	58614	51.4	
53 Benzene	78		6.441				ND	
55 1,2-Dichloroethane	62		6.526				ND	
* 59 Fluorobenzene (IS)	96	6.867	6.874	-0.007	99	1014487	50.0	
62 Trichloroethene	95		7.374				ND	
63 Methylcyclohexane	83		7.684				ND	
64 1,2-Dichloropropane	63		7.721				ND	
70 Dichlorobromomethane	83		8.093				ND	
73 cis-1,3-Dichloropropene	75		8.678				ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/l	Flags
75 4-Methyl-2-pentanone (MIBK)	43		8.892				ND	
$ 76 Toluene-d8 (Surr)	98	9.019	9.020	-0.001	94	1005938	51.5	
77 Toluene	92		9.111				ND	
78 trans-1,3-Dichloropropene	75		9.428				ND	
80 1,1,2-Trichloroethane	97		9.654				ND	
81 Tetrachloroethene	166		9.733				ND	
84 2-Hexanone	43		9.910				ND	
85 Chlorodibromomethane	129		10.062				ND	
87 Ethylene Dibromide	107		10.172				ND	
* 90 Chlorobenzene-d5 (IS)	117	10.653	10.653	0.000	85	780941	50.0	
88 Chlorobenzene	112		10.684				ND	
93 Ethylbenzene	91		10.788				ND	
94 m-Xylene & p-Xylene	106		10.916				ND	
S 130 Xylenes, Total	106		11.245				ND	7
95 o-Xylene	106		11.263				ND	
96 Styrene	104		11.281				ND	
97 Bromoform	173		11.440				ND	
98 Isopropylbenzene	105		11.586				ND	
$ 101 4-Bromofluorobenzene (Surr)	95	11.732	11.732	0.000	94	381711	50.7	
105 1,1,2,2-Tetrachloroethane	83		11.854				ND	
115 1,3-Dichlorobenzene	146		12.598				ND	7
* 117 1,4-Dichlorobenzene-d4	152	12.659	12.659	0.000	94	435216	50.0	
118 1,4-Dichlorobenzene	146		12.677				ND	7
125 1,2-Dichlorobenzene	146		12.946				ND	
127 1,2-Dibromo-3-Chloropropane	75		13.506				ND	
129 1,2,4-Trichlorobenzene	180		14.073				ND	

QC Flag Legend

Processing Flags

7 - Failed Limit of Detection

Reagents:

MSV_Cent_ISSS_00004 Amount Added: 5.00 Units: uL Run Reagent

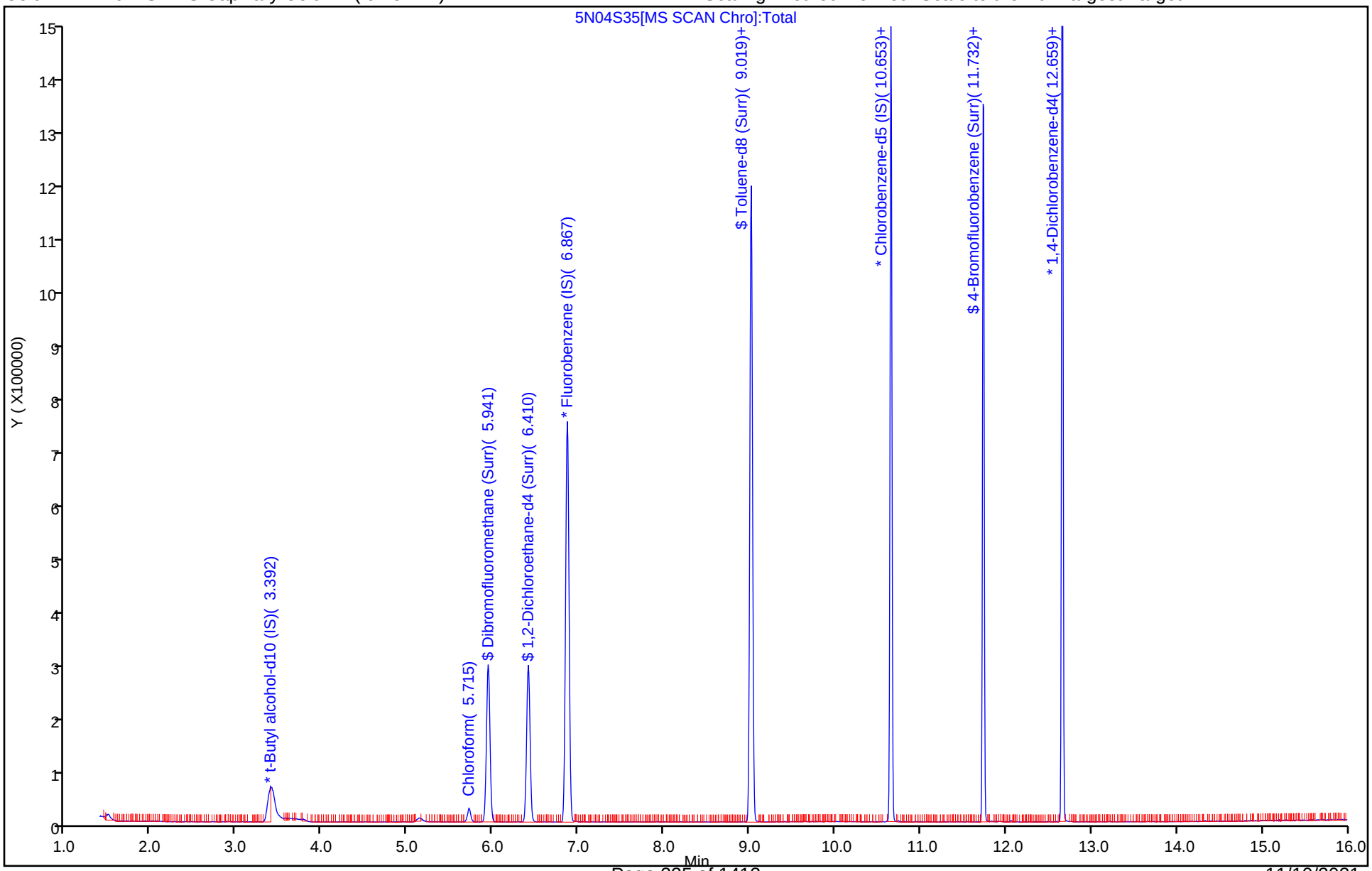
Report Date: 05-Nov-2021 11:42:02 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S35.D

Injection Date:	04-Nov-2021 23:53:30	Instrument ID:	26285	Operator ID:	mec29284
Lims ID:	410-60870-A-7	Lab Sample ID:	410-60870-7	Worklist Smp#:	11
Client ID:	FB-102621				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	10
Method:	MSVoa_26285a	Limit Group:	MSV - 8260C DOD5		

Column: Rxi-624Sil MS Capillary Column (0.25 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins Lancaster Laboratories Env, LLC

Recovery Report

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S35.D
Lims ID: 410-60870-A-7
Client ID: FB-102621
Sample Type: Client
Inject. Date: 04-Nov-2021 23:53:30 ALS Bottle#: 10 Worklist Smp#: 11
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 410-0043341-011
Operator ID: mec29284 Instrument ID: 26285

Method: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\MSVoa_26285a.m
Limit Group: MSV - 8260C DOD5
Last Update: 04-Nov-2021 22:38:20 Calib Date: 02-Aug-2021 18:49:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I17.D

Column 1 : Rxi-624Sil MS Capillary Column (0.25 mm) Det: MS Quad
Process Host: CTX1684

First Level Reviewer: innoonk Date: 05-Nov-2021 11:42:02

Compound	Amount Added	Amount Recovered	% Rec.
$ 47 Dibromofluoromethane (Surr)	50.0	52.4	104.88
$ 56 1,2-Dichloroethane-d4 (Surr)	50.0	51.4	102.82
$ 76 Toluene-d8 (Surr)	50.0	51.5	103.07
$ 101 4-Bromofluorobenzene (Surr)	50.0	50.7	101.39

Report Date: 05-Nov-2021 11:42:02 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S35.D

Injection Date: 04-Nov-2021 23:53:30 Instrument ID: 26285

Lims ID: 410-60870-A-7 Lab Sample ID: 410-60870-7

Client ID: FB-102621

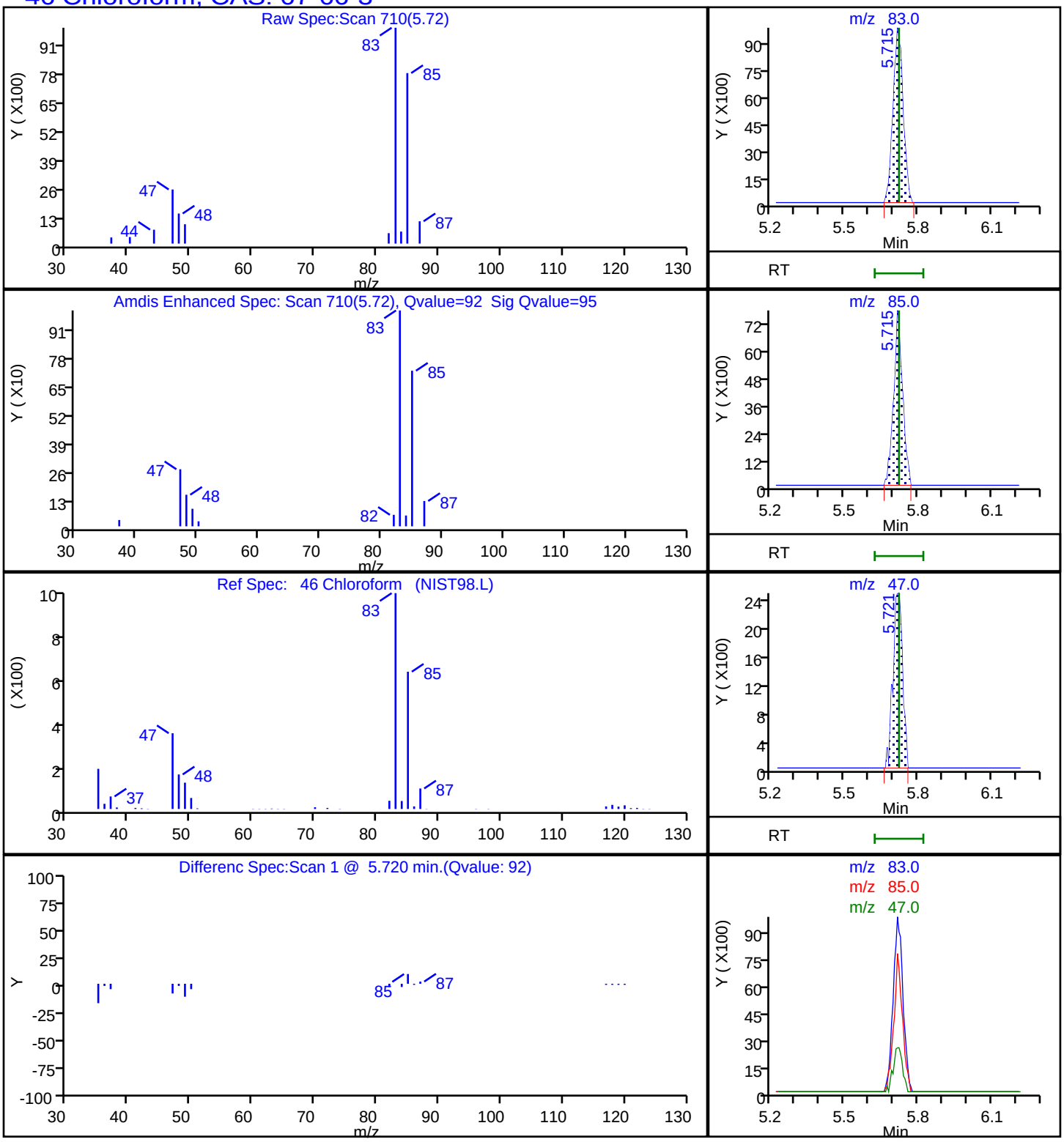
Operator ID: mec29284 ALS Bottle#: 10 Worklist Smp#: 11

Purge Vol: 5.000 mL Dil. Factor: 1.0000

Method: MSVoa_26285a Limit Group: MSV - 8260C DOD5

Column: Rxi-624Sil MS Capillary Column (0.25 mm) Detector MS Quad

46 Chloroform, CAS: 67-66-3



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Client Sample ID: FB-102721 Lab Sample ID: 410-60870-8

Matrix: Water Lab File ID: 5N04S36.D

Analysis Method: 8260D Date Collected: 10/27/2021 09:00

Sample wt/vol: 5(mL) Date Analyzed: 11/05/2021 00:13

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: R-624SilMS 30m ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 191072 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
10061-01-5	cis-1,3-Dichloropropene	0.50	U	1.0	0.50	0.20
10061-02-6	trans-1,3-Dichloropropene	0.50	U	1.0	0.50	0.20
100-41-4	Ethylbenzene	0.80	U	1.0	0.80	0.40
100-42-5	Styrene	0.60	U	5.0	0.60	0.30
106-46-7	1,4-Dichlorobenzene	0.60	U	5.0	0.60	0.30
106-93-4	1,2-Dibromoethane (EDB)	0.50	U	1.0	0.50	0.20
107-06-2	1,2-Dichloroethane	0.60	U	1.0	0.60	0.30
108-10-1	4-Methyl-2-pentanone	1.0	U	10	1.0	0.50
108-87-2	Methylcyclohexane	1.0	U Q	5.0	1.0	0.50
108-88-3	Toluene	0.50	U	1.0	0.50	0.20
108-90-7	Chlorobenzene	0.60	U	1.0	0.60	0.30
110-82-7	Cyclohexane	2.0	U Q	5.0	2.0	1.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	5.0	1.0	0.30
124-48-1	Dibromochloromethane	0.50	U	1.0	0.50	0.20
1330-20-7	Xylenes, Total	0.80	U	1.0	0.80	0.40
127-18-4	Tetrachloroethene	0.60	U	1.0	0.60	0.30
156-59-2	cis-1,2-Dichloroethene	0.60	U	1.0	0.60	0.30
156-60-5	trans-1,2-Dichloroethene	0.60	U	1.0	0.60	0.30
1634-04-4	Methyl tert-butyl ether	0.50	U	1.0	0.50	0.20
541-73-1	1,3-Dichlorobenzene	0.60	U	5.0	0.60	0.30
56-23-5	Carbon tetrachloride	0.60	U	1.0	0.60	0.30
591-78-6	2-Hexanone	1.0	U	10	1.0	0.40
67-64-1	Acetone	2.0	U	20	2.0	0.70
67-66-3	Chloroform	2.7		1.0	0.60	0.30
71-43-2	Benzene	0.60	U	1.0	0.60	0.30
71-55-6	1,1,1-Trichloroethane	0.60	U	1.0	0.60	0.30
74-83-9	Bromomethane	0.60	U	1.0	0.60	0.30
74-87-3	Chloromethane	0.50	U	1.0	0.50	0.20
75-00-3	Chloroethane	0.50	U	1.0	0.50	0.20
75-01-4	Vinyl chloride	0.50	U	1.0	0.50	0.20
75-09-2	Methylene Chloride	0.60	U	1.0	0.60	0.30
75-15-0	Carbon disulfide	0.60	U	5.0	0.60	0.30
75-25-2	Bromoform	2.0	U	4.0	2.0	1.0
75-27-4	Bromodichloromethane	0.50	U	1.0	0.50	0.20
75-34-3	1,1-Dichloroethane	0.60	U	1.0	0.60	0.30
75-35-4	1,1-Dichloroethene	0.60	U	1.0	0.60	0.30

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Client Sample ID: FB-102721 Lab Sample ID: 410-60870-8

Matrix: Water Lab File ID: 5N04S36.D

Analysis Method: 8260D Date Collected: 10/27/2021 09:00

Sample wt/vol: 5(mL) Date Analyzed: 11/05/2021 00:13

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: R-624SilMS 30m ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 191072 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
75-69-4	Trichlorofluoromethane	0.50	U	1.0	0.50	0.20
75-71-8	Dichlorodifluoromethane	0.50	U	1.0	0.50	0.20
76-13-1	Freon 113	0.60	U	10	0.60	0.30
78-87-5	1,2-Dichloropropane	0.60	U	1.0	0.60	0.30
78-93-3	2-Butanone	1.0	U	10	1.0	0.50
79-00-5	1,1,2-Trichloroethane	0.60	U	1.0	0.60	0.30
79-01-6	Trichloroethene	0.60	U	1.0	0.60	0.30
79-20-9	Methyl acetate	0.60	U	5.0	0.60	0.30
79-34-5	1,1,2,2-Tetrachloroethane	0.60	U	1.0	0.60	0.30
95-50-1	1,2-Dichlorobenzene	0.50	U	5.0	0.50	0.20
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U	5.0	1.0	0.30
98-82-8	Isopropylbenzene	0.50	U	5.0	0.50	0.20

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	105		81-118
1868-53-7	Dibromofluoromethane (Surr)	107		80-119
460-00-4	4-Bromofluorobenzene (Surr)	99		85-114
2037-26-5	Toluene-d8 (Surr)	102		89-112

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Client Sample ID: FB-102721 Lab Sample ID: 410-60870-8

Matrix: Water Lab File ID: 5N04S36.D

Analysis Method: 8260D Date Collected: 10/27/2021 09:00

Sample wt/vol: 5(mL) Date Analyzed: 11/05/2021 00:13

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: R-624SilMS 30m ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 191072 Units: ug/L

Number TICs Found: 0 TIC Result Total: 0

CAS NO.	COMPOUND NAME	RT	RESULT	Q	MATCH QUALITY
	Tentatively Identified Compound		None		

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S36.D
Lims ID: 410-60870-A-8
Client ID: FB-102721
Sample Type: Client
Inject. Date: 05-Nov-2021 00:13:30 ALS Bottle#: 11 Worklist Smp#: 12
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 410-0043341-012
Operator ID: mec29284 Instrument ID: 26285

Method: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\MSVoa_26285a.m
Limit Group: MSV - 8260C DOD5
Last Update: 04-Nov-2021 22:38:20 Calib Date: 02-Aug-2021 18:49:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I17.D

Column 1 : Rxi-624Sil MS Capillary Column (0.25 mm) Det: MS Quad
Process Host: CTX1684

First Level Reviewer: innoonk Date: 05-Nov-2021 11:42:31

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/l	Flags
2 Dichlorodifluoromethane	85		1.606				ND	
3 Chloromethane	50		1.771				ND	
5 Vinyl chloride	62		1.856				ND	
8 Bromomethane	94		2.137				ND	
9 Chloroethane	64		2.192				ND	
11 Trichlorofluoromethane	101		2.423				ND	
19 1,1-Dichloroethene	96		2.881				ND	
17 Acetone	58		2.899				ND	
18 112TCTFE	101		2.905				ND	
22 Carbon disulfide	76		3.137				ND	
23 Methyl acetate	43		3.228				ND	
* 27 t-Butyl alcohol-d10 (IS)	65	3.411	3.399	0.012	29	249251	250.0	
26 Methylene Chloride	84		3.417				ND	
30 Methyl tert-butyl ether	73		3.728				ND	
31 trans-1,2-Dichloroethene	96		3.740				ND	
33 1,1-Dichloroethane	63		4.338				ND	
39 2-Butanone (MEK)	43		5.173				ND	
38 cis-1,2-Dichloroethene	96		5.209				ND	
46 Chloroform	83	5.715	5.721	-0.006	92	28366	2.70	
48 1,1,1-Trichloroethane	97		5.941				ND	
$ 47 Dibromofluoromethane (Surr)	113	5.941	5.947	-0.006	93	249039	53.5	
49 Cyclohexane	56		6.038				ND	
51 Carbon tetrachloride	117		6.160				ND	
$ 56 1,2-Dichloroethane-d4 (Surr)	102	6.410	6.410	0.000	50	56263	52.5	
53 Benzene	78		6.441				ND	
55 1,2-Dichloroethane	62		6.526				ND	
* 59 Fluorobenzene (IS)	96	6.868	6.874	-0.006	99	952792	50.0	
62 Trichloroethene	95		7.374				ND	
63 Methylcyclohexane	83		7.684				ND	
64 1,2-Dichloropropane	63		7.721				ND	
70 Dichlorobromomethane	83		8.093				ND	
73 cis-1,3-Dichloropropene	75		8.678				ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/l	Flags
75 4-Methyl-2-pentanone (MIBK)	43		8.892				ND	
$ 76 Toluene-d8 (Surr)	98	9.020	9.020	0.000	94	938044	50.8	
77 Toluene	92		9.111				ND	
78 trans-1,3-Dichloropropene	75		9.428				ND	
80 1,1,2-Trichloroethane	97		9.654				ND	
81 Tetrachloroethene	166		9.733				ND	
84 2-Hexanone	43		9.910				ND	
85 Chlorodibromomethane	129		10.062				ND	
87 Ethylene Dibromide	107		10.172				ND	
* 90 Chlorobenzene-d5 (IS)	117	10.653	10.653	0.000	85	739165	50.0	
88 Chlorobenzene	112		10.684				ND	
93 Ethylbenzene	91		10.788				ND	
94 m-Xylene & p-Xylene	106		10.916				ND	
S 130 Xylenes, Total	106		11.245				ND	7
95 o-Xylene	106		11.263				ND	
96 Styrene	104		11.281				ND	
97 Bromoform	173		11.440				ND	
98 Isopropylbenzene	105		11.586				ND	
$ 101 4-Bromofluorobenzene (Surr)	95	11.732	11.732	0.000	94	354054	49.7	
105 1,1,2,2-Tetrachloroethane	83		11.854				ND	
115 1,3-Dichlorobenzene	146		12.598				ND	
* 117 1,4-Dichlorobenzene-d4	152	12.659	12.659	0.000	94	413628	50.0	
118 1,4-Dichlorobenzene	146		12.677				ND	
125 1,2-Dichlorobenzene	146		12.946				ND	
127 1,2-Dibromo-3-Chloropropane	75		13.506				ND	
129 1,2,4-Trichlorobenzene	180		14.073				ND	

QC Flag Legend

Processing Flags

7 - Failed Limit of Detection

Reagents:

MSV_Cent_ISSS_00004 Amount Added: 5.00 Units: uL Run Reagent

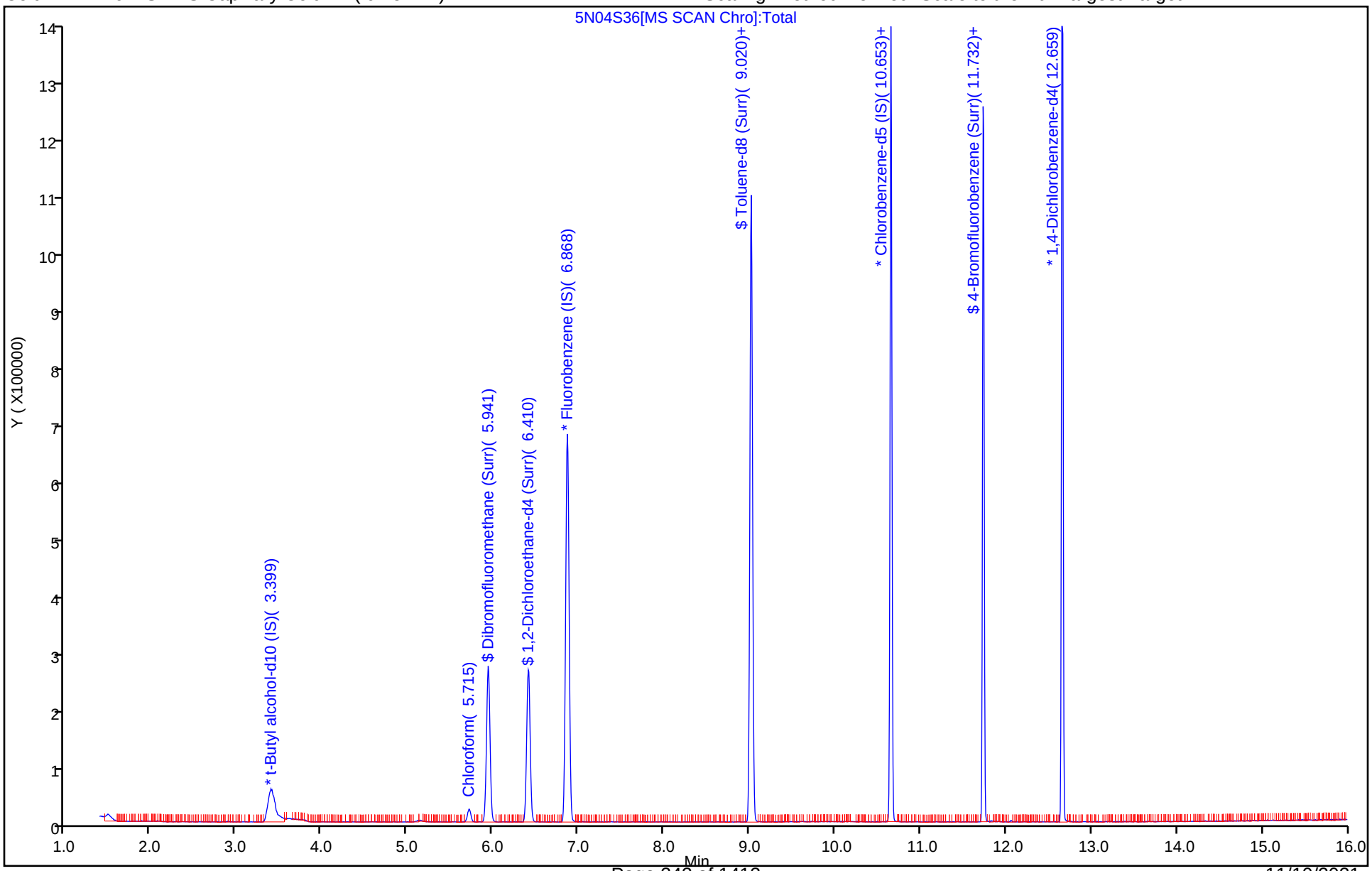
Report Date: 05-Nov-2021 11:42:32 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S36.D

Injection Date:	05-Nov-2021 00:13:30	Instrument ID:	26285	Operator ID:	mec29284
Lims ID:	410-60870-A-8	Lab Sample ID:	410-60870-8	Worklist Smp#:	12
Client ID:	FB-102721				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	11
Method:	MSVoa_26285a	Limit Group:	MSV - 8260C DOD5		

Column: Rxi-624Sil MS Capillary Column (0.25 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins Lancaster Laboratories Env, LLC

Recovery Report

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S36.D
Lims ID: 410-60870-A-8
Client ID: FB-102721
Sample Type: Client
Inject. Date: 05-Nov-2021 00:13:30 ALS Bottle#: 11 Worklist Smp#: 12
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 410-0043341-012
Operator ID: mec29284 Instrument ID: 26285

Method: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\MSVoa_26285a.m
Limit Group: MSV - 8260C DOD5
Last Update: 04-Nov-2021 22:38:20 Calib Date: 02-Aug-2021 18:49:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I17.D

Column 1 : Rxi-624Sil MS Capillary Column (0.25 mm) Det: MS Quad
Process Host: CTX1684

First Level Reviewer: innoonk Date: 05-Nov-2021 11:42:31

Compound	Amount Added	Amount Recovered	% Rec.
$ 47 Dibromofluoromethane (Surr)	50.0	53.5	106.91
$ 56 1,2-Dichloroethane-d4 (Surr)	50.0	52.5	105.09
$ 76 Toluene-d8 (Surr)	50.0	50.8	101.55
$ 101 4-Bromofluorobenzene (Surr)	50.0	49.7	99.36

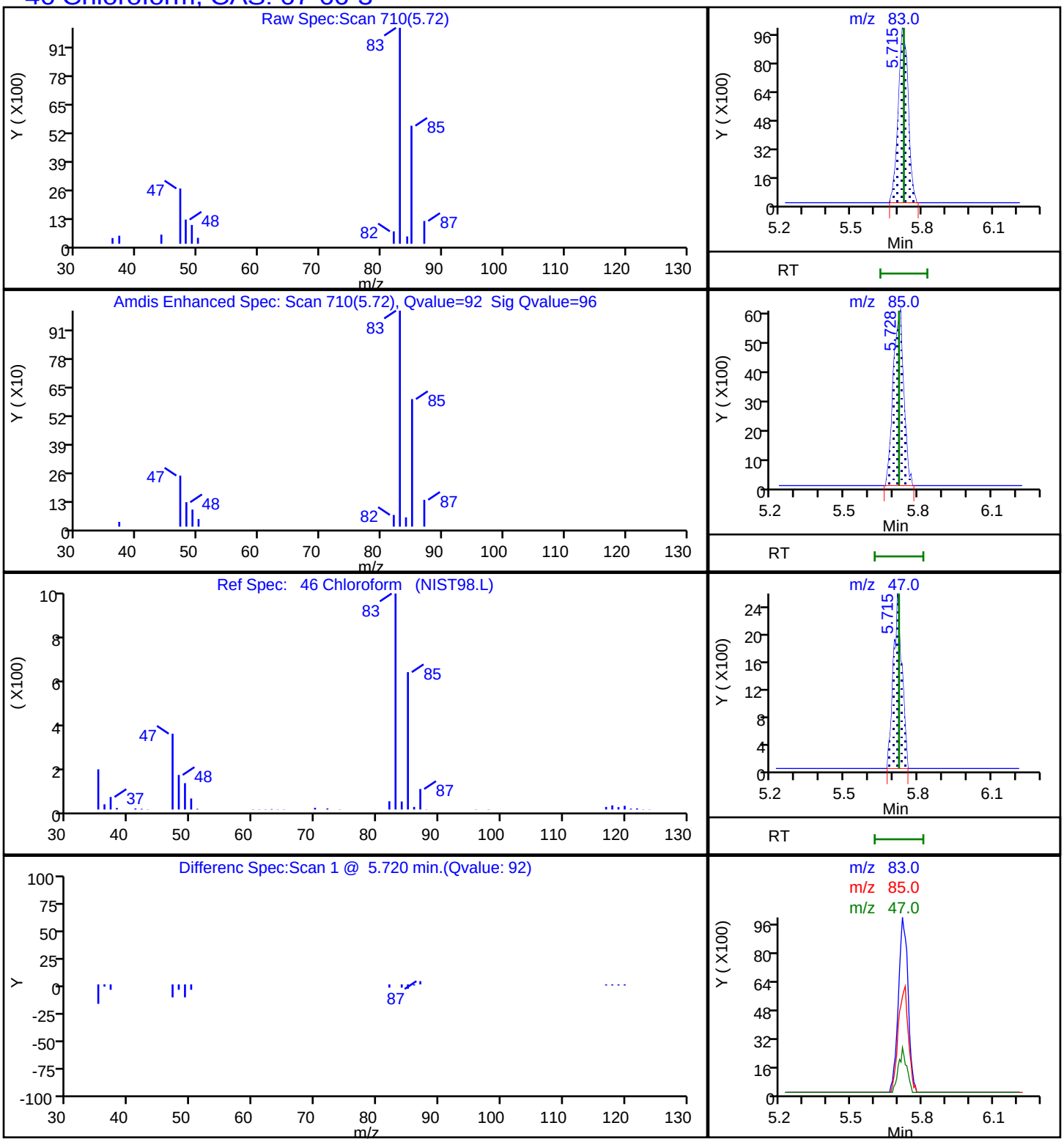
Report Date: 05-Nov-2021 11:42:32 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S36.D

Injection Date:	05-Nov-2021 00:13:30	Instrument ID:	26285
Lims ID:	410-60870-A-8	Lab Sample ID:	410-60870-8
Client ID:	FB-102721		
Operator ID:	mec29284	ALS Bottle#:	11 Worklist Smp#: 12
Purge Vol:	5.000 mL	Dil. Factor:	1.0000
Method:	MSVoa_26285a	Limit Group:	MSV - 8260C DOD5
Column:	Rxi-624Sil MS Capillary Column (0.25mm)	Detector	MS Quad

46 Chloroform, CAS: 67-66-3



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Client Sample ID: Trip Blank Lab Sample ID: 410-60870-9

Matrix: Water Lab File ID: 5N04S37.D

Analysis Method: 8260D Date Collected: 10/26/2021 00:00

Sample wt/vol: 5(mL) Date Analyzed: 11/05/2021 00:32

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: R-624SilMS 30m ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 191072 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
10061-01-5	cis-1,3-Dichloropropene	0.50	U	1.0	0.50	0.20
10061-02-6	trans-1,3-Dichloropropene	0.50	U	1.0	0.50	0.20
100-41-4	Ethylbenzene	0.80	U	1.0	0.80	0.40
100-42-5	Styrene	0.60	U	5.0	0.60	0.30
106-46-7	1,4-Dichlorobenzene	0.60	U	5.0	0.60	0.30
106-93-4	1,2-Dibromoethane (EDB)	0.50	U	1.0	0.50	0.20
107-06-2	1,2-Dichloroethane	0.60	U	1.0	0.60	0.30
108-10-1	4-Methyl-2-pentanone	1.0	U	10	1.0	0.50
108-87-2	Methylcyclohexane	1.0	U Q	5.0	1.0	0.50
108-88-3	Toluene	0.50	U	1.0	0.50	0.20
108-90-7	Chlorobenzene	0.60	U	1.0	0.60	0.30
110-82-7	Cyclohexane	2.0	U Q	5.0	2.0	1.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	5.0	1.0	0.30
124-48-1	Dibromochloromethane	0.50	U	1.0	0.50	0.20
1330-20-7	Xylenes, Total	0.80	U	1.0	0.80	0.40
127-18-4	Tetrachloroethene	0.60	U	1.0	0.60	0.30
156-59-2	cis-1,2-Dichloroethene	0.60	U	1.0	0.60	0.30
156-60-5	trans-1,2-Dichloroethene	0.60	U	1.0	0.60	0.30
1634-04-4	Methyl tert-butyl ether	0.50	U	1.0	0.50	0.20
541-73-1	1,3-Dichlorobenzene	0.60	U	5.0	0.60	0.30
56-23-5	Carbon tetrachloride	0.60	U	1.0	0.60	0.30
591-78-6	2-Hexanone	1.0	U	10	1.0	0.40
67-64-1	Acetone	2.0	U	20	2.0	0.70
67-66-3	Chloroform	0.60	U	1.0	0.60	0.30
71-43-2	Benzene	0.60	U	1.0	0.60	0.30
71-55-6	1,1,1-Trichloroethane	0.60	U	1.0	0.60	0.30
74-83-9	Bromomethane	0.60	U	1.0	0.60	0.30
74-87-3	Chloromethane	0.50	U	1.0	0.50	0.20
75-00-3	Chloroethane	0.50	U	1.0	0.50	0.20
75-01-4	Vinyl chloride	0.50	U	1.0	0.50	0.20
75-09-2	Methylene Chloride	0.60	U	1.0	0.60	0.30
75-15-0	Carbon disulfide	0.60	U	5.0	0.60	0.30
75-25-2	Bromoform	2.0	U	4.0	2.0	1.0
75-27-4	Bromodichloromethane	0.50	U	1.0	0.50	0.20
75-34-3	1,1-Dichloroethane	0.60	U	1.0	0.60	0.30
75-35-4	1,1-Dichloroethene	0.60	U	1.0	0.60	0.30

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Client Sample ID: Trip Blank Lab Sample ID: 410-60870-9

Matrix: Water Lab File ID: 5N04S37.D

Analysis Method: 8260D Date Collected: 10/26/2021 00:00

Sample wt/vol: 5(mL) Date Analyzed: 11/05/2021 00:32

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: R-624SilMS 30m ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 191072 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
75-69-4	Trichlorofluoromethane	0.50	U	1.0	0.50	0.20
75-71-8	Dichlorodifluoromethane	0.50	U	1.0	0.50	0.20
76-13-1	Freon 113	0.60	U	10	0.60	0.30
78-87-5	1,2-Dichloropropane	0.60	U	1.0	0.60	0.30
78-93-3	2-Butanone	1.0	U	10	1.0	0.50
79-00-5	1,1,2-Trichloroethane	0.60	U	1.0	0.60	0.30
79-01-6	Trichloroethene	0.60	U	1.0	0.60	0.30
79-20-9	Methyl acetate	0.60	U	5.0	0.60	0.30
79-34-5	1,1,2,2-Tetrachloroethane	0.60	U	1.0	0.60	0.30
95-50-1	1,2-Dichlorobenzene	0.50	U	5.0	0.50	0.20
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U	5.0	1.0	0.30
98-82-8	Isopropylbenzene	0.50	U	5.0	0.50	0.20

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	103		81-118
1868-53-7	Dibromofluoromethane (Surr)	106		80-119
460-00-4	4-Bromofluorobenzene (Surr)	102		85-114
2037-26-5	Toluene-d8 (Surr)	103		89-112

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Client Sample ID: Trip Blank Lab Sample ID: 410-60870-9

Matrix: Water Lab File ID: 5N04S37.D

Analysis Method: 8260D Date Collected: 10/26/2021 00:00

Sample wt/vol: 5(mL) Date Analyzed: 11/05/2021 00:32

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: R-624SilMS 30m ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 191072 Units: ug/L

Number TICs Found: 0 TIC Result Total: 0

CAS NO.	COMPOUND NAME	RT	RESULT	Q	MATCH QUALITY
	Tentatively Identified Compound		None		

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S37.D
Lims ID: 410-60870-A-9
Client ID: Trip Blank
Sample Type: Client
Inject. Date: 05-Nov-2021 00:32:30 ALS Bottle#: 12 Worklist Smp#: 13
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 410-0043341-013
Operator ID: mec29284 Instrument ID: 26285

Method: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\MSVoa_26285a.m
Limit Group: MSV - 8260C DOD5
Last Update: 05-Nov-2021 00:13:21 Calib Date: 02-Aug-2021 18:49:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I17.D

Column 1 : Rxi-624Sil MS Capillary Column (0.25 mm) Det: MS Quad
Process Host: CTX1657

First Level Reviewer: kaewrungrueangp Date: 05-Nov-2021 13:26:05

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/l	Flags
2 Dichlorodifluoromethane	85		1.606				ND	
3 Chloromethane	50		1.771				ND	
5 Vinyl chloride	62		1.856				ND	
8 Bromomethane	94		2.137				ND	
9 Chloroethane	64		2.192				ND	
11 Trichlorofluoromethane	101		2.423				ND	
19 1,1-Dichloroethene	96		2.881				ND	
17 Acetone	58		2.899				ND	
18 112TCTFE	101		2.905				ND	
22 Carbon disulfide	76		3.137				ND	
23 Methyl acetate	43		3.228				ND	
* 27 t-Butyl alcohol-d10 (IS)	65	3.417	3.399	0.018	29	272781	250.0	
26 Methylene Chloride	84		3.417				ND	
30 Methyl tert-butyl ether	73		3.728				ND	
31 trans-1,2-Dichloroethene	96		3.740				ND	
33 1,1-Dichloroethane	63		4.338				ND	
39 2-Butanone (MEK)	43		5.173				ND	
38 cis-1,2-Dichloroethene	96		5.209				ND	
46 Chloroform	83		5.721				ND	
48 1,1,1-Trichloroethane	97		5.941				ND	
$ 47 Dibromofluoromethane (Surr)	113	5.947	5.947	0.000	93	246263	53.2	
49 Cyclohexane	56		6.038				ND	
51 Carbon tetrachloride	117		6.160				ND	
$ 56 1,2-Dichloroethane-d4 (Surr)	102	6.422	6.410	0.012	50	54704	51.4	
53 Benzene	78		6.441				ND	
55 1,2-Dichloroethane	62		6.526				ND	
* 59 Fluorobenzene (IS)	96	6.873	6.874	-0.001	99	947206	50.0	
62 Trichloroethene	95		7.374				ND	
63 Methylcyclohexane	83		7.684				ND	
64 1,2-Dichloropropane	63		7.721				ND	
70 Dichlorobromomethane	83		8.093				ND	
73 cis-1,3-Dichloropropene	75		8.678				ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ug/l	Flags
75 4-Methyl-2-pentanone (MIBK)	43		8.892				ND	
$ 76 Toluene-d8 (Surr)	98	9.019	9.020	-0.001	93	929080	51.7	
77 Toluene	92		9.111				ND	
78 trans-1,3-Dichloropropene	75		9.428				ND	
80 1,1,2-Trichloroethane	97		9.654				ND	
81 Tetrachloroethene	166		9.733				ND	
84 2-Hexanone	43		9.910				ND	
85 Chlorodibromomethane	129		10.062				ND	
87 Ethylene Dibromide	107		10.172				ND	
* 90 Chlorobenzene-d5 (IS)	117	10.653	10.653	0.000	85	719507	50.0	
88 Chlorobenzene	112		10.684				ND	
93 Ethylbenzene	91		10.788				ND	
94 m-Xylene & p-Xylene	106		10.916				ND	
S 130 Xylenes, Total	106		11.245				ND	7
95 o-Xylene	106		11.263				ND	
96 Styrene	104		11.281				ND	
97 Bromoform	173		11.440				ND	
98 Isopropylbenzene	105		11.586				ND	
$ 101 4-Bromofluorobenzene (Surr)	95	11.732	11.732	0.000	94	353458	50.9	
105 1,1,2,2-Tetrachloroethane	83		11.854				ND	
115 1,3-Dichlorobenzene	146		12.598				ND	
* 117 1,4-Dichlorobenzene-d4	152	12.659	12.659	0.000	95	407871	50.0	
118 1,4-Dichlorobenzene	146		12.677				ND	
125 1,2-Dichlorobenzene	146		12.946				ND	
127 1,2-Dibromo-3-Chloropropane	75		13.506				ND	
129 1,2,4-Trichlorobenzene	180		14.073				ND	

QC Flag Legend

Processing Flags

7 - Failed Limit of Detection

Reagents:

MSV_Cent_ISSS_00004 Amount Added: 5.00 Units: uL Run Reagent

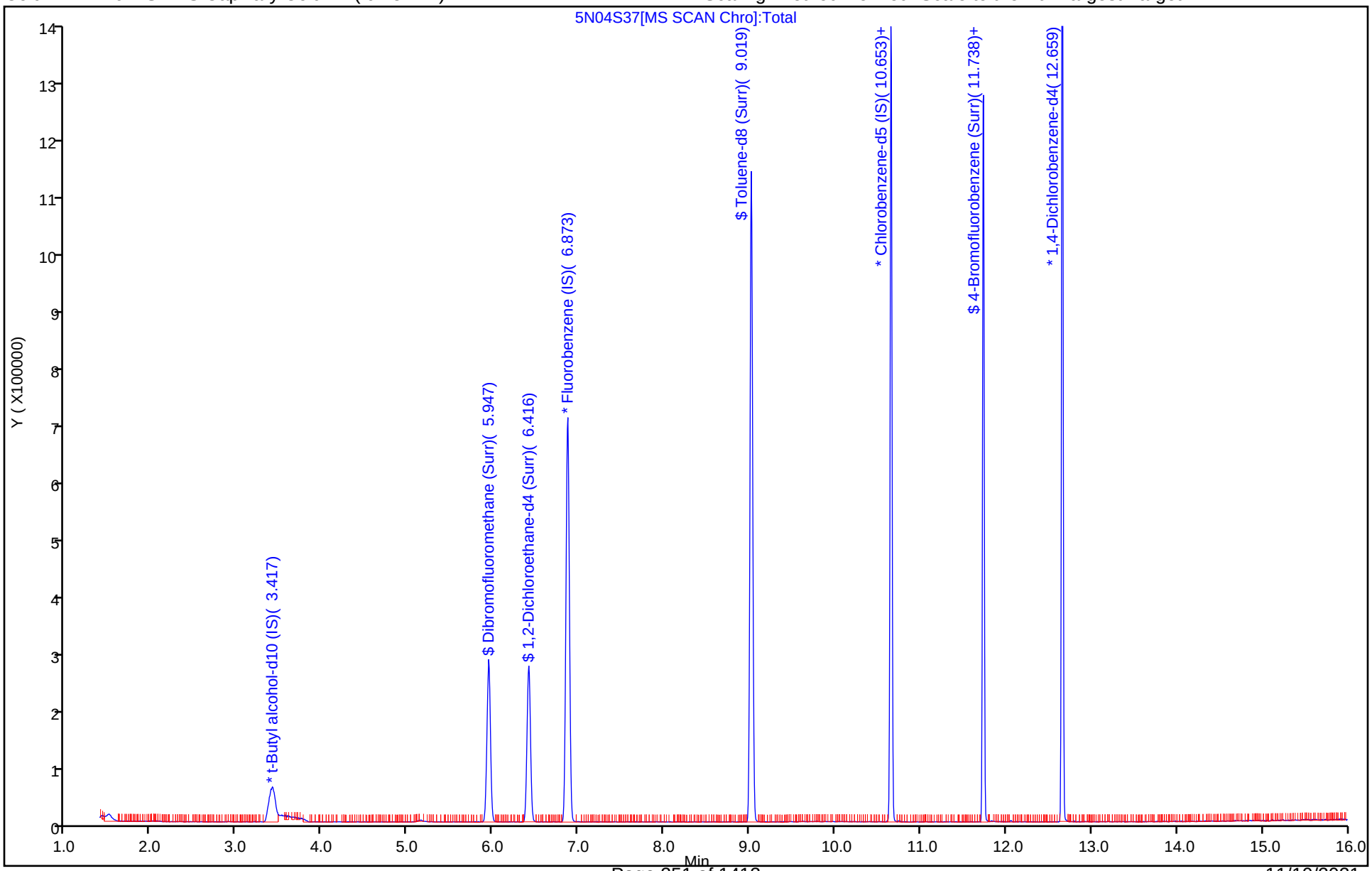
Report Date: 05-Nov-2021 13:26:05 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S37.D

Injection Date:	05-Nov-2021 00:32:30	Instrument ID:	26285	Operator ID:	mec29284
Lims ID:	410-60870-A-9	Lab Sample ID:	410-60870-9	Worklist Smp#:	13
Client ID:	Trip Blank				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	12
Method:	MSVoa_26285a	Limit Group:	MSV - 8260C DOD5		

Column: Rxi-624Sil MS Capillary Column (0.25 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins Lancaster Laboratories Env, LLC

Recovery Report

Data File:	\\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S37.D				
Lims ID:	410-60870-A-9				
Client ID:	Trip Blank				
Sample Type:	Client				
Inject. Date:	05-Nov-2021 00:32:30	ALS Bottle#:	12	Worklist Smp#:	13
Purge Vol:	5.000 mL	Dil. Factor:	1.0000		
Sample Info:	410-0043341-013				
Operator ID:	mec29284	Instrument ID:	26285		
Method:	\\chromfs\Lancaster\ChromData\26285\20211104-43341.b\MSVoa_26285a.m				
Limit Group:	MSV - 8260C DOD5				
Last Update:	05-Nov-2021 00:13:21	Calib Date:	02-Aug-2021 18:49:30		
Integrator:	RTE	ID Type:	Deconvolution ID		
Quant Method:	Internal Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I17.D				
Column 1 :	Rxi-624Sil MS Capillary Column (0.25 mm)		Det: MS Quad		
Process Host:	CTX1657				

First Level Reviewer: kaewrungrueangp Date: 05-Nov-2021 13:26:05

Compound	Amount Added	Amount Recovered	% Rec.
$ 47 Dibromofluoromethane (Surr)	50.0	53.2	106.34
$ 56 1,2-Dichloroethane-d4 (Surr)	50.0	51.4	102.78
$ 76 Toluene-d8 (Surr)	50.0	51.7	103.32
$ 101 4-Bromofluorobenzene (Surr)	50.0	50.9	101.90

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1 Analy Batch No.: 155419

SDG No.:

Instrument ID: 26285 GC Column: R-624SilMS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/02/2021 16:48 Calibration End Date: 08/02/2021 18:49 Calibration ID: 29420

Calibration Files

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 410-155419/17	5G02I17.D
Level 2	IC 410-155419/16	5G02I16.D
Level 3	IC 410-155419/15	5G02I15.D
Level 4	IC 410-155419/14	5G02I14.D
Level 5	ICIS 410-155419/13	5G02I13.D
Level 6	IC 410-155419/12	5G02I12.D
Level 7	IC 410-155419/11	5G02I11.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Dichlorodifluoromethane	0.3317 0.3937	0.3929 0.3535	0.3825	0.4170	0.3782	Ave		0.3785			0.1000	7.4		15.0			
Chloromethane	0.4133 0.4294	0.4582 0.3993	0.4400	0.4596	0.4103	Ave		0.4300			0.1000	5.5		15.0			
Vinyl chloride	0.4127 0.4377	0.4558 0.4052	0.4386	0.4732	0.4140	Ave		0.4339			0.1000	5.7		15.0			
Bromomethane	0.3052 0.3087	0.3208 0.2945	0.3148	0.3333	0.3016	Ave		0.3113			0.1000	4.2		15.0			
Chloroethane	0.2166 0.2239	0.2406 0.2159	0.2323	0.2537	0.2258	Ave		0.2298			0.1000	5.9		15.0			
Dichlorofluoromethane	0.5717 0.5877	0.6293 0.5754	0.6121	0.6531	0.5877	Ave		0.6024			0.1000	5.0		15.0			
Trichlorofluoromethane	0.4781 0.5288	0.5577 0.5001	0.5336	0.5835	0.5157	Ave		0.5282			0.1000	6.7		15.0			
Ethyl ether	0.1915 0.2167	0.2229 0.2179	0.2175	0.2244	0.2187	Ave		0.2156				5.1		15.0			
Acrolein	2.0332 2.1404	2.2376 2.0842	2.1069	2.0636	2.1188	Ave		2.1121				3.1		15.0			
1,1-Dichloroethene	0.2757 0.2839	0.2905 0.2838	0.2880	0.2942	0.2782	Ave		0.2849			0.1000	2.3		15.0			
Acetone	0.8341 0.8408	0.9319 0.8374	0.9365	0.9366	0.8664	Ave		0.8834			0.1000	5.6		15.0			
Freon 113	0.2693 0.3229	0.3301 0.3145	0.3215	0.3314	0.3152	Ave		0.3150			0.1000	6.7		15.0			
Isopropyl alcohol	0.6128 0.6213	0.6448 0.5733	0.7100	0.6856	0.6366	Ave		0.6406				7.1		15.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1 Analy Batch No.: 155419

SDG No.:

Instrument ID: 26285 GC Column: R-624SilMS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/02/2021 16:48 Calibration End Date: 08/02/2021 18:49 Calibration ID: 29420

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Iodomethane	0.5159 0.5589	0.5770 0.5562	0.5768	0.5784	0.5545	Ave		0.5597				3.9		15.0			
Carbon disulfide	0.9581 1.0477	1.0773 1.0227	1.0589	1.0606	1.0239	Ave		1.0356			0.1000	3.8		15.0			
Methyl acetate	0.4618 0.4006	0.4102 0.4047	0.4154	0.4237	0.4057	Ave		0.4174			0.1000	5.0		15.0			
3-Chloro-1-propene	0.5305 0.5164	0.5573 0.5145	0.5407	0.5301	0.5128	Ave		0.5289				3.1		15.0			
Methylene Chloride	0.3144 0.3132	0.3333 0.3112	0.3214	0.3181	0.3147	Ave		0.3180			0.1000	2.4		15.0			
2-Methyl-2-propanol	1.1645 1.2590	1.2890 1.1861	1.2745	1.2477	1.2407	Ave		1.2374				3.7		15.0			
Acrylonitrile	0.2060 0.1957	0.2074 0.1923	0.2078	0.2066	0.1982	Ave		0.2020				3.2		15.0			
Methyl tert-butyl ether	0.8752 0.8970	0.9348 0.8771	0.9337	0.9322	0.8966	Ave		0.9067			0.1000	2.9		15.0			
trans-1,2-Dichloroethene	0.2851 0.3124	0.3278 0.3151	0.3179	0.3220	0.3117	Ave		0.3131			0.1000	4.3		15.0			
Hexane	0.4348 0.5115	0.5205 0.4984	0.4975	0.5173	0.4919	Ave		0.4960				5.9		15.0			
1,1-Dichloroethane	0.5636 0.5659	0.5902 0.5609	0.5837	0.5757	0.5622	Ave		0.5717			0.2000	2.0		15.0			
Isopropyl ether	1.0104 1.0323	1.0734 1.0164	1.0713	1.0602	1.0381	Ave		1.0431				2.5		15.0			
2-Chloro-1,3-butadiene	0.4626 0.4870	0.5198 0.4828	0.4945	0.4950	0.4794	Ave		0.4887				3.6		15.0			
Tert-butyl ethyl ether	0.8936 0.9566	0.9850 0.9379	0.9877	0.9758	0.9595	Ave		0.9566				3.4		15.0			
2-Butanone	0.3183 0.2892	0.3062 0.2916	0.3116	0.3126	0.2978	Ave		0.3039			0.1000	3.7		15.0			
cis-1,2-Dichloroethene	0.3400 0.3429	0.3555 0.3425	0.3517	0.3520	0.3380	Ave		0.3461			0.1000	2.0		15.0			
2,2-Dichloropropane	0.4275 0.4596	0.4944 0.4506	0.4744	0.4731	0.4549	Ave		0.4621				4.6		15.0			
Propionitrile	1.4082 1.4174	1.5110 1.5027	1.4923	1.4352	1.5097	Ave		1.4681				3.1		15.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1 Analy Batch No.: 155419

SDG No.:

Instrument ID: 26285 GC Column: R-624SilMS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/02/2021 16:48 Calibration End Date: 08/02/2021 18:49 Calibration ID: 29420

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Methacrylonitrile	0.2078 0.2085	0.2072 0.2076	0.2177	0.2153	0.2099	Ave		0.2106				2.0		15.0			
Chlorobromomethane	0.1633 0.1633	0.1711 0.1643	0.1657	0.1670	0.1640	Ave		0.1655				1.7		15.0			
Tetrahydrofuran	1.4723 1.5154	1.5780 1.5289	1.4816	1.4115	1.5104	Ave		1.4997				3.5		15.0			
Chloroform	0.5326 0.5458	0.5739 0.5457	0.5564	0.5575	0.5461	Ave		0.5511			0.2000	2.4		15.0			
1,1,1-Trichloroethane	0.4242 0.4897	0.4940 0.4854	0.4941	0.4938	0.4801	Ave		0.4802			0.1000	5.3		15.0			
Cyclohexane	0.5646 0.6150	0.6206 0.5999	0.6138	0.6341	0.6014	Ave		0.6070			0.1000	3.6		15.0			
Carbon tetrachloride	0.3866 0.4284	0.4379 0.4264	0.4307	0.4283	0.4203	Ave		0.4226			0.1000	4.0		15.0			
1,1-Dichloropropene	0.4108 0.4542	0.4751 0.4528	0.4563	0.4561	0.4488	Ave		0.4506				4.3		15.0			
Isobutyl alcohol	0.4119 0.4616	0.4473 0.4329	0.4494	0.4516	0.4432	Ave		0.4426				3.6		15.0			
Benzene	1.2777 1.3406	1.4025 1.3396	1.4023	1.3698	1.3302	Ave		1.3518			0.5000	3.3		15.0			
1,2-Dichloroethane	0.4427 0.3876	0.3981 0.3841	0.4009	0.4020	0.3888	Ave		0.4006			0.1000	5.0		15.0			
Tert-amyl methyl ether	0.9011 0.9265	0.9430 0.9210	0.9472	0.9545	0.9309	Ave		0.9320				1.9		15.0			
n-Heptane	0.4802 0.5345	0.5324 0.5289	0.4975	0.5218	0.5001	Ave		0.5137				4.1		15.0			
Trichloroethene	0.3476 0.3524	0.3719 0.3563	0.3650	0.3567	0.3520	Ave		0.3574			0.2000	2.3		15.0			
Methylcyclohexane	0.5613 0.6290	0.6246 0.6211	0.6085	0.6362	0.6027	Ave		0.6119			0.1000	4.1		15.0			
1,2-Dichloropropane	0.3460 0.3471	0.3593 0.3483	0.3546	0.3545	0.3469	Ave		0.3510			0.1000	1.5		15.0			
2-ethoxy-2-methyl butane	0.4404 0.4661	0.4692 0.4671	0.4735	0.4807	0.4665	Ave		0.4662				2.7		15.0			
1,4-Dioxane	0.0571 0.0775	0.0734 0.0789	0.0756	0.0764	0.0777	Ave		0.0738			0.0050	10.2		15.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1 Analy Batch No.: 155419

SDG No.:

Instrument ID: 26285 GC Column: R-624SilMS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/02/2021 16:48 Calibration End Date: 08/02/2021 18:49 Calibration ID: 29420

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Dibromomethane	0.2123 0.2104	0.2171 0.2120	0.2149	0.2148	0.2105	Ave		0.2132				1.2		15.0			
Methyl methacrylate	0.3219 0.3192	0.3297 0.3255	0.3239	0.3263	0.3253	Ave		0.3245				1.0		15.0			
Bromodichloromethane	0.4070 0.4180	0.4205 0.4244	0.4206	0.4181	0.4128	Ave		0.4173			0.2000	1.4		15.0			
2-Nitropropane	2.7275 2.7096	2.7708 2.7003	2.6059	2.5529	2.6829	Ave		2.6786				2.8		15.0			
2-Chloroethyl vinyl ether	0.2622 0.2775	0.2642 0.2782	0.2794	0.2841	0.2770	Ave		0.2747				3.0		15.0			
cis-1,3-Dichloropropene	0.5188 0.5564	0.5507 0.5617	0.5687	0.5530	0.5556	Ave		0.5521			0.2000	2.9		15.0			
4-Methyl-2-pentanone	0.5951 0.5689	0.5648 0.5593	0.5993	0.5992	0.5764	Ave		0.5804			0.1000	3.0		15.0			
Toluene	1.0874 1.1363	1.1995 1.1189	1.1621	1.1485	1.1104	Ave		1.1376			0.4000	3.2		15.0			
trans-1,3-Dichloropropene	0.6346 0.6631	0.6631 0.6606	0.6531	0.6601	0.6504	Ave		0.6550			0.1000	1.6		15.0			
Ethyl methacrylate	0.6641 0.7034	0.6840 0.6898	0.7063	0.7160	0.7015	Ave		0.6950				2.5		15.0			
1,1,2-Trichloroethane	0.4093 0.4039	0.4104 0.3996	0.4182	0.4118	0.4016	Ave		0.4078			0.1000	1.6		15.0			
Tetrachloroethene	0.4613 0.5137	0.5253 0.5175	0.5187	0.5177	0.4952	Ave		0.5071			0.2000	4.4		15.0			
1,3-Dichloropropane	0.6464 0.6517	0.6498 0.6406	0.6593	0.6615	0.6430	Ave		0.6503				1.2		15.0			
2-Hexanone	0.6182 0.6080	0.6107 0.5871	0.6449	0.6320	0.6086	Ave		0.6156			0.1000	3.0		15.0			
Dibromochloromethane	0.4181 0.4654	0.4435 0.4633	0.4572	0.4601	0.4534	Ave		0.4516				3.6		15.0			
1,2-Dibromoethane (EDB)	0.4331 0.4465	0.4417 0.4464	0.4566	0.4546	0.4434	Ave		0.4460			0.1000	1.8		15.0			
Chlorobenzene	1.2041 1.2512	1.2707 1.2639	1.2666	1.2482	1.2205	Ave		1.2465			0.5000	2.0		15.0			
1-Chlorohexane	0.6464 0.6763	0.7130 0.6748	0.6809	0.6843	0.6537	Ave		0.6756				3.2		15.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1 Analy Batch No.: 155419

SDG No.:

Instrument ID: 26285 GC Column: R-624SilMS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/02/2021 16:48 Calibration End Date: 08/02/2021 18:49 Calibration ID: 29420

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
1,1,1,2-Tetrachloroethane	0.4221 0.4417	0.4191 0.4486	0.4469	0.4388	0.4342	Ave		0.4359				2.7		15.0			
Ethylbenzene	2.0951 2.2587	2.3052 2.2256	2.2726	2.2502	2.1805	Ave		2.2268			0.1000	3.1		15.0			
m-Xylene & p-Xylene	0.8229 0.8714	0.8916 0.8757	0.8757	0.8693	0.8400	Ave		0.8638			0.1000	2.7		15.0			
o-Xylene	0.8072 0.8524	0.8501 0.8506	0.8582	0.8541	0.8319	Ave		0.8435			0.3000	2.1		15.0			
Styrene	1.3103 1.4366	1.4389 1.4367	1.4589	1.4216	1.3978	Ave		1.4144			0.3000	3.5		15.0			
Bromoform	0.3495 0.3928	0.3537 0.3933	0.3628	0.3728	0.3768	Ave		0.3717			0.1000	4.7		15.0			
Isopropylbenzene	2.0078 2.2325	2.2375 2.1632	2.2470	2.2362	2.1479	Ave		2.1817			0.1000	4.0		15.0			
Cyclohexanone	0.3839 0.4107	0.3791 0.4109	0.3860	0.3966	0.4173	Ave		0.3978				3.8		15.0			
Bromobenzene	0.9299 0.9798	0.9696 0.9724	0.9542	0.9798	0.9573	Ave		0.9633				1.8		15.0			
1,1,2,2-Tetrachloroethane	1.2766 1.2963	1.2963 1.2508	1.3007	1.3378	1.2719	Ave		1.2901			0.3000	2.1		15.0			
trans-1,4-Dichloro-2-butene	0.3768 0.4255	0.3986 0.4094	0.4129	0.4204	0.4208	Ave		0.4092				4.1		15.0			
1,2,3-Trichloropropane	0.3400 0.3516	0.3455 0.3377	0.3510	0.3599	0.3470	Ave		0.3475				2.2		15.0			
N-Propylbenzene	4.5795 4.9213	5.0834 4.5176	4.8672	4.9294	4.7980	Ave		4.8138				4.2		15.0			
2-Chlorotoluene	0.9419 0.9630	0.9598 0.9497	0.9392	0.9619	0.9346	Ave		0.9500				1.2		15.0			
1,3,5-Trimethylbenzene	3.1333 3.3863	3.3333 3.2940	3.3090	3.3532	3.3268	Ave		3.3051				2.5		15.0			
4-Chlorotoluene	0.8804 0.9796	1.0031 0.9762	0.9632	0.9851	0.9606	Ave		0.9640				4.1		15.0			
tert-Butylbenzene	0.5996 0.6758	0.6390 0.6722	0.6449	0.6569	0.6504	Ave		0.6484				3.9		15.0			
1,2,4-Trimethylbenzene	3.0975 3.4214	3.4303 3.3325	3.3637	3.3942	3.3389	Ave		3.3398				3.4		15.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1 Analy Batch No.: 155419

SDG No.:

Instrument ID: 26285 GC Column: R-624SilMS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/02/2021 16:48 Calibration End Date: 08/02/2021 18:49 Calibration ID: 29420

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
sec-Butylbenzene	3.7466 4.3026	4.2098 4.0905	4.1248	4.2593	4.1154	Ave		4.1213				4.4		15.0			
1,3-Dichlorobenzene	1.7289 1.8777	1.8702 1.8839	1.8298	1.8740	1.8420	Ave		1.8438			0.6000	3.0		15.0			
4-Isopropyltoluene	3.1918 3.6990	3.5886 3.5947	3.5181	3.6242	3.5670	Ave		3.5405				4.6		15.0			
1,4-Dichlorobenzene	1.7708 1.8918	1.8812 1.8973	1.8629	1.8885	1.8485	Ave		1.8630			0.5000	2.4		15.0			
1,2,3-Trimethylbenzene	3.1598 3.4270	3.4015 3.3539	3.3683	3.4127	3.3335	Ave		3.3510				2.7		20.0			
n-Butylbenzene	1.5405 1.8729	1.7856 1.8701	1.7679	1.8216	1.7875	Ave		1.7780				6.3		15.0			
1,2-Dichlorobenzene	1.6959 1.7881	1.7325 1.7653	1.7670	1.7655	1.7491	Ave		1.7519			0.4000	1.7		15.0			
1,2-Dibromo-3-Chloropropane	0.3092 0.3339	0.3079 0.3272	0.3151	0.3334	0.3202	Ave		0.3210			0.0500	3.4		15.0			
1,3,5-Trichlorobenzene	1.2591 1.3658	1.2405 1.3907	1.2744	1.3321	1.2983	Ave		1.3087				4.3		20.0			
1,2,4-Trichlorobenzene	1.0894 1.2554	1.1736 1.2687	1.1740	1.2224	1.2057	Ave		1.1984			0.2000	5.0		15.0			
Hexachlorobutadiene	0.4803 0.5546	0.5176 0.5590	0.4875	0.5132	0.5045	Ave		0.5167				5.9		15.0			
Naphthalene	4.1826 4.4528	4.0497 4.1754	4.2408	4.4161	4.2923	Ave		4.2585				3.3		15.0			
1,2,3-Trichlorobenzene	1.2131 1.2077	1.1057 1.1939	1.1374	1.1700	1.1507	Ave		1.1683				3.4		15.0			
Dibromofluoromethane (Surr)	0.2423 0.2439	0.2466 0.2441	0.2427	0.2452	0.2465	Ave		0.2445				0.7		15.0			
1,2-Dichloroethane-d4 (Surr)	0.0559 0.0565	0.0562 0.0557	0.0560	0.0566	0.0564	Ave		0.0562				0.6		15.0			
Toluene-d8 (Surr)	1.2600 1.2506	1.2613 1.2377	1.2535	1.2497	1.2353	Ave		1.2497				0.8		15.0			
4-Bromofluorobenzene (Surr)	0.4830 0.4789	0.4874 0.4839	0.4852	0.4798	0.4764	Ave		0.4821				0.8		15.0			

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1 Analy Batch No.: 155419

SDG No.:

Instrument ID: 26285 GC Column: R-624SilMS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/02/2021 16:48 Calibration End Date: 08/02/2021 18:49 Calibration ID: 29420

Calibration Files

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 410-155419/17	5G02I17.D
Level 2	IC 410-155419/16	5G02I16.D
Level 3	IC 410-155419/15	5G02I15.D
Level 4	IC 410-155419/14	5G02I14.D
Level 5	ICIS 410-155419/13	5G02I13.D
Level 6	IC 410-155419/12	5G02I12.D
Level 7	IC 410-155419/11	5G02I11.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Dichlorodifluoromethane	FB	Ave	6462 753285	31246 2042256	74501	161682	363073	1.00 100	4.00 300	10.0	20.0	50.0
Chloromethane	FB	Ave	8052 821566	36436 2307160	85705	178204	393808	1.00 100	4.00 300	10.0	20.0	50.0
Vinyl chloride	FB	Ave	8040 837326	36246 2340960	85442	183493	397392	1.00 100	4.00 300	10.0	20.0	50.0
Bromomethane	FB	Ave	5945 590658	25512 1701231	61320	129234	289538	1.00 100	4.00 300	10.0	20.0	50.0
Chloroethane	FB	Ave	4219 428410	19136 1247337	45248	98377	216736	1.00 100	4.00 300	10.0	20.0	50.0
Dichlorofluoromethane	FB	Ave	11136 1124282	50048 3324398	119234	253228	564170	1.00 100	4.00 300	10.0	20.0	50.0
Trichlorofluoromethane	FB	Ave	9314 1011751	44352 2889246	103938	226249	494980	1.00 100	4.00 300	10.0	20.0	50.0
Ethyl ether	FB	Ave	3730 414703	17724 1258905	42380	87007	209916	1.00 100	4.00 300	10.0	20.0	50.0
Acrolein	TBAd 10	Ave	21851 2123008	91679 6200132	227604	456982	1080910	10.00 1000	40.0 3000	100.0	200	500
1,1-Dichloroethene	FB	Ave	5370 543203	23101 1639665	56108	114063	267028	1.00 100	4.00 300	10.0	20.0	50.0
Acetone	TBAd 10	Ave	1793 166791	7637 498229	20234	41485	88402	2.00 200	8.00 600	20.0	40.0	100
Freon 113	FB	Ave	5246 617826	26253 1816821	62634	128502	302523	1.00 100	4.00 300	10.0	20.0	50.0

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1 Analy Batch No.: 155419

SDG No.:

Instrument ID: 26285 GC Column: R-624SilMS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/02/2021 16:48 Calibration End Date: 08/02/2021 18:49 Calibration ID: 29420

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Isopropyl alcohol	TBAd 10	Ave	13173 308150	52842 852696	76706	151829	162396	20.0 500	80.0 1500	100	200	250
Iodomethane	FB	Ave	10049 1069323	45887 3213641	112349	224266	532290	1.00 100	4.00 300	10.0	20.0	50.0
Carbon disulfide	FB	Ave	18663 2004373	85669 5908769	206276	411228	982838	1.00 100	4.00 300	10.0	20.0	50.0
Methyl acetate	FB	Ave	8995 766470	32623 2338359	80913	164280	389395	1.00 100	4.00 300	10.0	20.0	50.0
3-Chloro-1-propene	FB	Ave	10334 987975	44316 2972519	105316	205529	492225	1.00 100	4.00 300	10.0	20.0	50.0
Methylene Chloride	FB	Ave	6124 599249	26507 1797805	62604	123348	302122	1.00 100	4.00 300	10.0	20.0	50.0
2-Methyl-2-propanol	TBAd 10	Ave	25032 624413	105630 1764215	137684	276319	316496	20.0 500	80.0 1500	100	200	250
Acrylonitrile	FB	Ave	10030 936233	41235 2777579	101184	200278	475677	2.50 250	10.0 750	25.0	50.0	125
Methyl tert-butyl ether	FB	Ave	17049 1716186	74343 5067767	181881	361470	860651	1.00 100	4.00 300	10.0	20.0	50.0
trans-1,2-Dichloroethene	FB	Ave	5554 597670	26072 1820268	61924	124838	299197	1.00 100	4.00 300	10.0	20.0	50.0
Hexane	FB	Ave	8470 978672	41390 2879393	96909	200573	472140	1.00 100	4.00 300	10.0	20.0	50.0
1,1-Dichloroethane	FB	Ave	10978 1082640	46937 3240753	113708	223238	539624	1.00 100	4.00 300	10.0	20.0	50.0
Isopropyl ether	FB	Ave	19682 1974933	85359 5872583	208675	411084	996435	1.00 100	4.00 300	10.0	20.0	50.0
2-Chloro-1,3-butadiene	FB	Ave	9012 931702	41336 2789636	96326	191948	460147	1.00 100	4.00 300	10.0	20.0	50.0
Tert-butyl ethyl ether	FB	Ave	17408 1830111	78336 5418907	192391	378351	920997	1.00 100	4.00 300	10.0	20.0	50.0
2-Butanone	FB	Ave	12400 1106702	48700 3368962	121411	242385	571761	2.00 200	8.00 600	20.0	40.0	100
cis-1,2-Dichloroethene	FB	Ave	6624 655968	28269 1979079	68508	136468	324455	1.00 100	4.00 300	10.0	20.0	50.0

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1 Analy Batch No.: 155419

SDG No.:

Instrument ID: 26285 GC Column: R-624SilMS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/02/2021 16:48 Calibration End Date: 08/02/2021 18:49 Calibration ID: 29420

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
2,2-Dichloropropane	FB	Ave	8327 879238	39318 2603159	92406	183433	436653	1.00 100	4.00 300	10.0	20.0	50.0
Propionitrile	TBAd 10	Ave	30270 702948	123824 2235262	161216	317834	385113	20.0 500	80.0 1500	100	200	250
Methacrylonitrile	FB	Ave	40474 997328	164738 2998276	212054	417436	503711	10.0 250	40.0 750	50.0	100	125
Chlorobromomethane	FB	Ave	3182 312338	13603 949385	32268	64766	157404	1.00 100	4.00 300	10.0	20.0	50.0
Tetrahydrofuran	TBAd 10	Ave	7912 751566	32328 2274157	80030	156296	385283	5.00 500	20.0 1500	50.0	100	250
Chloroform	FB	Ave	10375 1044148	45642 3152696	108383	216169	524188	1.00 100	4.00 300	10.0	20.0	50.0
1,1,1-Trichloroethane	FB	Ave	8264 936920	39287 2804579	96243	191478	460888	1.00 100	4.00 300	10.0	20.0	50.0
Cyclohexane	FB	Ave	10998 1176529	49351 3465995	119566	245849	577270	1.00 100	4.00 300	10.0	20.0	50.0
Carbon tetrachloride	FB	Ave	7530 819664	34821 2463329	83895	166087	403406	1.00 100	4.00 300	10.0	20.0	50.0
1,1-Dichloropropene	FB	Ave	8003 868922	37786 2616296	88879	176866	430792	1.00 100	4.00 300	10.0	20.0	50.0
Isobutyl alcohol	TBAd 10	Ave	22136 572300	91635 1609646	121379	250035	282661	50.0 1250	200 3750	250	500	625
Benzene	FB	Ave	24889 2564749	111536 7739767	273154	531138	1276898	1.00 100	4.00 300	10.0	20.0	50.0
1,2-Dichloroethane	FB	Ave	8624 741501	31658 2218923	78089	155886	373177	1.00 100	4.00 300	10.0	20.0	50.0
Tert-amyl methyl ether	FB	Ave	17553 1772476	74990 5321247	184499	370116	893587	1.00 100	4.00 300	10.0	20.0	50.0
n-Heptane	FB	Ave	9355 1022676	42343 3055882	96916	202338	480074	1.00 100	4.00 300	10.0	20.0	50.0
Trichloroethene	FB	Ave	6771 674159	29573 2058821	71102	138320	337930	1.00 100	4.00 300	10.0	20.0	50.0
Methylcyclohexane	FB	Ave	10934	49675	118533	246695	578514	1.00	4.00	10.0	20.0	50.0

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1 Analy Batch No.: 155419

SDG No.:

Instrument ID: 26285 GC Column: R-624SilMS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/02/2021 16:48 Calibration End Date: 08/02/2021 18:49 Calibration ID: 29420

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
			1203290	3588337				100	300			
1,2-Dichloropropane	FB	Ave	6741 664096	28577 2012534	69077	137461	332982	1.00 100	4.00 300	10.0	20.0	50.0
2-ethoxy-2-methyl butane	FB	Ave	8579 891681	37317 2698786	92235	186384	447753	1.00 100	4.00 300	10.0	20.0	50.0
1,4-Dioxane	TBAd 10	Ave	3071 96108	15039 293404	20425	42318	49548	50.0 1250	200 3750	250	500	625
Dibromomethane	FB	Ave	4136 402624	17264 1224649	41870	83296	202052	1.00 100	4.00 300	10.0	20.0	50.0
Methyl methacrylate	FB	Ave	6270 610662	26220 1880418	63088	126535	312302	1.00 100	4.00 300	10.0	20.0	50.0
Bromodichloromethane	FB	Ave	7928 799736	33440 2451900	81925	162110	396201	1.00 100	4.00 300	10.0	20.0	50.0
2-Nitropropane	TBAd 10	Ave	14657 1343832	56766 4016560	140758	282685	684388	5.00 500	20.0 1500	50.0	100	250
2-Chloroethyl vinyl ether	FB	Ave	5107 530966	21012 1607339	54434	110140	265857	1.00 100	4.00 300	10.0	20.0	50.0
cis-1,3-Dichloropropene	FB	Ave	10107 1064493	43795 3245153	110771	214419	533305	1.00 100	4.00 300	10.0	20.0	50.0
4-Methyl-2-pentanone	FB	Ave	23183 2176953	89836 6462996	233497	464661	1106541	2.00 200	8.00 600	20.0	40.0	100
Toluene	CBZd 5	Ave	16136 1666359	72621 5038829	172862	340936	826079	1.00 100	4.00 300	10.0	20.0	50.0
trans-1,3-Dichloropropene	CBZd 5	Ave	9417 972402	40144 2974867	97143	195956	483837	1.00 100	4.00 300	10.0	20.0	50.0
Ethyl methacrylate	CBZd 5	Ave	9855 1031534	41411 3106728	105058	212569	521893	1.00 100	4.00 300	10.0	20.0	50.0
1,1,2-Trichloroethane	CBZd 5	Ave	6074 592251	24848 1799696	62199	122251	298774	1.00 100	4.00 300	10.0	20.0	50.0

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1 Analy Batch No.: 155419

SDG No.:

Instrument ID: 26285 GC Column: R-624SilMS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/02/2021 16:48 Calibration End Date: 08/02/2021 18:49 Calibration ID: 29420

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Tetrachloroethene	CBZd5	Ave	6845 753285	31805 2330448	77157	153701	368399	1.00 100	4.00 300	10.0	20.0	50.0
1,3-Dichloropropane	CBZd5	Ave	9592 955654	39341 2885107	98066	196379	478388	1.00 100	4.00 300	10.0	20.0	50.0
2-Hexanone	CBZd5	Ave	18347 1783126	73949 5287964	191853	375229	905490	2.00 200	8.00 600	20.0	40.0	100
Dibromochloromethane	CBZd5	Ave	6204 682535	26851 2086570	68010	136600	337333	1.00 100	4.00 300	10.0	20.0	50.0
1,2-Dibromoethane (EDB)	CBZd5	Ave	6426 654743	26740 2010420	67921	134940	329868	1.00 100	4.00 300	10.0	20.0	50.0
Chlorobenzene	CBZd5	Ave	17867 1834963	76930 5692189	188403	370559	908038	1.00 100	4.00 300	10.0	20.0	50.0
1-Chlorohexane	CBZd5	Ave	9591 991800	43169 3038790	101285	203135	486317	1.00 100	4.00 300	10.0	20.0	50.0
1,1,1,2-Tetrachloroethane	CBZd5	Ave	6263 647824	25371 2020496	66482	130276	323064	1.00 100	4.00 300	10.0	20.0	50.0
Ethylbenzene	CBZd5	Ave	31088 3312382	139563 10022942	338046	667999	1622238	1.00 100	4.00 300	10.0	20.0	50.0
m-Xylene & p-Xylene	CBZd5	Ave	24421 2555804	107960 7887045	260516	516121	1249858	2.00 200	8.00 600	20.0	40.0	100
o-Xylene	CBZd5	Ave	11977 1250028	51470 3830893	127656	253556	618938	1.00 100	4.00 300	10.0	20.0	50.0
Styrene	CBZd5	Ave	19443 2106713	87115 6469996	217002	422028	1039942	1.00 100	4.00 300	10.0	20.0	50.0

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1 Analy Batch No.: 155419

SDG No.:

Instrument ID: 26285 GC Column: R-624SilMS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/02/2021 16:48 Calibration End Date: 08/02/2021 18:49 Calibration ID: 29420

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Bromoform	CBZd 5	Ave	5186 576031	21414 1771162	53960	110685	280307	1.00 100	4.00 300	10.0	20.0	50.0
Isopropylbenzene	CBZd 5	Ave	29792 3274028	135468 9742054	334228	663843	1597947	1.00 100	4.00 300	10.0	20.0	50.0
Cyclohexanone	TBAd 10	Ave	20630 509225	77676 1527872	104258	219563	266150	50.0 1250	200 3750	250	500	625
Bromobenzene	DCBd 4	Ave	7609 792149	32221 2467727	78808	159124	385412	1.00 100	4.00 300	10.0	20.0	50.0
1,1,2,2-Tetrachloroethane	DCBd 4	Ave	10446 1048007	43075 3174190	107431	217269	512054	1.00 100	4.00 300	10.0	20.0	50.0
trans-1,4-Dichloro-2-butene	DCBd 4	Ave	30834 860021	132463 2597267	170495	341413	423496	10.0 250	40.0 750	50.0	100	125
1,2,3-Trichloropropane	DCBd 4	Ave	2782 284234	11480 856869	28988	58455	139711	1.00 100	4.00 300	10.0	20.0	50.0
N-Propylbenzene	DCBd 4	Ave	37472 3978567	168919 11464433	401994	800565	1931638	1.00 100	4.00 300	10.0	20.0	50.0
2-Chlorotoluene	DCBd 4	Ave	7707 778521	31894 2409965	77574	156224	376255	1.00 100	4.00 300	10.0	20.0	50.0
1,3,5-Trimethylbenzene	DCBd 4	Ave	25638 2737611	110764 8359302	273296	544586	1339348	1.00 100	4.00 300	10.0	20.0	50.0
4-Chlorotoluene	DCBd 4	Ave	7204 791933	33333 2477193	79557	159984	386746	1.00 100	4.00 300	10.0	20.0	50.0
tert-Butylbenzene	DCBd 4	Ave	4906 546384	21233 1705881	53266	106686	261866	1.00 100	4.00 300	10.0	20.0	50.0

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1 Analy Batch No.: 155419

SDG No.:

Instrument ID: 26285 GC Column: R-624SilMS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/02/2021 16:48 Calibration End Date: 08/02/2021 18:49 Calibration ID: 29420

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
1,2,4-Trimethylbenzene	DCBd 4	Ave	25345 2765977	113986 8456867	277816	551240	1344232	1.00 100	4.00 300	10.0	20.0	50.0
sec-Butylbenzene	DCBd 4	Ave	30657 3478395	139889 10380428	340674	691737	1656843	1.00 100	4.00 300	10.0	20.0	50.0
1,3-Dichlorobenzene	DCBd 4	Ave	14147 1517995	62146 4780828	151132	304348	741566	1.00 100	4.00 300	10.0	20.0	50.0
4-Isopropyltoluene	DCBd 4	Ave	26117 2990458	119247 9122278	290570	588601	1436041	1.00 100	4.00 300	10.0	20.0	50.0
1,4-Dichlorobenzene	DCBd 4	Ave	14490 1529416	62510 4814862	153860	306707	744201	1.00 100	4.00 300	10.0	20.0	50.0
1,2,3-Trimethylbenzene	DCBd 4	Ave	25855 2770543	113030 8511332	278199	554241	1342071	1.00 100	4.00 300	10.0	20.0	50.0
n-Butylbenzene	DCBd 4	Ave	12605 1514135	59333 4745686	146013	295843	719624	1.00 100	4.00 300	10.0	20.0	50.0
1,2-Dichlorobenzene	DCBd 4	Ave	13877 1445583	57571 4479840	145944	286737	704181	1.00 100	4.00 300	10.0	20.0	50.0
1,2-Dibromo-3-Chloropropane	DCBd 4	Ave	2530 269971	10230 830368	26028	54151	128902	1.00 100	4.00 300	10.0	20.0	50.0
1,3,5-Trichlorobenzene	DCBd 4	Ave	10303 1104185	41222 3529175	105253	216349	522677	1.00 100	4.00 300	10.0	20.0	50.0
1,2,4-Trichlorobenzene	DCBd 4	Ave	8914 1014894	38998 3219647	96964	198520	485409	1.00 100	4.00 300	10.0	20.0	50.0
Hexachlorobutadiene	DCBd 4	Ave	3930 448323	17199 1418550	40267	83353	203112	1.00 100	4.00 300	10.0	20.0	50.0

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins Lancaster Laboratories Env Job No.: 410-60870-1 Analy Batch No.: 155419

SDG No.:

Instrument ID: 26285 GC Column: R-624SilMS ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/02/2021 16:48 Calibration End Date: 08/02/2021 18:49 Calibration ID: 29420

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Naphthalene	DCBd 4	Ave	34224 3599785	134571 10596025	350259	717204	1728052	1.00 100	4.00 300	10.0	20.0	50.0
1,2,3-Trichlorobenzene	DCBd 4	Ave	9926 976314	36741 3029827	93938	190019	463270	1.00 100	4.00 300	10.0	20.0	50.0
Dibromofluoromethane (Surr)	FB	Ave	236047 233324	245146 235090	236399	237701	236592	50.0 50.0	50.0 50.0	50.0	50.0	50.0
1,2-Dichloroethane-d4 (Surr)	FB	Ave	54454 54071	55879 53640	54502	54880	54163	50.0 50.0	50.0 50.0	50.0	50.0	50.0
Toluene-d8 (Surr)	CBZd 5	Ave	934837 917026	954545 928972	932266	927457	918997	50.0 50.0	50.0 50.0	50.0	50.0	50.0
4-Bromofluorobenzene (Surr)	CBZd 5	Ave	358366 351122	368835 363203	360880	356113	354457	50.0 50.0	50.0 50.0	50.0	50.0	50.0

Curve Type Legend
Ave = Average ISTD

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I11.D
Lims ID: IC v300
Client ID:
Sample Type: IC Calib Level: 7
Inject. Date: 02-Aug-2021 16:48:30 ALS Bottle#: 11 Worklist Smp#: 11
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 410-0035810-011
Misc. Info.: IC LEVEL7 300
Operator ID: jml01693 Instrument ID: 26285
Sublist: chrom-MSVoa_26285a*sub38

Method: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\MSVoa_26285a.m
Limit Group: MSV - 8260C DOD5
Last Update: 03-Aug-2021 13:08:10 Calib Date: 02-Aug-2021 18:49:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I17.D

Column 1 : Rxi-624Sil MS Capillary Column (0.25 mm) Det: MS Quad
Process Host: CTX1646

First Level Reviewer: mellingerc Date: 03-Aug-2021 08:59:42

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
2 Dichlorodifluoromethane	85	1.618	1.613	0.006	99	2042256	300.0	280.2	
3 Chloromethane	50	1.783	1.777	0.006	99	2307160	300.0	278.6	
4 Butadiene	39	1.862	1.856	0.006	91	2071098	NC	NC	
5 Vinyl chloride	62	1.881	1.875	0.006	98	2340960	300.0	280.2	
8 Bromomethane	94	2.149	2.143	0.006	90	1701231	300.0	283.8	
9 Chloroethane	64	2.198	2.192	0.006	99	1247337	300.0	281.8	
10 Dichlorofluoromethane	67	2.411	2.399	0.012	97	3324398	300.0	286.5	
11 Trichlorofluoromethane	101	2.466	2.460	0.006	98	2889246	300.0	284.0	
12 Pentane	43	2.466	2.460	0.006	98	3299057	NC	NC	a
14 Ethyl ether	59	2.637	2.637	0.000	94	1258905	300.0	303.1	
15 1,2-Dichloro-1,1,2-trifluoroetha	67	2.728	2.728	0.000	93	2213020	NC	NC	
16 Acrolein	56	2.777	2.777	0.000	99	6200132	2999.9	2960.3	
19 1,1-Dichloroethene	96	2.917	2.899	0.018	98	1639665	300.0	298.8	
17 Acetone	58	2.917	2.917	0.000	99	498229	600.0	568.8	
18 112TCTFE	101	2.935	2.935	0.000	92	1816821	300.0	299.5	
21 Isopropyl alcohol	45	3.057	3.045	0.012	99	852696	1500.0	1342.2	
20 Iodomethane	142	3.082	3.070	0.012	97	3213641	300.0	298.2	
22 Carbon disulfide	76	3.185	3.173	0.012	99	5908769	300.0	296.3	
23 Methyl acetate	43	3.258	3.259	-0.001	98	2338359	300.0	290.9	
25 3-Chloro-1-propene	41	3.283	3.277	0.006	94	2972519	300.0	291.8	
* 27 t-Butyl alcohol-d10 (IS)	65	3.453	3.429	0.024	29	247910	250.0	250.0	
26 Methylene Chloride	84	3.466	3.441	0.025	94	1797805	300.0	293.5	
28 2-Methyl-2-propanol	59	3.551	3.545	0.006	100	1764215	1500.0	1437.8	
29 Acrylonitrile	53	3.716	3.716	0.000	98	2777579	750.0	714.0	
30 Methyl tert-butyl ether	73	3.770	3.771	-0.001	95	5067767	300.0	290.2	
31 trans-1,2-Dichloroethene	96	3.770	3.771	-0.001	99	1820268	300.0	301.8	
32 Hexane	57	4.148	4.149	-0.001	94	2879393	300.0	301.4	
33 1,1-Dichloroethane	63	4.386	4.386	0.000	96	3240753	300.0	294.3	
35 Isopropyl ether	45	4.459	4.453	0.006	97	5872583	300.0	292.3	
36 2-Chloro-1,3-butadiene	53	4.496	4.496	0.000	90	2789636	300.0	296.4	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
37 Tert-butyl ethyl ether	59	5.020	5.014	0.006	99	5418907	300.0	294.1	
39 2-Butanone (MEK)	43	5.234	5.222	0.012	100	3368962	600.0	575.6	
38 cis-1,2-Dichloroethene	96	5.252	5.246	0.006	83	1979079	300.0	296.9	
40 2,2-Dichloropropane	77	5.276	5.270	0.006	88	2603159	300.0	292.5	
41 Propionitrile	54	5.325	5.319	0.006	99	2235262	1500.0	1535.4	
43 Methacrylonitrile	67	5.551	5.545	0.006	94	2998276	750.0	739.4	
44 Chlorobromomethane	128	5.593	5.593	0.000	98	949385	300.0	297.8	
45 Tetrahydrofuran	71	5.599	5.593	0.006	85	2274157	1500.0	1529.2	
46 Chloroform	83	5.758	5.758	0.000	93	3152696	300.0	297.0	
$ 47 Dibromofluoromethane (Surr)	113	5.983	5.978	0.005	94	235090	50.0	49.9	
48 1,1,1-Trichloroethane	97	5.983	5.978	0.005	98	2804579	300.0	303.3	
49 Cyclohexane	56	6.081	6.075	0.006	92	3465995	300.0	296.5	
S 74 1,2-Dichloroethene, Total	100				0			598.8	
50 1,1-Dichloropropene	75	6.203	6.197	0.006	98	2616296	300.0	301.5	
51 Carbon tetrachloride	117	6.197	6.197	0.000	96	2463329	300.0	302.6	
52 Isobutyl alcohol	41	6.410	6.398	0.012	95	1609646	3750.0	3667.8	
$ 56 1,2-Dichloroethane-d4 (Surr)	102	6.453	6.447	0.006	98	53640	50.0	49.6	
53 Benzene	78	6.471	6.471	0.000	96	7739767	300.0	297.3	
55 1,2-Dichloroethane	62	6.557	6.551	0.006	97	2218923	300.0	287.6	
58 Tert-amyl methyl ether	73	6.691	6.685	0.006	98	5321247	300.0	296.5	
* 59 Fluorobenzene (IS)	96	6.898	6.892	0.006	99	962931	50.0	50.0	
60 n-Heptane	43	6.922	6.922	0.000	95	3055882	300.0	308.9	
61 n-Butanol	56	7.331	7.325	0.006	90	1327409	NC	NC	
62 Trichloroethene	95	7.398	7.392	0.006	99	2058821	300.0	299.1	
63 Methylcyclohexane	83	7.709	7.697	0.012	91	3588337	300.0	304.5	
64 1,2-Dichloropropane	63	7.739	7.739	0.000	96	2012534	300.0	297.7	
65 2-ethoxy-2-methyl butane	87	7.776	7.770	0.006	91	2698786	300.0	300.6	
68 1,4-Dioxane	88	7.837	7.831	0.006	86	293404	3750.0	4008.2	M
66 Dibromomethane	93	7.855	7.849	0.006	97	1224649	300.0	298.3	
67 Methyl methacrylate	69	7.861	7.855	0.006	93	1880418	300.0	300.9	
70 Dichlorobromomethane	83	8.111	8.105	0.006	100	2451900	300.0	305.1	
72 2-Nitropropane	41	8.404	8.398	0.006	97	4016560	1500.0	1512.2	
71 2-Chloroethyl vinyl ether	63	8.507	8.501	0.006	91	1607339	300.0	303.9	
73 cis-1,3-Dichloropropene	75	8.690	8.684	0.006	96	3245153	300.0	305.2	
75 4-Methyl-2-pentanone (MIBK)	43	8.898	8.898	0.000	97	6462996	600.0	578.2	
$ 76 Toluene-d8 (Surr)	98	9.032	9.026	0.006	93	928972	50.0	49.5	
77 Toluene	92	9.117	9.117	0.000	98	5038829	300.0	295.1	
78 trans-1,3-Dichloropropene	75	9.428	9.428	0.000	93	2974867	300.0	302.6	
79 Ethyl methacrylate	69	9.513	9.513	0.000	90	3106728	300.0	297.8	
80 1,1,2-Trichloroethane	97	9.653	9.648	0.005	89	1799696	300.0	294.0	
81 Tetrachloroethene	166	9.733	9.727	0.006	98	2330448	300.0	306.2	
82 1,3-Dichloropropane	76	9.830	9.824	0.006	92	2885107	300.0	295.5	
84 2-Hexanone	43	9.903	9.897	0.006	97	5287964	600.0	572.2	
85 Chlorodibromomethane	129	10.056	10.056	0.000	90	2086570	300.0	307.8	
S 123 1,3-Dichloropropene, Total	100				0			607.8	
87 Ethylene Dibromide	107	10.166	10.166	0.000	98	2010420	300.0	300.3	
* 90 Chlorobenzene-d5 (IS)	117	10.641	10.635	0.006	85	750586	50.0	50.0	
88 Chlorobenzene	112	10.665	10.666	-0.001	94	5692189	300.0	304.2	
91 1-Chlorohexane	91	10.665	10.666	-0.001	69	3038790	300.0	299.6	
92 1,1,1,2-Tetrachloroethane	131	10.763	10.763	0.000	97	2020496	300.0	308.7	
93 Ethylbenzene	91	10.769	10.769	0.000	98	10022942	300.0	299.8	
94 m-Xylene & p-Xylene	106	10.897	10.891	0.006	98	7887045	600.0	608.2	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
95 o-Xylene	106	11.245	11.239	0.006	96	3830893	300.0	302.5	
S 130 Xylenes, Total	106				0			910.8	
96 Styrene	104	11.263	11.257	0.006	95	6469996	300.0	304.7	
97 Bromoform	173	11.415	11.415	0.000	98	1771162	300.0	317.5	
98 Isopropylbenzene	105	11.562	11.562	0.000	96	9742054	300.0	297.5	
100 Cyclohexanone	55	11.635	11.635	0.000	92	1527872	3750.0	3873.3	
$ 101 4-Bromofluorobenzene (Surr)	95	11.708	11.708	0.000	93	363203	50.0	50.2	
102 Bromobenzene	156	11.824	11.824	0.000	89	2467727	300.0	302.8	
105 1,1,2,2-Tetrachloroethane	83	11.830	11.824	0.006	93	3174190	300.0	290.9	
104 trans-1,4-Dichloro-2-butene	53	11.854	11.854	0.000	85	2597267	750.0	750.3	
103 1,2,3-Trichloropropane	110	11.866	11.867	-0.001	85	856869	300.0	291.5	
106 N-Propylbenzene	91	11.909	11.909	0.000	98	11464433	300.0	281.5	e
107 2-Chlorotoluene	126	11.982	11.976	0.006	97	2409965	300.0	299.9	
108 1,3,5-Trimethylbenzene	105	12.055	12.056	-0.001	96	8359302	300.0	299.0	
109 4-Chlorotoluene	126	12.080	12.074	0.006	97	2477193	300.0	303.8	
111 tert-Butylbenzene	134	12.299	12.299	0.000	93	1705881	300.0	311.0	
113 1,2,4-Trimethylbenzene	105	12.348	12.348	0.000	97	8456867	300.0	299.3	
114 sec-Butylbenzene	105	12.470	12.470	0.000	94	10380428	300.0	297.8	
115 1,3-Dichlorobenzene	146	12.568	12.568	0.000	98	4780828	300.0	306.5	
116 4-Isopropyltoluene	119	12.586	12.586	0.000	96	9122278	300.0	304.6	
* 117 1,4-Dichlorobenzene-d4	152	12.622	12.622	0.000	93	422952	50.0	50.0	
118 1,4-Dichlorobenzene	146	12.641	12.641	0.000	95	4814862	300.0	305.5	
119 1,2,3-Trimethylbenzene	105	12.659	12.659	0.000	98	8511332	300.0	300.3	
120 Benzyl chloride	91	12.726	12.726	0.000	98	6858545	NC	NC	
121 1,3-Diethylbenzene	119	12.793	12.793	0.000	95	5511993	NC	NC	
122 p-Diethylbenzene	119	12.866	12.866	0.000	94	5798347	NC	NC	
124 n-Butylbenzene	92	12.885	12.885	0.000	97	4745686	300.0	315.5	
125 1,2-Dichlorobenzene	146	12.909	12.909	0.000	99	4479840	300.0	302.3	
126 o-diethylbenzene	119	12.939	12.940	-0.001	95	4544010	NC	NC	
127 1,2-Dibromo-3-Chloropropane	75	13.464	13.464	0.000	90	830368	300.0	305.8	
128 1,3,5-Trichlorobenzene	180	13.598	13.598	0.000	98	3529175	300.0	318.8	
129 1,2,4-Trichlorobenzene	180	14.025	14.025	0.000	94	3219647	300.0	317.6	
131 Hexachlorobutadiene	225	14.116	14.116	0.000	96	1418550	300.0	324.6	
132 Naphthalene	128	14.207	14.208	-0.001	97	10596025	300.0	294.1	
133 1,2,3-Trichlorobenzene	180	14.354	14.354	0.000	96	3029827	300.0	306.6	
134 2-Methylnaphthalene	142	14.951	14.957	-0.006	92	5841816	NC	NC	
S 154 Total Diethylbenzene	1		0.000					ND	

QC Flag Legend

Processing Flags

NC - Not Calibrated

e - Potential Peak Saturated

Review Flags

M - Manually Integrated

a - User Assigned ID

Reagents:

MSV_CCV_VOC#1_00013	Amount Added:	15.00	Units: uL	
MSV_VCYC_00006	Amount Added:	30.00	Units: uL	
MSV_CCV_GASES_00049	Amount Added:	7.50	Units: uL	
MSV_CCV_VOC#3_00012	Amount Added:	12.00	Units: uL	
MSV_CCV_2CEVE_00012	Amount Added:	15.00	Units: uL	
MSV_V_EE_00005	Amount Added:	15.00	Units: uL	
MSV_Cent_ISSS_00001	Amount Added:	5.00	Units: uL	Run Reagent

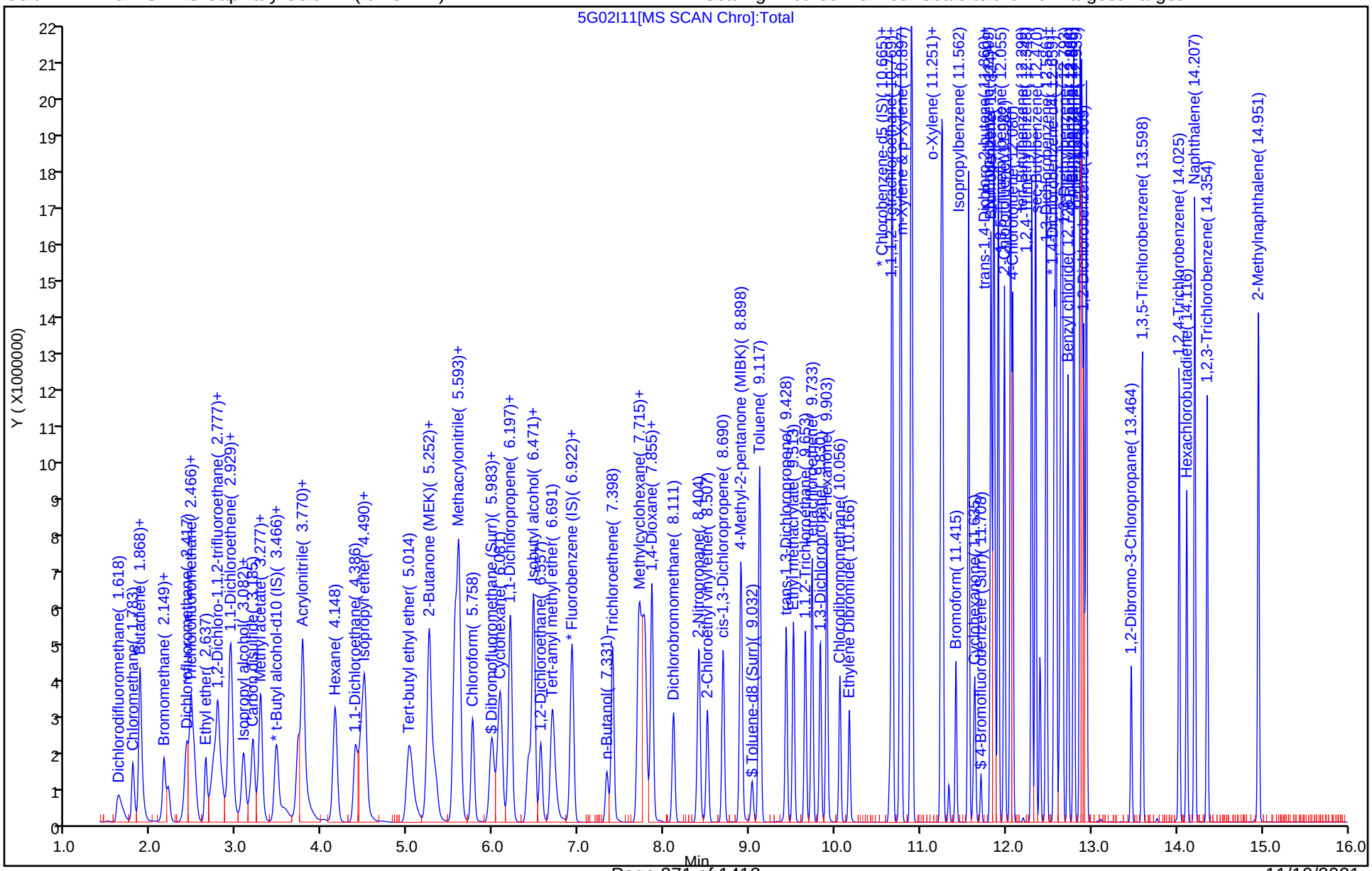
Report Date: 03-Aug-2021 13:08:12 Chrom Revision: 2.3 27-Jul-2021 18:12:28

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I11.D

Injection Date:	02-Aug-2021 16:48:30	Instrument ID:	26285	Operator ID:	jml01693
Lims ID:	IC v300			Worklist Smp#:	11
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	11
Method:	MSVoa_26285a	Limit Group:	MSV - 8260C DOD5		

Column: Rxi-624Sil MS Capillary Column (0.25 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

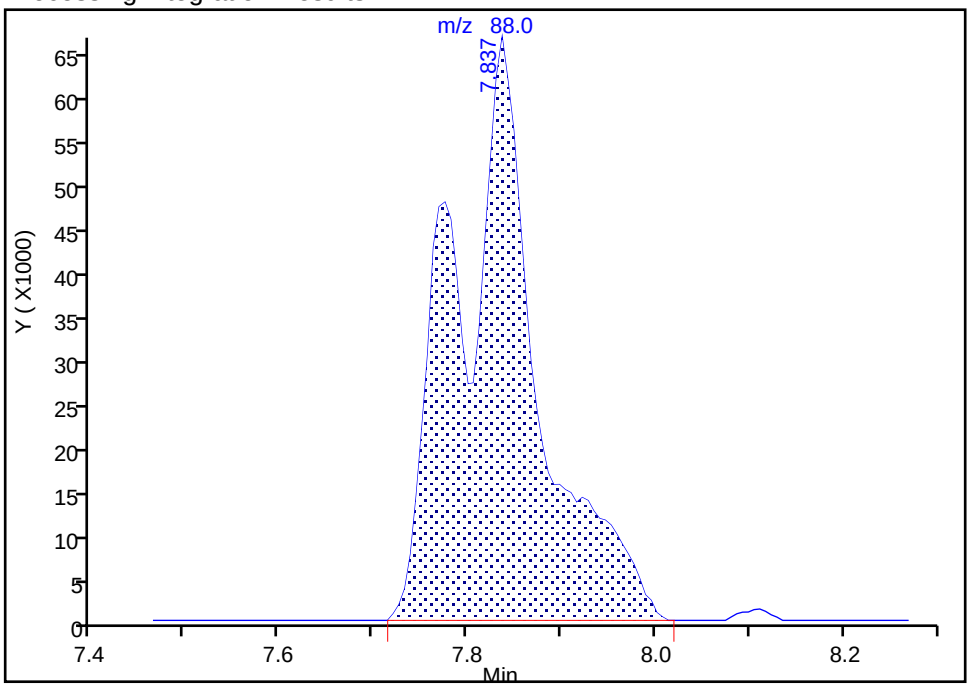
Data File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I11.D
Injection Date: 02-Aug-2021 16:48:30 Instrument ID: 26285
Lims ID: IC v300
Client ID:
Operator ID: jml01693 ALS Bottle#: 11 Worklist Smp#: 11
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: MSVoa_26285a Limit Group: MSV - 8260C DOD5
Column: Rxi-624Sil MS Capillary Column (0.25mm) Detector MS Quad

68 1,4-Dioxane, CAS: 123-91-1

Signal: 1

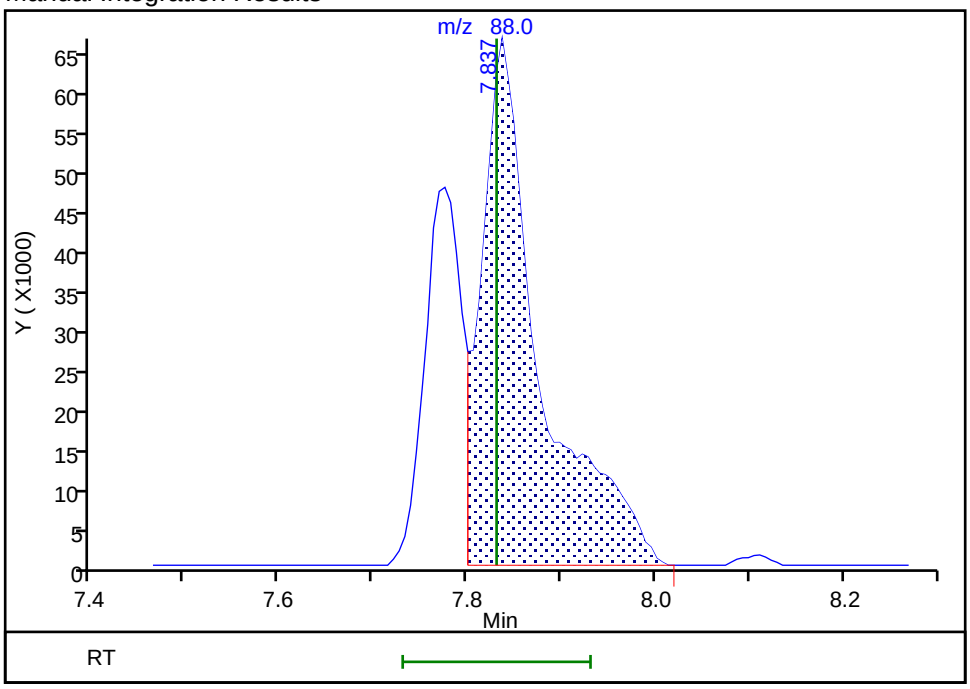
Processing Integration Results

RT: 7.84
Area: 416908
Amount: 5322.9350
Amount Units: ug/l



Manual Integration Results

RT: 7.84
Area: 293404
Amount: 4008.1921
Amount Units: ug/l



Reviewer: mellingerc, 03-Aug-2021 08:58:57
Audit Action: Split an Integrated Peak Audit Reason: Incomplete Integration

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I12.D
Lims ID: IC v100
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 02-Aug-2021 17:08:30 ALS Bottle#: 12 Worklist Smp#: 12
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 410-0035810-012
Misc. Info.: IC STD6 100
Operator ID: jml01693 Instrument ID: 26285
Sublist: chrom-MSVoa_26285a*sub38

Method: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\MSVoa_26285a.m
Limit Group: MSV - 8260C DOD5
Last Update: 03-Aug-2021 13:08:17 Calib Date: 02-Aug-2021 18:49:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I17.D

Column 1 : Rxi-624Sil MS Capillary Column (0.25 mm) Det: MS Quad
Process Host: CTX1646

First Level Reviewer: mellingerc Date: 03-Aug-2021 09:01:38

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
2 Dichlorodifluoromethane	85	1.612	1.613	0.000	99	753285	100.0	104.0	
3 Chloromethane	50	1.783	1.777	0.006	99	821566	100.0	99.9	
4 Butadiene	39	1.862	1.856	0.006	93	744643	NC	NC	
5 Vinyl chloride	62	1.881	1.875	0.006	98	837326	100.0	100.9	
8 Bromomethane	94	2.149	2.143	0.006	90	590658	100.0	99.2	
9 Chloroethane	64	2.198	2.192	0.006	99	428410	100.0	97.4	
10 Dichlorofluoromethane	67	2.405	2.399	0.006	97	1124282	100.0	97.5	
11 Trichlorofluoromethane	101	2.466	2.460	0.006	98	1011751	100.0	100.1	
12 Pentane	43	2.466	2.460	0.006	96	1115677	NC	NC	
14 Ethyl ether	59	2.643	2.637	0.006	94	414703	100.0	100.5	
15 1,2-Dichloro-1,1,2-trifluoroetha	67	2.728	2.728	0.000	95	753001	NC	NC	
16 Acrolein	56	2.783	2.777	0.006	99	2123008	1000.0	1013.4	
19 1,1-Dichloroethene	96	2.911	2.899	0.012	98	543203	100.0	99.7	
17 Acetone	58	2.923	2.917	0.006	99	166791	200.0	190.4	
18 112TCTFE	101	2.941	2.935	0.006	92	617826	100.0	102.5	
21 Isopropyl alcohol	45	3.051	3.045	0.006	100	308150	500.0	484.9	
20 Iodomethane	142	3.076	3.070	0.006	97	1069323	100.0	99.9	
22 Carbon disulfide	76	3.185	3.173	0.012	99	2004373	100.0	101.2	
23 Methyl acetate	43	3.258	3.259	-0.001	98	766470	100.0	96.0	
25 3-Chloro-1-propene	41	3.283	3.277	0.006	93	987975	100.0	97.6	
* 27 t-Butyl alcohol-d10 (IS)	65	3.441	3.429	0.012	89	247973	250.0	250.0	
26 Methylene Chloride	84	3.454	3.441	0.013	94	599249	100.0	98.5	
28 2-Methyl-2-propanol	59	3.551	3.545	0.006	100	624413	500.0	508.8	
29 Acrylonitrile	53	3.722	3.716	0.006	98	936233	250.0	242.3	
30 Methyl tert-butyl ether	73	3.771	3.771	0.000	82	1716186	100.0	98.9	
31 trans-1,2-Dichloroethene	96	3.777	3.771	0.006	98	597670	100.0	99.8	
32 Hexane	57	4.155	4.149	0.006	94	978672	100.0	103.1	
33 1,1-Dichloroethane	63	4.392	4.386	0.006	96	1082640	100.0	99.0	
35 Isopropyl ether	45	4.459	4.453	0.006	96	1974933	100.0	99.0	
36 2-Chloro-1,3-butadiene	53	4.502	4.496	0.006	90	931702	100.0	99.6	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
37 Tert-butyl ethyl ether	59	5.020	5.014	0.006	99	1830111	100.0	100.0	
39 2-Butanone (MEK)	43	5.234	5.222	0.012	100	1106702	200.0	190.3	
38 cis-1,2-Dichloroethene	96	5.258	5.246	0.012	85	655968	100.0	99.1	
40 2,2-Dichloropropane	77	5.276	5.270	0.006	87	879238	100.0	99.5	
41 Propionitrile	54	5.325	5.319	0.006	99	702948	500.0	482.7	
43 Methacrylonitrile	67	5.551	5.545	0.006	94	997328	250.0	247.6	
44 Chlorobromomethane	128	5.593	5.593	0.000	97	312338	100.0	98.6	
45 Tetrahydrofuran	71	5.599	5.593	0.006	85	751566	500.0	505.2	
46 Chloroform	83	5.764	5.758	0.006	93	1044148	100.0	99.0	
$ 47 Dibromofluoromethane (Surr)	113	5.984	5.978	0.006	56	233324	50.0	49.9	
48 1,1,1-Trichloroethane	97	5.984	5.978	0.006	98	936920	100.0	102.0	
49 Cyclohexane	56	6.075	6.075	0.000	92	1176529	100.0	101.3	
S 74 1,2-Dichloroethene, Total	100				0			198.8	
50 1,1-Dichloropropene	75	6.203	6.197	0.006	97	868922	100.0	100.8	
51 Carbon tetrachloride	117	6.197	6.197	0.000	96	819664	100.0	101.4	
52 Isobutyl alcohol	41	6.410	6.398	0.012	94	572300	1250.0	1303.7	
$ 56 1,2-Dichloroethane-d4 (Surr)	102	6.447	6.447	0.000	98	54071	50.0	50.3	
53 Benzene	78	6.471	6.471	0.000	96	2564749	100.0	99.2	
55 1,2-Dichloroethane	62	6.557	6.551	0.006	97	741501	100.0	96.8	
58 Tert-amyl methyl ether	73	6.691	6.685	0.006	98	1772476	100.0	99.4	
* 59 Fluorobenzene (IS)	96	6.904	6.892	0.012	99	956579	50.0	50.0	
60 n-Heptane	43	6.928	6.922	0.006	95	1022676	100.0	104.1	
61 n-Butanol	56	7.325	7.325	0.000	91	508668	NC	NC	
62 Trichloroethene	95	7.398	7.392	0.006	98	674159	100.0	98.6	
63 Methylcyclohexane	83	7.703	7.697	0.006	92	1203290	100.0	102.8	
64 1,2-Dichloropropane	63	7.739	7.739	0.000	93	664096	100.0	98.9	
65 2-ethoxy-2-methyl butane	87	7.776	7.770	0.006	93	891681	100.0	100.0	
68 1,4-Dioxane	88	7.837	7.831	0.006	88	96108	1250.0	1312.6	
66 Dibromomethane	93	7.855	7.849	0.006	97	402624	100.0	98.7	
67 Methyl methacrylate	69	7.855	7.855	0.000	97	610662	100.0	98.4	
70 Dichlorobromomethane	83	8.111	8.105	0.006	100	799736	100.0	100.2	
72 2-Nitropropane	41	8.398	8.398	0.000	97	1343832	500.0	505.8	
71 2-Chloroethyl vinyl ether	63	8.501	8.501	0.000	91	530966	100.0	101.0	
73 cis-1,3-Dichloropropene	75	8.690	8.684	0.006	96	1064493	100.0	100.8	
75 4-Methyl-2-pentanone (MIBK)	43	8.898	8.898	0.000	97	2176953	200.0	196.0	
$ 76 Toluene-d8 (Surr)	98	9.026	9.026	0.000	93	917026	50.0	50.0	
77 Toluene	92	9.117	9.117	0.000	98	1666359	100.0	99.9	
78 trans-1,3-Dichloropropene	75	9.428	9.428	0.000	93	972402	100.0	101.2	
79 Ethyl methacrylate	69	9.513	9.513	0.000	90	1031534	100.0	101.2	
80 1,1,2-Trichloroethane	97	9.647	9.648	-0.001	90	592251	100.0	99.0	
81 Tetrachloroethene	166	9.733	9.727	0.006	98	753285	100.0	101.3	
82 1,3-Dichloropropane	76	9.824	9.824	0.000	92	955654	100.0	100.2	
84 2-Hexanone	43	9.903	9.897	0.006	97	1783126	200.0	197.5	
85 Chlorodibromomethane	129	10.056	10.056	0.000	94	682535	100.0	103.1	
S 123 1,3-Dichloropropene, Total	100				0			202.0	
87 Ethylene Dibromide	107	10.166	10.166	0.000	98	654743	100.0	100.1	
* 90 Chlorobenzene-d5 (IS)	117	10.641	10.635	0.006	83	733252	50.0	50.0	
88 Chlorobenzene	112	10.666	10.666	0.000	93	1834963	100.0	100.4	
91 1-Chlorohexane	91	10.666	10.666	0.000	71	991800	100.0	100.1	
92 1,1,1,2-Tetrachloroethane	131	10.763	10.763	0.000	98	647824	100.0	101.3	
93 Ethylbenzene	91	10.769	10.769	0.000	98	3312382	100.0	101.4	
94 m-Xylene & p-Xylene	106	10.891	10.891	0.000	100	2555804	200.0	201.8	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
95 o-Xylene	106	11.239	11.239	0.000	97	1250028	100.0	101.1	
S 130 Xylenes, Total	106				0			302.8	
96 Styrene	104	11.257	11.257	0.000	95	2106713	100.0	101.6	
97 Bromoform	173	11.415	11.415	0.000	98	576031	100.0	105.7	
98 Isopropylbenzene	105	11.562	11.562	0.000	96	3274028	100.0	102.3	
100 Cyclohexanone	55	11.635	11.635	0.000	92	509225	1250.0	1290.6	
$ 101 4-Bromofluorobenzene (Surr)	95	11.708	11.708	0.000	95	351122	50.0	49.7	
102 Bromobenzene	156	11.824	11.824	0.000	94	792149	100.0	101.7	
105 1,1,2,2-Tetrachloroethane	83	11.830	11.824	0.006	93	1048007	100.0	100.5	
104 trans-1,4-Dichloro-2-butene	53	11.854	11.854	0.000	89	860021	250.0	260.0	
103 1,2,3-Trichloropropane	110	11.867	11.867	0.000	81	284234	100.0	101.2	
106 N-Propylbenzene	91	11.909	11.909	0.000	99	3978567	100.0	102.2	
107 2-Chlorotoluene	126	11.982	11.976	0.006	97	778521	100.0	101.4	
108 1,3,5-Trimethylbenzene	105	12.056	12.056	0.000	94	2737611	100.0	102.5	
109 4-Chlorotoluene	126	12.080	12.074	0.006	97	791933	100.0	101.6	
111 tert-Butylbenzene	134	12.299	12.299	0.000	93	546384	100.0	104.2	
113 1,2,4-Trimethylbenzene	105	12.348	12.348	0.000	97	2765977	100.0	102.4	
114 sec-Butylbenzene	105	12.470	12.470	0.000	94	3478395	100.0	104.4	
115 1,3-Dichlorobenzene	146	12.568	12.568	0.000	98	1517995	100.0	101.8	
116 4-Isopropyltoluene	119	12.586	12.586	0.000	97	2990458	100.0	104.5	
* 117 1,4-Dichlorobenzene-d4	152	12.622	12.622	0.000	94	404220	50.0	50.0	
118 1,4-Dichlorobenzene	146	12.641	12.641	0.000	96	1529416	100.0	101.5	
119 1,2,3-Trimethylbenzene	105	12.659	12.659	0.000	98	2770543	100.0	102.3	
120 Benzyl chloride	91	12.726	12.726	0.000	98	2255422	NC	NC	
121 1,3-Diethylbenzene	119	12.793	12.793	0.000	95	1767524	NC	NC	
122 p-Diethylbenzene	119	12.866	12.866	0.000	93	1849935	NC	NC	
124 n-Butylbenzene	92	12.885	12.885	0.000	98	1514135	100.0	105.3	
125 1,2-Dichlorobenzene	146	12.909	12.909	0.000	99	1445583	100.0	102.1	
126 o-diethylbenzene	119	12.939	12.940	-0.001	95	1451382	NC	NC	
127 1,2-Dibromo-3-Chloropropane	75	13.464	13.464	0.000	89	269971	100.0	104.0	
128 1,3,5-Trichlorobenzene	180	13.598	13.598	0.000	98	1104185	100.0	104.4	
129 1,2,4-Trichlorobenzene	180	14.025	14.025	0.000	94	1014894	100.0	104.7	
131 Hexachlorobutadiene	225	14.116	14.116	0.000	96	448323	100.0	107.3	
132 Naphthalene	128	14.208	14.208	0.000	97	3599785	100.0	104.6	
133 1,2,3-Trichlorobenzene	180	14.354	14.354	0.000	96	976314	100.0	103.4	
134 2-Methylnaphthalene	142	14.951	14.957	-0.006	92	2044552	NC	NC	
S 154 Total Diethylbenzene	1		0.000					ND	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

MSV_CCV_VOC#1_00013	Amount Added:	5.00	Units: uL	
MSV_VCYC_00006	Amount Added:	10.00	Units: uL	
MSV_CCV_GASES_00049	Amount Added:	2.50	Units: uL	
MSV_CCV_VOC#3_00012	Amount Added:	4.00	Units: uL	
MSV_CCV_2CEVE_00012	Amount Added:	5.00	Units: uL	
MSV_V_EE_00005	Amount Added:	5.00	Units: uL	
MSV_Cent_ISSS_00001	Amount Added:	5.00	Units: uL	Run Reagent

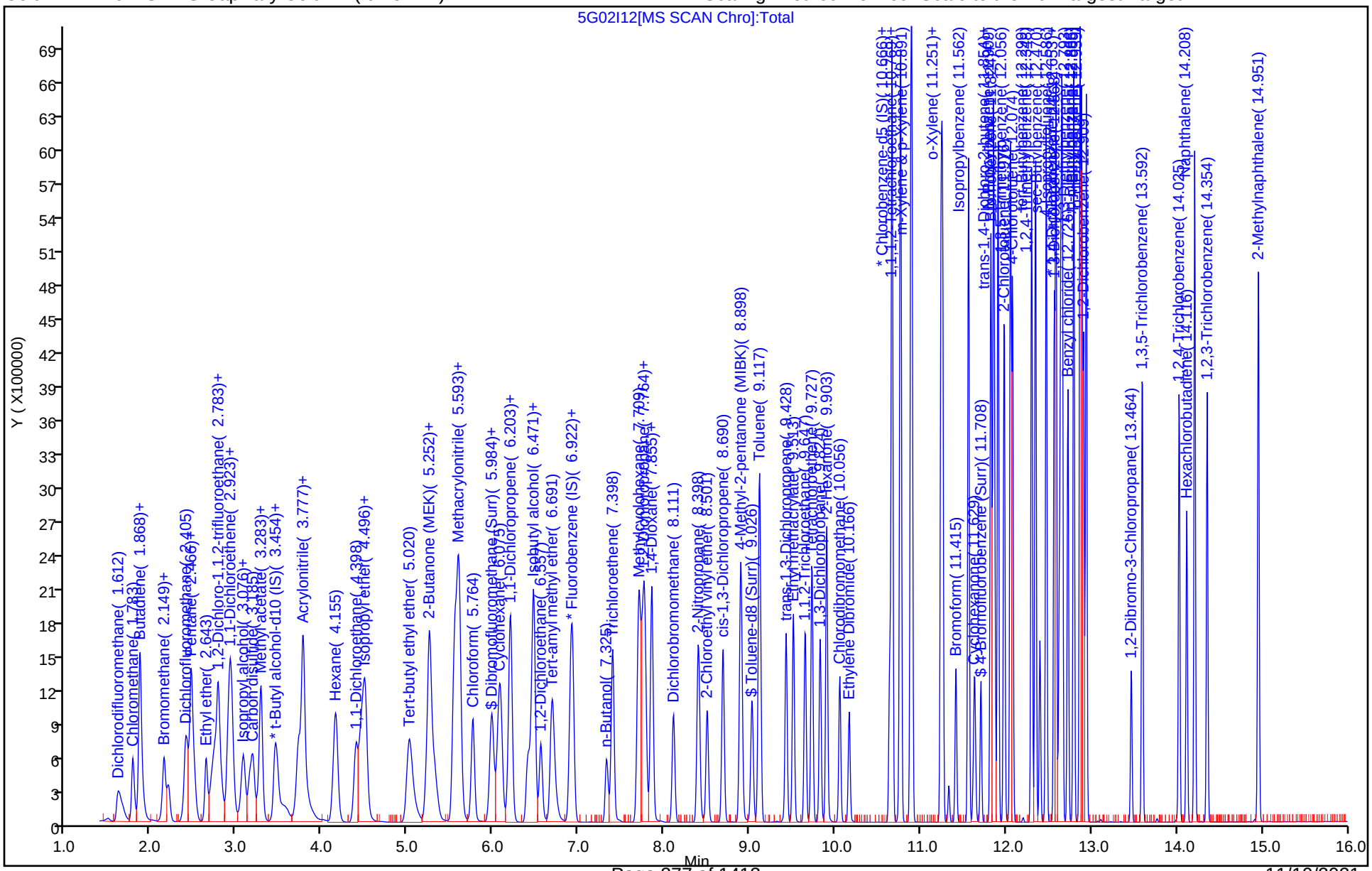
Report Date: 03-Aug-2021 13:08:19 Chrom Revision: 2.3 27-Jul-2021 18:12:28

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I12.D

Injection Date:	02-Aug-2021 17:08:30	Instrument ID:	26285	Operator ID:	jml01693
Lims ID:	IC v100			Worklist Smp#:	12
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	12
Method:	MSVoa_26285a	Limit Group:	MSV - 8260C DOD5		

Column: Rxi-624Sil MS Capillary Column (0.25 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I13.D
Lims ID: ICIS v50
Client ID:
Sample Type: ICIS Calib Level: 5
Inject. Date: 02-Aug-2021 17:28:30 ALS Bottle#: 13 Worklist Smp#: 13
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 410-0035810-013
Misc. Info.: ICIS 50
Operator ID: jml01693 Instrument ID: 26285
Sublist: chrom-MSVoa_26285a*sub38

Method: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\MSVoa_26285a.m
Limit Group: MSV - 8260C DOD5
Last Update: 03-Aug-2021 13:08:24 Calib Date: 02-Aug-2021 18:49:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I17.D

Column 1 : Rxi-624Sil MS Capillary Column (0.25 mm) Det: MS Quad
Process Host: CTX1646

First Level Reviewer: mellingerc Date: 03-Aug-2021 08:25:52

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
2 Dichlorodifluoromethane	85	1.613	1.613	0.000	99	363073	50.0	50.0	
3 Chloromethane	50	1.777	1.777	0.000	99	393808	50.0	47.7	
4 Butadiene	39	1.856	1.856	0.000	92	365135	NC	NC	
5 Vinyl chloride	62	1.875	1.875	0.000	98	397392	50.0	47.7	
8 Bromomethane	94	2.143	2.143	0.000	90	289538	50.0	48.5	
9 Chloroethane	64	2.192	2.192	0.000	99	216736	50.0	49.1	
10 Dichlorofluoromethane	67	2.399	2.399	0.000	97	564170	50.0	48.8	
11 Trichlorofluoromethane	101	2.460	2.460	0.000	97	494980	50.0	48.8	
12 Pentane	43	2.460	2.460	0.000	97	542652	NC	NC	
14 Ethyl ether	59	2.637	2.637	0.000	94	209916	50.0	50.7	
15 1,2-Dichloro-1,1,2-trifluoroetha	67	2.728	2.728	0.000	93	377294	NC	NC	
16 Acrolein	56	2.777	2.777	0.000	100	1080910	500.0	501.6	
19 1,1-Dichloroethene	96	2.899	2.899	0.000	98	267028	50.0	48.8	
17 Acetone	58	2.917	2.917	0.000	100	88402	100.0	98.1	
18 112TCTFE	101	2.935	2.935	0.000	92	302523	50.0	50.0	
21 Isopropyl alcohol	45	3.045	3.045	0.000	98	162396	250.0	248.4	
20 Iodomethane	142	3.070	3.070	0.000	97	532290	50.0	49.5	
22 Carbon disulfide	76	3.173	3.173	0.000	99	982838	50.0	49.4	
23 Methyl acetate	43	3.259	3.259	0.000	98	389395	50.0	48.6	
25 3-Chloro-1-propene	41	3.277	3.277	0.000	93	492225	50.0	48.5	
* 27 t-Butyl alcohol-d10 (IS)	65	3.448	3.448	0.000	98	255088	250.0	250.0	
26 Methylene Chloride	84	3.441	3.441	0.000	94	302122	50.0	49.5	
28 2-Methyl-2-propanol	59	3.545	3.545	0.000	99	316496	250.0	250.7	
29 Acrylonitrile	53	3.716	3.716	0.000	99	475677	125.0	122.7	
30 Methyl tert-butyl ether	73	3.771	3.771	0.000	95	860651	50.0	49.4	
31 trans-1,2-Dichloroethene	96	3.771	3.771	0.000	99	299197	50.0	49.8	
32 Hexane	57	4.149	4.149	0.000	94	472140	50.0	49.6	
33 1,1-Dichloroethane	63	4.386	4.386	0.000	96	539624	50.0	49.2	
35 Isopropyl ether	45	4.453	4.453	0.000	97	996435	50.0	49.8	
36 2-Chloro-1,3-butadiene	53	4.496	4.496	0.000	90	460147	50.0	49.0	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
37 Tert-butyl ethyl ether	59	5.014	5.014	0.000	99	920997	50.0	50.2	
39 2-Butanone (MEK)	43	5.222	5.222	0.000	100	571761	100.0	98.0	
38 cis-1,2-Dichloroethene	96	5.246	5.246	0.000	82	324455	50.0	48.8	
40 2,2-Dichloropropane	77	5.270	5.270	0.000	87	436653	50.0	49.2	
41 Propionitrile	54	5.319	5.319	0.000	99	385113	250.0	257.1	
43 Methacrylonitrile	67	5.545	5.545	0.000	94	503711	125.0	124.6	
44 Chlorobromomethane	128	5.593	5.593	0.000	98	157404	50.0	49.5	
45 Tetrahydrofuran	71	5.593	5.593	0.000	88	385283	250.0	251.8	
46 Chloroform	83	5.758	5.758	0.000	93	524188	50.0	49.5	
$ 47 Dibromofluoromethane (Surr)	113	5.978	5.978	0.000	92	236592	50.0	50.4	
48 1,1,1-Trichloroethane	97	5.978	5.978	0.000	98	460888	50.0	50.0	
49 Cyclohexane	56	6.075	6.075	0.000	92	577270	50.0	49.5	
50 1,1-Dichloropropene	75	6.197	6.197	0.000	97	430792	50.0	49.8	
51 Carbon tetrachloride	117	6.197	6.197	0.000	97	403406	50.0	49.7	
52 Isobutyl alcohol	41	6.398	6.398	0.000	94	282661	625.0	626.0	
$ 56 1,2-Dichloroethane-d4 (Surr)	102	6.447	6.447	0.000	98	54163	50.0	50.2	
53 Benzene	78	6.471	6.471	0.000	97	1276898	50.0	49.2	
55 1,2-Dichloroethane	62	6.551	6.551	0.000	97	373177	50.0	48.5	
58 Tert-amyl methyl ether	73	6.685	6.685	0.000	98	893587	50.0	49.9	
* 59 Fluorobenzene (IS)	96	6.898	6.898	0.000	99	959902	50.0	50.0	
60 n-Heptane	43	6.922	6.922	0.000	96	480074	50.0	48.7	
61 n-Butanol	56	7.325	7.325	0.000	90	259033	NC	NC	
62 Trichloroethene	95	7.392	7.392	0.000	99	337930	50.0	49.2	
63 Methylcyclohexane	83	7.697	7.697	0.000	91	578514	50.0	49.2	
64 1,2-Dichloropropane	63	7.739	7.739	0.000	97	332982	50.0	49.4	
65 2-ethoxy-2-methyl butane	87	7.770	7.770	0.000	91	447753	50.0	50.0	
68 1,4-Dioxane	88	7.831	7.831	0.000	84	49548	625.0	657.8	
66 Dibromomethane	93	7.849	7.849	0.000	96	202052	50.0	49.4	
67 Methyl methacrylate	69	7.855	7.855	0.000	93	312302	50.0	50.1	
70 Dichlorobromomethane	83	8.105	8.105	0.000	100	396201	50.0	49.5	
72 2-Nitropropane	41	8.398	8.398	0.000	98	684388	250.0	250.4	
71 2-Chloroethyl vinyl ether	63	8.501	8.501	0.000	92	265857	50.0	50.4	
73 cis-1,3-Dichloropropene	75	8.684	8.684	0.000	96	533305	50.0	50.3	
75 4-Methyl-2-pentanone (MIBK)	43	8.898	8.898	0.000	97	1106541	100.0	99.3	
$ 76 Toluene-d8 (Surr)	98	9.026	9.026	0.000	93	918997	50.0	49.4	
77 Toluene	92	9.117	9.117	0.000	98	826079	50.0	48.8	
78 trans-1,3-Dichloropropene	75	9.428	9.428	0.000	93	483837	50.0	49.6	
79 Ethyl methacrylate	69	9.513	9.513	0.000	90	521893	50.0	50.5	
80 1,1,2-Trichloroethane	97	9.648	9.648	0.000	89	298774	50.0	49.2	
81 Tetrachloroethene	166	9.727	9.727	0.000	98	368399	50.0	48.8	
82 1,3-Dichloropropane	76	9.824	9.824	0.000	92	478388	50.0	49.4	
84 2-Hexanone	43	9.897	9.897	0.000	97	905490	100.0	98.9	
85 Chlorodibromomethane	129	10.056	10.056	0.000	90	337333	50.0	50.2	
87 Ethylene Dibromide	107	10.166	10.166	0.000	98	329868	50.0	49.7	
* 90 Chlorobenzene-d5 (IS)	117	10.635	10.635	0.000	84	743963	50.0	50.0	
88 Chlorobenzene	112	10.666	10.666	0.000	93	908038	50.0	49.0	
91 1-Chlorohexane	91	10.666	10.666	0.000	70	486317	50.0	48.4	
92 1,1,1,2-Tetrachloroethane	131	10.763	10.763	0.000	97	323064	50.0	49.8	
93 Ethylbenzene	91	10.769	10.769	0.000	98	1622238	50.0	49.0	
94 m-Xylene & p-Xylene	106	10.891	10.891	0.000	100	1249858	100.0	97.2	
95 o-Xylene	106	11.239	11.239	0.000	96	618938	50.0	49.3	
96 Styrene	104	11.257	11.257	0.000	96	1039942	50.0	49.4	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
97 Bromoform	173	11.415	11.415	0.000	98	280307	50.0	50.7	
98 Isopropylbenzene	105	11.562	11.562	0.000	96	1597947	50.0	49.2	
100 Cyclohexanone	55	11.635	11.635	0.000	92	266150	625.0	655.7	
$ 101 4-Bromofluorobenzene (Surr)	95	11.708	11.708	0.000	94	354457	50.0	49.4	
102 Bromobenzene	156	11.824	11.824	0.000	94	385412	50.0	49.7	
105 1,1,2,2-Tetrachloroethane	83	11.824	11.824	0.000	93	512054	50.0	49.3	
104 trans-1,4-Dichloro-2-butene	53	11.854	11.854	0.000	88	423496	125.0	128.5	
103 1,2,3-Trichloropropane	110	11.867	11.867	0.000	83	139711	50.0	49.9	
106 N-Propylbenzene	91	11.909	11.909	0.000	99	1931638	50.0	49.8	
107 2-Chlorotoluene	126	11.976	11.976	0.000	97	376255	50.0	49.2	
108 1,3,5-Trimethylbenzene	105	12.056	12.056	0.000	94	1339348	50.0	50.3	
109 4-Chlorotoluene	126	12.074	12.074	0.000	98	386746	50.0	49.8	
111 tert-Butylbenzene	134	12.299	12.299	0.000	94	261866	50.0	50.2	
113 1,2,4-Trimethylbenzene	105	12.348	12.348	0.000	97	1344232	50.0	50.0	
114 sec-Butylbenzene	105	12.470	12.470	0.000	94	1656843	50.0	49.9	
115 1,3-Dichlorobenzene	146	12.568	12.568	0.000	98	741566	50.0	50.0	
116 4-Isopropyltoluene	119	12.586	12.586	0.000	97	1436041	50.0	50.4	
* 117 1,4-Dichlorobenzene-d4	152	12.623	12.623	0.000	94	402596	50.0	50.0	
118 1,4-Dichlorobenzene	146	12.641	12.641	0.000	96	744201	50.0	49.6	
119 1,2,3-Trimethylbenzene	105	12.659	12.659	0.000	98	1342071	50.0	49.7	
120 Benzyl chloride	91	12.726	12.726	0.000	98	1111007	NC	NC	
121 1,3-Diethylbenzene	119	12.793	12.793	0.000	95	850050	NC	NC	
122 p-Diethylbenzene	119	12.866	12.866	0.000	93	880432	NC	NC	
124 n-Butylbenzene	92	12.885	12.885	0.000	97	719624	50.0	50.3	
125 1,2-Dichlorobenzene	146	12.909	12.909	0.000	99	704181	50.0	49.9	
126 o-diethylbenzene	119	12.940	12.940	0.000	95	696510	NC	NC	
127 1,2-Dibromo-3-Chloropropane	75	13.464	13.464	0.000	89	128902	50.0	49.9	
128 1,3,5-Trichlorobenzene	180	13.598	13.598	0.000	98	522677	50.0	49.6	
129 1,2,4-Trichlorobenzene	180	14.025	14.025	0.000	94	485409	50.0	50.3	
131 Hexachlorobutadiene	225	14.116	14.116	0.000	96	203112	50.0	48.8	
132 Naphthalene	128	14.208	14.208	0.000	97	1728052	50.0	50.4	
133 1,2,3-Trichlorobenzene	180	14.354	14.354	0.000	96	463270	50.0	49.2	
134 2-Methylnaphthalene	142	14.957	14.957	0.000	92	951138	NC	NC	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

MSV_CCV_VOC#1_00013	Amount Added: 5.00	Units: uL	
MSV_VCYC_00006	Amount Added: 10.00	Units: uL	
MSV_CCV_GASES_00049	Amount Added: 2.50	Units: uL	
MSV_CCV_VOC#3_00012	Amount Added: 4.00	Units: uL	
MSV_CCV_2CEVE_00012	Amount Added: 5.00	Units: uL	
MSV_V_EE_00005	Amount Added: 5.00	Units: uL	
MSV_Cent_ISSS_00001	Amount Added: 5.00	Units: uL	Run Reagent

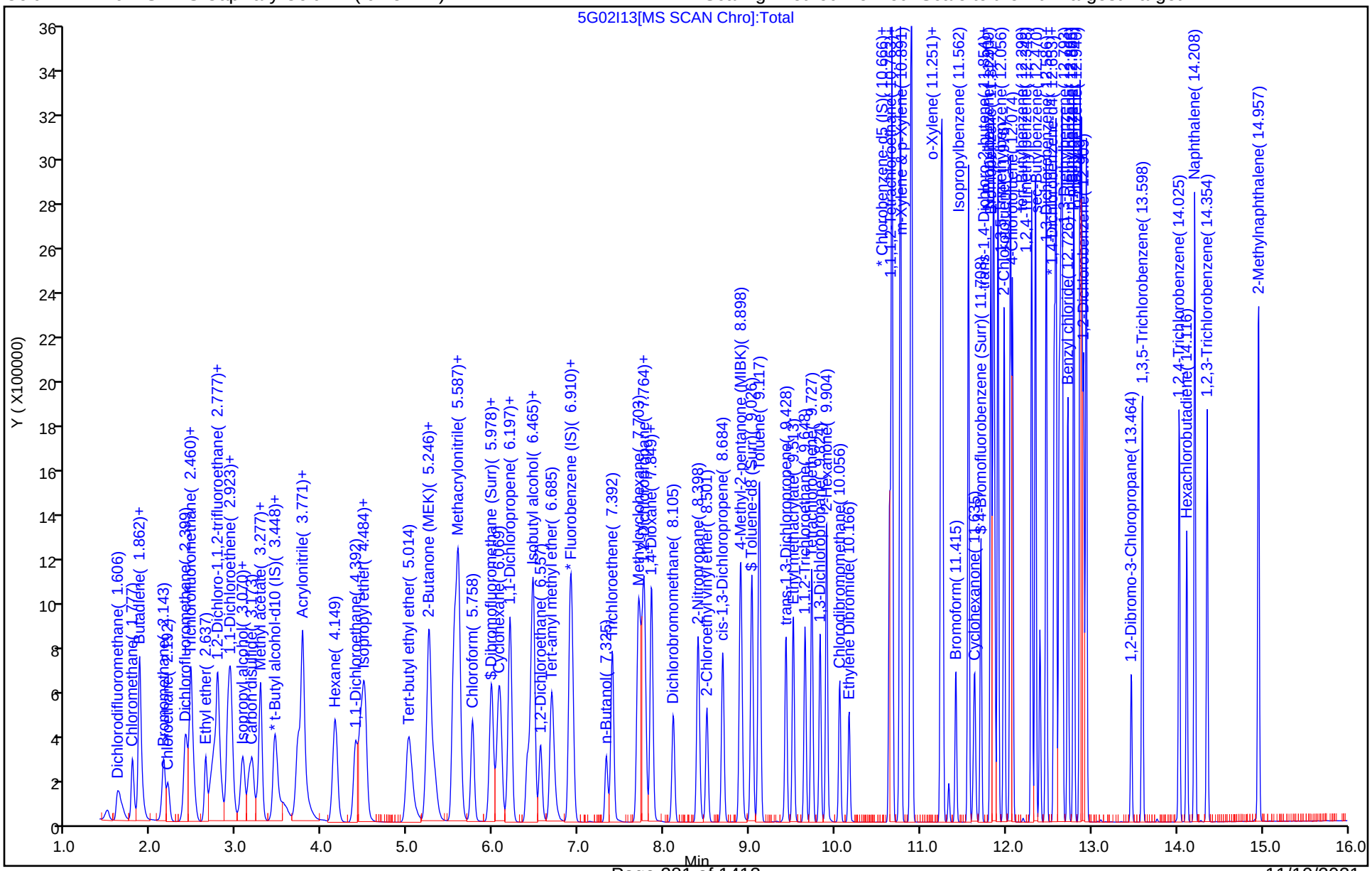
Report Date: 03-Aug-2021 13:08:26 Chrom Revision: 2.3 27-Jul-2021 18:12:28

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I13.D

Injection Date:	02-Aug-2021 17:28:30	Instrument ID:	26285	Operator ID:	jml01693
Lims ID:	ICIS v50			Worklist Smp#:	13
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	13
Method:	MSVoa_26285a	Limit Group:	MSV - 8260C DOD5		

Column: Rxi-624Sil MS Capillary Column (0.25 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I14.D
Lims ID: IC v20
Client ID:
Sample Type: IC Calib Level: 4
Inject. Date: 02-Aug-2021 17:48:30 ALS Bottle#: 14 Worklist Smp#: 14
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 410-0035810-014
Misc. Info.: IC STD4 20
Operator ID: jml01693 Instrument ID: 26285
Sublist: chrom-MSVoa_26285a*sub38

Method: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\MSVoa_26285a.m
Limit Group: MSV - 8260C DOD5
Last Update: 03-Aug-2021 13:08:31 Calib Date: 02-Aug-2021 18:49:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I17.D

Column 1 : Rxi-624Sil MS Capillary Column (0.25 mm) Det: MS Quad
Process Host: CTX1646

First Level Reviewer: mellingerc Date: 03-Aug-2021 09:04:56

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
2 Dichlorodifluoromethane	85	1.618	1.613	0.006	99	161682	20.0	22.0	
3 Chloromethane	50	1.783	1.777	0.006	99	178204	20.0	21.4	
4 Butadiene	39	1.862	1.856	0.006	92	169415	NC	NC	
5 Vinyl chloride	62	1.881	1.875	0.006	98	183493	20.0	21.8	
8 Bromomethane	94	2.149	2.143	0.006	90	129234	20.0	21.4	
9 Chloroethane	64	2.204	2.192	0.012	100	98377	20.0	22.1	
10 Dichlorofluoromethane	67	2.405	2.399	0.006	97	253228	20.0	21.7	
11 Trichlorofluoromethane	101	2.466	2.460	0.006	80	226249	20.0	22.1	
12 Pentane	43	2.466	2.460	0.006	96	232828	NC	NC	
14 Ethyl ether	59	2.636	2.637	-0.001	94	87007	20.0	20.8	
15 1,2-Dichloro-1,1,2-trifluoroetha	67	2.722	2.728	-0.006	93	172100	NC	NC	
16 Acrolein	56	2.777	2.777	0.000	99	456982	200.0	195.4	
19 1,1-Dichloroethene	96	2.899	2.899	0.000	98	114063	20.0	20.7	
17 Acetone	58	2.923	2.917	0.006	99	41485	40.0	42.4	
18 112TCTFE	101	2.935	2.935	0.000	92	128502	20.0	21.0	
21 Isopropyl alcohol	45	3.057	3.045	0.012	100	151829	200.0	214.0	
20 Iodomethane	142	3.075	3.070	0.005	97	224266	20.0	20.7	
22 Carbon disulfide	76	3.173	3.173	0.000	99	411228	20.0	20.5	
23 Methyl acetate	43	3.258	3.259	-0.001	98	164280	20.0	20.3	
25 3-Chloro-1-propene	41	3.283	3.277	0.006	92	205529	20.0	20.0	
26 Methylene Chloride	84	3.447	3.441	0.006	95	123348	20.0	20.0	
* 27 t-Butyl alcohol-d10 (IS)	65	3.441	3.448	-0.007	76	276824	250.0	250.0	
28 2-Methyl-2-propanol	59	3.551	3.545	0.006	100	276319	200.0	201.7	
29 Acrylonitrile	53	3.716	3.716	0.000	98	200278	50.0	51.1	
30 Methyl tert-butyl ether	73	3.770	3.771	-0.001	82	361470	20.0	20.6	
31 trans-1,2-Dichloroethene	96	3.770	3.771	-0.001	98	124838	20.0	20.6	
32 Hexane	57	4.154	4.149	0.005	94	200573	20.0	20.9	
33 1,1-Dichloroethane	63	4.392	4.386	0.006	96	223238	20.0	20.1	
35 Isopropyl ether	45	4.453	4.453	0.000	98	411084	20.0	20.3	
36 2-Chloro-1,3-butadiene	53	4.502	4.496	0.006	90	191948	20.0	20.3	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
37 Tert-butyl ethyl ether	59	5.014	5.014	0.000	99	378351	20.0	20.4	
39 2-Butanone (MEK)	43	5.221	5.222	-0.001	100	242385	40.0	41.1	
38 cis-1,2-Dichloroethene	96	5.252	5.246	0.006	82	136468	20.0	20.3	
40 2,2-Dichloropropane	77	5.258	5.270	-0.012	87	183433	20.0	20.5	
41 Propionitrile	54	5.319	5.319	0.000	99	317834	200.0	195.5	
43 Methacrylonitrile	67	5.544	5.545	-0.001	94	417436	100.0	102.3	
44 Chlorobromomethane	128	5.593	5.593	0.000	97	64766	20.0	20.2	
45 Tetrahydrofuran	71	5.599	5.593	0.006	90	156296	100.0	94.1	
46 Chloroform	83	5.758	5.758	0.000	93	216169	20.0	20.2	
$ 47 Dibromofluoromethane (Surr)	113	5.983	5.978	0.005	94	237701	50.0	50.1	
48 1,1,1-Trichloroethane	97	5.983	5.978	0.005	98	191478	20.0	20.6	
49 Cyclohexane	56	6.075	6.075	0.000	93	245849	20.0	20.9	
S 74 1,2-Dichloroethene, Total	100				0			40.9	
50 1,1-Dichloropropene	75	6.203	6.197	0.006	96	176866	20.0	20.2	
51 Carbon tetrachloride	117	6.191	6.197	-0.006	96	166087	20.0	20.3	
52 Isobutyl alcohol	41	6.404	6.398	0.006	94	250035	500.0	510.2	
$ 56 1,2-Dichloroethane-d4 (Surr)	102	6.447	6.447	0.000	98	54880	50.0	50.4	
53 Benzene	78	6.471	6.471	0.000	97	531138	20.0	20.3	
55 1,2-Dichloroethane	62	6.550	6.551	-0.001	97	155886	20.0	20.1	
58 Tert-amyl methyl ether	73	6.684	6.685	-0.001	99	370116	20.0	20.5	
* 59 Fluorobenzene (IS)	96	6.898	6.898	0.000	99	969353	50.0	50.0	
60 n-Heptane	43	6.922	6.922	0.000	95	202338	20.0	20.3	
61 n-Butanol	56	7.325	7.325	0.000	90	329298	NC	NC	
62 Trichloroethene	95	7.392	7.392	0.000	99	138320	20.0	20.0	
63 Methylcyclohexane	83	7.703	7.697	0.006	91	246695	20.0	20.8	
64 1,2-Dichloropropane	63	7.739	7.739	0.000	97	137461	20.0	20.2	
65 2-ethoxy-2-methyl butane	87	7.770	7.770	0.000	91	186384	20.0	20.6	
68 1,4-Dioxane	88	7.831	7.831	0.000	86	42318	500.0	517.7	
66 Dibromomethane	93	7.849	7.849	0.000	89	83296	20.0	20.2	
67 Methyl methacrylate	69	7.855	7.855	0.000	94	126535	20.0	20.1	
70 Dichlorobromomethane	83	8.105	8.105	0.000	99	162110	20.0	20.0	
72 2-Nitropropane	41	8.398	8.398	0.000	98	282685	100.0	95.3	
71 2-Chloroethyl vinyl ether	63	8.501	8.501	0.000	91	110140	20.0	20.7	
73 cis-1,3-Dichloropropene	75	8.684	8.684	0.000	96	214419	20.0	20.0	
75 4-Methyl-2-pentanone (MIBK)	43	8.897	8.898	-0.001	97	464661	40.0	41.3	
$ 76 Toluene-d8 (Surr)	98	9.025	9.026	-0.001	93	927457	50.0	50.0	
77 Toluene	92	9.117	9.117	0.000	98	340936	20.0	20.2	
78 trans-1,3-Dichloropropene	75	9.428	9.428	0.000	93	195956	20.0	20.2	
79 Ethyl methacrylate	69	9.513	9.513	0.000	90	212569	20.0	20.6	
80 1,1,2-Trichloroethane	97	9.647	9.648	-0.001	89	122251	20.0	20.2	
81 Tetrachloroethene	166	9.727	9.727	0.000	98	153701	20.0	20.4	
82 1,3-Dichloropropane	76	9.824	9.824	0.000	92	196379	20.0	20.3	
84 2-Hexanone	43	9.903	9.897	0.006	97	375229	40.0	41.1	
85 Chlorodibromomethane	129	10.056	10.056	0.000	90	136600	20.0	20.4	
S 123 1,3-Dichloropropene, Total	100				0			40.2	
87 Ethylene Dibromide	107	10.166	10.166	0.000	98	134940	20.0	20.4	
* 90 Chlorobenzene-d5 (IS)	117	10.641	10.635	0.006	84	742159	50.0	50.0	
88 Chlorobenzene	112	10.665	10.666	-0.001	93	370559	20.0	20.0	
91 1-Chlorohexane	91	10.665	10.666	-0.001	71	203135	20.0	20.3	
92 1,1,1,2-Tetrachloroethane	131	10.763	10.763	0.000	97	130276	20.0	20.1	
93 Ethylbenzene	91	10.769	10.769	0.000	98	667999	20.0	20.2	
94 m-Xylene & p-Xylene	106	10.891	10.891	0.000	100	516121	40.0	40.3	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
95 o-Xylene	106	11.238	11.239	-0.001	97	253556	20.0	20.3	
S 130 Xylenes, Total	106				0			60.5	
96 Styrene	104	11.257	11.257	0.000	96	422028	20.0	20.1	
97 Bromoform	173	11.415	11.415	0.000	98	110685	20.0	20.1	
98 Isopropylbenzene	105	11.562	11.562	0.000	95	663843	20.0	20.5	
100 Cyclohexanone	55	11.635	11.635	0.000	92	219563	500.0	498.5	
$ 101 4-Bromofluorobenzene (Surr)	95	11.708	11.708	0.000	93	356113	50.0	49.8	
102 Bromobenzene	156	11.824	11.824	0.000	96	159124	20.0	20.3	
105 1,1,2,2-Tetrachloroethane	83	11.824	11.824	0.000	94	217269	20.0	20.7	
104 trans-1,4-Dichloro-2-butene	53	11.854	11.854	0.000	89	341413	100.0	102.7	
103 1,2,3-Trichloropropane	110	11.866	11.867	-0.001	85	58455	20.0	20.7	
106 N-Propylbenzene	91	11.909	11.909	0.000	99	800565	20.0	20.5	
107 2-Chlorotoluene	126	11.982	11.976	0.006	97	156224	20.0	20.3	
108 1,3,5-Trimethylbenzene	105	12.055	12.056	-0.001	94	544586	20.0	20.3	
109 4-Chlorotoluene	126	12.080	12.074	0.006	97	159984	20.0	20.4	
111 tert-Butylbenzene	134	12.299	12.299	0.000	93	106686	20.0	20.3	
113 1,2,4-Trimethylbenzene	105	12.348	12.348	0.000	97	551240	20.0	20.3	
114 sec-Butylbenzene	105	12.470	12.470	0.000	94	691737	20.0	20.7	
115 1,3-Dichlorobenzene	146	12.567	12.568	-0.001	98	304348	20.0	20.3	
116 4-Isopropyltoluene	119	12.586	12.586	0.000	97	588601	20.0	20.5	
* 117 1,4-Dichlorobenzene-d4	152	12.622	12.623	-0.001	95	406017	50.0	50.0	
118 1,4-Dichlorobenzene	146	12.641	12.641	0.000	96	306707	20.0	20.3	
119 1,2,3-Trimethylbenzene	105	12.659	12.659	0.000	98	554241	20.0	20.4	
120 Benzyl chloride	91	12.726	12.726	0.000	98	445097	NC	NC	
121 1,3-Diethylbenzene	119	12.793	12.793	0.000	95	344666	NC	NC	a
122 p-Diethylbenzene	119	12.866	12.866	0.000	94	362059	NC	NC	a
124 n-Butylbenzene	92	12.884	12.885	-0.001	97	295843	20.0	20.5	
125 1,2-Dichlorobenzene	146	12.909	12.909	0.000	99	286737	20.0	20.2	
126 o-diethylbenzene	119	12.939	12.940	-0.001	95	286252	NC	NC	
127 1,2-Dibromo-3-Chloropropane	75	13.470	13.464	0.006	88	54151	20.0	20.8	
128 1,3,5-Trichlorobenzene	180	13.598	13.598	0.000	98	216349	20.0	20.4	
129 1,2,4-Trichlorobenzene	180	14.031	14.025	0.006	93	198520	20.0	20.4	
131 Hexachlorobutadiene	225	14.122	14.116	0.006	96	83353	20.0	19.9	
132 Naphthalene	128	14.213	14.208	0.005	97	717204	20.0	20.7	
133 1,2,3-Trichlorobenzene	180	14.360	14.354	0.006	96	190019	20.0	20.0	
134 2-Methylnaphthalene	142	14.957	14.957	0.000	92	389238	NC	NC	
S 154 Total Diethylbenzene	1		0.000					ND	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

a - User Assigned ID

Reagents:

MSV_CCV_VOC#1_00013	Amount Added:	4.00	Units: uL	
MSV_VCYC_00006	Amount Added:	16.00	Units: uL	
MSV_CCV_GASES_00049	Amount Added:	2.00	Units: uL	
MSV_CCV_VOC#3_00012	Amount Added:	3.20	Units: uL	
MSV_V_VOA2_00098	Amount Added:	4.00	Units: uL	
MSV_CCV_2CEVE_00012	Amount Added:	4.00	Units: uL	
MSV_V_EE_00005	Amount Added:	4.00	Units: uL	
MSV_Cent_ISSS_00001	Amount Added:	5.00	Units: uL	Run Reagent

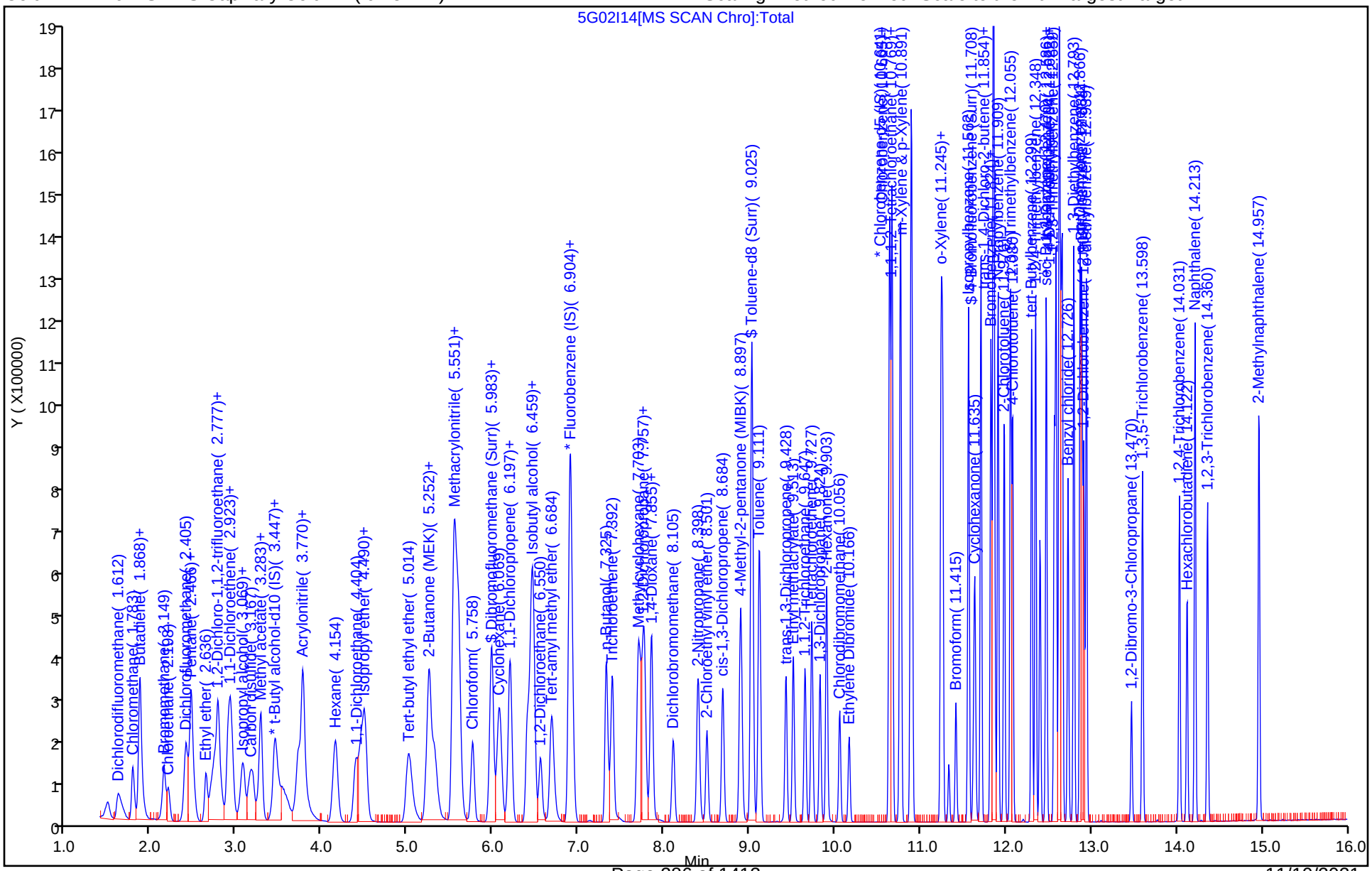
Report Date: 03-Aug-2021 13:08:34 Chrom Revision: 2.3 27-Jul-2021 18:12:28

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I14.D

Injection Date:	02-Aug-2021 17:48:30	Instrument ID:	26285	Operator ID:	jml01693
Lims ID:	IC v20			Worklist Smp#:	14
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	14
Method:	MSVoa_26285a	Limit Group:	MSV - 8260C DOD5		

Column: Rxi-624Sil MS Capillary Column (0.25 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I15.D
Lims ID: IC v10
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 02-Aug-2021 18:09:30 ALS Bottle#: 15 Worklist Smp#: 15
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 410-0035810-015
Misc. Info.: IC STD3 10
Operator ID: jml01693 Instrument ID: 26285
Sublist: chrom-MSVoa_26285a*sub38

Method: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\MSVoa_26285a.m
Limit Group: MSV - 8260C DOD5
Last Update: 04-Aug-2021 09:28:57 Calib Date: 02-Aug-2021 18:49:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I17.D

Column 1 : Rxi-624Sil MS Capillary Column (0.25 mm) Det: MS Quad
Process Host: CTX1682

First Level Reviewer: mellingerc Date: 03-Aug-2021 09:07:06

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
2 Dichlorodifluoromethane	85	1.612	1.613	0.000	99	74501	10.0	10.1	
3 Chloromethane	50	1.783	1.777	0.006	99	85705	10.0	10.2	
4 Butadiene	39	1.862	1.856	0.006	92	80537	NC	NC	
5 Vinyl chloride	62	1.881	1.875	0.006	98	85442	10.0	10.1	
8 Bromomethane	94	2.149	2.143	0.006	91	61320	10.0	10.1	
9 Chloroethane	64	2.192	2.192	0.000	99	45248	10.0	10.1	
10 Dichlorofluoromethane	67	2.405	2.399	0.006	97	119234	10.0	10.2	
11 Trichlorofluoromethane	101	2.460	2.460	0.000	97	103938	10.0	10.1	
12 Pentane	43	2.466	2.460	0.006	98	113816	NC	NC	
14 Ethyl ether	59	2.643	2.637	0.006	94	42380	10.0	10.1	
15 1,2-Dichloro-1,1,2-trifluoroetha	67	2.734	2.728	0.006	96	80413	NC	NC	
16 Acrolein	56	2.777	2.777	0.000	99	227604	100.0	99.8	
19 1,1-Dichloroethene	96	2.899	2.899	0.000	98	56108	10.0	10.1	
17 Acetone	58	2.917	2.917	0.000	78	20234	20.0	21.2	
18 112TCTFE	101	2.935	2.935	0.000	92	62634	10.0	10.2	
21 Isopropyl alcohol	45	3.045	3.045	0.000	99	76706	100.0	110.8	
20 Iodomethane	142	3.076	3.070	0.006	97	112349	10.0	10.3	
22 Carbon disulfide	76	3.161	3.173	-0.012	99	206276	10.0	10.2	
23 Methyl acetate	43	3.258	3.259	-0.001	98	80913	10.0	9.95	
25 3-Chloro-1-propene	41	3.277	3.277	0.000	92	105316	10.0	10.2	
26 Methylene Chloride	84	3.441	3.441	0.000	94	62604	10.0	10.1	
* 27 t-Butyl alcohol-d10 (IS)	65	3.441	3.448	-0.007	99	270076	250.0	250.0	
28 2-Methyl-2-propanol	59	3.533	3.545	-0.012	99	137684	100.0	103.0	
29 Acrylonitrile	53	3.722	3.716	0.006	99	101184	25.0	25.7	
30 Methyl tert-butyl ether	73	3.771	3.771	0.000	96	181881	10.0	10.3	
31 trans-1,2-Dichloroethene	96	3.777	3.771	0.006	98	61924	10.0	10.2	
32 Hexane	57	4.149	4.149	0.000	94	96909	10.0	10.0	
33 1,1-Dichloroethane	63	4.386	4.386	0.000	96	113708	10.0	10.2	
35 Isopropyl ether	45	4.447	4.453	-0.006	99	208675	10.0	10.3	
36 2-Chloro-1,3-butadiene	53	4.496	4.496	0.000	90	96326	10.0	10.1	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
37 Tert-butyl ethyl ether	59	5.008	5.014	-0.006	99	192391	10.0	10.3	
39 2-Butanone (MEK)	43	5.222	5.222	0.000	100	121411	20.0	20.5	
38 cis-1,2-Dichloroethene	96	5.246	5.246	0.000	82	68508	10.0	10.2	
40 2,2-Dichloropropane	77	5.264	5.270	-0.006	87	92406	10.0	10.3	
41 Propionitrile	54	5.313	5.319	-0.006	99	161216	100.0	101.7	
43 Methacrylonitrile	67	5.539	5.545	-0.006	94	212054	50.0	51.7	
44 Chlorobromomethane	128	5.587	5.593	-0.006	57	32268	10.0	10.0	
45 Tetrahydrofuran	71	5.587	5.593	-0.006	91	80030	50.0	49.4	
46 Chloroform	83	5.758	5.758	0.000	93	108383	10.0	10.1	
$ 47 Dibromofluoromethane (Surr)	113	5.977	5.978	-0.001	94	236399	50.0	49.6	
48 1,1,1-Trichloroethane	97	5.977	5.978	-0.001	51	96243	10.0	10.3	
49 Cyclohexane	56	6.069	6.075	-0.006	93	119566	10.0	10.1	
S 74 1,2-Dichloroethene, Total	100				0			20.3	
50 1,1-Dichloropropene	75	6.197	6.197	0.000	96	88879	10.0	10.1	
51 Carbon tetrachloride	117	6.191	6.197	-0.006	74	83895	10.0	10.2	
52 Isobutyl alcohol	41	6.404	6.398	0.006	92	121379	250.0	253.9	
$ 56 1,2-Dichloroethane-d4 (Surr)	102	6.441	6.447	-0.006	98	54502	50.0	49.8	
53 Benzene	78	6.465	6.471	-0.006	95	273154	10.0	10.4	
55 1,2-Dichloroethane	62	6.551	6.551	0.000	97	78089	10.0	10.0	
58 Tert-amyl methyl ether	73	6.685	6.685	0.000	98	184499	10.0	10.2	
* 59 Fluorobenzene (IS)	96	6.898	6.898	0.000	99	973968	50.0	50.0	
60 n-Heptane	43	6.922	6.922	0.000	95	96916	10.0	9.69	
61 n-Butanol	56	7.319	7.325	-0.006	91	162959	NC	NC	
62 Trichloroethene	95	7.392	7.392	0.000	99	71102	10.0	10.2	
63 Methylcyclohexane	83	7.697	7.697	0.000	91	118533	10.0	9.94	
64 1,2-Dichloropropane	63	7.739	7.739	0.000	98	69077	10.0	10.1	
65 2-ethoxy-2-methyl butane	87	7.770	7.770	0.000	91	92235	10.0	10.2	
68 1,4-Dioxane	88	7.831	7.831	0.000	88	20425	250.0	256.1	
66 Dibromomethane	93	7.849	7.849	0.000	82	41870	10.0	10.1	
67 Methyl methacrylate	69	7.849	7.855	-0.006	93	63088	10.0	9.98	
70 Dichlorobromomethane	83	8.105	8.105	0.000	99	81925	10.0	10.1	
72 2-Nitropropane	41	8.398	8.398	0.000	98	140758	50.0	48.6	
71 2-Chloroethyl vinyl ether	63	8.501	8.501	0.000	92	54434	10.0	10.2	
73 cis-1,3-Dichloropropene	75	8.684	8.684	0.000	96	110771	10.0	10.3	
75 4-Methyl-2-pentanone (MIBK)	43	8.892	8.898	-0.006	97	233497	20.0	20.7	
$ 76 Toluene-d8 (Surr)	98	9.026	9.026	0.000	93	932266	50.0	50.2	
77 Toluene	92	9.111	9.117	-0.006	98	172862	10.0	10.2	
78 trans-1,3-Dichloropropene	75	9.428	9.428	0.000	93	97143	10.0	9.97	
79 Ethyl methacrylate	69	9.513	9.513	0.000	91	105058	10.0	10.2	
80 1,1,2-Trichloroethane	97	9.647	9.648	-0.001	89	62199	10.0	10.3	
81 Tetrachloroethene	166	9.727	9.727	0.000	97	77157	10.0	10.2	
82 1,3-Dichloropropane	76	9.824	9.824	0.000	92	98066	10.0	10.1	
84 2-Hexanone	43	9.897	9.897	0.000	98	191853	20.0	21.0	
85 Chlorodibromomethane	129	10.056	10.056	0.000	91	68010	10.0	10.1	
S 123 1,3-Dichloropropene, Total	100				0			20.3	
87 Ethylene Dibromide	107	10.166	10.166	0.000	98	67921	10.0	10.2	
* 90 Chlorobenzene-d5 (IS)	117	10.641	10.635	0.006	85	743731	50.0	50.0	
88 Chlorobenzene	112	10.666	10.666	0.000	94	188403	10.0	10.2	
91 1-Chlorohexane	91	10.666	10.666	0.000	70	101285	10.0	10.1	
92 1,1,1,2-Tetrachloroethane	131	10.763	10.763	0.000	95	66482	10.0	10.3	
93 Ethylbenzene	91	10.769	10.769	0.000	98	338046	10.0	10.2	
94 m-Xylene & p-Xylene	106	10.891	10.891	0.000	100	260516	20.0	20.3	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
95 o-Xylene	106	11.245	11.239	0.006	96	127656	10.0	10.2	
S 130 Xylenes, Total	106				0			30.5	
96 Styrene	104	11.257	11.257	0.000	96	217002	10.0	10.3	
97 Bromoform	173	11.415	11.415	0.000	98	53960	10.0	9.76	
98 Isopropylbenzene	105	11.562	11.562	0.000	96	334228	10.0	10.3	
100 Cyclohexanone	55	11.635	11.635	0.000	92	104258	250.0	242.6	
$ 101 4-Bromofluorobenzene (Surr)	95	11.708	11.708	0.000	92	360880	50.0	50.3	
102 Bromobenzene	156	11.824	11.824	0.000	94	78808	10.0	9.91	
105 1,1,2,2-Tetrachloroethane	83	11.830	11.824	0.006	94	107431	10.0	10.1	
104 trans-1,4-Dichloro-2-butene	53	11.854	11.854	0.000	90	170495	50.0	50.4	
103 1,2,3-Trichloropropane	110	11.867	11.867	0.000	84	28988	10.0	10.1	
106 N-Propylbenzene	91	11.909	11.909	0.000	99	401994	10.0	10.1	
107 2-Chlorotoluene	126	11.982	11.976	0.006	97	77574	10.0	9.89	
108 1,3,5-Trimethylbenzene	105	12.056	12.056	0.000	94	273296	10.0	10.0	
109 4-Chlorotoluene	126	12.080	12.074	0.006	97	79557	10.0	10.0	
111 tert-Butylbenzene	134	12.306	12.299	0.007	94	53266	10.0	9.95	
113 1,2,4-Trimethylbenzene	105	12.348	12.348	0.000	97	277816	10.0	10.1	
114 sec-Butylbenzene	105	12.476	12.470	0.006	94	340674	10.0	10.0	
115 1,3-Dichlorobenzene	146	12.568	12.568	0.000	98	151132	10.0	9.92	
116 4-Isopropyltoluene	119	12.586	12.586	0.000	97	290570	10.0	9.94	
* 117 1,4-Dichlorobenzene-d4	152	12.623	12.623	-0.001	94	412963	50.0	50.0	
118 1,4-Dichlorobenzene	146	12.647	12.641	0.006	96	153860	10.0	10.0	
119 1,2,3-Trimethylbenzene	105	12.659	12.659	0.000	98	278199	10.0	10.1	
120 Benzyl chloride	91	12.726	12.726	0.000	98	221211	NC	NC	
121 1,3-Diethylbenzene	119	12.799	12.793	0.006	95	170599	NC	NC	
122 p-Diethylbenzene	119	12.866	12.866	0.000	93	177141	NC	NC	
124 n-Butylbenzene	92	12.891	12.885	0.006	97	146013	10.0	9.94	
125 1,2-Dichlorobenzene	146	12.909	12.909	0.000	99	145944	10.0	10.1	
126 o-diethylbenzene	119	12.940	12.940	0.000	96	141262	NC	NC	
127 1,2-Dibromo-3-Chloropropane	75	13.470	13.464	0.006	87	26028	10.0	9.82	
128 1,3,5-Trichlorobenzene	180	13.598	13.598	0.000	98	105253	10.0	9.74	
129 1,2,4-Trichlorobenzene	180	14.031	14.025	0.006	93	96964	10.0	9.80	
131 Hexachlorobutadiene	225	14.122	14.116	0.006	96	40267	10.0	9.44	
132 Naphthalene	128	14.214	14.208	0.006	97	350259	10.0	9.96	
133 1,2,3-Trichlorobenzene	180	14.360	14.354	0.006	97	93938	10.0	9.73	
134 2-Methylnaphthalene	142	14.964	14.957	0.007	93	187508	NC	NC	
S 154 Total Diethylbenzene	1		0.000					ND	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

MSV_CCV_VOC#1_00013	Amount Added:	2.00	Units: uL	
MSV_VCYC_00006	Amount Added:	8.00	Units: uL	
MSV_CCV_GASES_00049	Amount Added:	1.00	Units: uL	
MSV_CCV_VOC#3_00012	Amount Added:	1.60	Units: uL	
MSV_V_VOA2_00098	Amount Added:	2.00	Units: uL	
MSV_CCV_2CEVE_00012	Amount Added:	2.00	Units: uL	
MSV_V_EE_00005	Amount Added:	2.00	Units: uL	
MSV_Cent_ISSS_00001	Amount Added:	5.00	Units: uL	Run Reagent

Report Date: 04-Aug-2021 09:28:59 Chrom Revision: 2.3 03-Aug-2021 10:08:16

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I15.D

Injection Date: 02-Aug-2021 18:09:30 Instrument ID: 26285 Operator ID: jml01693

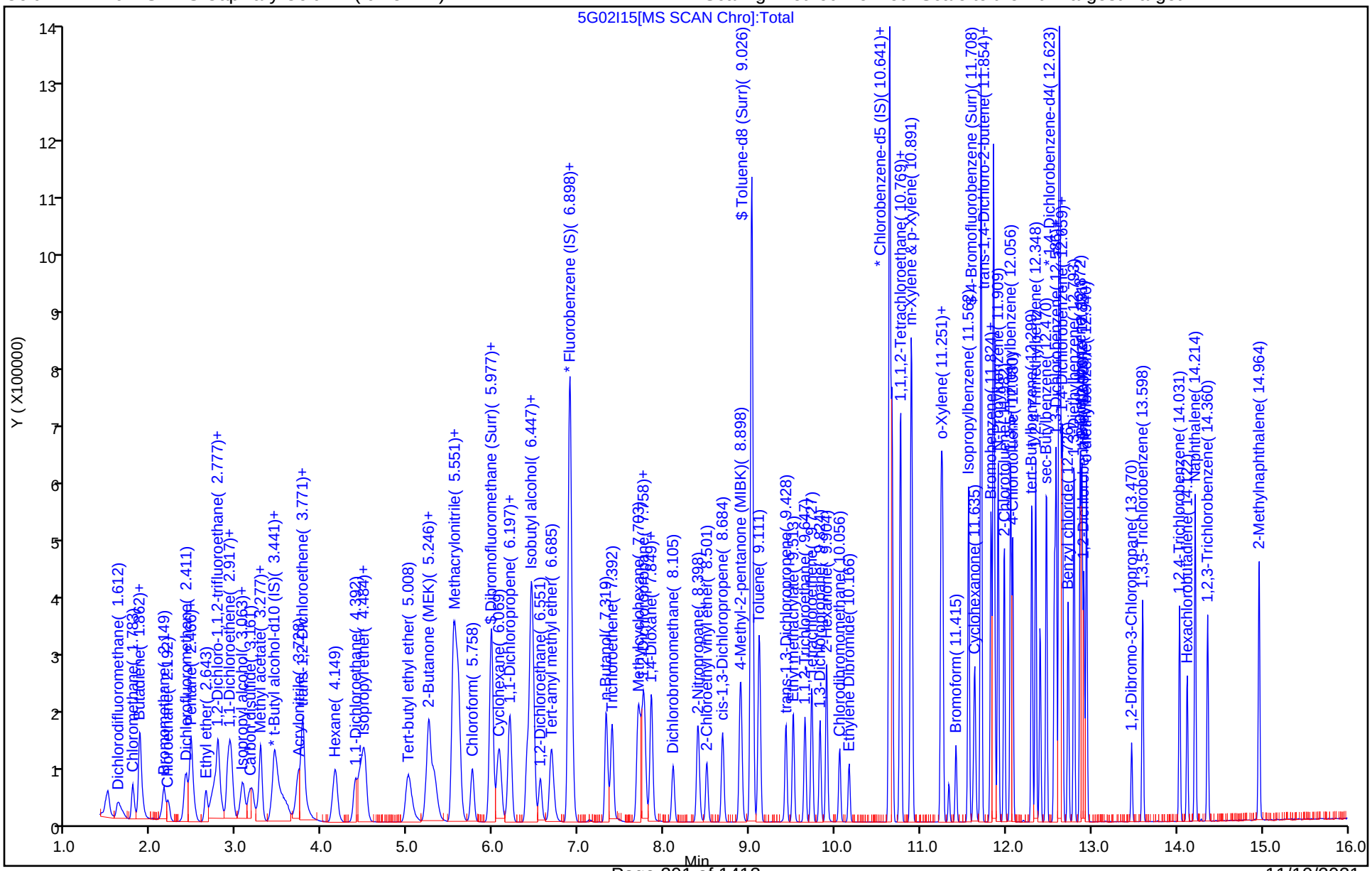
Lims ID: IC v10 Worklist Smp#: 15

Client ID:

Purge Vol: 5.000 mL Dil. Factor: 1.0000 ALS Bottle#: 15

Method: MSVoa_26285a Limit Group: MSV - 8260C DOD5

Column: Rxi-624Sil MS Capillary Column (0.25 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I16.D
Lims ID: IC v4
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 02-Aug-2021 18:29:30 ALS Bottle#: 16 Worklist Smp#: 16
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 410-0035810-016
Misc. Info.: IC STD2 4
Operator ID: jml01693 Instrument ID: 26285
Sublist: chrom-MSVoa_26285a*sub38

Method: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\MSVoa_26285a.m
Limit Group: MSV - 8260C DOD5
Last Update: 03-Aug-2021 13:08:47 Calib Date: 02-Aug-2021 18:49:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I17.D

Column 1 : Rxi-624Sil MS Capillary Column (0.25 mm) Det: MS Quad
Process Host: CTX1646

First Level Reviewer: mellingerc Date: 03-Aug-2021 09:17:05

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
2 Dichlorodifluoromethane	85	1.625	1.613	0.013	98	31246	4.00	4.15	
3 Chloromethane	50	1.789	1.777	0.012	99	36436	4.00	4.26	
4 Butadiene	39	1.868	1.856	0.012	91	33896	NC	NC	
5 Vinyl chloride	62	1.887	1.875	0.012	97	36246	4.00	4.20	
8 Bromomethane	94	2.149	2.143	0.006	90	25512	4.00	4.12	
9 Chloroethane	64	2.204	2.192	0.012	98	19136	4.00	4.19	
10 Dichlorofluoromethane	67	2.417	2.399	0.018	97	50048	4.00	4.18	
11 Trichlorofluoromethane	101	2.466	2.460	0.006	93	44352	4.00	4.22	
12 Pentane	43	2.466	2.460	0.006	97	48594	NC	NC	
14 Ethyl ether	59	2.643	2.637	0.006	94	17724	4.00	4.13	
15 1,2-Dichloro-1,1,2-trifluoroetha	67	2.728	2.728	0.000	93	35073	NC	NC	
16 Acrolein	56	2.789	2.777	0.012	99	91679	40.0	42.4	
19 1,1-Dichloroethene	96	2.899	2.899	0.000	98	23101	4.00	4.08	
17 Acetone	58	2.923	2.917	0.006	77	7637	8.00	8.44	
18 112TCTFE	101	2.935	2.935	0.000	91	26253	4.00	4.19	
21 Isopropyl alcohol	45	3.051	3.045	0.006	100	52842	80.0	80.5	
20 Iodomethane	142	3.069	3.070	-0.001	98	45887	4.00	4.12	
22 Carbon disulfide	76	3.179	3.173	0.006	99	85669	4.00	4.16	
23 Methyl acetate	43	3.264	3.259	0.005	98	32623	4.00	3.93	
25 3-Chloro-1-propene	41	3.289	3.277	0.012	93	44316	4.00	4.21	
26 Methylene Chloride	84	3.447	3.441	0.006	75	26507	4.00	4.19	
* 27 t-Butyl alcohol-d10 (IS)	65	3.435	3.448	-0.013	98	256088	250.0	250.0	
28 2-Methyl-2-propanol	59	3.551	3.545	0.006	100	105630	80.0	83.3	
29 Acrylonitrile	53	3.722	3.716	0.006	98	41235	10.0	10.3	
30 Methyl tert-butyl ether	73	3.770	3.771	-0.001	81	74343	4.00	4.12	
31 trans-1,2-Dichloroethene	96	3.777	3.771	0.006	98	26072	4.00	4.19	
32 Hexane	57	4.155	4.149	0.006	94	41390	4.00	4.20	
33 1,1-Dichloroethane	63	4.386	4.386	0.000	95	46937	4.00	4.13	
35 Isopropyl ether	45	4.453	4.453	0.000	95	85359	4.00	4.12	
36 2-Chloro-1,3-butadiene	53	4.502	4.496	0.006	91	41336	4.00	4.25	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
37 Tert-butyl ethyl ether	59	5.008	5.014	-0.006	99	78336	4.00	4.12	
39 2-Butanone (MEK)	43	5.221	5.222	-0.001	99	48700	8.00	8.06	
38 cis-1,2-Dichloroethene	96	5.252	5.246	0.006	82	28269	4.00	4.11	
40 2,2-Dichloropropane	77	5.270	5.270	0.000	83	39318	4.00	4.28	
41 Propionitrile	54	5.313	5.319	-0.006	99	123824	80.0	82.3	
43 Methacrylonitrile	67	5.545	5.545	0.000	93	164738	40.0	39.4	
44 Chlorobromomethane	128	5.593	5.593	0.000	61	13603	4.00	4.13	
45 Tetrahydrofuran	71	5.593	5.593	0.000	92	32328	20.0	21.0	
46 Chloroform	83	5.758	5.758	0.000	93	45642	4.00	4.17	
$ 47 Dibromofluoromethane (Surr)	113	5.977	5.978	-0.001	94	245146	50.0	50.4	
48 1,1,1-Trichloroethane	97	5.977	5.978	-0.001	41	39287	4.00	4.12	
49 Cyclohexane	56	6.069	6.075	-0.006	92	49351	4.00	4.09	
S 74 1,2-Dichloroethene, Total	100				0			8.30	
50 1,1-Dichloropropene	75	6.197	6.197	0.000	95	37786	4.00	4.22	
51 Carbon tetrachloride	117	6.185	6.197	-0.012	74	34821	4.00	4.14	
52 Isobutyl alcohol	41	6.404	6.398	0.006	94	91635	200.0	202.1	
$ 56 1,2-Dichloroethane-d4 (Surr)	102	6.441	6.447	-0.006	98	55879	50.0	50.0	
53 Benzene	78	6.465	6.471	-0.006	91	111536	4.00	4.15	a
55 1,2-Dichloroethane	62	6.557	6.551	0.006	95	31658	4.00	3.98	
58 Tert-amyl methyl ether	73	6.678	6.685	-0.007	99	74990	4.00	4.05	
* 59 Fluorobenzene (IS)	96	6.892	6.898	-0.006	99	994064	50.0	50.0	
60 n-Heptane	43	6.922	6.922	0.000	96	42343	4.00	4.15	
61 n-Butanol	56	7.325	7.325	0.000	90	144075	NC	NC	
62 Trichloroethene	95	7.392	7.392	0.000	98	29573	4.00	4.16	
63 Methylcyclohexane	83	7.697	7.697	0.000	90	49675	4.00	4.08	
64 1,2-Dichloropropane	63	7.739	7.739	0.000	94	28577	4.00	4.10	
65 2-ethoxy-2-methyl butane	87	7.764	7.770	-0.006	89	37317	4.00	4.03	
68 1,4-Dioxane	88	7.843	7.831	0.012	27	15039	200.0	198.9	M
66 Dibromomethane	93	7.849	7.849	0.000	65	17264	4.00	4.07	
67 Methyl methacrylate	69	7.855	7.855	0.000	93	26220	4.00	4.06	
70 Dichlorobromomethane	83	8.105	8.105	0.000	98	33440	4.00	4.03	
72 2-Nitropropane	41	8.398	8.398	0.000	98	56766	20.0	20.7	
71 2-Chloroethyl vinyl ether	63	8.501	8.501	0.000	92	21012	4.00	3.85	
73 cis-1,3-Dichloropropene	75	8.684	8.684	0.000	96	43795	4.00	3.99	
75 4-Methyl-2-pentanone (MIBK)	43	8.891	8.898	-0.007	97	89836	8.00	7.78	
$ 76 Toluene-d8 (Surr)	98	9.026	9.026	0.000	94	954545	50.0	50.5	
77 Toluene	92	9.111	9.117	-0.006	99	72621	4.00	4.22	
78 trans-1,3-Dichloropropene	75	9.428	9.428	0.000	92	40144	4.00	4.05	
79 Ethyl methacrylate	69	9.513	9.513	0.000	91	41411	4.00	3.94	
80 1,1,2-Trichloroethane	97	9.647	9.648	-0.001	90	24848	4.00	4.03	
81 Tetrachloroethene	166	9.733	9.727	0.006	97	31805	4.00	4.14	
82 1,3-Dichloropropane	76	9.824	9.824	0.000	92	39341	4.00	4.00	
84 2-Hexanone	43	9.903	9.897	0.006	98	73949	8.00	7.94	
85 Chlorodibromomethane	129	10.056	10.056	0.000	91	26851	4.00	3.93	
S 123 1,3-Dichloropropene, Total	100				0			8.04	
87 Ethylene Dibromide	107	10.166	10.166	0.000	98	26740	4.00	3.96	
* 90 Chlorobenzene-d5 (IS)	117	10.641	10.635	0.006	85	756791	50.0	50.0	
88 Chlorobenzene	112	10.665	10.666	-0.001	93	76930	4.00	4.08	
91 1-Chlorohexane	91	10.672	10.666	0.006	70	43169	4.00	4.22	
92 1,1,1,2-Tetrachloroethane	131	10.763	10.763	0.000	97	25371	4.00	3.85	
93 Ethylbenzene	91	10.769	10.769	0.000	98	139563	4.00	4.14	
94 m-Xylene & p-Xylene	106	10.897	10.891	0.006	100	107960	8.00	8.26	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
95 o-Xylene	106	11.245	11.239	0.006	97	51470	4.00	4.03	
S 130 Xylenes, Total	106				0			12.3	
96 Styrene	104	11.263	11.257	0.006	96	87115	4.00	4.07	
97 Bromoform	173	11.415	11.415	0.000	97	21414	4.00	3.81	
98 Isopropylbenzene	105	11.562	11.562	0.000	96	135468	4.00	4.10	
100 Cyclohexanone	55	11.635	11.635	0.000	92	77676	200.0	190.6	
$ 101 4-Bromofluorobenzene (Surr)	95	11.708	11.708	0.000	92	368835	50.0	50.5	
102 Bromobenzene	156	11.824	11.824	0.000	95	32221	4.00	4.03	
105 1,1,2,2-Tetrachloroethane	83	11.830	11.824	0.006	91	43075	4.00	4.02	
104 trans-1,4-Dichloro-2-butene	53	11.854	11.854	0.000	91	132463	40.0	39.0	
103 1,2,3-Trichloropropane	110	11.873	11.867	0.006	80	11480	4.00	3.98	
106 N-Propylbenzene	91	11.909	11.909	0.000	99	168919	4.00	4.22	
107 2-Chlorotoluene	126	11.982	11.976	0.006	97	31894	4.00	4.04	
108 1,3,5-Trimethylbenzene	105	12.055	12.056	-0.001	94	110764	4.00	4.03	
109 4-Chlorotoluene	126	12.080	12.074	0.006	97	33333	4.00	4.16	
111 tert-Butylbenzene	134	12.305	12.299	0.006	93	21233	4.00	3.94	
113 1,2,4-Trimethylbenzene	105	12.348	12.348	0.000	97	113986	4.00	4.11	
114 sec-Butylbenzene	105	12.476	12.470	0.006	94	139889	4.00	4.09	
115 1,3-Dichlorobenzene	146	12.568	12.568	0.000	98	62146	4.00	4.06	
116 4-Isopropyltoluene	119	12.592	12.586	0.006	97	119247	4.00	4.05	
* 117 1,4-Dichlorobenzene-d4	152	12.629	12.623	0.005	94	415369	50.0	50.0	
118 1,4-Dichlorobenzene	146	12.647	12.641	0.006	95	62510	4.00	4.04	
119 1,2,3-Trimethylbenzene	105	12.659	12.659	0.000	98	113030	4.00	4.06	
120 Benzyl chloride	91	12.726	12.726	0.000	98	86421	NC	NC	
121 1,3-Diethylbenzene	119	12.799	12.793	0.006	96	71099	NC	NC	a
122 p-Diethylbenzene	119	12.872	12.866	0.006	94	74294	NC	NC	a
124 n-Butylbenzene	92	12.891	12.885	0.006	97	59333	4.00	4.02	
125 1,2-Dichlorobenzene	146	12.915	12.909	0.006	99	57571	4.00	3.96	
126 o-diethylbenzene	119	12.946	12.940	0.006	95	57091	NC	NC	
127 1,2-Dibromo-3-Chloropropane	75	13.470	13.464	0.006	85	10230	4.00	3.84	
128 1,3,5-Trichlorobenzene	180	13.604	13.598	0.006	97	41222	4.00	3.79	
129 1,2,4-Trichlorobenzene	180	14.037	14.025	0.012	94	38998	4.00	3.92	
131 Hexachlorobutadiene	225	14.122	14.116	0.006	96	17199	4.00	4.01	
132 Naphthalene	128	14.214	14.208	0.006	97	134571	4.00	3.80	
133 1,2,3-Trichlorobenzene	180	14.360	14.354	0.006	96	36741	4.00	3.79	
134 2-Methylnaphthalene	142	14.963	14.957	0.006	93	70206	NC	NC	
S 154 Total Diethylbenzene	1		0.000					ND	

QC Flag Legend

Processing Flags
- NC - Not Calibrated

Review Flags
- M - Manually Integrated
- a - User Assigned ID

Reagents:

MSV_CCV_VOC#1_00013	Amount Added:	4.00	Units: uL	
MSV_VCYC_00006	Amount Added:	32.00	Units: uL	
MSV_CCV_GASES_00049	Amount Added:	2.00	Units: uL	
MSV_CCV_VOC#3_00012	Amount Added:	3.20	Units: uL	
MSV_V_VOA2_00098	Amount Added:	12.00	Units: uL	
MSV_CCV_2CEVE_00012	Amount Added:	4.00	Units: uL	
MSV_V_EE_00005	Amount Added:	4.00	Units: uL	
MSV_Cent_ISSS_00001	Amount Added:	5.00	Units: uL	Run Reagent

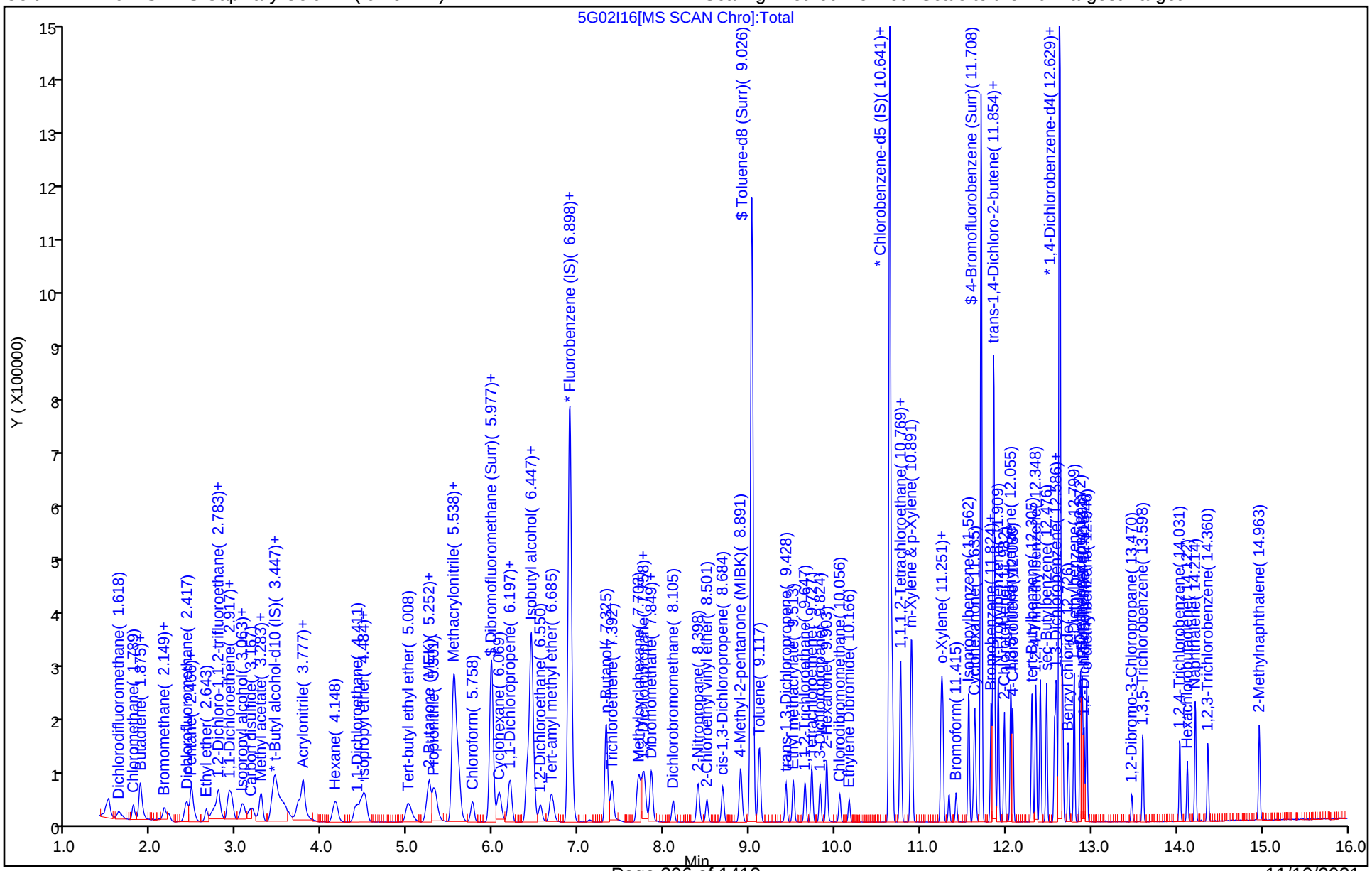
Report Date: 03-Aug-2021 13:08:50 Chrom Revision: 2.3 27-Jul-2021 18:12:28

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I16.D

Injection Date:	02-Aug-2021 18:29:30	Instrument ID:	26285	Operator ID:	jml01693
Lims ID:	IC v4			Worklist Smp#:	16
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	16
Method:	MSVoa_26285a	Limit Group:	MSV - 8260C DOD5		

Column: Rxi-624Sil MS Capillary Column (0.25 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

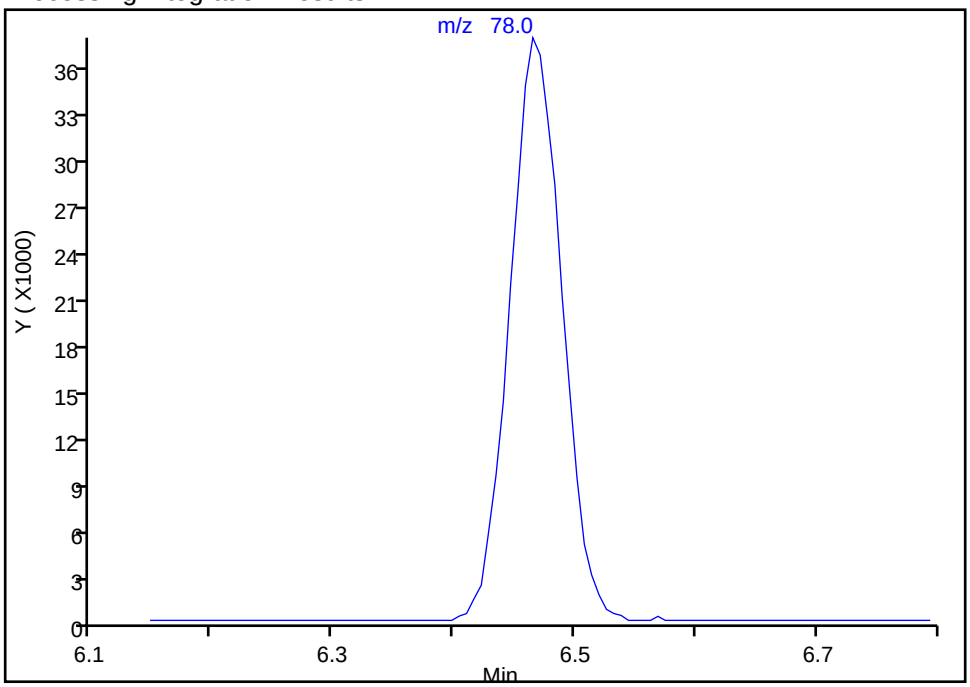
Data File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I16.D
Injection Date: 02-Aug-2021 18:29:30 Instrument ID: 26285
Lims ID: IC v4
Client ID:
Operator ID: jml01693 ALS Bottle#: 16 Worklist Smp#: 16
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: MSVoa_26285a Limit Group: MSV - 8260C DOD5
Column: Rxi-624Sil MS Capillary Column (0.25mm) Detector MS Quad

53 Benzene, CAS: 71-43-2

Signal: 1

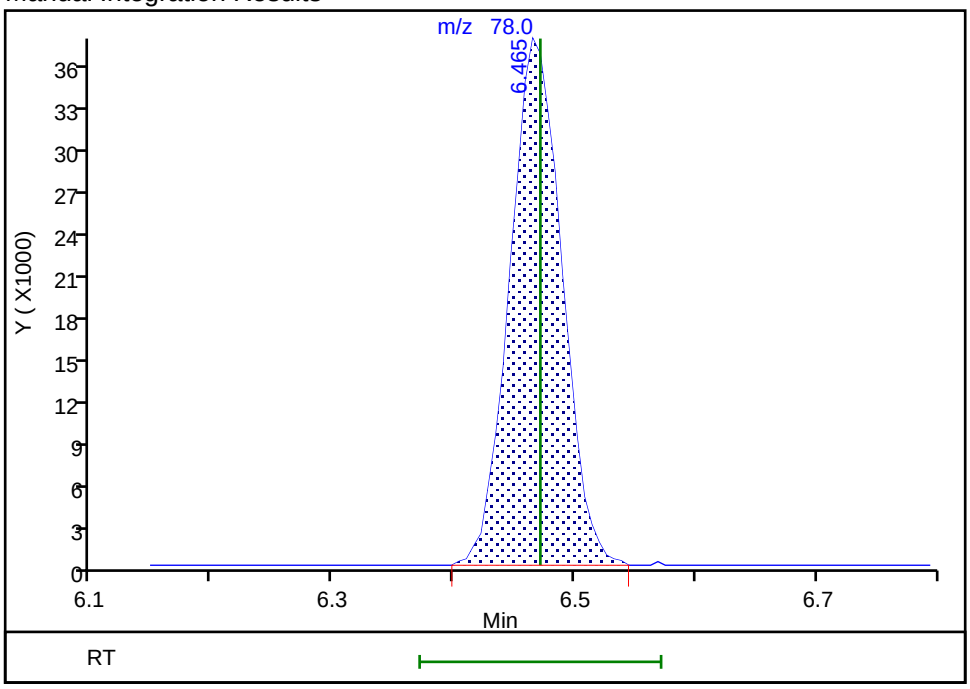
Not Detected
Expected RT: 6.47

Processing Integration Results



Manual Integration Results

RT: 6.47
Area: 111536
Amount: 4.150034
Amount Units: ug/l



Reviewer: mellingerc, 03-Aug-2021 09:07:55
Audit Action: Assigned Compound ID Audit Reason: Incomplete Integration

Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

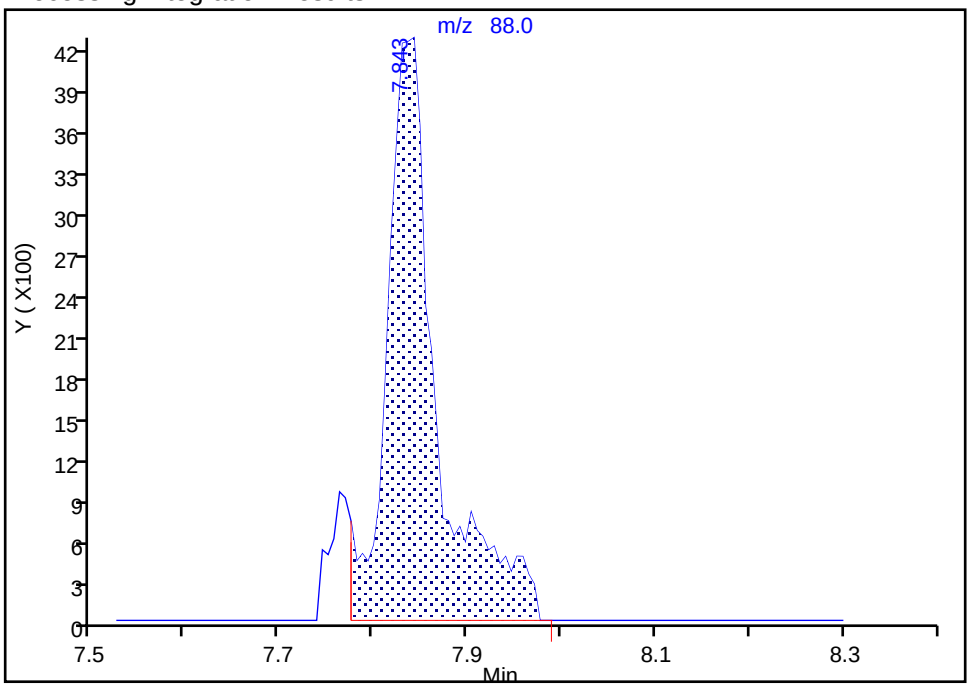
Data File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I16.D
Injection Date: 02-Aug-2021 18:29:30 Instrument ID: 26285
Lims ID: IC v4
Client ID:
Operator ID: jml01693 ALS Bottle#: 16 Worklist Smp#: 16
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: MSVoa_26285a Limit Group: MSV - 8260C DOD5
Column: Rxi-624Sil MS Capillary Column (0.25mm) Detector MS Quad

68 1,4-Dioxane, CAS: 123-91-1

Signal: 1

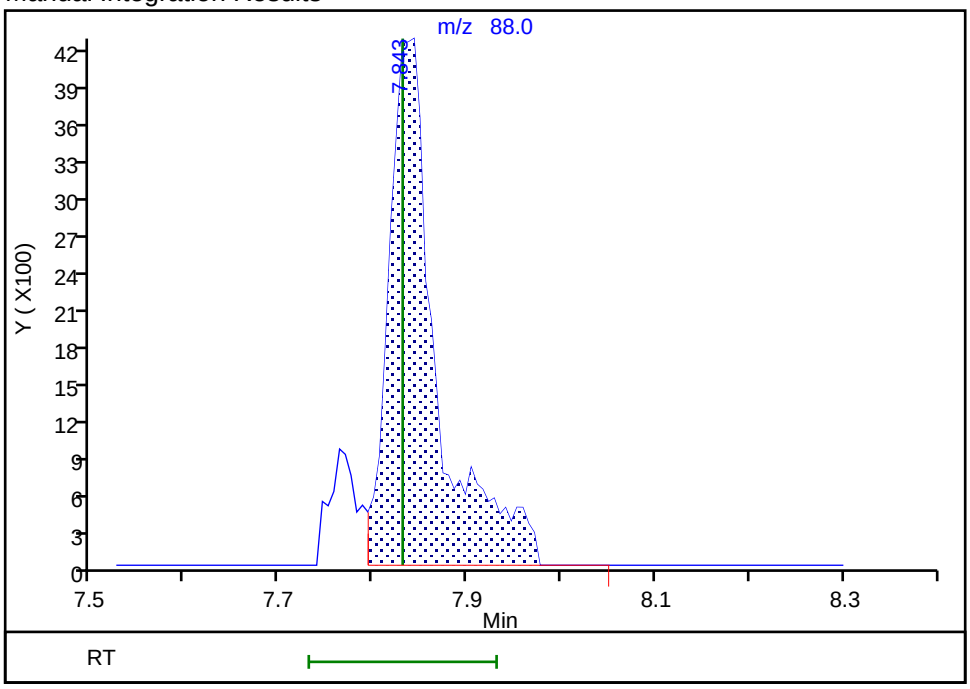
Processing Integration Results

RT: 7.84
Area: 15642
Amount: 205.6898
Amount Units: ug/l



Manual Integration Results

RT: 7.84
Area: 15039
Amount: 198.8869
Amount Units: ug/l



Reviewer: mellingerc, 03-Aug-2021 09:08:15
Audit Action: Split an Integrated Peak Audit Reason: Incomplete Integration

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I17.D
Lims ID: IC v1
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 02-Aug-2021 18:49:30 ALS Bottle#: 17 Worklist Smp#: 17
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 410-0035810-017
Misc. Info.: IC STD 1 1
Operator ID: jml01693 Instrument ID: 26285
Sublist: chrom-MSVoa_26285a*sub38

Method: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\MSVoa_26285a.m
Limit Group: MSV - 8260C DOD5
Last Update: 03-Aug-2021 13:08:55 Calib Date: 02-Aug-2021 18:49:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I17.D

Column 1 : Rxi-624Sil MS Capillary Column (0.25 mm) Det: MS Quad
Process Host: CTX1646

First Level Reviewer: mellingerc Date: 03-Aug-2021 08:35:39

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
2 Dichlorodifluoromethane	85	1.619	1.613	0.007	94	6462	1.00	0.8764	
3 Chloromethane	50	1.777	1.777	0.000	96	8052	1.00	0.9612	
4 Butadiene	39	1.862	1.856	0.006	91	9448	NC	NC	
5 Vinyl chloride	62	1.875	1.875	0.000	94	8040	1.00	0.9512	
8 Bromomethane	94	2.155	2.143	0.012	90	5945	1.00	0.9804	
9 Chloroethane	64	2.198	2.192	0.006	97	4219	1.00	0.9424	
10 Dichlorofluoromethane	67	2.405	2.399	0.006	95	11136	1.00	0.9489	
11 Trichlorofluoromethane	101	2.466	2.460	0.006	78	9314	1.00	0.9052	
12 Pentane	43	2.466	2.460	0.006	97	11379	NC	NC	
14 Ethyl ether	59	2.637	2.637	0.000	93	3730	1.00	0.8879	
15 1,2-Dichloro-1,1,2-trifluoroetha	67	2.722	2.728	-0.006	77	7169	NC	NC	
16 Acrolein	56	2.783	2.777	0.006	98	21851	10.0	9.63	
19 1,1-Dichloroethene	96	2.887	2.899	-0.012	96	5370	1.00	0.9676	
17 Acetone	58	2.923	2.917	0.006	95	1793	2.00	1.89	
18 112TCTFE	101	2.923	2.935	-0.012	75	5246	1.00	0.8550	
21 Isopropyl alcohol	45	3.057	3.045	0.012	98	13173	20.0	19.1	
20 Iodomethane	142	3.063	3.070	-0.007	97	10049	1.00	0.9217	
22 Carbon disulfide	76	3.173	3.173	0.000	99	18663	1.00	0.9251	
23 Methyl acetate	43	3.258	3.259	-0.001	98	8995	1.00	1.11	
25 3-Chloro-1-propene	41	3.277	3.277	0.000	92	10334	1.00	1.00	
26 Methylene Chloride	84	3.441	3.441	0.000	37	6124	1.00	0.9885	
* 27 t-Butyl alcohol-d10 (IS)	65	3.441	3.448	-0.007	99	268692	250.0	250.0	
28 2-Methyl-2-propanol	59	3.539	3.545	-0.006	99	25032	20.0	18.8	
29 Acrylonitrile	53	3.710	3.716	-0.006	93	10030	2.50	2.55	
30 Methyl tert-butyl ether	73	3.758	3.771	-0.013	82	17049	1.00	0.9653	
31 trans-1,2-Dichloroethene	96	3.777	3.771	0.006	95	5554	1.00	0.9105	
32 Hexane	57	4.142	4.149	-0.007	94	8470	1.00	0.8767	
33 1,1-Dichloroethane	63	4.386	4.386	0.000	53	10978	1.00	0.9857	
35 Isopropyl ether	45	4.453	4.453	0.000	93	19682	1.00	0.9686	
36 2-Chloro-1,3-butadiene	53	4.490	4.496	-0.006	91	9012	1.00	0.9466	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
37 Tert-butyl ethyl ether	59	5.008	5.014	-0.006	95	17408	1.00	0.9342	
39 2-Butanone (MEK)	43	5.234	5.222	0.012	91	12400	2.00	2.09	
38 cis-1,2-Dichloroethene	96	5.246	5.246	0.000	81	6624	1.00	0.9825	
40 2,2-Dichloropropane	77	5.264	5.270	-0.006	86	8327	1.00	0.9251	
41 Propionitrile	54	5.319	5.319	0.000	98	30270	20.0	19.2	
43 Methacrylonitrile	67	5.532	5.545	-0.013	92	40474	10.0	9.87	
44 Chlorobromomethane	128	5.587	5.593	-0.006	62	3182	1.00	0.9869	
45 Tetrahydrofuran	71	5.581	5.593	-0.012	88	7912	5.00	4.91	
46 Chloroform	83	5.746	5.758	-0.012	92	10375	1.00	0.9664	
$ 47 Dibromofluoromethane (Surr)	113	5.977	5.978	-0.001	94	236047	50.0	49.6	
48 1,1,1-Trichloroethane	97	5.971	5.978	-0.007	36	8264	1.00	0.8834	
49 Cyclohexane	56	6.069	6.075	-0.006	89	10998	1.00	0.9301	
S 74 1,2-Dichloroethene, Total	100				0			1.89	
50 1,1-Dichloropropene	75	6.197	6.197	0.000	92	8003	1.00	0.9117	
51 Carbon tetrachloride	117	6.179	6.197	-0.018	88	7530	1.00	0.9146	
52 Isobutyl alcohol	41	6.404	6.398	0.006	94	22136	50.0	46.5	
$ 56 1,2-Dichloroethane-d4 (Surr)	102	6.435	6.447	-0.012	98	54454	50.0	49.7	
53 Benzene	78	6.471	6.471	0.000	92	24889	1.00	0.9452	
55 1,2-Dichloroethane	62	6.544	6.551	-0.007	95	8624	1.00	1.11	
58 Tert-amyl methyl ether	73	6.679	6.685	-0.007	99	17553	1.00	0.9668	
* 59 Fluorobenzene (IS)	96	6.892	6.898	-0.006	99	973993	50.0	50.0	
60 n-Heptane	43	6.922	6.922	0.000	90	9355	1.00	0.9349	
61 n-Butanol	56	7.319	7.325	-0.006	88	34773	NC	NC	
62 Trichloroethene	95	7.392	7.392	0.000	95	6771	1.00	0.9725	
63 Methylcyclohexane	83	7.697	7.697	0.000	82	10934	1.00	0.9173	
64 1,2-Dichloropropane	63	7.733	7.739	-0.006	89	6741	1.00	0.9859	
65 2-ethoxy-2-methyl butane	87	7.764	7.770	-0.006	90	8579	1.00	0.9446	
68 1,4-Dioxane	88	7.837	7.831	0.006	58	3071	50.0	38.7	
66 Dibromomethane	93	7.843	7.849	-0.006	93	4136	1.00	1.00	
67 Methyl methacrylate	69	7.849	7.855	-0.006	95	6270	1.00	0.99	
70 Dichlorobromomethane	83	8.099	8.105	-0.006	96	7928	1.00	0.9752	
72 2-Nitropropane	41	8.392	8.398	-0.006	96	14657	5.00	5.09	
71 2-Chloroethyl vinyl ether	63	8.501	8.501	0.000	89	5107	1.00	0.9545	
73 cis-1,3-Dichloropropene	75	8.684	8.684	0.000	95	10107	1.00	0.9397	
75 4-Methyl-2-pentanone (MIBK)	43	8.891	8.898	-0.007	96	23183	2.00	2.05	
$ 76 Toluene-d8 (Surr)	98	9.026	9.026	0.000	94	934837	50.0	50.4	
77 Toluene	92	9.111	9.117	-0.006	99	16136	1.00	0.9559	
78 trans-1,3-Dichloropropene	75	9.428	9.428	0.000	91	9417	1.00	0.9689	
79 Ethyl methacrylate	69	9.519	9.513	0.006	89	9855	1.00	0.9556	
80 1,1,2-Trichloroethane	97	9.647	9.648	-0.001	88	6074	1.00	1.00	
81 Tetrachloroethene	166	9.733	9.727	0.006	93	6845	1.00	0.9098	
82 1,3-Dichloropropane	76	9.824	9.824	0.000	92	9592	1.00	0.99	
84 2-Hexanone	43	9.903	9.897	0.006	97	18347	2.00	2.01	
85 Chlorodibromomethane	129	10.056	10.056	0.000	89	6204	1.00	0.9258	
S 123 1,3-Dichloropropene, Total	100				0			1.91	
87 Ethylene Dibromide	107	10.166	10.166	0.000	96	6426	1.00	0.9709	
* 90 Chlorobenzene-d5 (IS)	117	10.641	10.635	0.006	85	741925	50.0	50.0	
88 Chlorobenzene	112	10.672	10.666	0.006	98	17867	1.00	0.9660	
91 1-Chlorohexane	91	10.666	10.666	0.000	59	9591	1.00	0.9567	
92 1,1,1,2-Tetrachloroethane	131	10.763	10.763	0.000	93	6263	1.00	0.9682	
93 Ethylbenzene	91	10.769	10.769	0.000	98	31088	1.00	0.9408	
94 m-Xylene & p-Xylene	106	10.897	10.891	0.006	99	24421	2.00	1.91	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
95 o-Xylene	106	11.245	11.239	0.006	96	11977	1.00	0.9569	
S 130 Xylenes, Total	106				0			2.86	
96 Styrene	104	11.263	11.257	0.006	95	19443	1.00	0.9264	
97 Bromoform	173	11.415	11.415	0.000	94	5186	1.00	0.9404	
98 Isopropylbenzene	105	11.562	11.562	0.000	95	29792	1.00	0.9203	
100 Cyclohexanone	55	11.641	11.635	0.006	92	20630	50.0	48.3	
$ 101 4-Bromofluorobenzene (Surr)	95	11.708	11.708	0.000	92	358366	50.0	50.1	
102 Bromobenzene	156	11.824	11.824	0.000	93	7609	1.00	0.9653	
105 1,1,2,2-Tetrachloroethane	83	11.830	11.824	0.006	92	10446	1.00	0.9896	
104 trans-1,4-Dichloro-2-butene	53	11.854	11.854	0.000	92	30834	10.0	9.21	
103 1,2,3-Trichloropropane	110	11.873	11.867	0.006	78	2782	1.00	0.9783	
106 N-Propylbenzene	91	11.909	11.909	0.000	99	37472	1.00	0.9513	
107 2-Chlorotoluene	126	11.982	11.976	0.006	97	7707	1.00	0.99	
108 1,3,5-Trimethylbenzene	105	12.056	12.056	0.000	93	25638	1.00	0.9480	
109 4-Chlorotoluene	126	12.080	12.074	0.006	95	7204	1.00	0.9133	
111 tert-Butylbenzene	134	12.305	12.299	0.006	94	4906	1.00	0.9247	
113 1,2,4-Trimethylbenzene	105	12.348	12.348	0.000	97	25345	1.00	0.9274	
114 sec-Butylbenzene	105	12.476	12.470	0.006	94	30657	1.00	0.9091	
115 1,3-Dichlorobenzene	146	12.568	12.568	0.000	98	14147	1.00	0.9377	
116 4-Isopropyltoluene	119	12.592	12.586	0.006	98	26117	1.00	0.9015	
* 117 1,4-Dichlorobenzene-d4	152	12.629	12.623	0.006	94	409126	50.0	50.0	
118 1,4-Dichlorobenzene	146	12.647	12.641	0.006	95	14490	1.00	0.9505	
119 1,2,3-Trimethylbenzene	105	12.665	12.659	0.006	98	25855	1.00	0.9429	
120 Benzyl chloride	91	12.732	12.726	0.006	98	20224	NC	NC	
121 1,3-Diethylbenzene	119	12.799	12.793	0.006	94	15571	NC	NC	
122 p-Diethylbenzene	119	12.872	12.866	0.006	94	15893	NC	NC	
124 n-Butylbenzene	92	12.891	12.885	0.006	97	12605	1.00	0.8664	
125 1,2-Dichlorobenzene	146	12.915	12.909	0.006	99	13877	1.00	0.9680	
126 o-diethylbenzene	119	12.946	12.940	0.006	96	12609	NC	NC	
127 1,2-Dibromo-3-Chloropropane	75	13.476	13.464	0.012	82	2530	1.00	0.9632	
128 1,3,5-Trichlorobenzene	180	13.604	13.598	0.006	97	10303	1.00	0.9621	
129 1,2,4-Trichlorobenzene	180	14.037	14.025	0.012	94	8914	1.00	0.9090	
131 Hexachlorobutadiene	225	14.122	14.116	0.006	93	3930	1.00	0.9296	
132 Naphthalene	128	14.220	14.208	0.012	96	34224	1.00	0.9822	
133 1,2,3-Trichlorobenzene	180	14.366	14.354	0.012	94	9926	1.00	1.04	
134 2-Methylnaphthalene	142	14.970	14.957	0.013	93	17789	NC	NC	
S 154 Total Diethylbenzene	1		0.000					ND	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

MSV_4ppbEE_00230	Amount Added: 12.50	Units: mL	
MSV_Cent_ISSS_00001	Amount Added: 5.00	Units: uL	Run Reagent

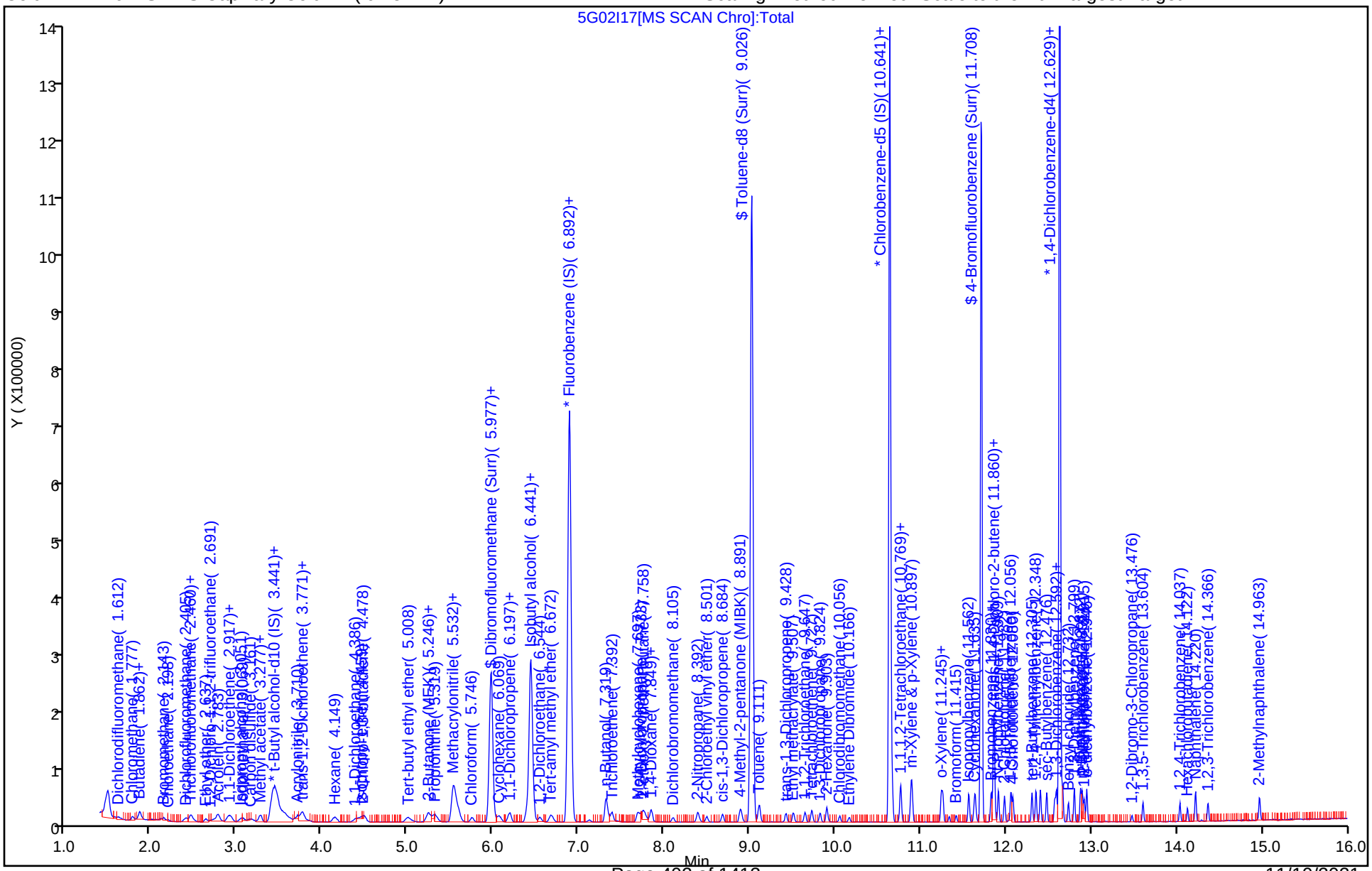
Report Date: 03-Aug-2021 13:08:58 Chrom Revision: 2.3 27-Jul-2021 18:12:28

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I17.D

Injection Date:	02-Aug-2021 18:49:30	Instrument ID:	26285	Operator ID:	jml01693
Lims ID:	IC v1			Worklist Smp#:	17
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	17
Method:	MSVoa_26285a	Limit Group:	MSV - 8260C DOD5		

Column: Rxi-624Sil MS Capillary Column (0.25 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

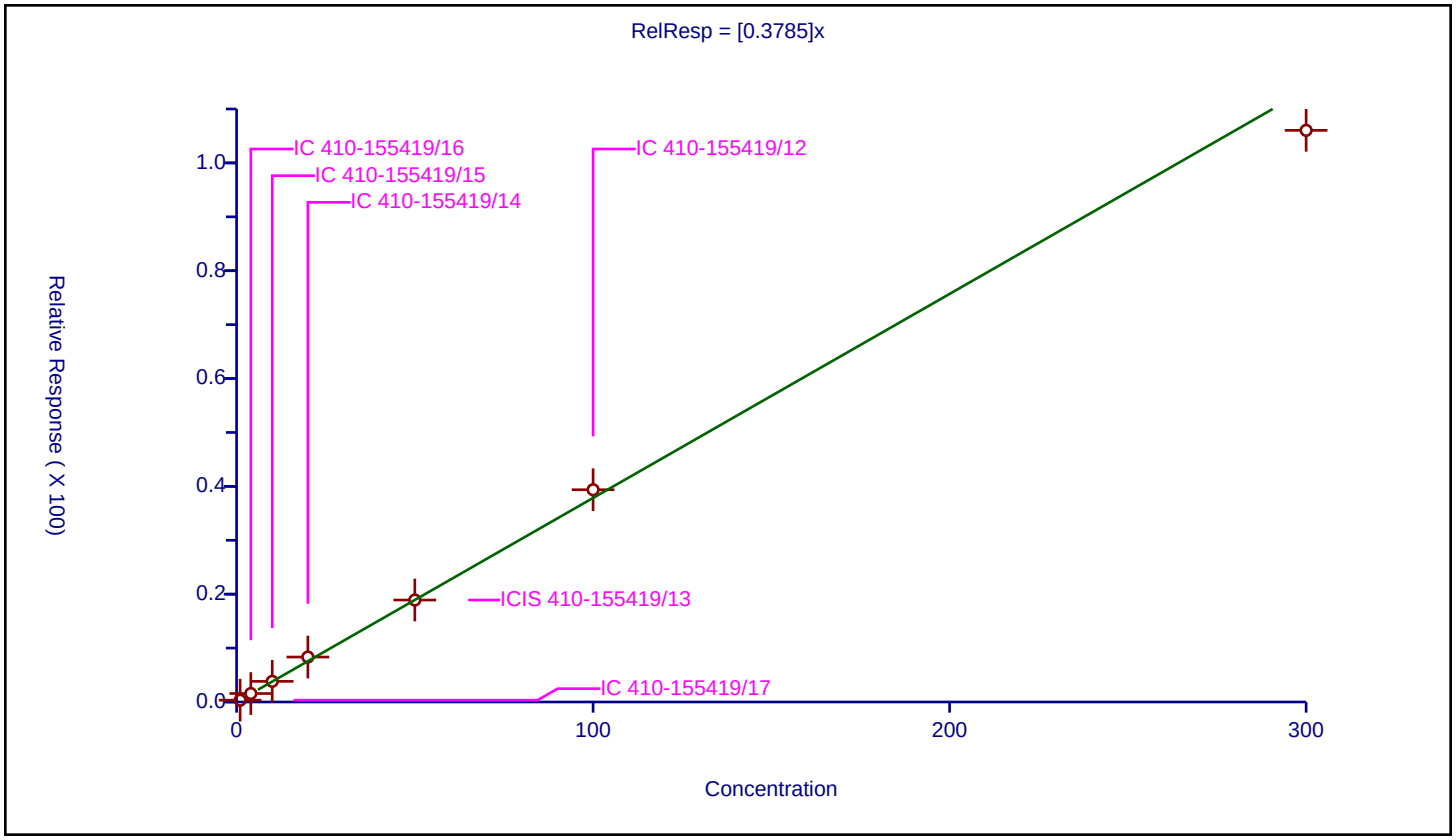
Curve Coefficients

Intercept:	0
Slope:	0.3785

Error Coefficients

Standard Error:	904000
Relative Standard Error:	7.4
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.994

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.331727	50.0	973993.0	0.331727	Y
2	IC 410-155419/16	4.0	1.571629	50.0	994064.0	0.392907	Y
3	IC 410-155419/15	10.0	3.824612	50.0	973968.0	0.382461	Y
4	IC 410-155419/14	20.0	8.339686	50.0	969353.0	0.416984	Y
5	ICIS 410-155419/13	50.0	18.911983	50.0	959902.0	0.37824	Y
6	IC 410-155419/12	100.0	39.373904	50.0	956579.0	0.393739	Y
7	IC 410-155419/11	300.0	106.043735	50.0	962931.0	0.353479	Y



Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

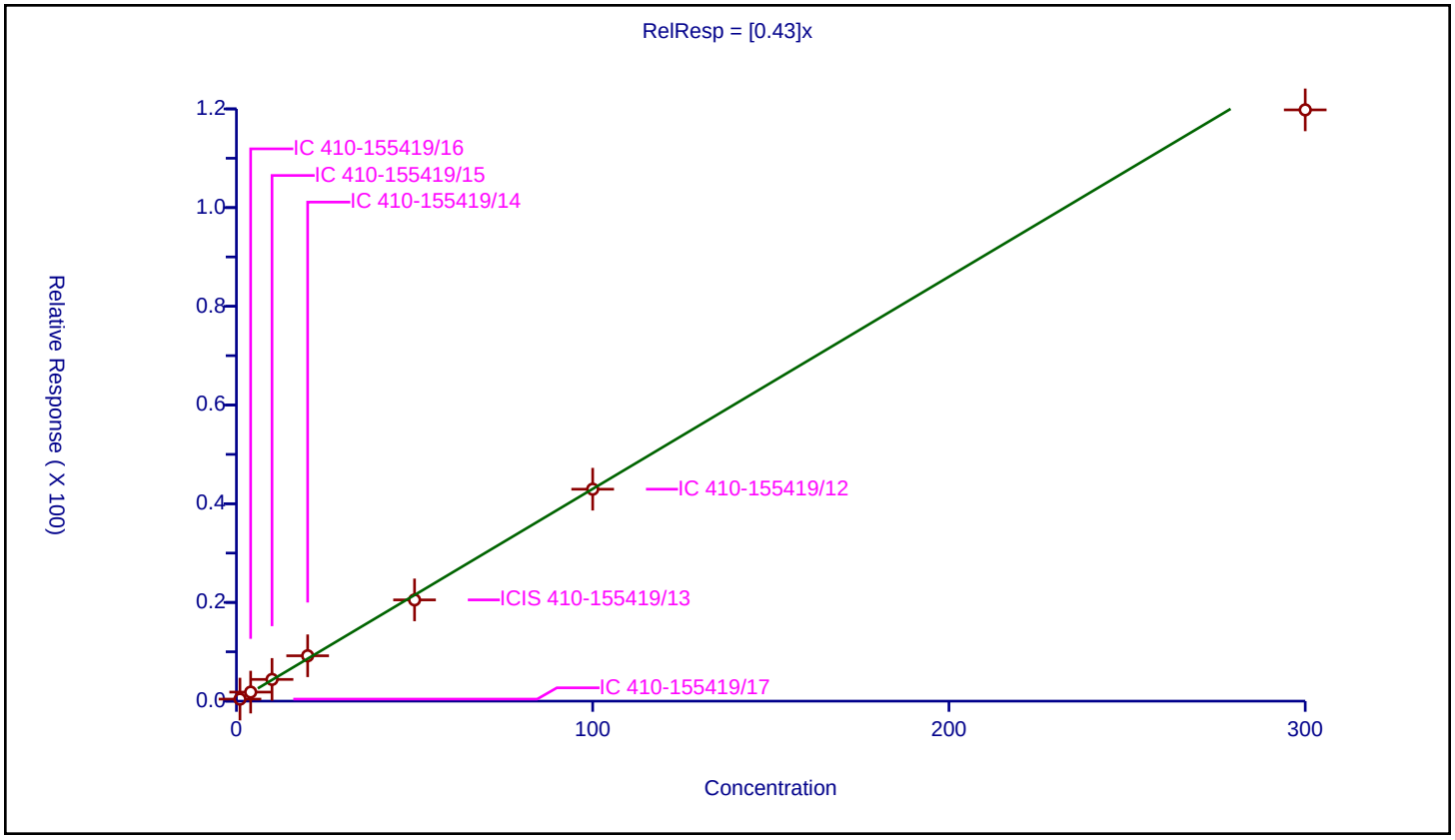
Curve Coefficients

Intercept:	0
Slope:	0.43

Error Coefficients

Standard Error:	1020000
Relative Standard Error:	5.5
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.996

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.41335	50.0	973993.0	0.41335	Y
2	IC 410-155419/16	4.0	1.832679	50.0	994064.0	0.45817	Y
3	IC 410-155419/15	10.0	4.399785	50.0	973968.0	0.439979	Y
4	IC 410-155419/14	20.0	9.191904	50.0	969353.0	0.459595	Y
5	ICIS 410-155419/13	50.0	20.512927	50.0	959902.0	0.410259	Y
6	IC 410-155419/12	100.0	42.942925	50.0	956579.0	0.429429	Y
7	IC 410-155419/11	300.0	119.798823	50.0	962931.0	0.399329	Y



Calibration / Vinyl chloride

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

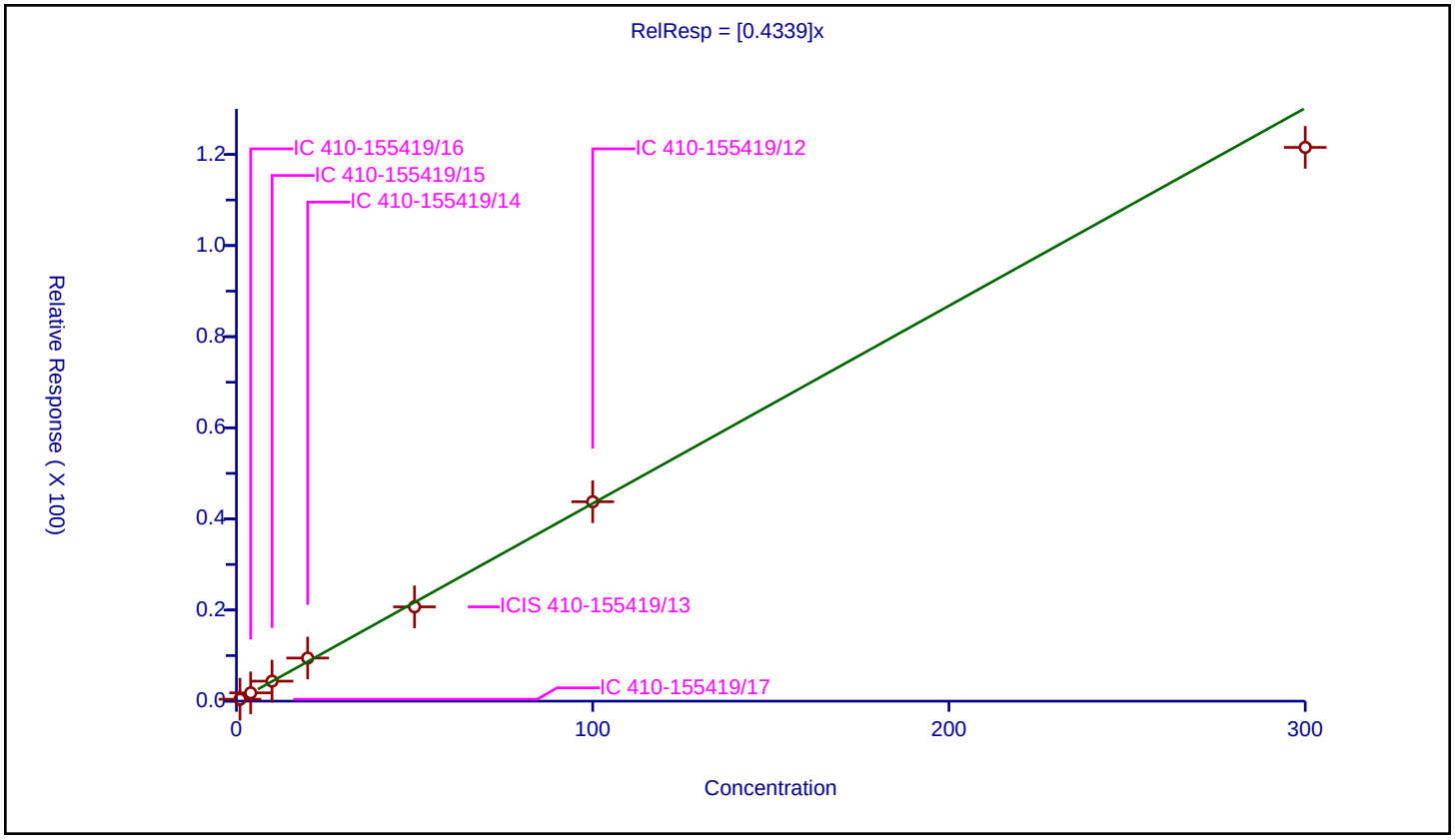
Curve Coefficients

Intercept:	0
Slope:	0.4339

Error Coefficients

Standard Error:	1030000
Relative Standard Error:	5.7
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.996

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.412734	50.0	973993.0	0.412734	Y
2	IC 410-155419/16	4.0	1.823122	50.0	994064.0	0.455781	Y
3	IC 410-155419/15	10.0	4.386284	50.0	973968.0	0.438628	Y
4	IC 410-155419/14	20.0	9.464715	50.0	969353.0	0.473236	Y
5	ICIS 410-155419/13	50.0	20.699613	50.0	959902.0	0.413992	Y
6	IC 410-155419/12	100.0	43.766694	50.0	956579.0	0.437667	Y
7	IC 410-155419/11	300.0	121.553881	50.0	962931.0	0.40518	Y



Calibration / Bromomethane

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

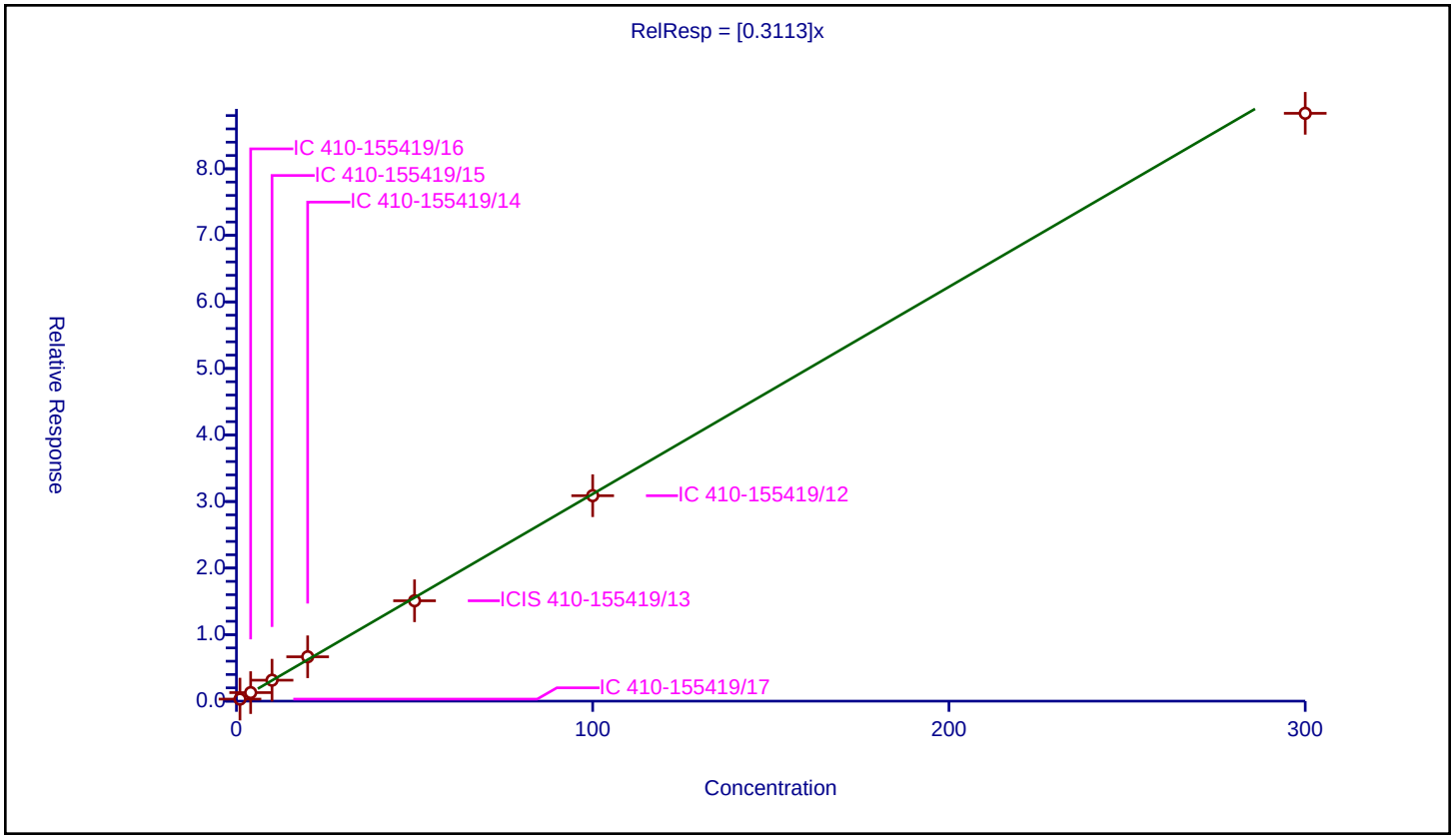
Curve Coefficients

Intercept:	0
Slope:	0.3113

Error Coefficients

Standard Error:	747000
Relative Standard Error:	4.2
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.305187	50.0	973993.0	0.305187	Y
2	IC 410-155419/16	4.0	1.283217	50.0	994064.0	0.320804	Y
3	IC 410-155419/15	10.0	3.147947	50.0	973968.0	0.314795	Y
4	IC 410-155419/14	20.0	6.665993	50.0	969353.0	0.3333	Y
5	ICIS 410-155419/13	50.0	15.081644	50.0	959902.0	0.301633	Y
6	IC 410-155419/12	100.0	30.873456	50.0	956579.0	0.308735	Y
7	IC 410-155419/11	300.0	88.33608	50.0	962931.0	0.294454	Y



Calibration / Chloroethane

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

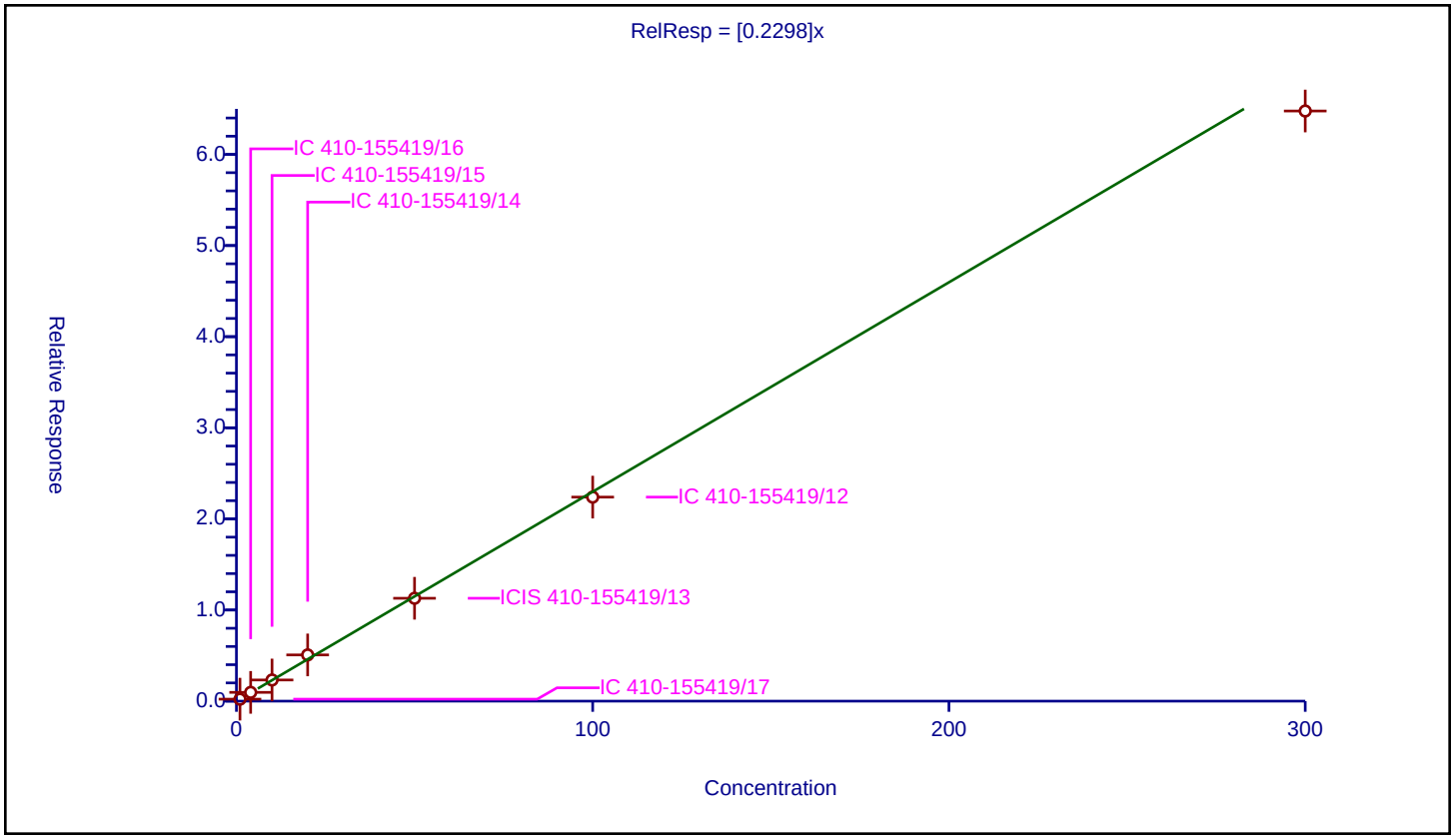
Curve Coefficients

Intercept:	0
Slope:	0.2298

Error Coefficients

Standard Error:	547000
Relative Standard Error:	5.9
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.996

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.216583	50.0	973993.0	0.216583	Y
2	IC 410-155419/16	4.0	0.962513	50.0	994064.0	0.240628	Y
3	IC 410-155419/15	10.0	2.322869	50.0	973968.0	0.232287	Y
4	IC 410-155419/14	20.0	5.074364	50.0	969353.0	0.253718	Y
5	ICIS 410-155419/13	50.0	11.289486	50.0	959902.0	0.22579	Y
6	IC 410-155419/12	100.0	22.392819	50.0	956579.0	0.223928	Y
7	IC 410-155419/11	300.0	64.767725	50.0	962931.0	0.215892	Y



Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

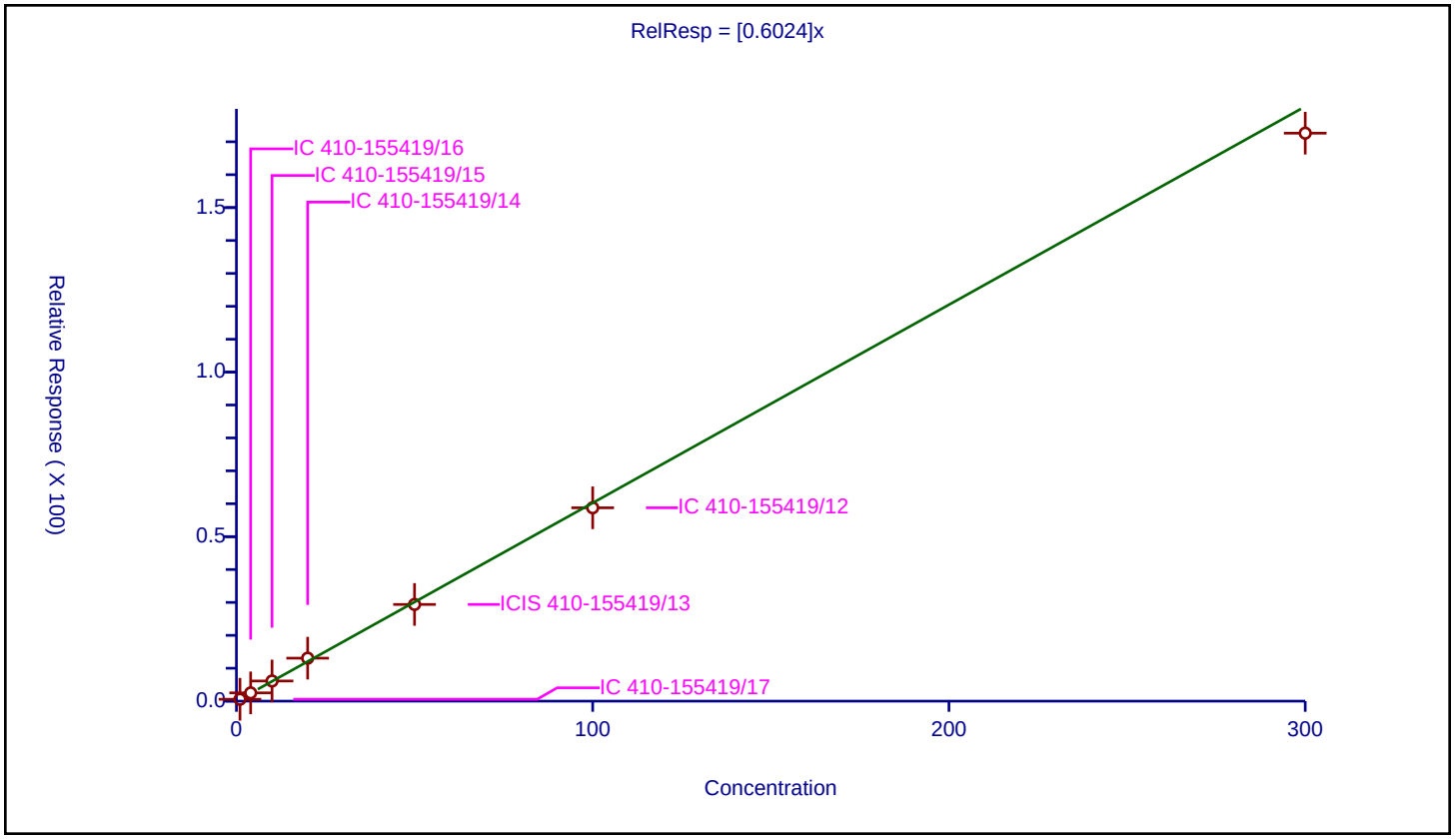
Curve Coefficients

Intercept:	0
Slope:	0.6024

Error Coefficients

Standard Error:	1460000
Relative Standard Error:	5.0
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.997

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.571667	50.0	973993.0	0.571667	Y
2	IC 410-155419/16	4.0	2.517343	50.0	994064.0	0.629336	Y
3	IC 410-155419/15	10.0	6.121043	50.0	973968.0	0.612104	Y
4	IC 410-155419/14	20.0	13.061702	50.0	969353.0	0.653085	Y
5	ICIS 410-155419/13	50.0	29.386854	50.0	959902.0	0.587737	Y
6	IC 410-155419/12	100.0	58.765768	50.0	956579.0	0.587658	Y
7	IC 410-155419/11	300.0	172.618703	50.0	962931.0	0.575396	Y



Calibration / Trichlorofluoromethane

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

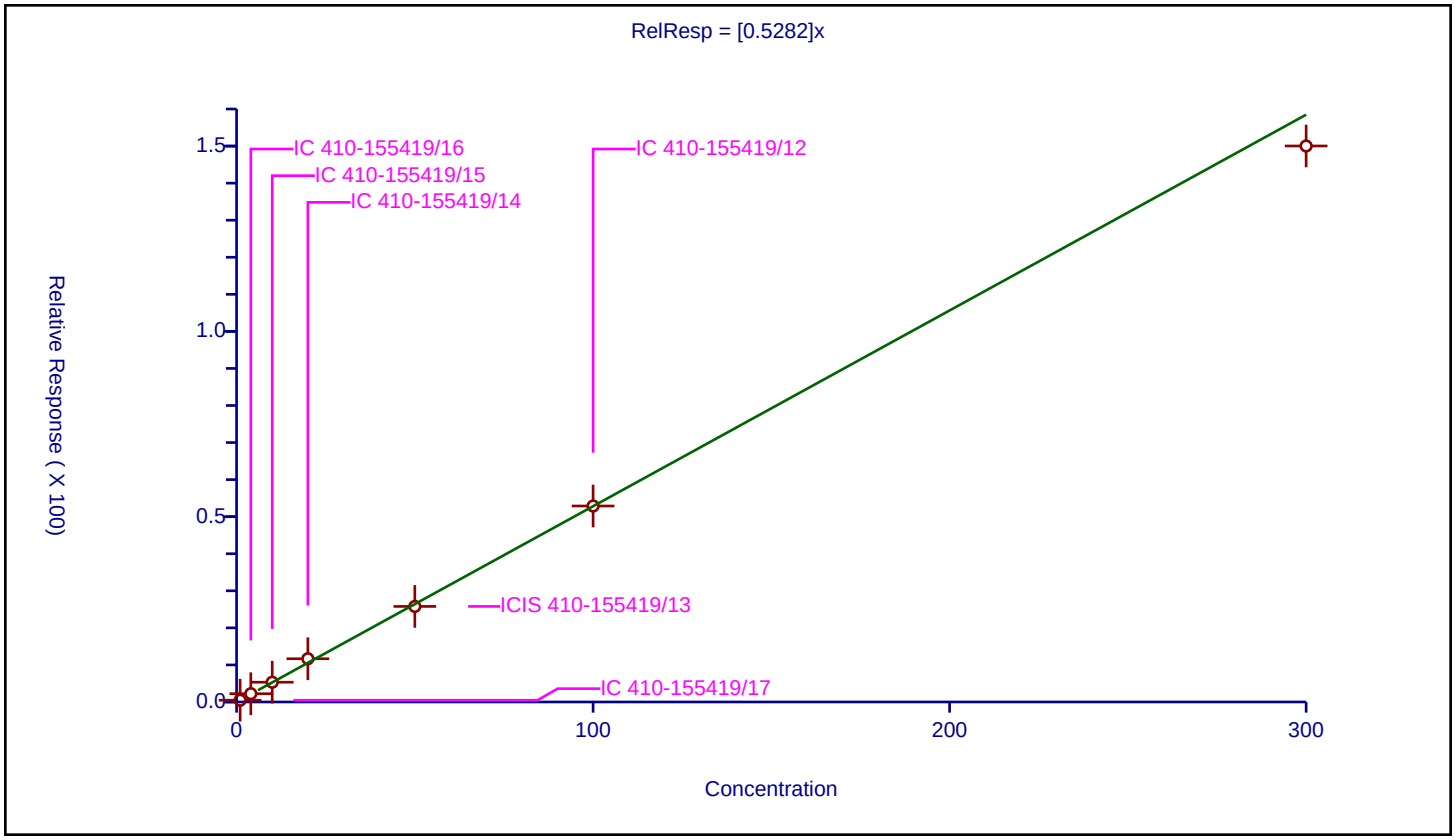
Curve Coefficients

Intercept:	0
Slope:	0.5282

Error Coefficients

Standard Error:	1270000
Relative Standard Error:	6.7
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.478135	50.0	973993.0	0.478135	Y
2	IC 410-155419/16	4.0	2.230842	50.0	994064.0	0.557711	Y
3	IC 410-155419/15	10.0	5.335802	50.0	973968.0	0.53358	Y
4	IC 410-155419/14	20.0	11.670104	50.0	969353.0	0.583505	Y
5	ICIS 410-155419/13	50.0	25.78284	50.0	959902.0	0.515657	Y
6	IC 410-155419/12	100.0	52.883818	50.0	956579.0	0.528838	Y
7	IC 410-155419/11	300.0	150.023522	50.0	962931.0	0.500078	Y



Calibration / Ethyl ether

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

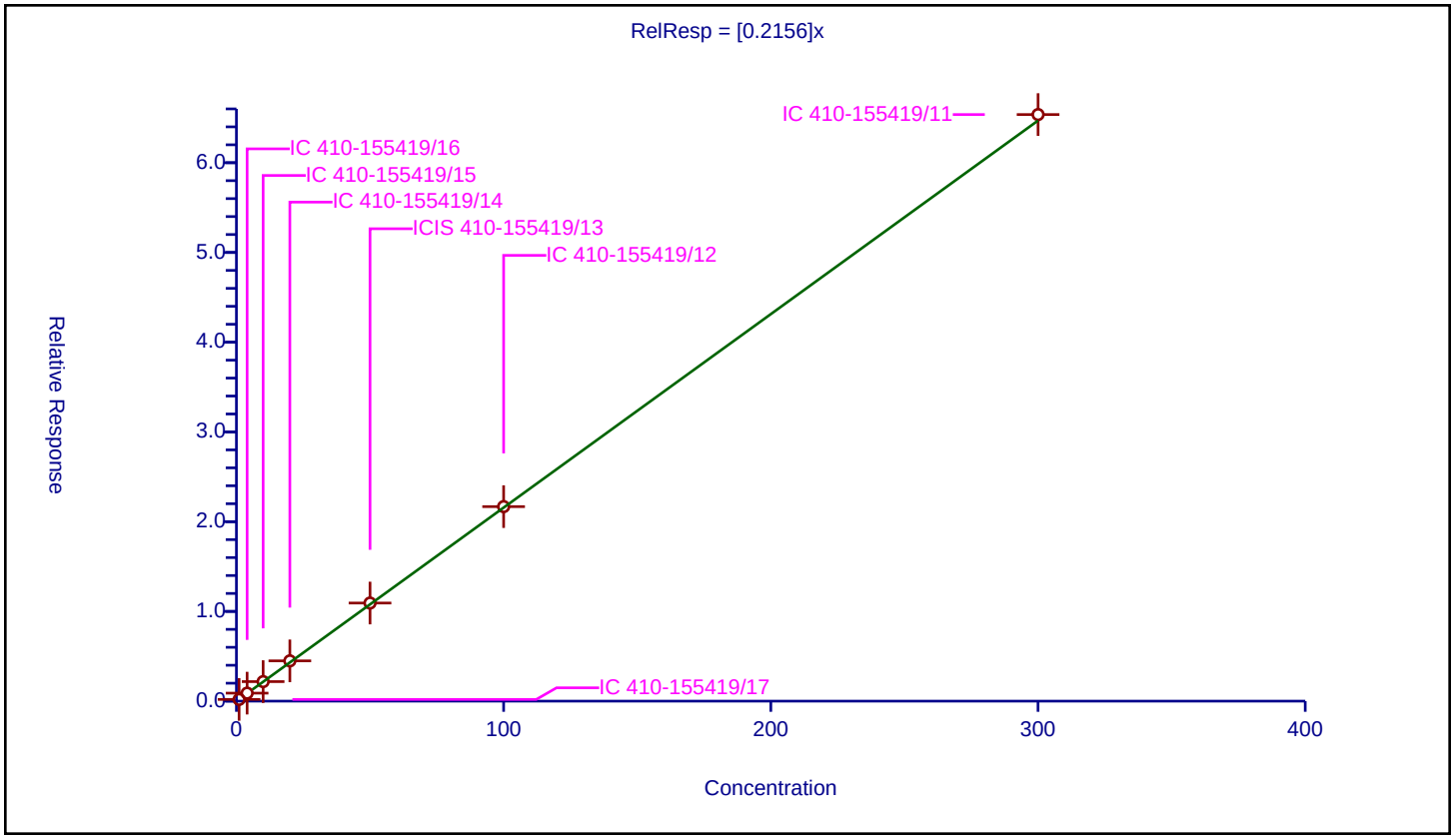
Curve Coefficients

Intercept:	0
Slope:	0.2156

Error Coefficients

Standard Error:	549000
Relative Standard Error:	5.1
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.997

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.000069	0.19148	50.0	973993.0	0.191467	Y
2	IC 410-155419/16	4.000277	0.891492	50.0	994064.0	0.222858	Y
3	IC 410-155419/15	10.000692	2.175636	50.0	973968.0	0.217549	Y
4	IC 410-155419/14	20.001384	4.48789	50.0	969353.0	0.224379	Y
5	ICIS 410-155419/13	50.00346	10.934241	50.0	959902.0	0.21867	Y
6	IC 410-155419/12	100.00692	21.676359	50.0	956579.0	0.216749	Y
7	IC 410-155419/11	300.02076	65.368391	50.0	962931.0	0.21788	Y



Calibration / Acrolein

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

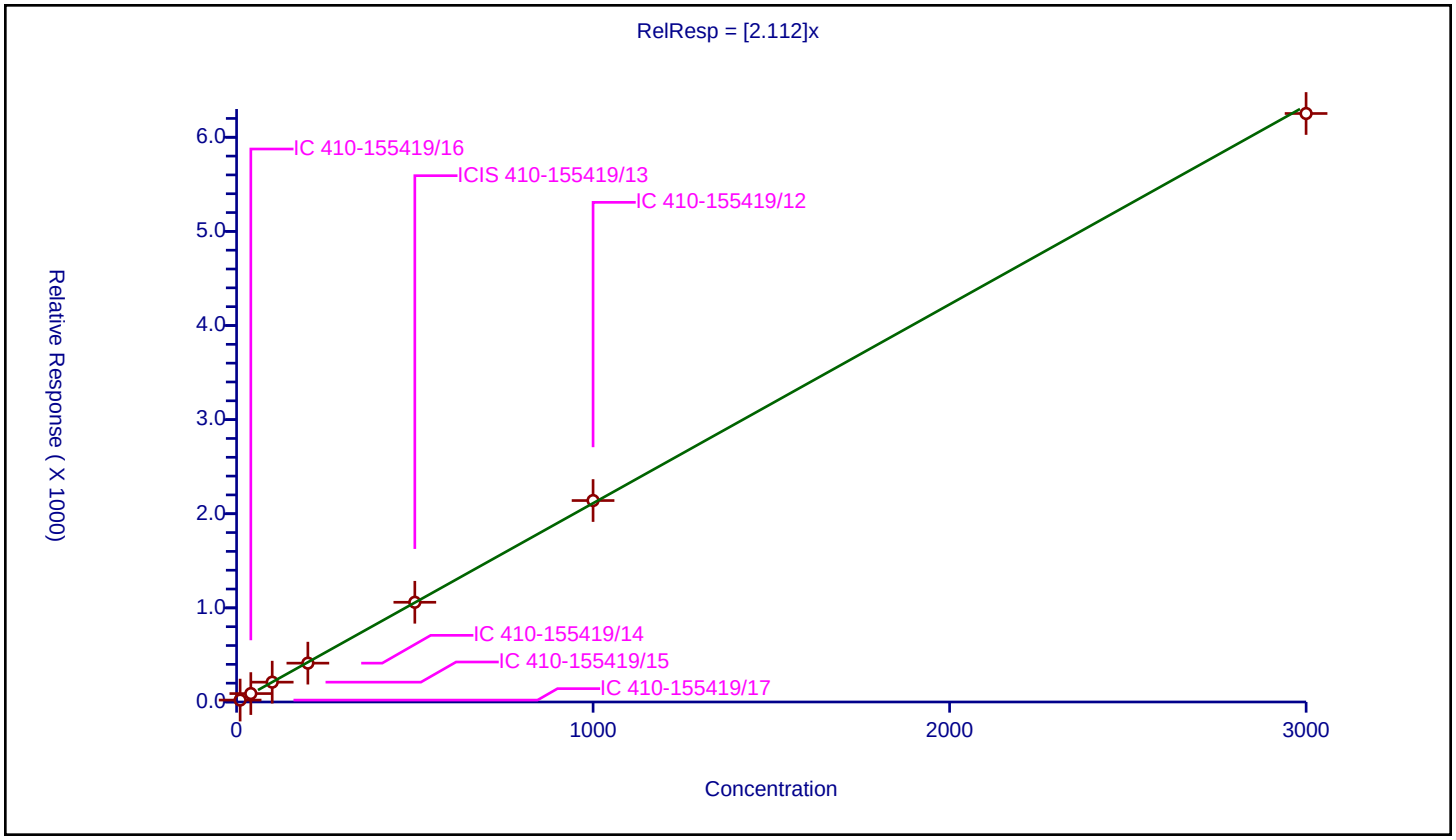
Curve Coefficients

Intercept:	0
Slope:	2.112

Error Coefficients

Standard Error:	2720000
Relative Standard Error:	3.1
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	9.999702	20.330899	250.0	268692.0	2.033151	Y
2	IC 410-155419/16	39.998806	89.499508	250.0	256088.0	2.237554	Y
3	IC 410-155419/15	99.997016	210.68514	250.0	270076.0	2.106914	Y
4	IC 410-155419/14	199.994031	412.70085	250.0	276824.0	2.063566	Y
5	ICIS 410-155419/13	499.985078	1059.350107	250.0	255088.0	2.118763	Y
6	IC 410-155419/12	999.970155	2140.362056	250.0	247973.0	2.140426	Y
7	IC 410-155419/11	2999.910466	6252.402081	250.0	247910.0	2.084196	Y



Calibration / 1,1-Dichloroethene

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

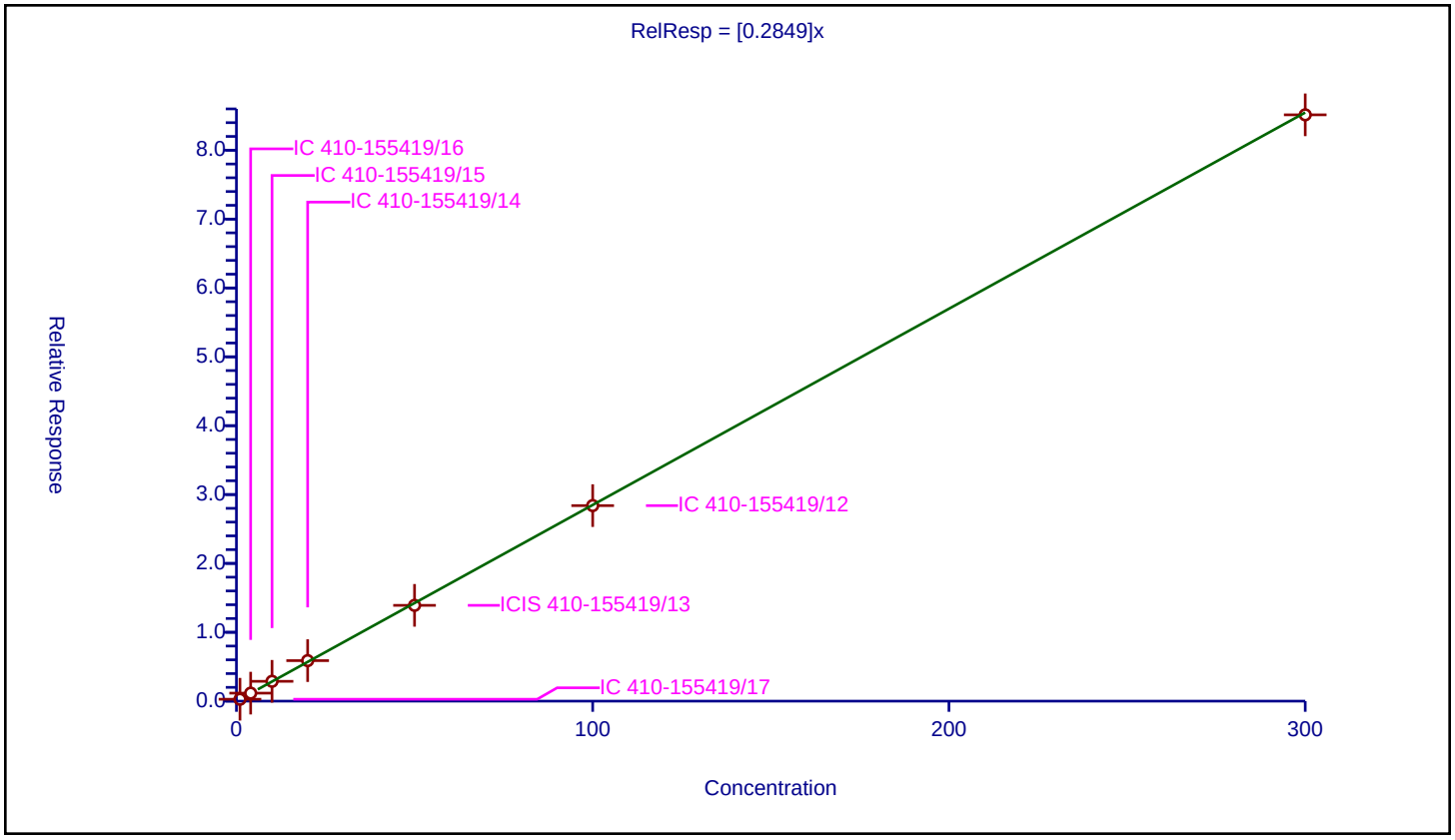
Curve Coefficients

Intercept:	0
Slope:	0.2849

Error Coefficients

Standard Error:	715000
Relative Standard Error:	2.3
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.275669	50.0	973993.0	0.275669	Y
2	IC 410-155419/16	4.0	1.161947	50.0	994064.0	0.290487	Y
3	IC 410-155419/15	10.0	2.880382	50.0	973968.0	0.288038	Y
4	IC 410-155419/14	20.0	5.88346	50.0	969353.0	0.294173	Y
5	ICIS 410-155419/13	50.0	13.909128	50.0	959902.0	0.278183	Y
6	IC 410-155419/12	100.0	28.393003	50.0	956579.0	0.28393	Y
7	IC 410-155419/11	300.0	85.139278	50.0	962931.0	0.283798	Y



Calibration / Acetone

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

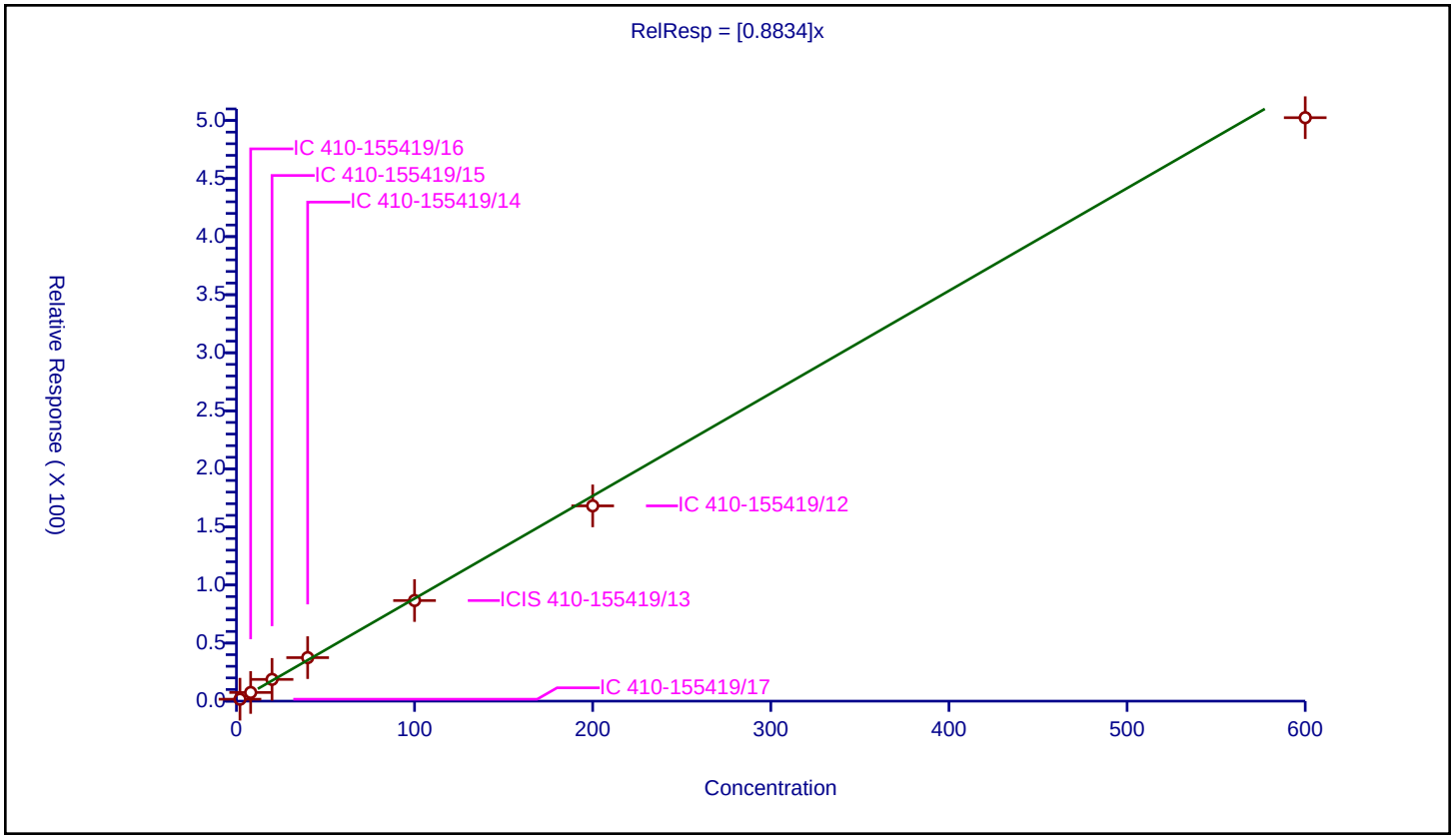
Curve Coefficients

Intercept:	0
Slope:	0.8834

Error Coefficients

Standard Error:	218000
Relative Standard Error:	5.6
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.996

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	2.0	1.668267	250.0	268692.0	0.834134	Y
2	IC 410-155419/16	8.0	7.455445	250.0	256088.0	0.931931	Y
3	IC 410-155419/15	20.0	18.729913	250.0	270076.0	0.936496	Y
4	IC 410-155419/14	40.0	37.46514	250.0	276824.0	0.936629	Y
5	ICIS 410-155419/13	100.0	86.638729	250.0	255088.0	0.866387	Y
6	IC 410-155419/12	200.0	168.154396	250.0	247973.0	0.840772	Y
7	IC 410-155419/11	600.0	502.429309	250.0	247910.0	0.837382	Y



Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

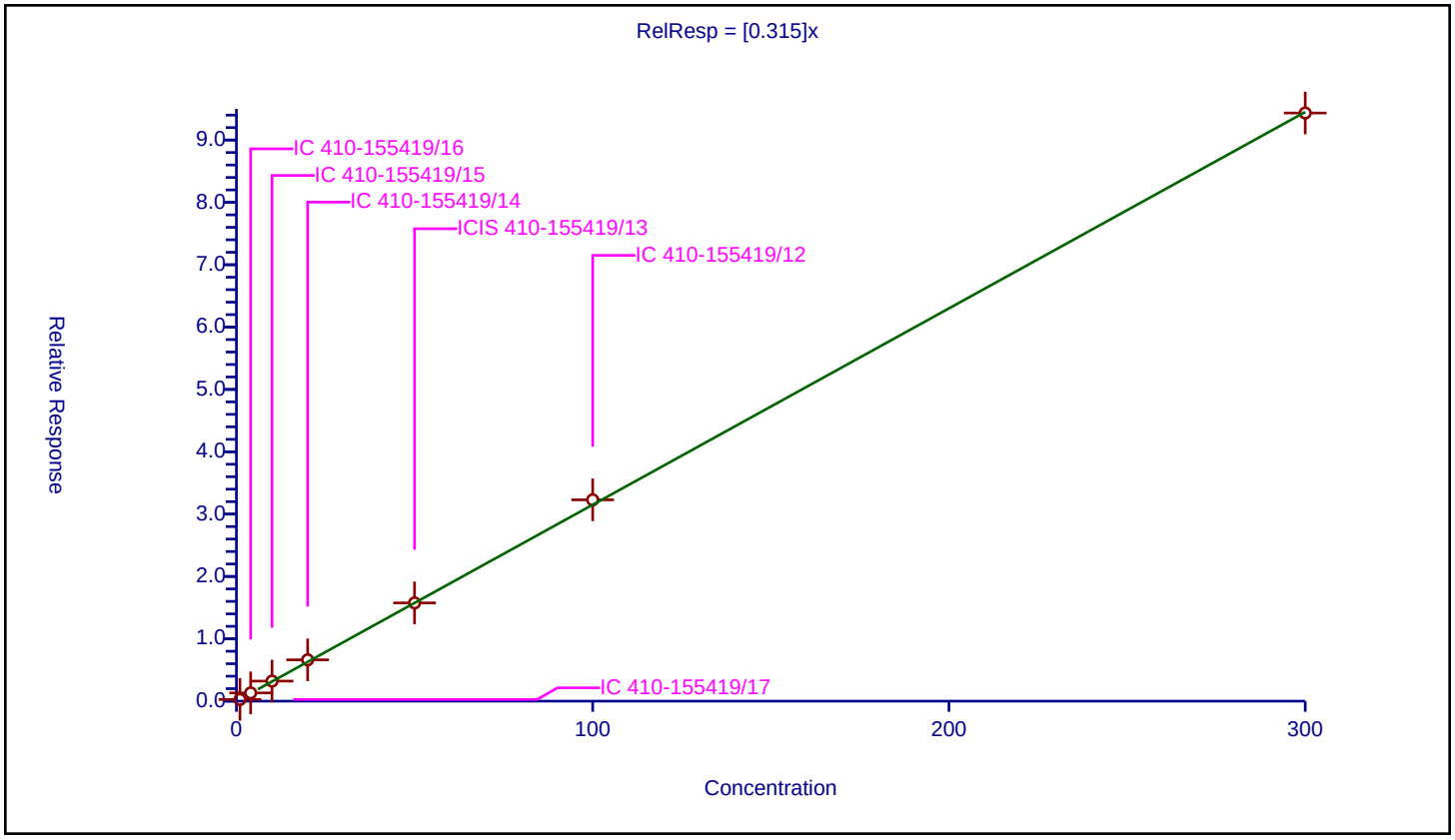
Curve Coefficients

Intercept:	0
Slope:	0.315

Error Coefficients

Standard Error:	795000
Relative Standard Error:	6.7
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.269304	50.0	973993.0	0.269304	Y
2	IC 410-155419/16	4.0	1.320488	50.0	994064.0	0.330122	Y
3	IC 410-155419/15	10.0	3.215403	50.0	973968.0	0.32154	Y
4	IC 410-155419/14	20.0	6.628236	50.0	969353.0	0.331412	Y
5	ICIS 410-155419/13	50.0	15.758015	50.0	959902.0	0.31516	Y
6	IC 410-155419/12	100.0	32.293517	50.0	956579.0	0.322935	Y
7	IC 410-155419/11	300.0	94.338068	50.0	962931.0	0.31446	Y



Calibration / Isopropyl alcohol

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

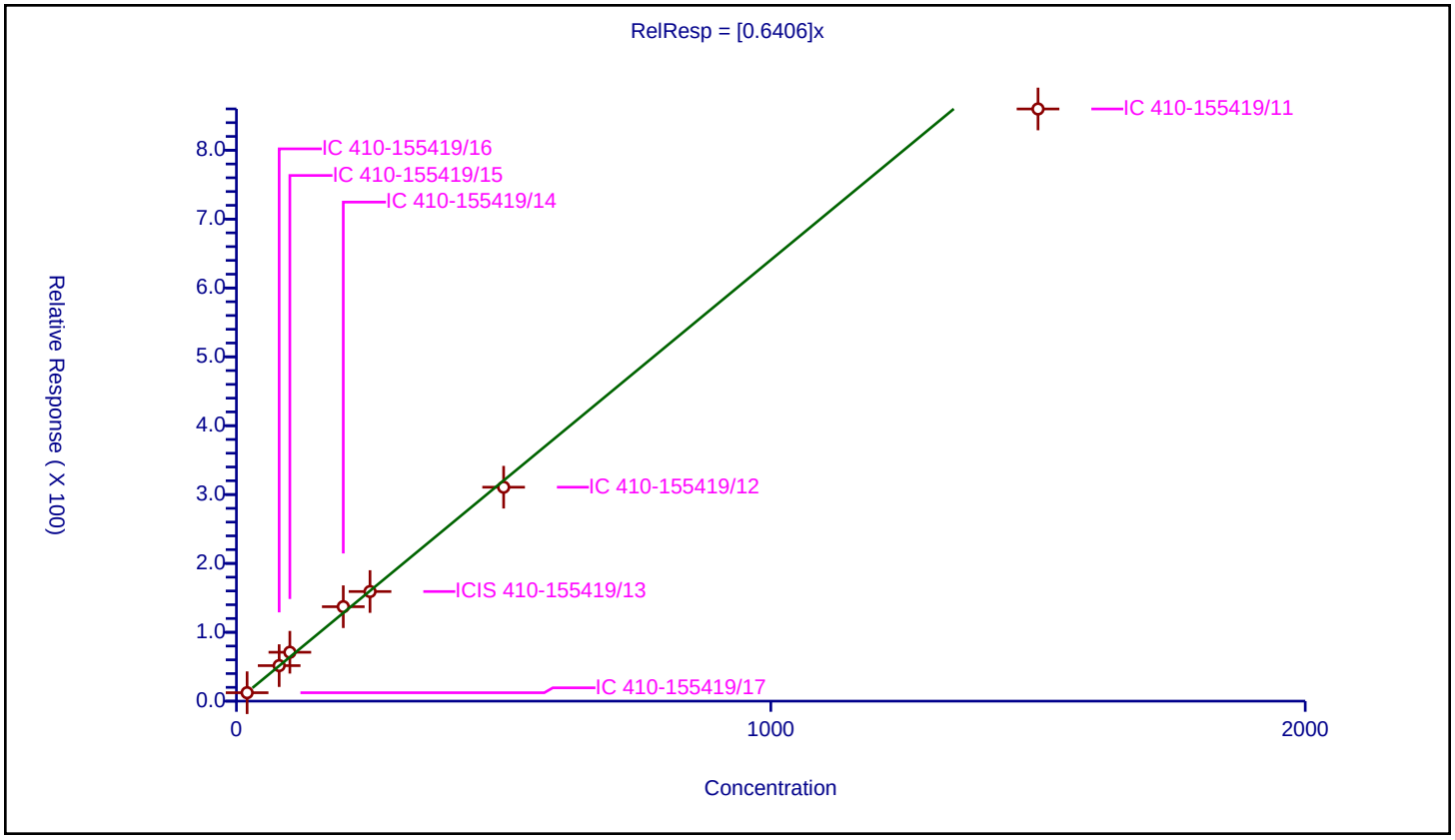
Curve Coefficients

Intercept:	0
Slope:	0.6406

Error Coefficients

Standard Error:	383000
Relative Standard Error:	7.1
Correlation Coefficient:	0.998
Coefficient of Determination (Adjusted):	0.993

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	20.0	12.256599	250.0	268692.0	0.61283	Y
2	IC 410-155419/16	80.0	51.585783	250.0	256088.0	0.644822	Y
3	IC 410-155419/15	100.0	71.004088	250.0	270076.0	0.710041	Y
4	IC 410-155419/14	200.0	137.116905	250.0	276824.0	0.685585	Y
5	ICIS 410-155419/13	250.0	159.15684	250.0	255088.0	0.636627	Y
6	IC 410-155419/12	500.0	310.668903	250.0	247973.0	0.621338	Y
7	IC 410-155419/11	1500.0	859.884636	250.0	247910.0	0.573256	Y



Calibration / Iodomethane

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

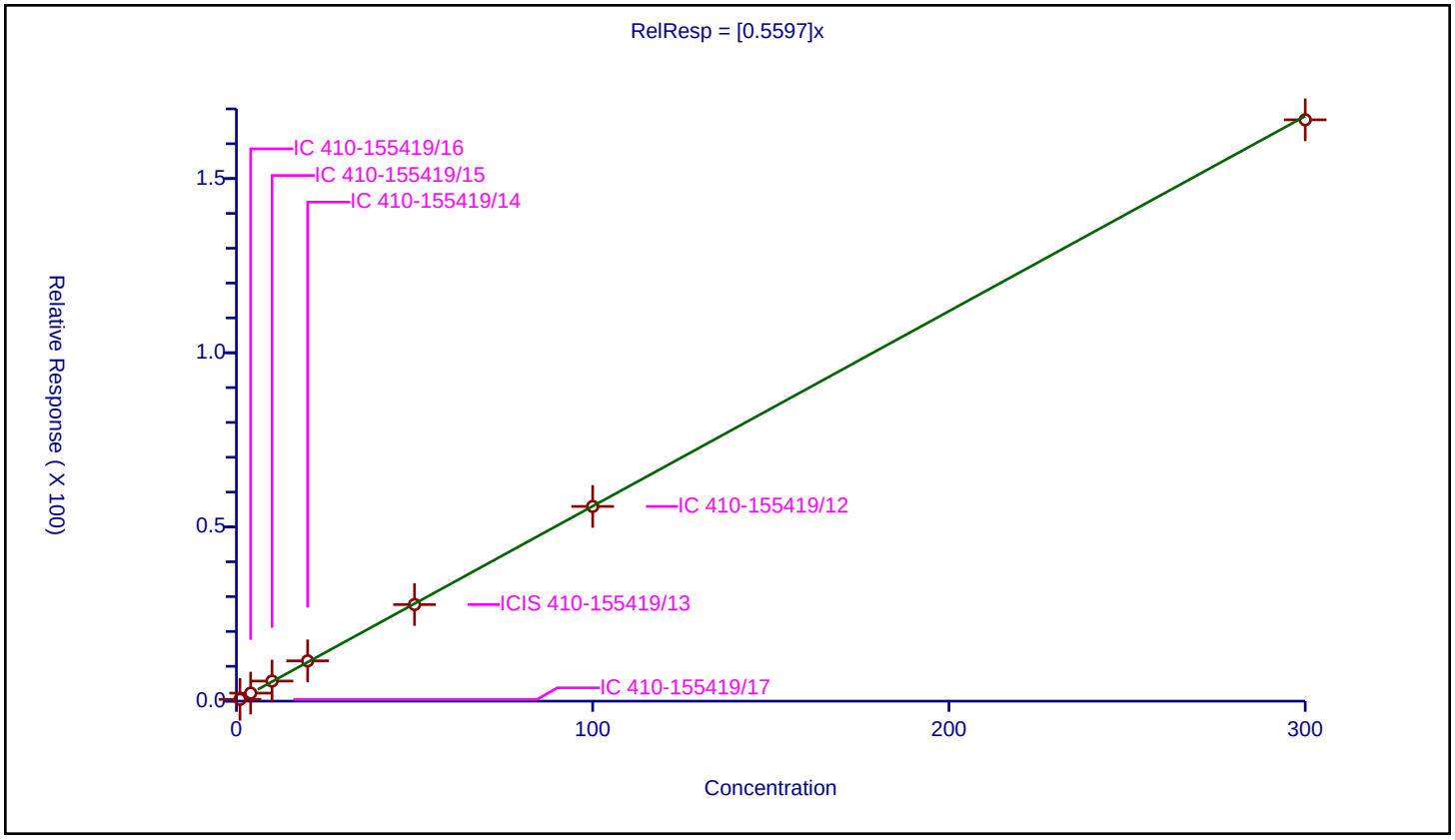
Curve Coefficients

Intercept:	0
Slope:	0.5597

Error Coefficients

Standard Error:	1400000
Relative Standard Error:	3.9
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.515866	50.0	973993.0	0.515866	Y
2	IC 410-155419/16	4.0	2.308051	50.0	994064.0	0.577013	Y
3	IC 410-155419/15	10.0	5.767592	50.0	973968.0	0.576759	Y
4	IC 410-155419/14	20.0	11.567819	50.0	969353.0	0.578391	Y
5	ICIS 410-155419/13	50.0	27.726268	50.0	959902.0	0.554525	Y
6	IC 410-155419/12	100.0	55.893084	50.0	956579.0	0.558931	Y
7	IC 410-155419/11	300.0	166.867668	50.0	962931.0	0.556226	Y



Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

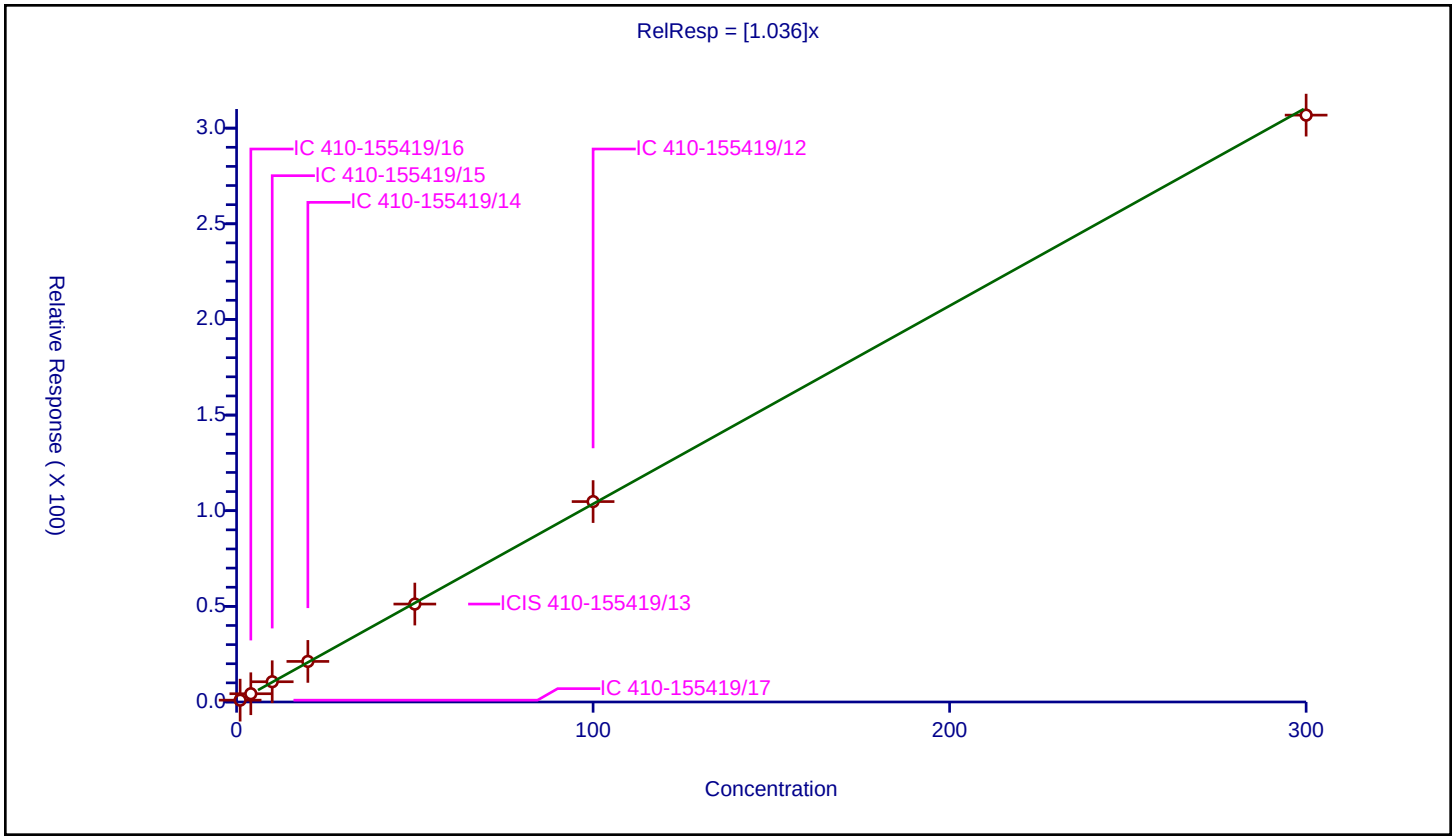
Curve Coefficients

Intercept:	0
Slope:	1.036

Error Coefficients

Standard Error:	2590000
Relative Standard Error:	3.8
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.958066	50.0	973993.0	0.958066	Y
2	IC 410-155419/16	4.0	4.309028	50.0	994064.0	1.077257	Y
3	IC 410-155419/15	10.0	10.589465	50.0	973968.0	1.058946	Y
4	IC 410-155419/14	20.0	21.211468	50.0	969353.0	1.060573	Y
5	ICIS 410-155419/13	50.0	51.194705	50.0	959902.0	1.023894	Y
6	IC 410-155419/12	100.0	104.767771	50.0	956579.0	1.047678	Y
7	IC 410-155419/11	300.0	306.811651	50.0	962931.0	1.022706	Y



Calibration / Methyl acetate

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

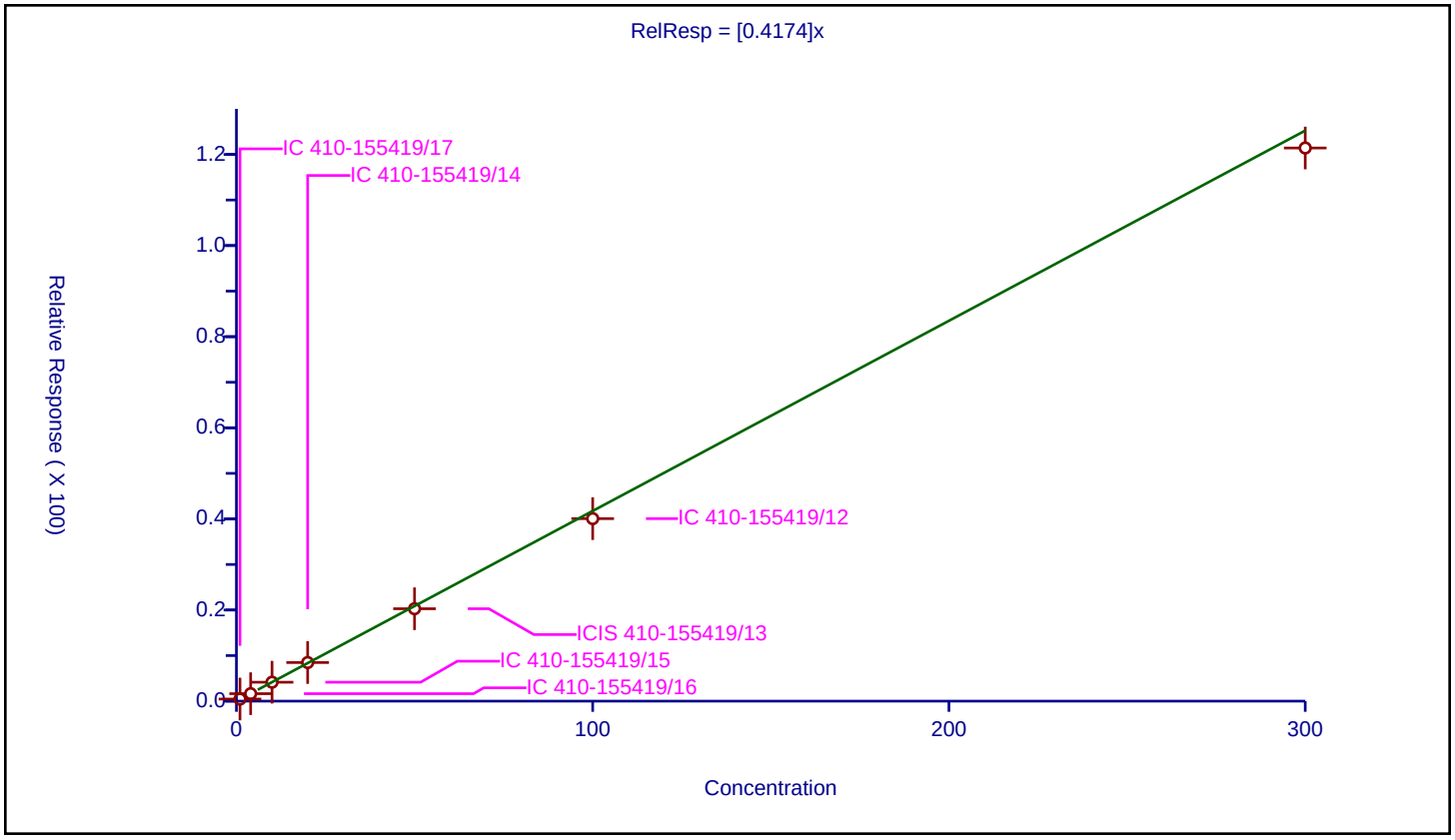
Curve Coefficients

Intercept:	0
Slope:	0.4174

Error Coefficients

Standard Error:	1020000
Relative Standard Error:	5.0
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.997

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.461759	50.0	973993.0	0.461759	Y
2	IC 410-155419/16	4.0	1.64089	50.0	994064.0	0.410223	Y
3	IC 410-155419/15	10.0	4.153781	50.0	973968.0	0.415378	Y
4	IC 410-155419/14	20.0	8.473693	50.0	969353.0	0.423685	Y
5	ICIS 410-155419/13	50.0	20.28306	50.0	959902.0	0.405661	Y
6	IC 410-155419/12	100.0	40.063079	50.0	956579.0	0.400631	Y
7	IC 410-155419/11	300.0	121.418824	50.0	962931.0	0.404729	Y



Calibration / 3-Chloro-1-propene

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

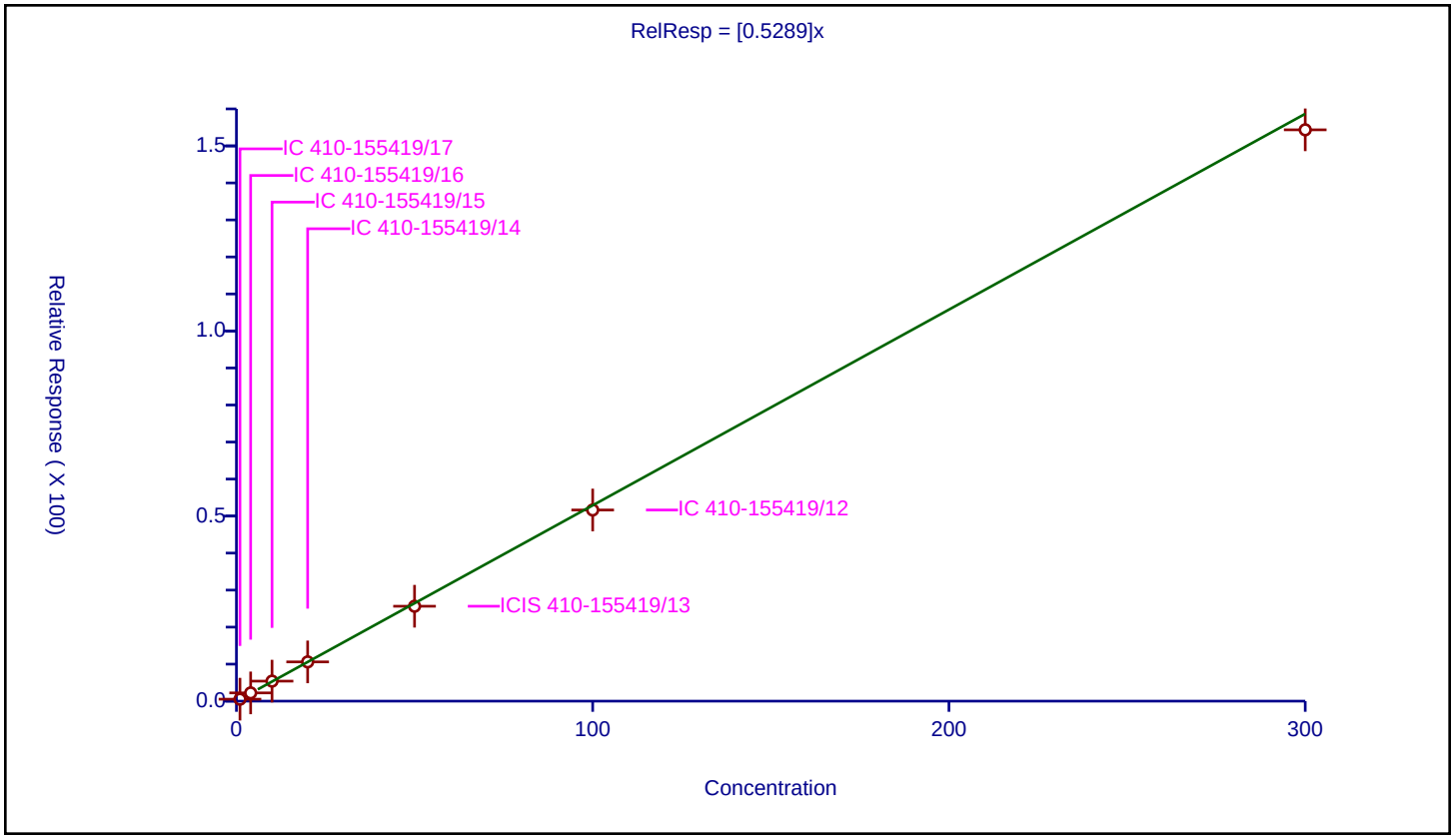
Curve Coefficients

Intercept:	0
Slope:	0.5289

Error Coefficients

Standard Error:	1300000
Relative Standard Error:	3.1
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.530497	50.0	973993.0	0.530497	Y
2	IC 410-155419/16	4.0	2.229032	50.0	994064.0	0.557258	Y
3	IC 410-155419/15	10.0	5.406543	50.0	973968.0	0.540654	Y
4	IC 410-155419/14	20.0	10.60135	50.0	969353.0	0.530067	Y
5	ICIS 410-155419/13	50.0	25.639336	50.0	959902.0	0.512787	Y
6	IC 410-155419/12	100.0	51.641056	50.0	956579.0	0.516411	Y
7	IC 410-155419/11	300.0	154.347456	50.0	962931.0	0.514492	Y



Calibration / Methylene Chloride

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

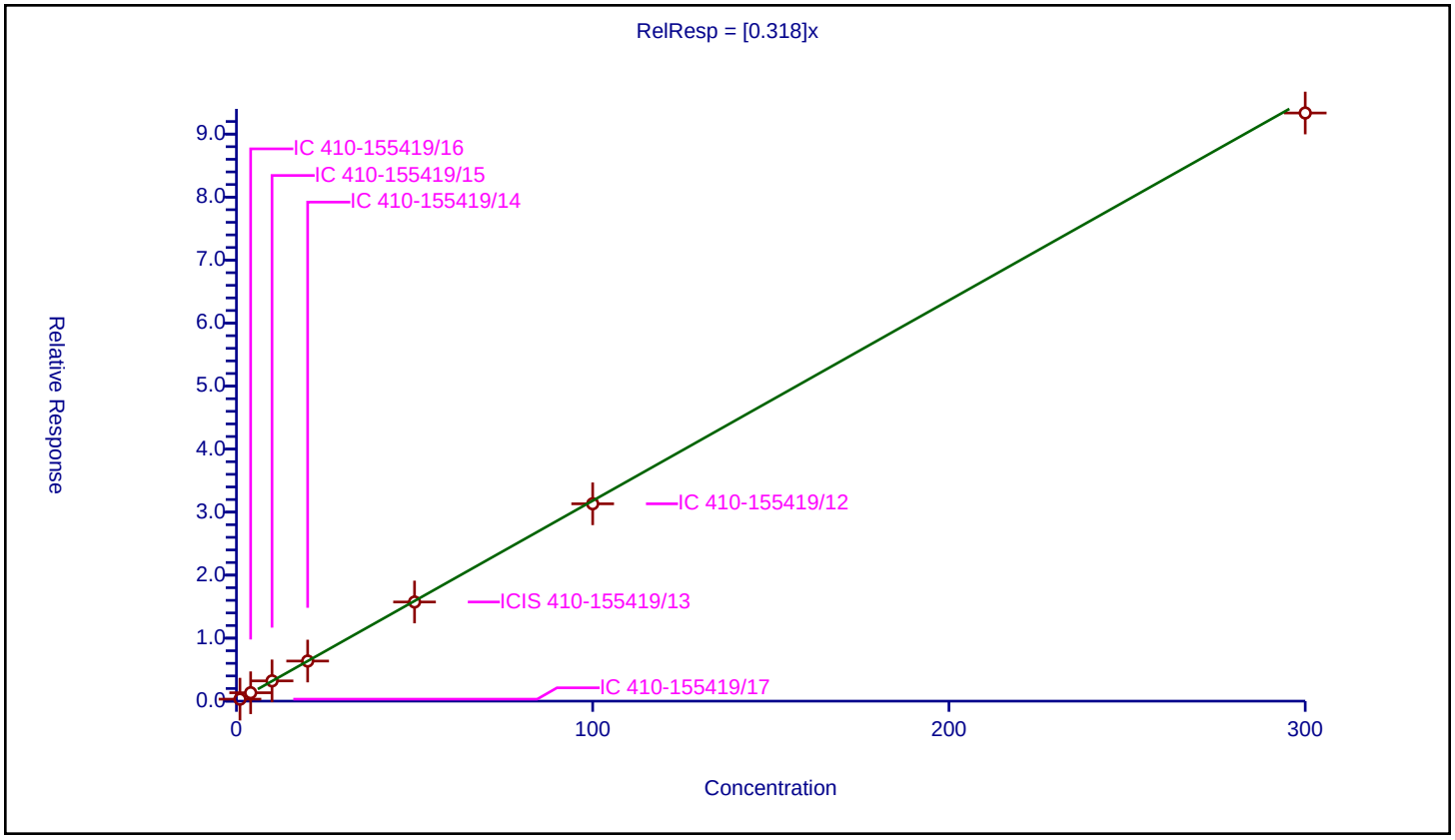
Curve Coefficients

Intercept:	0
Slope:	0.318

Error Coefficients

Standard Error:	785000
Relative Standard Error:	2.4
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.314376	50.0	973993.0	0.314376	Y
2	IC 410-155419/16	4.0	1.333264	50.0	994064.0	0.333316	Y
3	IC 410-155419/15	10.0	3.213863	50.0	973968.0	0.321386	Y
4	IC 410-155419/14	20.0	6.362388	50.0	969353.0	0.318119	Y
5	ICIS 410-155419/13	50.0	15.737127	50.0	959902.0	0.314743	Y
6	IC 410-155419/12	100.0	31.322504	50.0	956579.0	0.313225	Y
7	IC 410-155419/11	300.0	93.350666	50.0	962931.0	0.311169	Y



Calibration / 2-Methyl-2-propanol

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

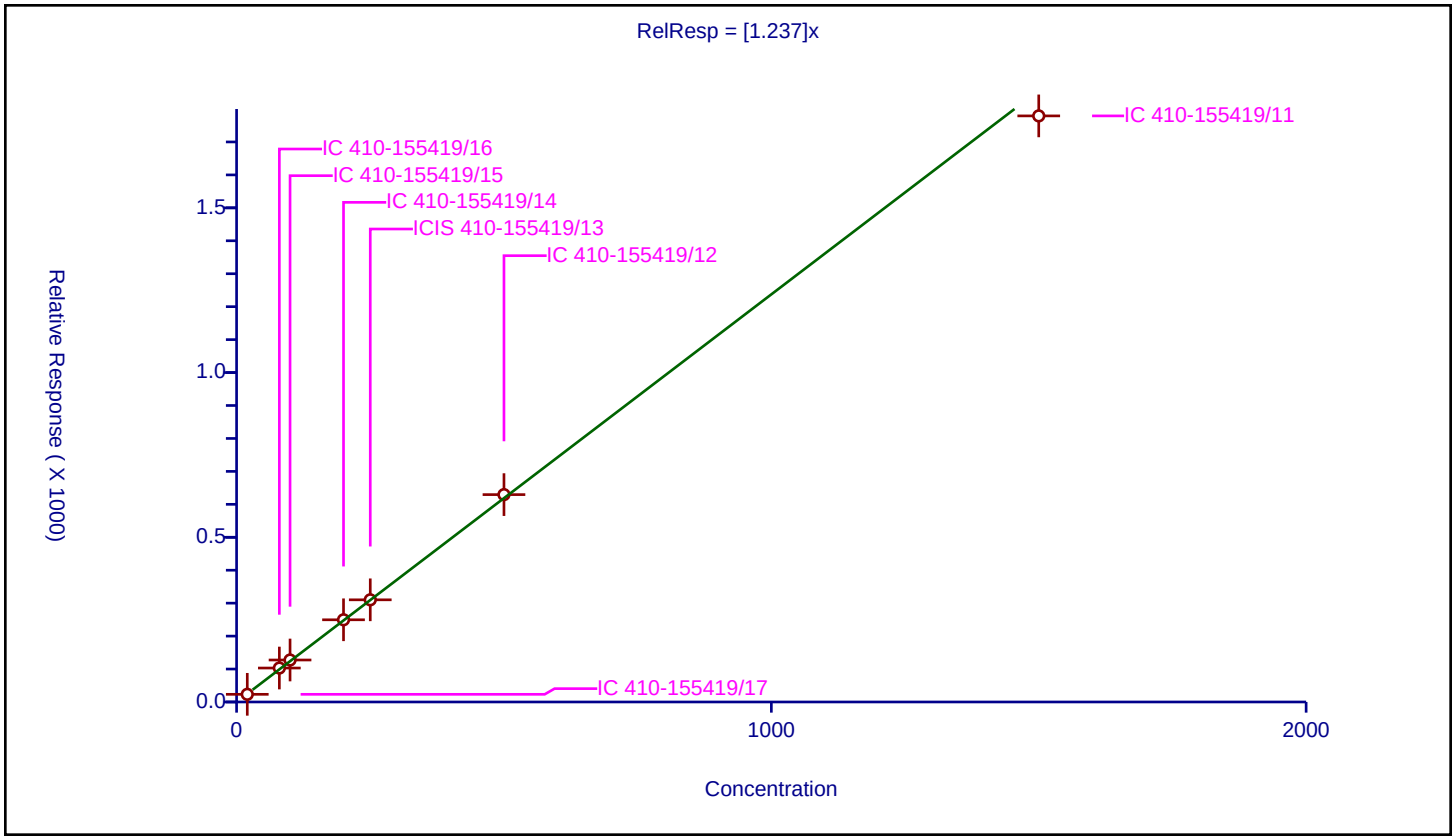
Curve Coefficients

Intercept:	0
Slope:	1.237

Error Coefficients

Standard Error:	785000
Relative Standard Error:	3.7
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	20.0	23.290608	250.0	268692.0	1.16453	Y
2	IC 410-155419/16	80.0	103.11885	250.0	256088.0	1.288986	Y
3	IC 410-155419/15	100.0	127.449311	250.0	270076.0	1.274493	Y
4	IC 410-155419/14	200.0	249.543934	250.0	276824.0	1.24772	Y
5	ICIS 410-155419/13	250.0	310.183152	250.0	255088.0	1.240733	Y
6	IC 410-155419/12	500.0	629.517125	250.0	247973.0	1.259034	Y
7	IC 410-155419/11	1500.0	1779.088177	250.0	247910.0	1.186059	Y



Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

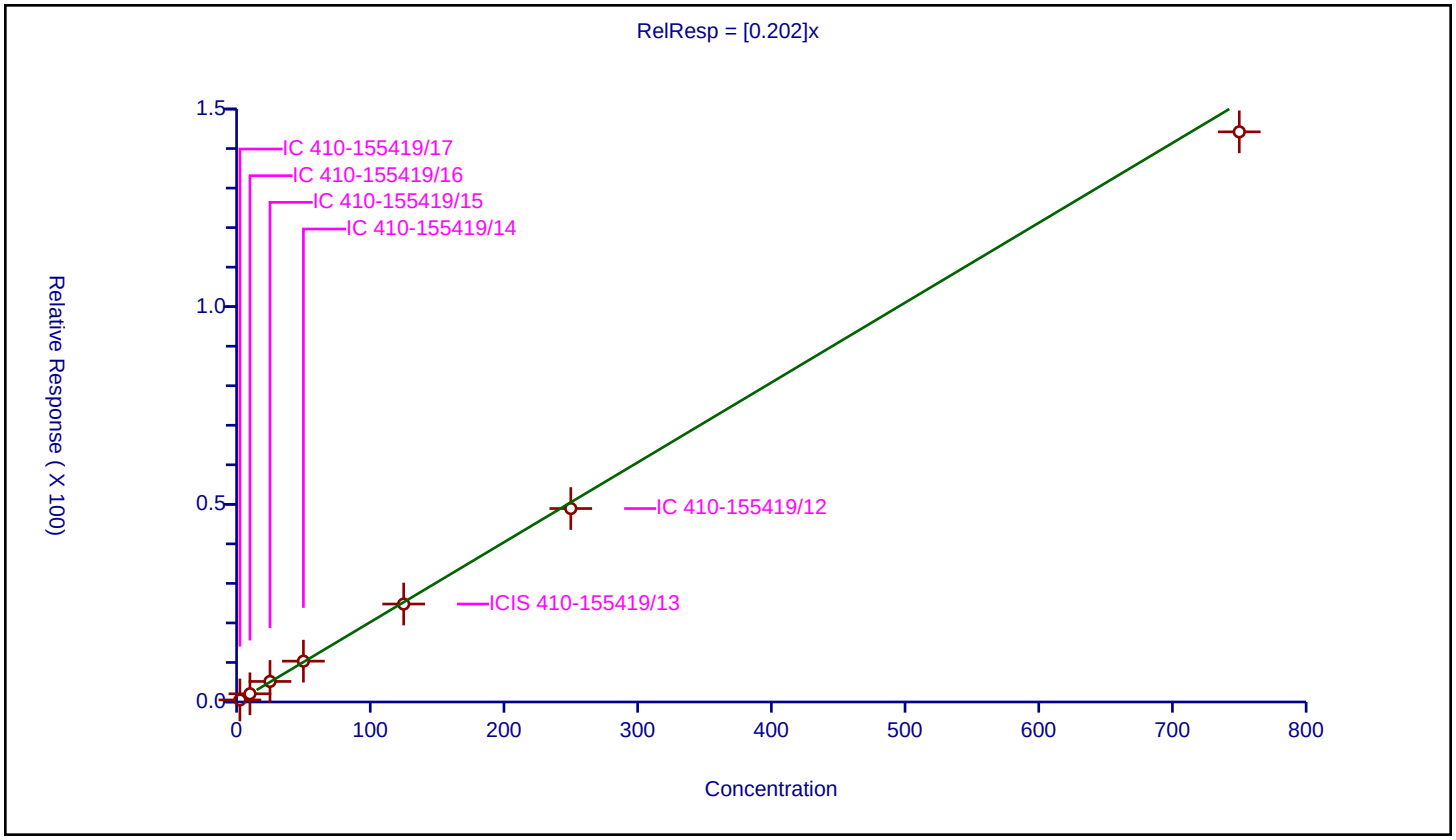
Curve Coefficients

Intercept:	0
Slope:	0.202

Error Coefficients

Standard Error:	1220000
Relative Standard Error:	3.2
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	2.5	0.514891	50.0	973993.0	0.205956	Y
2	IC 410-155419/16	10.0	2.074062	50.0	994064.0	0.207406	Y
3	IC 410-155419/15	25.0	5.194421	50.0	973968.0	0.207777	Y
4	IC 410-155419/14	50.0	10.330499	50.0	969353.0	0.20661	Y
5	ICIS 410-155419/13	125.0	24.777373	50.0	959902.0	0.198219	Y
6	IC 410-155419/12	250.0	48.936523	50.0	956579.0	0.195746	Y
7	IC 410-155419/11	750.0	144.225235	50.0	962931.0	0.1923	Y



Calibration / Methyl tert-butyl ether

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

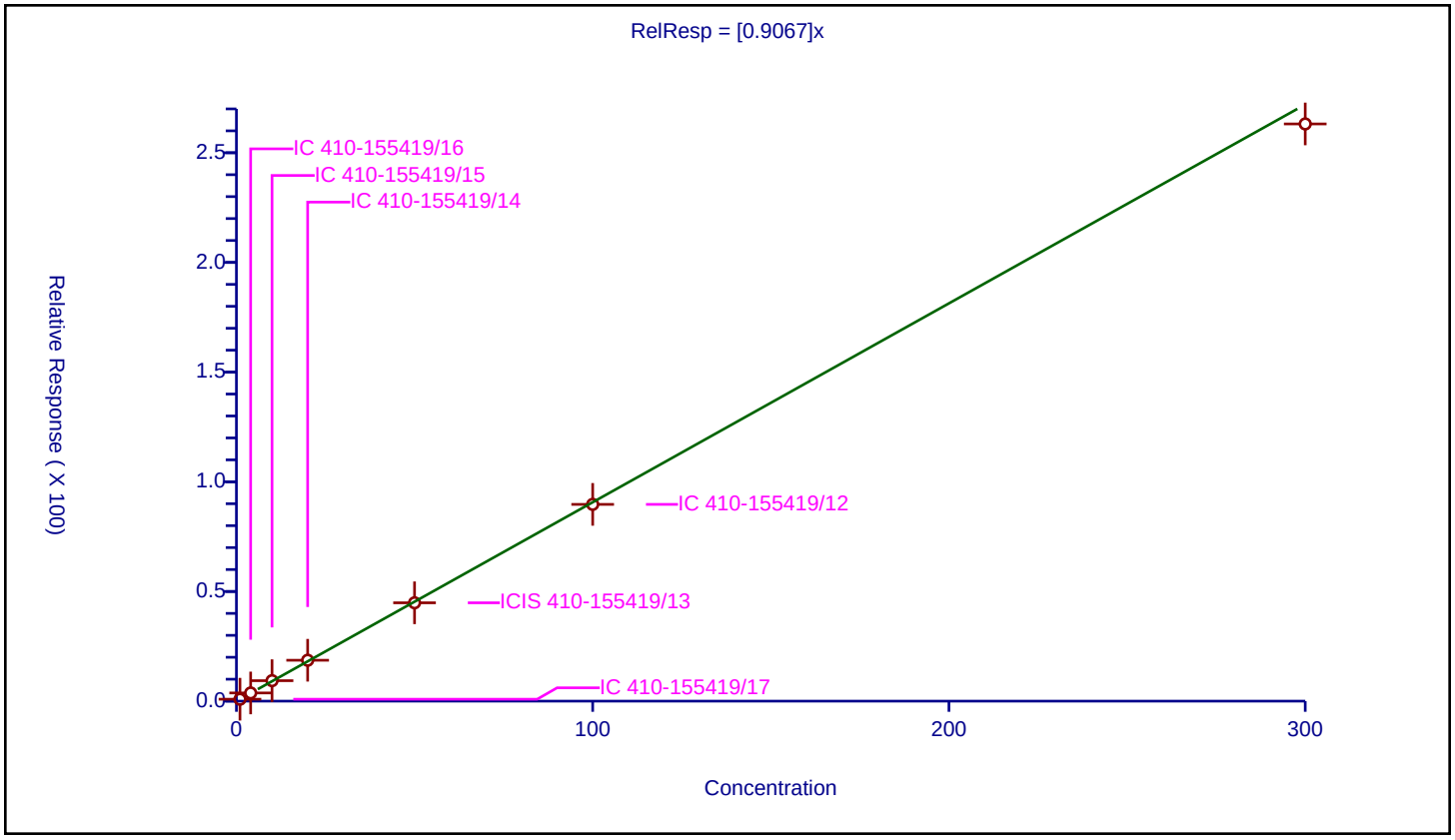
Curve Coefficients

Intercept:	0
Slope:	0.9067

Error Coefficients

Standard Error:	2220000
Relative Standard Error:	2.9
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.875212	50.0	973993.0	0.875212	Y
2	IC 410-155419/16	4.0	3.739347	50.0	994064.0	0.934837	Y
3	IC 410-155419/15	10.0	9.337114	50.0	973968.0	0.933711	Y
4	IC 410-155419/14	20.0	18.644911	50.0	969353.0	0.932246	Y
5	ICIS 410-155419/13	50.0	44.830149	50.0	959902.0	0.896603	Y
6	IC 410-155419/12	100.0	89.704353	50.0	956579.0	0.897044	Y
7	IC 410-155419/11	300.0	263.14279	50.0	962931.0	0.877143	Y



Calibration / trans-1,2-Dichloroethene

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

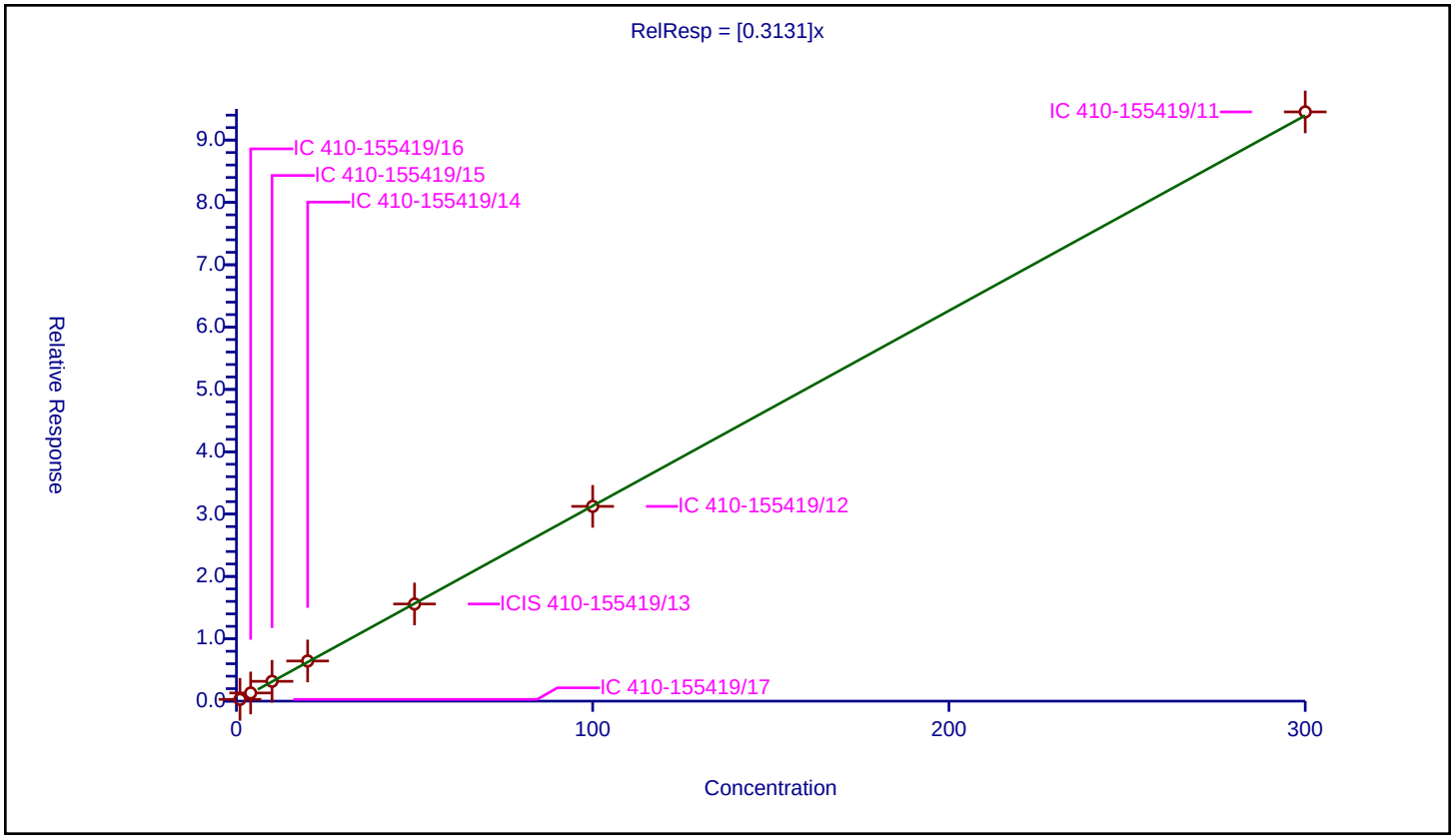
Curve Coefficients

Intercept:	0
Slope:	0.3131

Error Coefficients

Standard Error:	794000
Relative Standard Error:	4.3
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.285115	50.0	973993.0	0.285115	Y
2	IC 410-155419/16	4.0	1.311384	50.0	994064.0	0.327846	Y
3	IC 410-155419/15	10.0	3.178955	50.0	973968.0	0.317895	Y
4	IC 410-155419/14	20.0	6.439243	50.0	969353.0	0.321962	Y
5	ICIS 410-155419/13	50.0	15.584768	50.0	959902.0	0.311695	Y
6	IC 410-155419/12	100.0	31.239971	50.0	956579.0	0.3124	Y
7	IC 410-155419/11	300.0	94.517053	50.0	962931.0	0.315057	Y



Calibration / Hexane

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

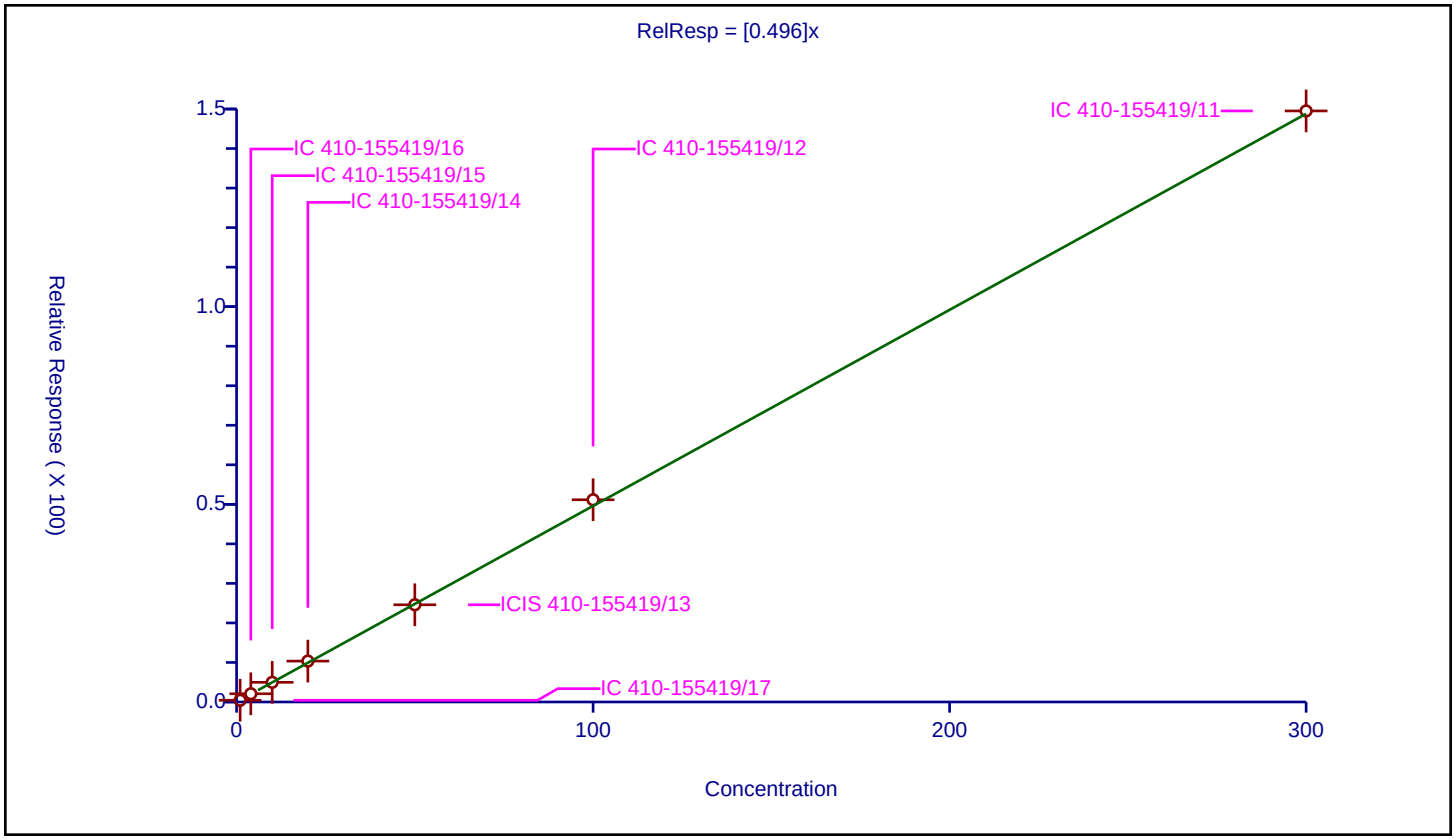
Curve Coefficients

Intercept:	0
Slope:	0.496

Error Coefficients

Standard Error:	1260000
Relative Standard Error:	5.9
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.996

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.434808	50.0	973993.0	0.434808	Y
2	IC 410-155419/16	4.0	2.081858	50.0	994064.0	0.520464	Y
3	IC 410-155419/15	10.0	4.974958	50.0	973968.0	0.497496	Y
4	IC 410-155419/14	20.0	10.345715	50.0	969353.0	0.517286	Y
5	ICIS 410-155419/13	50.0	24.593136	50.0	959902.0	0.491863	Y
6	IC 410-155419/12	100.0	51.154792	50.0	956579.0	0.511548	Y
7	IC 410-155419/11	300.0	149.511907	50.0	962931.0	0.498373	Y



Calibration / 1,1-Dichloroethane

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

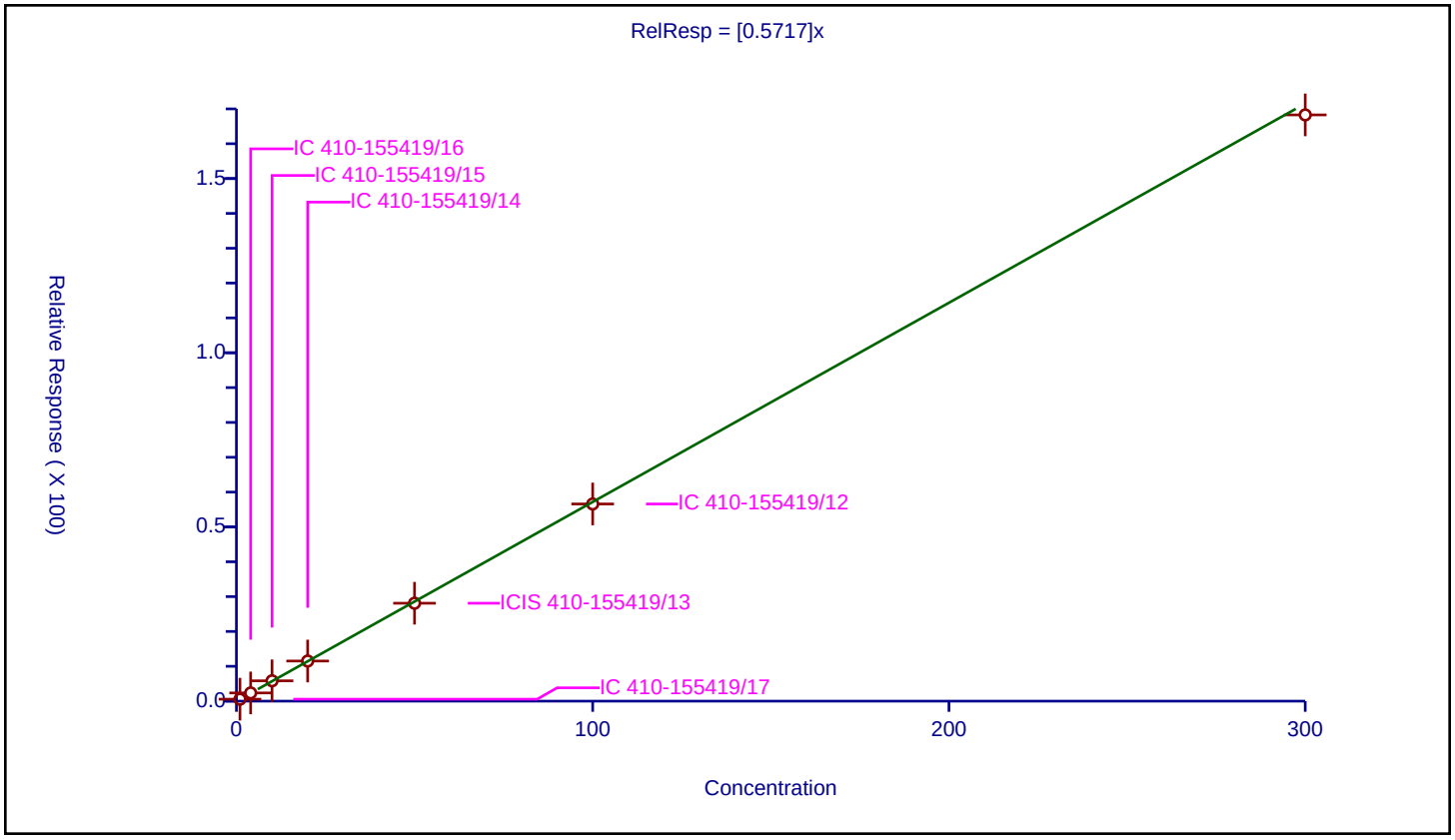
Curve Coefficients

Intercept:	0
Slope:	0.5717

Error Coefficients

Standard Error:	1420000
Relative Standard Error:	2.0
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	1.000

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.563556	50.0	973993.0	0.563556	Y
2	IC 410-155419/16	4.0	2.360864	50.0	994064.0	0.590216	Y
3	IC 410-155419/15	10.0	5.837358	50.0	973968.0	0.583736	Y
4	IC 410-155419/14	20.0	11.514794	50.0	969353.0	0.57574	Y
5	ICIS 410-155419/13	50.0	28.108286	50.0	959902.0	0.562166	Y
6	IC 410-155419/12	100.0	56.589158	50.0	956579.0	0.565892	Y
7	IC 410-155419/11	300.0	168.275453	50.0	962931.0	0.560918	Y



Calibration / Isopropyl ether

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

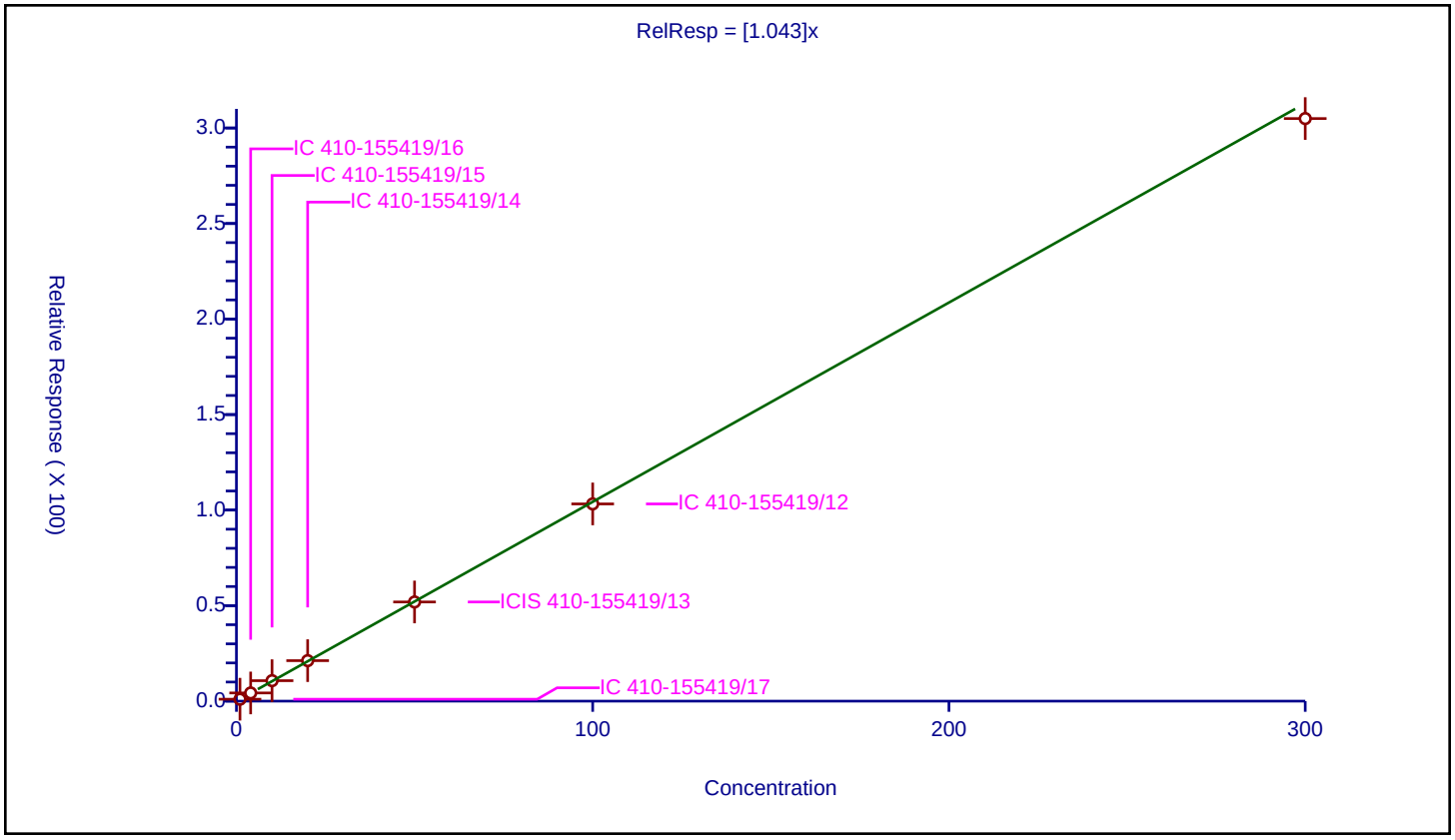
Curve Coefficients

Intercept:	0
Slope:	1.043

Error Coefficients

Standard Error:	2570000
Relative Standard Error:	2.5
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	1.010377	50.0	973993.0	1.010377	Y
2	IC 410-155419/16	4.0	4.293436	50.0	994064.0	1.073359	Y
3	IC 410-155419/15	10.0	10.712621	50.0	973968.0	1.071262	Y
4	IC 410-155419/14	20.0	21.20404	50.0	969353.0	1.060202	Y
5	ICIS 410-155419/13	50.0	51.902955	50.0	959902.0	1.038059	Y
6	IC 410-155419/12	100.0	103.228954	50.0	956579.0	1.03229	Y
7	IC 410-155419/11	300.0	304.9327	50.0	962931.0	1.016442	Y



Calibration / 2-Chloro-1,3-butadiene

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

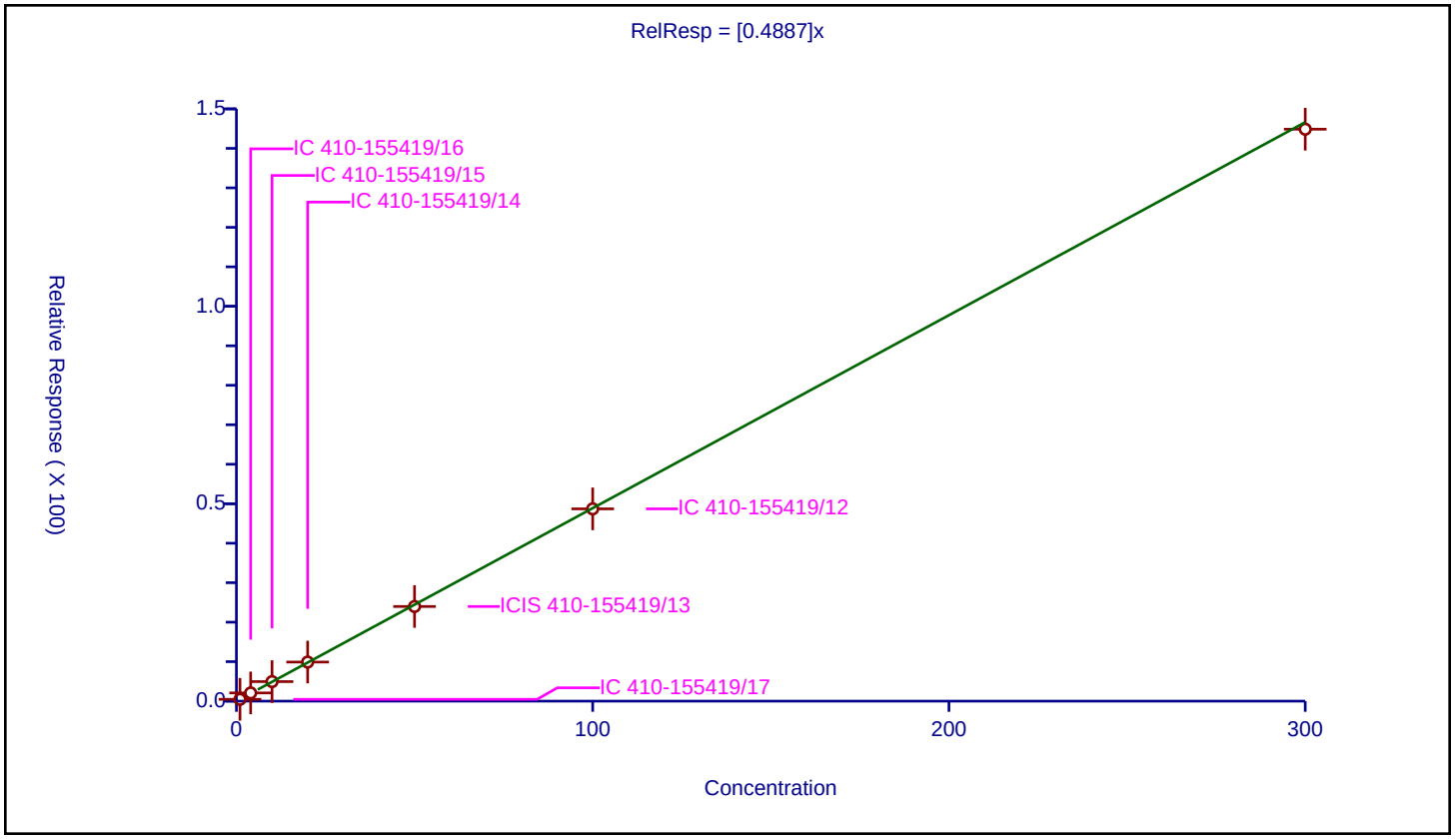
Curve Coefficients

Intercept:	0
Slope:	0.4887

Error Coefficients

Standard Error:	1220000
Relative Standard Error:	3.6
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.462632	50.0	973993.0	0.462632	Y
2	IC 410-155419/16	4.0	2.079142	50.0	994064.0	0.519785	Y
3	IC 410-155419/15	10.0	4.945029	50.0	973968.0	0.494503	Y
4	IC 410-155419/14	20.0	9.900831	50.0	969353.0	0.495042	Y
5	ICIS 410-155419/13	50.0	23.968436	50.0	959902.0	0.479369	Y
6	IC 410-155419/12	100.0	48.699689	50.0	956579.0	0.486997	Y
7	IC 410-155419/11	300.0	144.851293	50.0	962931.0	0.482838	Y



Calibration / Tert-butyl ethyl ether

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

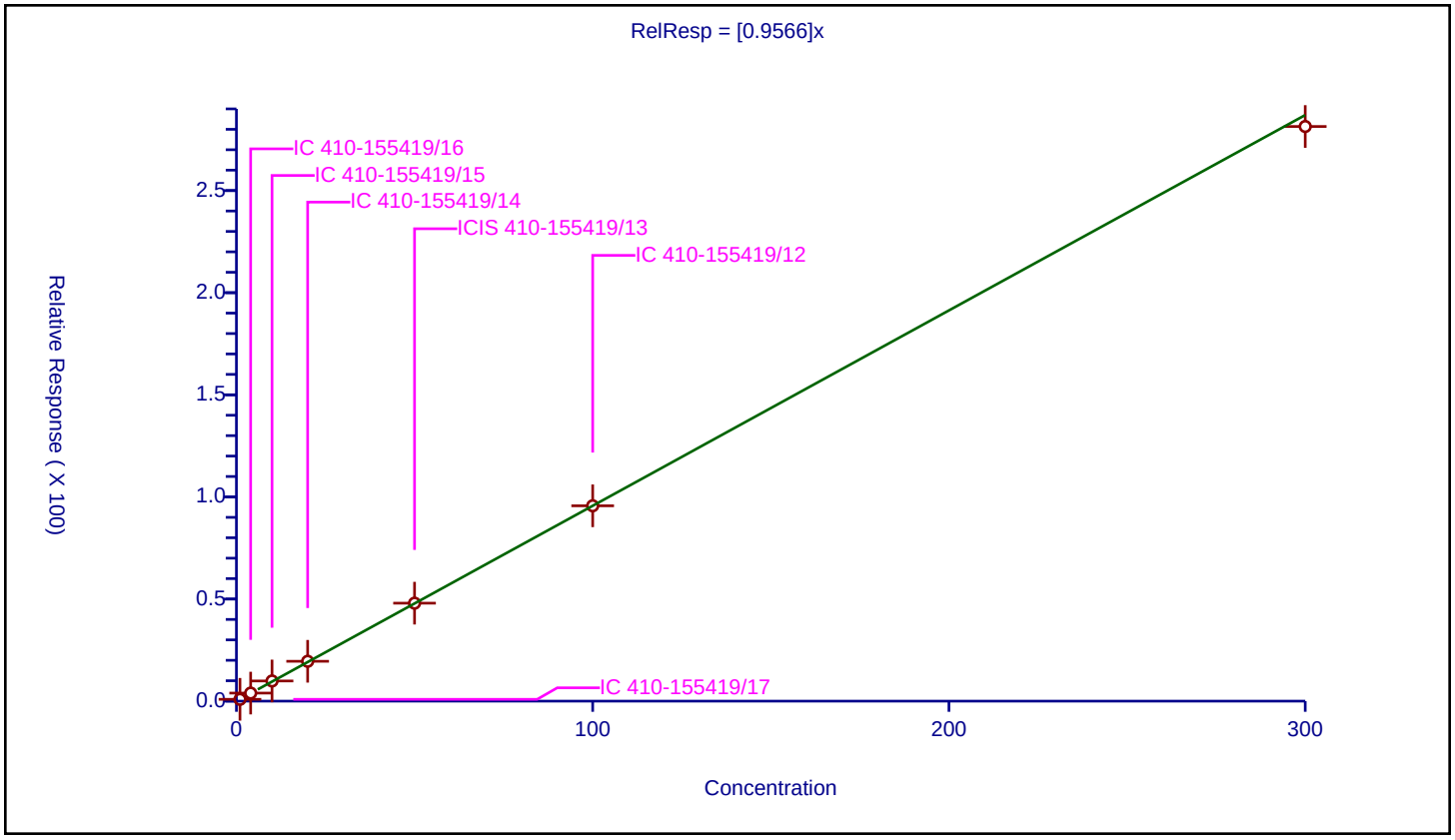
Curve Coefficients

Intercept:	0
Slope:	0.9566

Error Coefficients

Standard Error:	2370000
Relative Standard Error:	3.4
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.893641	50.0	973993.0	0.893641	Y
2	IC 410-155419/16	4.0	3.940189	50.0	994064.0	0.985047	Y
3	IC 410-155419/15	10.0	9.876659	50.0	973968.0	0.987666	Y
4	IC 410-155419/14	20.0	19.515646	50.0	969353.0	0.975782	Y
5	ICIS 410-155419/13	50.0	47.973491	50.0	959902.0	0.95947	Y
6	IC 410-155419/12	100.0	95.659167	50.0	956579.0	0.956592	Y
7	IC 410-155419/11	300.0	281.375665	50.0	962931.0	0.937919	Y



Calibration / 2-Butanone (MEK)

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

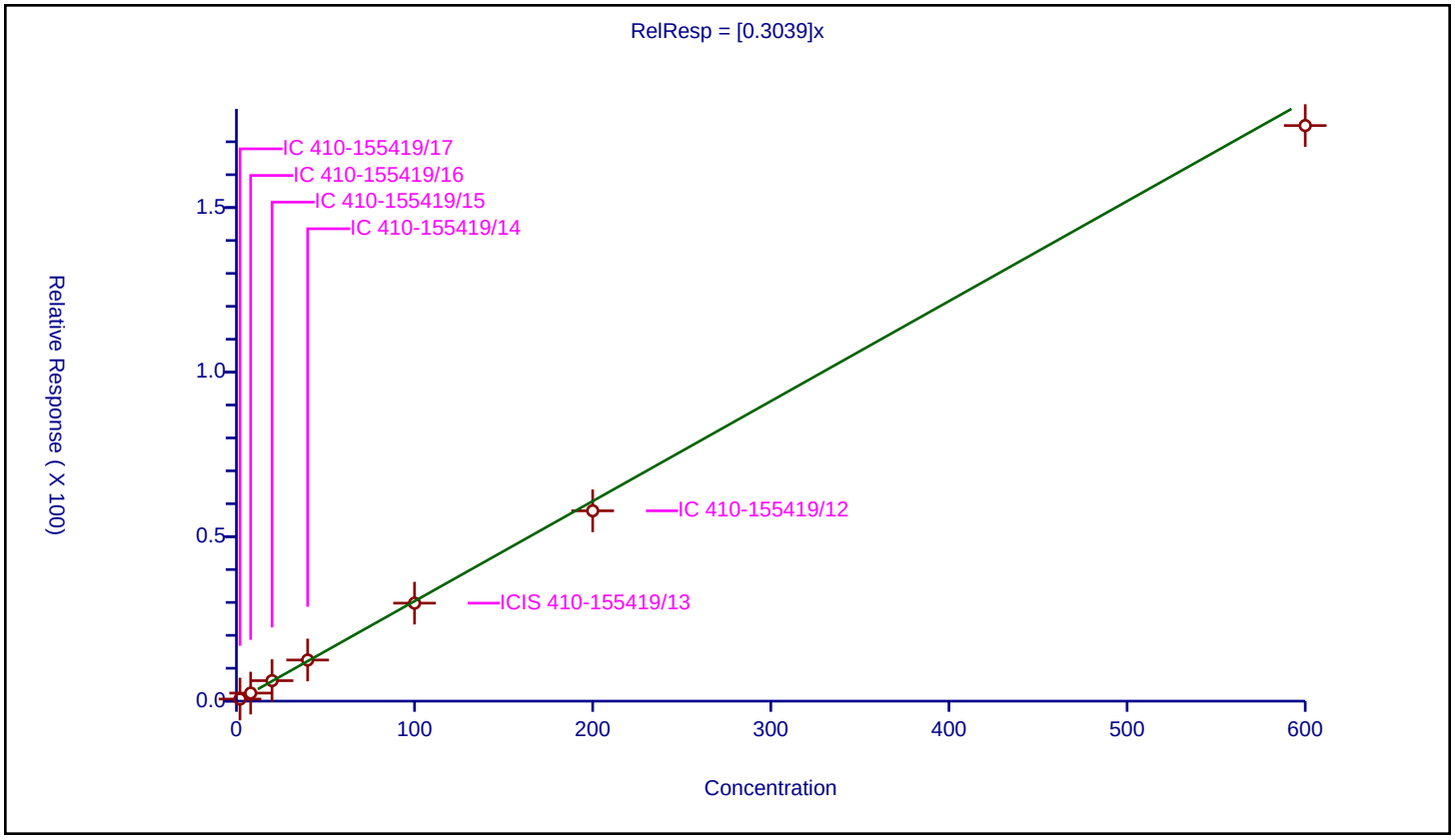
Curve Coefficients

Intercept:	0
Slope:	0.3039

Error Coefficients

Standard Error:	1470000
Relative Standard Error:	3.7
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	2.0	0.636555	50.0	973993.0	0.318277	Y
2	IC 410-155419/16	8.0	2.44954	50.0	994064.0	0.306193	Y
3	IC 410-155419/15	20.0	6.232802	50.0	973968.0	0.31164	Y
4	IC 410-155419/14	40.0	12.502411	50.0	969353.0	0.31256	Y
5	ICIS 410-155419/13	100.0	29.782259	50.0	959902.0	0.297823	Y
6	IC 410-155419/12	200.0	57.846869	50.0	956579.0	0.289234	Y
7	IC 410-155419/11	600.0	174.932679	50.0	962931.0	0.291554	Y



Calibration / cis-1,2-Dichloroethene

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

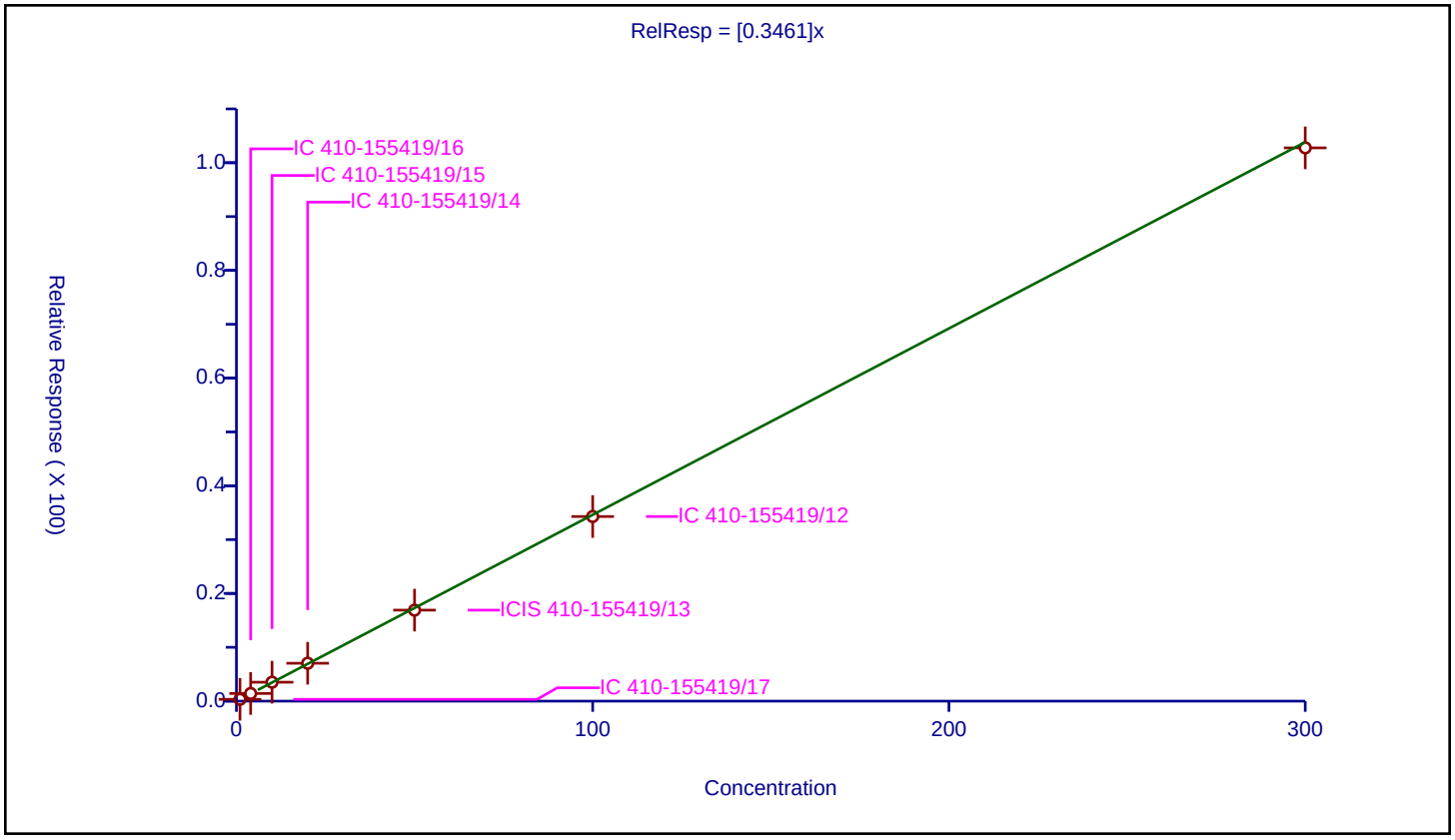
Curve Coefficients

Intercept:	0
Slope:	0.3461

Error Coefficients

Standard Error:	864000
Relative Standard Error:	2.0
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	1.000

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.340044	50.0	973993.0	0.340044	Y
2	IC 410-155419/16	4.0	1.42189	50.0	994064.0	0.355473	Y
3	IC 410-155419/15	10.0	3.516953	50.0	973968.0	0.351695	Y
4	IC 410-155419/14	20.0	7.039128	50.0	969353.0	0.351956	Y
5	ICIS 410-155419/13	50.0	16.900423	50.0	959902.0	0.338008	Y
6	IC 410-155419/12	100.0	34.287184	50.0	956579.0	0.342872	Y
7	IC 410-155419/11	300.0	102.763282	50.0	962931.0	0.342544	Y



Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

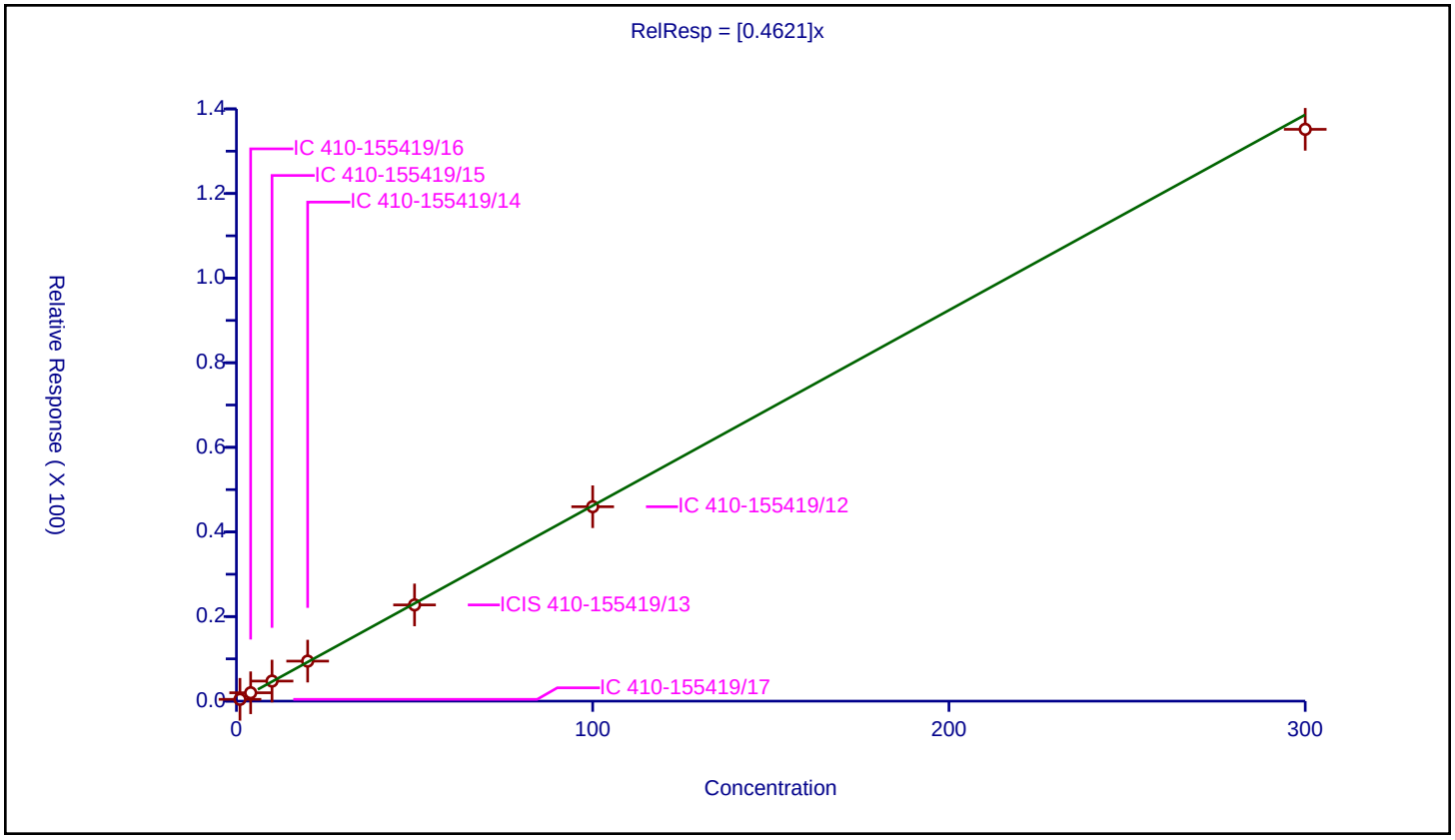
Curve Coefficients

Intercept:	0
Slope:	0.4621

Error Coefficients

Standard Error:	1140000
Relative Standard Error:	4.6
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.427467	50.0	973993.0	0.427467	Y
2	IC 410-155419/16	4.0	1.977639	50.0	994064.0	0.49441	Y
3	IC 410-155419/15	10.0	4.74379	50.0	973968.0	0.474379	Y
4	IC 410-155419/14	20.0	9.46162	50.0	969353.0	0.473081	Y
5	ICIS 410-155419/13	50.0	22.744666	50.0	959902.0	0.454893	Y
6	IC 410-155419/12	100.0	45.957417	50.0	956579.0	0.459574	Y
7	IC 410-155419/11	300.0	135.168512	50.0	962931.0	0.450562	Y



Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

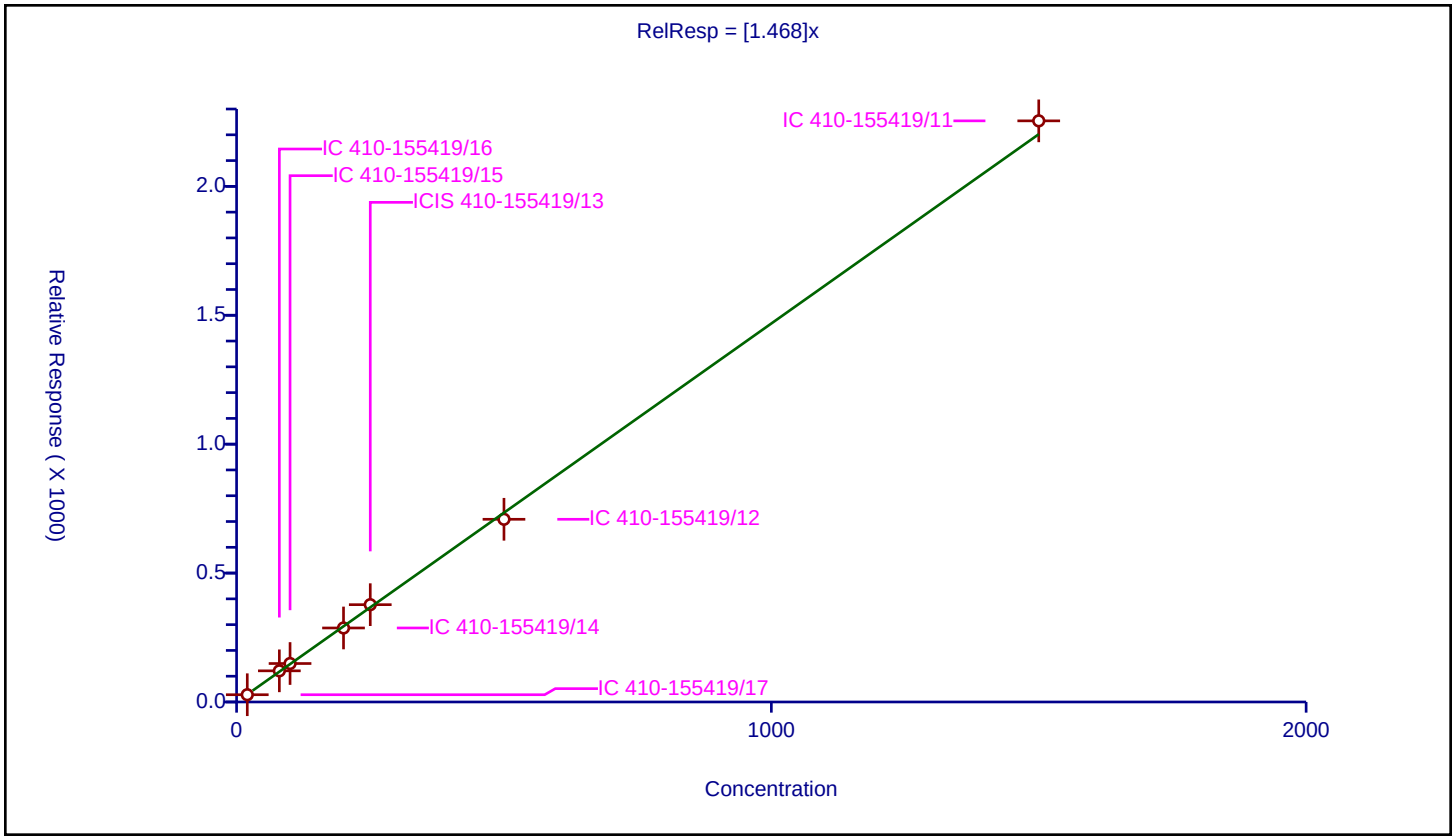
Curve Coefficients

Intercept:	0
Slope:	1.468

Error Coefficients

Standard Error:	981000
Relative Standard Error:	3.1
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	20.0	28.164218	250.0	268692.0	1.408211	Y
2	IC 410-155419/16	80.0	120.880322	250.0	256088.0	1.511004	Y
3	IC 410-155419/15	100.0	149.232068	250.0	270076.0	1.492321	Y
4	IC 410-155419/14	200.0	287.036167	250.0	276824.0	1.435181	Y
5	ICIS 410-155419/13	250.0	377.431514	250.0	255088.0	1.509726	Y
6	IC 410-155419/12	500.0	708.694092	250.0	247973.0	1.417388	Y
7	IC 410-155419/11	1500.0	2254.106329	250.0	247910.0	1.502738	Y



Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

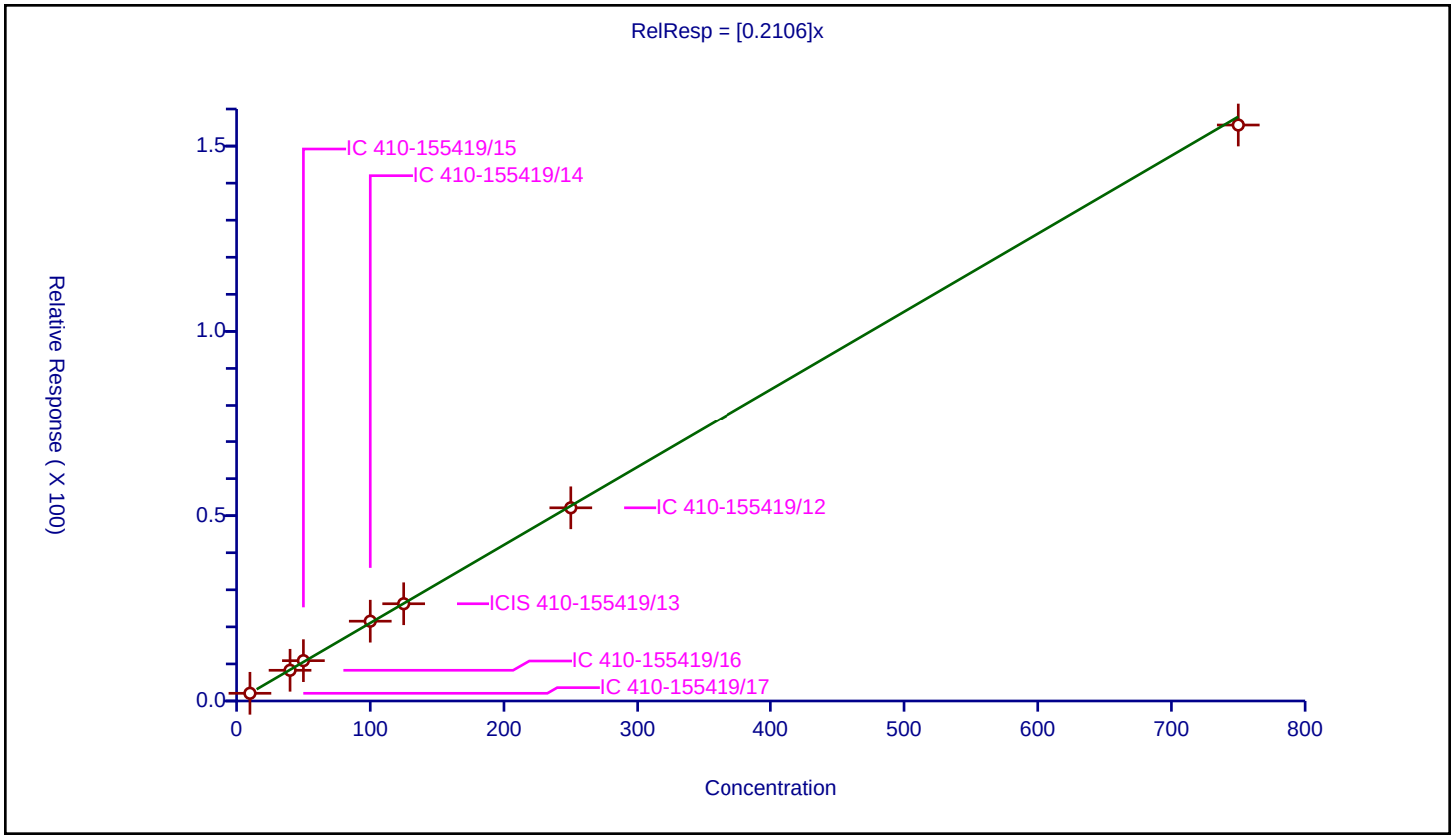
Curve Coefficients

Intercept:	0
Slope:	0.2106

Error Coefficients

Standard Error:	1320000
Relative Standard Error:	2.0
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	10.0	2.077736	50.0	973993.0	0.207774	Y
2	IC 410-155419/16	40.0	8.286086	50.0	994064.0	0.207152	Y
3	IC 410-155419/15	50.0	10.886087	50.0	973968.0	0.217722	Y
4	IC 410-155419/14	100.0	21.531681	50.0	969353.0	0.215317	Y
5	ICIS 410-155419/13	125.0	26.237626	50.0	959902.0	0.209901	Y
6	IC 410-155419/12	250.0	52.129934	50.0	956579.0	0.20852	Y
7	IC 410-155419/11	750.0	155.684883	50.0	962931.0	0.20758	Y



Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

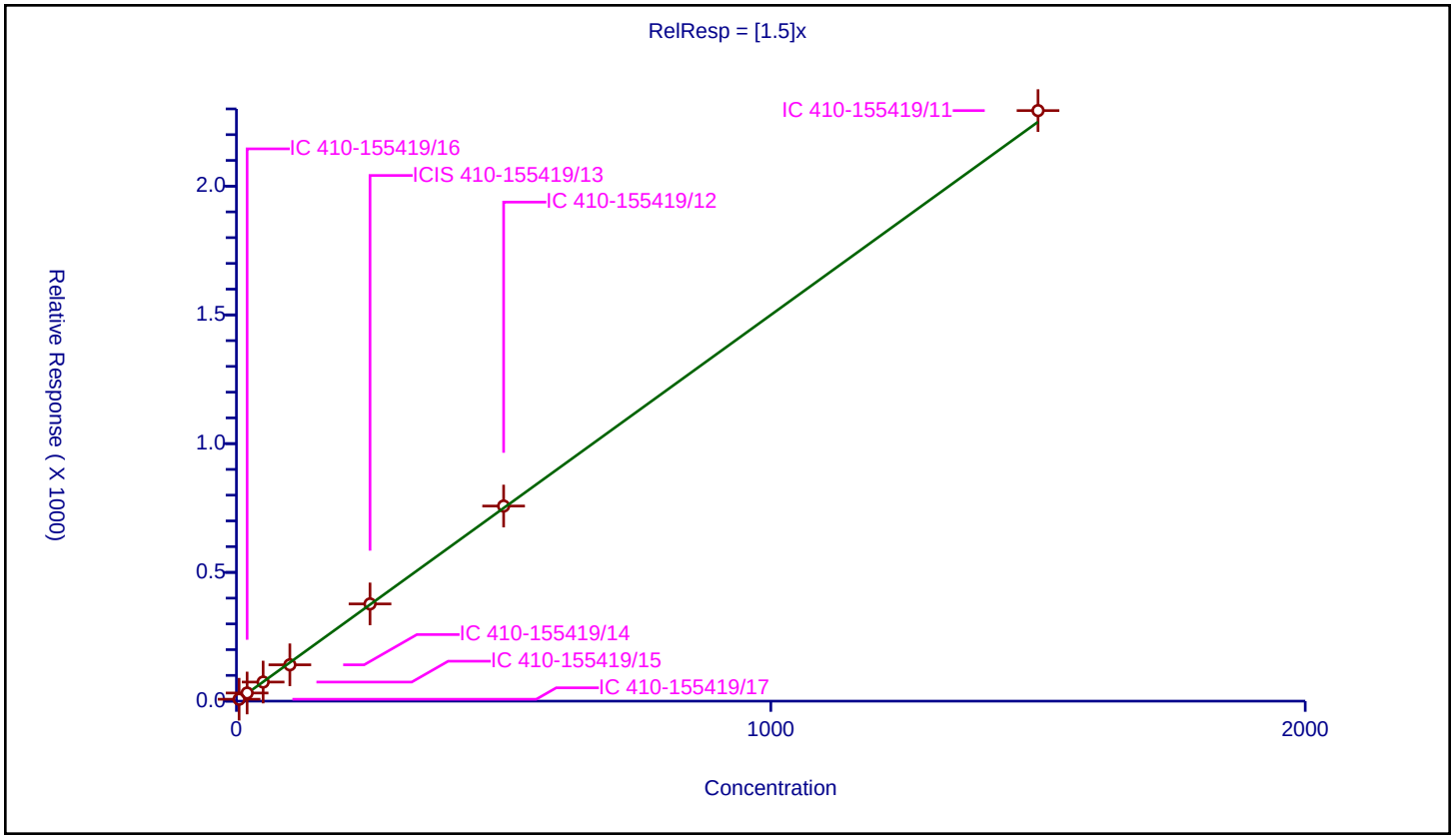
Curve Coefficients

Intercept:	0
Slope:	1.5

Error Coefficients

Standard Error:	992000
Relative Standard Error:	3.5
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	5.0	7.361589	250.0	268692.0	1.472318	Y
2	IC 410-155419/16	20.0	31.559464	250.0	256088.0	1.577973	Y
3	IC 410-155419/15	50.0	74.080999	250.0	270076.0	1.48162	Y
4	IC 410-155419/14	100.0	141.151056	250.0	276824.0	1.411511	Y
5	ICIS 410-155419/13	250.0	377.598123	250.0	255088.0	1.510392	Y
6	IC 410-155419/12	500.0	757.709509	250.0	247973.0	1.515419	Y
7	IC 410-155419/11	1500.0	2293.329232	250.0	247910.0	1.528886	Y



Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

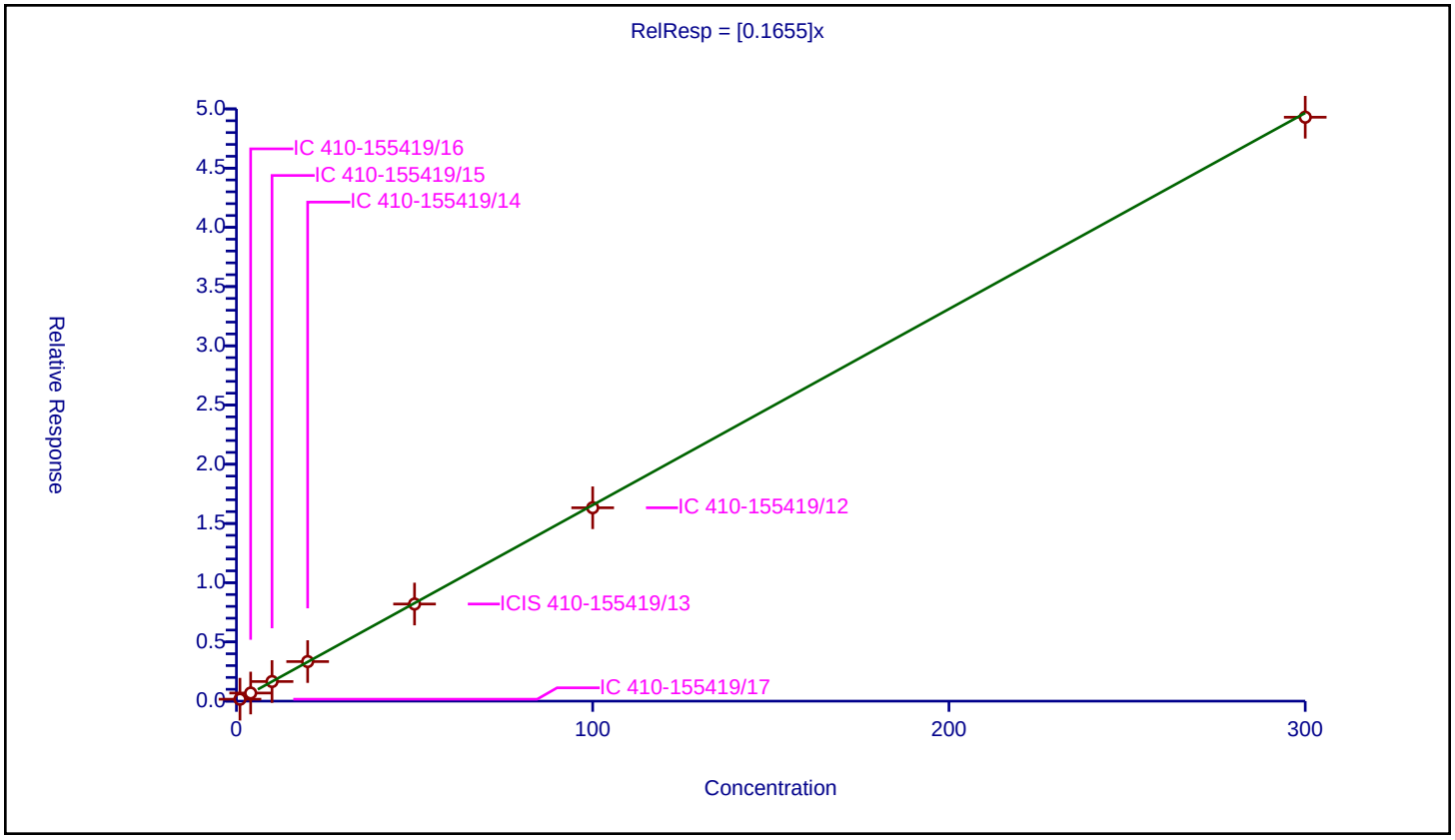
Curve Coefficients

Intercept:	0
Slope:	0.1655

Error Coefficients

Standard Error:	414000
Relative Standard Error:	1.7
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	1.000

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.163348	50.0	973993.0	0.163348	Y
2	IC 410-155419/16	4.0	0.684211	50.0	994064.0	0.171053	Y
3	IC 410-155419/15	10.0	1.656523	50.0	973968.0	0.165652	Y
4	IC 410-155419/14	20.0	3.340682	50.0	969353.0	0.167034	Y
5	ICIS 410-155419/13	50.0	8.198962	50.0	959902.0	0.163979	Y
6	IC 410-155419/12	100.0	16.325782	50.0	956579.0	0.163258	Y
7	IC 410-155419/11	300.0	49.296627	50.0	962931.0	0.164322	Y



Calibration / Chloroform

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

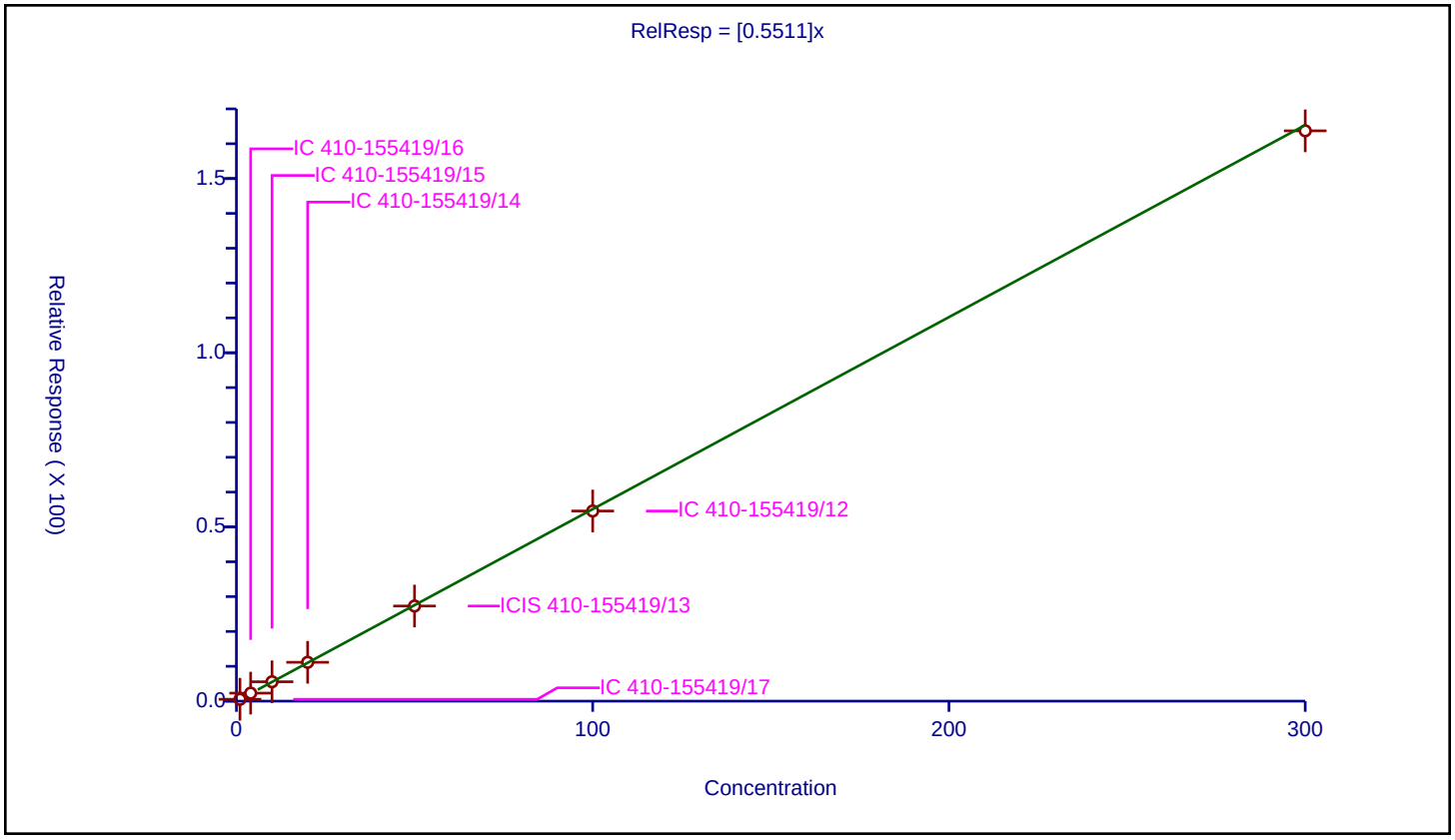
Curve Coefficients

Intercept:	0
Slope:	0.5511

Error Coefficients

Standard Error:	1380000
Relative Standard Error:	2.4
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.532601	50.0	973993.0	0.532601	Y
2	IC 410-155419/16	4.0	2.295727	50.0	994064.0	0.573932	Y
3	IC 410-155419/15	10.0	5.563992	50.0	973968.0	0.556399	Y
4	IC 410-155419/14	20.0	11.150169	50.0	969353.0	0.557508	Y
5	ICIS 410-155419/13	50.0	27.304246	50.0	959902.0	0.546085	Y
6	IC 410-155419/12	100.0	54.577196	50.0	956579.0	0.545772	Y
7	IC 410-155419/11	300.0	163.703111	50.0	962931.0	0.545677	Y



Calibration / 1,1,1-Trichloroethane

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

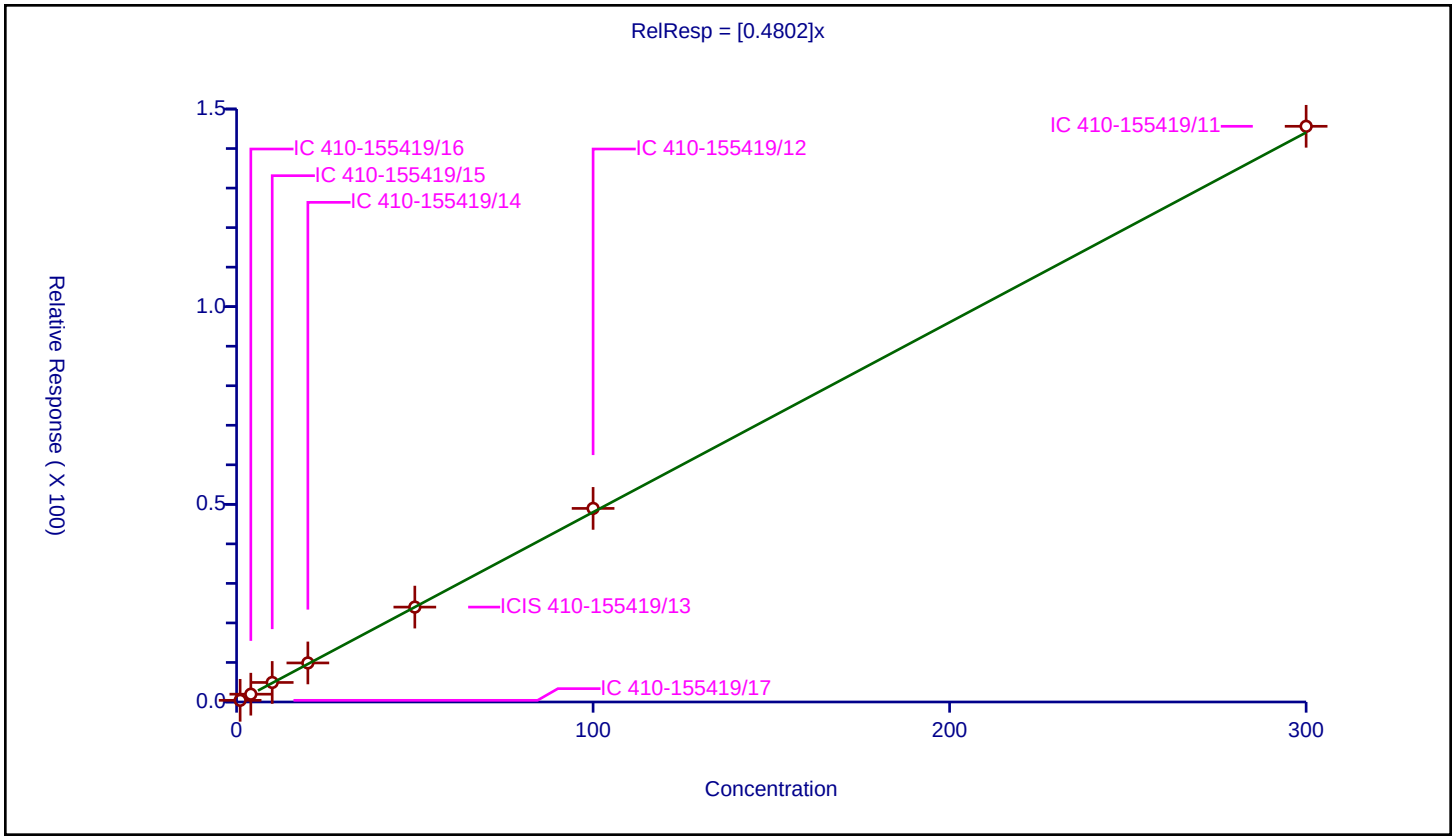
Curve Coefficients

Intercept:	0
Slope:	0.4802

Error Coefficients

Standard Error:	1220000
Relative Standard Error:	5.3
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.997

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.424233	50.0	973993.0	0.424233	Y
2	IC 410-155419/16	4.0	1.97608	50.0	994064.0	0.49402	Y
3	IC 410-155419/15	10.0	4.940768	50.0	973968.0	0.494077	Y
4	IC 410-155419/14	20.0	9.876588	50.0	969353.0	0.493829	Y
5	ICIS 410-155419/13	50.0	24.007034	50.0	959902.0	0.480141	Y
6	IC 410-155419/12	100.0	48.972432	50.0	956579.0	0.489724	Y
7	IC 410-155419/11	300.0	145.627205	50.0	962931.0	0.485424	Y



Calibration / Dibromofluoromethane (Surr)

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

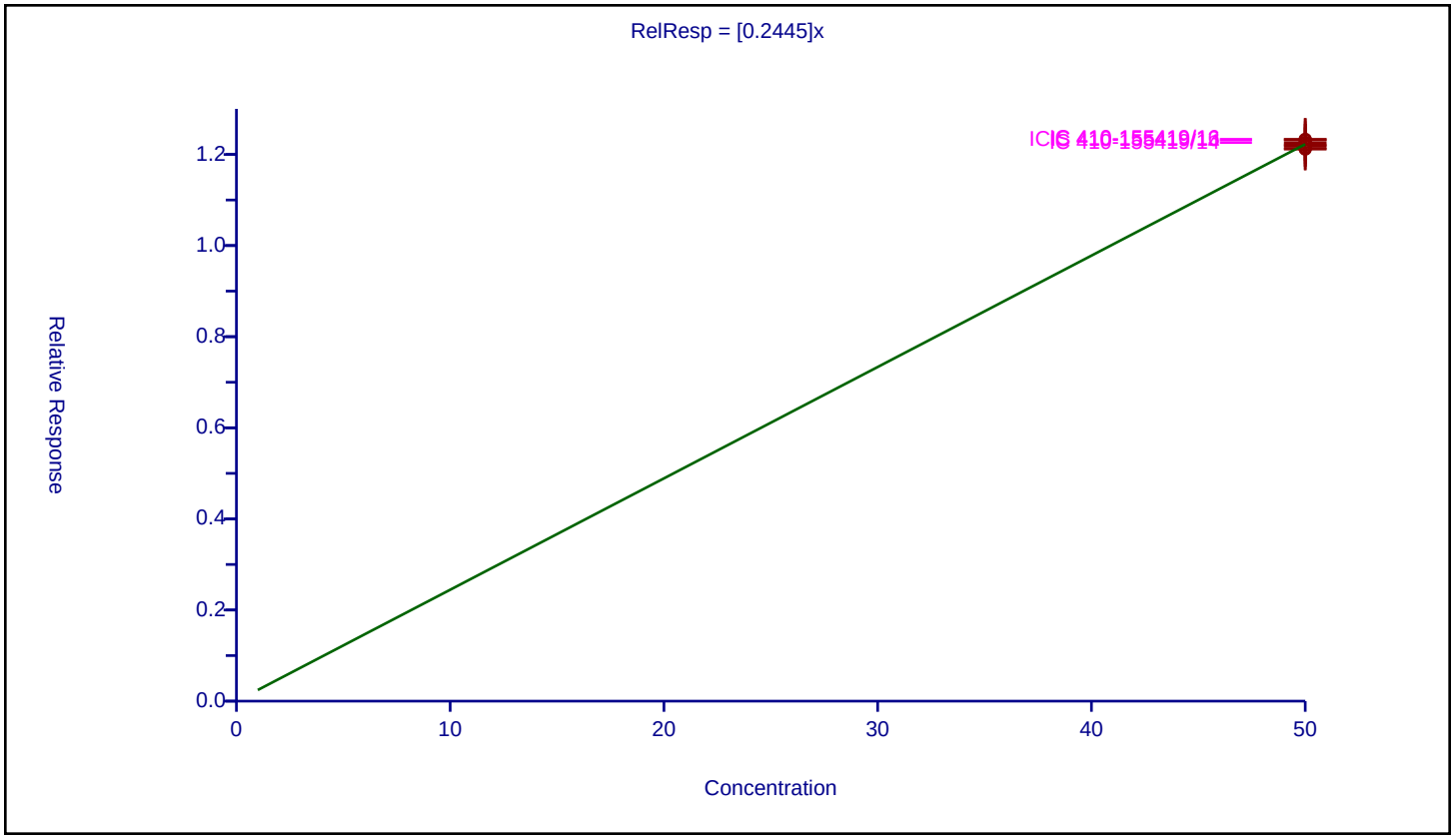
Curve Coefficients

Intercept:	0
Slope:	0.2445

Error Coefficients

Standard Error:	256000
Relative Standard Error:	0.7
Correlation Coefficient:	0.00000000000000000000
Coefficient of Determination (Adjusted):	0

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/11	50.0	12.207001	50.0	962931.0	0.24414	Y
2	IC 410-155419/12	50.0	12.195752	50.0	956579.0	0.243915	Y
3	ICIS 410-155419/13	50.0	12.323758	50.0	959902.0	0.246475	Y
4	IC 410-155419/14	50.0	12.260807	50.0	969353.0	0.245216	Y
5	IC 410-155419/15	50.0	12.135871	50.0	973968.0	0.242717	Y
6	IC 410-155419/16	50.0	12.330494	50.0	994064.0	0.24661	Y
7	IC 410-155419/17	50.0	12.11749	50.0	973993.0	0.24235	Y



Calibration / Cyclohexane

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

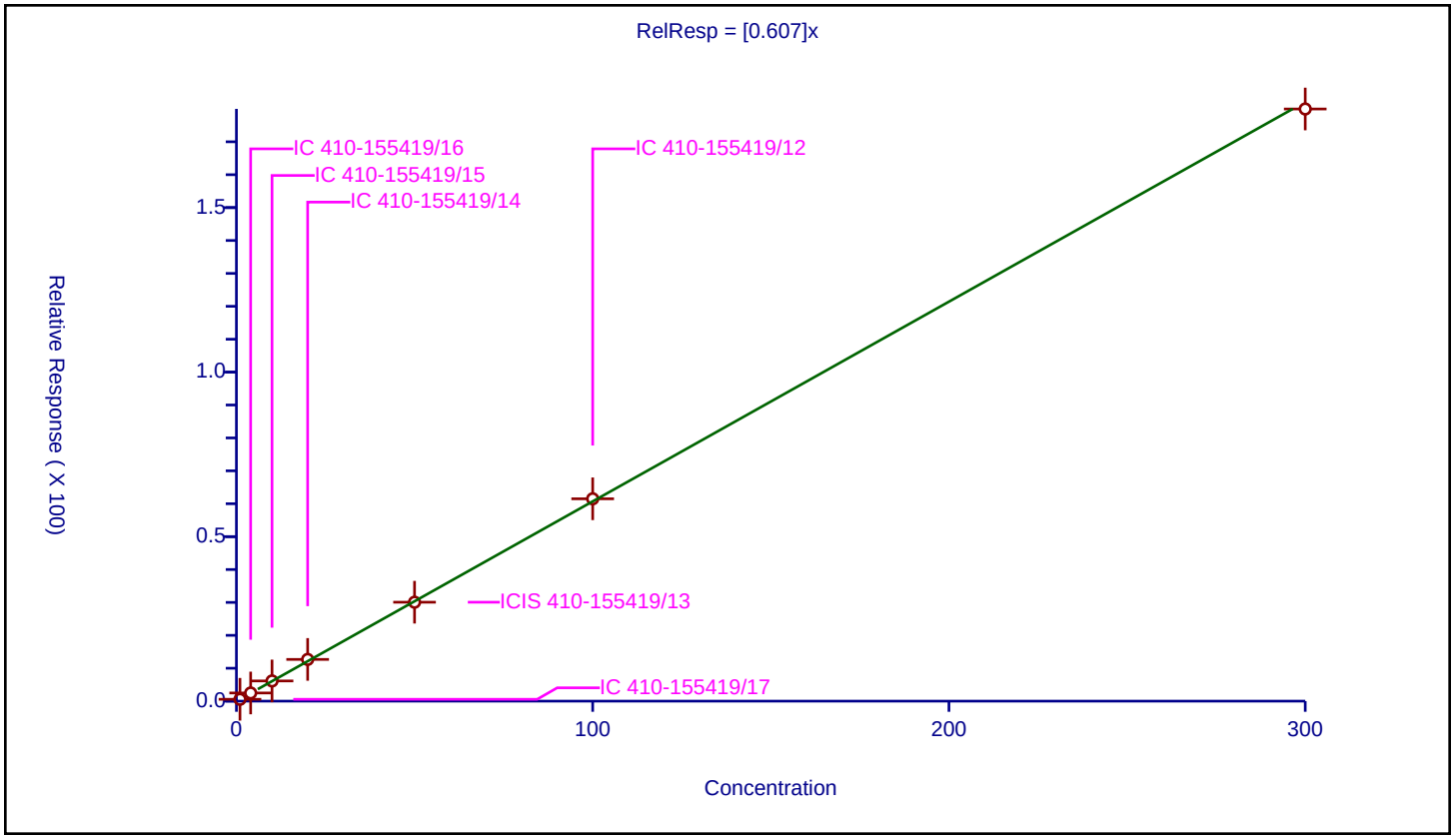
Curve Coefficients

Intercept:	0
Slope:	0.607

Error Coefficients

Standard Error:	1520000
Relative Standard Error:	3.6
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.564583	50.0	973993.0	0.564583	Y
2	IC 410-155419/16	4.0	2.482285	50.0	994064.0	0.620571	Y
3	IC 410-155419/15	10.0	6.138087	50.0	973968.0	0.613809	Y
4	IC 410-155419/14	20.0	12.681087	50.0	969353.0	0.634054	Y
5	ICIS 410-155419/13	50.0	30.069215	50.0	959902.0	0.601384	Y
6	IC 410-155419/12	100.0	61.496698	50.0	956579.0	0.614967	Y
7	IC 410-155419/11	300.0	179.971099	50.0	962931.0	0.599904	Y



Calibration / Carbon tetrachloride

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

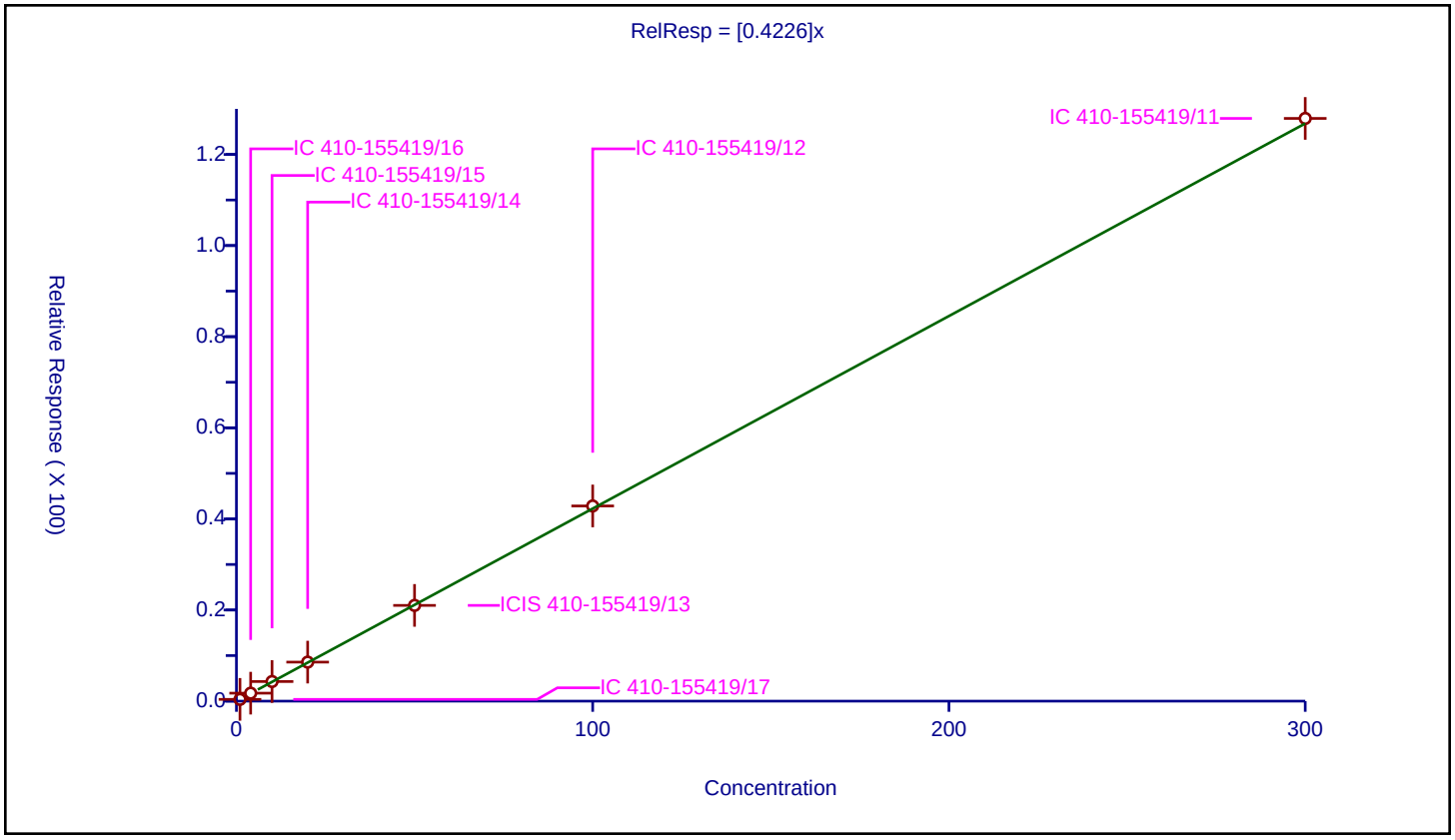
Curve Coefficients

Intercept:	0
Slope:	0.4226

Error Coefficients

Standard Error:	1080000
Relative Standard Error:	4.0
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.386553	50.0	973993.0	0.386553	Y
2	IC 410-155419/16	4.0	1.751447	50.0	994064.0	0.437862	Y
3	IC 410-155419/15	10.0	4.306866	50.0	973968.0	0.430687	Y
4	IC 410-155419/14	20.0	8.5669	50.0	969353.0	0.428345	Y
5	ICIS 410-155419/13	50.0	21.012874	50.0	959902.0	0.420257	Y
6	IC 410-155419/12	100.0	42.843508	50.0	956579.0	0.428435	Y
7	IC 410-155419/11	300.0	127.907867	50.0	962931.0	0.42636	Y



Calibration / 1,1-Dichloropropene

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

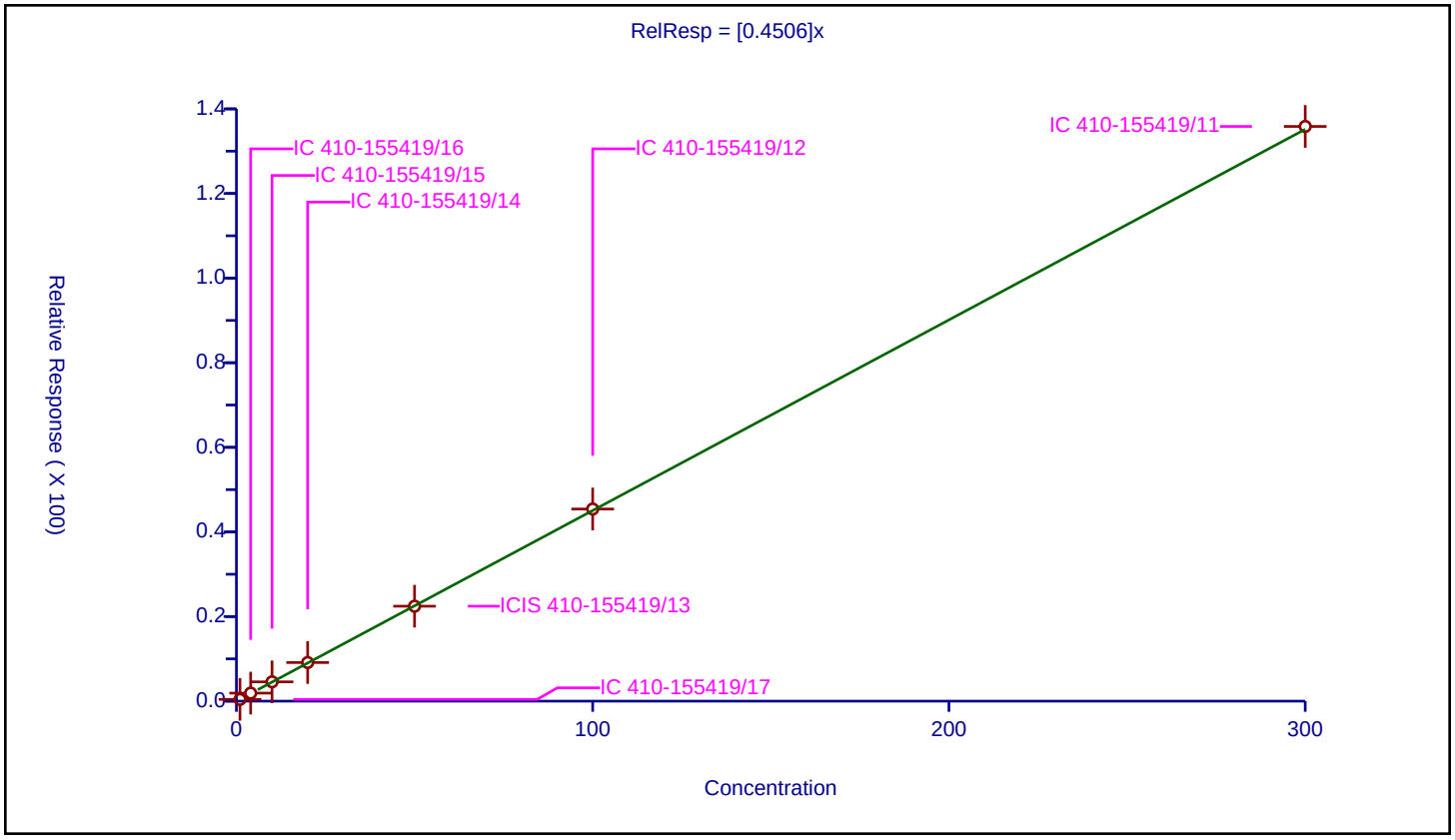
Curve Coefficients

Intercept:	0
Slope:	0.4506

Error Coefficients

Standard Error:	1140000
Relative Standard Error:	4.3
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.410835	50.0	973993.0	0.410835	Y
2	IC 410-155419/16	4.0	1.900582	50.0	994064.0	0.475145	Y
3	IC 410-155419/15	10.0	4.562727	50.0	973968.0	0.456273	Y
4	IC 410-155419/14	20.0	9.122889	50.0	969353.0	0.456144	Y
5	ICIS 410-155419/13	50.0	22.439374	50.0	959902.0	0.448787	Y
6	IC 410-155419/12	100.0	45.418204	50.0	956579.0	0.454182	Y
7	IC 410-155419/11	300.0	135.850648	50.0	962931.0	0.452835	Y



Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

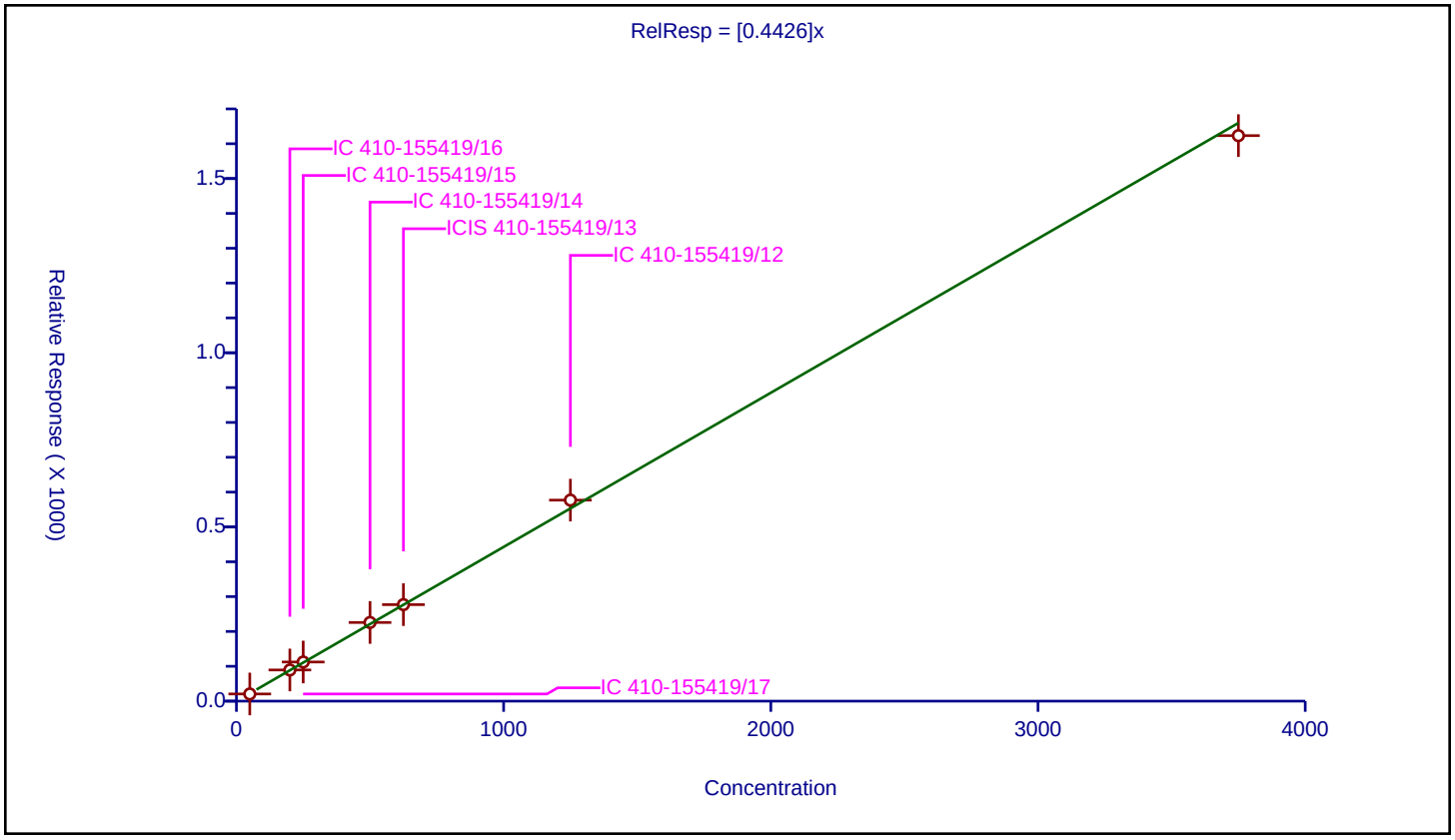
Curve Coefficients

Intercept:	0
Slope:	0.4426

Error Coefficients

Standard Error:	716000
Relative Standard Error:	3.6
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	50.0	20.596073	250.0	268692.0	0.411921	Y
2	IC 410-155419/16	200.0	89.456554	250.0	256088.0	0.447283	Y
3	IC 410-155419/15	250.0	112.356337	250.0	270076.0	0.449425	Y
4	IC 410-155419/14	500.0	225.80683	250.0	276824.0	0.451614	Y
5	ICIS 410-155419/13	625.0	277.023027	250.0	255088.0	0.443237	Y
6	IC 410-155419/12	1250.0	576.978139	250.0	247973.0	0.461583	Y
7	IC 410-155419/11	3750.0	1623.216086	250.0	247910.0	0.432858	Y



Calibration / 1,2-Dichloroethane-d4 (Surr)

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

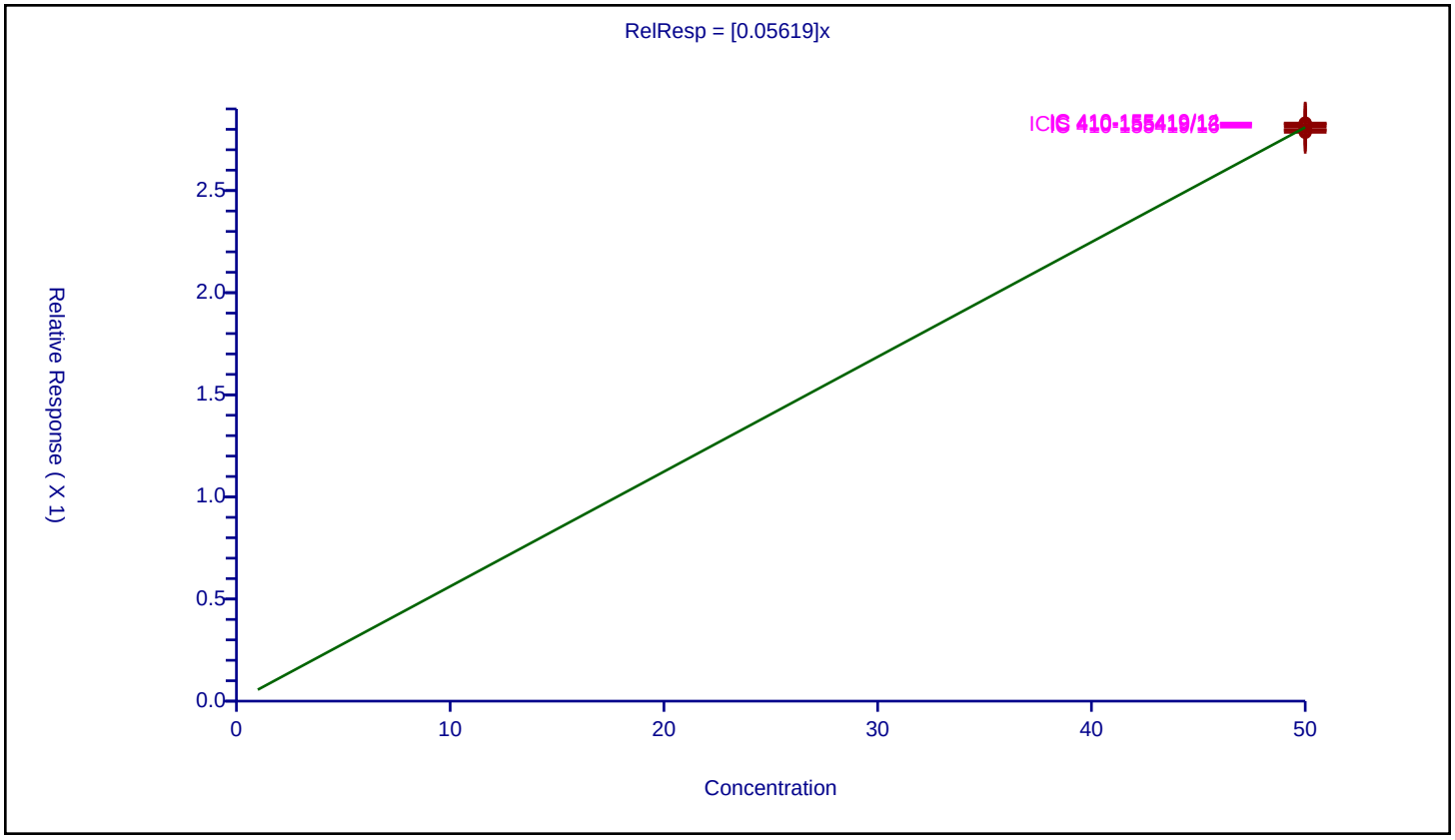
Curve Coefficients

Intercept:	0
Slope:	0.05619

Error Coefficients

Standard Error:	58900
Relative Standard Error:	0.6
Correlation Coefficient:	0.00000000000000000000
Coefficient of Determination (Adjusted):	0

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/11	50.0	2.785246	50.0	962931.0	0.055705	Y
2	IC 410-155419/12	50.0	2.826269	50.0	956579.0	0.056525	Y
3	ICIS 410-155419/13	50.0	2.821278	50.0	959902.0	0.056426	Y
4	IC 410-155419/14	50.0	2.830754	50.0	969353.0	0.056615	Y
5	IC 410-155419/15	50.0	2.797936	50.0	973968.0	0.055959	Y
6	IC 410-155419/16	50.0	2.810634	50.0	994064.0	0.056213	Y
7	IC 410-155419/17	50.0	2.7954	50.0	973993.0	0.055908	Y



Calibration / Benzene

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

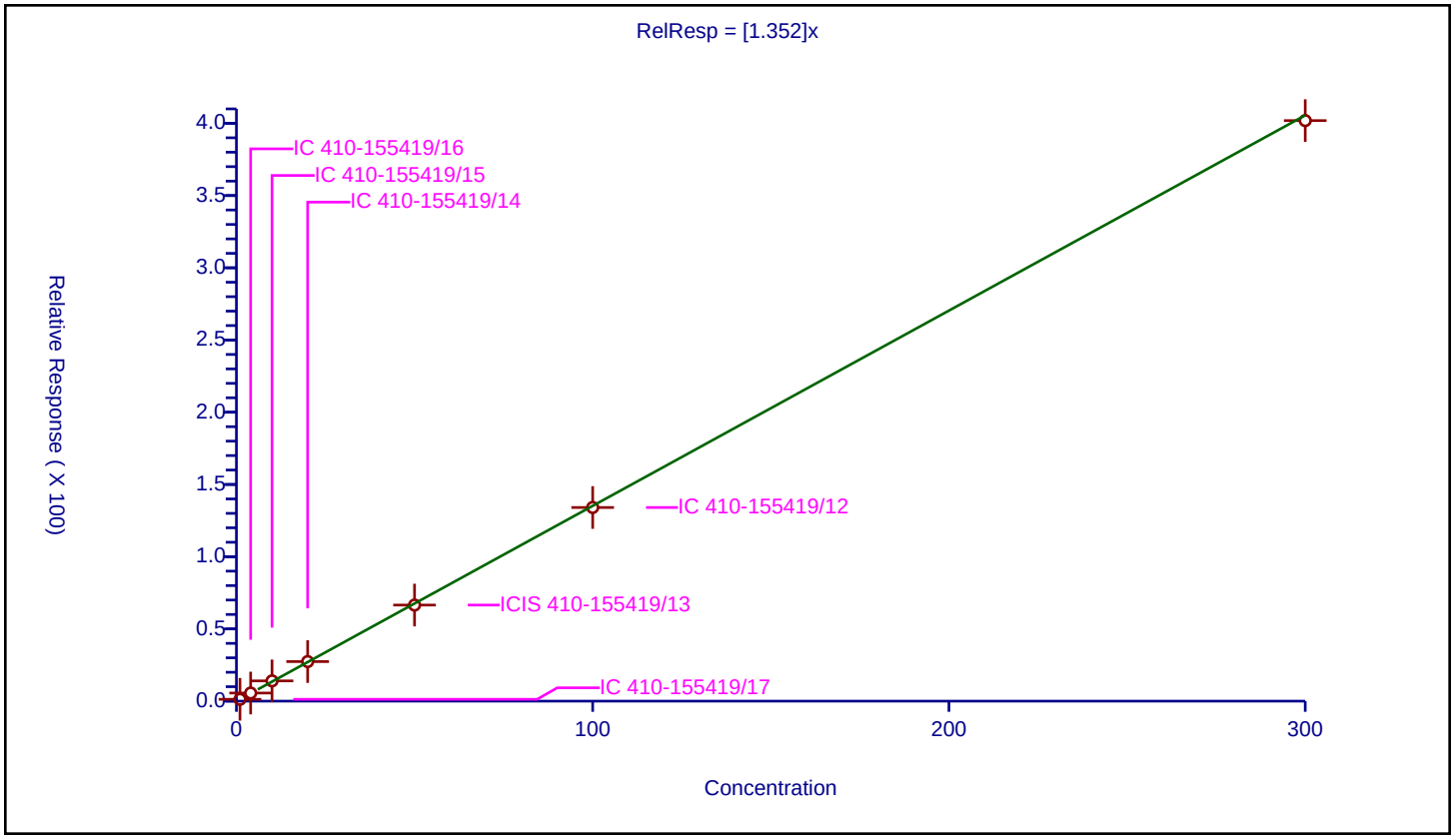
Curve Coefficients

Intercept:	0
Slope:	1.352

Error Coefficients

Standard Error:	3380000
Relative Standard Error:	3.3
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	1.277679	50.0	973993.0	1.277679	Y
2	IC 410-155419/16	4.0	5.610102	50.0	994064.0	1.402525	Y
3	IC 410-155419/15	10.0	14.02274	50.0	973968.0	1.402274	Y
4	IC 410-155419/14	20.0	27.396521	50.0	969353.0	1.369826	Y
5	ICIS 410-155419/13	50.0	66.511894	50.0	959902.0	1.330238	Y
6	IC 410-155419/12	100.0	134.0584	50.0	956579.0	1.340584	Y
7	IC 410-155419/11	300.0	401.885857	50.0	962931.0	1.33962	Y



Calibration / 1,2-Dichloroethane

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

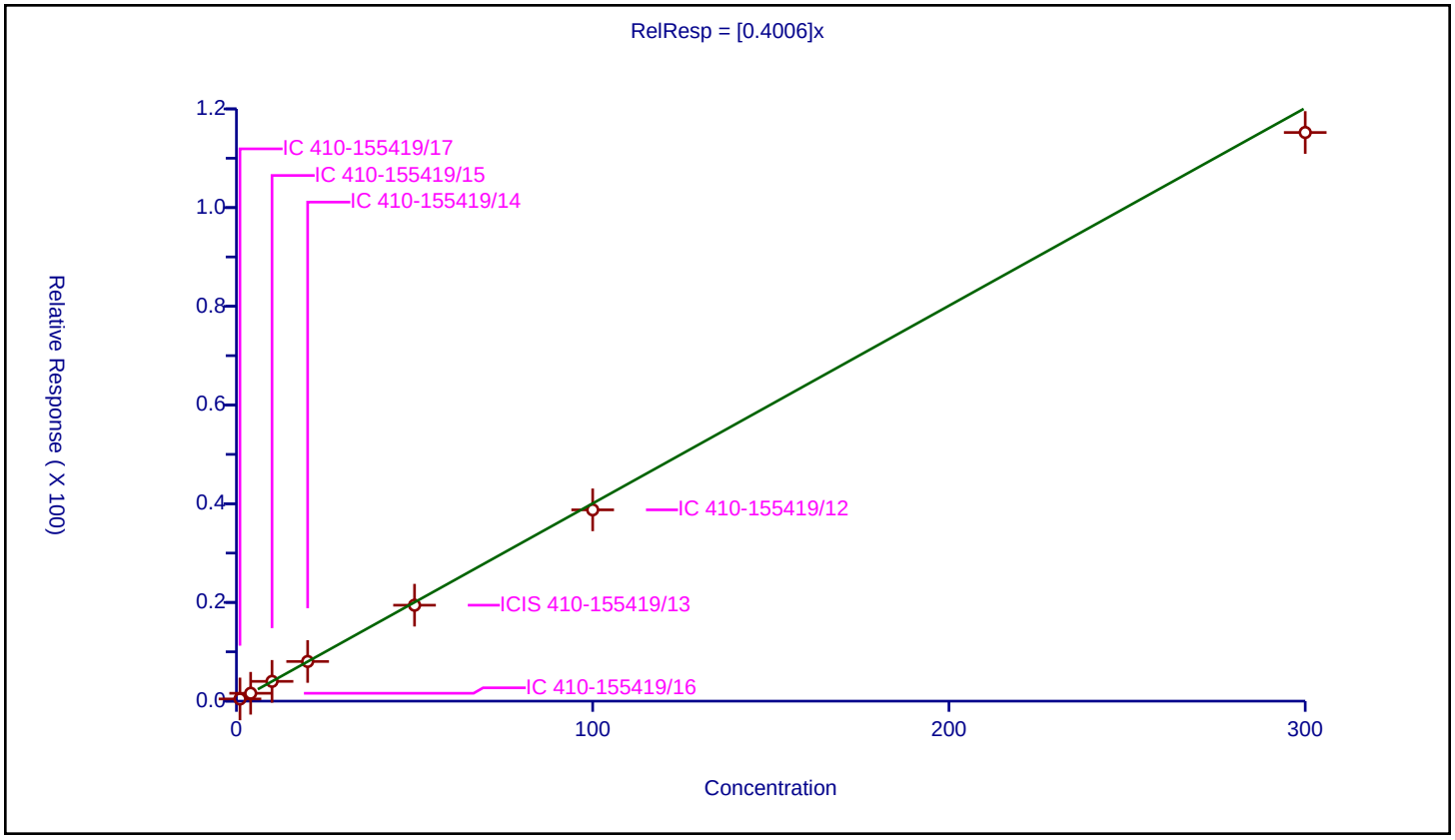
Curve Coefficients

Intercept:	0
Slope:	0.4006

Error Coefficients

Standard Error:	970000
Relative Standard Error:	5.0
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.997

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.442714	50.0	973993.0	0.442714	Y
2	IC 410-155419/16	4.0	1.592352	50.0	994064.0	0.398088	Y
3	IC 410-155419/15	10.0	4.008807	50.0	973968.0	0.400881	Y
4	IC 410-155419/14	20.0	8.040724	50.0	969353.0	0.402036	Y
5	ICIS 410-155419/13	50.0	19.438286	50.0	959902.0	0.388766	Y
6	IC 410-155419/12	100.0	38.757959	50.0	956579.0	0.38758	Y
7	IC 410-155419/11	300.0	115.217134	50.0	962931.0	0.384057	Y



Calibration / Tert-amyl methyl ether

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

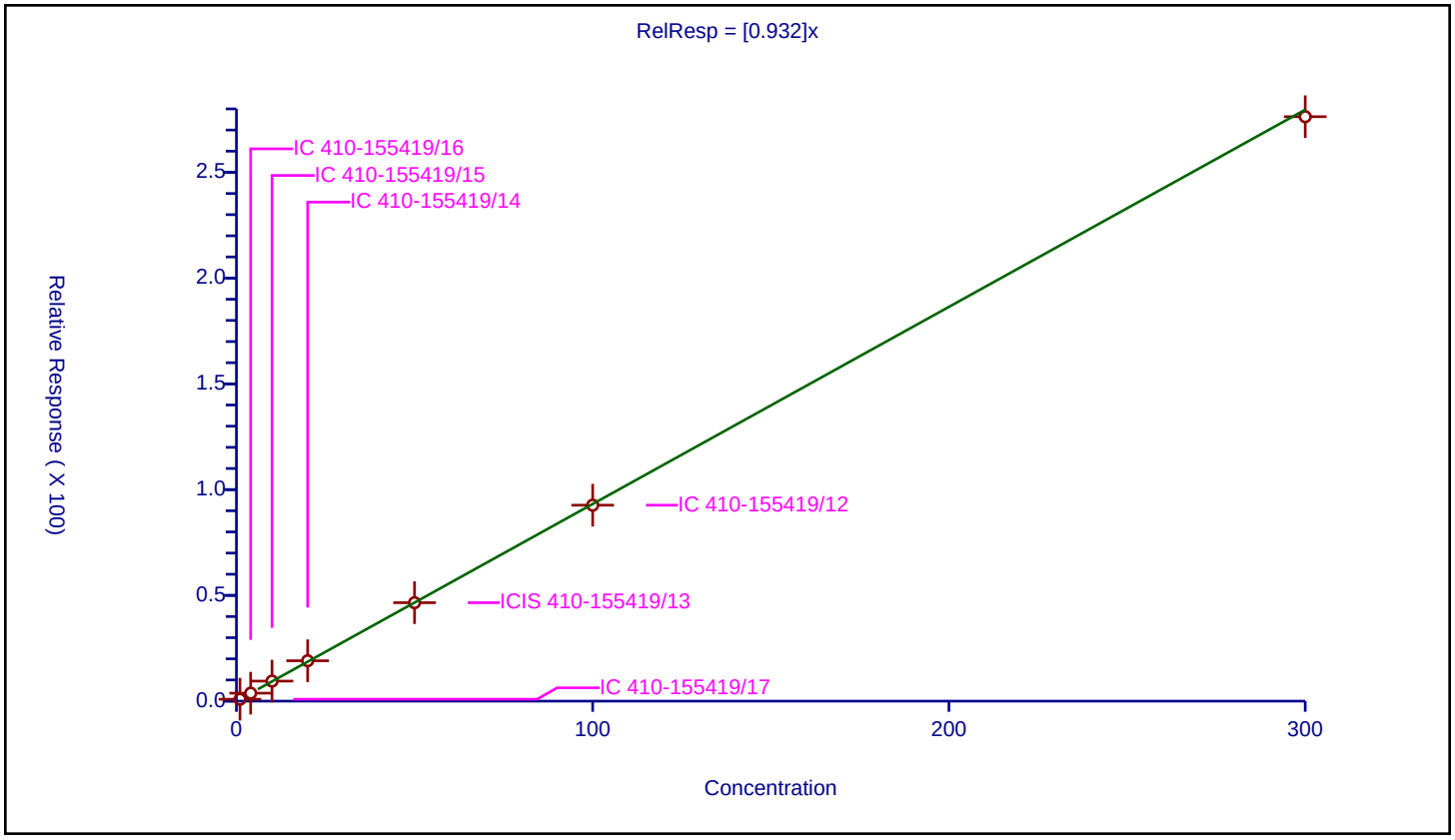
Curve Coefficients

Intercept:	0
Slope:	0.932

Error Coefficients

Standard Error:	2320000
Relative Standard Error:	1.9
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	1.000

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.901085	50.0	973993.0	0.901085	Y
2	IC 410-155419/16	4.0	3.77189	50.0	994064.0	0.942972	Y
3	IC 410-155419/15	10.0	9.471512	50.0	973968.0	0.947151	Y
4	IC 410-155419/14	20.0	19.090878	50.0	969353.0	0.954544	Y
5	ICIS 410-155419/13	50.0	46.545741	50.0	959902.0	0.930915	Y
6	IC 410-155419/12	100.0	92.646608	50.0	956579.0	0.926466	Y
7	IC 410-155419/11	300.0	276.304688	50.0	962931.0	0.921016	Y



Calibration / n-Heptane

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

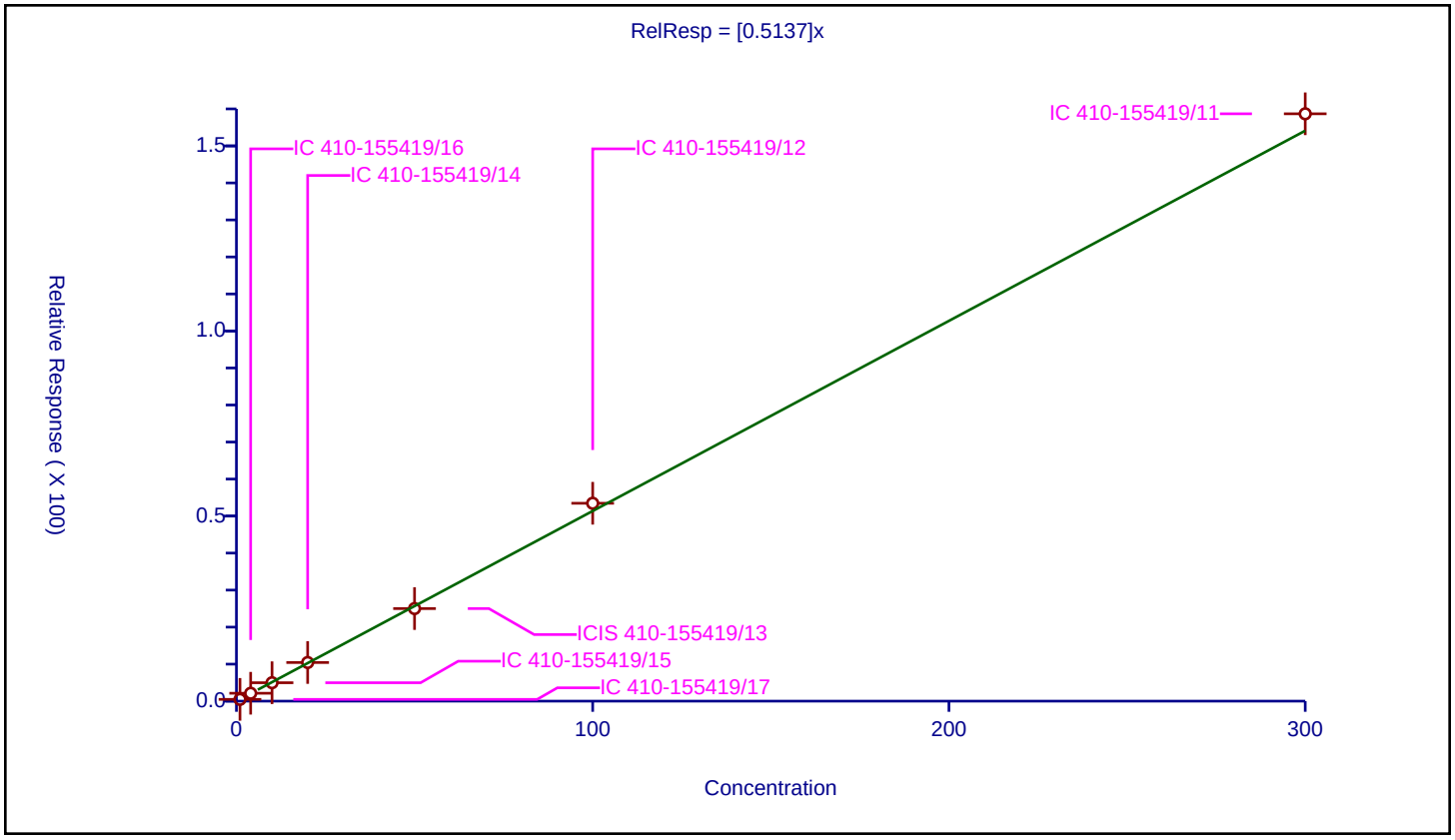
Curve Coefficients

Intercept:	0
Slope:	0.5137

Error Coefficients

Standard Error:	1330000
Relative Standard Error:	4.1
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.48024	50.0	973993.0	0.48024	Y
2	IC 410-155419/16	4.0	2.129792	50.0	994064.0	0.532448	Y
3	IC 410-155419/15	10.0	4.975317	50.0	973968.0	0.497532	Y
4	IC 410-155419/14	20.0	10.436755	50.0	969353.0	0.521838	Y
5	ICIS 410-155419/13	50.0	25.006407	50.0	959902.0	0.500128	Y
6	IC 410-155419/12	100.0	53.454864	50.0	956579.0	0.534549	Y
7	IC 410-155419/11	300.0	158.676063	50.0	962931.0	0.52892	Y



Calibration / Trichloroethene

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

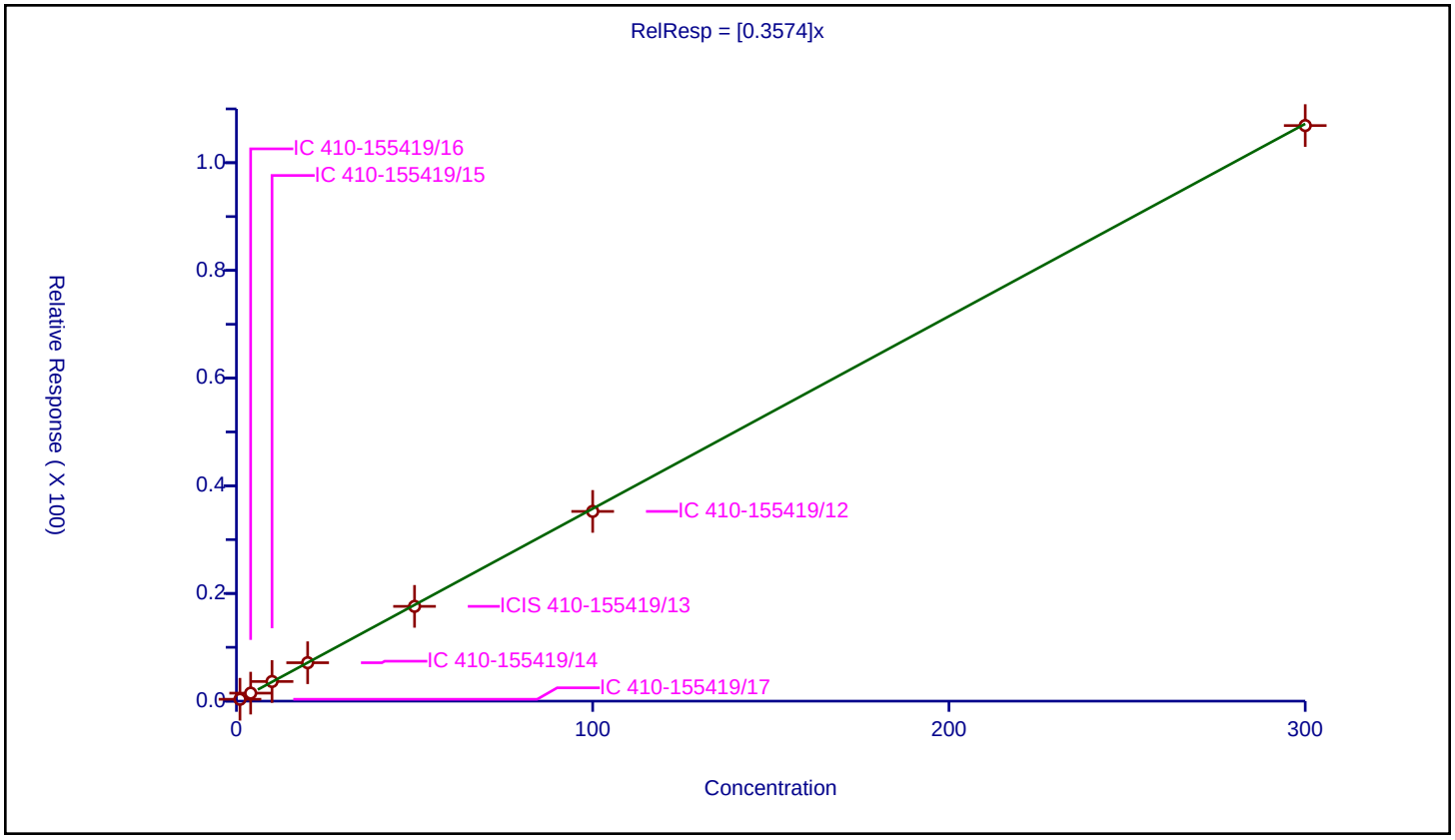
Curve Coefficients

Intercept:	0
Slope:	0.3574

Error Coefficients

Standard Error:	897000
Relative Standard Error:	2.3
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.34759	50.0	973993.0	0.34759	Y
2	IC 410-155419/16	4.0	1.48748	50.0	994064.0	0.37187	Y
3	IC 410-155419/15	10.0	3.65012	50.0	973968.0	0.365012	Y
4	IC 410-155419/14	20.0	7.134656	50.0	969353.0	0.356733	Y
5	ICIS 410-155419/13	50.0	17.602318	50.0	959902.0	0.352046	Y
6	IC 410-155419/12	100.0	35.23802	50.0	956579.0	0.35238	Y
7	IC 410-155419/11	300.0	106.90387	50.0	962931.0	0.356346	Y



Calibration / Methylcyclohexane

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

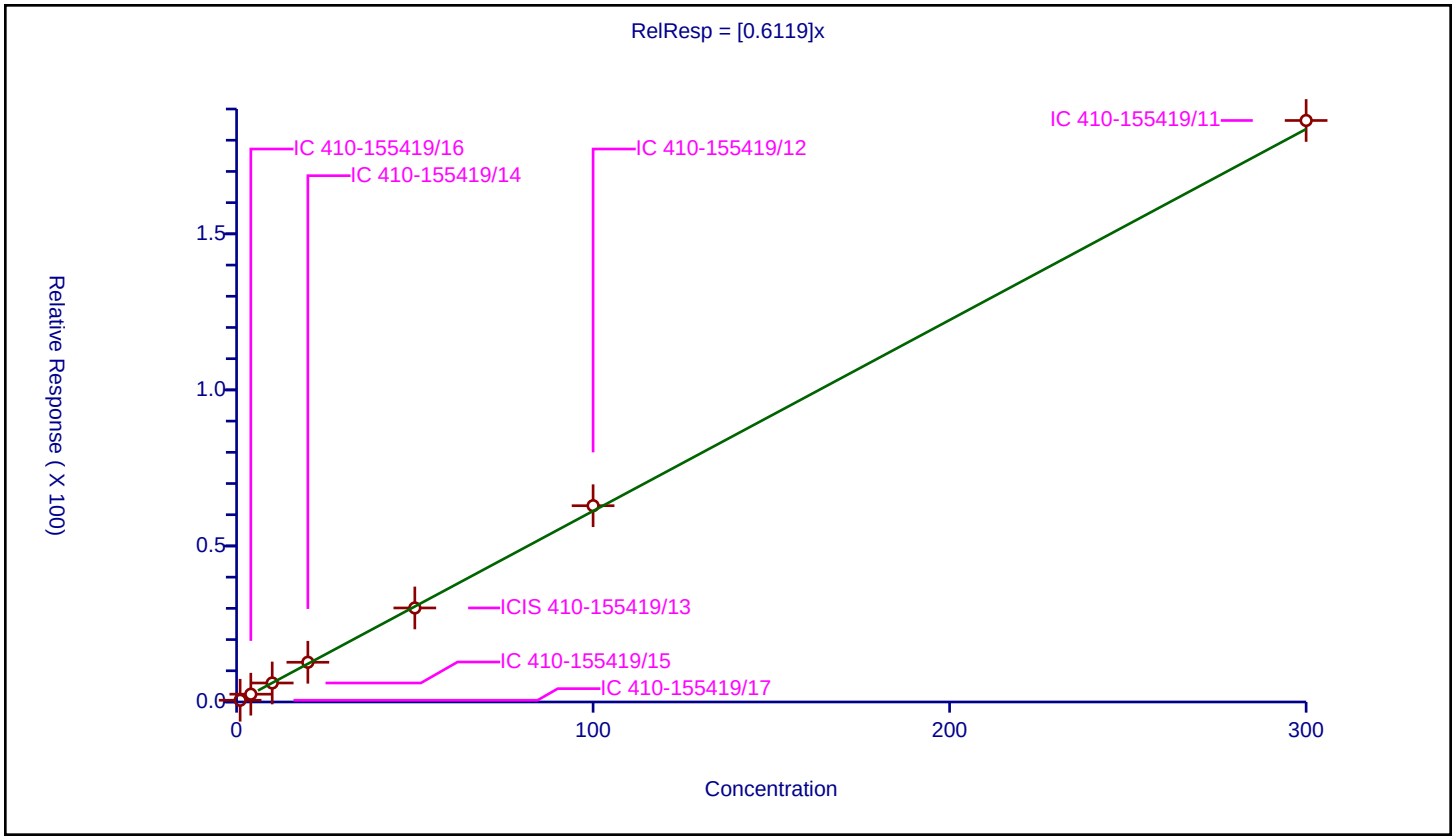
Curve Coefficients

Intercept:	0
Slope:	0.6119

Error Coefficients

Standard Error:	1570000
Relative Standard Error:	4.1
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.561298	50.0	973993.0	0.561298	Y
2	IC 410-155419/16	4.0	2.498582	50.0	994064.0	0.624645	Y
3	IC 410-155419/15	10.0	6.085056	50.0	973968.0	0.608506	Y
4	IC 410-155419/14	20.0	12.724725	50.0	969353.0	0.636236	Y
5	ICIS 410-155419/13	50.0	30.134014	50.0	959902.0	0.60268	Y
6	IC 410-155419/12	100.0	62.895485	50.0	956579.0	0.628955	Y
7	IC 410-155419/11	300.0	186.323683	50.0	962931.0	0.621079	Y



Calibration / 1,2-Dichloropropane

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

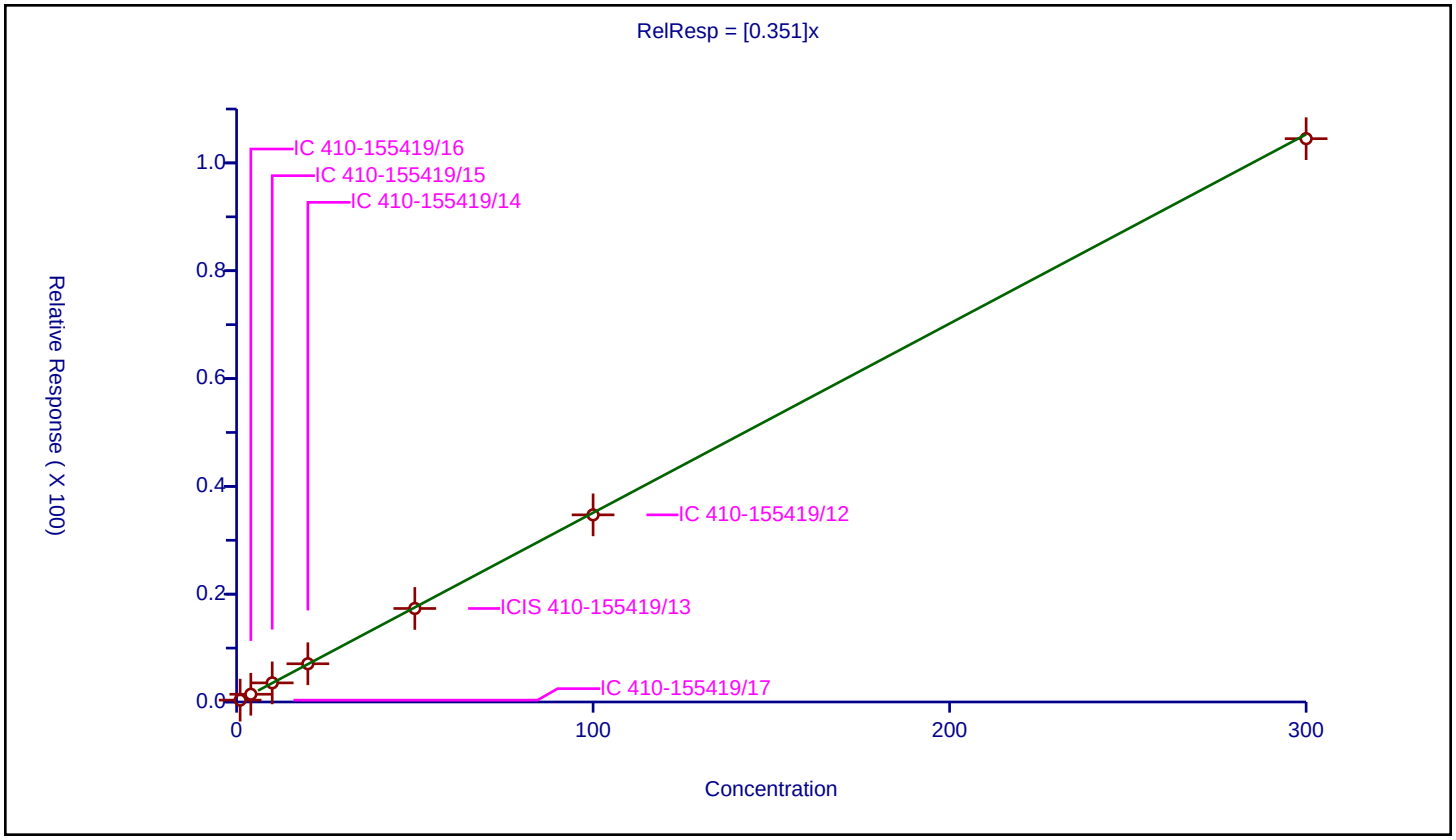
Curve Coefficients

Intercept:	0
Slope:	0.351

Error Coefficients

Standard Error:	878000
Relative Standard Error:	1.5
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	1.000

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.34605	50.0	973993.0	0.34605	Y
2	IC 410-155419/16	4.0	1.437382	50.0	994064.0	0.359346	Y
3	IC 410-155419/15	10.0	3.546164	50.0	973968.0	0.354616	Y
4	IC 410-155419/14	20.0	7.090348	50.0	969353.0	0.354517	Y
5	ICIS 410-155419/13	50.0	17.344583	50.0	959902.0	0.346892	Y
6	IC 410-155419/12	100.0	34.712031	50.0	956579.0	0.34712	Y
7	IC 410-155419/11	300.0	104.500426	50.0	962931.0	0.348335	Y



Calibration / 2-ethoxy-2-methyl butane

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

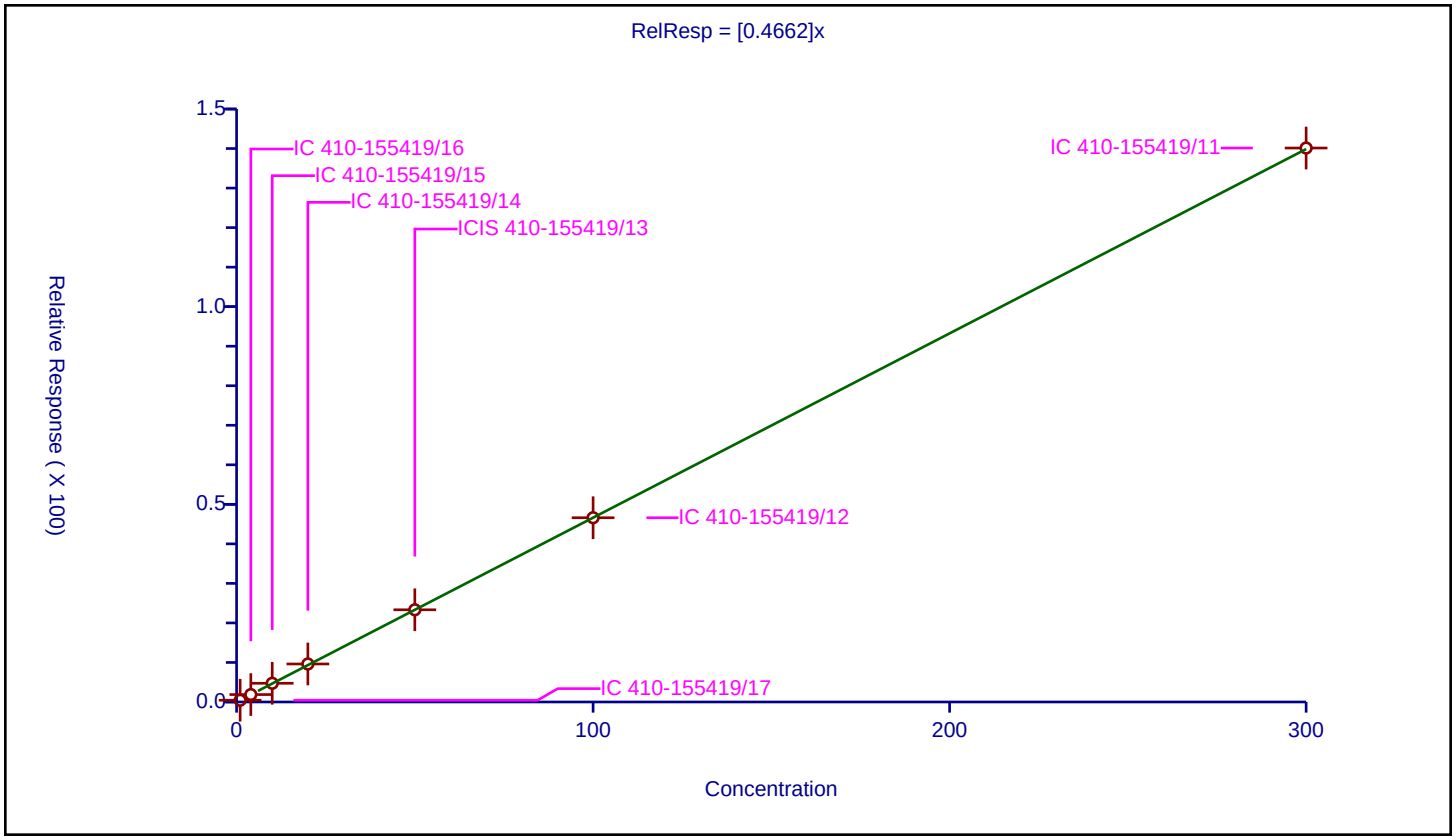
Curve Coefficients

Intercept:	0
Slope:	0.4662

Error Coefficients

Standard Error:	1180000
Relative Standard Error:	2.7
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.440404	50.0	973993.0	0.440404	Y
2	IC 410-155419/16	4.0	1.876992	50.0	994064.0	0.469248	Y
3	IC 410-155419/15	10.0	4.735012	50.0	973968.0	0.473501	Y
4	IC 410-155419/14	20.0	9.613835	50.0	969353.0	0.480692	Y
5	ICIS 410-155419/13	50.0	23.32285	50.0	959902.0	0.466457	Y
6	IC 410-155419/12	100.0	46.607808	50.0	956579.0	0.466078	Y
7	IC 410-155419/11	300.0	140.133924	50.0	962931.0	0.467113	Y



Calibration / 1,4-Dioxane

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

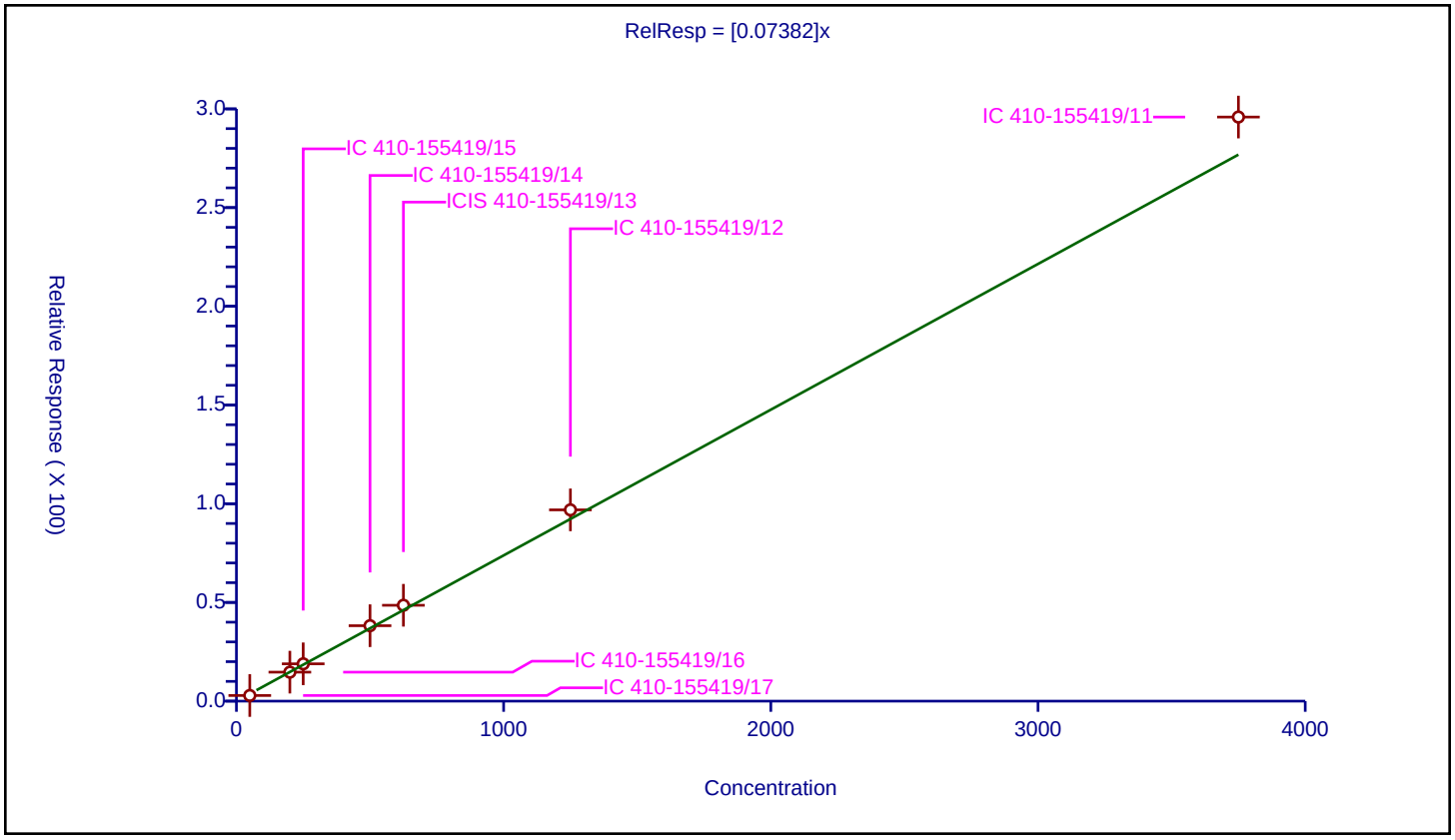
Curve Coefficients

Intercept:	0
Slope:	0.07382

Error Coefficients

Standard Error:	129000
Relative Standard Error:	10.2
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.988

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	50.0	2.857361	250.0	268692.0	0.057147	Y
2	IC 410-155419/16	200.0	14.681477	250.0	256088.0	0.073407	Y
3	IC 410-155419/15	250.0	18.906715	250.0	270076.0	0.075627	Y
4	IC 410-155419/14	500.0	38.217423	250.0	276824.0	0.076435	Y
5	ICIS 410-155419/13	625.0	48.559713	250.0	255088.0	0.077696	Y
6	IC 410-155419/12	1250.0	96.893613	250.0	247973.0	0.077515	Y
7	IC 410-155419/11	3750.0	295.877536	250.0	247910.0	0.078901	Y



Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

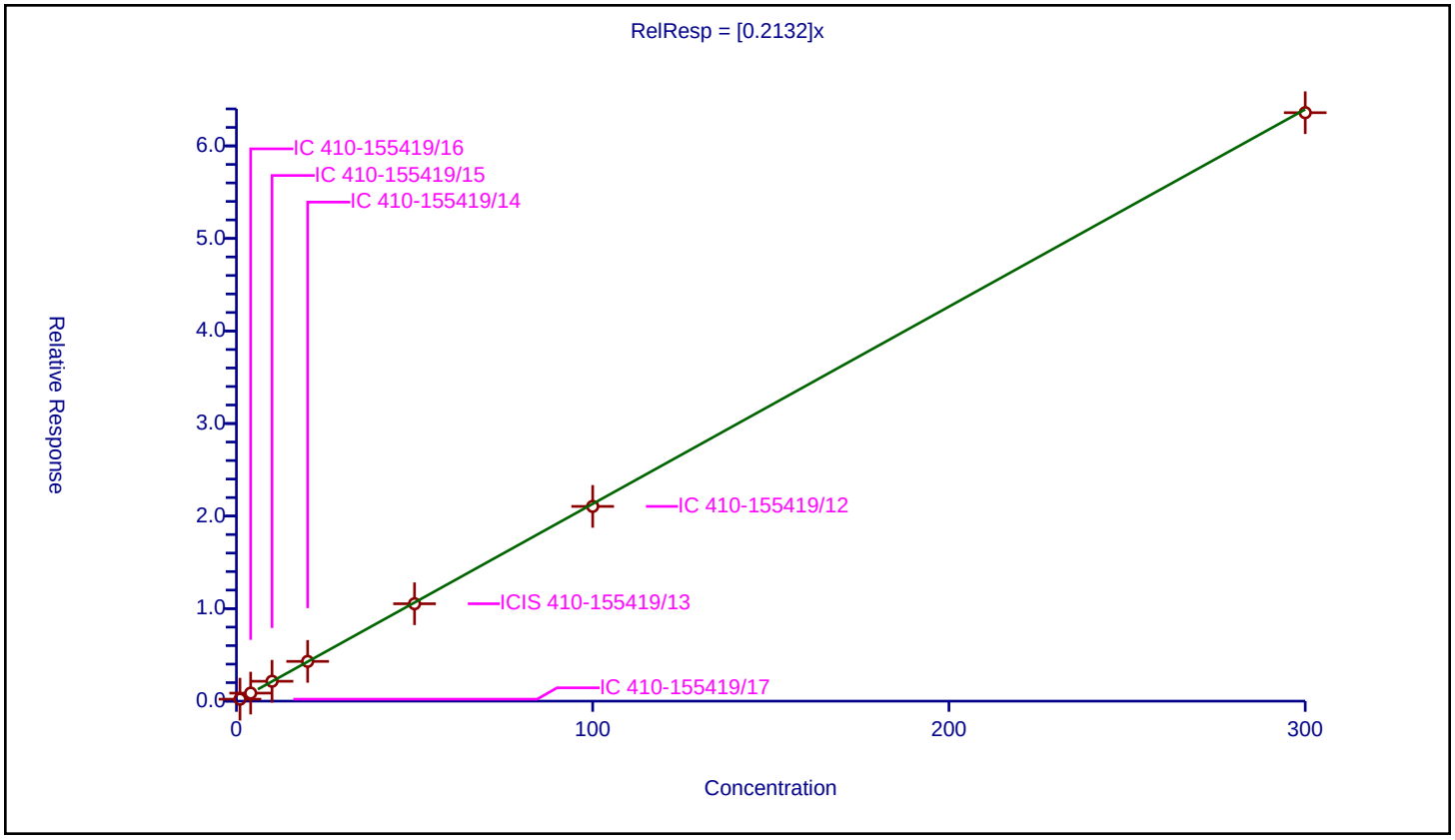
Curve Coefficients

Intercept:	0
Slope:	0.2132

Error Coefficients

Standard Error:	534000
Relative Standard Error:	1.2
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	1.000

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.212322	50.0	973993.0	0.212322	Y
2	IC 410-155419/16	4.0	0.868355	50.0	994064.0	0.217089	Y
3	IC 410-155419/15	10.0	2.149455	50.0	973968.0	0.214945	Y
4	IC 410-155419/14	20.0	4.296474	50.0	969353.0	0.214824	Y
5	ICIS 410-155419/13	50.0	10.524616	50.0	959902.0	0.210492	Y
6	IC 410-155419/12	100.0	21.044995	50.0	956579.0	0.21045	Y
7	IC 410-155419/11	300.0	63.589655	50.0	962931.0	0.211966	Y



Calibration / Methyl methacrylate

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

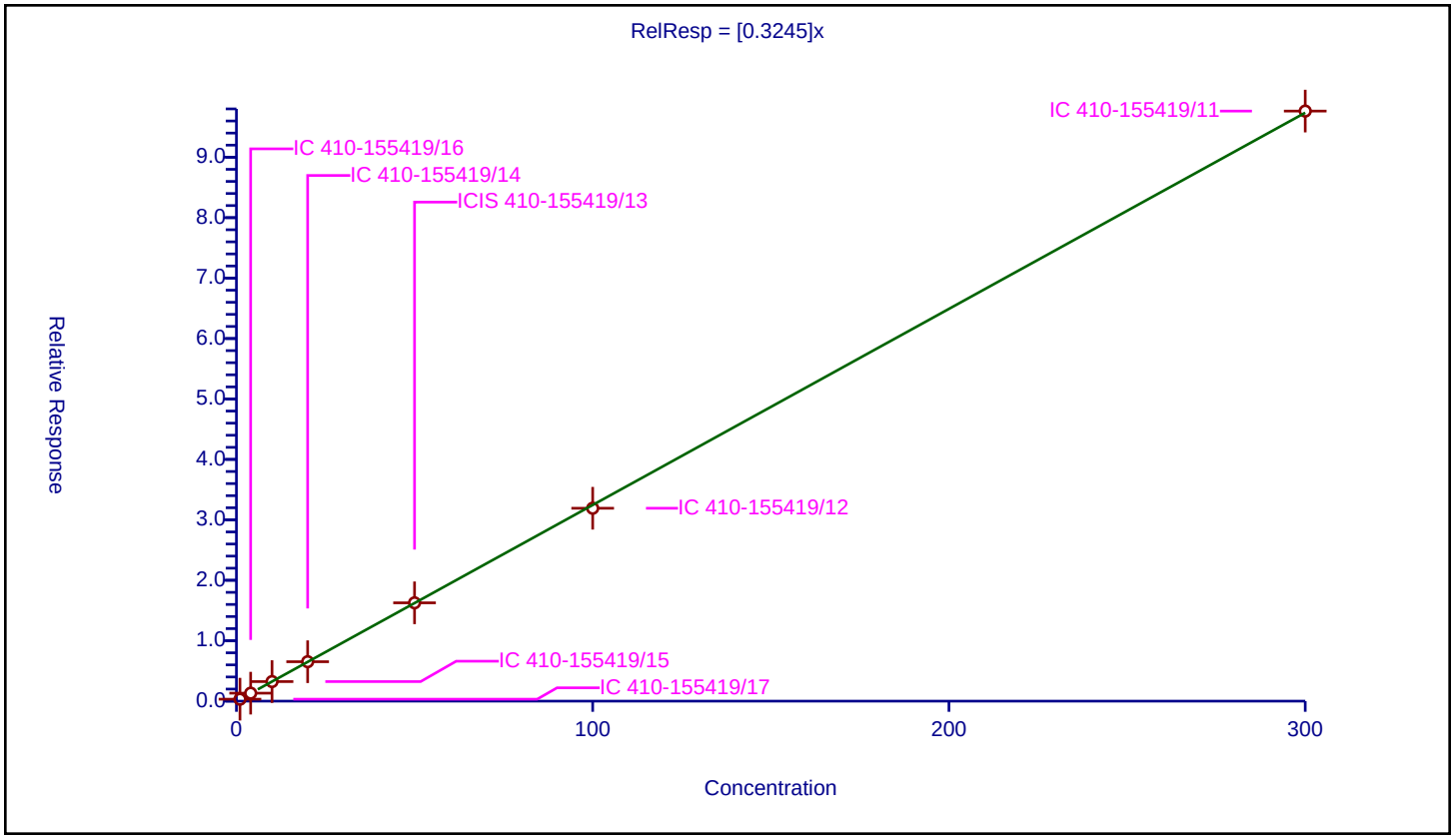
Curve Coefficients

Intercept:	0
Slope:	0.3245

Error Coefficients

Standard Error:	819000
Relative Standard Error:	1.0
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	1.000

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.321871	50.0	973993.0	0.321871	Y
2	IC 410-155419/16	4.0	1.318829	50.0	994064.0	0.329707	Y
3	IC 410-155419/15	10.0	3.23871	50.0	973968.0	0.323871	Y
4	IC 410-155419/14	20.0	6.526776	50.0	969353.0	0.326339	Y
5	ICIS 410-155419/13	50.0	16.26739	50.0	959902.0	0.325348	Y
6	IC 410-155419/12	100.0	31.919057	50.0	956579.0	0.319191	Y
7	IC 410-155419/11	300.0	97.640329	50.0	962931.0	0.325468	Y



Calibration / Dichlorobromomethane

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

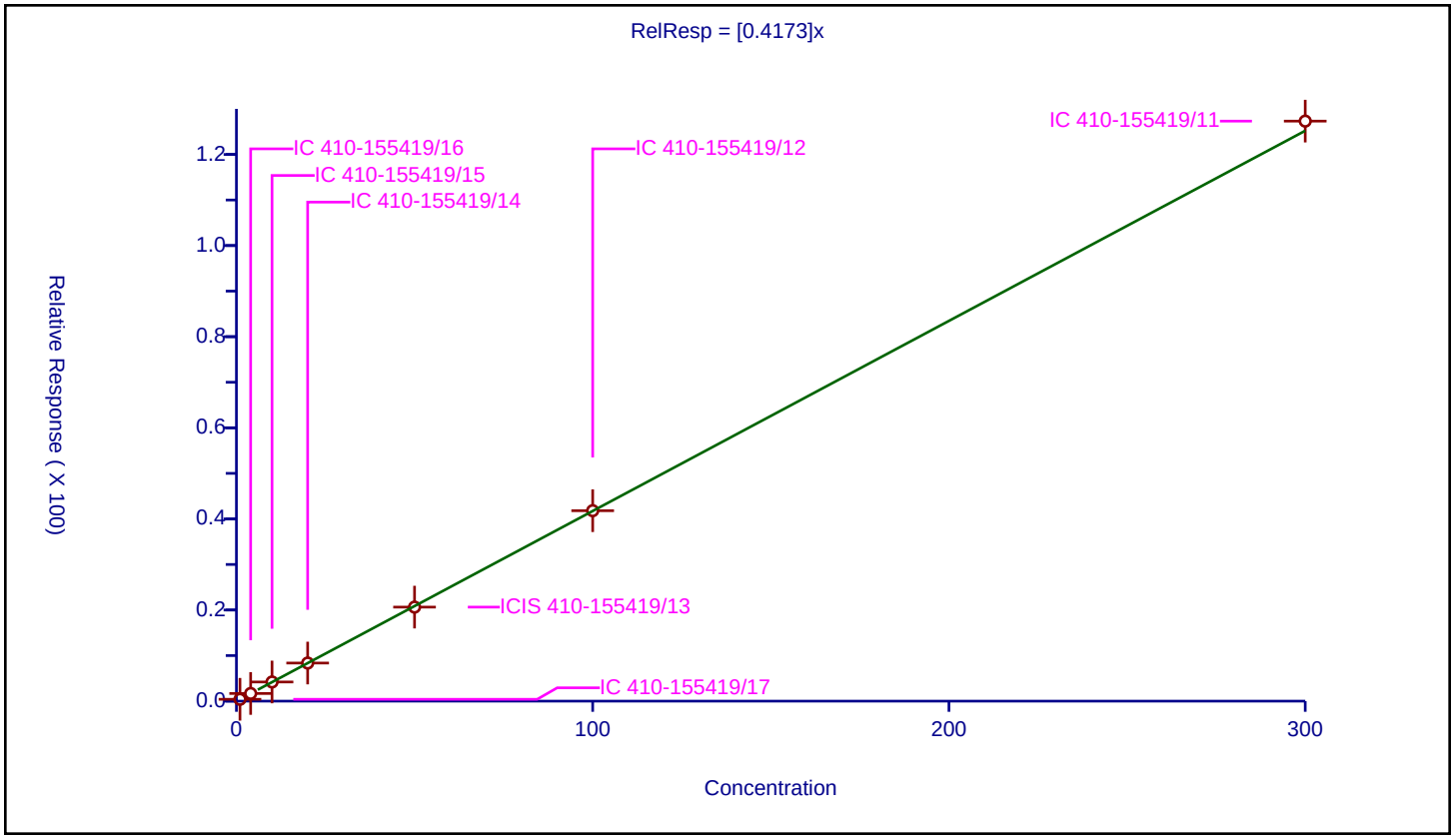
Curve Coefficients

Intercept:	0
Slope:	0.4173

Error Coefficients

Standard Error:	1070000
Relative Standard Error:	1.4
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	1.000

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.406984	50.0	973993.0	0.406984	Y
2	IC 410-155419/16	4.0	1.681984	50.0	994064.0	0.420496	Y
3	IC 410-155419/15	10.0	4.205734	50.0	973968.0	0.420573	Y
4	IC 410-155419/14	20.0	8.361763	50.0	969353.0	0.418088	Y
5	ICIS 410-155419/13	50.0	20.637576	50.0	959902.0	0.412752	Y
6	IC 410-155419/12	100.0	41.801879	50.0	956579.0	0.418019	Y
7	IC 410-155419/11	300.0	127.314418	50.0	962931.0	0.424381	Y



Calibration / 2-Nitropropane

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

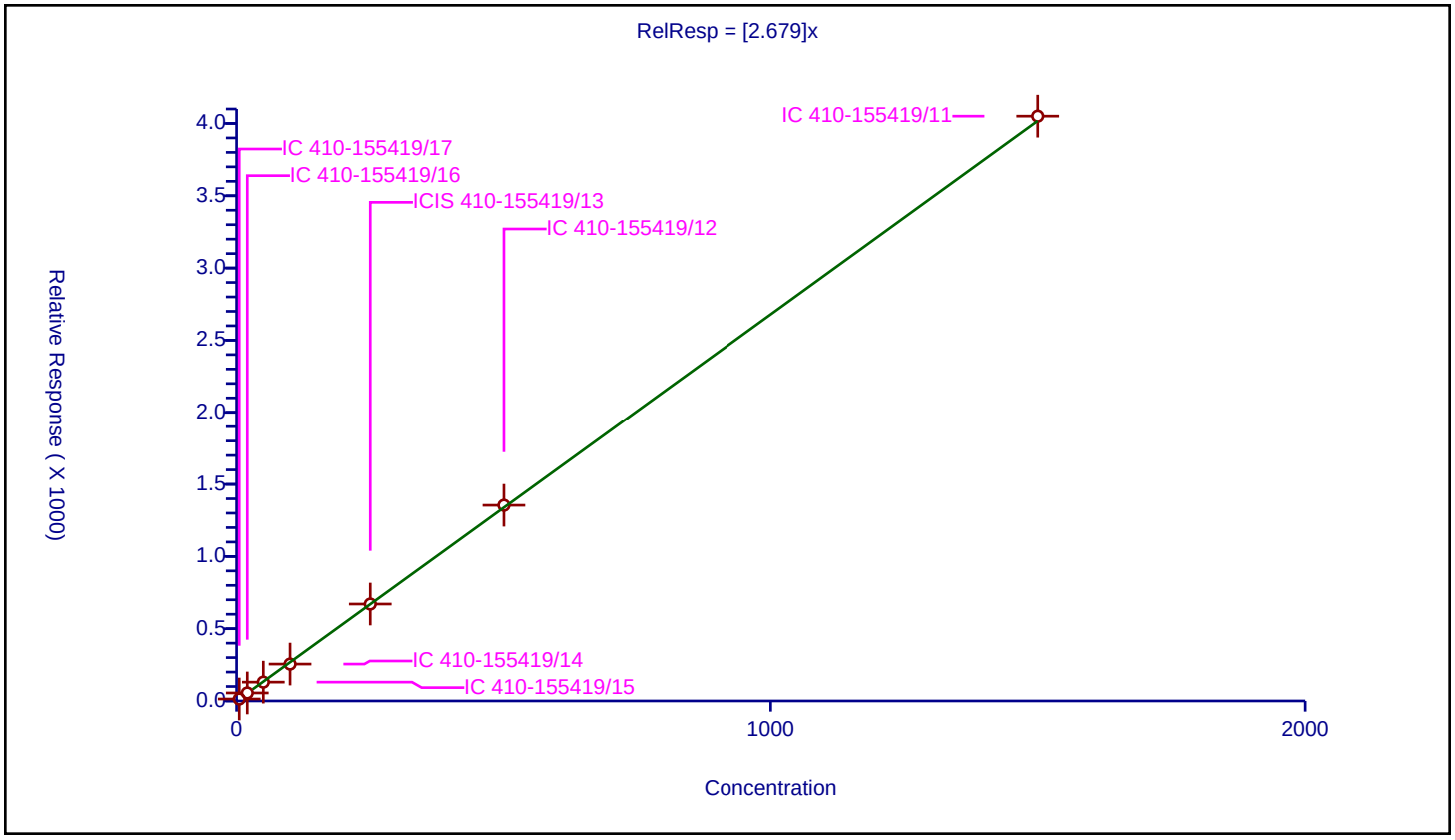
Curve Coefficients

Intercept:	0
Slope:	2.679

Error Coefficients

Standard Error:	1750000
Relative Standard Error:	2.8
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	5.0	13.637362	250.0	268692.0	2.727472	Y
2	IC 410-155419/16	20.0	55.416497	250.0	256088.0	2.770825	Y
3	IC 410-155419/15	50.0	130.294806	250.0	270076.0	2.605896	Y
4	IC 410-155419/14	100.0	255.293074	250.0	276824.0	2.552931	Y
5	ICIS 410-155419/13	250.0	670.737157	250.0	255088.0	2.682949	Y
6	IC 410-155419/12	500.0	1354.816855	250.0	247973.0	2.709634	Y
7	IC 410-155419/11	1500.0	4050.421524	250.0	247910.0	2.700281	Y



Calibration / 2-Chloroethyl vinyl ether

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

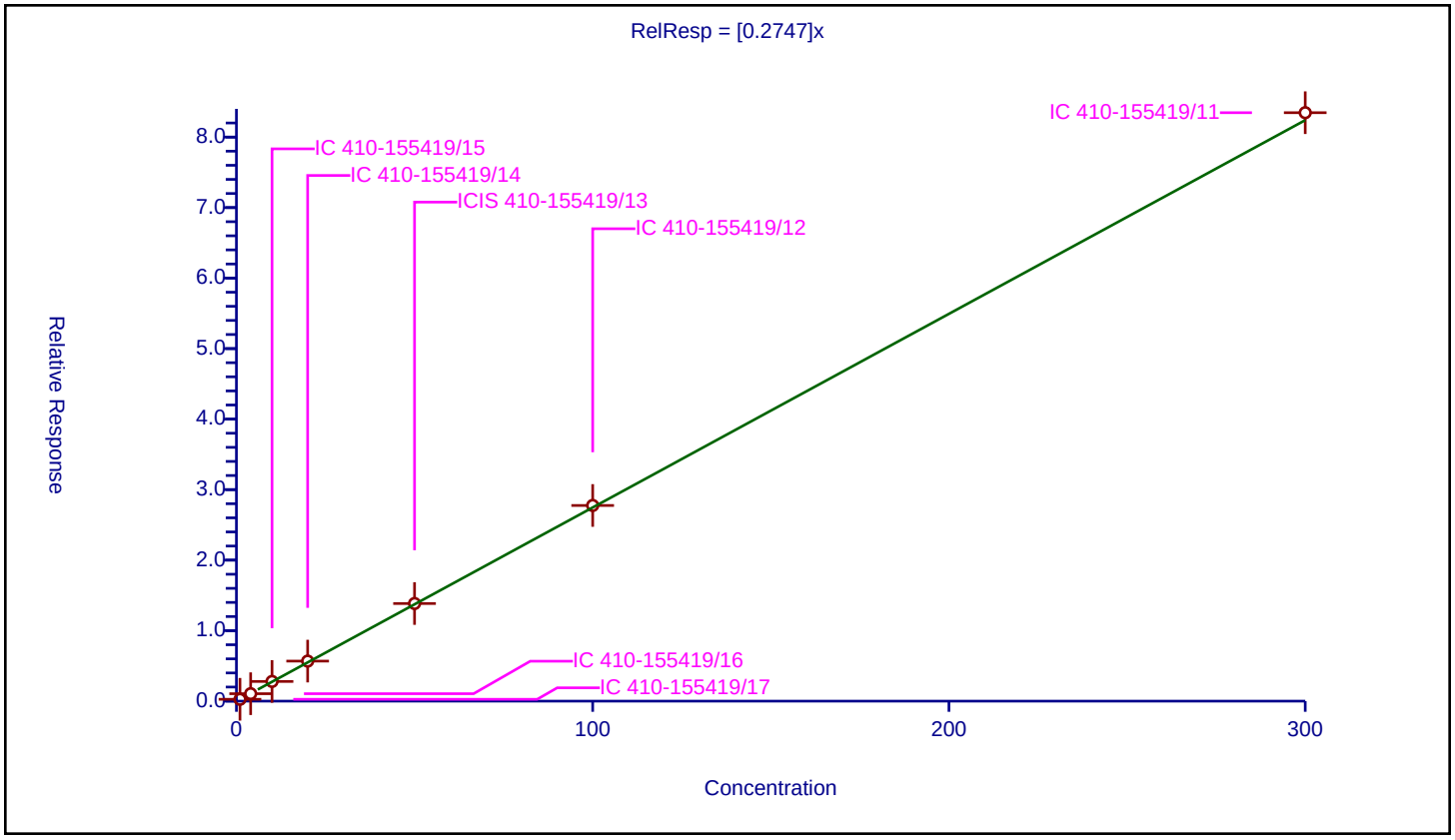
Curve Coefficients

Intercept:	0
Slope:	0.2747

Error Coefficients

Standard Error:	701000
Relative Standard Error:	3.0
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.262168	50.0	973993.0	0.262168	Y
2	IC 410-155419/16	4.0	1.056874	50.0	994064.0	0.264218	Y
3	IC 410-155419/15	10.0	2.794445	50.0	973968.0	0.279444	Y
4	IC 410-155419/14	20.0	5.681109	50.0	969353.0	0.284055	Y
5	ICIS 410-155419/13	50.0	13.848132	50.0	959902.0	0.276963	Y
6	IC 410-155419/12	100.0	27.753379	50.0	956579.0	0.277534	Y
7	IC 410-155419/11	300.0	83.460757	50.0	962931.0	0.278203	Y



Calibration / cis-1,3-Dichloropropene

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

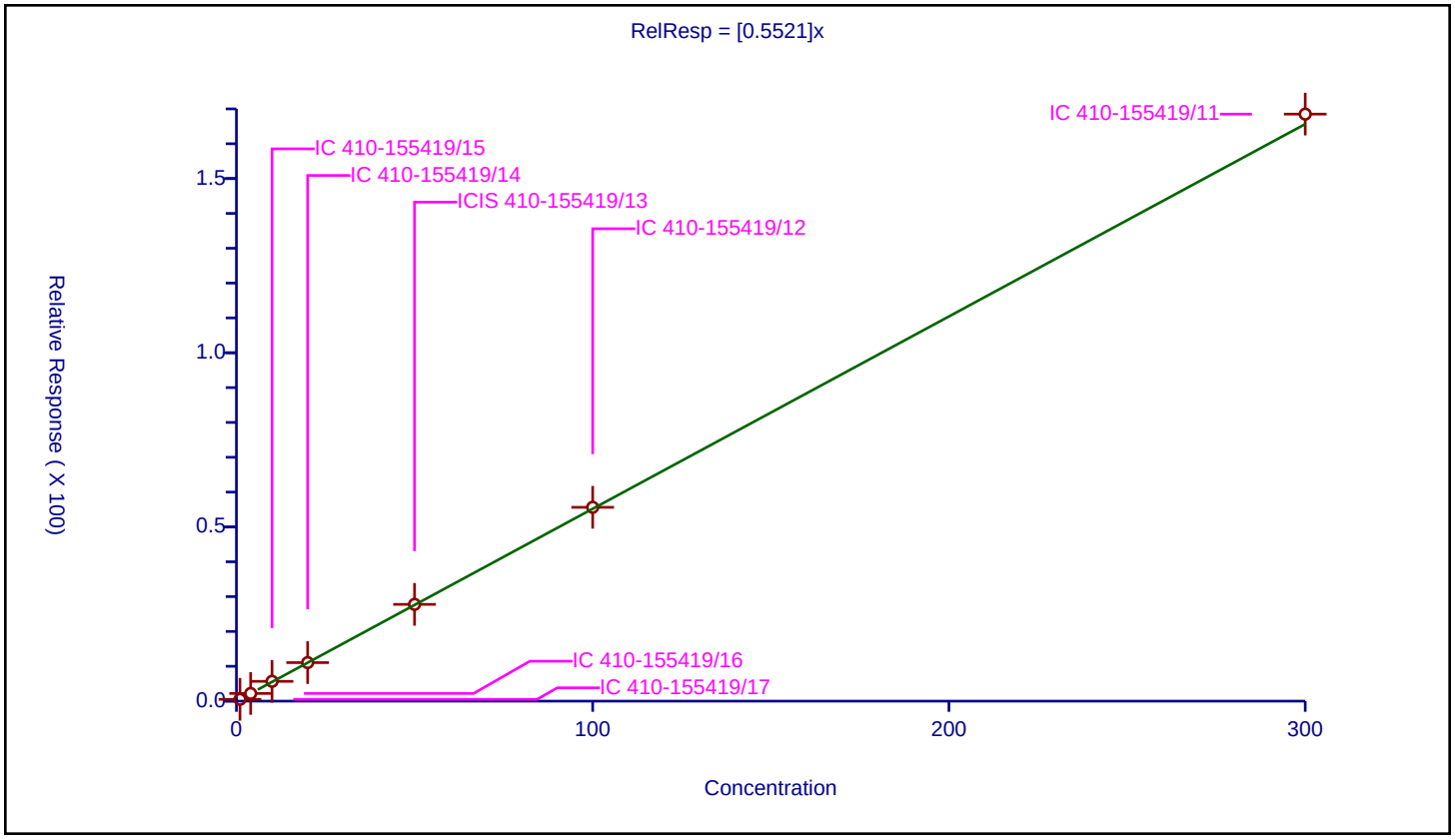
Curve Coefficients

Intercept:	0
Slope:	0.5521

Error Coefficients

Standard Error:	1410000
Relative Standard Error:	2.9
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.518844	50.0	973993.0	0.518844	Y
2	IC 410-155419/16	4.0	2.202826	50.0	994064.0	0.550706	Y
3	IC 410-155419/15	10.0	5.686583	50.0	973968.0	0.568658	Y
4	IC 410-155419/14	20.0	11.059903	50.0	969353.0	0.552995	Y
5	ICIS 410-155419/13	50.0	27.779138	50.0	959902.0	0.555583	Y
6	IC 410-155419/12	100.0	55.640621	50.0	956579.0	0.556406	Y
7	IC 410-155419/11	300.0	168.503922	50.0	962931.0	0.56168	Y



Calibration / 4-Methyl-2-pentanone (MIBK)

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

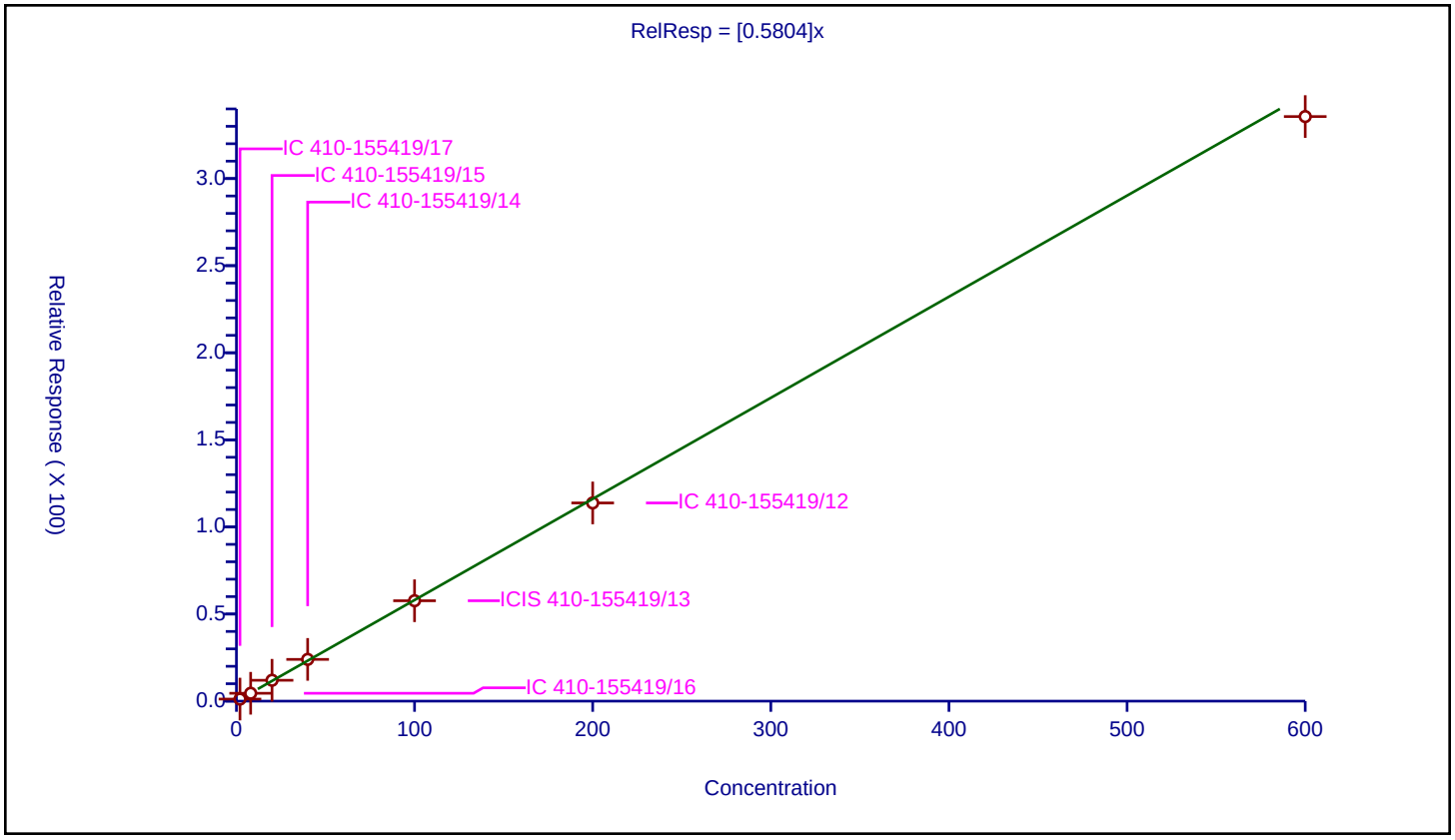
Curve Coefficients

Intercept:	0
Slope:	0.5804

Error Coefficients

Standard Error:	2830000
Relative Standard Error:	3.0
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	2.0	1.190101	50.0	973993.0	0.59505	Y
2	IC 410-155419/16	8.0	4.518623	50.0	994064.0	0.564828	Y
3	IC 410-155419/15	20.0	11.986893	50.0	973968.0	0.599345	Y
4	IC 410-155419/14	40.0	23.967585	50.0	969353.0	0.59919	Y
5	ICIS 410-155419/13	100.0	57.638228	50.0	959902.0	0.576382	Y
6	IC 410-155419/12	200.0	113.788459	50.0	956579.0	0.568942	Y
7	IC 410-155419/11	600.0	335.589777	50.0	962931.0	0.559316	Y



Calibration / Toluene-d8 (Surr)

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

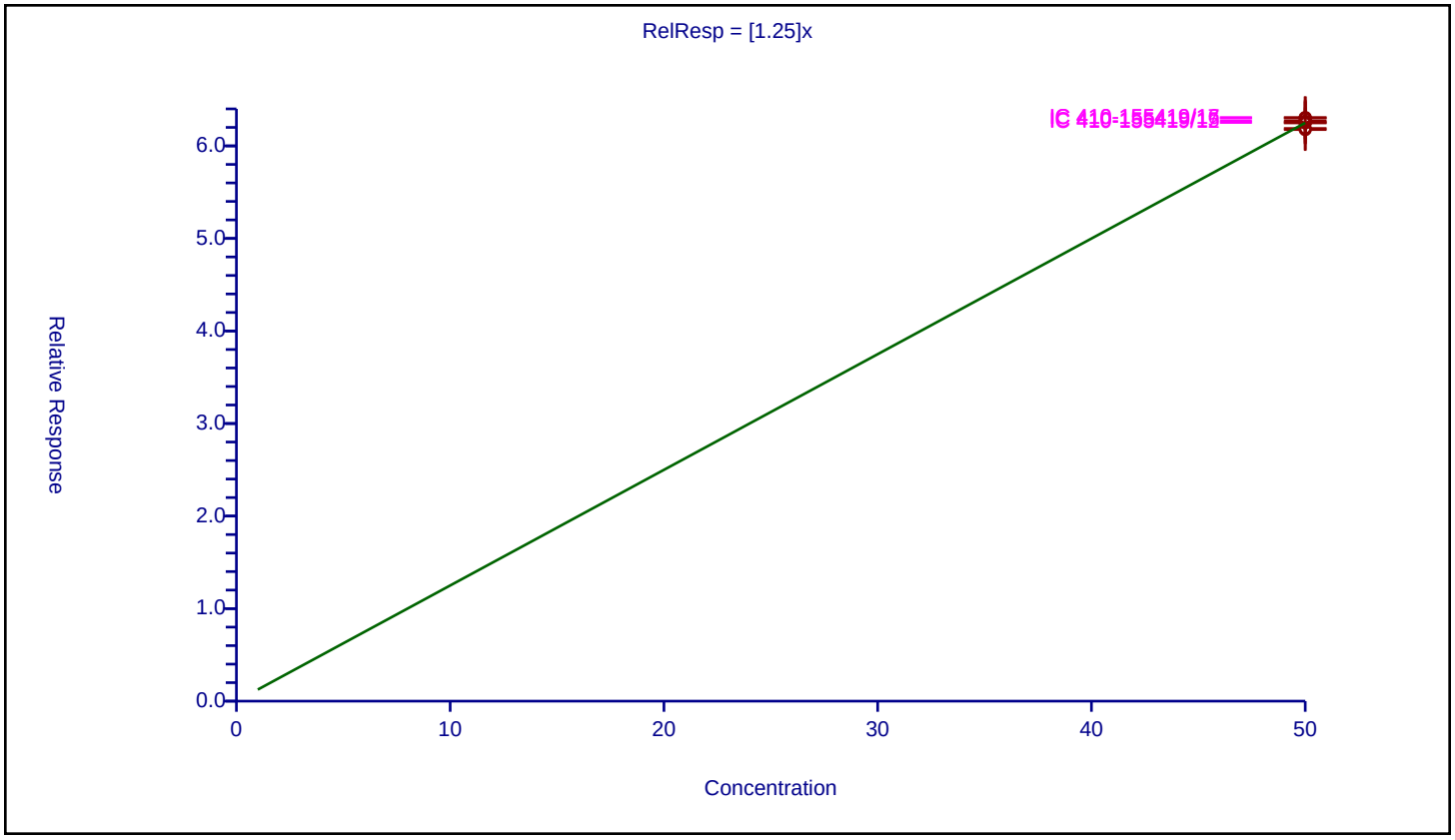
Curve Coefficients

Intercept:	0
Slope:	1.25

Error Coefficients

Standard Error:	1010000
Relative Standard Error:	0.8
Correlation Coefficient:	NA
Coefficient of Determination (Adjusted):	0

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/11	50.0	61.883115	50.0	750586.0	1.237662	Y
2	IC 410-155419/12	50.0	62.531435	50.0	733252.0	1.250629	Y
3	ICIS 410-155419/13	50.0	61.763623	50.0	743963.0	1.235272	Y
4	IC 410-155419/14	50.0	62.483713	50.0	742159.0	1.249674	Y
5	IC 410-155419/15	50.0	62.674946	50.0	743731.0	1.253499	Y
6	IC 410-155419/16	50.0	63.065298	50.0	756791.0	1.261306	Y
7	IC 410-155419/17	50.0	63.000775	50.0	741925.0	1.260016	Y



Calibration / Toluene

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

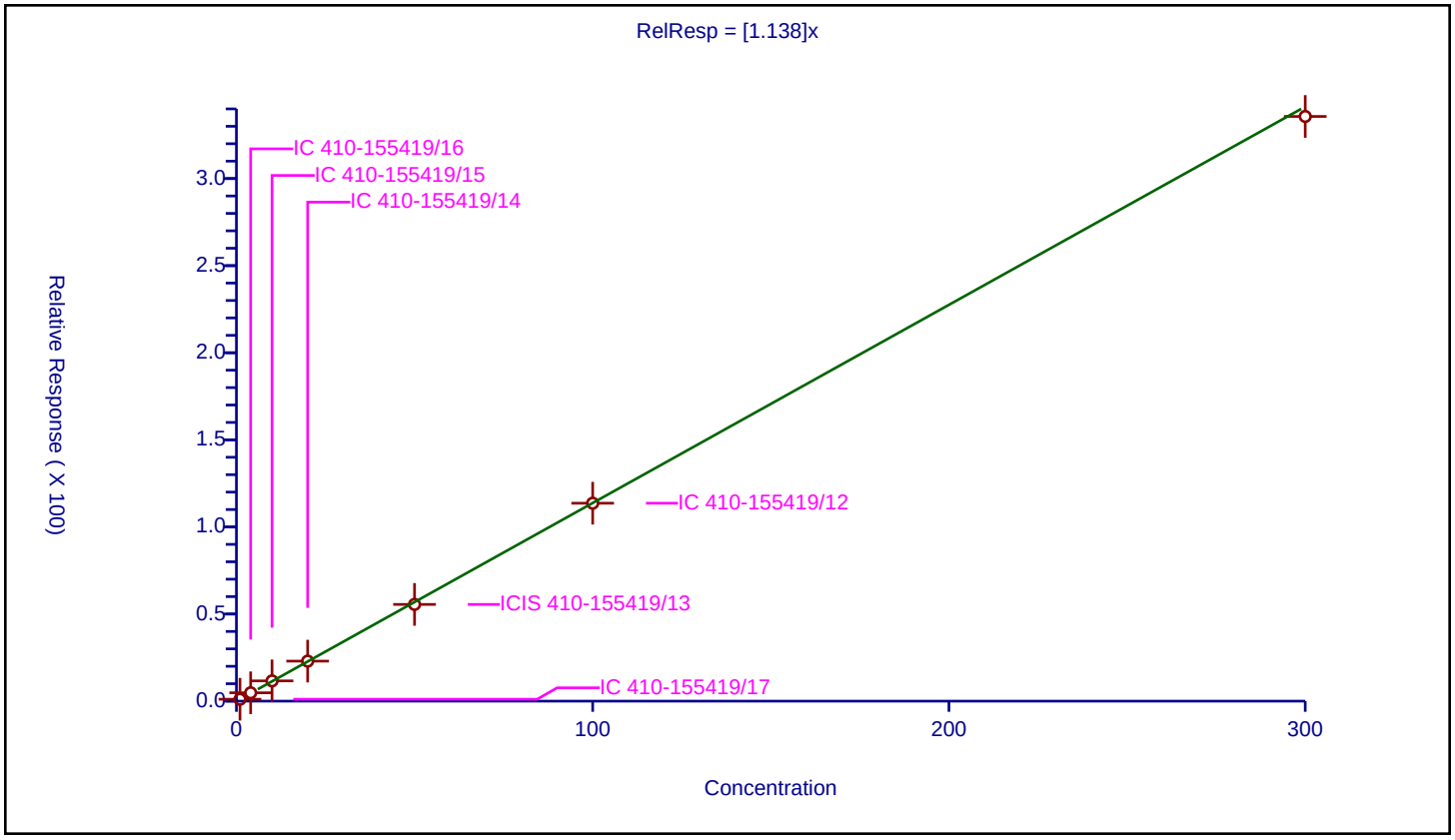
Curve Coefficients

Intercept:	0
Slope:	1.138

Error Coefficients

Standard Error:	2200000
Relative Standard Error:	3.2
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	1.087441	50.0	741925.0	1.087441	Y
2	IC 410-155419/16	4.0	4.797956	50.0	756791.0	1.199489	Y
3	IC 410-155419/15	10.0	11.621272	50.0	743731.0	1.162127	Y
4	IC 410-155419/14	20.0	22.969202	50.0	742159.0	1.14846	Y
5	ICIS 410-155419/13	50.0	55.518823	50.0	743963.0	1.110376	Y
6	IC 410-155419/12	100.0	113.627989	50.0	733252.0	1.13628	Y
7	IC 410-155419/11	300.0	335.659671	50.0	750586.0	1.118866	Y



Calibration / trans-1,3-Dichloropropene

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

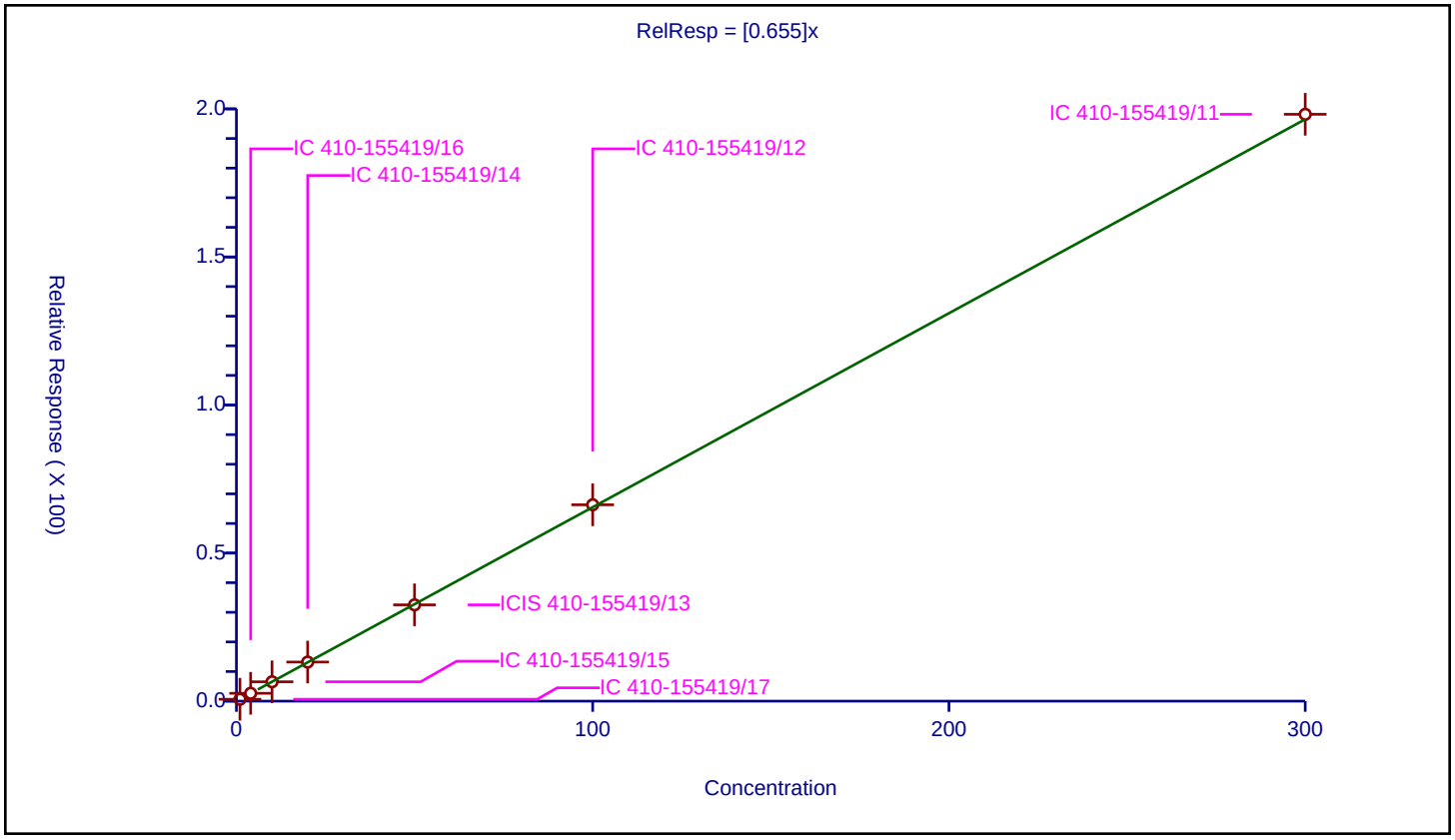
Curve Coefficients

Intercept:	0
Slope:	0.655

Error Coefficients

Standard Error:	1300000
Relative Standard Error:	1.6
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	1.000

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.634633	50.0	741925.0	0.634633	Y
2	IC 410-155419/16	4.0	2.652251	50.0	756791.0	0.663063	Y
3	IC 410-155419/15	10.0	6.530789	50.0	743731.0	0.653079	Y
4	IC 410-155419/14	20.0	13.201753	50.0	742159.0	0.660088	Y
5	ICIS 410-155419/13	50.0	32.517545	50.0	743963.0	0.650351	Y
6	IC 410-155419/12	100.0	66.30749	50.0	733252.0	0.663075	Y
7	IC 410-155419/11	300.0	198.16963	50.0	750586.0	0.660565	Y



Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

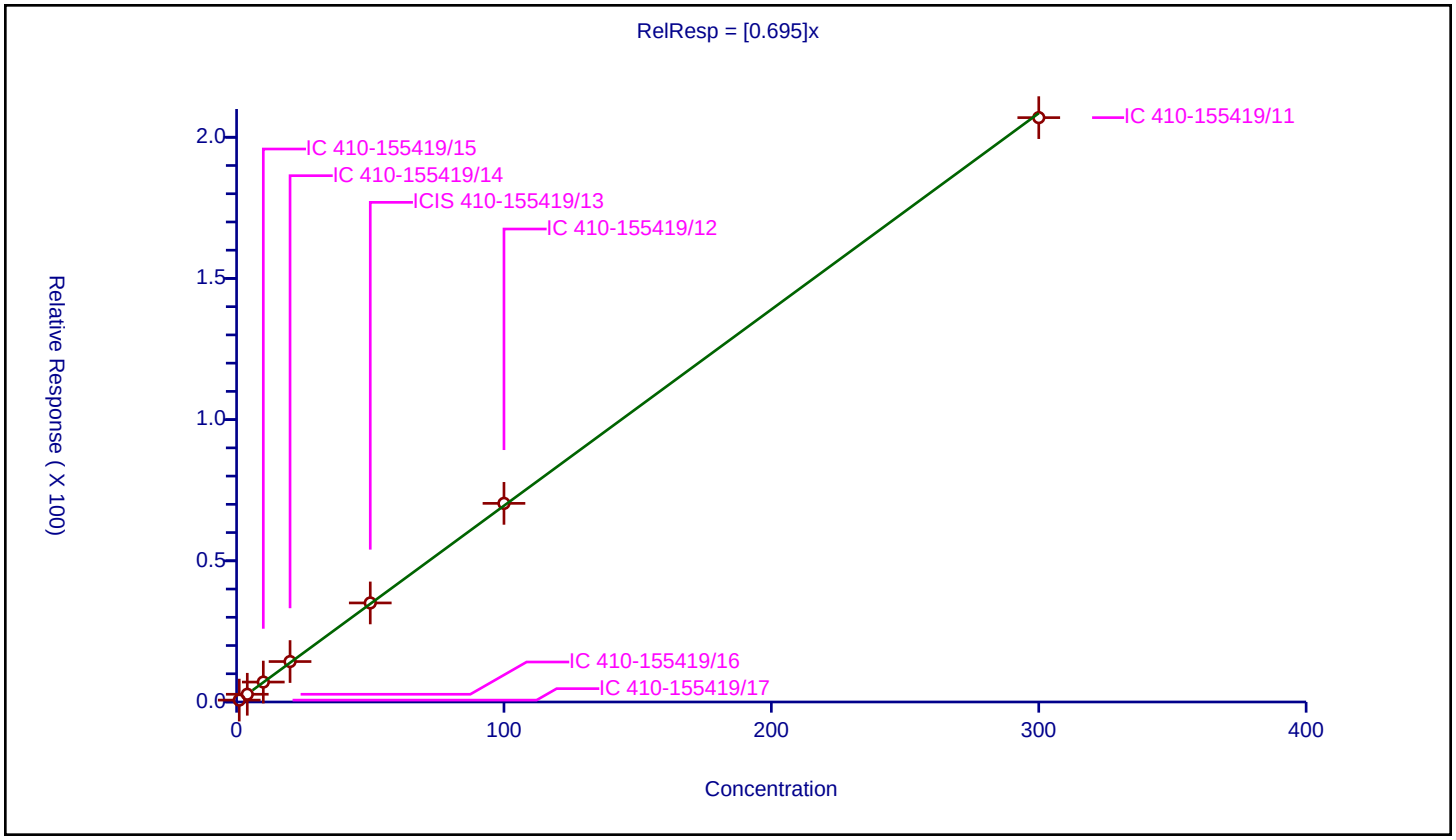
Curve Coefficients

Intercept:	0
Slope:	0.695

Error Coefficients

Standard Error:	1360000
Relative Standard Error:	2.5
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.000044	0.664151	50.0	741925.0	0.664122	Y
2	IC 410-155419/16	4.000175	2.73596	50.0	756791.0	0.68396	Y
3	IC 410-155419/15	10.000438	7.062903	50.0	743731.0	0.706259	Y
4	IC 410-155419/14	20.000875	14.320988	50.0	742159.0	0.716018	Y
5	ICIS 410-155419/13	50.002188	35.075199	50.0	743963.0	0.701473	Y
6	IC 410-155419/12	100.004376	70.339665	50.0	733252.0	0.703366	Y
7	IC 410-155419/11	300.013128	206.9535	50.0	750586.0	0.689815	Y



Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

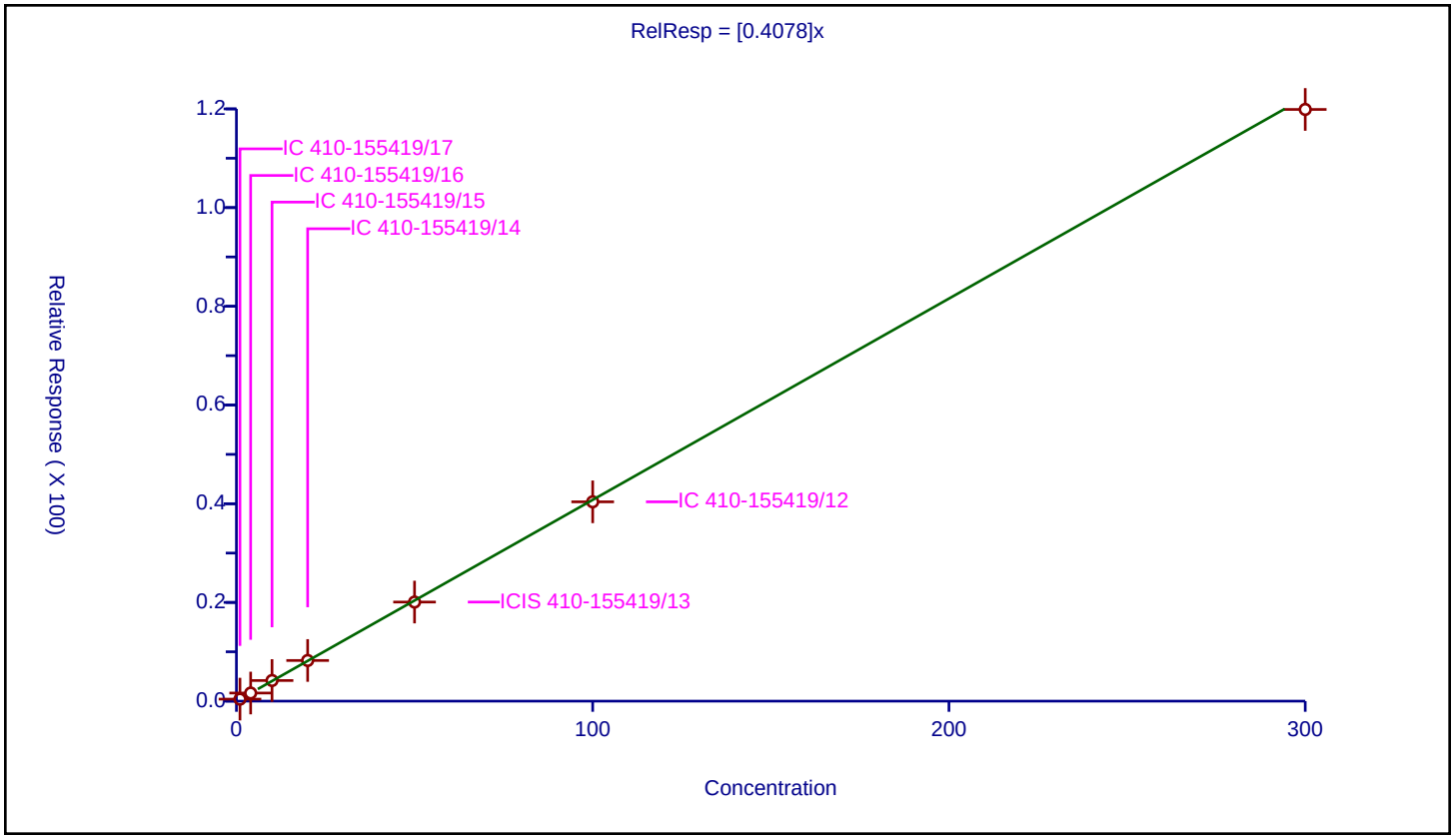
Curve Coefficients

Intercept:	0
Slope:	0.4078

Error Coefficients

Standard Error:	785000
Relative Standard Error:	1.6
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	1.000

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.409341	50.0	741925.0	0.409341	Y
2	IC 410-155419/16	4.0	1.641669	50.0	756791.0	0.410417	Y
3	IC 410-155419/15	10.0	4.181552	50.0	743731.0	0.418155	Y
4	IC 410-155419/14	20.0	8.236173	50.0	742159.0	0.411809	Y
5	ICIS 410-155419/13	50.0	20.079896	50.0	743963.0	0.401598	Y
6	IC 410-155419/12	100.0	40.385229	50.0	733252.0	0.403852	Y
7	IC 410-155419/11	300.0	119.886062	50.0	750586.0	0.39962	Y



Calibration / Tetrachloroethene

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

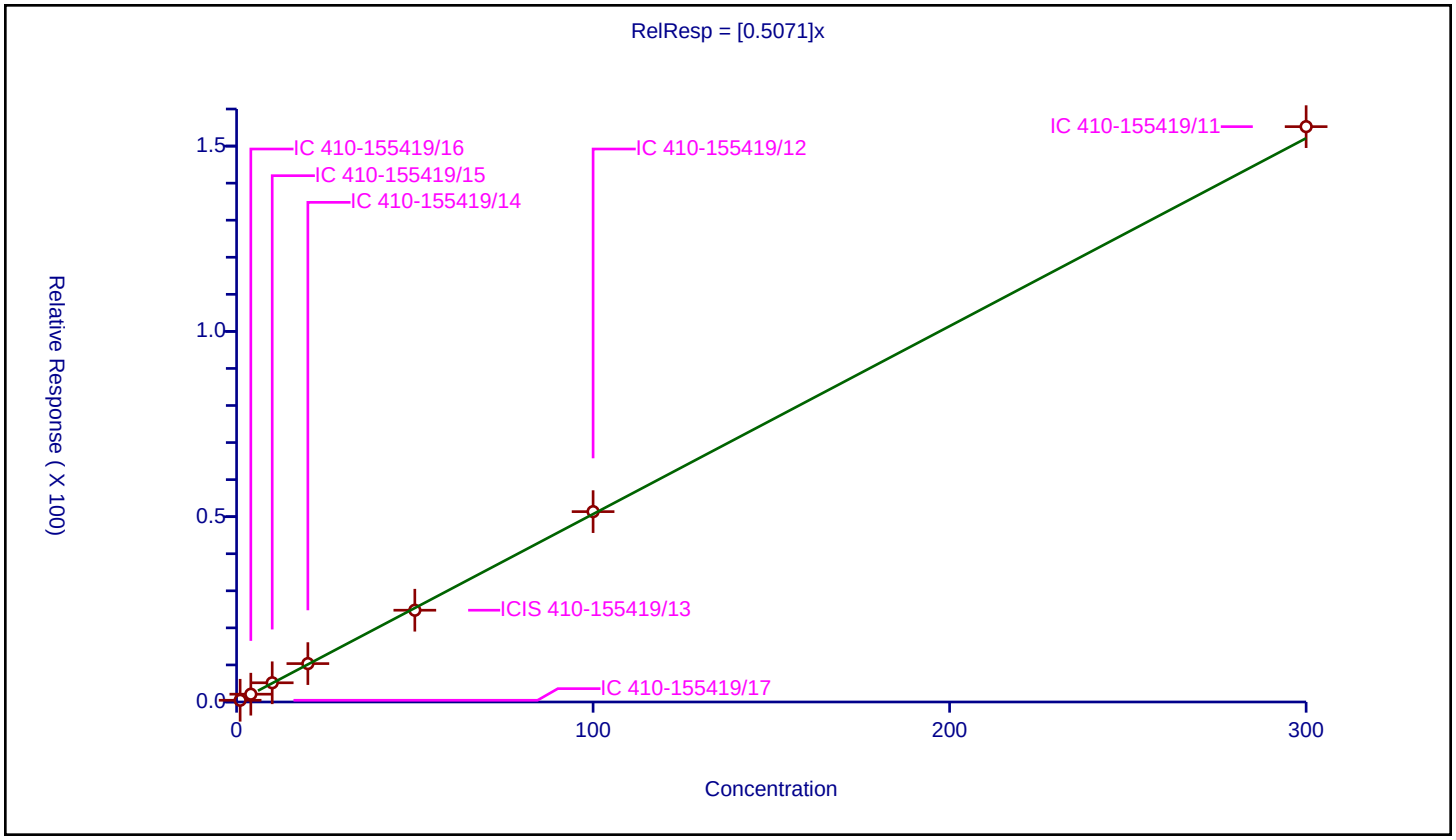
Curve Coefficients

Intercept:	0
Slope:	0.5071

Error Coefficients

Standard Error:	1010000
Relative Standard Error:	4.4
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.4613	50.0	741925.0	0.4613	Y
2	IC 410-155419/16	4.0	2.101307	50.0	756791.0	0.525327	Y
3	IC 410-155419/15	10.0	5.187158	50.0	743731.0	0.518716	Y
4	IC 410-155419/14	20.0	10.354991	50.0	742159.0	0.51775	Y
5	ICIS 410-155419/13	50.0	24.759229	50.0	743963.0	0.495185	Y
6	IC 410-155419/12	100.0	51.366038	50.0	733252.0	0.51366	Y
7	IC 410-155419/11	300.0	155.241904	50.0	750586.0	0.517473	Y



Calibration / 1,3-Dichloropropane

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

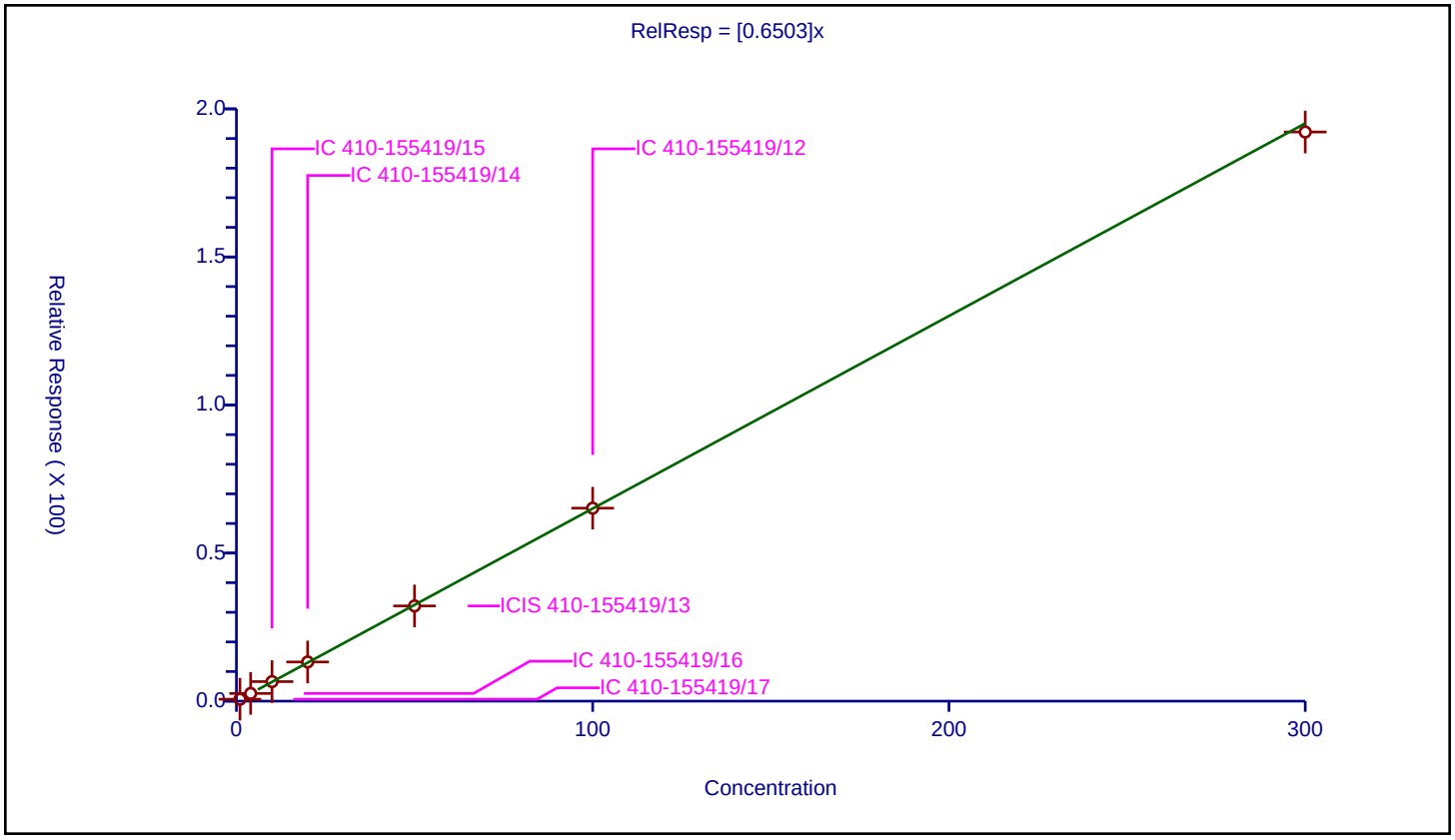
Curve Coefficients

Intercept:	0
Slope:	0.6503

Error Coefficients

Standard Error:	1260000
Relative Standard Error:	1.2
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	1.000

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.646427	50.0	741925.0	0.646427	Y
2	IC 410-155419/16	4.0	2.599198	50.0	756791.0	0.6498	Y
3	IC 410-155419/15	10.0	6.592841	50.0	743731.0	0.659284	Y
4	IC 410-155419/14	20.0	13.230251	50.0	742159.0	0.661513	Y
5	ICIS 410-155419/13	50.0	32.15133	50.0	743963.0	0.643027	Y
6	IC 410-155419/12	100.0	65.165455	50.0	733252.0	0.651655	Y
7	IC 410-155419/11	300.0	192.190302	50.0	750586.0	0.640634	Y



Calibration / 2-Hexanone

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

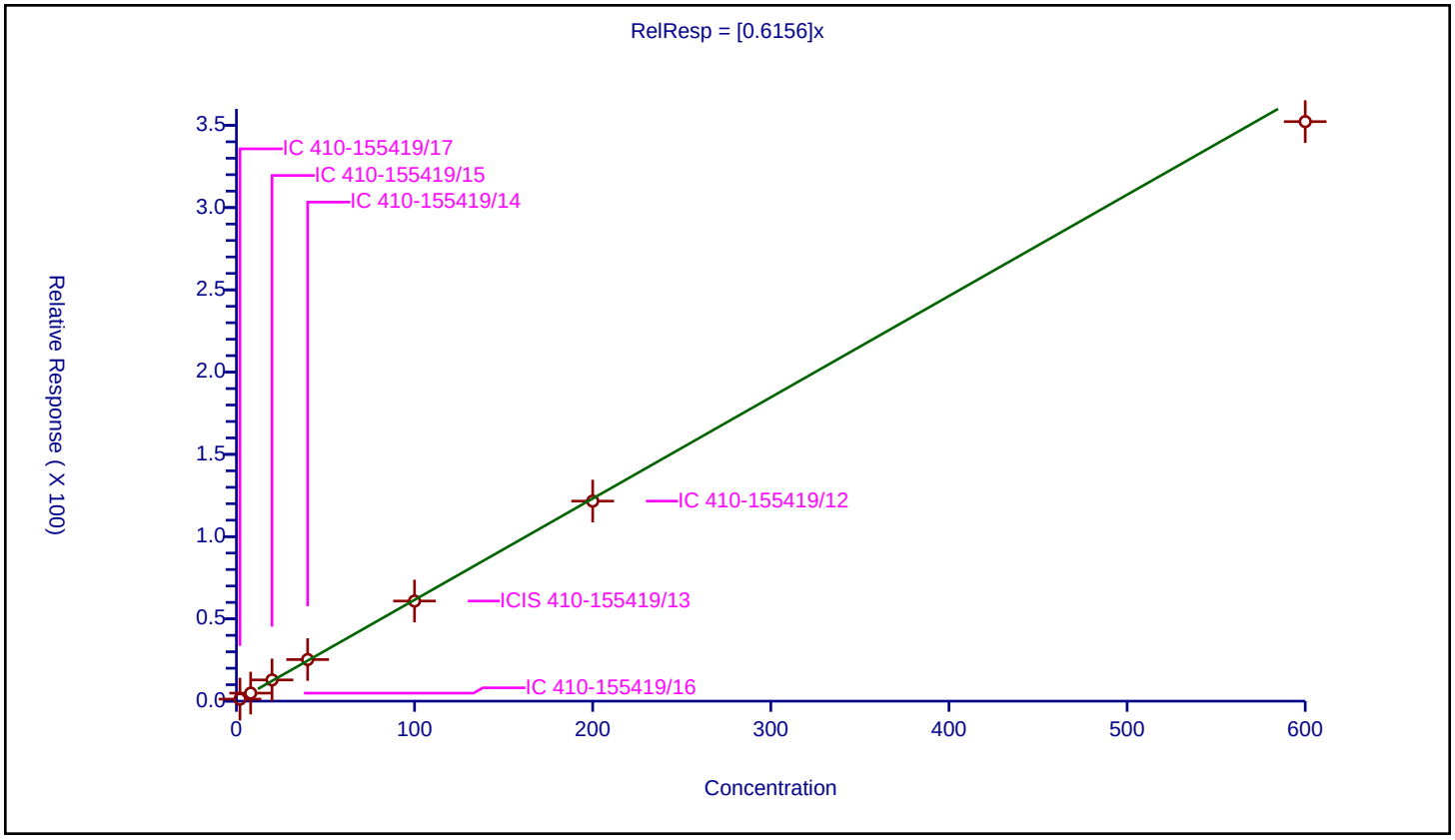
Curve Coefficients

Intercept:	0
Slope:	0.6156

Error Coefficients

Standard Error:	2310000
Relative Standard Error:	3.0
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	2.0	1.236446	50.0	741925.0	0.618223	Y
2	IC 410-155419/16	8.0	4.885695	50.0	756791.0	0.610712	Y
3	IC 410-155419/15	20.0	12.89801	50.0	743731.0	0.644901	Y
4	IC 410-155419/14	40.0	25.279556	50.0	742159.0	0.631989	Y
5	ICIS 410-155419/13	100.0	60.855849	50.0	743963.0	0.608558	Y
6	IC 410-155419/12	200.0	121.590258	50.0	733252.0	0.607951	Y
7	IC 410-155419/11	600.0	352.255704	50.0	750586.0	0.587093	Y



Calibration / Chlorodibromomethane

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

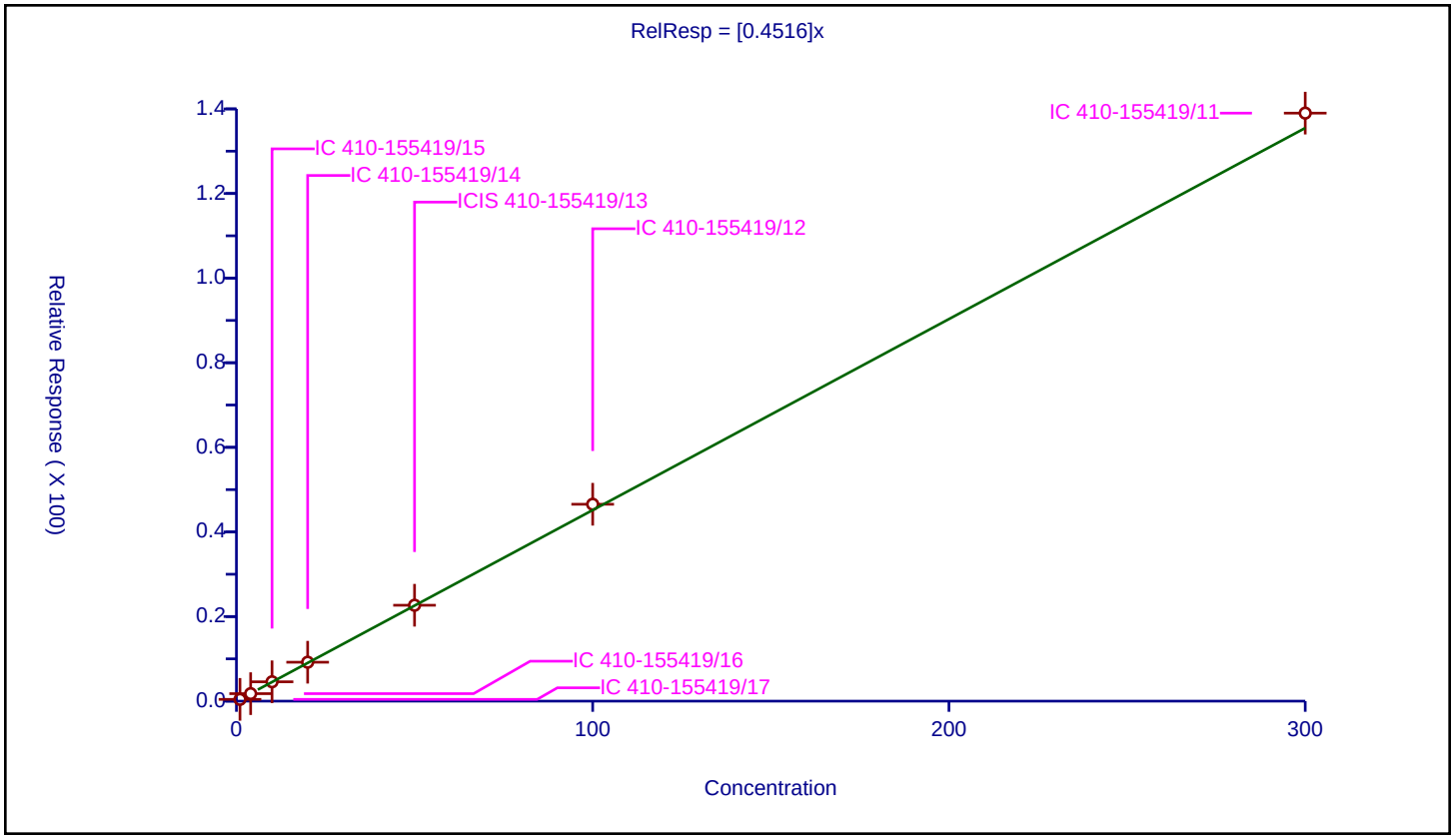
Curve Coefficients

Intercept:	0
Slope:	0.4516

Error Coefficients

Standard Error:	909000
Relative Standard Error:	3.6
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.418102	50.0	741925.0	0.418102	Y
2	IC 410-155419/16	4.0	1.774004	50.0	756791.0	0.443501	Y
3	IC 410-155419/15	10.0	4.572218	50.0	743731.0	0.457222	Y
4	IC 410-155419/14	20.0	9.20288	50.0	742159.0	0.460144	Y
5	ICIS 410-155419/13	50.0	22.671356	50.0	743963.0	0.453427	Y
6	IC 410-155419/12	100.0	46.541639	50.0	733252.0	0.465416	Y
7	IC 410-155419/11	300.0	138.996064	50.0	750586.0	0.46332	Y



Calibration / Ethylene Dibromide

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

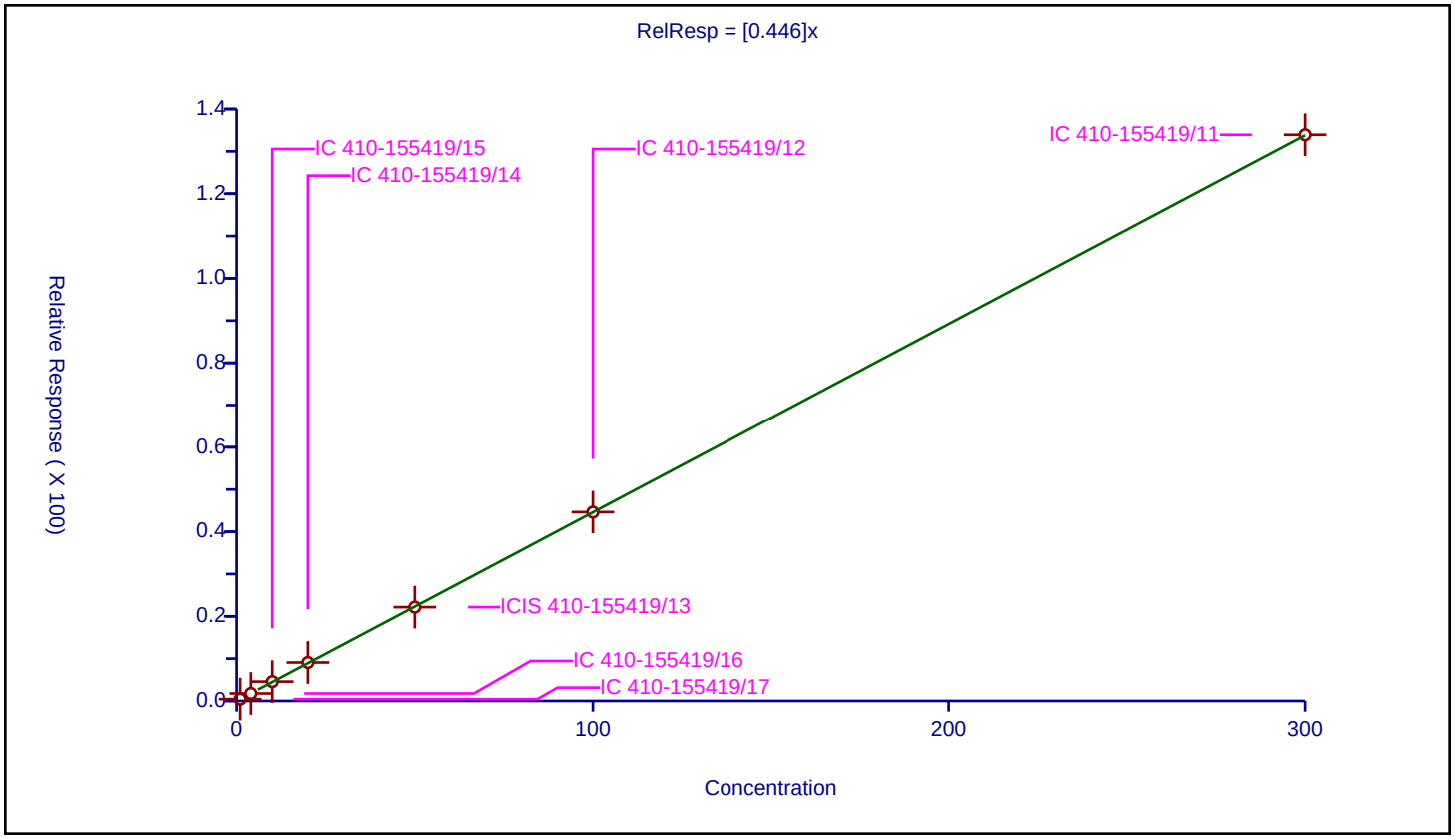
Curve Coefficients

Intercept:	0
Slope:	0.446

Error Coefficients

Standard Error:	876000
Relative Standard Error:	1.8
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	1.000

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.433063	50.0	741925.0	0.433063	Y
2	IC 410-155419/16	4.0	1.76667	50.0	756791.0	0.441668	Y
3	IC 410-155419/15	10.0	4.566234	50.0	743731.0	0.456623	Y
4	IC 410-155419/14	20.0	9.091044	50.0	742159.0	0.454552	Y
5	ICIS 410-155419/13	50.0	22.169651	50.0	743963.0	0.443393	Y
6	IC 410-155419/12	100.0	44.64652	50.0	733252.0	0.446465	Y
7	IC 410-155419/11	300.0	133.923361	50.0	750586.0	0.446411	Y



Calibration / 1-Chlorohexane

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

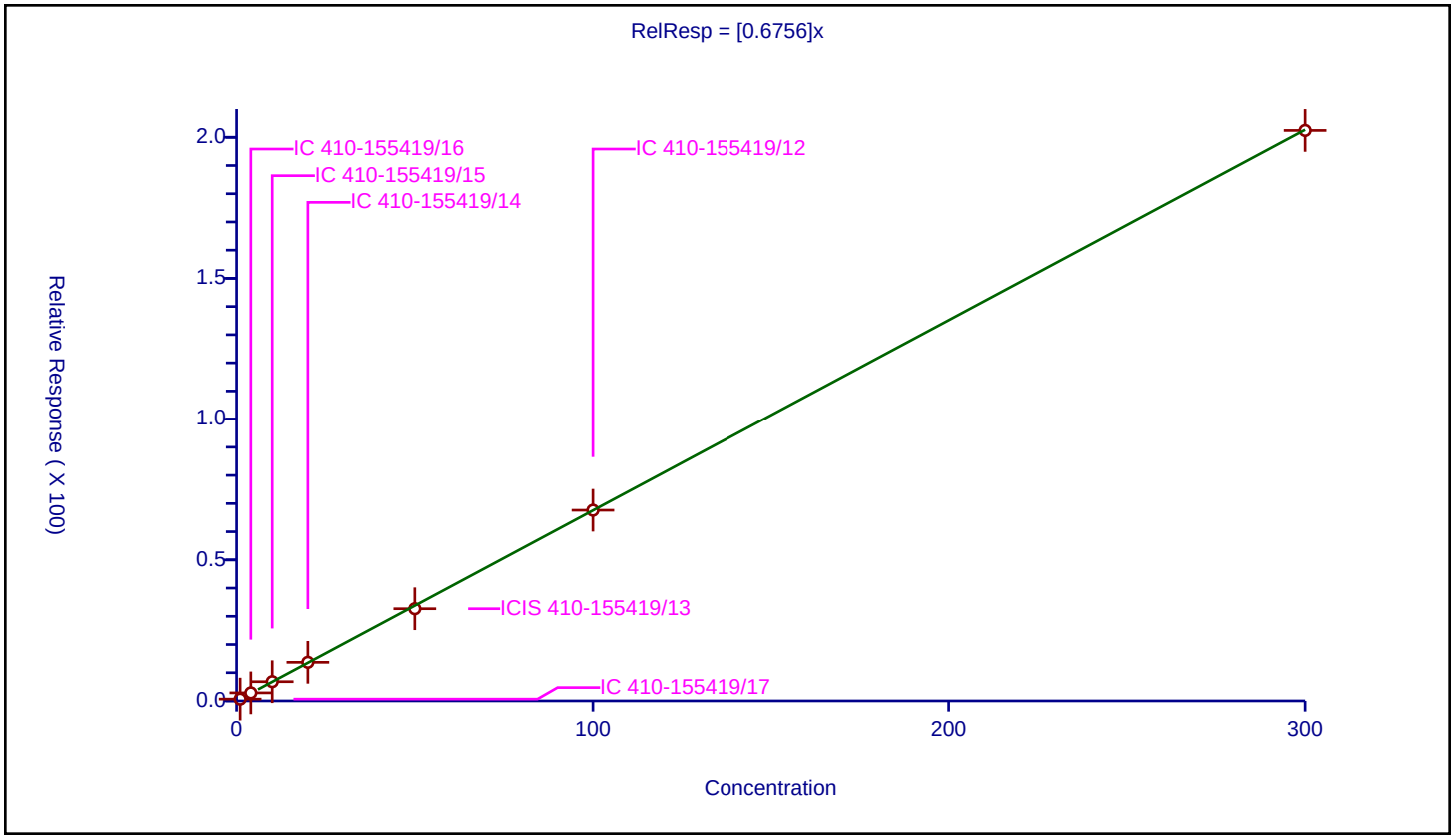
Curve Coefficients

Intercept:	0
Slope:	0.6756

Error Coefficients

Standard Error:	1320000
Relative Standard Error:	3.2
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.646359	50.0	741925.0	0.646359	Y
2	IC 410-155419/16	4.0	2.852108	50.0	756791.0	0.713027	Y
3	IC 410-155419/15	10.0	6.80925	50.0	743731.0	0.680925	Y
4	IC 410-155419/14	20.0	13.68541	50.0	742159.0	0.68427	Y
5	ICIS 410-155419/13	50.0	32.68422	50.0	743963.0	0.653684	Y
6	IC 410-155419/12	100.0	67.630228	50.0	733252.0	0.676302	Y
7	IC 410-155419/11	300.0	202.427836	50.0	750586.0	0.674759	Y



Calibration / Chlorobenzene

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

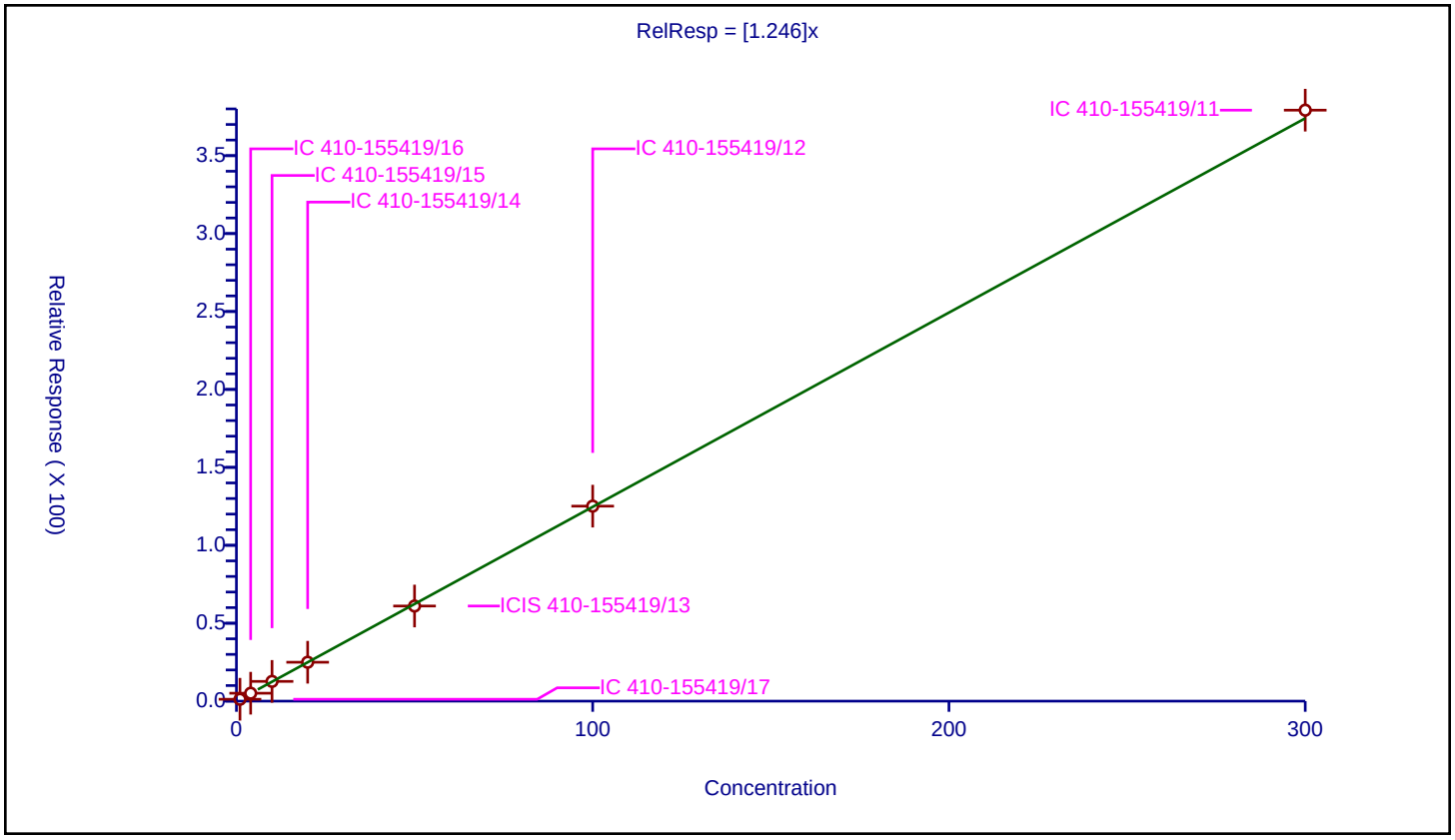
Curve Coefficients

Intercept:	0
Slope:	1.246

Error Coefficients

Standard Error:	2480000
Relative Standard Error:	2.0
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	1.000

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	1.204097	50.0	741925.0	1.204097	Y
2	IC 410-155419/16	4.0	5.082645	50.0	756791.0	1.270661	Y
3	IC 410-155419/15	10.0	12.666071	50.0	743731.0	1.266607	Y
4	IC 410-155419/14	20.0	24.964933	50.0	742159.0	1.248247	Y
5	ICIS 410-155419/13	50.0	61.027094	50.0	743963.0	1.220542	Y
6	IC 410-155419/12	100.0	125.124991	50.0	733252.0	1.25125	Y
7	IC 410-155419/11	300.0	379.182998	50.0	750586.0	1.263943	Y



Calibration / 1,1,1,2-Tetrachloroethane

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

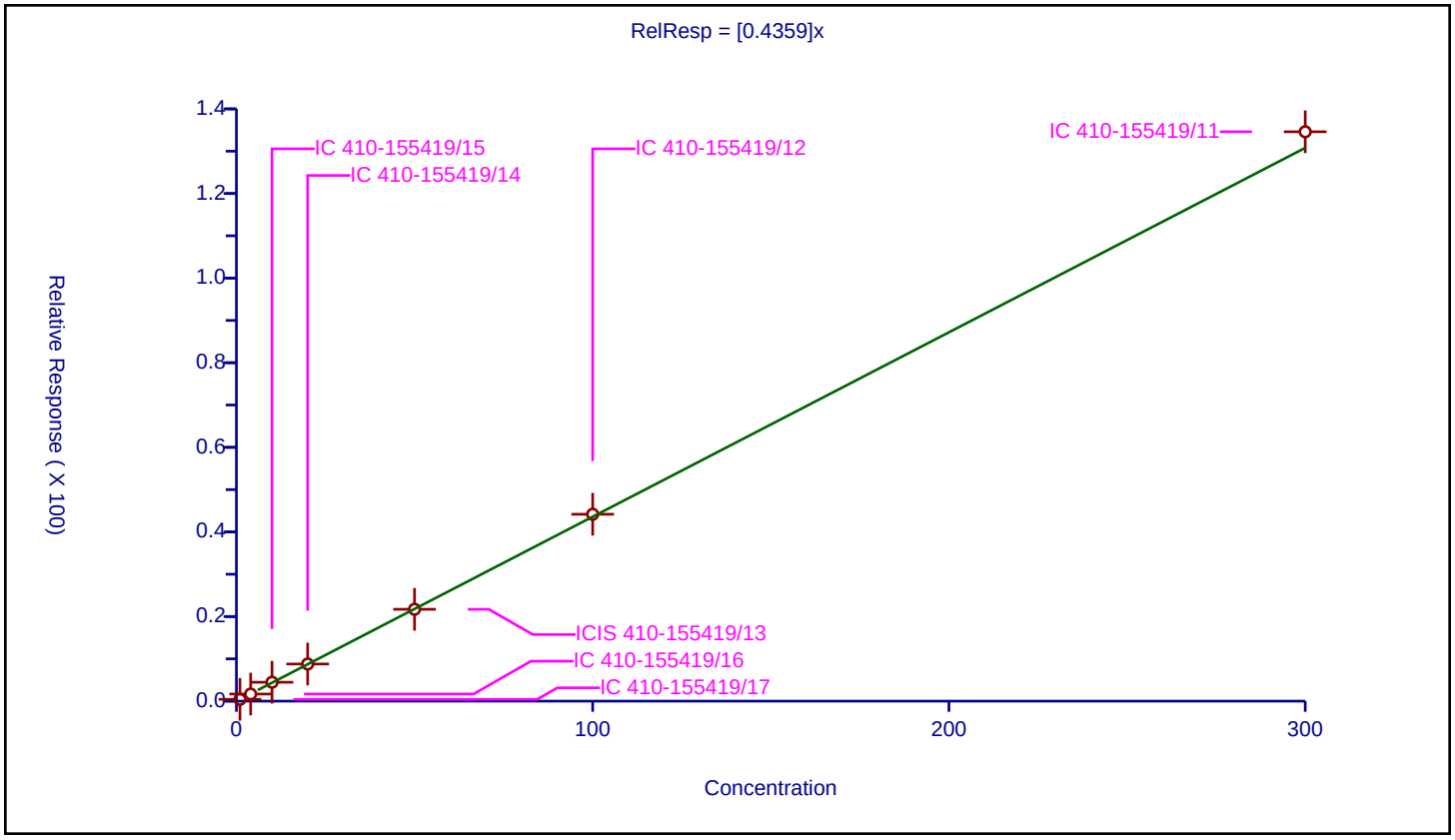
Curve Coefficients

Intercept:	0
Slope:	0.4359

Error Coefficients

Standard Error:	878000
Relative Standard Error:	2.7
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.422078	50.0	741925.0	0.422078	Y
2	IC 410-155419/16	4.0	1.676222	50.0	756791.0	0.419056	Y
3	IC 410-155419/15	10.0	4.469492	50.0	743731.0	0.446949	Y
4	IC 410-155419/14	20.0	8.776825	50.0	742159.0	0.438841	Y
5	ICIS 410-155419/13	50.0	21.71237	50.0	743963.0	0.434247	Y
6	IC 410-155419/12	100.0	44.174718	50.0	733252.0	0.441747	Y
7	IC 410-155419/11	300.0	134.59457	50.0	750586.0	0.448649	Y



Calibration / Ethylbenzene

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

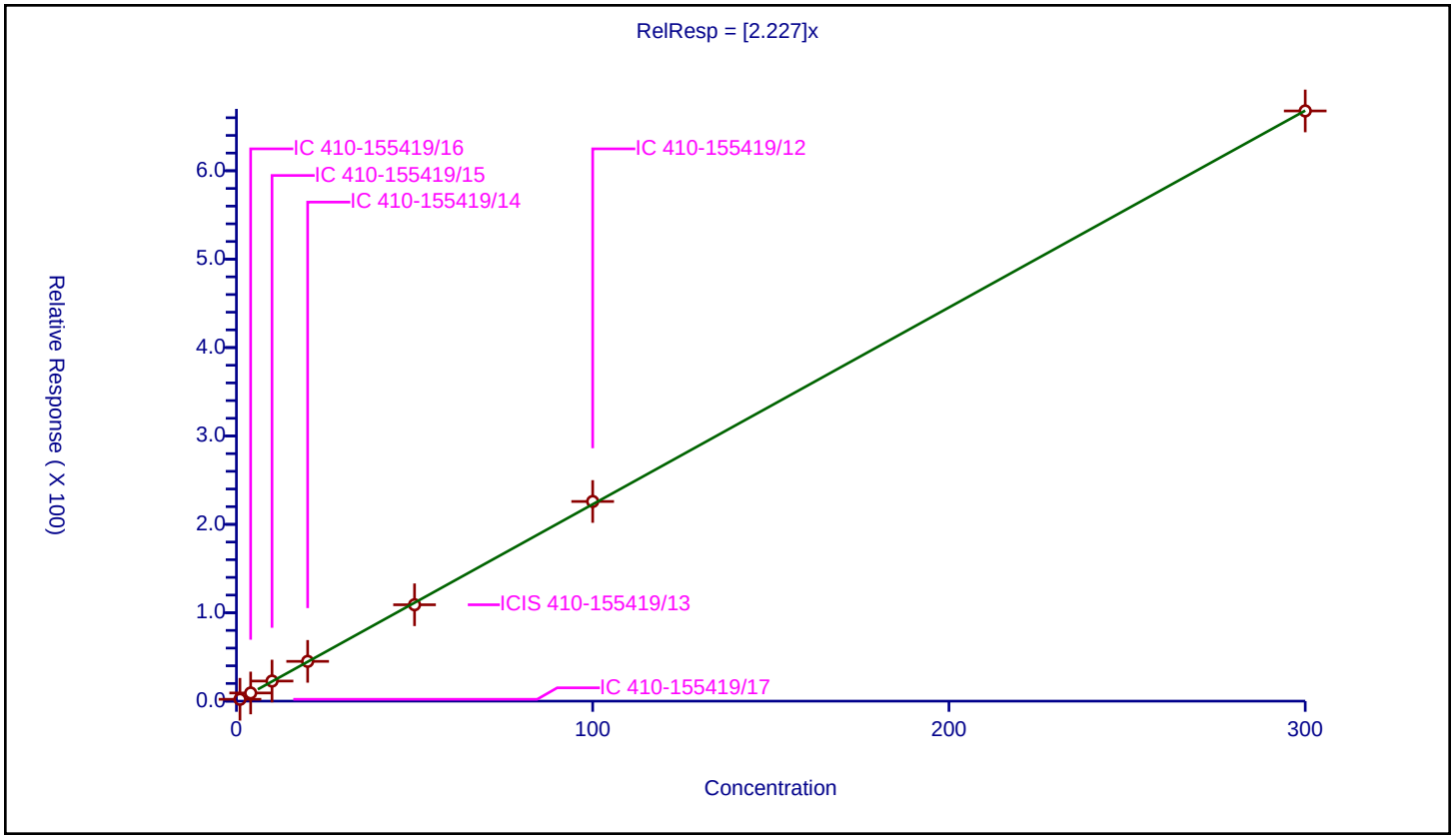
Curve Coefficients

Intercept:	0
Slope:	2.227

Error Coefficients

Standard Error:	4370000
Relative Standard Error:	3.1
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	2.09509	50.0	741925.0	2.09509	Y
2	IC 410-155419/16	4.0	9.22071	50.0	756791.0	2.305177	Y
3	IC 410-155419/15	10.0	22.726362	50.0	743731.0	2.272636	Y
4	IC 410-155419/14	20.0	45.003766	50.0	742159.0	2.250188	Y
5	ICIS 410-155419/13	50.0	109.026793	50.0	743963.0	2.180536	Y
6	IC 410-155419/12	100.0	225.869278	50.0	733252.0	2.258693	Y
7	IC 410-155419/11	300.0	667.674457	50.0	750586.0	2.225582	Y



Calibration / m-Xylene & p-Xylene

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

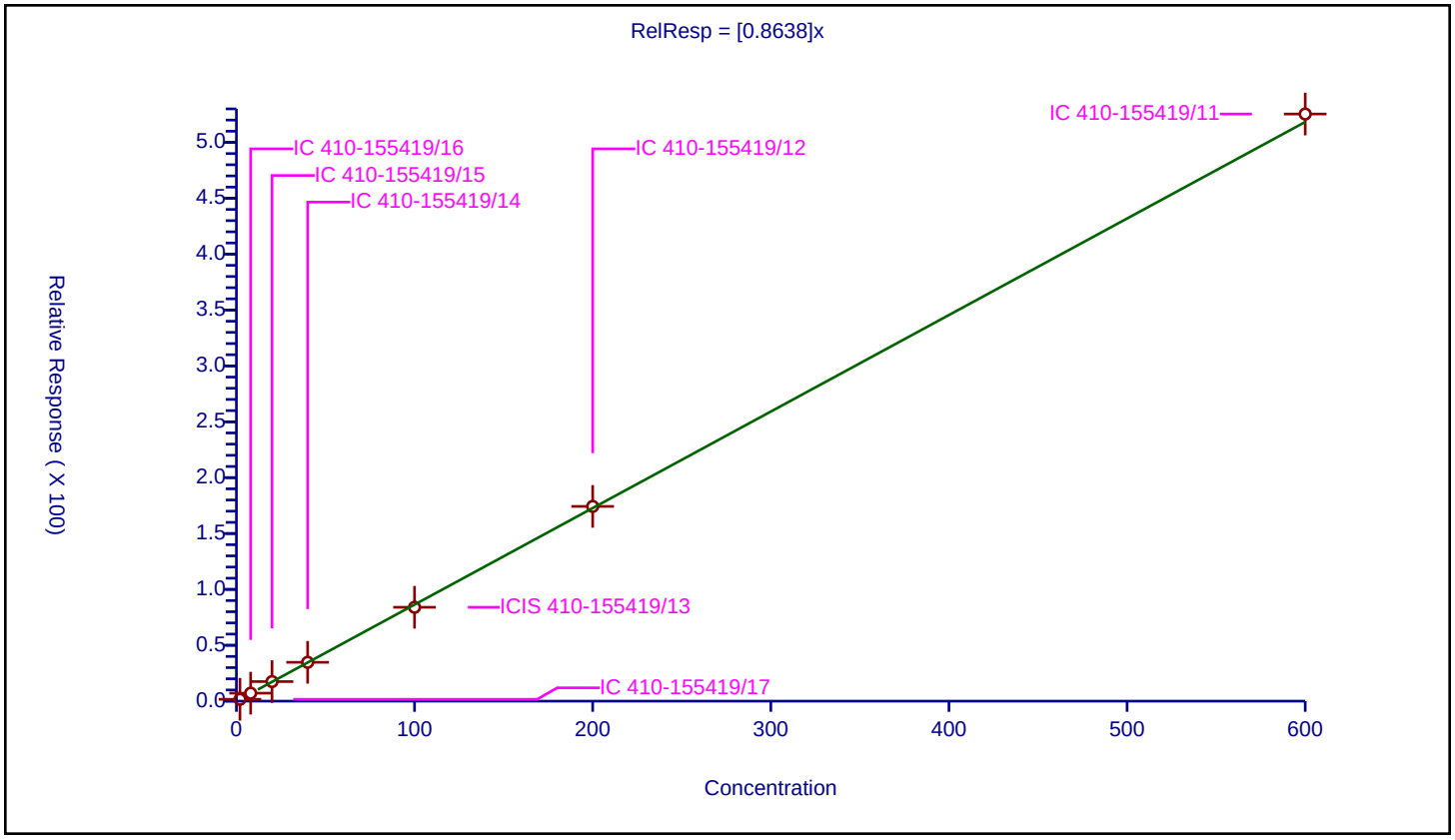
Curve Coefficients

Intercept:	0
Slope:	0.8638

Error Coefficients

Standard Error:	3430000
Relative Standard Error:	2.7
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	2.0	1.645786	50.0	741925.0	0.822893	Y
2	IC 410-155419/16	8.0	7.132749	50.0	756791.0	0.891594	Y
3	IC 410-155419/15	20.0	17.514128	50.0	743731.0	0.875706	Y
4	IC 410-155419/14	40.0	34.771592	50.0	742159.0	0.86929	Y
5	ICIS 410-155419/13	100.0	84.000011	50.0	743963.0	0.84	Y
6	IC 410-155419/12	200.0	174.278693	50.0	733252.0	0.871393	Y
7	IC 410-155419/11	600.0	525.392493	50.0	750586.0	0.875654	Y



Calibration / o-Xylene

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

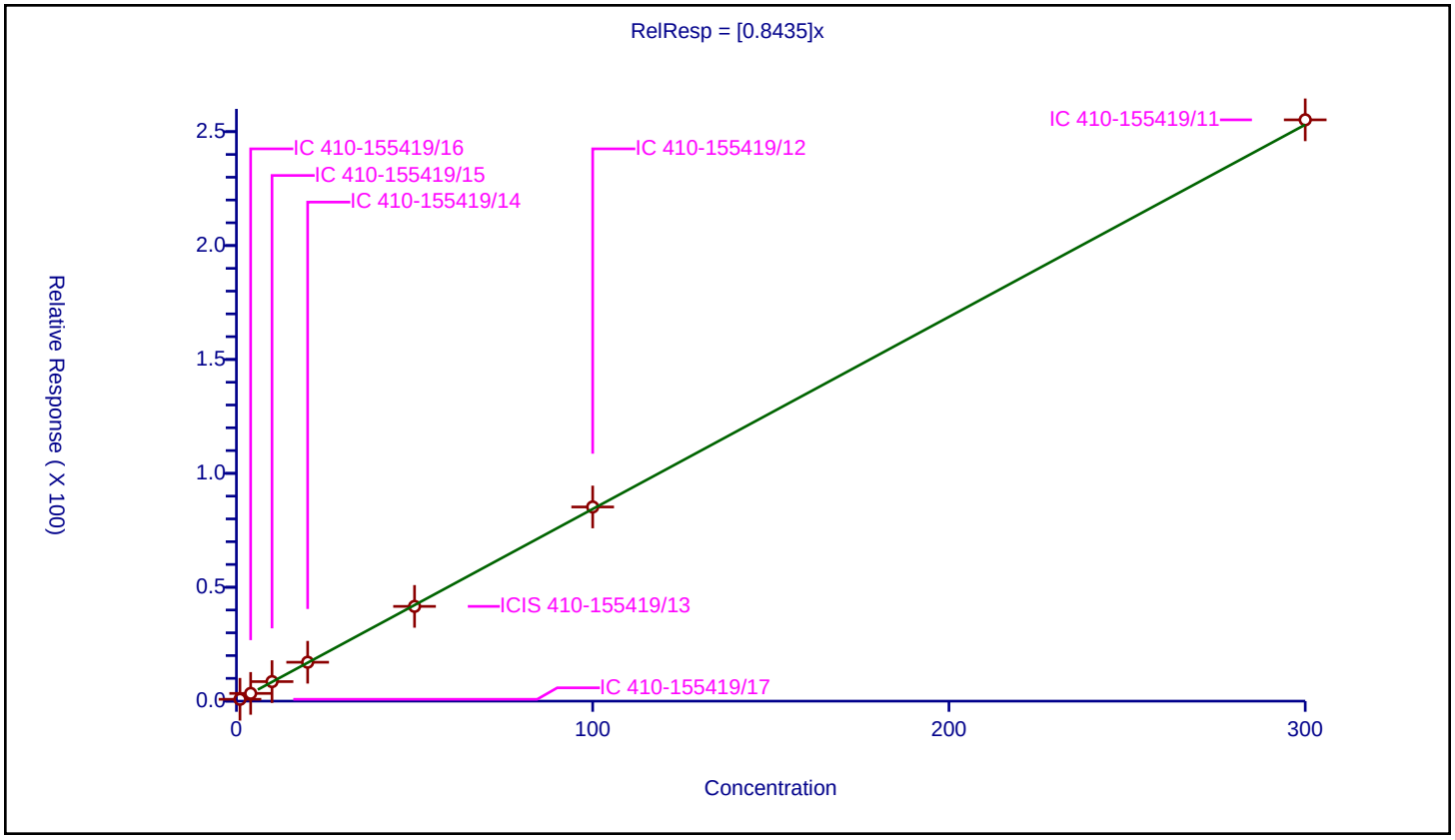
Curve Coefficients

Intercept:	0
Slope:	0.8435

Error Coefficients

Standard Error:	1670000
Relative Standard Error:	2.1
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.807157	50.0	741925.0	0.807157	Y
2	IC 410-155419/16	4.0	3.400543	50.0	756791.0	0.850136	Y
3	IC 410-155419/15	10.0	8.582135	50.0	743731.0	0.858214	Y
4	IC 410-155419/14	20.0	17.082323	50.0	742159.0	0.854116	Y
5	ICIS 410-155419/13	50.0	41.597364	50.0	743963.0	0.831947	Y
6	IC 410-155419/12	100.0	85.238636	50.0	733252.0	0.852386	Y
7	IC 410-155419/11	300.0	255.193475	50.0	750586.0	0.850645	Y



Calibration / Styrene

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

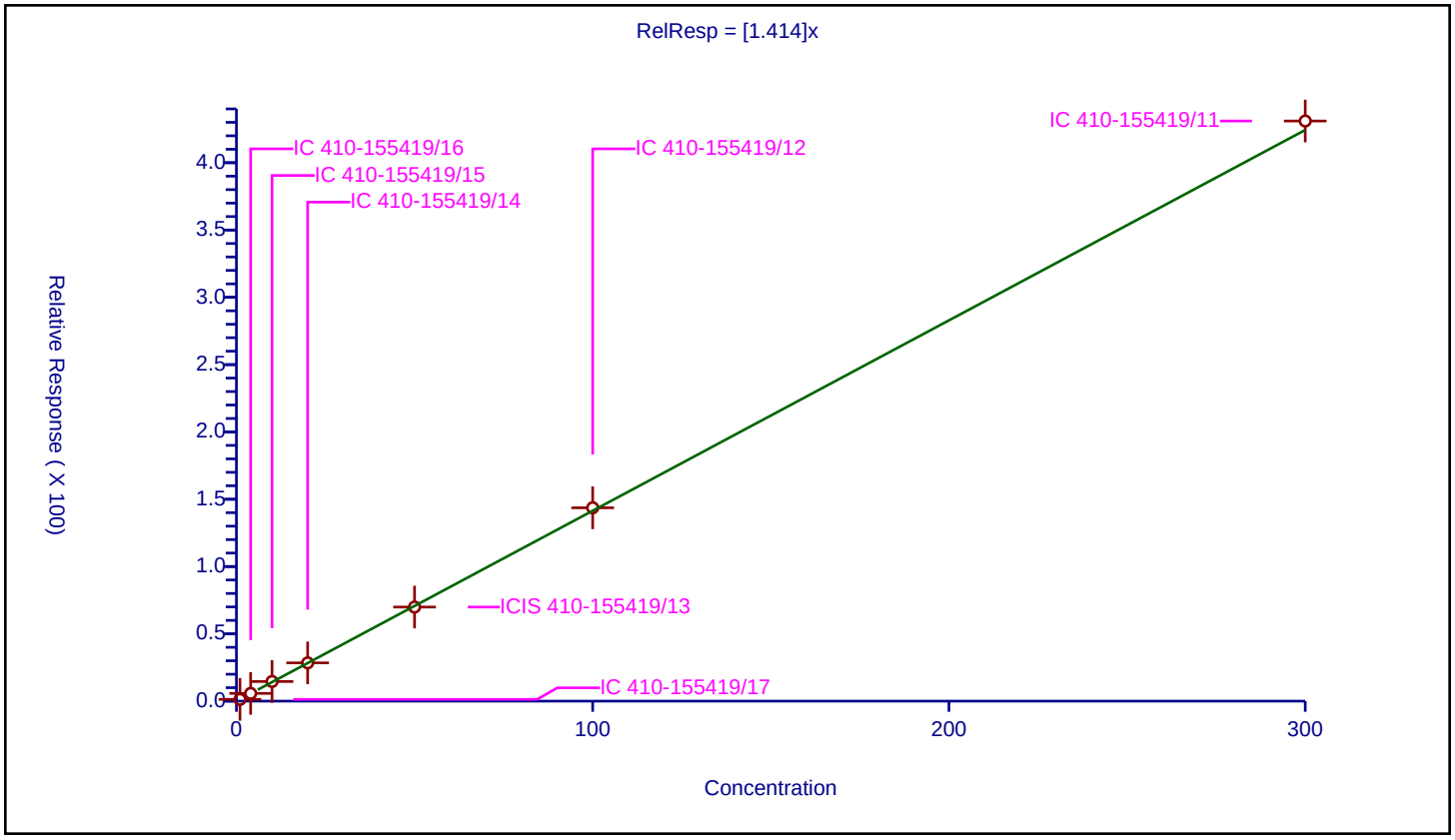
Curve Coefficients

Intercept:	0
Slope:	1.414

Error Coefficients

Standard Error:	2820000
Relative Standard Error:	3.5
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	1.310308	50.0	741925.0	1.310308	Y
2	IC 410-155419/16	4.0	5.755552	50.0	756791.0	1.438888	Y
3	IC 410-155419/15	10.0	14.588742	50.0	743731.0	1.458874	Y
4	IC 410-155419/14	20.0	28.432452	50.0	742159.0	1.421623	Y
5	ICIS 410-155419/13	50.0	69.892051	50.0	743963.0	1.397841	Y
6	IC 410-155419/12	100.0	143.655455	50.0	733252.0	1.436555	Y
7	IC 410-155419/11	300.0	430.996315	50.0	750586.0	1.436654	Y



Calibration / Bromoform

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

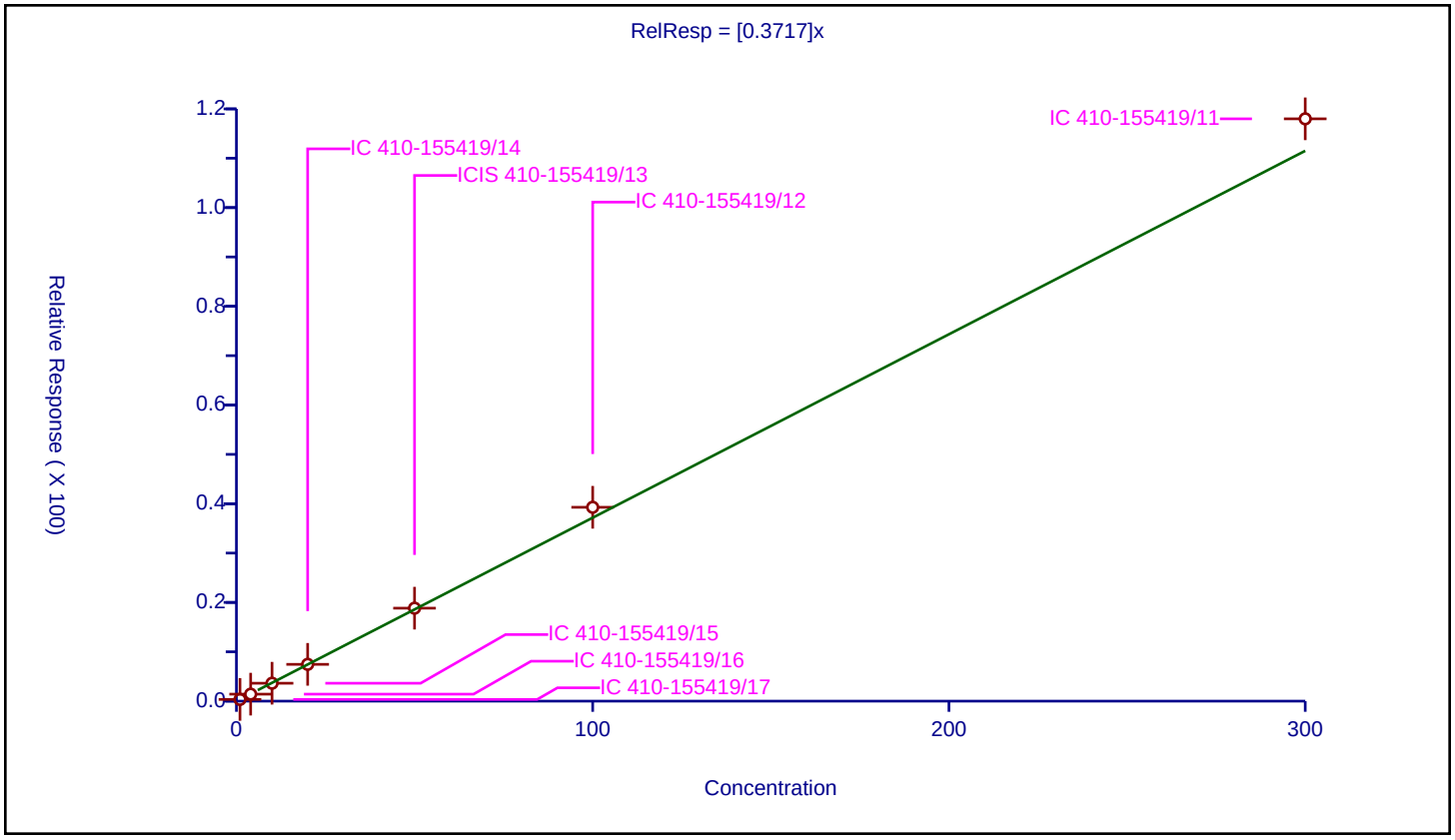
Curve Coefficients

Intercept:	0
Slope:	0.3717

Error Coefficients

Standard Error:	771000
Relative Standard Error:	4.7
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.997

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.349496	50.0	741925.0	0.349496	Y
2	IC 410-155419/16	4.0	1.41479	50.0	756791.0	0.353697	Y
3	IC 410-155419/15	10.0	3.627656	50.0	743731.0	0.362766	Y
4	IC 410-155419/14	20.0	7.45696	50.0	742159.0	0.372848	Y
5	ICIS 410-155419/13	50.0	18.838773	50.0	743963.0	0.376775	Y
6	IC 410-155419/12	100.0	39.279197	50.0	733252.0	0.392792	Y
7	IC 410-155419/11	300.0	117.985281	50.0	750586.0	0.393284	Y



Calibration / Isopropylbenzene

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

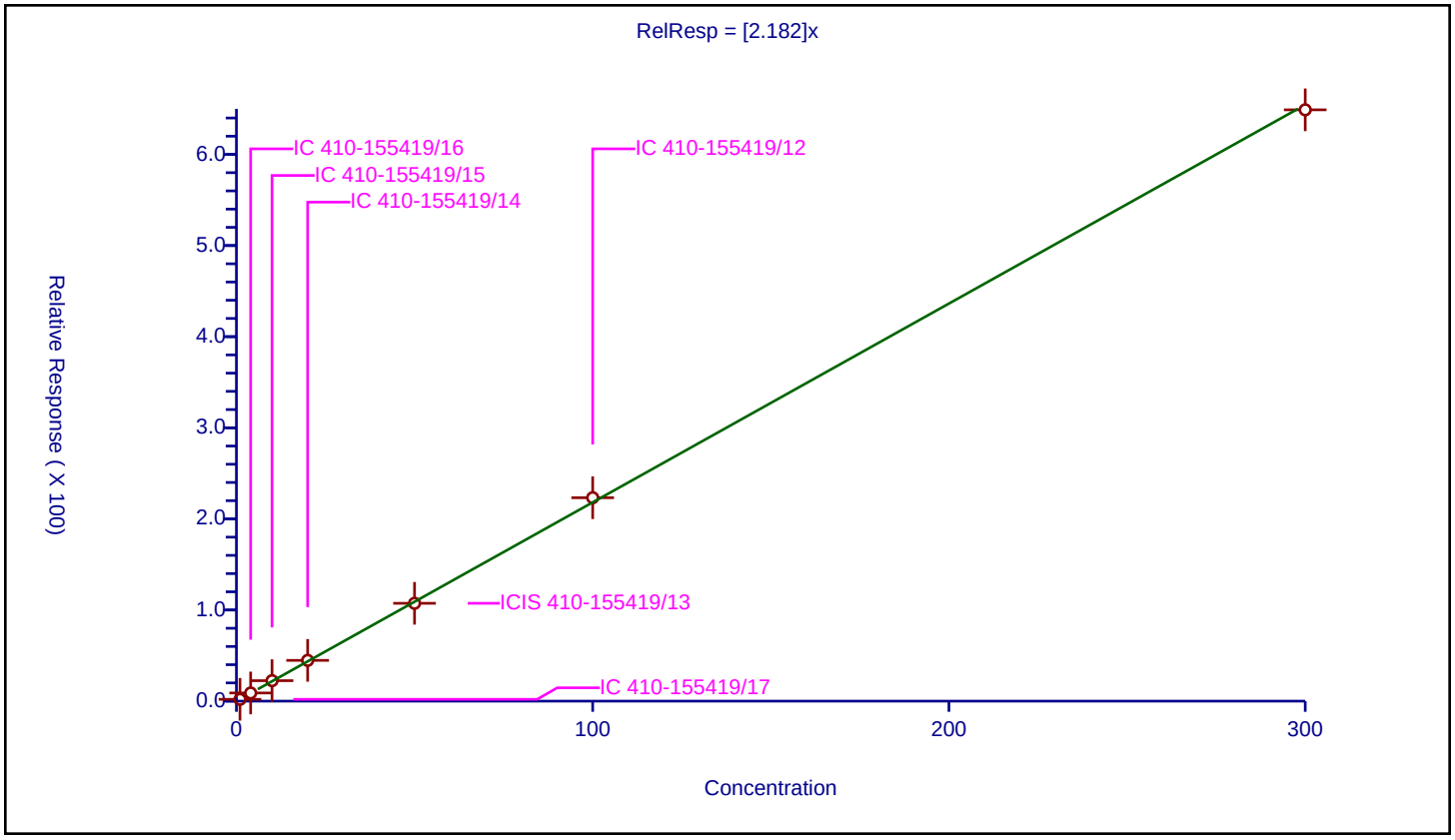
Curve Coefficients

Intercept:	0
Slope:	2.182

Error Coefficients

Standard Error:	4260000
Relative Standard Error:	4.0
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	2.00775	50.0	741925.0	2.00775	Y
2	IC 410-155419/16	4.0	8.950159	50.0	756791.0	2.23754	Y
3	IC 410-155419/15	10.0	22.469683	50.0	743731.0	2.246968	Y
4	IC 410-155419/14	20.0	44.723772	50.0	742159.0	2.236189	Y
5	ICIS 410-155419/13	50.0	107.394252	50.0	743963.0	2.147885	Y
6	IC 410-155419/12	100.0	223.253943	50.0	733252.0	2.232539	Y
7	IC 410-155419/11	300.0	648.96321	50.0	750586.0	2.163211	Y



Calibration / Cyclohexanone

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

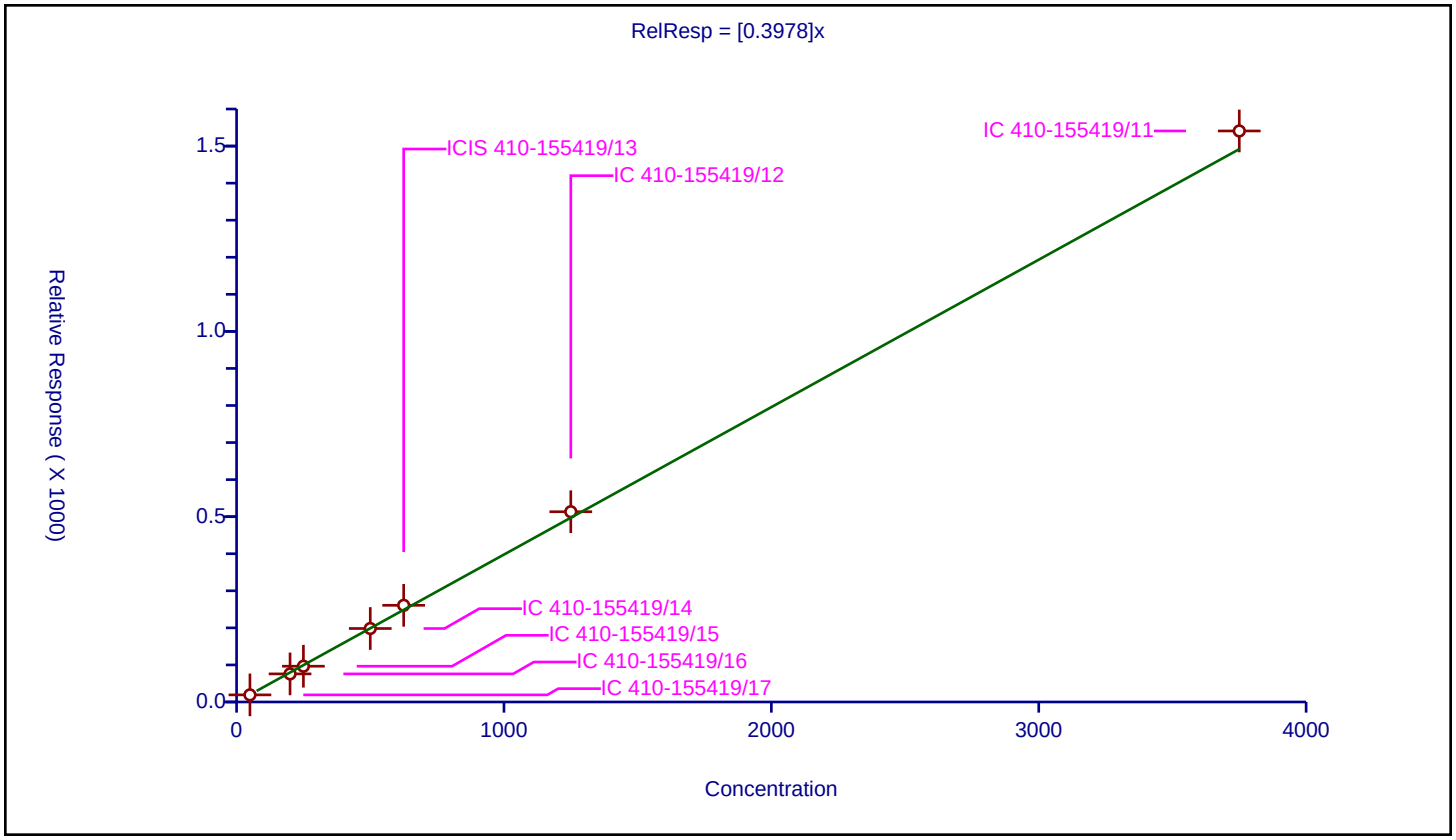
Curve Coefficients

Intercept:	0
Slope:	0.3978

Error Coefficients

Standard Error:	674000
Relative Standard Error:	3.8
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	50.000503	19.19484	250.0	268692.0	0.383893	Y
2	IC 410-155419/16	200.002013	75.829402	250.0	256088.0	0.379143	Y
3	IC 410-155419/15	250.002516	96.50802	250.0	270076.0	0.386028	Y
4	IC 410-155419/14	500.005032	198.28754	250.0	276824.0	0.396571	Y
5	ICIS 410-155419/13	625.00629	260.841357	250.0	255088.0	0.417342	Y
6	IC 410-155419/12	1250.01258	513.387546	250.0	247973.0	0.410706	Y
7	IC 410-155419/11	3750.03774	1540.752693	250.0	247910.0	0.410863	Y



Calibration / 4-Bromofluorobenzene (Surr)

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

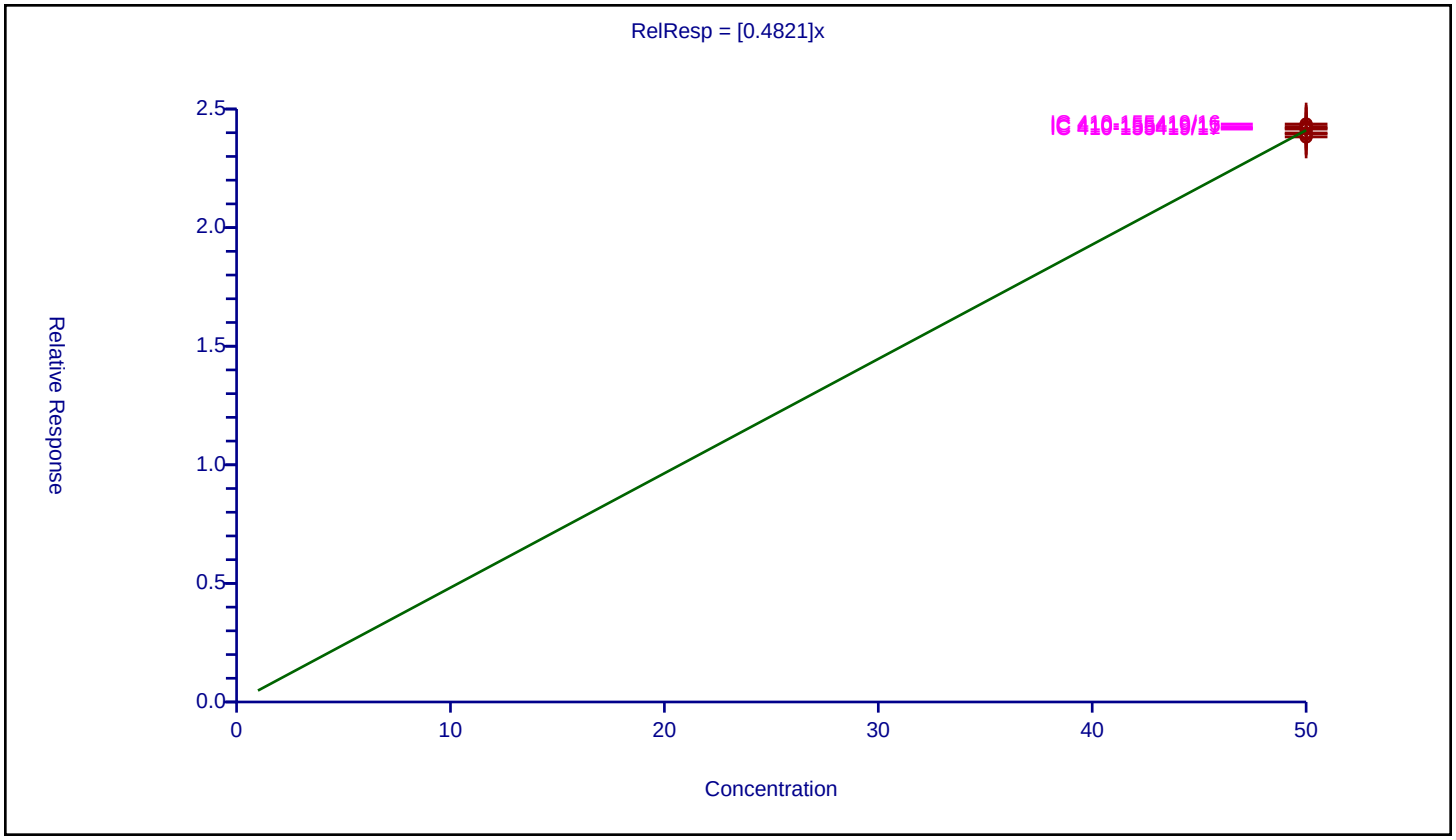
Curve Coefficients

Intercept:	0
Slope:	0.4821

Error Coefficients

Standard Error:	388000
Relative Standard Error:	0.8
Correlation Coefficient:	0.00000000000000000000
Coefficient of Determination (Adjusted):	0

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/11	50.0	24.194629	50.0	750586.0	0.483893	Y
2	IC 410-155419/12	50.0	23.942792	50.0	733252.0	0.478856	Y
3	ICIS 410-155419/13	50.0	23.82222	50.0	743963.0	0.476444	Y
4	IC 410-155419/14	50.0	23.991692	50.0	742159.0	0.479834	Y
5	IC 410-155419/15	50.0	24.26146	50.0	743731.0	0.485229	Y
6	IC 410-155419/16	50.0	24.368353	50.0	756791.0	0.487367	Y
7	IC 410-155419/17	50.0	24.151093	50.0	741925.0	0.483022	Y



Calibration / 1,1,2,2-Tetrachloroethane

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

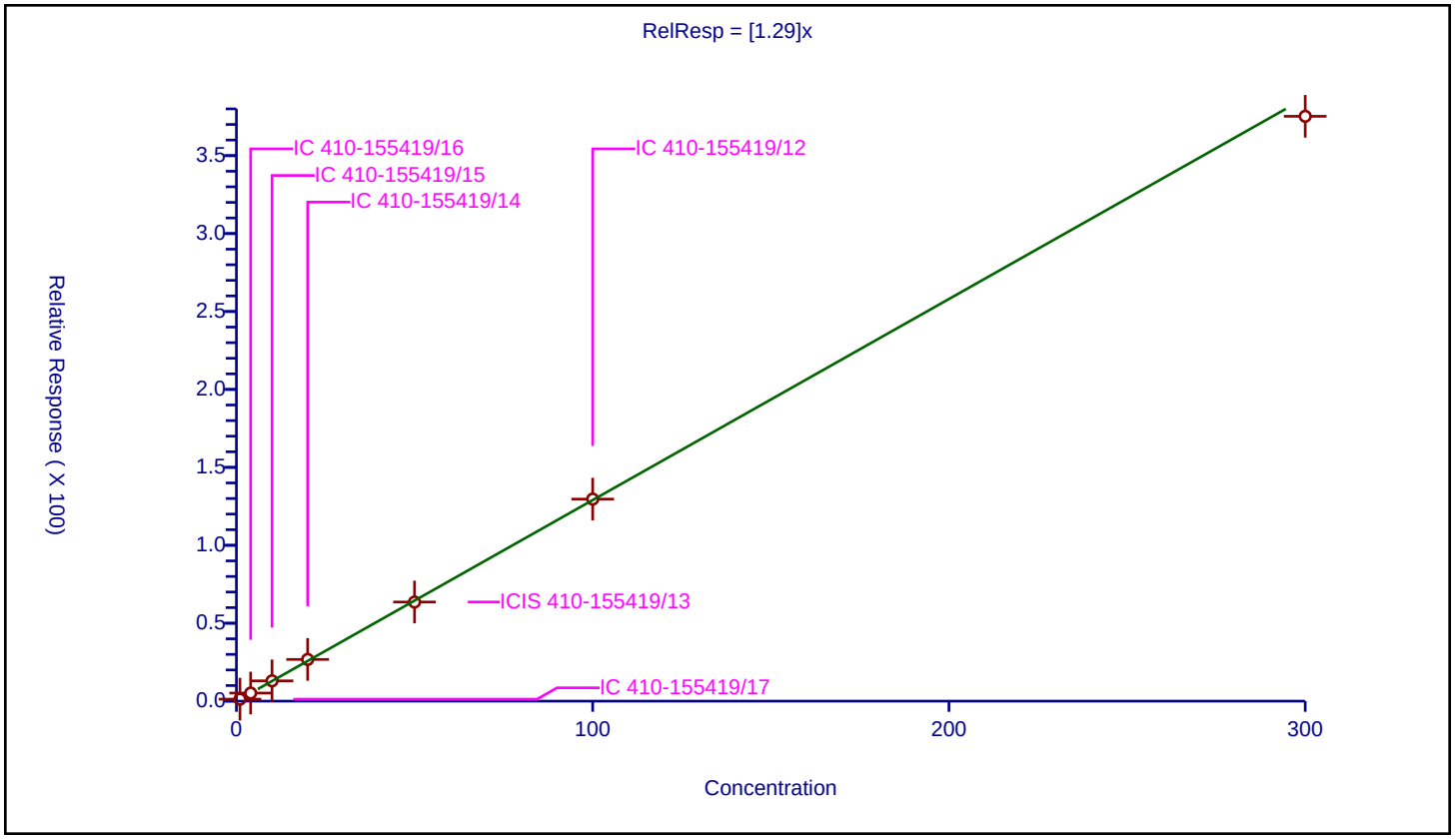
Curve Coefficients

Intercept:	0
Slope:	1.29

Error Coefficients

Standard Error:	1380000
Relative Standard Error:	2.1
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	1.276624	50.0	409126.0	1.276624	Y
2	IC 410-155419/16	4.0	5.185149	50.0	415369.0	1.296287	Y
3	IC 410-155419/15	10.0	13.00734	50.0	412963.0	1.300734	Y
4	IC 410-155419/14	20.0	26.756146	50.0	406017.0	1.337807	Y
5	ICIS 410-155419/13	50.0	63.594025	50.0	402596.0	1.27188	Y
6	IC 410-155419/12	100.0	129.633244	50.0	404220.0	1.296332	Y
7	IC 410-155419/11	300.0	375.242344	50.0	422952.0	1.250808	Y



Calibration / Bromobenzene

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

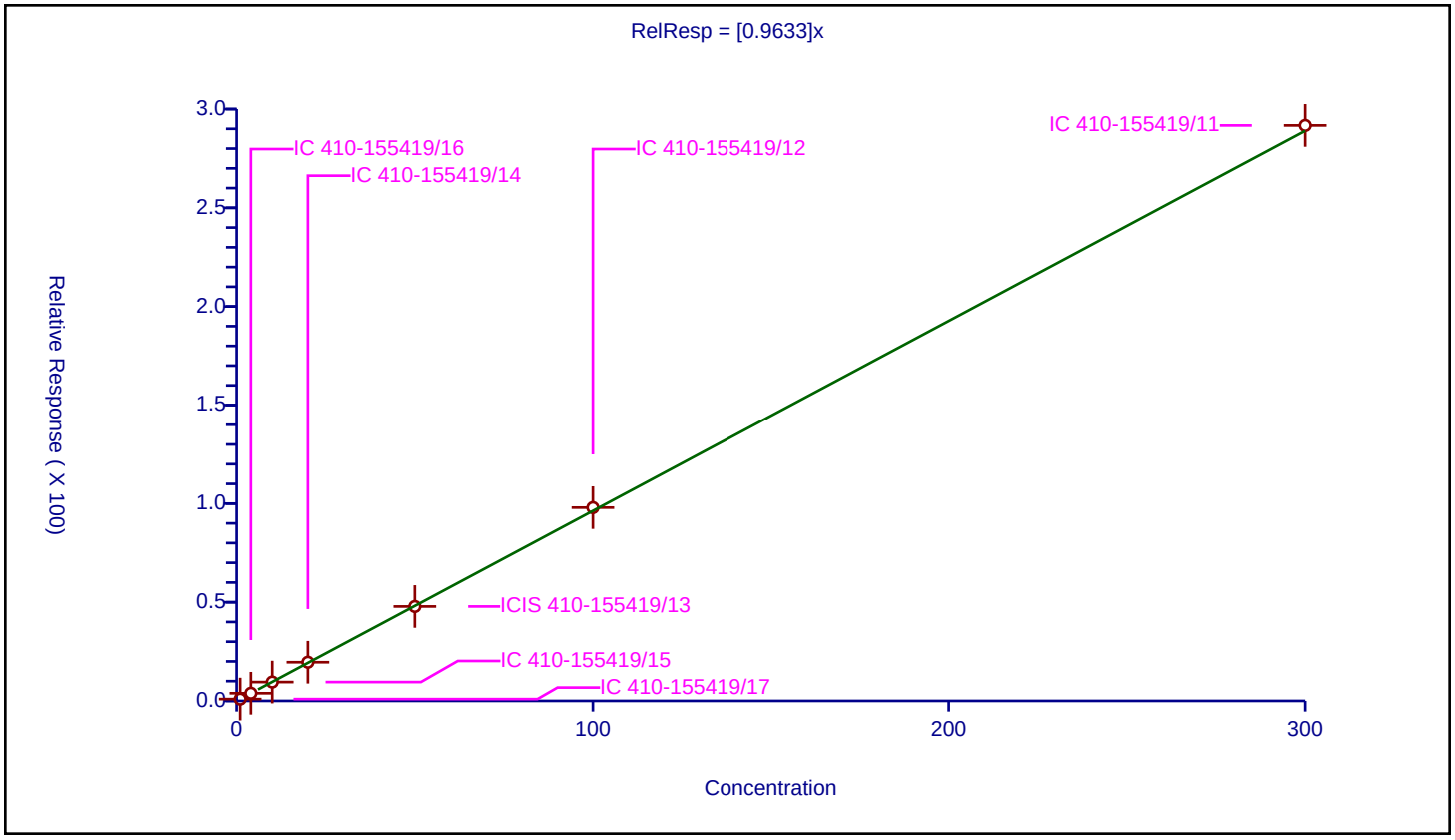
Curve Coefficients

Intercept:	0
Slope:	0.9633

Error Coefficients

Standard Error:	1070000
Relative Standard Error:	1.8
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	1.000

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.929909	50.0	409126.0	0.929909	Y
2	IC 410-155419/16	4.0	3.8786	50.0	415369.0	0.96965	Y
3	IC 410-155419/15	10.0	9.541775	50.0	412963.0	0.954177	Y
4	IC 410-155419/14	20.0	19.595731	50.0	406017.0	0.979787	Y
5	ICIS 410-155419/13	50.0	47.865851	50.0	402596.0	0.957317	Y
6	IC 410-155419/12	100.0	97.984884	50.0	404220.0	0.979849	Y
7	IC 410-155419/11	300.0	291.726603	50.0	422952.0	0.972422	Y



Calibration / trans-1,4-Dichloro-2-butene

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

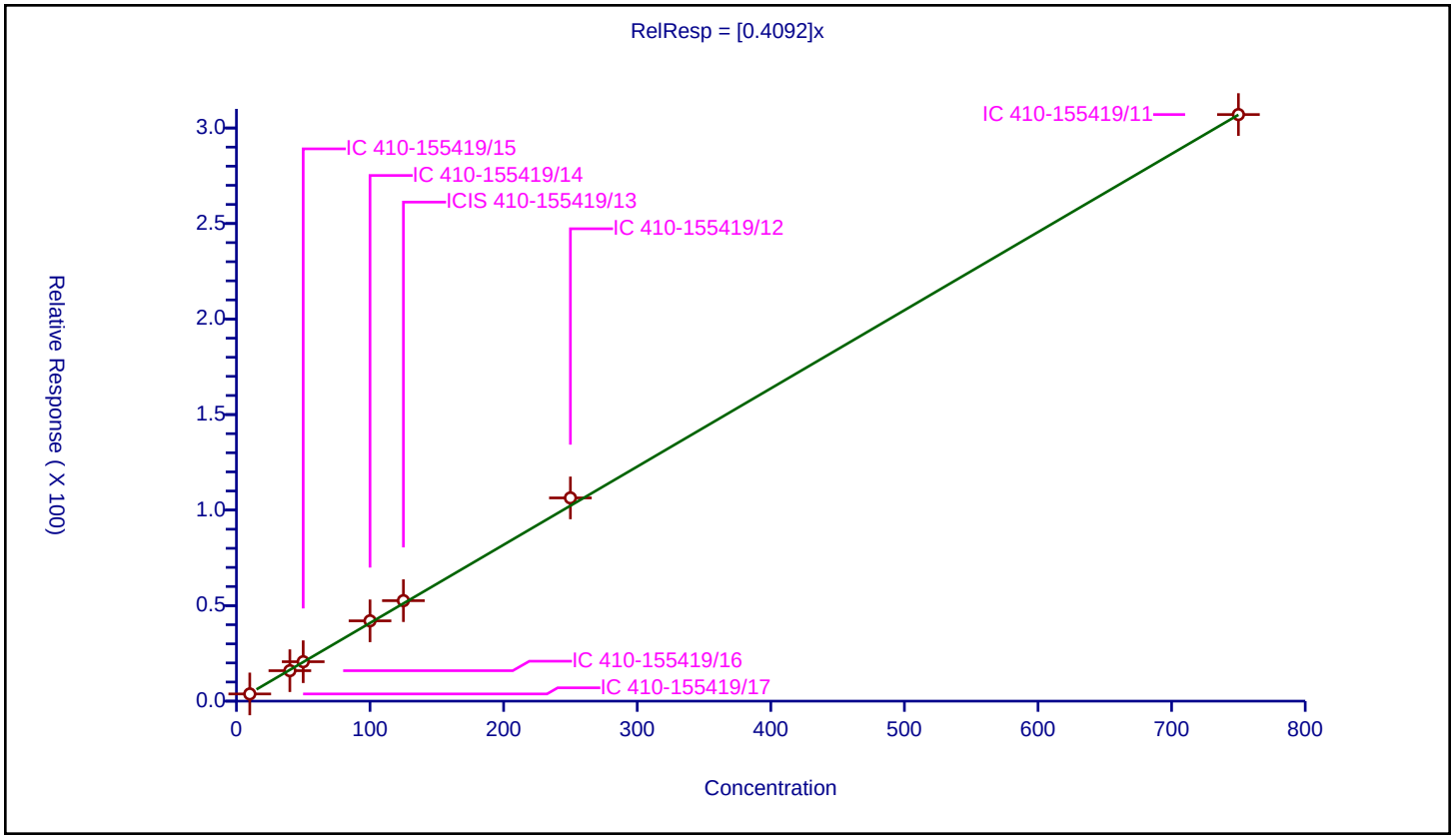
Curve Coefficients

Intercept:	0
Slope:	0.4092

Error Coefficients

Standard Error:	1140000
Relative Standard Error:	4.1
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	10.0	3.768277	50.0	409126.0	0.376828	Y
2	IC 410-155419/16	40.0	15.94522	50.0	415369.0	0.39863	Y
3	IC 410-155419/15	50.0	20.642891	50.0	412963.0	0.412858	Y
4	IC 410-155419/14	100.0	42.044175	50.0	406017.0	0.420442	Y
5	ICIS 410-155419/13	125.0	52.595654	50.0	402596.0	0.420765	Y
6	IC 410-155419/12	250.0	106.380313	50.0	404220.0	0.425521	Y
7	IC 410-155419/11	750.0	307.040397	50.0	422952.0	0.409387	Y



Calibration / 1,2,3-Trichloropropane

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

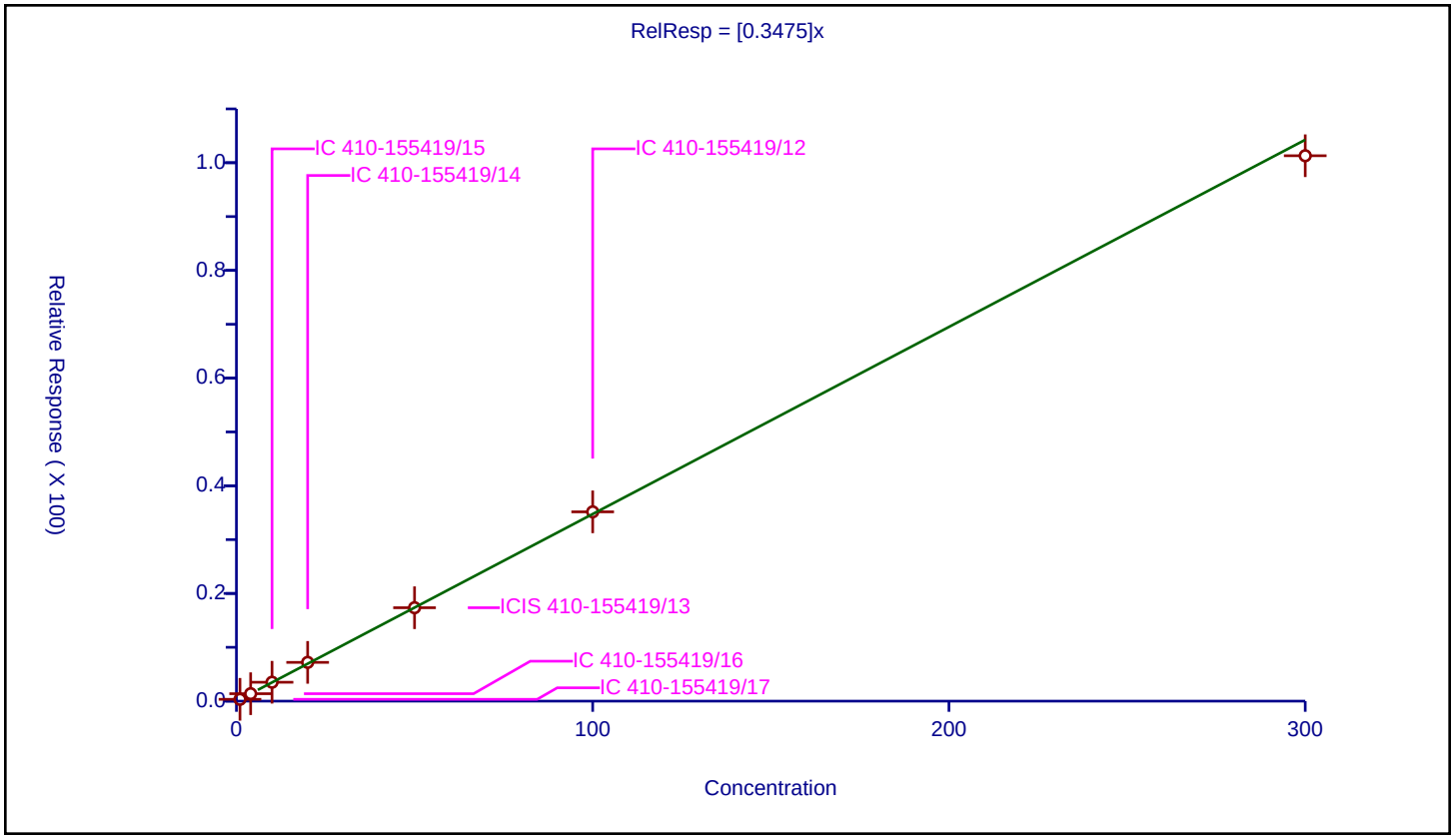
Curve Coefficients

Intercept:	0
Slope:	0.3475

Error Coefficients

Standard Error:	374000
Relative Standard Error:	2.2
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.339993	50.0	409126.0	0.339993	Y
2	IC 410-155419/16	4.0	1.381904	50.0	415369.0	0.345476	Y
3	IC 410-155419/15	10.0	3.509758	50.0	412963.0	0.350976	Y
4	IC 410-155419/14	20.0	7.19859	50.0	406017.0	0.35993	Y
5	ICIS 410-155419/13	50.0	17.351265	50.0	402596.0	0.347025	Y
6	IC 410-155419/12	100.0	35.15833	50.0	404220.0	0.351583	Y
7	IC 410-155419/11	300.0	101.296246	50.0	422952.0	0.337654	Y



Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

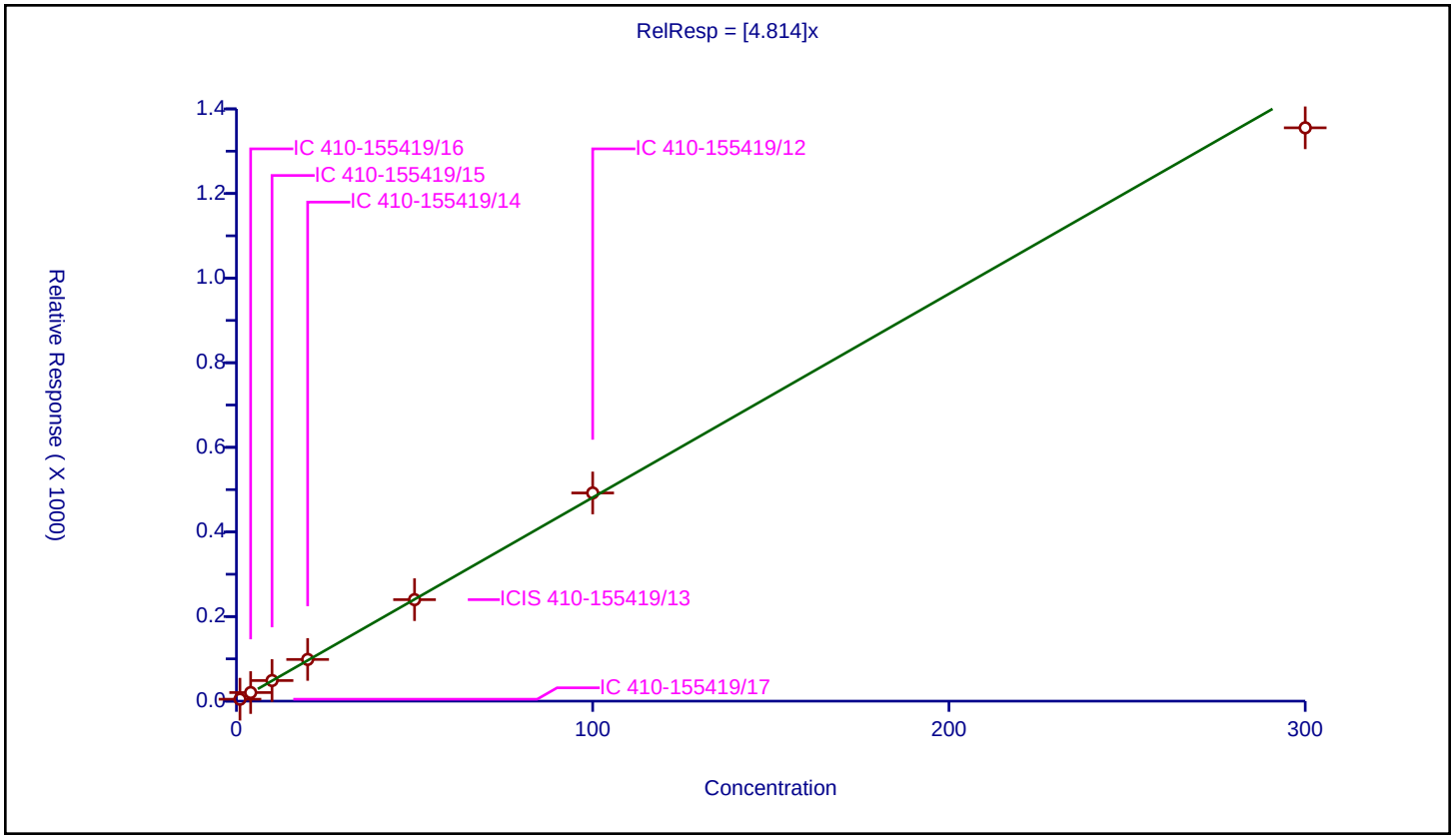
Curve Coefficients

Intercept:	0
Slope:	4.814

Error Coefficients

Standard Error:	5030000
Relative Standard Error:	4.2
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	4.579518	50.0	409126.0	4.579518	Y
2	IC 410-155419/16	4.0	20.333607	50.0	415369.0	5.083402	Y
3	IC 410-155419/15	10.0	48.671915	50.0	412963.0	4.867191	Y
4	IC 410-155419/14	20.0	98.587621	50.0	406017.0	4.929381	Y
5	ICIS 410-155419/13	50.0	239.897813	50.0	402596.0	4.797956	Y
6	IC 410-155419/12	100.0	492.128915	50.0	404220.0	4.921289	Y
7	IC 410-155419/11	300.0	1355.287716	50.0	422952.0	4.517626	Y



Calibration / 2-Chlorotoluene

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

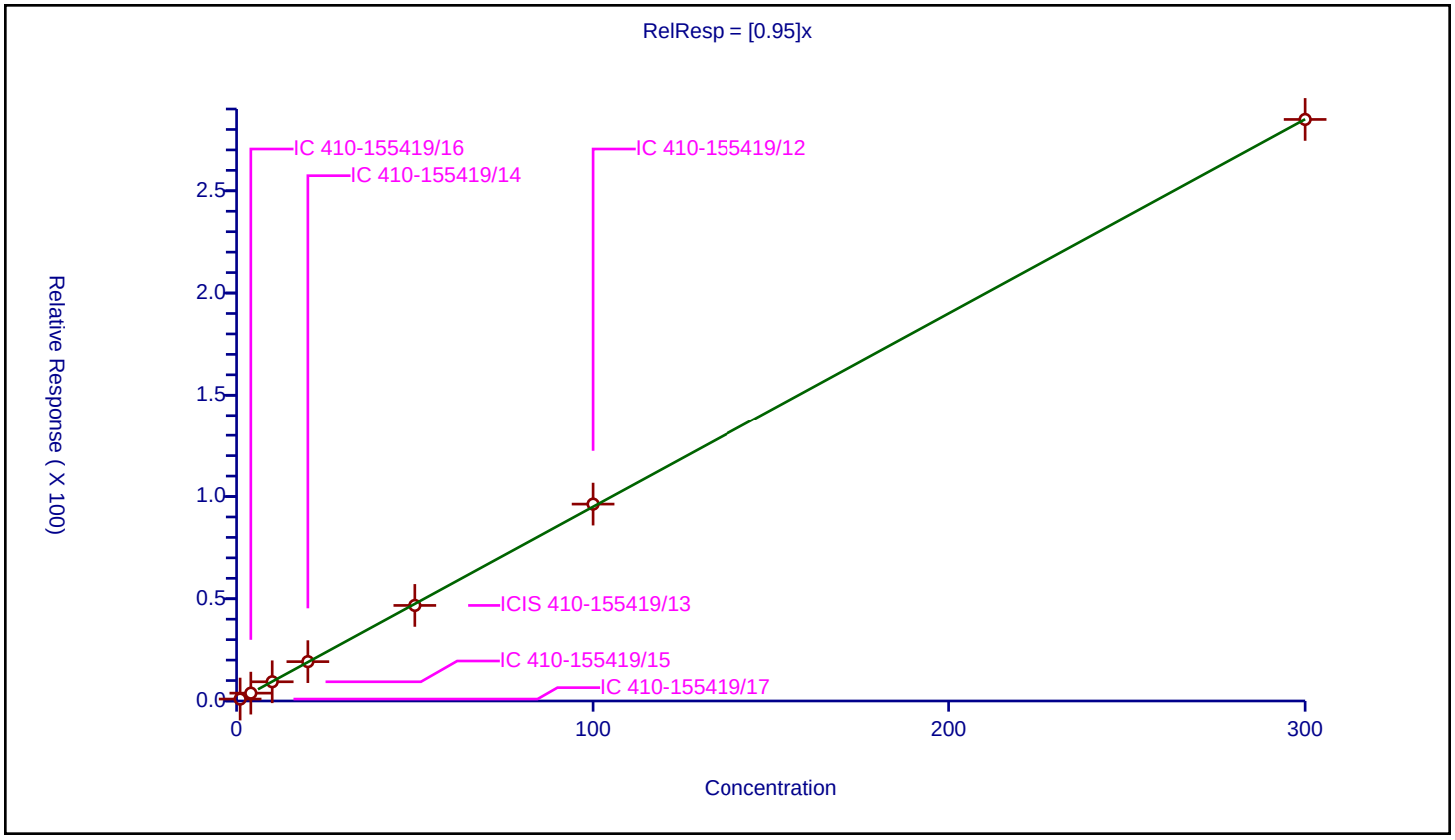
Curve Coefficients

Intercept:	0
Slope:	0.95

Error Coefficients

Standard Error:	1050000
Relative Standard Error:	1.2
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	1.000

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.941886	50.0	409126.0	0.941886	Y
2	IC 410-155419/16	4.0	3.839237	50.0	415369.0	0.959809	Y
3	IC 410-155419/15	10.0	9.392367	50.0	412963.0	0.939237	Y
4	IC 410-155419/14	20.0	19.238603	50.0	406017.0	0.96193	Y
5	ICIS 410-155419/13	50.0	46.728606	50.0	402596.0	0.934572	Y
6	IC 410-155419/12	100.0	96.299169	50.0	404220.0	0.962992	Y
7	IC 410-155419/11	300.0	284.898168	50.0	422952.0	0.949661	Y



Calibration / 1,3,5-Trimethylbenzene

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

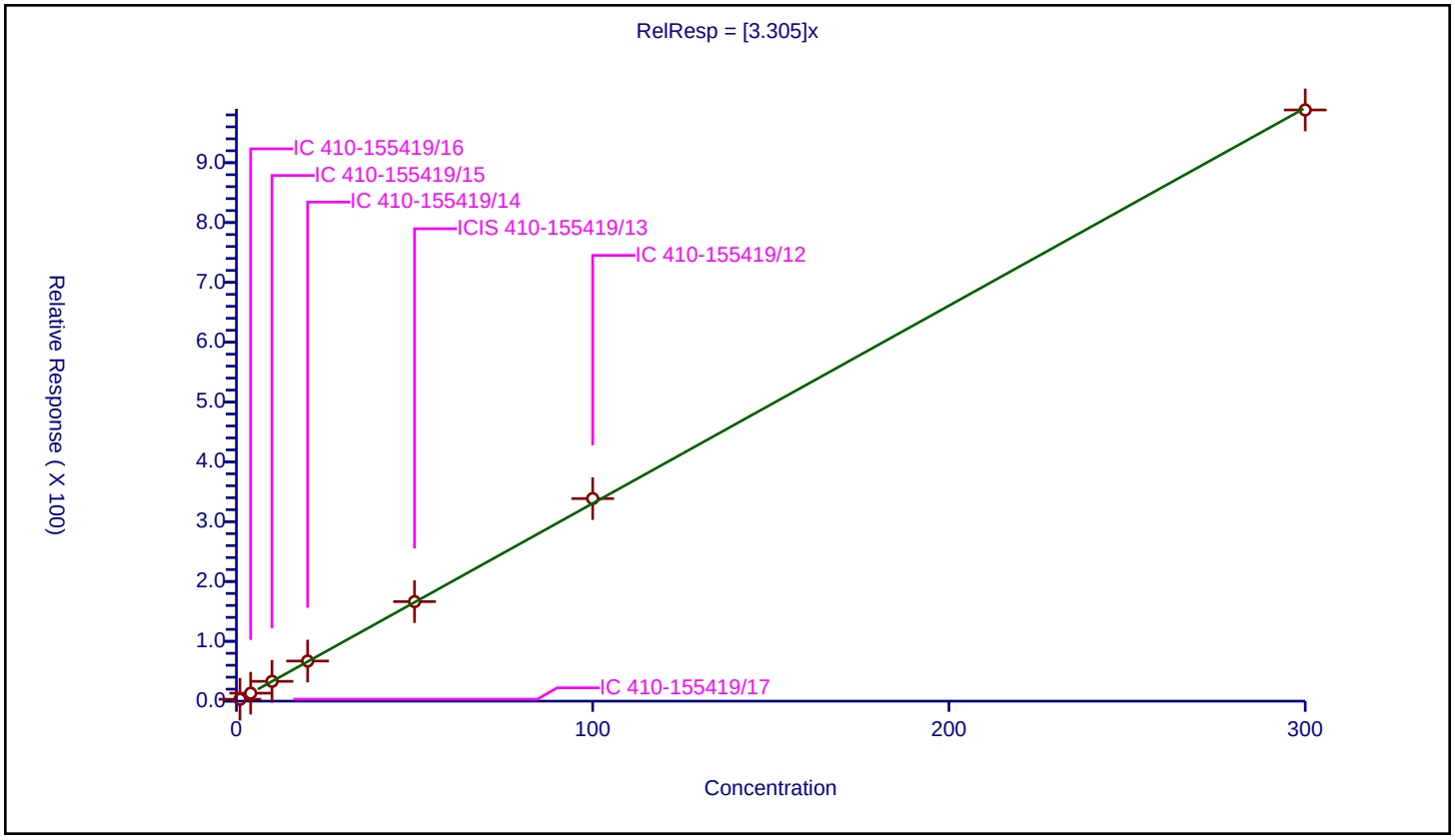
Curve Coefficients

Intercept:	0
Slope:	3.305

Error Coefficients

Standard Error:	3640000
Relative Standard Error:	2.5
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	3.133265	50.0	409126.0	3.133265	Y
2	IC 410-155419/16	4.0	13.333205	50.0	415369.0	3.333301	Y
3	IC 410-155419/15	10.0	33.089647	50.0	412963.0	3.308965	Y
4	IC 410-155419/14	20.0	67.064433	50.0	406017.0	3.353222	Y
5	ICIS 410-155419/13	50.0	166.33896	50.0	402596.0	3.326779	Y
6	IC 410-155419/12	100.0	338.628841	50.0	404220.0	3.386288	Y
7	IC 410-155419/11	300.0	988.2093	50.0	422952.0	3.294031	Y



Calibration / 4-Chlorotoluene

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

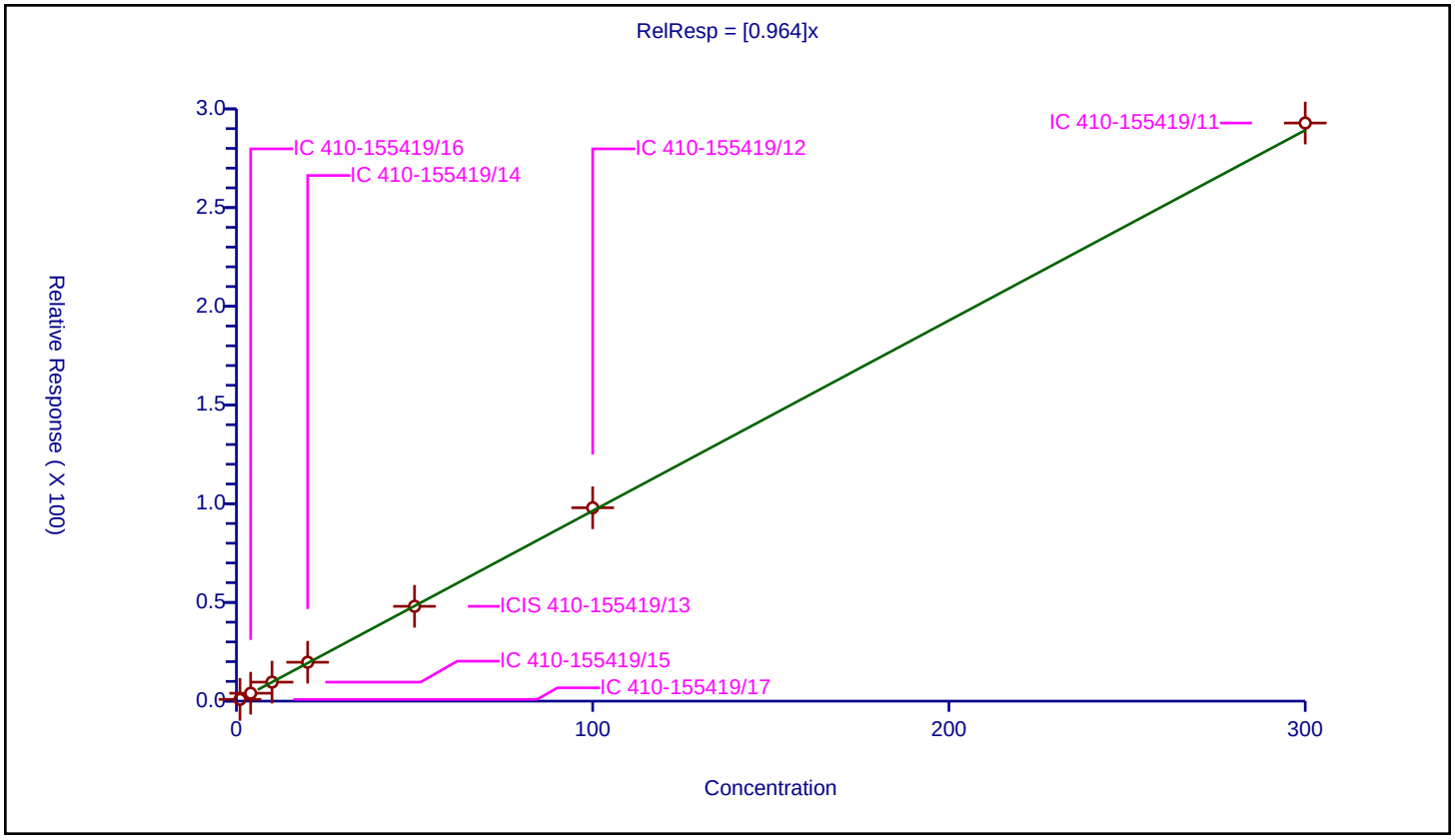
Curve Coefficients

Intercept:	0
Slope:	0.964

Error Coefficients

Standard Error:	1080000
Relative Standard Error:	4.1
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.880413	50.0	409126.0	0.880413	Y
2	IC 410-155419/16	4.0	4.012456	50.0	415369.0	1.003114	Y
3	IC 410-155419/15	10.0	9.632461	50.0	412963.0	0.963246	Y
4	IC 410-155419/14	20.0	19.701638	50.0	406017.0	0.985082	Y
5	ICIS 410-155419/13	50.0	48.031525	50.0	402596.0	0.960631	Y
6	IC 410-155419/12	100.0	97.958166	50.0	404220.0	0.979582	Y
7	IC 410-155419/11	300.0	292.845642	50.0	422952.0	0.976152	Y



Calibration / tert-Butylbenzene

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

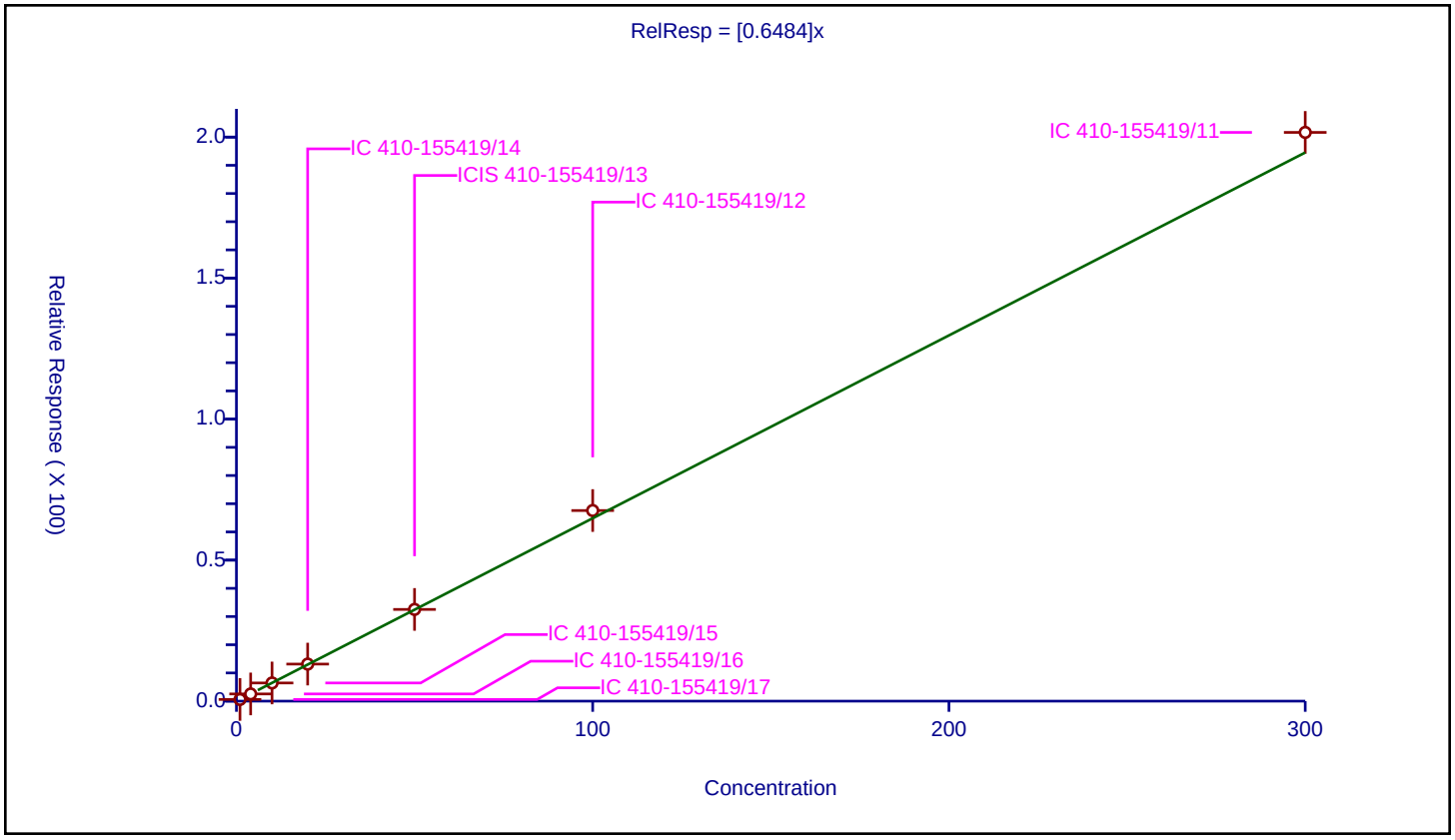
Curve Coefficients

Intercept:	0
Slope:	0.6484

Error Coefficients

Standard Error:	741000
Relative Standard Error:	3.9
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.599571	50.0	409126.0	0.599571	Y
2	IC 410-155419/16	4.0	2.55592	50.0	415369.0	0.63898	Y
3	IC 410-155419/15	10.0	6.449246	50.0	412963.0	0.644925	Y
4	IC 410-155419/14	20.0	13.13812	50.0	406017.0	0.656906	Y
5	ICIS 410-155419/13	50.0	32.522181	50.0	402596.0	0.650444	Y
6	IC 410-155419/12	100.0	67.584978	50.0	404220.0	0.67585	Y
7	IC 410-155419/11	300.0	201.663664	50.0	422952.0	0.672212	Y



Calibration / 1,2,4-Trimethylbenzene

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

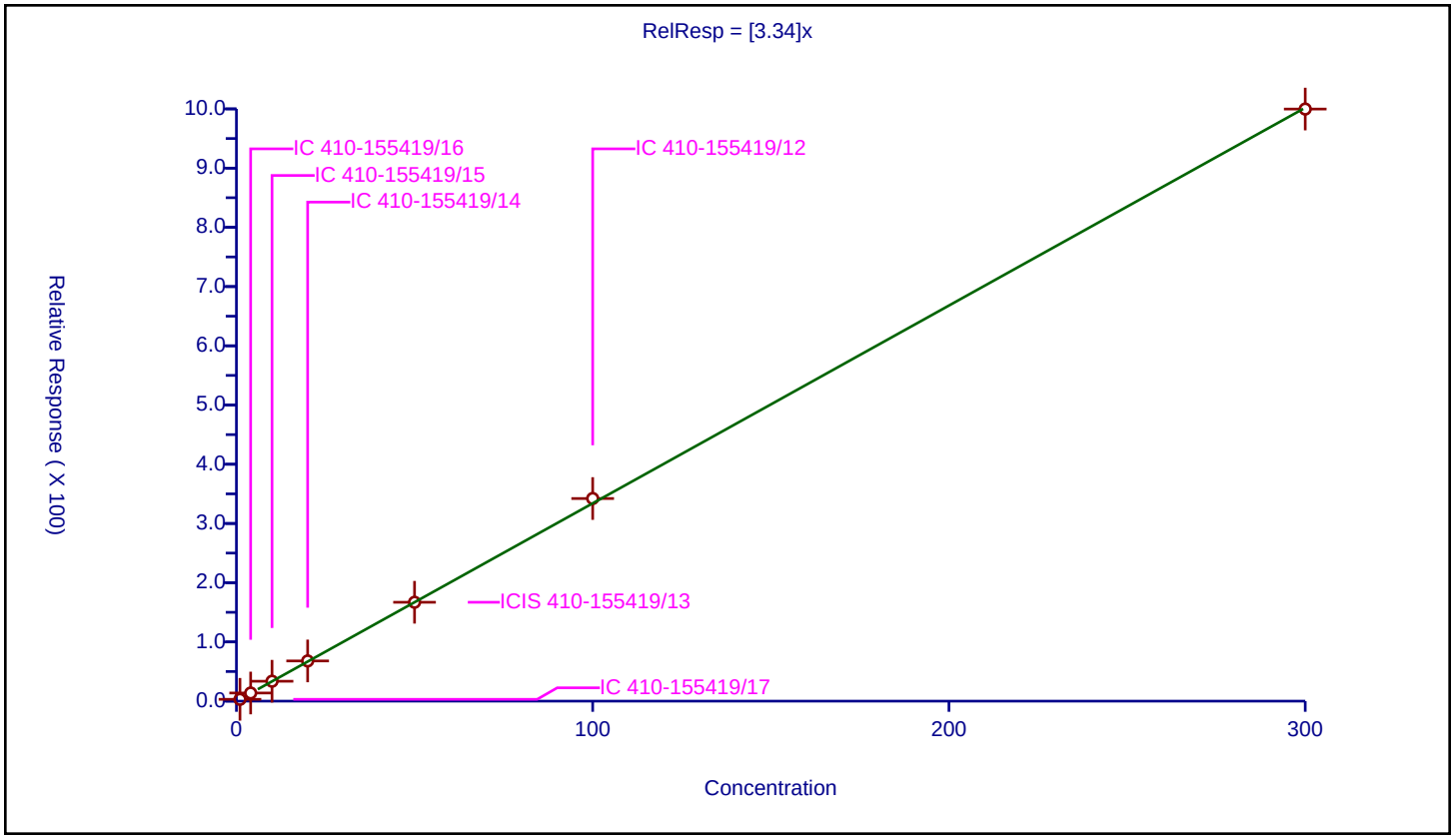
Curve Coefficients

Intercept:	0
Slope:	3.34

Error Coefficients

Standard Error:	3680000
Relative Standard Error:	3.4
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	3.097457	50.0	409126.0	3.097457	Y
2	IC 410-155419/16	4.0	13.721053	50.0	415369.0	3.430263	Y
3	IC 410-155419/15	10.0	33.636912	50.0	412963.0	3.363691	Y
4	IC 410-155419/14	20.0	67.883857	50.0	406017.0	3.394193	Y
5	ICIS 410-155419/13	50.0	166.945524	50.0	402596.0	3.33891	Y
6	IC 410-155419/12	100.0	342.137574	50.0	404220.0	3.421376	Y
7	IC 410-155419/11	300.0	999.743115	50.0	422952.0	3.332477	Y



Calibration / sec-Butylbenzene

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

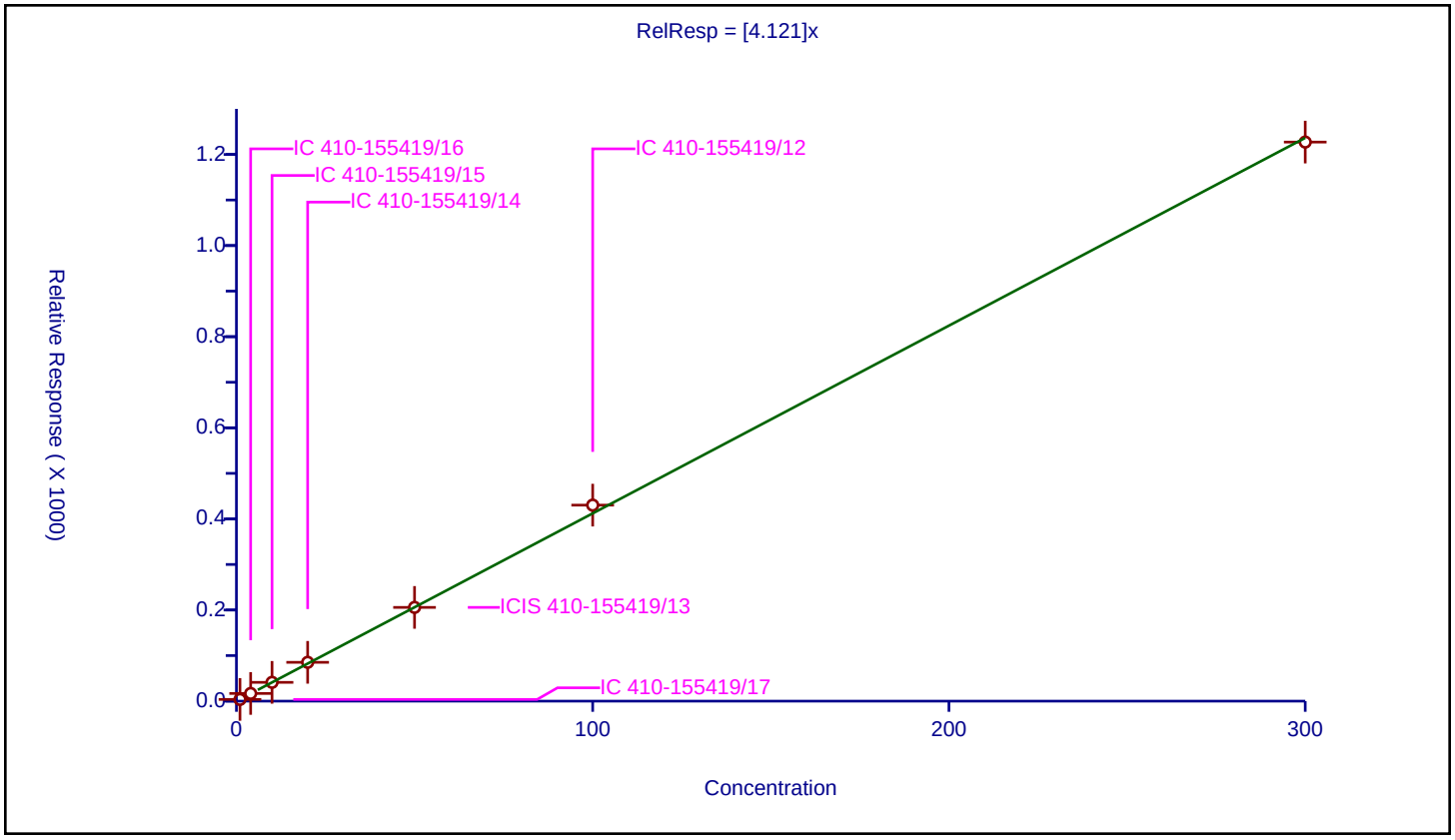
Curve Coefficients

Intercept:	0
Slope:	4.121

Error Coefficients

Standard Error:	4530000
Relative Standard Error:	4.4
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	3.746645	50.0	409126.0	3.746645	Y
2	IC 410-155419/16	4.0	16.839124	50.0	415369.0	4.209781	Y
3	IC 410-155419/15	10.0	41.247521	50.0	412963.0	4.124752	Y
4	IC 410-155419/14	20.0	85.185719	50.0	406017.0	4.259286	Y
5	ICIS 410-155419/13	50.0	205.769928	50.0	402596.0	4.115399	Y
6	IC 410-155419/12	100.0	430.260131	50.0	404220.0	4.302601	Y
7	IC 410-155419/11	300.0	1227.140196	50.0	422952.0	4.090467	Y



Calibration / 1,3-Dichlorobenzene

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

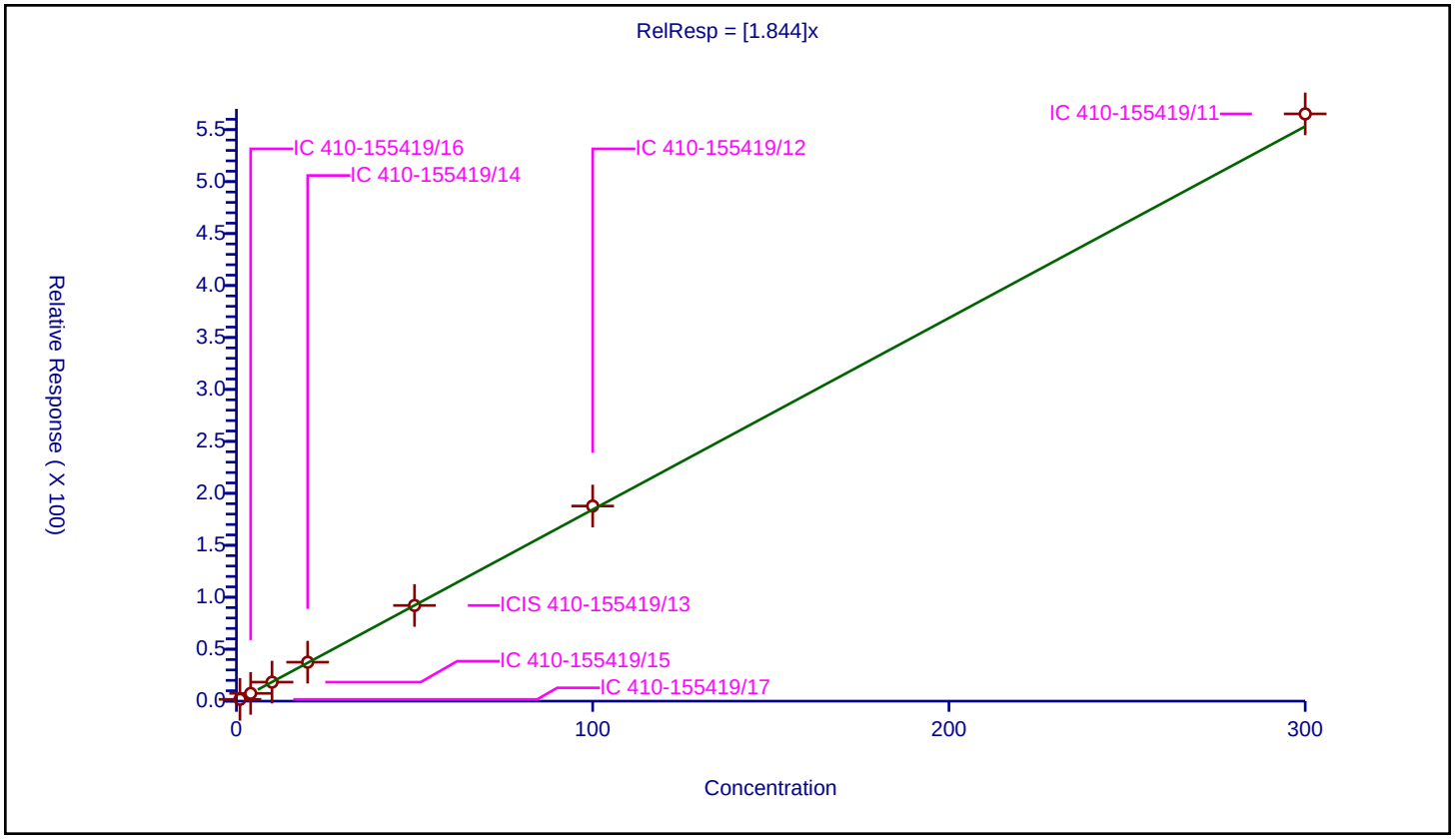
Curve Coefficients

Intercept:	0
Slope:	1.844

Error Coefficients

Standard Error:	2070000
Relative Standard Error:	3.0
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	1.728929	50.0	409126.0	1.728929	Y
2	IC 410-155419/16	4.0	7.480818	50.0	415369.0	1.870205	Y
3	IC 410-155419/15	10.0	18.298492	50.0	412963.0	1.829849	Y
4	IC 410-155419/14	20.0	37.479711	50.0	406017.0	1.873986	Y
5	ICIS 410-155419/13	50.0	92.098034	50.0	402596.0	1.841961	Y
6	IC 410-155419/12	100.0	187.768418	50.0	404220.0	1.877684	Y
7	IC 410-155419/11	300.0	565.173826	50.0	422952.0	1.883913	Y



Calibration / 4-Isopropyltoluene

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

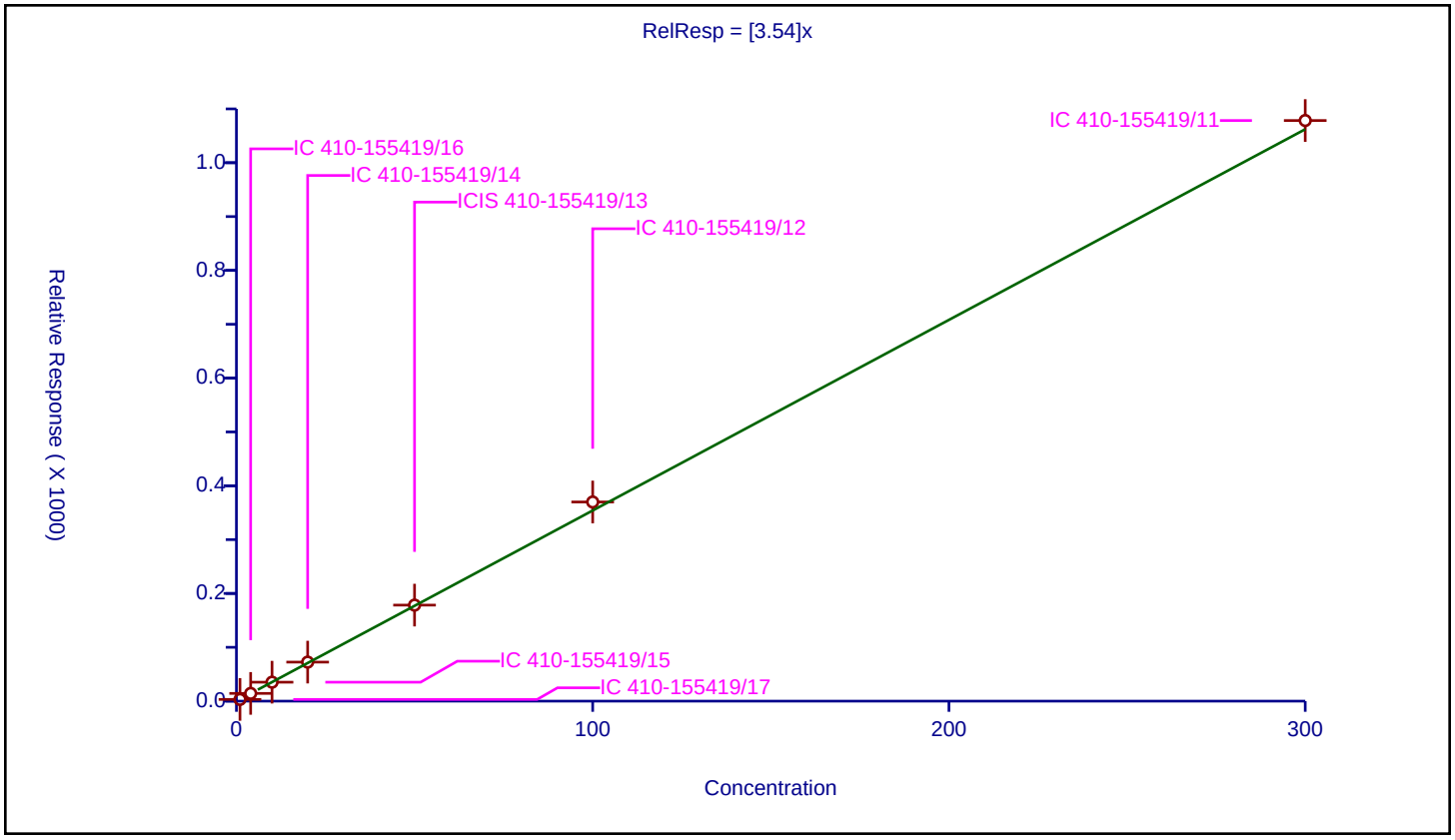
Curve Coefficients

Intercept:	0
Slope:	3.54

Error Coefficients

Standard Error:	3970000
Relative Standard Error:	4.6
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	3.191804	50.0	409126.0	3.191804	Y
2	IC 410-155419/16	4.0	14.354345	50.0	415369.0	3.588586	Y
3	IC 410-155419/15	10.0	35.181118	50.0	412963.0	3.518112	Y
4	IC 410-155419/14	20.0	72.484773	50.0	406017.0	3.624239	Y
5	ICIS 410-155419/13	50.0	178.347649	50.0	402596.0	3.566953	Y
6	IC 410-155419/12	100.0	369.904755	50.0	404220.0	3.699048	Y
7	IC 410-155419/11	300.0	1078.405824	50.0	422952.0	3.594686	Y



Calibration / 1,4-Dichlorobenzene

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

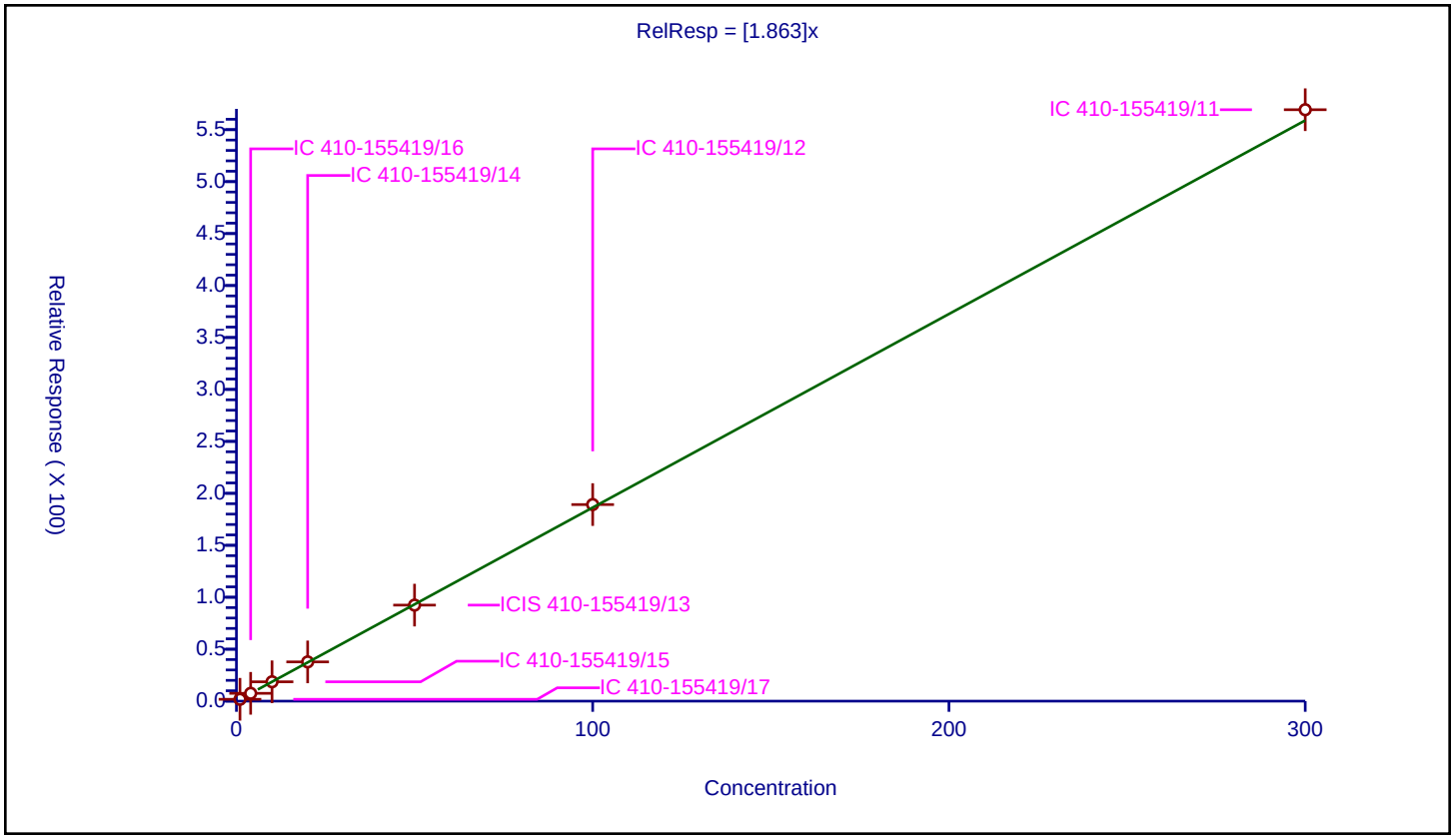
Curve Coefficients

Intercept:	0
Slope:	1.863

Error Coefficients

Standard Error:	2090000
Relative Standard Error:	2.4
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	1.770848	50.0	409126.0	1.770848	Y
2	IC 410-155419/16	4.0	7.524635	50.0	415369.0	1.881159	Y
3	IC 410-155419/15	10.0	18.628788	50.0	412963.0	1.862879	Y
4	IC 410-155419/14	20.0	37.770217	50.0	406017.0	1.888511	Y
5	ICIS 410-155419/13	50.0	92.425285	50.0	402596.0	1.848506	Y
6	IC 410-155419/12	100.0	189.181139	50.0	404220.0	1.891811	Y
7	IC 410-155419/11	300.0	569.197214	50.0	422952.0	1.897324	Y



Calibration / 1,2,3-Trimethylbenzene

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

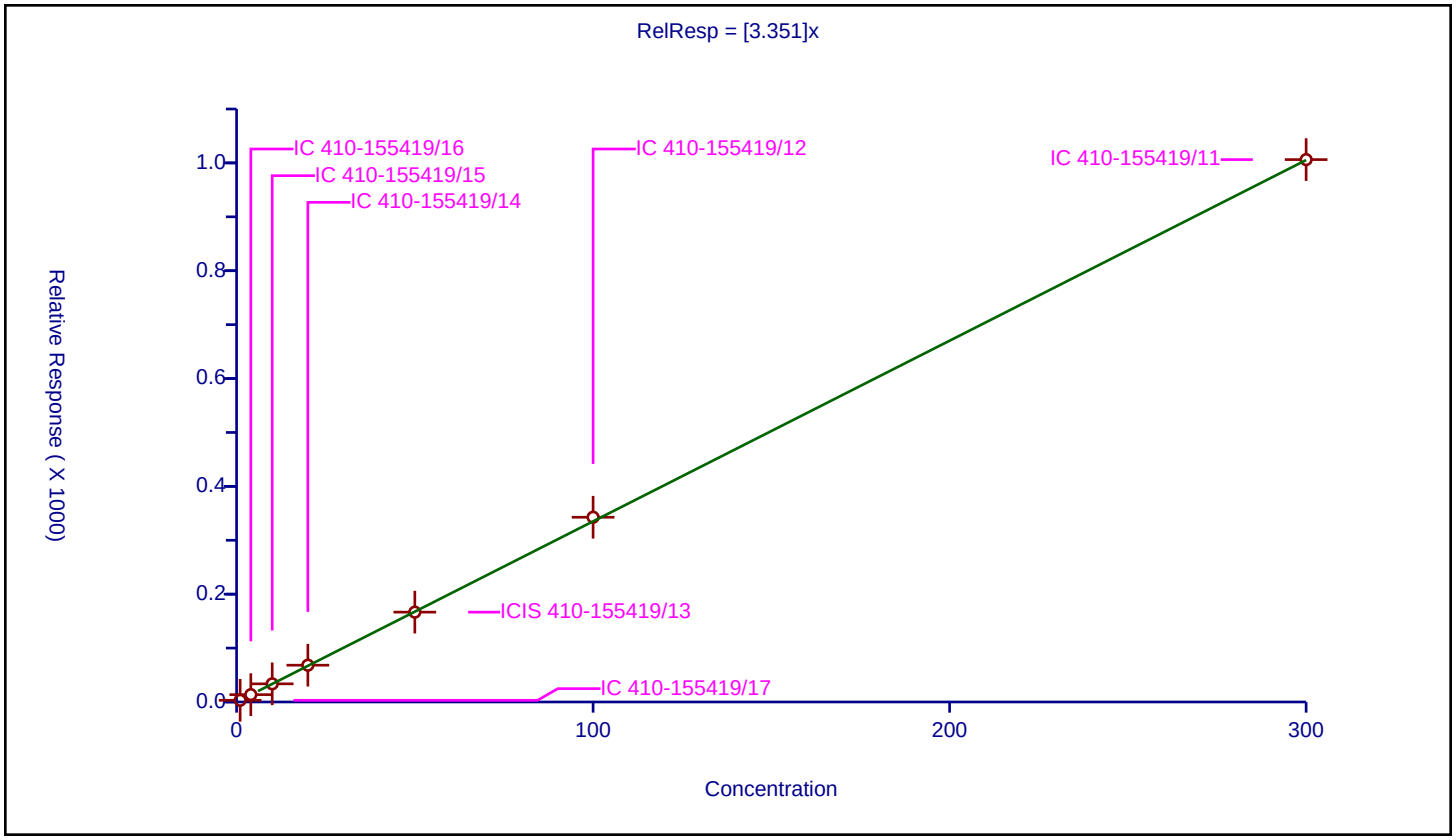
Curve Coefficients

Intercept:	0
Slope:	3.351

Error Coefficients

Standard Error:	3700000
Relative Standard Error:	2.7
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	3.159785	50.0	409126.0	3.159785	Y
2	IC 410-155419/16	4.0	13.605974	50.0	415369.0	3.401494	Y
3	IC 410-155419/15	10.0	33.683284	50.0	412963.0	3.368328	Y
4	IC 410-155419/14	20.0	68.253423	50.0	406017.0	3.412671	Y
5	ICIS 410-155419/13	50.0	166.67714	50.0	402596.0	3.333543	Y
6	IC 410-155419/12	100.0	342.702365	50.0	404220.0	3.427024	Y
7	IC 410-155419/11	300.0	1006.181789	50.0	422952.0	3.353939	Y



Calibration / n-Butylbenzene

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

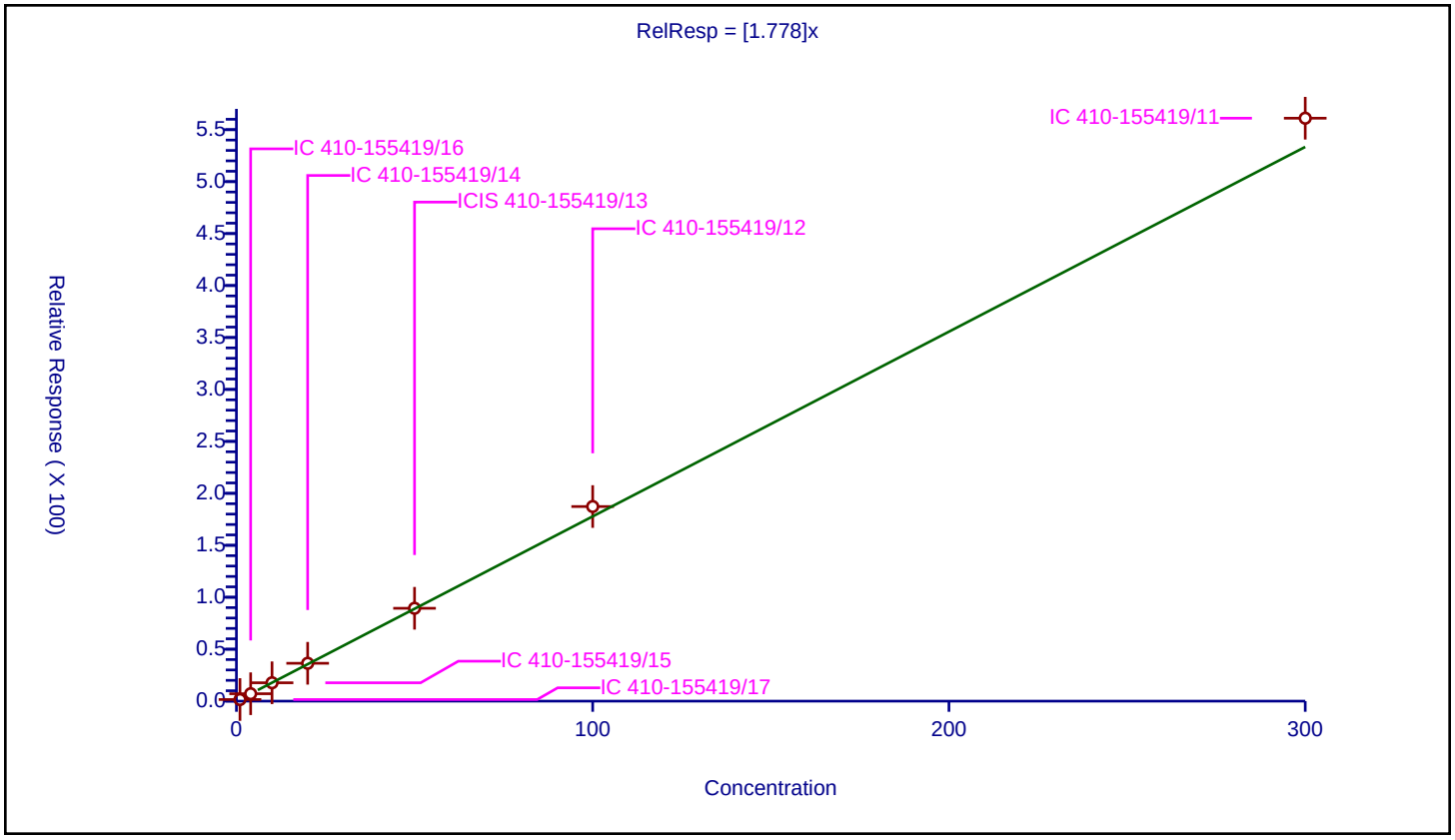
Curve Coefficients

Intercept:	0
Slope:	1.778

Error Coefficients

Standard Error:	2060000
Relative Standard Error:	6.3
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.996

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	1.540479	50.0	409126.0	1.540479	Y
2	IC 410-155419/16	4.0	7.142204	50.0	415369.0	1.785551	Y
3	IC 410-155419/15	10.0	17.678702	50.0	412963.0	1.76787	Y
4	IC 410-155419/14	20.0	36.432342	50.0	406017.0	1.821617	Y
5	ICIS 410-155419/13	50.0	89.372969	50.0	402596.0	1.787459	Y
6	IC 410-155419/12	100.0	187.290955	50.0	404220.0	1.87291	Y
7	IC 410-155419/11	300.0	561.019454	50.0	422952.0	1.870065	Y



Calibration / 1,2-Dichlorobenzene

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

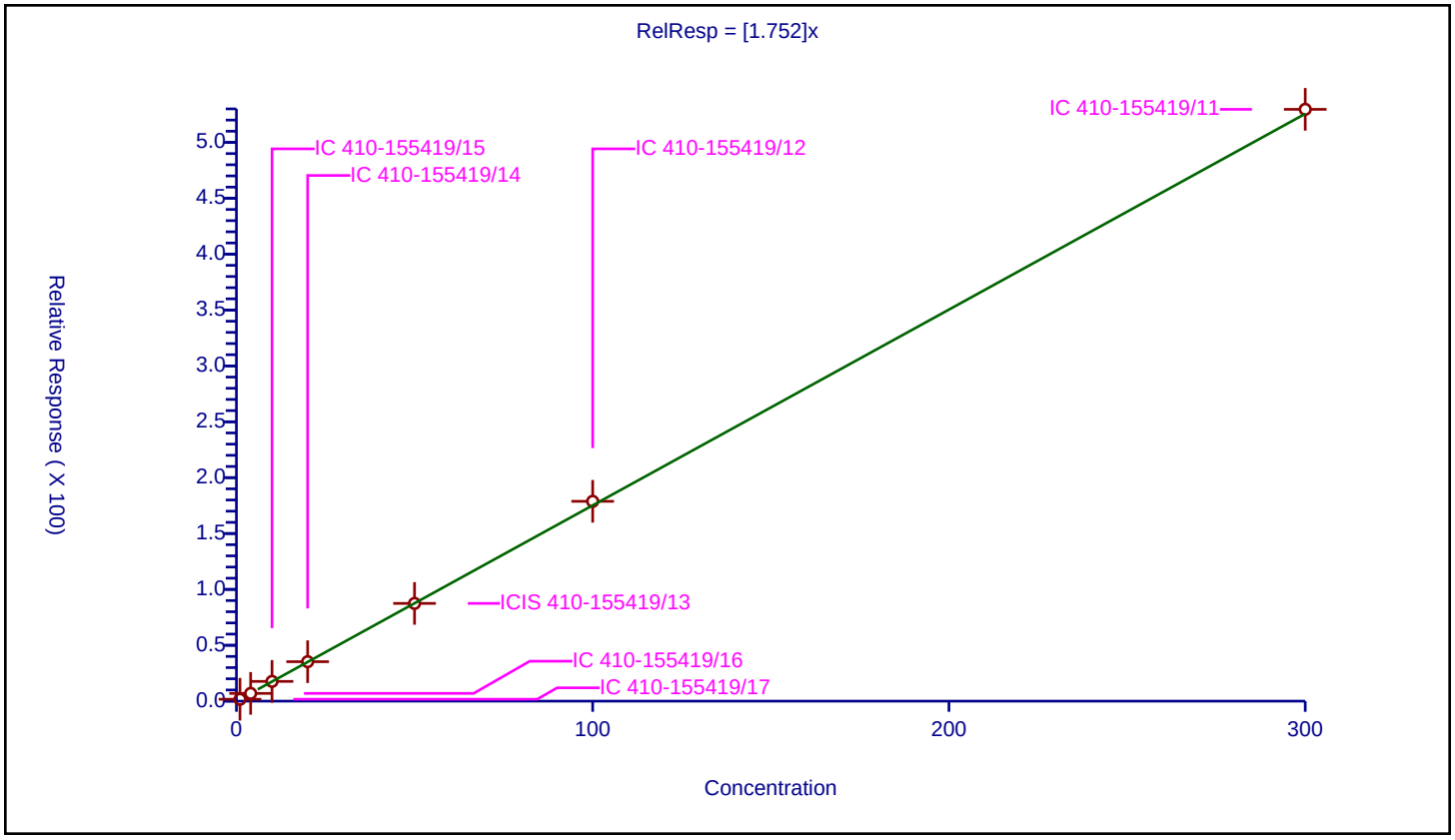
Curve Coefficients

Intercept:	0
Slope:	1.752

Error Coefficients

Standard Error:	1950000
Relative Standard Error:	1.7
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	1.000

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	1.695932	50.0	409126.0	1.695932	Y
2	IC 410-155419/16	4.0	6.930103	50.0	415369.0	1.732526	Y
3	IC 410-155419/15	10.0	17.670348	50.0	412963.0	1.767035	Y
4	IC 410-155419/14	20.0	35.31096	50.0	406017.0	1.765548	Y
5	ICIS 410-155419/13	50.0	87.455042	50.0	402596.0	1.749101	Y
6	IC 410-155419/12	100.0	178.811415	50.0	404220.0	1.788114	Y
7	IC 410-155419/11	300.0	529.59201	50.0	422952.0	1.765307	Y



Calibration / 1,2-Dibromo-3-Chloropropane

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

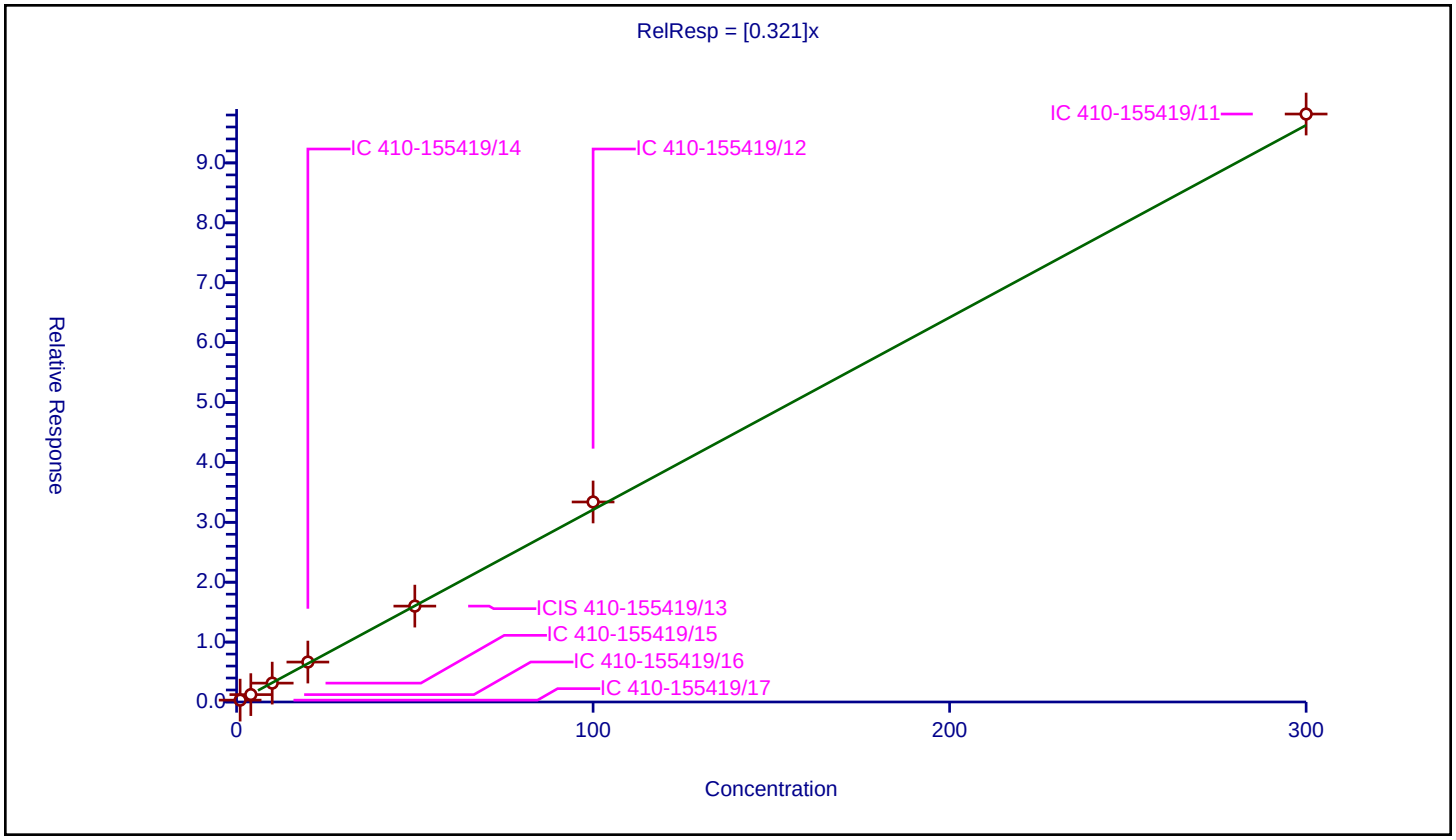
Curve Coefficients

Intercept:	0
Slope:	0.321

Error Coefficients

Standard Error:	361000
Relative Standard Error:	3.4
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.309196	50.0	409126.0	0.309196	Y
2	IC 410-155419/16	4.0	1.231435	50.0	415369.0	0.307859	Y
3	IC 410-155419/15	10.0	3.151372	50.0	412963.0	0.315137	Y
4	IC 410-155419/14	20.0	6.668563	50.0	406017.0	0.333428	Y
5	ICIS 410-155419/13	50.0	16.008853	50.0	402596.0	0.320177	Y
6	IC 410-155419/12	100.0	33.394068	50.0	404220.0	0.333941	Y
7	IC 410-155419/11	300.0	98.163385	50.0	422952.0	0.327211	Y



Calibration / 1,3,5-Trichlorobenzene

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

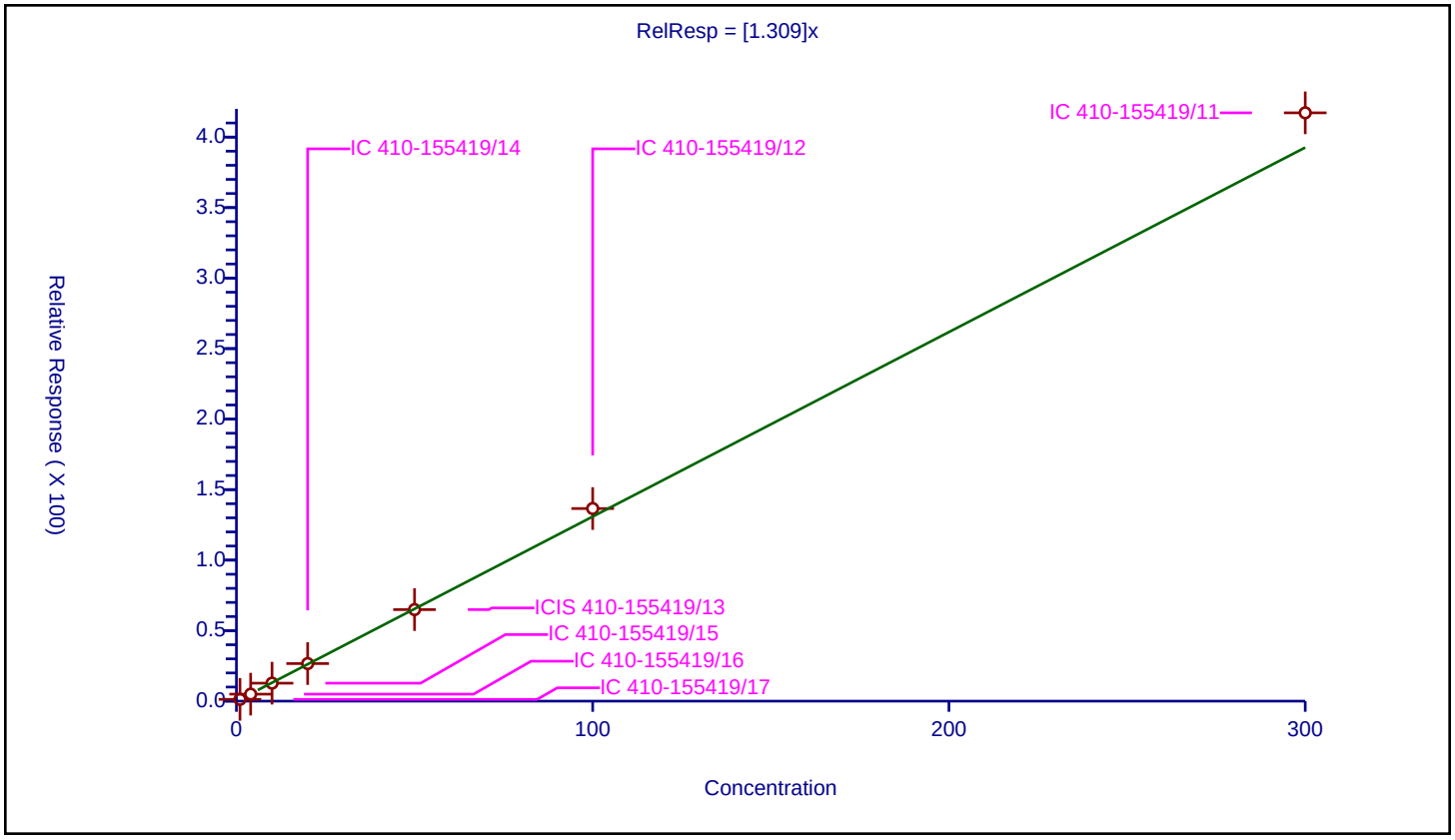
Curve Coefficients

Intercept:	0
Slope:	1.309

Error Coefficients

Standard Error:	1530000
Relative Standard Error:	4.3
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	1.259148	50.0	409126.0	1.259148	Y
2	IC 410-155419/16	4.0	4.962094	50.0	415369.0	1.240523	Y
3	IC 410-155419/15	10.0	12.743636	50.0	412963.0	1.274364	Y
4	IC 410-155419/14	20.0	26.64285	50.0	406017.0	1.332142	Y
5	ICIS 410-155419/13	50.0	64.913337	50.0	402596.0	1.298267	Y
6	IC 410-155419/12	100.0	136.582183	50.0	404220.0	1.365822	Y
7	IC 410-155419/11	300.0	417.207508	50.0	422952.0	1.390692	Y



Calibration / 1,2,4-Trichlorobenzene

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

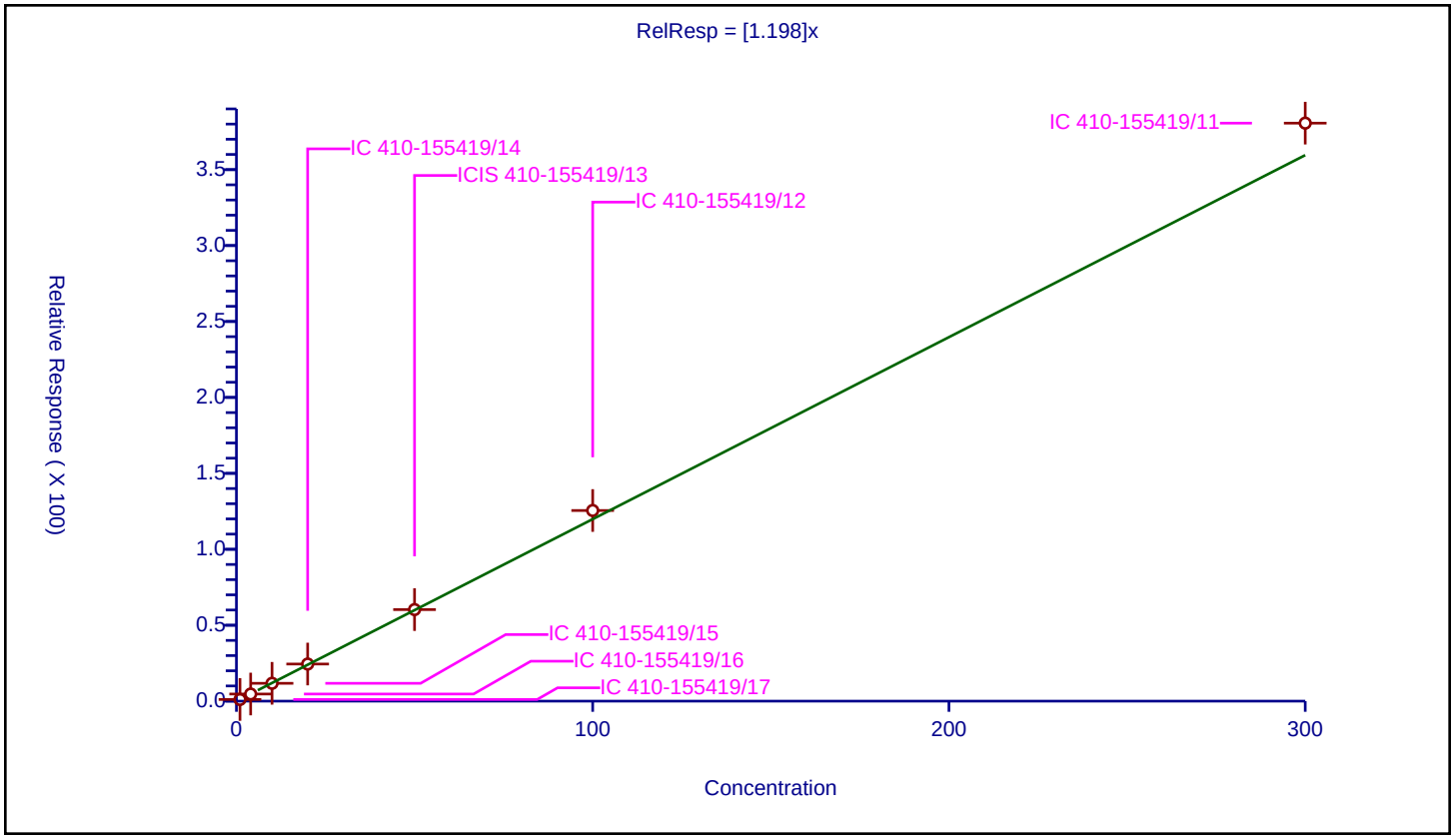
Curve Coefficients

Intercept:	0
Slope:	1.198

Error Coefficients

Standard Error:	1400000
Relative Standard Error:	5.0
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.997

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	1.089395	50.0	409126.0	1.089395	Y
2	IC 410-155419/16	4.0	4.69438	50.0	415369.0	1.173595	Y
3	IC 410-155419/15	10.0	11.740035	50.0	412963.0	1.174003	Y
4	IC 410-155419/14	20.0	24.447252	50.0	406017.0	1.222363	Y
5	ICIS 410-155419/13	50.0	60.284876	50.0	402596.0	1.205698	Y
6	IC 410-155419/12	100.0	125.537331	50.0	404220.0	1.255373	Y
7	IC 410-155419/11	300.0	380.616122	50.0	422952.0	1.26872	Y



Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

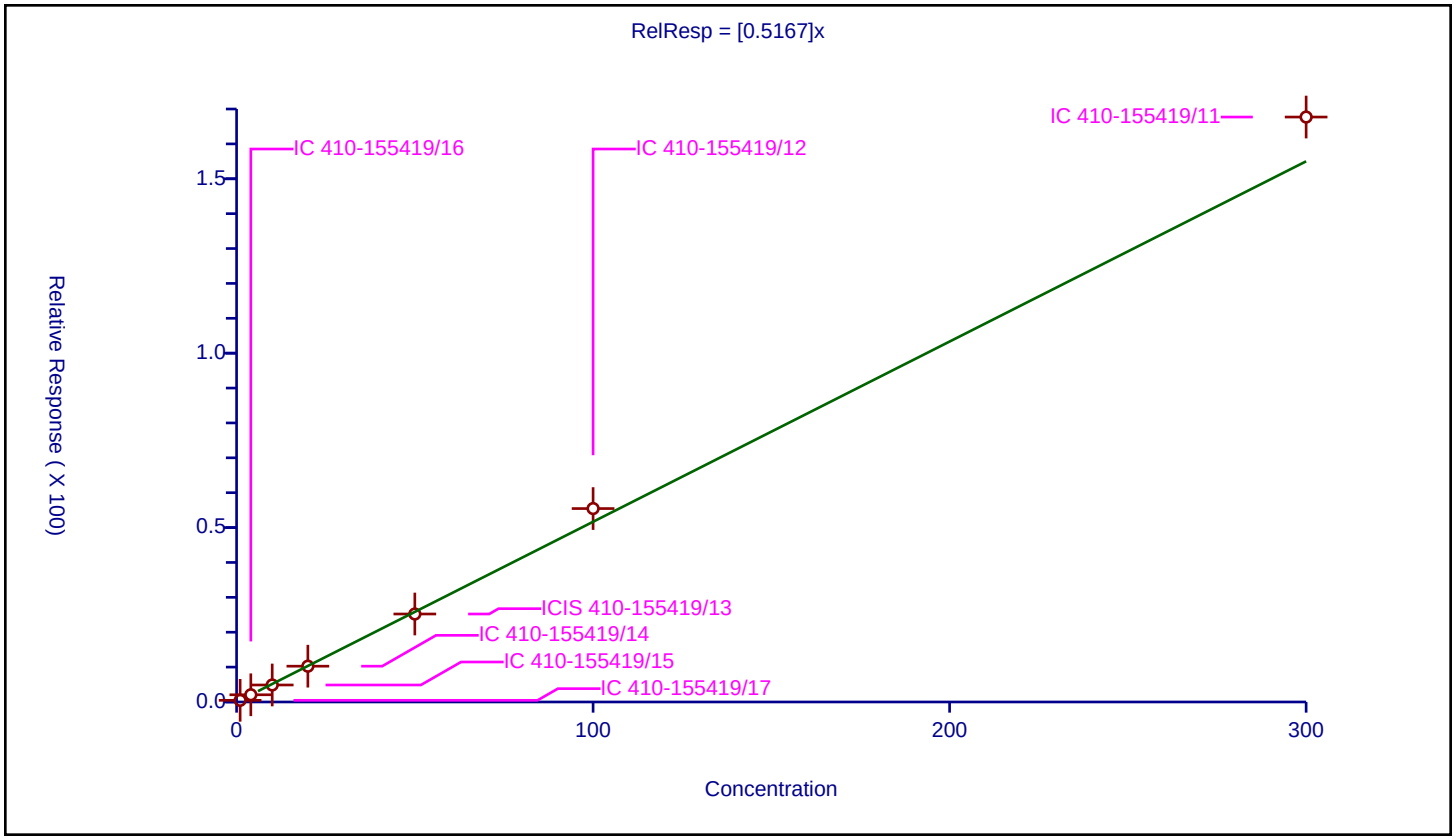
Curve Coefficients

Intercept:	0
Slope:	0.5167

Error Coefficients

Standard Error:	614000
Relative Standard Error:	5.9
Correlation Coefficient:	0.999
Coefficient of Determination (Adjusted):	0.996

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	0.480292	50.0	409126.0	0.480292	Y
2	IC 410-155419/16	4.0	2.070328	50.0	415369.0	0.517582	Y
3	IC 410-155419/15	10.0	4.875376	50.0	412963.0	0.487538	Y
4	IC 410-155419/14	20.0	10.264718	50.0	406017.0	0.513236	Y
5	ICIS 410-155419/13	50.0	25.225288	50.0	402596.0	0.504506	Y
6	IC 410-155419/12	100.0	55.455321	50.0	404220.0	0.554553	Y
7	IC 410-155419/11	300.0	167.696334	50.0	422952.0	0.558988	Y



Calibration / Naphthalene

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

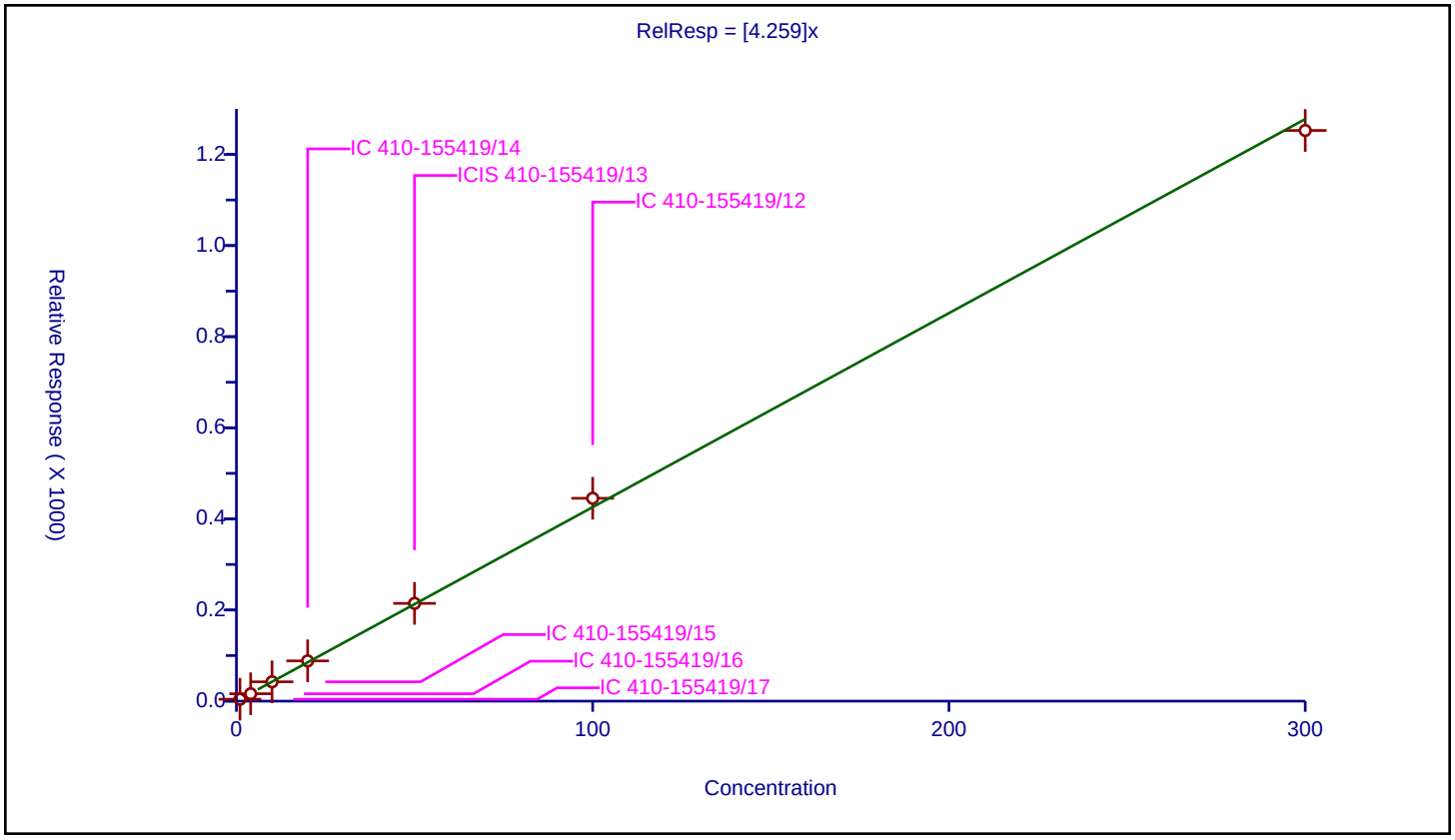
Curve Coefficients

Intercept:	0
Slope:	4.259

Error Coefficients

Standard Error:	4630000
Relative Standard Error:	3.3
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	4.182575	50.0	409126.0	4.182575	Y
2	IC 410-155419/16	4.0	16.19897	50.0	415369.0	4.049743	Y
3	IC 410-155419/15	10.0	42.408037	50.0	412963.0	4.240804	Y
4	IC 410-155419/14	20.0	88.321918	50.0	406017.0	4.416096	Y
5	ICIS 410-155419/13	50.0	214.613657	50.0	402596.0	4.292273	Y
6	IC 410-155419/12	100.0	445.275469	50.0	404220.0	4.452755	Y
7	IC 410-155419/11	300.0	1252.627367	50.0	422952.0	4.175425	Y



Calibration / 1,2,3-Trichlorobenzene

Curve Type:	Average
Weighting:	Conc_Sq
Origin:	Force
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

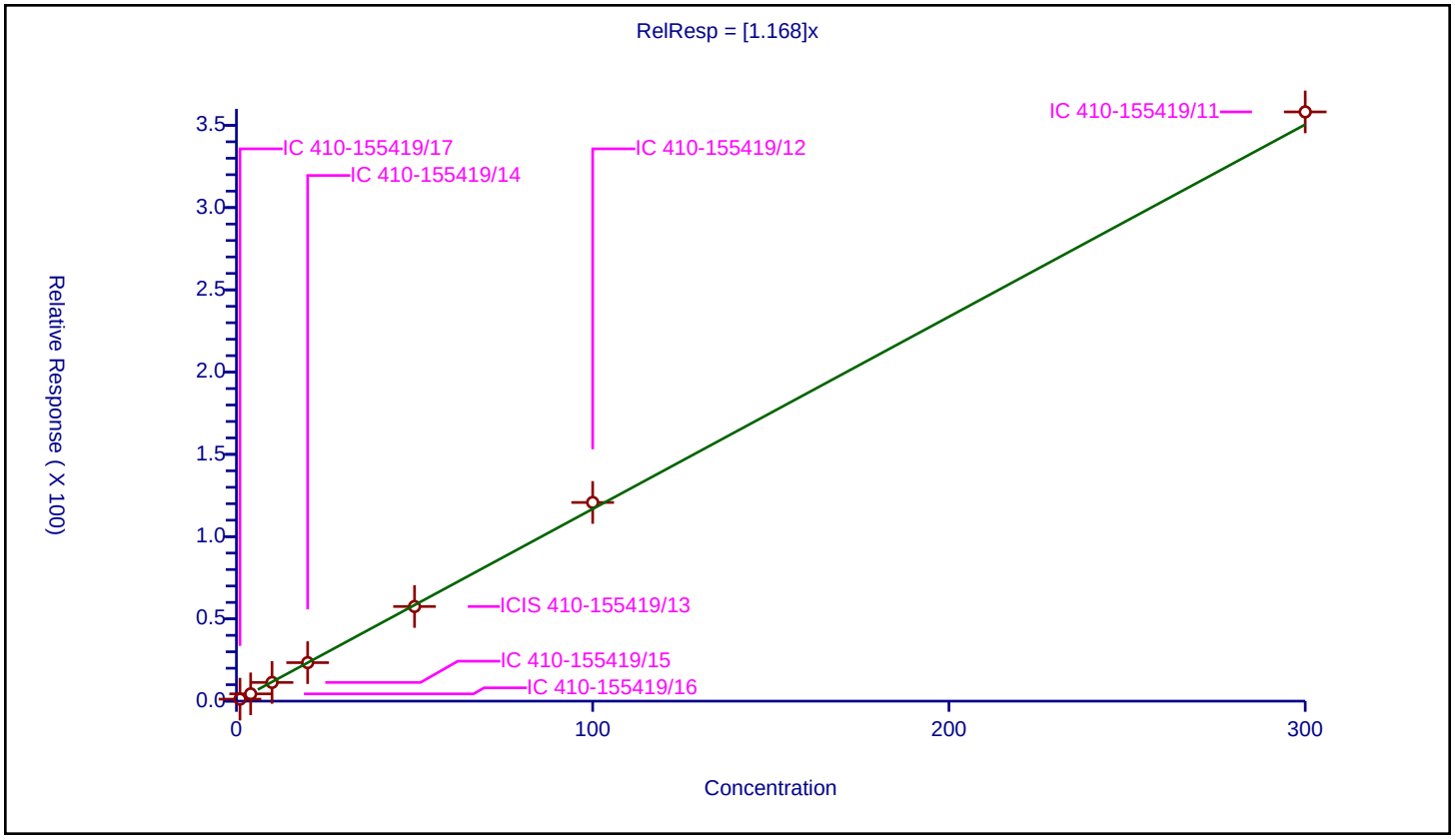
Curve Coefficients

Intercept:	0
Slope:	1.168

Error Coefficients

Standard Error:	1320000
Relative Standard Error:	3.4
Correlation Coefficient:	1.000
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 410-155419/17	1.0	1.213074	50.0	409126.0	1.213074	Y
2	IC 410-155419/16	4.0	4.422694	50.0	415369.0	1.105674	Y
3	IC 410-155419/15	10.0	11.373658	50.0	412963.0	1.137366	Y
4	IC 410-155419/14	20.0	23.400375	50.0	406017.0	1.170019	Y
5	ICIS 410-155419/13	50.0	57.535346	50.0	402596.0	1.150707	Y
6	IC 410-155419/12	100.0	120.765177	50.0	404220.0	1.207652	Y
7	IC 410-155419/11	300.0	358.176223	50.0	422952.0	1.193921	Y



FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins Lancaster Laboratories Env, Job No.: 410-60870-1

SDG No.:

Lab Sample ID: ICV 410-155419/18 Calibration Date: 08/02/2021 19:09

Instrument ID: 26285 Calib Start Date: 08/02/2021 16:48

GC Column: R-624SilMS 30m ID: 0.25(mm) Calib End Date: 08/02/2021 18:49

Lab File ID: 5G02V11.D Conc. Units: ug/L Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dichlorodifluoromethane	Ave	0.3785	0.3649	0.1000	19.3	20.0	-3.6	20.0
Chloromethane	Ave	0.4300	0.3942	0.1000	18.3	20.0	-8.3	20.0
Vinyl chloride	Ave	0.4339	0.3827	0.1000	17.6	20.0	-11.8	20.0
Bromomethane	Ave	0.3113	0.2736	0.1000	17.6	20.0	-12.1	20.0
Chloroethane	Ave	0.2298	0.2030	0.1000	17.7	20.0	-11.7	20.0
Dichlorofluoromethane	Ave	0.6024	0.5768		19.2	20.0	-4.2	20.0
Trichlorofluoromethane	Ave	0.5282	0.4779	0.1000	18.1	20.0	-9.5	20.0
Ethyl ether	Ave	0.2156	0.2443		22.8	20.1	13.3	20.0
1,1-Dichloroethene	Ave	0.2849	0.2789	0.1000	19.6	20.0	-2.1	20.0
Acetone	Ave	0.8834	0.9189	0.1000	260	250	4.0	20.0
Freon 113	Ave	0.3150	0.3066	0.1000	19.5	20.0	-2.7	20.0
Isopropyl alcohol	Ave	0.6406	0.5525		129	150	-13.8	20.0
Iodomethane	Ave	0.5597	0.5199		18.6	20.0	-7.1	20.0
Carbon disulfide	Ave	1.036	0.9611	0.1000	18.6	20.0	-7.2	20.0
Methyl acetate	Ave	0.4174	0.4583	0.1000	22.0	20.0	9.8	20.0
3-Chloro-1-propene	Ave	0.5289	0.5157		19.5	20.0	-2.5	20.0
Methylene Chloride	Ave	0.3180	0.3048	0.1000	19.2	20.0	-4.2	20.0
2-Methyl-2-propanol	Ave	1.237	1.197		193	200	-3.3	20.0
Acrylonitrile	Ave	0.2020	0.1931		95.6	100	-4.4	20.0
Methyl tert-butyl ether	Ave	0.9067	0.8552	0.1000	18.9	20.0	-5.7	20.0
trans-1,2-Dichloroethene	Ave	0.3131	0.2954	0.1000	18.9	20.0	-5.7	20.0
Hexane	Ave	0.4960	0.4612		18.6	20.0	-7.0	20.0
1,1-Dichloroethane	Ave	0.5717	0.5336	0.2000	18.7	20.0	-6.7	20.0
Isopropyl ether	Ave	1.043	0.9922		19.0	20.0	-4.9	20.0
2-Chloro-1,3-butadiene	Ave	0.4887	0.4800		19.6	20.0	-1.8	20.0
Tert-butyl ethyl ether	Ave	0.9566	0.9360		19.6	20.0	-2.2	20.0
2-Butanone	Ave	0.3039	0.2748	0.1000	226	250	-9.6	20.0
cis-1,2-Dichloroethene	Ave	0.3461	0.3385	0.1000	19.6	20.0	-2.2	20.0
2,2-Dichloropropane	Ave	0.4621	0.4512		19.5	20.0	-2.3	20.0
Propionitrile	Ave	1.468	1.449		148	150	-1.3	20.0
Methacrylonitrile	Ave	0.2106	0.2055		146	150	-2.4	20.0
Chlorobromomethane	Ave	0.1655	0.1598		19.3	20.0	-3.4	20.0
Tetrahydrofuran	Ave	1.500	1.466		97.8	100	-2.2	20.0
Chloroform	Ave	0.5511	0.5225	0.2000	19.0	20.0	-5.2	20.0
1,1,1-Trichloroethane	Ave	0.4802	0.4651	0.1000	19.4	20.0	-3.1	20.0
Cyclohexane	Ave	0.6070	0.5782	0.1000	19.0	20.0	-4.8	20.0
Carbon tetrachloride	Ave	0.4226	0.4012	0.1000	19.0	20.0	-5.1	20.0
1,1-Dichloropropene	Ave	0.4506	0.4344		19.3	20.0	-3.6	20.0
Isobutyl alcohol	Ave	0.4426	0.4328		489	500	-2.2	20.0
Benzene	Ave	1.352	1.303	0.5000	19.3	20.0	-3.6	20.0
1,2-Dichloroethane	Ave	0.4006	0.3783	0.1000	18.9	20.0	-5.6	20.0

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins Lancaster Laboratories Env, Job No.: 410-60870-1

SDG No.:

Lab Sample ID: ICV 410-155419/18 Calibration Date: 08/02/2021 19:09

Instrument ID: 26285 Calib Start Date: 08/02/2021 16:48

GC Column: R-624SilMS 30m ID: 0.25(mm) Calib End Date: 08/02/2021 18:49

Lab File ID: 5G02V11.D Conc. Units: ug/L Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Tert-amyl methyl ether	Ave	0.9320	0.8863		19.0	20.0	-4.9	20.0
n-Heptane	Ave	0.5137	0.4793		18.7	20.0	-6.7	20.0
Trichloroethene	Ave	0.3574	0.3345	0.2000	18.7	20.0	-6.4	20.0
Methylcyclohexane	Ave	0.6119	0.5733	0.1000	18.7	20.0	-6.3	20.0
1,2-Dichloropropane	Ave	0.3510	0.3355	0.1000	19.1	20.0	-4.4	20.0
2-ethoxy-2-methyl butane	Ave	0.4662	0.4489		19.3	20.0	-3.7	20.0
1,4-Dioxane	Ave	0.0738	0.0772	0.0050	523	500	4.6	20.0
Dibromomethane	Ave	0.2132	0.2037		19.1	20.0	-4.4	20.0
Methyl methacrylate	Ave	0.3245	0.3119		19.2	20.0	-3.9	20.0
Bromodichloromethane	Ave	0.4173	0.3941	0.2000	18.9	20.0	-5.6	20.0
2-Nitropropane	Ave	2.679	2.496		18.6	20.0	-6.8	20.0
2-Chloroethyl vinyl ether	Ave	0.2747	0.2653		19.3	20.0	-3.4	20.0
cis-1,3-Dichloropropene	Ave	0.5521	0.5248	0.2000	19.0	20.0	-5.0	20.0
4-Methyl-2-pentanone	Ave	0.5804	0.5559	0.1000	239	250	-4.2	20.0
Toluene	Ave	1.138	1.069	0.4000	18.8	20.0	-6.0	20.0
trans-1,3-Dichloropropene	Ave	0.6550	0.6356	0.1000	19.4	20.0	-3.0	20.0
Ethyl methacrylate	Ave	0.6950	0.6768		19.5	20.0	-2.6	20.0
1,1,2-Trichloroethane	Ave	0.4078	0.3918	0.1000	19.2	20.0	-3.9	20.0
Tetrachloroethene	Ave	0.5071	0.4853	0.2000	19.1	20.0	-4.3	20.0
1,3-Dichloropropane	Ave	0.6503	0.6325		19.5	20.0	-2.7	20.0
2-Hexanone	Ave	0.6156	0.5857	0.1000	238	250	-4.9	20.0
Dibromochloromethane	Ave	0.4516	0.4212		18.7	20.0	-6.7	20.0
1,2-Dibromoethane (EDB)	Ave	0.4460	0.4268	0.1000	19.1	20.0	-4.3	20.0
1-Chlorohexane	Ave	0.6756	0.6237		18.5	20.0	-7.7	20.0
Chlorobenzene	Ave	1.246	1.177	0.5000	18.9	20.0	-5.6	20.0
1,1,1,2-Tetrachloroethane	Ave	0.4359	0.4118		18.9	20.0	-5.5	20.0
Ethylbenzene	Ave	2.227	2.100	0.1000	18.9	20.0	-5.7	20.0
m-Xylene & p-Xylene	Ave	0.8638	0.8205	0.1000	38.0	40.0	-5.0	20.0
o-Xylene	Ave	0.8435	0.7914	0.3000	18.8	20.0	-6.2	20.0
Styrene	Ave	1.414	1.342	0.3000	19.0	20.0	-5.1	20.0
Bromoform	Ave	0.3717	0.3464	0.1000	18.6	20.0	-6.8	20.0
Isopropylbenzene	Ave	2.182	2.141	0.1000	19.6	20.0	-1.9	20.0
Cyclohexanone	Ave	0.3978	0.4514		567	500	13.5	20.0
1,1,2,2-Tetrachloroethane	Ave	1.290	1.256	0.3000	19.5	20.0	-2.7	20.0
Bromobenzene	Ave	0.9633	0.9642		20.0	20.0	0.0	20.0
trans-1,4-Dichloro-2-butene	Ave	0.4092	0.4056		99.1	100	-0.9	20.0
1,2,3-Trichloropropane	Ave	0.3475	0.3395		19.5	20.0	-2.3	20.0
N-Propylbenzene	Ave	4.814	4.640		19.3	20.0	-3.6	20.0
2-Chlorotoluene	Ave	0.9500	0.9288		19.6	20.0	-2.2	20.0
1,3,5-Trimethylbenzene	Ave	3.305	3.154		19.1	20.0	-4.6	20.0
4-Chlorotoluene	Ave	0.9640	0.9252		19.2	20.0	-4.0	20.0

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins Lancaster Laboratories Env, Job No.: 410-60870-1

SDG No.:

Lab Sample ID: ICV 410-155419/18 Calibration Date: 08/02/2021 19:09

Instrument ID: 26285 Calib Start Date: 08/02/2021 16:48

GC Column: R-624SilMS 30m ID: 0.25(mm) Calib End Date: 08/02/2021 18:49

Lab File ID: 5G02V11.D Conc. Units: ug/L Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
tert-Butylbenzene	Ave	0.6484	0.6186		19.1	20.0	-4.6	20.0
1,2,4-Trimethylbenzene	Ave	3.340	3.205		19.2	20.0	-4.0	20.0
sec-Butylbenzene	Ave	4.121	4.090		19.8	20.0	-0.8	20.0
1,3-Dichlorobenzene	Ave	1.844	1.787	0.6000	19.4	20.0	-3.1	20.0
4-Isopropyltoluene	Ave	3.540	3.467		19.6	20.0	-2.1	20.0
1,4-Dichlorobenzene	Ave	1.863	1.807	0.5000	19.4	20.0	-3.0	20.0
1,2,3-Trimethylbenzene	Ave	3.351	3.187		19.0	20.0	-4.9	30.0
n-Butylbenzene	Ave	1.778	1.702		19.1	20.0	-4.3	20.0
1,2-Dichlorobenzene	Ave	1.752	1.683	0.4000	19.2	20.0	-3.9	20.0
1,2-Dibromo-3-Chloropropane	Ave	0.3210	0.2904	0.0500	18.1	20.0	-9.5	20.0
1,3,5-Trichlorobenzene	Ave	1.309	1.236		18.9	20.0	-5.5	30.0
1,2,4-Trichlorobenzene	Ave	1.198	1.143	0.2000	19.1	20.0	-4.7	20.0
Hexachlorobutadiene	Ave	0.5167	0.4799		18.6	20.0	-7.1	20.0
Naphthalene	Ave	4.259	3.970		18.6	20.0	-6.8	20.0
1,2,3-Trichlorobenzene	Ave	1.168	1.080		18.5	20.0	-7.6	20.0
Dibromofluoromethane (Surr)	Ave	0.2445	0.2428		49.6	50.0	-0.7	20.0
1,2-Dichloroethane-d4 (Surr)	Ave	0.0562	0.0564		50.1	50.0	0.3	20.0
Toluene-d8 (Surr)	Ave	1.250	1.246		49.9	50.0	-0.3	20.0
4-Bromofluorobenzene (Surr)	Ave	0.4821	0.4783		49.6	50.0	-0.8	20.0

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02V11.D
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 02-Aug-2021 19:09:30 ALS Bottle#: 18 Worklist Smp#: 18
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 410-0035810-018
Misc. Info.: ICV
Operator ID: jml01693 Instrument ID: 26285
Sublist:

Method: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\MSVoa_26285a.m
Limit Group: MSV - 8260C DOD5
Last Update: 03-Aug-2021 13:09:50 Calib Date: 02-Aug-2021 18:49:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I17.D

Column 1 : Rxi-624Sil MS Capillary Column (0.25 mm) Det: MS Quad
Process Host: CTX1646

First Level Reviewer: mellingerc Date: 03-Aug-2021 09:25:27

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
2 Dichlorodifluoromethane	85	1.612	1.613	0.000	99	143834	20.0	19.3	
3 Chloromethane	50	1.783	1.777	0.006	99	155375	20.0	18.3	
4 Butadiene	39	1.862	1.856	0.006	92	140721	NC	NC	
5 Vinyl chloride	62	1.881	1.875	0.006	98	150830	20.0	17.6	
8 Bromomethane	94	2.143	2.143	0.000	90	107830	20.0	17.6	
9 Chloroethane	64	2.192	2.192	0.000	99	80014	20.0	17.7	
10 Dichlorofluoromethane	67	2.405	2.399	0.006	97	227348	20.0	19.2	
11 Trichlorofluoromethane	101	2.460	2.460	0.000	94	188343	20.0	18.1	
12 Pentane	43	2.454	2.460	-0.006	97	214339	NC	NC	
14 Ethyl ether	59	2.631	2.637	-0.006	94	96725	20.1	22.8	
15 1,2-Dichloro-1,1,2-trifluoroetha	67	2.716	2.728	-0.012	93	148387	NC	NC	
19 1,1-Dichloroethene	96	2.905	2.899	0.006	97	109908	20.0	19.6	
17 Acetone	58	2.911	2.917	-0.006	100	235016	250.0	260.1	
18 112TCTFE	101	2.929	2.935	-0.006	91	120856	20.0	19.5	
21 Isopropyl alcohol	45	3.045	3.045	0.000	96	84785	150.0	129.4	
20 Iodomethane	142	3.070	3.070	0.000	97	204893	20.0	18.6	
22 Carbon disulfide	76	3.179	3.173	0.006	99	378791	20.0	18.6	
23 Methyl acetate	43	3.246	3.259	-0.013	98	180643	20.0	22.0	
25 3-Chloro-1-propene	41	3.271	3.277	-0.006	93	203270	20.0	19.5	
26 Methylene Chloride	84	3.447	3.441	0.006	94	120114	20.0	19.2	
* 27 t-Butyl alcohol-d10 (IS)	65	3.417	3.448	-0.031	99	255752	250.0	250.0	
28 2-Methyl-2-propanol	59	3.539	3.545	-0.006	100	244889	200.0	193.5	
29 Acrylonitrile	53	3.710	3.716	-0.006	98	380499	100.0	95.6	
30 Methyl tert-butyl ether	73	3.752	3.771	-0.019	90	337054	20.0	18.9	
31 trans-1,2-Dichloroethene	96	3.764	3.771	-0.007	98	116416	20.0	18.9	
32 Hexane	57	4.142	4.149	-0.007	94	181768	20.0	18.6	
33 1,1-Dichloroethane	63	4.374	4.386	-0.012	96	210299	20.0	18.7	
35 Isopropyl ether	45	4.435	4.453	-0.018	98	391058	20.0	19.0	
36 2-Chloro-1,3-butadiene	53	4.484	4.496	-0.012	90	189189	20.0	19.6	
37 Tert-butyl ethyl ether	59	5.002	5.014	-0.012	99	368915	20.0	19.6	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
39 2-Butanone (MEK)	43	5.215	5.222	-0.007	100	1353917	250.0	226.1	
38 cis-1,2-Dichloroethene	96	5.240	5.246	-0.006	82	133402	20.0	19.6	
40 2,2-Dichloropropane	77	5.258	5.270	-0.012	85	177839	20.0	19.5	
41 Propionitrile	54	5.313	5.319	-0.006	99	222414	150.0	148.1	
43 Methacrylonitrile	67	5.532	5.545	-0.013	93	607334	150.0	146.4	
44 Chlorobromomethane	128	5.581	5.593	-0.012	97	63001	20.0	19.3	
45 Tetrahydrofuran	71	5.587	5.593	-0.006	89	149990	100.0	97.8	
46 Chloroform	83	5.746	5.758	-0.012	93	205921	20.0	19.0	
$ 47 Dibromofluoromethane (Surr)	113	5.971	5.978	-0.007	94	239213	50.0	49.6	
48 1,1,1-Trichloroethane	97	5.971	5.978	-0.007	94	183329	20.0	19.4	
49 Cyclohexane	56	6.063	6.075	-0.012	93	227869	20.0	19.0	
50 1,1-Dichloropropene	75	6.191	6.197	-0.006	98	171211	20.0	19.3	
51 Carbon tetrachloride	117	6.179	6.197	-0.018	97	158114	20.0	19.0	
52 Isobutyl alcohol	41	6.392	6.398	-0.006	93	221360	500.0	488.9	
$ 56 1,2-Dichloroethane-d4 (Surr)	102	6.435	6.447	-0.012	99	55524	50.0	50.1	
53 Benzene	78	6.459	6.471	-0.012	97	513597	20.0	19.3	
55 1,2-Dichloroethane	62	6.544	6.551	-0.007	97	149090	20.0	18.9	
58 Tert-amyl methyl ether	73	6.679	6.685	-0.006	95	349333	20.0	19.0	
* 59 Fluorobenzene (IS)	96	6.886	6.898	-0.012	99	985332	50.0	50.0	
60 n-Heptane	43	6.910	6.922	-0.012	96	188915	20.0	18.7	
61 n-Butanol	56	7.313	7.325	-0.012	89	396277	NC	NC	
62 Trichloroethene	95	7.386	7.392	-0.006	99	131828	20.0	18.7	
63 Methylcyclohexane	83	7.697	7.697	0.000	91	225939	20.0	18.7	
64 1,2-Dichloropropane	63	7.733	7.739	-0.006	96	132230	20.0	19.1	
65 2-ethoxy-2-methyl butane	87	7.764	7.770	-0.006	91	176943	20.0	19.3	
68 1,4-Dioxane	88	7.825	7.831	-0.006	88	39512	500.0	523.2	M
66 Dibromomethane	93	7.843	7.849	-0.006	96	80274	20.0	19.1	
67 Methyl methacrylate	69	7.843	7.855	-0.012	94	122911	20.0	19.2	
70 Dichlorobromomethane	83	8.099	8.105	-0.006	99	155341	20.0	18.9	
72 2-Nitropropane	41	8.392	8.398	-0.006	98	51064	20.0	18.6	
71 2-Chloroethyl vinyl ether	63	8.495	8.501	-0.006	91	104564	20.0	19.3	
73 cis-1,3-Dichloropropene	75	8.684	8.684	0.000	95	206836	20.0	19.0	
75 4-Methyl-2-pentanone (MIBK)	43	8.892	8.898	-0.006	97	2738691	250.0	239.4	
$ 76 Toluene-d8 (Surr)	98	9.026	9.026	0.000	93	939561	50.0	49.9	
77 Toluene	92	9.111	9.117	-0.006	98	322473	20.0	18.8	
78 trans-1,3-Dichloropropene	75	9.422	9.428	-0.006	94	191671	20.0	19.4	
79 Ethyl methacrylate	69	9.507	9.513	-0.006	91	204098	20.0	19.5	
80 1,1,2-Trichloroethane	97	9.647	9.648	-0.001	89	118146	20.0	19.2	
81 Tetrachloroethene	166	9.727	9.727	0.000	98	146346	20.0	19.1	
82 1,3-Dichloropropane	76	9.824	9.824	0.000	92	190745	20.0	19.5	
84 2-Hexanone	43	9.904	9.897	0.007	97	2207934	250.0	237.8	
85 Chlorodibromomethane	129	10.056	10.056	0.000	90	127033	20.0	18.7	
87 Ethylene Dibromide	107	10.166	10.166	0.000	98	128698	20.0	19.1	
* 90 Chlorobenzene-d5 (IS)	117	10.641	10.635	0.006	84	753931	50.0	50.0	
88 Chlorobenzene	112	10.672	10.666	0.006	93	354819	20.0	18.9	
91 1-Chlorohexane	91	10.666	10.666	0.000	71	188088	20.0	18.5	
92 1,1,1,2-Tetrachloroethane	131	10.763	10.763	0.000	96	124189	20.0	18.9	
93 Ethylbenzene	91	10.769	10.769	0.000	98	633285	20.0	18.9	
94 m-Xylene & p-Xylene	106	10.897	10.891	0.006	100	494878	40.0	38.0	
95 o-Xylene	106	11.245	11.239	0.006	97	238657	20.0	18.8	
96 Styrene	104	11.263	11.257	0.006	95	404590	20.0	19.0	
97 Bromoform	173	11.422	11.415	0.007	98	104453	20.0	18.6	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
98 Isopropylbenzene	105	11.568	11.562	0.006	95	645749	20.0	19.6	
100 Cyclohexanone	55	11.635	11.635	0.000	93	230920	500.0	567.4	
$ 101 4-Bromofluorobenzene (Surr)	95	11.714	11.708	0.006	94	360585	50.0	49.6	
102 Bromobenzene	156	11.830	11.824	0.006	95	157785	20.0	20.0	
105 1,1,2,2-Tetrachloroethane	83	11.830	11.824	0.006	94	205471	20.0	19.5	
104 trans-1,4-Dichloro-2-butene	53	11.860	11.854	0.006	90	331896	100.0	99.1	
103 1,2,3-Trichloropropane	110	11.873	11.867	0.006	82	55563	20.0	19.5	
106 N-Propylbenzene	91	11.915	11.909	0.006	99	759360	20.0	19.3	
107 2-Chlorotoluene	126	11.982	11.976	0.006	97	152002	20.0	19.6	
108 1,3,5-Trimethylbenzene	105	12.062	12.056	0.006	94	516124	20.0	19.1	
109 4-Chlorotoluene	126	12.086	12.074	0.012	97	151400	20.0	19.2	
111 tert-Butylbenzene	134	12.306	12.299	0.007	93	101228	20.0	19.1	
113 1,2,4-Trimethylbenzene	105	12.354	12.348	0.006	97	524456	20.0	19.2	
114 sec-Butylbenzene	105	12.476	12.470	0.006	94	669344	20.0	19.8	
115 1,3-Dichlorobenzene	146	12.574	12.568	0.006	98	292389	20.0	19.4	
116 4-Isopropyltoluene	119	12.592	12.586	0.006	97	567384	20.0	19.6	
* 117 1,4-Dichlorobenzene-d4	152	12.629	12.623	0.006	95	409122	50.0	50.0	
118 1,4-Dichlorobenzene	146	12.647	12.641	0.006	96	295752	20.0	19.4	
119 1,2,3-Trimethylbenzene	105	12.665	12.659	0.006	98	521517	20.0	19.0	
120 Benzyl chloride	91	12.732	12.726	0.006	98	409638	NC	NC	
121 1,3-Diethylbenzene	119	12.799	12.793	0.006	95	325848	NC	NC	a
122 p-Diethylbenzene	119	12.872	12.866	0.006	94	341555	NC	NC	a
124 n-Butylbenzene	92	12.891	12.885	0.006	98	278512	20.0	19.1	
125 1,2-Dichlorobenzene	146	12.915	12.909	0.006	99	275488	20.0	19.2	
126 o-diethylbenzene	119	12.946	12.940	0.006	96	269702	NC	NC	
127 1,2-Dibromo-3-Chloropropane	75	13.476	13.464	0.012	88	47523	20.0	18.1	
128 1,3,5-Trichlorobenzene	180	13.604	13.598	0.006	98	202306	20.0	18.9	
129 1,2,4-Trichlorobenzene	180	14.037	14.025	0.012	94	186993	20.0	19.1	
131 Hexachlorobutadiene	225	14.128	14.116	0.012	96	78532	20.0	18.6	
132 Naphthalene	128	14.220	14.208	0.012	97	649725	20.0	18.6	
133 1,2,3-Trichlorobenzene	180	14.366	14.354	0.012	95	176717	20.0	18.5	
134 2-Methylnaphthalene	142	14.970	14.957	0.013	92	345388	NC	NC	

QC Flag Legend

Processing Flags
- NC - Not Calibrated

Review Flags
- M - Manually Integrated
- a - User Assigned ID

Reagents:

MSV_LCS_VOC#1_00012	Amount Added: 50.00	Units: uL	
MSV_LCS_2CEVE_00013	Amount Added: 50.00	Units: uL	
MSV_Q_EE_00004	Amount Added: 50.00	Units: uL	
MSV_QCYC_00005	Amount Added: 50.00	Units: uL	
MSV_QC_2K_GAS_00023	Amount Added: 1.00	Units: uL	
MSV_Cent_ISSS_00001	Amount Added: 5.00	Units: uL	Run Reagent

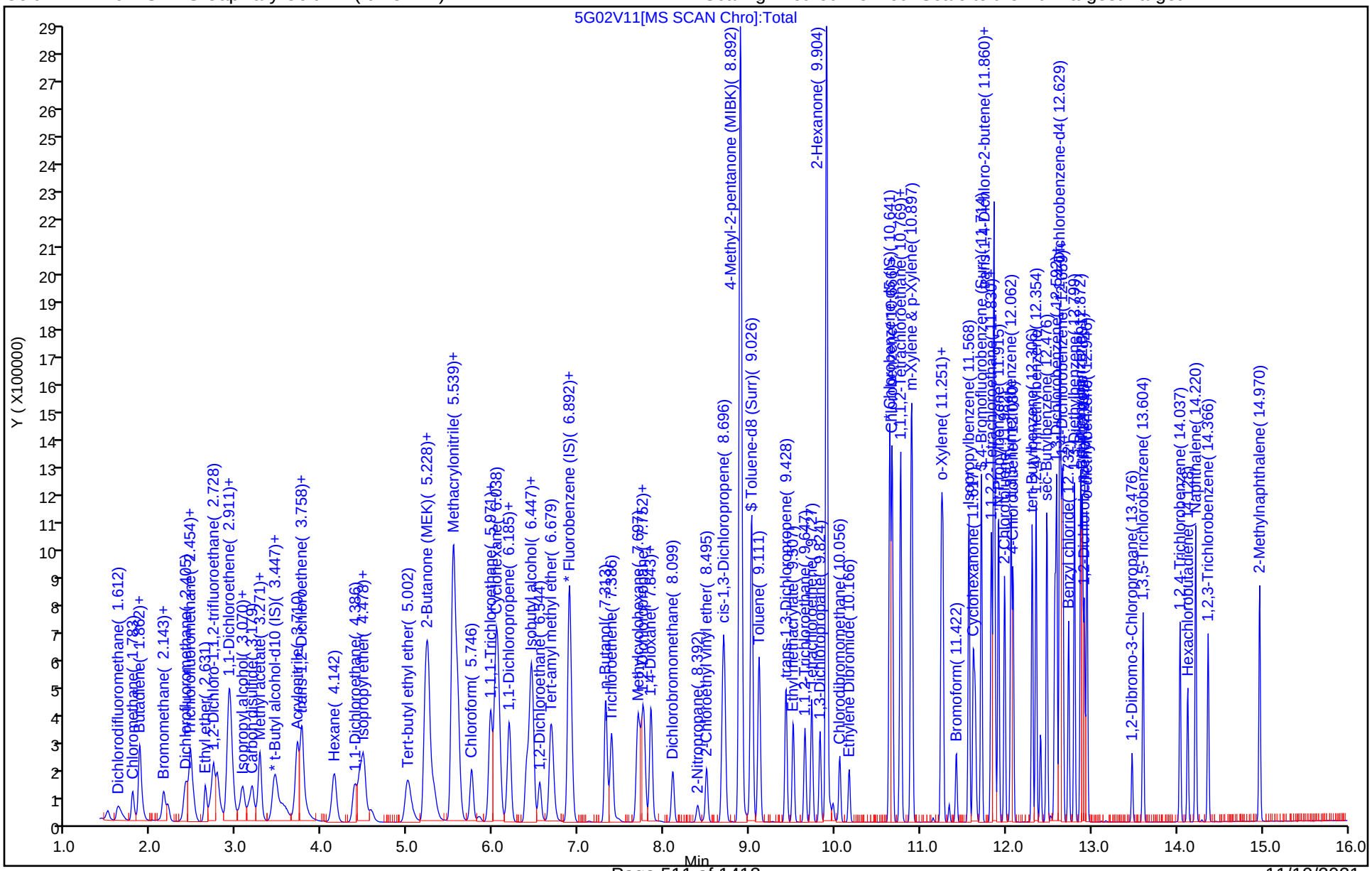
Report Date: 03-Aug-2021 13:09:55 Chrom Revision: 2.3 27-Jul-2021 18:12:28

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02V11.D

Injection Date:	02-Aug-2021 19:09:30	Instrument ID:	26285	Operator ID:	jml01693
Lims ID:	ICV			Worklist Smp#:	18
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	18
Method:	MSVoa_26285a	Limit Group:	MSV - 8260C DOD5		

Column: Rxi-624Sil MS Capillary Column (0.25 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

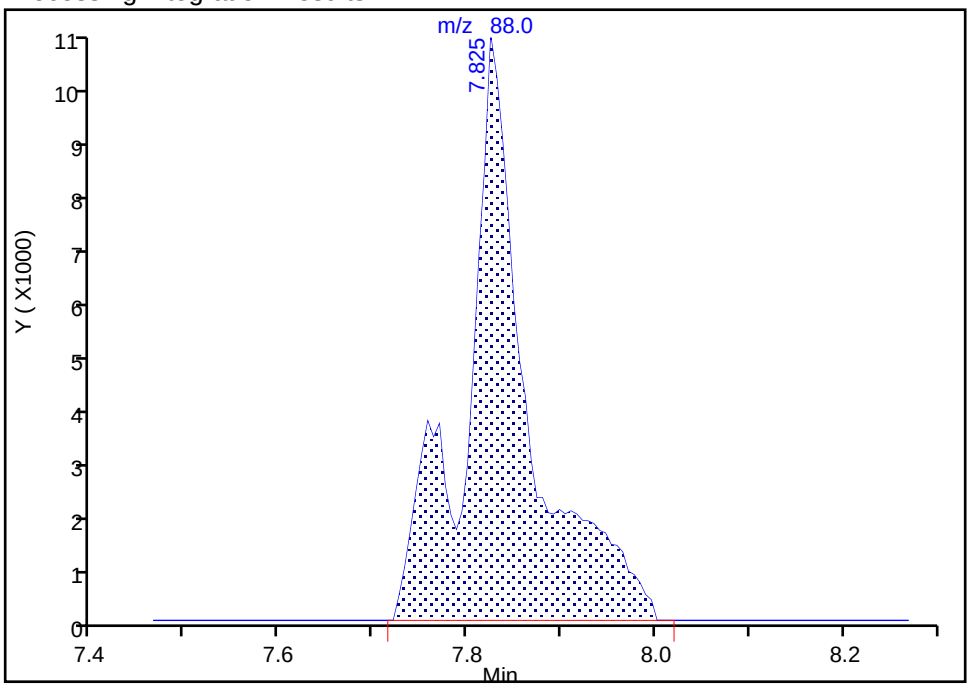
Data File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02V11.D
Injection Date: 02-Aug-2021 19:09:30 Instrument ID: 26285
Lims ID: ICV
Client ID:
Operator ID: jml01693 ALS Bottle#: 18 Worklist Smp#: 18
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: MSVoa_26285a Limit Group: MSV - 8260C DOD5
Column: Rxi-624Sil MS Capillary Column (0.25mm) Detector MS Quad

68 1,4-Dioxane, CAS: 123-91-1

Signal: 1

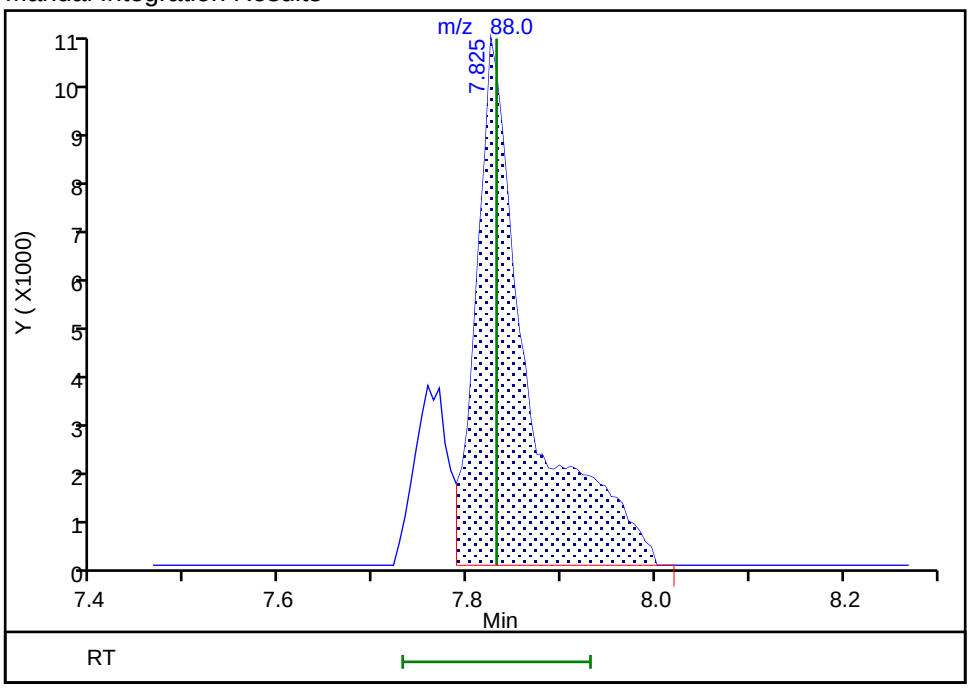
Processing Integration Results

RT: 7.82
Area: 47729
Amount: 632.0331
Amount Units: ug/l



Manual Integration Results

RT: 7.82
Area: 39512
Amount: 523.2226
Amount Units: ug/l



Reviewer: mellingerc, 03-Aug-2021 09:44:45
Audit Action: Split an Integrated Peak Audit Reason: Split Peak

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins Lancaster Laboratories Env, Job No.: 410-60870-1

SDG No.:

Lab Sample ID: CCVIS 410-191072/3 Calibration Date: 11/04/2021 21:16

Instrument ID: 26285 Calib Start Date: 08/02/2021 16:48

GC Column: R-624SilMS 30m ID: 0.25(mm) Calib End Date: 08/02/2021 18:49

Lab File ID: 5N04C31.D Conc. Units: ug/L Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dichlorodifluoromethane	Ave	0.3785	0.3952	0.1000	52.2	50.0	4.4	20.0
Chloromethane	Ave	0.4300	0.4293	0.1000	49.9	50.0	-0.2	20.0
Vinyl chloride	Ave	0.4339	0.4329	0.1000	49.9	50.0	-0.2	20.0
Bromomethane	Ave	0.3113	0.3108	0.1000	49.9	50.0	-0.1	20.0
Chloroethane	Ave	0.2298	0.2362	0.1000	51.4	50.0	2.8	20.0
Dichlorofluoromethane	Ave	0.6024	0.6187		51.4	50.0	2.7	20.0
Trichlorofluoromethane	Ave	0.5282	0.5569	0.1000	52.7	50.0	5.4	20.0
Acrolein	Ave	2.112	1.848		438	501	-12.5	20.0
1,1-Dichloroethene	Ave	0.2849	0.2729	0.1000	47.9	50.0	-4.2	20.0
Acetone	Ave	0.8834	1.023	0.1000	116	100	15.8	20.0
Freon 113	Ave	0.3150	0.2574	0.1000	40.9	50.0	-18.3	20.0
Isopropyl alcohol	Ave	0.6406	0.5274		206	250	-17.7	20.0
Iodomethane	Ave	0.5597	0.4859		43.4	50.0	-13.2	20.0
Carbon disulfide	Ave	1.036	0.8657	0.1000	41.8	50.0	-16.4	20.0
Methyl acetate	Ave	0.4174	0.4168	0.1000	49.9	50.0	-0.2	20.0
3-Chloro-1-propene	Ave	0.5289	0.4751		44.9	50.0	-10.2	20.0
Methylene Chloride	Ave	0.3180	0.3058	0.1000	48.1	50.0	-3.8	20.0
2-Methyl-2-propanol	Ave	1.237	1.016		205	250	-17.9	20.0
Acrylonitrile	Ave	0.2020	0.2105		130	125	4.2	20.0
Methyl tert-butyl ether	Ave	0.9067	0.8318	0.1000	45.9	50.0	-8.3	20.0
trans-1,2-Dichloroethene	Ave	0.3131	0.3073	0.1000	49.1	50.0	-1.9	20.0
Hexane	Ave	0.4960	0.3689		37.2	50.0	-25.6*	20.0
1,1-Dichloroethane	Ave	0.5717	0.5612	0.2000	49.1	50.0	-1.9	20.0
Isopropyl ether	Ave	1.043	0.9831		47.1	50.0	-5.8	20.0
2-Chloro-1,3-butadiene	Ave	0.4887	0.4546		46.5	50.0	-7.0	20.0
Tert-butyl ethyl ether	Ave	0.9566	0.8833		46.2	50.0	-7.7	20.0
2-Butanone	Ave	0.3039	0.3512	0.1000	116	100	15.6	20.0
cis-1,2-Dichloroethene	Ave	0.3461	0.3314	0.1000	47.9	50.0	-4.2	20.0
2,2-Dichloropropane	Ave	0.4621	0.4388		47.5	50.0	-5.0	20.0
Propionitrile	Ave	1.468	1.571		268	250	7.0	20.0
Methacrylonitrile	Ave	0.2106	0.2136		127	125	1.4	20.0
Chlorobromomethane	Ave	0.1655	0.1613		48.7	50.0	-2.5	20.0
Tetrahydrofuran	Ave	1.500	1.360		227	250	-9.3	20.0
Chloroform	Ave	0.5511	0.5457	0.2000	49.5	50.0	-1.0	20.0
1,1,1-Trichloroethane	Ave	0.4802	0.4779	0.1000	49.8	50.0	-0.5	20.0
Cyclohexane	Ave	0.6070	0.4802	0.1000	39.6	50.0	-20.9*	20.0
Carbon tetrachloride	Ave	0.4226	0.4098	0.1000	48.5	50.0	-3.0	20.0
1,1-Dichloropropene	Ave	0.4506	0.4308		47.8	50.0	-4.4	20.0
Isobutyl alcohol	Ave	0.4426	0.3740		528	625	-15.5	20.0
Benzene	Ave	1.352	1.289	0.5000	47.7	50.0	-4.7	20.0
1,2-Dichloroethane	Ave	0.4006	0.3954	0.1000	49.3	50.0	-1.3	20.0

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins Lancaster Laboratories Env, Job No.: 410-60870-1

SDG No.:

Lab Sample ID: CCVIS 410-191072/3 Calibration Date: 11/04/2021 21:16

Instrument ID: 26285 Calib Start Date: 08/02/2021 16:48

GC Column: R-624SilMS 30m ID: 0.25(mm) Calib End Date: 08/02/2021 18:49

Lab File ID: 5N04C31.D Conc. Units: ug/L Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Tert-amyl methyl ether	Ave	0.9320	0.8496		45.6	50.0	-8.8	20.0
n-Heptane	Ave	0.5137	0.3710		36.1	50.0	-27.8*	20.0
Trichloroethene	Ave	0.3574	0.3413	0.2000	47.8	50.0	-4.5	20.0
Methylcyclohexane	Ave	0.6119	0.4689	0.1000	38.3	50.0	-23.4*	20.0
1,2-Dichloropropane	Ave	0.3510	0.3394	0.1000	48.3	50.0	-3.3	20.0
2-ethoxy-2-methyl butane	Ave	0.4662	0.4369		46.9	50.0	-6.3	20.0
1,4-Dioxane	Ave	0.0738	0.0787	0.0050	666	625	6.6	20.0
Dibromomethane	Ave	0.2132	0.2109		49.5	50.0	-1.1	20.0
Methyl methacrylate	Ave	0.3245	0.3116		48.0	50.0	-4.0	20.0
Bromodichloromethane	Ave	0.4173	0.4132	0.2000	49.5	50.0	-1.0	20.0
2-Nitropropane	Ave	2.679	2.392		223	250	-10.7	20.0
2-Chloroethyl vinyl ether	Ave	0.2747	0.2956		53.8	50.0	7.6	20.0
cis-1,3-Dichloropropene	Ave	0.5521	0.5422	0.2000	49.1	50.0	-1.8	20.0
4-Methyl-2-pentanone	Ave	0.5804	0.6602	0.1000	114	100	13.7	20.0
Toluene	Ave	1.138	1.073	0.4000	47.1	50.0	-5.7	20.0
trans-1,3-Dichloropropene	Ave	0.6550	0.6326	0.1000	48.3	50.0	-3.4	20.0
Ethyl methacrylate	Ave	0.6950	0.6756		48.6	50.0	-2.8	20.0
1,1,2-Trichloroethane	Ave	0.4078	0.3986	0.1000	48.9	50.0	-2.3	20.0
Tetrachloroethene	Ave	0.5071	0.4635	0.2000	45.7	50.0	-8.6	20.0
1,3-Dichloropropane	Ave	0.6503	0.6458		49.7	50.0	-0.7	20.0
2-Hexanone	Ave	0.6156	0.6871	0.1000	112	100	11.6	20.0
Dibromochloromethane	Ave	0.4516	0.4526		50.1	50.0	0.2	20.0
1,2-Dibromoethane (EDB)	Ave	0.4460	0.4437	0.1000	49.7	50.0	-0.5	20.0
1-Chlorohexane	Ave	0.6756	0.5555		41.1	50.0	-17.8	20.0
Chlorobenzene	Ave	1.246	1.189	0.5000	47.7	50.0	-4.6	20.0
1,1,1,2-Tetrachloroethane	Ave	0.4359	0.4194		48.1	50.0	-3.8	20.0
Ethylbenzene	Ave	2.227	2.066	0.1000	46.4	50.0	-7.2	20.0
m-Xylene & p-Xylene	Ave	0.8638	0.7960	0.1000	92.1	100	-7.9	20.0
o-Xylene	Ave	0.8435	0.7906	0.3000	46.9	50.0	-6.3	20.0
Styrene	Ave	1.414	1.347	0.3000	47.6	50.0	-4.8	20.0
Bromoform	Ave	0.3717	0.3728	0.1000	50.2	50.0	0.3	20.0
Isopropylbenzene	Ave	2.182	1.942	0.1000	44.5	50.0	-11.0	20.0
Bromobenzene	Ave	0.9633	0.9091		47.2	50.0	-5.6	20.0
1,1,2,2-Tetrachloroethane	Ave	1.290	1.267	0.3000	49.1	50.0	-1.8	20.0
trans-1,4-Dichloro-2-butene	Ave	0.4092	0.3568		109	125	-12.8	20.0
1,2,3-Trichloropropane	Ave	0.3475	0.3566		51.3	50.0	2.6	20.0
N-Propylbenzene	Ave	4.814	4.260		44.2	50.0	-11.5	20.0
2-Chlorotoluene	Ave	0.9500	0.8669		45.6	50.0	-8.7	20.0
1,3,5-Trimethylbenzene	Ave	3.305	2.887		43.7	50.0	-12.7	20.0
4-Chlorotoluene	Ave	0.9640	0.8908		46.2	50.0	-7.6	20.0
tert-Butylbenzene	Ave	0.6484	0.5362		41.3	50.0	-17.3	20.0

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins Lancaster Laboratories Env, Job No.: 410-60870-1

SDG No.:

Lab Sample ID: CCVIS 410-191072/3 Calibration Date: 11/04/2021 21:16

Instrument ID: 26285 Calib Start Date: 08/02/2021 16:48

GC Column: R-624SilMS 30m ID: 0.25(mm) Calib End Date: 08/02/2021 18:49

Lab File ID: 5N04C31.D Conc. Units: ug/L Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,2,4-Trimethylbenzene	Ave	3.340	2.965		44.4	50.0	-11.2	20.0
sec-Butylbenzene	Ave	4.121	3.444		41.8	50.0	-16.4	20.0
1,3-Dichlorobenzene	Ave	1.844	1.705	0.6000	46.2	50.0	-7.5	20.0
4-Isopropyltoluene	Ave	3.540	2.960		41.8	50.0	-16.4	20.0
1,4-Dichlorobenzene	Ave	1.863	1.727	0.5000	46.4	50.0	-7.3	20.0
1,2,3-Trimethylbenzene	Ave	3.351	2.952		44.0	50.0	-11.9	20.0
n-Butylbenzene	Ave	1.778	1.498		42.1	50.0	-15.8	20.0
1,2-Dichlorobenzene	Ave	1.752	1.643	0.4000	46.9	50.0	-6.2	20.0
1,2-Dibromo-3-Chloropropane	Ave	0.3210	0.3331	0.0500	51.9	50.0	3.8	20.0
1,3,5-Trichlorobenzene	Ave	1.309	1.097		41.9	50.0	-16.2	20.0
1,2,4-Trichlorobenzene	Ave	1.198	1.033	0.2000	43.1	50.0	-13.8	20.0
Hexachlorobutadiene	Ave	0.5167	0.4172		40.4	50.0	-19.3	20.0
Naphthalene	Ave	4.259	3.874		45.5	50.0	-9.0	20.0
1,2,3-Trichlorobenzene	Ave	1.168	0.9794		41.9	50.0	-16.2	20.0
Dibromofluoromethane (Surr)	Ave	0.2445	0.2591		53.0	50.0	6.0	20.0
1,2-Dichloroethane-d4 (Surr)	Ave	0.0562	0.0584		51.9	50.0	3.9	20.0
Toluene-d8 (Surr)	Ave	1.250	1.292		51.7	50.0	3.4	20.0
4-Bromofluorobenzene (Surr)	Ave	0.4821	0.4975		51.6	50.0	3.2	20.0

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04C31.D
Lims ID: CCVIS
Client ID:
Sample Type: CCVIS
Inject. Date: 04-Nov-2021 21:16:30 ALS Bottle#: 2 Worklist Smp#: 3
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 410-0043341-003
Misc. Info.: CCVIS
Operator ID: mec29284 Instrument ID: 26285
Sublist: chrom-MSVoa_26285a*sub40

Method: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\MSVoa_26285a.m
Limit Group: MSV - 8260C DOD5
Last Update: 04-Nov-2021 21:43:37 Calib Date: 02-Aug-2021 18:49:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I17.D

Column 1 : Rxi-624Sil MS Capillary Column (0.25 mm) Det: MS Quad
Process Host: CTX1638

First Level Reviewer: campbellme Date: 04-Nov-2021 21:43:16

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
2 Dichlorodifluoromethane	85	1.606	1.606	0.000	99	392570	50.0	52.2	
3 Chloromethane	50	1.771	1.771	0.000	99	426435	50.0	49.9	
4 Butadiene	39	1.856	1.856	0.000	92	433743	NC	NC	
5 Vinyl chloride	62	1.856	1.856	0.000	85	430061	50.0	49.9	
8 Bromomethane	94	2.137	2.137	0.000	90	308767	50.0	49.9	
9 Chloroethane	64	2.192	2.192	0.000	99	234642	50.0	51.4	
10 Dichlorofluoromethane	67	2.387	2.387	0.000	97	614625	50.0	51.4	
11 Trichlorofluoromethane	101	2.423	2.423	0.000	99	553259	50.0	52.7	
12 Pentane	43	2.454	2.454	0.000	97	433233	NC	NC	
15 1,2-Dichloro-1,1,2-trifluoroetha	67	2.704	2.704	0.000	93	419313	NC	NC	
16 Acrolein	56	2.759	2.759	0.000	99	1123255	501.1	438.4	
19 1,1-Dichloroethene	96	2.881	2.881	0.000	97	271149	50.0	47.9	
17 Acetone	58	2.899	2.899	0.000	99	124071	100.0	115.8	
18 112TCTFE	101	2.905	2.905	0.000	92	255683	50.0	40.9	
21 Isopropyl alcohol	45	3.027	3.027	0.000	97	159931	250.0	205.8	
20 Iodomethane	142	3.051	3.051	0.000	98	482728	50.0	43.4	
22 Carbon disulfide	76	3.137	3.137	0.000	99	860012	50.0	41.8	
23 Methyl acetate	43	3.228	3.228	0.000	98	414053	50.0	49.9	
25 3-Chloro-1-propene	41	3.252	3.252	0.000	92	471975	50.0	44.9	
* 27 t-Butyl alcohol-d10 (IS)	65	3.399	3.399	0.000	97	303268	250.0	250.0	
26 Methylene Chloride	84	3.417	3.417	0.000	95	303793	50.0	48.1	
28 2-Methyl-2-propanol	59	3.508	3.508	0.000	100	308011	250.0	205.2	
29 Acrylonitrile	53	3.679	3.679	0.000	98	522872	125.0	130.3	
30 Methyl tert-butyl ether	73	3.728	3.728	0.000	96	826272	50.0	45.9	
31 trans-1,2-Dichloroethene	96	3.740	3.740	0.000	99	305239	50.0	49.1	
32 Hexane	57	4.112	4.112	0.000	95	366495	50.0	37.2	
33 1,1-Dichloroethane	63	4.338	4.338	0.000	96	557452	50.0	49.1	
35 Isopropyl ether	45	4.405	4.405	0.000	97	976601	50.0	47.1	
36 2-Chloro-1,3-butadiene	53	4.447	4.447	0.000	90	451637	50.0	46.5	
37 Tert-butyl ethyl ether	59	4.959	4.959	0.000	99	877481	50.0	46.2	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
39 2-Butanone (MEK)	43	5.173	5.173	0.000	100	697751	100.0	115.6	
38 cis-1,2-Dichloroethene	96	5.209	5.209	0.000	84	329203	50.0	47.9	
40 2,2-Dichloropropane	77	5.215	5.215	0.000	57	435908	50.0	47.5	
41 Propionitrile	54	5.276	5.276	0.000	98	476402	250.0	267.5	
43 Methacrylonitrile	67	5.502	5.502	0.000	95	530365	125.0	126.8	
44 Chlorobromomethane	128	5.551	5.551	0.000	97	160242	50.0	48.7	
45 Tetrahydrofuran	71	5.557	5.557	0.000	85	412544	250.0	226.8	
46 Chloroform	83	5.721	5.721	0.000	93	542082	50.0	49.5	
48 1,1,1-Trichloroethane	97	5.941	5.941	0.000	98	474770	50.0	49.8	
$ 47 Dibromofluoromethane (Surr)	113	5.947	5.947	0.000	83	257394	50.0	53.0	
49 Cyclohexane	56	6.038	6.038	0.000	91	477082	50.0	39.6	
51 Carbon tetrachloride	117	6.160	6.160	0.000	96	407082	50.0	48.5	
50 1,1-Dichloropropene	75	6.166	6.166	0.000	97	427937	50.0	47.8	
52 Isobutyl alcohol	41	6.368	6.368	0.000	94	283521	625.0	528.1	
$ 56 1,2-Dichloroethane-d4 (Surr)	102	6.410	6.410	0.000	92	57987	50.0	51.9	
53 Benzene	78	6.441	6.441	0.000	97	1280345	50.0	47.7	
55 1,2-Dichloroethane	62	6.526	6.526	0.000	97	392745	50.0	49.3	
58 Tert-amyl methyl ether	73	6.660	6.660	0.000	99	843977	50.0	45.6	
* 59 Fluorobenzene (IS)	96	6.874	6.874	0.000	99	993408	50.0	50.0	
60 n-Heptane	43	6.898	6.898	0.000	95	368553	50.0	36.1	
61 n-Butanol	56	7.300	7.300	0.000	92	274356	NC	NC	
62 Trichloroethene	95	7.374	7.374	0.000	99	339099	50.0	47.8	
63 Methylcyclohexane	83	7.684	7.684	0.000	91	465811	50.0	38.3	
64 1,2-Dichloropropane	63	7.721	7.721	0.000	98	337134	50.0	48.3	
65 2-ethoxy-2-methyl butane	87	7.752	7.752	0.000	92	434029	50.0	46.9	
68 1,4-Dioxane	88	7.819	7.819	0.000	86	59668	625.0	666.3	M
66 Dibromomethane	93	7.831	7.831	0.000	96	209520	50.0	49.5	
67 Methyl methacrylate	69	7.837	7.837	0.000	93	309562	50.0	48.0	
70 Dichlorobromomethane	83	8.093	8.093	0.000	99	410433	50.0	49.5	
72 2-Nitropropane	41	8.386	8.386	0.000	97	725545	250.0	223.3	
71 2-Chloroethyl vinyl ether	63	8.489	8.489	0.000	91	293690	50.0	53.8	
73 cis-1,3-Dichloropropene	75	8.678	8.678	0.000	96	538604	50.0	49.1	
75 4-Methyl-2-pentanone (MIBK)	43	8.892	8.892	0.000	97	1311715	100.0	113.7	
$ 76 Toluene-d8 (Surr)	98	9.020	9.020	0.000	94	997324	50.0	51.7	
77 Toluene	92	9.111	9.111	0.000	98	828227	50.0	47.1	
78 trans-1,3-Dichloropropene	75	9.428	9.428	0.000	93	488432	50.0	48.3	
79 Ethyl methacrylate	69	9.513	9.513	0.000	90	521648	50.0	48.6	
80 1,1,2-Trichloroethane	97	9.654	9.654	0.000	89	307783	50.0	48.9	
81 Tetrachloroethene	166	9.733	9.733	0.000	97	357928	50.0	45.7	
82 1,3-Dichloropropane	76	9.830	9.830	0.000	92	498666	50.0	49.7	
84 2-Hexanone	43	9.910	9.910	0.000	98	1061050	100.0	111.6	
85 Chlorodibromomethane	129	10.062	10.062	0.000	90	349454	50.0	50.1	
87 Ethylene Dibromide	107	10.172	10.172	0.000	98	342622	50.0	49.7	
* 90 Chlorobenzene-d5 (IS)	117	10.653	10.653	0.000	84	772151	50.0	50.0	
88 Chlorobenzene	112	10.684	10.684	0.000	94	918317	50.0	47.7	
91 1-Chlorohexane	91	10.684	10.684	0.000	66	428940	50.0	41.1	
92 1,1,1,2-Tetrachloroethane	131	10.775	10.775	0.000	97	323808	50.0	48.1	
93 Ethylbenzene	91	10.788	10.788	0.000	98	1595293	50.0	46.4	
94 m-Xylene & p-Xylene	106	10.916	10.916	0.000	99	1229196	100.0	92.1	
95 o-Xylene	106	11.263	11.263	0.000	97	610495	50.0	46.9	
96 Styrene	104	11.281	11.281	0.000	95	1039902	50.0	47.6	
97 Bromoform	173	11.440	11.440	0.000	98	287875	50.0	50.2	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
98 Isopropylbenzene	105	11.586	11.586	0.000	96	1499324	50.0	44.5	
$ 101 4-Bromofluorobenzene (Surr)	95	11.732	11.732	0.000	93	384121	50.0	51.6	
102 Bromobenzene	156	11.848	11.848	0.000	92	392273	50.0	47.2	
105 1,1,2,2-Tetrachloroethane	83	11.854	11.854	0.000	93	546551	50.0	49.1	
104 trans-1,4-Dichloro-2-butene	53	11.885	11.885	0.000	87	384873	125.0	109.0	
103 1,2,3-Trichloropropane	110	11.897	11.897	0.000	82	153868	50.0	51.3	
106 N-Propylbenzene	91	11.940	11.940	0.000	99	1838080	50.0	44.2	
107 2-Chlorotoluene	126	12.007	12.007	0.000	97	374072	50.0	45.6	
108 1,3,5-Trimethylbenzene	105	12.086	12.086	0.000	93	1245548	50.0	43.7	
109 4-Chlorotoluene	126	12.110	12.110	0.000	97	384362	50.0	46.2	
111 tert-Butylbenzene	134	12.336	12.336	0.000	93	231357	50.0	41.3	
113 1,2,4-Trimethylbenzene	105	12.379	12.379	0.000	98	1279223	50.0	44.4	
114 sec-Butylbenzene	105	12.507	12.507	0.000	94	1485982	50.0	41.8	
115 1,3-Dichlorobenzene	146	12.598	12.598	0.000	98	735818	50.0	46.2	
116 4-Isopropyltoluene	119	12.623	12.623	0.000	97	1277072	50.0	41.8	
* 117 1,4-Dichlorobenzene-d4	152	12.659	12.659	0.000	94	431487	50.0	50.0	
118 1,4-Dichlorobenzene	146	12.677	12.677	0.000	96	745212	50.0	46.4	
119 1,2,3-Trimethylbenzene	105	12.696	12.696	0.000	98	1273741	50.0	44.0	
120 Benzyl chloride	91	12.763	12.763	0.000	98	1069572	NC	NC	
121 1,3-Diethylbenzene	119	12.830	12.830	0.000	95	748385	NC	NC	
122 p-Diethylbenzene	119	12.903	12.903	0.000	94	783068	NC	NC	
124 n-Butylbenzene	92	12.927	12.927	0.000	98	646290	50.0	42.1	
125 1,2-Dichlorobenzene	146	12.946	12.946	0.000	99	708778	50.0	46.9	
126 o-diethylbenzene	119	12.976	12.976	0.000	96	624290	NC	NC	
127 1,2-Dibromo-3-Chloropropane	75	13.506	13.506	0.000	87	143741	50.0	51.9	
128 1,3,5-Trichlorobenzene	180	13.641	13.641	0.000	98	473379	50.0	41.9	
129 1,2,4-Trichlorobenzene	180	14.073	14.073	0.000	94	445731	50.0	43.1	
131 Hexachlorobutadiene	225	14.165	14.165	0.000	96	180012	50.0	40.4	
132 Naphthalene	128	14.256	14.256	0.000	97	1671670	50.0	45.5	
133 1,2,3-Trichlorobenzene	180	14.403	14.403	0.000	95	422577	50.0	41.9	
134 2-Methylnaphthalene	142	15.006	15.006	0.000	92	739839	NC	NC	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

MSV_CCV_VOC#3_00031	Amount Added:	4.00	Units: uL	
MSV_CCV_VOC#1_00032	Amount Added:	5.00	Units: uL	
MSV_CCV_2CEVE_00030	Amount Added:	5.00	Units: uL	
MSV_CCV_GASES_00103	Amount Added:	2.50	Units: uL	
MSV_Cent_ISSS_00004	Amount Added:	5.00	Units: uL	Run Reagent

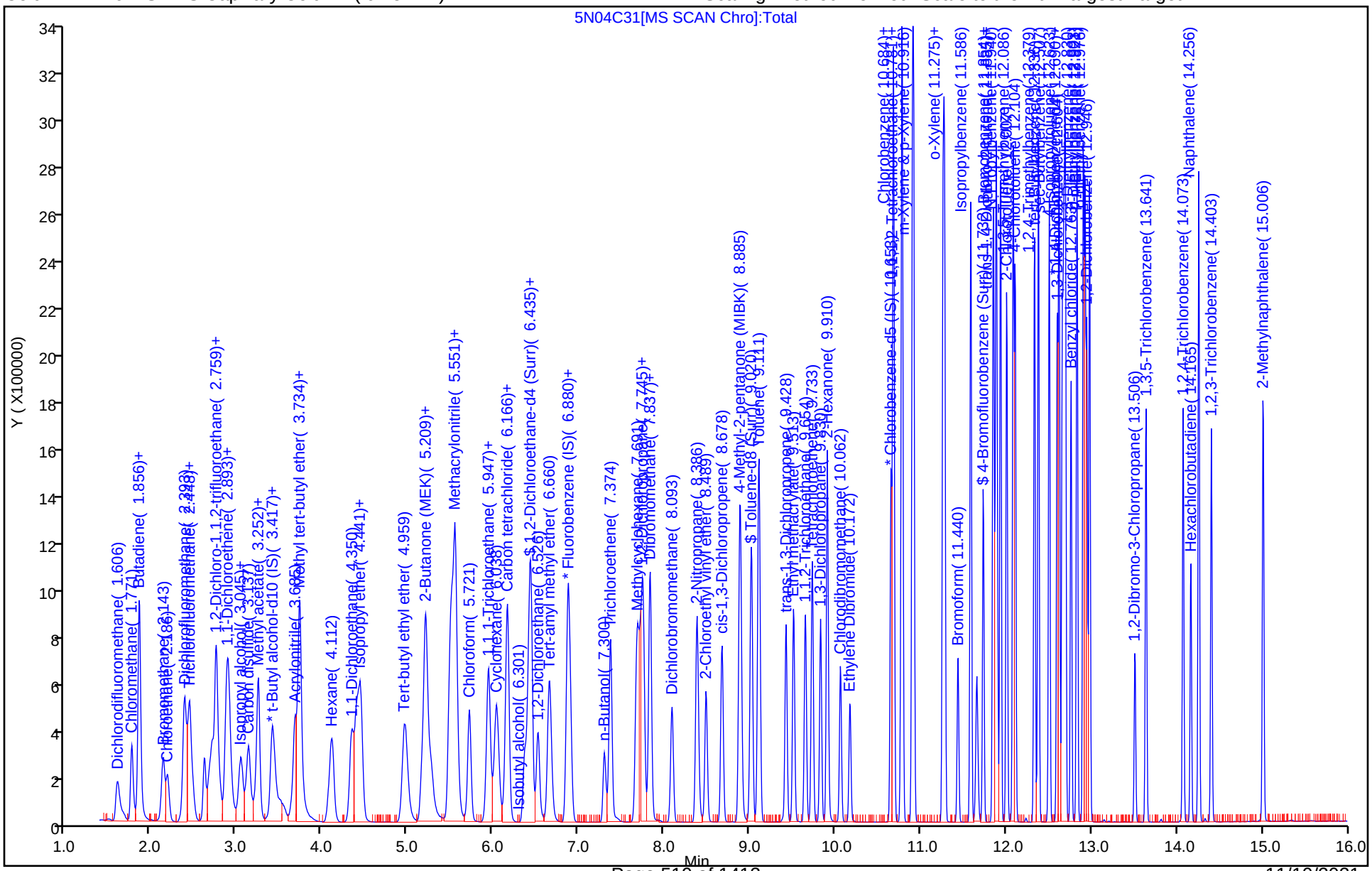
Report Date: 04-Nov-2021 21:43:39 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04C31.D

Injection Date:	04-Nov-2021 21:16:30	Instrument ID:	26285	Operator ID:	mec29284
Lims ID:	CCVIS			Worklist Smp#:	3
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	2
Method:	MSVoa_26285a	Limit Group:	MSV - 8260C DOD5		

Column: Rxi-624Sil MS Capillary Column (0.25 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

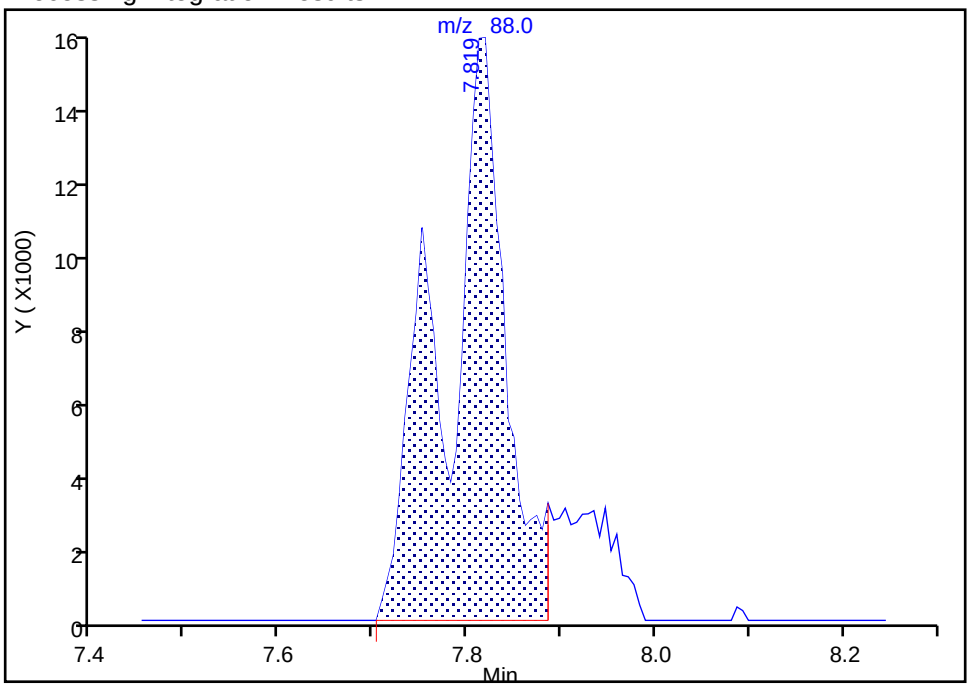
Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04C31.D
Injection Date: 04-Nov-2021 21:16:30 Instrument ID: 26285
Lims ID: CCVIS
Client ID:
Operator ID: mec29284 ALS Bottle#: 2 Worklist Smp#: 3
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: MSVoa_26285a Limit Group: MSV - 8260C DOD5
Column: Rxi-624Sil MS Capillary Column (0.25mm) Detector MS Quad

68 1,4-Dioxane, CAS: 123-91-1

Signal: 1

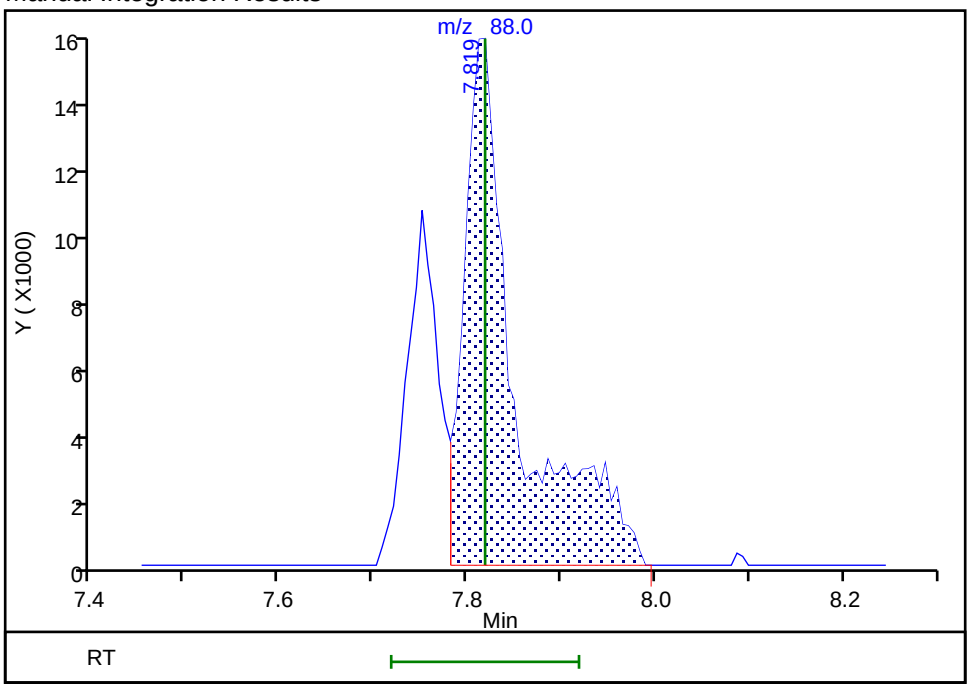
Processing Integration Results

RT: 7.82
Area: 69896
Amount: 780.5528
Amount Units: ug/l



Manual Integration Results

RT: 7.82
Area: 59668
Amount: 666.3332
Amount Units: ug/l



Reviewer: campbellme, 04-Nov-2021 21:42:37
Audit Action: Split an Integrated Peak Audit Reason: Incomplete Integration

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins Lancaster Laboratories Env, Job No.: 410-60870-1

SDG No.:

Lab Sample ID: CCVC 410-191072/30 Calibration Date: 11/05/2021 06:06

Instrument ID: 26285 Calib Start Date: 08/02/2021 16:48

GC Column: R-624SilMS 30m ID: 0.25(mm) Calib End Date: 08/02/2021 18:49

Lab File ID: 5N04S54.D Conc. Units: ug/L Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dichlorodifluoromethane	Ave	0.3785	0.3693	0.1000	48.8	50.0	-2.4	50.0
Chloromethane	Ave	0.4300	0.3782	0.1000	44.0	50.0	-12.0	50.0
Vinyl chloride	Ave	0.4339	0.3886	0.1000	44.8	50.0	-10.4	50.0
Bromomethane	Ave	0.3113	0.2836	0.1000	45.5	50.0	-8.9	50.0
Chloroethane	Ave	0.2298	0.2147	0.1000	46.7	50.0	-6.6	50.0
Dichlorofluoromethane	Ave	0.6024	0.5644		46.8	50.0	-6.3	50.0
Trichlorofluoromethane	Ave	0.5282	0.5175	0.1000	49.0	50.0	-2.0	50.0
Acrolein	Ave	2.112	1.709		405	501	-19.1	50.0
1,1-Dichloroethene	Ave	0.2849	0.2813	0.1000	49.4	50.0	-1.3	50.0
Acetone	Ave	0.8834	0.8160	0.1000	92.4	100	-7.6	50.0
Freon 113	Ave	0.3150	0.2796	0.1000	44.4	50.0	-11.2	50.0
Isopropyl alcohol	Ave	0.6406	0.4950		193	250	-22.7	50.0
Iodomethane	Ave	0.5597	0.5129		45.8	50.0	-8.4	50.0
Carbon disulfide	Ave	1.036	0.8944	0.1000	43.2	50.0	-13.6	50.0
Methyl acetate	Ave	0.4174	0.4083	0.1000	48.9	50.0	-2.2	50.0
3-Chloro-1-propene	Ave	0.5289	0.4782		45.2	50.0	-9.6	50.0
Methylene Chloride	Ave	0.3180	0.3168	0.1000	49.8	50.0	-0.4	50.0
2-Methyl-2-propanol	Ave	1.237	1.080		218	250	-12.7	50.0
Acrylonitrile	Ave	0.2020	0.2072		128	125	2.6	50.0
Methyl tert-butyl ether	Ave	0.9067	0.8399	0.1000	46.3	50.0	-7.4	50.0
trans-1,2-Dichloroethene	Ave	0.3131	0.3078	0.1000	49.1	50.0	-1.7	50.0
Hexane	Ave	0.4960	0.4237		42.7	50.0	-14.6	50.0
1,1-Dichloroethane	Ave	0.5717	0.5628	0.2000	49.2	50.0	-1.6	50.0
Isopropyl ether	Ave	1.043	0.9796		47.0	50.0	-6.1	50.0
2-Chloro-1,3-butadiene	Ave	0.4887	0.4580		46.9	50.0	-6.3	50.0
Tert-butyl ethyl ether	Ave	0.9566	0.8661		45.3	50.0	-9.5	50.0
2-Butanone	Ave	0.3039	0.2993	0.1000	98.5	100	-1.5	50.0
cis-1,2-Dichloroethene	Ave	0.3461	0.3372	0.1000	48.7	50.0	-2.6	50.0
2,2-Dichloropropane	Ave	0.4621	0.4366		47.2	50.0	-5.5	50.0
Propionitrile	Ave	1.468	1.528		260	250	4.1	50.0
Methacrylonitrile	Ave	0.2106	0.2129		126	125	1.1	50.0
Chlorobromomethane	Ave	0.1655	0.1640		49.5	50.0	-0.9	50.0
Tetrahydrofuran	Ave	1.500	1.424		237	250	-5.1	50.0
Chloroform	Ave	0.5511	0.5580	0.2000	50.6	50.0	1.2	50.0
1,1,1-Trichloroethane	Ave	0.4802	0.4851	0.1000	50.5	50.0	1.0	50.0
Cyclohexane	Ave	0.6070	0.5300	0.1000	43.7	50.0	-12.7	50.0
Carbon tetrachloride	Ave	0.4226	0.4256	0.1000	50.3	50.0	0.7	50.0
1,1-Dichloropropene	Ave	0.4506	0.4448		49.4	50.0	-1.3	50.0
Isobutyl alcohol	Ave	0.4426	0.4478		632	625	1.2	50.0
Benzene	Ave	1.352	1.317	0.5000	48.7	50.0	-2.6	50.0
1,2-Dichloroethane	Ave	0.4006	0.4015	0.1000	50.1	50.0	0.2	50.0

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins Lancaster Laboratories Env, Job No.: 410-60870-1

SDG No.:

Lab Sample ID: CCVC 410-191072/30 Calibration Date: 11/05/2021 06:06

Instrument ID: 26285 Calib Start Date: 08/02/2021 16:48

GC Column: R-624SilMS 30m ID: 0.25(mm) Calib End Date: 08/02/2021 18:49

Lab File ID: 5N04S54.D Conc. Units: ug/L Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Tert-amyl methyl ether	Ave	0.9320	0.8372		44.9	50.0	-10.2	50.0
n-Heptane	Ave	0.5137	0.4321		42.1	50.0	-15.9	50.0
Trichloroethene	Ave	0.3574	0.3476	0.2000	48.6	50.0	-2.8	50.0
Methylcyclohexane	Ave	0.6119	0.5376	0.1000	43.9	50.0	-12.1	50.0
1,2-Dichloropropane	Ave	0.3510	0.3466	0.1000	49.4	50.0	-1.3	50.0
2-ethoxy-2-methyl butane	Ave	0.4662	0.4379		47.0	50.0	-6.1	50.0
1,4-Dioxane	Ave	0.0738	0.0802	0.0050	679	625	8.6	50.0
Dibromomethane	Ave	0.2132	0.2191		51.4	50.0	2.8	50.0
Methyl methacrylate	Ave	0.3245	0.3163		48.7	50.0	-2.6	50.0
Bromodichloromethane	Ave	0.4173	0.4151	0.2000	49.7	50.0	-0.5	50.0
2-Nitropropane	Ave	2.679	2.559		239	250	-4.5	50.0
2-Chloroethyl vinyl ether	Ave	0.2747	0.2726		49.6	50.0	-0.7	50.0
cis-1,3-Dichloropropene	Ave	0.5521	0.5448	0.2000	49.3	50.0	-1.3	50.0
4-Methyl-2-pentanone	Ave	0.5804	0.5711	0.1000	98.4	100	-1.6	50.0
Toluene	Ave	1.138	1.085	0.4000	47.7	50.0	-4.6	50.0
trans-1,3-Dichloropropene	Ave	0.6550	0.6354	0.1000	48.5	50.0	-3.0	50.0
Ethyl methacrylate	Ave	0.6950	0.6620		47.6	50.0	-4.7	50.0
1,1,2-Trichloroethane	Ave	0.4078	0.4011	0.1000	49.2	50.0	-1.7	50.0
Tetrachloroethene	Ave	0.5071	0.4907	0.2000	48.4	50.0	-3.2	50.0
1,3-Dichloropropane	Ave	0.6503	0.6387		49.1	50.0	-1.8	50.0
2-Hexanone	Ave	0.6156	0.5948	0.1000	96.6	100	-3.4	50.0
Dibromochloromethane	Ave	0.4516	0.4625		51.2	50.0	2.4	50.0
1,2-Dibromoethane (EDB)	Ave	0.4460	0.4462	0.1000	50.0	50.0	0.0	50.0
1-Chlorohexane	Ave	0.6756	0.6084		45.0	50.0	-9.9	50.0
Chlorobenzene	Ave	1.246	1.211	0.5000	48.6	50.0	-2.8	50.0
1,1,1,2-Tetrachloroethane	Ave	0.4359	0.4224		48.5	50.0	-3.1	50.0
Ethylbenzene	Ave	2.227	2.143	0.1000	48.1	50.0	-3.8	50.0
m-Xylene & p-Xylene	Ave	0.8638	0.8300	0.1000	96.1	100	-3.9	50.0
o-Xylene	Ave	0.8435	0.8083	0.3000	47.9	50.0	-4.2	50.0
Styrene	Ave	1.414	1.369	0.3000	48.4	50.0	-3.2	50.0
Bromoform	Ave	0.3717	0.3797	0.1000	51.1	50.0	2.2	50.0
Isopropylbenzene	Ave	2.182	2.075	0.1000	47.6	50.0	-4.9	50.0
Bromobenzene	Ave	0.9633	0.9250		48.0	50.0	-4.0	50.0
1,1,2,2-Tetrachloroethane	Ave	1.290	1.265	0.3000	49.0	50.0	-1.9	50.0
trans-1,4-Dichloro-2-butene	Ave	0.4092	0.3608		110	125	-11.8	50.0
1,2,3-Trichloropropane	Ave	0.3475	0.3468		49.9	50.0	-0.2	50.0
N-Propylbenzene	Ave	4.814	4.454		46.3	50.0	-7.5	50.0
2-Chlorotoluene	Ave	0.9500	0.8767		46.1	50.0	-7.7	50.0
1,3,5-Trimethylbenzene	Ave	3.305	3.058		46.3	50.0	-7.5	50.0
4-Chlorotoluene	Ave	0.9640	0.9070		47.0	50.0	-5.9	50.0
tert-Butylbenzene	Ave	0.6484	0.5946		45.9	50.0	-8.3	50.0

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins Lancaster Laboratories Env, Job No.: 410-60870-1

SDG No.:

Lab Sample ID: CCVC 410-191072/30 Calibration Date: 11/05/2021 06:06

Instrument ID: 26285 Calib Start Date: 08/02/2021 16:48

GC Column: R-624SilMS 30m ID: 0.25(mm) Calib End Date: 08/02/2021 18:49

Lab File ID: 5N04S54.D Conc. Units: ug/L Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,2,4-Trimethylbenzene	Ave	3.340	3.109		46.6	50.0	-6.9	50.0
sec-Butylbenzene	Ave	4.121	3.802		46.1	50.0	-7.8	50.0
1,3-Dichlorobenzene	Ave	1.844	1.756	0.6000	47.6	50.0	-4.7	50.0
4-Isopropyltoluene	Ave	3.540	3.249		45.9	50.0	-8.2	50.0
1,4-Dichlorobenzene	Ave	1.863	1.782	0.5000	47.8	50.0	-4.3	50.0
1,2,3-Trimethylbenzene	Ave	3.351	3.073		45.8	50.0	-8.3	50.0
n-Butylbenzene	Ave	1.778	1.645		46.3	50.0	-7.5	50.0
1,2-Dichlorobenzene	Ave	1.752	1.682	0.4000	48.0	50.0	-4.0	50.0
1,2-Dibromo-3-Chloropropane	Ave	0.3210	0.3214	0.0500	50.1	50.0	0.1	50.0
1,3,5-Trichlorobenzene	Ave	1.309	1.189		45.4	50.0	-9.1	50.0
1,2,4-Trichlorobenzene	Ave	1.198	1.087	0.2000	45.3	50.0	-9.3	50.0
Hexachlorobutadiene	Ave	0.5167	0.4521		43.8	50.0	-12.5	50.0
Naphthalene	Ave	4.259	3.928		46.1	50.0	-7.8	50.0
1,2,3-Trichlorobenzene	Ave	1.168	1.034		44.2	50.0	-11.5	50.0
Dibromofluoromethane (Surr)	Ave	0.2445	0.2614		53.5	50.0	6.9	50.0
1,2-Dichloroethane-d4 (Surr)	Ave	0.0562	0.0590		52.5	50.0	5.0	50.0
Toluene-d8 (Surr)	Ave	1.250	1.295		51.8	50.0	3.6	50.0
4-Bromofluorobenzene (Surr)	Ave	0.4821	0.4984		51.7	50.0	3.4	50.0

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S54.D
Lims ID: CCVC
Client ID:
Sample Type: CCVC
Inject. Date: 05-Nov-2021 06:06:30 ALS Bottle#: 29 Worklist Smp#: 30
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 410-0043341-030
Operator ID: mec29284 Instrument ID: 26285
Sublist: chrom-MSVoa_26285a*sub40

Method: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\MSVoa_26285a.m
Limit Group: MSV - 8260C DOD5
Last Update: 05-Nov-2021 08:42:02 Calib Date: 02-Aug-2021 18:49:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I17.D

Column 1 : Rxi-624Sil MS Capillary Column (0.25 mm) Det: MS Quad
Process Host: CTX1668

First Level Reviewer: mellingerc Date: 05-Nov-2021 08:40:57

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
2 Dichlorodifluoromethane	85	1.600	1.606	-0.006	99	364611	50.0	48.8	
3 Chloromethane	50	1.765	1.771	-0.006	99	373415	50.0	44.0	
4 Butadiene	39	1.856	1.856	0.000	92	398967	NC	NC	
5 Vinyl chloride	62	1.856	1.856	0.000	82	383636	50.0	44.8	
8 Bromomethane	94	2.137	2.137	0.000	90	279956	50.0	45.5	
9 Chloroethane	64	2.191	2.192	-0.001	99	211994	50.0	46.7	
10 Dichlorofluoromethane	67	2.380	2.387	-0.007	97	557288	50.0	46.8	
11 Trichlorofluoromethane	101	2.423	2.423	0.000	98	510975	50.0	49.0	
12 Pentane	43	2.448	2.454	-0.006	96	486436	NC	NC	
15 1,2-Dichloro-1,1,2-trifluoroetha	67	2.704	2.704	0.000	93	381141	NC	NC	
16 Acrolein	56	2.752	2.759	-0.007	100	974679	501.1	405.4	
19 1,1-Dichloroethene	96	2.880	2.881	-0.001	98	277757	50.0	49.4	
17 Acetone	58	2.886	2.899	-0.013	99	92893	100.0	92.4	
18 112TCTFE	101	2.905	2.905	0.000	85	276016	50.0	44.4	
21 Isopropyl alcohol	45	3.021	3.027	-0.006	97	140870	250.0	193.2	
20 Iodomethane	142	3.051	3.051	0.000	98	506397	50.0	45.8	
22 Carbon disulfide	76	3.136	3.137	-0.001	99	883056	50.0	43.2	
23 Methyl acetate	43	3.222	3.228	-0.006	98	403132	50.0	48.9	
25 3-Chloro-1-propene	41	3.246	3.252	-0.006	93	472096	50.0	45.2	
* 27 t-Butyl alcohol-d10 (IS)	65	3.399	3.399	0.000	96	284607	250.0	250.0	
26 Methylene Chloride	84	3.417	3.417	0.000	94	312809	50.0	49.8	
28 2-Methyl-2-propanol	59	3.502	3.508	-0.006	99	307485	250.0	218.3	
29 Acrylonitrile	53	3.673	3.679	-0.006	98	511316	125.0	128.2	
30 Methyl tert-butyl ether	73	3.728	3.728	0.000	95	829275	50.0	46.3	
31 trans-1,2-Dichloroethene	96	3.734	3.740	-0.006	98	303885	50.0	49.1	
32 Hexane	57	4.106	4.112	-0.006	95	418361	50.0	42.7	
33 1,1-Dichloroethane	63	4.337	4.338	-0.001	96	555680	50.0	49.2	
35 Isopropyl ether	45	4.398	4.405	-0.007	96	967129	50.0	47.0	
36 2-Chloro-1,3-butadiene	53	4.441	4.447	-0.006	91	452238	50.0	46.9	
37 Tert-butyl ethyl ether	59	4.959	4.959	0.000	99	855122	50.0	45.3	
39 2-Butanone (MEK)	43	5.173	5.173	0.000	100	591065	100.0	98.5	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
38 cis-1,2-Dichloroethene	96	5.209	5.209	0.000	82	332893	50.0	48.7	
40 2,2-Dichloropropane	77	5.215	5.215	0.000	87	431036	50.0	47.2	
41 Propionitrile	54	5.276	5.276	0.000	99	434847	250.0	260.2	
43 Methacrylonitrile	67	5.502	5.502	0.000	94	525604	125.0	126.4	
44 Chlorobromomethane	128	5.551	5.551	0.000	97	161934	50.0	49.5	
45 Tetrahydrofuran	71	5.551	5.557	-0.006	92	405245	250.0	237.4	
46 Chloroform	83	5.721	5.721	0.000	94	550900	50.0	50.6	
48 1,1,1-Trichloroethane	97	5.941	5.941	0.000	98	478920	50.0	50.5	
$ 47 Dibromofluoromethane (Surr)	113	5.941	5.947	-0.006	79	258129	50.0	53.5	
49 Cyclohexane	56	6.038	6.038	0.000	92	523321	50.0	43.7	
S 74 1,2-Dichloroethene, Total	100				0			97.9	
51 Carbon tetrachloride	117	6.154	6.160	-0.006	95	420154	50.0	50.3	
50 1,1-Dichloropropene	75	6.160	6.166	-0.006	97	439182	50.0	49.4	
52 Isobutyl alcohol	41	6.368	6.368	0.000	94	318613	625.0	632.4	
$ 56 1,2-Dichloroethane-d4 (Surr)	102	6.416	6.410	0.006	93	58228	50.0	52.5	
53 Benzene	78	6.435	6.441	-0.006	97	1300267	50.0	48.7	
55 1,2-Dichloroethane	62	6.520	6.526	-0.006	97	396369	50.0	50.1	
58 Tert-amyl methyl ether	73	6.654	6.660	-0.006	99	826625	50.0	44.9	
* 59 Fluorobenzene (IS)	96	6.867	6.874	-0.007	99	987316	50.0	50.0	
60 n-Heptane	43	6.898	6.898	0.000	94	426586	50.0	42.1	
61 n-Butanol	56	7.300	7.300	0.000	91	249504	NC	NC	
62 Trichloroethene	95	7.373	7.374	-0.001	99	343147	50.0	48.6	
63 Methylcyclohexane	83	7.678	7.684	-0.006	91	530827	50.0	43.9	
64 1,2-Dichloropropane	63	7.715	7.721	-0.006	93	342193	50.0	49.4	
65 2-ethoxy-2-methyl butane	87	7.751	7.752	-0.001	91	432344	50.0	47.0	
68 1,4-Dioxane	88	7.812	7.819	-0.007	86	57050	625.0	678.9	M
66 Dibromomethane	93	7.831	7.831	0.000	96	216299	50.0	51.4	
67 Methyl methacrylate	69	7.837	7.837	0.000	94	312251	50.0	48.7	
70 Dichlorobromomethane	83	8.093	8.093	0.000	100	409802	50.0	49.7	
72 2-Nitropropane	41	8.385	8.386	-0.001	97	728298	250.0	238.8	
71 2-Chloroethyl vinyl ether	63	8.489	8.489	0.000	92	269166	50.0	49.6	
73 cis-1,3-Dichloropropene	75	8.672	8.678	-0.006	96	537884	50.0	49.3	
75 4-Methyl-2-pentanone (MIBK)	43	8.885	8.892	-0.007	97	1127650	100.0	98.4	
$ 76 Toluene-d8 (Surr)	98	9.019	9.020	-0.001	94	999326	50.0	51.8	
77 Toluene	92	9.105	9.111	-0.006	98	837813	50.0	47.7	
78 trans-1,3-Dichloropropene	75	9.428	9.428	0.000	93	490450	50.0	48.5	
79 Ethyl methacrylate	69	9.513	9.513	0.000	90	510997	50.0	47.6	
80 1,1,2-Trichloroethane	97	9.653	9.654	-0.001	90	309572	50.0	49.2	
81 Tetrachloroethene	166	9.733	9.733	0.000	98	378742	50.0	48.4	
82 1,3-Dichloropropane	76	9.830	9.830	0.000	92	493002	50.0	49.1	
84 2-Hexanone	43	9.910	9.910	0.000	97	918290	100.0	96.6	
S 123 1,3-Dichloropropene, Total	100				0			97.8	
85 Chlorodibromomethane	129	10.062	10.062	0.000	90	356979	50.0	51.2	
87 Ethylene Dibromide	107	10.172	10.172	0.000	98	344391	50.0	50.0	
* 90 Chlorobenzene-d5 (IS)	117	10.653	10.653	0.000	84	771871	50.0	50.0	
88 Chlorobenzene	112	10.684	10.684	0.000	94	934921	50.0	48.6	
91 1-Chlorohexane	91	10.684	10.684	0.000	97	469644	50.0	45.0	
92 1,1,1,2-Tetrachloroethane	131	10.775	10.775	0.000	97	326063	50.0	48.5	
93 Ethylbenzene	91	10.781	10.788	-0.007	98	1653870	50.0	48.1	
94 m-Xylene & p-Xylene	106	10.909	10.916	-0.007	99	1281259	100.0	96.1	
S 130 Xylenes, Total	106				0			144.0	
95 o-Xylene	106	11.263	11.263	0.000	97	623889	50.0	47.9	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
96 Styrene	104	11.281	11.281	0.000	95	1056359	50.0	48.4	
97 Bromoform	173	11.440	11.440	0.000	98	293074	50.0	51.1	
98 Isopropylbenzene	105	11.586	11.586	0.000	96	1601988	50.0	47.6	
$ 101 4-Bromofluorobenzene (Surr)	95	11.732	11.732	0.000	93	384684	50.0	51.7	
102 Bromobenzene	156	11.848	11.848	0.000	90	406513	50.0	48.0	
105 1,1,2,2-Tetrachloroethane	83	11.854	11.854	0.000	93	556172	50.0	49.0	
104 trans-1,4-Dichloro-2-butene	53	11.879	11.885	-0.006	88	396404	125.0	110.2	
103 1,2,3-Trichloropropane	110	11.897	11.897	0.000	85	152397	50.0	49.9	
106 N-Propylbenzene	91	11.933	11.940	-0.007	99	1957467	50.0	46.3	
107 2-Chlorotoluene	126	12.007	12.007	0.000	97	385280	50.0	46.1	
108 1,3,5-Trimethylbenzene	105	12.080	12.086	-0.006	93	1343990	50.0	46.3	
109 4-Chlorotoluene	126	12.104	12.110	-0.006	98	398621	50.0	47.0	
111 tert-Butylbenzene	134	12.330	12.336	-0.006	93	261334	50.0	45.9	
113 1,2,4-Trimethylbenzene	105	12.379	12.379	0.000	97	1366592	50.0	46.6	
114 sec-Butylbenzene	105	12.507	12.507	0.000	94	1670739	50.0	46.1	
115 1,3-Dichlorobenzene	146	12.598	12.598	0.000	98	771949	50.0	47.6	
116 4-Isopropyltoluene	119	12.622	12.623	-0.001	97	1427945	50.0	45.9	
* 117 1,4-Dichlorobenzene-d4	152	12.659	12.659	0.000	93	439491	50.0	50.0	
118 1,4-Dichlorobenzene	146	12.677	12.677	0.000	96	783287	50.0	47.8	
119 1,2,3-Trimethylbenzene	105	12.696	12.696	0.000	98	1350390	50.0	45.8	
120 Benzyl chloride	91	12.757	12.763	-0.007	98	1041600	NC	NC	
121 1,3-Diethylbenzene	119	12.830	12.830	0.000	95	838292	NC	NC	
122 p-Diethylbenzene	119	12.903	12.903	0.000	93	865345	NC	NC	
124 n-Butylbenzene	92	12.921	12.927	-0.006	98	723090	50.0	46.3	
125 1,2-Dichlorobenzene	146	12.945	12.946	-0.001	99	739378	50.0	48.0	
126 o-diethylbenzene	119	12.976	12.976	0.000	96	691057	NC	NC	
127 1,2-Dibromo-3-Chloropropane	75	13.506	13.506	0.000	88	141245	50.0	50.1	
128 1,3,5-Trichlorobenzene	180	13.640	13.641	-0.001	98	522580	50.0	45.4	
129 1,2,4-Trichlorobenzene	180	14.073	14.073	0.000	94	477536	50.0	45.3	
131 Hexachlorobutadiene	225	14.165	14.165	0.000	96	198704	50.0	43.8	
132 Naphthalene	128	14.256	14.256	0.000	97	1726473	50.0	46.1	
133 1,2,3-Trichlorobenzene	180	14.403	14.403	0.000	96	454351	50.0	44.2	
134 2-Methylnaphthalene	142	15.006	15.006	0.000	92	783206	NC	NC	
S 154 Total Diethylbenzene	1		0.000					ND	7

QC Flag Legend

Processing Flags

NC - Not Calibrated

7 - Failed Limit of Detection

Review Flags

M - Manually Integrated

Reagents:

MSV_CCV_VOC#1_00032	Amount Added:	5.00	Units: uL	
MSV_CCV_2CEVE_00030	Amount Added:	5.00	Units: uL	
MSV_CCV_VOC#3_00031	Amount Added:	4.00	Units: uL	
MSV_CCV_GASES_00103	Amount Added:	2.50	Units: uL	
MSV_Cent_ISSS_00004	Amount Added:	5.00	Units: uL	Run Reagent

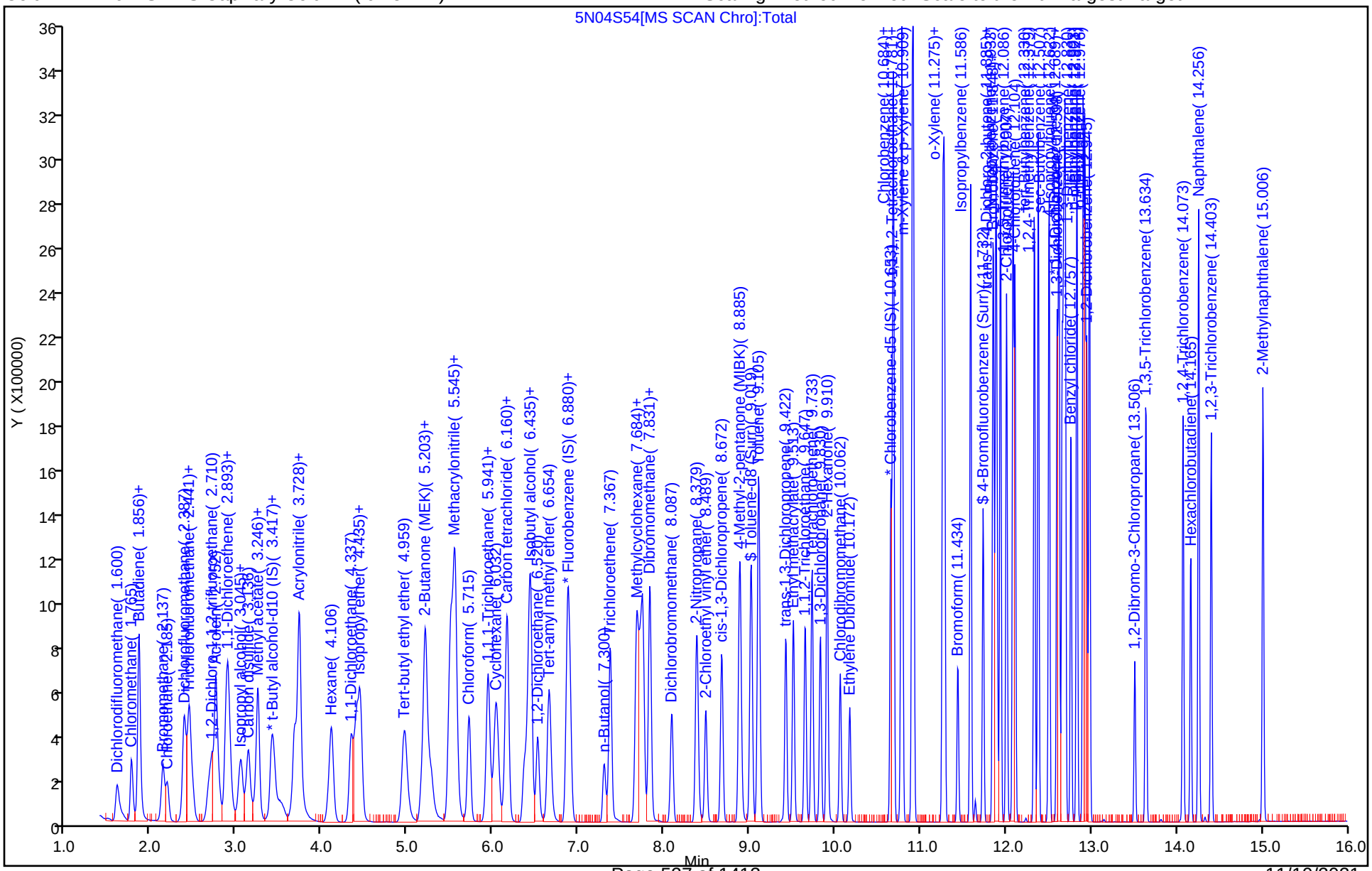
Report Date: 05-Nov-2021 08:42:03 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S54.D

Injection Date:	05-Nov-2021 06:06:30	Instrument ID:	26285	Operator ID:	mec29284
Lims ID:	CCVC			Worklist Smp#:	30
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	29
Method:	MSVoa_26285a	Limit Group:	MSV - 8260C DOD5		

Column: Rxi-624Sil MS Capillary Column (0.25 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Manual Integration/User Assign Peak Report

Eurofins Lancaster Laboratories Env, LLC

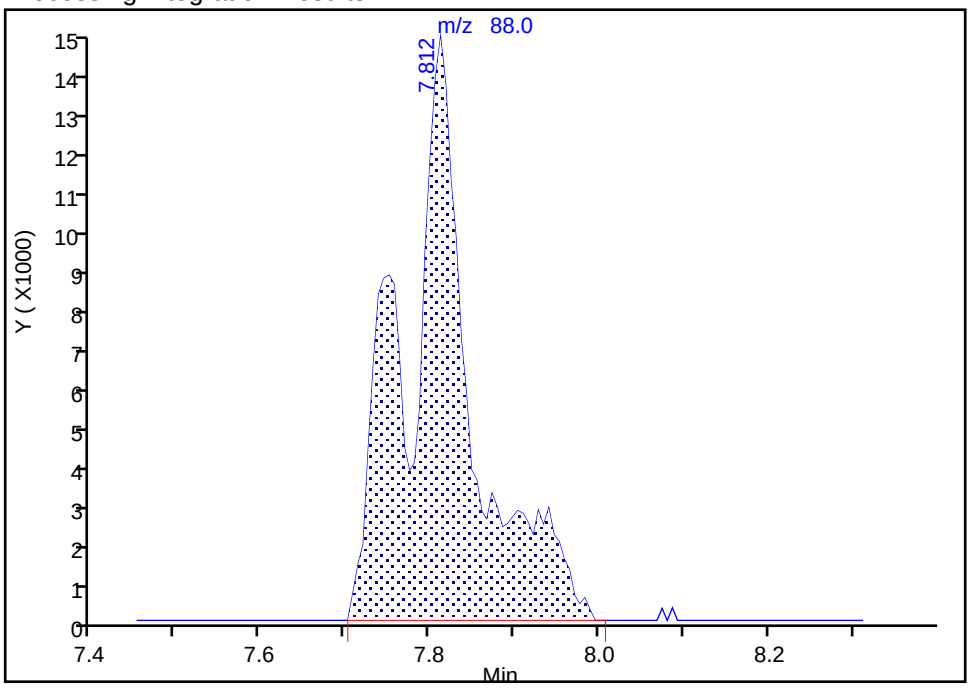
Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S54.D
Injection Date: 05-Nov-2021 06:06:30 Instrument ID: 26285
Lims ID: CCVC
Client ID:
Operator ID: mec29284 ALS Bottle#: 29 Worklist Smp#: 30
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Method: MSVoa_26285a Limit Group: MSV - 8260C DOD5
Column: Rxi-624Sil MS Capillary Column (0.25mm) Detector MS Quad

68 1,4-Dioxane, CAS: 123-91-1

Signal: 1

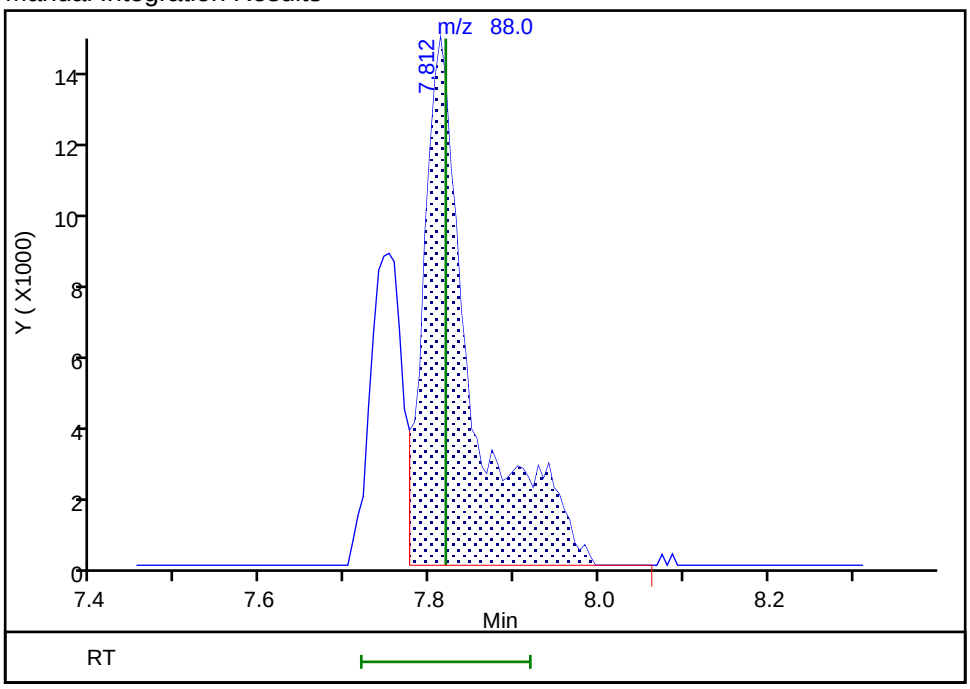
Processing Integration Results

RT: 7.81
Area: 78092
Amount: 929.2606
Amount Units: ug/l



Manual Integration Results

RT: 7.81
Area: 57050
Amount: 678.8700
Amount Units: ug/l



Reviewer: mellingerc, 05-Nov-2021 08:40:41
Audit Action: Split an Integrated Peak Audit Reason: Incomplete Integration

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File:	\\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02T01.D				
Lims ID:	bfb				
Client ID:					
Sample Type:	BFB				
Inject. Date:	02-Aug-2021 13:32:30	ALS Bottle#:	1	Worklist Smp#:	1
Injection Vol:	1.0 uL	Dil. Factor:	1.0000		
Sample Info:	BFB				
Misc. Info.:	410-0035810-001				
Operator ID:	jml01693	Instrument ID:	26285		
Method:	\\chromfs\Lancaster\ChromData\26285\20210802-35810.b\MSVoa_26285a.m				
Limit Group:	MSV - 8260C DOD5				
Last Update:	03-Aug-2021 13:09:50	Calib Date:	02-Aug-2021 18:49:30		
Integrator:	RTE	ID Type:	Deconvolution ID		
Quant Method:	Internal Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I17.D				
Column 1 :	Rxi-624Sil MS Capillary Column (0.25 mm)		Det: MS Quad		
Process Host:	CTX1646				
First Level Reviewer: longj		Date:	02-Aug-2021 13:43:45		

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
$ 54 BFB	95	4.388	4.388	0.000	0	263003	NC	NC	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

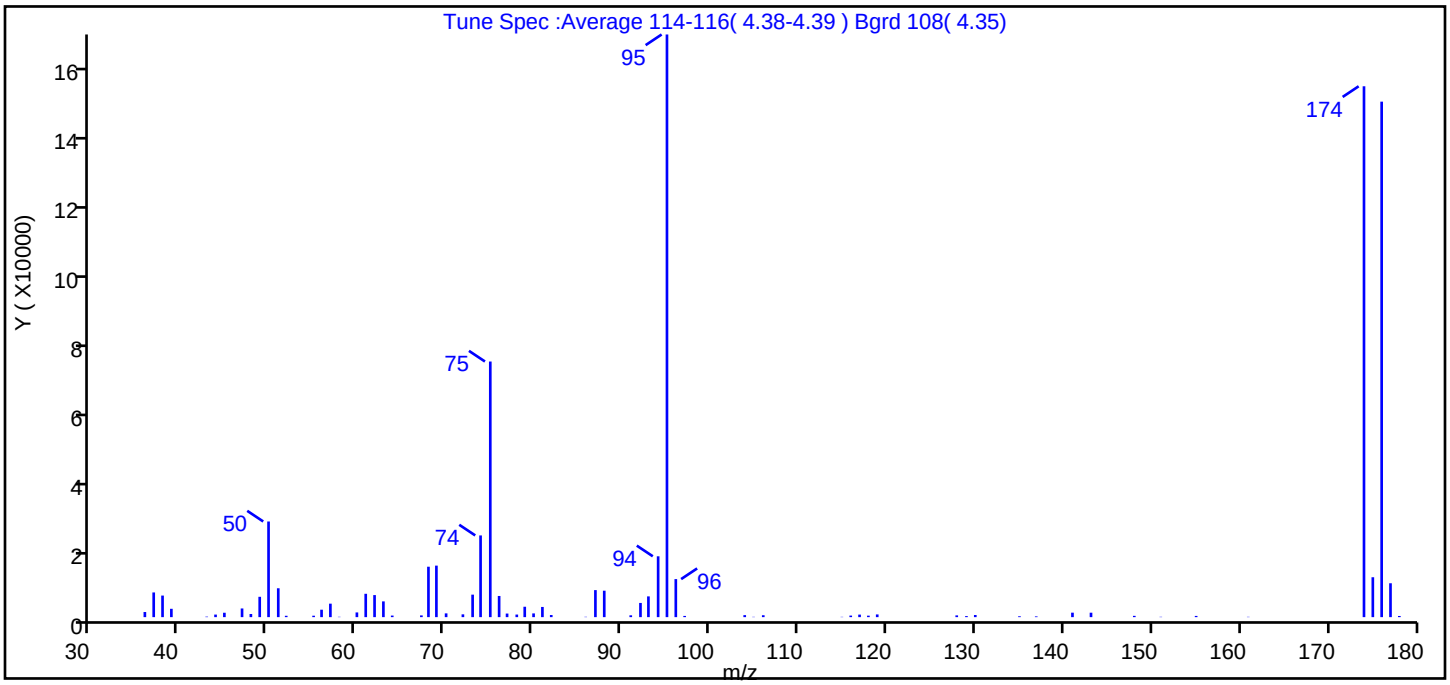
MSV_V_BFB_00006 Amount Added: 1.00 Units: uL

MS Tune Report

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02T01.D
Injection Date: 02-Aug-2021 13:32:30 Instrument ID: 26285
Lims ID: bfb
Client ID:
Operator ID: jml01693 ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 1.0 uL Dil. Factor: 1.0000
Method: MSVoa_26285a Limit Group: MSV - 8260C DOD5
Tune Method: BFB Method 1624

$ 54 BFB



m/z	Ion Abundance Criteria	% Relative Abundance
95	Base peak, 100% relative abundance	100.0
50	15 to 40% of m/z 95	16.4
75	30 to 60% of m/z 95	43.9
96	5 to 9% of m/z 95	6.5
173	Less than 2% of m/z 174	0.0 (0.0)
174	50 to 120% of m/z 95	91.1
175	5 to 9% of m/z 174	6.8 (7.5)
176	Greater than 95% but less than 101% of m/z 174	88.5 (97.1)
177	5 to 9% of m/z 176	5.8 (6.6)

Data File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02T01.D\MSVoa_26285a.rslt\spectra.d
Injection Date: 02-Aug-2021 13:32:30
Spectrum: Tune Spec :Average 114-116(4.38-4.39) Bgrd 108(4.35)
Base Peak: 95.10
Minimum % Base Peak: 0
Number of Points: 72

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1452	60.00	1332	81.00	2883	118.00	423
37.00	6987	61.00	6607	82.00	598	119.00	765
38.00	6105	62.00	6242	86.00	95	128.00	497
39.00	2361	63.00	4460	87.00	7648	129.00	298
40.00	2	64.00	447	88.00	7483	130.00	601
43.00	142	67.00	492	91.00	517	135.00	245
44.00	727	68.00	14270	92.00	4018	137.00	211
45.00	1245	69.00	14578	93.00	5874	141.00	1266
47.00	2457	70.00	1067	94.00	17216	143.00	1257
48.00	891	72.00	795	95.00	164864	148.00	367
49.00	5756	73.00	6367	96.00	10765	151.00	93
50.00	27064	74.00	23120	97.00	345	155.00	346
51.00	8170	75.00	72328	104.00	568	161.00	88
52.00	386	76.00	5989	105.00	86	174.00	150208
55.00	404	77.00	1015	106.00	541	175.00	11290
56.00	2104	78.00	732	115.00	84	176.00	145856
57.00	3814	79.00	2941	116.00	441	177.00	9589
58.00	95	80.00	1058	117.00	719	178.00	329

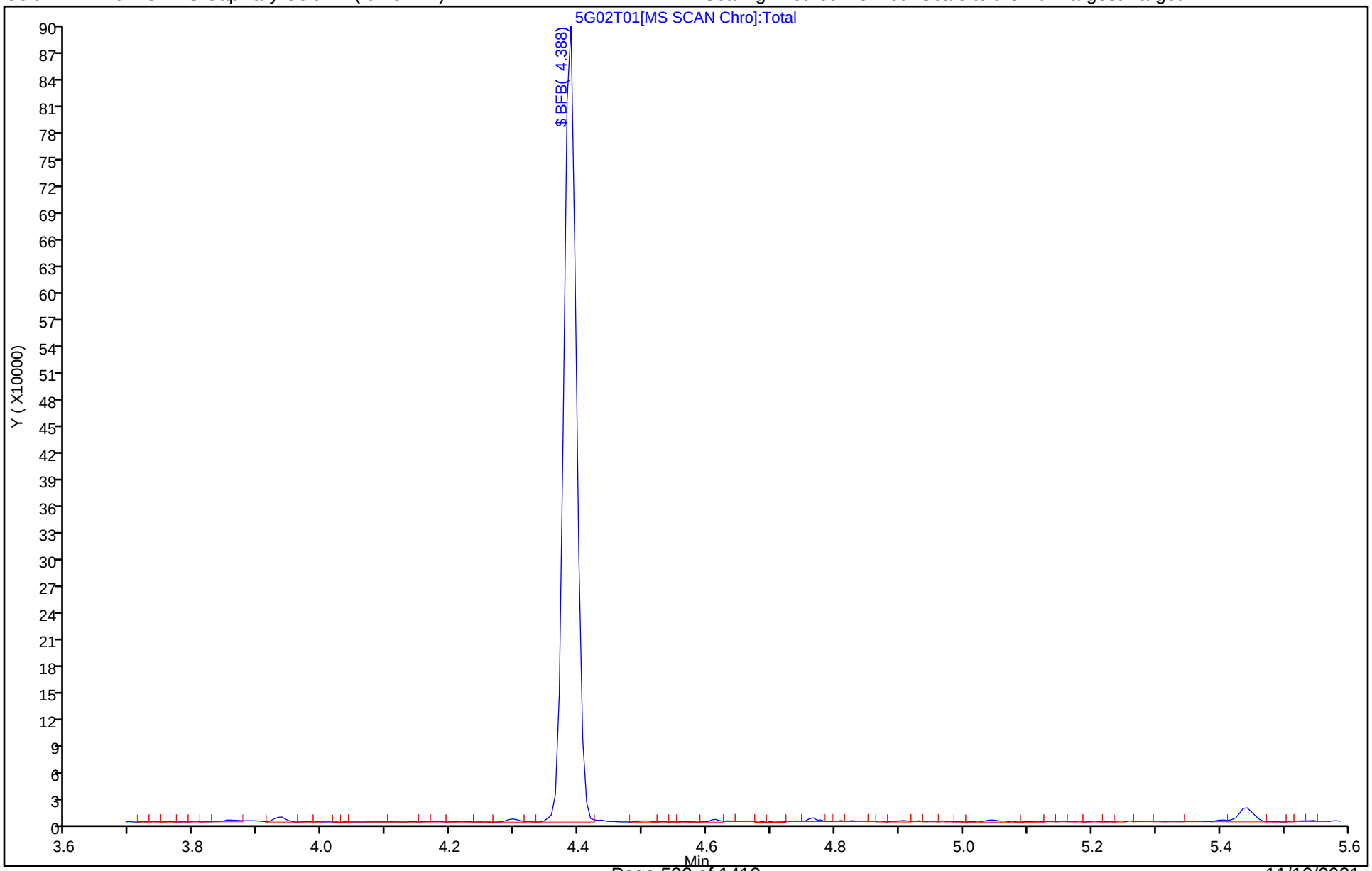
Report Date: 03-Aug-2021 13:09:50 Chrom Revision: 2.3 27-Jul-2021 18:12:28

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02T01.D

Injection Date:	02-Aug-2021 13:32:30	Instrument ID:	26285	Operator ID:	jml01693
Lims ID:	bfb			Worklist Smp#:	1
Client ID:					
Injection Vol:	1.0 uL	Dil. Factor:	1.0000	ALS Bottle#:	1
Method:	MSVoa_26285a	Limit Group:	MSV - 8260C DOD5		

Column: Rxi-624Sil MS Capillary Column (0.25 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File:	\\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04T31.D				
Lims ID:	BFB				
Client ID:					
Sample Type:	BFB				
Inject. Date:	04-Nov-2021 20:43:30	ALS Bottle#:	1	Worklist Smp#:	1
Injection Vol:	1.0 uL	Dil. Factor:	1.0000		
Sample Info:	410-0043341-001				
Misc. Info.:	BFB				
Operator ID:	mec29284	Instrument ID:	26285		
Method:	\\chromfs\Lancaster\ChromData\26285\20211104-43341.b\MSVoa_26285a.m				
Limit Group:	MSV - 8260C DOD5				
Last Update:	04-Nov-2021 21:26:57	Calib Date:	02-Aug-2021 18:49:30		
Integrator:	RTE	ID Type:	Deconvolution ID		
Quant Method:	Internal Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I17.D				
Column 1 :	Rxi-624Sil MS Capillary Column (0.25 mm)		Det: MS Quad		
Process Host:	CTX1638				

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
$ 54 BFB	95	4.419	4.419	0.000	0	323772	NC	NC	

QC Flag Legend

Processing Flags
NC - Not Calibrated

Reagents:

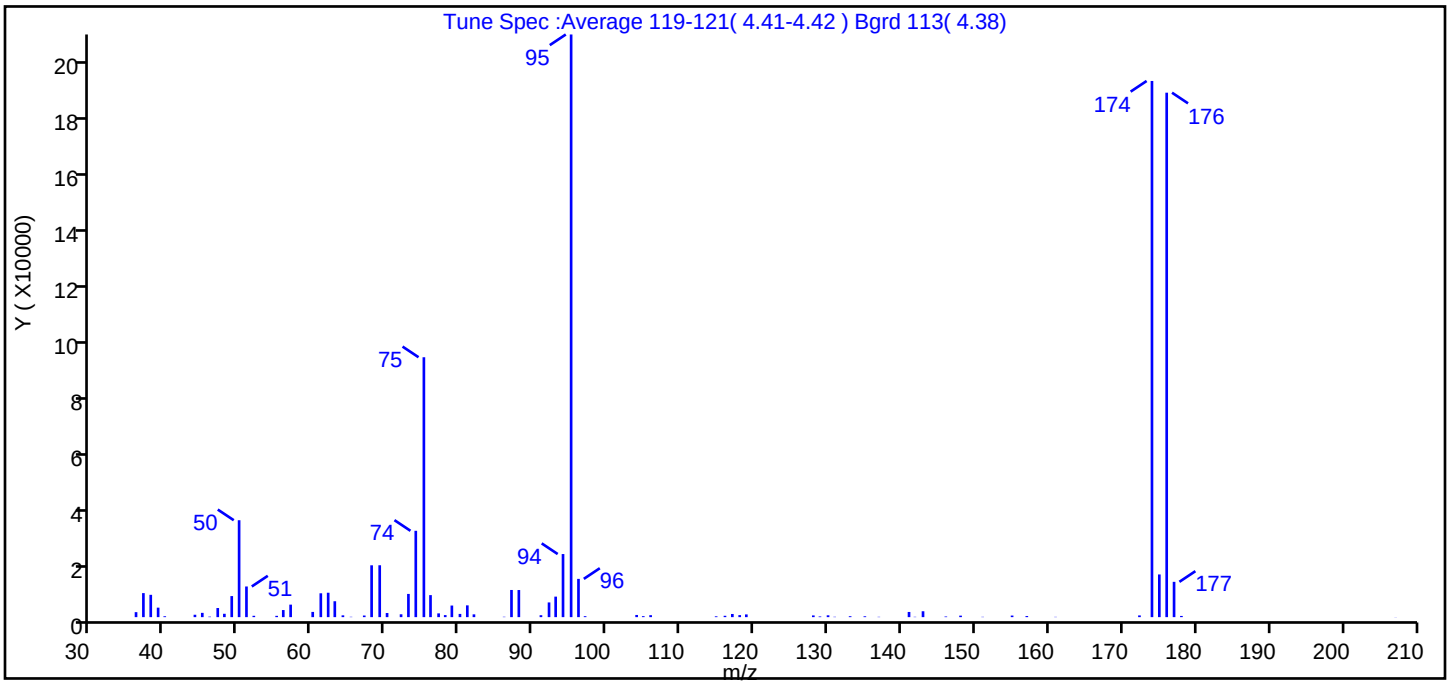
MSV_V_BFB_00006 Amount Added: 1.00 Units: uL

MS Tune Report

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04T31.D
Injection Date: 04-Nov-2021 20:43:30 Instrument ID: 26285
Lims ID: BFB
Client ID:
Operator ID: mec29284 ALS Bottle#: 1 Worklist Smp#: 1
Injection Vol: 1.0 uL Dil. Factor: 1.0000
Method: MSVoa_26285a Limit Group: MSV - 8260C DOD5
Tune Method: BFB Method 8260

$ 54 BFB



m/z	Ion Abundance Criteria	% Relative Abundance
95	Base peak, 100% relative abundance	100.0
50	15 to 40% of m/z 95	16.6
75	30 to 60% of m/z 95	44.6
96	5 to 9% of m/z 95	6.6
173	Less than 2% of m/z 174	0.0 (0.0)
174	50 to 120% of m/z 95	92.0
175	5 to 9% of m/z 174	7.3 (8.0)
176	Greater than 95% but less than 101% of m/z 174	90.0 (97.8)
177	5 to 9% of m/z 176	6.1 (6.7)

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04T31.D\MSVoa_26285a.rslt\spectra.d
Injection Date: 04-Nov-2021 20:43:30
Spectrum: Tune Spec :Average 119-121(4.41-4.42) Bgrd 113(4.38)
Base Peak: 95.10
Minimum % Base Peak: 0
Number of Points: 79

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1720	63.00	5472	88.00	9328	133.00	316
37.00	8269	64.00	621	91.00	665	135.00	294
38.00	7681	65.00	116	92.00	5061	137.00	109
39.00	3266	67.00	559	93.00	7059	141.00	1785
40.00	304	68.00	17840	94.00	21712	142.00	117
44.00	824	69.00	17856	95.00	200512	143.00	2029
45.00	1474	70.00	1418	96.00	13168	146.00	221
46.00	174	72.00	984	97.00	326	148.00	519
47.00	3139	73.00	7991	104.00	751	151.00	107
48.00	1158	74.00	29712	105.00	335	155.00	546
49.00	7249	75.00	89440	106.00	676	157.00	379
50.00	33352	76.00	7579	115.00	284	161.00	97
51.00	10550	77.00	1298	116.00	469	172.00	595
52.00	465	78.00	701	117.00	1088	174.00	184512
55.00	449	79.00	3993	118.00	701	175.00	14691
56.00	2442	80.00	1112	119.00	939	176.00	180480
57.00	4305	81.00	4055	128.00	589	177.00	12150
60.00	1800	82.00	963	129.00	230	178.00	418
61.00	8210	86.00	128	130.00	631	207.00	42
62.00	8399	87.00	9350	131.00	121		

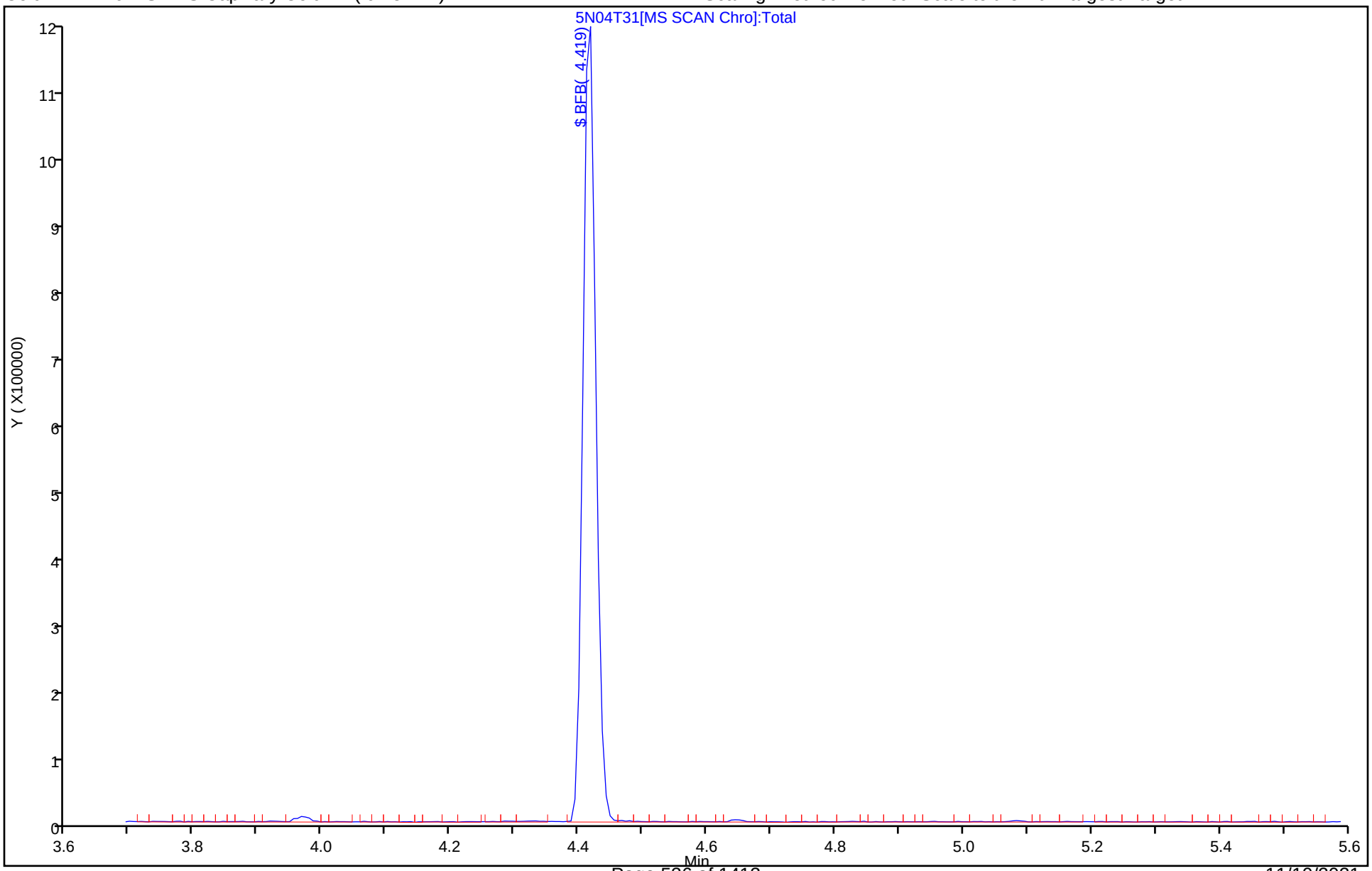
Report Date: 04-Nov-2021 21:26:58 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04T31.D

Injection Date:	04-Nov-2021 20:43:30	Instrument ID:	26285	Operator ID:	mec29284
Lims ID:	BFB			Worklist Smp#:	1
Client ID:					
Injection Vol:	1.0 uL	Dil. Factor:	1.0000	ALS Bottle#:	1
Method:	MSVoa_26285a	Limit Group:	MSV - 8260C DOD5		

Column: Rxi-624Sil MS Capillary Column (0.25 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 410-191072/6

Matrix: Water Lab File ID: 5N04B31.D

Analysis Method: 8260D Date Collected:

Sample wt/vol: 5(mL) Date Analyzed: 11/04/2021 22:15

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: R-624SilMS 30m ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 191072 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
10061-01-5	cis-1,3-Dichloropropene	0.50	U	1.0	0.50	0.20
10061-02-6	trans-1,3-Dichloropropene	0.50	U	1.0	0.50	0.20
100-41-4	Ethylbenzene	0.80	U	1.0	0.80	0.40
100-42-5	Styrene	0.60	U	5.0	0.60	0.30
106-46-7	1,4-Dichlorobenzene	0.60	U	5.0	0.60	0.30
106-93-4	1,2-Dibromoethane (EDB)	0.50	U	1.0	0.50	0.20
107-06-2	1,2-Dichloroethane	0.60	U	1.0	0.60	0.30
108-10-1	4-Methyl-2-pentanone	1.0	U	10	1.0	0.50
108-87-2	Methylcyclohexane	1.0	U	5.0	1.0	0.50
108-88-3	Toluene	0.50	U	1.0	0.50	0.20
108-90-7	Chlorobenzene	0.60	U	1.0	0.60	0.30
110-82-7	Cyclohexane	2.0	U	5.0	2.0	1.0
120-82-1	1,2,4-Trichlorobenzene	1.0	U	5.0	1.0	0.30
124-48-1	Dibromochloromethane	0.50	U	1.0	0.50	0.20
1330-20-7	Xylenes, Total	0.80	U	1.0	0.80	0.40
127-18-4	Tetrachloroethene	0.60	U	1.0	0.60	0.30
156-59-2	cis-1,2-Dichloroethene	0.60	U	1.0	0.60	0.30
156-60-5	trans-1,2-Dichloroethene	0.60	U	1.0	0.60	0.30
1634-04-4	Methyl tert-butyl ether	0.50	U	1.0	0.50	0.20
541-73-1	1,3-Dichlorobenzene	0.60	U	5.0	0.60	0.30
56-23-5	Carbon tetrachloride	0.60	U	1.0	0.60	0.30
591-78-6	2-Hexanone	1.0	U	10	1.0	0.40
67-64-1	Acetone	2.0	U	20	2.0	0.70
67-66-3	Chloroform	0.60	U	1.0	0.60	0.30
71-43-2	Benzene	0.60	U	1.0	0.60	0.30
71-55-6	1,1,1-Trichloroethane	0.60	U	1.0	0.60	0.30
74-83-9	Bromomethane	0.60	U	1.0	0.60	0.30
74-87-3	Chloromethane	0.50	U	1.0	0.50	0.20
75-00-3	Chloroethane	0.50	U	1.0	0.50	0.20
75-01-4	Vinyl chloride	0.50	U	1.0	0.50	0.20
75-09-2	Methylene Chloride	0.60	U	1.0	0.60	0.30
75-15-0	Carbon disulfide	0.60	U	5.0	0.60	0.30
75-25-2	Bromoform	2.0	U	4.0	2.0	1.0
75-27-4	Bromodichloromethane	0.50	U	1.0	0.50	0.20
75-34-3	1,1-Dichloroethane	0.60	U	1.0	0.60	0.30
75-35-4	1,1-Dichloroethene	0.60	U	1.0	0.60	0.30

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 410-191072/6

Matrix: Water Lab File ID: 5N04B31.D

Analysis Method: 8260D Date Collected:

Sample wt/vol: 5(mL) Date Analyzed: 11/04/2021 22:15

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: R-624SilMS 30m ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 191072 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
75-69-4	Trichlorofluoromethane	0.50	U	1.0	0.50	0.20
75-71-8	Dichlorodifluoromethane	0.50	U	1.0	0.50	0.20
76-13-1	Freon 113	0.60	U	10	0.60	0.30
78-87-5	1,2-Dichloropropane	0.60	U	1.0	0.60	0.30
78-93-3	2-Butanone	1.0	U	10	1.0	0.50
79-00-5	1,1,2-Trichloroethane	0.60	U	1.0	0.60	0.30
79-01-6	Trichloroethene	0.60	U	1.0	0.60	0.30
79-20-9	Methyl acetate	0.60	U	5.0	0.60	0.30
79-34-5	1,1,2,2-Tetrachloroethane	0.60	U	1.0	0.60	0.30
95-50-1	1,2-Dichlorobenzene	0.50	U	5.0	0.50	0.20
96-12-8	1,2-Dibromo-3-Chloropropane	1.0	U	5.0	1.0	0.30
98-82-8	Isopropylbenzene	0.50	U	5.0	0.50	0.20

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	106		81-118
1868-53-7	Dibromofluoromethane (Surr)	105		80-119
460-00-4	4-Bromofluorobenzene (Surr)	102		85-114
2037-26-5	Toluene-d8 (Surr)	103		89-112

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 410-191072/6

Matrix: Water Lab File ID: 5N04B31.D

Analysis Method: 8260D Date Collected:

Sample wt/vol: 5(mL) Date Analyzed: 11/04/2021 22:15

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: R-624SilMS 30m ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 191072 Units: ug/L

Number TICs Found: 0 TIC Result Total: 0

CAS NO.	COMPOUND NAME	RT	RESULT	Q	MATCH QUALITY
	Tentatively Identified Compound		None		

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04B31.D
Lims ID: MB
Client ID:
Sample Type: MB
Inject. Date: 04-Nov-2021 22:15:30 ALS Bottle#: 5 Worklist Smp#: 6
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 410-0043341-006
Misc. Info.: MB
Operator ID: mec29284 Instrument ID: 26285

Method: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\MSVoa_26285a.m
Limit Group: MSV - 8260C DOD5
Last Update: 04-Nov-2021 22:46:10 Calib Date: 02-Aug-2021 18:49:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I17.D

Column 1 : Rxi-624Sil MS Capillary Column (0.25 mm) Det: MS Quad
Process Host: CTX1638

First Level Reviewer: campbellme Date: 04-Nov-2021 22:46:10

	Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
1	Chlorotrifluoroethene	116		1.576					ND	
2	Dichlorodifluoromethane	85		1.606					ND	
6	Chlorodifluoromethane	51		1.625					ND	
3	Chloromethane	50		1.771					ND	
4	Butadiene	39		1.856					ND	
5	Vinyl chloride	62		1.856					ND	
7	2-Chloro-1,1,1-Trifluoroethane	118		1.917					ND	
8	Bromomethane	94		2.137					ND	
9	Chloroethane	64		2.192					ND	
10	Dichlorofluoromethane	67		2.387					ND	
11	Trichlorofluoromethane	101		2.423					ND	
12	Pentane	43		2.454					ND	
13	Ethanol	45		2.496					ND	
14	Ethyl ether	59		2.618					ND	
15	1,2-Dichloro-1,1,2-trifluoroetha	67		2.704					ND	
16	Acrolein	56		2.759					ND	
19	1,1-Dichloroethene	96		2.881					ND	
17	Acetone	58		2.899					ND	
18	112TCTFE	101		2.905					ND	
21	Isopropyl alcohol	45		3.027					ND	
20	Iodomethane	142		3.051					ND	
22	Carbon disulfide	76		3.137					ND	7
24	Acetonitrile	41		3.185					ND	
23	Methyl acetate	43		3.228					ND	
25	3-Chloro-1-propene	41		3.252					ND	
* 27	t-Butyl alcohol-d10 (IS)	65	3.411	3.399	0.012	29	273697	250.0	250.0	
26	Methylene Chloride	84		3.417					ND	
28	2-Methyl-2-propanol	59		3.508					ND	
29	Acrylonitrile	53		3.679					ND	
30	Methyl tert-butyl ether	73		3.728					ND	
31	trans-1,2-Dichloroethene	96		3.740					ND	

	Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
	32 Hexane	57		4.112					ND	
	33 1,1-Dichloroethane	63		4.338					ND	
	34 Vinyl acetate	43		4.344					ND	
	35 Isopropyl ether	45		4.405					ND	
	36 2-Chloro-1,3-butadiene	53		4.447					ND	
	37 Tert-butyl ethyl ether	59		4.959					ND	
	39 2-Butanone (MEK)	43		5.173					ND	
	38 cis-1,2-Dichloroethene	96		5.209					ND	
	40 2,2-Dichloropropane	77		5.215					ND	
	42 Ethyl acetate	43		5.252					ND	
	41 Propionitrile	54		5.276					ND	
	43 Methacrylonitrile	67		5.502					ND	
	44 Chlorobromomethane	128		5.551					ND	
	45 Tetrahydrofuran	71		5.557					ND	
	46 Chloroform	83		5.721					ND	
	48 1,1,1-Trichloroethane	97		5.941					ND	
$	47 Dibromofluoromethane (Surr)	113	5.947	5.947	0.000	93	259898	50.0	52.6	
	49 Cyclohexane	56		6.038					ND	
S	74 1,2-Dichloroethene, Total	100		6.155					ND	7
	51 Carbon tetrachloride	117		6.160					ND	
	50 1,1-Dichloropropene	75		6.166					ND	
	52 Isobutyl alcohol	41		6.368					ND	
$	56 1,2-Dichloroethane-d4 (Surr)	102	6.416	6.410	0.006	50	60371	50.0	53.1	
	53 Benzene	78		6.441					ND	
	55 1,2-Dichloroethane	62		6.526					ND	7
	57 Isopropyl acetate	43		6.563					ND	
	58 Tert-amyl methyl ether	73		6.660					ND	
*	59 Fluorobenzene (IS)	96	6.873	6.874	-0.001	99	1010728	50.0	50.0	
	60 n-Heptane	43		6.898					ND	
	61 n-Butanol	56		7.300					ND	
	62 Trichloroethene	95		7.374					ND	
	63 Methylcyclohexane	83		7.684					ND	
	64 1,2-Dichloropropane	63		7.721					ND	
	65 2-ethoxy-2-methyl butane	87		7.752					ND	
	68 1,4-Dioxane	88		7.819					ND	
	66 Dibromomethane	93		7.831					ND	
	67 Methyl methacrylate	69		7.837					ND	
	89 t-Amyl alcohol	73		7.842					ND	
	69 n-Propyl acetate	61		7.928					ND	
	70 Dichlorobromomethane	83		8.093					ND	
	72 2-Nitropropane	41		8.386					ND	
	71 2-Chloroethyl vinyl ether	63		8.489					ND	
	73 cis-1,3-Dichloropropene	75		8.678					ND	
	75 4-Methyl-2-pentanone (MIBK)	43		8.892					ND	
$	76 Toluene-d8 (Surr)	98	9.019	9.020	-0.001	94	1002263	50.0	51.6	
	77 Toluene	92		9.111					ND	
	78 trans-1,3-Dichloropropene	75		9.428					ND	
	79 Ethyl methacrylate	69		9.513					ND	
	80 1,1,2-Trichloroethane	97		9.654					ND	
	81 Tetrachloroethene	166		9.733					ND	
	82 1,3-Dichloropropane	76		9.830					ND	
	83 3,4-Dichloro-1-butene	75		9.873					ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
84 2-Hexanone	43		9.910					ND	
86 n-Butyl acetate	43		10.056					ND	
S 123 1,3-Dichloropropene, Total	100		10.060					ND	7
85 Chlorodibromomethane	129		10.062					ND	
87 Ethylene Dibromide	107		10.172					ND	
* 90 Chlorobenzene-d5 (IS)	117	10.653	10.653	0.000	85	777513	50.0	50.0	
88 Chlorobenzene	112		10.684					ND	
91 1-Chlorohexane	91		10.684					ND	U
92 1,1,1,2-Tetrachloroethane	131		10.775					ND	
93 Ethylbenzene	91		10.788					ND	
94 m-Xylene & p-Xylene	106		10.916					ND	
S 130 Xylenes, Total	106		11.245					ND	7
95 o-Xylene	106		11.263					ND	
96 Styrene	104		11.281					ND	
97 Bromoform	173		11.440					ND	
98 Isopropylbenzene	105		11.586					ND	
99 cis-1,4-Dichloro-2-butene	88		11.641					ND	U
100 Cyclohexanone	55		11.659					ND	
$ 101 4-Bromofluorobenzene (Surr)	95	11.732	11.732	0.000	94	381243	50.0	50.9	
102 Bromobenzene	156		11.848					ND	
105 1,1,2,2-Tetrachloroethane	83		11.854					ND	
104 trans-1,4-Dichloro-2-butene	53		11.885					ND	
103 1,2,3-Trichloropropane	110		11.897					ND	
106 N-Propylbenzene	91		11.940					ND	
107 2-Chlorotoluene	126		12.007					ND	
108 1,3,5-Trimethylbenzene	105		12.086					ND	
109 4-Chlorotoluene	126		12.110					ND	
110 2,3,4-Trichlorobutene	109		12.129					ND	
111 tert-Butylbenzene	134		12.336					ND	
112 Pentachloroethane	167		12.360					ND	
113 1,2,4-Trimethylbenzene	105		12.379					ND	
114 sec-Butylbenzene	105		12.507					ND	
115 1,3-Dichlorobenzene	146		12.598					ND	7
116 4-Isopropyltoluene	119		12.623					ND	
* 117 1,4-Dichlorobenzene-d4	152	12.659	12.659	0.000	95	432032	50.0	50.0	
118 1,4-Dichlorobenzene	146		12.677					ND	7
119 1,2,3-Trimethylbenzene	105		12.696					ND	
120 Benzyl chloride	91		12.763					ND	
121 1,3-Diethylbenzene	119		12.830					ND	
122 p-Diethylbenzene	119		12.903					ND	
124 n-Butylbenzene	92		12.927					ND	
125 1,2-Dichlorobenzene	146		12.946					ND	
126 o-diethylbenzene	119		12.976					ND	
127 1,2-Dibromo-3-Chloropropane	75		13.506					ND	
135 Hexachloroethane	201		13.560					ND	
128 1,3,5-Trichlorobenzene	180		13.641					ND	
129 1,2,4-Trichlorobenzene	180		14.073					ND	
131 Hexachlorobutadiene	225		14.165					ND	
132 Naphthalene	128		14.256					ND	7
133 1,2,3-Trichlorobenzene	180		14.403					ND	
134 2-Methylnaphthalene	142	15.024	15.006	0.018	89	4268		NC	
136 C4-C10	1		0.000					ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
148 Diethoxymethane	1		0.000					ND	
146 2,3-Dichloro-1,3-butadiene	1		0.000					ND	
202 Bromoacetone (TIC)	1		0.000					ND	
143 trans-1,2,3-Trichlorobutene-2	1		0.000					ND	
195 1-Bromopropane TIC	1		0.000					ND	
161 Chloroacetonitrile	1		0.000					ND	
150 C5-C12	1		0.000					ND	
158 tert-Butyl Formate	1		0.000					ND	
157 Methyl acrylate	1		0.000					ND	
208 Pentachloroethane TIC	1		0.000					ND	
209 Ethyl acrylate TIC	1		0.000					ND	
207 1-Bromo-2-chloroethane TIC	1		0.000					ND	
152 C6-C12	1		0.000					ND	
159 1,3-Divinylbenzene	1		0.000					ND	
151 1-Bromo-2-chloroethane	1		0.000					ND	
173 1,3-Dichloro-2-propanol TIC	1		0.000					ND	
155 3-chloro-1-Butene	1		0.000					ND	
141 1-Chlorobutane	1		0.000					ND	
199 Bis(2-chloroethyl)sulfide (TIC)	1		0.000					ND	
198 2-Bromo-3-chloropropene TIC	1		0.000					ND	
197 Pentafluorobenzene TIC	1		0.000					ND	
196 Epichlorohydrin TIC	1		0.000					ND	
S 162 divinyl benzene	1		0.000					ND	7
203 2,3-Dibromopropene TIC	1		0.000					ND	
163 Methylal	1		0.000					ND	
145 cis-1,2,3-Trichlorobutene-2	1		0.000					ND	
192 Vinyl acetate (TIC)	1		0.000					ND	
S 154 Total Diethylbenzene	1		0.000					ND	7
156 C6-C10	1		0.000					ND	
144 1,1-Dichloro-1-fluoroethane	1		0.000					ND	
174 1-Methyl-2-pyrrilidinone TIC	1		0.000					ND	
165 n-Decane	57		0.000					ND	
176 beta-Propiolactone TIC	1		0.000					ND	
210 Ethanol TIC	1		0.000					ND	
175 n-Propylamine (TIC)	1		0.000					ND	
178 Propargyl alcohol TIC	1		0.000					ND	
201 Paraldehyde TIC	1		0.000					ND	
187 2-Pentanone (TIC)	1		0.000					ND	
193 Allyl Alcohol TIC	1		0.000					ND	
189 Epibromohydrin TIC	1		0.000					ND	
190 2-Picoline (TIC)	1		0.000					ND	
191 Chloroacetaldehyde TIC	1		0.000					ND	
142 1,4-Divinylbenzene	1		0.000					ND	
137 1,3-Dichlorobutene-2(total)	1		0.000					ND	
194 Vinyl bromide TIC	1		0.000					ND	
166 Dodecane	57		0.000					ND	
179 Monochloroacetic acid TIC	1		0.000					ND	
180 Propanol TIC	1		0.000					ND	
181 Acetonitrile TIC	1		0.000					ND	
182 2-Chloroethanol TIC	1		0.000					ND	
138 Propene oxide	1		0.000					ND	
184 1,3-Dichlorobutene-2(total) TIC	1		0.000					ND	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
185 Nitrobenzene TIC	1		0.000					ND	
219 Ethyl Acetate TIC	1		0.000					ND	
140 C4-C12	1		0.000					ND	
177 2-Bromoethanol TIC	1		0.000					ND	
211 o-toluidine TIC	1		0.000					ND	
224 Diethoxymethane TIC	1		0.000					ND	
205 Chloral hydrate (TIC)	1		0.000					ND	
172 2,3-Dibromo-1-propanol TIC	1		0.000					ND	
170 1,2,3,4-Diepoxybutane (TIC)	1		0.000					ND	
169 Ethyl acrylate	55		0.000					ND	
168 1,1,2,2-Tetrachloro-1,2-difluoro	1		0.000					ND	
167 Butane	1		0.000					ND	
206 3-Chloro-1,2-propanediol TIC	1		0.000					ND	
188 Malononitrile (TIC)	1		0.000					ND	
212 Propene oxide TIC	1		0.000					ND	
215 1-Chlorobutane TIC	1		0.000					ND	
217 n-butyl Acetate TIC	1		0.000					ND	
218 Ethyl ether TIC	1		0.000					ND	
171 N-Nitrosodi-n-butylamine TIC	1		0.000					ND	
220 Chlorodifluoromethane TIC	1		0.000					ND	
S 221 Total BTEX	1		0.000					ND	
222 2-Methylbutane TIC	1		0.000					ND	
204 Methanol TIC	1		0.000					ND	
225 Butane TIC	1		0.000					ND	

QC Flag Legend

Processing Flags

NC - Not Calibrated

7 - Failed Limit of Detection

Review Flags

U - Marked Undetected

Reagents:

MSV_Cent_ISSS_00004 Amount Added: 5.00 Units: uL Run Reagent

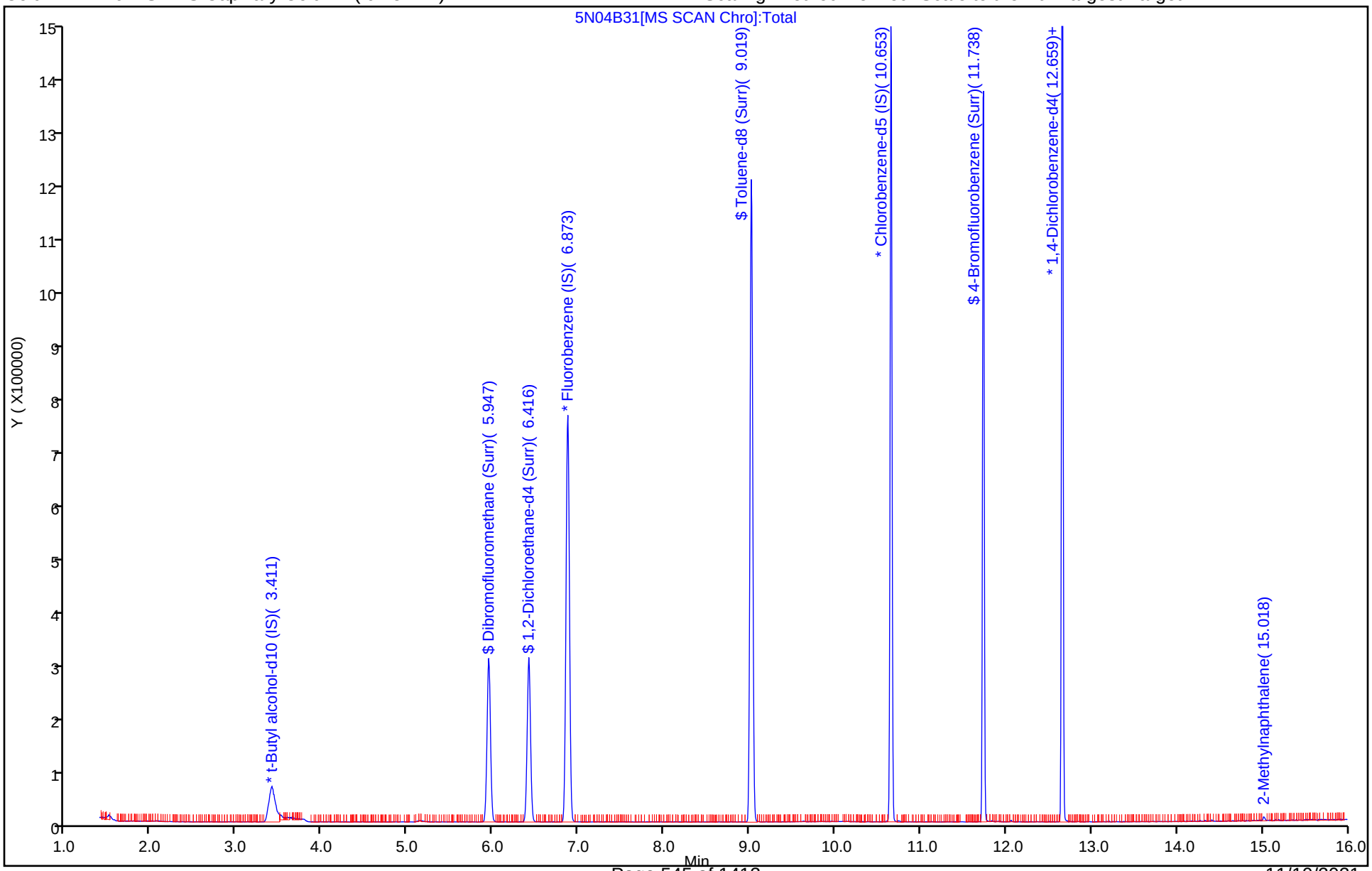
Report Date: 04-Nov-2021 22:47:31 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04B31.D

Injection Date:	04-Nov-2021 22:15:30	Instrument ID:	26285	Operator ID:	mec29284
Lims ID:	MB			Worklist Smp#:	6
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	5
Method:	MSVoa_26285a	Limit Group:	MSV - 8260C DOD5		

Column: Rxi-624Sil MS Capillary Column (0.25 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins Lancaster Laboratories Env, LLC

Recovery Report

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04B31.D
Lims ID: MB
Client ID:
Sample Type: MB
Inject. Date: 04-Nov-2021 22:15:30 ALS Bottle#: 5 Worklist Smp#: 6
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 410-0043341-006
Misc. Info.: MB
Operator ID: mec29284 Instrument ID: 26285

Method: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\MSVoa_26285a.m
Limit Group: MSV - 8260C DOD5
Last Update: 04-Nov-2021 22:46:10 Calib Date: 02-Aug-2021 18:49:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I17.D

Column 1 : Rxi-624Sil MS Capillary Column (0.25 mm) Det: MS Quad
Process Host: CTX1638

First Level Reviewer: campbellme Date: 04-Nov-2021 22:46:10

Compound	Amount Added	Amount Recovered	% Rec.
$ 47 Dibromofluoromethane (Surr)	50.0	52.6	105.17
$ 56 1,2-Dichloroethane-d4 (Surr)	50.0	53.1	106.29
$ 76 Toluene-d8 (Surr)	50.0	51.6	103.15
$ 101 4-Bromofluorobenzene (Surr)	50.0	50.9	101.71

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 410-191072/4

Matrix: Water Lab File ID: 5N04L31.D

Analysis Method: 8260D Date Collected:

Sample wt/vol: 5(mL) Date Analyzed: 11/04/2021 21:36

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: R-624SilMS 30m ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 191072 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
10061-01-5	cis-1,3-Dichloropropene	19.3		1.0	0.50	0.20
10061-02-6	trans-1,3-Dichloropropene	19.7		1.0	0.50	0.20
100-41-4	Ethylbenzene	18.9		1.0	0.80	0.40
100-42-5	Styrene	19.0		5.0	0.60	0.30
106-46-7	1,4-Dichlorobenzene	19.1		5.0	0.60	0.30
106-93-4	1,2-Dibromoethane (EDB)	20.0		1.0	0.50	0.20
107-06-2	1,2-Dichloroethane	20.0		1.0	0.60	0.30
108-10-1	4-Methyl-2-pentanone	272		10	1.0	0.50
108-87-2	Methylcyclohexane	17.6		5.0	1.0	0.50
108-88-3	Toluene	18.7		1.0	0.50	0.20
108-90-7	Chlorobenzene	19.2		1.0	0.60	0.30
110-82-7	Cyclohexane	17.2		5.0	2.0	1.0
120-82-1	1,2,4-Trichlorobenzene	19.0		5.0	1.0	0.30
124-48-1	Dibromochloromethane	20.0		1.0	0.50	0.20
1330-20-7	Xylenes, Total	56.6		1.0	0.80	0.40
127-18-4	Tetrachloroethene	18.7		1.0	0.60	0.30
156-59-2	cis-1,2-Dichloroethene	19.5		1.0	0.60	0.30
156-60-5	trans-1,2-Dichloroethene	19.2		1.0	0.60	0.30
1634-04-4	Methyl tert-butyl ether	19.3		1.0	0.50	0.20
541-73-1	1,3-Dichlorobenzene	19.1		5.0	0.60	0.30
56-23-5	Carbon tetrachloride	19.0		1.0	0.60	0.30
591-78-6	2-Hexanone	274		10	1.0	0.40
67-64-1	Acetone	254		20	2.0	0.70
67-66-3	Chloroform	20.1		1.0	0.60	0.30
71-43-2	Benzene	19.1		1.0	0.60	0.30
71-55-6	1,1,1-Trichloroethane	19.2		1.0	0.60	0.30
74-83-9	Bromomethane	17.6		1.0	0.60	0.30
74-87-3	Chloromethane	19.0		1.0	0.50	0.20
75-00-3	Chloroethane	18.1		1.0	0.50	0.20
75-01-4	Vinyl chloride	17.5		1.0	0.50	0.20
75-09-2	Methylene Chloride	19.8		1.0	0.60	0.30
75-15-0	Carbon disulfide	18.2		5.0	0.60	0.30
75-25-2	Bromoform	19.8		4.0	2.0	1.0
75-27-4	Bromodichloromethane	20.0		1.0	0.50	0.20
75-34-3	1,1-Dichloroethane	19.3		1.0	0.60	0.30
75-35-4	1,1-Dichloroethene	19.5		1.0	0.60	0.30

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Client Sample ID: Lab Sample ID: LCS 410-191072/4

Matrix: Water Lab File ID: 5N04L31.D

Analysis Method: 8260D Date Collected:

Sample wt/vol: 5(mL) Date Analyzed: 11/04/2021 21:36

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: R-624SilMS 30m ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 191072 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
75-69-4	Trichlorofluoromethane	18.3		1.0	0.50	0.20
75-71-8	Dichlorodifluoromethane	20.3		1.0	0.50	0.20
76-13-1	Freon 113	18.9		10	0.60	0.30
78-87-5	1,2-Dichloropropane	19.9		1.0	0.60	0.30
78-93-3	2-Butanone	268		10	1.0	0.50
79-00-5	1,1,2-Trichloroethane	20.1		1.0	0.60	0.30
79-01-6	Trichloroethene	18.6		1.0	0.60	0.30
79-20-9	Methyl acetate	25.1		5.0	0.60	0.30
79-34-5	1,1,2,2-Tetrachloroethane	20.7		1.0	0.60	0.30
95-50-1	1,2-Dichlorobenzene	19.1		5.0	0.50	0.20
96-12-8	1,2-Dibromo-3-Chloropropane	19.9		5.0	1.0	0.30
98-82-8	Isopropylbenzene	19.2		5.0	0.50	0.20

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	104		81-118
1868-53-7	Dibromofluoromethane (Surr)	105		80-119
460-00-4	4-Bromofluorobenzene (Surr)	103		85-114
2037-26-5	Toluene-d8 (Surr)	104		89-112

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04L31.D
Lims ID: LCS
Client ID:
Sample Type: LCS
Inject. Date: 04-Nov-2021 21:36:30 ALS Bottle#: 3 Worklist Smp#: 4
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 410-0043341-004
Misc. Info.: LCS
Operator ID: mec29284 Instrument ID: 26285

Method: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\MSVoa_26285a.m
Limit Group: MSV - 8260C DOD5
Last Update: 04-Nov-2021 22:21:28 Calib Date: 02-Aug-2021 18:49:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I17.D

Column 1 : Rxi-624Sil MS Capillary Column (0.25 mm) Det: MS Quad
Process Host: CTX1638

First Level Reviewer: campbellme Date: 04-Nov-2021 22:20:41

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
2 Dichlorodifluoromethane	85	1.600	1.606	-0.006	99	156253	20.0	20.3	
3 Chloromethane	50	1.765	1.771	-0.006	99	166577	20.0	19.0	
4 Butadiene	39	1.850	1.856	-0.006	93	177695	NC	NC	
5 Vinyl chloride	62	1.856	1.856	0.000	85	154242	20.0	17.5	
8 Bromomethane	94	2.125	2.137	-0.012	91	111787	20.0	17.6	
9 Chloroethane	64	2.186	2.192	-0.006	99	84725	20.0	18.1	
10 Dichlorofluoromethane	67	2.381	2.387	-0.006	97	233492	20.0	19.0	
11 Trichlorofluoromethane	101	2.411	2.423	-0.012	99	196477	20.0	18.3	
12 Pentane	43	2.448	2.454	-0.006	96	214944	NC	NC	
15 1,2-Dichloro-1,1,2-trifluoroetha	67	2.692	2.704	-0.012	95	151862	NC	NC	
16 Acrolein	56	2.753	2.759	-0.006	99	320852	150.3	122.6	
19 1,1-Dichloroethene	96	2.874	2.881	-0.007	98	113043	20.0	19.5	
17 Acetone	58	2.887	2.899	-0.012	100	278069	250.0	254.0	
18 112TCTFE	101	2.899	2.905	-0.006	92	121231	20.0	18.9	
21 Isopropyl alcohol	45	3.021	3.027	-0.006	96	93520	150.0	117.8	
20 Iodomethane	142	3.039	3.051	-0.012	98	211796	20.0	18.6	
22 Carbon disulfide	76	3.131	3.137	-0.007	99	384667	20.0	18.2	
23 Methyl acetate	43	3.222	3.228	-0.006	98	213433	20.0	25.1	
25 3-Chloro-1-propene	41	3.246	3.252	-0.006	93	206302	20.0	19.2	
* 27 t-Butyl alcohol-d10 (IS)	65	3.405	3.399	0.006	95	309801	250.0	250.0	
26 Methylene Chloride	84	3.411	3.417	-0.006	95	128287	20.0	19.8	
28 2-Methyl-2-propanol	59	3.496	3.508	-0.012	100	271554	200.0	177.1	
29 Acrylonitrile	53	3.673	3.679	-0.006	98	442675	100.0	107.6	
30 Methyl tert-butyl ether	73	3.728	3.728	0.000	90	356730	20.0	19.3	
31 trans-1,2-Dichloroethene	96	3.734	3.740	-0.006	99	122160	20.0	19.2	
32 Hexane	57	4.100	4.112	-0.012	95	175417	20.0	17.4	
33 1,1-Dichloroethane	63	4.338	4.338	0.000	96	224266	20.0	19.3	
35 Isopropyl ether	45	4.405	4.405	0.000	96	412267	20.0	19.4	
36 2-Chloro-1,3-butadiene	53	4.447	4.447	0.000	90	191904	20.0	19.3	
37 Tert-butyl ethyl ether	59	4.959	4.959	0.000	99	372823	20.0	19.1	
39 2-Butanone (MEK)	43	5.173	5.173	0.000	100	1660515	250.0	268.3	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
38 cis-1,2-Dichloroethene	96	5.203	5.209	-0.006	82	137774	20.0	19.5	
40 2,2-Dichloropropane	77	5.215	5.215	0.000	92	181204	20.0	19.3	
41 Propionitrile	54	5.276	5.276	0.000	99	281612	150.0	154.8	
43 Methacrylonitrile	67	5.502	5.502	0.000	93	684009	150.0	159.5	
44 Chlorobromomethane	128	5.551	5.551	0.000	58	67142	20.0	19.9	
45 Tetrahydrofuran	71	5.557	5.557	0.000	81	175946	100.0	94.7	
46 Chloroform	83	5.721	5.721	0.000	93	225135	20.0	20.1	
48 1,1,1-Trichloroethane	97	5.941	5.941	0.000	97	187379	20.0	19.2	
$ 47 Dibromofluoromethane (Surr)	113	5.941	5.947	-0.006	94	262487	50.0	52.7	
49 Cyclohexane	56	6.032	6.038	-0.006	92	212353	20.0	17.2	
51 Carbon tetrachloride	117	6.154	6.160	-0.006	92	163231	20.0	19.0	
50 1,1-Dichloropropene	75	6.160	6.166	-0.006	96	177414	20.0	19.3	
52 Isobutyl alcohol	41	6.368	6.368	0.000	95	284669	500.0	519.1	
$ 56 1,2-Dichloroethane-d4 (Surr)	102	6.416	6.410	0.006	89	59641	50.0	52.1	
53 Benzene	78	6.435	6.441	-0.006	97	526701	20.0	19.1	
55 1,2-Dichloroethane	62	6.520	6.526	-0.006	97	163137	20.0	20.0	
58 Tert-amyl methyl ether	73	6.660	6.660	0.000	99	358842	20.0	18.9	
* 59 Fluorobenzene (IS)	96	6.868	6.874	-0.006	99	1018252	50.0	50.0	
60 n-Heptane	43	6.892	6.898	-0.006	96	181739	20.0	17.4	
61 n-Butanol	56	7.300	7.300	0.000	91	465730	NC	NC	
62 Trichloroethene	95	7.367	7.374	-0.007	99	135484	20.0	18.6	
63 Methylcyclohexane	83	7.684	7.684	0.000	92	219104	20.0	17.6	
64 1,2-Dichloropropane	63	7.721	7.721	0.000	97	142090	20.0	19.9	
65 2-ethoxy-2-methyl butane	87	7.752	7.752	0.000	92	181201	20.0	19.1	
68 1,4-Dioxane	88	7.813	7.819	-0.006	85	47723	500.0	521.7	M
66 Dibromomethane	93	7.831	7.831	0.000	96	89374	20.0	20.6	
67 Methyl methacrylate	69	7.837	7.837	0.000	93	132393	20.0	20.0	
70 Dichlorobromomethane	83	8.087	8.093	-0.006	99	170187	20.0	20.0	
72 2-Nitropropane	41	8.386	8.386	0.000	99	57017	20.0	17.2	
71 2-Chloroethyl vinyl ether	63	8.489	8.489	0.000	91	109243	20.0	19.5	
73 cis-1,3-Dichloropropene	75	8.678	8.678	0.000	96	217472	20.0	19.3	
75 4-Methyl-2-pentanone (MIBK)	43	8.885	8.892	-0.007	97	3215753	250.0	272.0	
$ 76 Toluene-d8 (Surr)	98	9.020	9.020	0.000	93	1015871	50.0	51.9	
77 Toluene	92	9.105	9.111	-0.006	98	333502	20.0	18.7	
78 trans-1,3-Dichloropropene	75	9.428	9.428	0.000	93	202284	20.0	19.7	
79 Ethyl methacrylate	69	9.513	9.513	0.000	91	210006	20.0	19.3	
80 1,1,2-Trichloroethane	97	9.654	9.654	0.000	89	128270	20.0	20.1	
81 Tetrachloroethene	166	9.733	9.733	0.000	98	148672	20.0	18.7	
82 1,3-Dichloropropane	76	9.830	9.830	0.000	92	206476	20.0	20.3	
84 2-Hexanone	43	9.910	9.910	0.000	97	2641527	250.0	274.0	
85 Chlorodibromomethane	129	10.062	10.062	0.000	90	141543	20.0	20.0	
87 Ethylene Dibromide	107	10.172	10.172	0.000	98	139792	20.0	20.0	
* 90 Chlorobenzene-d5 (IS)	117	10.653	10.653	0.000	85	783120	50.0	50.0	
88 Chlorobenzene	112	10.684	10.684	0.000	94	374204	20.0	19.2	
91 1-Chlorohexane	91	10.684	10.684	0.000	68	189860	20.0	17.9	
92 1,1,1,2-Tetrachloroethane	131	10.781	10.775	0.006	96	132570	20.0	19.4	
93 Ethylbenzene	91	10.788	10.788	0.000	98	658960	20.0	18.9	
94 m-Xylene & p-Xylene	106	10.916	10.916	0.000	99	512582	40.0	37.9	
95 o-Xylene	106	11.263	11.263	0.000	97	247014	20.0	18.7	
96 Styrene	104	11.281	11.281	0.000	95	420002	20.0	19.0	
97 Bromoform	173	11.440	11.440	0.000	98	115365	20.0	19.8	
98 Isopropylbenzene	105	11.586	11.586	0.000	95	657596	20.0	19.2	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
$ 101 4-Bromofluorobenzene (Surr)	95	11.732	11.732	0.000	93	390714	50.0	51.7	
102 Bromobenzene	156	11.848	11.848	0.000	91	168582	20.0	20.0	
105 1,1,2,2-Tetrachloroethane	83	11.854	11.854	0.000	94	232868	20.0	20.7	
104 trans-1,4-Dichloro-2-butene	53	11.885	11.885	0.000	90	313801	100.0	87.8	
103 1,2,3-Trichloropropane	110	11.897	11.897	0.000	81	64294	20.0	21.2	
106 N-Propylbenzene	91	11.940	11.940	0.000	99	789942	20.0	18.8	
107 2-Chlorotoluene	126	12.013	12.007	0.006	97	154812	20.0	18.7	
108 1,3,5-Trimethylbenzene	105	12.086	12.086	0.000	94	535487	20.0	18.5	
109 4-Chlorotoluene	126	12.110	12.110	0.000	97	164081	20.0	19.5	
111 tert-Butylbenzene	134	12.336	12.336	0.000	93	102916	20.0	18.2	
113 1,2,4-Trimethylbenzene	105	12.379	12.379	0.000	98	541355	20.0	18.6	
114 sec-Butylbenzene	105	12.507	12.507	0.000	94	683648	20.0	19.0	
115 1,3-Dichlorobenzene	146	12.598	12.598	0.000	98	306886	20.0	19.1	
116 4-Isopropyltoluene	119	12.623	12.623	0.000	97	571002	20.0	18.5	
* 117 1,4-Dichlorobenzene-d4	152	12.659	12.659	0.000	94	436753	50.0	50.0	
118 1,4-Dichlorobenzene	146	12.677	12.677	0.000	96	310703	20.0	19.1	
119 1,2,3-Trimethylbenzene	105	12.696	12.696	0.000	98	551022	20.0	18.8	
120 Benzyl chloride	91	12.763	12.763	0.000	98	439089	NC	NC	
121 1,3-Diethylbenzene	119	12.830	12.830	0.000	95	333381	NC	NC	
122 p-Diethylbenzene	119	12.903	12.903	0.000	93	349698	NC	NC	
124 n-Butylbenzene	92	12.927	12.927	0.000	98	288011	20.0	18.5	
125 1,2-Dichlorobenzene	146	12.946	12.946	0.000	98	293053	20.0	19.1	
126 o-diethylbenzene	119	12.976	12.976	0.000	96	279099	NC	NC	
127 1,2-Dibromo-3-Chloropropane	75	13.507	13.506	0.001	87	55668	20.0	19.9	
128 1,3,5-Trichlorobenzene	180	13.641	13.641	0.000	98	211091	20.0	18.5	
129 1,2,4-Trichlorobenzene	180	14.073	14.073	0.000	94	198474	20.0	19.0	
131 Hexachlorobutadiene	225	14.165	14.165	0.000	96	81954	20.0	18.2	
132 Naphthalene	128	14.256	14.256	0.000	97	720635	20.0	19.4	
133 1,2,3-Trichlorobenzene	180	14.403	14.403	0.000	96	195266	20.0	19.1	
134 2-Methylnaphthalene	142	15.012	15.006	0.006	93	375869	NC	NC	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Review Flags

M - Manually Integrated

Reagents:

MSV_LCS_VOC#1_00025	Amount Added: 50.00	Units: uL	
MSV_LCS_2CEVE_00030	Amount Added: 50.00	Units: uL	
MSV_LCS_ACROL_00028	Amount Added: 50.00	Units: uL	
MSV_LCS_Gases_00050	Amount Added: 50.00	Units: uL	
MSV_Cent_ISSS_00004	Amount Added: 5.00	Units: uL	Run Reagent

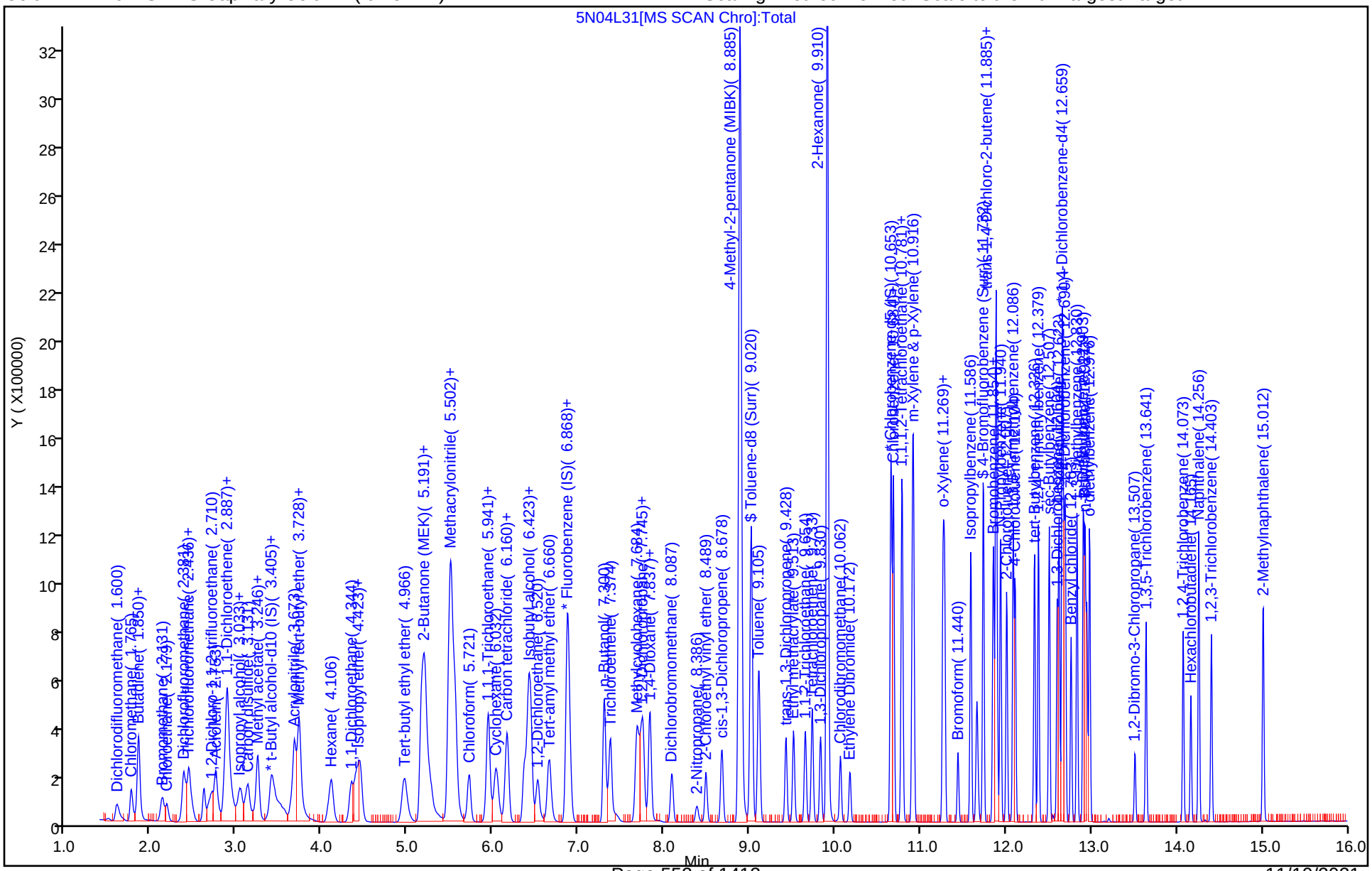
Report Date: 04-Nov-2021 22:21:36 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04L31.D

Injection Date:	04-Nov-2021 21:36:30	Instrument ID:	26285	Operator ID:	mec29284
Lims ID:	LCS			Worklist Smp#:	4
Client ID:					
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	3
Method:	MSVoa_26285a	Limit Group:	MSV - 8260C DOD5		

Column: Rxi-624Sil MS Capillary Column (0.25 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins Lancaster Laboratories Env, LLC

Recovery Report

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04L31.D
Lims ID: LCS
Client ID:
Sample Type: LCS
Inject. Date: 04-Nov-2021 21:36:30 ALS Bottle#: 3 Worklist Smp#: 4
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 410-0043341-004
Misc. Info.: LCS
Operator ID: mec29284 Instrument ID: 26285

Method: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\MSVoa_26285a.m
Limit Group: MSV - 8260C DOD5
Last Update: 04-Nov-2021 22:21:28 Calib Date: 02-Aug-2021 18:49:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I17.D

Column 1 : Rxi-624Sil MS Capillary Column (0.25 mm) Det: MS Quad
Process Host: CTX1638

First Level Reviewer: campbellme Date: 04-Nov-2021 22:20:41

Compound	Amount Added	Amount Recovered	% Rec.
$ 47 Dibromofluoromethane (Surr)	50.0	52.7	105.44
$ 56 1,2-Dichloroethane-d4 (Surr)	50.0	52.1	104.23
$ 76 Toluene-d8 (Surr)	50.0	51.9	103.80
$ 101 4-Bromofluorobenzene (Surr)	50.0	51.7	103.49

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Client Sample ID: 3MW01-102621MS MS Lab Sample ID: 410-60870-2 MS

Matrix: Ground Water Lab File ID: 5N04S39.D

Analysis Method: 8260D Date Collected: 10/26/2021 15:55

Sample wt/vol: 5(mL) Date Analyzed: 11/05/2021 01:11

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: R-624SilMS 30m ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 191072 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
10061-01-5	cis-1,3-Dichloropropene	19.8		1.0	0.50	0.20
10061-02-6	trans-1,3-Dichloropropene	20.2		1.0	0.50	0.20
100-41-4	Ethylbenzene	20.8		1.0	0.80	0.40
100-42-5	Styrene	20.2		5.0	0.60	0.30
106-46-7	1,4-Dichlorobenzene	20.0		5.0	0.60	0.30
106-93-4	1,2-Dibromoethane (EDB)	20.3		1.0	0.50	0.20
107-06-2	1,2-Dichloroethane	20.8		1.0	0.60	0.30
108-10-1	4-Methyl-2-pentanone	264		10	1.0	0.50
108-87-2	Methylcyclohexane	21.5		5.0	1.0	0.50
108-88-3	Toluene	20.6		1.0	0.50	0.20
108-90-7	Chlorobenzene	20.6		1.0	0.60	0.30
110-82-7	Cyclohexane	20.7		5.0	2.0	1.0
120-82-1	1,2,4-Trichlorobenzene	18.9		5.0	1.0	0.30
124-48-1	Dibromochloromethane	20.4		1.0	0.50	0.20
1330-20-7	Xylenes, Total	61.9		1.0	0.80	0.40
127-18-4	Tetrachloroethene	21.5		1.0	0.60	0.30
156-59-2	cis-1,2-Dichloroethene	22.1		1.0	0.60	0.30
156-60-5	trans-1,2-Dichloroethene	21.5		1.0	0.60	0.30
1634-04-4	Methyl tert-butyl ether	19.2		1.0	0.50	0.20
541-73-1	1,3-Dichlorobenzene	20.0		5.0	0.60	0.30
56-23-5	Carbon tetrachloride	22.3		1.0	0.60	0.30
591-78-6	2-Hexanone	265		10	1.0	0.40
67-64-1	Acetone	256		20	2.0	0.70
67-66-3	Chloroform	21.9		1.0	0.60	0.30
71-43-2	Benzene	21.2		1.0	0.60	0.30
71-55-6	1,1,1-Trichloroethane	22.1		1.0	0.60	0.30
74-83-9	Bromomethane	20.0		1.0	0.60	0.30
74-87-3	Chloromethane	21.2		1.0	0.50	0.20
75-00-3	Chloroethane	21.2		1.0	0.50	0.20
75-01-4	Vinyl chloride	20.0		1.0	0.50	0.20
75-09-2	Methylene Chloride	21.0		1.0	0.60	0.30
75-15-0	Carbon disulfide	21.2		5.0	0.60	0.30
75-25-2	Bromoform	20.3		4.0	2.0	1.0
75-27-4	Bromodichloromethane	20.9		1.0	0.50	0.20
75-34-3	1,1-Dichloroethane	20.5		1.0	0.60	0.30
75-35-4	1,1-Dichloroethene	22.5		1.0	0.60	0.30

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Client Sample ID: 3MW01-102621MS MS Lab Sample ID: 410-60870-2 MS

Matrix: Ground Water Lab File ID: 5N04S39.D

Analysis Method: 8260D Date Collected: 10/26/2021 15:55

Sample wt/vol: 5(mL) Date Analyzed: 11/05/2021 01:11

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: R-624SilMS 30m ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 191072 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
75-69-4	Trichlorofluoromethane	22.0		1.0	0.50	0.20
75-71-8	Dichlorodifluoromethane	24.9		1.0	0.50	0.20
76-13-1	Freon 113	22.8		10	0.60	0.30
78-87-5	1,2-Dichloropropane	20.4		1.0	0.60	0.30
78-93-3	2-Butanone	264		10	1.0	0.50
79-00-5	1,1,2-Trichloroethane	20.6		1.0	0.60	0.30
79-01-6	Trichloroethene	26.7		1.0	0.60	0.30
79-20-9	Methyl acetate	22.5		5.0	0.60	0.30
79-34-5	1,1,2,2-Tetrachloroethane	19.8		1.0	0.60	0.30
95-50-1	1,2-Dichlorobenzene	20.0		5.0	0.50	0.20
96-12-8	1,2-Dibromo-3-Chloropropane	18.8		5.0	1.0	0.30
98-82-8	Isopropylbenzene	21.1		5.0	0.50	0.20

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	103		81-118
1868-53-7	Dibromofluoromethane (Surr)	106		80-119
460-00-4	4-Bromofluorobenzene (Surr)	102		85-114
2037-26-5	Toluene-d8 (Surr)	104		89-112

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S39.D
Lims ID: 410-60870-A-2 MS
Client ID: 3MW01-102621MS
Sample Type: MS
Inject. Date: 05-Nov-2021 01:11:30 ALS Bottle#: 14 Worklist Smp#: 15
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 410-0043341-015
Operator ID: mec29284 Instrument ID: 26285

Method: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\MSVoa_26285a.m
Limit Group: MSV - 8260C DOD5
Last Update: 05-Nov-2021 13:28:49 Calib Date: 02-Aug-2021 18:49:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I17.D

Column 1 : Rxi-624Sil MS Capillary Column (0.25 mm) Det: MS Quad
Process Host: CTX1657

First Level Reviewer: kaewrungrueangp Date: 05-Nov-2021 13:28:49

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
2 Dichlorodifluoromethane	85	1.600	1.606	-0.006	99	183252	20.0	24.9	
3 Chloromethane	50	1.765	1.771	-0.006	99	176776	20.0	21.2	
4 Butadiene	39	1.850	1.856	-0.006	92	189651	NC	NC	
5 Vinyl chloride	62	1.856	1.856	0.000	83	168749	20.0	20.0	
8 Bromomethane	94	2.131	2.137	-0.006	90	120895	20.0	20.0	
9 Chloroethane	64	2.192	2.192	0.000	99	94588	20.0	21.2	
10 Dichlorofluoromethane	67	2.381	2.387	-0.006	97	252839	20.0	21.6	
11 Trichlorofluoromethane	101	2.423	2.423	0.000	98	225440	20.0	22.0	
12 Pentane	43	2.448	2.454	-0.006	95	245980	NC	NC	
15 1,2-Dichloro-1,1,2-trifluoroetha	67	2.704	2.704	0.000	93	167591	NC	NC	
16 Acrolein	56	2.759	2.759	0.000	99	273945	150.3	114.8	
19 1,1-Dichloroethene	96	2.881	2.881	0.000	97	124271	20.0	22.5	
17 Acetone	58	2.893	2.899	-0.006	100	255468	250.0	256.0	
18 112TCTFE	101	2.911	2.905	0.006	92	139549	20.0	22.8	
21 Isopropyl alcohol	45	3.021	3.027	-0.006	96	79545	150.0	109.9	
20 Iodomethane	142	3.045	3.051	-0.006	98	228433	20.0	21.0	
22 Carbon disulfide	76	3.131	3.137	-0.007	99	426834	20.0	21.2	
23 Methyl acetate	43	3.228	3.228	0.000	98	182728	20.0	22.5	
25 3-Chloro-1-propene	41	3.252	3.252	0.000	93	208385	20.0	20.3	
* 27 t-Butyl alcohol-d10 (IS)	65	3.405	3.399	0.006	95	282462	250.0	250.0	
26 Methylene Chloride	84	3.417	3.417	0.000	94	129802	20.0	21.0	
28 2-Methyl-2-propanol	59	3.508	3.508	0.000	100	224838	200.0	160.8	
29 Acrylonitrile	53	3.673	3.679	-0.006	98	405757	100.0	103.4	
30 Methyl tert-butyl ether	73	3.728	3.728	0.000	90	337570	20.0	19.2	
31 trans-1,2-Dichloroethene	96	3.734	3.740	-0.006	98	130459	20.0	21.5	
32 Hexane	57	4.106	4.112	-0.006	95	203242	20.0	21.1	
33 1,1-Dichloroethane	63	4.338	4.338	0.000	96	227853	20.0	20.5	
35 Isopropyl ether	45	4.399	4.405	-0.006	97	401138	20.0	19.8	
36 2-Chloro-1,3-butadiene	53	4.447	4.447	0.000	91	206132	20.0	21.7	
37 Tert-butyl ethyl ether	59	4.959	4.959	0.000	99	360945	20.0	19.4	
39 2-Butanone (MEK)	43	5.173	5.173	0.000	100	1555616	250.0	263.6	
38 cis-1,2-Dichloroethene	96	5.209	5.209	0.000	81	148744	20.0	22.1	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
40 2,2-Dichloropropane	77	5.215	5.215	0.000	63	199537	20.0	22.2	
41 Propionitrile	54	5.283	5.276	0.007	98	276745	150.0	166.8	
43 Methacrylonitrile	67	5.502	5.502	0.000	93	635237	150.0	155.4	
44 Chlorobromomethane	128	5.557	5.551	0.006	95	68823	20.0	21.4	
45 Tetrahydrofuran	71	5.563	5.557	0.006	83	164740	100.0	97.2	
46 Chloroform	83	5.728	5.721	0.007	93	233895	20.0	21.9	
48 1,1,1-Trichloroethane	97	5.941	5.941	0.000	97	206485	20.0	22.1	
$ 47 Dibromofluoromethane (Surr)	113	5.947	5.947	0.000	94	252359	50.0	53.2	
49 Cyclohexane	56	6.038	6.038	0.000	92	244340	20.0	20.7	
51 Carbon tetrachloride	117	6.160	6.160	0.000	76	182949	20.0	22.3	
50 1,1-Dichloropropene	75	6.166	6.166	0.000	95	191421	20.0	21.9	
52 Isobutyl alcohol	41	6.368	6.368	0.000	93	215183	500.0	430.3	
$ 56 1,2-Dichloroethane-d4 (Surr)	102	6.416	6.410	0.006	93	56019	50.0	51.3	
53 Benzene	78	6.441	6.441	0.000	97	556108	20.0	21.2	
55 1,2-Dichloroethane	62	6.526	6.526	0.000	98	161490	20.0	20.8	
58 Tert-amyl methyl ether	73	6.654	6.660	-0.006	99	338648	20.0	18.7	
* 59 Fluorobenzene (IS)	96	6.874	6.874	0.000	99	970968	50.0	50.0	
60 n-Heptane	43	6.898	6.898	0.000	94	209751	20.0	21.0	
61 n-Butanol	56	7.300	7.300	0.000	91	350015	NC	NC	
62 Trichloroethene	95	7.374	7.374	0.000	99	185158	20.0	26.7	
63 Methylcyclohexane	83	7.684	7.684	0.000	90	255090	20.0	21.5	
64 1,2-Dichloropropane	63	7.715	7.721	-0.006	97	139322	20.0	20.4	
65 2-ethoxy-2-methyl butane	87	7.752	7.752	0.000	93	179629	20.0	19.8	
68 1,4-Dioxane	88	7.819	7.819	0.000	86	46944	500.0	562.9	M
66 Dibromomethane	93	7.831	7.831	0.000	95	85432	20.0	20.6	
67 Methyl methacrylate	69	7.837	7.837	0.000	93	124168	20.0	19.7	
70 Dichlorobromomethane	83	8.093	8.093	0.000	99	169235	20.0	20.9	
72 2-Nitropropane	41	8.386	8.386	0.000	98	51343	20.0	17.0	
71 2-Chloroethyl vinyl ether	63		8.489				ND	ND	
73 cis-1,3-Dichloropropene	75	8.678	8.678	0.000	96	212692	20.0	19.8	
75 4-Methyl-2-pentanone (MIBK)	43	8.892	8.892	0.000	97	2973495	250.0	263.8	
$ 76 Toluene-d8 (Surr)	98	9.020	9.020	0.000	94	975104	50.0	52.1	
77 Toluene	92	9.111	9.111	0.000	98	351051	20.0	20.6	
78 trans-1,3-Dichloropropene	75	9.428	9.428	0.000	93	197781	20.0	20.2	
79 Ethyl methacrylate	69	9.513	9.513	0.000	90	201571	20.0	19.4	
80 1,1,2-Trichloroethane	97	9.654	9.654	0.000	90	125890	20.0	20.6	
81 Tetrachloroethene	166	9.733	9.733	0.000	98	163640	20.0	21.5	
82 1,3-Dichloropropane	76	9.830	9.830	0.000	91	200420	20.0	20.6	
84 2-Hexanone	43	9.910	9.910	0.000	98	2445495	250.0	265.2	
85 Chlorodibromomethane	129	10.068	10.062	0.006	90	138305	20.0	20.4	
87 Ethylene Dibromide	107	10.178	10.172	0.006	98	135614	20.0	20.3	
* 90 Chlorobenzene-d5 (IS)	117	10.653	10.653	0.000	85	748856	50.0	50.0	
88 Chlorobenzene	112	10.684	10.684	0.000	93	384905	20.0	20.6	
91 1-Chlorohexane	91	10.684	10.684	0.000	71	209395	20.0	20.7	
92 1,1,1,2-Tetrachloroethane	131	10.781	10.775	0.006	96	133949	20.0	20.5	
93 Ethylbenzene	91	10.788	10.788	0.000	98	693923	20.0	20.8	
94 m-Xylene & p-Xylene	106	10.916	10.916	0.000	99	539848	40.0	41.7	
95 o-Xylene	106	11.263	11.263	0.000	97	255200	20.0	20.2	
96 Styrene	104	11.281	11.281	0.000	95	427063	20.0	20.2	
97 Bromoform	173	11.440	11.440	0.000	98	113028	20.0	20.3	
98 Isopropylbenzene	105	11.586	11.586	0.000	96	690332	20.0	21.1	
$ 101 4-Bromofluorobenzene (Surr)	95	11.732	11.732	0.000	94	369713	50.0	51.2	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
102 Bromobenzene	156	11.848	11.848	0.000	94	168436	20.0	20.4	
105 1,1,2,2-Tetrachloroethane	83	11.854	11.854	0.000	94	218918	20.0	19.8	
104 trans-1,4-Dichloro-2-butene	53	11.885	11.885	0.000	91	303492	100.0	86.7	
103 1,2,3-Trichloropropane	110	11.897	11.897	0.000	82	60239	20.0	20.3	
106 N-Propylbenzene	91	11.940	11.940	0.000	99	840647	20.0	20.4	
107 2-Chlorotoluene	126	12.013	12.007	0.006	97	159865	20.0	19.7	
108 1,3,5-Trimethylbenzene	105	12.086	12.086	0.000	93	564150	20.0	20.0	
109 4-Chlorotoluene	126	12.110	12.110	0.000	97	167478	20.0	20.3	
111 tert-Butylbenzene	134	12.336	12.336	0.000	93	107274	20.0	19.3	
113 1,2,4-Trimethylbenzene	105	12.379	12.379	0.000	98	561727	20.0	19.7	
114 sec-Butylbenzene	105	12.507	12.507	0.000	94	738481	20.0	21.0	
115 1,3-Dichlorobenzene	146	12.604	12.598	0.006	98	314543	20.0	20.0	
116 4-Isopropyltoluene	119	12.623	12.623	0.000	97	610761	20.0	20.2	
* 117 1,4-Dichlorobenzene-d4	152	12.659	12.659	0.000	94	427556	50.0	50.0	
118 1,4-Dichlorobenzene	146	12.677	12.677	0.000	97	318206	20.0	20.0	
119 1,2,3-Trimethylbenzene	105	12.696	12.696	0.000	98	561898	20.0	19.6	
120 Benzyl chloride	91	12.763	12.763	0.000	98	416751	NC	NC	
121 1,3-Diethylbenzene	119	12.830	12.830	0.000	95	355799	NC	NC	
122 p-Diethylbenzene	119	12.903	12.903	0.000	94	374995	NC	NC	
124 n-Butylbenzene	92	12.927	12.927	0.000	98	312466	20.0	20.6	
125 1,2-Dichlorobenzene	146	12.946	12.946	0.000	99	299589	20.0	20.0	
126 o-diethylbenzene	119	12.976	12.976	0.000	96	295160	NC	NC	
127 1,2-Dibromo-3-Chloropropane	75	13.507	13.506	0.001	88	51626	20.0	18.8	
128 1,3,5-Trichlorobenzene	180	13.641	13.641	0.000	98	217733	20.0	19.5	
129 1,2,4-Trichlorobenzene	180	14.073	14.073	0.000	94	193220	20.0	18.9	
131 Hexachlorobutadiene	225	14.165	14.165	0.000	96	89864	20.0	20.3	
132 Naphthalene	128	14.256	14.256	0.000	97	669598	20.0	18.4	
133 1,2,3-Trichlorobenzene	180	14.403	14.403	0.000	95	185989	20.0	18.6	
134 2-Methylnaphthalene	142	15.012	15.006	0.006	93	301981	NC	NC	

QC Flag Legend

Processing Flags

NC - Not Calibrated

ND - Not Detected or Marked ND

Review Flags

M - Manually Integrated

Reagents:

MSV_LCS_VOC#1_00025	Amount Added: 21.50	Units: uL	
MSV_LCS_2CEVE_00030	Amount Added: 21.50	Units: uL	
MSV_LCS_ACROL_00028	Amount Added: 21.50	Units: uL	
MSV_LCS_Gases_00050	Amount Added: 21.50	Units: uL	
MSV_Cent_ISSS_00004	Amount Added: 5.00	Units: uL	Run Reagent

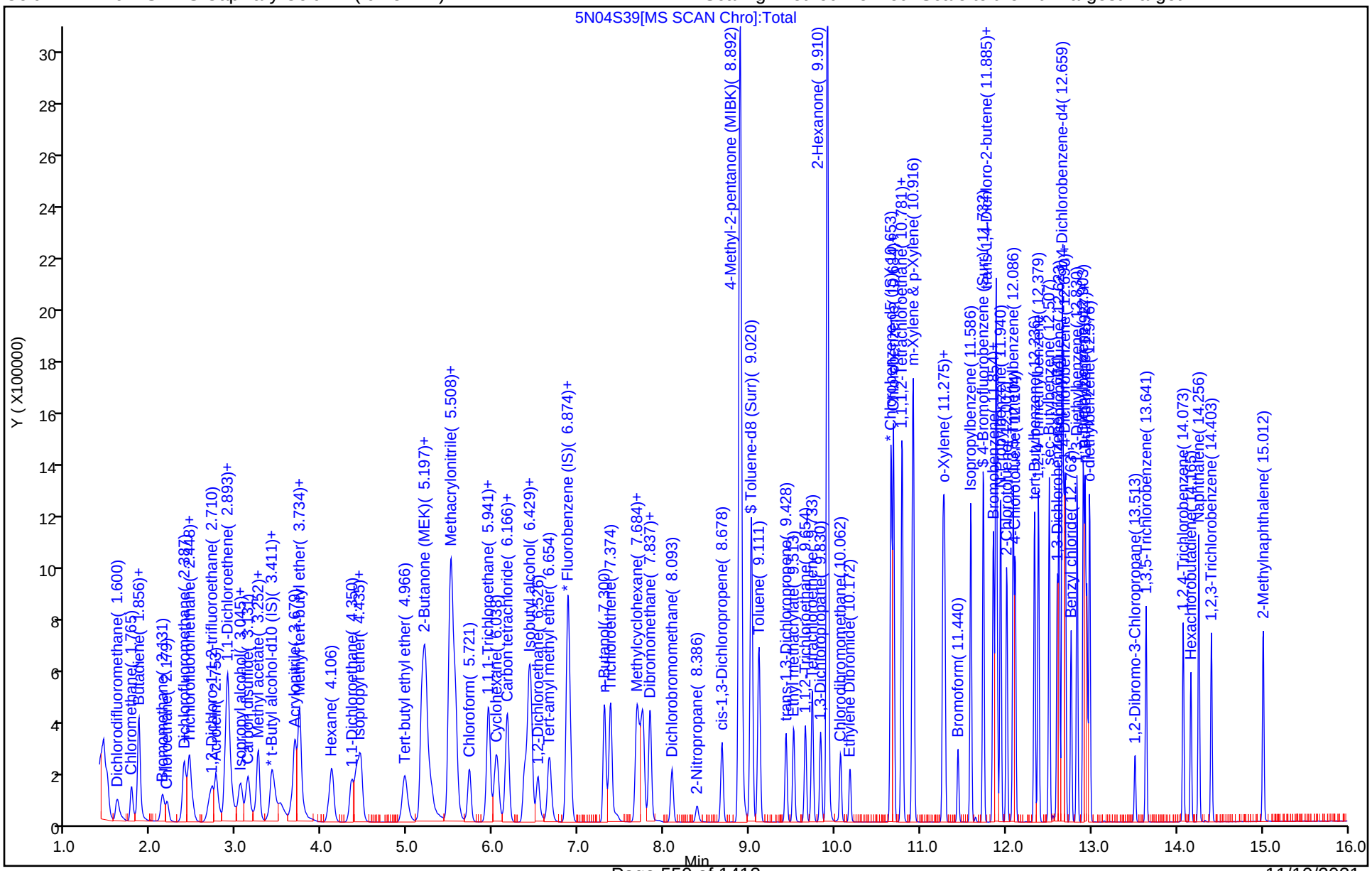
Report Date: 05-Nov-2021 13:28:50 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S39.D

Injection Date:	05-Nov-2021 01:11:30	Instrument ID:	26285	Operator ID:	mec29284
Lims ID:	410-60870-A-2 MS			Worklist Smp#:	15
Client ID:	3MW01-102621MS				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	14
Method:	MSVoa_26285a	Limit Group:	MSV - 8260C DOD5		

Column: Rxi-624Sil MS Capillary Column (0.25 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins Lancaster Laboratories Env, LLC

Recovery Report

Data File:	\\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S39.D				
Lims ID:	410-60870-A-2 MS				
Client ID:	3MW01-102621MS				
Sample Type:	MS				
Inject. Date:	05-Nov-2021 01:11:30	ALS Bottle#:	14	Worklist Smp#:	15
Purge Vol:	5.000 mL	Dil. Factor:	1.0000		
Sample Info:	410-0043341-015				
Operator ID:	mec29284	Instrument ID:	26285		
Method:	\\chromfs\Lancaster\ChromData\26285\20211104-43341.b\MSVoa_26285a.m				
Limit Group:	MSV - 8260C DOD5				
Last Update:	05-Nov-2021 13:28:49	Calib Date:	02-Aug-2021 18:49:30		
Integrator:	RTE	ID Type:	Deconvolution ID		
Quant Method:	Internal Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I17.D				
Column 1 :	Rxi-624Sil MS Capillary Column (0.25 mm)		Det: MS Quad		
Process Host:	CTX1657				

First Level Reviewer: kaewrungrueangp Date: 05-Nov-2021 13:28:49

Compound	Amount Added	Amount Recovered	% Rec.
$ 47 Dibromofluoromethane (Surr)	50.0	53.2	106.31
$ 56 1,2-Dichloroethane-d4 (Surr)	50.0	51.3	102.67
$ 76 Toluene-d8 (Surr)	50.0	52.1	104.19
$ 101 4-Bromofluorobenzene (Surr)	50.0	51.2	102.41

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Client Sample ID: 3MW01-102621MSD MSD Lab Sample ID: 410-60870-2 MSD

Matrix: Ground Water Lab File ID: 5N04S40.D

Analysis Method: 8260D Date Collected: 10/26/2021 15:55

Sample wt/vol: 5(mL) Date Analyzed: 11/05/2021 01:31

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: R-624SilMS 30m ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 191072 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
10061-01-5	cis-1,3-Dichloropropene	19.4		1.0	0.50	0.20
10061-02-6	trans-1,3-Dichloropropene	19.8		1.0	0.50	0.20
100-41-4	Ethylbenzene	20.4		1.0	0.80	0.40
100-42-5	Styrene	19.8		5.0	0.60	0.30
106-46-7	1,4-Dichlorobenzene	20.0		5.0	0.60	0.30
106-93-4	1,2-Dibromoethane (EDB)	19.6		1.0	0.50	0.20
107-06-2	1,2-Dichloroethane	20.5		1.0	0.60	0.30
108-10-1	4-Methyl-2-pentanone	259		10	1.0	0.50
108-87-2	Methylcyclohexane	21.0		5.0	1.0	0.50
108-88-3	Toluene	20.2		1.0	0.50	0.20
108-90-7	Chlorobenzene	20.2		1.0	0.60	0.30
110-82-7	Cyclohexane	20.7		5.0	2.0	1.0
120-82-1	1,2,4-Trichlorobenzene	18.9		5.0	1.0	0.30
124-48-1	Dibromochloromethane	19.4		1.0	0.50	0.20
1330-20-7	Xylenes, Total	60.1		1.0	0.80	0.40
127-18-4	Tetrachloroethene	21.1		1.0	0.60	0.30
156-59-2	cis-1,2-Dichloroethene	21.7		1.0	0.60	0.30
156-60-5	trans-1,2-Dichloroethene	21.0		1.0	0.60	0.30
1634-04-4	Methyl tert-butyl ether	18.9		1.0	0.50	0.20
541-73-1	1,3-Dichlorobenzene	20.0		5.0	0.60	0.30
56-23-5	Carbon tetrachloride	22.0		1.0	0.60	0.30
591-78-6	2-Hexanone	260		10	1.0	0.40
67-64-1	Acetone	243		20	2.0	0.70
67-66-3	Chloroform	21.2		1.0	0.60	0.30
71-43-2	Benzene	20.7		1.0	0.60	0.30
71-55-6	1,1,1-Trichloroethane	21.9		1.0	0.60	0.30
74-83-9	Bromomethane	19.5		1.0	0.60	0.30
74-87-3	Chloromethane	21.5		1.0	0.50	0.20
75-00-3	Chloroethane	20.7		1.0	0.50	0.20
75-01-4	Vinyl chloride	20.3		1.0	0.50	0.20
75-09-2	Methylene Chloride	20.2		1.0	0.60	0.30
75-15-0	Carbon disulfide	21.1		5.0	0.60	0.30
75-25-2	Bromoform	19.6		4.0	2.0	1.0
75-27-4	Bromodichloromethane	20.5		1.0	0.50	0.20
75-34-3	1,1-Dichloroethane	20.8		1.0	0.60	0.30
75-35-4	1,1-Dichloroethene	22.2		1.0	0.60	0.30

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Client Sample ID: 3MW01-102621MSD MSD Lab Sample ID: 410-60870-2 MSD

Matrix: Ground Water Lab File ID: 5N04S40.D

Analysis Method: 8260D Date Collected: 10/26/2021 15:55

Sample wt/vol: 5(mL) Date Analyzed: 11/05/2021 01:31

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: R-624SilMS 30m ID: 0.25(mm)

% Moisture: Level: (low/med) Low

Analysis Batch No.: 191072 Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
75-69-4	Trichlorofluoromethane	22.0		1.0	0.50	0.20
75-71-8	Dichlorodifluoromethane	24.4		1.0	0.50	0.20
76-13-1	Freon 113	22.6		10	0.60	0.30
78-87-5	1,2-Dichloropropane	20.3		1.0	0.60	0.30
78-93-3	2-Butanone	261		10	1.0	0.50
79-00-5	1,1,2-Trichloroethane	19.8		1.0	0.60	0.30
79-01-6	Trichloroethene	26.5		1.0	0.60	0.30
79-20-9	Methyl acetate	24.4		5.0	0.60	0.30
79-34-5	1,1,2,2-Tetrachloroethane	19.9		1.0	0.60	0.30
95-50-1	1,2-Dichlorobenzene	19.8		5.0	0.50	0.20
96-12-8	1,2-Dibromo-3-Chloropropane	19.2		5.0	1.0	0.30
98-82-8	Isopropylbenzene	20.8		5.0	0.50	0.20

CAS NO.	SURROGATE	%REC	Q	LIMITS
17060-07-0	1,2-Dichloroethane-d4 (Surr)	103		81-118
1868-53-7	Dibromofluoromethane (Surr)	105		80-119
460-00-4	4-Bromofluorobenzene (Surr)	103		85-114
2037-26-5	Toluene-d8 (Surr)	103		89-112

Eurofins Lancaster Laboratories Env, LLC
Target Compound Quantitation Report

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S40.D
Lims ID: 410-60870-A-2 MSD
Client ID: 3MW01-102621MSD
Sample Type: MSD
Inject. Date: 05-Nov-2021 01:31:30 ALS Bottle#: 15 Worklist Smp#: 16
Purge Vol: 5.000 mL Dil. Factor: 1.0000
Sample Info: 410-0043341-016
Operator ID: mec29284 Instrument ID: 26285

Method: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\MSVoa_26285a.m
Limit Group: MSV - 8260C DOD5
Last Update: 05-Nov-2021 13:30:17 Calib Date: 02-Aug-2021 18:49:30
Integrator: RTE ID Type: Deconvolution ID
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I17.D

Column 1 : Rxi-624Sil MS Capillary Column (0.25 mm) Det: MS Quad
Process Host: CTX1657

First Level Reviewer: kaewrungrueangp Date: 05-Nov-2021 13:30:17

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
2 Dichlorodifluoromethane	85	1.594	1.606	-0.012	99	182267	20.0	24.4	
3 Chloromethane	50	1.765	1.771	-0.006	99	182747	20.0	21.5	
4 Butadiene	39	1.850	1.856	-0.006	93	198732	NC	NC	
5 Vinyl chloride	62	1.850	1.856	-0.006	83	173782	20.0	20.3	
8 Bromomethane	94	2.125	2.137	-0.012	91	119985	20.0	19.5	
9 Chloroethane	64	2.179	2.192	-0.013	99	94123	20.0	20.7	
10 Dichlorofluoromethane	67	2.381	2.387	-0.006	97	251720	20.0	21.1	
11 Trichlorofluoromethane	101	2.411	2.423	-0.012	98	229616	20.0	22.0	
12 Pentane	43	2.448	2.454	-0.006	97	252162	NC	NC	
15 1,2-Dichloro-1,1,2-trifluoroetha	67	2.698	2.704	-0.006	94	170890	NC	NC	
16 Acrolein	56	2.753	2.759	-0.006	99	280202	150.3	110.9	
19 1,1-Dichloroethene	96	2.874	2.881	-0.007	96	125217	20.0	22.2	
17 Acetone	58	2.887	2.899	-0.012	100	256744	250.0	243.0	
18 112TCTFE	101	2.899	2.905	-0.006	45	140738	20.0	22.6	
21 Isopropyl alcohol	45	3.021	3.027	-0.006	95	81089	150.0	105.8	
20 Iodomethane	142	3.045	3.051	-0.006	98	228732	20.0	20.7	
22 Carbon disulfide	76	3.124	3.137	-0.013	99	432545	20.0	21.1	
23 Methyl acetate	43	3.228	3.228	0.000	98	201190	20.0	24.4	
25 3-Chloro-1-propene	41	3.246	3.252	-0.006	92	215839	20.0	20.6	
* 27 t-Butyl alcohol-d10 (IS)	65	3.399	3.399	0.000	94	298953	250.0	250.0	
26 Methylene Chloride	84	3.405	3.417	-0.012	94	127192	20.0	20.2	
28 2-Methyl-2-propanol	59	3.496	3.508	-0.012	100	248706	200.0	168.1	
29 Acrylonitrile	53	3.673	3.679	-0.006	100	410316	100.0	102.8	
30 Methyl tert-butyl ether	73	3.728	3.728	0.000	90	339474	20.0	18.9	
31 trans-1,2-Dichloroethene	96	3.728	3.740	-0.012	98	130138	20.0	21.0	
32 Hexane	57	4.106	4.112	-0.006	95	204565	20.0	20.9	
33 1,1-Dichloroethane	63	4.338	4.338	0.000	96	234600	20.0	20.8	
35 Isopropyl ether	45	4.405	4.405	0.000	98	407692	20.0	19.8	
36 2-Chloro-1,3-butadiene	53	4.441	4.447	-0.006	91	210172	20.0	21.8	
37 Tert-butyl ethyl ether	59	4.959	4.959	0.000	99	363066	20.0	19.2	
39 2-Butanone (MEK)	43	5.167	5.173	-0.006	100	1570553	250.0	261.5	
38 cis-1,2-Dichloroethene	96	5.209	5.209	0.000	82	148231	20.0	21.7	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
40 2,2-Dichloropropane	77	5.215	5.215	0.000	83	201338	20.0	22.0	
41 Propionitrile	54	5.276	5.276	0.000	99	248221	150.0	141.4	
43 Methacrylonitrile	67	5.502	5.502	0.000	93	637489	150.0	153.2	
44 Chlorobromomethane	128	5.551	5.551	0.000	63	67524	20.0	20.6	
45 Tetrahydrofuran	71	5.557	5.557	0.000	80	161606	100.0	90.1	
46 Chloroform	83	5.721	5.721	0.000	94	230871	20.0	21.2	
48 1,1,1-Trichloroethane	97	5.941	5.941	0.000	66	208048	20.0	21.9	
$ 47 Dibromofluoromethane (Surr)	113	5.947	5.947	0.000	93	252986	50.0	52.4	
49 Cyclohexane	56	6.038	6.038	0.000	92	248001	20.0	20.7	
51 Carbon tetrachloride	117	6.160	6.160	0.000	96	184037	20.0	22.0	
50 1,1-Dichloropropene	75	6.160	6.166	-0.006	97	196015	20.0	22.0	
52 Isobutyl alcohol	41	6.374	6.368	0.006	93	217171	500.0	410.4	
$ 56 1,2-Dichloroethane-d4 (Surr)	102	6.410	6.410	0.000	90	56935	50.0	51.3	
53 Benzene	78	6.441	6.441	0.000	97	552231	20.0	20.7	
55 1,2-Dichloroethane	62	6.520	6.526	-0.006	97	162120	20.0	20.5	
58 Tert-amyl methyl ether	73	6.654	6.660	-0.006	99	340386	20.0	18.5	
* 59 Fluorobenzene (IS)	96	6.868	6.874	-0.006	99	988187	50.0	50.0	
60 n-Heptane	43	6.898	6.898	0.000	95	211477	20.0	20.8	
61 n-Butanol	56	7.300	7.300	0.000	90	417301	NC	NC	
62 Trichloroethene	95	7.374	7.374	0.000	99	187519	20.0	26.5	
63 Methylcyclohexane	83	7.678	7.684	-0.006	91	253836	20.0	21.0	
64 1,2-Dichloropropane	63	7.715	7.721	-0.006	95	140488	20.0	20.3	
65 2-ethoxy-2-methyl butane	87	7.752	7.752	0.000	91	179277	20.0	19.5	
68 1,4-Dioxane	88	7.813	7.819	-0.006	87	46403	500.0	525.7	M
66 Dibromomethane	93	7.831	7.831	0.000	98	87035	20.0	20.7	
67 Methyl methacrylate	69	7.837	7.837	0.000	92	121683	20.0	19.0	
70 Dichlorobromomethane	83	8.093	8.093	0.000	99	168694	20.0	20.5	
72 2-Nitropropane	41	8.386	8.386	0.000	97	51654	20.0	16.1	
71 2-Chloroethyl vinyl ether	63		8.489				20.0	ND	7
73 cis-1,3-Dichloropropene	75	8.678	8.678	0.000	96	212044	20.0	19.4	
75 4-Methyl-2-pentanone (MIBK)	43	8.885	8.892	-0.007	97	2976195	250.0	259.4	
$ 76 Toluene-d8 (Surr)	98	9.020	9.020	0.000	94	984503	50.0	51.4	
77 Toluene	92	9.105	9.111	-0.006	98	353181	20.0	20.2	
78 trans-1,3-Dichloropropene	75	9.428	9.428	0.000	93	198686	20.0	19.8	
79 Ethyl methacrylate	69	9.513	9.513	0.000	90	206003	20.0	19.3	
80 1,1,2-Trichloroethane	97	9.654	9.654	0.000	90	123647	20.0	19.8	
81 Tetrachloroethene	166	9.733	9.733	0.000	98	164065	20.0	21.1	
82 1,3-Dichloropropane	76	9.830	9.830	0.000	92	198644	20.0	19.9	
84 2-Hexanone	43	9.910	9.910	0.000	98	2451140	250.0	259.6	
85 Chlorodibromomethane	129	10.062	10.062	0.000	90	134383	20.0	19.4	
87 Ethylene Dibromide	107	10.172	10.172	0.000	100	134405	20.0	19.6	
* 90 Chlorobenzene-d5 (IS)	117	10.653	10.653	0.000	84	766865	50.0	50.0	
88 Chlorobenzene	112	10.684	10.684	0.000	93	385397	20.0	20.2	
91 1-Chlorohexane	91	10.684	10.684	0.000	72	211262	20.0	20.4	
92 1,1,1,2-Tetrachloroethane	131	10.781	10.775	0.006	96	131878	20.0	19.7	
93 Ethylbenzene	91	10.788	10.788	0.000	98	698113	20.0	20.4	
94 m-Xylene & p-Xylene	106	10.916	10.916	0.000	100	533462	40.0	40.3	
95 o-Xylene	106	11.263	11.263	0.000	97	256736	20.0	19.8	
96 Styrene	104	11.281	11.281	0.000	95	429931	20.0	19.8	
97 Bromoform	173	11.440	11.440	0.000	98	111779	20.0	19.6	
98 Isopropylbenzene	105	11.586	11.586	0.000	96	695747	20.0	20.8	
$ 101 4-Bromofluorobenzene (Surr)	95	11.732	11.732	0.000	94	380978	50.0	51.5	

Compound	Sig	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Q	Response	Cal Amt ug/l	OnCol Amt ug/l	Flags
102 Bromobenzene	156	11.848	11.848	0.000	92	169795	20.0	20.5	
105 1,1,2,2-Tetrachloroethane	83	11.854	11.854	0.000	93	221024	20.0	19.9	
104 trans-1,4-Dichloro-2-butene	53	11.885	11.885	0.000	91	299749	100.0	85.0	
103 1,2,3-Trichloropropane	110	11.897	11.897	0.000	83	60387	20.0	20.2	
106 N-Propylbenzene	91	11.940	11.940	0.000	99	848891	20.0	20.5	
107 2-Chlorotoluene	126	12.007	12.007	0.000	97	160475	20.0	19.6	
108 1,3,5-Trimethylbenzene	105	12.086	12.086	0.000	94	559937	20.0	19.7	
109 4-Chlorotoluene	126	12.110	12.110	0.000	97	164695	20.0	19.8	
111 tert-Butylbenzene	134	12.336	12.336	0.000	93	109195	20.0	19.6	
113 1,2,4-Trimethylbenzene	105	12.379	12.379	0.000	98	567798	20.0	19.7	
114 sec-Butylbenzene	105	12.507	12.507	0.000	94	739714	20.0	20.8	
115 1,3-Dichlorobenzene	146	12.598	12.598	0.000	98	316897	20.0	20.0	
116 4-Isopropyltoluene	119	12.623	12.623	0.000	97	620051	20.0	20.3	
* 117 1,4-Dichlorobenzene-d4	152	12.659	12.659	0.000	94	430645	50.0	50.0	
118 1,4-Dichlorobenzene	146	12.677	12.677	0.000	96	320949	20.0	20.0	
119 1,2,3-Trimethylbenzene	105	12.696	12.696	0.000	99	554158	20.0	19.2	
120 Benzyl chloride	91	12.763	12.763	0.000	98	418236	NC	NC	
121 1,3-Diethylbenzene	119	12.830	12.830	0.000	95	350343	NC	NC	
122 p-Diethylbenzene	119	12.903	12.903	0.000	93	376784	NC	NC	
124 n-Butylbenzene	92	12.927	12.927	0.000	98	313583	20.0	20.5	
125 1,2-Dichlorobenzene	146	12.946	12.946	0.000	99	299403	20.0	19.8	
126 o-diethylbenzene	119	12.976	12.976	0.000	96	292533	NC	NC	
127 1,2-Dibromo-3-Chloropropane	75	13.507	13.506	0.001	86	52955	20.0	19.2	
128 1,3,5-Trichlorobenzene	180	13.641	13.641	0.000	98	216358	20.0	19.2	
129 1,2,4-Trichlorobenzene	180	14.074	14.073	0.001	93	195174	20.0	18.9	
131 Hexachlorobutadiene	225	14.165	14.165	0.000	96	87347	20.0	19.6	
132 Naphthalene	128	14.256	14.256	0.000	97	672201	20.0	18.3	
133 1,2,3-Trichlorobenzene	180	14.403	14.403	0.000	95	188001	20.0	18.7	
134 2-Methylnaphthalene	142	15.012	15.006	0.006	92	324082	NC	NC	

QC Flag Legend

Processing Flags

NC - Not Calibrated

7 - Failed Limit of Detection

Review Flags

M - Manually Integrated

Reagents:

MSV_LCS_VOC#1_00025	Amount Added: 21.50	Units: uL	
MSV_LCS_2CEVE_00030	Amount Added: 21.50	Units: uL	
MSV_LCS_ACROL_00028	Amount Added: 21.50	Units: uL	
MSV_LCS_Gases_00050	Amount Added: 21.50	Units: uL	
MSV_Cent_ISSS_00004	Amount Added: 5.00	Units: uL	Run Reagent

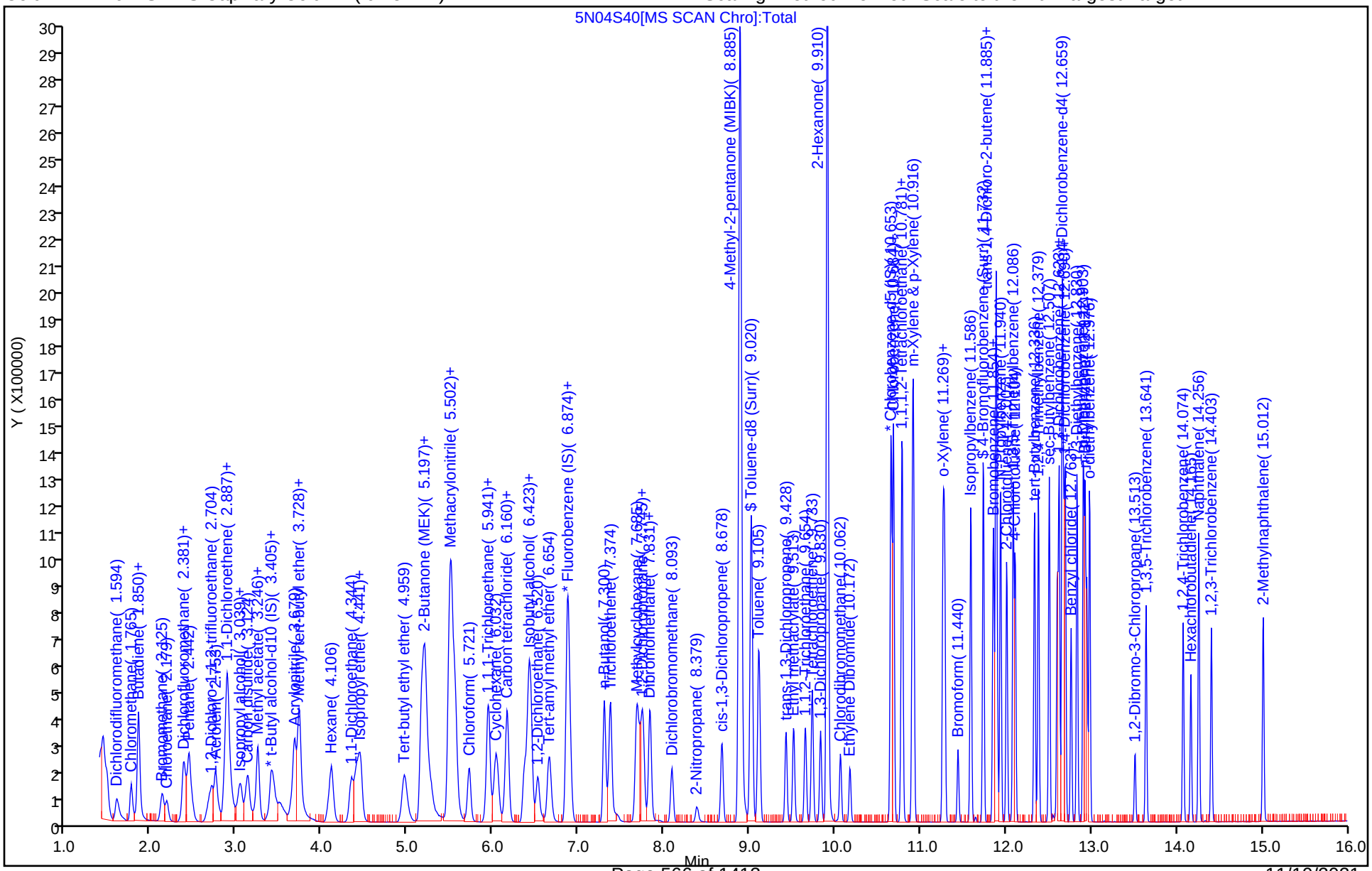
Report Date: 05-Nov-2021 13:30:18 Chrom Revision: 2.3 22-Sep-2021 15:38:46

Eurofins Lancaster Laboratories Env, LLC

Data File: \\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S40.D

Injection Date:	05-Nov-2021 01:31:30	Instrument ID:	26285	Operator ID:	mec29284
Lims ID:	410-60870-A-2 MSD			Worklist Smp#:	16
Client ID:	3MW01-102621MSD				
Purge Vol:	5.000 mL	Dil. Factor:	1.0000	ALS Bottle#:	15
Method:	MSVoa_26285a	Limit Group:	MSV - 8260C DOD5		

Column: Rxi-624Sil MS Capillary Column (0.25 mm) Y Scaling: Method Defined: Scale to the Nth Largest Target: 2



Eurofins Lancaster Laboratories Env, LLC

Recovery Report

Data File:	\\chromfs\Lancaster\ChromData\26285\20211104-43341.b\5N04S40.D				
Lims ID:	410-60870-A-2 MSD				
Client ID:	3MW01-102621MSD				
Sample Type:	MSD				
Inject. Date:	05-Nov-2021 01:31:30	ALS Bottle#:	15	Worklist Smp#:	16
Purge Vol:	5.000 mL	Dil. Factor:	1.0000		
Sample Info:	410-0043341-016				
Operator ID:	mec29284	Instrument ID:	26285		
Method:	\\chromfs\Lancaster\ChromData\26285\20211104-43341.b\MSVoa_26285a.m				
Limit Group:	MSV - 8260C DOD5				
Last Update:	05-Nov-2021 13:30:17	Calib Date:	02-Aug-2021 18:49:30		
Integrator:	RTE	ID Type:	Deconvolution ID		
Quant Method:	Internal Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Lancaster\ChromData\26285\20210802-35810.b\5G02I17.D				
Column 1 :	Rxi-624Sil MS Capillary Column (0.25 mm)		Det: MS Quad		
Process Host:	CTX1657				

First Level Reviewer: kaewrungrueangp Date: 05-Nov-2021 13:30:17

Compound	Amount Added	Amount Recovered	% Rec.
$ 47 Dibromofluoromethane (Surr)	50.0	52.4	104.71
$ 56 1,2-Dichloroethane-d4 (Surr)	50.0	51.3	102.53
$ 76 Toluene-d8 (Surr)	50.0	51.4	102.73
$ 101 4-Bromofluorobenzene (Surr)	50.0	51.5	103.05

GC/MS VOA ANALYSIS RUN LOG

Lab Name: Eurofins Lancaster Laboratories Env, Job No.: 410-60870-1

SDG No.:

Instrument ID: 26285 Start Date: 08/02/2021 13:32

Analysis Batch Number: 155419 End Date: 08/02/2021 19:09

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
BFB 410-155419/1		08/02/2021 13:32	1	5G02T01.D	R-624SilMS 30m 0.25(mm)
IC 410-155419/3		08/02/2021 14:06	1		R-624SilMS 30m 0.25(mm)
IC 410-155419/4		08/02/2021 14:26	1		R-624SilMS 30m 0.25(mm)
IC 410-155419/5		08/02/2021 14:47	1		R-624SilMS 30m 0.25(mm)
IC 410-155419/6		08/02/2021 15:07	1		R-624SilMS 30m 0.25(mm)
IC 410-155419/7		08/02/2021 15:27	1		R-624SilMS 30m 0.25(mm)
IC 410-155419/8		08/02/2021 15:47	1		R-624SilMS 30m 0.25(mm)
ICV 410-155419/9		08/02/2021 16:07	1		R-624SilMS 30m 0.25(mm)
IC 410-155419/11		08/02/2021 16:48	1	5G02I11.D	R-624SilMS 30m 0.25(mm)
IC 410-155419/12		08/02/2021 17:08	1	5G02I12.D	R-624SilMS 30m 0.25(mm)
ICIS 410-155419/13		08/02/2021 17:28	1	5G02I13.D	R-624SilMS 30m 0.25(mm)
IC 410-155419/14		08/02/2021 17:48	1	5G02I14.D	R-624SilMS 30m 0.25(mm)
IC 410-155419/15		08/02/2021 18:09	1	5G02I15.D	R-624SilMS 30m 0.25(mm)
IC 410-155419/16		08/02/2021 18:29	1	5G02I16.D	R-624SilMS 30m 0.25(mm)
IC 410-155419/17		08/02/2021 18:49	1	5G02I17.D	R-624SilMS 30m 0.25(mm)
ICV 410-155419/18		08/02/2021 19:09	1	5G02V11.D	R-624SilMS 30m 0.25(mm)

GC/MS VOA ANALYSIS RUN LOG

Lab Name: Eurofins Lancaster Laboratories Env, Job No.: 410-60870-1

SDG No.:

Instrument ID: 26285 Start Date: 11/04/2021 20:43

Analysis Batch Number: 191072 End Date: 11/05/2021 06:06

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
BFB 410-191072/1		11/04/2021 20:43	1	5N04T31.D	R-624SilMS 30m 0.25(mm)
CCVIS 410-191072/3		11/04/2021 21:16	1	5N04C31.D	R-624SilMS 30m 0.25(mm)
LCS 410-191072/4		11/04/2021 21:36	1	5N04L31.D	R-624SilMS 30m 0.25(mm)
ZZZZZ		11/04/2021 21:55	1		R-624SilMS 30m 0.25(mm)
MB 410-191072/6		11/04/2021 22:15	1	5N04B31.D	R-624SilMS 30m 0.25(mm)
ZZZZZ		11/04/2021 22:35	10		R-624SilMS 30m 0.25(mm)
410-60870-7	FB-102621	11/04/2021 23:53	1	5N04S35.D	R-624SilMS 30m 0.25(mm)
410-60870-8	FB-102721	11/05/2021 00:13	1	5N04S36.D	R-624SilMS 30m 0.25(mm)
410-60870-9	Trip Blank	11/05/2021 00:32	1	5N04S37.D	R-624SilMS 30m 0.25(mm)
410-60870-2	3MW01-102621	11/05/2021 00:52	1	5N04S38.D	R-624SilMS 30m 0.25(mm)
410-60870-2 MS	3MW01-102621MS MS	11/05/2021 01:11	1	5N04S39.D	R-624SilMS 30m 0.25(mm)
410-60870-2 MSD	3MW01-102621MSD MSD	11/05/2021 01:31	1	5N04S40.D	R-624SilMS 30m 0.25(mm)
410-60870-1	3MW05R-102621	11/05/2021 03:29	1	5N04S46.D	R-624SilMS 30m 0.25(mm)
410-60870-3	3MW01-102621D	11/05/2021 03:48	1	5N04S47.D	R-624SilMS 30m 0.25(mm)
410-60870-4	3MW08-102721	11/05/2021 04:08	1	5N04S48.D	R-624SilMS 30m 0.25(mm)
410-60870-5	3MW07-102721	11/05/2021 04:28	1	5N04S49.D	R-624SilMS 30m 0.25(mm)
410-60870-6	3MW09-102721	11/05/2021 04:47	1	5N04S50.D	R-624SilMS 30m 0.25(mm)
ZZZZZ		11/05/2021 05:07	1		R-624SilMS 30m 0.25(mm)
ZZZZZ		11/05/2021 05:27	1		R-624SilMS 30m 0.25(mm)
ZZZZZ		11/05/2021 05:46	1		R-624SilMS 30m 0.25(mm)
CCVC 410-191072/30		11/05/2021 06:06	1	5N04S54.D	R-624SilMS 30m 0.25(mm)

GC/MS VOA BATCH WORKSHEET

Lab Name: Eurofins Lancaster Laboratorie Job No.: 410-60870-1

SDG No.:

Batch Number: 155419 Batch Start Date: 08/02/21 13:32 Batch Analyst: Mellinger, Corie M

Batch Method: 8260D Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	Lot#Vial	MSV_4ppbEE 00230	MSV_CCV_2CEVE 00012	MSV_CCV_GASES 00049
BFB 410-155419/1		8260D		1 uL	1 uL				
IC 410-155419/11		8260D		5 mL	5 mL	2602		15 uL	7.5 uL
IC 410-155419/12		8260D		5 mL	5 mL	2602		5 uL	2.5 uL
ICIS 410-155419/13		8260D		5 mL	5 mL	2602		5 uL	2.5 uL
IC 410-155419/14		8260D		5 mL	5 mL	2602		4 uL	2 uL
IC 410-155419/15		8260D		5 mL	5 mL	2602		2 uL	1 uL
IC 410-155419/16		8260D		5 mL	5 mL	2602		4 uL	2 uL
IC 410-155419/17		8260D		5 mL	5 mL	2602	12.5 mL		
ICV 410-155419/18		8260D		5 mL	5 mL	2602			

Lab Sample ID	Client Sample ID	Method Chain	Basis	MSV_CCV_VOC#1 00013	MSV_CCV_VOC#3 00012	MSV_Cent_ISSS 00001	MSV_LCS_2CEVE 00013	MSV_LCS_VOC#1 00012	MSV_Q_EE 00004
BFB 410-155419/1		8260D							
IC 410-155419/11		8260D		15 uL	12 uL	5 uL			
IC 410-155419/12		8260D		5 uL	4 uL	5 uL			
ICIS 410-155419/13		8260D		5 uL	4 uL	5 uL			
IC 410-155419/14		8260D		4 uL	3.2 uL	5 uL			
IC 410-155419/15		8260D		2 uL	1.6 uL	5 uL			
IC 410-155419/16		8260D		4 uL	3.2 uL	5 uL			
IC 410-155419/17		8260D				5 uL			
ICV 410-155419/18		8260D				5 uL	50 uL	50 uL	50 uL

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC/MS VOA BATCH WORKSHEET

Lab Name: Eurofins Lancaster Laboratorie Job No.: 410-60870-1

SDG No.:

Batch Number: 155419 Batch Start Date: 08/02/21 13:32 Batch Analyst: Mellinger, Corie M

Batch Method: 8260D Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	MSV_QC_2K_GAS 00023	MSV_QCYC 00005	MSV_V_BFB 00006	MSV_V_EE 00005	MSV_V_VOA2 00098	MSV_VCYC 00006
BFB 410-155419/1		8260D				1 uL			
IC 410-155419/11		8260D					15 uL		30 uL
IC 410-155419/12		8260D					5 uL		10 uL
ICIS 410-155419/13		8260D					5 uL		10 uL
IC 410-155419/14		8260D					4 uL	4 uL	16 uL
IC 410-155419/15		8260D					2 uL	2 uL	8 uL
IC 410-155419/16		8260D					4 uL	12 uL	32 uL
IC 410-155419/17		8260D							
ICV 410-155419/18		8260D		1 uL	50 uL				

Batch Notes	

Basis	Basis Description

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC/MS VOA BATCH WORKSHEET

Lab Name: Eurofins Lancaster Laboratorie Job No.: 410-60870-1

SDG No.:

Batch Number: 191072 Batch Start Date: 11/04/21 20:43 Batch Analyst: Campbell, Miranda E

Batch Method: 8260D Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	Initial pH	ResidualChloCheck	Headspace	Lot#Vial
BFB 410-191072/1		8260D		1 uL	1 uL				
CCVIS 410-191072/3		8260D		5 mL	5 mL				2608
LCS 410-191072/4		8260D		5 mL	5 mL				2608
MB 410-191072/6		8260D		5 mL	5 mL				2608
410-60870-A-7	FB-102621	8260D	T	5 mL	5 mL	<2 SU	N	N	
410-60870-A-8	FB-102721	8260D	T	5 mL	5 mL	<2 SU	N	N	
410-60870-A-9	Trip Blank	8260D	T	5 mL	5 mL	<2 SU	N	N	
410-60870-A-2	3MW01-102621	8260D	T	5 mL	5 mL	<2 SU	N	N	
410-60870-A-2 MS	3MW01-102621MS	8260D	T	5 mL	5 mL	<2 SU	N	N	
410-60870-A-2 MSD	3MW01-102621MSD	8260D	T	5 mL	5 mL	<2 SU	N	N	
410-60870-A-1	3MW05R-102621	8260D	T	5 mL	5 mL	<2 SU	N	N	
410-60870-A-3	3MW01-102621D	8260D	T	5 mL	5 mL	<2 SU	N	N	
410-60870-A-4	3MW08-102721	8260D	T	5 mL	5 mL	<2 SU	N	N	
410-60870-A-5	3MW07-102721	8260D	T	5 mL	5 mL	<2 SU	N	N	
410-60870-A-6	3MW09-102721	8260D	T	5 mL	5 mL	<2 SU	N	N	
CCVC 410-191072/30		8260D		5 mL	5 mL				

Lab Sample ID	Client Sample ID	Method Chain	Basis	MSV_CCV_2CEVE 00030	MSV_CCV_GASES 00103	MSV_CCV_VOC#1 00032	MSV_CCV_VOC#3 00031	MSV_Cent_ISSS 00004	MSV_LCS_2CEVE 00030
BFB 410-191072/1		8260D							
CCVIS 410-191072/3		8260D		5 uL	2.5 uL	5 uL	4 uL	5 uL	
LCS 410-191072/4		8260D						5 uL	50 uL
MB 410-191072/6		8260D						5 uL	
410-60870-A-7	FB-102621	8260D	T					5 uL	
410-60870-A-8	FB-102721	8260D	T					5 uL	
410-60870-A-9	Trip Blank	8260D	T					5 uL	

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC/MS VOA BATCH WORKSHEET

Lab Name: Eurofins Lancaster Laboratorie Job No.: 410-60870-1

SDG No.:

Batch Number: 191072 Batch Start Date: 11/04/21 20:43 Batch Analyst: Campbell, Miranda E

Batch Method: 8260D Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	MSV_CCV_2CEVE 00030	MSV_CCV_GASES 00103	MSV_CCV_VOC#1 00032	MSV_CCV_VOC#3 00031	MSV_Cent_ISSS 00004	MSV_LCS_2CEVE 00030
410-60870-A-2	3MW01-102621	8260D	T					5 uL	
410-60870-A-2 MS	3MW01-102621MS	8260D	T					5 uL	21.5 uL
410-60870-A-2 MSD	3MW01-102621MSD	8260D	T					5 uL	21.5 uL
410-60870-A-1	3MW05R-102621	8260D	T					5 uL	
410-60870-A-3	3MW01-102621D	8260D	T					5 uL	
410-60870-A-4	3MW08-102721	8260D	T					5 uL	
410-60870-A-5	3MW07-102721	8260D	T					5 uL	
410-60870-A-6	3MW09-102721	8260D	T					5 uL	
CCVC 410-191072/30		8260D		5 uL	2.5 uL	5 uL	4 uL	5 uL	

Lab Sample ID	Client Sample ID	Method Chain	Basis	MSV_LCS_ACROL 00028	MSV_LCS_Gases 00050	MSV_LCS_VOC#1 00025	MSV_V_BFB 00006		
BFB 410-191072/1		8260D					1 uL		
CCVIS 410-191072/3		8260D							
LCS 410-191072/4		8260D		50 uL	50 uL	50 uL			
MB 410-191072/6		8260D							
410-60870-A-7	FB-102621	8260D	T						
410-60870-A-8	FB-102721	8260D	T						
410-60870-A-9	Trip Blank	8260D	T						
410-60870-A-2	3MW01-102621	8260D	T						
410-60870-A-2 MS	3MW01-102621MS	8260D	T	21.5 uL	21.5 uL	21.5 uL			
410-60870-A-2 MSD	3MW01-102621MSD	8260D	T	21.5 uL	21.5 uL	21.5 uL			
410-60870-A-1	3MW05R-102621	8260D	T						
410-60870-A-3	3MW01-102621D	8260D	T						
410-60870-A-4	3MW08-102721	8260D	T						
410-60870-A-5	3MW07-102721	8260D	T						
410-60870-A-6	3MW09-102721	8260D	T						

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC/MS VOA BATCH WORKSHEET

Lab Name: Eurofins Lancaster Laboratorie Job No.: 410-60870-1

SDG No.:

Batch Number: 191072 Batch Start Date: 11/04/21 20:43 Batch Analyst: Campbell, Miranda E

Batch Method: 8260D Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	MSV_LCS_ACROL 00028	MSV_LCS_Gases 00050	MSV_LCS_VOC#1 00025	MSV_V_BFB 00006		
CCVC 410-191072/30		8260D							

Batch Notes	

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS

COVER PAGE
METALS

Lab Name: Eurofins Lancaster Laboratories Job Number: 410-60870-1

SDG No.:

Project: Fort Monmouth NJ

Client Sample ID	Lab Sample ID
3MW01-102621	410-60870-2
3MW01-102621D	410-60870-3
FB-102621	410-60870-7
FB-102721	410-60870-8

Comments:

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - TOTAL RECOVERABLE

Client Sample ID: 3MW01-102621 Lab Sample ID: 410-60870-2

Lab Name: Eurofins Lancaster Laboratories Env, LLC Job No.: 410-60870-1

SDG ID.:

Matrix: Ground Water Date Sampled: 10/26/2021 15:55

Reporting Basis: WET Date Received: 10/27/2021 17:29

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Cadmium	3.5	0.50	0.40	0.15	ug/L		J1	1	6020B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - TOTAL RECOVERABLE

Client Sample ID: 3MW01-102621D
Lab Sample ID: 410-60870-3
Lab Name: Eurofins Lancaster Laboratories Env, LLC
Job No.: 410-60870-1
SDG ID.:
Matrix: Ground Water
Date Sampled: 10/26/2021 00:00
Reporting Basis: WET
Date Received: 10/27/2021 17:29

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Cadmium	3.6	0.50	0.40	0.15	ug/L			1	6020B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - TOTAL RECOVERABLE

Client Sample ID: FB-102621 Lab Sample ID: 410-60870-7

Lab Name: Eurofins Lancaster Laboratories Env, LLC Job No.: 410-60870-1

SDG ID.:

Matrix: Water Date Sampled: 10/26/2021 16:00

Reporting Basis: WET Date Received: 10/27/2021 17:29

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Cadmium	0.40	0.50	0.40	0.15	ug/L	U		1	6020B

1A-IN
INORGANIC ANALYSIS DATA SHEET
METALS - TOTAL RECOVERABLE

Client Sample ID: FB-102721 Lab Sample ID: 410-60870-8

Lab Name: Eurofins Lancaster Laboratories Env, LLC Job No.: 410-60870-1

SDG ID.:

Matrix: Water Date Sampled: 10/27/2021 09:00

Reporting Basis: WET Date Received: 10/27/2021 17:29

Analyte	Result	LOQ	LOD	DL	Units	C	Q	DIL	Method
Cadmium	0.40	0.50	0.40	0.15	ug/L	U		1	6020B

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins Lancaster Laboratories En Job No.: 410-60870-1

SDG No.:

ICV Source: MT_MJ_ICV_00051 Concentration Units: ug/L

CCV Source: MT_MJ_CCV_00121

Analyte	ICV 410-191445/4 11/05/2021 09:44				CCV 410-191445/10 11/05/2021 13:37				CCV 410-191445/38 11/05/2021 14:34			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Cadmium	30.2		30.0	101	30.3		30.0	101	31.3		30.0	104

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins Lancaster Laboratories En Job No.: 410-60870-1

SDG No.:

ICV Source: MT_MJ_ICV_00051 Concentration Units: ug/L

CCV Source: MT_MJ_CCV_00121

Analyte	CCV 410-191445/48 11/05/2021 14:55											
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Cadmium	30.5		30.0	102								

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins Lancaster Laboratories En Job No.: 410-60870-1

SDG No.:

ICV Source: MT_MJ_ICV_00051 Concentration Units: ug/L

CCV Source: MT_MJ_CCV_00121

Analyte	ICV 410-190933/4 11/04/2021 10:31				CCV 410-190933/10 11/04/2021 11:07				CCV 410-190933/69 11/04/2021 13:33			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Cadmium	30.5		30.0	102	30.6		30.0	102	30.1		30.0	100

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins Lancaster Laboratories En Job No.: 410-60870-1

SDG No.:

ICV Source: MT_MJ_ICV_00051 Concentration Units: ug/L

CCV Source: MT_MJ_CCV_00121

Analyte	CCV 410-190933/79 11/04/2021 13:53				CCV 410-190933/91 11/04/2021 14:17							
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Cadmium	30.8		30.0	103	30.8		30.0	103				

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins Lancaster Laboratories En Job No.: 410-60870-1

SDG No.:

ICV Source: MT_MJ_ICV_00051 Concentration Units: ug/L

CCV Source: MT_MJ_CCV_00121

Analyte	ICV 410-191437/4 11/05/2021 09:51				CCV 410-191437/10 11/05/2021 13:11				CCV 410-191437/20 11/05/2021 13:31			
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Cadmium	31.0		30.0	103	31.9		30.0	106	31.8		30.0	106

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2A-IN
CALIBRATION VERIFICATIONS
METALS

Lab Name: Eurofins Lancaster Laboratories En Job No.: 410-60870-1

SDG No.:

ICV Source: MT_MJ_ICV_00051 Concentration Units: ug/L

CCV Source: MT_MJ_CCV_00121

Analyte	CCV 410-191437/32 11/05/2021 13:56											
	Found	C	True	%R	Found	C	True	%R	Found	C	True	%R
Cadmium	31.5		30.0	105								

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.
Italicized analytes were not requested for this sequence.

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: Eurofins Lancaster Laboratories Env, Job No.: 410-60870-1

SDG No.:

Method: 6020B Instrument ID: E07 - 27813

Lab Sample ID: CRI 410-191445/9 Concentration Units: ug/L

CRQL Check Standard Source: MT_MJ_CRI-V_00064

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Cadmium	0.500	0.488	J	98	80-120

Lab Sample ID: CRI 410-191445/66 Concentration Units: ug/L

CRQL Check Standard Source: MT_MJ_CRI-V_00064

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Cadmium	0.500	0.544		109	80-120

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IIB-IN

2B-IN
CRQL CHECK STANDARD
METALS

Lab Name: Eurofins Lancaster Laboratories Env, Job No.: 410-60870-1

SDG No.:

Method: 6020B Instrument ID: E09 - 30921

Lab Sample ID: CRI 410-190933/6 Concentration Units: ug/L

CRQL Check Standard Source: MT_MJ_CRI-V_00064

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Cadmium	0.500	0.482	J	96	80-120

Lab Sample ID: CRI 410-190933/108 Concentration Units: ug/L

CRQL Check Standard Source: MT_MJ_CRI-V_00064

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Cadmium	0.500	0.493	J	99	80-120

Lab Sample ID: CRI 410-191437/9 Concentration Units: ug/L

CRQL Check Standard Source: MT_MJ_CRI-V_00064

Analyte	CRQL Check Standard				
	True	Found	Qualifiers	%R(1)	Limits
Cadmium	0.500	0.538		108	80-120

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IIB-IN

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: Eurofins Lancaster Laboratories Env, Job No.: 410-60870-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	ICB 410-191445/5 11/05/2021 09:46		CCB 410-191445/11 11/05/2021 13:39		CCB 410-191445/39 11/05/2021 14:36		CCB 410-191445/49 11/05/2021 14:57	
		Found	C	Found	C	Found	C	Found	C
Cadmium	0.50	0.40	U	0.40	U	0.40	U	0.40	U

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: Eurofins Lancaster Laboratories Env, Job No.: 410-60870-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	ICB 410-190933/5 11/04/2021 10:33		CCB 410-190933/11 11/04/2021 11:09		CCB 410-190933/70 11/04/2021 13:35		CCB 410-190933/80 11/04/2021 13:55	
		Found	C	Found	C	Found	C	Found	C
Cadmium	0.50	0.40	U	0.40	U	0.40	U	0.40	U

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: Eurofins Lancaster Laboratories Env, Job No.: 410-60870-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	CCB 410-190933/92 11/04/2021 14:19							
		Found	C	Found	C	Found	C	Found	C
Cadmium	0.50	0.40	U						

Italicized analytes were not requested for this sequence.

3-IN
INSTRUMENT BLANKS
METALS

Lab Name: Eurofins Lancaster Laboratories Env, Job No.: 410-60870-1

SDG No.:

Concentration Units: ug/L

Analyte	RL	ICB 410-191437/5 11/05/2021 09:53		CCB 410-191437/11 11/05/2021 13:13		CCB 410-191437/21 11/05/2021 13:33		CCB 410-191437/33 11/05/2021 13:58	
		Found	C	Found	C	Found	C	Found	C
Cadmium	0.50	0.40	U	0.40	U	0.40	U	0.40	U

Italicized analytes were not requested for this sequence.

3-IN
METHOD BLANK
METALS - TOTAL RECOVERABLE

Lab Name: Eurofins Lancaster Laboratories Job No.: 410-60870-1

SDG No.:

Concentration Units: ug/L Lab Sample ID: MB 410-190591/1-A

Instrument Code: E09 - 30921 Batch No.: 190933

CAS No.	Analyte	Concentration	C	Q	Method
7440-43-9	Cadmium	0.40	U		6020B_DOD5

3-IN
METHOD BLANK
METALS - TOTAL RECOVERABLE

Lab Name: Eurofins Lancaster Laboratories Job No.: 410-60870-1

SDG No.:

Concentration Units: ug/L Lab Sample ID: MB 410-190873/1-A

Instrument Code: E09 - 30921 Batch No.: 191437

CAS No.	Analyte	Concentration	C	Q	Method
7440-43-9	Cadmium	0.40	U		6020B_DOD5

3-IN
METHOD BLANK
METALS - TOTAL RECOVERABLE

Lab Name: Eurofins Lancaster Laboratories Job No.: 410-60870-1

SDG No.:

Concentration Units: ug/L Lab Sample ID: MB 410-190955/1-A

Instrument Code: E07 - 27813 Batch No.: 191445

CAS No.	Analyte	Concentration	C	Q	Method
7440-43-9	Cadmium	0.40	U		6020B_DOD5

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins Lancaster Laboratories Job No.: 410-60870-1

SDG No.:

Lab Sample ID: ICSA 410-191445/6 Instrument ID: E07 - 27813

Lab File ID: 017ICSA.d ICS Source: MT_MJ_ICSA_00049

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Cadmium	**0.266**	**0.331**	
Aluminum	*99800*	*96332*	*97*
Antimony	*0.560*	*0.191*	
Arsenic	*1.41*	*0.422*	
Barium	*0.345*	*0.555*	
Beryllium	*0.00550*	*0.0100*	
Calcium	*299000*	*285429*	*95*
Chromium	*1.24*	*1.70*	
Cobalt	*1.37*	*1.51*	
Copper	*0.870*	*0.476*	
Iron	*250000*	*238505*	*96*
Lead	*0.176*	*0.228*	
Magnesium	*99800*	*93556*	*94*
Manganese	*1.31*	*1.63*	
Molybdenum	*2000*	*2163*	*108*
Nickel	*1.12*	*1.32*	
Potassium	*99800*	*97340*	*98*
Selenium	*0.380*	*0.147*	
Silver	*0.0805*	*0.0320*	
Sodium	*250000*	*227596*	*91*
Strontium	*2.10*	*2.47*	
Thallium	*0.00550*	*0.0230*	
Tin	*0.235*	*-0.0050*	
Titanium	*2000*	*1936*	*97*
Uranium	*0.00550*	*0.0560*	
Vanadium	*0.170*	*-0.231*	
Zinc	*1.55*	*2.22*	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins Lancaster Laboratories Job No.: 410-60870-1

SDG No.:

Lab Sample ID: ICSAB 410-191445/7 Instrument ID: E07 - 27813

Lab File ID: 018ICSB.d ICS Source: MT_MJ_ICSAB_00039

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Percent Recovery
Cadmium	**100**	**104**	**103**
Aluminum	*99800*	*94760*	*95*
Antimony	*0.560*	*0.159*	
Arsenic	*102*	*96.0*	*95*
Barium	*0.345*	*0.565*	
Beryllium	*0.00550*	*0.0130*	
Calcium	*299000*	*286232*	*96*
Chromium	*201*	*186*	*92*
Cobalt	*202*	*180*	*89*
Copper	*201*	*175*	*87*
Iron	*250000*	*236336*	*95*
Lead	*0.176*	*0.228*	
Magnesium	*99800*	*93026*	*93*
Manganese	*202*	*192*	*95*
Molybdenum	*2000*	*2225*	*111*
Nickel	*201*	*188*	*93*
Potassium	*99800*	*96637*	*97*
Selenium	*100*	*108*	*107*
Silver	*50.1*	*50.6*	*101*
Sodium	*250000*	*225922*	*91*
Thallium	*0.00550*	*0.0130*	
Tin	*0.235*	*-0.0440*	
Titanium	*2000*	*1920*	*96*
Uranium	*0.00550*	*0.0440*	
Vanadium	*200*	*190*	*95*
Zinc	*102*	*94.7*	*93*

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins Lancaster Laboratories Job No.: 410-60870-1

SDG No.:

Lab Sample ID: ICSA 410-190933/7 Instrument ID: E09 - 30921

Lab File ID: 017ICSA.d ICS Source: MT_MJ_ICSA_00049

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Cadmium	**0.266**	**0.195**	
Aluminum	*99800*	*105384*	*106*
Antimony	*0.560*	*0.156*	
Arsenic	*1.41*	*0.573*	
Barium	*0.345*	*0.363*	
Beryllium	*0.00550*	*0.0150*	
Calcium	*299000*	*307878*	*103*
Chromium	*1.24*	*1.95*	
Cobalt	*1.37*	*1.36*	
Copper	*0.870*	*0.481*	
Iron	*250000*	*230358*	*92*
Lead	*0.176*	*0.245*	
Magnesium	*99800*	*104162*	*104*
Manganese	*1.31*	*1.57*	
Molybdenum	*2000*	*2359*	*118*
Nickel	*1.12*	*1.41*	
Potassium	*99800*	*106142*	*106*
Selenium	*0.380*	*0.169*	
Silver	*0.0805*	*0.0630*	
Sodium	*250000*	*261159*	*105*
Thallium	*0.00550*	*0.0200*	
Tin	*0.235*	*-0.0670*	
Titanium	*2000*	*2075*	*104*
Uranium	*0.00550*	*0.0480*	
Vanadium	*0.170*	*0.0260*	
Zinc	*1.55*	*1.80*	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins Lancaster Laboratories Job No.: 410-60870-1

SDG No.:

Lab Sample ID: ICSAB 410-190933/8 Instrument ID: E09 - 30921

Lab File ID: 018ICSB.d ICS Source: MT_MJ_ICSAB_00039

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Percent Recovery
Cadmium	**100**	**103**	**103**
Aluminum	*99800*	*103288*	*103*
Antimony	*0.560*	*0.141*	
Arsenic	*102*	*92.6*	*91*
Barium	*0.345*	*0.408*	
Beryllium	*0.00550*	*0.0140*	
Calcium	*299000*	*301478*	*101*
Chromium	*201*	*200*	*99*
Cobalt	*202*	*173*	*86*
Copper	*201*	*173*	*86*
Iron	*250000*	*233723*	*94*
Lead	*0.176*	*0.254*	
Magnesium	*99800*	*101446*	*102*
Manganese	*202*	*183*	*91*
Molybdenum	*2000*	*2249*	*113*
Nickel	*201*	*183*	*91*
Potassium	*99800*	*103887*	*104*
Selenium	*100*	*109*	*108*
Silver	*50.1*	*50.0*	*100*
Sodium	*250000*	*256525*	*103*
Thallium	*0.00550*	*0.0110*	
Tin	*0.235*	*-0.0050*	
Titanium	*2000*	*2062*	*103*
Uranium	*0.00550*	*0.0410*	
Vanadium	*200*	*205*	*102*
Zinc	*102*	*95.7*	*94*

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins Lancaster Laboratories Job No.: 410-60870-1

SDG No.:

Lab Sample ID: ICSA 410-191437/6 Instrument ID: E09 - 30921

Lab File ID: 016ICSA.d ICS Source: MT_MJ_ICSA_00049

Concentration Units: ug/L

Analyte	True Solution A	Found Solution A	Percent Recovery
Cadmium	**0.266**	**0.241**	
Aluminum	*99800*	*110414*	*111*
Antimony	*0.560*	*0.241*	
Arsenic	*1.41*	*0.430*	
Barium	*0.345*	*0.599*	
Beryllium	*0.00550*	*0.0150*	
Calcium	*299000*	*310722*	*104*
Chromium	*1.24*	*1.89*	
Copper	*0.870*	*0.513*	
Iron	*250000*	*264032*	*106*
Magnesium	*99800*	*106975*	*107*
Manganese	*1.31*	*1.98*	
Molybdenum	*2000*	*2033*	*102*
Nickel	*1.12*	*1.36*	
Potassium	*99800*	*111534*	*112*
Selenium	*0.380*	*0.126*	
Silver	*0.0805*	*0.0710*	
Sodium	*250000*	*255089*	*102*
Strontium	*2.10*	*2.36*	
Thallium	*0.00550*	*0.0220*	
Tin	*0.235*	*0.180*	
Titanium	*2000*	*2117*	*106*
Uranium	*0.00550*	*0.0890*	
Vanadium	*0.170*	*0.0530*	
Zinc	*1.55*	*2.56*	

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

4A-IN
INTERFERENCE CHECK STANDARD
METALS

Lab Name: Eurofins Lancaster Laboratories Job No.: 410-60870-1

SDG No.:

Lab Sample ID: ICSAB 410-191437/7 Instrument ID: E09 - 30921

Lab File ID: 017ICSB.d ICS Source: MT_MJ_ICSAB_00039

Concentration Units: ug/L

Analyte	True Solution AB	Found Solution AB	Percent Recovery
Cadmium	**100**	**108**	**108**
Aluminum	*99800*	*110870*	*111*
Antimony	*0.560*	*0.121*	
Arsenic	*102*	*92.0*	*91*
Barium	*0.345*	*0.488*	
Beryllium	*0.00550*	*-0.0050*	
Calcium	*299000*	*307021*	*103*
Chromium	*201*	*211*	*105*
Cobalt	*202*	*200*	*99*
Copper	*201*	*175*	*87*
Iron	*250000*	*263314*	*106*
Magnesium	*99800*	*106379*	*107*
Manganese	*202*	*211*	*105*
Molybdenum	*2000*	*2026*	*102*
Nickel	*201*	*183*	*91*
Potassium	*99800*	*111710*	*112*
Selenium	*100*	*97.1*	*97*
Silver	*50.1*	*52.5*	*105*
Sodium	*250000*	*256518*	*103*
Strontium	*2.10*	*2.48*	
Thallium	*0.00550*	*0.0140*	
Tin	*0.235*	*0.0000*	
Titanium	*2000*	*2153*	*108*
Uranium	*0.00550*	*0.0510*	
Vanadium	*200*	*216*	*108*
Zinc	*102*	*94.9*	*93*

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM IVA-IN

5A-IN
MATRIX SPIKE SAMPLE RECOVERY
METALS - TOTAL RECOVERABLE

Client ID: 3MW01-102621MS MS Lab ID: 410-60870-2 MS

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Matrix: Water Concentration Units: ug/L

% Solids:

Analyte	SSR C		Sample Result (SR) C		Spike Added (SA)	%R	Control Limit %R	Q	Method
Cadmium	54.8		3.5		50.0	103	87-115		6020B

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VA - IN

5A-IN
MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
METALS - TOTAL RECOVERABLE

Client ID: 3MW01-102621MSD MSD
Lab ID: 410-60870-2 MSD
Lab Name: Eurofins Lancaster Laboratories E
Job No.: 410-60870-1
SDG No.:
Matrix: Water
Concentration Units: ug/L
% Solids:

Analyte	(SDR)	C	Spike Added (SA)	%R	Control Limit %R	RPD	RPD Limit	Q	Method
Cadmium	53.8		50.0	101	87-115	2	20		6020B

SDR = Sample Duplicate Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VD - IN

5B-IN
POST DIGESTION SPIKE SAMPLE RECOVERY
METALS - TOTAL RECOVERABLE

Client ID: 3MW01-102621 PDS Lab ID: 410-60870-2 PDS

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.:

Matrix: Water Concentration Units: ug/L

Analyte	SSR C		Sample Result (SR) C		Spike Added (SA)	%R	Control Limit %R	Q	Method
Cadmium	53.3		3.5		50.0	100	80-120		6020B

SSR = Spiked Sample Result

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VB - IN

6-IN
DUPLICATES
METALS - TOTAL RECOVERABLE

Client ID: 3MW01-102621 DU
Lab ID: 410-60870-2 DU
Lab Name: Eurofins Lancaster Laboratories
Job No.: 410-60870-1
SDG No.:
% Solids for Sample:
% Solids for Duplicate:
Matrix: Water
Concentration Units: ug/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	Method
Cadmium	0.50	3.5		3.49		1		6020B

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VI-IN

7A-IN
LINEAR RANGE CHECK STANDARD
METALS

Lab ID: LRC 410-190933/9

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

Sample Matrix: LCS Source: MT_MJ_LRC_00050

Analyte	(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Cadmium	503	488		97				6020B

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS - TOTAL RECOVERABLE

Lab ID: LCS 410-190591/2-A

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

Sample Matrix: Water LCS Source: MT_LCS-SPK-A_00007

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Cadmium	50.0	51.9		104	87	115		6020B

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LINEAR RANGE CHECK STANDARD
METALS

Lab ID: LRC 410-191437/8

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

Sample Matrix: LCS Source: MT_MJ_LRC_00050

Analyte	(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Cadmium	503	494		98				6020B

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS - TOTAL RECOVERABLE

Lab ID: LCS 410-190873/2-A

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

Sample Matrix: Water LCS Source: MT_LCS-SPK-A_00001

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Cadmium	50.0	50.4		101	87	115		6020B

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LINEAR RANGE CHECK STANDARD
METALS

Lab ID: LRC 410-191445/8

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

Sample Matrix: LCS Source: MT_MJ_LRC_00050

Analyte	(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Cadmium	503	480		95				6020B

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

7A-IN
LAB CONTROL SAMPLE
METALS - TOTAL RECOVERABLE

Lab ID: LCS 410-190955/2-A

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

Sample Matrix: Water LCS Source: MT_LCS-SPK-A_00007

Analyte	Water(ug/L)							
	True	Found	C	%R	Limits		Q	Method
Cadmium	50.0	50.0		100	87	115		6020B

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIIA - IN

8-IN
ICP-AES AND ICP-MS SERIAL DILUTIONS
METALS - TOTAL RECOVERABLE

Lab ID: 410-60870-2

SDG No:

Lab Name: Eurofins Lancaster Laboratories Job No: 410-60870-1

Matrix: Water Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	Method
Cadmium	3.5		3.94		NC	D	6020B

Calculations are performed before rounding to avoid round-off errors in calculated results.

FORM VIII-IN

9-IN
DETECTION LIMITS
METALS - TOTAL RECOVERABLE

Lab Name: Eurofins Lancaster Laboratories Job Number: 410-60870-1

SDG Number:

Matrix: Water Instrument ID: E07 - 27813

Method: 6020B DL Date: 11/04/2020 00:00

Prep Method: 3005A

Analyte	Wavelength/ Mass	LOQ (ug/L)	DL (ug/L)
Cadmium	111	0.5	0.151

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS - TOTAL RECOVERABLE

Lab Name: Eurofins Lancaster Laboratories Job Number: 410-60870-1

SDG Number:

Matrix: Water Instrument ID: E07 - 27813

Method: 6020B XMDL Date: 11/27/2018 16:11

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Cadmium	111	0.5	0.151

9-IN
DETECTION LIMITS
METALS - TOTAL RECOVERABLE

Lab Name: Eurofins Lancaster Laboratories Job Number: 410-60870-1

SDG Number:

Matrix: Water Instrument ID: E09 - 30921

Method: 6020B DL Date: 11/04/2020 00:00

Prep Method: 3005A

Analyte	Wavelength/ Mass	LOQ (ug/L)	DL (ug/L)
Cadmium	111	0.5	0.151

9-IN
CALIBRATION BLANK DETECTION LIMITS
METALS - TOTAL RECOVERABLE

Lab Name: Eurofins Lancaster Laboratories Job Number: 410-60870-1

SDG Number:

Matrix: Water Instrument ID: E09 - 30921

Method: 6020B XMDL Date: 11/27/2018 16:11

Analyte	Wavelength/ Mass	XRL (ug/L)	XMDL (ug/L)
Cadmium	111	0.5	0.151

11-IN
LINEAR RANGES
METALS

Lab Name: Eurofins Lancaster Laboratorie Job No: 410-60870-1

SDG No.:

Instrument ID: E07 - 27813 Date: 06/20/2021 00:00

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Cadmium		500	6020B

11-IN
LINEAR RANGES
METALS

Lab Name: Eurofins Lancaster Laboratorie Job No: 410-60870-1

SDG No.:

Instrument ID: E09 - 30921 Date: 06/20/2021 00:00

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	Method
Cadmium		500	6020B

12-IN
PREPARATION LOG
METALS

Lab Name: Eurofins Lancaster Laboratories Job No.: 410-60870-1

SDG No.:

Prep Method: 3005A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 410-190591/1-A	11/04/2021 05:27	190591		50	50
LCS 410-190591/2-A	11/04/2021 05:27	190591		50	50
410-60870-7	11/04/2021 05:27	190591		50	50
410-60870-3	11/04/2021 05:27	190591		50	50

12-IN
PREPARATION LOG
METALS

Lab Name: Eurofins Lancaster Laboratories Job No.: 410-60870-1

SDG No.:

Prep Method: 3005A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 410-190873/1-A	11/04/2021 13:13	190873		50	50
LCS 410-190873/2-A	11/04/2021 13:13	190873		50	50
410-60870-8	11/04/2021 13:13	190873		50	50

12-IN
PREPARATION LOG
METALS

Lab Name: Eurofins Lancaster Laboratories Job No.: 410-60870-1

SDG No.:

Prep Method: 3005A

Lab Sample ID	Preparation Date	Prep Batch	Initial Weight	Initial Volume (mL)	Final Volume (mL)
MB 410-190955/1-A	11/04/2021 15:51	190955		50	50
LCS 410-190955/2-A	11/04/2021 15:51	190955		50	50
410-60870-2	11/04/2021 15:51	190955		50	50
410-60870-2 DU	11/04/2021 15:51	190955		50	50
410-60870-2 MS	11/04/2021 15:51	190955		50	50
410-60870-2 MSD	11/04/2021 15:51	190955		50	50

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins Lancaster Laboratories Env, Job No.: 410-60870-1

SDG No.:

Instrument ID: E07 - 27813 Analysis Method: 6020B

Start Date: 11/05/2021 09:07 End Date: 11/05/2021 15:43

Lab Sample Id	D/F	Type	Time	Analytes																								
				Cd																								
ITUNE 410-191445/1	1		09:07																									
ICIS 410-191445/2			09:40	X																								
STD1 410-191445/3 IC	1		09:42	X																								
ICV 410-191445/4	1		09:44	X																								
ICB 410-191445/5	1		09:46	X																								
ICSA 410-191445/6	1		09:48	X																								
ICSAB 410-191445/7	1		09:50	X																								
LRC 410-191445/8	1		09:52	X																								
CRI 410-191445/9	1		12:13	X																								
CCV 410-191445/10	1		13:37	X																								
CCB 410-191445/11	1		13:39	X																								
ZZZZZZ			13:42																									
ZZZZZZ			13:44																									
ZZZZZZ			13:46																									
ZZZZZZ			13:48																									
ZZZZZZ			13:50																									
ZZZZZZ			13:52																									
ZZZZZZ			13:54																									
ZZZZZZ			13:56																									
CCV 410-191445/20			13:58																									
CCB 410-191445/21			14:00																									
ZZZZZZ			14:02																									
ZZZZZZ			14:04																									
ZZZZZZ			14:06																									
ZZZZZZ			14:08																									
ZZZZZZ			14:10																									
ZZZZZZ			14:12																									
ZZZZZZ			14:14																									
CCV 410-191445/29			14:16																									
CCB 410-191445/30			14:18																									
ZZZZZZ			14:20																									
ZZZZZZ			14:22																									
ZZZZZZ			14:24																									
ZZZZZZ			14:26																									
ZZZZZZ			14:28																									
ZZZZZZ			14:30																									
ZZZZZZ			14:32																									
CCV 410-191445/38	1		14:34	X																								
CCB 410-191445/39	1		14:36	X																								
MB 410-190955/1-A	1	R	14:38	X																								
LCS 410-190955/2-A	1	R	14:40	X																								
410-60870-2	1	R	14:42	X																								

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins Lancaster Laboratories Env, Job No.: 410-60870-1

SDG No.:

Instrument ID: E07 - 27813 Analysis Method: 6020B

Start Date: 11/05/2021 09:07 End Date: 11/05/2021 15:43

Lab Sample Id	D/F	Type	Time	Analytes																								
				Cd																								
410-60870-2 PDS	1	R	14:44	X																								
410-60870-2 DU	1	R	14:46	X																								
410-60870-2 MS	1	R	14:48	X																								
410-60870-2 MSD	1	R	14:50	X																								
410-60870-2 SD	5	R	14:53	X																								
CCV 410-191445/48	1		14:55	X																								
CCB 410-191445/49	1		14:57	X																								
ZZZZZZ			14:59																									
ZZZZZZ			15:01																									
ZZZZZZ			15:03																									
ZZZZZZ			15:05																									
ZZZZZZ			15:07																									
ZZZZZZ			15:09																									
CCV 410-191445/56			15:11																									
CCB 410-191445/57			15:13																									
ZZZZZZ			15:15																									
ZZZZZZ			15:17																									
ZZZZZZ			15:19																									
ZZZZZZ			15:21																									
ZZZZZZ			15:23																									
ZZZZZZ			15:25																									
CCV 410-191445/64			15:27																									
CCB 410-191445/65			15:29																									
CRI 410-191445/66	1		15:43	X																								

Prep Types:
R = Total Recoverable

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins Lancaster Laboratories Env, Job No.: 410-60870-1

SDG No.:

Instrument ID: E09 - 30921 Analysis Method: 6020B

Start Date: 11/04/2021 09:11 End Date: 11/04/2021 14:52

Lab Sample Id	D/F	Type	Time	Analytes																								
				Cd																								
ITUNE 410-190933/1	1		09:11																									
ICIS 410-190933/2			10:27	X																								
STD1 410-190933/3 IC	1		10:29	X																								
ICV 410-190933/4	1		10:31	X																								
ICB 410-190933/5	1		10:33	X																								
CRI 410-190933/6	1		10:35	X																								
ICSA 410-190933/7	1		10:37	X																								
ICSAB 410-190933/8	1		10:39	X																								
LRC 410-190933/9	1		10:41	X																								
CCV 410-190933/10	1		11:07	X																								
CCB 410-190933/11	1		11:09	X																								
ZZZZZZ			11:11																									
ZZZZZZ			11:13																									
ZZZZZZ			11:15																									
ZZZZZZ			11:17																									
ZZZZZZ			11:19																									
ZZZZZZ			11:21																									
ZZZZZZ			11:23																									
ZZZZZZ			11:25																									
ZZZZZZ			11:27																									
CCV 410-190933/21			11:29																									
CCB 410-190933/22			11:31																									
ZZZZZZ			11:34																									
ZZZZZZ			11:36																									
ZZZZZZ			11:38																									
ZZZZZZ			11:40																									
ZZZZZZ			11:42																									
ZZZZZZ			11:44																									
ZZZZZZ			11:46																									
ZZZZZZ			11:48																									
CCV 410-190933/31			11:50																									
CCB 410-190933/32			11:52																									
ZZZZZZ			11:54																									
ZZZZZZ			11:56																									
ZZZZZZ			11:58																									
ZZZZZZ			12:00																									
ZZZZZZ			12:02																									
ZZZZZZ			12:04																									
CCV 410-190933/39			12:06																									
CCB 410-190933/40			12:08																									
ZZZZZZ			12:10																									
ZZZZZZ			12:12																									

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins Lancaster Laboratories Env, Job No.: 410-60870-1

SDG No.:

Instrument ID: E09 - 30921 Analysis Method: 6020B

Start Date: 11/04/2021 09:11 End Date: 11/04/2021 14:52

Lab Sample Id	D/F	Type	Time	Analytes																								
				Cd																								
ZZZZZZ			12:14																									
ZZZZZZ			12:16																									
ZZZZZZ			12:18																									
ZZZZZZ			12:20																									
ZZZZZZ			12:22																									
ZZZZZZ			12:24																									
CCV 410-190933/49			12:26																									
CCB 410-190933/50			12:28																									
ZZZZZZ			12:30																									
ZZZZZZ			12:32																									
ZZZZZZ			12:34																									
ZZZZZZ			12:37																									
ZZZZZZ			12:39																									
ZZZZZZ			12:41																									
ZZZZZZ			12:43																									
ZZZZZZ			12:45																									
CCV 410-190933/59			12:47																									
CCB 410-190933/60			12:49																									
ZZZZZZ			12:51																									
ZZZZZZ			12:53																									
ZZZZZZ			12:55																									
ZZZZZZ			12:57																									
ZZZZZZ			12:59																									
ZZZZZZ			13:01																									
CCV 410-190933/67			13:03																									
CCB 410-190933/68			13:05																									
CCV 410-190933/69	1		13:33	X																								
CCB 410-190933/70	1		13:35	X																								
MB 410-190591/1-A	1	R	13:37	X																								
LCS 410-190591/2-A	1	R	13:39	X																								
ZZZZZZ			13:41																									
ZZZZZZ			13:43																									
ZZZZZZ			13:45																									
ZZZZZZ			13:47																									
ZZZZZZ			13:49																									
ZZZZZZ			13:51																									
CCV 410-190933/79	1		13:53	X																								
CCB 410-190933/80	1		13:55	X																								
ZZZZZZ			13:57																									
ZZZZZZ			13:59																									
ZZZZZZ			14:01																									
ZZZZZZ			14:03																									

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins Lancaster Laboratories Env, Job No.: 410-60870-1

SDG No.:

Instrument ID: E09 - 30921 Analysis Method: 6020B

Start Date: 11/04/2021 09:11 End Date: 11/04/2021 14:52

Lab Sample Id	D/F	Type	Time	Analytes																								
				Cd																								
ZZZZZZ			14:05																									
ZZZZZZ			14:07																									
410-60870-7	1	R	14:09	X																								
ZZZZZZ			14:11																									
ZZZZZZ			14:13																									
410-60870-3	1	R	14:15	X																								
CCV 410-190933/91	1		14:17	X																								
CCB 410-190933/92	1		14:19	X																								
ZZZZZZ			14:21																									
ZZZZZZ			14:23																									
ZZZZZZ			14:25																									
ZZZZZZ			14:27																									
ZZZZZZ			14:29																									
ZZZZZZ			14:31																									
ZZZZZZ			14:33																									
ZZZZZZ			14:35																									
ZZZZZZ			14:37																									
CCV 410-190933/102			14:39																									
CCB 410-190933/103			14:41																									
RINSE 410-190933/104			14:43																									
RINSE 410-190933/105			14:46																									
RINSE 410-190933/106			14:48																									
RINSE 410-190933/107			14:50																									
CRI 410-190933/108	1		14:52	X																								

Prep Types:
R = Total Recoverable

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins Lancaster Laboratories Env, Job No.: 410-60870-1

SDG No.:

Instrument ID: E09 - 30921 Analysis Method: 6020B

Start Date: 11/05/2021 09:02 End Date: 11/05/2021 15:35

Lab Sample Id	D/F	Type	Time	Analytes
				Cd
ITUNE 410-191437/1	1		09:02	
ICIS 410-191437/2			09:47	X
STD1 410-191437/3 IC	1		09:49	X
ICV 410-191437/4	1		09:51	X
ICB 410-191437/5	1		09:53	X
ICSA 410-191437/6	1		09:55	X
ICSAB 410-191437/7	1		09:57	X
LRC 410-191437/8	1		09:59	X
CRI 410-191437/9	1		11:47	X
CCV 410-191437/10	1		13:11	X
CCB 410-191437/11	1		13:13	X
MB 410-190873/1-A	1	R	13:15	X
LCS 410-190873/2-A	1	R	13:17	X
ZZZZZZ			13:19	
ZZZZZZ			13:21	
ZZZZZZ			13:23	
ZZZZZZ			13:25	
ZZZZZZ			13:27	
ZZZZZZ			13:29	
CCV 410-191437/20	1		13:31	X
CCB 410-191437/21	1		13:33	X
ZZZZZZ			13:35	
ZZZZZZ			13:37	
ZZZZZZ			13:39	
ZZZZZZ			13:41	
ZZZZZZ			13:43	
ZZZZZZ			13:45	
ZZZZZZ			13:47	
ZZZZZZ			13:49	
410-60870-8	1	R	13:51	X
ZZZZZZ			13:53	
CCV 410-191437/32	1		13:56	X
CCB 410-191437/33	1		13:58	X
ZZZZZZ			14:00	
ZZZZZZ			14:02	
ZZZZZZ			14:04	
ZZZZZZ			14:06	
ZZZZZZ			14:08	
ZZZZZZ			14:10	
ZZZZZZ			14:12	
ZZZZZZ			14:14	
ZZZZZZ			14:16	

FORM XIII-IN

13-IN
ANALYSIS RUN LOG
METALS

Lab Name: Eurofins Lancaster Laboratories Env, Job No.: 410-60870-1

SDG No.:

Instrument ID: E09 - 30921 Analysis Method: 6020B

Start Date: 11/05/2021 09:02 End Date: 11/05/2021 15:35

Lab Sample Id	D/F	Type	Time	Analytes																								
				Cd																								
CCV 410-191437/43			14:18																									
CCB 410-191437/44			14:20																									
ZZZZZZ			14:22																									
ZZZZZZ			14:24																									
ZZZZZZ			14:26																									
ZZZZZZ			14:28																									
ZZZZZZ			14:30																									
ZZZZZZ			14:32																									
CCV 410-191437/51			14:34																									
CCB 410-191437/52			14:36																									
ZZZZZZ			14:38																									
ZZZZZZ			14:40																									
ZZZZZZ			14:42																									
ZZZZZZ			14:44																									
ZZZZZZ			14:46																									
ZZZZZZ			14:48																									
ZZZZZZ			14:50																									
ZZZZZZ			14:52																									
ZZZZZZ			14:54																									
CCV 410-191437/62			14:56																									
CCB 410-191437/63			14:58																									
ZZZZZZ			15:00																									
ZZZZZZ			15:02																									
ZZZZZZ			15:04																									
ZZZZZZ			15:07																									
ZZZZZZ			15:09																									
ZZZZZZ			15:11																									
ZZZZZZ			15:13																									
CCV 410-191437/71			15:15																									
CCB 410-191437/72			15:17																									
ZZZZZZ			15:19																									
ZZZZZZ			15:21																									
ZZZZZZ			15:23																									
ZZZZZZ			15:25																									
ZZZZZZ			15:27																									
ZZZZZZ			15:29																									
ZZZZZZ			15:31																									
CCV 410-191437/80			15:33																									
CCB 410-191437/81			15:35																									

Prep Types:
R = Total Recoverable

FORM XIII-IN

14-IN
ICP-MS TUNE
METALS

Lab Name: Eurofins Lancaster Laboratories Env, LLC Job No.: 410-60870-1

SDG No.:

ICP-MS Instrument ID: E07 - 27813 Analysis Date: 11/05/21

Lab ID: ITUNE 410-191445/1

Element - Mass	Avg. Measured Mass (amu)	Avg. Peak Width at Peak Height (amu)	% RSD	Q
Be-9	9	0.7754	0.891	
Mg-24	24	0.8089	0.404	
Co-59	59	0.7704	0.531	
In-115	115	0.7276	0.378	
Pb-208	208	0.7798	0.403	

14-IN
ICP-MS TUNE
METALS

Lab Name: Eurofins Lancaster Laboratories Env, LLC Job No.: 410-60870-1

SDG No.:

ICP-MS Instrument ID: E09 - 30921 Analysis Date: 11/04/21

Lab ID: ITUNE 410-190933/1

Element - Mass	Avg. Measured Mass (amu)	Avg. Peak Width at Peak Height (amu)	% RSD	Q
Be-9	9	0.7586	0.459	
Mg-24	24	0.7716	0.181	
Co-59	59	0.7653	0.276	
In-115	115	0.7626	0.43	
Pb-208	208	0.7663	0.768	

14-IN
ICP-MS TUNE
METALS

Lab Name: Eurofins Lancaster Laboratories Env, LLC Job No.: 410-60870-1

SDG No.:

ICP-MS Instrument ID: E09 - 30921 Analysis Date: 11/05/21

Lab ID: ITUNE 410-191437/1

Element - Mass	Avg. Measured Mass (amu)	Avg. Peak Width at Peak Height (amu)	% RSD	Q
Be-9	9	0.7581	0.33	
Mg-24	24	0.7697	0.526	
Co-59	59	0.7600	0.51	
In-115	115	0.7395	0.539	
Pb-208	208	0.7262	0.44	

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.: Analysis Batch No.: 191445

ICP-MS Instrument ID: E07 - 27813 Start Date: 11/05/2021 End Date: 11/05/2021

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Sc-45/1	Q	Element Sc-45/2	Q	Element Sc-45/3	Q	Element Ge/1	Q	Element Ge/2	Q
STD1 410-191445/3 IC	09:42	99		101		95		98		96	
ICV 410-191445/4	09:44	98		100		94		96		95	
ICB 410-191445/5	09:46	97		99		94		98		96	
ICSA 410-191445/6	09:48	96		97		93		96		97	
ICSAB 410-191445/7	09:50	96		95		94		99		95	
LRC 410-191445/8	09:52	98		93		97		98		93	
CRI 410-191445/9	12:13	98		97		94		95		96	
CCV 410-191445/10	13:37	99		100		93		93		96	
CCB 410-191445/11	13:39	99		99		92		100		98	
CCV 410-191445/38	14:34	96		93		89		92		89	
CCB 410-191445/39	14:36	95		91		89		93		91	
MB 410-190955/1-A	14:38	97		94		89		95		93	
LCS 410-190955/2-A	14:40	97		96		91		98		95	
410-60870-2	14:42	97		95		91		99		96	
410-60870-2 PDS	14:44	99		91		91		99		92	
410-60870-2 DU	14:46	98		94		90		99		95	
410-60870-2 MS	14:48	99		92		93		97		94	
410-60870-2 MSD	14:50	98		90		94		99		93	
410-60870-2 SD	14:53	97		90		90		99		94	
CCV 410-191445/48	14:55	98		89		90		93		87	
CCB 410-191445/49	14:57	96		89		91		94		89	
CRI 410-191445/66	15:43	96		89		92		93		90	

15A-IN
ICP-MS INTERNAL STANDARDS RELATIONS
METALS

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.: Analysis Batch No.: 191445

ICP-MS Instrument ID: E07 - 27813 Start Date: 11/05/2021 End Date: 11/05/2021

Analyte	Mass	Internal Standard Used:				
		Element In-115/2 115	Element In-115/3 115	Element Tb-159 159	Element Bi-209 209	Element Sc-45/1 45
Cadmium	111		X			
Aluminum	27					
Antimony	121		X			
Arsenic	75					
Barium	137		X			
Beryllium	9					
Calcium	44					
Chromium	52					
Cobalt	59					
Copper	63					
Iron	57					
Lead	208			X		
Magnesium	24					
Manganese	55					
Molybdenum	98		X			
Nickel	60					
Potassium	39					
Selenium	78	X				
Silver	107		X			
Sodium	23					
Strontium	88		X			
Thallium	205			X		
Tin	120		X			
Titanium	47					
Uranium	238				X	
Vanadium	51					
Zinc	66					
Internal Standard Name on Instrument		In-115 (IS)	In-115 (IS)	Tb-159 (IS)	Bi-209 (IS)	Sc-45 (IS)

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.: Analysis Batch No.: 191445

ICP-MS Instrument ID: E07 - 27813 Start Date: 11/05/2021 End Date: 11/05/2021

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Ge/3	Q	Element In-115/2	Q	Element In-115/3	Q	Element Tb-159	Q	Element Bi-209	Q
STD1 410-191445/3 IC	09:42	94		100		96		99		100	
ICV 410-191445/4	09:44	94		99		96		100		100	
ICB 410-191445/5	09:46	95		99		97		99		99	
ICSA 410-191445/6	09:48	97		93		92		95		91	
ICSAB 410-191445/7	09:50	98		93		90		96		91	
LRC 410-191445/8	09:52	97		101		101		98		95	
CRI 410-191445/9	12:13	96		99		97		98		99	
CCV 410-191445/10	13:37	91		99		95		95		96	
CCB 410-191445/11	13:39	94		99		94		96		95	
CCV 410-191445/38	14:34	90		96		92		96		98	
CCB 410-191445/39	14:36	92		96		92		96		97	
MB 410-190955/1-A	14:38	93		98		94		96		98	
LCS 410-190955/2-A	14:40	95		98		95		96		97	
410-60870-2	14:42	94		98		94		96		97	
410-60870-2 PDS	14:44	94		98		94		96		95	
410-60870-2 DU	14:46	96		99		94		96		98	
410-60870-2 MS	14:48	96		99		95		97		97	
410-60870-2 MSD	14:50	97		99		96		97		96	
410-60870-2 SD	14:53	96		98		94		97		97	
CCV 410-191445/48	14:55	92		97		94		96		96	
CCB 410-191445/49	14:57	92		96		93		95		96	
CRI 410-191445/66	15:43	93		97		95		95		96	

15A-IN
ICP-MS INTERNAL STANDARDS RELATIONS
METALS

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.: Analysis Batch No.: 191445

ICP-MS Instrument ID: E07 - 27813 Start Date: 11/05/2021 End Date: 11/05/2021

Analyte	Mass	Internal Standard Used:				
		Element Sc-45/2 45	Element Sc-45/3 45	Element Ge/1 72	Element Ge/2 72	Element Ge/3 72
Cadmium	111					
Aluminum	27					X
Antimony	121					
Arsenic	75					X
Barium	137					
Beryllium	9			X		
Calcium	44					X
Chromium	52					X
Cobalt	59					X
Copper	63					X
Iron	57					X
Lead	208					
Magnesium	24					X
Manganese	55					X
Molybdenum	98					
Nickel	60					X
Potassium	39					X
Selenium	78					
Silver	107					
Sodium	23					X
Strontium	88					
Thallium	205					
Tin	120					
Titanium	47					X
Uranium	238					
Vanadium	51					X
Zinc	66					X
Internal Standard Name on Instrument		Sc-45 (IS)	Sc-45 (IS)	Ge Internal Standard	Ge Internal Standard	Ge Internal Standard

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.: Analysis Batch No.: 190933

ICP-MS Instrument ID: E09 - 30921 Start Date: 11/04/2021 End Date: 11/04/2021

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Sc-45/1	Q	Element Sc-45/2	Q	Element Sc-45/3	Q	Element Ge/1	Q	Element Ge/2	Q
STD1 410-190933/3 IC	10:29	100		101		100		95		95	
ICV 410-190933/4	10:31	100		99		102		94		95	
ICB 410-190933/5	10:33	100		99		102		100		100	
CRI 410-190933/6	10:35	100		98		102		100		99	
ICSA 410-190933/7	10:37	99		101		98		106		105	
ICSAB 410-190933/8	10:39	99		99		101		106		103	
LRC 410-190933/9	10:41	99		99		103		101		99	
CCV 410-190933/10	11:07	98		98		105		94		92	
CCB 410-190933/11	11:09	99		97		102		100		97	
CCV 410-190933/69	13:33	97		98		100		93		92	
CCB 410-190933/70	13:35	96		97		101		96		97	
MB 410-190591/1-A	13:37	97		97		100		99		98	
LCS 410-190591/2-A	13:39	98		97		102		103		101	
CCV 410-190933/79	13:53	95		96		97		91		89	
CCB 410-190933/80	13:55	93		94		98		94		93	
410-60870-7	14:09	95		99		99		102		101	
410-60870-3	14:15	96		98		102		102		101	
CCV 410-190933/91	14:17	97		97		102		91		90	
CCB 410-190933/92	14:19	96		99		100		98		97	
CRI 410-190933/108	14:52	96		98		98		95		95	

15A-IN
ICP-MS INTERNAL STANDARDS RELATIONS
METALS

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.: Analysis Batch No.: 190933

ICP-MS Instrument ID: E09 - 30921 Start Date: 11/04/2021 End Date: 11/04/2021

Analyte	Mass	Internal Standard Used:				
		Element In-115/2 115	Element In-115/3 115	Element Tb-159 159	Element Bi-209 209	Element Sc-45/1 45
Cadmium	111		X			
Aluminum	27					
Antimony	121		X			
Arsenic	75					
Barium	137		X			
Beryllium	9					X
Calcium	44					
Chromium	52					
Cobalt	59					
Copper	63					
Iron	57					
Lead	208				X	
Magnesium	24					
Manganese	55					
Molybdenum	98		X			
Nickel	60					
Potassium	39					
Selenium	78	X				
Silver	107		X			
Sodium	23					
Thallium	205				X	
Tin	120		X			
Titanium	47					
Uranium	238				X	
Vanadium	51					
Zinc	66					
Internal Standard Name on Instrument		In-115 (IS)	In-115 (IS)	Tb-159 (IS)	Bi-209 (IS)	Sc-45 (IS)

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.: Analysis Batch No.: 190933

ICP-MS Instrument ID: E09 - 30921 Start Date: 11/04/2021 End Date: 11/04/2021

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Ge/3	Q	Element In-115/2	Q	Element In-115/3	Q	Element Tb-159	Q	Element Bi-209	Q
STD1 410-190933/3 IC	10:29	96		101		103		100		101	
ICV 410-190933/4	10:31	96		100		102		100		102	
ICB 410-190933/5	10:33	101		99		102		100		101	
CRI 410-190933/6	10:35	101		99		102		101		102	
ICSA 410-190933/7	10:37	105		95		94		98		95	
ICSAB 410-190933/8	10:39	104		94		100		98		94	
LRC 410-190933/9	10:41	103		105		108		100		98	
CCV 410-190933/10	11:07	96		98		102		99		100	
CCB 410-190933/11	11:09	101		98		101		99		101	
CCV 410-190933/69	13:33	93		98		102		100		100	
CCB 410-190933/70	13:35	99		97		99		98		99	
MB 410-190591/1-A	13:37	98		97		100		99		102	
LCS 410-190591/2-A	13:39	104		99		100		100		100	
CCV 410-190933/79	13:53	93		97		100		99		99	
CCB 410-190933/80	13:55	98		96		99		97		100	
410-60870-7	14:09	104		99		102		100		103	
410-60870-3	14:15	105		99		102		100		101	
CCV 410-190933/91	14:17	94		98		103		100		100	
CCB 410-190933/92	14:19	100		99		102		101		101	
CRI 410-190933/108	14:52	97		98		101		99		100	

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ICP-MS INTERNAL STANDARDS RELATIONS
METALS

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.: Analysis Batch No.: 190933

ICP-MS Instrument ID: E09 - 30921 Start Date: 11/04/2021 End Date: 11/04/2021

Analyte	Mass	Internal Standard Used:				
		Element Sc-45/2 45	Element Sc-45/3 45	Element Ge/1 72	Element Ge/2 72	Element Ge/3 72
Cadmium	111					
Aluminum	27		X			
Antimony	121					
Arsenic	75					X
Barium	137					
Beryllium	9					
Calcium	44		X			
Chromium	52		X			
Cobalt	59					X
Copper	63					X
Iron	57					X
Lead	208					
Magnesium	24		X			
Manganese	55					X
Molybdenum	98					
Nickel	60					X
Potassium	39		X			
Selenium	78					
Silver	107					
Sodium	23		X			
Thallium	205					
Tin	120					
Titanium	47		X			
Uranium	238					
Vanadium	51		X			
Zinc	66					X
Internal Standard Name on Instrument		Sc-45 (IS)	Sc-45 (IS)	Ge Internal Standard	Ge Internal Standard	Ge Internal Standard

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.: Analysis Batch No.: 191437

ICP-MS Instrument ID: E09 - 30921 Start Date: 11/05/2021 End Date: 11/05/2021

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Sc-45/1	Q	Element Sc-45/2	Q	Element Sc-45/3	Q	Element Ge/1	Q	Element Ge/2	Q
STD1 410-191437/3 IC	09:49	101		97		100		96		94	
ICV 410-191437/4	09:51	101		100		101		96		94	
ICB 410-191437/5	09:53	100		100		99		101		101	
ICSA 410-191437/6	09:55	100		101		96		106		104	
ICSAB 410-191437/7	09:57	98		98		96		104		103	
LRC 410-191437/8	09:59	99		97		103		101		98	
CRI 410-191437/9	11:47	98		94		102		96		94	
CCV 410-191437/10	13:11	97		92		97		91		87	
CCB 410-191437/11	13:13	95		91		95		97		92	
MB 410-190873/1-A	13:15	98		94		97		98		95	
LCS 410-190873/2-A	13:17	98		92		101		102		98	
CCV 410-191437/20	13:31	96		92		97		91		87	
CCB 410-191437/21	13:33	97		91		97		97		92	
410-60870-8	13:51	97		94		97		100		97	
CCV 410-191437/32	13:56	95		92		94		90		85	
CCB 410-191437/33	13:58	93		90		96		95		91	

15A-IN
ICP-MS INTERNAL STANDARDS RELATIONS
METALS

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.: Analysis Batch No.: 191437

ICP-MS Instrument ID: E09 - 30921 Start Date: 11/05/2021 End Date: 11/05/2021

Analyte	Mass	Internal Standard Used:				
		Element In-115/2 115	Element In-115/3 115	Element Tb-159 159	Element Bi-209 209	Element Sc-45/1 45
Cadmium	111		X			
Aluminum	27					
Antimony	121		X			
Arsenic	75					
Barium	137		X			
Beryllium	9					X
Calcium	44					
Chromium	52					
Cobalt	59					
Copper	63					
Iron	57					
Magnesium	24					
Manganese	55					
Molybdenum	98					
Nickel	60					
Potassium	39					
Selenium	78					
Silver	107		X			
Sodium	23					
Strontium	88					
Thallium	205				X	
Tin	120		X			
Titanium	47					
Uranium	238				X	
Vanadium	51					
Zinc	66					
Internal Standard Name on Instrument		In-115 (IS)	In-115 (IS)	Tb-159 (IS)	Bi-209 (IS)	Sc-45 (IS)

15-IN
ICP-MS INTERNAL STANDARDS RELATIVE INTENSITY SUMMARY
METALS

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.: Analysis Batch No.: 191437

ICP-MS Instrument ID: E09 - 30921 Start Date: 11/05/2021 End Date: 11/05/2021

Lab Sample ID	Time	Internal Standards %RI For:									
		Element Ge/3	Q	Element In-115/2	Q	Element In-115/3	Q	Element Tb-159	Q	Element Bi-209	Q
STD1 410-191437/3 IC	09:49	98		101		105		102		101	
ICV 410-191437/4	09:51	98		102		103		101		101	
ICB 410-191437/5	09:53	102		101		100		100		100	
ICSA 410-191437/6	09:55	106		95		97		100		94	
ICSAB 410-191437/7	09:57	107		95		97		99		93	
LRC 410-191437/8	09:59	103		106		108		100		97	
CRI 410-191437/9	11:47	101		99		99		98		98	
CCV 410-191437/10	13:11	91		94		95		94		94	
CCB 410-191437/11	13:13	97		94		96		95		94	
MB 410-190873/1-A	13:15	98		97		97		96		97	
LCS 410-190873/2-A	13:17	101		97		98		96		95	
CCV 410-191437/20	13:31	94		96		97		96		95	
CCB 410-191437/21	13:33	98		95		98		96		96	
410-60870-8	13:51	102		97		98		96		98	
CCV 410-191437/32	13:56	91		94		97		95		95	
CCB 410-191437/33	13:58	96		94		95		95		95	

15A-IN
ICP-MS INTERNAL STANDARDS RELATIONS
METALS

Lab Name: Eurofins Lancaster Laboratories E Job No.: 410-60870-1

SDG No.: Analysis Batch No.: 191437

ICP-MS Instrument ID: E09 - 30921 Start Date: 11/05/2021 End Date: 11/05/2021

Analyte	Mass	Internal Standard Used:				
		Element Sc-45/2 45	Element Sc-45/3 45	Element Ge/1 72	Element Ge/2 72	Element Ge/3 72
Cadmium	111					
Aluminum	27		X			
Antimony	121					
Arsenic	75					X
Barium	137					
Beryllium	9					
Calcium	44		X			
Chromium	52		X			
Cobalt	59		X			
Copper	63					X
Iron	57		X			
Magnesium	24		X			
Manganese	55		X			
Molybdenum	98					X
Nickel	60					X
Potassium	39		X			
Selenium	78				X	
Silver	107					
Sodium	23		X			
Strontium	88					X
Thallium	205					
Tin	120					
Titanium	47		X			
Uranium	238					
Vanadium	51		X			
Zinc	66					X
Internal Standard Name on Instrument		Sc-45 (IS)	Sc-45 (IS)	Ge Internal Standard	Ge Internal Standard	Ge Internal Standard

METALS BATCH WORKSHEET

Lab Name: Eurofins Lancaster Laboratorie Job No.: 410-60870-1

SDG No.:

Batch Number: 190591 Batch Start Date: 11/04/21 06:44 Batch Analyst: Kuhns, Annamaria M

Batch Method: 3005A Batch End Date: 11/04/21 10:28

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	MP_1:1HCl 00016	MP_1:1HNO3 00022	MT_LCS-SPK-A 00007	MT_LCS-SPK-B 00003
MB 410-190591/1		3005A, 6020B		50 mL	50 mL	5 mL	2 mL		
LCS 410-190591/2		3005A, 6020B		50 mL	50 mL	5 mL	2 mL	0.2 mL	0.2 mL
410-60870-E-7	FB-102621	3005A, 6020B	R	50 mL	50 mL	5 mL	2 mL		
410-60870-E-3	3MW01-102621D	3005A, 6020B	R	50 mL	50 mL	5 mL	2 mL		

Batch Notes	
Digestion Tube/Cup ID	2104009
Pipette/Syringe/Dispenser ID	G20054G
Analyst ID - Spike Analyst	0862
Digestion Unit ID	14
Thermometer ID	191201
Thermometer Location ID	8
Temperature - Uncorrected - Start	94 Degrees C
Temperature - Uncorrected - End	94 Degrees C

Basis	Basis Description
R	Total Recoverable

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: Eurofins Lancaster Laboratorie Job No.: 410-60870-1

SDG No.:

Batch Number: 190873 Batch Start Date: 11/04/21 13:40 Batch Analyst: Rice, JoElla L

Batch Method: 3005A Batch End Date: 11/04/21 17:40

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	MP_1:1HCl 00012	MP_1:1HNO3 00016	MT_LCS-SPK-A 00001	MT_LCS-SPK-B 00002
MB 410-190873/1		3005A, 6020B		50 mL	50 mL	5 mL	2 mL		
LCS 410-190873/2		3005A, 6020B		50 mL	50 mL	5 mL	2 mL	0.2 mL	0.2 mL
410-60870-E-8	FB-102721	3005A, 6020B	R	50 mL	50 mL	5 mL	2 mL		

Batch Notes	
Digestion Tube/Cup ID	2106023
Pipette/Syringe/Dispenser ID	G20054G
Analyst ID - Spike Analyst	1364
Digestion Unit ID	14
Thermometer ID	191201
Temperature - Corrected - Start	94 Degrees C
Temperature - Corrected - End	94 Degrees C

Basis	Basis Description
R	Total Recoverable

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

METALS BATCH WORKSHEET

Lab Name: Eurofins Lancaster Laboratorie Job No.: 410-60870-1

SDG No.:

Batch Number: 190955 Batch Start Date: 11/05/21 05:45 Batch Analyst: Kuhns, Annamaria M

Batch Method: 3005A Batch End Date: 11/05/21 09:45

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	MP_1:1HCl 00016	MP_1:1HNO3 00022	MT_LCS-SPK-A 00007	MT_LCS-SPK-B 00003
MB 410-190955/1		3005A, 6020B		50 mL	50 mL	5 mL	2 mL		
LCS 410-190955/2		3005A, 6020B		50 mL	50 mL	5 mL	2 mL	0.2 mL	0.2 mL
410-60870-E-2	3MW01-102621	3005A, 6020B	R	50 mL	50 mL	5 mL	2 mL		
410-60870-E-2 DU	3MW01-102621	3005A, 6020B	R	50 mL	50 mL	5 mL	2 mL		
410-60870-E-2 MS	3MW01-102621MS	3005A, 6020B	R	50 mL	50 mL	5 mL	2 mL	0.2 mL	0.2 mL
410-60870-E-2 MSD	3MW01-102621MSD	3005A, 6020B	R	50 mL	50 mL	5 mL	2 mL	0.2 mL	0.2 mL

Batch Notes	
Digestion Tube/Cup ID	2106023
Pipette/Syringe/Dispenser ID	G20054G
Analyst ID - Spike Analyst	0862
Digestion Unit ID	16
Thermometer ID	191201
Thermometer Location ID	9
Temperature - Uncorrected - Start	94 Degrees C
Temperature - Uncorrected - End	94 Degrees C

Basis	Basis Description
R	Total Recoverable

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Quantitation Report

Data File Name	013CALB.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 09:40:19
Sample Name	ICIS 2014932
Sample Type	CalBlk
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

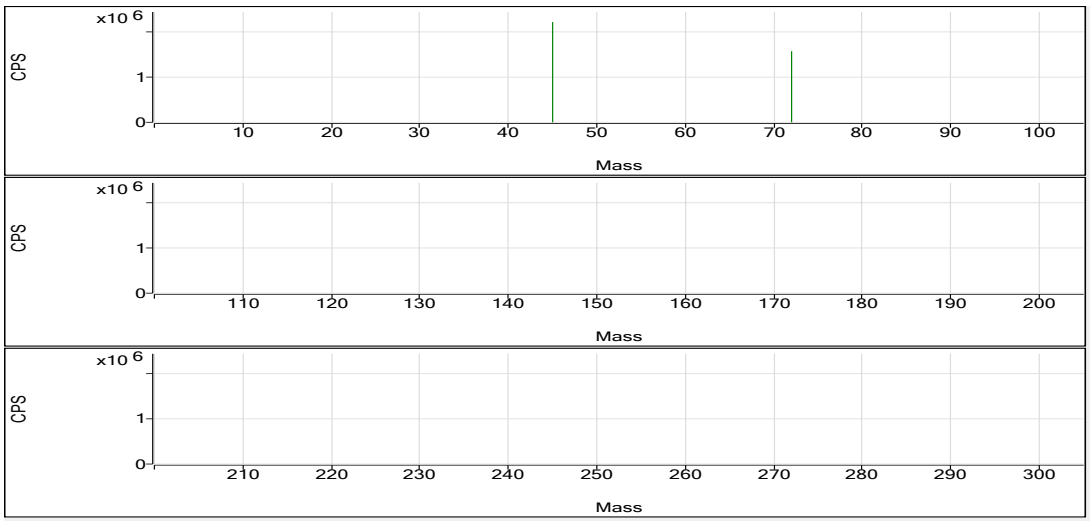
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.000	ppb	N/A	16.00	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.000	ppb	N/A	2.22	0.0000	Pulse	1.5000	3
Na	23	72	He	0.000	ppb	N/A	13026.11	0.0673	Pulse	0.1000	3
Mg	24	72	He	0.000	ppb	N/A	146.67	0.0008	Pulse	0.1000	3
Al	27	72	He	0.000	ppb	N/A	1341.45	0.0070	Pulse	0.1000	3
K	39	72	He	0.000	ppb	N/A	25983.62	0.1342	Pulse	0.1000	3
Ca	44	72	He	0.000	ppb	N/A	230.01	0.0012	Pulse	0.1000	3
Ti	47	72	He	0.000	ppb	N/A	3.33	0.0000	Pulse	0.1000	3
V	51	72	He	0.000	ppb	N/A	1515.42	0.0078	Pulse	0.5000	3
Cr	52	72	He	0.000	ppb	N/A	1993.55	0.0103	Pulse	0.1000	3
Mn	55	72	He	0.000	ppb	N/A	156.67	0.0008	Pulse	0.1000	3
Fe	57	72	He	0.000	ppb	N/A	133.34	0.0007	Pulse	0.1000	3
Co	59	72	He	0.000	ppb	N/A	73.33	0.0004	Pulse	0.1000	3
Ni	60	72	He	0.000	ppb	N/A	156.67	0.0008	Pulse	0.1000	3
Cu	63	72	He	0.000	ppb	N/A	446.69	0.0023	Pulse	0.1000	3
Zn	66	72	He	0.000	ppb	N/A	150.01	0.0008	Pulse	0.1000	3
As	75	72	He	0.000	ppb	N/A	78.67	0.0004	Pulse	0.5000	3
Sr	88	115	He	0.000	ppb	N/A	26.67	0.0003	Pulse	0.1000	3
Mo	98	115	He	0.000	ppb	N/A	36.67	0.0004	Pulse	0.1000	3
Ag	107	115	He	0.000	ppb	N/A	36.67	0.0004	Pulse	0.1000	3
Cd	111	115	He	0.000	ppb	N/A	0.67	0.0000	Pulse	0.5000	3
Sn	120	115	He	0.000	ppb	N/A	1600.16	0.0196	Pulse	0.1000	3
Sb	121	115	He	0.000	ppb	N/A	20.00	0.0002	Pulse	0.1000	3
Ba	137	115	He	0.000	ppb	N/A	13.33	0.0002	Pulse	0.1000	3
Tl	205	159	He	0.000	ppb	N/A	60.00	0.0002	Pulse	0.1000	3
Pb	208	159	He	0.000	ppb	N/A	293.35	0.0010	Pulse	0.1000	3
U	238	209	He	0.000	ppb	N/A	10.00	0.0001	Pulse	0.1000	3

ISTD Table:

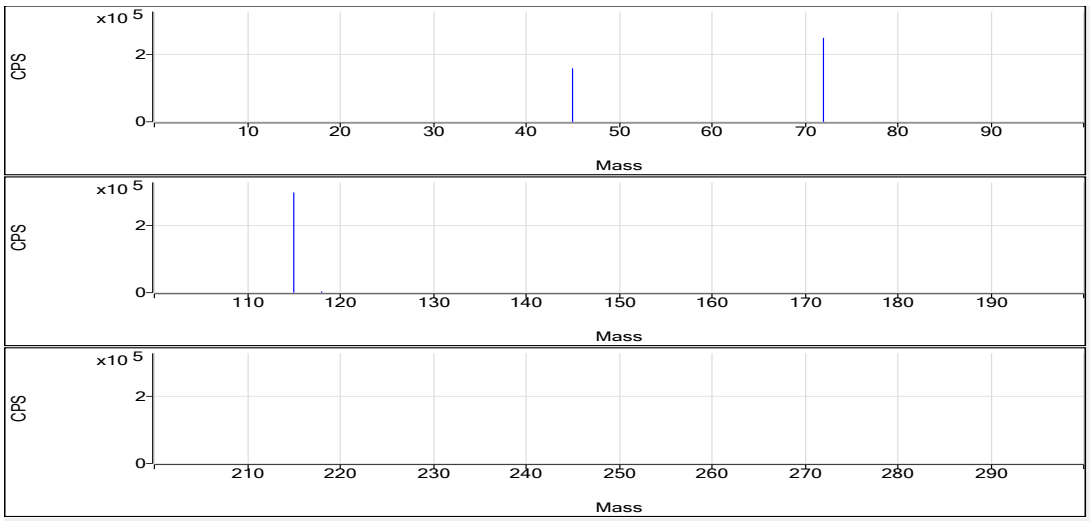
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2213388.25	1.4	100.0	Analog	0.1000	3
No Gas	Ge	72	1570465.13	1.3	100.0	Analog	0.1000	3
H2	Sc	45	158083.73	0.3	100.0	Pulse	0.1000	3
H2	Ge	72	248212.34	0.5	100.0	Pulse	0.1000	3
H2	In	115	296281.42	0.9	100.0	Pulse	0.1000	3
He	Sc	45	78218.86	2.7	100.0	Pulse	0.1000	3
He	Ge	72	193597.57	1.3	100.0	Pulse	0.1000	3
He	In	115	81527.18	1.7	100.0	Pulse	0.1000	3
He	Tb	159	287459.36	0.4	100.0	Pulse	0.1000	3
He	Bi	209	183712.11	0.3	100.0	Pulse	0.1000	3

No Gas

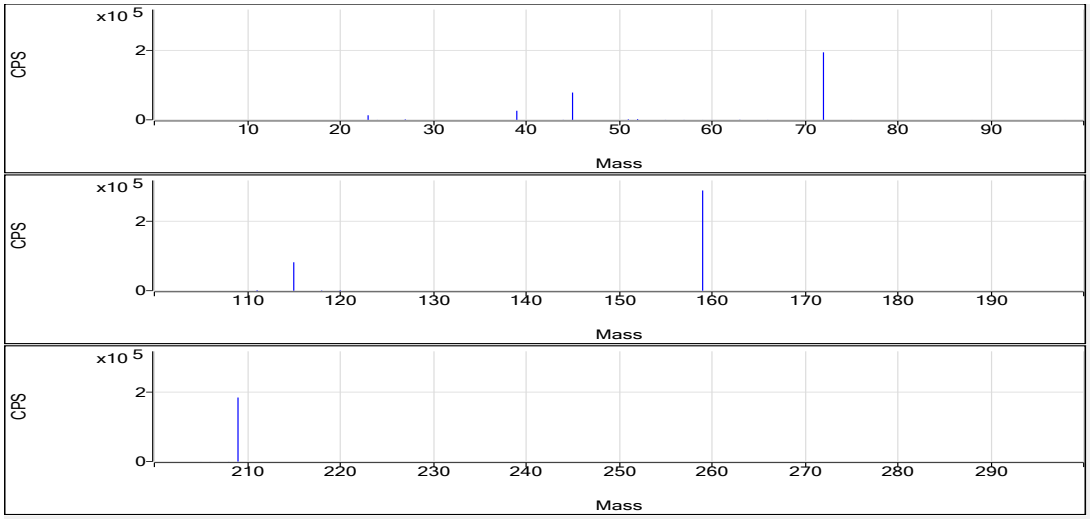


H2



Quantitation Report

He



Quantitation Report

Data File Name	014CALS.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 09:42:21
Sample Name	STD1 1990993
Sample Type	CalStd
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

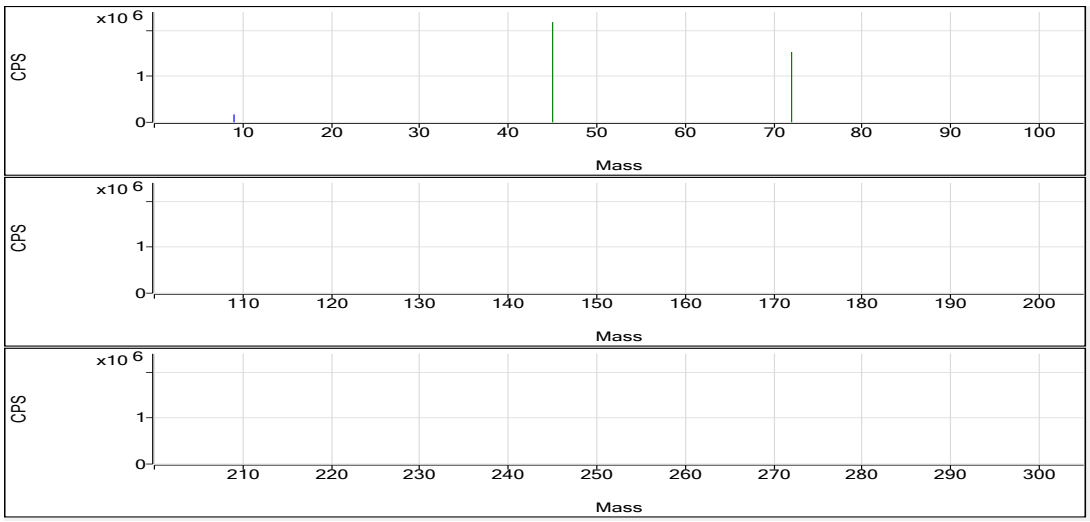
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	100.000	ppb	1.2	172006.00	0.1121	Pulse	0.5000	3
Se	78	115	H2	100.000	ppb	2.7	5667.78	0.0191	Pulse	1.5000	3
Na	23	72	He	10000.000	ppb	0.7	2551688.66	14.0848	Analog	0.1000	3
Mg	24	72	He	10000.000	ppb	1.9	1220435.71	6.7372	Mix	0.1000	3
Al	27	72	He	10000.000	ppb	0.8	387170.83	2.1373	Pulse	0.1000	3
K	39	72	He	10000.000	ppb	0.8	967706.52	5.3419	Pulse	0.1000	3
Ca	44	72	He	10000.000	ppb	0.8	50942.27	0.2812	Pulse	0.1000	3
Ti	47	72	He	1000.000	ppb	3.2	38133.60	0.2105	Pulse	0.1000	3
V	51	72	He	1000.000	ppb	1.6	1438206.00	7.9390	Analog	0.5000	3
Cr	52	72	He	1000.000	ppb	1.5	1862677.68	10.2828	Analog	0.1000	3
Mn	55	72	He	1000.000	ppb	1.0	805345.72	4.4457	Pulse	0.1000	3
Fe	57	72	He	10000.000	ppb	0.7	346700.64	1.9138	Pulse	0.1000	3
Co	59	72	He	1000.000	ppb	2.4	3167842.97	17.4887	Analog	0.1000	3
Ni	60	72	He	1000.000	ppb	0.6	849355.17	4.6884	Pulse	0.1000	3
Cu	63	72	He	1000.000	ppb	1.2	2444618.45	13.4951	Analog	0.1000	3
Zn	66	72	He	1000.000	ppb	0.9	275767.55	1.5223	Pulse	0.1000	3
As	75	72	He	1000.000	ppb	1.4	192256.76	1.0613	Pulse	0.5000	3
Sr	88	115	He	100.000	ppb	1.1	88715.83	1.1315	Pulse	0.1000	3
Mo	98	115	He	100.000	ppb	0.9	164759.59	2.1013	Pulse	0.1000	3
Ag	107	115	He	100.000	ppb	0.6	329525.57	4.2026	Pulse	0.1000	3
Cd	111	115	He	100.000	ppb	0.7	38472.34	0.4907	Pulse	0.5000	3
Sn	120	115	He	100.000	ppb	0.7	112208.81	1.4310	Pulse	0.1000	3
Sb	121	115	He	100.000	ppb	0.5	101823.26	1.2986	Pulse	0.1000	3
Ba	137	115	He	1000.000	ppb	0.7	367653.05	4.6890	Pulse	0.1000	3
Tl	205	159	He	100.000	ppb	1.9	554593.39	1.9577	Pulse	0.1000	3
Pb	208	159	He	100.000	ppb	1.1	738653.35	2.6073	Pulse	0.1000	3
U	238	209	He	500.000	ppb	2.6	4264675.98	23.1946	Analog	0.1000	3

ISTD Table:

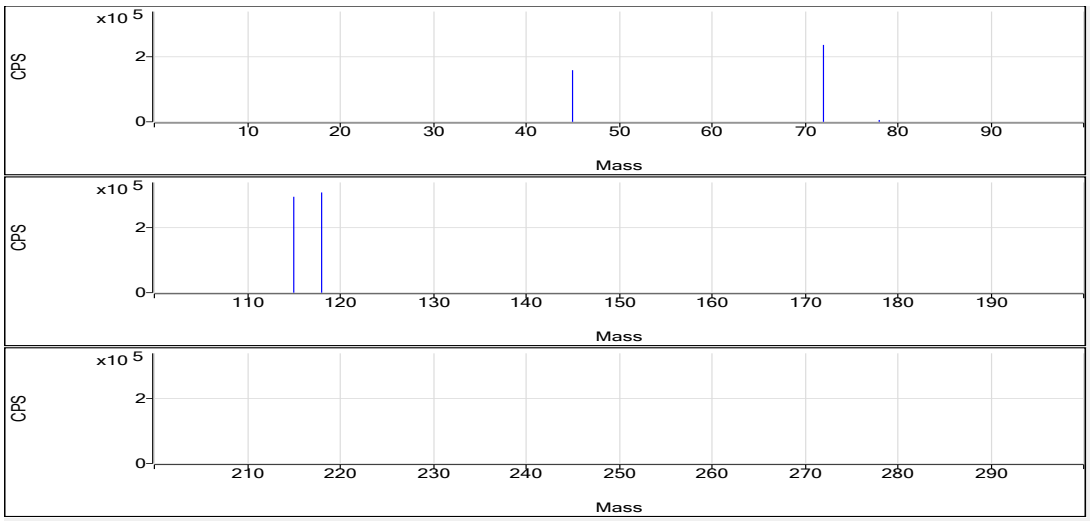
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2189182.26	0.6	98.9	Analog	0.1000	3
No Gas	Ge	72	1535004.56	1.3	97.7	Analog	0.1000	3
H2	Sc	45	159770.47	1.5	101.1	Pulse	0.1000	3
H2	Ge	72	237986.74	0.6	95.9	Pulse	0.1000	3
H2	In	115	296834.88	0.7	100.2	Pulse	0.1000	3
He	Sc	45	74335.49	0.5	95.0	Pulse	0.1000	3
He	Ge	72	181163.49	1.1	93.6	Pulse	0.1000	3
He	In	115	78409.56	0.5	96.2	Pulse	0.1000	3
He	Tb	159	283312.52	0.5	98.6	Pulse	0.1000	3
He	Bi	209	183901.00	1.5	100.1	Pulse	0.1000	3

No Gas

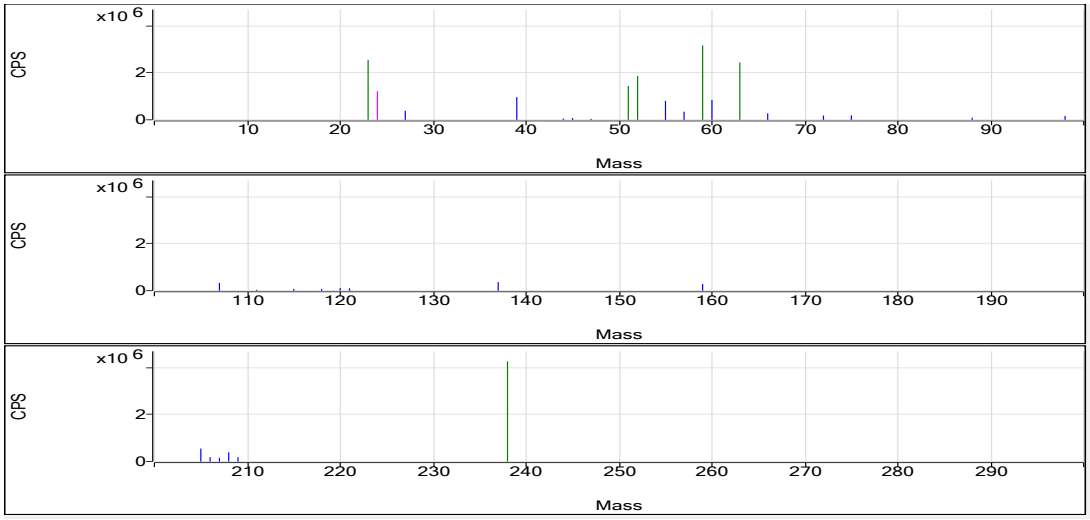


H2



Quantitation Report

He



Quantitation Report

Data File Name	015_ICV.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 09:44:20
Sample Name	ICV 1973334
Sample Type	ICV
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

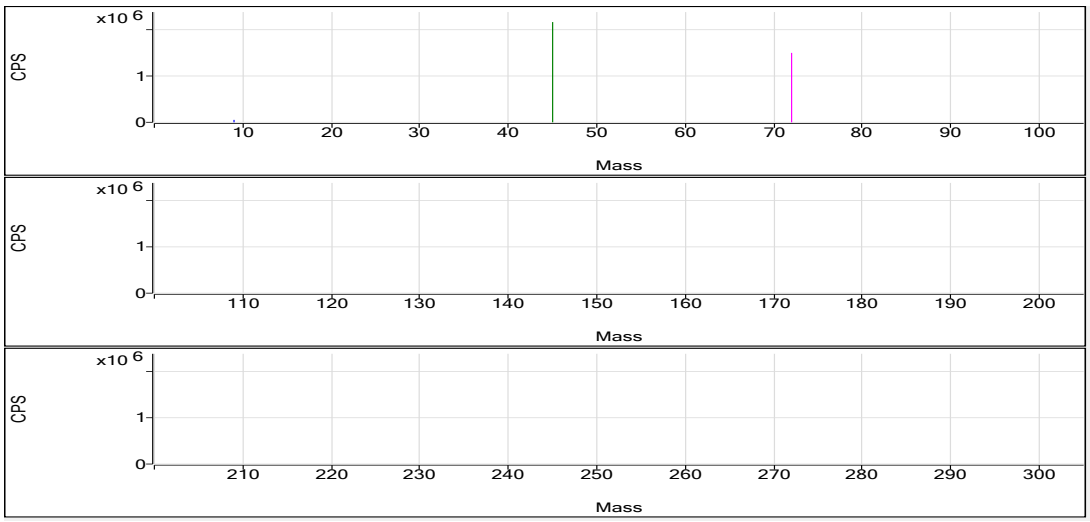
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	31.075	ppb	0.4	52231.87	0.0348	Pulse	0.5000	3
Se	78	115	H2	30.758	ppb	0.8	1727.22	0.0059	Pulse	1.5000	3
Na	23	72	He	5168.901	ppb	0.8	1336743.37	7.3128	Analog	0.1000	3
Mg	24	72	He	5070.904	ppb	1.4	624458.14	3.4167	Pulse	0.1000	3
Al	27	72	He	5035.414	ppb	0.6	197340.73	1.0797	Pulse	0.1000	3
K	39	72	He	5033.605	ppb	1.2	503631.50	2.7556	Pulse	0.1000	3
Ca	44	72	He	4965.222	ppb	1.9	25629.81	0.1402	Pulse	0.1000	3
Ti	47	72	He	298.266	ppb	2.4	11478.17	0.0628	Pulse	0.1000	3
V	51	72	He	287.949	ppb	1.7	418823.16	2.2916	Pulse	0.5000	3
Cr	52	72	He	290.625	ppb	1.8	547491.94	2.9957	Pulse	0.1000	3
Mn	55	72	He	303.541	ppb	2.7	246715.02	1.3500	Pulse	0.1000	3
Fe	57	72	He	5006.022	ppb	2.2	175153.97	0.9584	Pulse	0.1000	3
Co	59	72	He	286.643	ppb	1.8	916294.91	5.0133	Pulse	0.1000	3
Ni	60	72	He	299.341	ppb	1.4	256601.36	1.4040	Pulse	0.1000	3
Cu	63	72	He	284.839	ppb	1.3	702836.08	3.8456	Pulse	0.1000	3
Zn	66	72	He	304.318	ppb	0.6	84771.46	0.4638	Pulse	0.1000	3
As	75	72	He	298.077	ppb	2.2	57869.97	0.3166	Pulse	0.5000	3
Sr	88	115	He	30.793	ppb	3.0	27316.84	0.3486	Pulse	0.1000	3
Mo	98	115	He	30.383	ppb	1.2	50042.57	0.6387	Pulse	0.1000	3
Ag	107	115	He	30.165	ppb	1.3	99336.96	1.2680	Pulse	0.1000	3
Cd	111	115	He	30.194	ppb	1.5	11607.51	0.1482	Pulse	0.5000	3
Sn	120	115	He	29.612	ppb	2.7	34282.90	0.4376	Pulse	0.1000	3
Sb	121	115	He	31.015	ppb	2.1	31563.21	0.4029	Pulse	0.1000	3
Ba	137	115	He	302.524	ppb	2.6	111125.11	1.4186	Pulse	0.1000	3
Tl	205	159	He	30.073	ppb	0.5	169094.33	0.5889	Pulse	0.1000	3
Pb	208	159	He	29.771	ppb	1.2	223097.43	0.7769	Pulse	0.1000	3
U	238	209	He	301.495	ppb	1.5	2570608.66	13.9861	Analog	0.1000	3

ISTD Table:

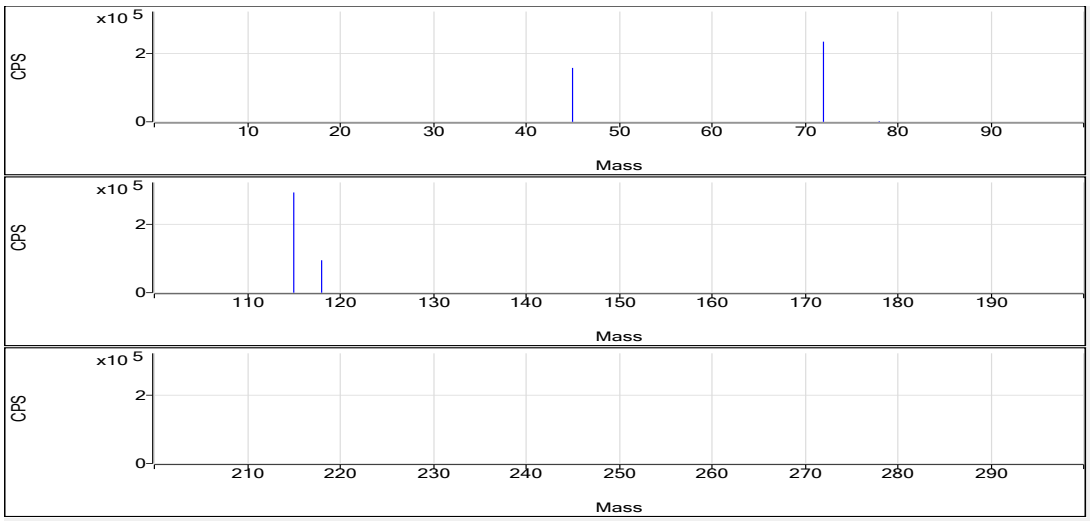
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2165115.18	1.4	97.8	Analog	0.1000	3
No Gas	Ge	72	1499590.08	0.9	95.5	Mix	0.1000	3
H2	Sc	45	158039.03	1.2	100.0	Pulse	0.1000	3
H2	Ge	72	234989.96	1.2	94.7	Pulse	0.1000	3
H2	In	115	293816.70	1.5	99.2	Pulse	0.1000	3
He	Sc	45	73601.38	1.3	94.1	Pulse	0.1000	3
He	Ge	72	182787.05	1.5	94.4	Pulse	0.1000	3
He	In	115	78342.54	0.8	96.1	Pulse	0.1000	3
He	Tb	159	287152.09	0.3	99.9	Pulse	0.1000	3
He	Bi	209	183806.74	0.9	100.1	Pulse	0.1000	3

No Gas

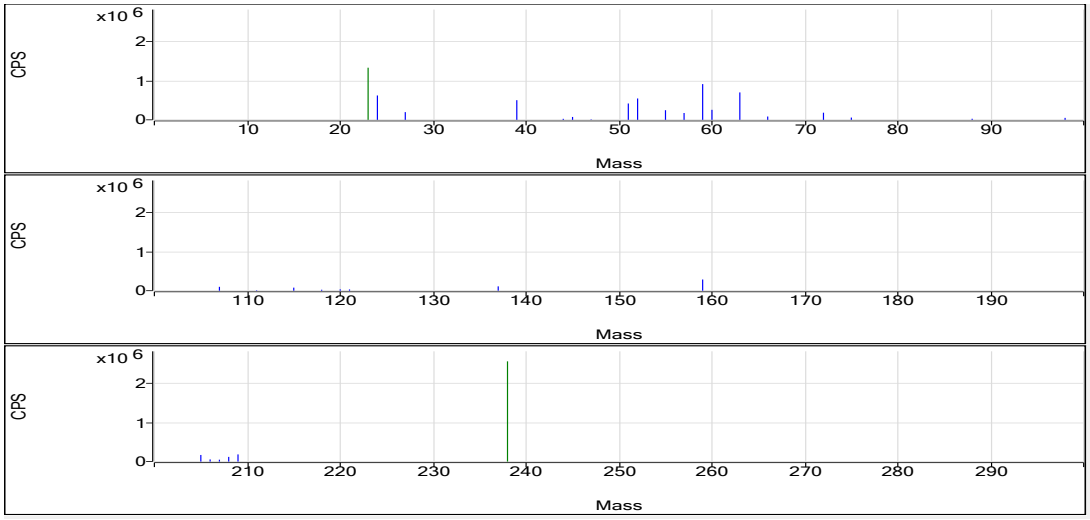


H2



Quantitation Report

He



Quantitation Report

Data File Name	016_ICB.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 09:46:22
Sample Name	ICB 2014932
Sample Type	ICB
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

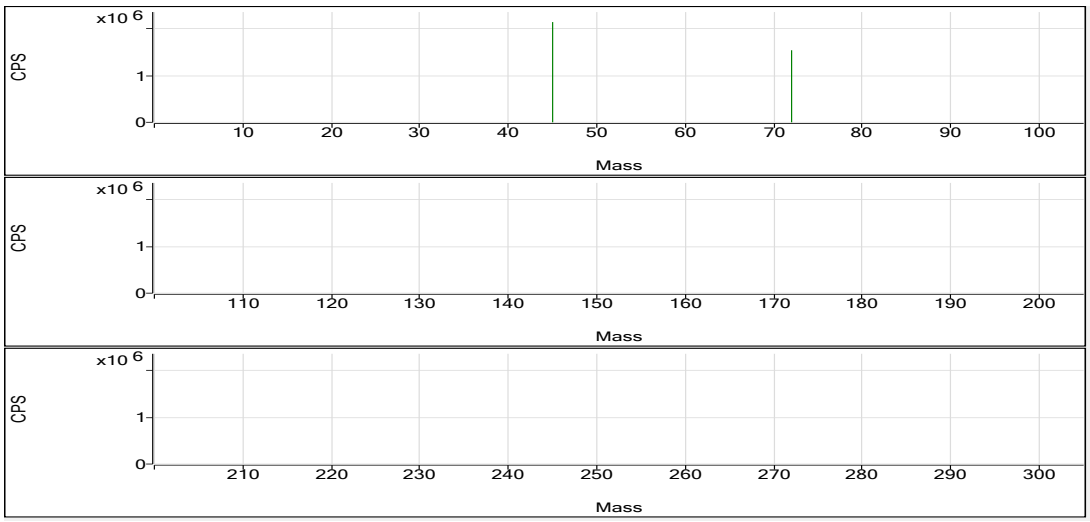
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.016	ppb	26.3	42.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.060	ppb	60.1	5.55	0.0000	Pulse	1.5000	3
Na	23	72	He	2.518	ppb	38.0	13046.10	0.0708	Pulse	0.1000	3
Mg	24	72	He	0.781	ppb	21.2	236.68	0.0013	Pulse	0.1000	3
Al	27	72	He	-29.855	ppb	N/A	120.00	0.0007	Pulse	0.1000	3
K	39	72	He	-4.857	ppb	N/A	24267.22	0.1317	Pulse	0.1000	3
Ca	44	72	He	-14.041	ppb	N/A	146.67	0.0008	Pulse	0.1000	3
Ti	47	72	He	0.348	ppb	42.9	16.67	0.0001	Pulse	0.1000	3
V	51	72	He	-0.020	ppb	N/A	1412.75	0.0077	Pulse	0.5000	3
Cr	52	72	He	0.027	ppb	81.7	1946.86	0.0106	Pulse	0.1000	3
Mn	55	72	He	0.071	ppb	85.9	206.68	0.0011	Pulse	0.1000	3
Fe	57	72	He	0.003	ppb	45833.4	126.67	0.0007	Pulse	0.1000	3
Co	59	72	He	0.052	ppb	27.2	236.68	0.0013	Pulse	0.1000	3
Ni	60	72	He	0.082	ppb	74.6	220.01	0.0012	Pulse	0.1000	3
Cu	63	72	He	0.077	ppb	29.8	616.70	0.0033	Pulse	0.1000	3
Zn	66	72	He	0.123	ppb	135.9	176.68	0.0010	Pulse	0.1000	3
As	75	72	He	0.119	ppb	25.0	98.00	0.0005	Pulse	0.5000	3
Sr	88	115	He	-0.003	ppb	N/A	23.33	0.0003	Pulse	0.1000	3
Mo	98	115	He	0.015	ppb	108.6	60.00	0.0008	Pulse	0.1000	3
Ag	107	115	He	0.001	ppb	759.9	40.00	0.0005	Pulse	0.1000	3
Cd	111	115	He	0.007	ppb	42.7	3.33	0.0000	Pulse	0.5000	3
Sn	120	115	He	-0.070	ppb	N/A	1463.46	0.0186	Pulse	0.1000	3
Sb	121	115	He	0.014	ppb	178.9	33.33	0.0004	Pulse	0.1000	3
Ba	137	115	He	0.046	ppb	153.2	30.00	0.0004	Pulse	0.1000	3
Tl	205	159	He	0.060	ppb	15.2	393.35	0.0014	Pulse	0.1000	3
Pb	208	159	He	0.001	ppb	542.1	296.67	0.0010	Pulse	0.1000	3
U	238	209	He	0.069	ppb	6.6	593.37	0.0033	Pulse	0.1000	3

ISTD Table:

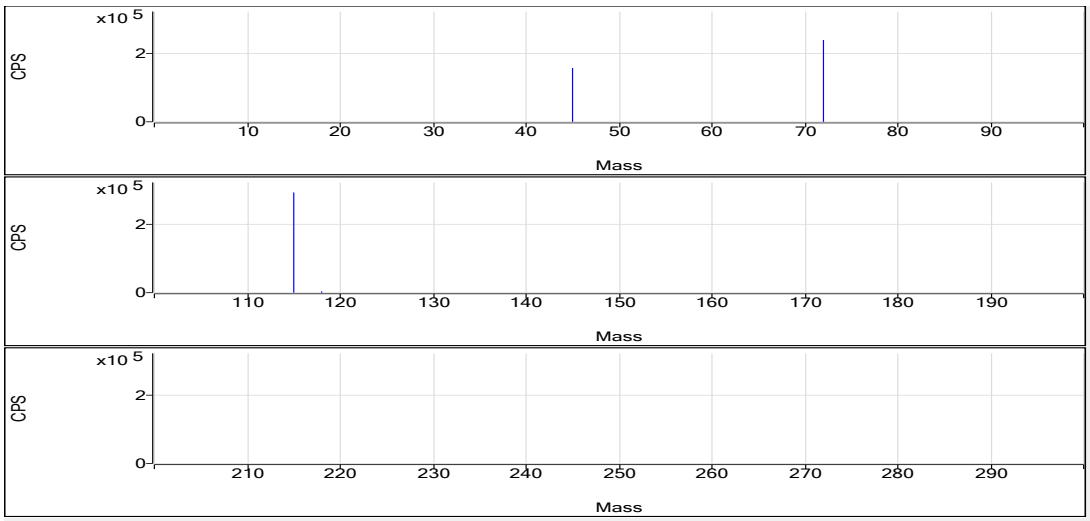
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2140005.49	1.1	96.7	Analog	0.1000	3
No Gas	Ge	72	1538482.53	2.5	98.0	Analog	0.1000	3
H2	Sc	45	156641.01	0.7	99.1	Pulse	0.1000	3
H2	Ge	72	238216.31	0.5	96.0	Pulse	0.1000	3
H2	In	115	291955.37	0.7	98.5	Pulse	0.1000	3
He	Sc	45	73420.83	1.5	93.9	Pulse	0.1000	3
He	Ge	72	184235.15	0.3	95.2	Pulse	0.1000	3
He	In	115	78643.90	1.3	96.5	Pulse	0.1000	3
He	Tb	159	283768.35	0.7	98.7	Pulse	0.1000	3
He	Bi	209	182258.06	2.1	99.2	Pulse	0.1000	3

No Gas

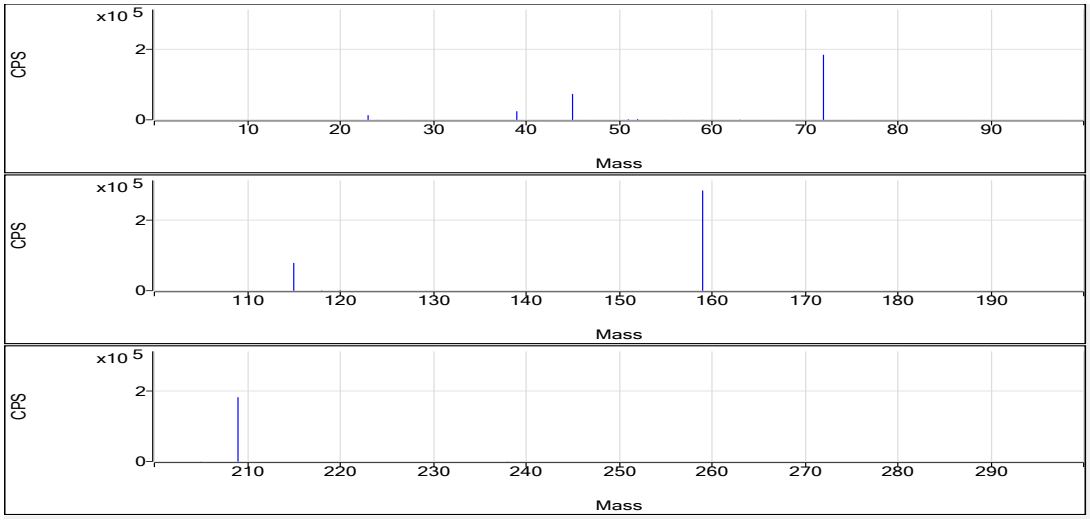


H2



Quantitation Report

He



Quantitation Report

Data File Name	017ICSA.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 09:48:25
Sample Name	ICSA 1942766
Sample Type	ICSA
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

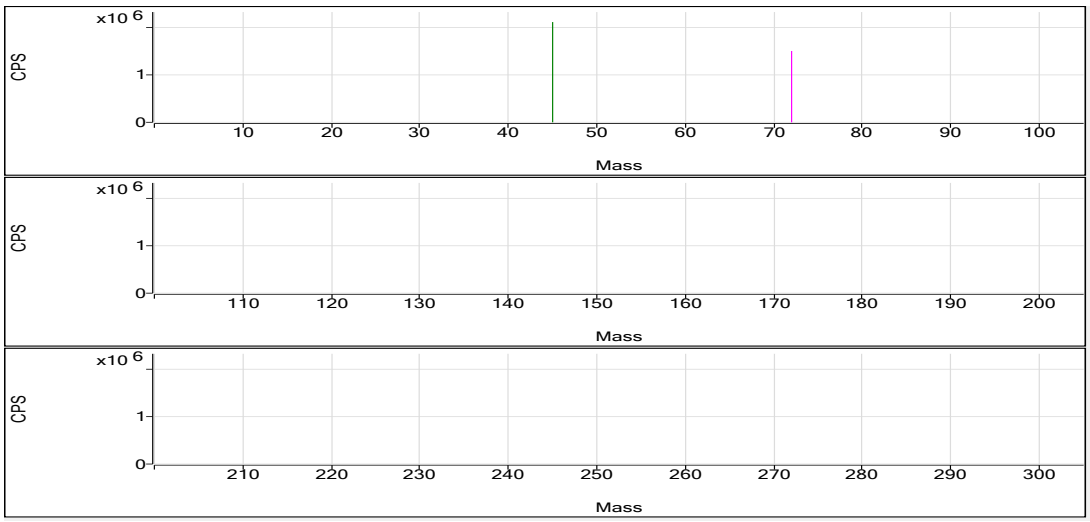
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.010	ppb	21.2	32.00	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.147	ppb	43.8	9.78	0.0000	Pulse	1.5000	3
Na	23	72	He	227596.318	ppb	1.0	59908047.44	319.1018	Analog	0.1000	3
Mg	24	72	He	93555.768	ppb	0.5	11831386.07	63.0238	Analog	0.1000	3
Al	27	72	He	96331.611	ppb	1.1	3853925.46	20.5280	Analog	0.1000	3
K	39	72	He	97340.270	ppb	0.9	9542081.73	50.8259	Analog	0.1000	3
Ca	44	72	He	285428.631	ppb	0.6	1500657.74	7.9935	Analog	0.1000	3
Ti	47	72	He	1936.243	ppb	1.2	76527.26	0.4076	Pulse	0.1000	3
V	51	72	He	-0.231	ppb	N/A	1124.72	0.0060	Pulse	0.5000	3
Cr	52	72	He	1.702	ppb	8.6	5214.46	0.0278	Pulse	0.1000	3
Mn	55	72	He	1.625	ppb	8.3	1506.79	0.0080	Pulse	0.1000	3
Fe	57	72	He	238504.675	ppb	0.8	8566728.62	45.6302	Analog	0.1000	3
Co	59	72	He	1.510	ppb	7.2	5027.74	0.0268	Pulse	0.1000	3
Ni	60	72	He	1.317	ppb	9.7	1310.10	0.0070	Pulse	0.1000	3
Cu	63	72	He	0.476	ppb	4.4	1640.15	0.0087	Pulse	0.1000	3
Zn	66	72	He	2.221	ppb	11.5	780.04	0.0042	Pulse	0.1000	3
As	75	72	He	0.422	ppb	21.2	160.00	0.0009	Pulse	0.5000	3
Sr	88	115	He	2.467	ppb	5.4	2110.23	0.0282	Pulse	0.1000	3
Mo	98	115	He	2162.698	ppb	0.8	3397091.51	45.4349	Analog	0.1000	3
Ag	107	115	He	0.032	ppb	46.8	133.34	0.0018	Pulse	0.1000	3
Cd	111	115	He	0.331	ppb	14.5	122.00	0.0016	Pulse	0.5000	3
Sn	120	115	He	-0.005	ppb	N/A	1460.13	0.0195	Pulse	0.1000	3
Sb	121	115	He	0.191	ppb	24.2	203.34	0.0027	Pulse	0.1000	3
Ba	137	115	He	0.555	ppb	13.1	206.68	0.0028	Pulse	0.1000	3
Tl	205	159	He	0.023	ppb	21.1	180.01	0.0007	Pulse	0.1000	3
Pb	208	159	He	0.228	ppb	13.8	1893.46	0.0070	Pulse	0.1000	3
U	238	209	He	0.056	ppb	9.9	443.36	0.0026	Pulse	0.1000	3

ISTD Table:

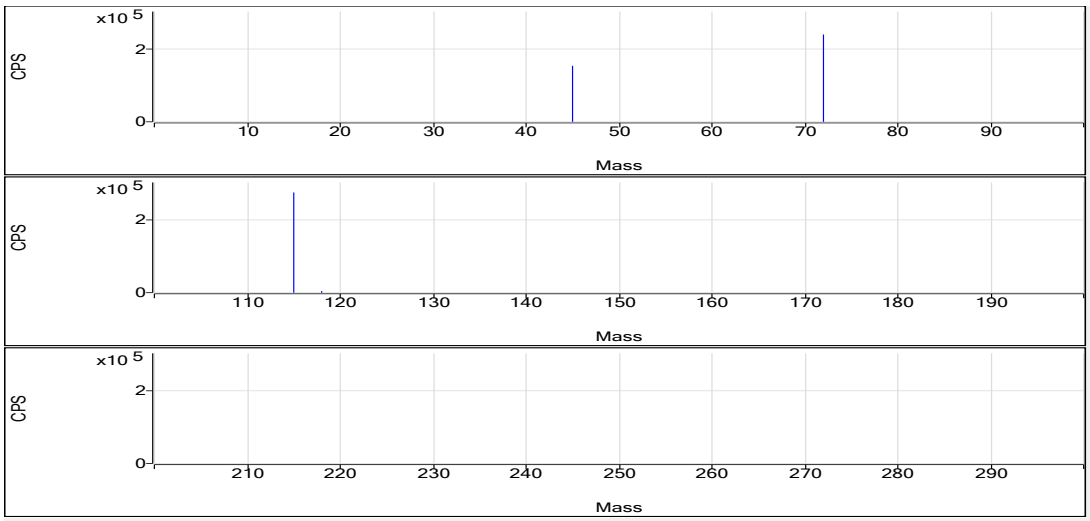
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2115877.94	0.3	95.6	Analog	0.1000	3
No Gas	Ge	72	1505075.97	0.6	95.8	Mix	0.1000	3
H2	Sc	45	153724.79	0.1	97.2	Pulse	0.1000	3
H2	Ge	72	239889.16	1.5	96.6	Pulse	0.1000	3
H2	In	115	275362.59	0.5	92.9	Pulse	0.1000	3
He	Sc	45	72730.68	1.5	93.0	Pulse	0.1000	3
He	Ge	72	187731.75	1.1	97.0	Pulse	0.1000	3
He	In	115	74770.02	1.5	91.7	Pulse	0.1000	3
He	Tb	159	272248.08	0.7	94.7	Pulse	0.1000	3
He	Bi	209	168002.11	1.5	91.4	Pulse	0.1000	3

No Gas

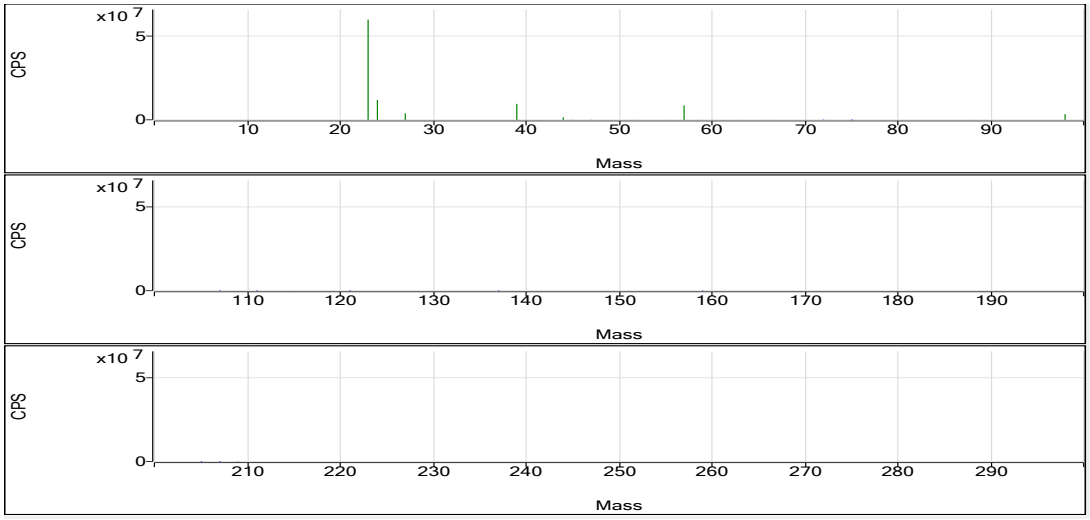


H2



Quantitation Report

He



Quantitation Report

Data File Name	018ICSB.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 09:50:25
Sample Name	ICSAB 1942785
Sample Type	ICSAB
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

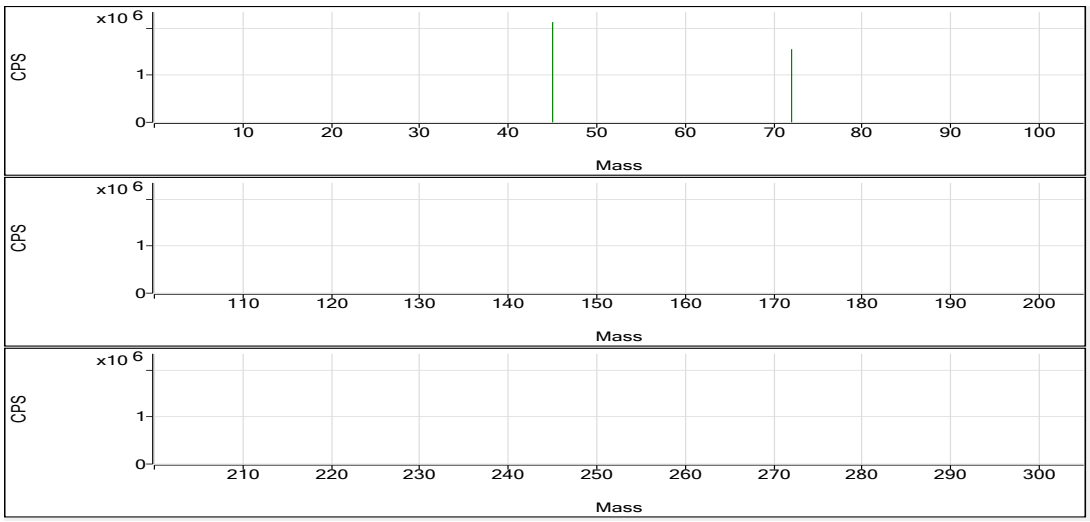
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.013	ppb	24.4	38.00	0.0000	Pulse	0.5000	3
Se	78	115	H2	107.832	ppb	0.8	5644.22	0.0206	Pulse	1.5000	3
Na	23	72	He	225922.131	ppb	0.5	59936744.11	316.7550	Analog	0.1000	3
Mg	24	72	He	93026.020	ppb	0.7	11857688.15	62.6669	Analog	0.1000	3
Al	27	72	He	94760.173	ppb	1.3	3820731.50	20.1932	Analog	0.1000	3
K	39	72	He	96636.982	ppb	0.3	9548139.65	50.4597	Analog	0.1000	3
Ca	44	72	He	286232.344	ppb	0.7	1516766.54	8.0160	Analog	0.1000	3
Ti	47	72	He	1920.479	ppb	0.2	76503.21	0.4043	Pulse	0.1000	3
V	51	72	He	189.713	ppb	0.4	286189.84	1.5125	Pulse	0.5000	3
Cr	52	72	He	185.641	ppb	0.8	362781.88	1.9173	Pulse	0.1000	3
Mn	55	72	He	192.079	ppb	0.2	161710.37	0.8546	Pulse	0.1000	3
Fe	57	72	He	236335.518	ppb	0.2	8555992.37	45.2152	Analog	0.1000	3
Co	59	72	He	179.976	ppb	0.8	595632.22	3.1479	Pulse	0.1000	3
Ni	60	72	He	188.046	ppb	0.5	166957.75	0.8823	Pulse	0.1000	3
Cu	63	72	He	174.849	ppb	0.4	446850.43	2.3615	Pulse	0.1000	3
Zn	66	72	He	94.739	ppb	1.4	27420.01	0.1449	Pulse	0.1000	3
As	75	72	He	96.008	ppb	0.9	19351.69	0.1023	Pulse	0.5000	3
Sr	88	115	He	2.660	ppb	4.5	2236.91	0.0304	Pulse	0.1000	3
Mo	98	115	He	2224.688	ppb	1.0	3437833.38	46.7372	Analog	0.1000	3
Ag	107	115	He	50.644	ppb	1.4	156567.47	2.1286	Pulse	0.1000	3
Cd	111	115	He	103.522	ppb	1.7	37361.42	0.5079	Pulse	0.5000	3
Sn	120	115	He	-0.044	ppb	N/A	1396.82	0.0190	Pulse	0.1000	3
Sb	121	115	He	0.159	ppb	29.3	170.01	0.0023	Pulse	0.1000	3
Ba	137	115	He	0.565	ppb	29.8	206.68	0.0028	Pulse	0.1000	3
Tl	205	159	He	0.013	ppb	37.5	130.01	0.0005	Pulse	0.1000	3
Pb	208	159	He	0.228	ppb	12.3	1920.13	0.0070	Pulse	0.1000	3
U	238	209	He	0.044	ppb	21.0	350.02	0.0021	Pulse	0.1000	3

ISTD Table:

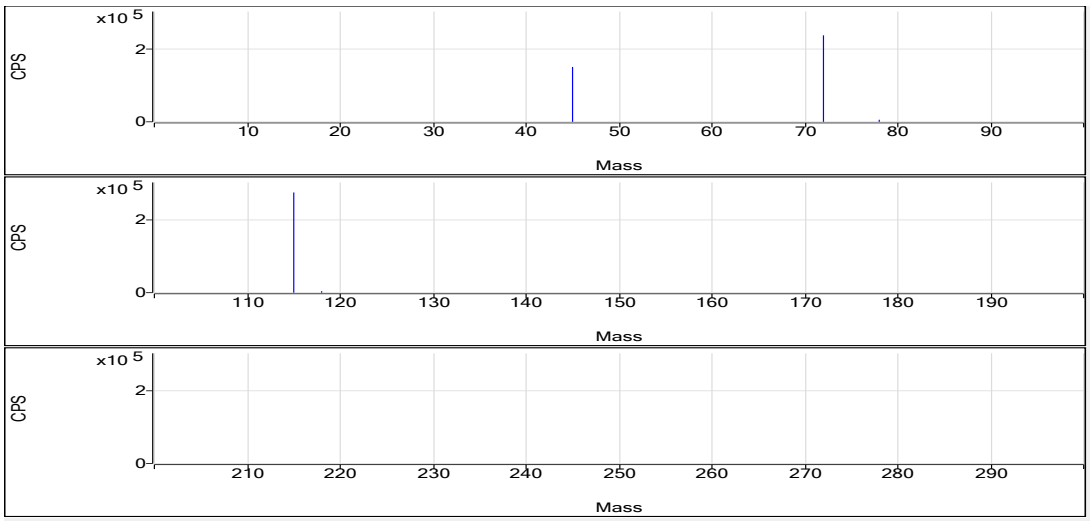
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2130788.72	0.9	96.3	Analog	0.1000	3
No Gas	Ge	72	1555239.93	1.0	99.0	Analog	0.1000	3
H2	Sc	45	150035.10	0.5	94.9	Pulse	0.1000	3
H2	Ge	72	236554.46	1.6	95.3	Pulse	0.1000	3
H2	In	115	274107.42	0.7	92.5	Pulse	0.1000	3
He	Sc	45	73480.81	1.3	93.9	Pulse	0.1000	3
He	Ge	72	189227.09	1.1	97.7	Pulse	0.1000	3
He	In	115	73559.84	0.8	90.2	Pulse	0.1000	3
He	Tb	159	276001.88	1.2	96.0	Pulse	0.1000	3
He	Bi	209	167411.05	0.6	91.1	Pulse	0.1000	3

No Gas

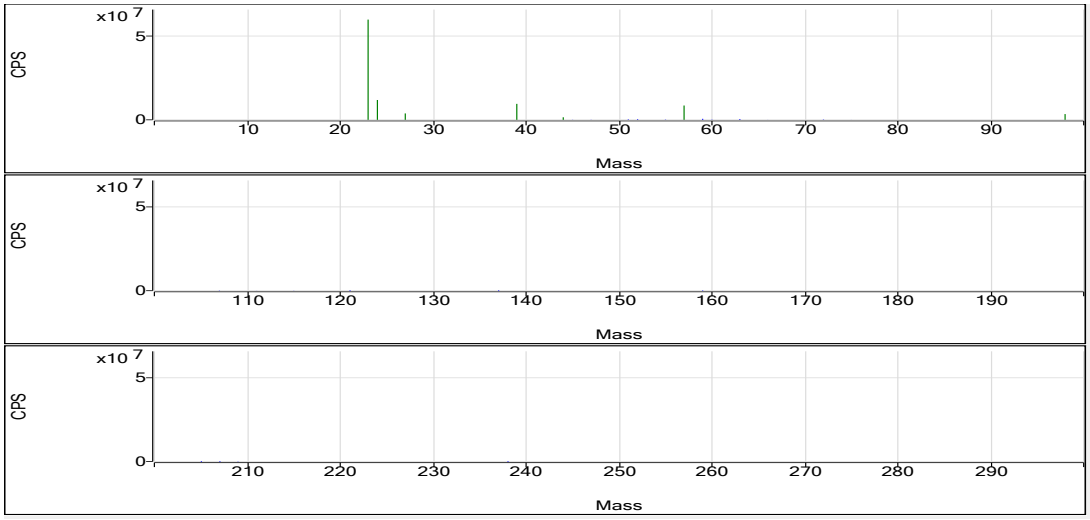


H2



Quantitation Report

He



Quantitation Report

Data File Name	019_LRC.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 09:52:25
Sample Name	LRC 1932659
Sample Type	LRC
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

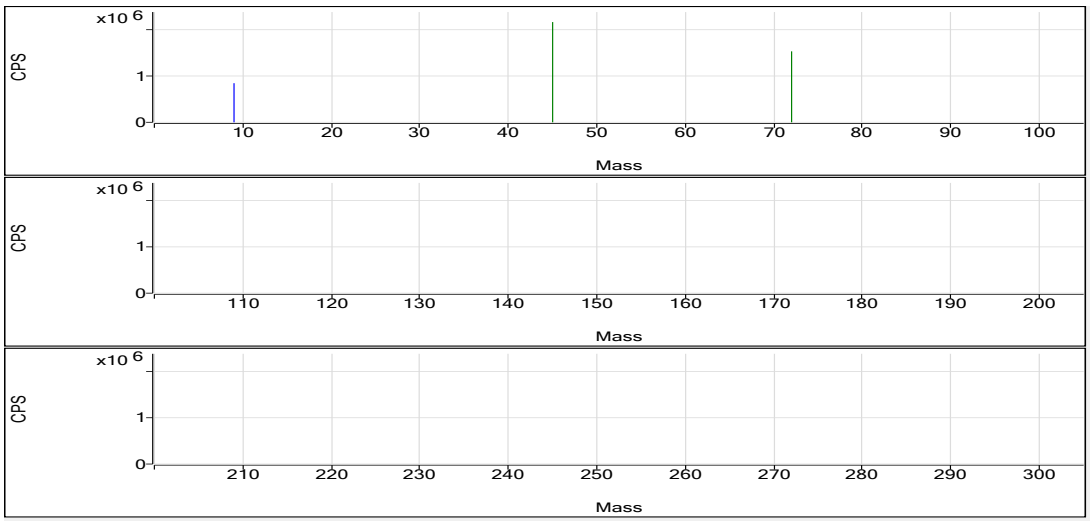
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	491.723	ppb	1.0	846941.46	0.5510	Pulse	0.5000	3
Se	78	115	H2	486.427	ppb	1.3	27873.47	0.0929	Pulse	1.5000	3
Na	23	72	He	48206.341	ppb	0.3	12749501.89	67.6408	Analog	0.1000	3
Mg	24	72	He	47387.370	ppb	0.4	6017115.12	31.9228	Analog	0.1000	3
Al	27	72	He	50075.049	ppb	0.4	2011969.56	10.6742	Analog	0.1000	3
K	39	72	He	50040.516	ppb	1.8	4937291.49	26.1937	Analog	0.1000	3
Ca	44	72	He	48905.557	ppb	0.6	258343.04	1.3706	Pulse	0.1000	3
Ti	47	72	He	510.667	ppb	3.5	20264.65	0.1075	Pulse	0.1000	3
V	51	72	He	476.690	ppb	1.2	714095.06	3.7885	Pulse	0.5000	3
Cr	52	72	He	471.857	ppb	1.5	915607.83	4.8575	Pulse	0.1000	3
Mn	55	72	He	490.210	ppb	1.0	410859.13	2.1797	Pulse	0.1000	3
Fe	57	72	He	50040.132	ppb	0.3	1804613.67	9.5741	Analog	0.1000	3
Co	59	72	He	485.848	ppb	0.8	1601574.20	8.4971	Analog	0.1000	3
Ni	60	72	He	487.793	ppb	0.7	431158.89	2.2874	Pulse	0.1000	3
Cu	63	72	He	465.006	ppb	0.8	1183044.62	6.2766	Pulse	0.1000	3
Zn	66	72	He	495.910	ppb	0.7	142369.31	0.7553	Pulse	0.1000	3
As	75	72	He	503.405	ppb	0.7	100743.91	0.5345	Pulse	0.5000	3
Sr	88	115	He	489.980	ppb	0.9	456344.02	5.5427	Pulse	0.1000	3
Mo	98	115	He	490.170	ppb	1.4	847819.34	10.2980	Pulse	0.1000	3
Ag	107	115	He	485.964	ppb	2.0	1681092.74	20.4213	Analog	0.1000	3
Cd	111	115	He	479.575	ppb	1.9	193709.03	2.3531	Pulse	0.5000	3
Sn	120	115	He	488.350	ppb	1.8	569030.54	6.9124	Pulse	0.1000	3
Sb	121	115	He	489.482	ppb	1.7	523185.13	6.3554	Pulse	0.1000	3
Ba	137	115	He	481.986	ppb	2.9	186024.12	2.2601	Pulse	0.1000	3
Tl	205	159	He	526.876	ppb	0.8	2897771.31	10.3136	Analog	0.1000	3
Pb	208	159	He	507.652	ppb	0.4	3717819.66	13.2319	Analog	0.1000	3
U	238	209	He	514.096	ppb	0.3	4157750.88	23.8485	Analog	0.1000	3

ISTD Table:

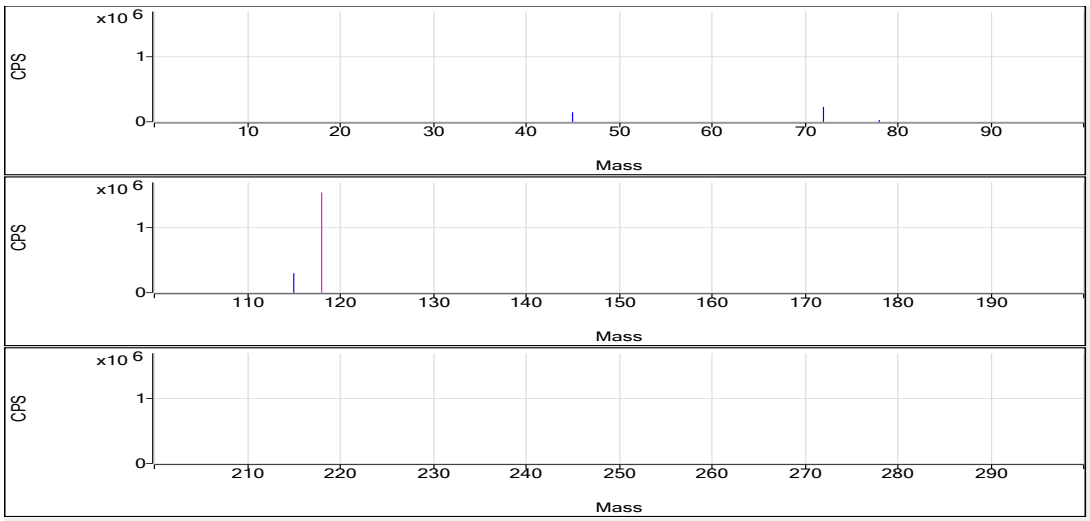
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2171020.23	1.9	98.1	Analog	0.1000	3
No Gas	Ge	72	1537123.67	0.7	97.9	Analog	0.1000	3
H2	Sc	45	146965.41	0.9	93.0	Pulse	0.1000	3
H2	Ge	72	230505.18	0.7	92.9	Pulse	0.1000	3
H2	In	115	300195.96	0.9	101.3	Pulse	0.1000	3
He	Sc	45	75615.27	0.1	96.7	Pulse	0.1000	3
He	Ge	72	188491.37	0.8	97.4	Pulse	0.1000	3
He	In	115	82341.54	2.2	101.0	Pulse	0.1000	3
He	Tb	159	280971.81	1.0	97.7	Pulse	0.1000	3
He	Bi	209	174338.64	0.9	94.9	Pulse	0.1000	3

No Gas

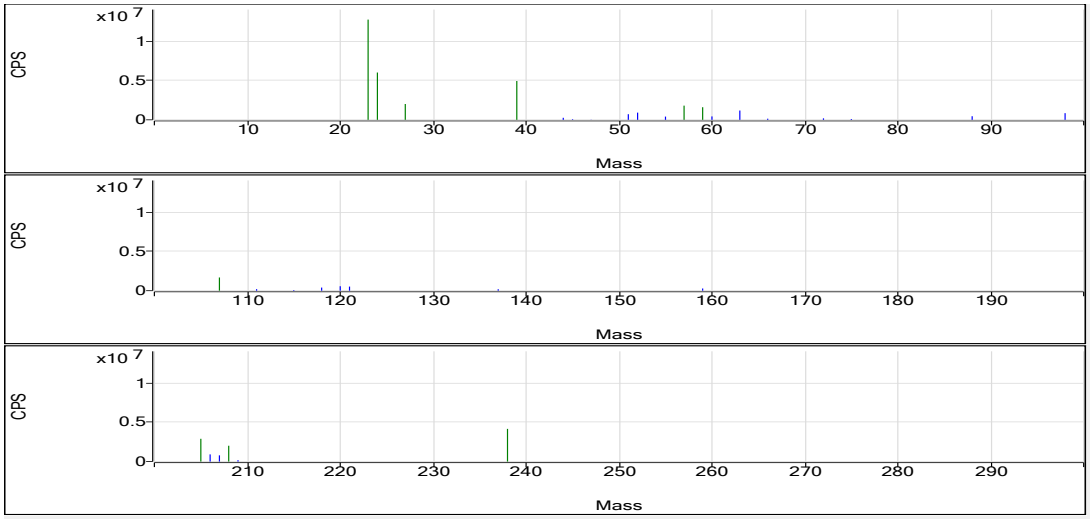


H2



Quantitation Report

He



Quantitation Report

Data File Name	072_LLC.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 12:13:57
Sample Name	CRI 2020343
Sample Type	CRI
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

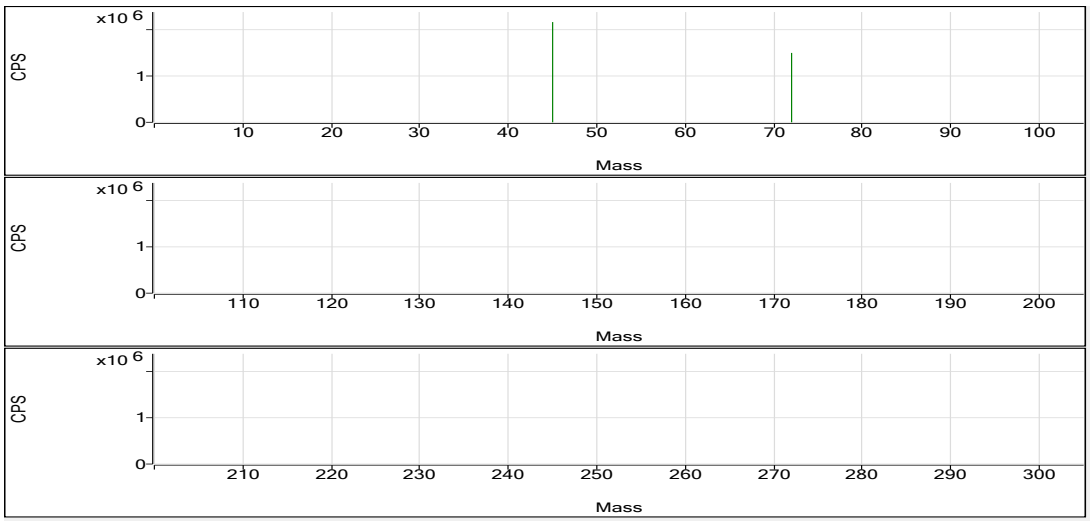
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.469	ppb	1.0	801.36	0.0005	Pulse	0.5000	3
Se	78	115	H2	1.003	ppb	11.2	58.22	0.0002	Pulse	1.5000	3
Na	23	72	He	187.673	ppb	1.4	61149.52	0.3304	Pulse	0.1000	3
Mg	24	72	He	51.606	ppb	0.8	6575.01	0.0355	Pulse	0.1000	3
Al	27	72	He	-4.926	ppb	N/A	1103.41	0.0060	Pulse	0.1000	3
K	39	72	He	175.126	ppb	5.9	41726.30	0.2254	Pulse	0.1000	3
Ca	44	72	He	101.439	ppb	40.3	746.71	0.0040	Pulse	0.1000	3
Ti	47	72	He	9.497	ppb	16.9	373.35	0.0020	Pulse	0.1000	3
V	51	72	He	1.694	ppb	3.6	3934.55	0.0213	Pulse	0.5000	3
Cr	52	72	He	1.839	ppb	3.6	5401.15	0.0292	Pulse	0.1000	3
Mn	55	72	He	2.047	ppb	4.6	1833.51	0.0099	Pulse	0.1000	3
Fe	57	72	He	51.117	ppb	7.9	1936.87	0.0105	Pulse	0.1000	3
Co	59	72	He	0.494	ppb	2.5	1670.15	0.0090	Pulse	0.1000	3
Ni	60	72	He	1.003	ppb	2.8	1020.07	0.0055	Pulse	0.1000	3
Cu	63	72	He	1.016	ppb	5.1	2963.72	0.0160	Pulse	0.1000	3
Zn	66	72	He	10.041	ppb	4.2	2970.41	0.0161	Pulse	0.1000	3
As	75	72	He	1.909	ppb	8.2	450.01	0.0024	Pulse	0.5000	3
Sr	88	115	He	1.108	ppb	11.4	1013.40	0.0129	Pulse	0.1000	3
Mo	98	115	He	0.507	ppb	10.1	873.39	0.0111	Pulse	0.1000	3
Ag	107	115	He	0.511	ppb	4.9	1723.50	0.0219	Pulse	0.1000	3
Cd	111	115	He	0.488	ppb	6.0	188.67	0.0024	Pulse	0.5000	3
Sn	120	115	He	1.940	ppb	2.2	3697.32	0.0470	Pulse	0.1000	3
Sb	121	115	He	0.985	ppb	18.3	1026.75	0.0130	Pulse	0.1000	3
Ba	137	115	He	2.124	ppb	10.2	796.72	0.0101	Pulse	0.1000	3
Tl	205	159	He	0.493	ppb	7.3	2773.74	0.0099	Pulse	0.1000	3
Pb	208	159	He	0.523	ppb	7.1	4123.75	0.0146	Pulse	0.1000	3
U	238	209	He	0.988	ppb	2.8	8299.64	0.0459	Pulse	0.1000	3

ISTD Table:

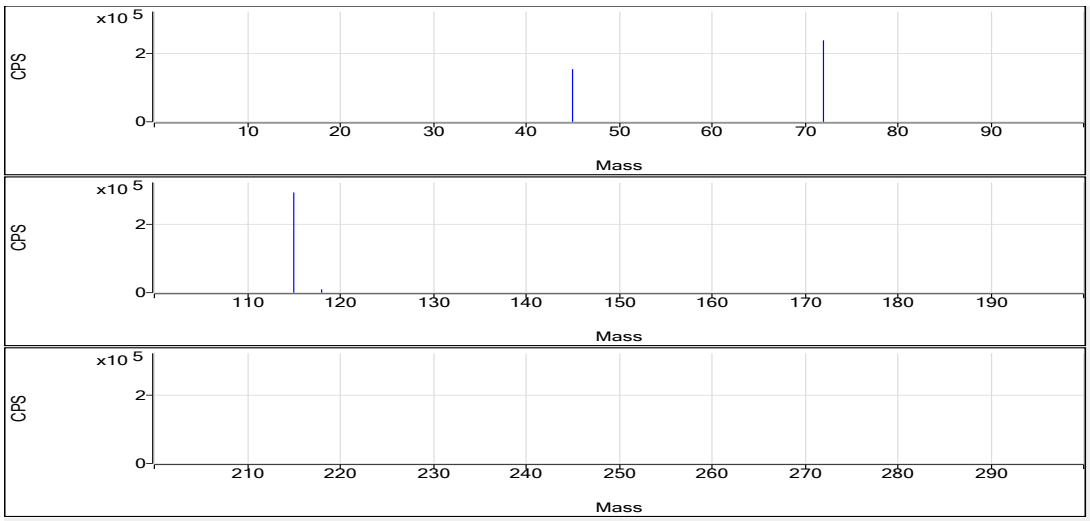
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2162039.97	1.2	97.7	Analog	0.1000	3
No Gas	Ge	72	1496901.54	1.2	95.3	Analog	0.1000	3
H2	Sc	45	153821.11	1.4	97.3	Pulse	0.1000	3
H2	Ge	72	238028.57	0.6	95.9	Pulse	0.1000	3
H2	In	115	292636.79	0.7	98.8	Pulse	0.1000	3
He	Sc	45	73172.70	1.2	93.5	Pulse	0.1000	3
He	Ge	72	185102.22	0.7	95.6	Pulse	0.1000	3
He	In	115	78664.64	2.5	96.5	Pulse	0.1000	3
He	Tb	159	281584.75	0.6	98.0	Pulse	0.1000	3
He	Bi	209	180904.37	1.4	98.5	Pulse	0.1000	3

No Gas

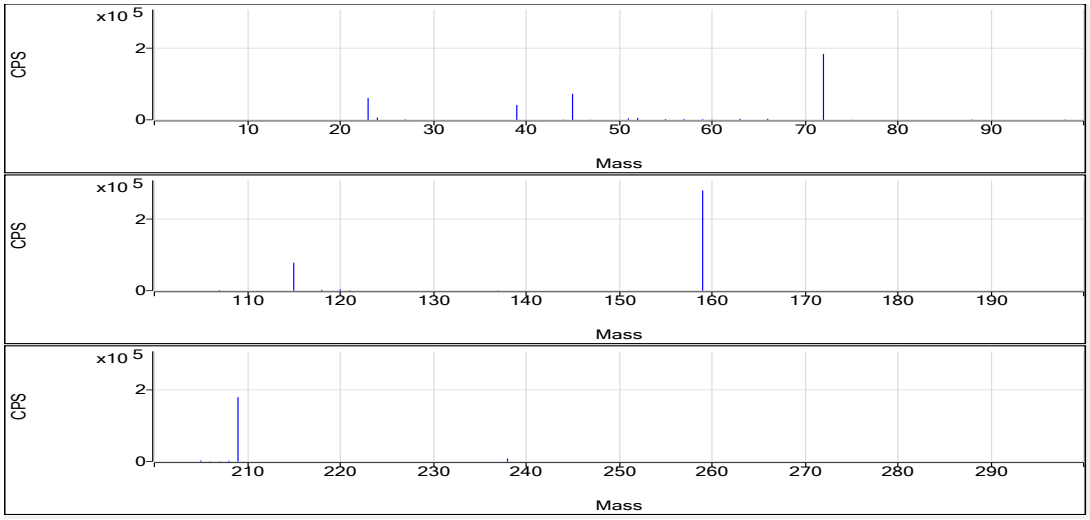


H2



Quantitation Report

He



Quantitation Report

Data File Name	073_CCV.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 13:37:39
Sample Name	CCV 1942322
Sample Type	CCV
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

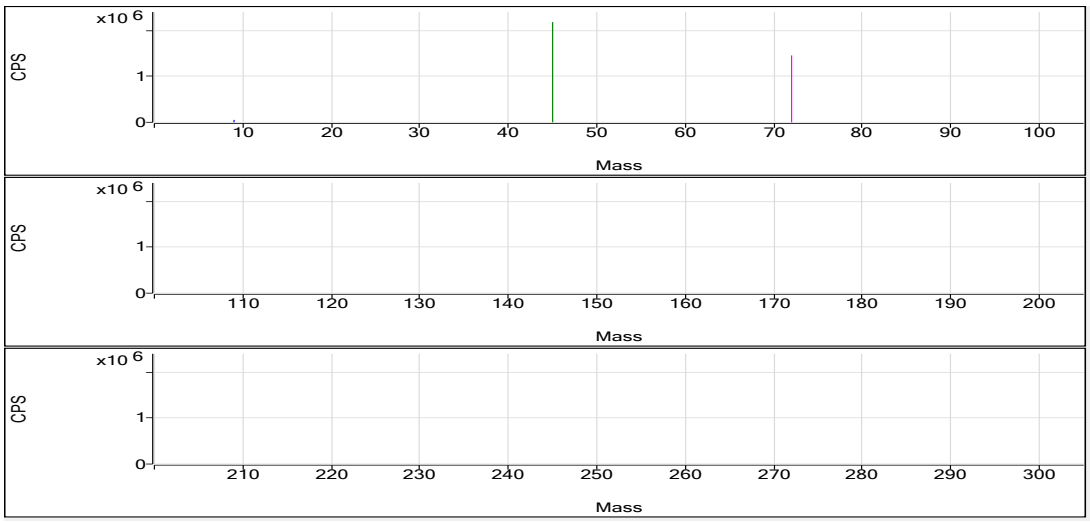
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	32.077	ppb	2.0	52555.66	0.0360	Pulse	0.5000	3
Se	78	115	H2	31.976	ppb	4.2	1783.89	0.0061	Pulse	1.5000	3
Na	23	72	He	5316.929	ppb	3.1	1327161.36	7.5203	Analog	0.1000	3
Mg	24	72	He	5270.759	ppb	1.0	626827.09	3.5514	Pulse	0.1000	3
Al	27	72	He	5312.431	ppb	0.9	200988.29	1.1387	Pulse	0.1000	3
K	39	72	He	5312.351	ppb	0.5	511985.19	2.9007	Pulse	0.1000	3
Ca	44	72	He	5010.045	ppb	1.9	24972.03	0.1415	Pulse	0.1000	3
Ti	47	72	He	315.596	ppb	1.4	11728.37	0.0665	Pulse	0.1000	3
V	51	72	He	304.549	ppb	0.6	427701.79	2.4232	Pulse	0.5000	3
Cr	52	72	He	304.261	ppb	0.7	553471.62	3.1358	Pulse	0.1000	3
Mn	55	72	He	317.559	ppb	1.0	249276.03	1.4123	Pulse	0.1000	3
Fe	57	72	He	5278.239	ppb	1.1	178358.62	1.0105	Pulse	0.1000	3
Co	59	72	He	300.324	ppb	1.0	927089.70	5.2526	Pulse	0.1000	3
Ni	60	72	He	314.059	ppb	0.6	259987.30	1.4730	Pulse	0.1000	3
Cu	63	72	He	301.209	ppb	0.6	717759.47	4.0665	Pulse	0.1000	3
Zn	66	72	He	315.623	ppb	0.6	84898.80	0.4810	Pulse	0.1000	3
As	75	72	He	314.430	ppb	0.9	58951.65	0.3340	Pulse	0.5000	3
Sr	88	115	He	31.166	ppb	3.3	27216.67	0.3529	Pulse	0.1000	3
Mo	98	115	He	30.775	ppb	2.7	49905.01	0.6470	Pulse	0.1000	3
Ag	107	115	He	30.547	ppb	1.5	99064.43	1.2841	Pulse	0.1000	3
Cd	111	115	He	30.261	ppb	3.9	11453.38	0.1485	Pulse	0.5000	3
Sn	120	115	He	31.102	ppb	2.6	35375.59	0.4586	Pulse	0.1000	3
Sb	121	115	He	30.528	ppb	2.2	30597.80	0.3966	Pulse	0.1000	3
Ba	137	115	He	307.678	ppb	0.6	111342.83	1.4428	Pulse	0.1000	3
Tl	205	159	He	31.288	ppb	1.5	166923.20	0.6127	Pulse	0.1000	3
Pb	208	159	He	31.066	ppb	1.6	220861.18	0.8107	Pulse	0.1000	3
U	238	209	He	261.425	ppb	1.8	2126251.84	12.1273	Analog	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2189716.79	1.5	98.9	Analog	0.1000	3
No Gas	Ge	72	1461752.94	0.1	93.1	Mix	0.1000	3
H2	Sc	45	157250.25	0.9	99.5	Pulse	0.1000	3
H2	Ge	72	237989.71	1.7	95.9	Pulse	0.1000	3
H2	In	115	291885.88	1.3	98.5	Pulse	0.1000	3
He	Sc	45	72412.24	1.9	92.6	Pulse	0.1000	3
He	Ge	72	176503.25	0.8	91.2	Pulse	0.1000	3
He	In	115	77166.67	2.4	94.7	Pulse	0.1000	3
He	Tb	159	272475.40	1.7	94.8	Pulse	0.1000	3
He	Bi	209	175356.54	1.8	95.5	Pulse	0.1000	3

No Gas



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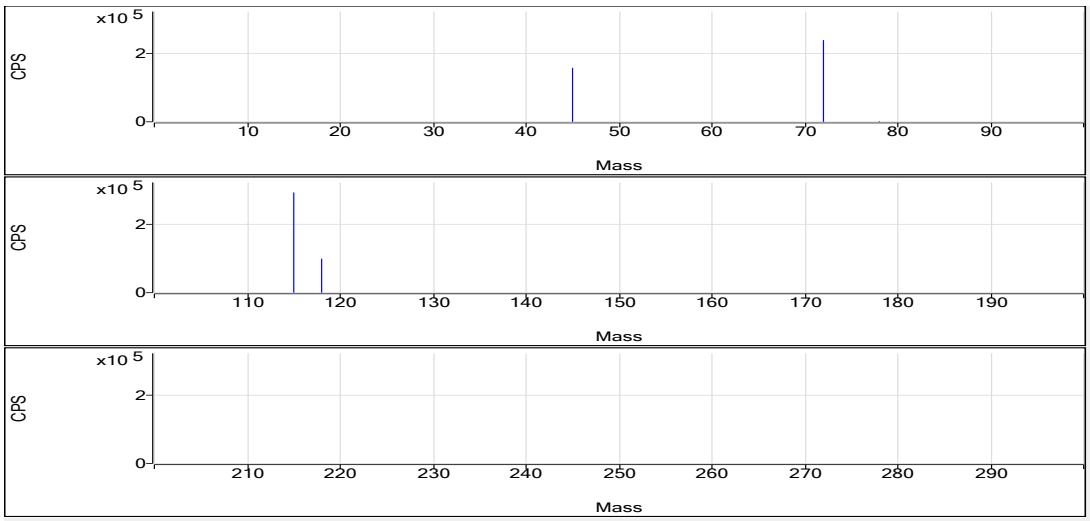
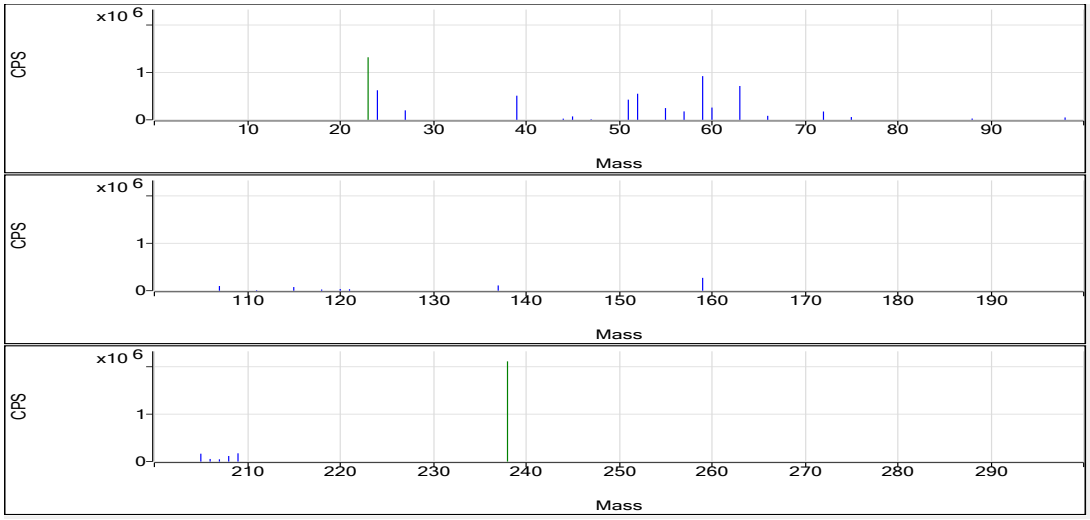


Quantitation Report

He



Quantitation Report

Data File Name	074_CCB.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 13:39:40
Sample Name	CCB 2014932
Sample Type	CCB
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

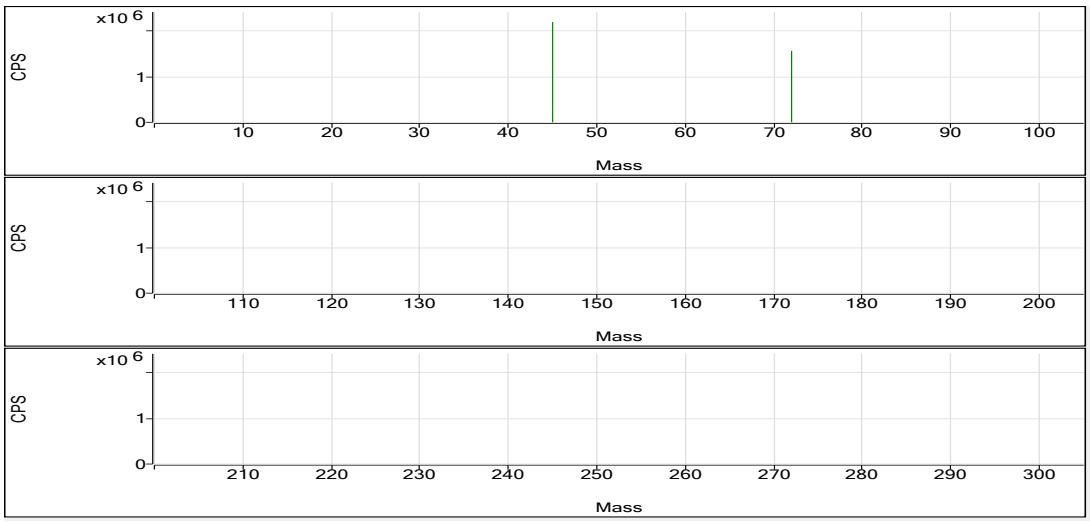
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.006	ppb	66.0	26.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.004	ppb	152.9	2.45	0.0000	Pulse	1.5000	3
Na	23	72	He	-6.430	ppb	N/A	10617.41	0.0583	Pulse	0.1000	3
Mg	24	72	He	0.069	ppb	186.7	146.67	0.0008	Pulse	0.1000	3
Al	27	72	He	-29.135	ppb	N/A	146.67	0.0008	Pulse	0.1000	3
K	39	72	He	-22.882	ppb	N/A	22290.69	0.1223	Pulse	0.1000	3
Ca	44	72	He	0.651	ppb	1554.2	220.01	0.0012	Pulse	0.1000	3
Ti	47	72	He	0.178	ppb	145.5	10.00	0.0001	Pulse	0.1000	3
V	51	72	He	-0.167	ppb	N/A	1184.72	0.0065	Pulse	0.5000	3
Cr	52	72	He	-0.058	ppb	N/A	1766.84	0.0097	Pulse	0.1000	3
Mn	55	72	He	0.053	ppb	82.6	190.01	0.0010	Pulse	0.1000	3
Fe	57	72	He	1.288	ppb	60.3	170.01	0.0009	Pulse	0.1000	3
Co	59	72	He	0.022	ppb	13.4	140.01	0.0008	Pulse	0.1000	3
Ni	60	72	He	0.003	ppb	768.5	150.01	0.0008	Pulse	0.1000	3
Cu	63	72	He	0.012	ppb	233.4	450.03	0.0025	Pulse	0.1000	3
Zn	66	72	He	-0.087	ppb	N/A	116.67	0.0006	Pulse	0.1000	3
As	75	72	He	0.118	ppb	47.6	96.67	0.0005	Pulse	0.5000	3
Sr	88	115	He	0.006	ppb	199.9	30.00	0.0004	Pulse	0.1000	3
Mo	98	115	He	0.035	ppb	32.0	90.00	0.0012	Pulse	0.1000	3
Ag	107	115	He	0.005	ppb	65.9	50.00	0.0007	Pulse	0.1000	3
Cd	111	115	He	0.002	ppb	330.1	1.33	0.0000	Pulse	0.5000	3
Sn	120	115	He	-0.166	ppb	N/A	1320.11	0.0173	Pulse	0.1000	3
Sb	121	115	He	0.015	ppb	103.7	33.33	0.0004	Pulse	0.1000	3
Ba	137	115	He	-0.007	ppb	N/A	10.00	0.0001	Pulse	0.1000	3
Tl	205	159	He	0.051	ppb	18.7	333.35	0.0012	Pulse	0.1000	3
Pb	208	159	He	-0.009	ppb	N/A	213.34	0.0008	Pulse	0.1000	3
U	238	209	He	0.041	ppb	22.7	343.35	0.0020	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2197341.22	1.3	99.3	Analog	0.1000	3
No Gas	Ge	72	1566047.74	1.0	99.7	Analog	0.1000	3
H2	Sc	45	156693.01	0.9	99.1	Pulse	0.1000	3
H2	Ge	72	242645.08	0.2	97.8	Pulse	0.1000	3
H2	In	115	294469.93	0.9	99.4	Pulse	0.1000	3
He	Sc	45	71876.27	1.6	91.9	Pulse	0.1000	3
He	Ge	72	182216.04	0.4	94.1	Pulse	0.1000	3
He	In	115	76482.85	0.8	93.8	Pulse	0.1000	3
He	Tb	159	275455.53	0.5	95.8	Pulse	0.1000	3
He	Bi	209	174983.87	1.0	95.2	Pulse	0.1000	3

No Gas



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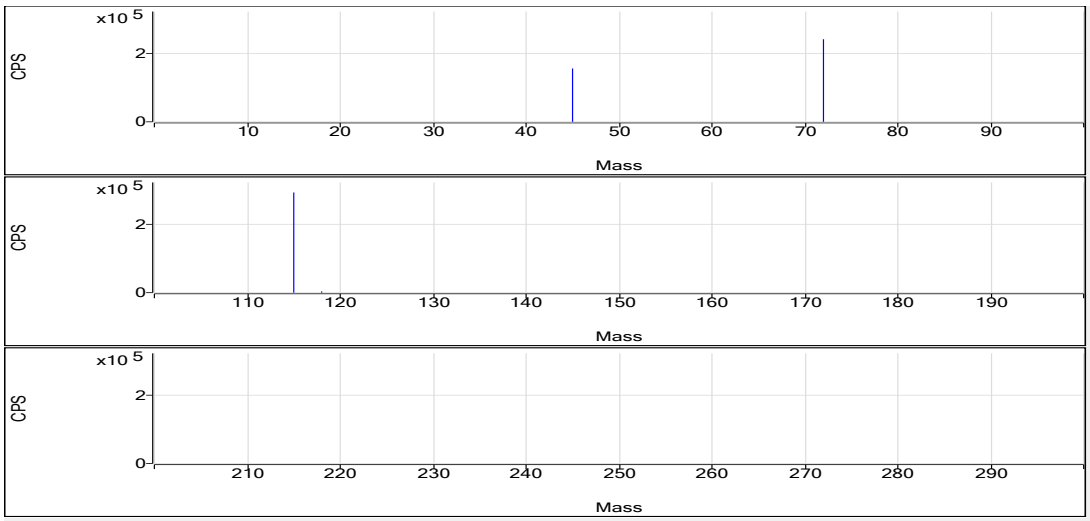
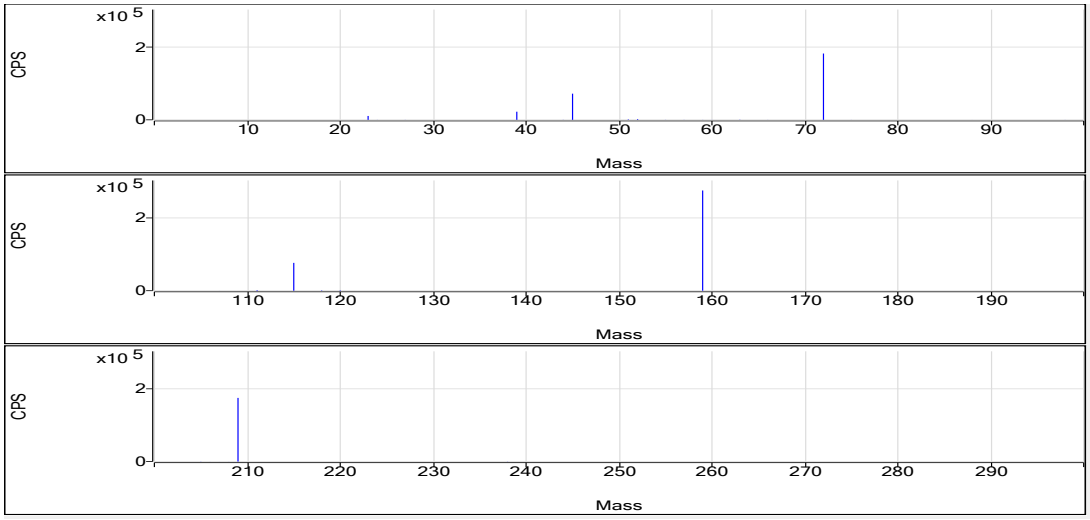


Quantitation Report

He



Quantitation Report

Data File Name	075SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 13:42:23
Sample Name	MB 410-190987/1-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

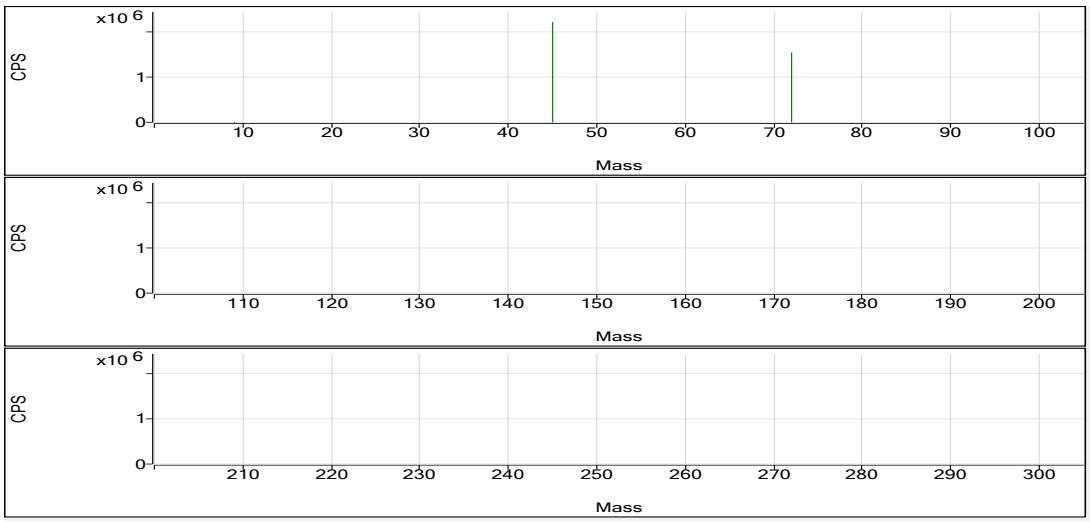
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	-0.005	ppb	N/A	6.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.003	ppb	531.3	2.44	0.0000	Pulse	1.5000	3
Na	23	72	He	-6.470	ppb	N/A	10640.81	0.0582	Pulse	0.1000	3
Mg	24	72	He	0.258	ppb	225.3	170.01	0.0009	Pulse	0.1000	3
Al	27	72	He	-30.767	ppb	N/A	83.33	0.0005	Pulse	0.1000	3
K	39	72	He	-14.721	ppb	N/A	23128.74	0.1266	Pulse	0.1000	3
Ca	44	72	He	-12.469	ppb	N/A	153.34	0.0008	Pulse	0.1000	3
Ti	47	72	He	-0.082	ppb	0.0	0.00	0.0000	Pulse	0.1000	3
V	51	72	He	-0.283	ppb	N/A	1020.71	0.0056	Pulse	0.5000	3
Cr	52	72	He	1.336	ppb	4.2	4387.48	0.0240	Pulse	0.1000	3
Mn	55	72	He	1.263	ppb	2.0	1173.42	0.0064	Pulse	0.1000	3
Fe	57	72	He	6.622	ppb	19.4	356.69	0.0020	Pulse	0.1000	3
Co	59	72	He	0.007	ppb	48.1	90.00	0.0005	Pulse	0.1000	3
Ni	60	72	He	0.929	ppb	3.1	943.39	0.0052	Pulse	0.1000	3
Cu	63	72	He	-0.007	ppb	N/A	403.35	0.0022	Pulse	0.1000	3
Zn	66	72	He	0.295	ppb	67.8	223.34	0.0012	Pulse	0.1000	3
As	75	72	He	-0.111	ppb	N/A	52.67	0.0003	Pulse	0.5000	3
Sr	88	115	He	0.008	ppb	207.2	33.33	0.0004	Pulse	0.1000	3
Mo	98	115	He	0.410	ppb	14.5	716.71	0.0091	Pulse	0.1000	3
Ag	107	115	He	-0.007	ppb	N/A	13.33	0.0002	Pulse	0.1000	3
Cd	111	115	He	0.002	ppb	338.4	1.33	0.0000	Pulse	0.5000	3
Sn	120	115	He	-0.275	ppb	N/A	1243.44	0.0157	Pulse	0.1000	3
Sb	121	115	He	-0.019	ppb	0.0	0.00	0.0000	Pulse	0.1000	3
Ba	137	115	He	0.127	ppb	74.6	60.00	0.0008	Pulse	0.1000	3
Tl	205	159	He	-0.002	ppb	N/A	46.67	0.0002	Pulse	0.1000	3
Pb	208	159	He	-0.017	ppb	N/A	163.33	0.0006	Pulse	0.1000	3
U	238	209	He	0.009	ppb	60.6	86.67	0.0005	Pulse	0.1000	3

ISTD Table:

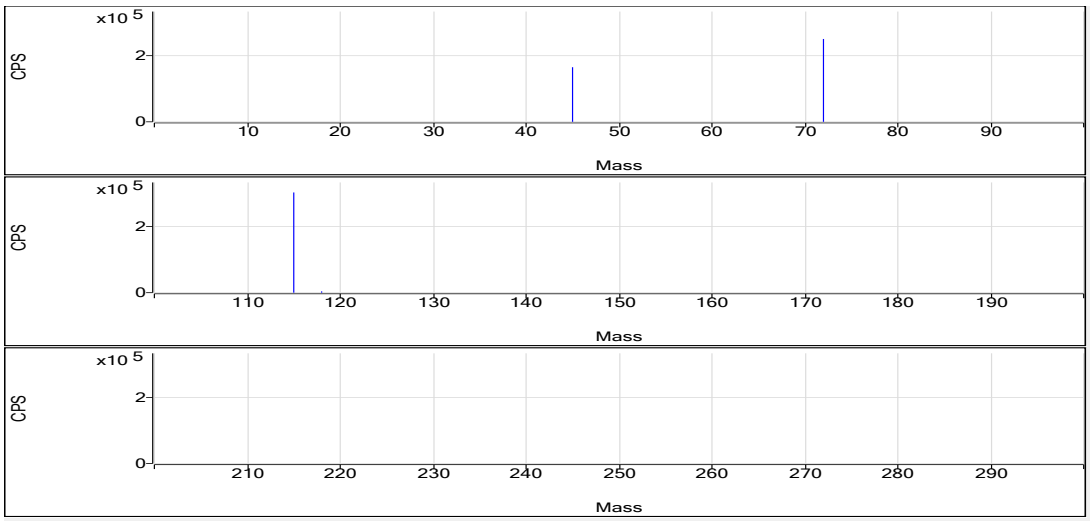
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2216458.67	0.9	100.1	Analog	0.1000	3
No Gas	Ge	72	1541635.03	1.7	98.2	Analog	0.1000	3
H2	Sc	45	163874.75	0.5	103.7	Pulse	0.1000	3
H2	Ge	72	248670.40	0.7	100.2	Pulse	0.1000	3
H2	In	115	300849.11	0.9	101.5	Pulse	0.1000	3
He	Sc	45	73584.72	0.6	94.1	Pulse	0.1000	3
He	Ge	72	182756.44	1.4	94.4	Pulse	0.1000	3
He	In	115	79073.45	1.3	97.0	Pulse	0.1000	3
He	Tb	159	280127.07	1.0	97.4	Pulse	0.1000	3
He	Bi	209	181323.48	1.0	98.7	Pulse	0.1000	3

No Gas

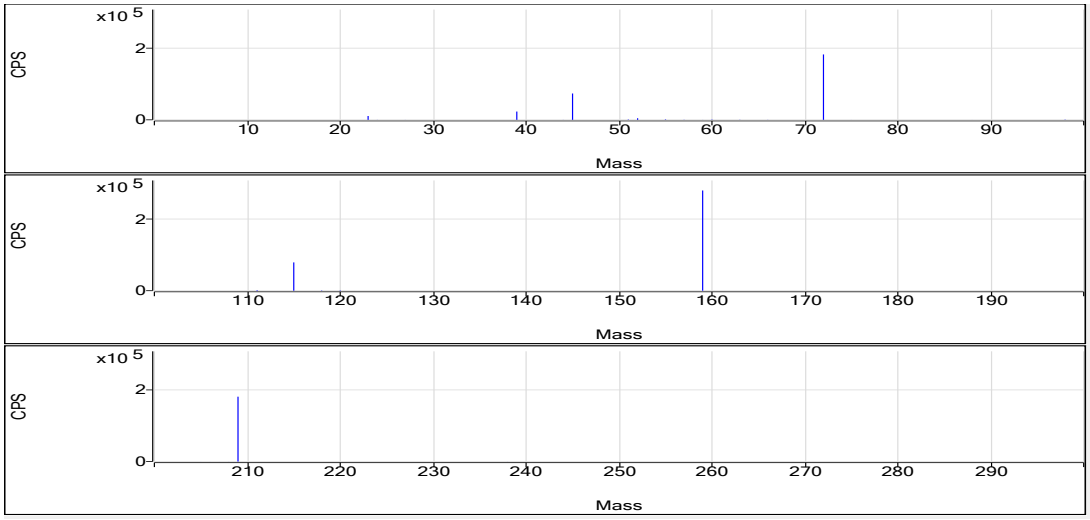


H2



Quantitation Report

He



Quantitation Report

Data File Name	076SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 13:44:25
Sample Name	LCS 410-190987/2-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

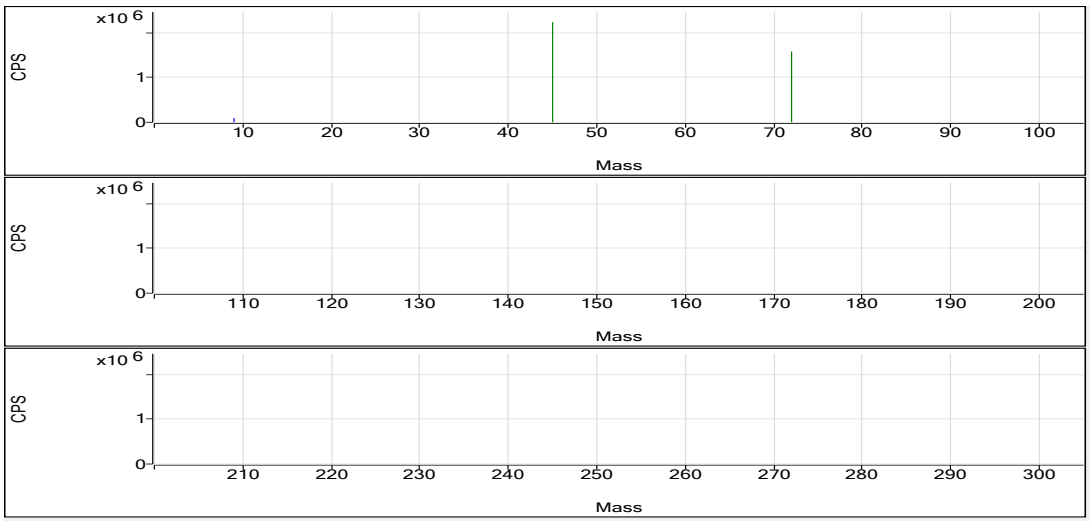
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	52.908	ppb	0.1	93764.67	0.0593	Pulse	0.5000	3
Se	78	115	H2	107.189	ppb	1.1	6222.68	0.0205	Pulse	1.5000	3
Na	23	72	He	5255.146	ppb	1.5	1386632.06	7.4337	Analog	0.1000	3
Mg	24	72	He	5206.795	ppb	1.1	654420.82	3.5083	Pulse	0.1000	3
Al	27	72	He	5178.943	ppb	0.7	207106.77	1.1103	Pulse	0.1000	3
K	39	72	He	5141.189	ppb	1.6	524459.86	2.8116	Pulse	0.1000	3
Ca	44	72	He	5104.990	ppb	0.6	26888.62	0.1441	Pulse	0.1000	3
Ti	47	72	He	530.589	ppb	2.7	20842.03	0.1117	Pulse	0.1000	3
V	51	72	He	501.136	ppb	0.1	742906.90	3.9824	Pulse	0.5000	3
Cr	52	72	He	498.392	ppb	0.5	956990.20	5.1300	Pulse	0.1000	3
Mn	55	72	He	522.215	ppb	0.9	433152.21	2.3220	Pulse	0.1000	3
Fe	57	72	He	5197.123	ppb	0.7	185607.09	0.9950	Pulse	0.1000	3
Co	59	72	He	520.365	ppb	0.2	1697720.39	9.1007	Analog	0.1000	3
Ni	60	72	He	517.291	ppb	0.6	452490.03	2.4257	Pulse	0.1000	3
Cu	63	72	He	489.406	ppb	0.4	1232306.67	6.6058	Pulse	0.1000	3
Zn	66	72	He	520.817	ppb	0.3	147973.21	0.7932	Pulse	0.1000	3
As	75	72	He	503.013	ppb	0.3	99627.42	0.5341	Pulse	0.5000	3
Sr	88	115	He	53.218	ppb	4.1	47623.69	0.6023	Pulse	0.1000	3
Mo	98	115	He	53.886	ppb	2.2	89569.93	1.1325	Pulse	0.1000	3
Ag	107	115	He	48.713	ppb	4.3	161882.74	2.0474	Pulse	0.1000	3
Cd	111	115	He	52.501	ppb	2.7	20372.75	0.2576	Pulse	0.5000	3
Sn	120	115	He	105.887	ppb	1.5	119777.22	1.5141	Pulse	0.1000	3
Sb	121	115	He	99.005	ppb	3.2	101665.44	1.2857	Pulse	0.1000	3
Ba	137	115	He	533.779	ppb	1.0	197999.66	2.5029	Pulse	0.1000	3
Tl	205	159	He	106.819	ppb	0.3	589644.10	2.0911	Pulse	0.1000	3
Pb	208	159	He	52.823	ppb	1.1	388443.03	1.3777	Pulse	0.1000	3
U	238	209	He	50.556	ppb	0.9	425628.45	2.3453	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2238026.16	0.2	101.1	Analog	0.1000	3
No Gas	Ge	72	1581282.11	1.1	100.7	Analog	0.1000	3
H2	Sc	45	165334.58	0.9	104.6	Pulse	0.1000	3
H2	Ge	72	257167.56	0.8	103.6	Pulse	0.1000	3
H2	In	115	304036.55	1.3	102.6	Pulse	0.1000	3
He	Sc	45	75172.81	1.3	96.1	Pulse	0.1000	3
He	Ge	72	186547.44	0.8	96.4	Pulse	0.1000	3
He	In	115	79120.29	2.6	97.0	Pulse	0.1000	3
He	Tb	159	281969.86	1.2	98.1	Pulse	0.1000	3
He	Bi	209	181476.64	0.5	98.8	Pulse	0.1000	3

No Gas



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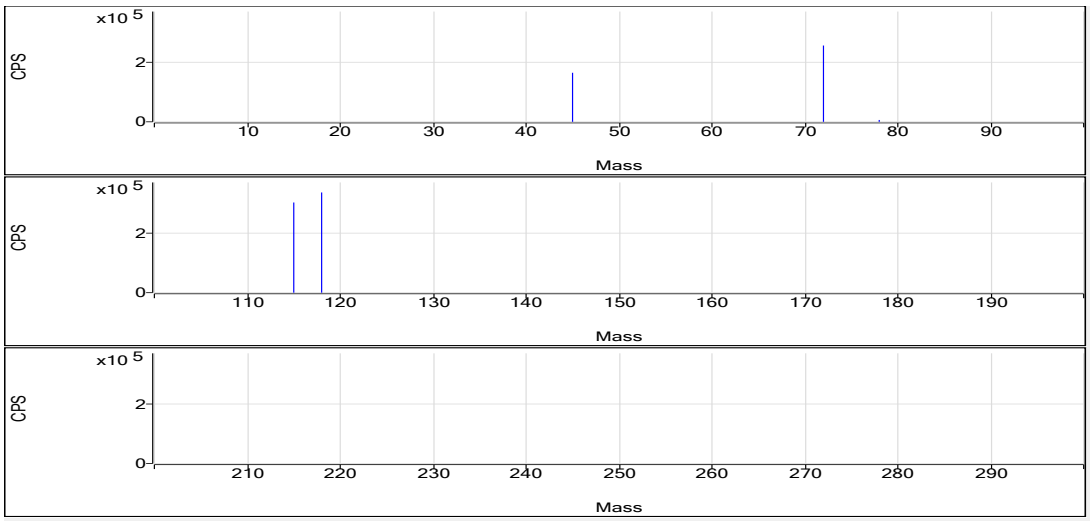
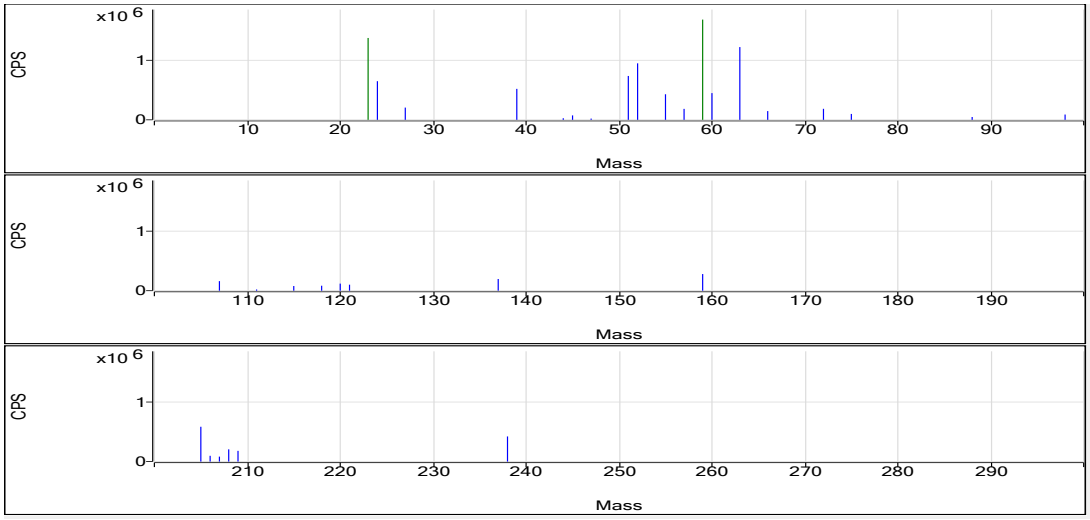


Quantitation Report

He



Quantitation Report

Data File Name	077SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 13:46:26
Sample Name	410-61302-V-12-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

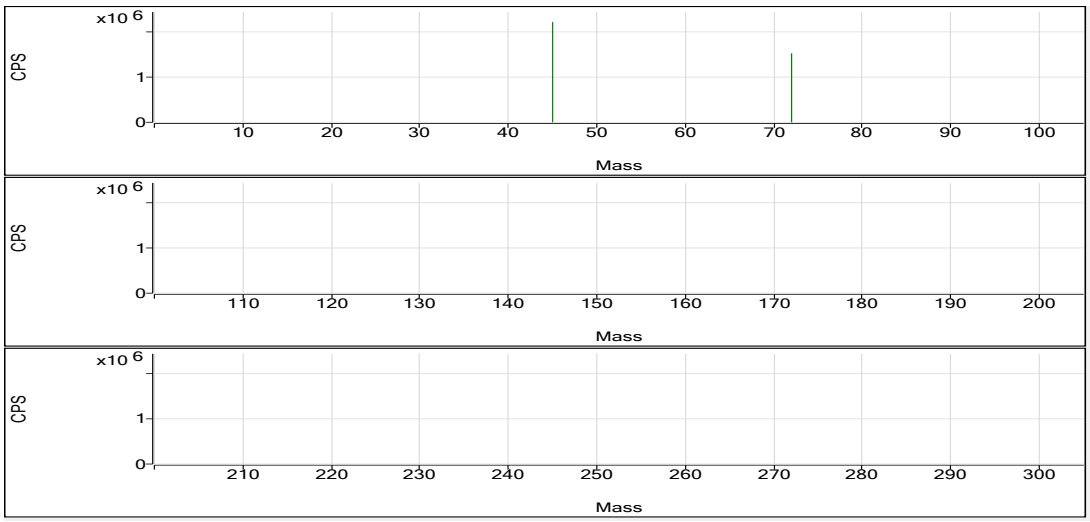
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.019	ppb	11.8	48.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	1.471	ppb	12.0	84.44	0.0003	Pulse	1.5000	3
Na	23	72	He	363338.115	ppb	0.5	93809071.94	509.3788	Analog	0.1000	3
Mg	24	72	He	65795.581	ppb	0.8	8162643.63	44.3234	Analog	0.1000	3
Al	27	72	He	-20.081	ppb	N/A	503.41	0.0027	Pulse	0.1000	3
K	39	72	He	25064.500	ppb	0.4	2428620.28	13.1870	Analog	0.1000	3
Ca	44	72	He	223855.264	ppb	0.6	1154587.67	6.2694	Pulse	0.1000	3
Ti	47	72	He	0.605	ppb	64.9	26.67	0.0001	Pulse	0.1000	3
V	51	72	He	0.703	ppb	3.5	2467.56	0.0134	Pulse	0.5000	3
Cr	52	72	He	1.561	ppb	5.6	4847.67	0.0263	Pulse	0.1000	3
Mn	55	72	He	2156.640	ppb	1.3	1765477.00	9.5869	Analog	0.1000	3
Fe	57	72	He	23708.715	ppb	1.7	835446.76	4.5365	Pulse	0.1000	3
Co	59	72	He	2.154	ppb	4.2	7008.59	0.0381	Pulse	0.1000	3
Ni	60	72	He	3.934	ppb	7.4	3543.90	0.0193	Pulse	0.1000	3
Cu	63	72	He	0.302	ppb	18.4	1173.42	0.0064	Pulse	0.1000	3
Zn	66	72	He	1.514	ppb	8.2	566.70	0.0031	Pulse	0.1000	3
As	75	72	He	24.581	ppb	2.5	4877.52	0.0265	Pulse	0.5000	3
Sr	88	115	He	1012.789	ppb	0.6	879805.59	11.4563	Pulse	0.1000	3
Mo	98	115	He	5.573	ppb	5.2	9029.82	0.1175	Pulse	0.1000	3
Ag	107	115	He	-0.001	ppb	N/A	30.00	0.0004	Pulse	0.1000	3
Cd	111	115	He	0.007	ppb	112.7	3.33	0.0000	Pulse	0.5000	3
Sn	120	115	He	-0.149	ppb	N/A	1343.47	0.0175	Pulse	0.1000	3
Sb	121	115	He	0.730	ppb	12.3	746.72	0.0097	Pulse	0.1000	3
Ba	137	115	He	27.926	ppb	2.6	10067.29	0.1311	Pulse	0.1000	3
Tl	205	159	He	0.037	ppb	30.1	260.01	0.0009	Pulse	0.1000	3
Pb	208	159	He	0.058	ppb	13.5	703.37	0.0025	Pulse	0.1000	3
U	238	209	He	1.055	ppb	0.5	8359.69	0.0490	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2218856.58	2.0	100.2	Analog	0.1000	3
No Gas	Ge	72	1527709.92	0.6	97.3	Analog	0.1000	3
H2	Sc	45	166922.76	0.4	105.6	Pulse	0.1000	3
H2	Ge	72	256432.58	0.8	103.3	Pulse	0.1000	3
H2	In	115	292954.70	0.5	98.9	Pulse	0.1000	3
He	Sc	45	73511.02	1.2	94.0	Pulse	0.1000	3
He	Ge	72	184170.02	1.0	95.1	Pulse	0.1000	3
He	In	115	76794.00	1.2	94.2	Pulse	0.1000	3
He	Tb	159	277782.58	0.6	96.6	Pulse	0.1000	3
He	Bi	209	170696.36	0.2	92.9	Pulse	0.1000	3

No Gas



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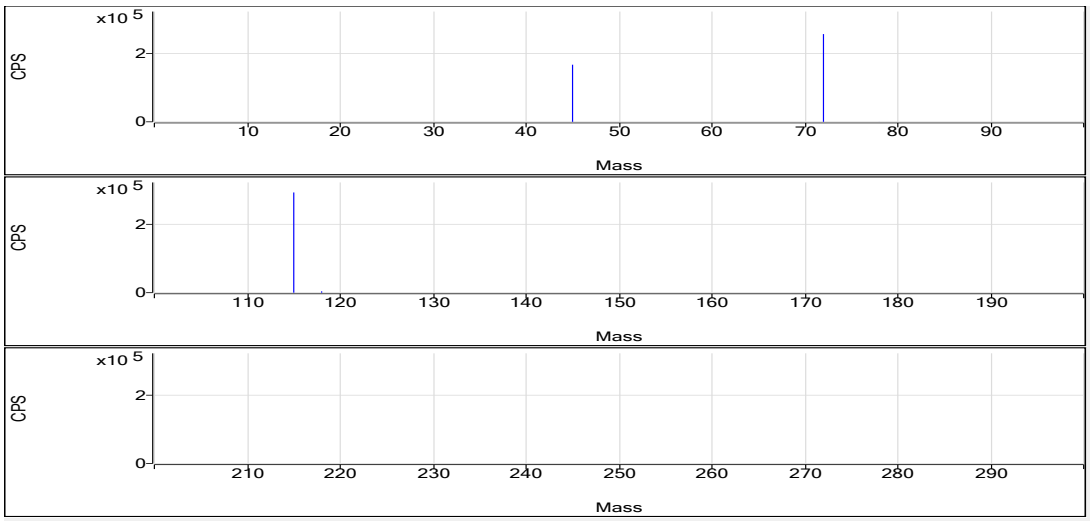
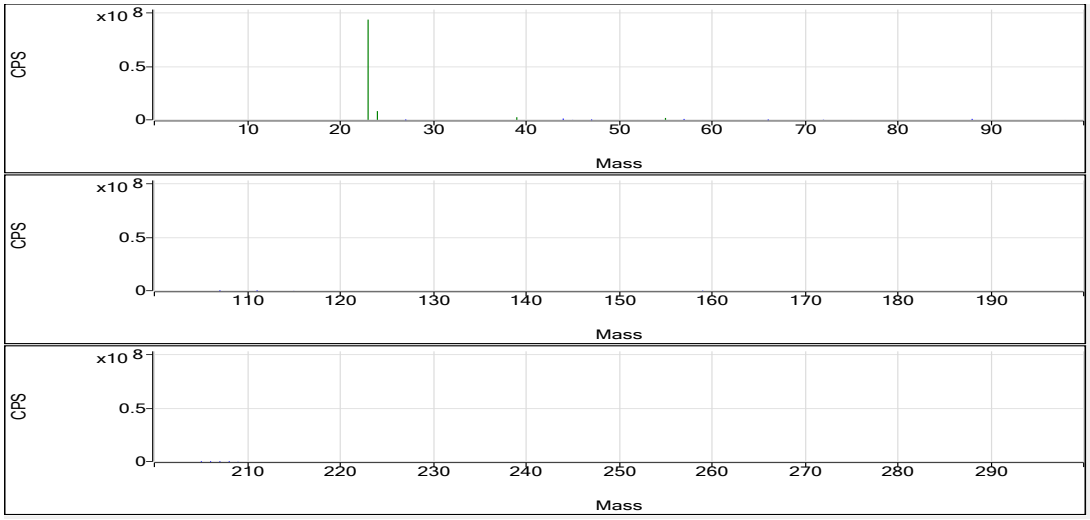


Quantitation Report

He



Quantitation Report

Data File Name	078SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 13:48:27
Sample Name	410-61302-V-12-A PDS
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

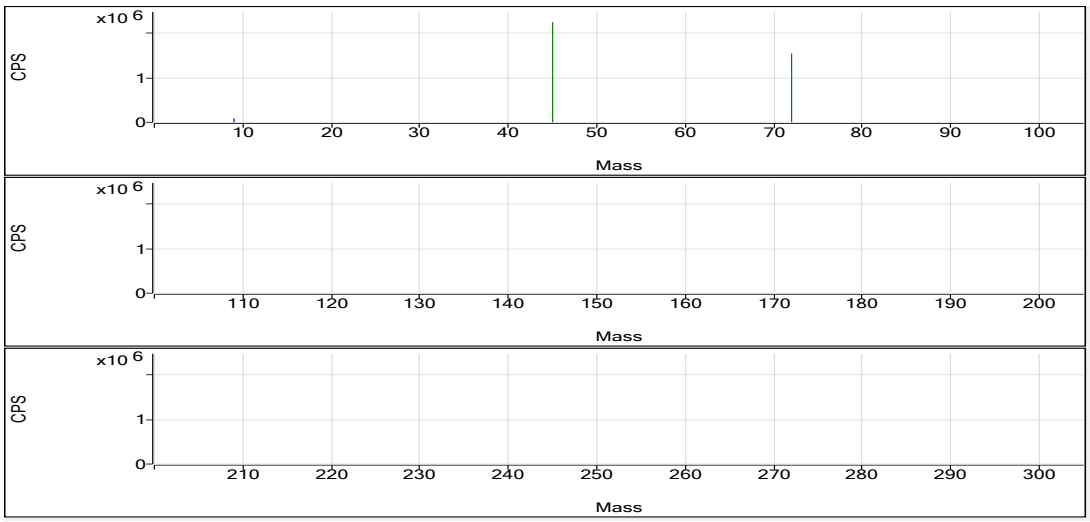
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	51.145	ppb	0.6	88569.15	0.0573	Pulse	0.5000	3
Se	78	115	H2	117.538	ppb	0.7	6624.19	0.0224	Pulse	1.5000	3
Na	23	72	He	353927.176	ppb	0.7	91422161.97	496.1869	Analog	0.1000	3
Mg	24	72	He	67782.648	ppb	0.7	8413175.29	45.6619	Analog	0.1000	3
Al	27	72	He	4927.950	ppb	0.1	194718.74	1.0568	Pulse	0.1000	3
K	39	72	He	28882.157	ppb	0.8	2795983.60	15.1751	Analog	0.1000	3
Ca	44	72	He	220225.940	ppb	1.3	1136423.87	6.1678	Pulse	0.1000	3
Ti	47	72	He	504.138	ppb	3.0	19553.51	0.1061	Pulse	0.1000	3
V	51	72	He	489.868	ppb	1.0	717289.50	3.8930	Pulse	0.5000	3
Cr	52	72	He	474.419	ppb	1.2	899813.66	4.8838	Pulse	0.1000	3
Mn	55	72	He	2606.033	ppb	1.3	2134330.07	11.5844	Analog	0.1000	3
Fe	57	72	He	27814.536	ppb	1.5	980522.54	5.3220	Pulse	0.1000	3
Co	59	72	He	472.271	ppb	2.4	1521802.74	8.2596	Mix	0.1000	3
Ni	60	72	He	477.821	ppb	1.7	412818.09	2.2407	Pulse	0.1000	3
Cu	63	72	He	456.359	ppb	1.8	1134884.77	6.1599	Pulse	0.1000	3
Zn	66	72	He	492.867	ppb	2.3	138303.08	0.7507	Pulse	0.1000	3
As	75	72	He	529.747	ppb	1.3	103621.92	0.5624	Pulse	0.5000	3
Sr	88	115	He	1029.423	ppb	1.2	904217.17	11.6445	Pulse	0.1000	3
Mo	98	115	He	59.004	ppb	0.3	96300.01	1.2400	Pulse	0.1000	3
Ag	107	115	He	35.205	ppb	1.9	114903.18	1.4798	Pulse	0.1000	3
Cd	111	115	He	49.777	ppb	0.9	18966.80	0.2442	Pulse	0.5000	3
Sn	120	115	He	104.232	ppb	1.4	115758.14	1.4908	Pulse	0.1000	3
Sb	121	115	He	105.233	ppb	1.8	106108.57	1.3665	Pulse	0.1000	3
Ba	137	115	He	530.134	ppb	0.3	193050.69	2.4859	Pulse	0.1000	3
Tl	205	159	He	99.087	ppb	0.9	539948.69	1.9398	Pulse	0.1000	3
Pb	208	159	He	49.429	ppb	0.4	358856.76	1.2893	Pulse	0.1000	3
U	238	209	He	51.881	ppb	0.7	409263.16	2.4068	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2251610.44	1.3	101.7	Analog	0.1000	3
No Gas	Ge	72	1545103.31	0.9	98.4	Analog	0.1000	3
H2	Sc	45	169651.36	0.3	107.3	Pulse	0.1000	3
H2	Ge	72	256861.62	1.8	103.5	Pulse	0.1000	3
H2	In	115	295133.88	1.5	99.6	Pulse	0.1000	3
He	Sc	45	73943.00	1.9	94.5	Pulse	0.1000	3
He	Ge	72	184257.79	1.1	95.2	Pulse	0.1000	3
He	In	115	77662.03	1.7	95.3	Pulse	0.1000	3
He	Tb	159	278346.22	1.1	96.8	Pulse	0.1000	3
He	Bi	209	170050.90	0.8	92.6	Pulse	0.1000	3

No Gas



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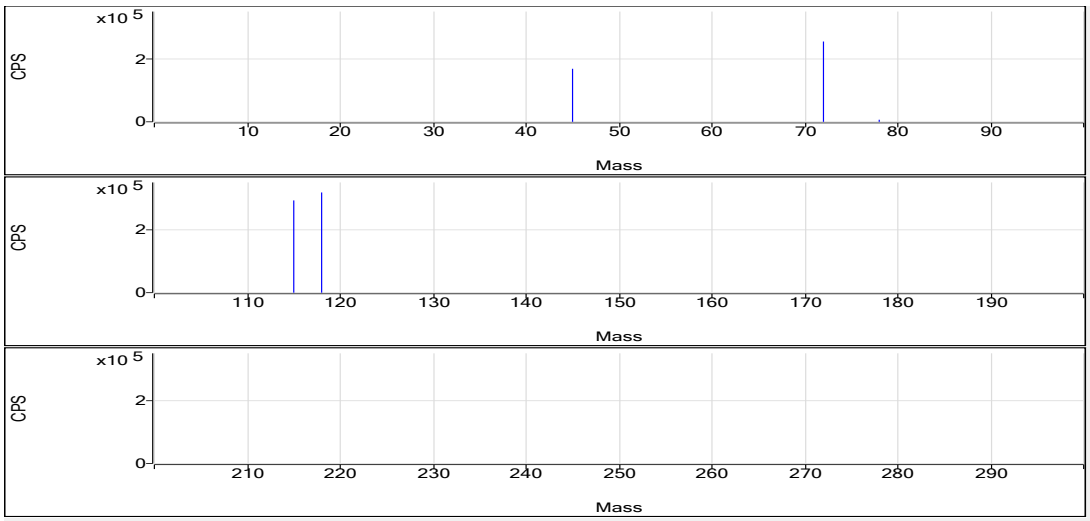
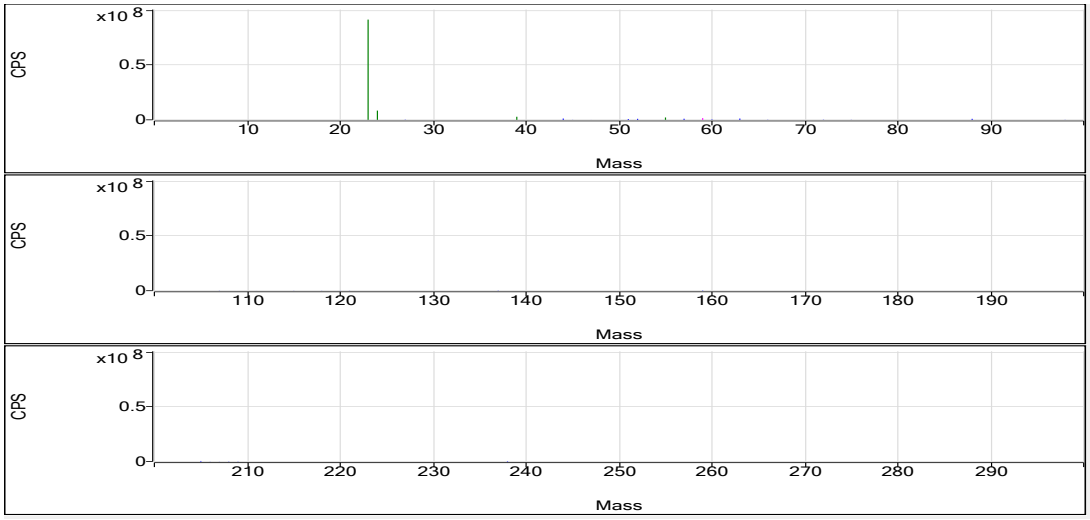


Quantitation Report

He



Quantitation Report

Data File Name	079SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 13:50:28
Sample Name	410-61302-Y-12-A DU
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

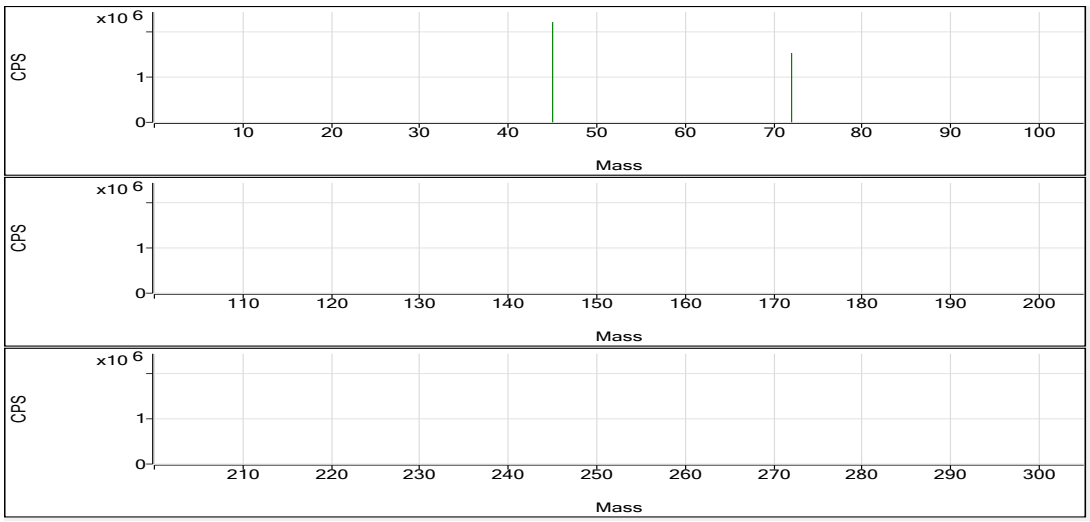
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.022	ppb	11.9	53.33	0.0000	Pulse	0.5000	3
Se	78	115	H2	1.545	ppb	8.4	87.78	0.0003	Pulse	1.5000	3
Na	23	72	He	355916.908	ppb	1.8	91317988.64	498.9760	Analog	0.1000	3
Mg	24	72	He	64273.042	ppb	0.8	7924901.55	43.2977	Analog	0.1000	3
Al	27	72	He	-20.722	ppb	N/A	473.48	0.0026	Pulse	0.1000	3
K	39	72	He	24327.408	ppb	1.9	2343088.87	12.8032	Analog	0.1000	3
Ca	44	72	He	218277.459	ppb	1.2	1118876.23	6.1132	Pulse	0.1000	3
Ti	47	72	He	0.791	ppb	78.6	33.33	0.0002	Pulse	0.1000	3
V	51	72	He	0.680	ppb	10.7	2419.55	0.0132	Pulse	0.5000	3
Cr	52	72	He	1.691	ppb	41.5	5047.82	0.0277	Pulse	0.1000	3
Mn	55	72	He	2155.954	ppb	0.9	1754262.21	9.5838	Analog	0.1000	3
Fe	57	72	He	23454.814	ppb	0.6	821483.11	4.4879	Pulse	0.1000	3
Co	59	72	He	2.227	ppb	5.3	7202.04	0.0393	Pulse	0.1000	3
Ni	60	72	He	4.030	ppb	4.4	3607.24	0.0197	Pulse	0.1000	3
Cu	63	72	He	0.256	ppb	16.7	1053.41	0.0058	Pulse	0.1000	3
Zn	66	72	He	1.726	ppb	40.9	623.37	0.0034	Pulse	0.1000	3
As	75	72	He	24.183	ppb	0.8	4770.15	0.0261	Pulse	0.5000	3
Sr	88	115	He	1009.278	ppb	1.3	869629.78	11.4166	Pulse	0.1000	3
Mo	98	115	He	6.503	ppb	3.6	10440.81	0.1371	Pulse	0.1000	3
Ag	107	115	He	-0.001	ppb	N/A	30.00	0.0004	Pulse	0.1000	3
Cd	111	115	He	0.014	ppb	98.0	6.00	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.051	ppb	N/A	1436.80	0.0189	Pulse	0.1000	3
Sb	121	115	He	0.605	ppb	17.1	616.70	0.0081	Pulse	0.1000	3
Ba	137	115	He	28.108	ppb	4.5	10047.32	0.1320	Pulse	0.1000	3
Tl	205	159	He	0.022	ppb	50.1	176.68	0.0006	Pulse	0.1000	3
Pb	208	159	He	0.029	ppb	25.2	490.02	0.0018	Pulse	0.1000	3
U	238	209	He	1.118	ppb	7.1	8983.42	0.0519	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2212127.99	1.1	99.9	Analog	0.1000	3
No Gas	Ge	72	1529806.54	0.6	97.4	Analog	0.1000	3
H2	Sc	45	171109.02	0.8	108.2	Pulse	0.1000	3
H2	Ge	72	258451.57	0.6	104.1	Pulse	0.1000	3
H2	In	115	290495.33	2.4	98.0	Pulse	0.1000	3
He	Sc	45	72432.16	1.8	92.6	Pulse	0.1000	3
He	Ge	72	183050.23	1.8	94.6	Pulse	0.1000	3
He	In	115	76183.82	1.8	93.4	Pulse	0.1000	3
He	Tb	159	275538.90	0.5	95.9	Pulse	0.1000	3
He	Bi	209	173094.36	0.5	94.2	Pulse	0.1000	3

No Gas



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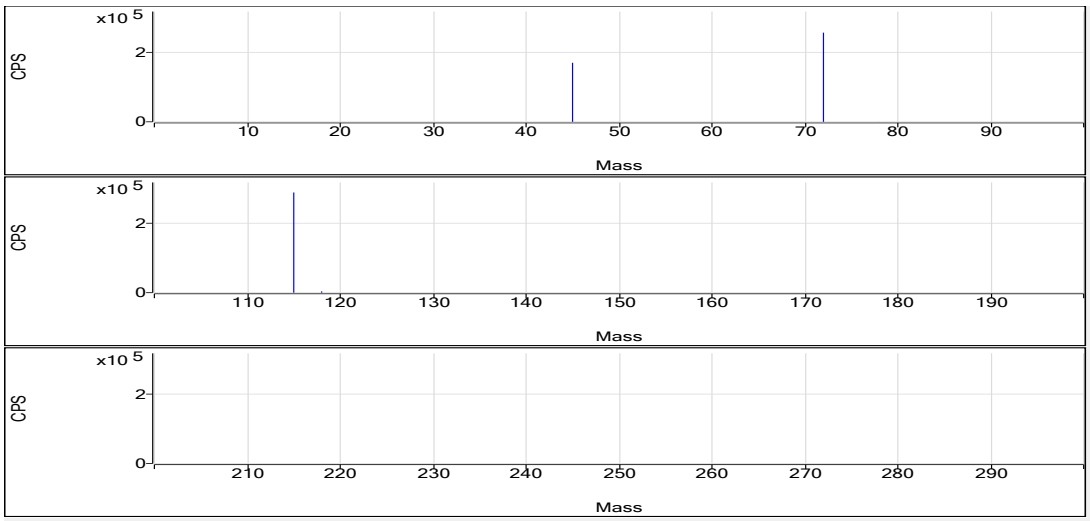
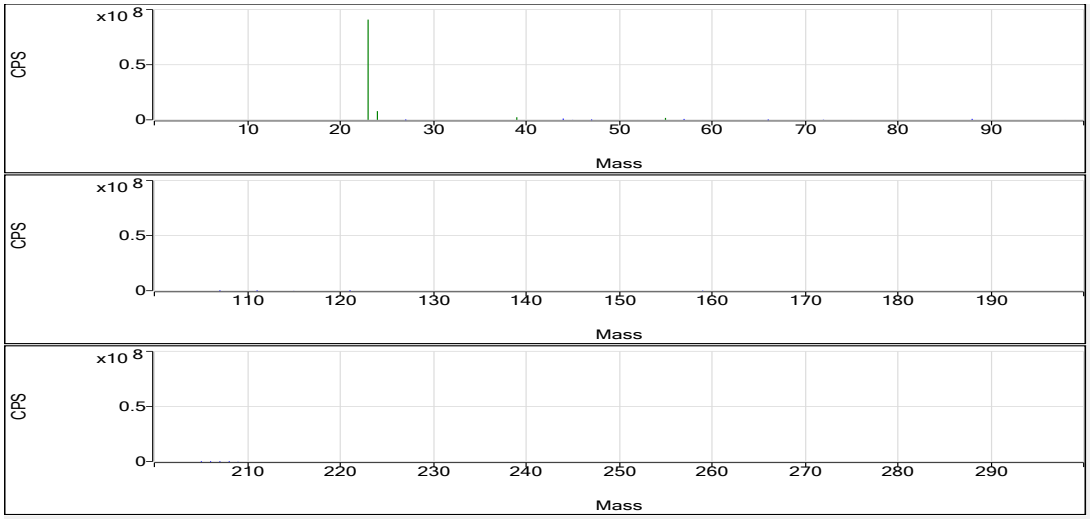


Quantitation Report

He



Quantitation Report

Data File Name	080SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 13:52:29
Sample Name	410-61302-W-12-A MS
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

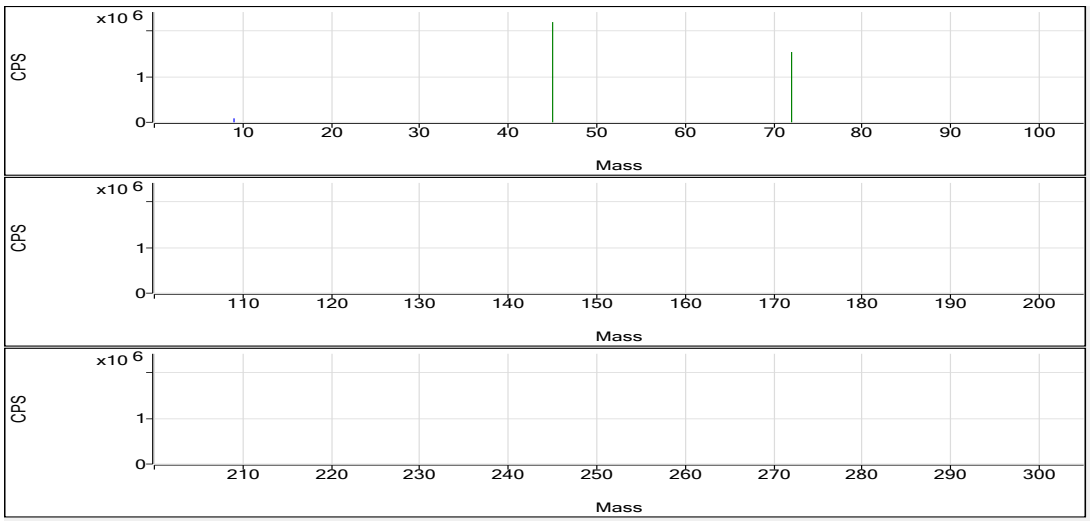
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	50.308	ppb	1.8	86797.44	0.0564	Pulse	0.5000	3
Se	78	115	H2	125.157	ppb	0.3	7056.62	0.0239	Pulse	1.5000	3
Na	23	72	He	354591.778	ppb	0.3	91479201.97	497.1185	Analog	0.1000	3
Mg	24	72	He	68207.744	ppb	0.1	8455426.54	45.9483	Analog	0.1000	3
Al	27	72	He	4869.935	ppb	0.1	192196.47	1.0444	Pulse	0.1000	3
K	39	72	He	28852.646	ppb	0.8	2789640.79	15.1598	Analog	0.1000	3
Ca	44	72	He	222064.832	ppb	0.5	1144445.32	6.2192	Pulse	0.1000	3
Ti	47	72	He	506.462	ppb	1.4	19623.71	0.1066	Pulse	0.1000	3
V	51	72	He	489.636	ppb	0.6	716068.31	3.8912	Pulse	0.5000	3
Cr	52	72	He	471.329	ppb	0.8	892904.26	4.8520	Pulse	0.1000	3
Mn	55	72	He	2640.048	ppb	0.3	2159598.04	11.7356	Analog	0.1000	3
Fe	57	72	He	28214.065	ppb	0.4	993410.82	5.3985	Pulse	0.1000	3
Co	59	72	He	480.737	ppb	1.5	1547070.65	8.4077	Analog	0.1000	3
Ni	60	72	He	482.948	ppb	0.4	416762.52	2.2647	Pulse	0.1000	3
Cu	63	72	He	454.930	ppb	0.7	1129997.74	6.1406	Pulse	0.1000	3
Zn	66	72	He	490.918	ppb	1.2	137599.65	0.7477	Pulse	0.1000	3
As	75	72	He	538.695	ppb	0.7	105242.28	0.5719	Pulse	0.5000	3
Sr	88	115	He	1058.460	ppb	1.4	914016.65	11.9729	Pulse	0.1000	3
Mo	98	115	He	60.032	ppb	2.1	96303.32	1.2616	Pulse	0.1000	3
Ag	107	115	He	40.641	ppb	1.7	130418.96	1.7082	Pulse	0.1000	3
Cd	111	115	He	50.156	ppb	1.0	18788.57	0.2461	Pulse	0.5000	3
Sn	120	115	He	105.729	ppb	3.0	115405.06	1.5119	Pulse	0.1000	3
Sb	121	115	He	99.900	ppb	1.8	99030.43	1.2973	Pulse	0.1000	3
Ba	137	115	He	546.751	ppb	2.9	195685.90	2.5638	Pulse	0.1000	3
Tl	205	159	He	100.637	ppb	0.8	548424.95	1.9701	Pulse	0.1000	3
Pb	208	159	He	50.075	ppb	0.3	363600.86	1.3061	Pulse	0.1000	3
U	238	209	He	52.540	ppb	0.4	417681.56	2.4373	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2195534.19	0.8	99.2	Analog	0.1000	3
No Gas	Ge	72	1539563.52	0.9	98.0	Analog	0.1000	3
H2	Sc	45	176271.40	0.7	111.5	Pulse	0.1000	3
H2	Ge	72	260441.73	0.5	104.9	Pulse	0.1000	3
H2	In	115	295289.17	0.7	99.7	Pulse	0.1000	3
He	Sc	45	73916.90	0.5	94.5	Pulse	0.1000	3
He	Ge	72	184021.85	0.9	95.1	Pulse	0.1000	3
He	In	115	76351.80	1.7	93.7	Pulse	0.1000	3
He	Tb	159	278393.34	1.7	96.8	Pulse	0.1000	3
He	Bi	209	171374.66	1.8	93.3	Pulse	0.1000	3

No Gas



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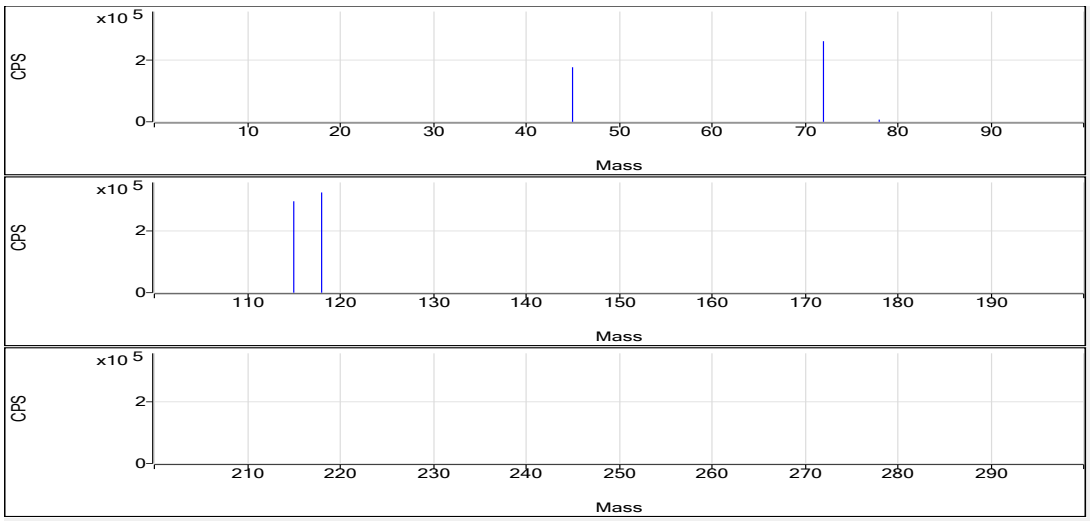
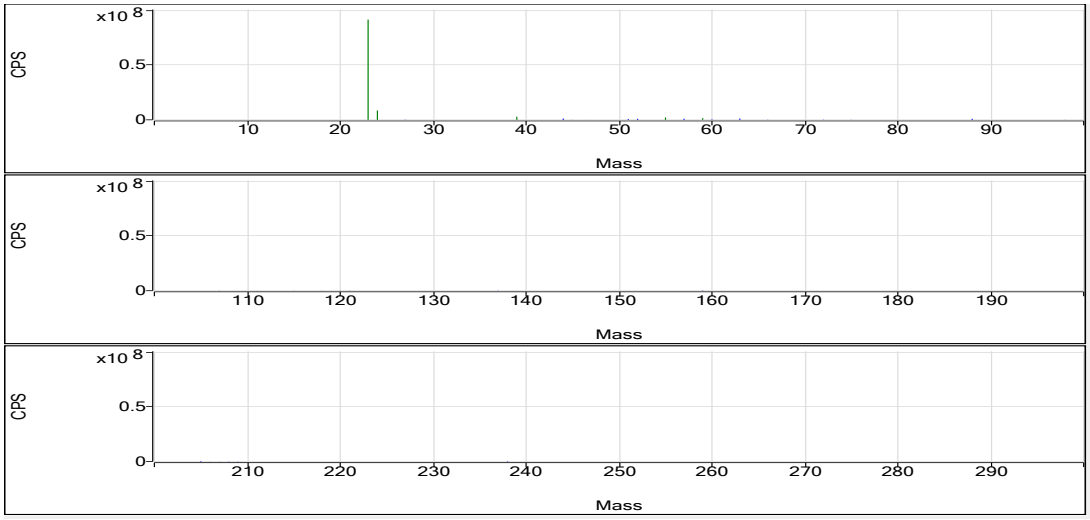


Quantitation Report

He



Quantitation Report

Data File Name	081SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 13:54:30
Sample Name	410-61302-X-12-A MSD
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

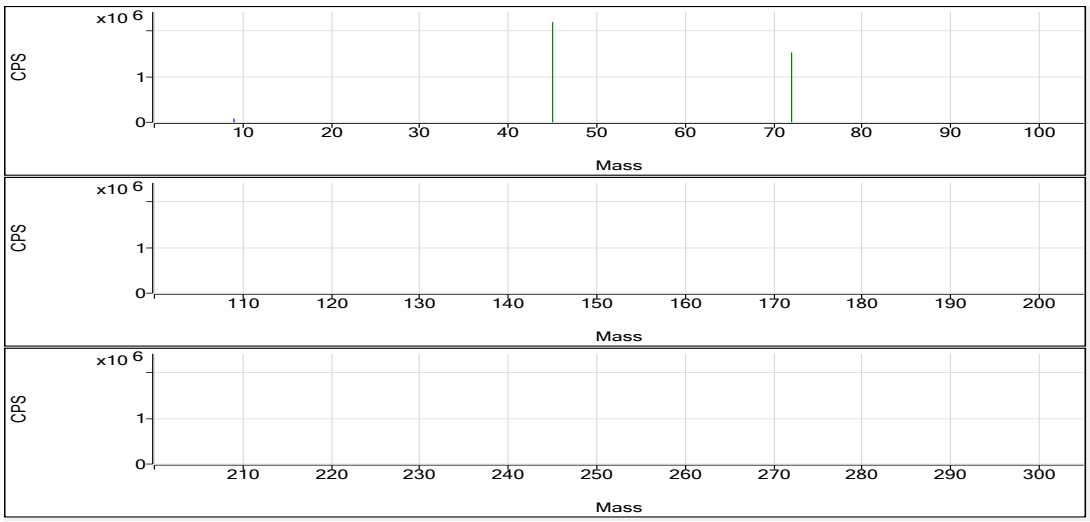
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	48.682	ppb	0.9	83925.43	0.0546	Pulse	0.5000	3
Se	78	115	H2	122.296	ppb	1.0	6938.34	0.0234	Pulse	1.5000	3
Na	23	72	He	354381.041	ppb	0.9	91259248.64	496.8231	Analog	0.1000	3
Mg	24	72	He	67505.658	ppb	0.9	8353254.25	45.4753	Analog	0.1000	3
Al	27	72	He	4797.608	ppb	0.8	189023.09	1.0290	Pulse	0.1000	3
K	39	72	He	28715.312	ppb	0.5	2771634.13	15.0883	Analog	0.1000	3
Ca	44	72	He	218342.779	ppb	0.6	1123302.56	6.1150	Pulse	0.1000	3
Ti	47	72	He	484.214	ppb	1.8	18725.76	0.1019	Pulse	0.1000	3
V	51	72	He	478.767	ppb	0.5	698938.92	3.8050	Pulse	0.5000	3
Cr	52	72	He	461.505	ppb	0.5	872730.59	4.7511	Pulse	0.1000	3
Mn	55	72	He	2607.852	ppb	1.3	2129332.31	11.5925	Analog	0.1000	3
Fe	57	72	He	27834.114	ppb	0.8	978277.54	5.3258	Pulse	0.1000	3
Co	59	72	He	458.725	ppb	1.9	1473807.89	8.0227	Mix	0.1000	3
Ni	60	72	He	469.086	ppb	0.8	404076.24	2.1997	Pulse	0.1000	3
Cu	63	72	He	448.265	ppb	0.7	1111460.74	6.0507	Pulse	0.1000	3
Zn	66	72	He	481.840	ppb	1.1	134810.11	0.7339	Pulse	0.1000	3
As	75	72	He	526.944	ppb	0.4	102767.89	0.5595	Pulse	0.5000	3
Sr	88	115	He	1047.141	ppb	3.1	904918.63	11.8449	Pulse	0.1000	3
Mo	98	115	He	59.036	ppb	2.9	94793.38	1.2407	Pulse	0.1000	3
Ag	107	115	He	39.171	ppb	1.4	125827.91	1.6465	Pulse	0.1000	3
Cd	111	115	He	49.790	ppb	1.5	18670.38	0.2443	Pulse	0.5000	3
Sn	120	115	He	102.902	ppb	2.5	112471.00	1.4720	Pulse	0.1000	3
Sb	121	115	He	98.499	ppb	1.4	97754.79	1.2791	Pulse	0.1000	3
Ba	137	115	He	534.748	ppb	2.3	191597.63	2.5075	Pulse	0.1000	3
Tl	205	159	He	98.069	ppb	0.7	537661.24	1.9199	Pulse	0.1000	3
Pb	208	159	He	48.695	ppb	0.8	355696.60	1.2702	Pulse	0.1000	3
U	238	209	He	51.507	ppb	0.6	411865.81	2.3894	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2203831.06	1.1	99.6	Analog	0.1000	3
No Gas	Ge	72	1538318.26	1.8	98.0	Analog	0.1000	3
H2	Sc	45	171999.25	0.5	108.8	Pulse	0.1000	3
H2	Ge	72	257613.10	1.0	103.8	Pulse	0.1000	3
H2	In	115	297136.13	0.5	100.3	Pulse	0.1000	3
He	Sc	45	71595.60	1.8	91.5	Pulse	0.1000	3
He	Ge	72	183692.43	0.7	94.9	Pulse	0.1000	3
He	In	115	76442.19	2.8	93.8	Pulse	0.1000	3
He	Tb	159	280055.91	1.0	97.4	Pulse	0.1000	3
He	Bi	209	172374.08	0.3	93.8	Pulse	0.1000	3

No Gas



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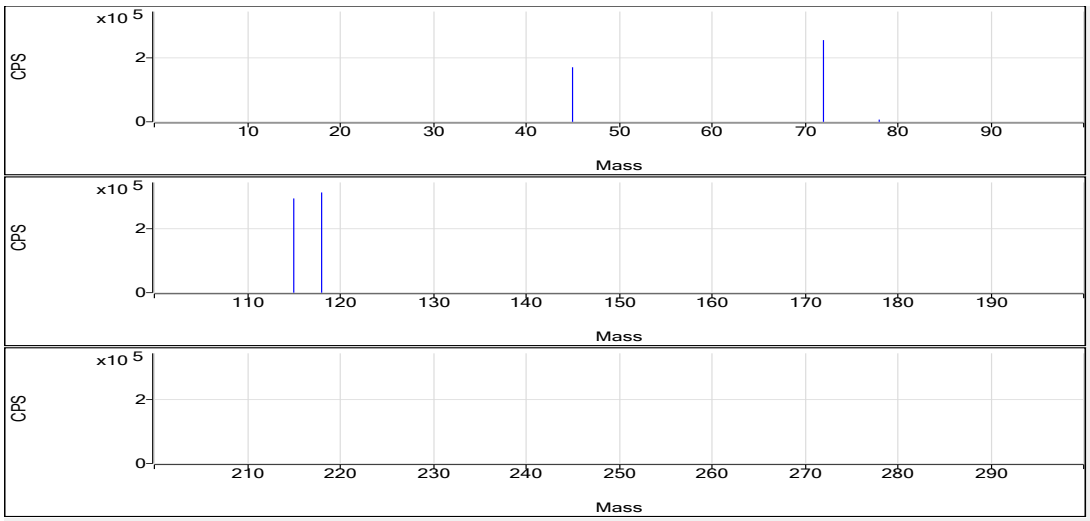
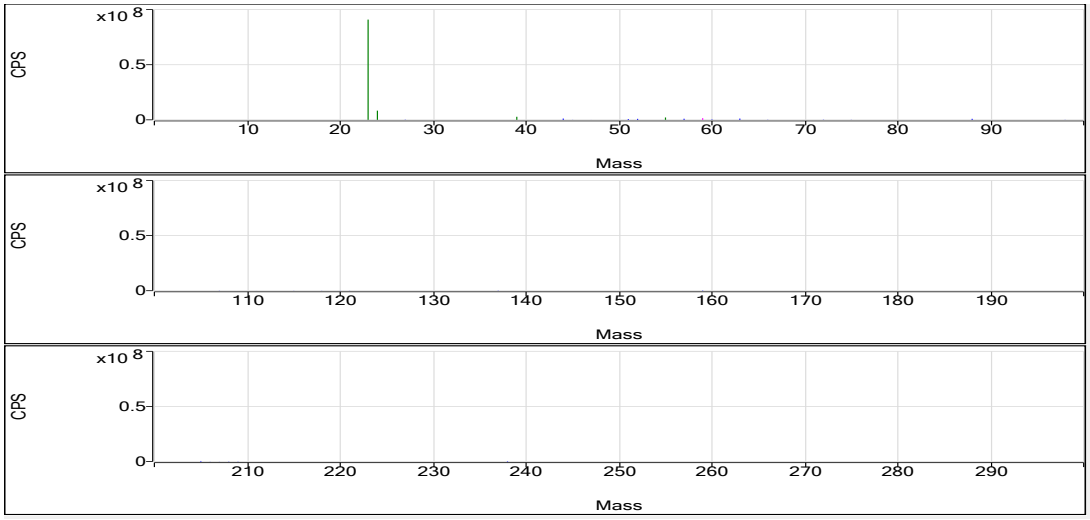


Quantitation Report

He



Quantitation Report

Data File Name	082SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 13:56:30
Sample Name	410-61302-V-12-A SD @5
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

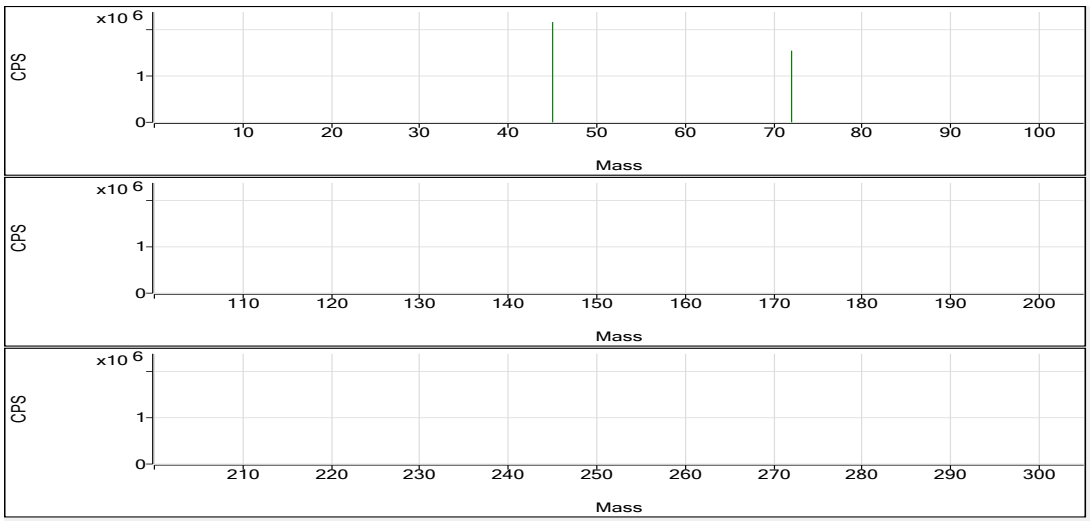
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.022	ppb	30.0	53.33	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.607	ppb	11.4	35.78	0.0001	Pulse	1.5000	3
Na	23	72	He	67043.655	ppb	1.1	17516629.32	94.0461	Analog	0.1000	3
Mg	24	72	He	12409.360	ppb	0.8	1557032.48	8.3602	Analog	0.1000	3
Al	27	72	He	-28.459	ppb	N/A	176.67	0.0009	Pulse	0.1000	3
K	39	72	He	4244.081	ppb	0.5	436662.03	2.3444	Pulse	0.1000	3
Ca	44	72	He	39942.175	ppb	1.2	208532.96	1.1196	Pulse	0.1000	3
Ti	47	72	He	0.089	ppb	165.8	6.67	0.0000	Pulse	0.1000	3
V	51	72	He	0.022	ppb	161.9	1490.09	0.0080	Pulse	0.5000	3
Cr	52	72	He	0.262	ppb	51.1	2420.29	0.0130	Pulse	0.1000	3
Mn	55	72	He	375.779	ppb	0.7	311271.84	1.6711	Pulse	0.1000	3
Fe	57	72	He	4358.876	ppb	0.4	155449.30	0.8346	Pulse	0.1000	3
Co	59	72	He	0.508	ppb	6.4	1723.49	0.0093	Pulse	0.1000	3
Ni	60	72	He	0.816	ppb	3.3	863.40	0.0046	Pulse	0.1000	3
Cu	63	72	He	0.237	ppb	27.4	1026.74	0.0055	Pulse	0.1000	3
Zn	66	72	He	0.446	ppb	29.7	270.01	0.0015	Pulse	0.1000	3
As	75	72	He	4.746	ppb	5.0	1013.38	0.0054	Pulse	0.5000	3
Sr	88	115	He	186.715	ppb	1.6	161925.36	2.1123	Pulse	0.1000	3
Mo	98	115	He	1.612	ppb	4.5	2630.33	0.0343	Pulse	0.1000	3
Ag	107	115	He	1.604	ppb	4.0	5204.48	0.0679	Pulse	0.1000	3
Cd	111	115	He	0.004	ppb	2.6	2.00	0.0000	Pulse	0.5000	3
Sn	120	115	He	-0.102	ppb	N/A	1393.45	0.0182	Pulse	0.1000	3
Sb	121	115	He	0.888	ppb	1.7	903.40	0.0118	Pulse	0.1000	3
Ba	137	115	He	5.080	ppb	9.9	1836.85	0.0240	Pulse	0.1000	3
Tl	205	159	He	0.042	ppb	38.4	290.01	0.0010	Pulse	0.1000	3
Pb	208	159	He	0.014	ppb	91.4	393.35	0.0014	Pulse	0.1000	3
U	238	209	He	0.241	ppb	0.1	2016.89	0.0112	Pulse	0.1000	3

ISTD Table:

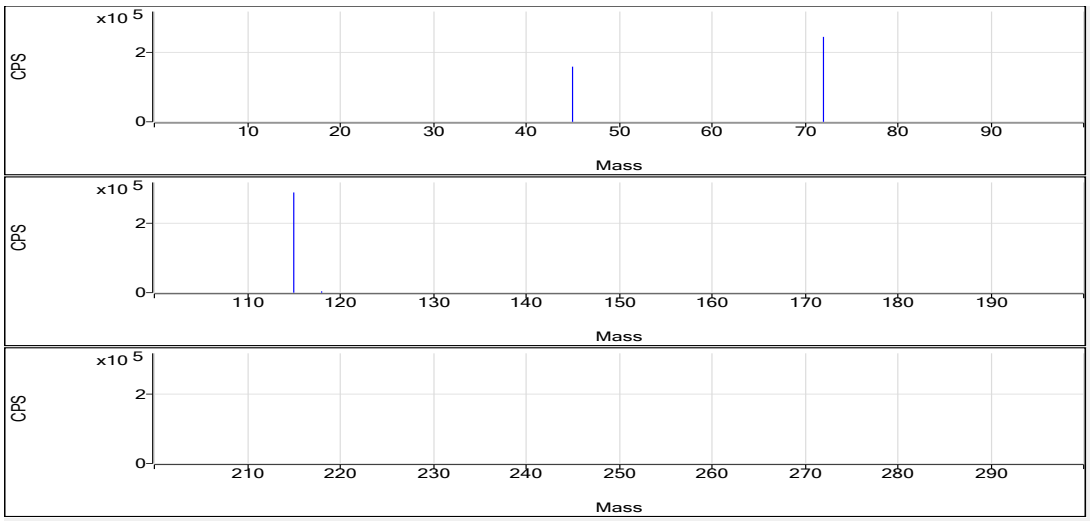
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2168333.15	0.6	98.0	Analog	0.1000	3
No Gas	Ge	72	1549844.92	1.1	98.7	Analog	0.1000	3
H2	Sc	45	159783.93	0.2	101.1	Pulse	0.1000	3
H2	Ge	72	246103.60	0.3	99.2	Pulse	0.1000	3
H2	In	115	290366.32	1.6	98.0	Pulse	0.1000	3
He	Sc	45	71414.25	1.6	91.3	Pulse	0.1000	3
He	Ge	72	186255.95	1.3	96.2	Pulse	0.1000	3
He	In	115	76670.66	1.8	94.0	Pulse	0.1000	3
He	Tb	159	281358.11	1.0	97.9	Pulse	0.1000	3
He	Bi	209	179681.25	2.1	97.8	Pulse	0.1000	3

No Gas

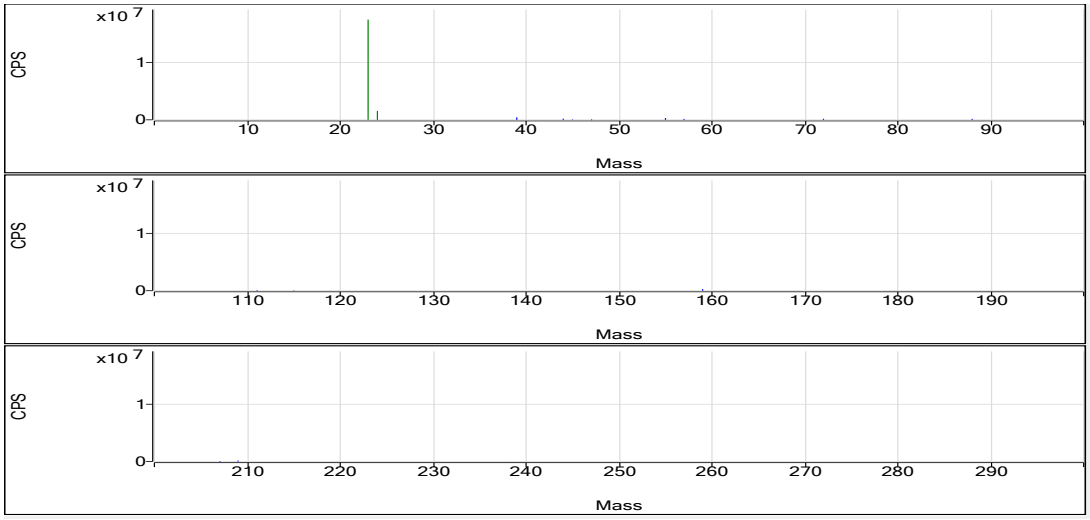


H2



Quantitation Report

He



Quantitation Report

Data File Name	083_CCV.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 13:58:32
Sample Name	CCV 1942322
Sample Type	CCV
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

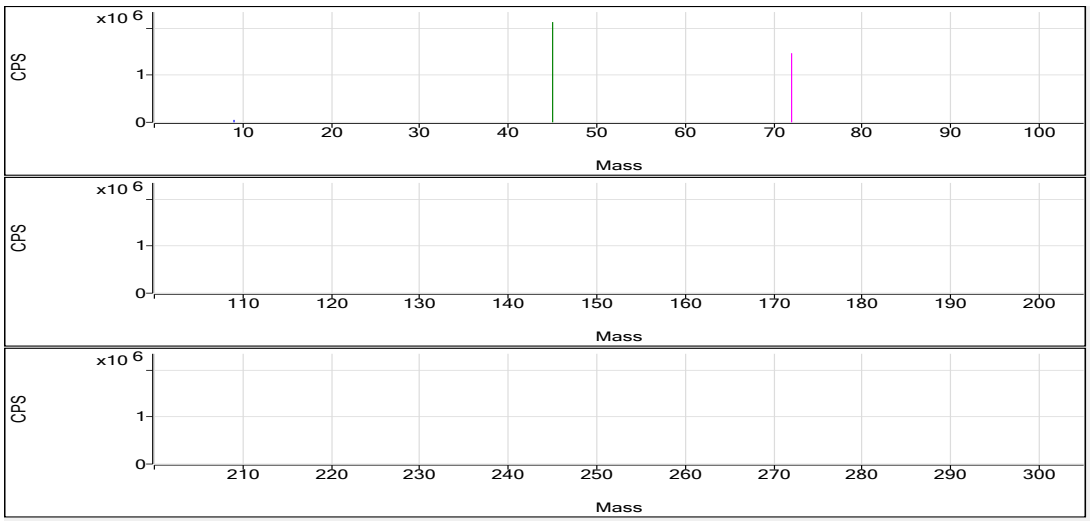
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	31.175	ppb	1.4	51242.46	0.0349	Pulse	0.5000	3
Se	78	115	H2	31.801	ppb	1.3	1781.89	0.0061	Pulse	1.5000	3
Na	23	72	He	5255.152	ppb	1.2	1294871.54	7.4337	Analog	0.1000	3
Mg	24	72	He	5158.208	ppb	0.9	605414.73	3.4755	Pulse	0.1000	3
Al	27	72	He	5183.862	ppb	0.9	193584.68	1.1113	Pulse	0.1000	3
K	39	72	He	5168.174	ppb	0.8	492218.12	2.8257	Pulse	0.1000	3
Ca	44	72	He	5146.996	ppb	2.4	25312.55	0.1453	Pulse	0.1000	3
Ti	47	72	He	306.411	ppb	3.7	11241.40	0.0645	Pulse	0.1000	3
V	51	72	He	304.956	ppb	0.2	422690.24	2.4265	Pulse	0.5000	3
Cr	52	72	He	301.391	ppb	0.7	541113.36	3.1063	Pulse	0.1000	3
Mn	55	72	He	313.255	ppb	0.5	242691.59	1.3932	Pulse	0.1000	3
Fe	57	72	He	5277.651	ppb	0.5	176008.20	1.0104	Pulse	0.1000	3
Co	59	72	He	301.602	ppb	0.3	918880.54	5.2749	Pulse	0.1000	3
Ni	60	72	He	314.126	ppb	0.1	256653.10	1.4733	Pulse	0.1000	3
Cu	63	72	He	300.611	ppb	0.3	706973.82	4.0584	Pulse	0.1000	3
Zn	66	72	He	317.343	ppb	1.0	84242.31	0.4836	Pulse	0.1000	3
As	75	72	He	320.243	ppb	0.5	59254.92	0.3402	Pulse	0.5000	3
Sr	88	115	He	31.691	ppb	3.4	27687.72	0.3588	Pulse	0.1000	3
Mo	98	115	He	31.952	ppb	2.9	51832.24	0.6717	Pulse	0.1000	3
Ag	107	115	He	31.324	ppb	2.4	101615.82	1.3167	Pulse	0.1000	3
Cd	111	115	He	30.863	ppb	1.2	11689.56	0.1514	Pulse	0.5000	3
Sn	120	115	He	31.815	ppb	4.2	36157.53	0.4687	Pulse	0.1000	3
Sb	121	115	He	31.580	ppb	1.7	31670.14	0.4103	Pulse	0.1000	3
Ba	137	115	He	314.102	ppb	2.4	113669.10	1.4729	Pulse	0.1000	3
Tl	205	159	He	31.402	ppb	1.4	172141.63	0.6149	Pulse	0.1000	3
Pb	208	159	He	31.429	ppb	1.2	229594.60	0.8201	Pulse	0.1000	3
U	238	209	He	261.941	ppb	1.2	2211618.82	12.1512	Analog	0.1000	3

ISTD Table:

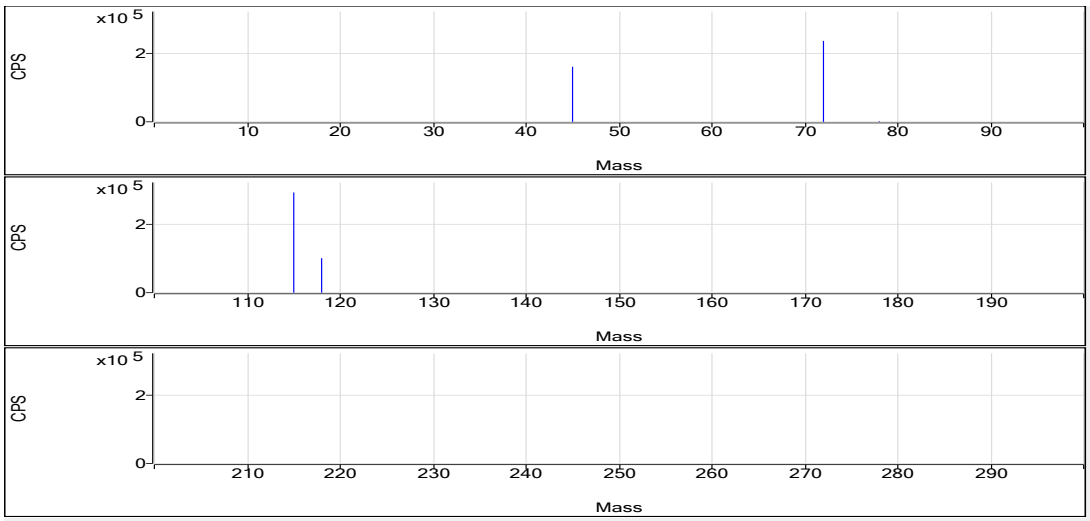
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2127183.41	1.6	96.1	Analog	0.1000	3
No Gas	Ge	72	1466625.40	1.7	93.4	Mix	0.1000	3
H2	Sc	45	161031.84	1.0	101.9	Pulse	0.1000	3
H2	Ge	72	236621.70	1.0	95.3	Pulse	0.1000	3
H2	In	115	293212.63	1.7	99.0	Pulse	0.1000	3
He	Sc	45	71079.48	1.9	90.9	Pulse	0.1000	3
He	Ge	72	174201.72	0.9	90.0	Pulse	0.1000	3
He	In	115	77206.34	2.8	94.7	Pulse	0.1000	3
He	Tb	159	279975.32	1.5	97.4	Pulse	0.1000	3
He	Bi	209	182008.33	0.2	99.1	Pulse	0.1000	3

No Gas

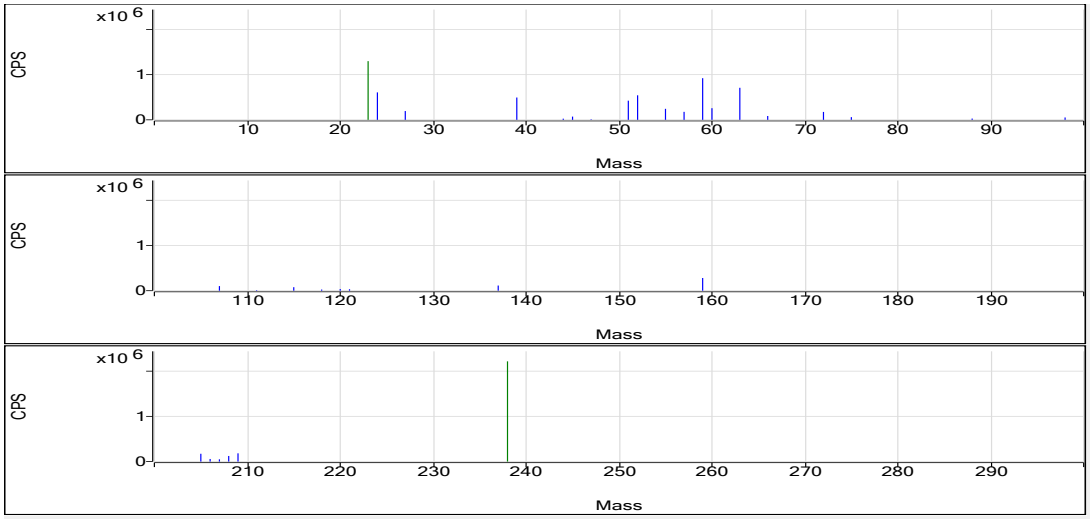


H2



Quantitation Report

He



Quantitation Report

Data File Name	084_CCB.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 14:00:34
Sample Name	CCB 2014932
Sample Type	CCB
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

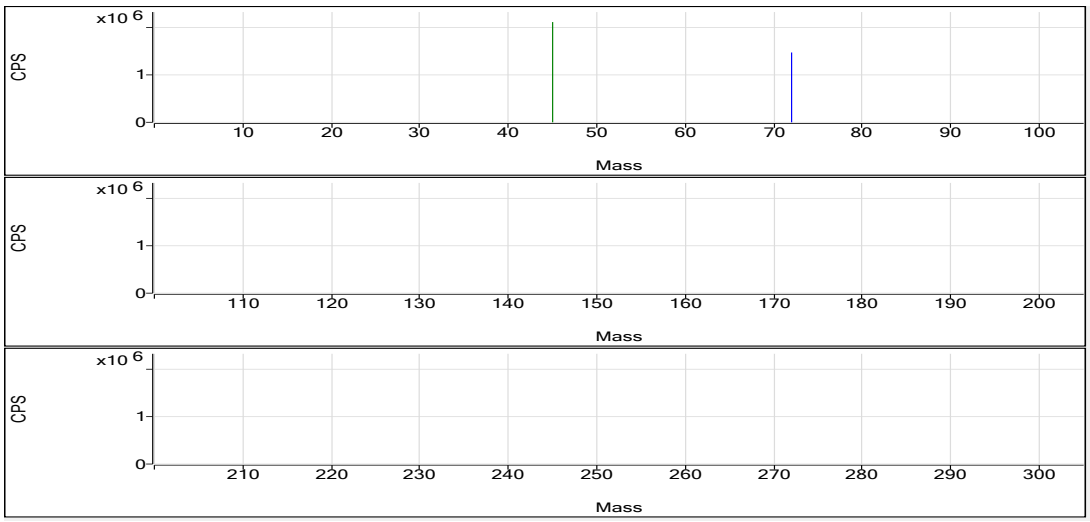
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.011	ppb	35.4	32.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.078	ppb	48.4	6.45	0.0000	Pulse	1.5000	3
Na	23	72	He	28.537	ppb	7.9	19503.22	0.1073	Pulse	0.1000	3
Mg	24	72	He	4.403	ppb	12.6	676.70	0.0037	Pulse	0.1000	3
Al	27	72	He	-29.036	ppb	N/A	150.01	0.0008	Pulse	0.1000	3
K	39	72	He	-27.537	ppb	N/A	21799.98	0.1199	Pulse	0.1000	3
Ca	44	72	He	4.079	ppb	273.3	236.68	0.0013	Pulse	0.1000	3
Ti	47	72	He	0.093	ppb	325.2	6.67	0.0000	Pulse	0.1000	3
V	51	72	He	-0.069	ppb	N/A	1322.74	0.0073	Pulse	0.5000	3
Cr	52	72	He	-0.081	ppb	N/A	1720.16	0.0095	Pulse	0.1000	3
Mn	55	72	He	0.268	ppb	36.8	363.35	0.0020	Pulse	0.1000	3
Fe	57	72	He	2.449	ppb	22.1	210.01	0.0012	Pulse	0.1000	3
Co	59	72	He	0.062	ppb	20.0	266.68	0.0015	Pulse	0.1000	3
Ni	60	72	He	0.062	ppb	75.6	200.01	0.0011	Pulse	0.1000	3
Cu	63	72	He	0.049	ppb	92.9	540.03	0.0030	Pulse	0.1000	3
Zn	66	72	He	0.046	ppb	239.4	153.34	0.0008	Pulse	0.1000	3
As	75	72	He	0.118	ppb	92.8	96.67	0.0005	Pulse	0.5000	3
Sr	88	115	He	0.067	ppb	48.8	83.33	0.0011	Pulse	0.1000	3
Mo	98	115	He	0.070	ppb	35.1	146.67	0.0019	Pulse	0.1000	3
Ag	107	115	He	0.029	ppb	27.5	126.67	0.0017	Pulse	0.1000	3
Cd	111	115	He	0.004	ppb	255.8	2.00	0.0000	Pulse	0.5000	3
Sn	120	115	He	-0.056	ppb	N/A	1443.46	0.0188	Pulse	0.1000	3
Sb	121	115	He	0.142	ppb	21.7	160.01	0.0021	Pulse	0.1000	3
Ba	137	115	He	0.049	ppb	100.2	30.00	0.0004	Pulse	0.1000	3
Tl	205	159	He	0.059	ppb	31.7	380.02	0.0014	Pulse	0.1000	3
Pb	208	159	He	-0.003	ppb	N/A	266.68	0.0010	Pulse	0.1000	3
U	238	209	He	0.048	ppb	10.4	410.02	0.0023	Pulse	0.1000	3

ISTD Table:

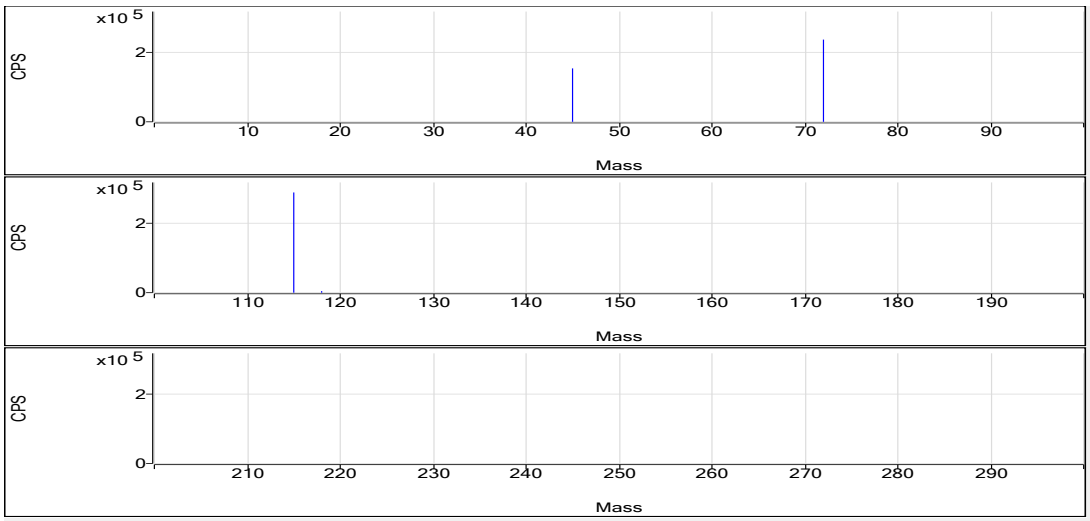
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2123890.07	1.5	96.0	Analog	0.1000	3
No Gas	Ge	72	1479389.77	0.6	94.2	Pulse	0.1000	3
H2	Sc	45	153910.60	1.1	97.4	Pulse	0.1000	3
H2	Ge	72	236864.67	0.7	95.4	Pulse	0.1000	3
H2	In	115	288765.91	1.2	97.5	Pulse	0.1000	3
He	Sc	45	70171.38	1.7	89.7	Pulse	0.1000	3
He	Ge	72	181806.44	1.1	93.9	Pulse	0.1000	3
He	In	115	76649.87	1.5	94.0	Pulse	0.1000	3
He	Tb	159	279496.79	0.1	97.2	Pulse	0.1000	3
He	Bi	209	180648.51	0.8	98.3	Pulse	0.1000	3

No Gas

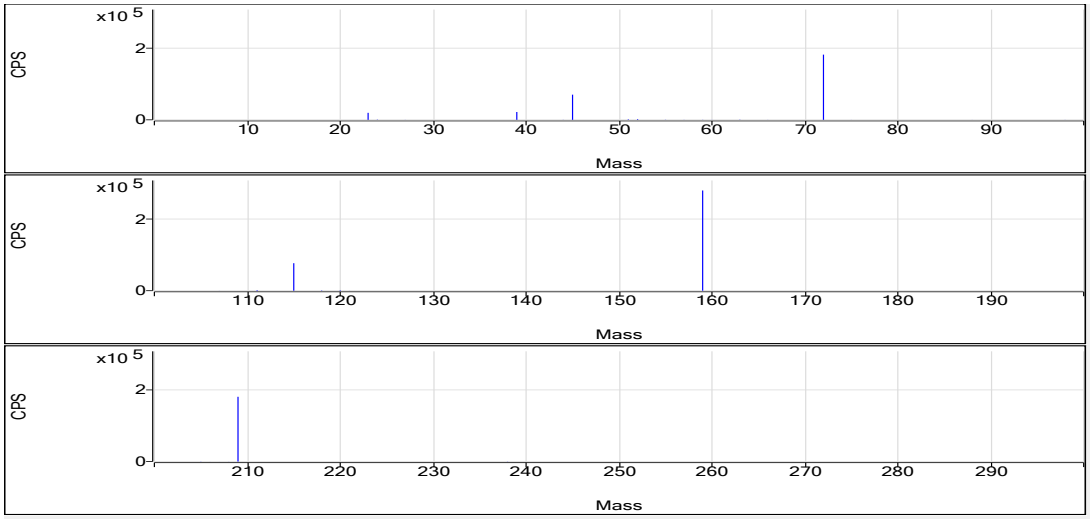


H2



Quantitation Report

He



Quantitation Report

Data File Name	085SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 14:02:36
Sample Name	410-61302-U-14-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

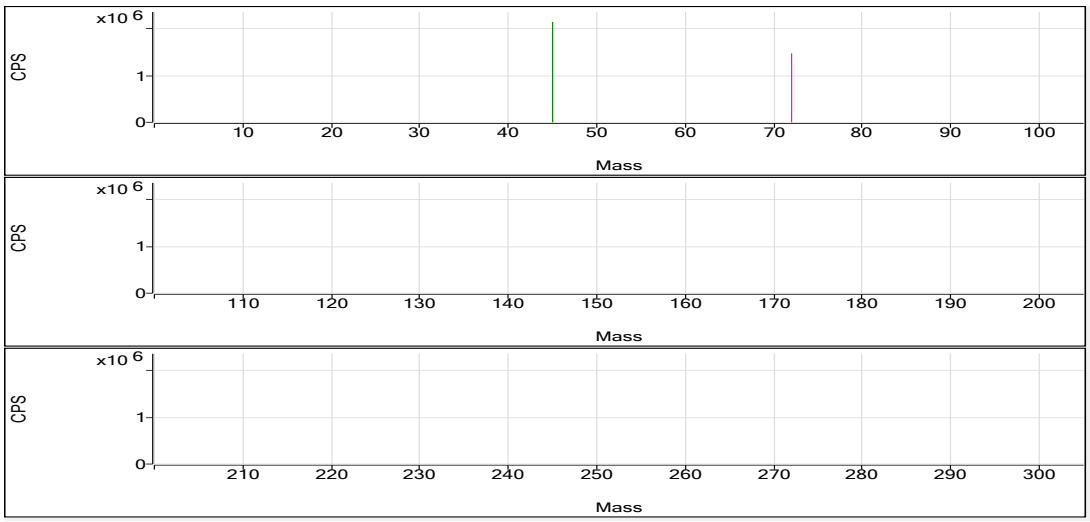
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.041	ppb	8.2	82.67	0.0001	Pulse	0.5000	3
Se	78	115	H2	0.291	ppb	14.6	18.00	0.0001	Pulse	1.5000	3
Na	23	72	He	326235.023	ppb	0.9	80492828.80	457.3693	Analog	0.1000	3
Mg	24	72	He	52104.123	ppb	0.7	6177470.95	35.1002	Analog	0.1000	3
Al	27	72	He	-15.312	ppb	N/A	660.09	0.0037	Pulse	0.1000	3
K	39	72	He	2581.834	ppb	0.7	260255.07	1.4788	Pulse	0.1000	3
Ca	44	72	He	66154.596	ppb	0.4	326222.96	1.8536	Pulse	0.1000	3
Ti	47	72	He	0.637	ppb	87.9	26.67	0.0002	Pulse	0.1000	3
V	51	72	He	-0.355	ppb	N/A	881.37	0.0050	Pulse	0.5000	3
Cr	52	72	He	2.747	ppb	168.8	6785.65	0.0385	Pulse	0.1000	3
Mn	55	72	He	808.737	ppb	0.5	632804.84	3.5956	Pulse	0.1000	3
Fe	57	72	He	104652.925	ppb	1.2	3523865.88	20.0224	Analog	0.1000	3
Co	59	72	He	0.388	ppb	12.7	1260.10	0.0072	Pulse	0.1000	3
Ni	60	72	He	0.817	ppb	12.6	816.72	0.0046	Pulse	0.1000	3
Cu	63	72	He	0.107	ppb	56.5	660.04	0.0037	Pulse	0.1000	3
Zn	66	72	He	2.032	ppb	16.1	680.04	0.0039	Pulse	0.1000	3
As	75	72	He	4.392	ppb	3.0	891.37	0.0051	Pulse	0.5000	3
Sr	88	115	He	771.590	ppb	0.6	655075.38	8.7280	Pulse	0.1000	3
Mo	98	115	He	0.623	ppb	9.5	1016.74	0.0135	Pulse	0.1000	3
Ag	107	115	He	-0.005	ppb	N/A	16.67	0.0002	Pulse	0.1000	3
Cd	111	115	He	0.011	ppb	124.7	4.67	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.139	ppb	N/A	1323.45	0.0176	Pulse	0.1000	3
Sb	121	115	He	0.070	ppb	30.4	86.67	0.0012	Pulse	0.1000	3
Ba	137	115	He	567.674	ppb	1.4	199788.45	2.6619	Pulse	0.1000	3
Tl	205	159	He	0.007	ppb	13.5	96.67	0.0004	Pulse	0.1000	3
Pb	208	159	He	0.314	ppb	7.8	2526.86	0.0092	Pulse	0.1000	3
U	238	209	He	0.031	ppb	13.4	256.68	0.0015	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2150676.63	0.4	97.2	Analog	0.1000	3
No Gas	Ge	72	1478511.07	1.1	94.1	Mix	0.1000	3
H2	Sc	45	163296.70	0.8	103.3	Pulse	0.1000	3
H2	Ge	72	241467.17	1.9	97.3	Pulse	0.1000	3
H2	In	115	285764.29	1.1	96.5	Pulse	0.1000	3
He	Sc	45	69923.60	0.6	89.4	Pulse	0.1000	3
He	Ge	72	175994.14	0.3	90.9	Pulse	0.1000	3
He	In	115	75054.86	0.4	92.1	Pulse	0.1000	3
He	Tb	159	274464.72	0.7	95.5	Pulse	0.1000	3
He	Bi	209	173384.85	0.5	94.4	Pulse	0.1000	3

No Gas



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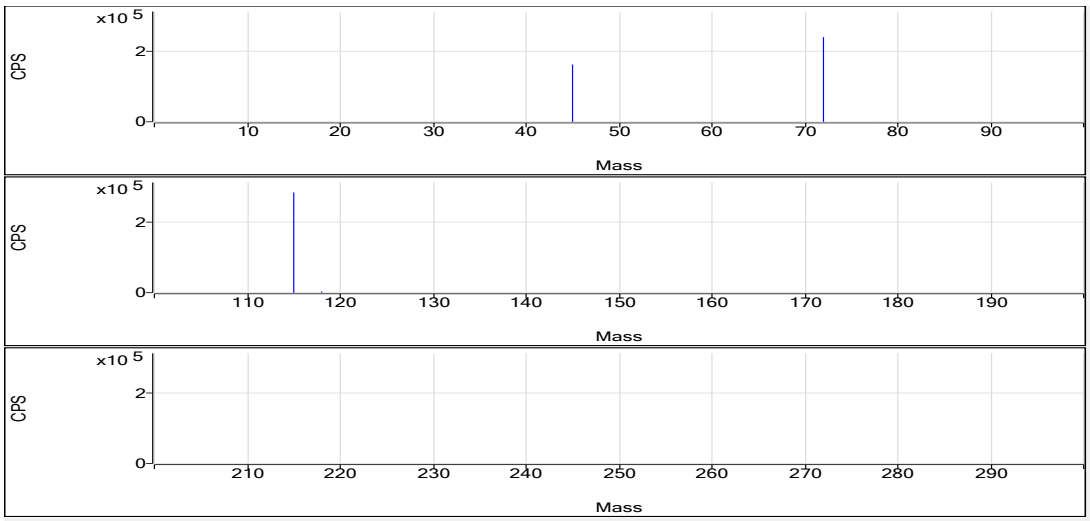
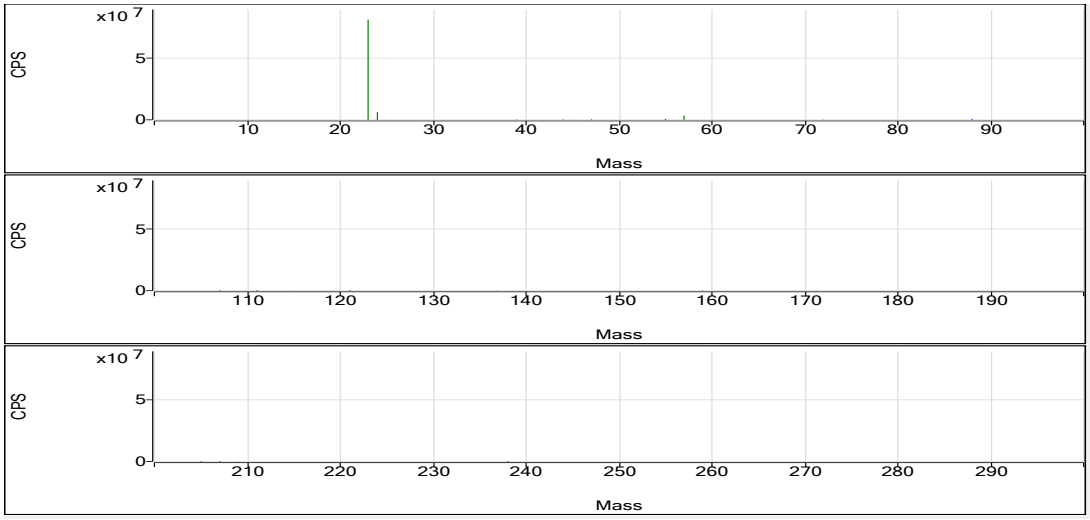


Quantitation Report

He



Quantitation Report

Data File Name	086SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 14:04:36
Sample Name	410-61302-U-15-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

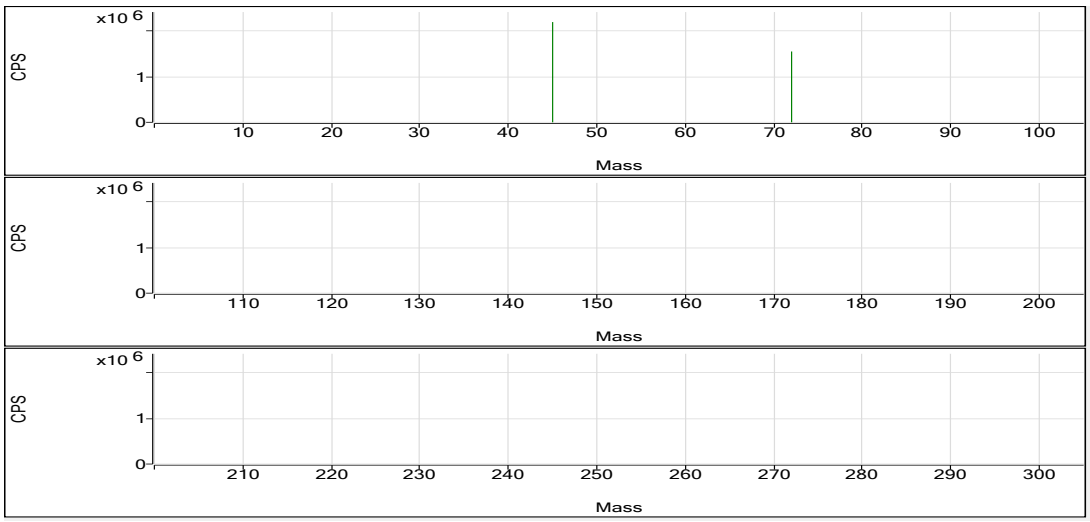
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.021	ppb	26.0	52.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	1.237	ppb	10.6	72.00	0.0002	Pulse	1.5000	3
Na	23	72	He	18037.117	ppb	2.4	4687169.83	25.3509	Analog	0.1000	3
Mg	24	72	He	27028.401	ppb	0.8	3367241.09	18.2082	Analog	0.1000	3
Al	27	72	He	-28.594	ppb	N/A	170.01	0.0009	Pulse	0.1000	3
K	39	72	He	4108.597	ppb	2.3	420438.34	2.2739	Pulse	0.1000	3
Ca	44	72	He	79074.825	ppb	1.0	409680.97	2.2154	Pulse	0.1000	3
Ti	47	72	He	0.430	ppb	102.2	20.00	0.0001	Pulse	0.1000	3
V	51	72	He	0.523	ppb	5.3	2214.18	0.0120	Pulse	0.5000	3
Cr	52	72	He	0.250	ppb	45.8	2380.27	0.0129	Pulse	0.1000	3
Mn	55	72	He	512.714	ppb	1.6	421553.83	2.2798	Pulse	0.1000	3
Fe	57	72	He	53963.771	ppb	1.5	1909216.53	10.3248	Analog	0.1000	3
Co	59	72	He	0.198	ppb	5.1	710.04	0.0038	Pulse	0.1000	3
Ni	60	72	He	0.299	ppb	33.0	410.02	0.0022	Pulse	0.1000	3
Cu	63	72	He	0.052	ppb	60.9	556.70	0.0030	Pulse	0.1000	3
Zn	66	72	He	1.136	ppb	31.0	463.36	0.0025	Pulse	0.1000	3
As	75	72	He	1.503	ppb	7.4	370.01	0.0020	Pulse	0.5000	3
Sr	88	115	He	575.436	ppb	2.1	500029.94	6.5093	Pulse	0.1000	3
Mo	98	115	He	0.080	ppb	25.7	163.34	0.0021	Pulse	0.1000	3
Ag	107	115	He	-0.007	ppb	N/A	13.33	0.0002	Pulse	0.1000	3
Cd	111	115	He	0.005	ppb	54.5	2.67	0.0000	Pulse	0.5000	3
Sn	120	115	He	-0.130	ppb	N/A	1363.60	0.0178	Pulse	0.1000	3
Sb	121	115	He	0.055	ppb	29.0	73.33	0.0010	Pulse	0.1000	3
Ba	137	115	He	120.845	ppb	1.3	43542.75	0.5668	Pulse	0.1000	3
Tl	205	159	He	-0.002	ppb	N/A	50.00	0.0002	Pulse	0.1000	3
Pb	208	159	He	0.007	ppb	348.5	340.11	0.0012	Pulse	0.1000	3
U	238	209	He	0.012	ppb	11.2	110.00	0.0006	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2201180.75	1.2	99.4	Analog	0.1000	3
No Gas	Ge	72	1555292.11	1.6	99.0	Analog	0.1000	3
H2	Sc	45	170425.46	0.7	107.8	Pulse	0.1000	3
H2	Ge	72	258800.19	1.2	104.3	Pulse	0.1000	3
H2	In	115	295460.32	1.4	99.7	Pulse	0.1000	3
He	Sc	45	72465.62	1.3	92.6	Pulse	0.1000	3
He	Ge	72	184948.09	1.9	95.5	Pulse	0.1000	3
He	In	115	76834.29	1.6	94.2	Pulse	0.1000	3
He	Tb	159	284523.94	1.1	99.0	Pulse	0.1000	3
He	Bi	209	182360.79	1.1	99.3	Pulse	0.1000	3

No Gas



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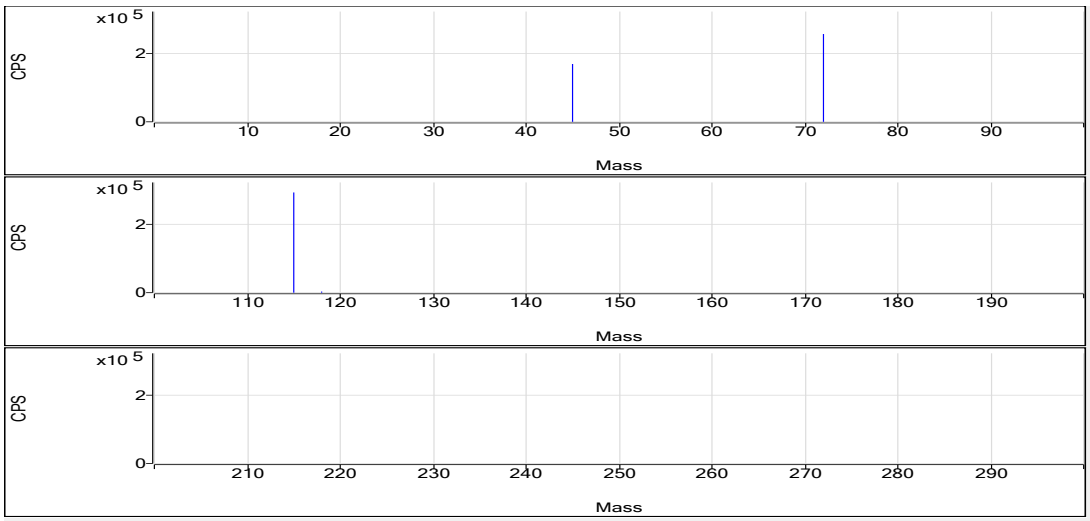
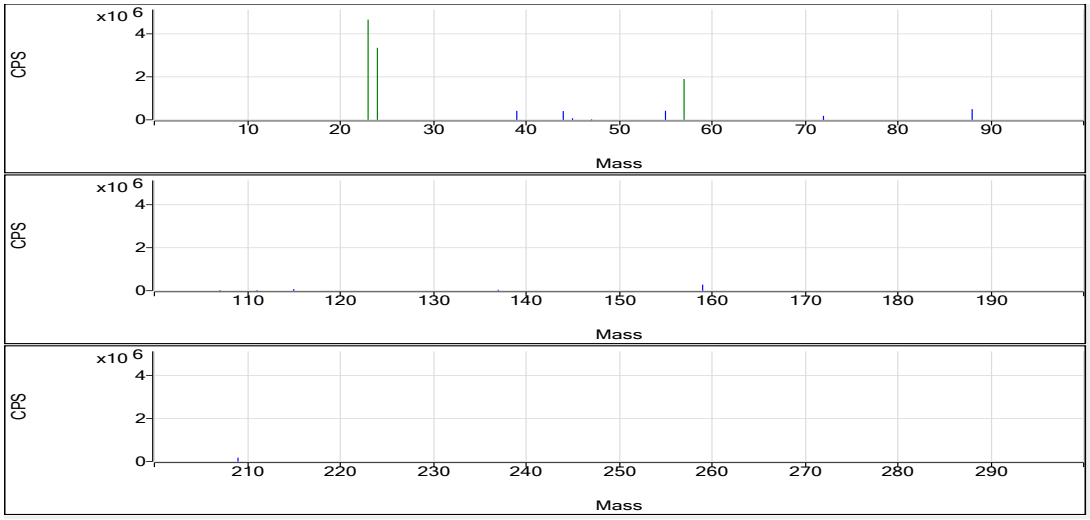


Quantitation Report

He



Quantitation Report

Data File Name	087SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 14:06:36
Sample Name	410-61302-V-11-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

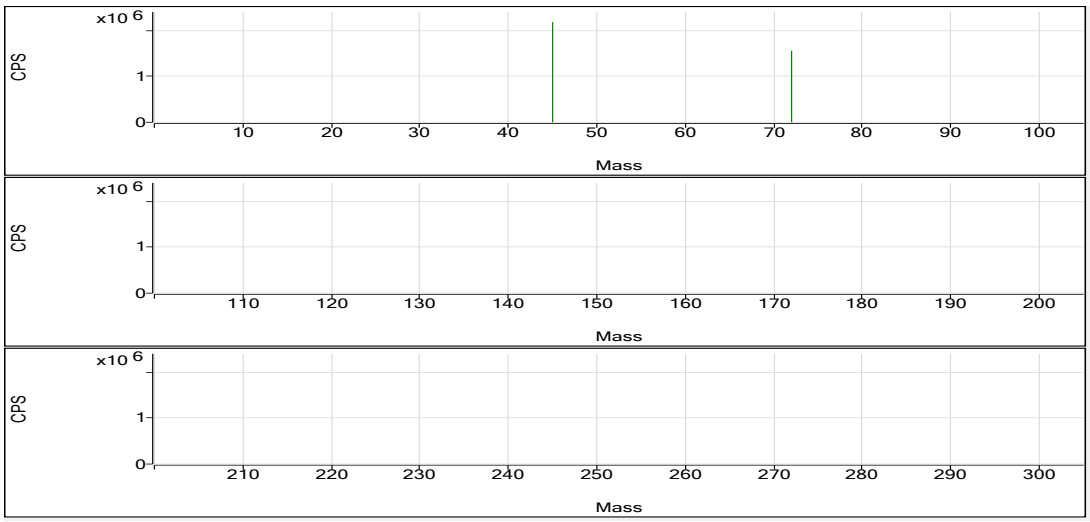
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.022	ppb	40.9	54.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	5.313	ppb	9.4	303.34	0.0010	Pulse	1.5000	3
Na	23	72	He	76175.910	ppb	1.2	19752208.46	106.8473	Analog	0.1000	3
Mg	24	72	He	8643.277	ppb	0.8	1076497.43	5.8232	Pulse	0.1000	3
Al	27	72	He	-10.997	ppb	N/A	863.40	0.0047	Pulse	0.1000	3
K	39	72	He	2879.172	ppb	0.3	302013.39	1.6336	Pulse	0.1000	3
Ca	44	72	He	37166.280	ppb	0.2	192615.69	1.0419	Pulse	0.1000	3
Ti	47	72	He	1.031	ppb	13.5	43.33	0.0002	Pulse	0.1000	3
V	51	72	He	0.884	ppb	10.7	2741.60	0.0148	Pulse	0.5000	3
Cr	52	72	He	6.578	ppb	16.1	14382.41	0.0779	Pulse	0.1000	3
Mn	55	72	He	449.715	ppb	0.8	369685.77	1.9998	Pulse	0.1000	3
Fe	57	72	He	23810.813	ppb	0.7	842245.27	4.5561	Pulse	0.1000	3
Co	59	72	He	0.227	ppb	5.5	803.38	0.0043	Pulse	0.1000	3
Ni	60	72	He	2.183	ppb	8.8	2040.22	0.0110	Pulse	0.1000	3
Cu	63	72	He	0.318	ppb	14.9	1220.15	0.0066	Pulse	0.1000	3
Zn	66	72	He	4.281	ppb	4.5	1346.77	0.0073	Pulse	0.1000	3
As	75	72	He	3.371	ppb	1.6	736.02	0.0040	Pulse	0.5000	3
Sr	88	115	He	180.260	ppb	0.6	160278.37	2.0393	Pulse	0.1000	3
Mo	98	115	He	0.659	ppb	6.4	1123.42	0.0143	Pulse	0.1000	3
Ag	107	115	He	-0.004	ppb	N/A	23.33	0.0003	Pulse	0.1000	3
Cd	111	115	He	0.010	ppb	57.8	4.67	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.193	ppb	N/A	1326.80	0.0169	Pulse	0.1000	3
Sb	121	115	He	0.092	ppb	43.7	113.34	0.0014	Pulse	0.1000	3
Ba	137	115	He	80.556	ppb	0.7	29699.27	0.3779	Pulse	0.1000	3
Tl	205	159	He	0.005	ppb	118.6	86.67	0.0003	Pulse	0.1000	3
Pb	208	159	He	0.822	ppb	1.1	6354.16	0.0224	Pulse	0.1000	3
U	238	209	He	0.023	ppb	23.7	203.34	0.0011	Pulse	0.1000	3

ISTD Table:

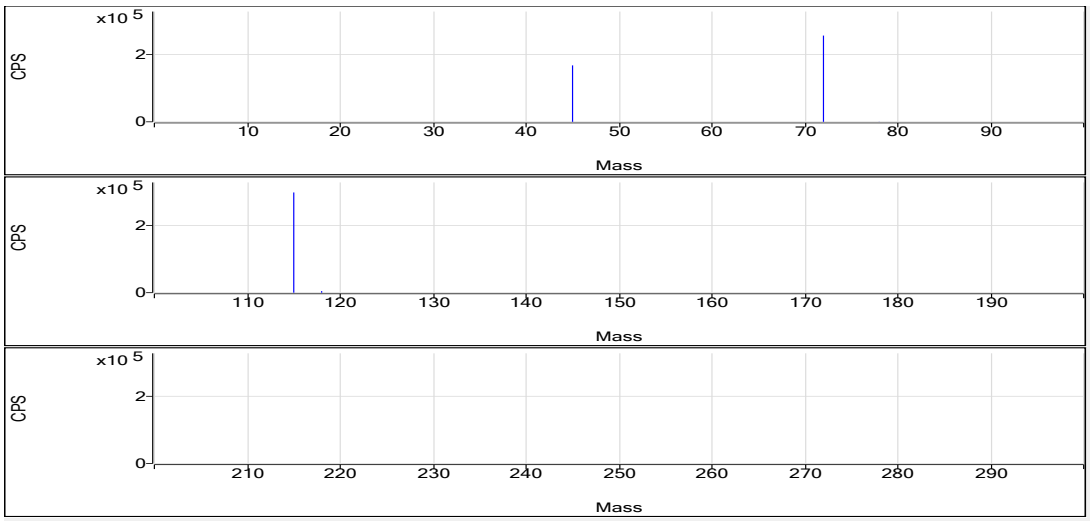
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2186939.39	0.5	98.8	Analog	0.1000	3
No Gas	Ge	72	1561746.12	2.2	99.4	Analog	0.1000	3
H2	Sc	45	167317.28	0.6	105.8	Pulse	0.1000	3
H2	Ge	72	255621.02	0.5	103.0	Pulse	0.1000	3
H2	In	115	297088.52	1.0	100.3	Pulse	0.1000	3
He	Sc	45	71591.36	0.6	91.5	Pulse	0.1000	3
He	Ge	72	184871.03	1.0	95.5	Pulse	0.1000	3
He	In	115	78594.09	0.6	96.4	Pulse	0.1000	3
He	Tb	159	283286.46	1.9	98.5	Pulse	0.1000	3
He	Bi	209	179781.21	1.0	97.9	Pulse	0.1000	3

No Gas

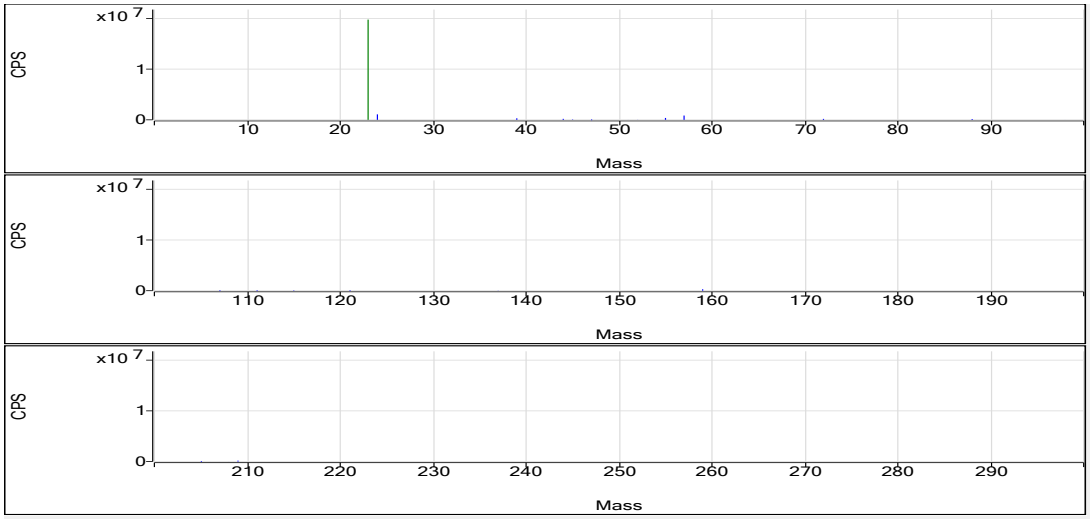


H2



Quantitation Report

He



Quantitation Report

Data File Name	088SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 14:08:38
Sample Name	410-61302-U-8-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

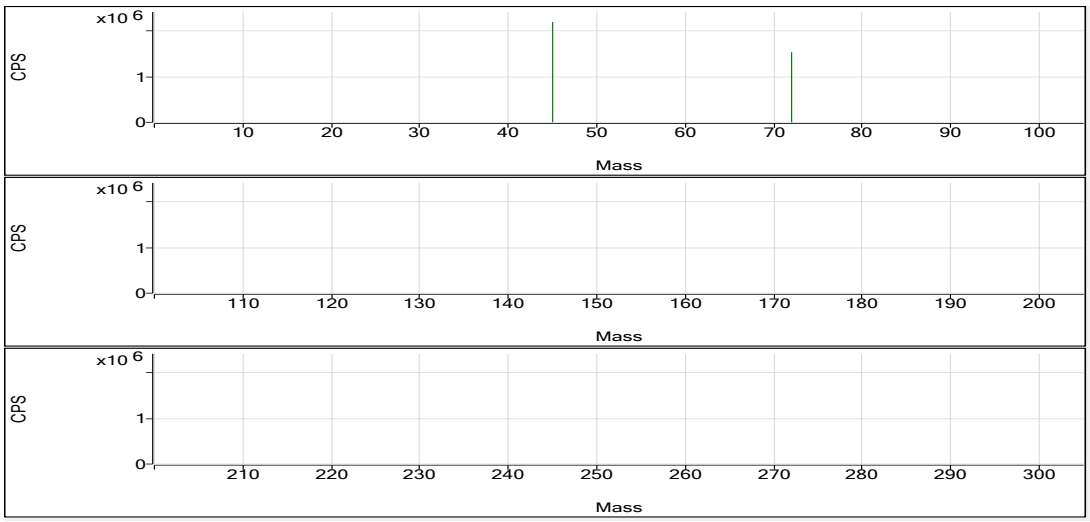
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.016	ppb	17.2	42.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	1.226	ppb	19.7	69.34	0.0002	Pulse	1.5000	3
Na	23	72	He	141345.461	ppb	1.1	35980109.46	198.1992	Analog	0.1000	3
Mg	24	72	He	89143.131	ppb	0.8	10901569.42	60.0512	Analog	0.1000	3
Al	27	72	He	32.036	ppb	63.3	2507.85	0.0138	Pulse	0.1000	3
K	39	72	He	6108.487	ppb	1.4	601852.00	3.3154	Pulse	0.1000	3
Ca	44	72	He	106498.211	ppb	1.0	541566.58	2.9833	Pulse	0.1000	3
Ti	47	72	He	0.703	ppb	1.1	30.00	0.0002	Pulse	0.1000	3
V	51	72	He	-0.072	ppb	N/A	1316.74	0.0073	Pulse	0.5000	3
Cr	52	72	He	0.069	ppb	95.7	1996.87	0.0110	Pulse	0.1000	3
Mn	55	72	He	2142.816	ppb	1.5	1729160.08	9.5254	Analog	0.1000	3
Fe	57	72	He	69416.917	ppb	0.6	2411145.07	13.2812	Analog	0.1000	3
Co	59	72	He	2.799	ppb	0.6	8956.39	0.0493	Pulse	0.1000	3
Ni	60	72	He	1.410	ppb	3.7	1346.78	0.0074	Pulse	0.1000	3
Cu	63	72	He	0.102	ppb	18.9	670.04	0.0037	Pulse	0.1000	3
Zn	66	72	He	4.344	ppb	11.1	1340.11	0.0074	Pulse	0.1000	3
As	75	72	He	22.392	ppb	1.7	4386.03	0.0242	Pulse	0.5000	3
Sr	88	115	He	984.365	ppb	1.0	840652.88	11.1348	Pulse	0.1000	3
Mo	98	115	He	1.807	ppb	3.1	2900.38	0.0384	Pulse	0.1000	3
Ag	107	115	He	-0.001	ppb	N/A	30.00	0.0004	Pulse	0.1000	3
Cd	111	115	He	0.020	ppb	27.5	8.00	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.194	ppb	N/A	1273.44	0.0169	Pulse	0.1000	3
Sb	121	115	He	0.838	ppb	5.8	840.06	0.0111	Pulse	0.1000	3
Ba	137	115	He	653.082	ppb	0.5	231199.35	3.0623	Pulse	0.1000	3
Tl	205	159	He	-0.001	ppb	N/A	50.00	0.0002	Pulse	0.1000	3
Pb	208	159	He	5.031	ppb	2.3	36647.45	0.1321	Pulse	0.1000	3
U	238	209	He	0.054	ppb	30.3	443.36	0.0026	Pulse	0.1000	3

ISTD Table:

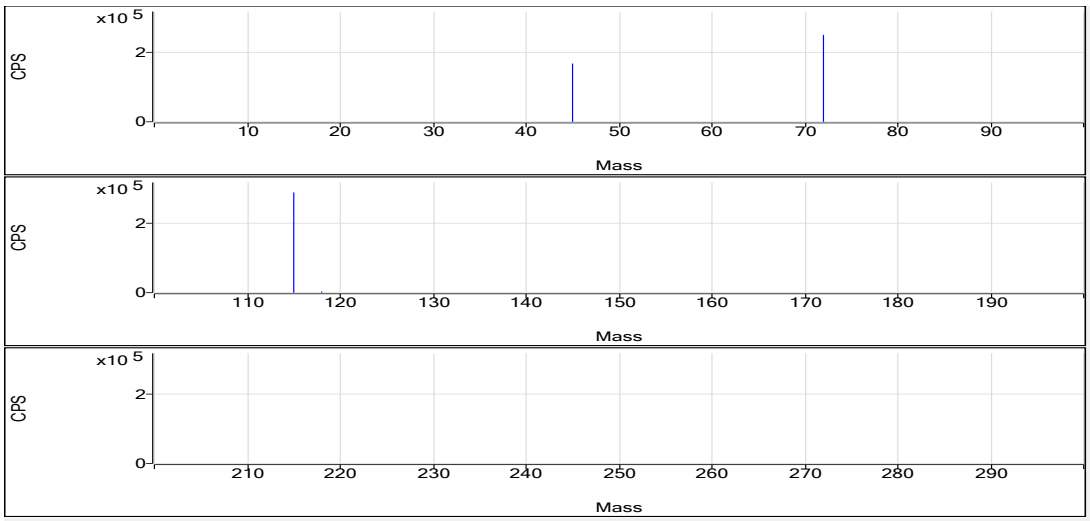
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2196668.77	2.9	99.2	Analog	0.1000	3
No Gas	Ge	72	1536981.90	2.1	97.9	Analog	0.1000	3
H2	Sc	45	166568.10	1.3	105.4	Pulse	0.1000	3
H2	Ge	72	248548.49	0.9	100.1	Pulse	0.1000	3
H2	In	115	286527.35	1.4	96.7	Pulse	0.1000	3
He	Sc	45	71434.12	0.8	91.3	Pulse	0.1000	3
He	Ge	72	181546.92	1.0	93.8	Pulse	0.1000	3
He	In	115	75496.98	0.5	92.6	Pulse	0.1000	3
He	Tb	159	277351.11	0.7	96.5	Pulse	0.1000	3
He	Bi	209	173087.01	0.5	94.2	Pulse	0.1000	3

No Gas

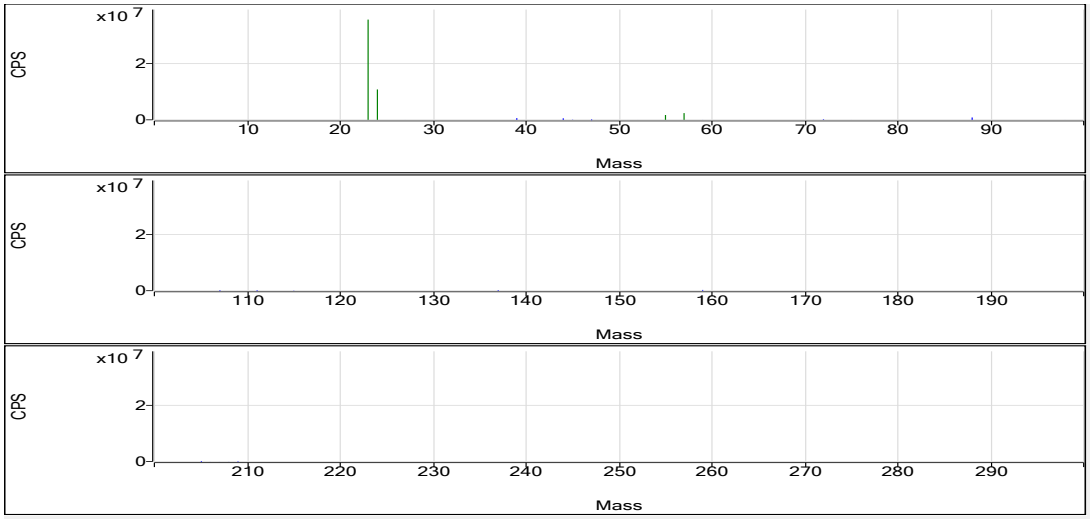


H2



Quantitation Report

He



Quantitation Report

Data File Name	089SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 14:10:38
Sample Name	410-61785-E-1-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

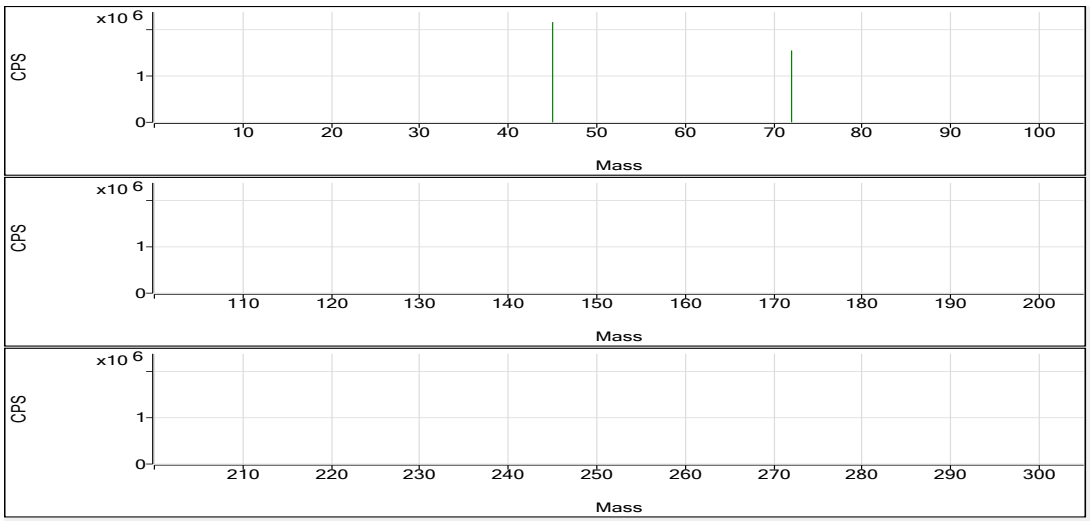
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.002	ppb	153.1	18.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.273	ppb	46.6	17.56	0.0001	Pulse	1.5000	3
Na	23	72	He	23317.666	ppb	0.7	5985876.58	32.7530	Analog	0.1000	3
Mg	24	72	He	12428.586	ppb	1.9	1530135.92	8.3732	Analog	0.1000	3
Al	27	72	He	-26.912	ppb	N/A	233.35	0.0013	Pulse	0.1000	3
K	39	72	He	7363.400	ppb	0.3	725343.45	3.9689	Pulse	0.1000	3
Ca	44	72	He	79946.141	ppb	0.7	409353.33	2.2398	Pulse	0.1000	3
Ti	47	72	He	0.177	ppb	145.8	10.00	0.0001	Pulse	0.1000	3
V	51	72	He	-0.264	ppb	N/A	1047.38	0.0057	Pulse	0.5000	3
Cr	52	72	He	0.627	ppb	13.0	3057.09	0.0167	Pulse	0.1000	3
Mn	55	72	He	28.810	ppb	2.0	23549.56	0.1289	Pulse	0.1000	3
Fe	57	72	He	20.714	ppb	7.6	850.05	0.0046	Pulse	0.1000	3
Co	59	72	He	0.586	ppb	8.0	1943.53	0.0106	Pulse	0.1000	3
Ni	60	72	He	1.407	ppb	8.6	1353.44	0.0074	Pulse	0.1000	3
Cu	63	72	He	0.282	ppb	24.4	1116.75	0.0061	Pulse	0.1000	3
Zn	66	72	He	102.707	ppb	0.6	28702.28	0.1570	Pulse	0.1000	3
As	75	72	He	4.517	ppb	5.9	950.04	0.0052	Pulse	0.5000	3
Sr	88	115	He	2522.196	ppb	2.1	2210424.39	28.5297	Analog	0.1000	3
Mo	98	115	He	4.498	ppb	2.6	7355.46	0.0949	Pulse	0.1000	3
Ag	107	115	He	-0.006	ppb	N/A	16.67	0.0002	Pulse	0.1000	3
Cd	111	115	He	0.044	ppb	35.1	17.33	0.0002	Pulse	0.5000	3
Sn	120	115	He	-0.308	ppb	N/A	1183.42	0.0153	Pulse	0.1000	3
Sb	121	115	He	1.304	ppb	9.5	1330.11	0.0172	Pulse	0.1000	3
Ba	137	115	He	85.539	ppb	6.0	31075.70	0.4012	Pulse	0.1000	3
Tl	205	159	He	0.035	ppb	39.2	253.35	0.0009	Pulse	0.1000	3
Pb	208	159	He	0.058	ppb	6.7	710.03	0.0025	Pulse	0.1000	3
U	238	209	He	6.664	ppb	1.5	55978.47	0.3092	Pulse	0.1000	3

ISTD Table:

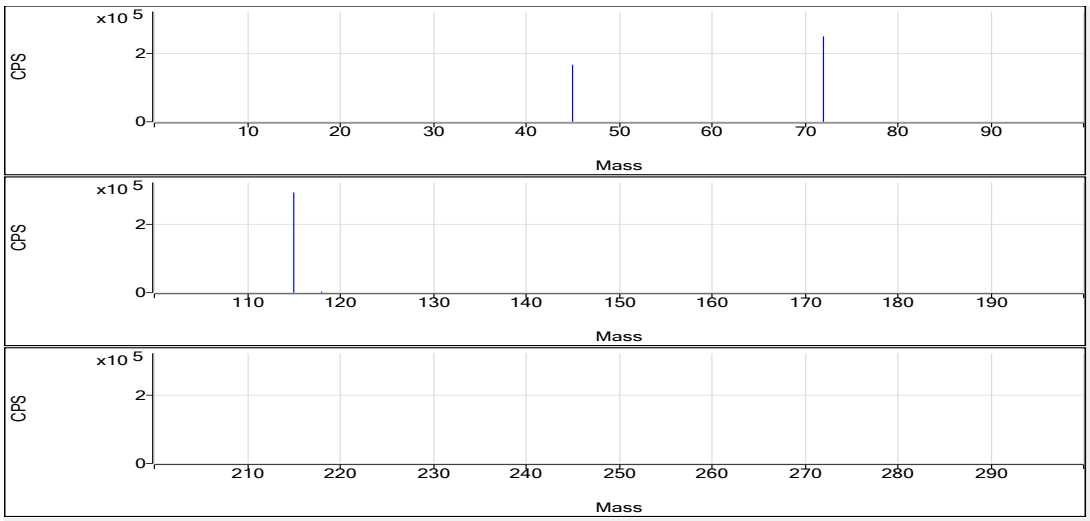
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2170668.93	1.3	98.1	Analog	0.1000	3
No Gas	Ge	72	1556064.61	1.0	99.1	Analog	0.1000	3
H2	Sc	45	167859.29	1.7	106.2	Pulse	0.1000	3
H2	Ge	72	251084.78	2.3	101.2	Pulse	0.1000	3
H2	In	115	294590.88	1.4	99.4	Pulse	0.1000	3
He	Sc	45	70847.89	0.2	90.6	Pulse	0.1000	3
He	Ge	72	182759.84	0.8	94.4	Pulse	0.1000	3
He	In	115	77494.32	1.5	95.1	Pulse	0.1000	3
He	Tb	159	281789.67	1.2	98.0	Pulse	0.1000	3
He	Bi	209	181031.66	0.5	98.5	Pulse	0.1000	3

No Gas

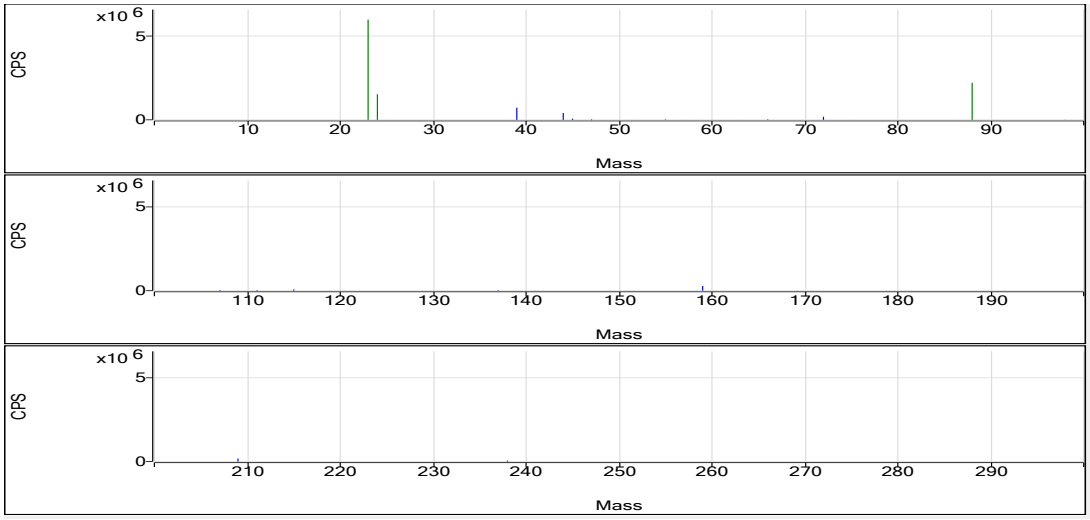


H2



Quantitation Report

He



Quantitation Report

Data File Name	090SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 14:12:39
Sample Name	410-60816-U-4-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

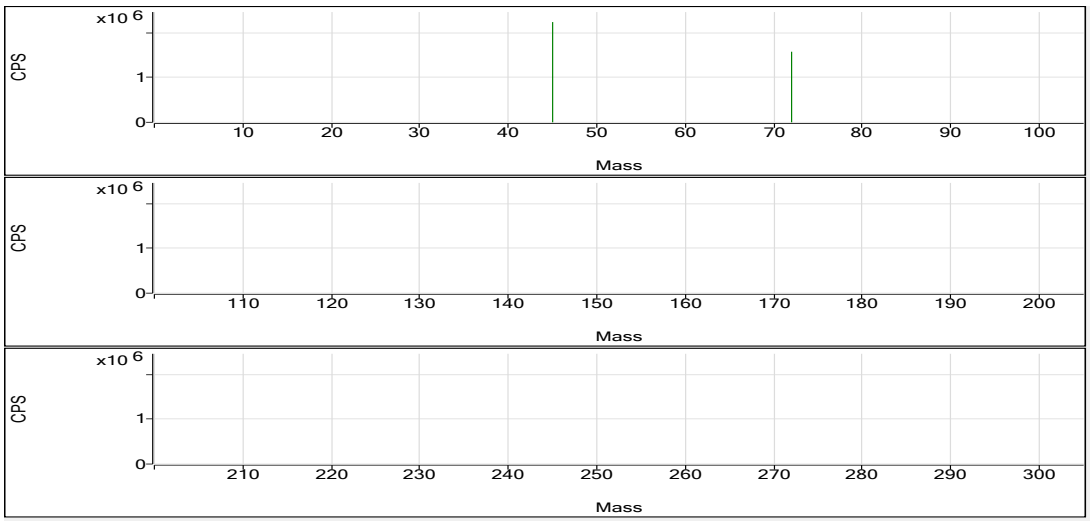
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.012	ppb	14.1	36.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.984	ppb	1.6	57.11	0.0002	Pulse	1.5000	3
Na	23	72	He	48525.291	ppb	0.3	12566210.23	68.0879	Analog	0.1000	3
Mg	24	72	He	45384.791	ppb	0.5	5642658.46	30.5738	Analog	0.1000	3
Al	27	72	He	-22.144	ppb	N/A	423.36	0.0023	Pulse	0.1000	3
K	39	72	He	2483.678	ppb	0.9	263488.16	1.4277	Pulse	0.1000	3
Ca	44	72	He	49941.856	ppb	0.6	258310.89	1.3996	Pulse	0.1000	3
Ti	47	72	He	0.176	ppb	146.5	10.00	0.0001	Pulse	0.1000	3
V	51	72	He	-0.168	ppb	N/A	1198.72	0.0065	Pulse	0.5000	3
Cr	52	72	He	0.783	ppb	5.4	3383.83	0.0183	Pulse	0.1000	3
Mn	55	72	He	8191.571	ppb	1.2	6720071.57	36.4116	Analog	0.1000	3
Fe	57	72	He	34500.470	ppb	0.9	1218298.03	6.6011	Pulse	0.1000	3
Co	59	72	He	3.126	ppb	3.5	10160.56	0.0551	Pulse	0.1000	3
Ni	60	72	He	1.384	ppb	2.9	1346.79	0.0073	Pulse	0.1000	3
Cu	63	72	He	0.054	ppb	52.2	560.03	0.0030	Pulse	0.1000	3
Zn	66	72	He	1.617	ppb	10.9	596.70	0.0032	Pulse	0.1000	3
As	75	72	He	10.776	ppb	4.0	2184.85	0.0118	Pulse	0.5000	3
Sr	88	115	He	217.691	ppb	3.9	189769.54	2.4627	Pulse	0.1000	3
Mo	98	115	He	0.457	ppb	21.2	773.38	0.0100	Pulse	0.1000	3
Ag	107	115	He	-0.004	ppb	N/A	20.00	0.0003	Pulse	0.1000	3
Cd	111	115	He	0.002	ppb	165.4	1.33	0.0000	Pulse	0.5000	3
Sn	120	115	He	-0.153	ppb	N/A	1343.48	0.0174	Pulse	0.1000	3
Sb	121	115	He	0.044	ppb	11.8	63.33	0.0008	Pulse	0.1000	3
Ba	137	115	He	68.642	ppb	4.5	24813.01	0.3220	Pulse	0.1000	3
Tl	205	159	He	0.000	ppb	N/A	56.67	0.0002	Pulse	0.1000	3
Pb	208	159	He	0.061	ppb	6.8	740.04	0.0026	Pulse	0.1000	3
U	238	209	He	0.020	ppb	0.3	180.01	0.0010	Pulse	0.1000	3

ISTD Table:

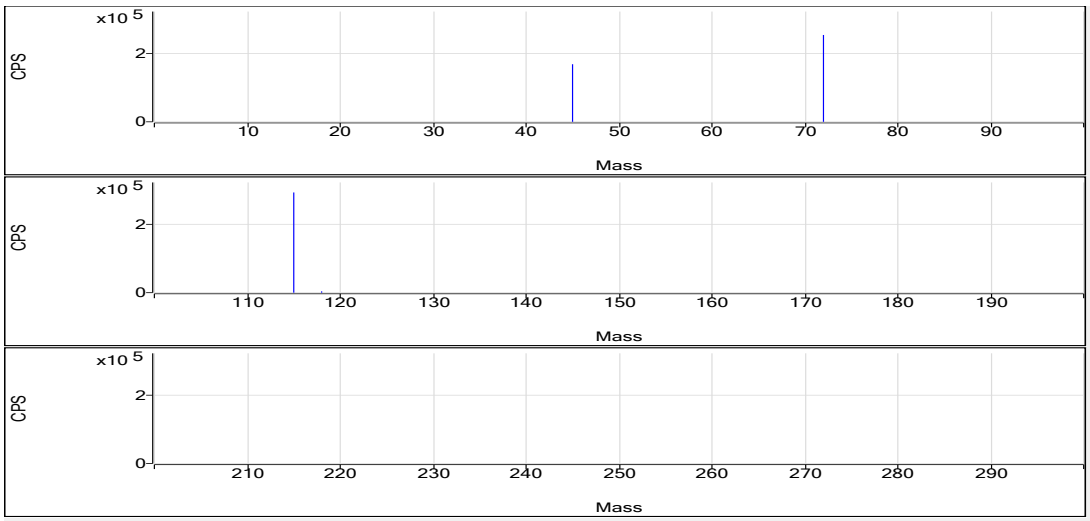
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2235761.37	0.9	101.0	Analog	0.1000	3
No Gas	Ge	72	1574196.28	0.5	100.2	Analog	0.1000	3
H2	Sc	45	168109.09	1.6	106.3	Pulse	0.1000	3
H2	Ge	72	253489.72	2.6	102.1	Pulse	0.1000	3
H2	In	115	292561.36	1.8	98.7	Pulse	0.1000	3
He	Sc	45	72247.99	1.6	92.4	Pulse	0.1000	3
He	Ge	72	184558.59	0.0	95.3	Pulse	0.1000	3
He	In	115	77089.07	1.7	94.6	Pulse	0.1000	3
He	Tb	159	282758.89	0.8	98.4	Pulse	0.1000	3
He	Bi	209	179062.64	0.3	97.5	Pulse	0.1000	3

No Gas

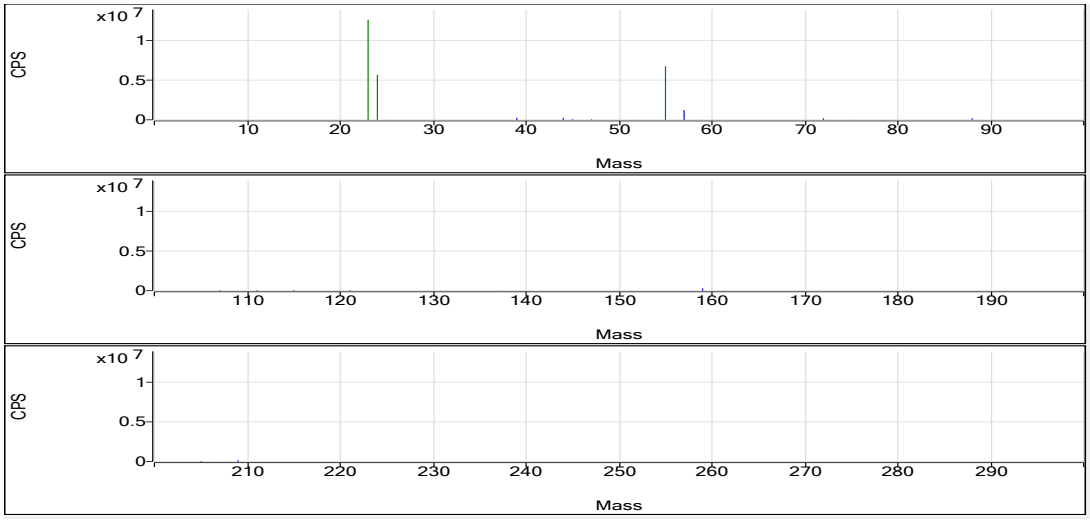


H2



Quantitation Report

He



Quantitation Report

Data File Name	091SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 14:14:40
Sample Name	410-60816-V-9-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

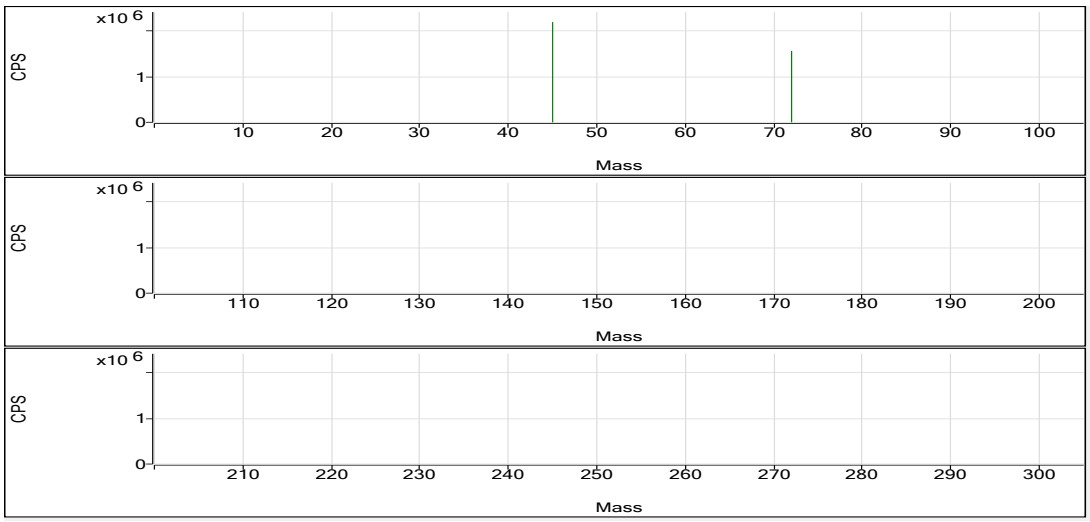
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.012	ppb	38.8	37.33	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.753	ppb	22.3	44.00	0.0002	Pulse	1.5000	3
Na	23	72	He	48139.188	ppb	1.1	12387324.40	67.5467	Analog	0.1000	3
Mg	24	72	He	45673.892	ppb	1.4	5642176.17	30.7686	Analog	0.1000	3
Al	27	72	He	-23.697	ppb	N/A	360.02	0.0020	Pulse	0.1000	3
K	39	72	He	2793.184	ppb	1.1	291370.69	1.5888	Pulse	0.1000	3
Ca	44	72	He	54984.448	ppb	1.7	282550.51	1.5408	Pulse	0.1000	3
Ti	47	72	He	0.265	ppb	58.3	13.33	0.0001	Pulse	0.1000	3
V	51	72	He	-0.074	ppb	N/A	1327.40	0.0072	Pulse	0.5000	3
Cr	52	72	He	0.927	ppb	4.7	3633.89	0.0198	Pulse	0.1000	3
Mn	55	72	He	7011.519	ppb	0.3	5715841.79	31.1664	Analog	0.1000	3
Fe	57	72	He	36680.684	ppb	0.9	1287033.52	7.0183	Pulse	0.1000	3
Co	59	72	He	0.311	ppb	2.4	1066.74	0.0058	Pulse	0.1000	3
Ni	60	72	He	0.874	ppb	2.1	900.06	0.0049	Pulse	0.1000	3
Cu	63	72	He	0.044	ppb	40.4	533.36	0.0029	Pulse	0.1000	3
Zn	66	72	He	6.516	ppb	4.9	1960.19	0.0107	Pulse	0.1000	3
As	75	72	He	0.777	ppb	17.1	225.33	0.0012	Pulse	0.5000	3
Sr	88	115	He	300.981	ppb	2.2	262782.74	3.4048	Pulse	0.1000	3
Mo	98	115	He	0.788	ppb	7.1	1313.45	0.0170	Pulse	0.1000	3
Ag	107	115	He	-0.009	ppb	N/A	6.67	0.0001	Pulse	0.1000	3
Cd	111	115	He	0.004	ppb	2.6	2.00	0.0000	Pulse	0.5000	3
Sn	120	115	He	-0.232	ppb	N/A	1260.11	0.0163	Pulse	0.1000	3
Sb	121	115	He	0.060	ppb	73.1	80.00	0.0010	Pulse	0.1000	3
Ba	137	115	He	70.509	ppb	1.7	25531.00	0.3308	Pulse	0.1000	3
Tl	205	159	He	-0.004	ppb	N/A	36.67	0.0001	Pulse	0.1000	3
Pb	208	159	He	0.010	ppb	60.4	356.68	0.0013	Pulse	0.1000	3
U	238	209	He	0.026	ppb	9.2	223.34	0.0012	Pulse	0.1000	3

ISTD Table:

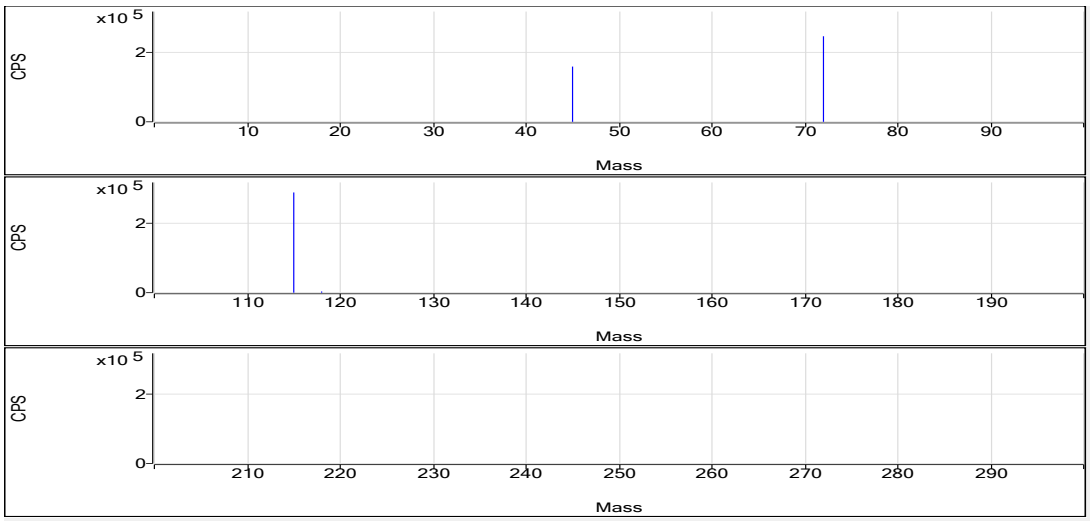
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2203445.54	0.7	99.6	Analog	0.1000	3
No Gas	Ge	72	1570056.85	0.9	100.0	Analog	0.1000	3
H2	Sc	45	160160.53	0.8	101.3	Pulse	0.1000	3
H2	Ge	72	248045.27	2.1	99.9	Pulse	0.1000	3
H2	In	115	290584.99	1.5	98.1	Pulse	0.1000	3
He	Sc	45	71115.65	1.5	90.9	Pulse	0.1000	3
He	Ge	72	183397.33	1.3	94.7	Pulse	0.1000	3
He	In	115	77199.30	1.8	94.7	Pulse	0.1000	3
He	Tb	159	278172.80	0.8	96.8	Pulse	0.1000	3
He	Bi	209	179453.87	1.0	97.7	Pulse	0.1000	3

No Gas

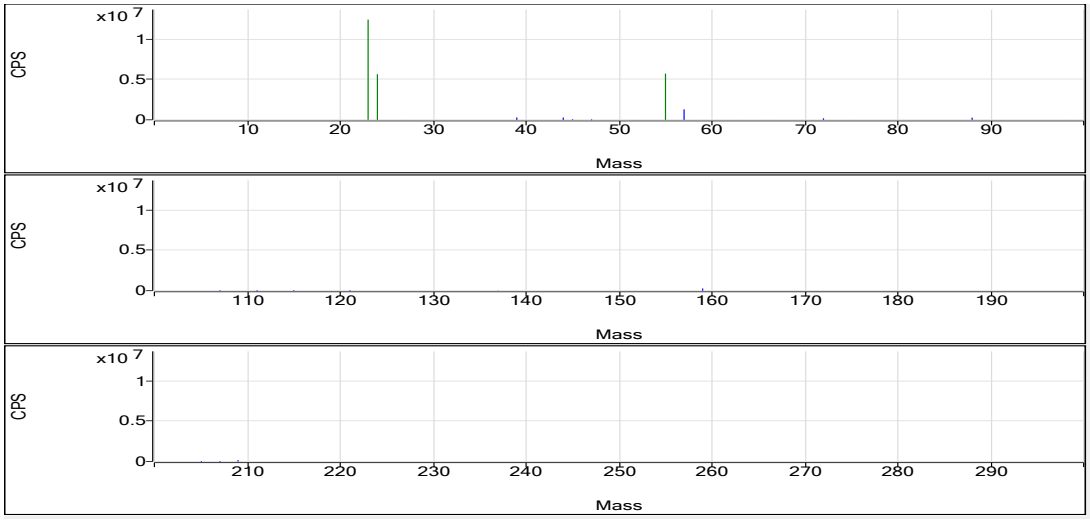


H2



Quantitation Report

He



Quantitation Report

Data File Name	092_CCV.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 14:16:42
Sample Name	CCV 1942322
Sample Type	CCV
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

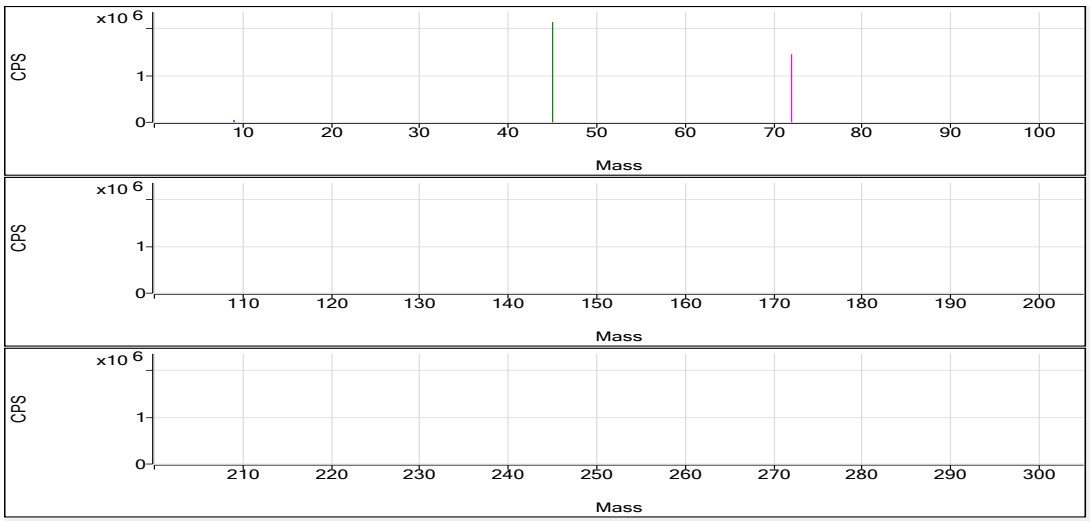
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	30.770	ppb	1.1	50192.35	0.0345	Pulse	0.5000	3
Se	78	115	H2	31.339	ppb	2.6	1726.77	0.0060	Pulse	1.5000	3
Na	23	72	He	5193.242	ppb	0.6	1275654.07	7.3469	Analog	0.1000	3
Mg	24	72	He	5089.936	ppb	1.3	595408.08	3.4295	Pulse	0.1000	3
Al	27	72	He	5061.236	ppb	1.2	188408.10	1.0852	Pulse	0.1000	3
K	39	72	He	5115.875	ppb	1.9	485810.72	2.7984	Pulse	0.1000	3
Ca	44	72	He	5076.705	ppb	2.5	24891.74	0.1433	Pulse	0.1000	3
Ti	47	72	He	305.416	ppb	1.9	11164.64	0.0643	Pulse	0.1000	3
V	51	72	He	300.199	ppb	1.4	414714.82	2.3887	Pulse	0.5000	3
Cr	52	72	He	300.734	ppb	1.2	538133.23	3.0996	Pulse	0.1000	3
Mn	55	72	He	311.217	ppb	1.8	240288.71	1.3841	Pulse	0.1000	3
Fe	57	72	He	5191.115	ppb	2.6	172515.01	0.9938	Pulse	0.1000	3
Co	59	72	He	299.658	ppb	2.0	909812.30	5.2409	Pulse	0.1000	3
Ni	60	72	He	309.858	ppb	1.0	252319.20	1.4533	Pulse	0.1000	3
Cu	63	72	He	300.315	ppb	1.3	703895.51	4.0544	Pulse	0.1000	3
Zn	66	72	He	308.315	ppb	1.8	81579.48	0.4699	Pulse	0.1000	3
As	75	72	He	314.718	ppb	1.2	58039.26	0.3343	Pulse	0.5000	3
Sr	88	115	He	31.725	ppb	1.8	27317.00	0.3592	Pulse	0.1000	3
Mo	98	115	He	30.982	ppb	1.2	49537.51	0.6513	Pulse	0.1000	3
Ag	107	115	He	31.130	ppb	1.3	99524.17	1.3086	Pulse	0.1000	3
Cd	111	115	He	30.964	ppb	1.1	11554.12	0.1519	Pulse	0.5000	3
Sn	120	115	He	31.962	ppb	0.8	35800.22	0.4707	Pulse	0.1000	3
Sb	121	115	He	31.378	ppb	2.9	30995.14	0.4076	Pulse	0.1000	3
Ba	137	115	He	311.240	ppb	0.2	110997.14	1.4595	Pulse	0.1000	3
Tl	205	159	He	31.024	ppb	0.9	167978.82	0.6075	Pulse	0.1000	3
Pb	208	159	He	31.108	ppb	0.3	224468.16	0.8118	Pulse	0.1000	3
U	238	209	He	257.698	ppb	1.1	2136420.39	11.9544	Analog	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2141762.10	0.7	96.8	Analog	0.1000	3
No Gas	Ge	72	1455445.55	1.6	92.7	Mix	0.1000	3
H2	Sc	45	150407.29	0.9	95.1	Pulse	0.1000	3
H2	Ge	72	227622.60	1.6	91.7	Pulse	0.1000	3
H2	In	115	288320.68	0.5	97.3	Pulse	0.1000	3
He	Sc	45	69800.14	1.1	89.2	Pulse	0.1000	3
He	Ge	72	173635.59	1.7	89.7	Pulse	0.1000	3
He	In	115	76050.21	1.0	93.3	Pulse	0.1000	3
He	Tb	159	276511.67	0.3	96.2	Pulse	0.1000	3
He	Bi	209	178716.70	0.4	97.3	Pulse	0.1000	3

No Gas



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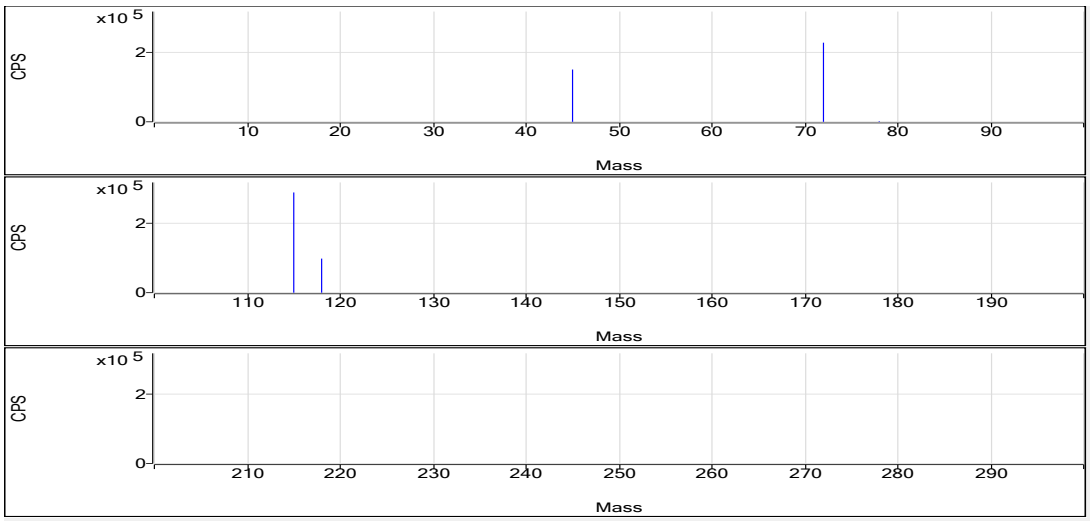
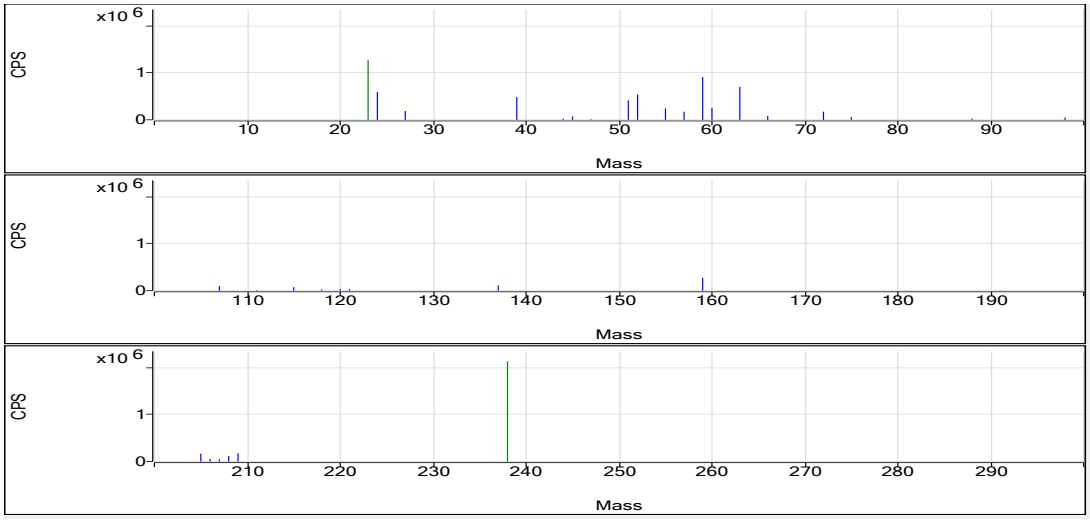


Quantitation Report

He



Quantitation Report

Data File Name	093_CCB.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 14:18:43
Sample Name	CCB 2014932
Sample Type	CCB
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

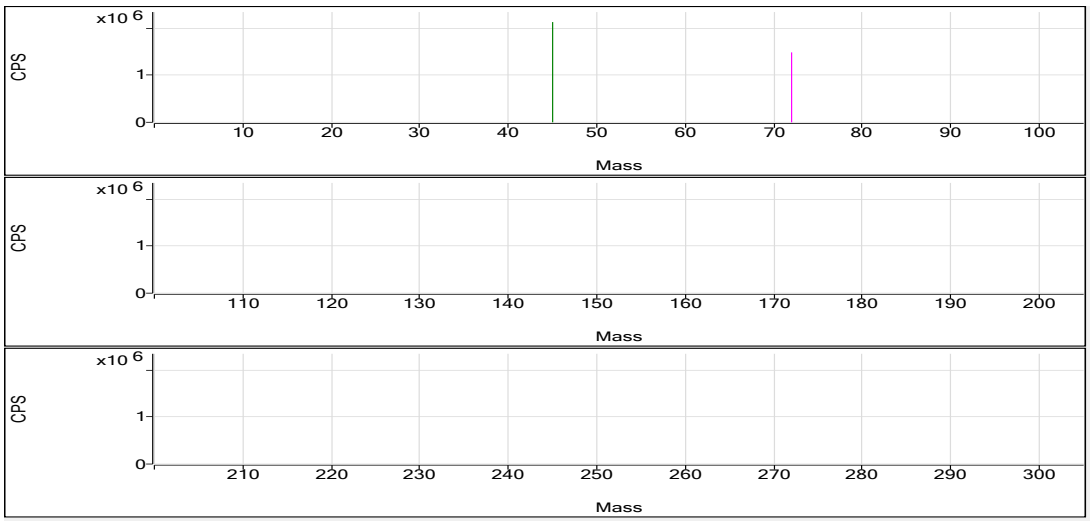
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.000	ppb	410.7	16.00	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.051	ppb	39.6	4.89	0.0000	Pulse	1.5000	3
Na	23	72	He	9.773	ppb	26.5	14620.93	0.0810	Pulse	0.1000	3
Mg	24	72	He	2.218	ppb	28.0	406.68	0.0023	Pulse	0.1000	3
Al	27	72	He	-29.877	ppb	N/A	116.67	0.0006	Pulse	0.1000	3
K	39	72	He	-22.986	ppb	N/A	22073.69	0.1223	Pulse	0.1000	3
Ca	44	72	He	4.353	ppb	181.8	236.68	0.0013	Pulse	0.1000	3
Ti	47	72	He	0.006	ppb	2653.6	3.33	0.0000	Pulse	0.1000	3
V	51	72	He	-0.202	ppb	N/A	1123.39	0.0062	Pulse	0.5000	3
Cr	52	72	He	-0.153	ppb	N/A	1573.48	0.0087	Pulse	0.1000	3
Mn	55	72	He	0.342	ppb	13.5	420.02	0.0023	Pulse	0.1000	3
Fe	57	72	He	3.551	ppb	20.2	246.68	0.0014	Pulse	0.1000	3
Co	59	72	He	0.034	ppb	70.6	176.67	0.0010	Pulse	0.1000	3
Ni	60	72	He	0.005	ppb	672.2	150.01	0.0008	Pulse	0.1000	3
Cu	63	72	He	0.034	ppb	23.0	500.02	0.0028	Pulse	0.1000	3
Zn	66	72	He	-0.120	ppb	N/A	106.67	0.0006	Pulse	0.1000	3
As	75	72	He	0.056	ppb	163.1	84.00	0.0005	Pulse	0.5000	3
Sr	88	115	He	0.068	ppb	51.2	83.33	0.0011	Pulse	0.1000	3
Mo	98	115	He	0.064	ppb	31.4	136.67	0.0018	Pulse	0.1000	3
Ag	107	115	He	-0.004	ppb	N/A	20.00	0.0003	Pulse	0.1000	3
Cd	111	115	He	0.004	ppb	1.7	2.00	0.0000	Pulse	0.5000	3
Sn	120	115	He	-0.013	ppb	N/A	1476.98	0.0194	Pulse	0.1000	3
Sb	121	115	He	0.042	ppb	112.1	60.00	0.0008	Pulse	0.1000	3
Ba	137	115	He	0.021	ppb	131.1	20.00	0.0003	Pulse	0.1000	3
Tl	205	159	He	0.076	ppb	18.2	466.69	0.0017	Pulse	0.1000	3
Pb	208	159	He	-0.006	ppb	N/A	240.01	0.0009	Pulse	0.1000	3
U	238	209	He	0.042	ppb	11.1	353.35	0.0020	Pulse	0.1000	3

ISTD Table:

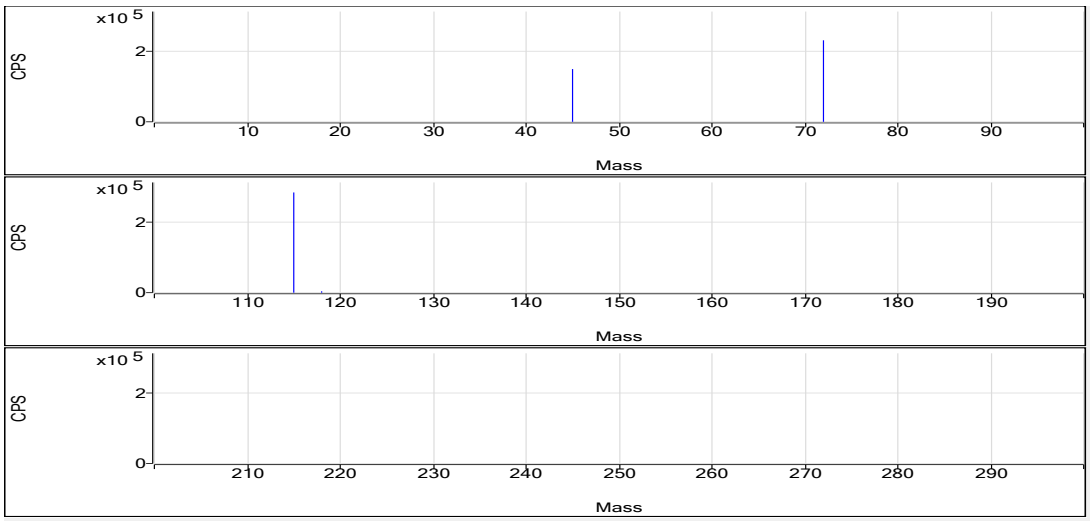
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2132681.11	0.8	96.4	Analog	0.1000	3
No Gas	Ge	72	1487725.29	1.4	94.7	Mix	0.1000	3
H2	Sc	45	149946.74	1.3	94.9	Pulse	0.1000	3
H2	Ge	72	231686.65	1.7	93.3	Pulse	0.1000	3
H2	In	115	284845.41	2.3	96.1	Pulse	0.1000	3
He	Sc	45	69715.97	1.4	89.1	Pulse	0.1000	3
He	Ge	72	180525.15	0.3	93.2	Pulse	0.1000	3
He	In	115	76061.04	1.2	93.3	Pulse	0.1000	3
He	Tb	159	275558.89	1.7	95.9	Pulse	0.1000	3
He	Bi	209	178491.34	1.1	97.2	Pulse	0.1000	3

No Gas

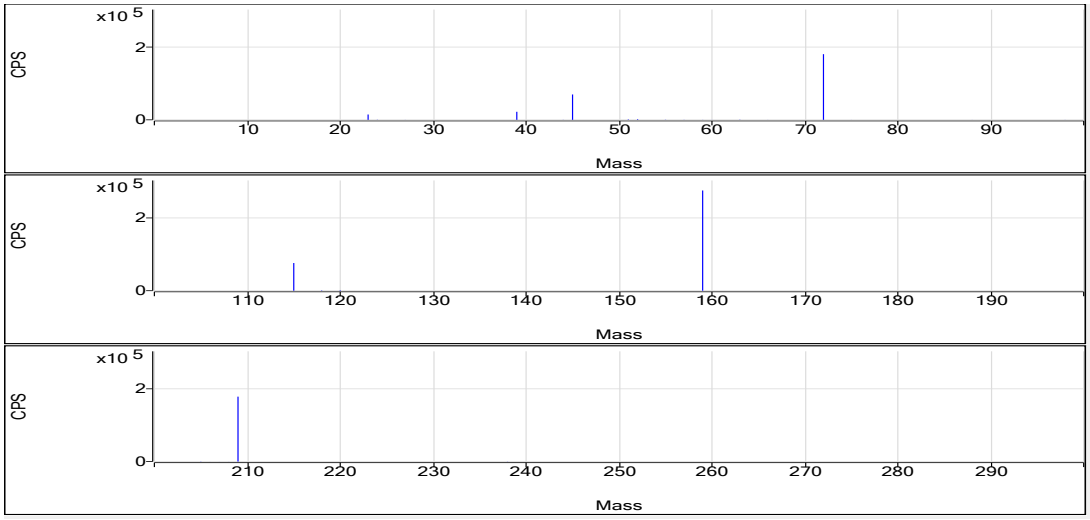


H2



Quantitation Report

He



Quantitation Report

Data File Name	094SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 14:20:46
Sample Name	410-60816-V-8-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

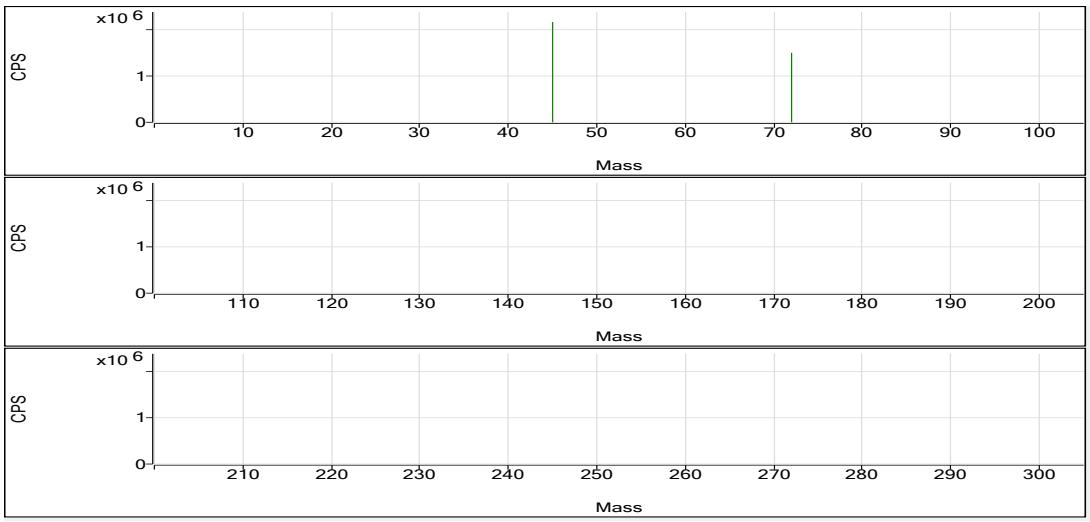
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.003	ppb	213.9	20.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.325	ppb	13.9	19.78	0.0001	Pulse	1.5000	3
Na	23	72	He	281157.829	ppb	1.5	70401152.29	394.1820	Analog	0.1000	3
Mg	24	72	He	54767.338	ppb	1.7	6589212.82	36.8943	Analog	0.1000	3
Al	27	72	He	-23.989	ppb	N/A	340.02	0.0019	Pulse	0.1000	3
K	39	72	He	3439.963	ppb	1.1	343935.05	1.9257	Pulse	0.1000	3
Ca	44	72	He	50694.250	ppb	0.8	253739.15	1.4207	Pulse	0.1000	3
Ti	47	72	He	0.006	ppb	2423.0	3.33	0.0000	Pulse	0.1000	3
V	51	72	He	-0.297	ppb	N/A	976.71	0.0055	Pulse	0.5000	3
Cr	52	72	He	0.032	ppb	89.1	1896.85	0.0106	Pulse	0.1000	3
Mn	55	72	He	521.855	ppb	0.5	414437.60	2.3204	Pulse	0.1000	3
Fe	57	72	He	66259.769	ppb	0.5	2264219.13	12.6772	Analog	0.1000	3
Co	59	72	He	0.285	ppb	13.5	956.73	0.0054	Pulse	0.1000	3
Ni	60	72	He	0.648	ppb	21.0	686.71	0.0038	Pulse	0.1000	3
Cu	63	72	He	0.140	ppb	9.1	750.04	0.0042	Pulse	0.1000	3
Zn	66	72	He	1.259	ppb	18.3	480.02	0.0027	Pulse	0.1000	3
As	75	72	He	16.675	ppb	2.3	3232.38	0.0181	Pulse	0.5000	3
Sr	88	115	He	632.588	ppb	1.0	532842.76	7.1557	Pulse	0.1000	3
Mo	98	115	He	1.060	ppb	9.8	1690.15	0.0227	Pulse	0.1000	3
Ag	107	115	He	-0.003	ppb	N/A	23.33	0.0003	Pulse	0.1000	3
Cd	111	115	He	-0.002	ppb	0.0	0.00	0.0000	Pulse	0.5000	3
Sn	120	115	He	-0.235	ppb	N/A	1213.43	0.0163	Pulse	0.1000	3
Sb	121	115	He	0.047	ppb	70.4	63.33	0.0008	Pulse	0.1000	3
Ba	137	115	He	327.799	ppb	1.6	114455.93	1.5371	Pulse	0.1000	3
Tl	205	159	He	0.002	ppb	81.6	70.00	0.0003	Pulse	0.1000	3
Pb	208	159	He	0.002	ppb	269.2	296.68	0.0011	Pulse	0.1000	3
U	238	209	He	0.025	ppb	39.7	206.68	0.0012	Pulse	0.1000	3

ISTD Table:

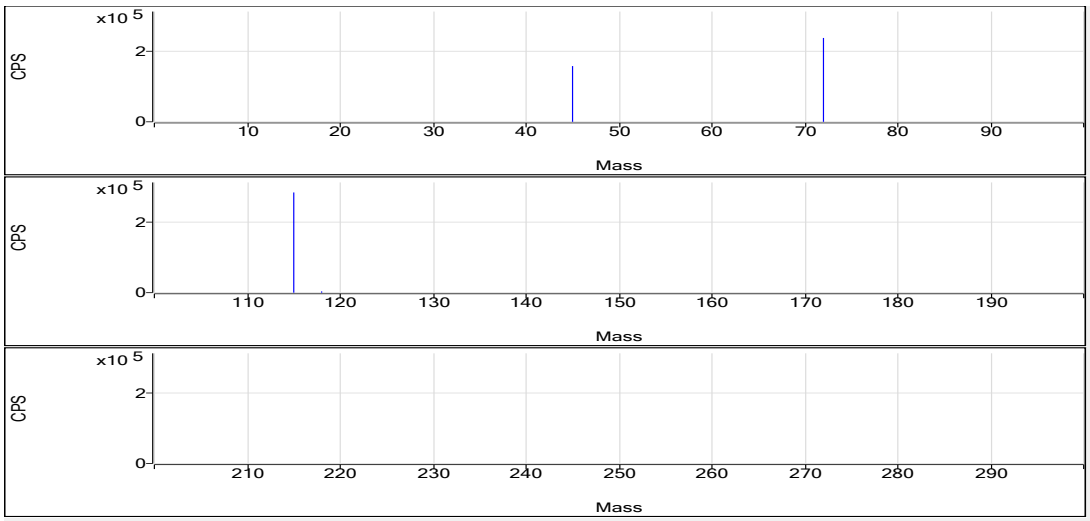
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2154457.16	0.4	97.3	Analog	0.1000	3
No Gas	Ge	72	1494444.72	1.1	95.2	Analog	0.1000	3
H2	Sc	45	157897.84	0.3	99.9	Pulse	0.1000	3
H2	Ge	72	237534.67	0.3	95.7	Pulse	0.1000	3
H2	In	115	283884.16	1.3	95.8	Pulse	0.1000	3
He	Sc	45	70422.53	0.9	90.0	Pulse	0.1000	3
He	Ge	72	178609.00	0.6	92.3	Pulse	0.1000	3
He	In	115	74471.65	1.6	91.3	Pulse	0.1000	3
He	Tb	159	275932.74	0.2	96.0	Pulse	0.1000	3
He	Bi	209	171893.95	1.1	93.6	Pulse	0.1000	3

No Gas

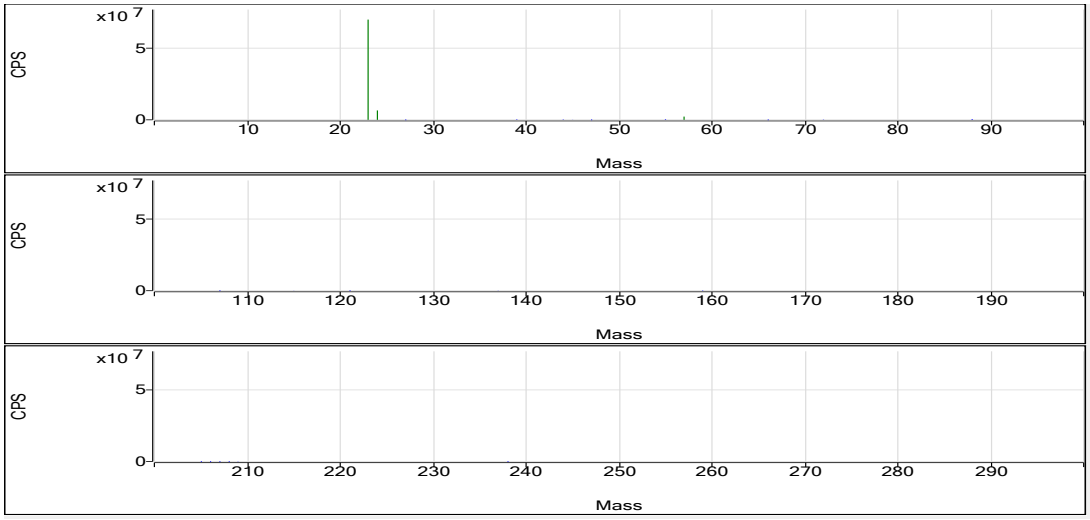


H2



Quantitation Report

He



Quantitation Report

Data File Name	095SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 14:22:46
Sample Name	410-60816-U-2-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

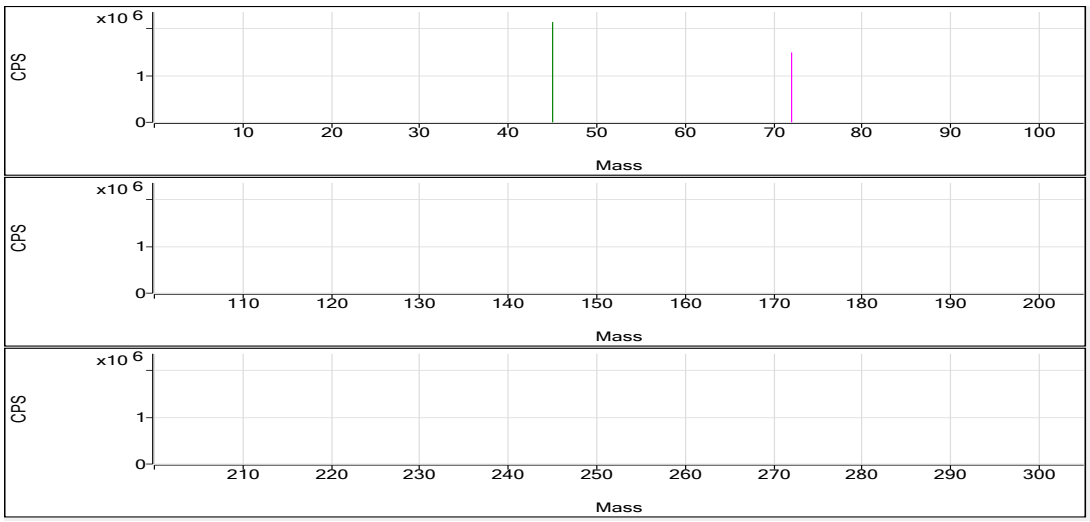
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.018	ppb	54.2	44.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.125	ppb	20.0	9.11	0.0000	Pulse	1.5000	3
Na	23	72	He	194685.803	ppb	1.2	49602137.60	272.9693	Analog	0.1000	3
Mg	24	72	He	41608.037	ppb	1.0	5093286.38	28.0296	Analog	0.1000	3
Al	27	72	He	-28.951	ppb	N/A	153.34	0.0008	Pulse	0.1000	3
K	39	72	He	11381.527	ppb	0.9	1101447.04	6.0614	Pulse	0.1000	3
Ca	44	72	He	90905.973	ppb	1.1	462764.76	2.5467	Pulse	0.1000	3
Ti	47	72	He	0.266	ppb	150.2	13.33	0.0001	Pulse	0.1000	3
V	51	72	He	-0.220	ppb	N/A	1104.72	0.0061	Pulse	0.5000	3
Cr	52	72	He	-0.050	ppb	N/A	1776.84	0.0098	Pulse	0.1000	3
Mn	55	72	He	780.444	ppb	0.5	630517.83	3.4698	Pulse	0.1000	3
Fe	57	72	He	4930.781	ppb	1.8	171530.57	0.9440	Pulse	0.1000	3
Co	59	72	He	0.189	ppb	6.9	670.04	0.0037	Pulse	0.1000	3
Ni	60	72	He	0.716	ppb	1.5	756.71	0.0042	Pulse	0.1000	3
Cu	63	72	He	0.085	ppb	59.4	626.70	0.0035	Pulse	0.1000	3
Zn	66	72	He	1.095	ppb	15.2	443.36	0.0024	Pulse	0.1000	3
As	75	72	He	0.101	ppb	118.1	93.33	0.0005	Pulse	0.5000	3
Sr	88	115	He	602.206	ppb	0.9	525704.67	6.8121	Pulse	0.1000	3
Mo	98	115	He	0.236	ppb	18.0	416.69	0.0054	Pulse	0.1000	3
Ag	107	115	He	-0.009	ppb	N/A	6.67	0.0001	Pulse	0.1000	3
Cd	111	115	He	0.004	ppb	146.8	2.00	0.0000	Pulse	0.5000	3
Sn	120	115	He	-0.176	ppb	N/A	1320.65	0.0171	Pulse	0.1000	3
Sb	121	115	He	0.067	ppb	36.2	86.67	0.0011	Pulse	0.1000	3
Ba	137	115	He	283.564	ppb	2.3	102609.37	1.3297	Pulse	0.1000	3
Tl	205	159	He	0.006	ppb	111.8	90.00	0.0003	Pulse	0.1000	3
Pb	208	159	He	-0.011	ppb	N/A	203.34	0.0007	Pulse	0.1000	3
U	238	209	He	0.019	ppb	16.6	166.68	0.0010	Pulse	0.1000	3

ISTD Table:

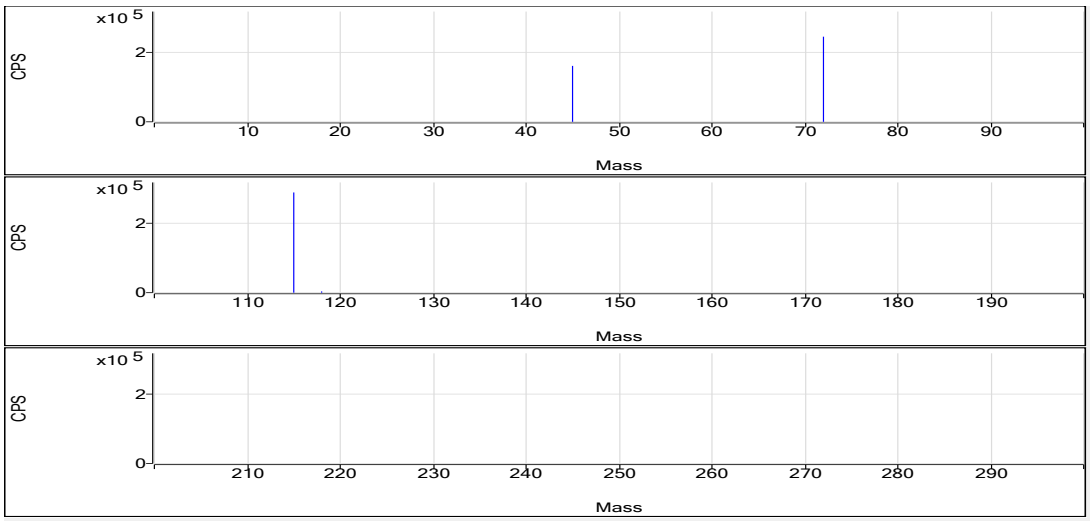
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2146081.43	0.9	97.0	Analog	0.1000	3
No Gas	Ge	72	1495442.01	0.3	95.2	Mix	0.1000	3
H2	Sc	45	162032.35	1.0	102.5	Pulse	0.1000	3
H2	Ge	72	246638.31	0.9	99.4	Pulse	0.1000	3
H2	In	115	290371.12	0.7	98.0	Pulse	0.1000	3
He	Sc	45	70311.57	0.8	89.9	Pulse	0.1000	3
He	Ge	72	181720.01	0.8	93.9	Pulse	0.1000	3
He	In	115	77169.27	0.8	94.7	Pulse	0.1000	3
He	Tb	159	276594.52	0.1	96.2	Pulse	0.1000	3
He	Bi	209	174435.96	0.6	95.0	Pulse	0.1000	3

No Gas

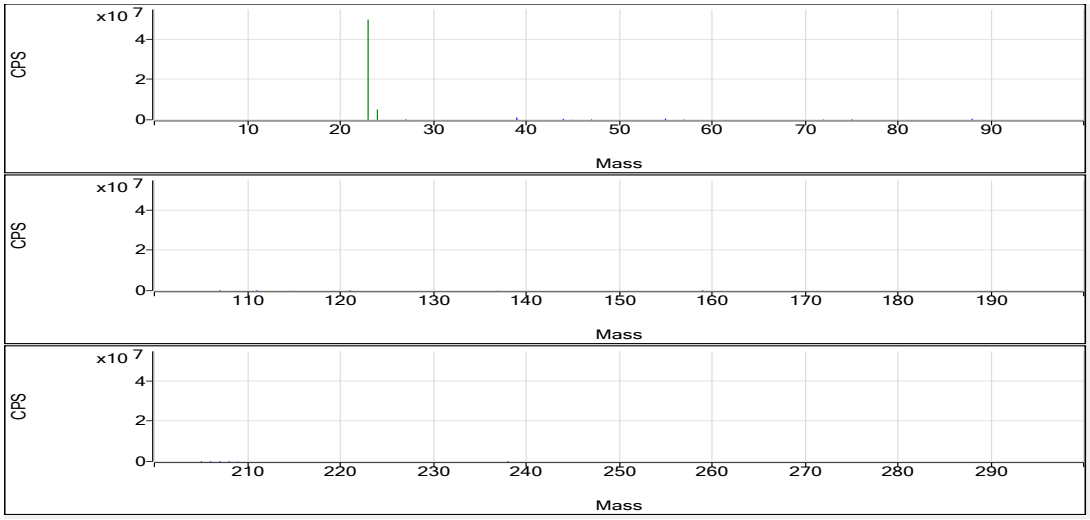


H2



Quantitation Report

He



Quantitation Report

Data File Name	096SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 14:24:47
Sample Name	410-60816-V-7-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

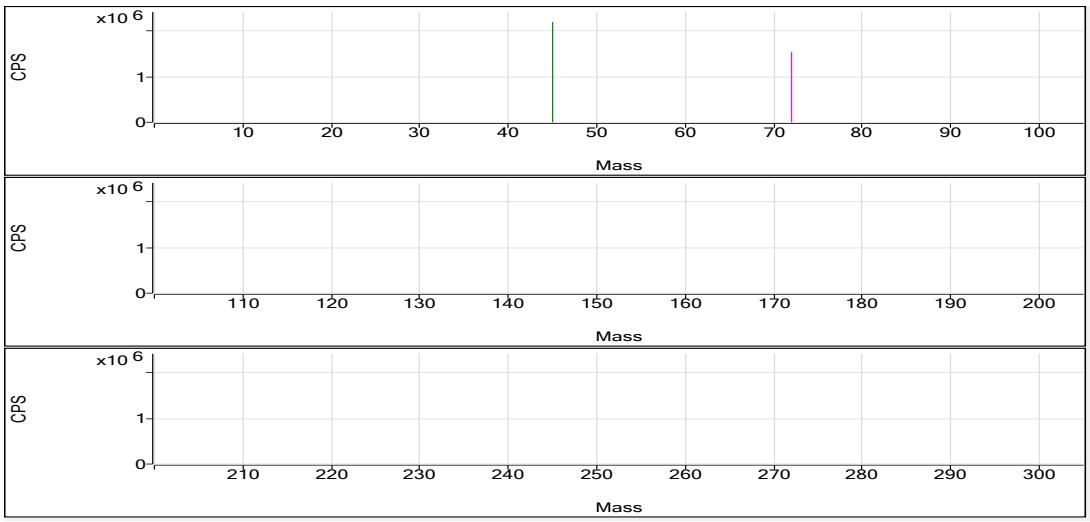
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.092	ppb	15.2	174.67	0.0001	Pulse	0.5000	3
Se	78	115	H2	0.219	ppb	21.1	14.22	0.0000	Pulse	1.5000	3
Na	23	72	He	46694.598	ppb	2.1	12033004.82	65.5217	Analog	0.1000	3
Mg	24	72	He	65450.887	ppb	0.6	8097564.46	44.0912	Analog	0.1000	3
Al	27	72	He	-27.623	ppb	N/A	206.67	0.0011	Pulse	0.1000	3
K	39	72	He	3009.723	ppb	0.9	312515.62	1.7016	Pulse	0.1000	3
Ca	44	72	He	66717.813	ppb	1.0	343317.31	1.8694	Pulse	0.1000	3
Ti	47	72	He	0.178	ppb	146.6	10.00	0.0001	Pulse	0.1000	3
V	51	72	He	-0.364	ppb	N/A	906.70	0.0049	Pulse	0.5000	3
Cr	52	72	He	0.146	ppb	65.4	2166.90	0.0118	Pulse	0.1000	3
Mn	55	72	He	7469.158	ppb	1.0	6097424.28	33.2006	Analog	0.1000	3
Fe	57	72	He	23648.903	ppb	1.3	831045.09	4.5251	Pulse	0.1000	3
Co	59	72	He	11.238	ppb	2.6	36162.37	0.1969	Pulse	0.1000	3
Ni	60	72	He	10.870	ppb	7.3	9503.44	0.0518	Pulse	0.1000	3
Cu	63	72	He	0.005	ppb	288.9	436.69	0.0024	Pulse	0.1000	3
Zn	66	72	He	5.256	ppb	8.3	1610.15	0.0088	Pulse	0.1000	3
As	75	72	He	1.661	ppb	6.1	398.01	0.0022	Pulse	0.5000	3
Sr	88	115	He	336.738	ppb	2.0	293095.37	3.8093	Pulse	0.1000	3
Mo	98	115	He	0.121	ppb	27.2	230.01	0.0030	Pulse	0.1000	3
Ag	107	115	He	-0.005	ppb	N/A	20.00	0.0003	Pulse	0.1000	3
Cd	111	115	He	0.012	ppb	50.5	5.33	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.286	ppb	N/A	1196.76	0.0156	Pulse	0.1000	3
Sb	121	115	He	0.024	ppb	84.6	43.33	0.0006	Pulse	0.1000	3
Ba	137	115	He	46.455	ppb	3.3	16770.68	0.2180	Pulse	0.1000	3
Tl	205	159	He	0.001	ppb	307.4	63.33	0.0002	Pulse	0.1000	3
Pb	208	159	He	0.080	ppb	22.7	866.71	0.0031	Pulse	0.1000	3
U	238	209	He	0.019	ppb	15.7	170.01	0.0009	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2192997.83	1.8	99.1	Analog	0.1000	3
No Gas	Ge	72	1535084.25	1.5	97.7	Mix	0.1000	3
H2	Sc	45	158233.70	0.8	100.1	Pulse	0.1000	3
H2	Ge	72	245153.52	1.4	98.8	Pulse	0.1000	3
H2	In	115	288724.12	1.2	97.4	Pulse	0.1000	3
He	Sc	45	72117.87	0.4	92.2	Pulse	0.1000	3
He	Ge	72	183660.72	0.8	94.9	Pulse	0.1000	3
He	In	115	76951.72	1.2	94.4	Pulse	0.1000	3
He	Tb	159	279295.49	0.6	97.2	Pulse	0.1000	3
He	Bi	209	179321.77	1.3	97.6	Pulse	0.1000	3

No Gas



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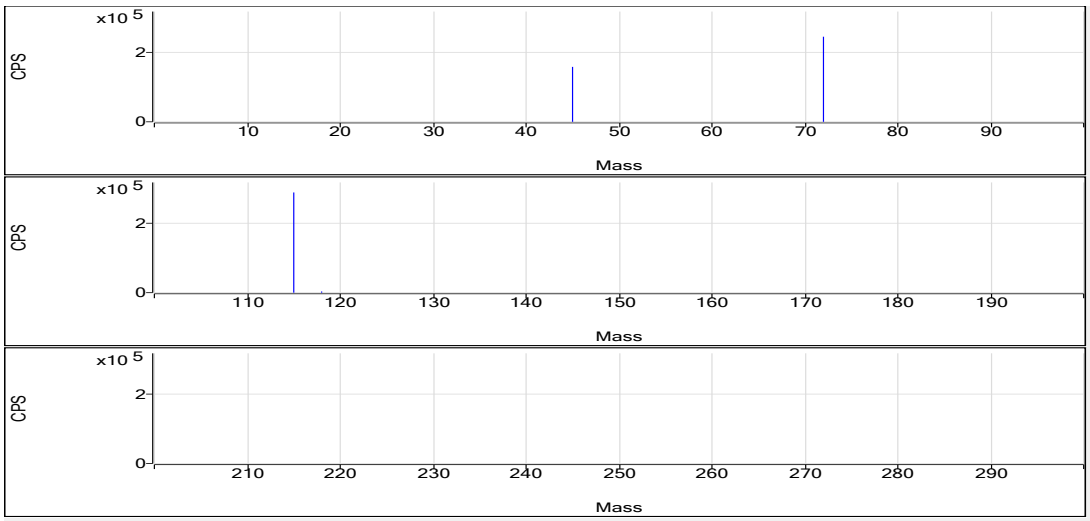
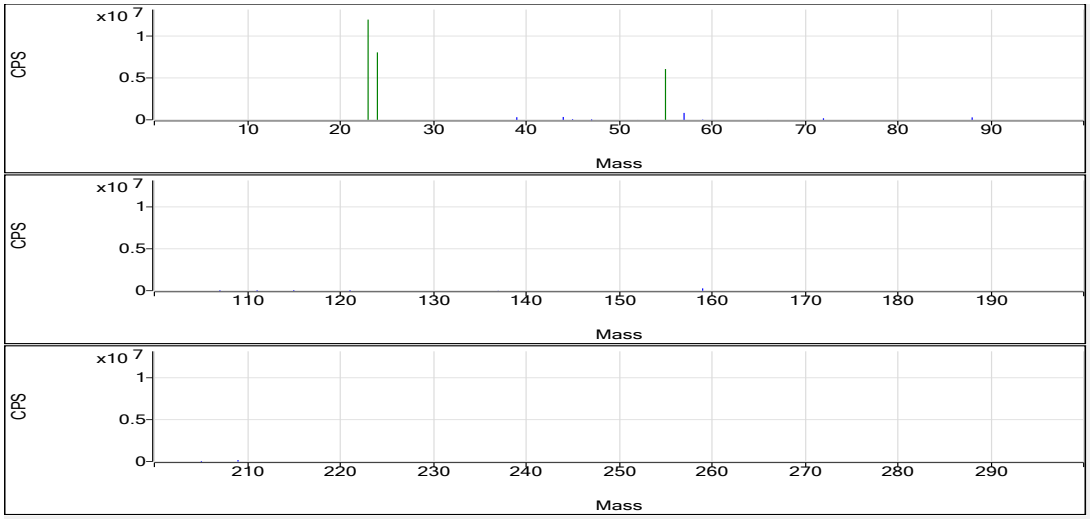


Quantitation Report

He



Quantitation Report

Data File Name	097SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 14:26:47
Sample Name	410-60816-V-1-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

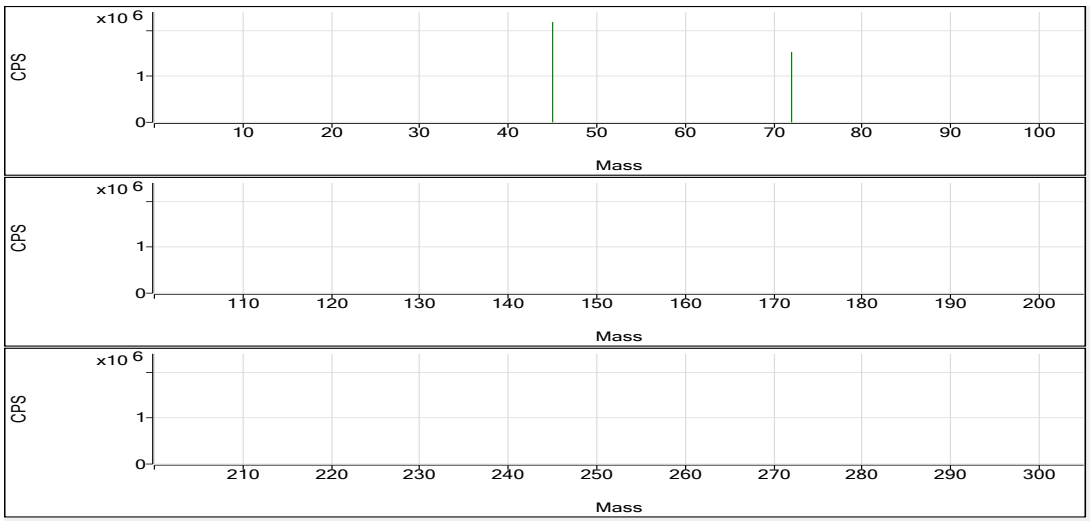
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.122	ppb	5.9	226.00	0.0001	Pulse	0.5000	3
Se	78	115	H2	0.062	ppb	51.1	5.55	0.0000	Pulse	1.5000	3
Na	23	72	He	54340.843	ppb	1.0	13955648.54	76.2399	Analog	0.1000	3
Mg	24	72	He	47084.880	ppb	1.2	5806104.29	31.7191	Analog	0.1000	3
Al	27	72	He	249.060	ppb	25.6	10996.16	0.0601	Pulse	0.1000	3
K	39	72	He	2351.938	ppb	1.8	248774.89	1.3591	Pulse	0.1000	3
Ca	44	72	He	50746.777	ppb	0.6	260321.78	1.4222	Pulse	0.1000	3
Ti	47	72	He	7.440	ppb	38.6	290.02	0.0016	Pulse	0.1000	3
V	51	72	He	0.221	ppb	11.3	1753.45	0.0096	Pulse	0.5000	3
Cr	52	72	He	6.090	ppb	10.2	13333.27	0.0729	Pulse	0.1000	3
Mn	55	72	He	7273.940	ppb	1.0	5918482.00	32.3328	Analog	0.1000	3
Fe	57	72	He	10728.338	ppb	0.7	375830.72	2.0532	Pulse	0.1000	3
Co	59	72	He	4.626	ppb	2.3	14878.16	0.0813	Pulse	0.1000	3
Ni	60	72	He	9.003	ppb	4.1	7873.13	0.0430	Pulse	0.1000	3
Cu	63	72	He	2.830	ppb	120.9	7420.29	0.0405	Pulse	0.1000	3
Zn	66	72	He	1.467	ppb	10.8	550.03	0.0030	Pulse	0.1000	3
As	75	72	He	0.476	ppb	5.0	166.67	0.0009	Pulse	0.5000	3
Sr	88	115	He	246.434	ppb	1.4	209957.78	2.7878	Pulse	0.1000	3
Mo	98	115	He	0.730	ppb	105.0	1185.64	0.0158	Pulse	0.1000	3
Ag	107	115	He	0.000	ppb	N/A	33.33	0.0004	Pulse	0.1000	3
Cd	111	115	He	0.000	ppb	2835.3	0.67	0.0000	Pulse	0.5000	3
Sn	120	115	He	-0.194	ppb	N/A	1270.10	0.0169	Pulse	0.1000	3
Sb	121	115	He	0.015	ppb	102.3	33.33	0.0004	Pulse	0.1000	3
Ba	137	115	He	50.009	ppb	1.5	17671.88	0.2346	Pulse	0.1000	3
Tl	205	159	He	-0.001	ppb	N/A	53.33	0.0002	Pulse	0.1000	3
Pb	208	159	He	0.236	ppb	12.9	1983.47	0.0072	Pulse	0.1000	3
U	238	209	He	0.039	ppb	27.8	330.02	0.0019	Pulse	0.1000	3

ISTD Table:

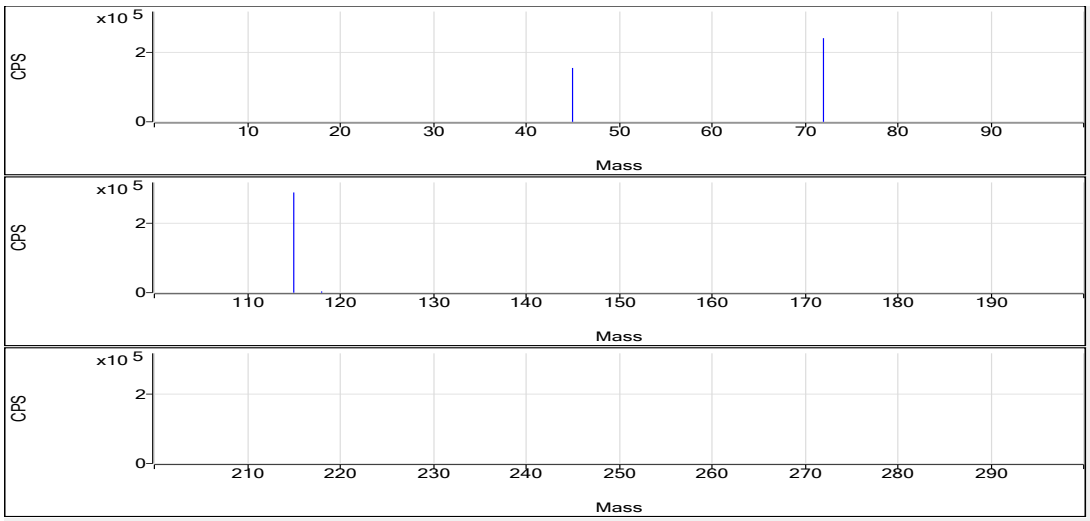
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2190144.29	1.0	98.9	Analog	0.1000	3
No Gas	Ge	72	1537902.79	0.6	97.9	Analog	0.1000	3
H2	Sc	45	155068.67	0.3	98.1	Pulse	0.1000	3
H2	Ge	72	240841.10	2.2	97.0	Pulse	0.1000	3
H2	In	115	288573.56	1.1	97.4	Pulse	0.1000	3
He	Sc	45	70613.40	0.3	90.3	Pulse	0.1000	3
He	Ge	72	183045.98	0.3	94.5	Pulse	0.1000	3
He	In	115	75312.26	0.5	92.4	Pulse	0.1000	3
He	Tb	159	276615.46	0.8	96.2	Pulse	0.1000	3
He	Bi	209	176113.19	1.1	95.9	Pulse	0.1000	3

No Gas

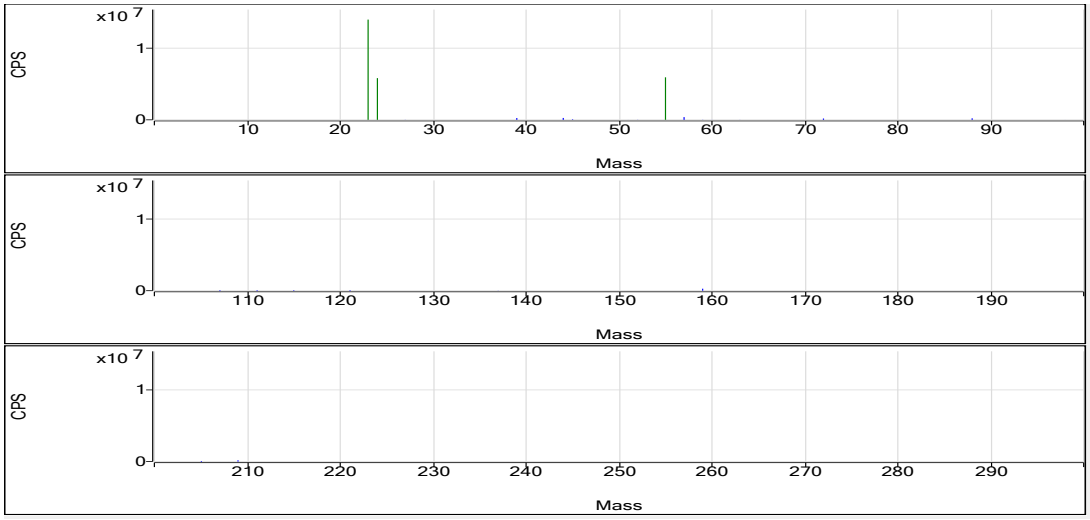


H2



Quantitation Report

He



Quantitation Report

Data File Name	098SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 14:28:47
Sample Name	410-60816-U-5-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

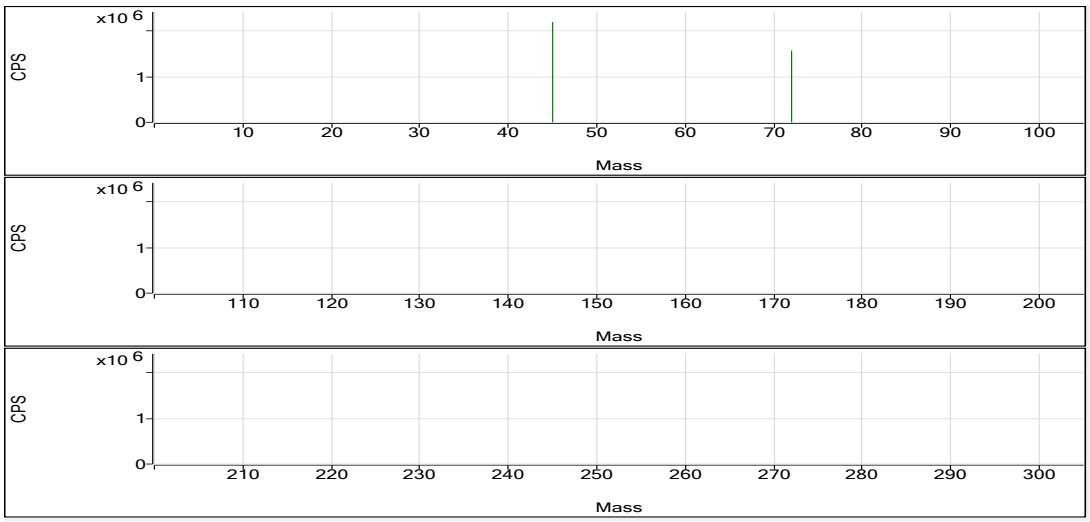
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.017	ppb	34.8	46.00	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.834	ppb	6.3	48.00	0.0002	Pulse	1.5000	3
Na	23	72	He	44309.123	ppb	0.9	11387328.58	62.1779	Analog	0.1000	3
Mg	24	72	He	41982.387	ppb	0.8	5179575.03	28.2818	Analog	0.1000	3
Al	27	72	He	-23.171	ppb	N/A	380.03	0.0021	Pulse	0.1000	3
K	39	72	He	2414.233	ppb	0.6	254846.44	1.3915	Pulse	0.1000	3
Ca	44	72	He	45171.043	ppb	1.1	231864.01	1.2660	Pulse	0.1000	3
Ti	47	72	He	0.091	ppb	164.3	6.67	0.0000	Pulse	0.1000	3
V	51	72	He	-0.287	ppb	N/A	1016.04	0.0055	Pulse	0.5000	3
Cr	52	72	He	0.419	ppb	6.2	2673.67	0.0146	Pulse	0.1000	3
Mn	55	72	He	5723.261	ppb	1.0	4659288.37	25.4402	Analog	0.1000	3
Fe	57	72	He	45884.014	ppb	1.3	1607829.45	8.7790	Analog	0.1000	3
Co	59	72	He	1.286	ppb	3.8	4187.43	0.0229	Pulse	0.1000	3
Ni	60	72	He	1.908	ppb	15.1	1786.84	0.0098	Pulse	0.1000	3
Cu	63	72	He	0.035	ppb	64.1	510.03	0.0028	Pulse	0.1000	3
Zn	66	72	He	2.710	ppb	15.0	896.73	0.0049	Pulse	0.1000	3
As	75	72	He	2.407	ppb	9.7	542.01	0.0030	Pulse	0.5000	3
Sr	88	115	He	213.910	ppb	1.3	186581.18	2.4199	Pulse	0.1000	3
Mo	98	115	He	1.197	ppb	9.0	1973.55	0.0256	Pulse	0.1000	3
Ag	107	115	He	-0.006	ppb	N/A	16.67	0.0002	Pulse	0.1000	3
Cd	111	115	He	0.002	ppb	166.0	1.33	0.0000	Pulse	0.5000	3
Sn	120	115	He	0.000	ppb	N/A	1510.99	0.0196	Pulse	0.1000	3
Sb	121	115	He	0.011	ppb	156.6	30.00	0.0004	Pulse	0.1000	3
Ba	137	115	He	60.408	ppb	0.6	21851.33	0.2834	Pulse	0.1000	3
Tl	205	159	He	0.007	ppb	71.6	93.34	0.0003	Pulse	0.1000	3
Pb	208	159	He	0.030	ppb	18.9	503.35	0.0018	Pulse	0.1000	3
U	238	209	He	0.023	ppb	24.0	200.01	0.0011	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2193278.20	0.6	99.1	Analog	0.1000	3
No Gas	Ge	72	1566548.15	0.4	99.8	Analog	0.1000	3
H2	Sc	45	151945.68	1.0	96.1	Pulse	0.1000	3
H2	Ge	72	237866.96	1.9	95.8	Pulse	0.1000	3
H2	In	115	287832.04	1.4	97.1	Pulse	0.1000	3
He	Sc	45	70533.42	0.9	90.2	Pulse	0.1000	3
He	Ge	72	183144.23	0.3	94.6	Pulse	0.1000	3
He	In	115	77102.46	0.2	94.6	Pulse	0.1000	3
He	Tb	159	277446.09	0.5	96.5	Pulse	0.1000	3
He	Bi	209	180163.63	0.4	98.1	Pulse	0.1000	3

No Gas



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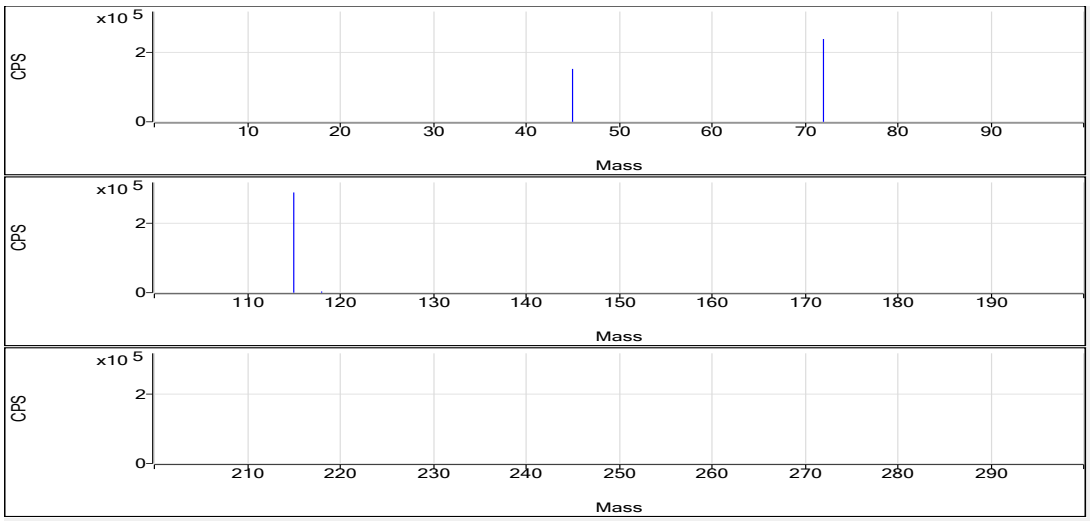
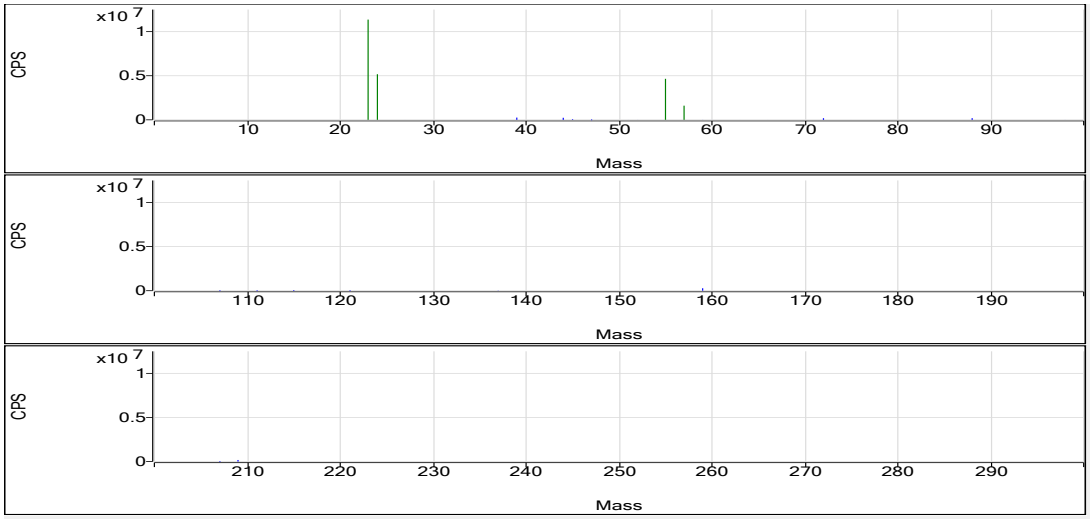


Quantitation Report

He



Quantitation Report

Data File Name	099SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 14:30:47
Sample Name	410-60816-U-6-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

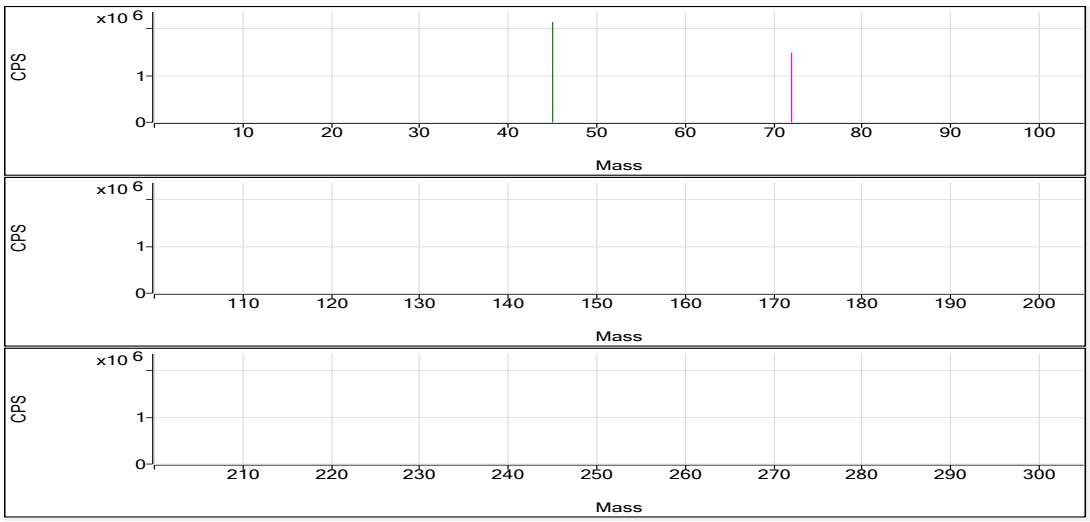
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.007	ppb	18.5	27.33	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.297	ppb	8.1	18.00	0.0001	Pulse	1.5000	3
Na	23	72	He	278830.630	ppb	1.3	69551732.30	390.9199	Analog	0.1000	3
Mg	24	72	He	42217.016	ppb	0.2	5060113.36	28.4399	Analog	0.1000	3
Al	27	72	He	-26.400	ppb	N/A	246.68	0.0014	Pulse	0.1000	3
K	39	72	He	6311.732	ppb	0.9	608704.50	3.4212	Pulse	0.1000	3
Ca	44	72	He	36452.559	ppb	1.7	181814.29	1.0219	Pulse	0.1000	3
Ti	47	72	He	0.007	ppb	2071.4	3.33	0.0000	Pulse	0.1000	3
V	51	72	He	-0.125	ppb	N/A	1216.06	0.0068	Pulse	0.5000	3
Cr	52	72	He	-0.072	ppb	N/A	1700.16	0.0096	Pulse	0.1000	3
Mn	55	72	He	756.742	ppb	0.8	598619.81	3.3645	Pulse	0.1000	3
Fe	57	72	He	51726.188	ppb	1.2	1760789.77	9.8967	Analog	0.1000	3
Co	59	72	He	0.497	ppb	2.9	1613.48	0.0091	Pulse	0.1000	3
Ni	60	72	He	0.699	ppb	23.3	726.71	0.0041	Pulse	0.1000	3
Cu	63	72	He	0.134	ppb	22.0	733.38	0.0041	Pulse	0.1000	3
Zn	66	72	He	14.455	ppb	1.6	4050.72	0.0228	Pulse	0.1000	3
As	75	72	He	13.535	ppb	0.9	2626.93	0.0148	Pulse	0.5000	3
Sr	88	115	He	523.348	ppb	2.1	432347.91	5.9201	Pulse	0.1000	3
Mo	98	115	He	2.157	ppb	4.6	3340.51	0.0458	Pulse	0.1000	3
Ag	107	115	He	-0.001	ppb	N/A	30.00	0.0004	Pulse	0.1000	3
Cd	111	115	He	0.015	ppb	63.9	6.00	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.003	ppb	N/A	1426.80	0.0196	Pulse	0.1000	3
Sb	121	115	He	0.227	ppb	5.8	233.34	0.0032	Pulse	0.1000	3
Ba	137	115	He	366.357	ppb	2.2	125459.47	1.7179	Pulse	0.1000	3
Tl	205	159	He	0.003	ppb	184.4	73.34	0.0003	Pulse	0.1000	3
Pb	208	159	He	0.436	ppb	5.3	3363.61	0.0124	Pulse	0.1000	3
U	238	209	He	0.074	ppb	14.1	600.04	0.0035	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2139824.60	1.1	96.7	Analog	0.1000	3
No Gas	Ge	72	1487355.91	0.6	94.7	Mix	0.1000	3
H2	Sc	45	152252.40	1.2	96.3	Pulse	0.1000	3
H2	Ge	72	230730.53	1.1	93.0	Pulse	0.1000	3
H2	In	115	280513.36	0.6	94.7	Pulse	0.1000	3
He	Sc	45	69578.89	1.8	89.0	Pulse	0.1000	3
He	Ge	72	177923.15	0.5	91.9	Pulse	0.1000	3
He	In	115	73057.49	2.7	89.6	Pulse	0.1000	3
He	Tb	159	271781.65	0.7	94.5	Pulse	0.1000	3
He	Bi	209	172124.37	2.3	93.7	Pulse	0.1000	3

No Gas



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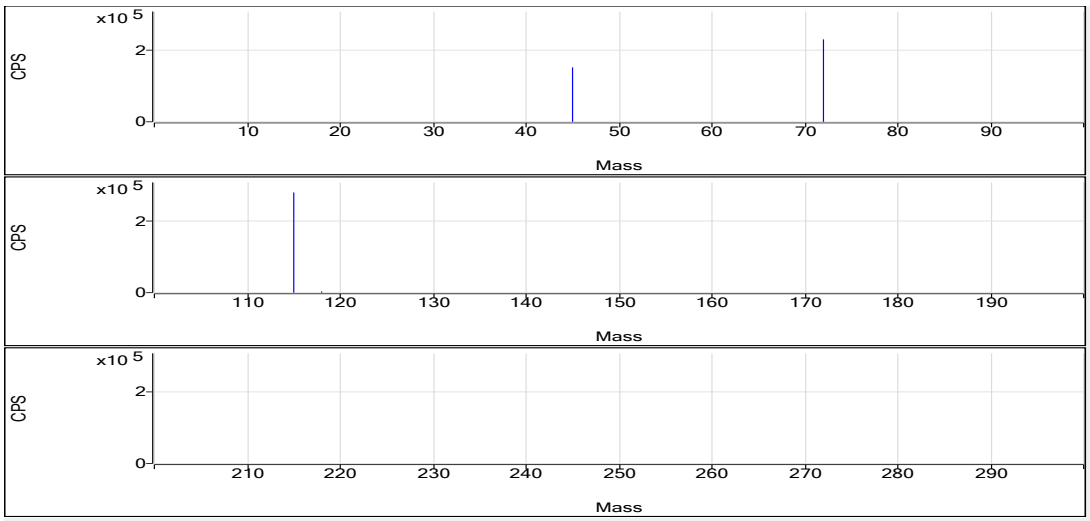
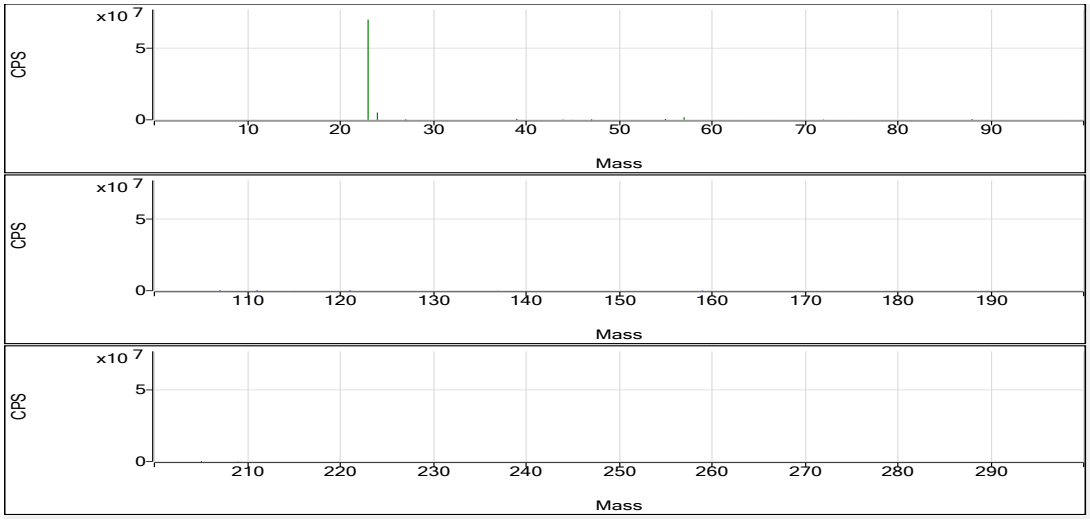


Quantitation Report

He



Quantitation Report

Data File Name	100SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 14:32:49
Sample Name	410-60816-U-3-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

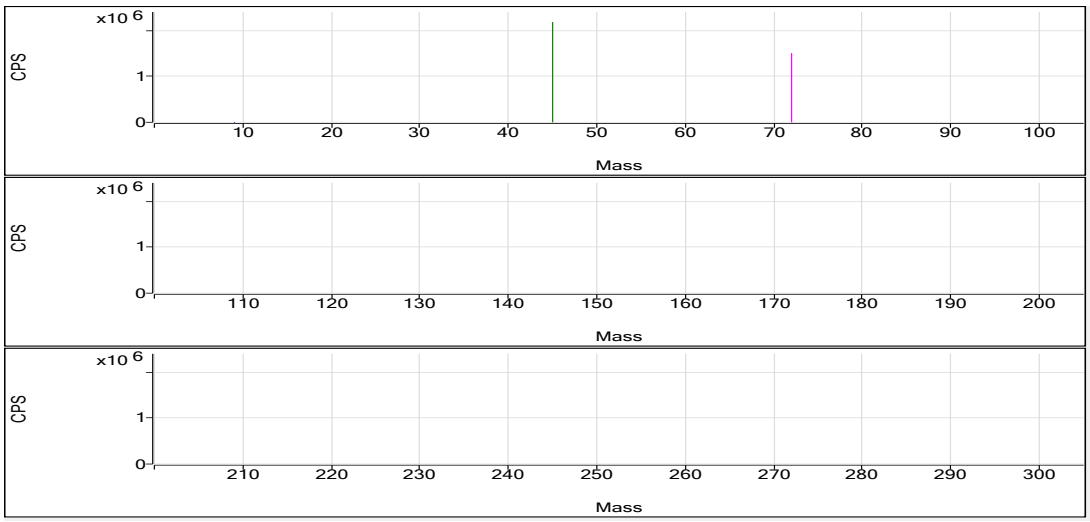
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	-0.003	ppb	N/A	10.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.917	ppb	4.3	52.22	0.0002	Pulse	1.5000	3
Na	23	72	He	132733.684	ppb	0.5	33371111.17	186.1276	Analog	0.1000	3
Mg	24	72	He	36757.246	ppb	1.3	4439523.06	24.7619	Analog	0.1000	3
Al	27	72	He	-24.276	ppb	N/A	330.03	0.0018	Pulse	0.1000	3
K	39	72	He	11137.606	ppb	1.2	1063991.03	5.9344	Pulse	0.1000	3
Ca	44	72	He	97617.375	ppb	0.9	490283.67	2.7346	Pulse	0.1000	3
Ti	47	72	He	0.449	ppb	59.7	20.00	0.0001	Pulse	0.1000	3
V	51	72	He	-0.262	ppb	N/A	1030.04	0.0057	Pulse	0.5000	3
Cr	52	72	He	0.102	ppb	41.6	2033.57	0.0113	Pulse	0.1000	3
Mn	55	72	He	195.827	ppb	1.3	156199.25	0.8712	Pulse	0.1000	3
Fe	57	72	He	2164.828	ppb	1.9	74390.30	0.4149	Pulse	0.1000	3
Co	59	72	He	2.261	ppb	4.5	7155.27	0.0399	Pulse	0.1000	3
Ni	60	72	He	2.200	ppb	8.8	1993.54	0.0111	Pulse	0.1000	3
Cu	63	72	He	0.243	ppb	14.3	1000.07	0.0056	Pulse	0.1000	3
Zn	66	72	He	3.587	ppb	7.7	1116.74	0.0062	Pulse	0.1000	3
As	75	72	He	0.571	ppb	41.2	181.33	0.0010	Pulse	0.5000	3
Sr	88	115	He	618.938	ppb	0.7	525782.34	7.0013	Pulse	0.1000	3
Mo	98	115	He	0.858	ppb	4.1	1386.79	0.0185	Pulse	0.1000	3
Ag	107	115	He	-0.002	ppb	N/A	26.67	0.0004	Pulse	0.1000	3
Cd	111	115	He	0.029	ppb	27.7	11.33	0.0002	Pulse	0.5000	3
Sn	120	115	He	-0.272	ppb	N/A	1183.42	0.0158	Pulse	0.1000	3
Sb	121	115	He	0.087	ppb	36.6	103.34	0.0014	Pulse	0.1000	3
Ba	137	115	He	123.990	ppb	1.9	43669.94	0.5815	Pulse	0.1000	3
Tl	205	159	He	0.008	ppb	39.1	96.67	0.0004	Pulse	0.1000	3
Pb	208	159	He	0.050	ppb	23.9	630.03	0.0023	Pulse	0.1000	3
U	238	209	He	1.219	ppb	4.1	9800.71	0.0566	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2178458.56	2.3	98.4	Analog	0.1000	3
No Gas	Ge	72	1504121.12	2.1	95.8	Mix	0.1000	3
H2	Sc	45	155351.90	0.6	98.3	Pulse	0.1000	3
H2	Ge	72	239254.03	0.5	96.4	Pulse	0.1000	3
H2	In	115	285988.18	0.9	96.5	Pulse	0.1000	3
He	Sc	45	68791.39	2.1	87.9	Pulse	0.1000	3
He	Ge	72	179297.45	0.9	92.6	Pulse	0.1000	3
He	In	115	75101.56	1.4	92.1	Pulse	0.1000	3
He	Tb	159	271216.56	0.8	94.3	Pulse	0.1000	3
He	Bi	209	173124.18	0.6	94.2	Pulse	0.1000	3

No Gas



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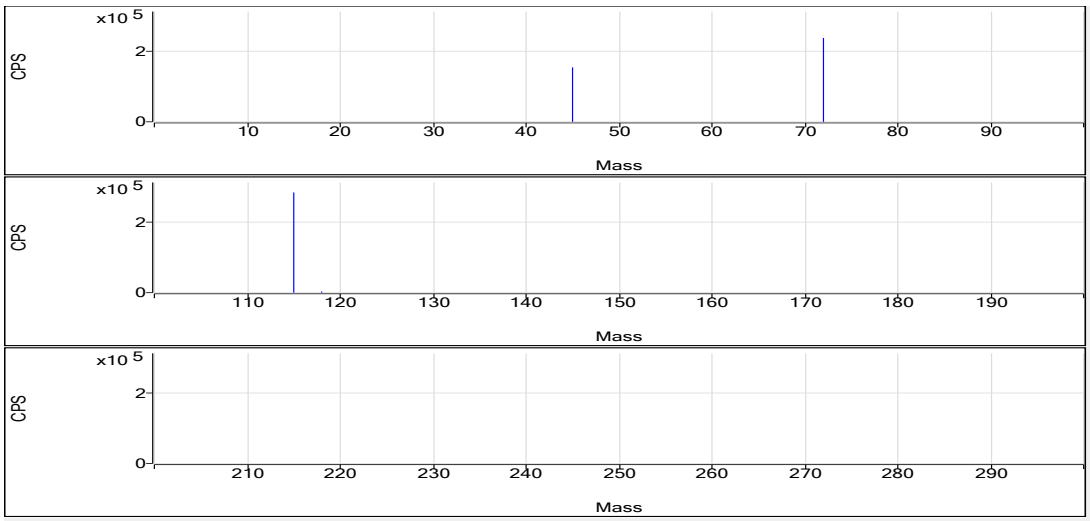
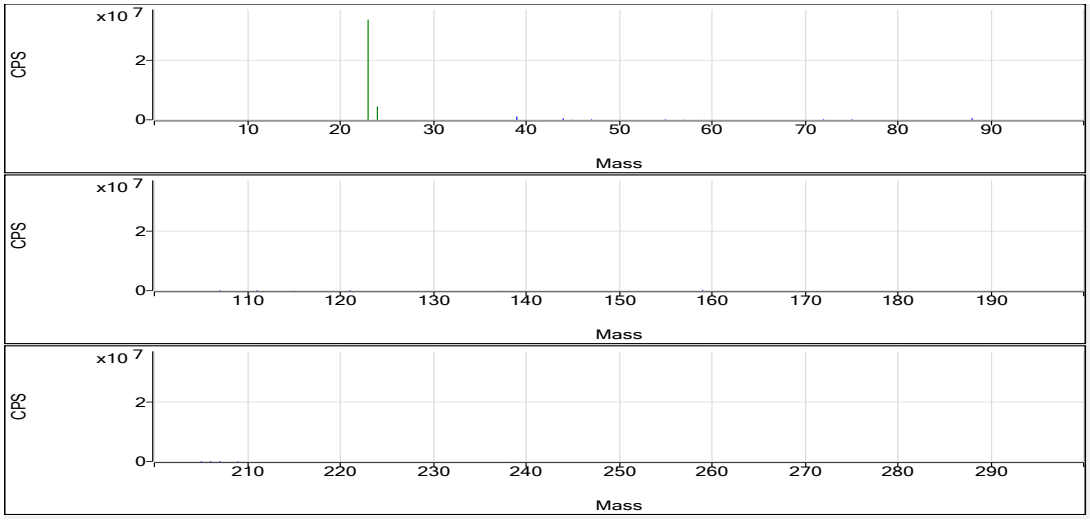


Quantitation Report

He



Quantitation Report

Data File Name	101_CCV.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 14:34:50
Sample Name	CCV 1942322
Sample Type	CCV
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

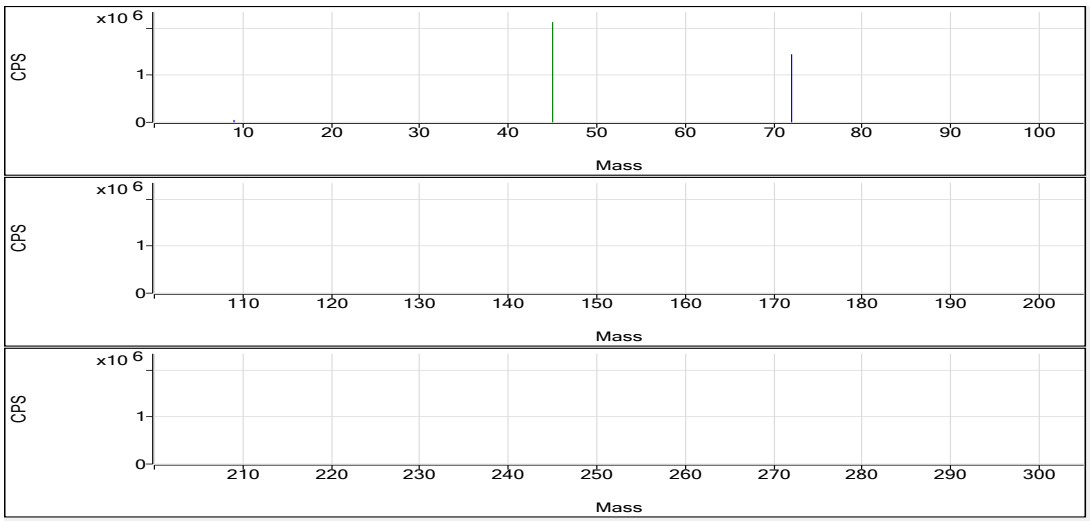
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	30.801	ppb	1.0	49858.63	0.0345	Pulse	0.5000	3
Se	78	115	H2	30.629	ppb	2.1	1668.32	0.0059	Pulse	1.5000	3
Na	23	72	He	5212.624	ppb	0.6	1286280.71	7.3741	Analog	0.1000	3
Mg	24	72	He	5026.886	ppb	0.7	590811.62	3.3871	Pulse	0.1000	3
Al	27	72	He	4957.934	ppb	0.7	185450.06	1.0632	Pulse	0.1000	3
K	39	72	He	5029.974	ppb	1.2	480315.96	2.7537	Pulse	0.1000	3
Ca	44	72	He	4878.247	ppb	2.4	24036.95	0.1378	Pulse	0.1000	3
Ti	47	72	He	297.270	ppb	2.0	10917.75	0.0626	Pulse	0.1000	3
V	51	72	He	296.940	ppb	0.9	412155.58	2.3629	Pulse	0.5000	3
Cr	52	72	He	297.287	ppb	0.2	534506.06	3.0642	Pulse	0.1000	3
Mn	55	72	He	304.875	ppb	0.9	236516.90	1.3560	Pulse	0.1000	3
Fe	57	72	He	5117.904	ppb	1.4	170902.75	0.9798	Pulse	0.1000	3
Co	59	72	He	295.152	ppb	0.1	900467.82	5.1621	Pulse	0.1000	3
Ni	60	72	He	310.503	ppb	1.5	254024.67	1.4563	Pulse	0.1000	3
Cu	63	72	He	297.551	ppb	0.4	700741.55	4.0171	Pulse	0.1000	3
Zn	66	72	He	310.467	ppb	0.7	82538.73	0.4732	Pulse	0.1000	3
As	75	72	He	311.133	ppb	0.9	57647.71	0.3305	Pulse	0.5000	3
Sr	88	115	He	30.858	ppb	2.3	26291.79	0.3494	Pulse	0.1000	3
Mo	98	115	He	32.160	ppb	2.1	50879.05	0.6761	Pulse	0.1000	3
Ag	107	115	He	31.597	ppb	1.8	99960.60	1.3282	Pulse	0.1000	3
Cd	111	115	He	31.344	ppb	2.8	11573.47	0.1538	Pulse	0.5000	3
Sn	120	115	He	32.426	ppb	1.5	35927.00	0.4773	Pulse	0.1000	3
Sb	121	115	He	31.924	ppb	1.6	31212.33	0.4147	Pulse	0.1000	3
Ba	137	115	He	315.097	ppb	2.1	111198.93	1.4776	Pulse	0.1000	3
Tl	205	159	He	31.317	ppb	1.2	168351.64	0.6132	Pulse	0.1000	3
Pb	208	159	He	31.433	ppb	0.7	225195.55	0.8202	Pulse	0.1000	3
U	238	209	He	261.149	ppb	2.5	2173700.91	12.1145	Analog	0.1000	3

ISTD Table:

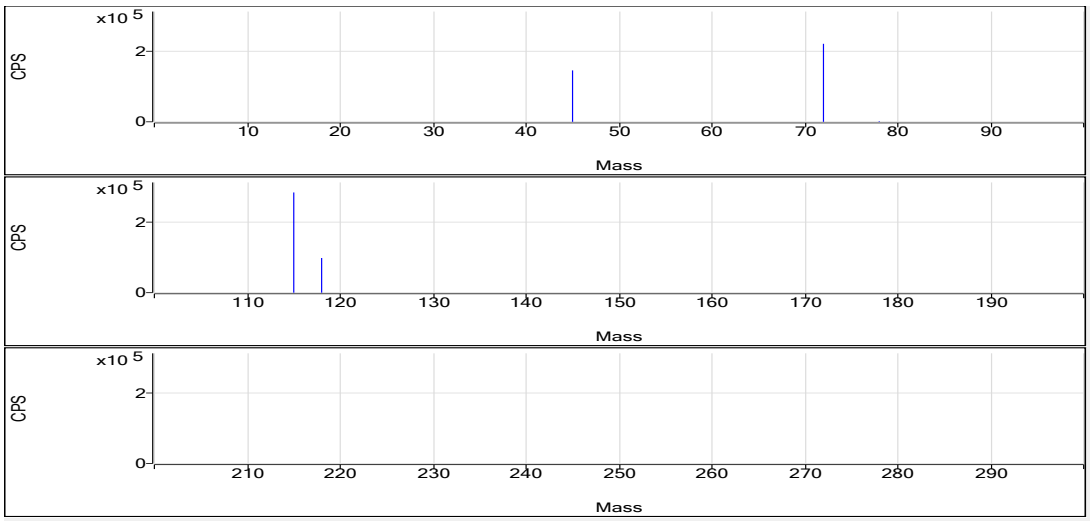
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2127726.63	0.3	96.1	Analog	0.1000	3
No Gas	Ge	72	1444202.79	1.5	92.0	Pulse	0.1000	3
H2	Sc	45	146216.69	0.9	92.5	Pulse	0.1000	3
H2	Ge	72	221825.88	0.5	89.4	Pulse	0.1000	3
H2	In	115	284984.44	0.5	96.2	Pulse	0.1000	3
He	Sc	45	69893.82	0.3	89.4	Pulse	0.1000	3
He	Ge	72	174439.31	1.0	90.1	Pulse	0.1000	3
He	In	115	75273.79	1.8	92.3	Pulse	0.1000	3
He	Tb	159	274557.45	1.0	95.5	Pulse	0.1000	3
He	Bi	209	179476.83	1.6	97.7	Pulse	0.1000	3

No Gas

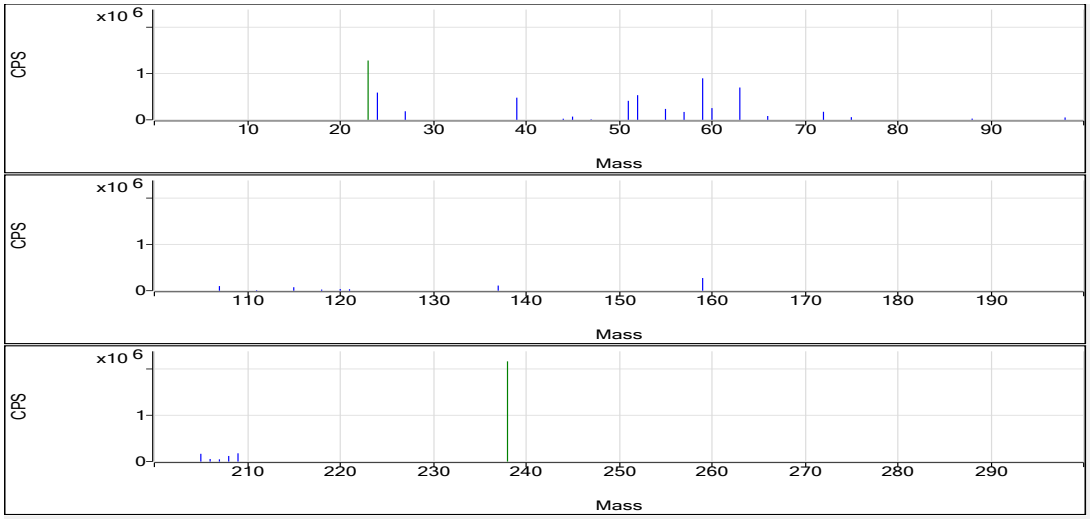


H2



Quantitation Report

He



Quantitation Report

Data File Name	102_CCB.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 14:36:52
Sample Name	CCB 2014932
Sample Type	CCB
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

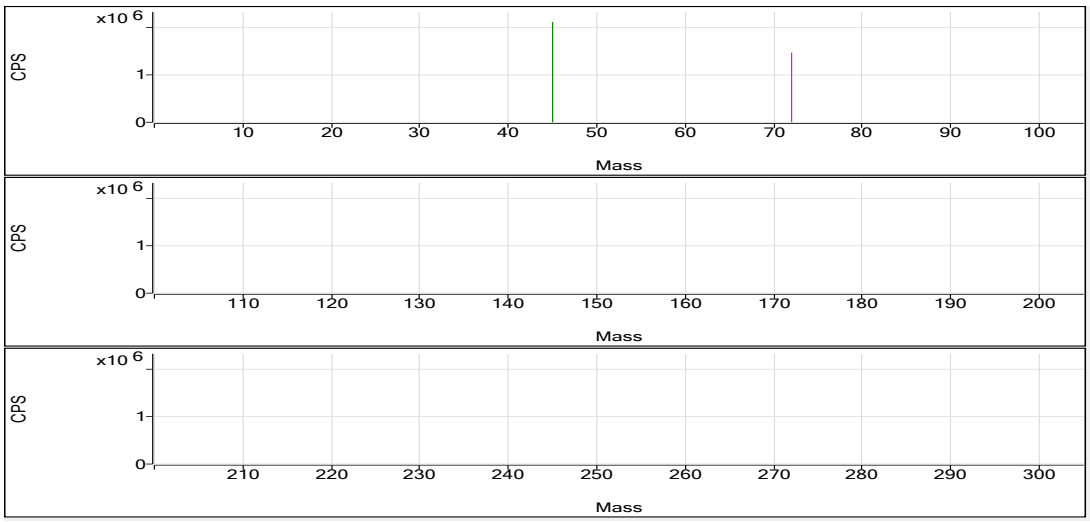
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.002	ppb	32.4	18.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.067	ppb	19.8	5.78	0.0000	Pulse	1.5000	3
Na	23	72	He	27.755	ppb	5.0	18839.04	0.1062	Pulse	0.1000	3
Mg	24	72	He	5.457	ppb	27.2	786.72	0.0044	Pulse	0.1000	3
Al	27	72	He	-30.619	ppb	N/A	86.67	0.0005	Pulse	0.1000	3
K	39	72	He	-29.778	ppb	N/A	21062.23	0.1187	Pulse	0.1000	3
Ca	44	72	He	7.879	ppb	93.4	250.01	0.0014	Pulse	0.1000	3
Ti	47	72	He	-0.082	ppb	0.0	0.00	0.0000	Pulse	0.1000	3
V	51	72	He	-0.183	ppb	N/A	1130.72	0.0064	Pulse	0.5000	3
Cr	52	72	He	0.009	ppb	1360.7	1840.18	0.0104	Pulse	0.1000	3
Mn	55	72	He	0.440	ppb	45.9	490.03	0.0028	Pulse	0.1000	3
Fe	57	72	He	4.166	ppb	26.5	263.35	0.0015	Pulse	0.1000	3
Co	59	72	He	0.024	ppb	98.8	140.01	0.0008	Pulse	0.1000	3
Ni	60	72	He	0.036	ppb	158.6	173.34	0.0010	Pulse	0.1000	3
Cu	63	72	He	0.067	ppb	30.6	570.03	0.0032	Pulse	0.1000	3
Zn	66	72	He	-0.025	ppb	N/A	130.01	0.0007	Pulse	0.1000	3
As	75	72	He	0.124	ppb	14.2	95.33	0.0005	Pulse	0.5000	3
Sr	88	115	He	0.069	ppb	28.3	83.33	0.0011	Pulse	0.1000	3
Mo	98	115	He	0.042	ppb	52.9	100.00	0.0013	Pulse	0.1000	3
Ag	107	115	He	-0.001	ppb	N/A	30.00	0.0004	Pulse	0.1000	3
Cd	111	115	He	0.002	ppb	161.9	1.33	0.0000	Pulse	0.5000	3
Sn	120	115	He	0.029	ppb	673.3	1500.18	0.0200	Pulse	0.1000	3
Sb	121	115	He	0.019	ppb	82.9	36.67	0.0005	Pulse	0.1000	3
Ba	137	115	He	0.051	ppb	112.3	30.00	0.0004	Pulse	0.1000	3
Tl	205	159	He	0.048	ppb	20.7	316.68	0.0012	Pulse	0.1000	3
Pb	208	159	He	-0.012	ppb	N/A	193.33	0.0007	Pulse	0.1000	3
U	238	209	He	0.045	ppb	23.0	383.36	0.0021	Pulse	0.1000	3

ISTD Table:

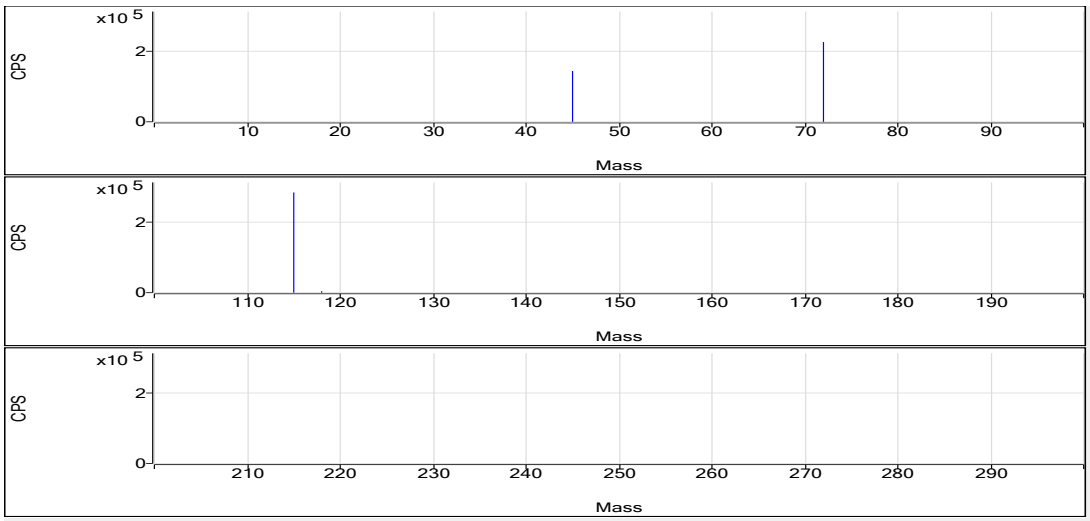
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2110602.84	2.8	95.4	Analog	0.1000	3
No Gas	Ge	72	1466457.90	1.3	93.4	Mix	0.1000	3
H2	Sc	45	144141.42	1.4	91.2	Pulse	0.1000	3
H2	Ge	72	226314.08	1.5	91.2	Pulse	0.1000	3
H2	In	115	284374.90	0.8	96.0	Pulse	0.1000	3
He	Sc	45	69427.97	0.5	88.8	Pulse	0.1000	3
He	Ge	72	177406.80	1.0	91.6	Pulse	0.1000	3
He	In	115	75051.46	1.5	92.1	Pulse	0.1000	3
He	Tb	159	274562.74	1.3	95.5	Pulse	0.1000	3
He	Bi	209	178441.10	0.5	97.1	Pulse	0.1000	3

No Gas

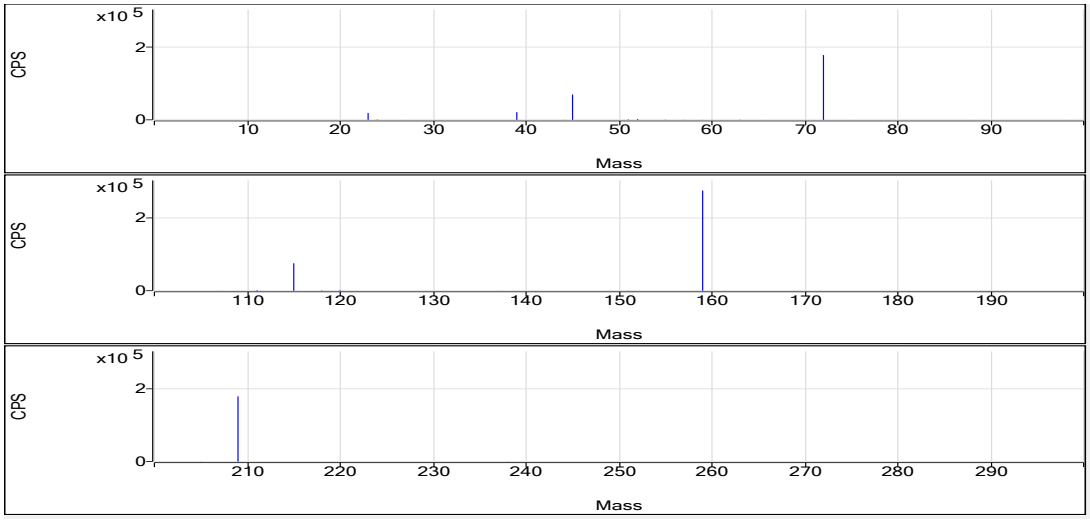


H2



Quantitation Report

He



Quantitation Report

Data File Name	103SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 14:38:53
Sample Name	MB 410-190955/1-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

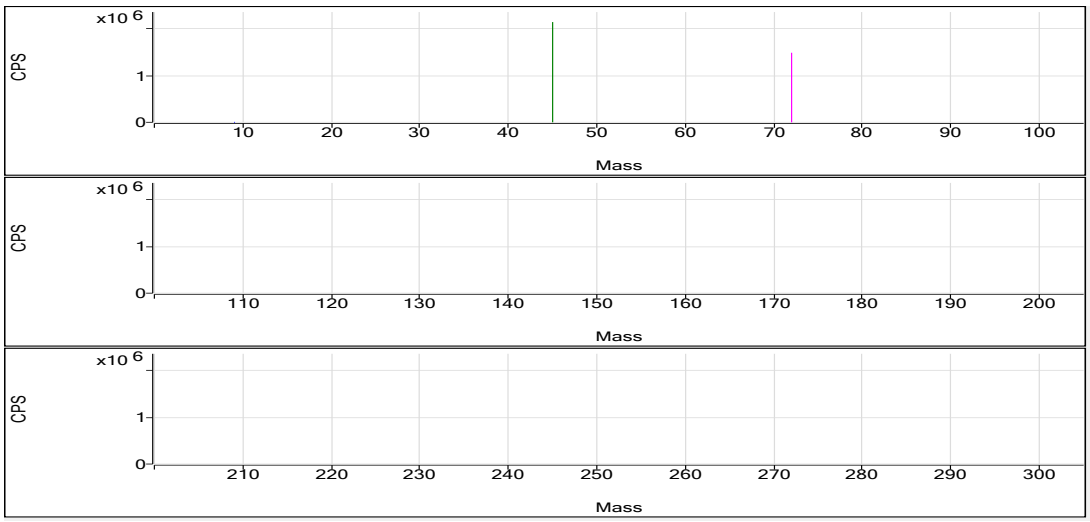
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	-0.005	ppb	N/A	7.33	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.005	ppb	498.6	2.44	0.0000	Pulse	1.5000	3
Na	23	72	He	12.896	ppb	16.9	15301.61	0.0854	Pulse	0.1000	3
Mg	24	72	He	1.717	ppb	22.7	343.35	0.0019	Pulse	0.1000	3
Al	27	72	He	-29.422	ppb	N/A	133.34	0.0007	Pulse	0.1000	3
K	39	72	He	-21.250	ppb	N/A	22080.43	0.1232	Pulse	0.1000	3
Ca	44	72	He	-8.603	ppb	N/A	170.01	0.0009	Pulse	0.1000	3
Ti	47	72	He	0.182	ppb	251.1	10.00	0.0001	Pulse	0.1000	3
V	51	72	He	-0.284	ppb	N/A	999.38	0.0056	Pulse	0.5000	3
Cr	52	72	He	-0.245	ppb	N/A	1393.45	0.0078	Pulse	0.1000	3
Mn	55	72	He	0.299	ppb	29.2	383.35	0.0021	Pulse	0.1000	3
Fe	57	72	He	1.460	ppb	81.6	173.34	0.0010	Pulse	0.1000	3
Co	59	72	He	-0.004	ppb	N/A	56.67	0.0003	Pulse	0.1000	3
Ni	60	72	He	0.014	ppb	632.0	156.67	0.0009	Pulse	0.1000	3
Cu	63	72	He	-0.024	ppb	N/A	356.69	0.0020	Pulse	0.1000	3
Zn	66	72	He	0.005	ppb	669.2	140.01	0.0008	Pulse	0.1000	3
As	75	72	He	-0.063	ppb	N/A	60.67	0.0003	Pulse	0.5000	3
Sr	88	115	He	0.057	ppb	139.5	73.34	0.0010	Pulse	0.1000	3
Mo	98	115	He	0.008	ppb	173.7	46.67	0.0006	Pulse	0.1000	3
Ag	107	115	He	0.000	ppb	N/A	33.33	0.0004	Pulse	0.1000	3
Cd	111	115	He	0.002	ppb	163.3	1.33	0.0000	Pulse	0.5000	3
Sn	120	115	He	-0.135	ppb	N/A	1353.45	0.0177	Pulse	0.1000	3
Sb	121	115	He	0.004	ppb	253.7	23.33	0.0003	Pulse	0.1000	3
Ba	137	115	He	-0.007	ppb	N/A	10.00	0.0001	Pulse	0.1000	3
Tl	205	159	He	0.005	ppb	136.3	83.34	0.0003	Pulse	0.1000	3
Pb	208	159	He	-0.017	ppb	N/A	160.00	0.0006	Pulse	0.1000	3
U	238	209	He	0.008	ppb	18.4	73.33	0.0004	Pulse	0.1000	3

ISTD Table:

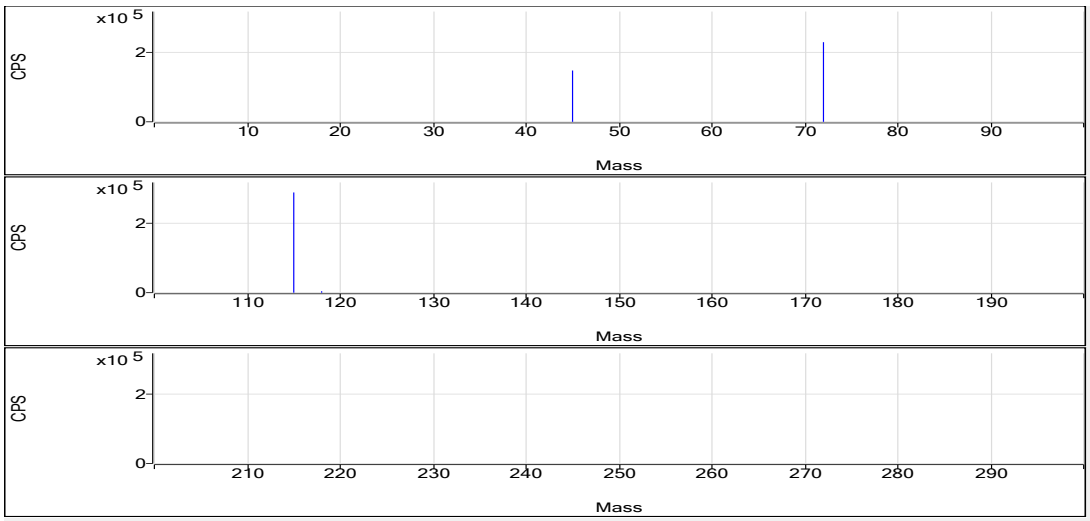
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2151613.72	0.7	97.2	Analog	0.1000	3
No Gas	Ge	72	1493122.79	1.4	95.1	Mix	0.1000	3
H2	Sc	45	148148.33	2.0	93.7	Pulse	0.1000	3
H2	Ge	72	229923.34	0.8	92.6	Pulse	0.1000	3
H2	In	115	289397.11	1.5	97.7	Pulse	0.1000	3
He	Sc	45	69772.72	2.6	89.2	Pulse	0.1000	3
He	Ge	72	179268.91	0.6	92.6	Pulse	0.1000	3
He	In	115	76482.15	2.1	93.8	Pulse	0.1000	3
He	Tb	159	276358.86	0.9	96.1	Pulse	0.1000	3
He	Bi	209	179063.41	1.3	97.5	Pulse	0.1000	3

No Gas

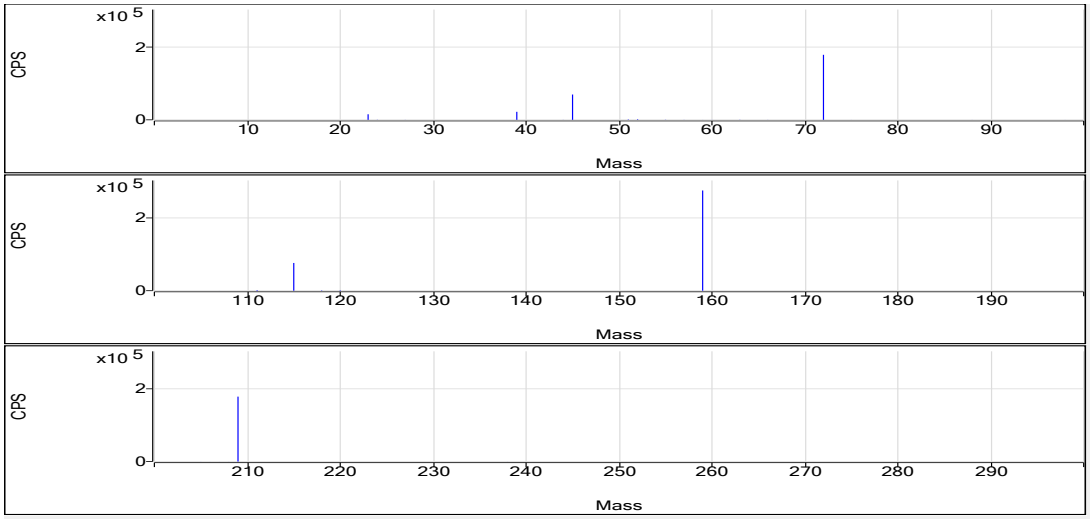


H2



Quantitation Report

He



Quantitation Report

Data File Name	104SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 14:40:55
Sample Name	LCS 410-190955/2-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

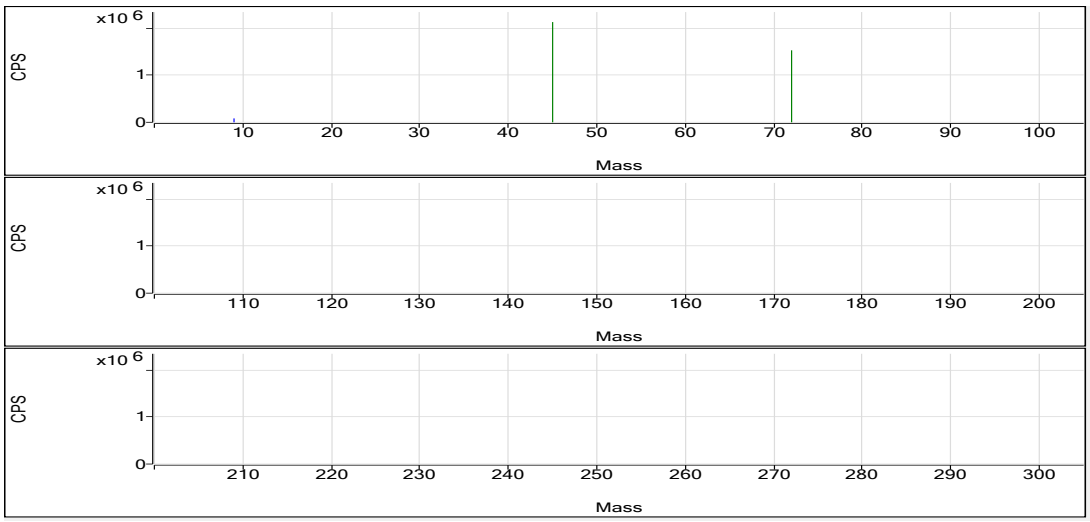
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	48.265	ppb	2.3	82978.99	0.0541	Pulse	0.5000	3
Se	78	115	H2	100.462	ppb	0.2	5589.98	0.0192	Pulse	1.5000	3
Na	23	72	He	4778.973	ppb	1.1	1241741.68	6.7662	Analog	0.1000	3
Mg	24	72	He	4813.231	ppb	2.7	595108.24	3.2431	Pulse	0.1000	3
Al	27	72	He	4760.683	ppb	2.3	187382.98	1.0212	Pulse	0.1000	3
K	39	72	He	4750.353	ppb	2.8	478574.58	2.6081	Pulse	0.1000	3
Ca	44	72	He	4758.546	ppb	4.6	24664.84	0.1344	Pulse	0.1000	3
Ti	47	72	He	476.045	ppb	3.6	18398.72	0.1002	Pulse	0.1000	3
V	51	72	He	470.104	ppb	1.4	685666.31	3.7363	Pulse	0.5000	3
Cr	52	72	He	465.629	ppb	2.3	879607.07	4.7935	Pulse	0.1000	3
Mn	55	72	He	483.441	ppb	2.5	394472.99	2.1497	Pulse	0.1000	3
Fe	57	72	He	4836.100	ppb	1.6	169914.78	0.9259	Pulse	0.1000	3
Co	59	72	He	474.611	ppb	2.1	1523479.09	8.3005	Mix	0.1000	3
Ni	60	72	He	485.201	ppb	0.4	417593.59	2.2752	Pulse	0.1000	3
Cu	63	72	He	461.133	ppb	0.9	1142351.73	6.2243	Pulse	0.1000	3
Zn	66	72	He	491.272	ppb	1.4	137330.60	0.7483	Pulse	0.1000	3
As	75	72	He	477.015	ppb	1.9	92943.31	0.5065	Pulse	0.5000	3
Sr	88	115	He	49.626	ppb	2.2	43410.16	0.5617	Pulse	0.1000	3
Mo	98	115	He	52.405	ppb	1.1	85129.19	1.1014	Pulse	0.1000	3
Ag	107	115	He	49.718	ppb	1.5	161503.89	2.0897	Pulse	0.1000	3
Cd	111	115	He	49.970	ppb	3.0	18946.09	0.2452	Pulse	0.5000	3
Sn	120	115	He	103.247	ppb	2.7	114118.37	1.4769	Pulse	0.1000	3
Sb	121	115	He	101.613	ppb	1.2	101977.75	1.3195	Pulse	0.1000	3
Ba	137	115	He	503.690	ppb	2.6	182508.50	2.3619	Pulse	0.1000	3
Tl	205	159	He	103.064	ppb	0.5	557017.64	2.0176	Pulse	0.1000	3
Pb	208	159	He	51.395	ppb	0.7	370077.82	1.3405	Pulse	0.1000	3
U	238	209	He	48.816	ppb	0.1	404006.93	2.2646	Pulse	0.1000	3

ISTD Table:

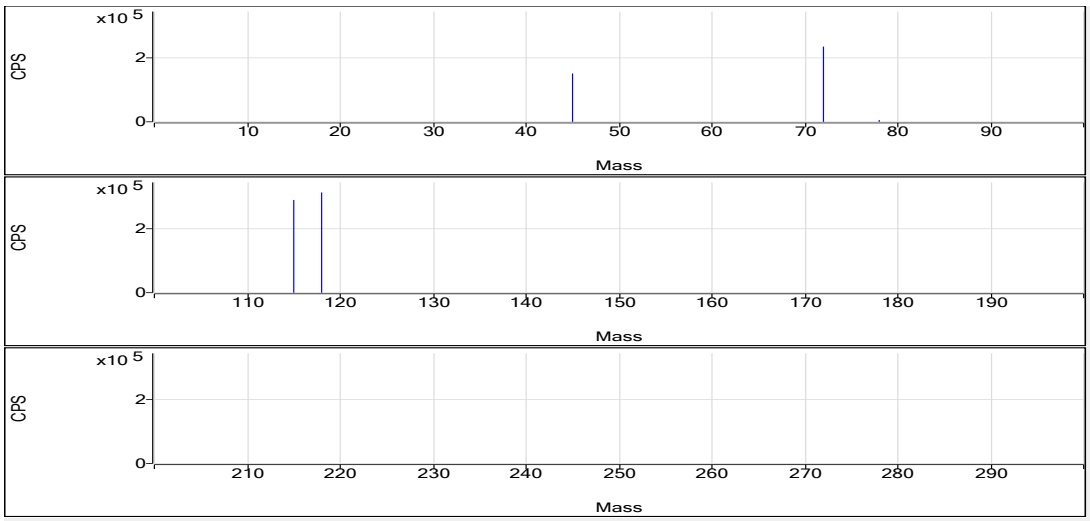
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2136405.96	1.2	96.5	Analog	0.1000	3
No Gas	Ge	72	1534416.18	1.9	97.7	Analog	0.1000	3
H2	Sc	45	151907.94	1.1	96.1	Pulse	0.1000	3
H2	Ge	72	236403.53	0.9	95.2	Pulse	0.1000	3
H2	In	115	291399.31	1.9	98.4	Pulse	0.1000	3
He	Sc	45	70992.51	1.8	90.8	Pulse	0.1000	3
He	Ge	72	183540.59	1.6	94.8	Pulse	0.1000	3
He	In	115	77293.62	1.8	94.8	Pulse	0.1000	3
He	Tb	159	276080.60	0.7	96.0	Pulse	0.1000	3
He	Bi	209	178400.52	0.7	97.1	Pulse	0.1000	3

No Gas

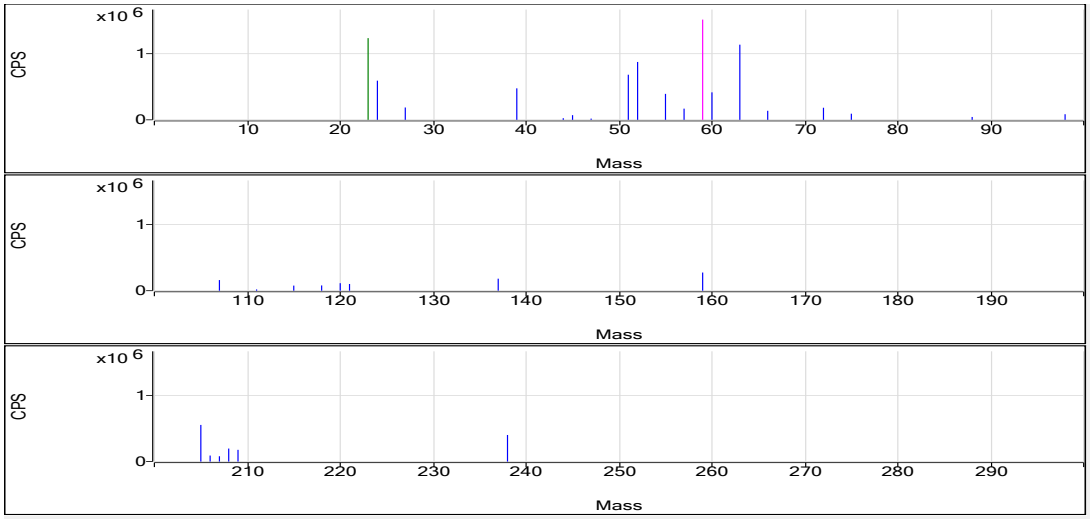


H2



Quantitation Report

He



Quantitation Report

Data File Name	105SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 14:42:55
Sample Name	410-60870-E-2-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

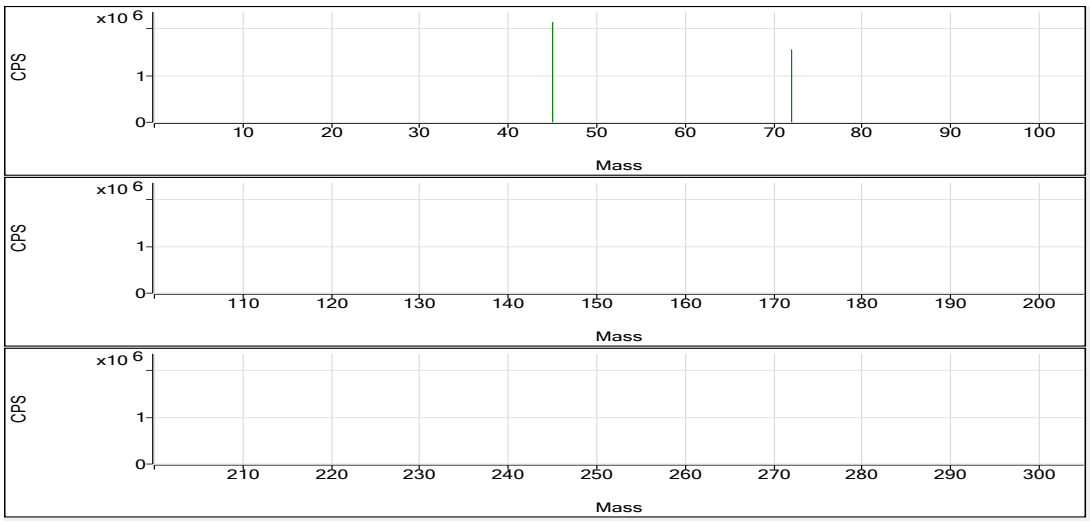
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.062	ppb	1.8	124.67	0.0001	Pulse	0.5000	3
Se	78	115	H2	1.608	ppb	10.1	91.33	0.0003	Pulse	1.5000	3
Na	23	72	He	9109.843	ppb	0.6	2346540.70	12.8371	Analog	0.1000	3
Mg	24	72	He	1583.448	ppb	2.4	195087.28	1.0674	Pulse	0.1000	3
Al	27	72	He	2104.426	ppb	2.5	83221.17	0.4553	Pulse	0.1000	3
K	39	72	He	2226.466	ppb	1.6	236464.83	1.2937	Pulse	0.1000	3
Ca	44	72	He	16260.170	ppb	1.5	83436.51	0.4565	Pulse	0.1000	3
Ti	47	72	He	39.838	ppb	23.8	1533.52	0.0084	Pulse	0.1000	3
V	51	72	He	2.969	ppb	2.5	5735.16	0.0314	Pulse	0.5000	3
Cr	52	72	He	1.940	ppb	9.7	5521.26	0.0302	Pulse	0.1000	3
Mn	55	72	He	7.973	ppb	8.2	6625.09	0.0362	Pulse	0.1000	3
Fe	57	72	He	3048.454	ppb	2.2	106720.11	0.5839	Pulse	0.1000	3
Co	59	72	He	0.413	ppb	3.4	1390.11	0.0076	Pulse	0.1000	3
Ni	60	72	He	24.348	ppb	3.2	21009.06	0.1149	Pulse	0.1000	3
Cu	63	72	He	2.659	ppb	5.6	6981.89	0.0382	Pulse	0.1000	3
Zn	66	72	He	12.056	ppb	3.2	3493.89	0.0191	Pulse	0.1000	3
As	75	72	He	1.301	ppb	8.7	326.68	0.0018	Pulse	0.5000	3
Sr	88	115	He	118.454	ppb	0.9	102262.40	1.3402	Pulse	0.1000	3
Mo	98	115	He	0.182	ppb	15.5	326.68	0.0043	Pulse	0.1000	3
Ag	107	115	He	0.054	ppb	15.6	206.68	0.0027	Pulse	0.1000	3
Cd	111	115	He	3.528	ppb	5.4	1320.74	0.0173	Pulse	0.5000	3
Sn	120	115	He	0.074	ppb	176.4	1576.81	0.0206	Pulse	0.1000	3
Sb	121	115	He	0.089	ppb	26.8	106.67	0.0014	Pulse	0.1000	3
Ba	137	115	He	8.448	ppb	4.7	3033.79	0.0398	Pulse	0.1000	3
Tl	205	159	He	0.142	ppb	3.8	826.72	0.0030	Pulse	0.1000	3
Pb	208	159	He	0.707	ppb	1.6	5373.98	0.0194	Pulse	0.1000	3
U	238	209	He	0.118	ppb	7.6	986.75	0.0055	Pulse	0.1000	3

ISTD Table:

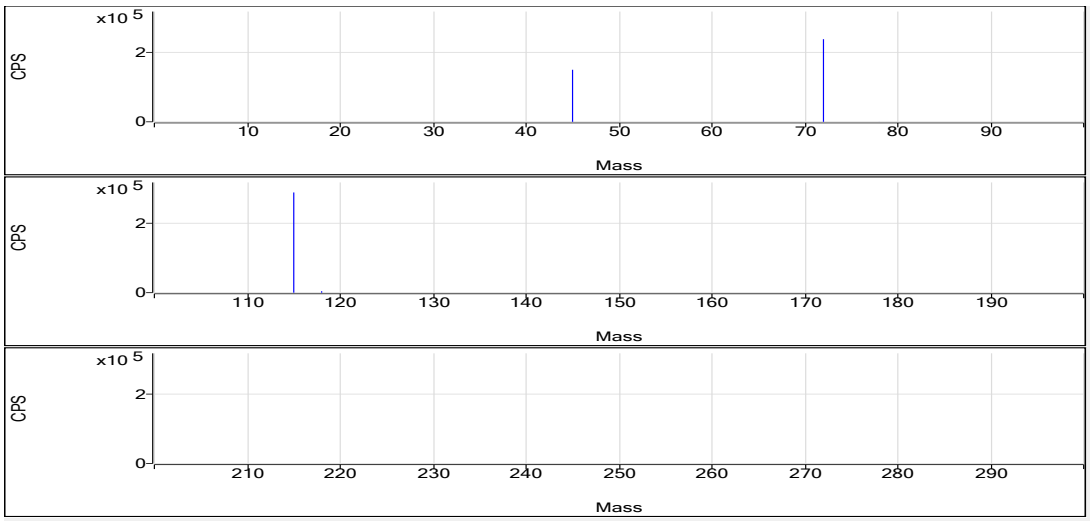
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2141310.91	0.8	96.7	Analog	0.1000	3
No Gas	Ge	72	1556159.35	1.1	99.1	Analog	0.1000	3
H2	Sc	45	150696.46	0.9	95.3	Pulse	0.1000	3
H2	Ge	72	239229.45	1.8	96.4	Pulse	0.1000	3
H2	In	115	290178.48	1.5	97.9	Pulse	0.1000	3
He	Sc	45	71270.13	2.0	91.1	Pulse	0.1000	3
He	Ge	72	182803.23	1.4	94.4	Pulse	0.1000	3
He	In	115	76311.02	1.7	93.6	Pulse	0.1000	3
He	Tb	159	276285.25	0.7	96.1	Pulse	0.1000	3
He	Bi	209	178818.20	0.6	97.3	Pulse	0.1000	3

No Gas

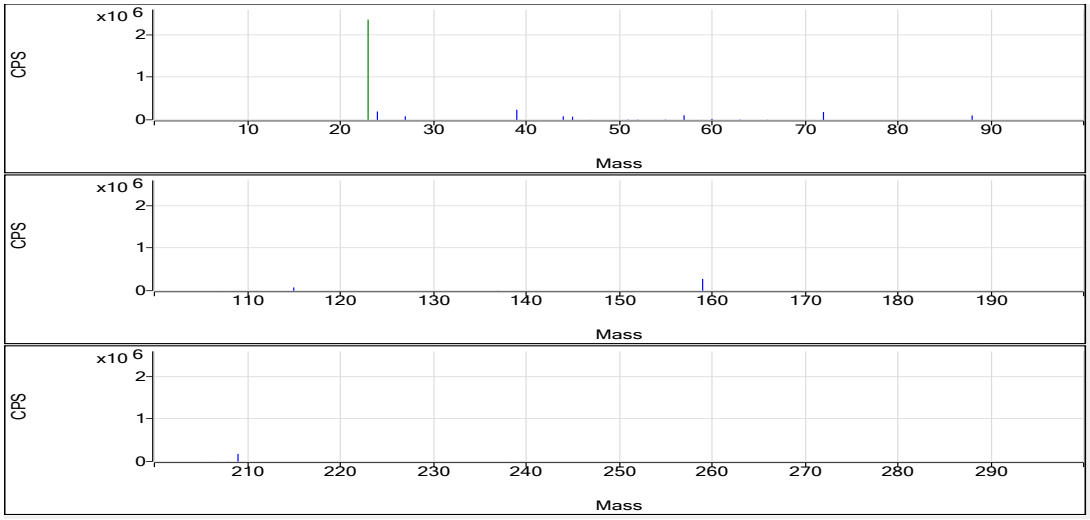


H2



Quantitation Report

He



Quantitation Report

Data File Name	106SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 14:44:56
Sample Name	410-60870-E-2-A PDS
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

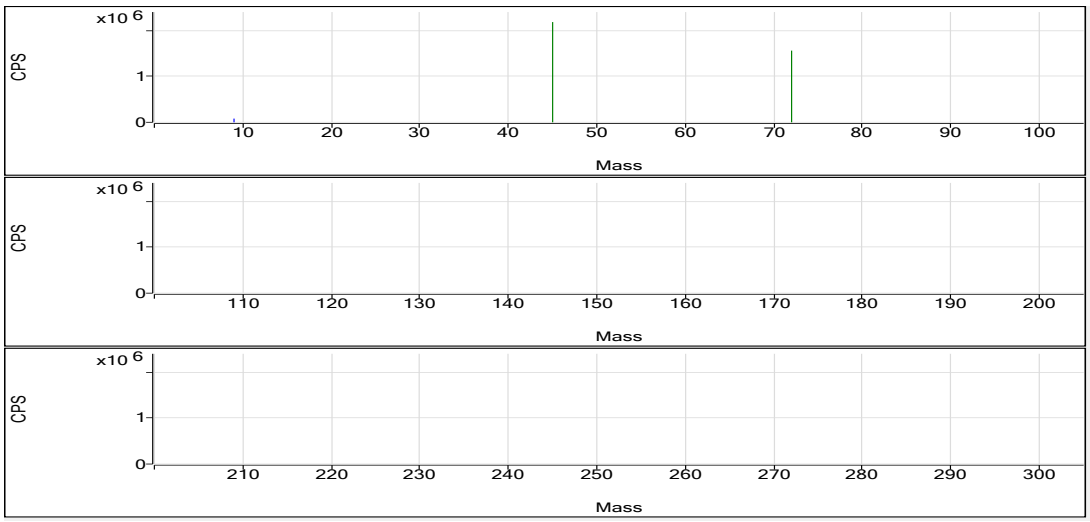
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	45.893	ppb	3.2	80236.97	0.0514	Pulse	0.5000	3
Se	78	115	H2	98.286	ppb	1.5	5426.80	0.0188	Pulse	1.5000	3
Na	23	72	He	13185.121	ppb	0.8	3371695.89	18.5496	Analog	0.1000	3
Mg	24	72	He	6282.997	ppb	0.5	769467.28	4.2332	Pulse	0.1000	3
Al	27	72	He	6846.103	ppb	1.5	266365.16	1.4654	Pulse	0.1000	3
K	39	72	He	6953.567	ppb	1.1	682624.21	3.7554	Pulse	0.1000	3
Ca	44	72	He	20646.702	ppb	0.8	105299.62	0.5793	Pulse	0.1000	3
Ti	47	72	He	527.700	ppb	0.9	20194.53	0.1111	Pulse	0.1000	3
V	51	72	He	472.614	ppb	0.6	682753.40	3.7562	Pulse	0.5000	3
Cr	52	72	He	465.886	ppb	0.7	871782.59	4.7961	Pulse	0.1000	3
Mn	55	72	He	491.346	ppb	0.5	397126.13	2.1848	Pulse	0.1000	3
Fe	57	72	He	7899.857	ppb	1.3	274842.55	1.5120	Pulse	0.1000	3
Co	59	72	He	478.633	ppb	1.1	1521539.30	8.3709	Analog	0.1000	3
Ni	60	72	He	500.789	ppb	0.7	426849.98	2.3483	Pulse	0.1000	3
Cu	63	72	He	457.837	ppb	1.0	1123302.43	6.1798	Pulse	0.1000	3
Zn	66	72	He	497.972	ppb	1.2	137862.19	0.7584	Pulse	0.1000	3
As	75	72	He	475.359	ppb	0.7	91743.10	0.5047	Pulse	0.5000	3
Sr	88	115	He	165.390	ppb	1.6	143440.44	1.8711	Pulse	0.1000	3
Mo	98	115	He	51.761	ppb	1.7	83395.84	1.0878	Pulse	0.1000	3
Ag	107	115	He	31.530	ppb	1.3	101612.08	1.3254	Pulse	0.1000	3
Cd	111	115	He	53.331	ppb	0.2	20065.00	0.2617	Pulse	0.5000	3
Sn	120	115	He	101.755	ppb	3.1	111580.76	1.4558	Pulse	0.1000	3
Sb	121	115	He	101.489	ppb	1.7	101030.59	1.3179	Pulse	0.1000	3
Ba	137	115	He	502.082	ppb	1.4	180489.31	2.3543	Pulse	0.1000	3
Tl	205	159	He	100.764	ppb	0.9	541540.14	1.9726	Pulse	0.1000	3
Pb	208	159	He	51.018	ppb	0.4	365326.87	1.3307	Pulse	0.1000	3
U	238	209	He	48.177	ppb	1.1	391374.55	2.2349	Pulse	0.1000	3

ISTD Table:

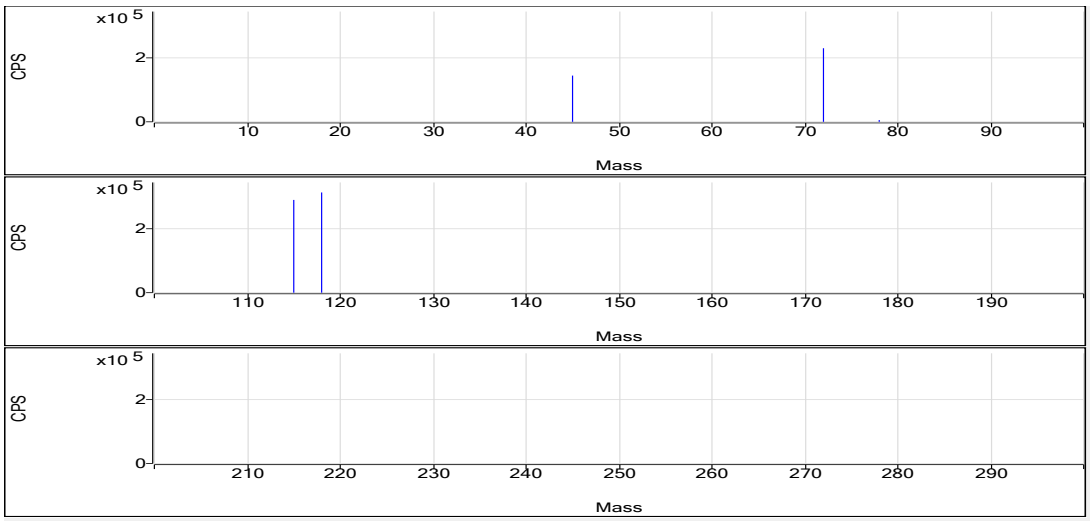
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2182291.58	1.9	98.6	Analog	0.1000	3
No Gas	Ge	72	1560661.54	2.4	99.4	Analog	0.1000	3
H2	Sc	45	144121.70	1.6	91.2	Pulse	0.1000	3
H2	Ge	72	229398.92	1.4	92.4	Pulse	0.1000	3
H2	In	115	289190.72	1.6	97.6	Pulse	0.1000	3
He	Sc	45	71256.42	1.5	91.1	Pulse	0.1000	3
He	Ge	72	181766.57	0.2	93.9	Pulse	0.1000	3
He	In	115	76676.95	2.0	94.1	Pulse	0.1000	3
He	Tb	159	274536.61	0.7	95.5	Pulse	0.1000	3
He	Bi	209	175130.45	1.1	95.3	Pulse	0.1000	3

No Gas

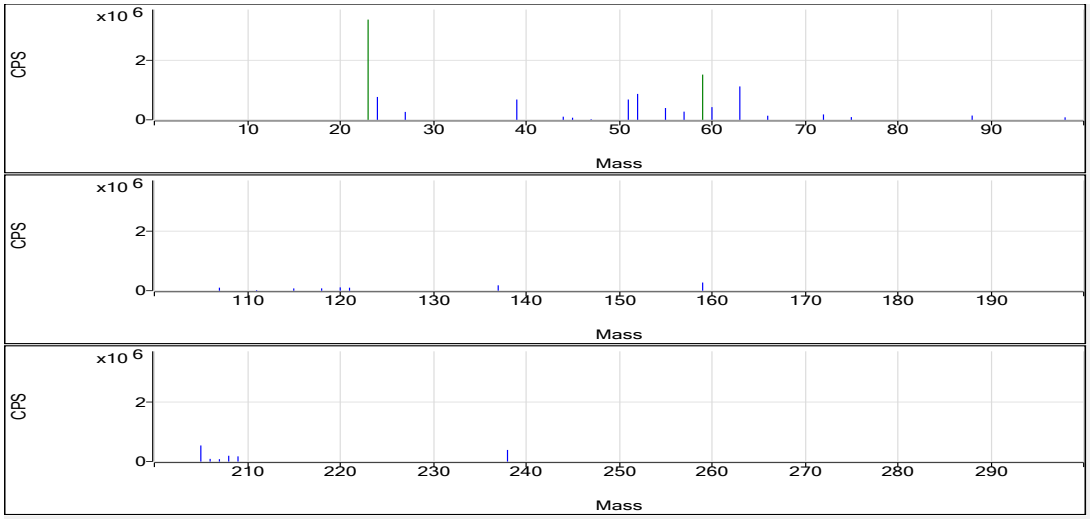


H2



Quantitation Report

He



Quantitation Report

Data File Name	107SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 14:46:56
Sample Name	410-60870-E-2-B DU
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

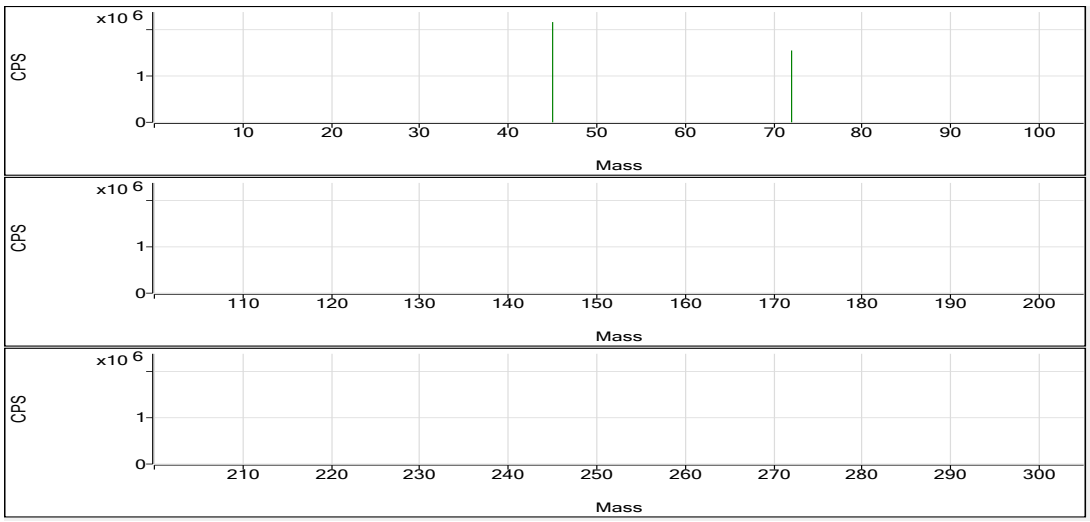
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.057	ppb	7.5	116.00	0.0001	Pulse	0.5000	3
Se	78	115	H2	1.715	ppb	14.4	98.22	0.0003	Pulse	1.5000	3
Na	23	72	He	9010.304	ppb	0.7	2352526.27	12.6975	Analog	0.1000	3
Mg	24	72	He	1550.336	ppb	0.5	193643.64	1.0451	Pulse	0.1000	3
Al	27	72	He	2019.822	ppb	4.1	80994.05	0.4373	Pulse	0.1000	3
K	39	72	He	2211.434	ppb	0.7	238252.48	1.2859	Pulse	0.1000	3
Ca	44	72	He	15975.382	ppb	0.9	83098.29	0.4485	Pulse	0.1000	3
Ti	47	72	He	42.103	ppb	14.6	1643.51	0.0089	Pulse	0.1000	3
V	51	72	He	2.989	ppb	3.1	5841.20	0.0315	Pulse	0.5000	3
Cr	52	72	He	1.915	ppb	7.3	5551.26	0.0300	Pulse	0.1000	3
Mn	55	72	He	8.179	ppb	6.9	6885.20	0.0372	Pulse	0.1000	3
Fe	57	72	He	3014.206	ppb	1.4	106981.24	0.5774	Pulse	0.1000	3
Co	59	72	He	0.459	ppb	10.3	1556.81	0.0084	Pulse	0.1000	3
Ni	60	72	He	24.019	ppb	0.3	21012.36	0.1134	Pulse	0.1000	3
Cu	63	72	He	2.748	ppb	4.0	7295.40	0.0394	Pulse	0.1000	3
Zn	66	72	He	12.638	ppb	3.6	3707.30	0.0200	Pulse	0.1000	3
As	75	72	He	1.379	ppb	9.0	346.01	0.0019	Pulse	0.5000	3
Sr	88	115	He	119.008	ppb	0.6	103004.50	1.3465	Pulse	0.1000	3
Mo	98	115	He	0.174	ppb	13.6	313.35	0.0041	Pulse	0.1000	3
Ag	107	115	He	0.062	ppb	16.3	233.34	0.0031	Pulse	0.1000	3
Cd	111	115	He	3.488	ppb	7.7	1309.40	0.0171	Pulse	0.5000	3
Sn	120	115	He	-0.056	ppb	N/A	1440.16	0.0188	Pulse	0.1000	3
Sb	121	115	He	0.099	ppb	59.3	116.67	0.0015	Pulse	0.1000	3
Ba	137	115	He	7.968	ppb	1.0	2870.41	0.0375	Pulse	0.1000	3
Tl	205	159	He	0.164	ppb	20.2	943.40	0.0034	Pulse	0.1000	3
Pb	208	159	He	0.750	ppb	1.5	5677.37	0.0206	Pulse	0.1000	3
U	238	209	He	0.117	ppb	16.4	980.08	0.0055	Pulse	0.1000	3

ISTD Table:

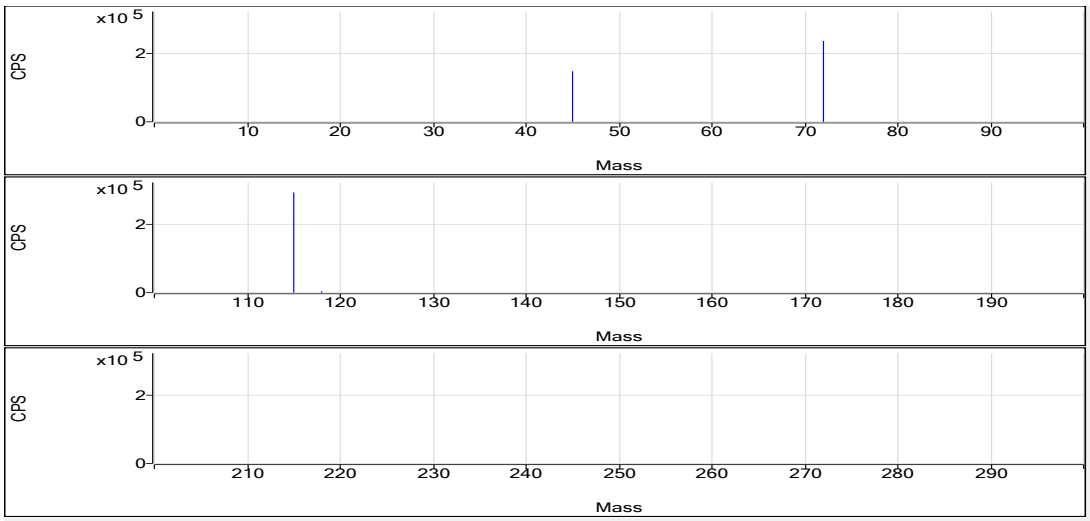
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2174099.39	0.2	98.2	Analog	0.1000	3
No Gas	Ge	72	1557730.45	0.4	99.2	Analog	0.1000	3
H2	Sc	45	148183.99	0.9	93.7	Pulse	0.1000	3
H2	Ge	72	236793.51	1.3	95.4	Pulse	0.1000	3
H2	In	115	293524.87	1.4	99.1	Pulse	0.1000	3
He	Sc	45	70730.51	0.4	90.4	Pulse	0.1000	3
He	Ge	72	185287.00	1.5	95.7	Pulse	0.1000	3
He	In	115	76503.03	1.0	93.8	Pulse	0.1000	3
He	Tb	159	276059.04	0.5	96.0	Pulse	0.1000	3
He	Bi	209	179555.03	0.9	97.7	Pulse	0.1000	3

No Gas

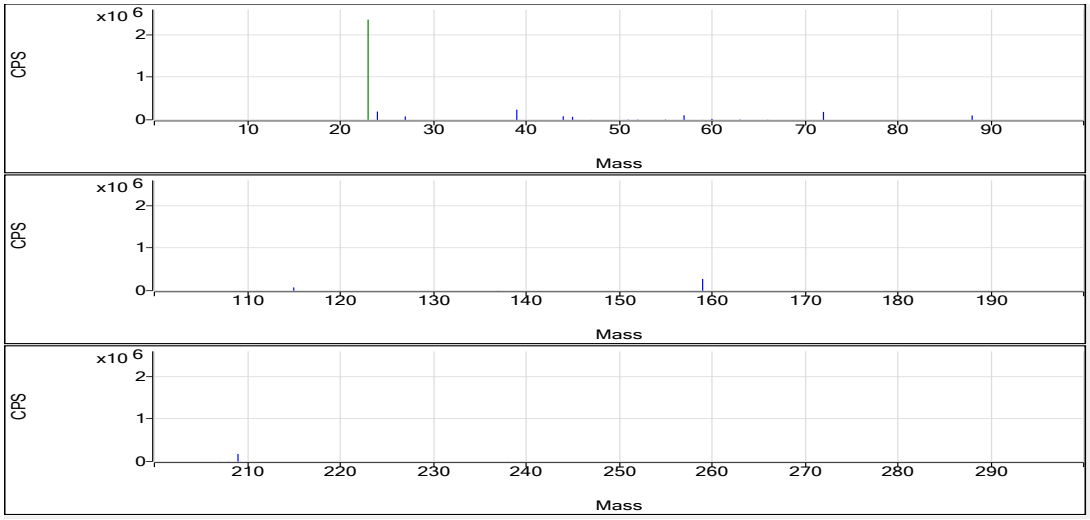


H2



Quantitation Report

He



Quantitation Report

Data File Name	108SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 14:48:58
Sample Name	410-60870-E-2-C MS
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

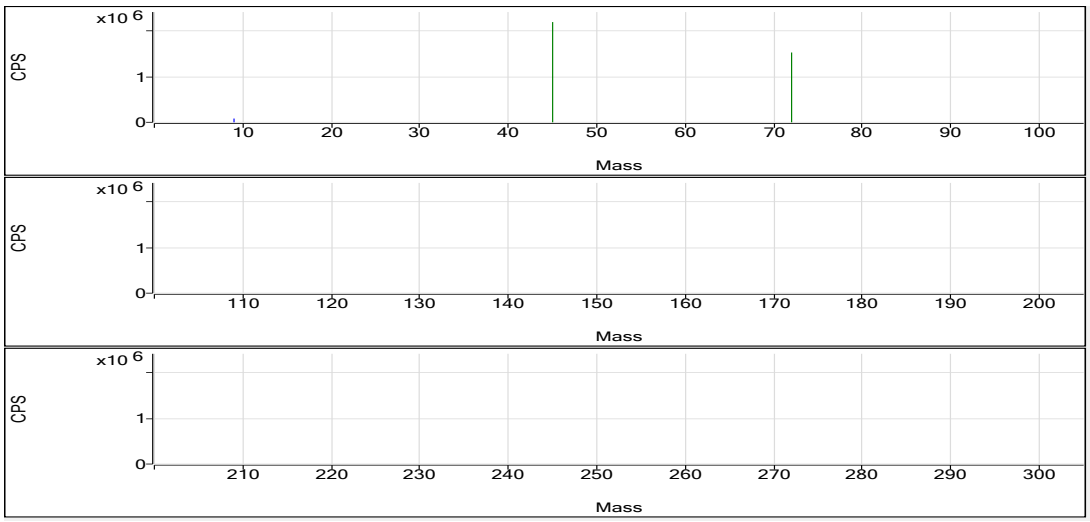
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	47.866	ppb	1.1	82082.65	0.0536	Pulse	0.5000	3
Se	78	115	H2	99.777	ppb	2.3	5603.09	0.0191	Pulse	1.5000	3
Na	23	72	He	13060.690	ppb	0.7	3395782.45	18.3752	Analog	0.1000	3
Mg	24	72	He	6285.415	ppb	1.3	782620.35	4.2349	Pulse	0.1000	3
Al	27	72	He	6832.298	ppb	1.2	270267.62	1.4625	Pulse	0.1000	3
K	39	72	He	6984.947	ppb	0.2	697045.74	3.7718	Pulse	0.1000	3
Ca	44	72	He	20356.059	ppb	0.8	105560.65	0.5712	Pulse	0.1000	3
Ti	47	72	He	524.982	ppb	2.1	20428.15	0.1105	Pulse	0.1000	3
V	51	72	He	479.651	ppb	0.6	704483.09	3.8120	Pulse	0.5000	3
Cr	52	72	He	472.954	ppb	0.4	899778.74	4.8687	Pulse	0.1000	3
Mn	55	72	He	491.092	ppb	0.3	403557.51	2.1837	Pulse	0.1000	3
Fe	57	72	He	7661.495	ppb	1.0	271017.93	1.4664	Pulse	0.1000	3
Co	59	72	He	477.639	ppb	2.1	1543772.79	8.3535	Analog	0.1000	3
Ni	60	72	He	513.131	ppb	0.6	444680.45	2.4062	Pulse	0.1000	3
Cu	63	72	He	467.202	ppb	0.3	1165433.50	6.3062	Pulse	0.1000	3
Zn	66	72	He	508.235	ppb	1.3	143051.41	0.7741	Pulse	0.1000	3
As	75	72	He	484.776	ppb	0.1	95122.78	0.5147	Pulse	0.5000	3
Sr	88	115	He	165.799	ppb	1.4	144560.80	1.8757	Pulse	0.1000	3
Mo	98	115	He	53.136	ppb	1.2	86062.06	1.1167	Pulse	0.1000	3
Ag	107	115	He	50.287	ppb	1.4	162881.89	2.1136	Pulse	0.1000	3
Cd	111	115	He	54.774	ppb	1.9	20711.24	0.2688	Pulse	0.5000	3
Sn	120	115	He	104.803	ppb	1.5	115515.94	1.4988	Pulse	0.1000	3
Sb	121	115	He	104.326	ppb	0.6	104405.72	1.3547	Pulse	0.1000	3
Ba	137	115	He	524.786	ppb	0.8	189641.21	2.4608	Pulse	0.1000	3
Tl	205	159	He	102.530	ppb	0.9	560431.11	2.0072	Pulse	0.1000	3
Pb	208	159	He	51.376	ppb	1.0	374146.51	1.3400	Pulse	0.1000	3
U	238	209	He	49.074	ppb	0.6	405349.12	2.2765	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2197242.63	0.6	99.3	Analog	0.1000	3
No Gas	Ge	72	1530118.10	1.0	97.4	Analog	0.1000	3
H2	Sc	45	145212.04	0.6	91.9	Pulse	0.1000	3
H2	Ge	72	233224.29	1.0	94.0	Pulse	0.1000	3
H2	In	115	294145.43	1.5	99.3	Pulse	0.1000	3
He	Sc	45	72810.79	1.8	93.1	Pulse	0.1000	3
He	Ge	72	184805.41	0.6	95.5	Pulse	0.1000	3
He	In	115	77068.93	0.8	94.5	Pulse	0.1000	3
He	Tb	159	279220.02	0.5	97.1	Pulse	0.1000	3
He	Bi	209	178061.79	1.0	96.9	Pulse	0.1000	3

No Gas



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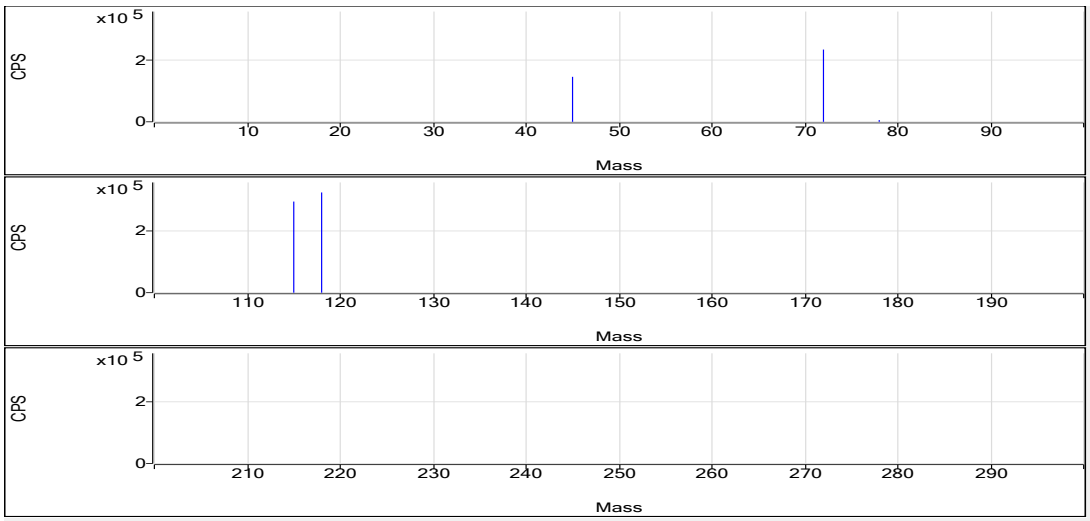
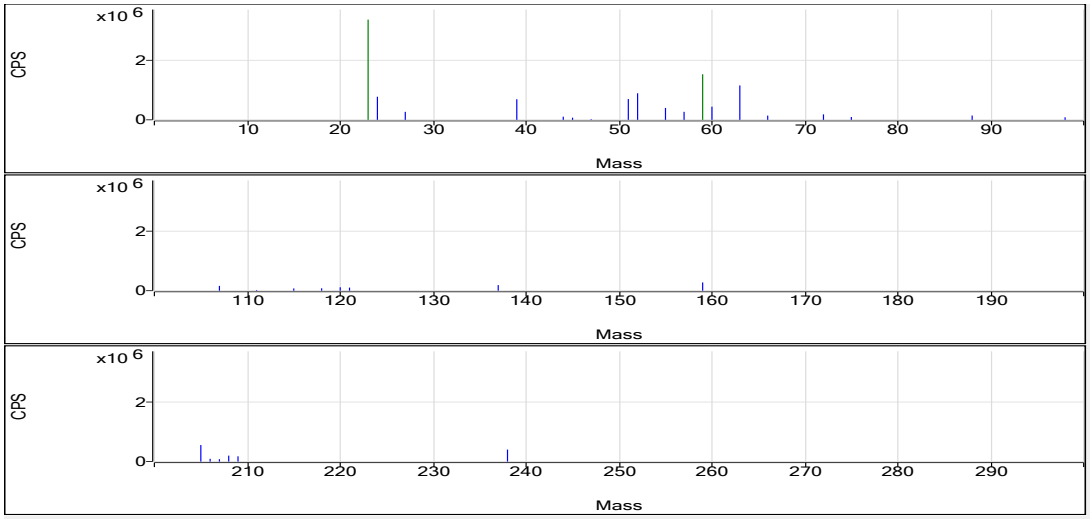


Quantitation Report

He



Quantitation Report

Data File Name	109SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 14:50:59
Sample Name	410-60870-E-2-D MSD
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

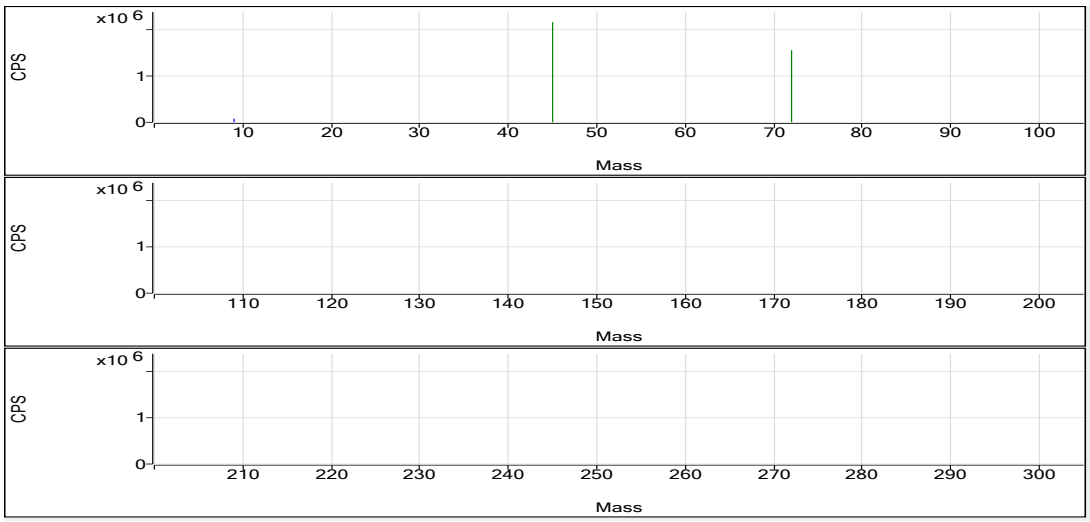
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	46.020	ppb	0.1	80555.33	0.0516	Pulse	0.5000	3
Se	78	115	H2	100.069	ppb	0.7	5587.76	0.0191	Pulse	1.5000	3
Na	23	72	He	12697.192	ppb	1.3	3355766.72	17.8657	Analog	0.1000	3
Mg	24	72	He	6134.689	ppb	0.9	776391.47	4.1333	Pulse	0.1000	3
Al	27	72	He	6740.243	ppb	0.5	271023.58	1.4428	Pulse	0.1000	3
K	39	72	He	6881.870	ppb	1.7	698367.98	3.7181	Pulse	0.1000	3
Ca	44	72	He	20022.263	ppb	1.2	105531.11	0.5618	Pulse	0.1000	3
Ti	47	72	He	515.051	ppb	1.5	20368.05	0.1084	Pulse	0.1000	3
V	51	72	He	467.821	ppb	0.6	698421.73	3.7182	Pulse	0.5000	3
Cr	52	72	He	460.244	ppb	0.8	890013.16	4.7382	Pulse	0.1000	3
Mn	55	72	He	479.501	ppb	0.7	400504.45	2.1321	Pulse	0.1000	3
Fe	57	72	He	7511.109	ppb	1.5	270046.14	1.4377	Pulse	0.1000	3
Co	59	72	He	470.339	ppb	3.2	1545187.95	8.2258	Analog	0.1000	3
Ni	60	72	He	500.140	ppb	0.7	440549.07	2.3453	Pulse	0.1000	3
Cu	63	72	He	455.810	ppb	0.8	1155661.13	6.1525	Pulse	0.1000	3
Zn	66	72	He	494.440	ppb	1.6	141445.52	0.7531	Pulse	0.1000	3
As	75	72	He	471.447	ppb	0.7	94026.99	0.5006	Pulse	0.5000	3
Sr	88	115	He	161.868	ppb	0.4	143123.01	1.8313	Pulse	0.1000	3
Mo	98	115	He	52.194	ppb	1.3	85722.51	1.0969	Pulse	0.1000	3
Ag	107	115	He	48.689	ppb	0.5	159933.44	2.0464	Pulse	0.1000	3
Cd	111	115	He	53.818	ppb	0.4	20639.14	0.2641	Pulse	0.5000	3
Sn	120	115	He	103.945	ppb	0.9	116190.39	1.4867	Pulse	0.1000	3
Sb	121	115	He	101.156	ppb	1.3	102666.46	1.3136	Pulse	0.1000	3
Ba	137	115	He	514.858	ppb	1.7	188655.73	2.4142	Pulse	0.1000	3
Tl	205	159	He	101.664	ppb	1.9	555193.96	1.9902	Pulse	0.1000	3
Pb	208	159	He	51.343	ppb	2.6	373544.77	1.3392	Pulse	0.1000	3
U	238	209	He	48.636	ppb	1.1	398749.47	2.2562	Pulse	0.1000	3

ISTD Table:

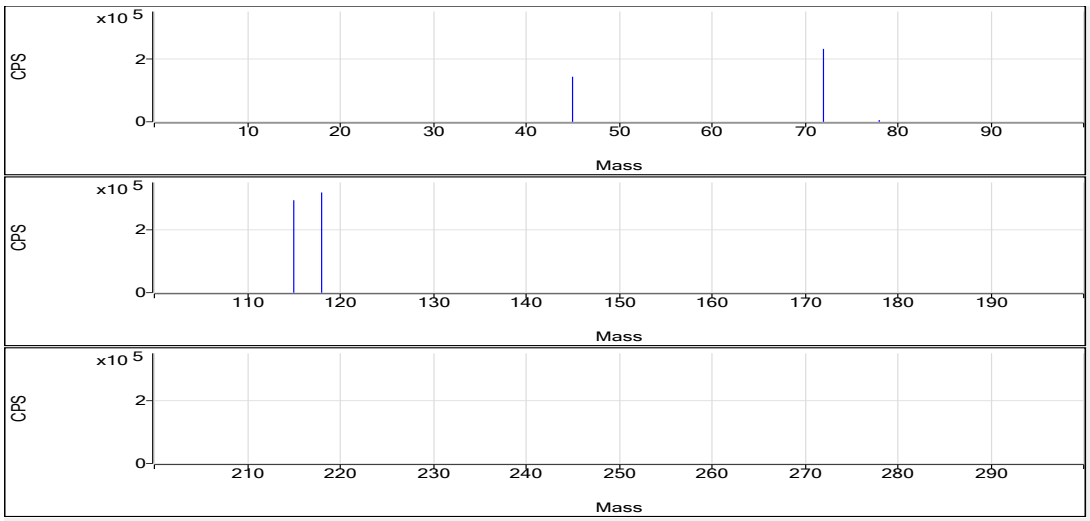
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2173414.66	1.0	98.2	Analog	0.1000	3
No Gas	Ge	72	1561823.94	1.1	99.4	Analog	0.1000	3
H2	Sc	45	142558.50	1.7	90.2	Pulse	0.1000	3
H2	Ge	72	230661.52	0.9	92.9	Pulse	0.1000	3
H2	In	115	292420.80	0.5	98.7	Pulse	0.1000	3
He	Sc	45	73406.98	1.0	93.8	Pulse	0.1000	3
He	Ge	72	187846.69	1.1	97.0	Pulse	0.1000	3
He	In	115	78155.08	1.3	95.9	Pulse	0.1000	3
He	Tb	159	278997.00	1.1	97.1	Pulse	0.1000	3
He	Bi	209	176735.43	0.7	96.2	Pulse	0.1000	3

No Gas

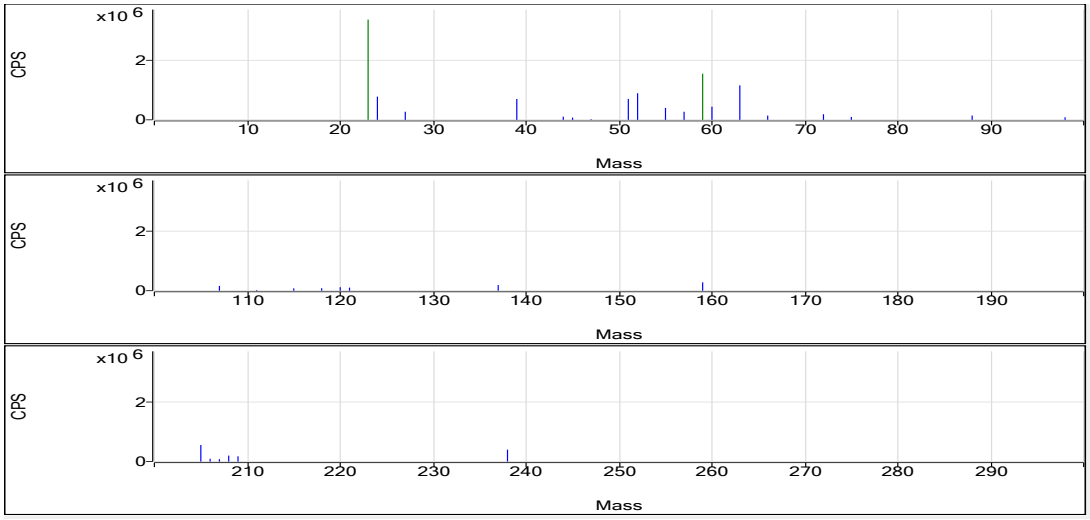


H2



Quantitation Report

He



Quantitation Report

Data File Name	110SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 14:53:00
Sample Name	410-60870-E-2-A SD @5
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

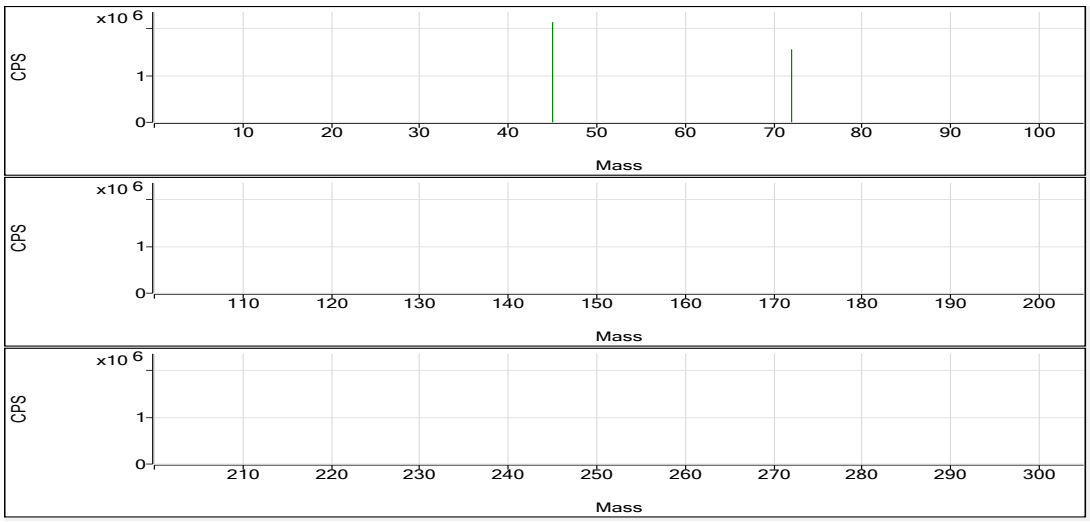
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.028	ppb	32.9	65.33	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.392	ppb	1.5	24.00	0.0001	Pulse	1.5000	3
Na	23	72	He	1819.262	ppb	1.6	486830.67	2.6174	Pulse	0.1000	3
Mg	24	72	He	325.862	ppb	4.0	40956.95	0.2203	Pulse	0.1000	3
Al	27	72	He	393.488	ppb	3.1	16903.75	0.0908	Pulse	0.1000	3
K	39	72	He	446.165	ppb	5.7	68168.40	0.3666	Pulse	0.1000	3
Ca	44	72	He	3342.282	ppb	1.0	17631.14	0.0948	Pulse	0.1000	3
Ti	47	72	He	9.326	ppb	38.7	366.70	0.0020	Pulse	0.1000	3
V	51	72	He	0.491	ppb	11.3	2179.51	0.0117	Pulse	0.5000	3
Cr	52	72	He	0.510	ppb	12.0	2887.06	0.0155	Pulse	0.1000	3
Mn	55	72	He	1.793	ppb	16.8	1630.15	0.0088	Pulse	0.1000	3
Fe	57	72	He	638.184	ppb	1.5	22845.24	0.1228	Pulse	0.1000	3
Co	59	72	He	0.169	ppb	6.6	620.03	0.0033	Pulse	0.1000	3
Ni	60	72	He	5.172	ppb	3.2	4660.90	0.0251	Pulse	0.1000	3
Cu	63	72	He	0.675	ppb	5.6	2123.57	0.0114	Pulse	0.1000	3
Zn	66	72	He	2.490	ppb	17.8	850.05	0.0046	Pulse	0.1000	3
As	75	72	He	0.395	ppb	0.2	153.33	0.0008	Pulse	0.5000	3
Sr	88	115	He	24.803	ppb	2.0	21587.01	0.2809	Pulse	0.1000	3
Mo	98	115	He	0.098	ppb	31.3	193.34	0.0025	Pulse	0.1000	3
Ag	107	115	He	0.021	ppb	10.9	103.34	0.0013	Pulse	0.1000	3
Cd	111	115	He	0.788	ppb	6.0	298.01	0.0039	Pulse	0.5000	3
Sn	120	115	He	-0.145	ppb	N/A	1350.11	0.0176	Pulse	0.1000	3
Sb	121	115	He	0.018	ppb	116.0	36.67	0.0005	Pulse	0.1000	3
Ba	137	115	He	1.750	ppb	7.3	643.38	0.0084	Pulse	0.1000	3
Tl	205	159	He	0.164	ppb	15.8	946.73	0.0034	Pulse	0.1000	3
Pb	208	159	He	0.133	ppb	12.7	1243.40	0.0045	Pulse	0.1000	3
U	238	209	He	0.034	ppb	19.7	290.02	0.0016	Pulse	0.1000	3

ISTD Table:

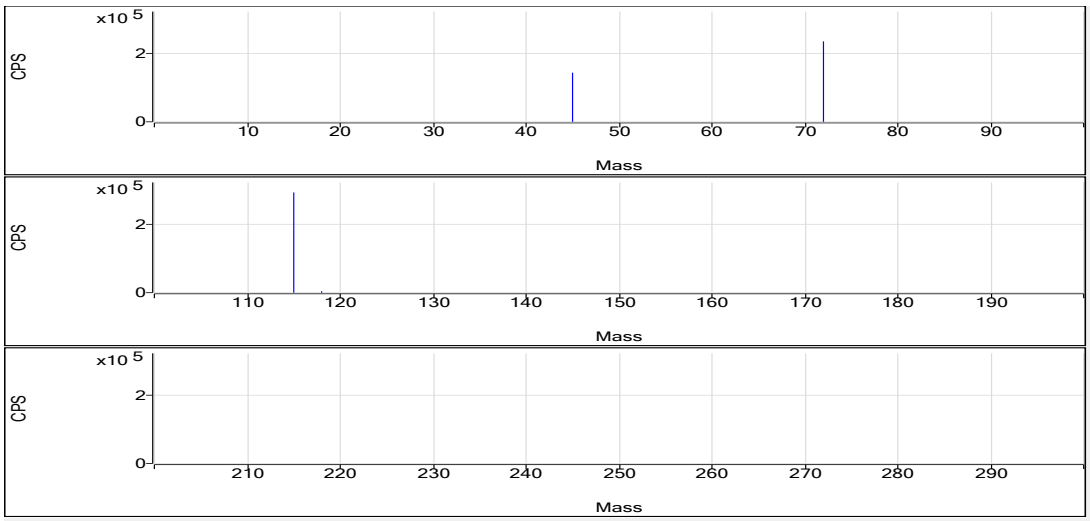
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2144101.38	0.5	96.9	Analog	0.1000	3
No Gas	Ge	72	1560651.80	1.6	99.4	Analog	0.1000	3
H2	Sc	45	142732.33	1.5	90.3	Pulse	0.1000	3
H2	Ge	72	233863.71	1.4	94.2	Pulse	0.1000	3
H2	In	115	291403.48	1.5	98.4	Pulse	0.1000	3
He	Sc	45	69994.09	2.1	89.5	Pulse	0.1000	3
He	Ge	72	186030.29	1.9	96.1	Pulse	0.1000	3
He	In	115	76864.29	1.7	94.3	Pulse	0.1000	3
He	Tb	159	277425.36	1.2	96.5	Pulse	0.1000	3
He	Bi	209	178362.95	0.3	97.1	Pulse	0.1000	3

No Gas

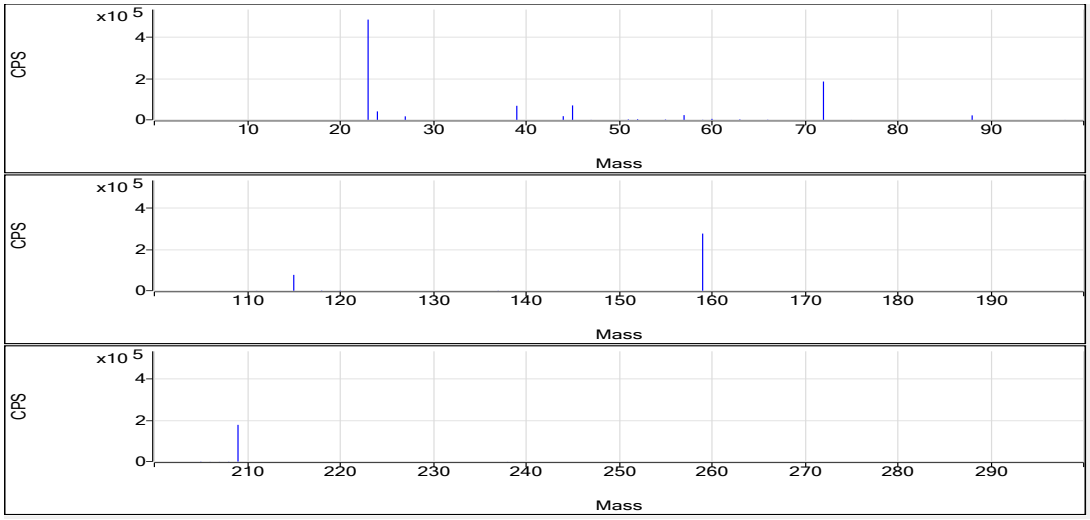


H2



Quantitation Report

He



Quantitation Report

Data File Name	111_CCV.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 14:55:02
Sample Name	CCV 1942322
Sample Type	CCV
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

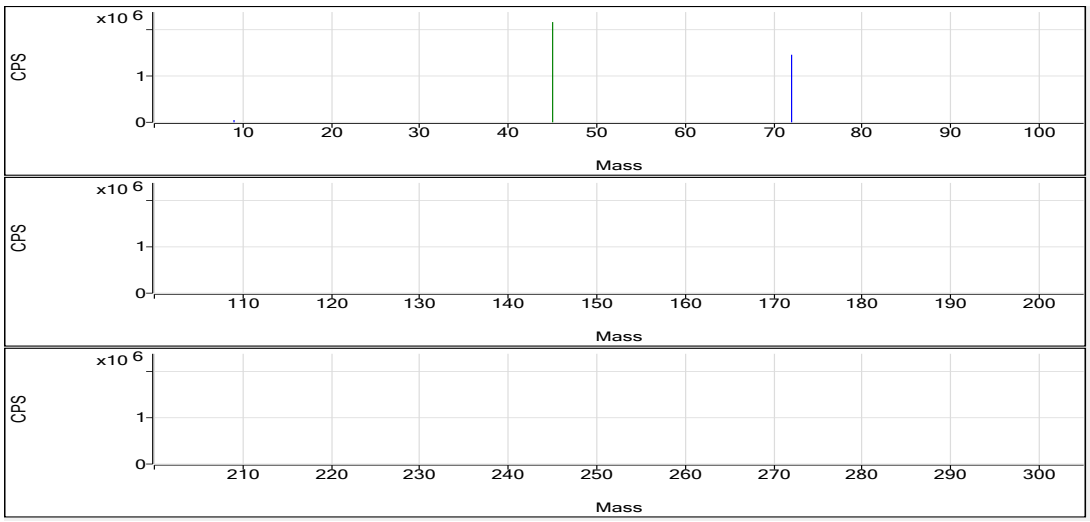
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	29.886	ppb	1.6	48712.88	0.0335	Pulse	0.5000	3
Se	78	115	H2	30.051	ppb	1.6	1656.10	0.0057	Pulse	1.5000	3
Na	23	72	He	5081.476	ppb	1.9	1273803.79	7.1903	Analog	0.1000	3
Mg	24	72	He	4982.313	ppb	0.7	594732.10	3.3570	Pulse	0.1000	3
Al	27	72	He	5007.988	ppb	0.7	190242.75	1.0738	Pulse	0.1000	3
K	39	72	He	5088.847	ppb	0.8	493262.27	2.7844	Pulse	0.1000	3
Ca	44	72	He	4948.073	ppb	1.9	24754.81	0.1397	Pulse	0.1000	3
Ti	47	72	He	300.687	ppb	2.9	11217.97	0.0633	Pulse	0.1000	3
V	51	72	He	297.960	ppb	0.4	420048.61	2.3710	Pulse	0.5000	3
Cr	52	72	He	297.584	ppb	0.4	543402.22	3.0672	Pulse	0.1000	3
Mn	55	72	He	309.178	ppb	1.4	243593.54	1.3751	Pulse	0.1000	3
Fe	57	72	He	5139.098	ppb	0.7	174300.45	0.9839	Pulse	0.1000	3
Co	59	72	He	296.733	ppb	0.5	919399.96	5.1897	Pulse	0.1000	3
Ni	60	72	He	307.542	ppb	0.4	255540.13	1.4424	Pulse	0.1000	3
Cu	63	72	He	297.412	ppb	0.2	711344.13	4.0152	Pulse	0.1000	3
Zn	66	72	He	308.115	ppb	1.8	83185.85	0.4696	Pulse	0.1000	3
As	75	72	He	315.796	ppb	0.4	59426.89	0.3354	Pulse	0.5000	3
Sr	88	115	He	31.036	ppb	3.9	26815.96	0.3514	Pulse	0.1000	3
Mo	98	115	He	31.615	ppb	1.9	50721.56	0.6646	Pulse	0.1000	3
Ag	107	115	He	31.060	ppb	1.3	99641.64	1.3056	Pulse	0.1000	3
Cd	111	115	He	30.515	ppb	1.4	11427.36	0.1497	Pulse	0.5000	3
Sn	120	115	He	31.765	ppb	2.8	35709.78	0.4679	Pulse	0.1000	3
Sb	121	115	He	31.869	ppb	1.7	31596.71	0.4140	Pulse	0.1000	3
Ba	137	115	He	308.982	ppb	0.7	110584.07	1.4489	Pulse	0.1000	3
Tl	205	159	He	31.212	ppb	1.4	167801.06	0.6112	Pulse	0.1000	3
Pb	208	159	He	30.893	ppb	0.5	221349.72	0.8062	Pulse	0.1000	3
U	238	209	He	260.383	ppb	1.6	2128507.16	12.0790	Analog	0.1000	3

ISTD Table:

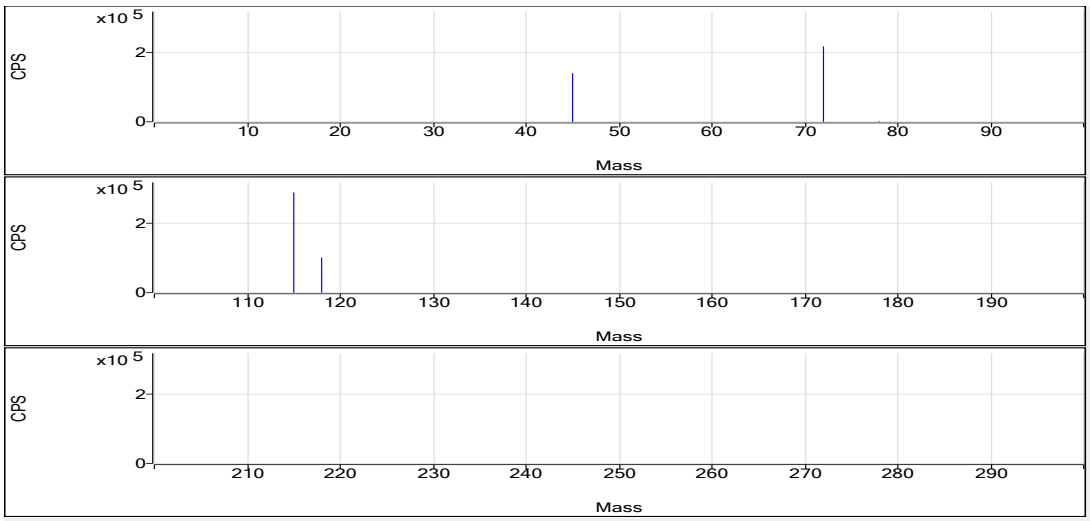
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2157549.81	0.6	97.5	Analog	0.1000	3
No Gas	Ge	72	1454282.22	1.0	92.6	Pulse	0.1000	3
H2	Sc	45	140059.03	1.4	88.6	Pulse	0.1000	3
H2	Ge	72	216935.45	1.1	87.4	Pulse	0.1000	3
H2	In	115	288346.12	0.9	97.3	Pulse	0.1000	3
He	Sc	45	70586.87	1.7	90.2	Pulse	0.1000	3
He	Ge	72	177160.36	0.7	91.5	Pulse	0.1000	3
He	In	115	76324.90	1.0	93.6	Pulse	0.1000	3
He	Tb	159	274566.75	0.4	95.5	Pulse	0.1000	3
He	Bi	209	176216.48	0.7	95.9	Pulse	0.1000	3

No Gas

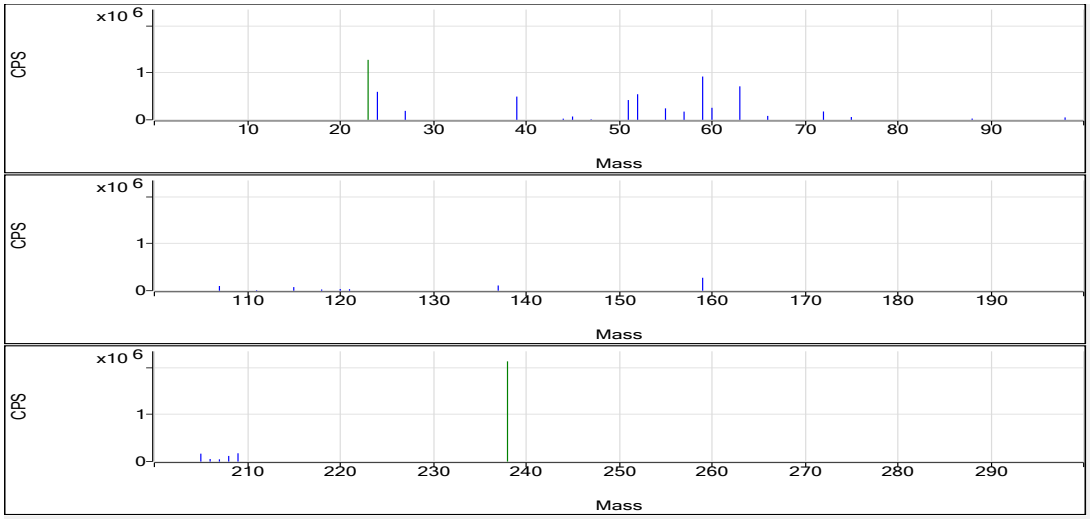


H2



Quantitation Report

He



Quantitation Report

Data File Name	112_CCB.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 14:57:02
Sample Name	CCB 2014932
Sample Type	CCB
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

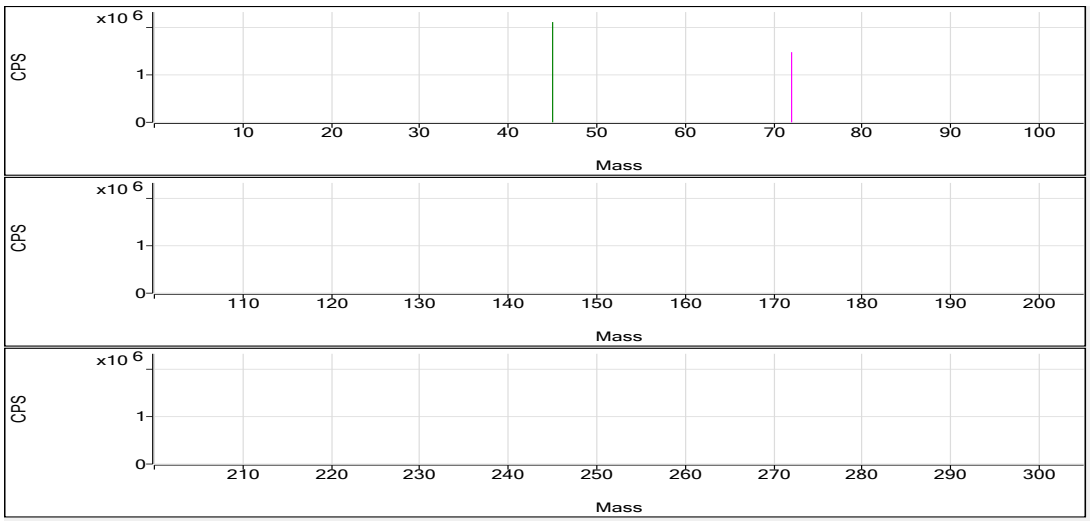
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.017	ppb	64.8	44.00	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.010	ppb	459.8	2.67	0.0000	Pulse	1.5000	3
Na	23	72	He	8.546	ppb	6.8	14180.55	0.0793	Pulse	0.1000	3
Mg	24	72	He	2.195	ppb	41.4	400.02	0.0022	Pulse	0.1000	3
Al	27	72	He	-29.145	ppb	N/A	143.34	0.0008	Pulse	0.1000	3
K	39	72	He	-27.556	ppb	N/A	21442.78	0.1199	Pulse	0.1000	3
Ca	44	72	He	-3.889	ppb	N/A	193.34	0.0011	Pulse	0.1000	3
Ti	47	72	He	0.008	ppb	2018.5	3.33	0.0000	Pulse	0.1000	3
V	51	72	He	-0.062	ppb	N/A	1312.07	0.0073	Pulse	0.5000	3
Cr	52	72	He	-0.037	ppb	N/A	1773.50	0.0099	Pulse	0.1000	3
Mn	55	72	He	0.212	ppb	21.2	313.35	0.0018	Pulse	0.1000	3
Fe	57	72	He	4.002	ppb	17.5	260.01	0.0015	Pulse	0.1000	3
Co	59	72	He	0.088	ppb	21.3	343.35	0.0019	Pulse	0.1000	3
Ni	60	72	He	0.010	ppb	485.2	153.34	0.0009	Pulse	0.1000	3
Cu	63	72	He	0.052	ppb	90.5	536.69	0.0030	Pulse	0.1000	3
Zn	66	72	He	0.165	ppb	67.0	183.34	0.0010	Pulse	0.1000	3
As	75	72	He	0.061	ppb	97.2	84.00	0.0005	Pulse	0.5000	3
Sr	88	115	He	0.029	ppb	70.3	50.00	0.0007	Pulse	0.1000	3
Mo	98	115	He	0.047	ppb	11.0	110.00	0.0014	Pulse	0.1000	3
Ag	107	115	He	-0.003	ppb	N/A	23.33	0.0003	Pulse	0.1000	3
Cd	111	115	He	0.013	ppb	64.0	5.33	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.104	ppb	N/A	1380.12	0.0181	Pulse	0.1000	3
Sb	121	115	He	0.025	ppb	131.6	43.33	0.0006	Pulse	0.1000	3
Ba	137	115	He	0.003	ppb	646.3	13.33	0.0002	Pulse	0.1000	3
Tl	205	159	He	0.080	ppb	19.9	486.70	0.0018	Pulse	0.1000	3
Pb	208	159	He	-0.007	ppb	N/A	226.67	0.0008	Pulse	0.1000	3
U	238	209	He	0.044	ppb	16.3	370.02	0.0021	Pulse	0.1000	3

ISTD Table:

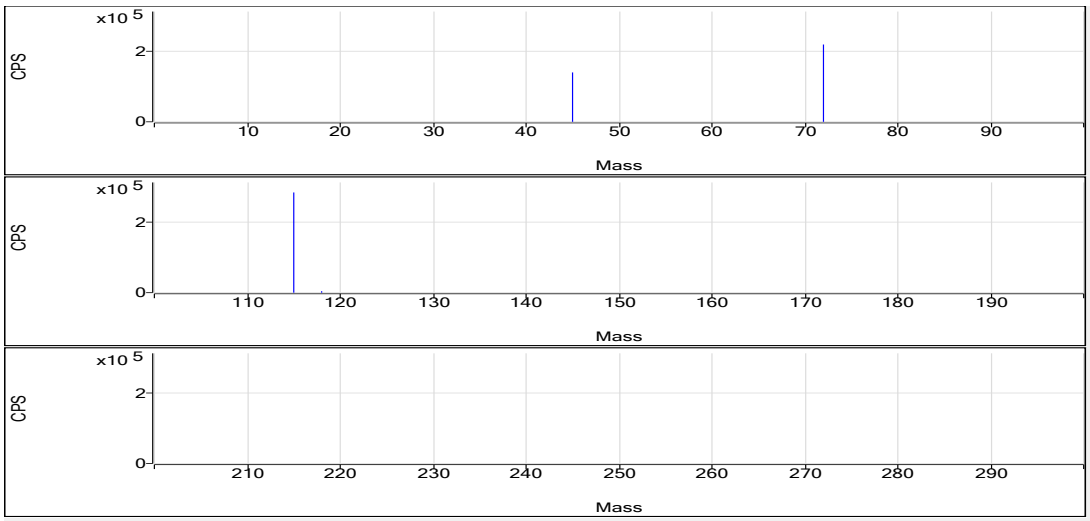
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2119970.33	0.4	95.8	Analog	0.1000	3
No Gas	Ge	72	1483252.89	1.4	94.4	Mix	0.1000	3
H2	Sc	45	140684.69	1.3	89.0	Pulse	0.1000	3
H2	Ge	72	220265.69	2.1	88.7	Pulse	0.1000	3
H2	In	115	285562.34	2.1	96.4	Pulse	0.1000	3
He	Sc	45	70777.89	1.9	90.5	Pulse	0.1000	3
He	Ge	72	178888.88	1.1	92.4	Pulse	0.1000	3
He	In	115	76140.75	1.6	93.4	Pulse	0.1000	3
He	Tb	159	274047.81	0.9	95.3	Pulse	0.1000	3
He	Bi	209	175911.31	0.9	95.8	Pulse	0.1000	3

No Gas

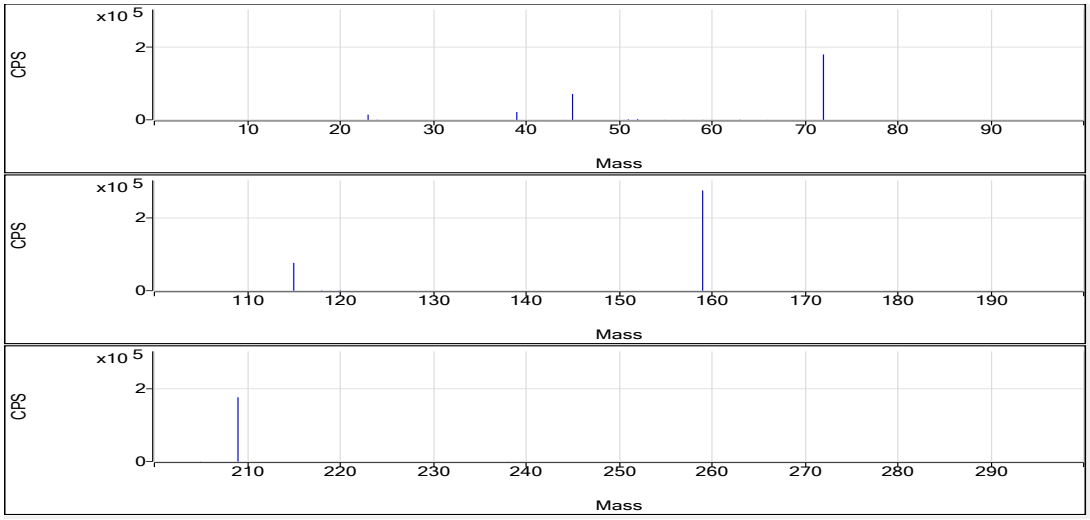


H2



Quantitation Report

He



Quantitation Report

Data File Name	113SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 14:59:04
Sample Name	410-61051-O-1-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

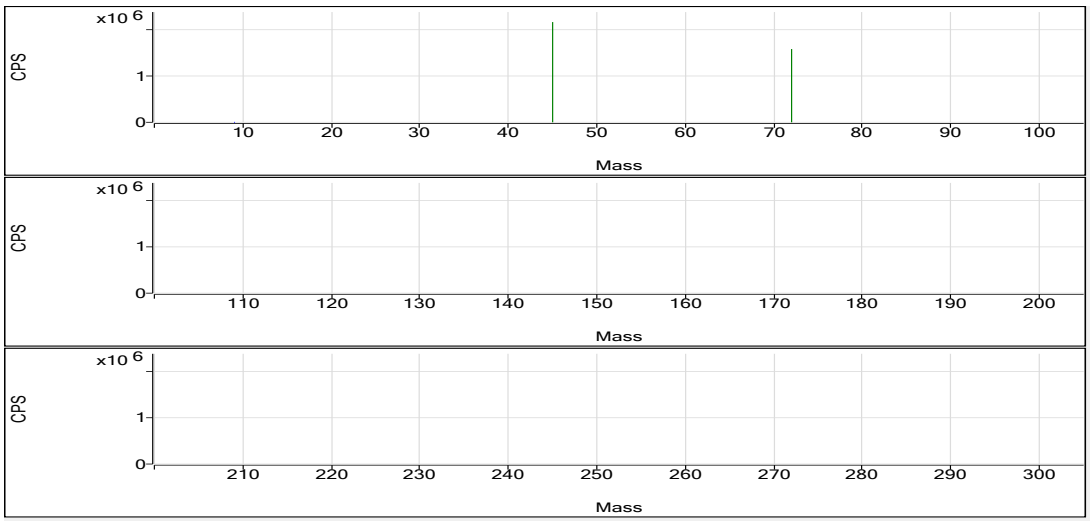
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	-0.001	ppb	N/A	14.00	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.028	ppb	87.7	3.78	0.0000	Pulse	1.5000	3
Na	23	72	He	500.540	ppb	1.0	142718.73	0.7689	Pulse	0.1000	3
Mg	24	72	He	46.077	ppb	3.3	5901.39	0.0318	Pulse	0.1000	3
Al	27	72	He	-11.410	ppb	N/A	850.05	0.0046	Pulse	0.1000	3
K	39	72	He	-25.025	ppb	N/A	22497.86	0.1212	Pulse	0.1000	3
Ca	44	72	He	237.841	ppb	7.6	1456.79	0.0078	Pulse	0.1000	3
Ti	47	72	He	0.175	ppb	146.3	10.00	0.0001	Pulse	0.1000	3
V	51	72	He	-0.192	ppb	N/A	1170.05	0.0063	Pulse	0.5000	3
Cr	52	72	He	0.149	ppb	86.8	2193.57	0.0118	Pulse	0.1000	3
Mn	55	72	He	0.214	ppb	33.9	326.68	0.0018	Pulse	0.1000	3
Fe	57	72	He	2.231	ppb	21.1	206.68	0.0011	Pulse	0.1000	3
Co	59	72	He	0.037	ppb	37.6	190.01	0.0010	Pulse	0.1000	3
Ni	60	72	He	0.038	ppb	241.4	183.34	0.0010	Pulse	0.1000	3
Cu	63	72	He	0.091	ppb	37.4	656.71	0.0035	Pulse	0.1000	3
Zn	66	72	He	0.932	ppb	36.4	406.69	0.0022	Pulse	0.1000	3
As	75	72	He	0.038	ppb	131.0	82.67	0.0004	Pulse	0.5000	3
Sr	88	115	He	0.240	ppb	18.5	236.68	0.0030	Pulse	0.1000	3
Mo	98	115	He	0.020	ppb	119.7	66.67	0.0009	Pulse	0.1000	3
Ag	107	115	He	-0.004	ppb	N/A	23.33	0.0003	Pulse	0.1000	3
Cd	111	115	He	0.000	ppb	4429.7	0.67	0.0000	Pulse	0.5000	3
Sn	120	115	He	0.230	ppb	17.4	1773.50	0.0228	Pulse	0.1000	3
Sb	121	115	He	0.034	ppb	102.8	53.33	0.0007	Pulse	0.1000	3
Ba	137	115	He	0.230	ppb	60.7	96.67	0.0012	Pulse	0.1000	3
Tl	205	159	He	0.016	ppb	15.0	143.34	0.0005	Pulse	0.1000	3
Pb	208	159	He	-0.004	ppb	N/A	253.34	0.0009	Pulse	0.1000	3
U	238	209	He	0.011	ppb	6.0	96.67	0.0005	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2160222.05	1.3	97.6	Analog	0.1000	3
No Gas	Ge	72	1578702.58	2.0	100.5	Analog	0.1000	3
H2	Sc	45	143973.70	1.9	91.1	Pulse	0.1000	3
H2	Ge	72	233419.05	0.8	94.0	Pulse	0.1000	3
H2	In	115	292930.82	1.2	98.9	Pulse	0.1000	3
He	Sc	45	71095.77	1.0	90.9	Pulse	0.1000	3
He	Ge	72	185617.20	0.9	95.9	Pulse	0.1000	3
He	In	115	77628.81	0.6	95.2	Pulse	0.1000	3
He	Tb	159	276166.96	1.4	96.1	Pulse	0.1000	3
He	Bi	209	178323.04	0.6	97.1	Pulse	0.1000	3

No Gas



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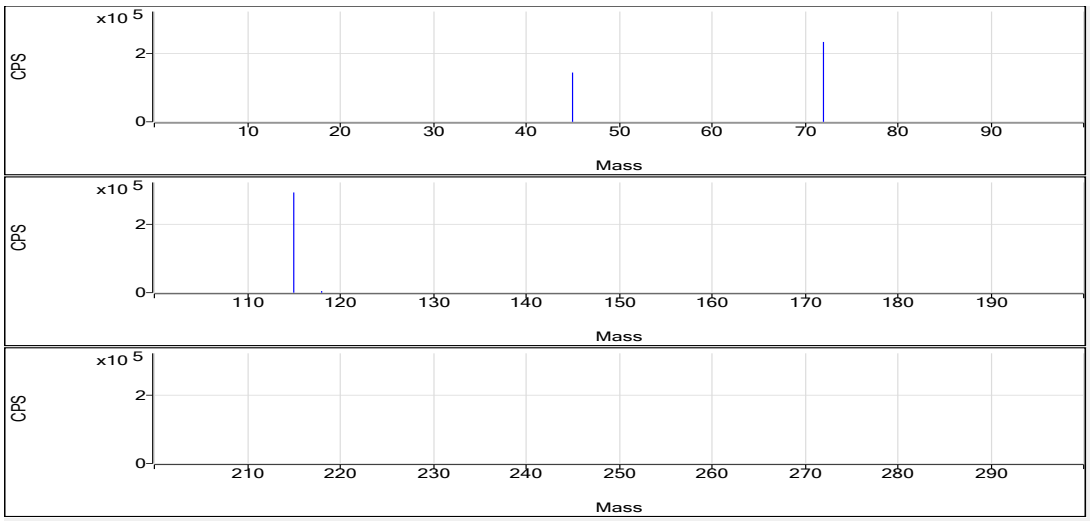
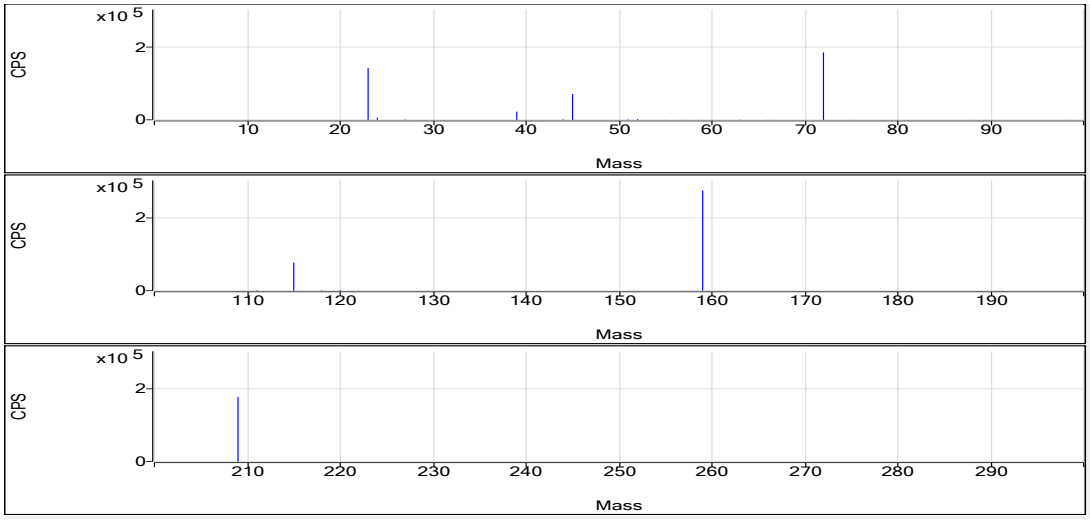


Quantitation Report

He



Quantitation Report

Data File Name	114SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 15:01:05
Sample Name	410-61243-N-8-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

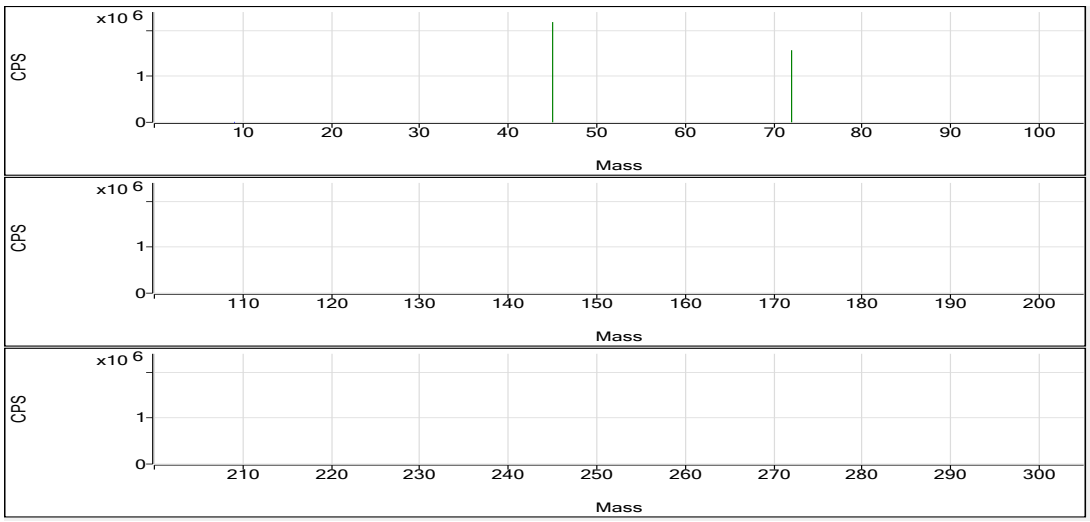
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	-0.002	ppb	N/A	13.33	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.530	ppb	11.3	31.78	0.0001	Pulse	1.5000	3
Na	23	72	He	21070.927	ppb	0.2	5520076.17	29.6036	Analog	0.1000	3
Mg	24	72	He	4788.807	ppb	0.5	601659.94	3.2267	Pulse	0.1000	3
Al	27	72	He	-27.203	ppb	N/A	226.68	0.0012	Pulse	0.1000	3
K	39	72	He	2004.002	ppb	1.0	219631.61	1.1779	Pulse	0.1000	3
Ca	44	72	He	34471.848	ppb	1.3	180204.07	0.9664	Pulse	0.1000	3
Ti	47	72	He	0.089	ppb	332.4	6.67	0.0000	Pulse	0.1000	3
V	51	72	He	5.677	ppb	0.6	9854.68	0.0529	Pulse	0.5000	3
Cr	52	72	He	3.696	ppb	4.6	8999.73	0.0483	Pulse	0.1000	3
Mn	55	72	He	4.910	ppb	1.3	4220.75	0.0226	Pulse	0.1000	3
Fe	57	72	He	154.821	ppb	4.7	5651.30	0.0303	Pulse	0.1000	3
Co	59	72	He	0.025	ppb	44.8	153.34	0.0008	Pulse	0.1000	3
Ni	60	72	He	1.319	ppb	7.2	1303.45	0.0070	Pulse	0.1000	3
Cu	63	72	He	1.453	ppb	4.5	4087.38	0.0219	Pulse	0.1000	3
Zn	66	72	He	9.183	ppb	5.4	2750.36	0.0147	Pulse	0.1000	3
As	75	72	He	1.035	ppb	18.9	280.67	0.0015	Pulse	0.5000	3
Sr	88	115	He	242.124	ppb	1.6	214845.22	2.7391	Pulse	0.1000	3
Mo	98	115	He	3.875	ppb	4.3	6421.69	0.0818	Pulse	0.1000	3
Ag	107	115	He	1.832	ppb	6.3	6071.48	0.0774	Pulse	0.1000	3
Cd	111	115	He	0.005	ppb	114.3	2.67	0.0000	Pulse	0.5000	3
Sn	120	115	He	0.062	ppb	234.2	1606.85	0.0205	Pulse	0.1000	3
Sb	121	115	He	0.046	ppb	67.3	66.67	0.0008	Pulse	0.1000	3
Ba	137	115	He	119.269	ppb	1.1	43877.18	0.5594	Pulse	0.1000	3
Tl	205	159	He	0.016	ppb	37.4	146.68	0.0005	Pulse	0.1000	3
Pb	208	159	He	0.061	ppb	14.5	720.04	0.0026	Pulse	0.1000	3
U	238	209	He	1.259	ppb	1.1	10491.32	0.0585	Pulse	0.1000	3

ISTD Table:

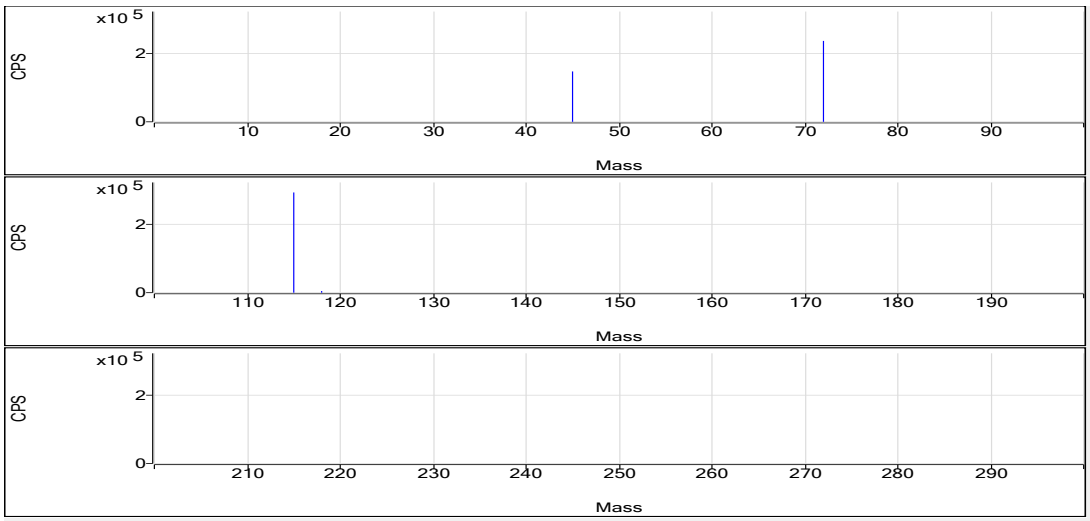
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2185710.65	0.5	98.7	Analog	0.1000	3
No Gas	Ge	72	1572122.74	0.6	100.1	Analog	0.1000	3
H2	Sc	45	147051.73	0.7	93.0	Pulse	0.1000	3
H2	Ge	72	236138.14	1.1	95.1	Pulse	0.1000	3
H2	In	115	292520.56	0.8	98.7	Pulse	0.1000	3
He	Sc	45	71183.01	1.1	91.0	Pulse	0.1000	3
He	Ge	72	186466.23	0.9	96.3	Pulse	0.1000	3
He	In	115	78436.56	1.0	96.2	Pulse	0.1000	3
He	Tb	159	276426.82	1.7	96.2	Pulse	0.1000	3
He	Bi	209	179409.23	0.6	97.7	Pulse	0.1000	3

No Gas

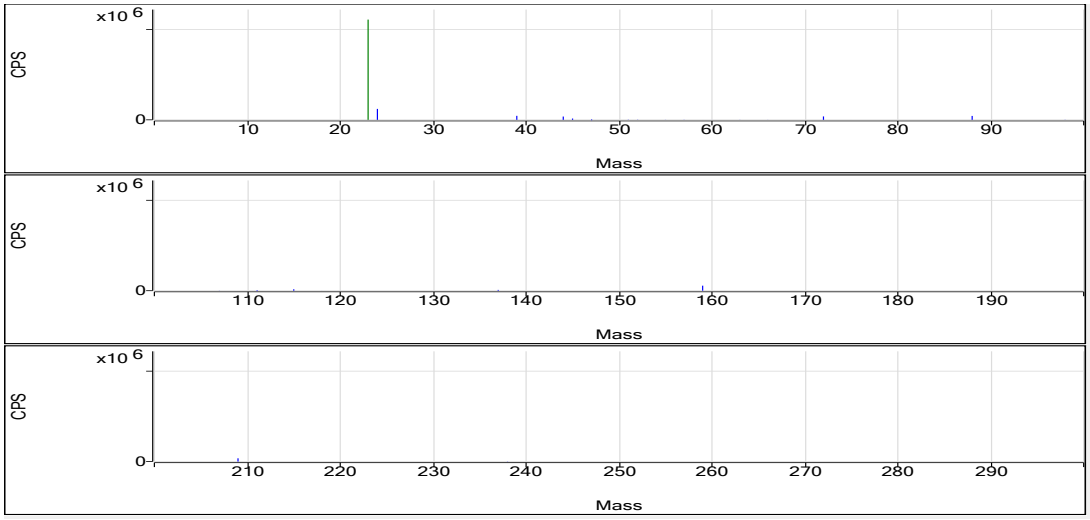


H2



Quantitation Report

He



Quantitation Report

Data File Name	115SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 15:03:06
Sample Name	410-61730-F-3-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

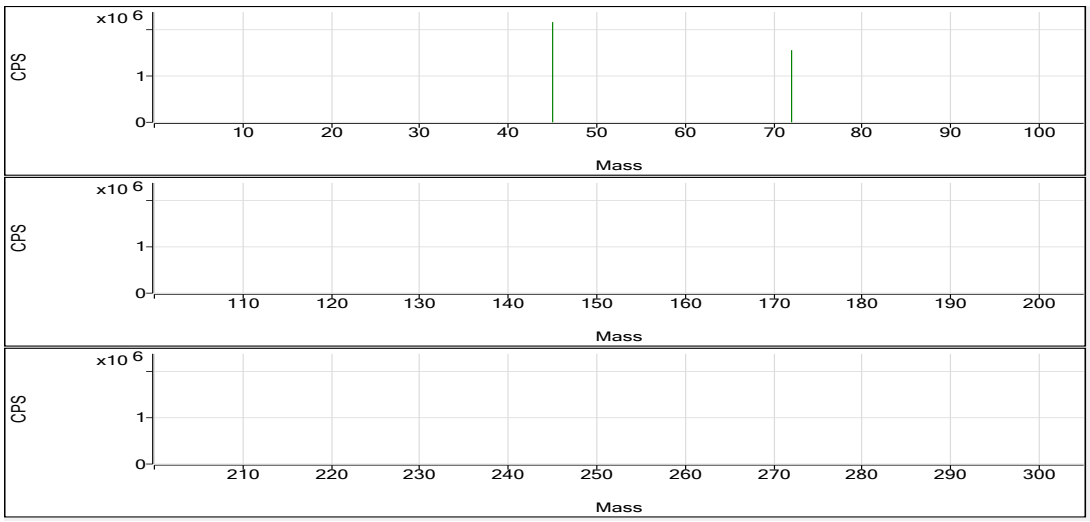
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.045	ppb	21.1	94.00	0.0001	Pulse	0.5000	3
Se	78	115	H2	0.140	ppb	51.4	9.78	0.0000	Pulse	1.5000	3
Na	23	72	He	2972.214	ppb	0.6	781367.20	4.2336	Pulse	0.1000	3
Mg	24	72	He	9354.890	ppb	0.6	1163242.38	6.3026	Pulse	0.1000	3
Al	27	72	He	612.972	ppb	8.4	25396.33	0.1376	Pulse	0.1000	3
K	39	72	He	926.005	ppb	2.9	113789.31	0.6165	Pulse	0.1000	3
Ca	44	72	He	36901.519	ppb	1.2	190927.28	1.0345	Pulse	0.1000	3
Ti	47	72	He	24.144	ppb	21.0	940.85	0.0051	Pulse	0.1000	3
V	51	72	He	0.801	ppb	5.4	2616.92	0.0142	Pulse	0.5000	3
Cr	52	72	He	0.574	ppb	22.7	2987.07	0.0162	Pulse	0.1000	3
Mn	55	72	He	64.813	ppb	2.0	53318.29	0.2889	Pulse	0.1000	3
Fe	57	72	He	500.379	ppb	1.5	17794.79	0.0964	Pulse	0.1000	3
Co	59	72	He	1.873	ppb	1.8	6114.83	0.0331	Pulse	0.1000	3
Ni	60	72	He	0.598	ppb	11.0	666.70	0.0036	Pulse	0.1000	3
Cu	63	72	He	0.288	ppb	14.5	1143.42	0.0062	Pulse	0.1000	3
Zn	66	72	He	1.842	ppb	0.6	660.04	0.0036	Pulse	0.1000	3
As	75	72	He	0.323	ppb	6.3	138.00	0.0007	Pulse	0.5000	3
Sr	88	115	He	46.370	ppb	3.3	40050.42	0.5248	Pulse	0.1000	3
Mo	98	115	He	0.228	ppb	11.0	400.02	0.0052	Pulse	0.1000	3
Ag	107	115	He	-0.001	ppb	N/A	30.00	0.0004	Pulse	0.1000	3
Cd	111	115	He	0.023	ppb	13.2	9.33	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.074	ppb	N/A	1416.86	0.0186	Pulse	0.1000	3
Sb	121	115	He	0.008	ppb	317.2	26.67	0.0003	Pulse	0.1000	3
Ba	137	115	He	19.851	ppb	2.0	7115.40	0.0932	Pulse	0.1000	3
Tl	205	159	He	0.027	ppb	48.9	203.34	0.0007	Pulse	0.1000	3
Pb	208	159	He	0.313	ppb	10.7	2536.91	0.0092	Pulse	0.1000	3
U	238	209	He	0.238	ppb	11.9	1976.90	0.0111	Pulse	0.1000	3

ISTD Table:

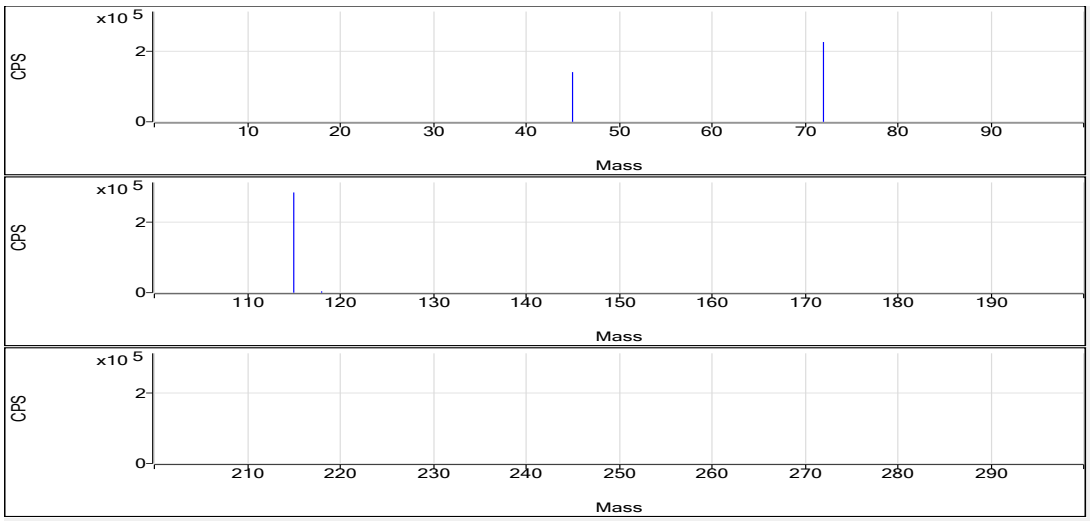
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2164808.56	0.8	97.8	Analog	0.1000	3
No Gas	Ge	72	1558093.21	1.5	99.2	Analog	0.1000	3
H2	Sc	45	141560.16	0.7	89.5	Pulse	0.1000	3
H2	Ge	72	227274.19	0.7	91.6	Pulse	0.1000	3
H2	In	115	285483.75	1.0	96.4	Pulse	0.1000	3
He	Sc	45	70908.46	1.9	90.7	Pulse	0.1000	3
He	Ge	72	184566.29	0.5	95.3	Pulse	0.1000	3
He	In	115	76311.00	0.1	93.6	Pulse	0.1000	3
He	Tb	159	276080.18	1.1	96.0	Pulse	0.1000	3
He	Bi	209	178046.22	1.2	96.9	Pulse	0.1000	3

No Gas

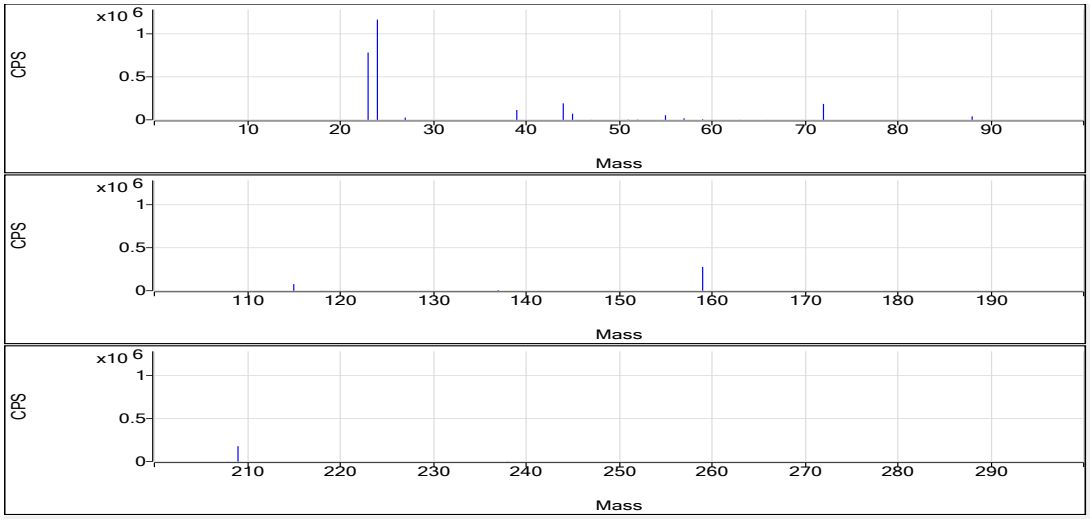


H2



Quantitation Report

He



Quantitation Report

Data File Name	116SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 15:05:07
Sample Name	410-61220-G-3-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

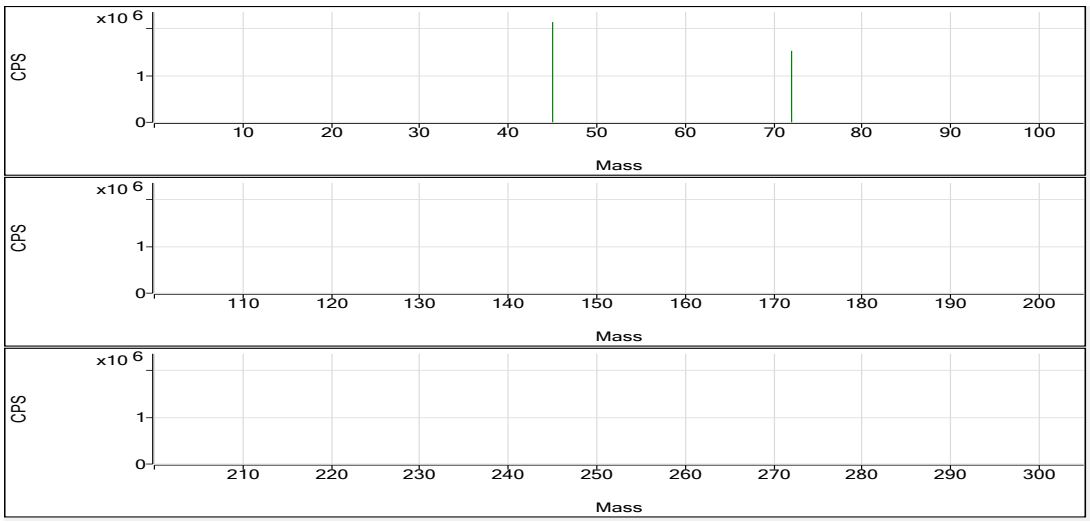
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.041	ppb	9.1	86.00	0.0001	Pulse	0.5000	3
Se	78	115	H2	0.131	ppb	18.5	9.11	0.0000	Pulse	1.5000	3
Na	23	72	He	132852.829	ppb	0.4	33700846.17	186.2946	Analog	0.1000	3
Mg	24	72	He	24980.602	ppb	0.7	3044330.27	16.8287	Analog	0.1000	3
Al	27	72	He	220.253	ppb	14.6	9760.29	0.0539	Pulse	0.1000	3
K	39	72	He	3761.280	ppb	1.4	378624.27	2.0930	Pulse	0.1000	3
Ca	44	72	He	72190.340	ppb	1.3	365891.84	2.0226	Pulse	0.1000	3
Ti	47	72	He	11.108	ppb	30.3	426.69	0.0024	Pulse	0.1000	3
V	51	72	He	1.796	ppb	3.7	3991.90	0.0221	Pulse	0.5000	3
Cr	52	72	He	1.452	ppb	11.0	4560.88	0.0252	Pulse	0.1000	3
Mn	55	72	He	584.165	ppb	0.4	469870.98	2.5974	Pulse	0.1000	3
Fe	57	72	He	18995.330	ppb	1.6	657569.68	3.6348	Pulse	0.1000	3
Co	59	72	He	0.672	ppb	1.1	2193.59	0.0121	Pulse	0.1000	3
Ni	60	72	He	0.908	ppb	14.5	916.73	0.0051	Pulse	0.1000	3
Cu	63	72	He	2.232	ppb	2.3	5864.70	0.0324	Pulse	0.1000	3
Zn	66	72	He	5.330	ppb	4.0	1606.82	0.0089	Pulse	0.1000	3
As	75	72	He	1.250	ppb	14.8	313.34	0.0017	Pulse	0.5000	3
Sr	88	115	He	366.930	ppb	2.2	312423.66	4.1508	Pulse	0.1000	3
Mo	98	115	He	0.120	ppb	29.7	223.35	0.0030	Pulse	0.1000	3
Ag	107	115	He	0.003	ppb	215.7	43.33	0.0006	Pulse	0.1000	3
Cd	111	115	He	0.038	ppb	34.0	14.67	0.0002	Pulse	0.5000	3
Sn	120	115	He	-0.041	ppb	N/A	1430.31	0.0190	Pulse	0.1000	3
Sb	121	115	He	0.060	ppb	37.3	76.67	0.0010	Pulse	0.1000	3
Ba	137	115	He	75.442	ppb	1.0	26644.18	0.3539	Pulse	0.1000	3
Tl	205	159	He	0.003	ppb	125.1	73.33	0.0003	Pulse	0.1000	3
Pb	208	159	He	0.938	ppb	0.3	6944.31	0.0255	Pulse	0.1000	3
U	238	209	He	0.034	ppb	46.1	283.37	0.0016	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2139703.25	0.3	96.7	Analog	0.1000	3
No Gas	Ge	72	1525288.94	2.2	97.1	Analog	0.1000	3
H2	Sc	45	141242.76	1.1	89.3	Pulse	0.1000	3
H2	Ge	72	228279.07	0.7	92.0	Pulse	0.1000	3
H2	In	115	281042.72	1.3	94.9	Pulse	0.1000	3
He	Sc	45	70861.36	1.0	90.6	Pulse	0.1000	3
He	Ge	72	180903.77	0.6	93.4	Pulse	0.1000	3
He	In	115	75286.24	1.6	92.3	Pulse	0.1000	3
He	Tb	159	272665.25	0.7	94.9	Pulse	0.1000	3
He	Bi	209	173492.15	1.5	94.4	Pulse	0.1000	3

No Gas



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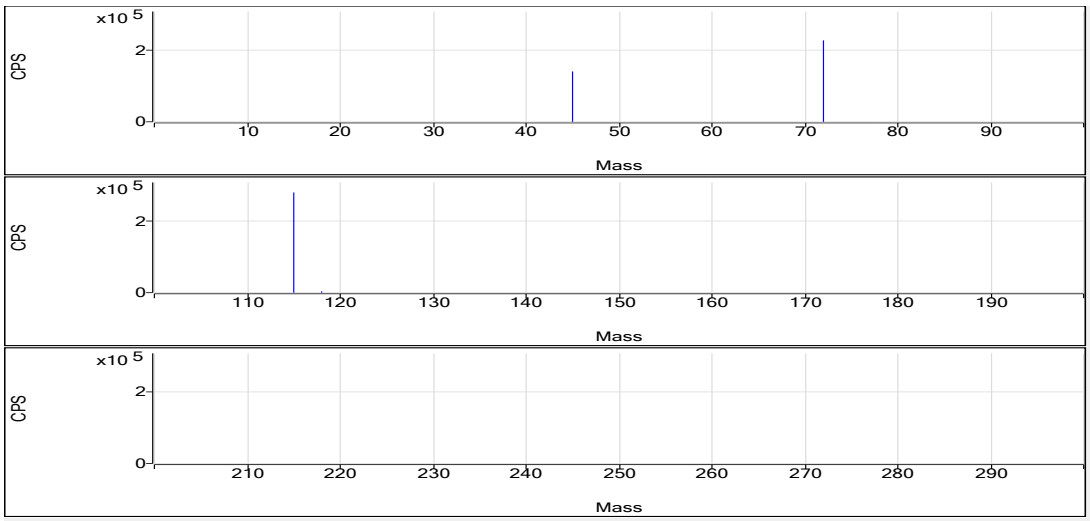
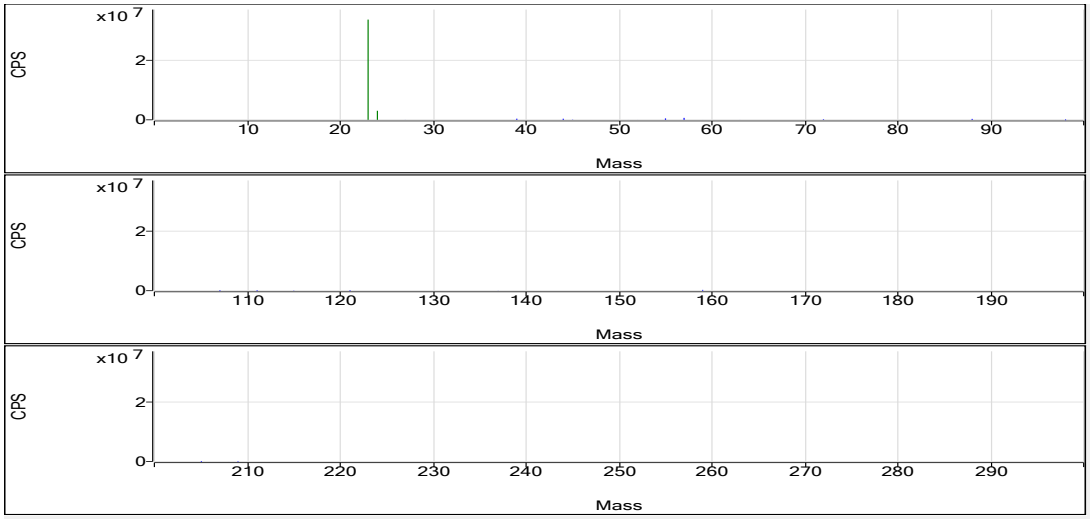


Quantitation Report

He



Quantitation Report

Data File Name	117SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 15:07:07
Sample Name	410-61796-S-2-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

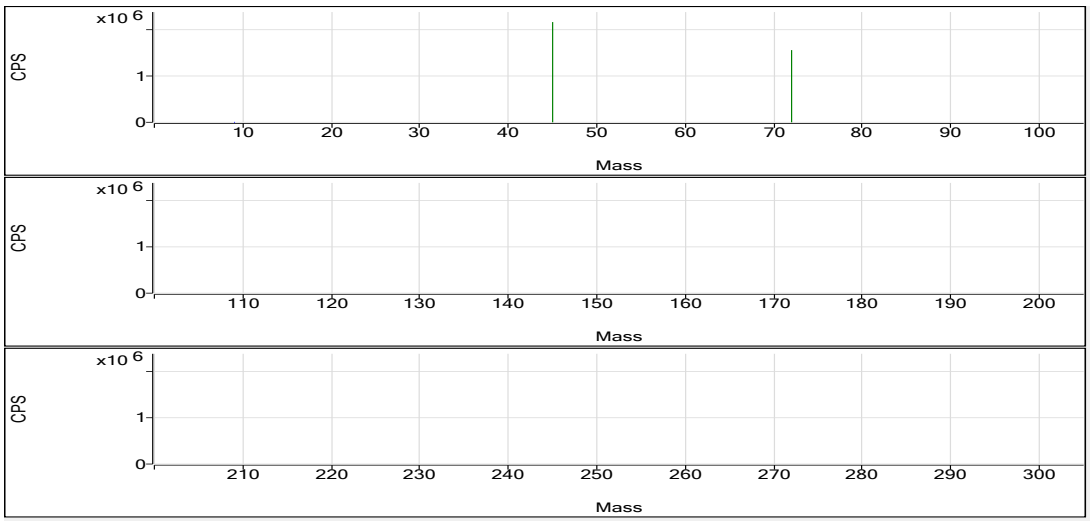
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	-0.003	ppb	N/A	10.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.026	ppb	104.2	3.56	0.0000	Pulse	1.5000	3
Na	23	72	He	19697.600	ppb	0.2	5089647.53	27.6785	Analog	0.1000	3
Mg	24	72	He	12318.433	ppb	1.3	1525971.28	8.2990	Analog	0.1000	3
Al	27	72	He	-26.185	ppb	N/A	263.34	0.0014	Pulse	0.1000	3
K	39	72	He	3529.965	ppb	0.5	362712.03	1.9725	Pulse	0.1000	3
Ca	44	72	He	26410.717	ppb	1.2	136200.88	0.7407	Pulse	0.1000	3
Ti	47	72	He	0.264	ppb	58.3	13.33	0.0001	Pulse	0.1000	3
V	51	72	He	-0.115	ppb	N/A	1270.06	0.0069	Pulse	0.5000	3
Cr	52	72	He	0.291	ppb	46.4	2440.29	0.0133	Pulse	0.1000	3
Mn	55	72	He	8.117	ppb	2.8	6781.80	0.0369	Pulse	0.1000	3
Fe	57	72	He	944.881	ppb	2.9	33362.23	0.1815	Pulse	0.1000	3
Co	59	72	He	0.133	ppb	13.7	496.69	0.0027	Pulse	0.1000	3
Ni	60	72	He	1.235	ppb	4.4	1213.43	0.0066	Pulse	0.1000	3
Cu	63	72	He	0.412	ppb	4.3	1446.79	0.0079	Pulse	0.1000	3
Zn	66	72	He	27.495	ppb	2.8	7835.69	0.0426	Pulse	0.1000	3
As	75	72	He	0.121	ppb	50.3	98.00	0.0005	Pulse	0.5000	3
Sr	88	115	He	214.523	ppb	0.4	185247.77	2.4269	Pulse	0.1000	3
Mo	98	115	He	0.060	ppb	26.1	130.00	0.0017	Pulse	0.1000	3
Ag	107	115	He	-0.003	ppb	N/A	23.33	0.0003	Pulse	0.1000	3
Cd	111	115	He	0.012	ppb	64.4	5.33	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.139	ppb	N/A	1346.78	0.0176	Pulse	0.1000	3
Sb	121	115	He	0.052	ppb	66.9	70.00	0.0009	Pulse	0.1000	3
Ba	137	115	He	11.143	ppb	1.7	4000.74	0.0524	Pulse	0.1000	3
Tl	205	159	He	0.012	ppb	30.6	123.34	0.0004	Pulse	0.1000	3
Pb	208	159	He	0.040	ppb	42.7	573.36	0.0021	Pulse	0.1000	3
U	238	209	He	0.025	ppb	37.5	216.67	0.0012	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2153966.53	1.7	97.3	Analog	0.1000	3
No Gas	Ge	72	1551602.89	1.2	98.8	Analog	0.1000	3
H2	Sc	45	143266.14	0.8	90.6	Pulse	0.1000	3
H2	Ge	72	229187.18	0.5	92.3	Pulse	0.1000	3
H2	In	115	286168.97	1.9	96.6	Pulse	0.1000	3
He	Sc	45	70827.77	0.2	90.6	Pulse	0.1000	3
He	Ge	72	183887.33	1.4	95.0	Pulse	0.1000	3
He	In	115	76334.52	1.3	93.6	Pulse	0.1000	3
He	Tb	159	276089.81	0.8	96.0	Pulse	0.1000	3
He	Bi	209	175998.17	0.8	95.8	Pulse	0.1000	3

No Gas



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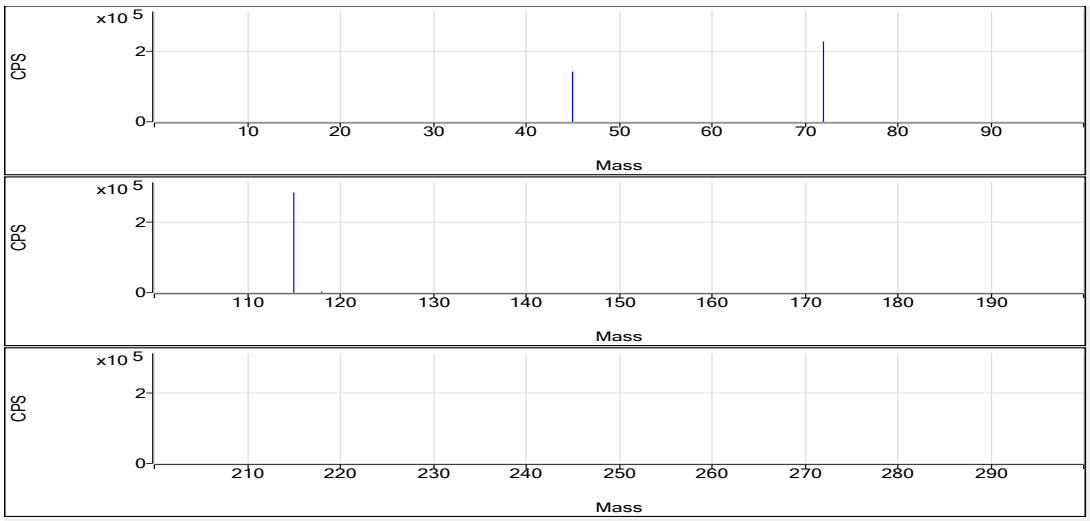
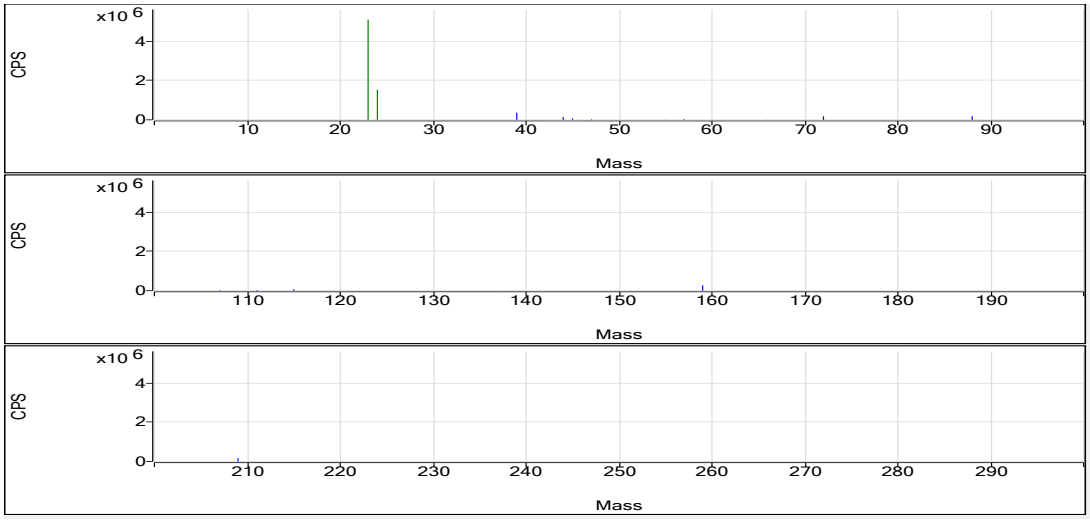


Quantitation Report

He



Quantitation Report

Data File Name	118SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 15:09:08
Sample Name	410-61802-V-1-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

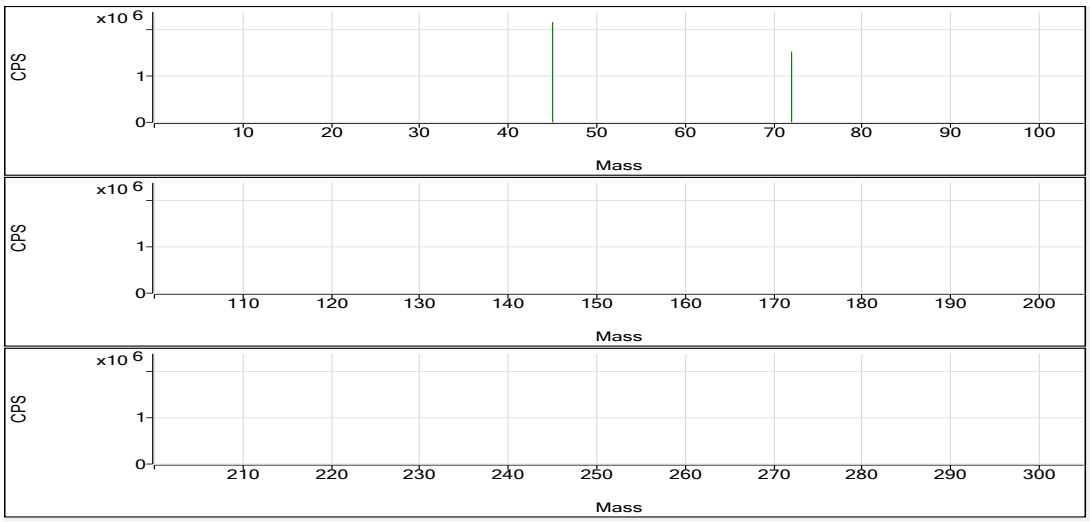
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.006	ppb	84.4	26.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.001	ppb	1411.5	2.22	0.0000	Pulse	1.5000	3
Na	23	72	He	3082.628	ppb	0.8	808824.62	4.3884	Pulse	0.1000	3
Mg	24	72	He	981.335	ppb	1.1	121983.58	0.6618	Pulse	0.1000	3
Al	27	72	He	52.644	ppb	13.5	3358.57	0.0182	Pulse	0.1000	3
K	39	72	He	1909.359	ppb	0.8	208010.44	1.1286	Pulse	0.1000	3
Ca	44	72	He	3248.218	ppb	2.3	16983.65	0.0921	Pulse	0.1000	3
Ti	47	72	He	2.323	ppb	16.7	93.34	0.0005	Pulse	0.1000	3
V	51	72	He	0.221	ppb	227.1	1766.94	0.0096	Pulse	0.5000	3
Cr	52	72	He	0.514	ppb	6.6	2870.38	0.0156	Pulse	0.1000	3
Mn	55	72	He	242.364	ppb	0.5	198706.21	1.0781	Pulse	0.1000	3
Fe	57	72	He	2045.237	ppb	1.5	72246.10	0.3920	Pulse	0.1000	3
Co	59	72	He	0.455	ppb	14.5	1536.80	0.0083	Pulse	0.1000	3
Ni	60	72	He	3.682	ppb	3.8	3330.51	0.0181	Pulse	0.1000	3
Cu	63	72	He	32.545	ppb	1.8	81361.30	0.4414	Pulse	0.1000	3
Zn	66	72	He	41.408	ppb	2.3	11755.15	0.0638	Pulse	0.1000	3
As	75	72	He	0.030	ppb	155.9	80.67	0.0004	Pulse	0.5000	3
Sr	88	115	He	41.441	ppb	2.8	36170.00	0.4691	Pulse	0.1000	3
Mo	98	115	He	0.045	ppb	53.9	106.67	0.0014	Pulse	0.1000	3
Ag	107	115	He	0.000	ppb	N/A	33.33	0.0004	Pulse	0.1000	3
Cd	111	115	He	0.116	ppb	23.3	44.67	0.0006	Pulse	0.5000	3
Sn	120	115	He	0.112	ppb	195.5	1634.04	0.0212	Pulse	0.1000	3
Sb	121	115	He	0.024	ppb	61.6	43.33	0.0006	Pulse	0.1000	3
Ba	137	115	He	19.488	ppb	2.0	7058.68	0.0915	Pulse	0.1000	3
Tl	205	159	He	0.018	ppb	72.3	156.67	0.0006	Pulse	0.1000	3
Pb	208	159	He	4.191	ppb	1.5	30357.95	0.1102	Pulse	0.1000	3
U	238	209	He	0.016	ppb	6.5	140.01	0.0008	Pulse	0.1000	3

ISTD Table:

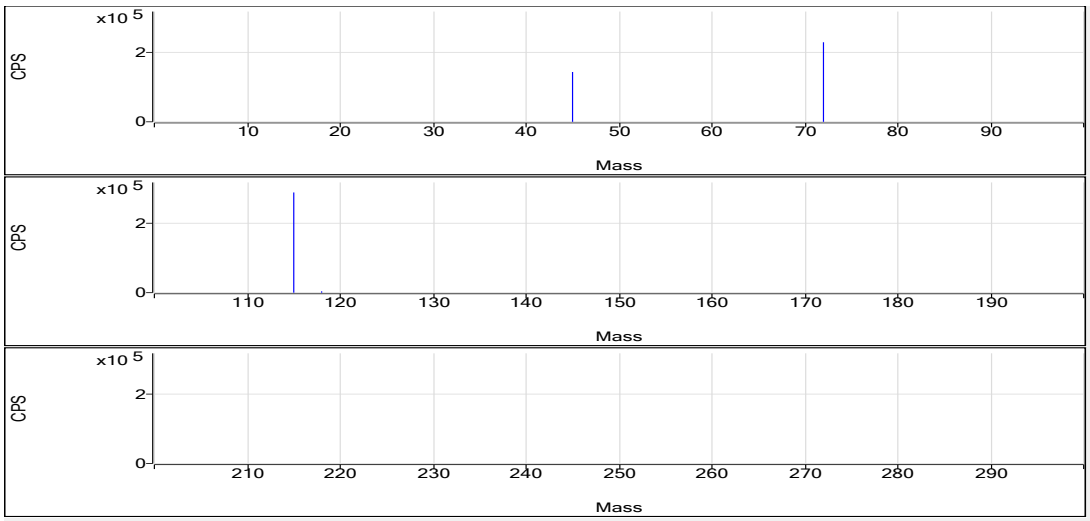
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2172535.96	0.8	98.2	Analog	0.1000	3
No Gas	Ge	72	1532361.02	1.3	97.6	Analog	0.1000	3
H2	Sc	45	143279.10	1.6	90.6	Pulse	0.1000	3
H2	Ge	72	228839.89	1.5	92.2	Pulse	0.1000	3
H2	In	115	288292.86	1.7	97.3	Pulse	0.1000	3
He	Sc	45	69822.91	0.4	89.3	Pulse	0.1000	3
He	Ge	72	184312.14	0.3	95.2	Pulse	0.1000	3
He	In	115	77115.82	0.9	94.6	Pulse	0.1000	3
He	Tb	159	275350.79	0.9	95.8	Pulse	0.1000	3
He	Bi	209	178065.45	1.1	96.9	Pulse	0.1000	3

No Gas

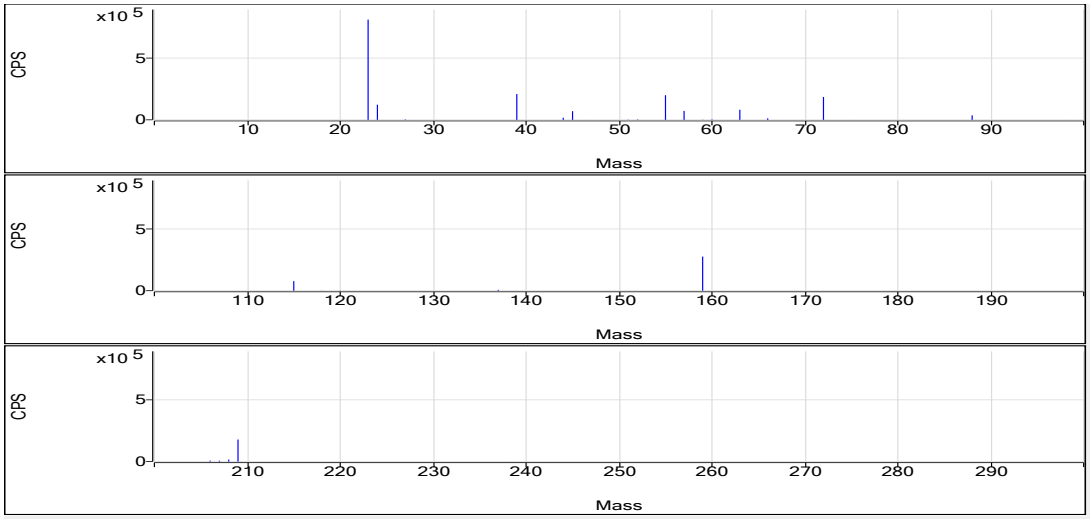


H2



Quantitation Report

He



Quantitation Report

Data File Name	119_CCV.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 15:11:10
Sample Name	CCV 1942322
Sample Type	CCV
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

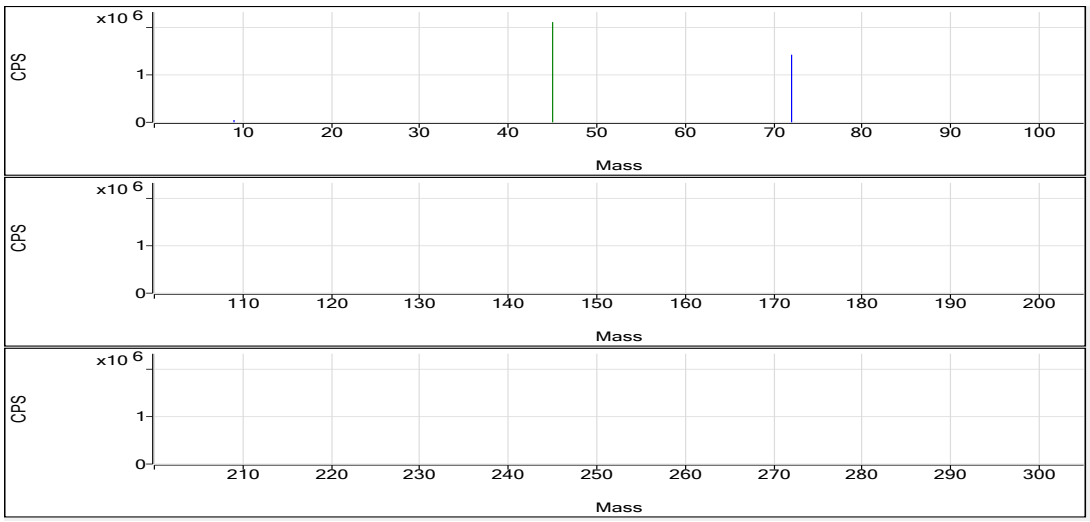
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	30.428	ppb	0.8	48447.40	0.0341	Pulse	0.5000	3
Se	78	115	H2	30.011	ppb	1.1	1637.21	0.0057	Pulse	1.5000	3
Na	23	72	He	5287.615	ppb	1.0	1288613.73	7.4792	Analog	0.1000	3
Mg	24	72	He	5098.961	ppb	0.8	591827.08	3.4356	Pulse	0.1000	3
Al	27	72	He	5053.228	ppb	0.3	186653.39	1.0835	Pulse	0.1000	3
K	39	72	He	5147.369	ppb	1.3	484877.40	2.8148	Pulse	0.1000	3
Ca	44	72	He	5016.173	ppb	2.2	24400.88	0.1416	Pulse	0.1000	3
Ti	47	72	He	313.993	ppb	2.7	11388.11	0.0661	Pulse	0.1000	3
V	51	72	He	303.586	ppb	0.9	416114.92	2.4156	Pulse	0.5000	3
Cr	52	72	He	302.496	ppb	0.5	537085.54	3.1177	Pulse	0.1000	3
Mn	55	72	He	312.536	ppb	1.5	239429.12	1.3900	Pulse	0.1000	3
Fe	57	72	He	5229.278	ppb	0.4	172476.24	1.0011	Pulse	0.1000	3
Co	59	72	He	301.792	ppb	0.6	909259.33	5.2782	Pulse	0.1000	3
Ni	60	72	He	313.571	ppb	0.9	253347.28	1.4707	Pulse	0.1000	3
Cu	63	72	He	301.300	ppb	1.2	700684.39	4.0677	Pulse	0.1000	3
Zn	66	72	He	315.113	ppb	1.1	82722.80	0.4802	Pulse	0.1000	3
As	75	72	He	320.043	ppb	0.9	58559.44	0.3399	Pulse	0.5000	3
Sr	88	115	He	30.654	ppb	1.4	26448.55	0.3471	Pulse	0.1000	3
Mo	98	115	He	31.329	ppb	1.3	50193.17	0.6586	Pulse	0.1000	3
Ag	107	115	He	30.945	ppb	0.5	99124.63	1.3008	Pulse	0.1000	3
Cd	111	115	He	30.770	ppb	1.9	11503.41	0.1510	Pulse	0.5000	3
Sn	120	115	He	31.445	ppb	1.5	35308.99	0.4634	Pulse	0.1000	3
Sb	121	115	He	31.341	ppb	2.5	31021.80	0.4072	Pulse	0.1000	3
Ba	137	115	He	308.141	ppb	1.2	110097.36	1.4450	Pulse	0.1000	3
Tl	205	159	He	30.701	ppb	0.4	165431.34	0.6012	Pulse	0.1000	3
Pb	208	159	He	30.956	ppb	1.7	222279.30	0.8078	Pulse	0.1000	3
U	238	209	He	260.349	ppb	0.8	2141633.98	12.0774	Analog	0.1000	3

ISTD Table:

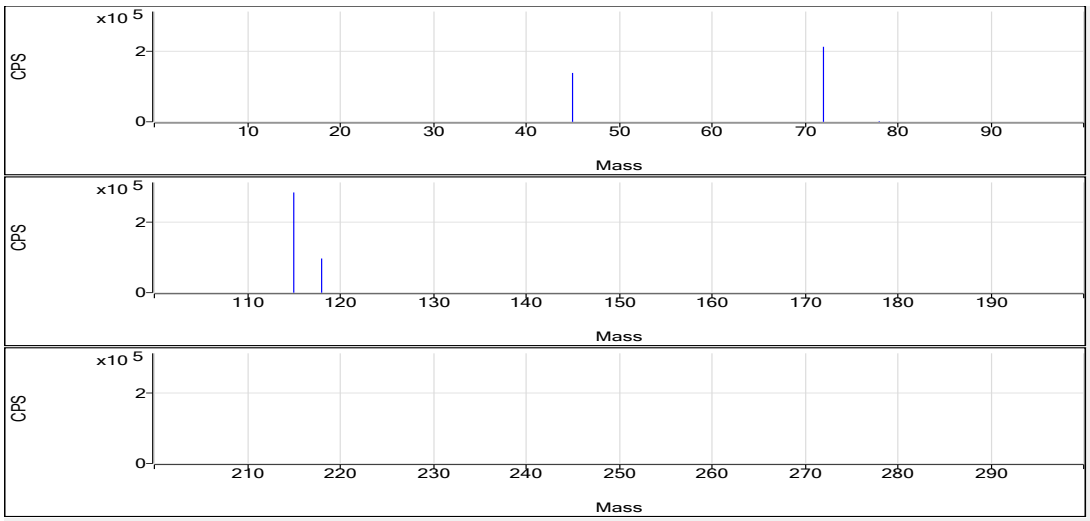
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2106766.22	1.3	95.2	Analog	0.1000	3
No Gas	Ge	72	1420487.95	0.4	90.5	Pulse	0.1000	3
H2	Sc	45	139204.97	1.5	88.1	Pulse	0.1000	3
H2	Ge	72	213707.06	0.4	86.1	Pulse	0.1000	3
H2	In	115	285450.68	1.4	96.3	Pulse	0.1000	3
He	Sc	45	69384.59	1.4	88.7	Pulse	0.1000	3
He	Ge	72	172276.62	1.5	89.0	Pulse	0.1000	3
He	In	115	76200.54	1.4	93.5	Pulse	0.1000	3
He	Tb	159	275189.46	1.0	95.7	Pulse	0.1000	3
He	Bi	209	177329.71	0.8	96.5	Pulse	0.1000	3

No Gas

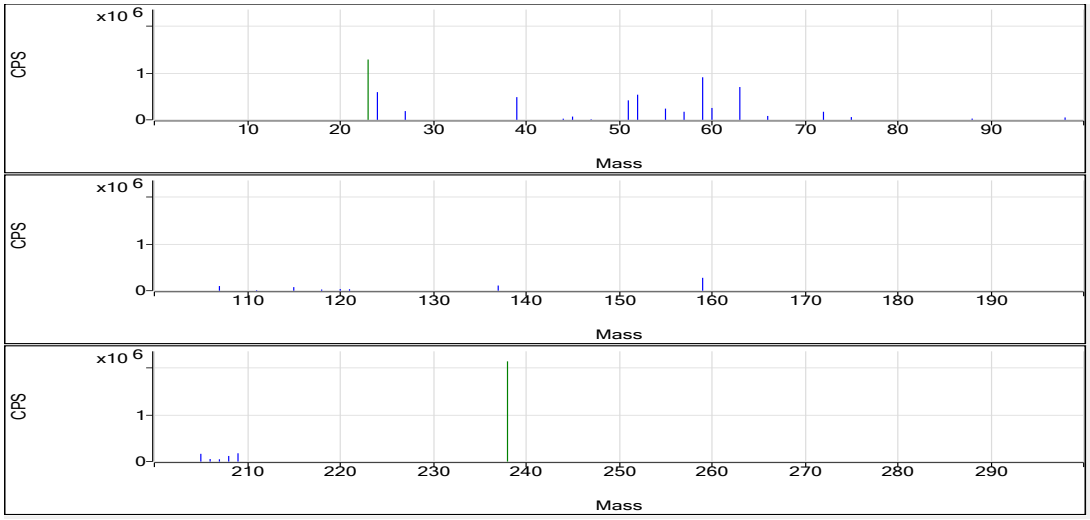


H2



Quantitation Report

He



Quantitation Report

Data File Name	120_CCB.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 15:13:11
Sample Name	CCB 2014932
Sample Type	CCB
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

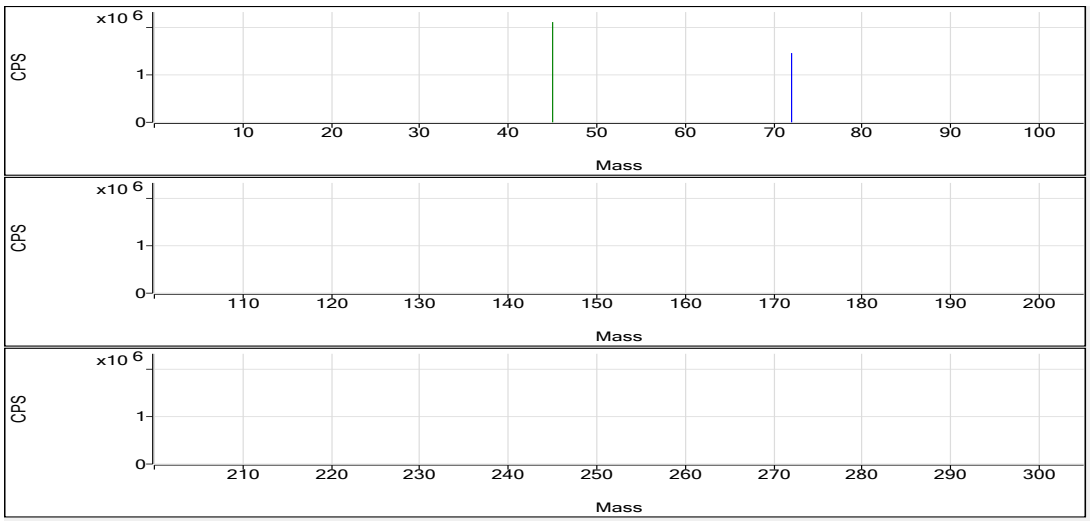
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.005	ppb	103.6	22.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.018	ppb	103.0	3.11	0.0000	Pulse	1.5000	3
Na	23	72	He	6.196	ppb	31.2	13586.65	0.0760	Pulse	0.1000	3
Mg	24	72	He	1.034	ppb	38.2	260.01	0.0015	Pulse	0.1000	3
Al	27	72	He	-29.230	ppb	N/A	140.01	0.0008	Pulse	0.1000	3
K	39	72	He	-19.085	ppb	N/A	22230.70	0.1243	Pulse	0.1000	3
Ca	44	72	He	-11.124	ppb	N/A	156.67	0.0009	Pulse	0.1000	3
Ti	47	72	He	-0.082	ppb	0.0	0.00	0.0000	Pulse	0.1000	3
V	51	72	He	-0.115	ppb	N/A	1236.06	0.0069	Pulse	0.5000	3
Cr	52	72	He	-0.082	ppb	N/A	1690.16	0.0095	Pulse	0.1000	3
Mn	55	72	He	0.053	ppb	68.9	186.68	0.0010	Pulse	0.1000	3
Fe	57	72	He	1.568	ppb	54.5	176.68	0.0010	Pulse	0.1000	3
Co	59	72	He	0.038	ppb	42.3	186.68	0.0010	Pulse	0.1000	3
Ni	60	72	He	0.042	ppb	82.2	180.01	0.0010	Pulse	0.1000	3
Cu	63	72	He	0.016	ppb	328.6	450.03	0.0025	Pulse	0.1000	3
Zn	66	72	He	-0.006	ppb	N/A	136.67	0.0008	Pulse	0.1000	3
As	75	72	He	0.025	ppb	275.3	77.33	0.0004	Pulse	0.5000	3
Sr	88	115	He	0.038	ppb	117.4	56.67	0.0008	Pulse	0.1000	3
Mo	98	115	He	0.038	ppb	39.7	93.33	0.0012	Pulse	0.1000	3
Ag	107	115	He	-0.003	ppb	N/A	23.33	0.0003	Pulse	0.1000	3
Cd	111	115	He	0.002	ppb	161.8	1.33	0.0000	Pulse	0.5000	3
Sn	120	115	He	-0.030	ppb	N/A	1436.80	0.0192	Pulse	0.1000	3
Sb	121	115	He	0.008	ppb	184.3	26.67	0.0004	Pulse	0.1000	3
Ba	137	115	He	0.022	ppb	224.0	20.00	0.0003	Pulse	0.1000	3
Tl	205	159	He	0.050	ppb	16.7	326.69	0.0012	Pulse	0.1000	3
Pb	208	159	He	-0.005	ppb	N/A	243.34	0.0009	Pulse	0.1000	3
U	238	209	He	0.033	ppb	5.5	283.35	0.0016	Pulse	0.1000	3

ISTD Table:

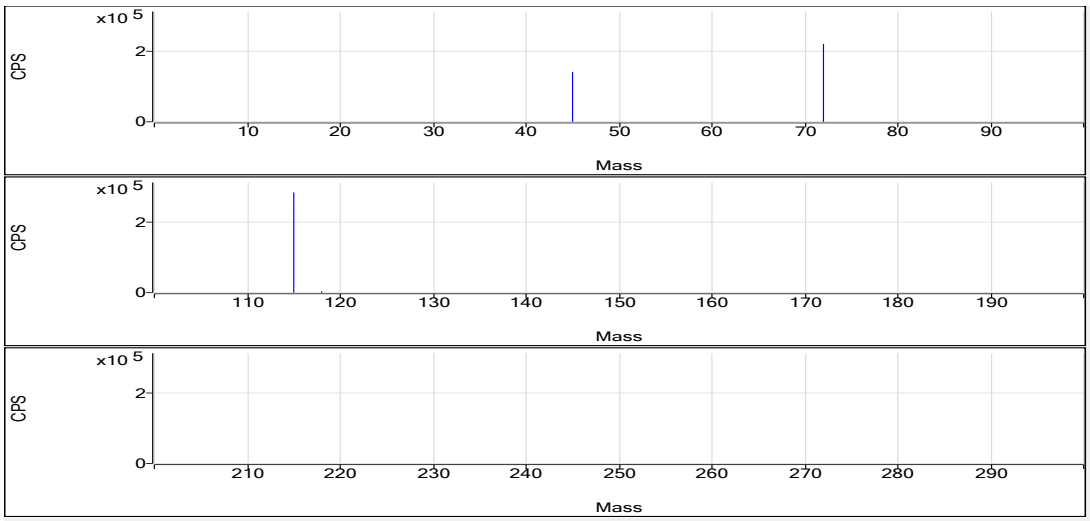
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2110887.57	1.0	95.4	Analog	0.1000	3
No Gas	Ge	72	1458192.48	0.1	92.9	Pulse	0.1000	3
H2	Sc	45	140556.65	0.8	88.9	Pulse	0.1000	3
H2	Ge	72	220008.03	1.0	88.6	Pulse	0.1000	3
H2	In	115	283282.93	0.4	95.6	Pulse	0.1000	3
He	Sc	45	69388.19	2.7	88.7	Pulse	0.1000	3
He	Ge	72	178854.86	1.0	92.4	Pulse	0.1000	3
He	In	115	74931.07	0.6	91.9	Pulse	0.1000	3
He	Tb	159	274878.67	0.4	95.6	Pulse	0.1000	3
He	Bi	209	177194.03	1.6	96.5	Pulse	0.1000	3

No Gas

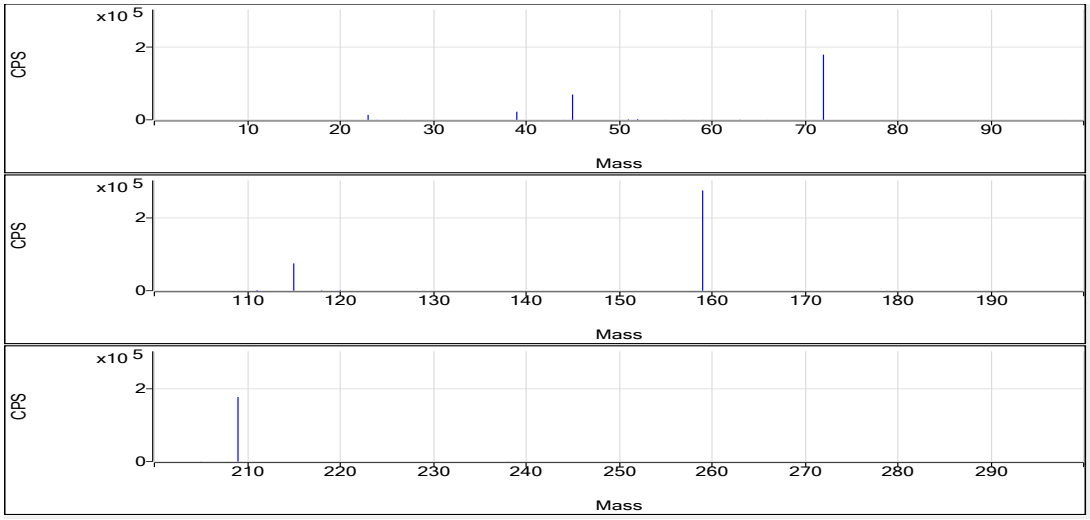


H2



Quantitation Report

He



Quantitation Report

Data File Name	121SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 15:15:12
Sample Name	410-61216-Y-4-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

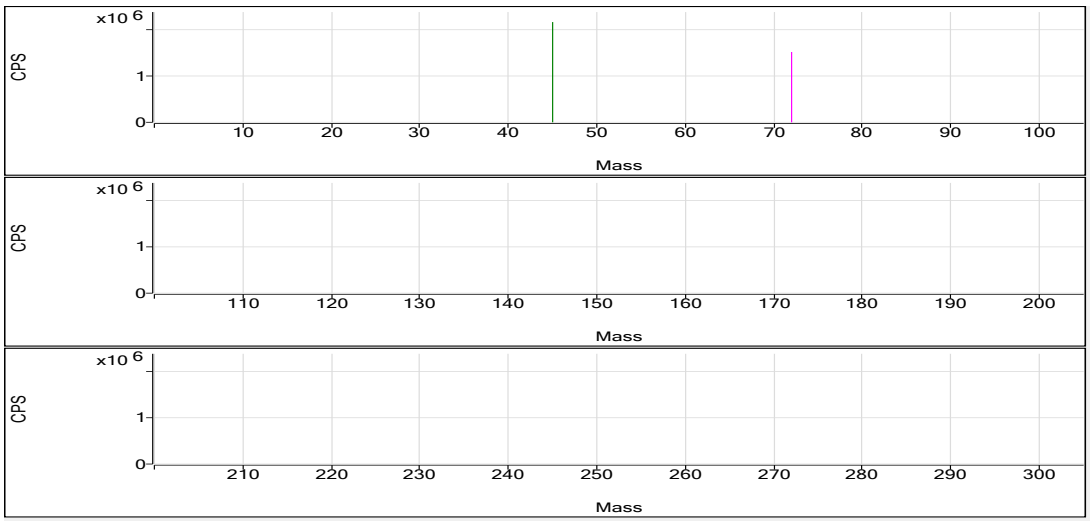
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.236	ppb	7.5	419.34	0.0003	Pulse	0.5000	3
Se	78	115	H2	0.376	ppb	24.7	22.45	0.0001	Pulse	1.5000	3
Na	23	72	He	60959.670	ppb	0.9	15595546.02	85.5179	Analog	0.1000	3
Mg	24	72	He	45913.047	ppb	0.8	5640590.13	30.9297	Analog	0.1000	3
Al	27	72	He	1590.001	ppb	15.7	63048.51	0.3457	Pulse	0.1000	3
K	39	72	He	1397.718	ppb	2.8	157210.11	0.8621	Pulse	0.1000	3
Ca	44	72	He	75856.662	ppb	1.0	387617.22	2.1253	Pulse	0.1000	3
Ti	47	72	He	39.503	ppb	29.3	1517.16	0.0083	Pulse	0.1000	3
V	51	72	He	2.285	ppb	3.8	4730.81	0.0259	Pulse	0.5000	3
Cr	52	72	He	2.021	ppb	7.8	5664.72	0.0311	Pulse	0.1000	3
Mn	55	72	He	1104.314	ppb	1.0	895383.03	4.9094	Pulse	0.1000	3
Fe	57	72	He	1152.578	ppb	1.9	40343.84	0.2212	Pulse	0.1000	3
Co	59	72	He	2.706	ppb	3.2	8699.50	0.0477	Pulse	0.1000	3
Ni	60	72	He	53.919	ppb	1.0	46240.95	0.2536	Pulse	0.1000	3
Cu	63	72	He	3.938	ppb	2.7	10110.58	0.0554	Pulse	0.1000	3
Zn	66	72	He	32.522	ppb	2.4	9166.58	0.0503	Pulse	0.1000	3
As	75	72	He	1.060	ppb	27.8	279.34	0.0015	Pulse	0.5000	3
Sr	88	115	He	269.532	ppb	3.2	231604.36	3.0491	Pulse	0.1000	3
Mo	98	115	He	0.284	ppb	19.0	486.69	0.0064	Pulse	0.1000	3
Ag	107	115	He	0.008	ppb	157.8	60.00	0.0008	Pulse	0.1000	3
Cd	111	115	He	0.234	ppb	11.8	88.00	0.0012	Pulse	0.5000	3
Sn	120	115	He	0.701	ppb	71.8	2251.76	0.0295	Pulse	0.1000	3
Sb	121	115	He	1.516	ppb	4.4	1513.47	0.0199	Pulse	0.1000	3
Ba	137	115	He	25.117	ppb	7.9	8956.63	0.1179	Pulse	0.1000	3
Tl	205	159	He	0.043	ppb	28.5	286.68	0.0011	Pulse	0.1000	3
Pb	208	159	He	7.371	ppb	1.2	52283.88	0.1931	Pulse	0.1000	3
U	238	209	He	0.177	ppb	3.4	1433.47	0.0082	Pulse	0.1000	3

ISTD Table:

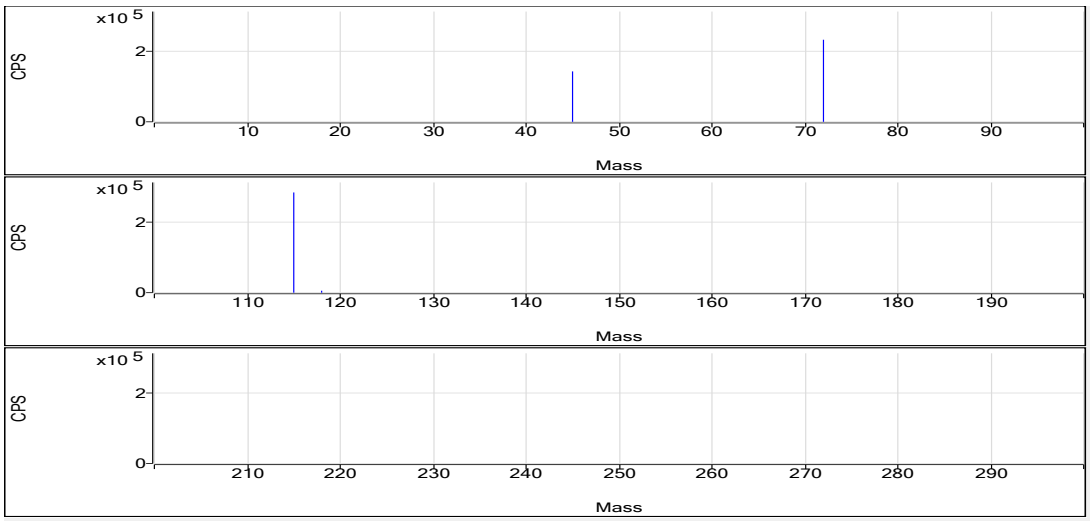
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2175634.81	1.0	98.3	Analog	0.1000	3
No Gas	Ge	72	1525917.16	2.6	97.2	Mix	0.1000	3
H2	Sc	45	142408.44	0.6	90.1	Pulse	0.1000	3
H2	Ge	72	231773.74	1.2	93.4	Pulse	0.1000	3
H2	In	115	283043.62	0.8	95.5	Pulse	0.1000	3
He	Sc	45	69953.59	1.2	89.4	Pulse	0.1000	3
He	Ge	72	182375.67	0.9	94.2	Pulse	0.1000	3
He	In	115	76009.37	3.1	93.2	Pulse	0.1000	3
He	Tb	159	270725.68	0.2	94.2	Pulse	0.1000	3
He	Bi	209	173820.48	0.6	94.6	Pulse	0.1000	3

No Gas

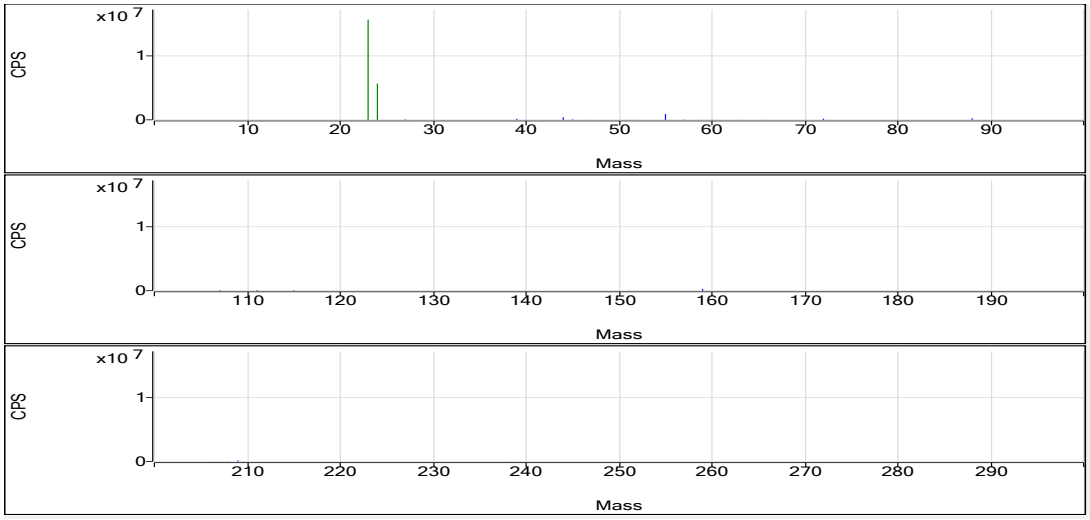


H2



Quantitation Report

He



Quantitation Report

Data File Name	122SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 15:17:13
Sample Name	410-61216-Z-5-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

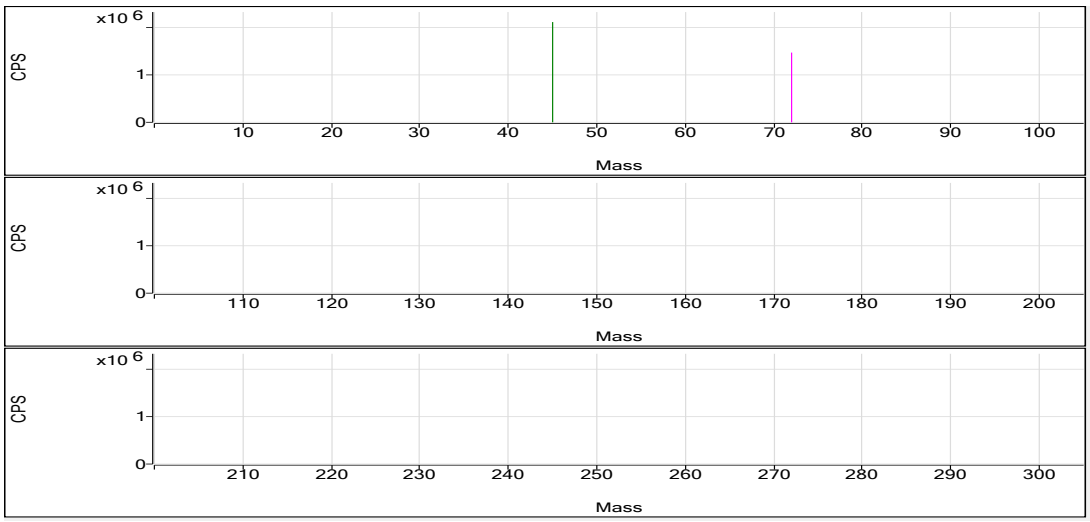
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.000	ppb	1143.1	15.33	0.0000	Pulse	0.5000	3
Se	78	115	H2	-0.011	ppb	N/A	1.55	0.0000	Pulse	1.5000	3
Na	23	72	He	38.980	ppb	5.6	21799.91	0.1219	Pulse	0.1000	3
Mg	24	72	He	7.838	ppb	18.1	1080.07	0.0060	Pulse	0.1000	3
Al	27	72	He	-28.445	ppb	N/A	170.01	0.0010	Pulse	0.1000	3
K	39	72	He	-24.594	ppb	N/A	21713.18	0.1214	Pulse	0.1000	3
Ca	44	72	He	38.131	ppb	46.0	403.35	0.0023	Pulse	0.1000	3
Ti	47	72	He	0.095	ppb	161.4	6.67	0.0000	Pulse	0.1000	3
V	51	72	He	-0.140	ppb	N/A	1200.06	0.0067	Pulse	0.5000	3
Cr	52	72	He	-0.100	ppb	N/A	1656.82	0.0093	Pulse	0.1000	3
Mn	55	72	He	0.217	ppb	27.6	316.68	0.0018	Pulse	0.1000	3
Fe	57	72	He	3.229	ppb	59.8	233.34	0.0013	Pulse	0.1000	3
Co	59	72	He	0.020	ppb	14.4	130.01	0.0007	Pulse	0.1000	3
Ni	60	72	He	0.015	ppb	747.4	156.67	0.0009	Pulse	0.1000	3
Cu	63	72	He	0.022	ppb	117.1	466.69	0.0026	Pulse	0.1000	3
Zn	66	72	He	1.036	ppb	27.8	420.02	0.0023	Pulse	0.1000	3
As	75	72	He	0.008	ppb	229.9	74.00	0.0004	Pulse	0.5000	3
Sr	88	115	He	0.087	ppb	13.7	100.00	0.0013	Pulse	0.1000	3
Mo	98	115	He	0.014	ppb	27.0	56.67	0.0007	Pulse	0.1000	3
Ag	107	115	He	-0.002	ppb	N/A	26.67	0.0003	Pulse	0.1000	3
Cd	111	115	He	0.002	ppb	163.9	1.33	0.0000	Pulse	0.5000	3
Sn	120	115	He	0.087	ppb	290.7	1586.96	0.0208	Pulse	0.1000	3
Sb	121	115	He	0.022	ppb	82.2	40.00	0.0005	Pulse	0.1000	3
Ba	137	115	He	0.021	ppb	266.4	20.00	0.0003	Pulse	0.1000	3
Tl	205	159	He	0.006	ppb	121.4	90.00	0.0003	Pulse	0.1000	3
Pb	208	159	He	-0.010	ppb	N/A	210.00	0.0008	Pulse	0.1000	3
U	238	209	He	0.007	ppb	16.2	70.00	0.0004	Pulse	0.1000	3

ISTD Table:

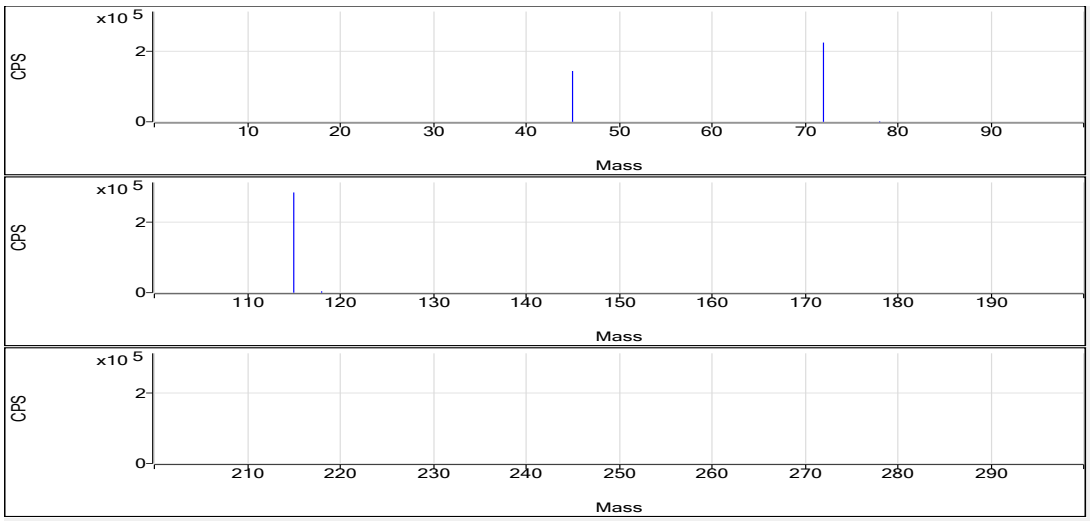
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2108897.47	0.3	95.3	Analog	0.1000	3
No Gas	Ge	72	1466759.04	1.1	93.4	Mix	0.1000	3
H2	Sc	45	144606.31	0.9	91.5	Pulse	0.1000	3
H2	Ge	72	225449.10	1.6	90.8	Pulse	0.1000	3
H2	In	115	285168.48	1.1	96.2	Pulse	0.1000	3
He	Sc	45	69692.43	1.9	89.1	Pulse	0.1000	3
He	Ge	72	178788.51	0.8	92.4	Pulse	0.1000	3
He	In	115	76187.12	0.6	93.4	Pulse	0.1000	3
He	Tb	159	273299.40	0.2	95.1	Pulse	0.1000	3
He	Bi	209	177728.48	0.7	96.7	Pulse	0.1000	3

No Gas

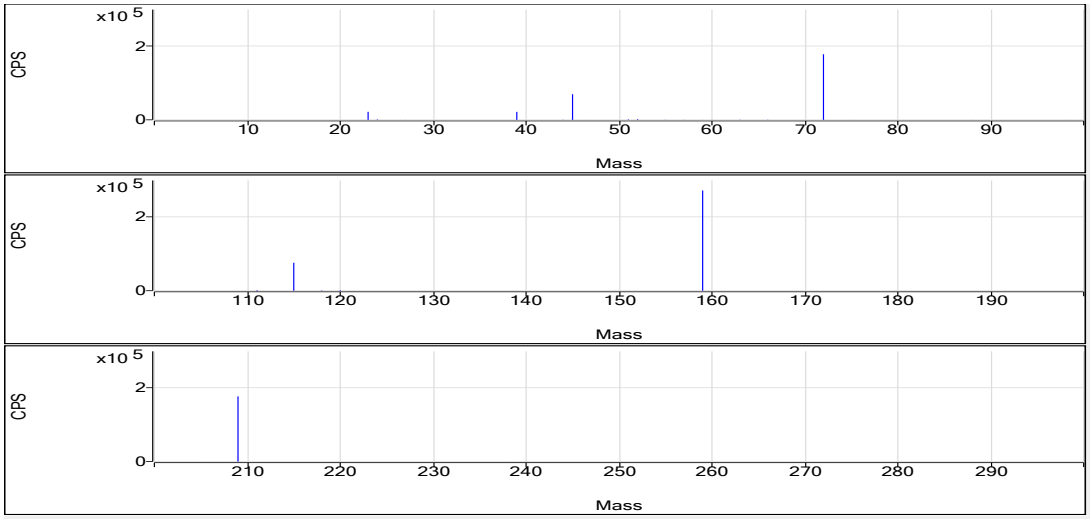


H2



Quantitation Report

He



Quantitation Report

Data File Name	123SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 15:19:14
Sample Name	410-61796-S-1-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

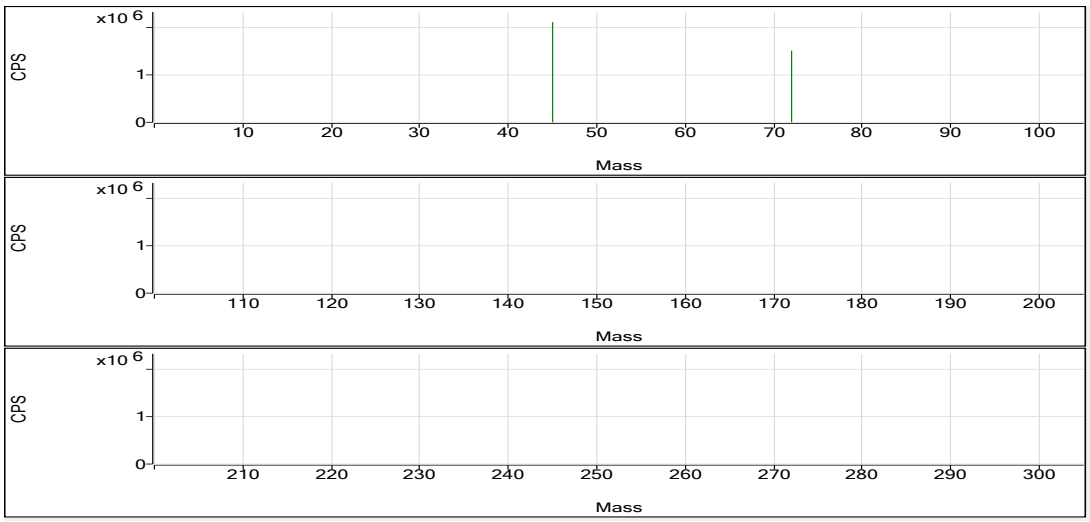
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.103	ppb	9.3	190.67	0.0001	Pulse	0.5000	3
Se	78	115	H2	0.031	ppb	20.9	3.78	0.0000	Pulse	1.5000	3
Na	23	72	He	19390.859	ppb	0.8	4948504.61	27.2485	Analog	0.1000	3
Mg	24	72	He	35000.222	ppb	1.2	4281987.44	23.5783	Analog	0.1000	3
Al	27	72	He	-12.491	ppb	N/A	790.05	0.0044	Pulse	0.1000	3
K	39	72	He	5314.566	ppb	0.3	527003.04	2.9019	Pulse	0.1000	3
Ca	44	72	He	68785.511	ppb	1.5	350003.20	1.9273	Pulse	0.1000	3
Ti	47	72	He	0.529	ppb	103.0	23.33	0.0001	Pulse	0.1000	3
V	51	72	He	-0.097	ppb	N/A	1280.73	0.0071	Pulse	0.5000	3
Cr	52	72	He	0.333	ppb	33.7	2490.30	0.0137	Pulse	0.1000	3
Mn	55	72	He	67.991	ppb	1.3	55031.21	0.3030	Pulse	0.1000	3
Fe	57	72	He	482.062	ppb	2.1	16873.64	0.0929	Pulse	0.1000	3
Co	59	72	He	0.133	ppb	14.4	490.02	0.0027	Pulse	0.1000	3
Ni	60	72	He	4.061	ppb	4.7	3603.91	0.0198	Pulse	0.1000	3
Cu	63	72	He	193.766	ppb	1.3	475221.37	2.6168	Pulse	0.1000	3
Zn	66	72	He	70.160	ppb	3.2	19527.10	0.1075	Pulse	0.1000	3
As	75	72	He	0.085	ppb	73.2	90.00	0.0005	Pulse	0.5000	3
Sr	88	115	He	982.711	ppb	0.9	837871.86	11.1161	Pulse	0.1000	3
Mo	98	115	He	0.012	ppb	60.6	53.33	0.0007	Pulse	0.1000	3
Ag	107	115	He	0.003	ppb	157.8	43.33	0.0006	Pulse	0.1000	3
Cd	111	115	He	0.020	ppb	71.2	8.00	0.0001	Pulse	0.5000	3
Sn	120	115	He	0.154	ppb	147.6	1640.21	0.0218	Pulse	0.1000	3
Sb	121	115	He	0.179	ppb	32.4	193.34	0.0026	Pulse	0.1000	3
Ba	137	115	He	62.044	ppb	1.6	21937.97	0.2911	Pulse	0.1000	3
Tl	205	159	He	0.016	ppb	43.1	143.34	0.0005	Pulse	0.1000	3
Pb	208	159	He	104.246	ppb	1.1	738141.11	2.7180	Pulse	0.1000	3
U	238	209	He	0.010	ppb	39.5	86.67	0.0005	Pulse	0.1000	3

ISTD Table:

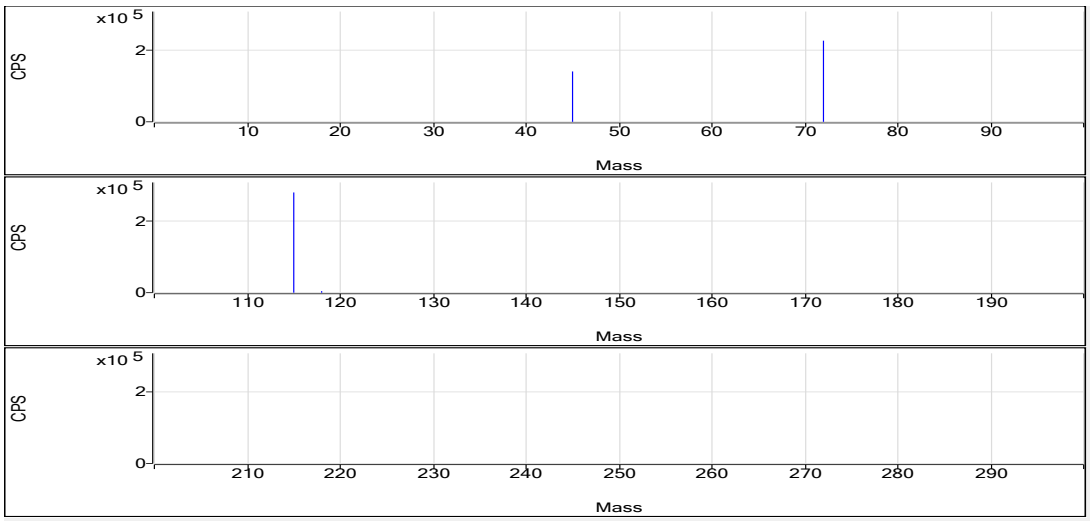
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2126203.04	0.6	96.1	Analog	0.1000	3
No Gas	Ge	72	1521663.16	2.4	96.9	Analog	0.1000	3
H2	Sc	45	141141.81	0.3	89.3	Pulse	0.1000	3
H2	Ge	72	227394.03	0.9	91.6	Pulse	0.1000	3
H2	In	115	280852.86	1.0	94.8	Pulse	0.1000	3
He	Sc	45	68979.18	1.3	88.2	Pulse	0.1000	3
He	Ge	72	181605.97	0.1	93.8	Pulse	0.1000	3
He	In	115	75379.83	1.4	92.5	Pulse	0.1000	3
He	Tb	159	271596.46	1.1	94.5	Pulse	0.1000	3
He	Bi	209	174421.54	0.4	94.9	Pulse	0.1000	3

No Gas

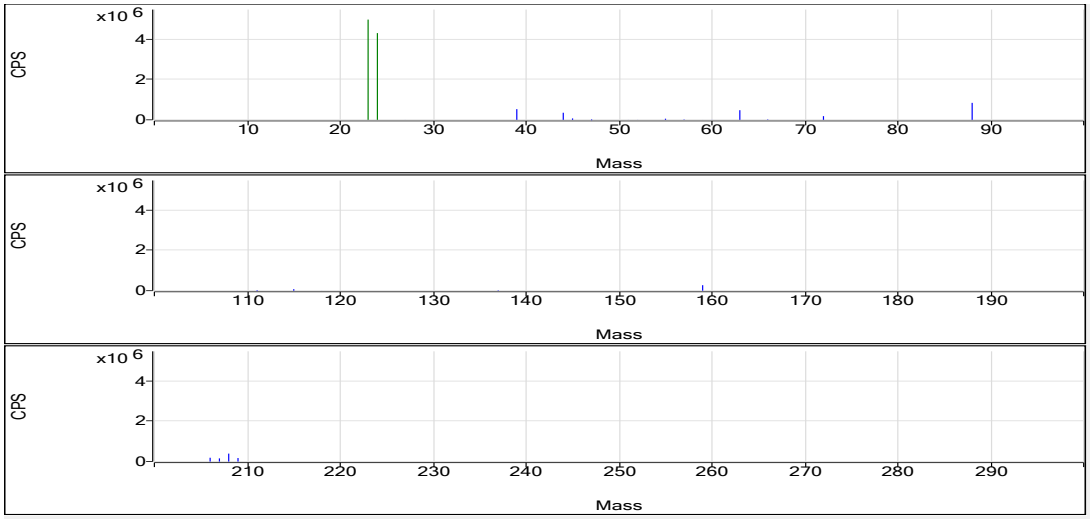


H2



Quantitation Report

He



Quantitation Report

Data File Name	124SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 15:21:16
Sample Name	410-61220-G-5-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

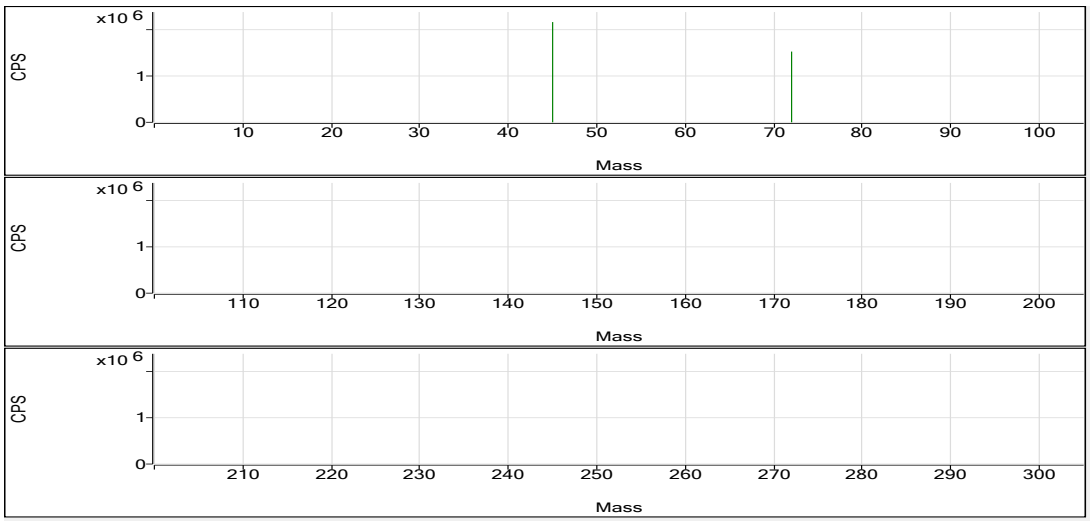
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.043	ppb	18.8	88.67	0.0001	Pulse	0.5000	3
Se	78	115	H2	0.110	ppb	58.2	8.00	0.0000	Pulse	1.5000	3
Na	23	72	He	102880.284	ppb	0.8	26095286.28	144.2804	Analog	0.1000	3
Mg	24	72	He	23254.121	ppb	2.5	2833503.39	15.6657	Analog	0.1000	3
Al	27	72	He	437.779	ppb	23.2	18132.48	0.1003	Pulse	0.1000	3
K	39	72	He	3356.183	ppb	1.2	340400.61	1.8820	Pulse	0.1000	3
Ca	44	72	He	66337.295	ppb	1.1	336182.77	1.8587	Pulse	0.1000	3
Ti	47	72	He	15.325	ppb	22.2	586.73	0.0032	Pulse	0.1000	3
V	51	72	He	1.492	ppb	5.1	3555.24	0.0197	Pulse	0.5000	3
Cr	52	72	He	1.379	ppb	3.6	4424.15	0.0245	Pulse	0.1000	3
Mn	55	72	He	555.914	ppb	0.3	447066.44	2.4718	Pulse	0.1000	3
Fe	57	72	He	22892.427	ppb	0.3	792256.34	4.3804	Pulse	0.1000	3
Co	59	72	He	0.647	ppb	13.2	2113.56	0.0117	Pulse	0.1000	3
Ni	60	72	He	1.192	ppb	19.1	1156.75	0.0064	Pulse	0.1000	3
Cu	63	72	He	1.910	ppb	7.9	5077.75	0.0281	Pulse	0.1000	3
Zn	66	72	He	13.580	ppb	8.6	3877.31	0.0214	Pulse	0.1000	3
As	75	72	He	2.731	ppb	9.7	597.35	0.0033	Pulse	0.5000	3
Sr	88	115	He	357.155	ppb	2.2	306332.83	4.0402	Pulse	0.1000	3
Mo	98	115	He	0.238	ppb	8.2	413.36	0.0055	Pulse	0.1000	3
Ag	107	115	He	-0.001	ppb	N/A	30.00	0.0004	Pulse	0.1000	3
Cd	111	115	He	0.014	ppb	62.6	6.00	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.144	ppb	N/A	1333.44	0.0176	Pulse	0.1000	3
Sb	121	115	He	0.035	ppb	45.2	53.33	0.0007	Pulse	0.1000	3
Ba	137	115	He	61.242	ppb	2.7	21784.93	0.2873	Pulse	0.1000	3
Tl	205	159	He	0.002	ppb	208.0	66.67	0.0002	Pulse	0.1000	3
Pb	208	159	He	0.696	ppb	3.3	5213.93	0.0192	Pulse	0.1000	3
U	238	209	He	0.035	ppb	12.0	286.68	0.0017	Pulse	0.1000	3

ISTD Table:

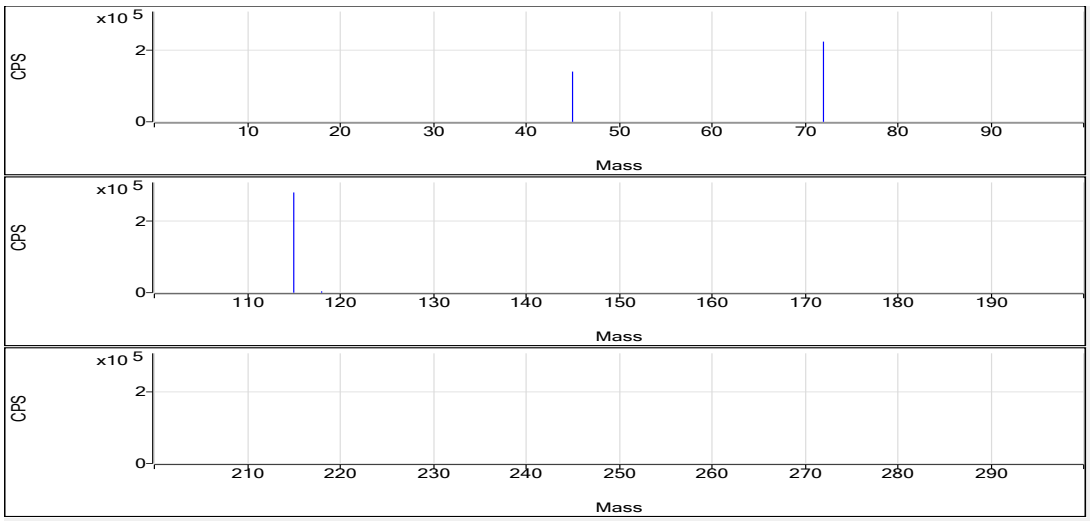
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2152779.34	1.0	97.3	Analog	0.1000	3
No Gas	Ge	72	1518982.84	0.4	96.7	Analog	0.1000	3
H2	Sc	45	140675.39	0.2	89.0	Pulse	0.1000	3
H2	Ge	72	224621.59	0.6	90.5	Pulse	0.1000	3
H2	In	115	280706.76	0.7	94.7	Pulse	0.1000	3
He	Sc	45	69829.87	0.5	89.3	Pulse	0.1000	3
He	Ge	72	180866.28	0.2	93.4	Pulse	0.1000	3
He	In	115	75835.40	1.6	93.0	Pulse	0.1000	3
He	Tb	159	272196.23	0.8	94.7	Pulse	0.1000	3
He	Bi	209	169514.79	1.8	92.3	Pulse	0.1000	3

No Gas

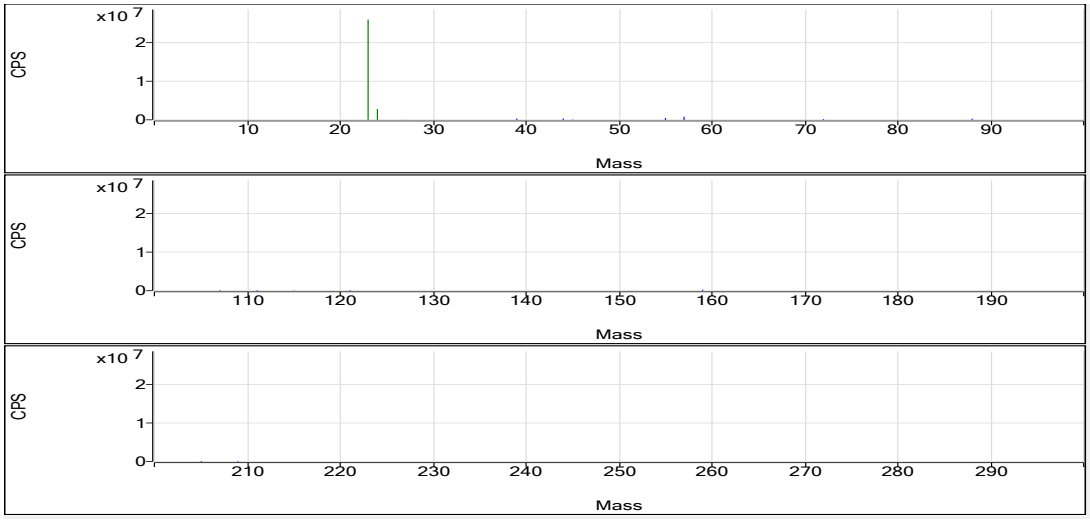


H2



Quantitation Report

He



Quantitation Report

Data File Name	125SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 15:23:17
Sample Name	410-61796-S-4-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

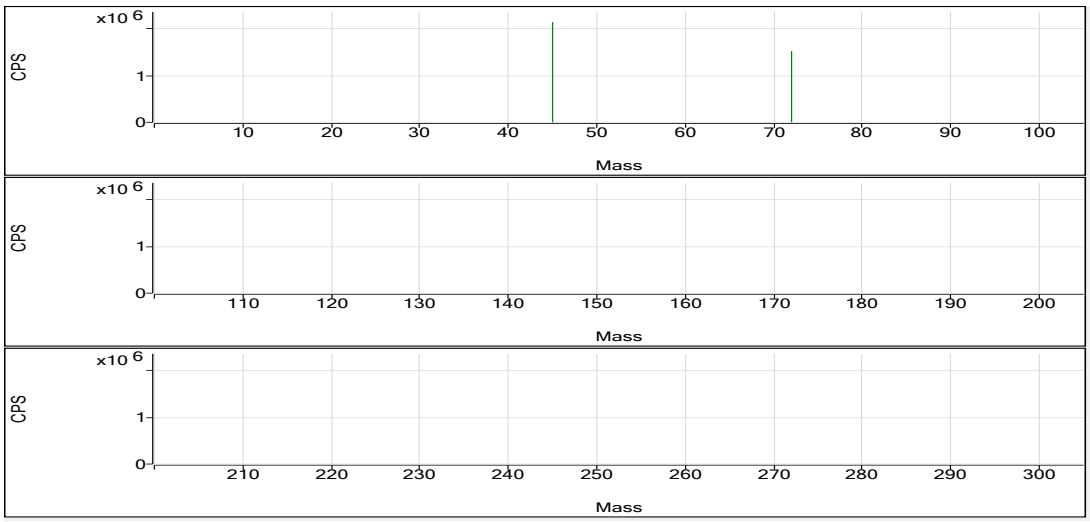
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.903	ppb	1.3	1560.09	0.0010	Pulse	0.5000	3
Se	78	115	H2	0.284	ppb	22.9	17.34	0.0001	Pulse	1.5000	3
Na	23	72	He	2148.502	ppb	0.5	560781.92	3.0790	Pulse	0.1000	3
Mg	24	72	He	13638.572	ppb	1.1	1673449.45	9.1883	Analog	0.1000	3
Al	27	72	He	5993.770	ppb	3.5	233818.00	1.2838	Pulse	0.1000	3
K	39	72	He	3767.410	ppb	0.6	381793.40	2.0962	Pulse	0.1000	3
Ca	44	72	He	5942.297	ppb	2.8	30519.13	0.1676	Pulse	0.1000	3
Ti	47	72	He	246.496	ppb	22.1	9452.65	0.0519	Pulse	0.1000	3
V	51	72	He	7.503	ppb	6.0	12262.03	0.0673	Pulse	0.5000	3
Cr	52	72	He	26.955	ppb	9.5	52332.06	0.2872	Pulse	0.1000	3
Mn	55	72	He	406.462	ppb	1.1	329206.46	1.8075	Pulse	0.1000	3
Fe	57	72	He	8347.002	ppb	0.1	290981.62	1.5976	Pulse	0.1000	3
Co	59	72	He	10.563	ppb	1.3	33716.53	0.1851	Pulse	0.1000	3
Ni	60	72	He	30.194	ppb	1.3	25927.08	0.1423	Pulse	0.1000	3
Cu	63	72	He	13.267	ppb	1.2	33025.01	0.1813	Pulse	0.1000	3
Zn	66	72	He	69.728	ppb	1.2	19463.66	0.1069	Pulse	0.1000	3
As	75	72	He	0.421	ppb	18.3	155.33	0.0009	Pulse	0.5000	3
Sr	88	115	He	78.431	ppb	2.5	67061.75	0.8875	Pulse	0.1000	3
Mo	98	115	He	0.541	ppb	7.2	893.39	0.0118	Pulse	0.1000	3
Ag	107	115	He	0.001	ppb	554.7	36.67	0.0005	Pulse	0.1000	3
Cd	111	115	He	0.112	ppb	37.6	42.00	0.0006	Pulse	0.5000	3
Sn	120	115	He	0.032	ppb	207.4	1516.80	0.0201	Pulse	0.1000	3
Sb	121	115	He	0.015	ppb	216.8	33.33	0.0004	Pulse	0.1000	3
Ba	137	115	He	118.489	ppb	2.0	41994.93	0.5557	Pulse	0.1000	3
Tl	205	159	He	0.184	ppb	9.6	1060.08	0.0038	Pulse	0.1000	3
Pb	208	159	He	2.525	ppb	0.9	18635.91	0.0668	Pulse	0.1000	3
U	238	209	He	0.244	ppb	11.7	2020.25	0.0114	Pulse	0.1000	3

ISTD Table:

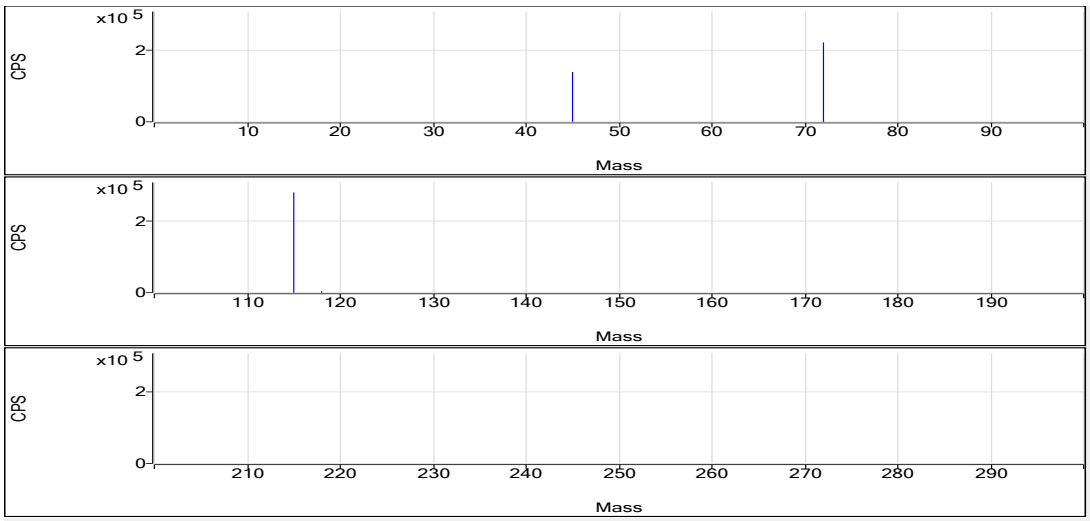
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2145840.90	0.4	96.9	Analog	0.1000	3
No Gas	Ge	72	1526789.04	1.5	97.2	Analog	0.1000	3
H2	Sc	45	139867.68	1.5	88.5	Pulse	0.1000	3
H2	Ge	72	222926.59	1.8	89.8	Pulse	0.1000	3
H2	In	115	281508.78	2.4	95.0	Pulse	0.1000	3
He	Sc	45	70422.69	1.3	90.0	Pulse	0.1000	3
He	Ge	72	182138.38	0.8	94.1	Pulse	0.1000	3
He	In	115	75581.60	1.5	92.7	Pulse	0.1000	3
He	Tb	159	278844.67	0.6	97.0	Pulse	0.1000	3
He	Bi	209	177950.05	1.6	96.9	Pulse	0.1000	3

No Gas

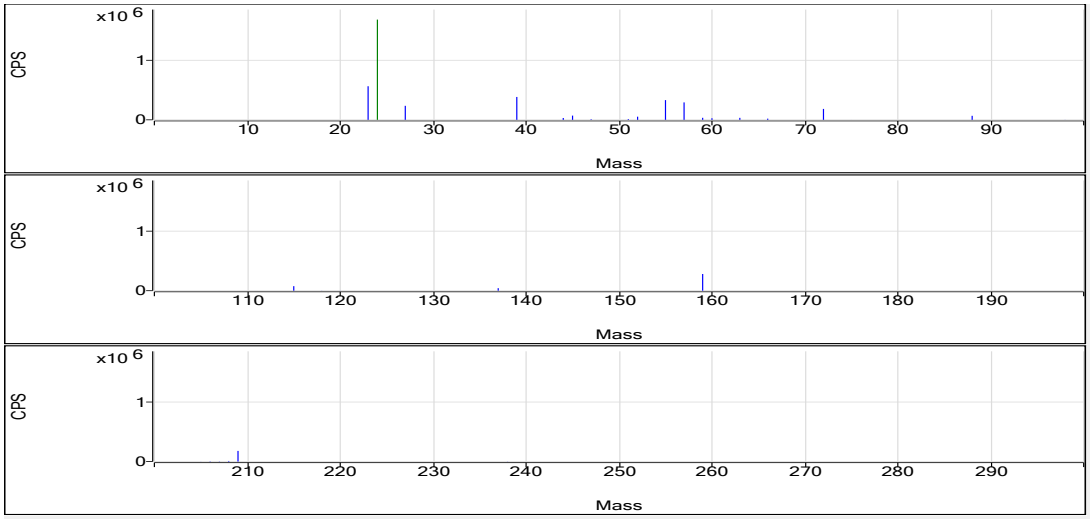


H2



Quantitation Report

He



Quantitation Report

Data File Name	126SMPL.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 15:25:17
Sample Name	410-61730-F-2-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

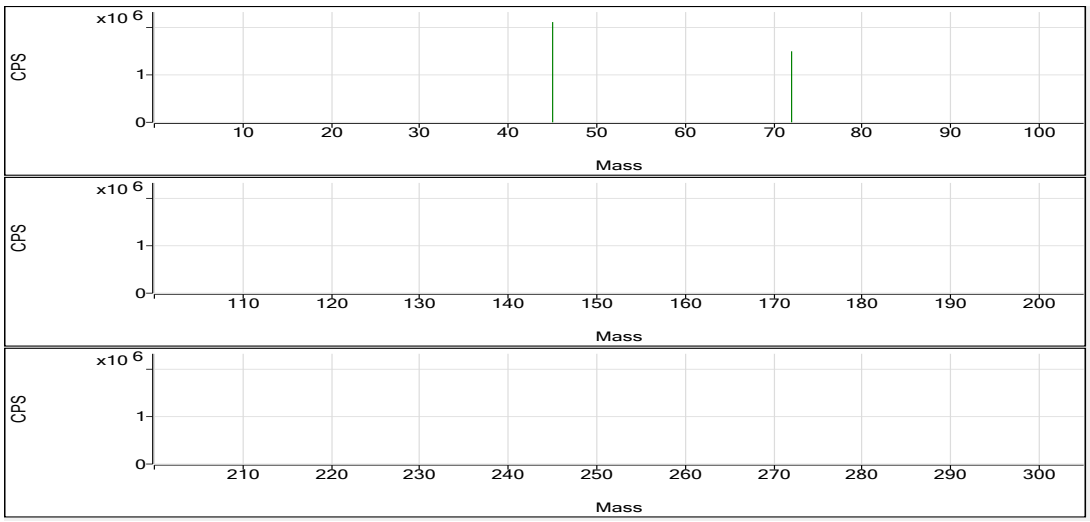
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.056	ppb	10.5	109.33	0.0001	Pulse	0.5000	3
Se	78	115	H2	0.644	ppb	7.2	36.67	0.0001	Pulse	1.5000	3
Na	23	72	He	8155.165	ppb	0.7	2055293.67	11.4988	Analog	0.1000	3
Mg	24	72	He	16546.220	ppb	0.3	1992444.24	11.1470	Analog	0.1000	3
Al	27	72	He	184.496	ppb	4.7	8276.48	0.0463	Pulse	0.1000	3
K	39	72	He	1077.976	ppb	1.4	124336.92	0.6956	Pulse	0.1000	3
Ca	44	72	He	35673.733	ppb	1.9	178750.01	1.0001	Pulse	0.1000	3
Ti	47	72	He	5.597	ppb	29.5	213.35	0.0012	Pulse	0.1000	3
V	51	72	He	0.428	ppb	23.3	2004.86	0.0112	Pulse	0.5000	3
Cr	52	72	He	0.264	ppb	21.9	2323.59	0.0130	Pulse	0.1000	3
Mn	55	72	He	424.643	ppb	1.1	337513.90	1.8883	Pulse	0.1000	3
Fe	57	72	He	243.192	ppb	2.1	8439.40	0.0472	Pulse	0.1000	3
Co	59	72	He	1.586	ppb	3.2	5027.69	0.0281	Pulse	0.1000	3
Ni	60	72	He	2.875	ppb	7.5	2553.65	0.0143	Pulse	0.1000	3
Cu	63	72	He	0.624	ppb	10.9	1916.86	0.0107	Pulse	0.1000	3
Zn	66	72	He	2.420	ppb	9.5	796.72	0.0045	Pulse	0.1000	3
As	75	72	He	0.451	ppb	5.4	158.00	0.0009	Pulse	0.5000	3
Sr	88	115	He	37.506	ppb	3.9	31134.65	0.4246	Pulse	0.1000	3
Mo	98	115	He	0.907	ppb	5.4	1430.13	0.0195	Pulse	0.1000	3
Ag	107	115	He	0.003	ppb	143.8	43.33	0.0006	Pulse	0.1000	3
Cd	111	115	He	0.106	ppb	38.7	38.67	0.0005	Pulse	0.5000	3
Sn	120	115	He	-0.089	ppb	N/A	1346.77	0.0184	Pulse	0.1000	3
Sb	121	115	He	0.037	ppb	98.2	53.33	0.0007	Pulse	0.1000	3
Ba	137	115	He	27.280	ppb	3.4	9396.88	0.1281	Pulse	0.1000	3
Tl	205	159	He	0.220	ppb	5.9	1233.43	0.0045	Pulse	0.1000	3
Pb	208	159	He	0.283	ppb	3.0	2293.50	0.0084	Pulse	0.1000	3
U	238	209	He	0.252	ppb	9.3	2073.58	0.0118	Pulse	0.1000	3

ISTD Table:

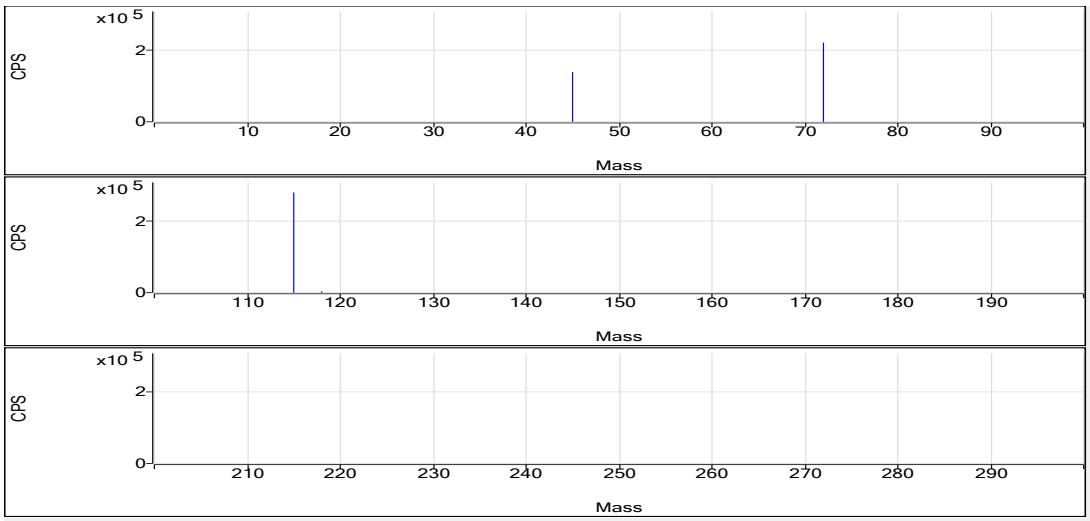
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2126456.22	0.4	96.1	Analog	0.1000	3
No Gas	Ge	72	1506505.55	1.4	95.9	Analog	0.1000	3
H2	Sc	45	139289.21	1.8	88.1	Pulse	0.1000	3
H2	Ge	72	221944.08	0.7	89.4	Pulse	0.1000	3
H2	In	115	281055.96	1.2	94.9	Pulse	0.1000	3
He	Sc	45	68416.46	0.6	87.5	Pulse	0.1000	3
He	Ge	72	178740.73	1.1	92.3	Pulse	0.1000	3
He	In	115	73358.98	2.1	90.0	Pulse	0.1000	3
He	Tb	159	273326.78	1.4	95.1	Pulse	0.1000	3
He	Bi	209	176218.43	0.6	95.9	Pulse	0.1000	3

No Gas

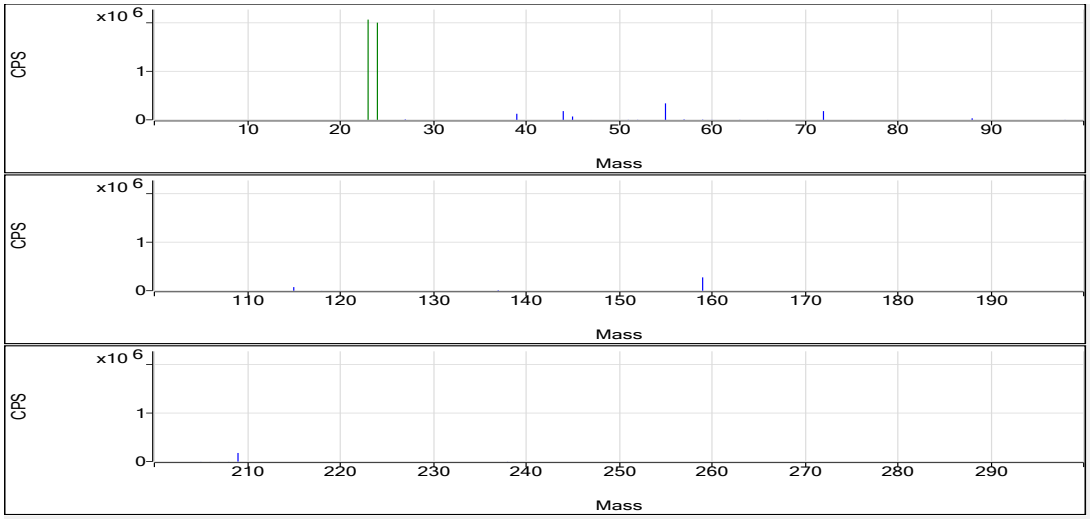


H2



Quantitation Report

He



Quantitation Report

Data File Name	127_CCV.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 15:27:19
Sample Name	CCV 1942322
Sample Type	CCV
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

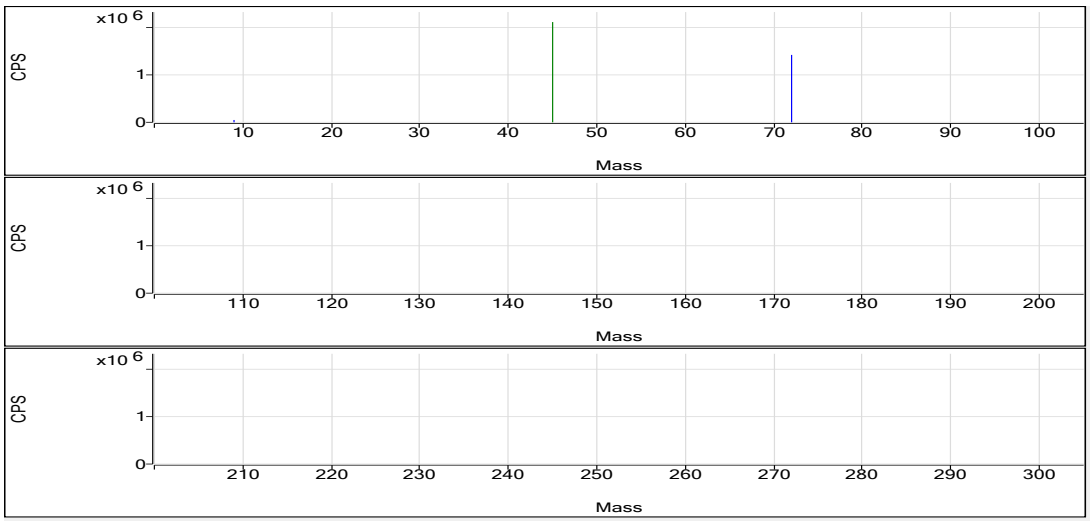
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	30.664	ppb	0.8	49074.73	0.0344	Pulse	0.5000	3
Se	78	115	H2	30.708	ppb	1.5	1647.43	0.0059	Pulse	1.5000	3
Na	23	72	He	5126.502	ppb	0.2	1252752.01	7.2534	Analog	0.1000	3
Mg	24	72	He	5125.111	ppb	1.2	596370.07	3.4532	Pulse	0.1000	3
Al	27	72	He	5045.755	ppb	1.1	186841.26	1.0819	Pulse	0.1000	3
K	39	72	He	5128.373	ppb	1.0	484428.56	2.8049	Pulse	0.1000	3
Ca	44	72	He	5021.341	ppb	3.7	24484.42	0.1418	Pulse	0.1000	3
Ti	47	72	He	302.640	ppb	2.3	11004.53	0.0637	Pulse	0.1000	3
V	51	72	He	300.147	ppb	1.0	412478.77	2.3883	Pulse	0.5000	3
Cr	52	72	He	301.536	ppb	1.1	536732.66	3.1078	Pulse	0.1000	3
Mn	55	72	He	310.838	ppb	0.8	238762.45	1.3825	Pulse	0.1000	3
Fe	57	72	He	5199.989	ppb	1.3	171935.60	0.9955	Pulse	0.1000	3
Co	59	72	He	297.830	ppb	0.9	899625.06	5.2089	Pulse	0.1000	3
Ni	60	72	He	311.854	ppb	1.0	252601.37	1.4627	Pulse	0.1000	3
Cu	63	72	He	300.864	ppb	0.6	701494.11	4.0618	Pulse	0.1000	3
Zn	66	72	He	311.590	ppb	1.1	82009.24	0.4749	Pulse	0.1000	3
As	75	72	He	316.167	ppb	0.8	57999.82	0.3358	Pulse	0.5000	3
Sr	88	115	He	31.377	ppb	1.7	26725.77	0.3552	Pulse	0.1000	3
Mo	98	115	He	30.781	ppb	3.0	48684.70	0.6471	Pulse	0.1000	3
Ag	107	115	He	31.520	ppb	2.1	99678.28	1.3250	Pulse	0.1000	3
Cd	111	115	He	31.138	ppb	1.2	11495.40	0.1528	Pulse	0.5000	3
Sn	120	115	He	32.079	ppb	1.4	35539.50	0.4724	Pulse	0.1000	3
Sb	121	115	He	31.680	ppb	3.3	30958.67	0.4116	Pulse	0.1000	3
Ba	137	115	He	319.088	ppb	1.8	112573.34	1.4963	Pulse	0.1000	3
Tl	205	159	He	31.273	ppb	1.5	167551.82	0.6124	Pulse	0.1000	3
Pb	208	159	He	31.519	ppb	1.3	225044.67	0.8225	Pulse	0.1000	3
U	238	209	He	262.470	ppb	1.2	2137977.52	12.1758	Analog	0.1000	3

ISTD Table:

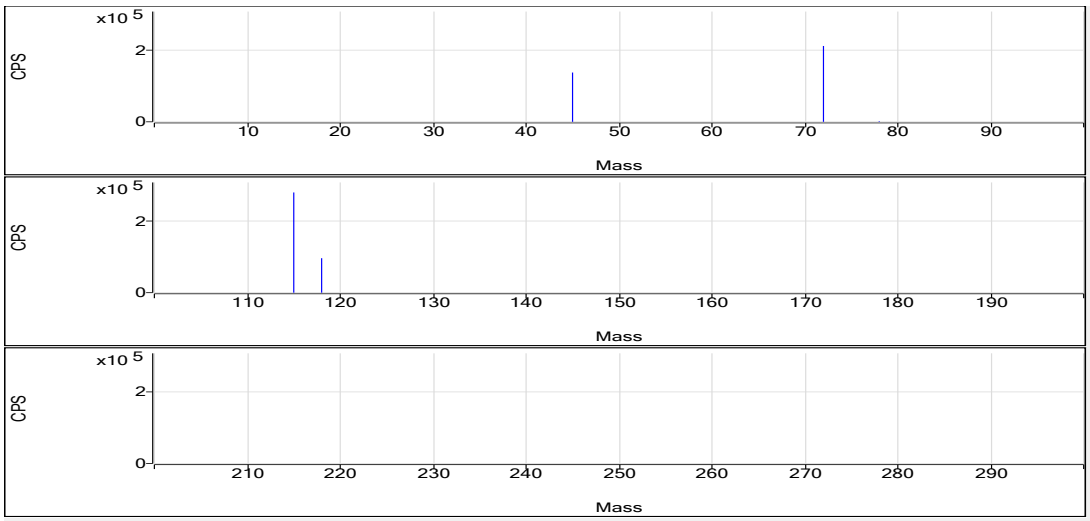
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2123413.87	0.7	95.9	Analog	0.1000	3
No Gas	Ge	72	1427768.52	0.5	90.9	Pulse	0.1000	3
H2	Sc	45	138009.12	1.5	87.3	Pulse	0.1000	3
H2	Ge	72	212373.58	0.4	85.6	Pulse	0.1000	3
H2	In	115	280672.86	1.0	94.7	Pulse	0.1000	3
He	Sc	45	69920.13	1.6	89.4	Pulse	0.1000	3
He	Ge	72	172710.92	1.0	89.2	Pulse	0.1000	3
He	In	115	75241.86	1.3	92.3	Pulse	0.1000	3
He	Tb	159	273636.11	1.0	95.2	Pulse	0.1000	3
He	Bi	209	175594.41	0.5	95.6	Pulse	0.1000	3

No Gas

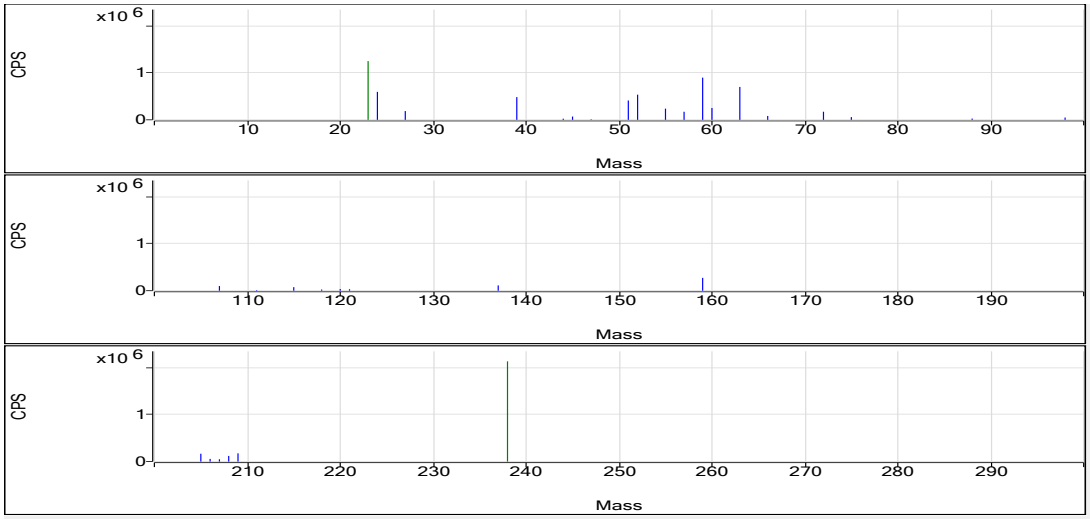


H2



Quantitation Report

He



Quantitation Report

Data File Name	128_CCB.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 15:29:20
Sample Name	CCB 2014932
Sample Type	CCB
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

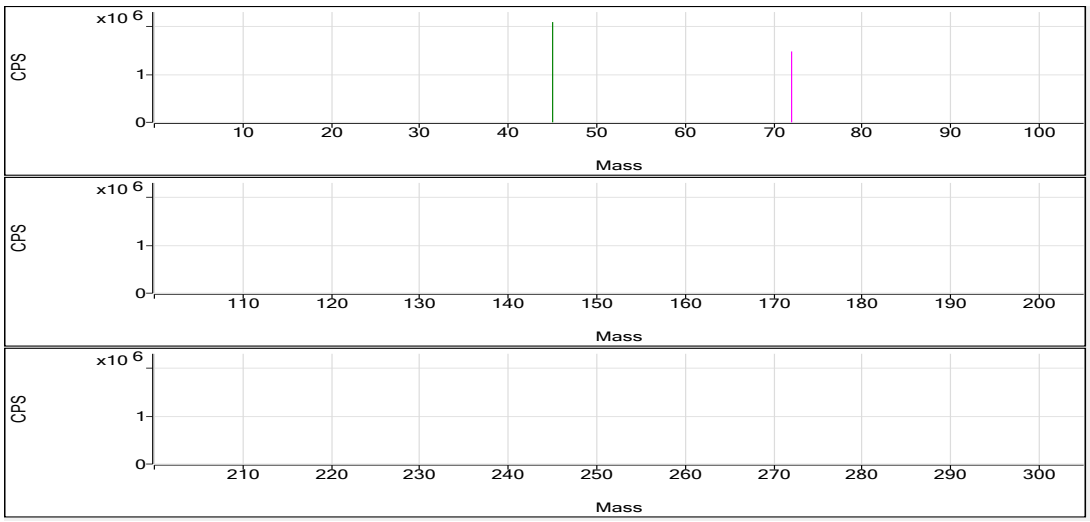
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.004	ppb	55.2	22.00	0.0000	Pulse	0.5000	3
Se	78	115	H2	-0.002	ppb	N/A	2.00	0.0000	Pulse	1.5000	3
Na	23	72	He	7.546	ppb	13.7	13660.01	0.0779	Pulse	0.1000	3
Mg	24	72	He	2.541	ppb	15.7	433.35	0.0025	Pulse	0.1000	3
Al	27	72	He	-29.256	ppb	N/A	136.67	0.0008	Pulse	0.1000	3
K	39	72	He	-15.453	ppb	N/A	22140.63	0.1262	Pulse	0.1000	3
Ca	44	72	He	4.376	ppb	234.0	230.01	0.0013	Pulse	0.1000	3
Ti	47	72	He	-0.082	ppb	0.0	0.00	0.0000	Pulse	0.1000	3
V	51	72	He	-0.057	ppb	N/A	1293.40	0.0074	Pulse	0.5000	3
Cr	52	72	He	-0.084	ppb	N/A	1653.48	0.0094	Pulse	0.1000	3
Mn	55	72	He	0.126	ppb	46.4	240.01	0.0014	Pulse	0.1000	3
Fe	57	72	He	3.653	ppb	46.8	243.34	0.0014	Pulse	0.1000	3
Co	59	72	He	0.055	ppb	53.0	233.34	0.0013	Pulse	0.1000	3
Ni	60	72	He	-0.027	ppb	N/A	120.00	0.0007	Pulse	0.1000	3
Cu	63	72	He	-0.009	ppb	N/A	383.35	0.0022	Pulse	0.1000	3
Zn	66	72	He	-0.009	ppb	N/A	133.34	0.0008	Pulse	0.1000	3
As	75	72	He	0.091	ppb	71.9	88.00	0.0005	Pulse	0.5000	3
Sr	88	115	He	0.022	ppb	34.3	43.33	0.0006	Pulse	0.1000	3
Mo	98	115	He	0.023	ppb	25.3	70.00	0.0009	Pulse	0.1000	3
Ag	107	115	He	-0.009	ppb	N/A	6.67	0.0001	Pulse	0.1000	3
Cd	111	115	He	0.006	ppb	58.5	2.67	0.0000	Pulse	0.5000	3
Sn	120	115	He	-0.055	ppb	N/A	1420.13	0.0188	Pulse	0.1000	3
Sb	121	115	He	0.022	ppb	166.7	40.00	0.0005	Pulse	0.1000	3
Ba	137	115	He	0.003	ppb	1280.2	13.33	0.0002	Pulse	0.1000	3
Tl	205	159	He	0.051	ppb	30.4	330.02	0.0012	Pulse	0.1000	3
Pb	208	159	He	-0.011	ppb	N/A	200.01	0.0007	Pulse	0.1000	3
U	238	209	He	0.050	ppb	12.7	423.36	0.0024	Pulse	0.1000	3

ISTD Table:

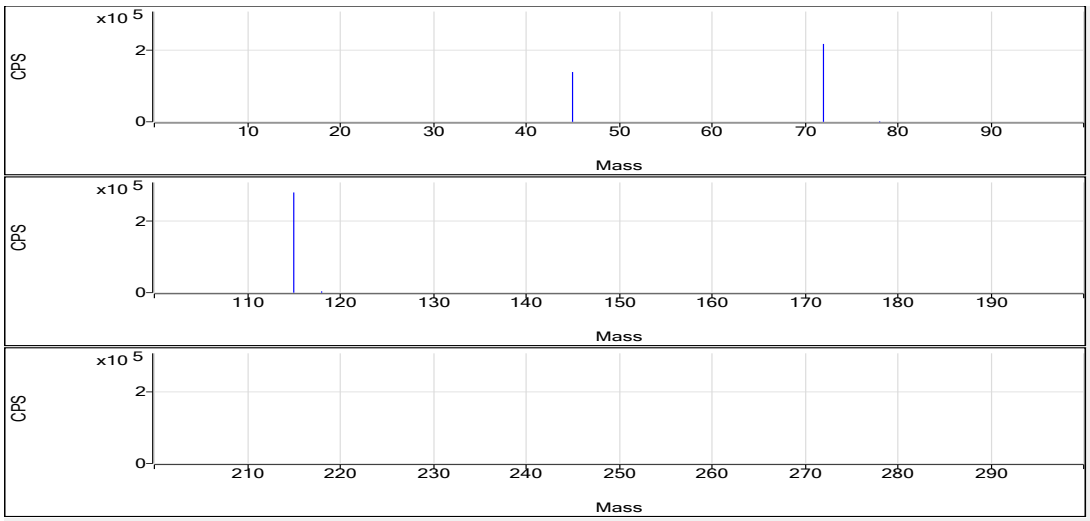
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2094709.03	1.2	94.6	Analog	0.1000	3
No Gas	Ge	72	1480808.36	1.9	94.3	Mix	0.1000	3
H2	Sc	45	139210.13	0.7	88.1	Pulse	0.1000	3
H2	Ge	72	217802.02	1.2	87.7	Pulse	0.1000	3
H2	In	115	280288.69	1.2	94.6	Pulse	0.1000	3
He	Sc	45	69294.26	2.0	88.6	Pulse	0.1000	3
He	Ge	72	175444.29	0.5	90.6	Pulse	0.1000	3
He	In	115	75409.37	1.4	92.5	Pulse	0.1000	3
He	Tb	159	271674.52	0.9	94.5	Pulse	0.1000	3
He	Bi	209	176928.35	1.1	96.3	Pulse	0.1000	3

No Gas

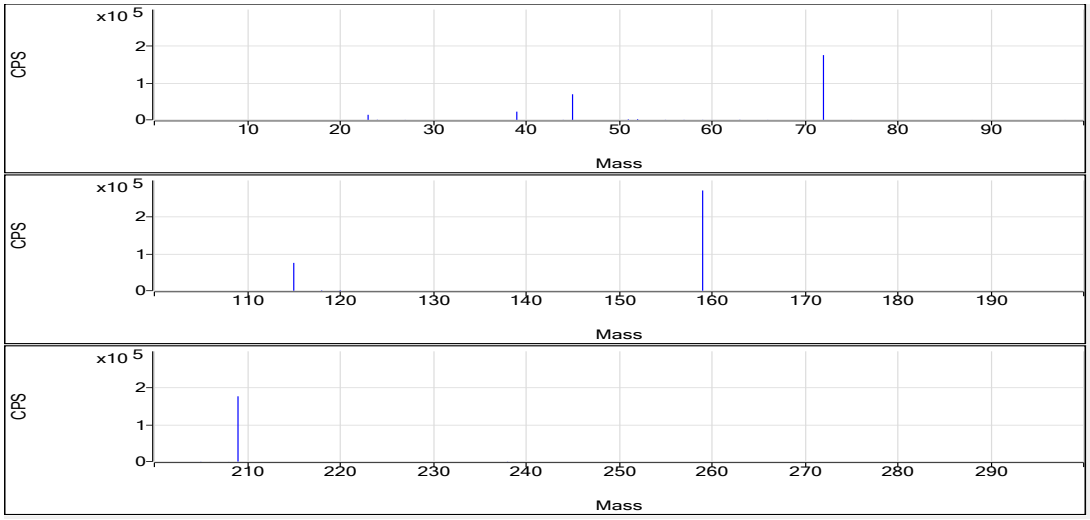


H2



Quantitation Report

He



Quantitation Report

Data File Name	135_LLC.d
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	2021-11-05 15:43:29
Sample Name	CRI 2020343
Sample Type	CRI
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins21905
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	2021-11-05 11:49:32
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

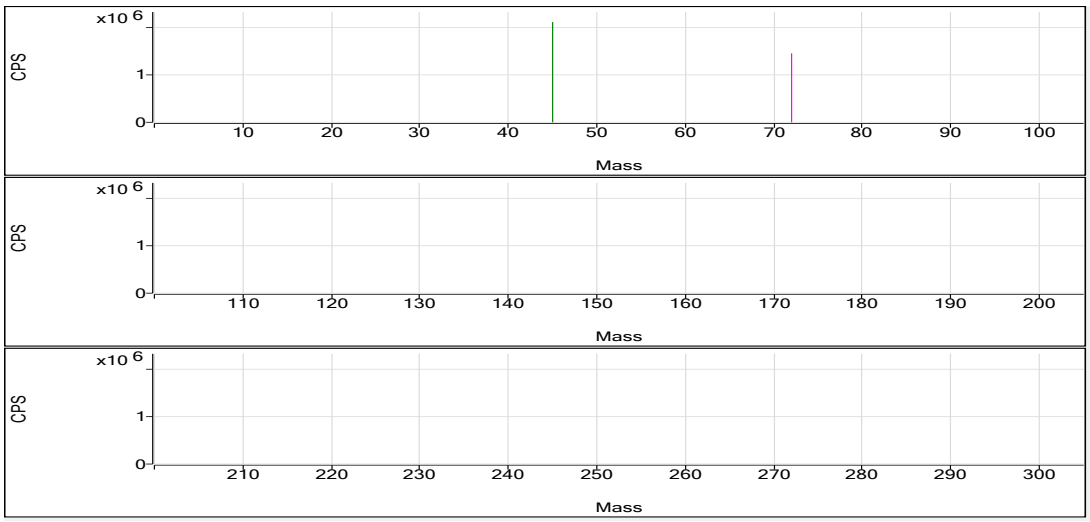
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	72	No Gas	0.490	ppb	7.2	818.70	0.0006	Pulse	0.5000	3
Se	78	115	H2	0.970	ppb	8.0	55.11	0.0002	Pulse	1.5000	3
Na	23	72	He	202.988	ppb	3.7	63218.16	0.3518	Pulse	0.1000	3
Mg	24	72	He	52.316	ppb	4.1	6468.30	0.0360	Pulse	0.1000	3
Al	27	72	He	-3.391	ppb	N/A	1130.09	0.0063	Pulse	0.1000	3
K	39	72	He	183.878	ppb	6.4	41328.70	0.2300	Pulse	0.1000	3
Ca	44	72	He	113.227	ppb	2.6	783.38	0.0044	Pulse	0.1000	3
Ti	47	72	He	11.286	ppb	1.0	430.02	0.0024	Pulse	0.1000	3
V	51	72	He	1.921	ppb	2.4	4144.61	0.0231	Pulse	0.5000	3
Cr	52	72	He	1.886	ppb	0.5	5331.17	0.0297	Pulse	0.1000	3
Mn	55	72	He	2.281	ppb	3.6	1966.87	0.0109	Pulse	0.1000	3
Fe	57	72	He	49.918	ppb	4.7	1840.18	0.0102	Pulse	0.1000	3
Co	59	72	He	0.559	ppb	10.7	1823.52	0.0102	Pulse	0.1000	3
Ni	60	72	He	1.055	ppb	20.0	1033.41	0.0058	Pulse	0.1000	3
Cu	63	72	He	0.940	ppb	10.5	2693.68	0.0150	Pulse	0.1000	3
Zn	66	72	He	10.587	ppb	2.1	3033.77	0.0169	Pulse	0.1000	3
As	75	72	He	1.860	ppb	12.5	427.34	0.0024	Pulse	0.5000	3
Sr	88	115	He	1.168	ppb	15.2	1050.08	0.0135	Pulse	0.1000	3
Mo	98	115	He	0.465	ppb	12.6	793.38	0.0102	Pulse	0.1000	3
Ag	107	115	He	0.473	ppb	4.1	1576.81	0.0203	Pulse	0.1000	3
Cd	111	115	He	0.544	ppb	9.1	208.00	0.0027	Pulse	0.5000	3
Sn	120	115	He	2.074	ppb	8.5	3794.01	0.0489	Pulse	0.1000	3
Sb	121	115	He	0.943	ppb	4.7	970.07	0.0125	Pulse	0.1000	3
Ba	137	115	He	2.179	ppb	20.8	806.72	0.0104	Pulse	0.1000	3
Tl	205	159	He	0.515	ppb	5.1	2797.07	0.0103	Pulse	0.1000	3
Pb	208	159	He	0.502	ppb	8.3	3837.03	0.0141	Pulse	0.1000	3
U	238	209	He	0.968	ppb	1.1	7959.35	0.0450	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	2125956.89	1.4	96.0	Analog	0.1000	3
No Gas	Ge	72	1463800.29	0.6	93.2	Mix	0.1000	3
H2	Sc	45	141145.86	1.1	89.3	Pulse	0.1000	3
H2	Ge	72	222318.74	0.5	89.6	Pulse	0.1000	3
H2	In	115	286199.27	0.5	96.6	Pulse	0.1000	3
He	Sc	45	71788.94	1.7	91.8	Pulse	0.1000	3
He	Ge	72	179716.28	1.0	92.8	Pulse	0.1000	3
He	In	115	77639.07	0.9	95.2	Pulse	0.1000	3
He	Tb	159	272017.54	0.4	94.6	Pulse	0.1000	3
He	Bi	209	176950.26	0.1	96.3	Pulse	0.1000	3

No Gas



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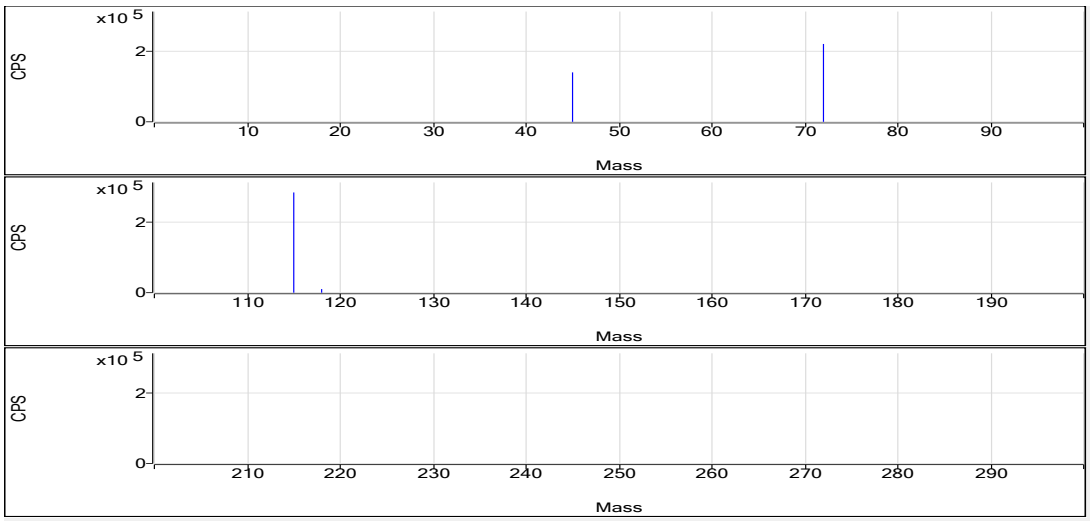
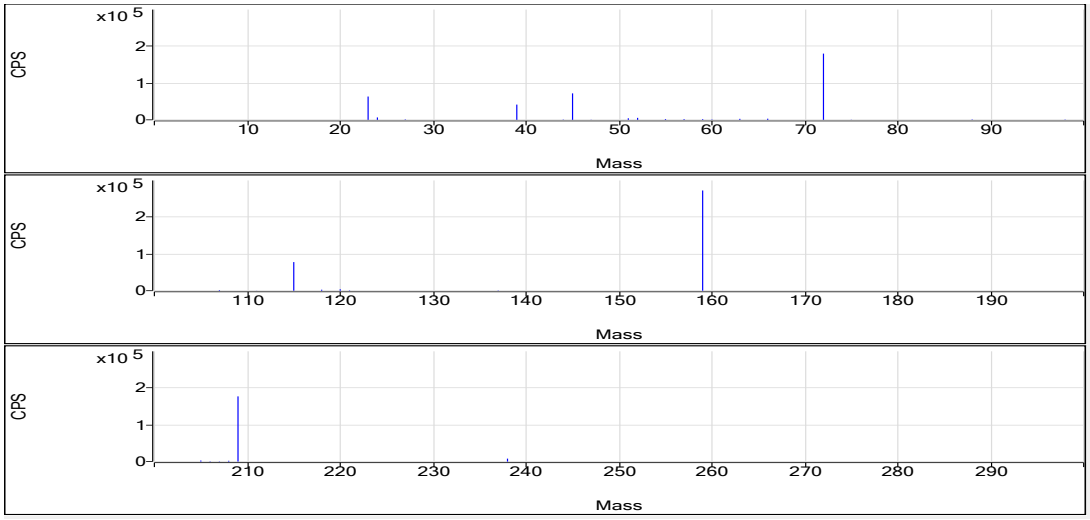


Quantitation Report

He



US EPA Tune Check Report

Operator Name	us19_usr_ins21905
Acq/Data Batch	C:\Agilent\ICPMH\1\DATA\~ICPMS.b
Acq. Date-Time	2021-11-05 09:07:46
Report Comment	E07 Tune Report
Instrument Name	G8403A SG18254097

[No Gas]

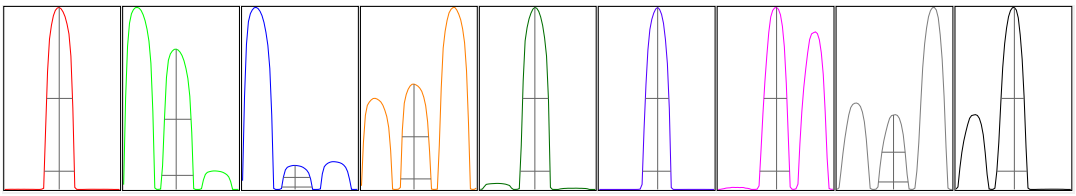
Sensitivity

Mass	Conc. [ug/l]	Count	CPS	Resp (Required) [cps/ug/l]	Resp (Flag)	RSD%	RSD% (Required)	RSD% (Flag)
9	10.00	5609	56094.29			0.891	5.000	
24	10.00	23158	231582.78			0.404	5.000	
25	10.00	3074	30735.71			0.506	5.000	
26	10.00	3531	35307.55			0.556	5.000	
59	10.00	29979	299787.87			0.531	5.000	
115	10.00	29183	291826.58			0.378	5.000	
206	10.00	5054	50537.24			0.344	5.000	
207	10.00	4361	43612.95			0.647	5.000	
208	10.00	10661	106609.43			0.403	5.000	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
9	5682	5627	5589	5603	5546
24	23217	23237	23216	23100	23022
25	3101	3071	3070	3062	3064
26	3539	3545	3545	3498	3527
59	29936	30139	30151	29801	29867
115	29285	29131	29192	29023	29282
206	5070	5034	5056	5038	5071
207	4403	4324	4363	4355	4361
208	10712	10673	10675	10649	10595

Integration Time [sec] 0.1

Resolution/Axis



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
9	8824.75	8.95	8.90 - 9.10	
24	35490.28	23.90	23.90 - 24.10	
25	4683.10	24.90	24.90 - 25.10	
26	5414.14	25.90	25.90 - 26.10	
59	47923.66	58.95	58.90 - 59.10	

US EPA Tune Check Report

Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
115	50640.75	115.05	114.90 - 115.10	
206	8859.70	206.05	205.90 - 206.10	
207	7630.56	207.00	206.90 - 207.10	
208	18662.61	208.05	207.90 - 208.10	

Mass	W-50%	W-10%	W-10% (Required)	W-10% (Flag)
9	0.66	0.775	0.900	
24	0.68	0.809	0.900	
25	0.69	0.782	0.900	
26	0.68	0.779	0.900	
59	0.66	0.770	0.900	
115	0.60	0.728	0.900	
206	0.59	0.764	0.900	
207	0.60	0.763	0.900	
208	0.59	0.780	0.900	

Integration Time [sec]	0.1
Acquisition Time [sec]	235
Y Axis	Linear

Tune Parameters

Plasma Parameters

Plasma Mode	---	Nebulizer Gas	1.06 L/min	Makeup Gas	0.00 L/min
RF Power	1550 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	0.90 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	10.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	7.5 V	Deflect	15.2 V
Extract 2	-250.0 V	Cell Entrance	-28 V	Plate Bias	-35 V
Omega Bias	-120 V	Cell Exit	-60 V		

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.5 V
He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	200 V		

QP Parameters

Mass Gain	125	Axis Gain	0.9997	QP Bias	-2.5 V
Mass Offset	124	Axis Offset	0.05		

Hardware Settings

Torch

Torch H	0.1 mm	Torch V	-0.5 mm		

EM

Discriminator	4.0 mV	Analog HV	2226 V	Pulse HV	1555 V

Quantitation Report

Data File Name	012CALB.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 10:27:28 AM
Sample Name	ICIS 2014932
Sample Type	CalBlk
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

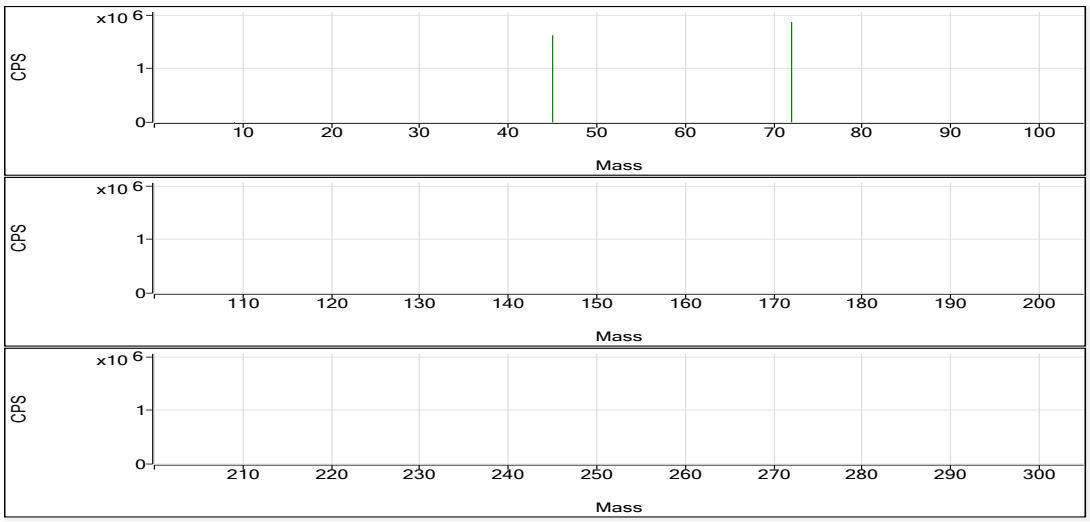
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.000	ppb	N/A	8.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.000	ppb	N/A	0.67	0.0000	Pulse	1.5000	3
Na	23	45	He	0.000	ppb	N/A	8129.21	0.3857	Pulse	0.1000	3
Mg	24	45	He	0.000	ppb	N/A	83.33	0.0040	Pulse	0.1000	3
Al	27	45	He	0.000	ppb	N/A	30.00	0.0014	Pulse	0.1000	3
K	39	45	He	0.000	ppb	N/A	4957.67	0.2351	Pulse	0.1000	3
Ca	44	45	He	0.000	ppb	N/A	93.34	0.0044	Pulse	0.1000	3
Ti	47	45	He	0.000	ppb	N/A	0.00	0.0000	Pulse	0.1000	3
V	51	45	He	0.000	ppb	N/A	220.67	0.0105	Pulse	0.5000	3
Cr	52	45	He	0.000	ppb	N/A	613.37	0.0291	Pulse	0.1000	3
Mn	55	72	He	0.000	ppb	N/A	16.67	0.0002	Pulse	0.1000	3
Fe	57	72	He	0.000	ppb	N/A	73.33	0.0009	Pulse	0.1000	3
Co	59	72	He	0.000	ppb	N/A	56.67	0.0007	Pulse	0.1000	3
Ni	60	72	He	0.000	ppb	N/A	100.00	0.0012	Pulse	0.1000	3
Cu	63	72	He	0.000	ppb	N/A	210.01	0.0026	Pulse	0.1000	3
Zn	66	72	He	0.000	ppb	N/A	73.33	0.0009	Pulse	0.1000	3
As	75	72	He	0.000	ppb	N/A	22.67	0.0003	Pulse	0.5000	3
Sr	88	115	He	0.000	ppb	N/A	30.00	0.0008	Pulse	0.1000	3
Mo	98	115	He	0.000	ppb	N/A	13.33	0.0004	Pulse	0.1000	3
Ag	107	115	He	0.000	ppb	N/A	6.67	0.0002	Pulse	0.1000	3
Cd	111	115	He	0.000	ppb	N/A	0.67	0.0000	Pulse	0.5000	3
Sn	120	115	He	0.000	ppb	N/A	826.73	0.0221	Pulse	0.1000	3
Sb	121	115	He	0.000	ppb	N/A	10.00	0.0003	Pulse	0.1000	3
Ba	137	115	He	0.000	ppb	N/A	10.00	0.0003	Pulse	0.1000	3
Tl	205	209	He	0.000	ppb	N/A	43.33	0.0002	Pulse	0.1000	3
Pb	208	209	He	0.000	ppb	N/A	923.38	0.0041	Pulse	0.1000	3
U	238	209	He	0.000	ppb	N/A	40.00	0.0002	Pulse	0.1000	3

ISTD Table:

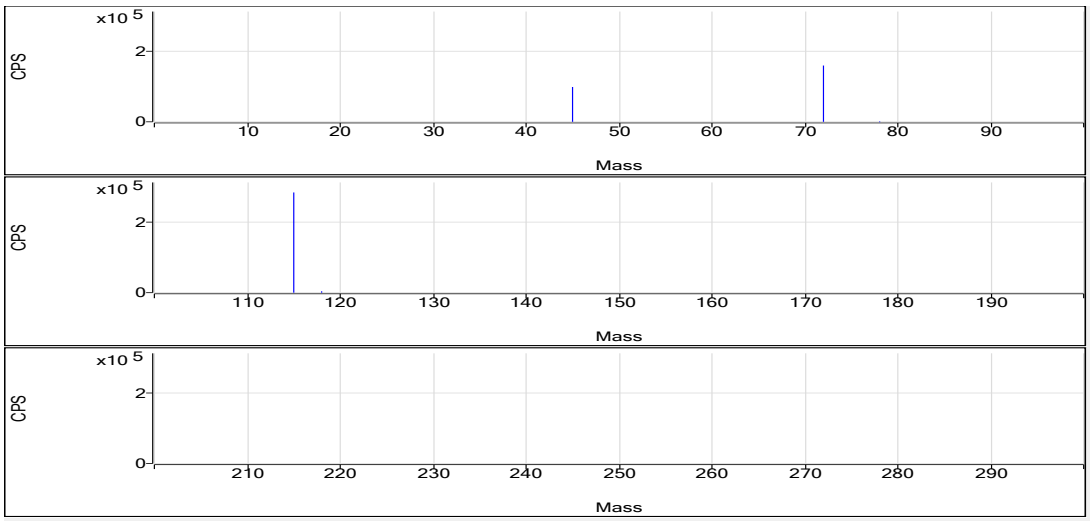
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1627373.36	0.8	100.0	Analog	0.1000	3
No Gas	Ge	72	1873472.26	0.8	100.0	Analog	0.1000	3
H2	Sc	45	98708.04	0.4	100.0	Pulse	0.1000	3
H2	Ge	72	159539.63	1.5	100.0	Pulse	0.1000	3
H2	In	115	284129.51	0.2	100.0	Pulse	0.1000	3
He	Sc	45	21105.82	3.0	100.0	Pulse	0.1000	3
He	Ge	72	82357.12	0.4	100.0	Pulse	0.1000	3
He	In	115	37471.38	1.3	100.0	Pulse	0.1000	3
He	Tb	159	251324.16	0.6	100.0	Pulse	0.1000	3
He	Bi	209	227504.20	0.7	100.0	Pulse	0.1000	3

No Gas

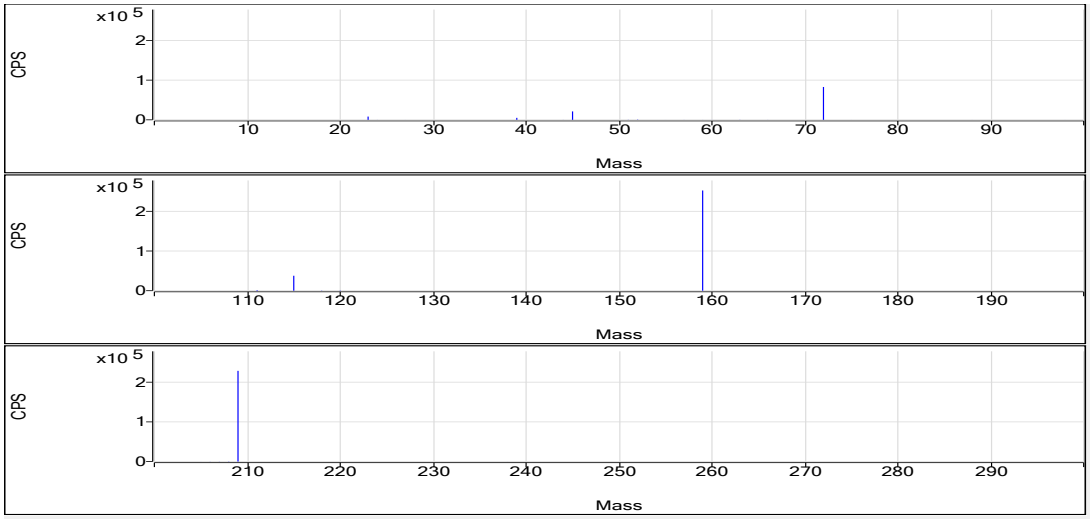


H2



Quantitation Report

He



Quantitation Report

Data File Name	013CALS.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 10:29:32 AM
Sample Name	STD1 1990993
Sample Type	CalStd
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

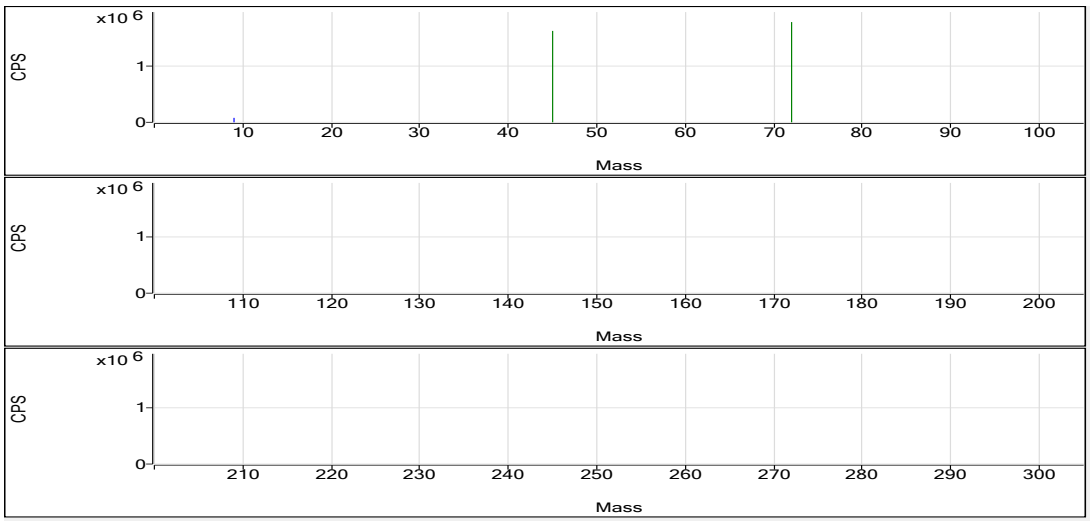
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	100.000	ppb	1.5	79111.77	0.0485	Pulse	0.5000	3
Se	78	115	H2	100.000	ppb	1.3	4243.30	0.0148	Pulse	1.5000	3
Na	23	45	He	10000.000	ppb	0.8	968111.97	45.8076	Pulse	0.1000	3
Mg	24	45	He	10000.000	ppb	2.1	464696.70	21.9906	Pulse	0.1000	3
Al	27	45	He	10000.000	ppb	0.7	115594.55	5.4694	Pulse	0.1000	3
K	39	45	He	10000.000	ppb	1.4	236564.43	11.1940	Pulse	0.1000	3
Ca	44	45	He	10000.000	ppb	0.8	13556.68	0.6414	Pulse	0.1000	3
Ti	47	45	He	1000.000	ppb	5.0	11921.94	0.5643	Pulse	0.1000	3
V	51	45	He	1000.000	ppb	1.6	613692.52	29.0401	Pulse	0.5000	3
Cr	52	45	He	1000.000	ppb	1.4	839100.09	39.7050	Pulse	0.1000	3
Mn	55	72	He	1000.000	ppb	1.7	287314.92	3.6439	Pulse	0.1000	3
Fe	57	72	He	10000.000	ppb	2.7	155197.24	1.9684	Pulse	0.1000	3
Co	59	72	He	1000.000	ppb	2.9	1888886.54	23.9577	Analog	0.1000	3
Ni	60	72	He	1000.000	ppb	1.7	526002.82	6.6710	Pulse	0.1000	3
Cu	63	72	He	1000.000	ppb	2.1	1602832.74	20.3268	Analog	0.1000	3
Zn	66	72	He	1000.000	ppb	1.7	138631.25	1.7582	Pulse	0.1000	3
As	75	72	He	1000.000	ppb	1.5	88697.05	1.1249	Pulse	0.5000	3
Sr	88	115	He	100.000	ppb	3.0	30560.31	0.7925	Pulse	0.1000	3
Mo	98	115	He	100.000	ppb	0.8	122699.83	3.1813	Pulse	0.1000	3
Ag	107	115	He	100.000	ppb	0.4	300693.72	7.7957	Pulse	0.1000	3
Cd	111	115	He	100.000	ppb	0.9	26599.32	0.6896	Pulse	0.5000	3
Sn	120	115	He	100.000	ppb	1.9	72168.26	1.8713	Pulse	0.1000	3
Sb	121	115	He	100.000	ppb	1.2	61189.25	1.5865	Pulse	0.1000	3
Ba	137	115	He	1000.000	ppb	1.7	202534.71	5.2511	Pulse	0.1000	3
Tl	205	209	He	100.000	ppb	0.3	821807.10	3.5936	Pulse	0.1000	3
Pb	208	209	He	100.000	ppb	0.3	1089857.36	4.7658	Pulse	0.1000	3
U	238	209	He	500.000	ppb	0.3	7318305.73	32.0020	Analog	0.1000	3

ISTD Table:

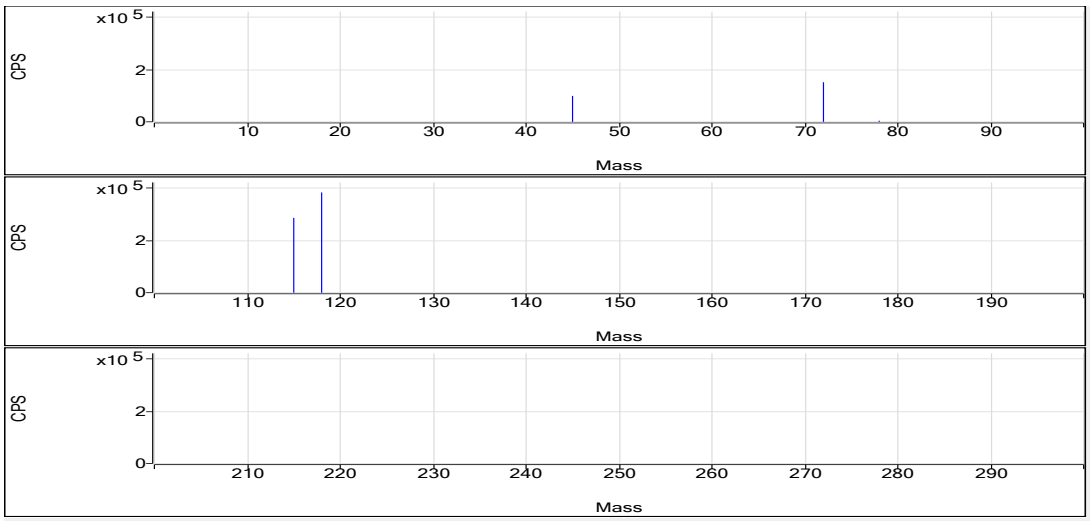
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1629961.75	1.2	100.2	Analog	0.1000	3
No Gas	Ge	72	1787280.23	0.6	95.4	Analog	0.1000	3
H2	Sc	45	99385.85	1.9	100.7	Pulse	0.1000	3
H2	Ge	72	151567.37	1.7	95.0	Pulse	0.1000	3
H2	In	115	286761.32	1.5	100.9	Pulse	0.1000	3
He	Sc	45	21135.80	1.4	100.1	Pulse	0.1000	3
He	Ge	72	78860.61	1.3	95.8	Pulse	0.1000	3
He	In	115	38570.96	1.0	102.9	Pulse	0.1000	3
He	Tb	159	251600.02	1.4	100.1	Pulse	0.1000	3
He	Bi	209	228684.45	0.5	100.5	Pulse	0.1000	3

No Gas

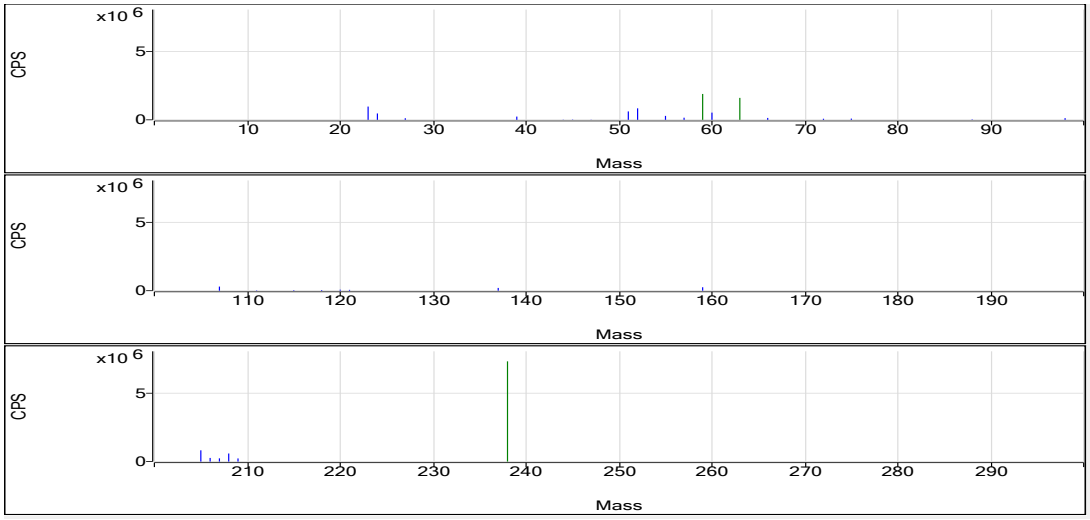


H2



Quantitation Report

He



Quantitation Report

Data File Name	014_ICV.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 10:31:35 AM
Sample Name	ICV 1973334
Sample Type	ICV
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

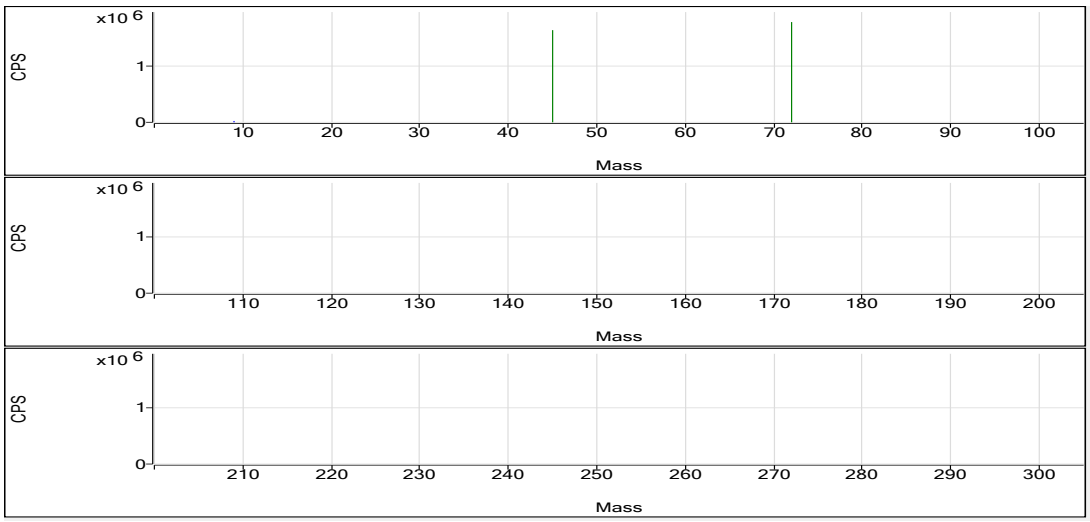
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	29.683	ppb	1.9	23401.65	0.0144	Pulse	0.5000	3
Se	78	115	H2	30.500	ppb	2.6	1276.95	0.0045	Pulse	1.5000	3
Na	23	45	He	5080.835	ppb	0.3	506585.01	23.4638	Pulse	0.1000	3
Mg	24	45	He	5039.999	ppb	0.6	239328.99	11.0852	Pulse	0.1000	3
Al	27	45	He	5000.840	ppb	1.2	59065.76	2.7359	Pulse	0.1000	3
K	39	45	He	4981.996	ppb	0.3	122951.10	5.6948	Pulse	0.1000	3
Ca	44	45	He	5266.222	ppb	7.4	7338.79	0.3399	Pulse	0.1000	3
Ti	47	45	He	296.877	ppb	8.8	3617.24	0.1675	Pulse	0.1000	3
V	51	45	He	295.159	ppb	0.4	185214.51	8.5788	Pulse	0.5000	3
Cr	52	45	He	300.001	ppb	1.1	257609.19	11.9319	Pulse	0.1000	3
Mn	55	72	He	310.096	ppb	0.5	88866.28	1.1301	Pulse	0.1000	3
Fe	57	72	He	5092.786	ppb	3.0	78852.05	1.0029	Pulse	0.1000	3
Co	59	72	He	290.874	ppb	1.8	547991.40	6.9691	Pulse	0.1000	3
Ni	60	72	He	304.822	ppb	0.9	159980.00	2.0343	Pulse	0.1000	3
Cu	63	72	He	293.561	ppb	1.3	469370.73	5.9690	Pulse	0.1000	3
Zn	66	72	He	302.086	ppb	0.5	41814.97	0.5317	Pulse	0.1000	3
As	75	72	He	308.355	ppb	1.2	27291.95	0.3471	Pulse	0.5000	3
Sr	88	115	He	30.042	ppb	1.9	9153.28	0.2386	Pulse	0.1000	3
Mo	98	115	He	30.784	ppb	3.9	37554.32	0.9796	Pulse	0.1000	3
Ag	107	115	He	30.825	ppb	1.4	92152.96	2.4032	Pulse	0.1000	3
Cd	111	115	He	30.510	ppb	1.0	8069.04	0.2104	Pulse	0.5000	3
Sn	120	115	He	30.548	ppb	2.3	22512.30	0.5870	Pulse	0.1000	3
Sb	121	115	He	31.200	ppb	1.8	18986.89	0.4952	Pulse	0.1000	3
Ba	137	115	He	303.521	ppb	2.1	61120.55	1.5940	Pulse	0.1000	3
Tl	205	209	He	30.093	ppb	0.3	250525.48	1.0815	Pulse	0.1000	3
Pb	208	209	He	30.252	ppb	1.3	334592.33	1.4446	Pulse	0.1000	3
U	238	209	He	301.845	ppb	0.5	4475105.25	19.3193	Analog	0.1000	3

ISTD Table:

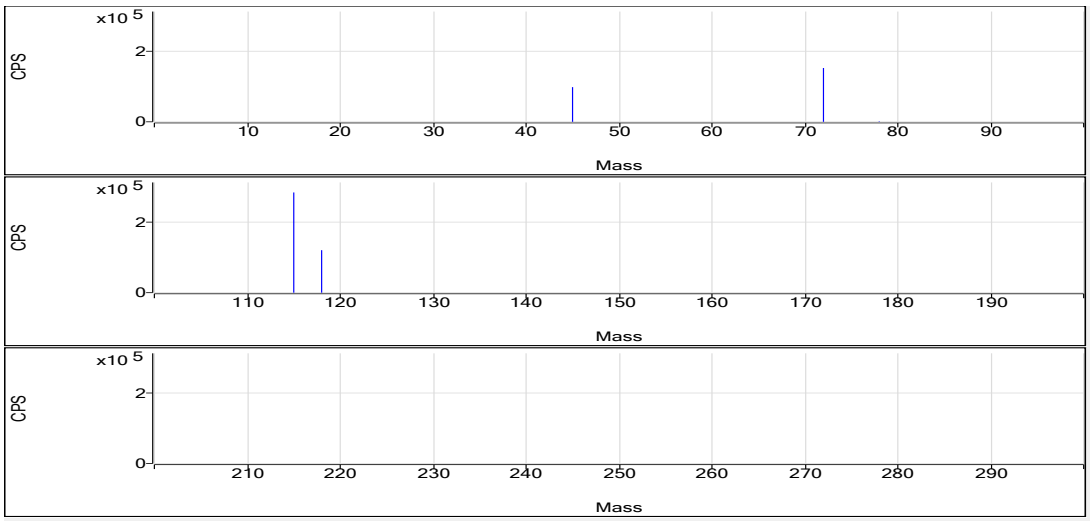
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1623978.67	1.5	99.8	Analog	0.1000	3
No Gas	Ge	72	1766244.19	0.7	94.3	Analog	0.1000	3
H2	Sc	45	97831.58	0.9	99.1	Pulse	0.1000	3
H2	Ge	72	151795.90	1.2	95.1	Pulse	0.1000	3
H2	In	115	282798.34	0.1	99.5	Pulse	0.1000	3
He	Sc	45	21589.93	0.3	102.3	Pulse	0.1000	3
He	Ge	72	78639.35	0.9	95.5	Pulse	0.1000	3
He	In	115	38350.38	1.4	102.3	Pulse	0.1000	3
He	Tb	159	251641.59	0.4	100.1	Pulse	0.1000	3
He	Bi	209	231640.25	1.0	101.8	Pulse	0.1000	3

No Gas

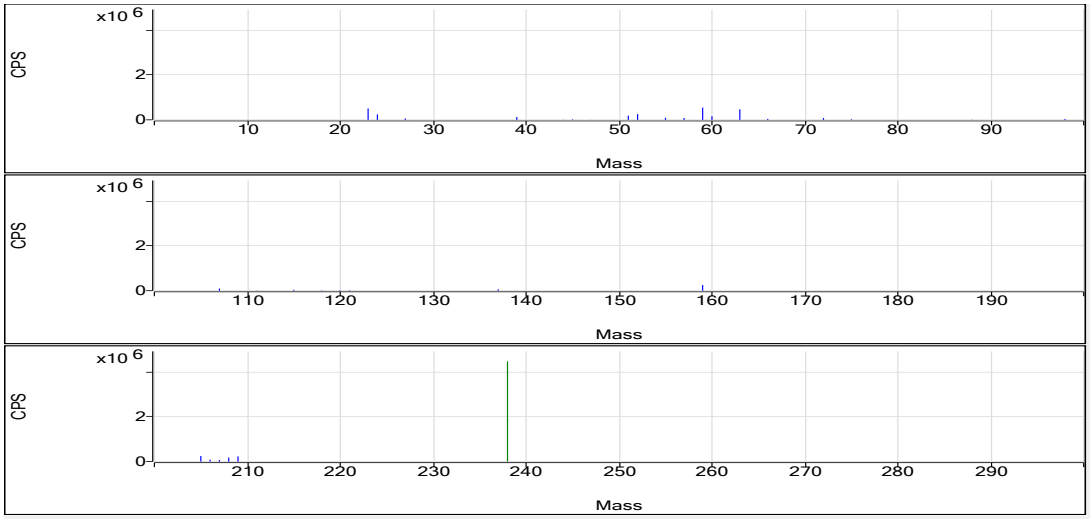


H2



Quantitation Report

He



Quantitation Report

Data File Name	015_ICB.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 10:33:36 AM
Sample Name	ICB 2014932
Sample Type	ICB
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

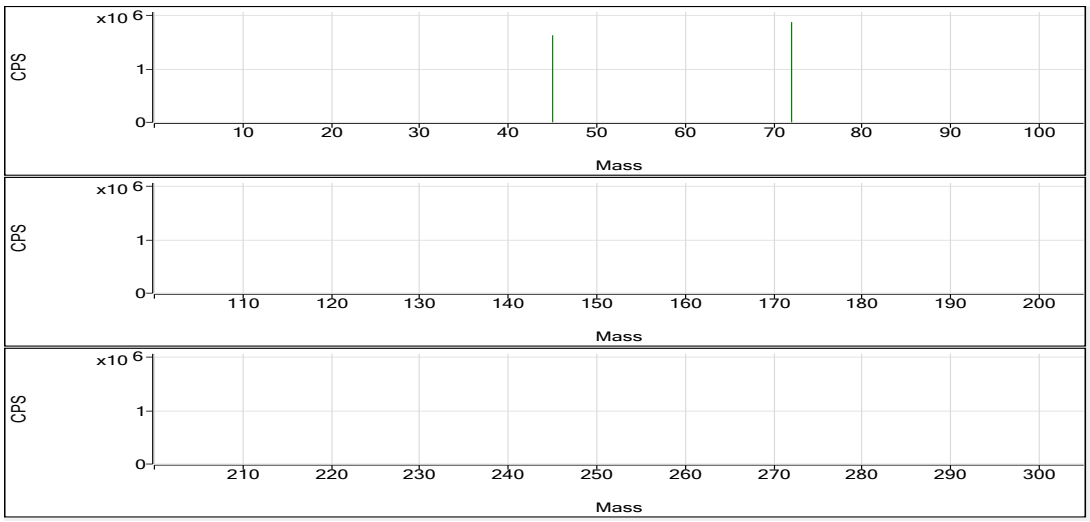
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.035	ppb	30.9	36.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.054	ppb	62.0	2.89	0.0000	Pulse	1.5000	3
Na	23	45	He	1.881	ppb	329.0	8516.09	0.3942	Pulse	0.1000	3
Mg	24	45	He	0.446	ppb	75.7	106.67	0.0049	Pulse	0.1000	3
Al	27	45	He	-0.611	ppb	N/A	23.33	0.0011	Pulse	0.1000	3
K	39	45	He	4.674	ppb	244.8	5191.09	0.2402	Pulse	0.1000	3
Ca	44	45	He	-6.653	ppb	N/A	86.67	0.0040	Pulse	0.1000	3
Ti	47	45	He	0.544	ppb	86.6	6.67	0.0003	Pulse	0.1000	3
V	51	45	He	0.104	ppb	30.6	291.33	0.0135	Pulse	0.5000	3
Cr	52	45	He	0.036	ppb	286.9	660.04	0.0305	Pulse	0.1000	3
Mn	55	72	He	0.240	ppb	33.2	90.00	0.0011	Pulse	0.1000	3
Fe	57	72	He	1.801	ppb	57.6	103.33	0.0012	Pulse	0.1000	3
Co	59	72	He	0.143	ppb	20.9	343.35	0.0041	Pulse	0.1000	3
Ni	60	72	He	0.184	ppb	27.4	203.34	0.0024	Pulse	0.1000	3
Cu	63	72	He	0.131	ppb	4.7	433.35	0.0052	Pulse	0.1000	3
Zn	66	72	He	0.423	ppb	120.5	136.67	0.0016	Pulse	0.1000	3
As	75	72	He	0.282	ppb	29.4	49.33	0.0006	Pulse	0.5000	3
Sr	88	115	He	-0.013	ppb	N/A	26.67	0.0007	Pulse	0.1000	3
Mo	98	115	He	0.049	ppb	34.6	73.33	0.0019	Pulse	0.1000	3
Ag	107	115	He	0.008	ppb	75.1	30.00	0.0008	Pulse	0.1000	3
Cd	111	115	He	0.005	ppb	150.0	2.00	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.041	ppb	N/A	813.38	0.0213	Pulse	0.1000	3
Sb	121	115	He	0.055	ppb	46.3	43.33	0.0011	Pulse	0.1000	3
Ba	137	115	He	0.165	ppb	106.6	43.33	0.0011	Pulse	0.1000	3
Tl	205	209	He	0.042	ppb	28.5	393.36	0.0017	Pulse	0.1000	3
Pb	208	209	He	-0.001	ppb	N/A	926.72	0.0040	Pulse	0.1000	3
U	238	209	He	0.123	ppb	13.6	1853.54	0.0081	Pulse	0.1000	3

ISTD Table:

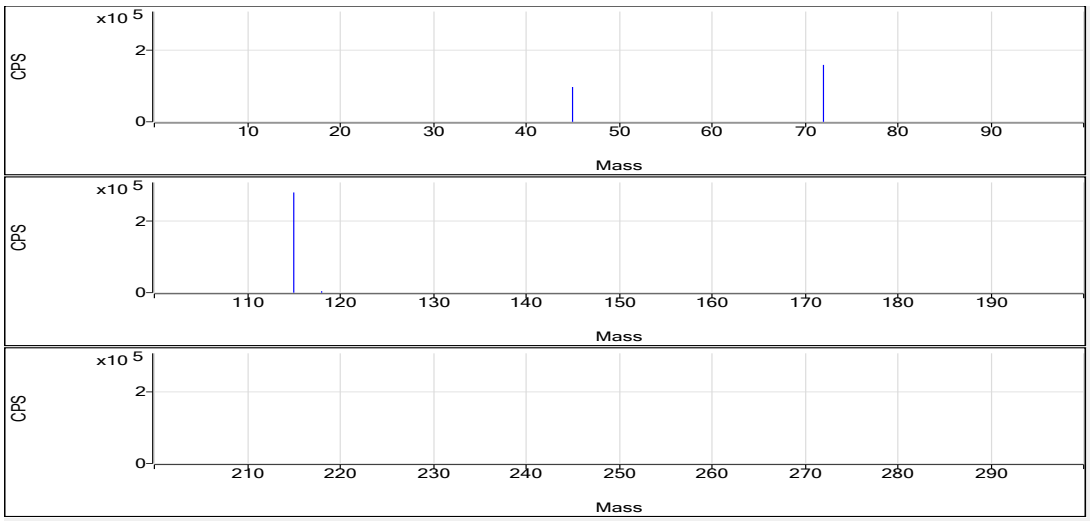
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1629030.49	0.8	100.1	Analog	0.1000	3
No Gas	Ge	72	1875684.82	1.4	100.1	Analog	0.1000	3
H2	Sc	45	97213.82	0.3	98.5	Pulse	0.1000	3
H2	Ge	72	158993.65	1.1	99.7	Pulse	0.1000	3
H2	In	115	279970.28	0.4	98.5	Pulse	0.1000	3
He	Sc	45	21609.97	1.0	102.4	Pulse	0.1000	3
He	Ge	72	83168.84	2.3	101.0	Pulse	0.1000	3
He	In	115	38150.05	0.8	101.8	Pulse	0.1000	3
He	Tb	159	251333.34	1.0	100.0	Pulse	0.1000	3
He	Bi	209	229689.88	0.9	101.0	Pulse	0.1000	3

No Gas

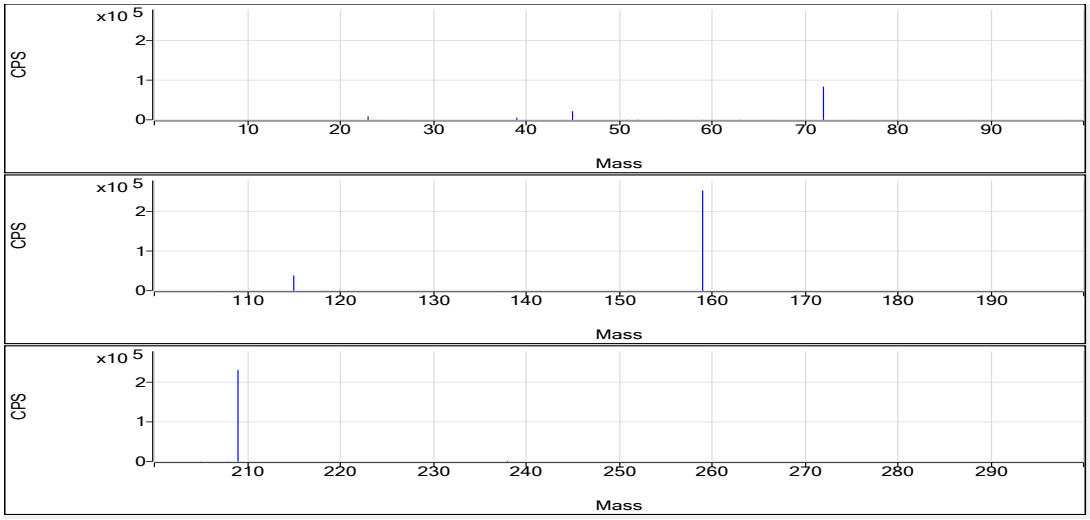


H2



Quantitation Report

He



Quantitation Report

Data File Name	016_LLC.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 10:35:39 AM
Sample Name	CRI 2020343
Sample Type	CRI
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

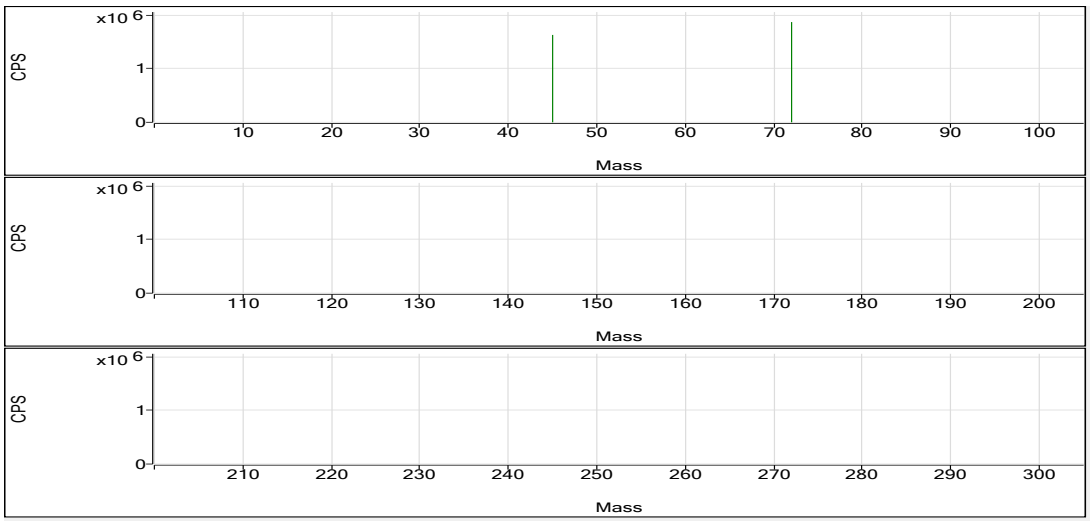
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.475	ppb	1.5	384.01	0.0002	Pulse	0.5000	3
Se	78	115	H2	0.859	ppb	8.5	36.44	0.0001	Pulse	1.5000	3
Na	23	45	He	206.462	ppb	6.2	28347.98	1.3235	Pulse	0.1000	3
Mg	24	45	He	52.925	ppb	9.2	2573.64	0.1203	Pulse	0.1000	3
Al	27	45	He	26.987	ppb	1.8	346.69	0.0162	Pulse	0.1000	3
K	39	45	He	186.463	ppb	8.2	9413.39	0.4395	Pulse	0.1000	3
Ca	44	45	He	90.237	ppb	44.2	216.68	0.0102	Pulse	0.1000	3
Ti	47	45	He	9.390	ppb	9.1	113.34	0.0053	Pulse	0.1000	3
V	51	45	He	2.025	ppb	8.8	1482.09	0.0693	Pulse	0.5000	3
Cr	52	45	He	2.250	ppb	8.7	2533.65	0.1183	Pulse	0.1000	3
Mn	55	72	He	2.320	ppb	11.5	716.71	0.0087	Pulse	0.1000	3
Fe	57	72	He	52.133	ppb	6.1	923.40	0.0111	Pulse	0.1000	3
Co	59	72	He	0.568	ppb	10.3	1183.43	0.0143	Pulse	0.1000	3
Ni	60	72	He	1.129	ppb	24.5	723.38	0.0087	Pulse	0.1000	3
Cu	63	72	He	1.072	ppb	10.7	2013.53	0.0243	Pulse	0.1000	3
Zn	66	72	He	9.349	ppb	18.0	1433.46	0.0173	Pulse	0.1000	3
As	75	72	He	1.981	ppb	4.4	207.33	0.0025	Pulse	0.5000	3
Sr	88	115	He	1.058	ppb	15.2	350.02	0.0092	Pulse	0.1000	3
Mo	98	115	He	0.489	ppb	6.8	606.70	0.0159	Pulse	0.1000	3
Ag	107	115	He	0.466	ppb	9.4	1393.46	0.0365	Pulse	0.1000	3
Cd	111	115	He	0.482	ppb	18.7	127.33	0.0033	Pulse	0.5000	3
Sn	120	115	He	1.921	ppb	11.3	2196.92	0.0576	Pulse	0.1000	3
Sb	121	115	He	1.118	ppb	7.2	686.71	0.0180	Pulse	0.1000	3
Ba	137	115	He	2.245	ppb	13.4	460.03	0.0121	Pulse	0.1000	3
Tl	205	209	He	0.510	ppb	7.7	4300.87	0.0185	Pulse	0.1000	3
Pb	208	209	He	0.501	ppb	3.5	6477.56	0.0279	Pulse	0.1000	3
U	238	209	He	0.961	ppb	1.6	14318.47	0.0617	Pulse	0.1000	3

ISTD Table:

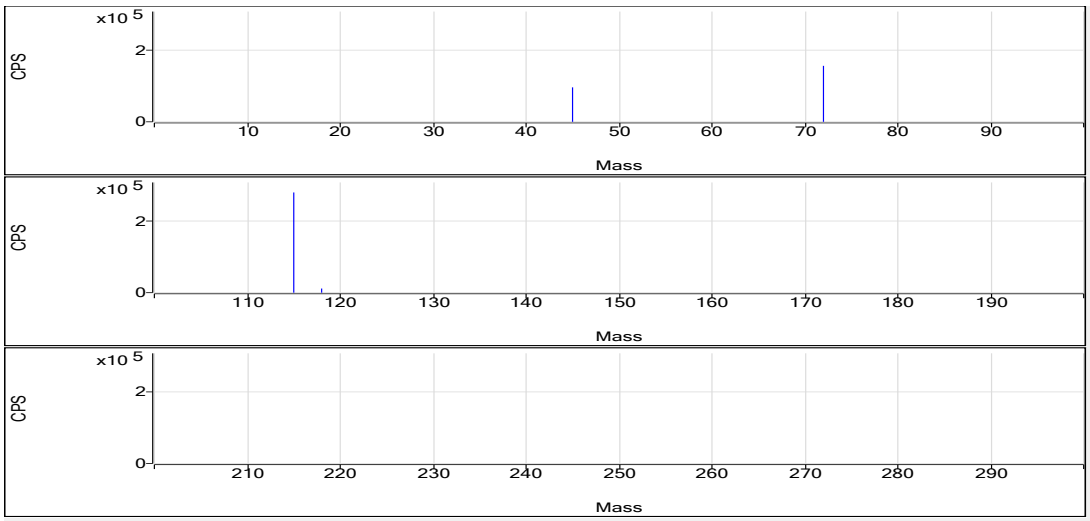
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1629045.96	0.6	100.1	Analog	0.1000	3
No Gas	Ge	72	1868571.17	0.7	99.7	Analog	0.1000	3
H2	Sc	45	96804.67	0.4	98.1	Pulse	0.1000	3
H2	Ge	72	157230.54	0.5	98.6	Pulse	0.1000	3
H2	In	115	281566.47	1.5	99.1	Pulse	0.1000	3
He	Sc	45	21442.95	4.5	101.6	Pulse	0.1000	3
He	Ge	72	82813.00	1.5	100.6	Pulse	0.1000	3
He	In	115	38140.12	0.8	101.8	Pulse	0.1000	3
He	Tb	159	253017.43	1.3	100.7	Pulse	0.1000	3
He	Bi	209	232119.64	0.4	102.0	Pulse	0.1000	3

No Gas

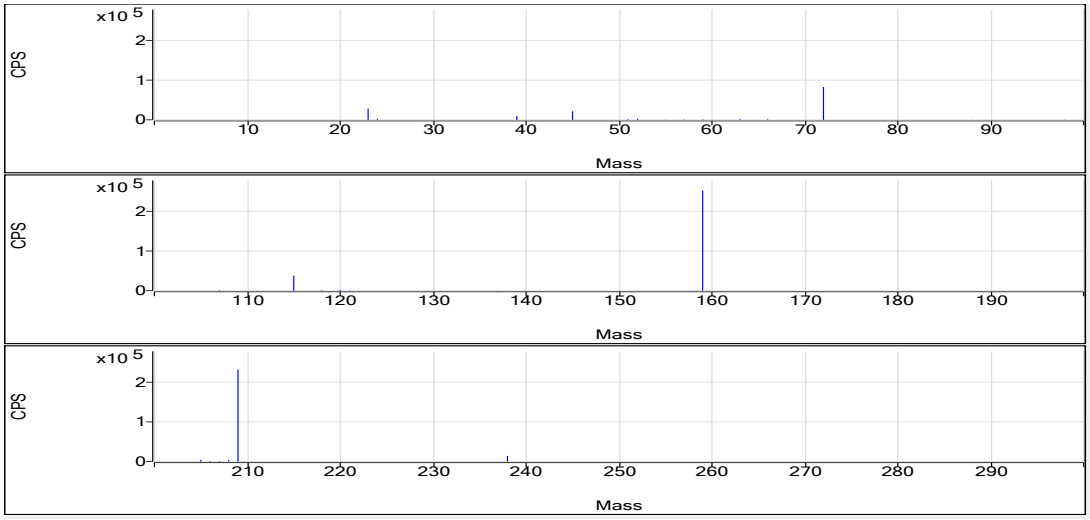


H2



Quantitation Report

He



Quantitation Report

Data File Name	017ICSA.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 10:37:42 AM
Sample Name	ICSA 1942766
Sample Type	ICSA
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

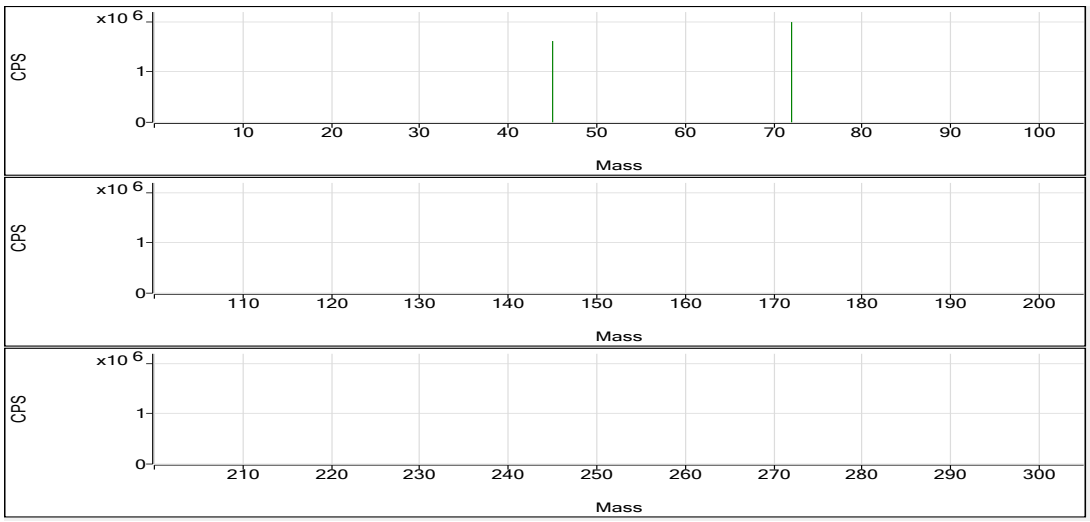
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.015	ppb	18.6	20.00	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.169	ppb	10.7	7.33	0.0000	Pulse	1.5000	3
Na	23	45	He	261159.449	ppb	4.5	24575739.63	1 186.6213	Analog	0.1000	3
Mg	24	45	He	104162.433	ppb	4.7	4742922.43	229.0220	Analog	0.1000	3
Al	27	45	He	105384.040	ppb	3.5	1193824.98	57.6251	Mix	0.1000	3
K	39	45	He	106142.319	ppb	4.2	2414195.64	116.5550	Analog	0.1000	3
Ca	44	45	He	307877.585	ppb	3.9	406329.81	19.6160	Pulse	0.1000	3
Ti	47	45	He	2074.539	ppb	5.2	24244.15	1.1707	Pulse	0.1000	3
V	51	45	He	0.026	ppb	149.6	232.00	0.0112	Pulse	0.5000	3
Cr	52	45	He	1.954	ppb	9.2	2206.92	0.1066	Pulse	0.1000	3
Mn	55	72	He	1.568	ppb	22.0	513.36	0.0059	Pulse	0.1000	3
Fe	57	72	He	230358.047	ppb	2.5	3933973.38	45.3232	Analog	0.1000	3
Co	59	72	He	1.358	ppb	11.1	2883.73	0.0332	Pulse	0.1000	3
Ni	60	72	He	1.405	ppb	6.9	920.06	0.0106	Pulse	0.1000	3
Cu	63	72	He	0.481	ppb	9.5	1070.08	0.0123	Pulse	0.1000	3
Zn	66	72	He	1.798	ppb	43.3	350.01	0.0040	Pulse	0.1000	3
As	75	72	He	0.573	ppb	21.2	80.00	0.0009	Pulse	0.5000	3
Sr	88	115	He	2.912	ppb	4.2	843.39	0.0239	Pulse	0.1000	3
Mo	98	115	He	2359.049	ppb	1.9	2653045.06	75.0395	Analog	0.1000	3
Ag	107	115	He	0.063	ppb	25.8	180.01	0.0051	Pulse	0.1000	3
Cd	111	115	He	0.195	ppb	33.5	48.00	0.0014	Pulse	0.5000	3
Sn	120	115	He	-0.067	ppb	N/A	733.38	0.0208	Pulse	0.1000	3
Sb	121	115	He	0.156	ppb	24.6	96.67	0.0027	Pulse	0.1000	3
Ba	137	115	He	0.363	ppb	25.3	76.67	0.0022	Pulse	0.1000	3
Tl	205	209	He	0.020	ppb	30.8	196.68	0.0009	Pulse	0.1000	3
Pb	208	209	He	0.245	ppb	8.4	3380.30	0.0157	Pulse	0.1000	3
U	238	209	He	0.048	ppb	2.1	700.05	0.0033	Pulse	0.1000	3

ISTD Table:

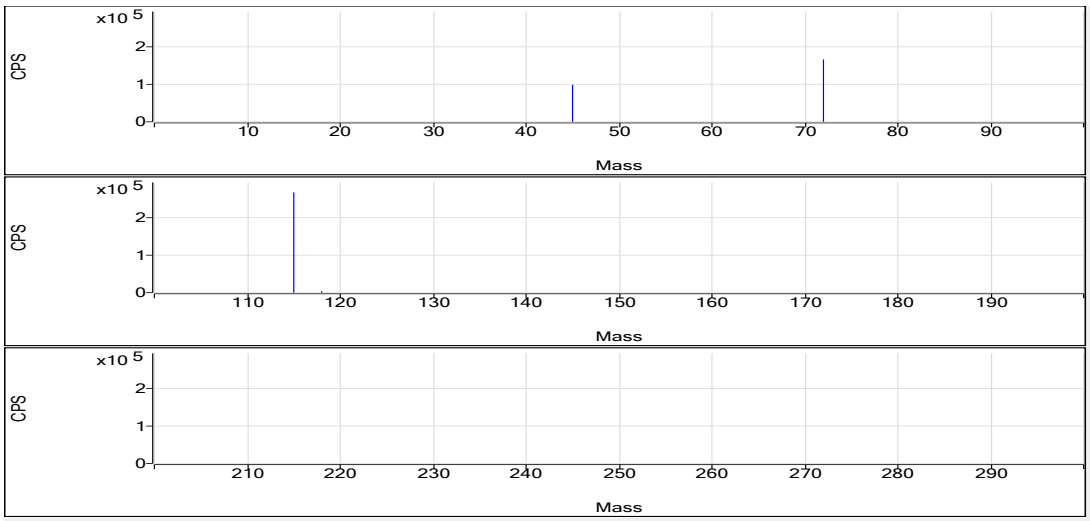
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1616875.03	1.1	99.4	Analog	0.1000	3
No Gas	Ge	72	1993936.12	0.1	106.4	Analog	0.1000	3
H2	Sc	45	99270.68	0.5	100.6	Pulse	0.1000	3
H2	Ge	72	167223.21	0.4	104.8	Pulse	0.1000	3
H2	In	115	268517.31	1.2	94.5	Pulse	0.1000	3
He	Sc	45	20735.32	4.0	98.2	Pulse	0.1000	3
He	Ge	72	86823.07	2.1	105.4	Pulse	0.1000	3
He	In	115	35369.08	3.0	94.4	Pulse	0.1000	3
He	Tb	159	246404.36	1.2	98.0	Pulse	0.1000	3
He	Bi	209	214981.69	1.8	94.5	Pulse	0.1000	3

No Gas

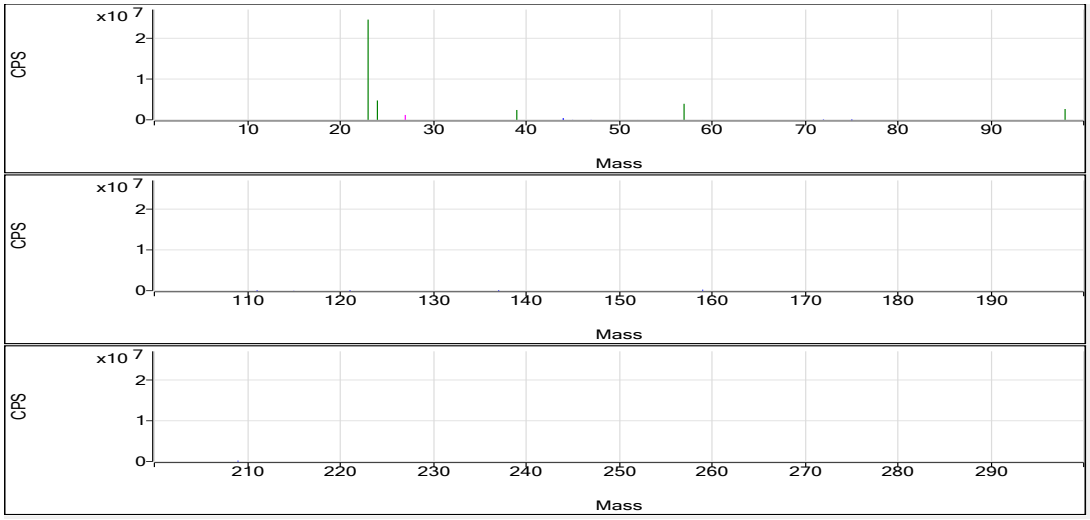


H2



Quantitation Report

He



Quantitation Report

Data File Name	018ICSB.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 10:39:43 AM
Sample Name	ICSAB 1942785
Sample Type	ICSAB
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

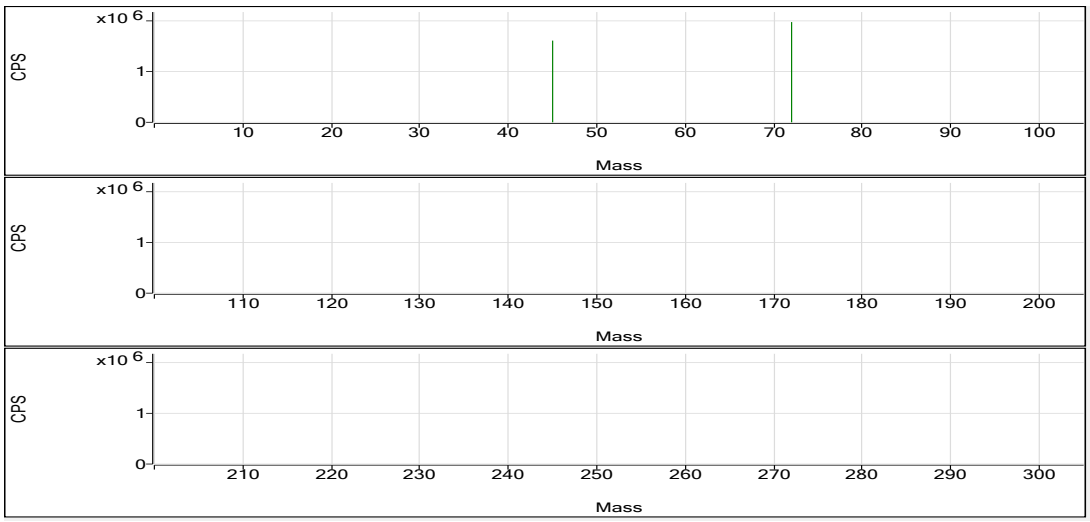
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.014	ppb	10.2	19.33	0.0000	Pulse	0.5000	3
Se	78	115	H2	109.005	ppb	1.0	4307.55	0.0161	Pulse	1.5000	3
Na	23	45	He	256524.891	ppb	2.2	24752997.96	1 165.5703	Analog	0.1000	3
Mg	24	45	He	101446.144	ppb	1.7	4737207.33	223.0498	Analog	0.1000	3
Al	27	45	He	103287.726	ppb	4.2	1199158.29	56.4789	Mix	0.1000	3
K	39	45	He	103886.953	ppb	1.3	2423059.60	114.0833	Analog	0.1000	3
Ca	44	45	He	301478.245	ppb	1.5	407962.56	19.2083	Pulse	0.1000	3
Ti	47	45	He	2062.294	ppb	0.3	24721.79	1.1638	Pulse	0.1000	3
V	51	45	He	204.961	ppb	1.9	126589.15	5.9604	Pulse	0.5000	3
Cr	52	45	He	199.979	ppb	1.4	169143.73	7.9634	Pulse	0.1000	3
Mn	55	72	He	182.954	ppb	0.8	56959.50	0.6668	Pulse	0.1000	3
Fe	57	72	He	233722.811	ppb	0.9	3928103.17	45.9852	Analog	0.1000	3
Co	59	72	He	173.176	ppb	0.8	354441.23	4.1495	Pulse	0.1000	3
Ni	60	72	He	183.079	ppb	1.9	104403.61	1.2223	Pulse	0.1000	3
Cu	63	72	He	173.270	ppb	2.4	301001.32	3.5241	Pulse	0.1000	3
Zn	66	72	He	95.736	ppb	1.3	14447.74	0.1691	Pulse	0.1000	3
As	75	72	He	92.648	ppb	1.4	8923.50	0.1045	Pulse	0.5000	3
Sr	88	115	He	2.791	ppb	11.6	853.39	0.0229	Pulse	0.1000	3
Mo	98	115	He	2249.481	ppb	1.2	2667259.02	71.5542	Analog	0.1000	3
Ag	107	115	He	49.969	ppb	1.3	145209.67	3.8956	Pulse	0.1000	3
Cd	111	115	He	103.381	ppb	2.4	26575.25	0.7129	Pulse	0.5000	3
Sn	120	115	He	-0.005	ppb	N/A	820.06	0.0220	Pulse	0.1000	3
Sb	121	115	He	0.141	ppb	81.0	93.34	0.0025	Pulse	0.1000	3
Ba	137	115	He	0.408	ppb	21.4	90.00	0.0024	Pulse	0.1000	3
Tl	205	209	He	0.011	ppb	37.5	123.34	0.0006	Pulse	0.1000	3
Pb	208	209	He	0.254	ppb	10.0	3446.98	0.0162	Pulse	0.1000	3
U	238	209	He	0.041	ppb	4.0	593.37	0.0028	Pulse	0.1000	3

ISTD Table:

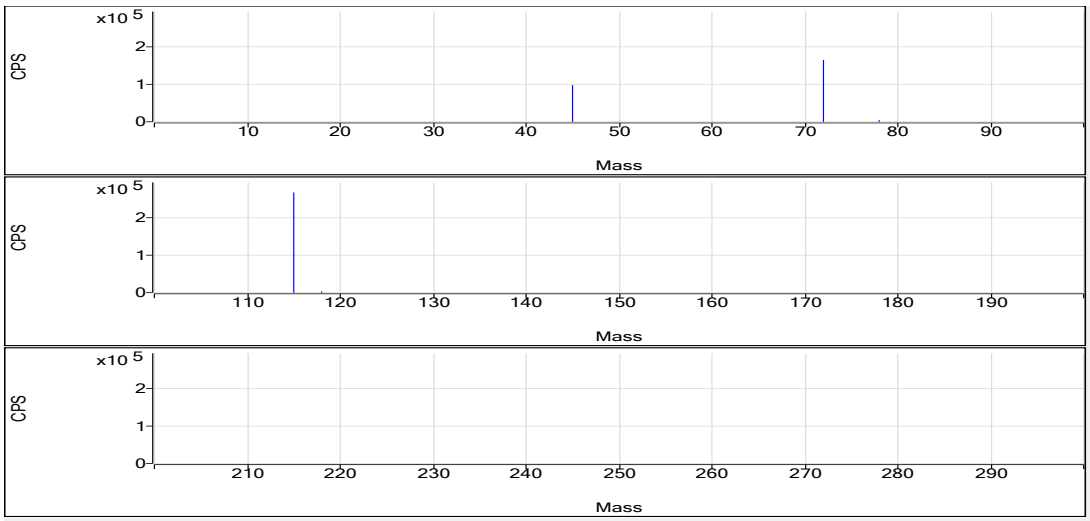
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1611395.44	0.4	99.0	Analog	0.1000	3
No Gas	Ge	72	1976954.19	0.6	105.5	Analog	0.1000	3
H2	Sc	45	97580.03	0.7	98.9	Pulse	0.1000	3
H2	Ge	72	164556.27	1.4	103.1	Pulse	0.1000	3
H2	In	115	267009.68	0.8	94.0	Pulse	0.1000	3
He	Sc	45	21242.88	1.9	100.6	Pulse	0.1000	3
He	Ge	72	85421.52	0.8	103.7	Pulse	0.1000	3
He	In	115	37277.57	0.6	99.5	Pulse	0.1000	3
He	Tb	159	246984.84	0.6	98.3	Pulse	0.1000	3
He	Bi	209	213168.53	0.5	93.7	Pulse	0.1000	3

No Gas

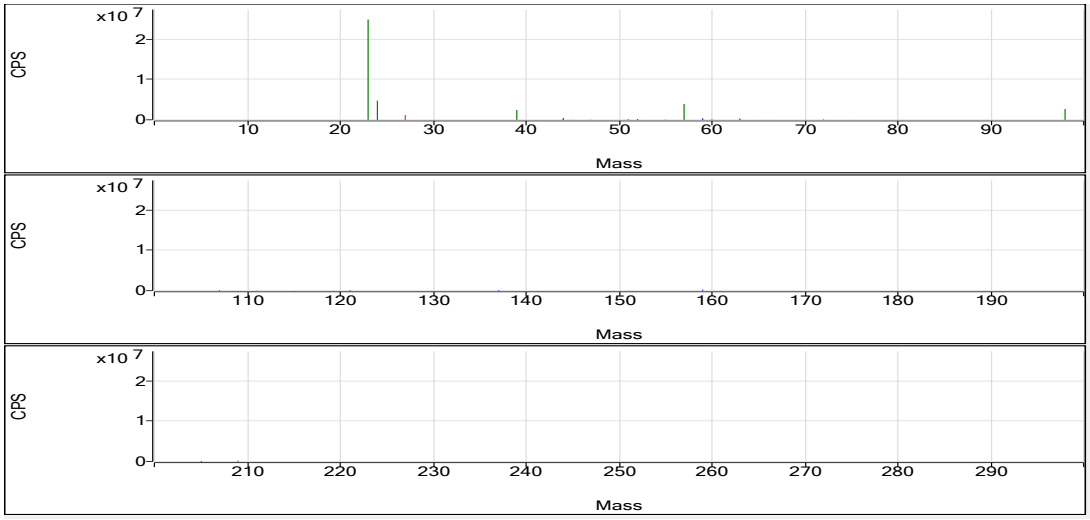


H2



Quantitation Report

He



Quantitation Report

Data File Name	019_LRC.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 10:41:44 AM
Sample Name	LRC 1932659
Sample Type	LRC
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

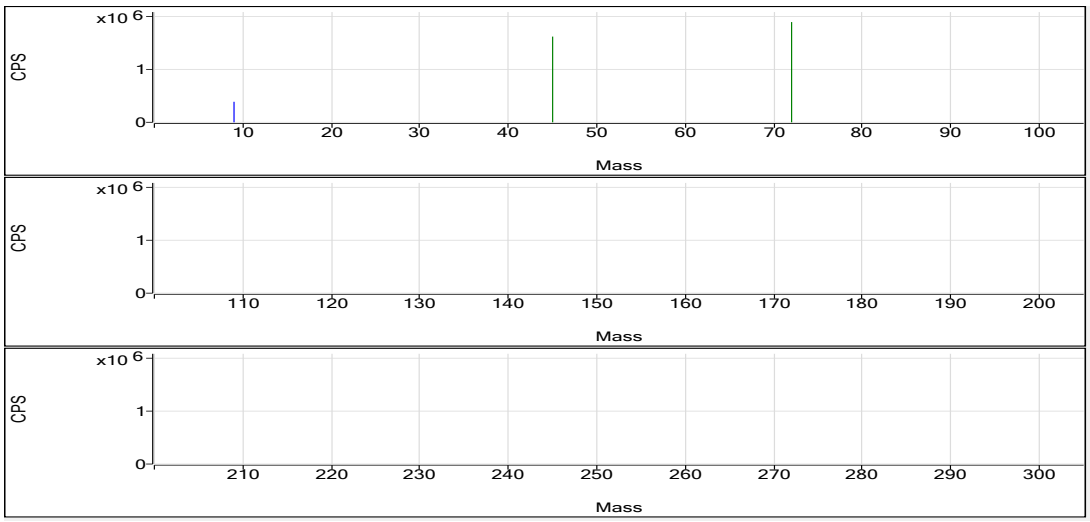
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	493.225	ppb	0.4	386140.91	0.2394	Pulse	0.5000	3
Se	78	115	H2	480.213	ppb	1.3	21148.70	0.0711	Pulse	1.5000	3
Na	23	45	He	51800.097	ppb	3.4	5096729.09	235.6715	Analog	0.1000	3
Mg	24	45	He	51328.355	ppb	3.0	2440975.28	112.8577	Analog	0.1000	3
Al	27	45	He	49856.031	ppb	4.0	589501.93	27.2626	Pulse	0.1000	3
K	39	45	He	50000.419	ppb	3.7	1190025.87	55.0299	Pulse	0.1000	3
Ca	44	45	He	52341.720	ppb	4.3	72192.89	3.3386	Pulse	0.1000	3
Ti	47	45	He	528.354	ppb	4.3	6448.32	0.2982	Pulse	0.1000	3
V	51	45	He	499.745	ppb	3.9	313934.15	14.5179	Pulse	0.5000	3
Cr	52	45	He	497.228	ppb	3.5	427262.88	19.7571	Pulse	0.1000	3
Mn	55	72	He	477.108	ppb	0.9	147234.30	1.7386	Pulse	0.1000	3
Fe	57	72	He	47328.595	ppb	0.8	788639.60	9.3127	Pulse	0.1000	3
Co	59	72	He	449.708	ppb	0.7	912442.98	10.7743	Pulse	0.1000	3
Ni	60	72	He	474.042	ppb	0.3	267865.23	3.1630	Pulse	0.1000	3
Cu	63	72	He	460.389	ppb	1.2	792610.25	9.3596	Pulse	0.1000	3
Zn	66	72	He	467.982	ppb	0.2	69719.81	0.8233	Pulse	0.1000	3
As	75	72	He	483.971	ppb	1.0	46114.57	0.5445	Pulse	0.5000	3
Sr	88	115	He	499.451	ppb	3.2	159504.92	3.9548	Pulse	0.1000	3
Mo	98	115	He	488.091	ppb	3.0	626212.16	15.5261	Pulse	0.1000	3
Ag	107	115	He	478.224	ppb	2.4	1503776.75	37.2804	Pulse	0.1000	3
Cd	111	115	He	488.034	ppb	2.0	135766.04	3.3656	Pulse	0.5000	3
Sn	120	115	He	488.172	ppb	1.6	365078.27	9.0495	Pulse	0.1000	3
Sb	121	115	He	489.765	ppb	2.4	313389.21	7.7691	Pulse	0.1000	3
Ba	137	115	He	484.749	ppb	3.1	102675.92	2.5456	Pulse	0.1000	3
Tl	205	209	He	534.994	ppb	1.1	4291372.33	19.2248	Analog	0.1000	3
Pb	208	209	He	521.627	ppb	0.8	5545446.71	24.8425	Analog	0.1000	3
U	238	209	He	504.689	ppb	1.0	7210540.10	32.3021	Analog	0.1000	3

ISTD Table:

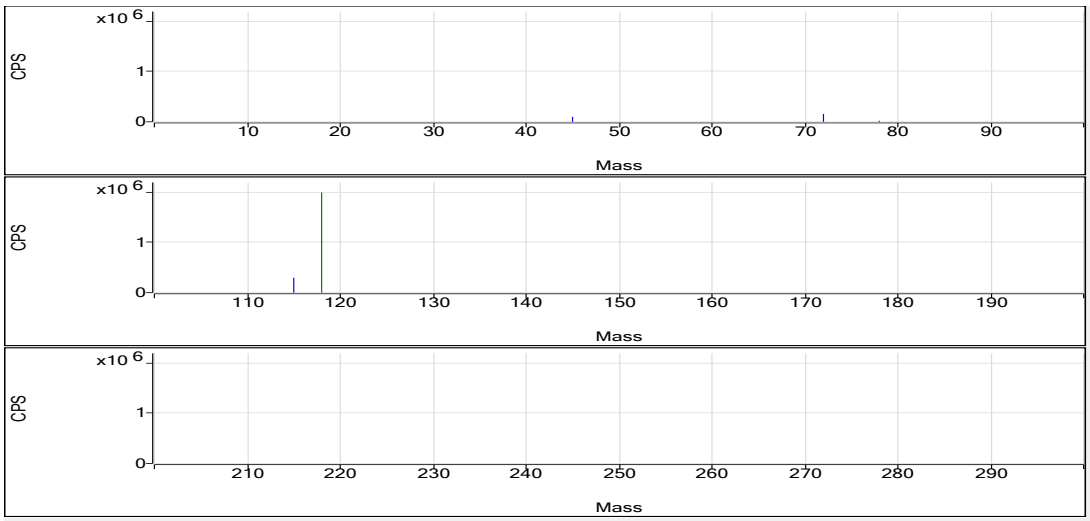
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1612973.15	0.8	99.1	Analog	0.1000	3
No Gas	Ge	72	1886187.26	0.5	100.7	Analog	0.1000	3
H2	Sc	45	97888.63	2.1	99.2	Pulse	0.1000	3
H2	Ge	72	157371.26	2.3	98.6	Pulse	0.1000	3
H2	In	115	297649.52	1.1	104.8	Pulse	0.1000	3
He	Sc	45	21643.31	3.5	102.5	Pulse	0.1000	3
He	Ge	72	84687.24	0.6	102.8	Pulse	0.1000	3
He	In	115	40352.71	2.4	107.7	Pulse	0.1000	3
He	Tb	159	251280.60	0.8	100.0	Pulse	0.1000	3
He	Bi	209	223232.73	0.7	98.1	Pulse	0.1000	3

No Gas

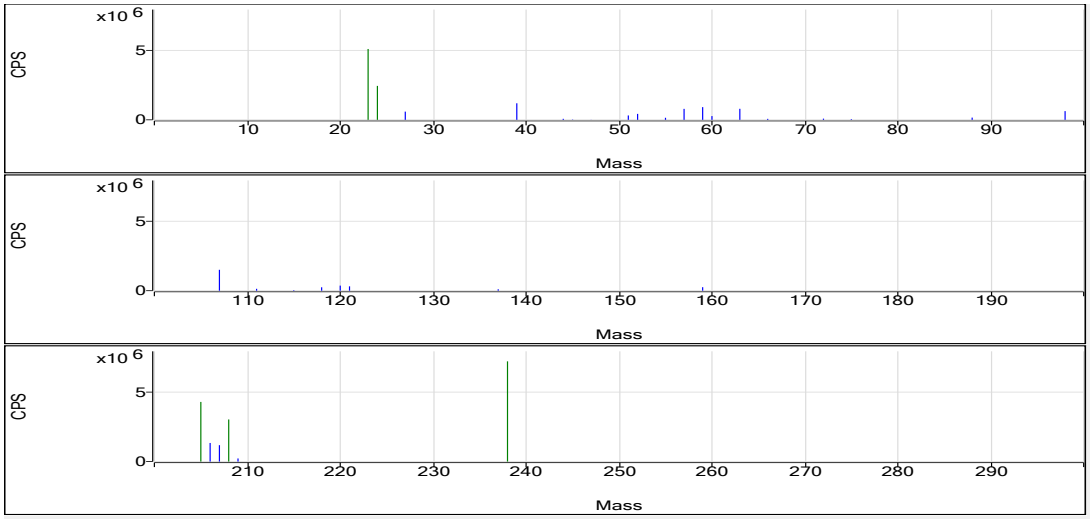


H2



Quantitation Report

He



Quantitation Report

Data File Name	027_CCV.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 11:07:31 AM
Sample Name	CCV 1942322
Sample Type	CCV
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

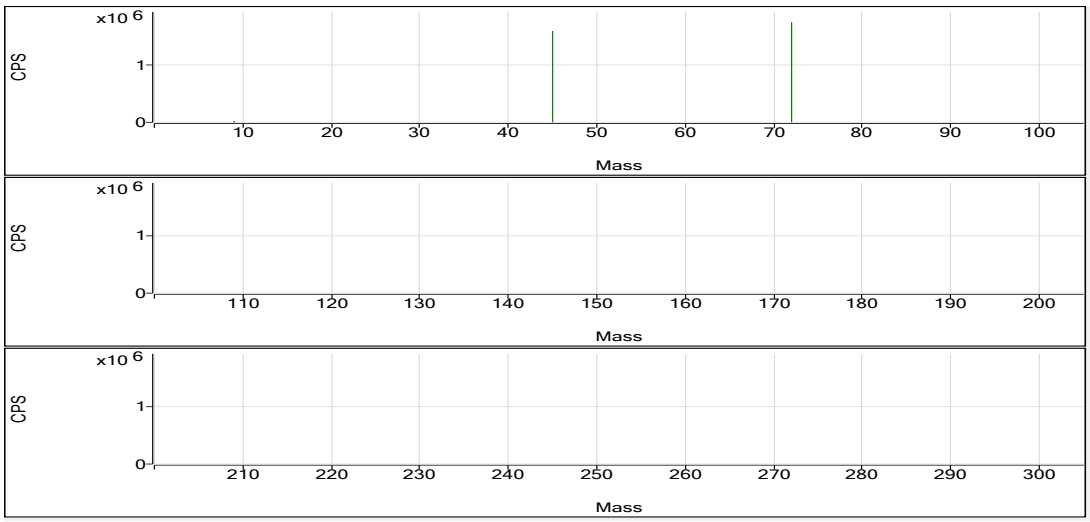
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	29.493	ppb	0.9	22916.23	0.0143	Pulse	0.5000	3
Se	78	115	H2	30.606	ppb	2.2	1261.84	0.0045	Pulse	1.5000	3
Na	23	45	He	5036.880	ppb	1.1	515365.08	23.2642	Pulse	0.1000	3
Mg	24	45	He	5017.401	ppb	1.0	244466.66	11.0355	Pulse	0.1000	3
Al	27	45	He	4908.667	ppb	0.5	59490.51	2.6855	Pulse	0.1000	3
K	39	45	He	5038.248	ppb	1.5	127509.44	5.7565	Pulse	0.1000	3
Ca	44	45	He	5297.001	ppb	9.3	7565.51	0.3418	Pulse	0.1000	3
Ti	47	45	He	307.057	ppb	5.9	3837.28	0.1733	Pulse	0.1000	3
V	51	45	He	295.852	ppb	1.0	190481.11	8.5989	Pulse	0.5000	3
Cr	52	45	He	300.995	ppb	2.1	265153.84	11.9713	Pulse	0.1000	3
Mn	55	72	He	311.731	ppb	1.5	89657.75	1.1360	Pulse	0.1000	3
Fe	57	72	He	5203.206	ppb	1.2	80863.26	1.0246	Pulse	0.1000	3
Co	59	72	He	299.049	ppb	0.9	565486.91	7.1650	Pulse	0.1000	3
Ni	60	72	He	312.973	ppb	1.4	164837.27	2.0887	Pulse	0.1000	3
Cu	63	72	He	304.619	ppb	1.0	488829.40	6.1937	Pulse	0.1000	3
Zn	66	72	He	300.760	ppb	2.6	41798.45	0.5294	Pulse	0.1000	3
As	75	72	He	307.099	ppb	1.4	27278.65	0.3456	Pulse	0.5000	3
Sr	88	115	He	31.883	ppb	6.0	9653.68	0.2532	Pulse	0.1000	3
Mo	98	115	He	31.148	ppb	3.2	37811.83	0.9912	Pulse	0.1000	3
Ag	107	115	He	31.166	ppb	1.4	92711.00	2.4297	Pulse	0.1000	3
Cd	111	115	He	30.625	ppb	3.1	8057.04	0.2112	Pulse	0.5000	3
Sn	120	115	He	30.759	ppb	2.5	22542.27	0.5909	Pulse	0.1000	3
Sb	121	115	He	31.532	ppb	4.6	19083.81	0.5004	Pulse	0.1000	3
Ba	137	115	He	307.042	ppb	2.4	61522.11	1.6125	Pulse	0.1000	3
Tl	205	209	He	31.036	ppb	1.0	252409.15	1.1155	Pulse	0.1000	3
Pb	208	209	He	30.460	ppb	0.5	329138.73	1.4545	Pulse	0.1000	3
U	238	209	He	257.254	ppb	1.1	3725812.44	16.4654	Analog	0.1000	3

ISTD Table:

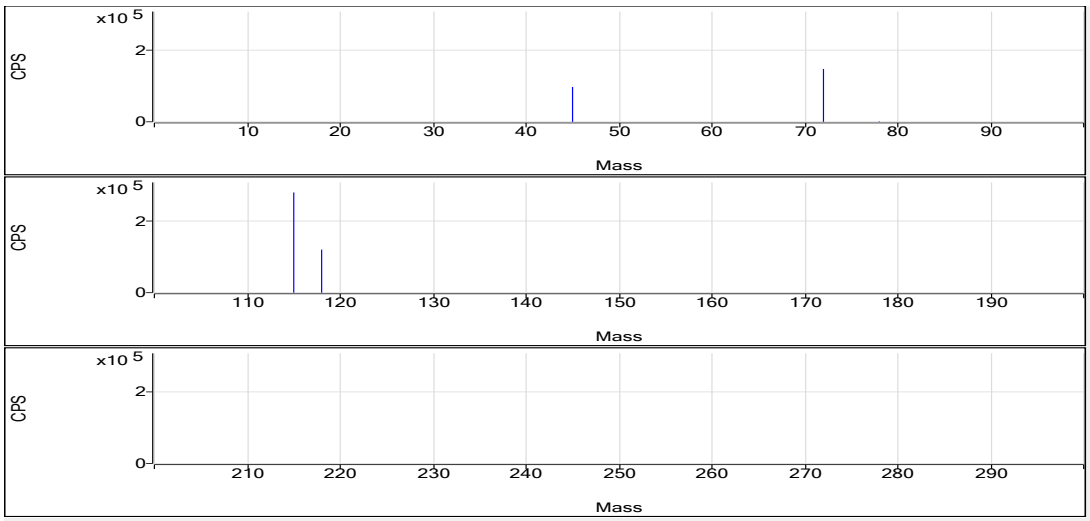
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1600263.10	0.8	98.3	Analog	0.1000	3
No Gas	Ge	72	1755594.56	0.4	93.7	Analog	0.1000	3
H2	Sc	45	96794.75	1.4	98.1	Pulse	0.1000	3
H2	Ge	72	146846.32	0.9	92.0	Pulse	0.1000	3
H2	In	115	278489.25	0.8	98.0	Pulse	0.1000	3
He	Sc	45	22154.08	1.7	105.0	Pulse	0.1000	3
He	Ge	72	78931.11	1.7	95.8	Pulse	0.1000	3
He	In	115	38166.69	2.8	101.9	Pulse	0.1000	3
He	Tb	159	248711.96	1.2	99.0	Pulse	0.1000	3
He	Bi	209	226291.44	0.6	99.5	Pulse	0.1000	3

No Gas

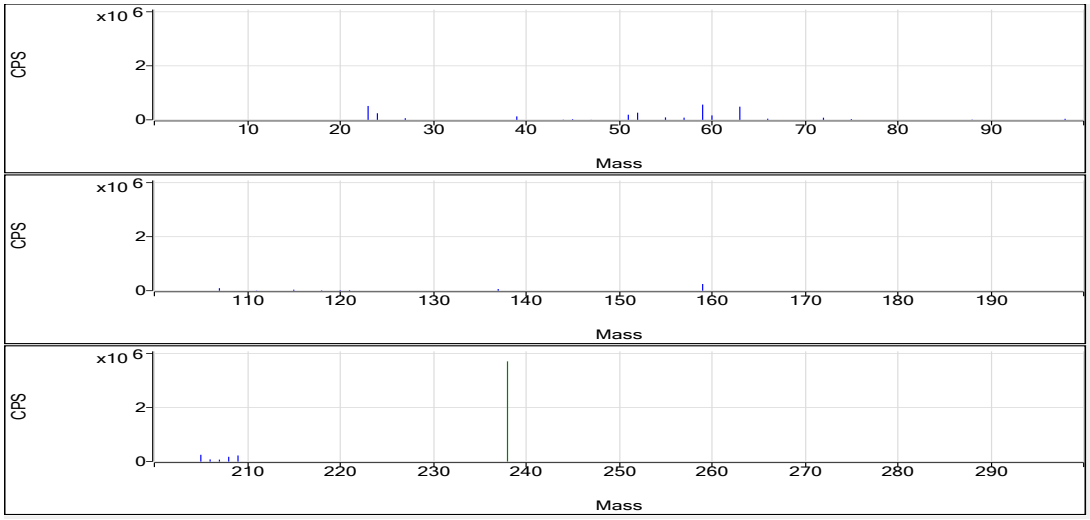


H2



Quantitation Report

He



Quantitation Report

Data File Name	028_CCB.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 11:09:33 AM
Sample Name	CCB 2014932
Sample Type	CCB
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

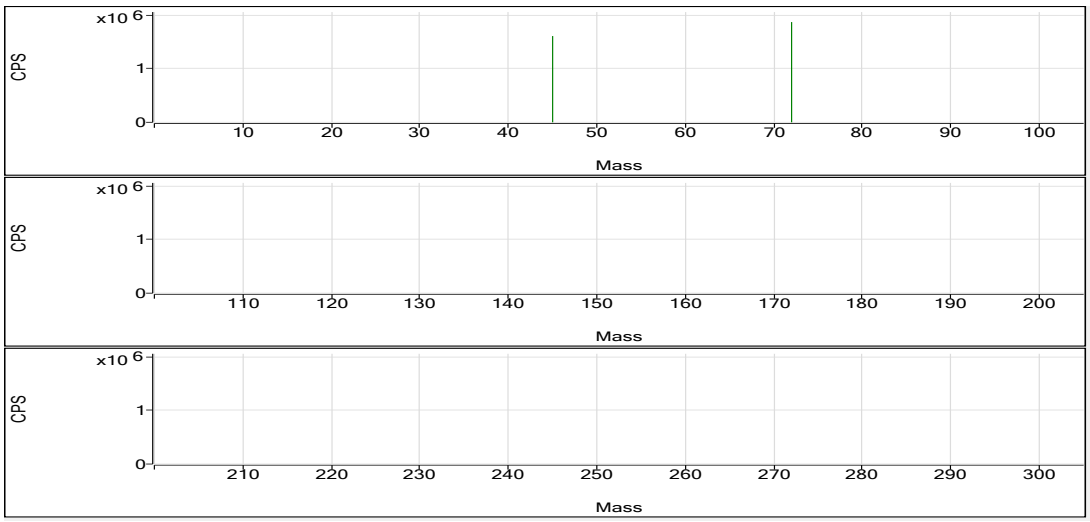
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.021	ppb	34.6	25.33	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.033	ppb	100.0	2.00	0.0000	Pulse	1.5000	3
Na	23	45	He	12.005	ppb	22.3	9469.98	0.4402	Pulse	0.1000	3
Mg	24	45	He	3.135	ppb	14.9	233.34	0.0109	Pulse	0.1000	3
Al	27	45	He	2.804	ppb	35.8	63.33	0.0029	Pulse	0.1000	3
K	39	45	He	7.155	ppb	235.0	5224.47	0.2430	Pulse	0.1000	3
Ca	44	45	He	-16.223	ppb	N/A	73.34	0.0034	Pulse	0.1000	3
Ti	47	45	He	0.000	ppb	N/A	0.00	0.0000	Pulse	0.1000	3
V	51	45	He	0.057	ppb	52.3	260.67	0.0121	Pulse	0.5000	3
Cr	52	45	He	0.197	ppb	12.2	793.38	0.0369	Pulse	0.1000	3
Mn	55	72	He	0.119	ppb	39.1	53.33	0.0006	Pulse	0.1000	3
Fe	57	72	He	3.993	ppb	14.4	140.00	0.0017	Pulse	0.1000	3
Co	59	72	He	0.062	ppb	68.8	180.01	0.0022	Pulse	0.1000	3
Ni	60	72	He	0.112	ppb	84.4	163.34	0.0020	Pulse	0.1000	3
Cu	63	72	He	0.104	ppb	10.7	390.02	0.0047	Pulse	0.1000	3
Zn	66	72	He	0.197	ppb	131.5	103.34	0.0012	Pulse	0.1000	3
As	75	72	He	0.181	ppb	24.4	40.00	0.0005	Pulse	0.5000	3
Sr	88	115	He	-0.024	ppb	N/A	23.33	0.0006	Pulse	0.1000	3
Mo	98	115	He	0.044	ppb	28.5	66.67	0.0018	Pulse	0.1000	3
Ag	107	115	He	0.010	ppb	97.2	36.67	0.0010	Pulse	0.1000	3
Cd	111	115	He	0.008	ppb	153.7	2.67	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.109	ppb	N/A	760.05	0.0201	Pulse	0.1000	3
Sb	121	115	He	0.044	ppb	79.1	36.67	0.0010	Pulse	0.1000	3
Ba	137	115	He	0.099	ppb	48.9	30.00	0.0008	Pulse	0.1000	3
Tl	205	209	He	0.038	ppb	2.3	360.02	0.0016	Pulse	0.1000	3
Pb	208	209	He	-0.003	ppb	N/A	900.05	0.0039	Pulse	0.1000	3
U	238	209	He	0.072	ppb	8.3	1093.42	0.0048	Pulse	0.1000	3

ISTD Table:

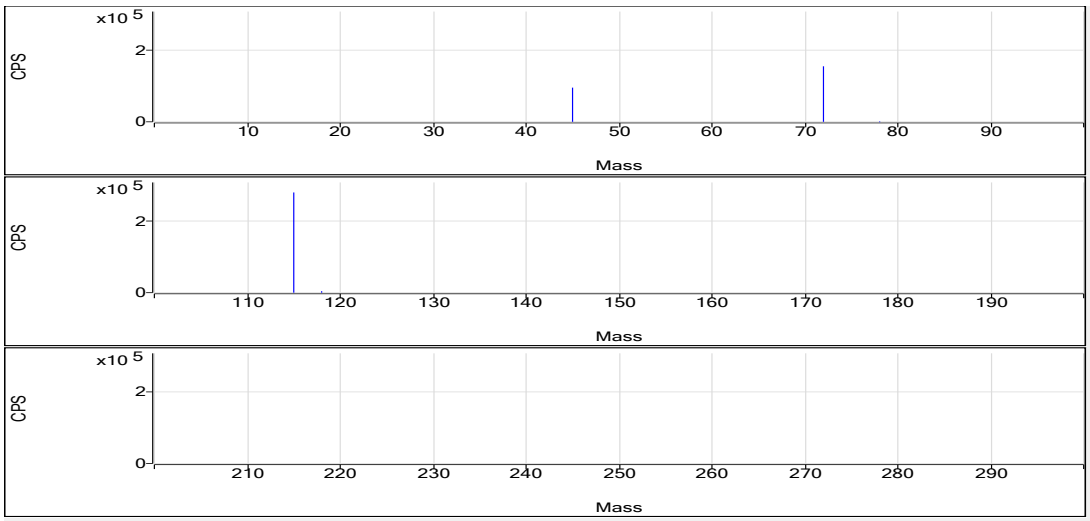
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1609766.64	0.5	98.9	Analog	0.1000	3
No Gas	Ge	72	1870510.54	1.4	99.8	Analog	0.1000	3
H2	Sc	45	95328.31	0.8	96.6	Pulse	0.1000	3
H2	Ge	72	154858.54	1.3	97.1	Pulse	0.1000	3
H2	In	115	279570.22	0.9	98.4	Pulse	0.1000	3
He	Sc	45	21509.75	0.6	101.9	Pulse	0.1000	3
He	Ge	72	83544.09	1.9	101.4	Pulse	0.1000	3
He	In	115	37935.89	1.2	101.2	Pulse	0.1000	3
He	Tb	159	247758.90	0.8	98.6	Pulse	0.1000	3
He	Bi	209	229520.94	0.9	100.9	Pulse	0.1000	3

No Gas

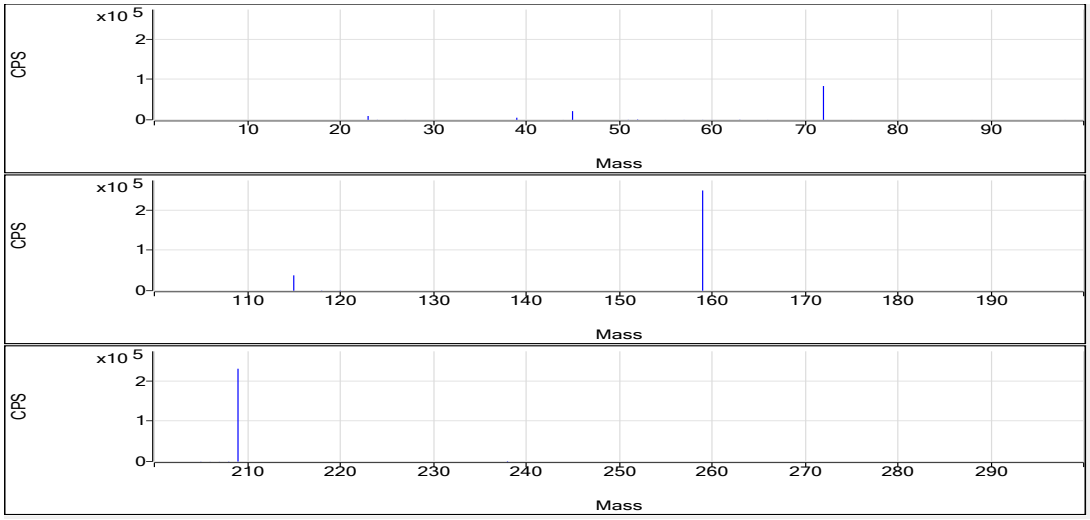


H2



Quantitation Report

He



Quantitation Report

Data File Name	029SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 11:11:35 AM
Sample Name	MB 410-190422/1-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

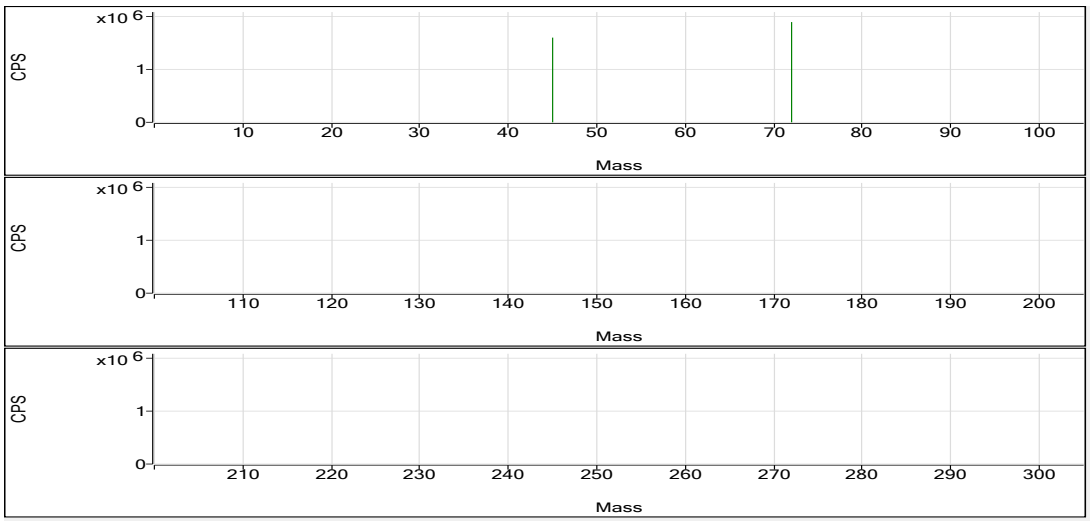
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.013	ppb	58.2	18.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.021	ppb	114.6	1.56	0.0000	Pulse	1.5000	3
Na	23	45	He	28.869	ppb	11.7	11371.39	0.5168	Pulse	0.1000	3
Mg	24	45	He	3.852	ppb	9.0	273.34	0.0124	Pulse	0.1000	3
Al	27	45	He	1.857	ppb	32.7	53.33	0.0024	Pulse	0.1000	3
K	39	45	He	13.604	ppb	51.8	5501.22	0.2500	Pulse	0.1000	3
Ca	44	45	He	16.248	ppb	125.6	120.01	0.0055	Pulse	0.1000	3
Ti	47	45	He	0.264	ppb	173.2	3.33	0.0001	Pulse	0.1000	3
V	51	45	He	0.004	ppb	529.0	233.33	0.0106	Pulse	0.5000	3
Cr	52	45	He	0.245	ppb	28.4	853.39	0.0388	Pulse	0.1000	3
Mn	55	72	He	0.310	ppb	41.5	113.34	0.0013	Pulse	0.1000	3
Fe	57	72	He	3.034	ppb	109.3	126.67	0.0015	Pulse	0.1000	3
Co	59	72	He	0.029	ppb	86.6	116.67	0.0014	Pulse	0.1000	3
Ni	60	72	He	0.088	ppb	27.3	153.34	0.0018	Pulse	0.1000	3
Cu	63	72	He	0.301	ppb	7.3	736.72	0.0087	Pulse	0.1000	3
Zn	66	72	He	4.542	ppb	2.8	753.38	0.0089	Pulse	0.1000	3
As	75	72	He	0.174	ppb	68.0	40.00	0.0005	Pulse	0.5000	3
Sr	88	115	He	0.086	ppb	60.4	56.67	0.0015	Pulse	0.1000	3
Mo	98	115	He	0.016	ppb	77.7	33.33	0.0009	Pulse	0.1000	3
Ag	107	115	He	0.002	ppb	235.8	13.33	0.0003	Pulse	0.1000	3
Cd	111	115	He	0.003	ppb	347.9	1.33	0.0000	Pulse	0.5000	3
Sn	120	115	He	-0.062	ppb	N/A	800.05	0.0209	Pulse	0.1000	3
Sb	121	115	He	0.082	ppb	34.5	60.00	0.0016	Pulse	0.1000	3
Ba	137	115	He	0.280	ppb	80.3	66.67	0.0017	Pulse	0.1000	3
Tl	205	209	He	0.014	ppb	34.8	156.68	0.0007	Pulse	0.1000	3
Pb	208	209	He	0.015	ppb	12.0	1100.06	0.0048	Pulse	0.1000	3
U	238	209	He	0.024	ppb	13.9	400.02	0.0017	Pulse	0.1000	3

ISTD Table:

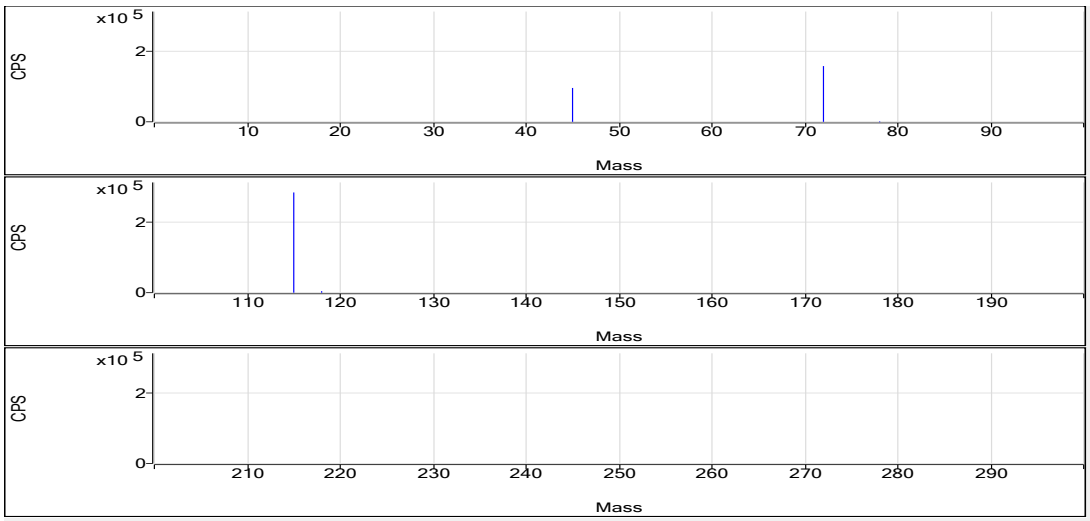
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1605052.84	0.9	98.6	Analog	0.1000	3
No Gas	Ge	72	1899902.42	0.3	101.4	Analog	0.1000	3
H2	Sc	45	96272.00	0.7	97.5	Pulse	0.1000	3
H2	Ge	72	158488.76	1.3	99.3	Pulse	0.1000	3
H2	In	115	285016.22	0.7	100.3	Pulse	0.1000	3
He	Sc	45	22014.00	2.7	104.3	Pulse	0.1000	3
He	Ge	72	84928.72	1.1	103.1	Pulse	0.1000	3
He	In	115	38250.00	0.8	102.1	Pulse	0.1000	3
He	Tb	159	251037.86	0.5	99.9	Pulse	0.1000	3
He	Bi	209	230377.82	1.5	101.3	Pulse	0.1000	3

No Gas

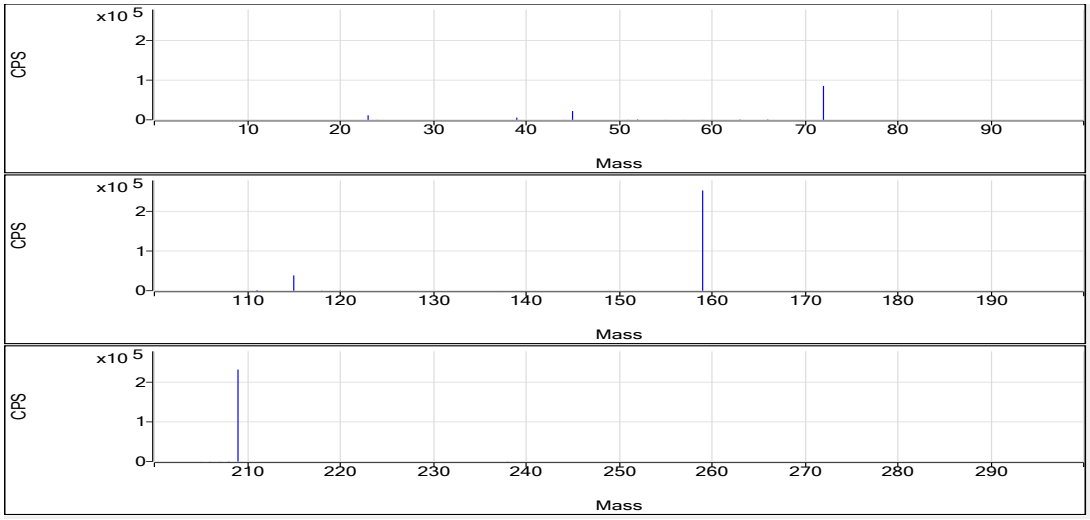


H2



Quantitation Report

He



Quantitation Report

Data File Name	030SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 11:13:38 AM
Sample Name	zLCS 410-190422/2-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

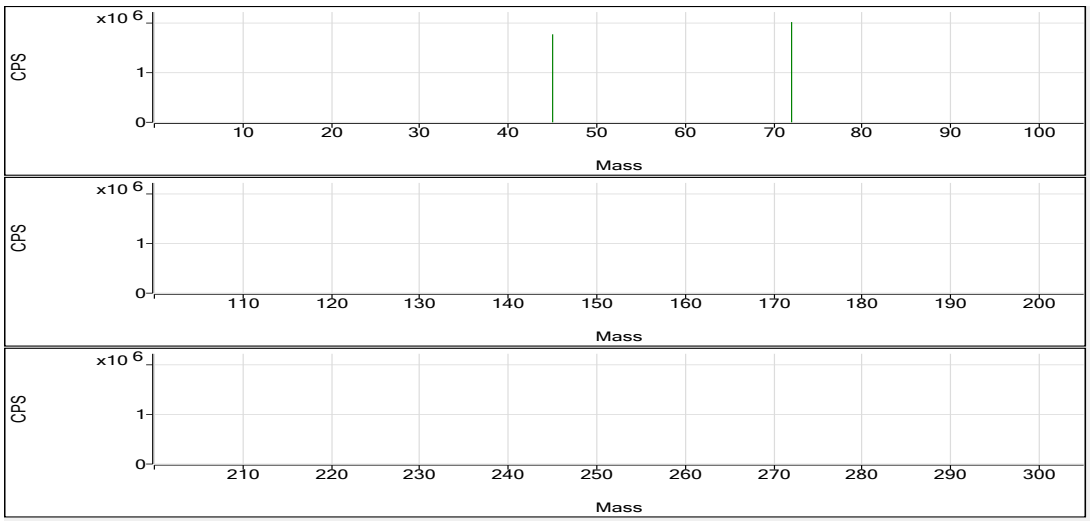
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.008	ppb	40.5	16.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.009	ppb	3.2	1.33	0.0000	Pulse	1.5000	3
Na	23	45	He	-8.043	ppb	N/A	9309.90	0.3492	Pulse	0.1000	3
Mg	24	45	He	0.445	ppb	154.5	130.00	0.0049	Pulse	0.1000	3
Al	27	45	He	-0.110	ppb	N/A	36.67	0.0014	Pulse	0.1000	3
K	39	45	He	-46.731	ppb	N/A	4897.64	0.1839	Pulse	0.1000	3
Ca	44	45	He	-18.302	ppb	N/A	86.67	0.0033	Pulse	0.1000	3
Ti	47	45	He	0.216	ppb	173.2	3.33	0.0001	Pulse	0.1000	3
V	51	45	He	-0.116	ppb	N/A	190.67	0.0071	Pulse	0.5000	3
Cr	52	45	He	-0.206	ppb	N/A	563.37	0.0209	Pulse	0.1000	3
Mn	55	72	He	0.090	ppb	59.4	53.33	0.0005	Pulse	0.1000	3
Fe	57	72	He	2.127	ppb	150.3	136.68	0.0013	Pulse	0.1000	3
Co	59	72	He	0.019	ppb	93.7	116.67	0.0012	Pulse	0.1000	3
Ni	60	72	He	0.000	ppb	13593.3	123.33	0.0012	Pulse	0.1000	3
Cu	63	72	He	-0.008	ppb	N/A	243.34	0.0024	Pulse	0.1000	3
Zn	66	72	He	-0.228	ppb	N/A	50.00	0.0005	Pulse	0.1000	3
As	75	72	He	0.190	ppb	59.9	50.67	0.0005	Pulse	0.5000	3
Sr	88	115	He	-0.012	ppb	N/A	33.33	0.0007	Pulse	0.1000	3
Mo	98	115	He	0.048	ppb	51.6	86.67	0.0019	Pulse	0.1000	3
Ag	107	115	He	0.004	ppb	111.7	23.33	0.0005	Pulse	0.1000	3
Cd	111	115	He	0.001	ppb	246.8	1.33	0.0000	Pulse	0.5000	3
Sn	120	115	He	-0.428	ppb	N/A	673.37	0.0142	Pulse	0.1000	3
Sb	121	115	He	0.004	ppb	436.6	16.67	0.0003	Pulse	0.1000	3
Ba	137	115	He	-0.039	ppb	N/A	3.33	0.0001	Pulse	0.1000	3
Tl	205	209	He	0.011	ppb	39.7	166.67	0.0006	Pulse	0.1000	3
Pb	208	209	He	-0.013	ppb	N/A	970.05	0.0034	Pulse	0.1000	3
U	238	209	He	0.011	ppb	49.5	240.01	0.0009	Pulse	0.1000	3

ISTD Table:

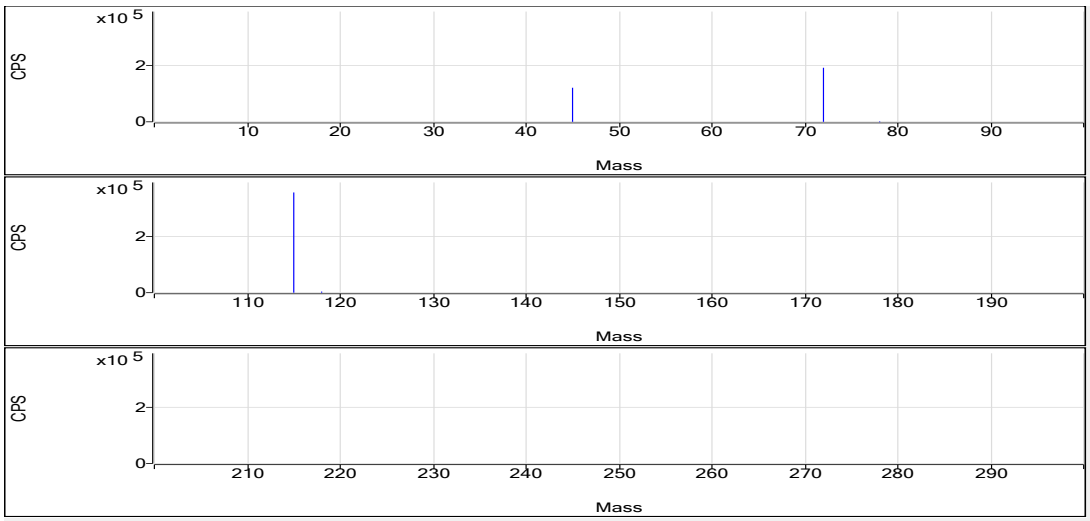
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1764300.75	2.7	108.4	Analog	0.1000	3
No Gas	Ge	72	2009486.90	3.4	107.3	Analog	0.1000	3
H2	Sc	45	120499.81	2.4	122.1	Pulse	0.1000	3
H2	Ge	72	191158.64	1.7	119.8	Pulse	0.1000	3
H2	In	115	354486.32	1.2	124.8	Pulse	0.1000	3
He	Sc	45	26855.86	9.6	127.2	Pulse	0.1000	3
He	Ge	72	102333.95	7.5	124.3	Pulse	0.1000	3
He	In	115	47266.03	7.9	126.1	Pulse	0.1000	3
He	Tb	159	312606.15	9.3	124.4	Pulse	0.1000	3
He	Bi	209	283225.67	7.6	124.5	Pulse	0.1000	3

No Gas

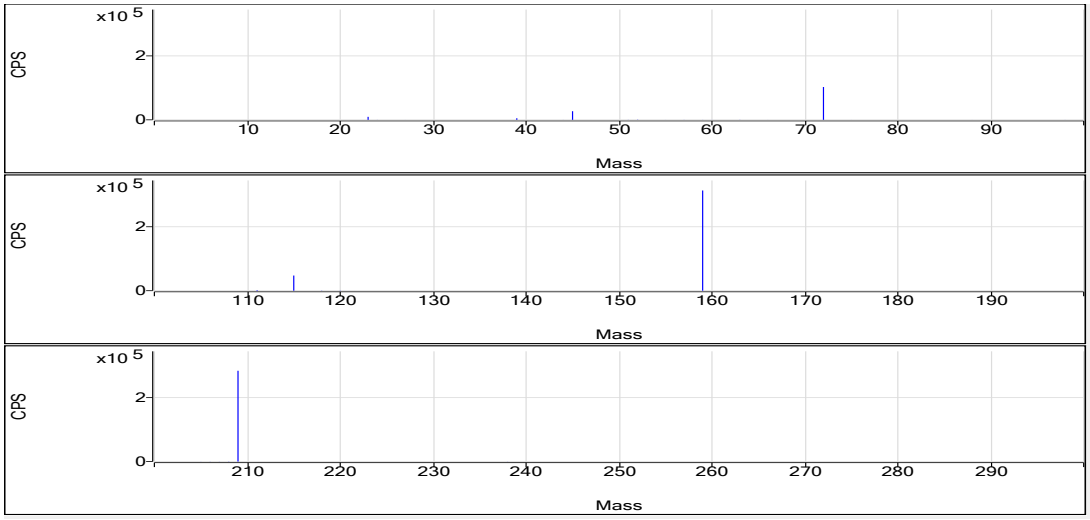


H2



Quantitation Report

He



Quantitation Report

Data File Name	031SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 11:15:40 AM
Sample Name	410-60700-A-7-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

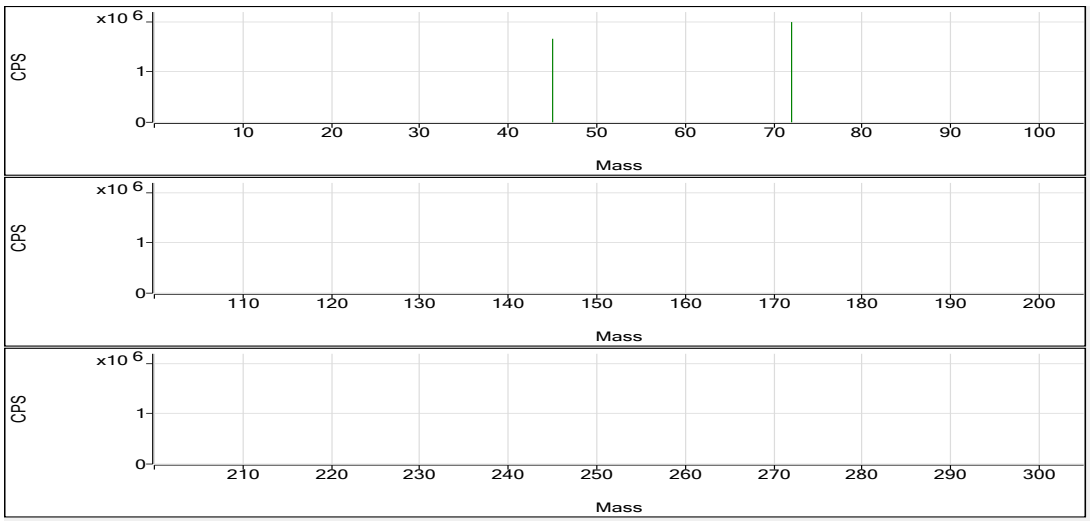
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.021	ppb	40.9	26.00	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.015	ppb	102.8	1.33	0.0000	Pulse	1.5000	3
Na	23	45	He	1250.261	ppb	2.3	134236.22	6.0646	Pulse	0.1000	3
Mg	24	45	He	154.910	ppb	5.2	7625.55	0.3446	Pulse	0.1000	3
Al	27	45	He	31.290	ppb	9.1	410.03	0.0185	Pulse	0.1000	3
K	39	45	He	112.860	ppb	9.7	7942.41	0.3588	Pulse	0.1000	3
Ca	44	45	He	431.363	ppb	7.0	706.71	0.0319	Pulse	0.1000	3
Ti	47	45	He	1.064	ppb	42.2	13.33	0.0006	Pulse	0.1000	3
V	51	45	He	0.002	ppb	2859.1	232.67	0.0105	Pulse	0.5000	3
Cr	52	45	He	-0.004	ppb	N/A	640.04	0.0289	Pulse	0.1000	3
Mn	55	72	He	29.132	ppb	3.7	9416.73	0.1064	Pulse	0.1000	3
Fe	57	72	He	14.429	ppb	31.5	330.02	0.0037	Pulse	0.1000	3
Co	59	72	He	1.444	ppb	7.3	3123.78	0.0353	Pulse	0.1000	3
Ni	60	72	He	1.172	ppb	6.6	800.06	0.0090	Pulse	0.1000	3
Cu	63	72	He	0.421	ppb	18.0	983.40	0.0111	Pulse	0.1000	3
Zn	66	72	He	1.442	ppb	25.3	303.35	0.0034	Pulse	0.1000	3
As	75	72	He	0.063	ppb	72.2	30.67	0.0003	Pulse	0.5000	3
Sr	88	115	He	0.683	ppb	13.5	243.34	0.0062	Pulse	0.1000	3
Mo	98	115	He	0.032	ppb	38.7	53.33	0.0014	Pulse	0.1000	3
Ag	107	115	He	0.005	ppb	126.9	23.33	0.0006	Pulse	0.1000	3
Cd	111	115	He	0.012	ppb	61.4	4.00	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.228	ppb	N/A	700.04	0.0179	Pulse	0.1000	3
Sb	121	115	He	0.010	ppb	95.2	16.67	0.0004	Pulse	0.1000	3
Ba	137	115	He	8.235	ppb	10.2	1706.84	0.0435	Pulse	0.1000	3
Tl	205	209	He	0.025	ppb	23.3	253.35	0.0011	Pulse	0.1000	3
Pb	208	209	He	0.041	ppb	33.9	1410.17	0.0060	Pulse	0.1000	3
U	238	209	He	0.035	ppb	13.8	570.04	0.0024	Pulse	0.1000	3

ISTD Table:

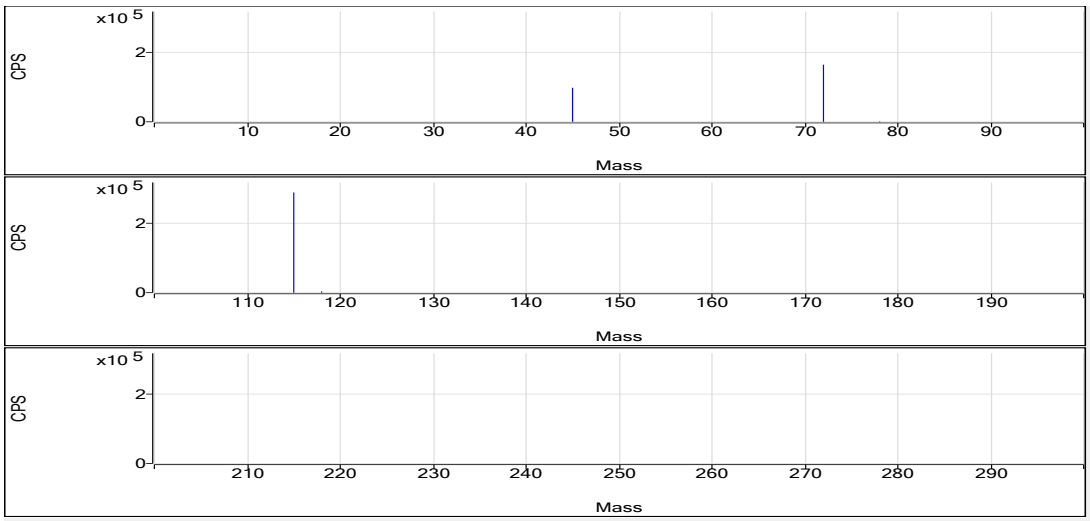
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1657693.93	0.7	101.9	Analog	0.1000	3
No Gas	Ge	72	1989123.25	1.0	106.2	Analog	0.1000	3
H2	Sc	45	98543.13	2.2	99.8	Pulse	0.1000	3
H2	Ge	72	165506.22	0.7	103.7	Pulse	0.1000	3
H2	In	115	290254.26	0.9	102.2	Pulse	0.1000	3
He	Sc	45	22137.53	1.0	104.9	Pulse	0.1000	3
He	Ge	72	88547.34	0.7	107.5	Pulse	0.1000	3
He	In	115	39193.04	1.5	104.6	Pulse	0.1000	3
He	Tb	159	254029.97	1.3	101.1	Pulse	0.1000	3
He	Bi	209	234438.25	0.5	103.0	Pulse	0.1000	3

No Gas

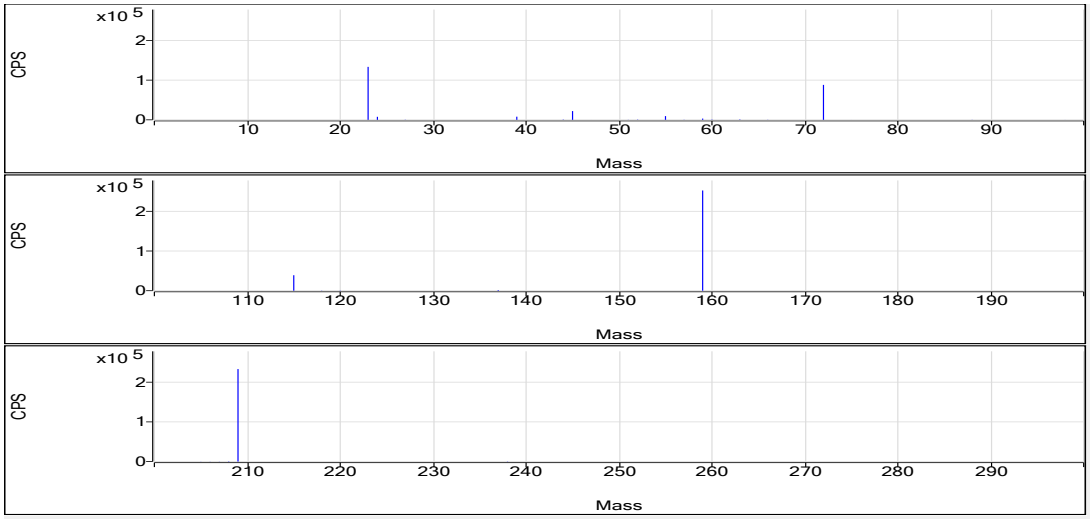


H2



Quantitation Report

He



Quantitation Report

Data File Name	032SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 11:17:42 AM
Sample Name	410-60700-A-7-A PDS
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

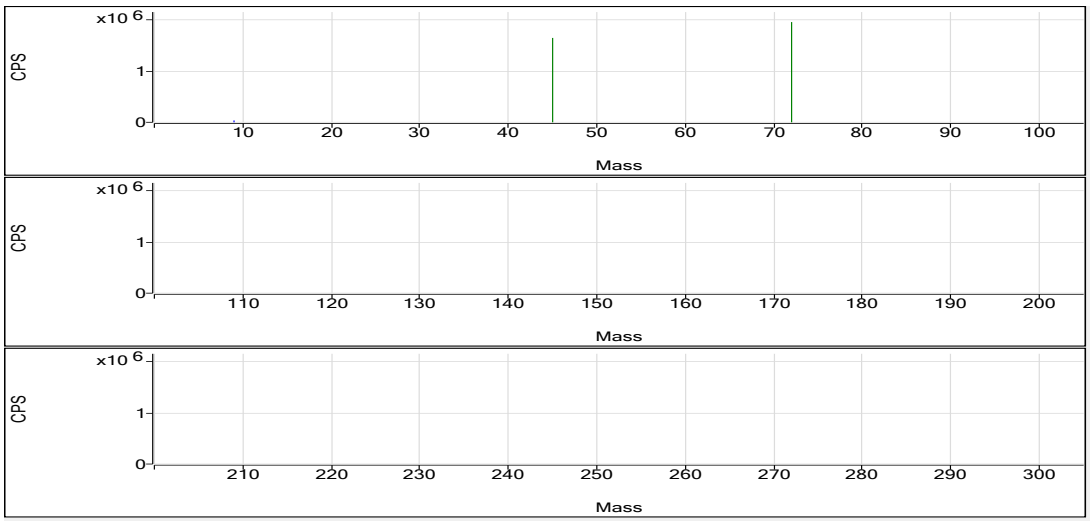
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	45.501	ppb	1.9	36508.41	0.0221	Pulse	0.5000	3
Se	78	115	H2	98.511	ppb	1.5	4187.51	0.0146	Pulse	1.5000	3
Na	23	45	He	6098.701	ppb	4.3	620471.92	28.0871	Pulse	0.1000	3
Mg	24	45	He	5086.221	ppb	4.5	247106.34	11.1868	Pulse	0.1000	3
Al	27	45	He	4796.186	ppb	6.0	57934.76	2.6240	Pulse	0.1000	3
K	39	45	He	5030.734	ppb	3.9	127005.89	5.7482	Pulse	0.1000	3
Ca	44	45	He	5480.007	ppb	6.0	7805.69	0.3535	Pulse	0.1000	3
Ti	47	45	He	509.388	ppb	3.1	6354.96	0.2875	Pulse	0.1000	3
V	51	45	He	487.570	ppb	4.3	312897.19	14.1644	Pulse	0.5000	3
Cr	52	45	He	490.739	ppb	4.6	430716.27	19.4996	Pulse	0.1000	3
Mn	55	72	He	482.491	ppb	1.1	155318.23	1.7582	Pulse	0.1000	3
Fe	57	72	He	4532.175	ppb	1.4	78848.66	0.8926	Pulse	0.1000	3
Co	59	72	He	432.805	ppb	0.8	916031.76	10.3694	Pulse	0.1000	3
Ni	60	72	He	454.036	ppb	1.5	267619.39	3.0295	Pulse	0.1000	3
Cu	63	72	He	441.075	ppb	0.9	792148.19	8.9671	Pulse	0.1000	3
Zn	66	72	He	452.539	ppb	1.5	70326.24	0.7961	Pulse	0.1000	3
As	75	72	He	440.414	ppb	1.1	43780.01	0.4956	Pulse	0.5000	3
Sr	88	115	He	50.854	ppb	2.2	15819.30	0.4034	Pulse	0.1000	3
Mo	98	115	He	51.320	ppb	1.0	64029.50	1.6328	Pulse	0.1000	3
Ag	107	115	He	33.529	ppb	1.4	102501.26	2.6140	Pulse	0.1000	3
Cd	111	115	He	50.133	ppb	3.5	13554.64	0.3457	Pulse	0.5000	3
Sn	120	115	He	101.048	ppb	2.5	74142.20	1.8907	Pulse	0.1000	3
Sb	121	115	He	100.074	ppb	2.4	62250.64	1.5877	Pulse	0.1000	3
Ba	137	115	He	503.175	ppb	2.7	103600.65	2.6424	Pulse	0.1000	3
Tl	205	209	He	99.510	ppb	1.2	818923.66	3.5760	Pulse	0.1000	3
Pb	208	209	He	49.701	ppb	0.7	542927.83	2.3707	Pulse	0.1000	3
U	238	209	He	46.717	ppb	0.7	684807.38	2.9902	Pulse	0.1000	3

ISTD Table:

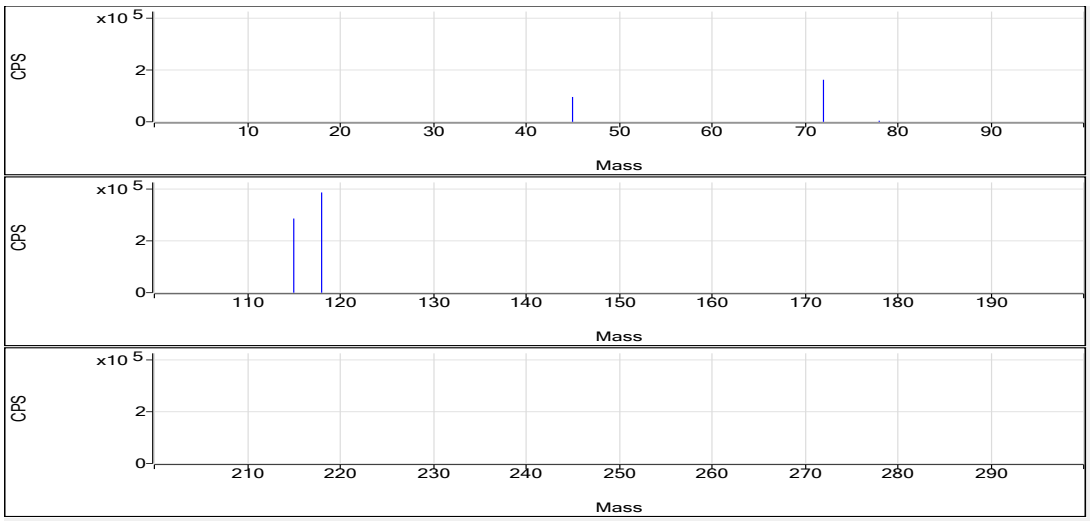
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1652903.73	0.8	101.6	Analog	0.1000	3
No Gas	Ge	72	1963521.84	0.3	104.8	Analog	0.1000	3
H2	Sc	45	96220.75	1.8	97.5	Pulse	0.1000	3
H2	Ge	72	162902.76	2.3	102.1	Pulse	0.1000	3
H2	In	115	287207.20	1.3	101.1	Pulse	0.1000	3
He	Sc	45	22120.89	4.8	104.8	Pulse	0.1000	3
He	Ge	72	88345.52	1.2	107.3	Pulse	0.1000	3
He	In	115	39219.54	1.8	104.7	Pulse	0.1000	3
He	Tb	159	254040.34	0.9	101.1	Pulse	0.1000	3
He	Bi	209	229023.30	1.1	100.7	Pulse	0.1000	3

No Gas

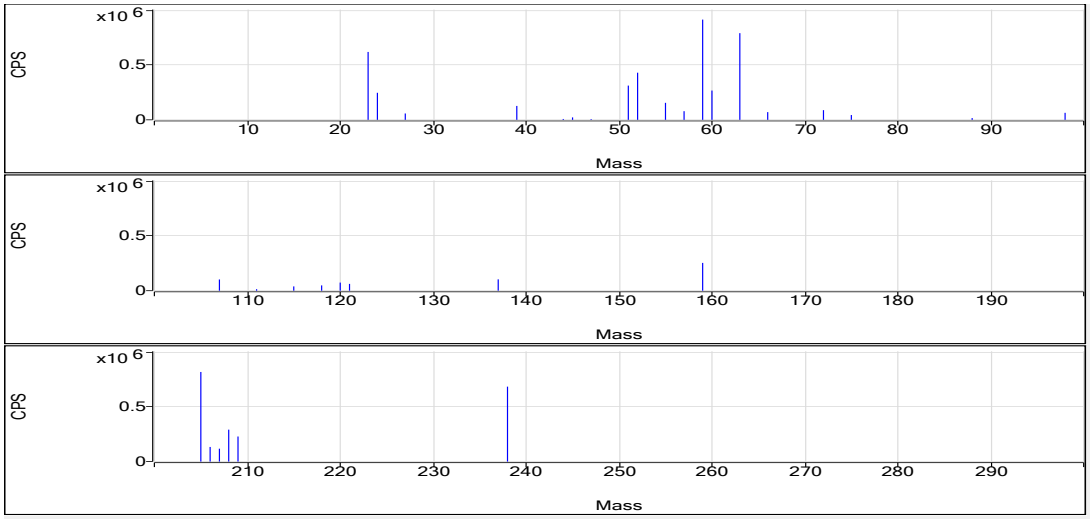


H2



Quantitation Report

He



Quantitation Report

Data File Name	033SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 11:19:44 AM
Sample Name	410-60700-A-7-B DU
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

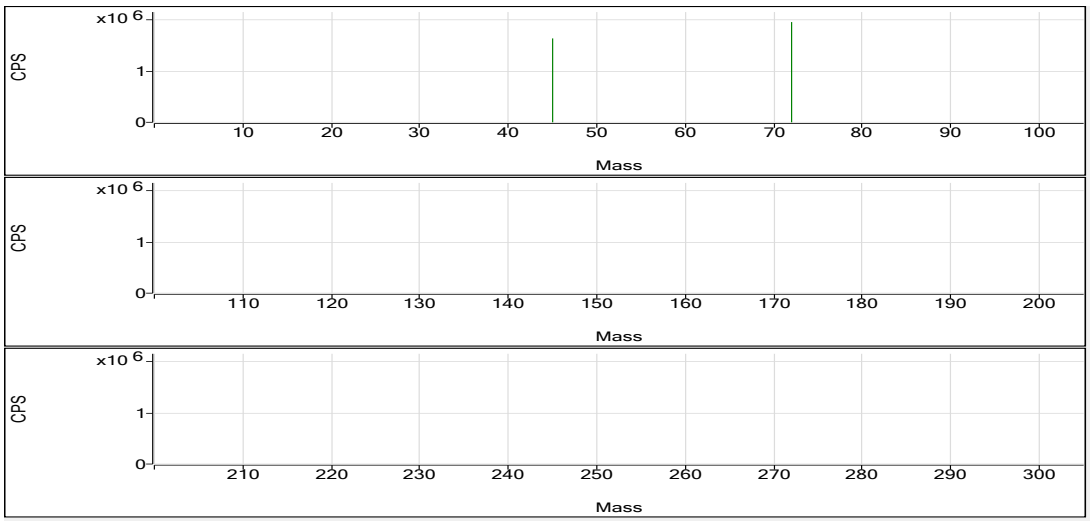
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.048	ppb	39.9	47.33	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.103	ppb	34.3	5.11	0.0000	Pulse	1.5000	3
Na	23	45	He	1241.706	ppb	2.2	132904.09	6.0258	Pulse	0.1000	3
Mg	24	45	He	149.075	ppb	1.3	7318.72	0.3317	Pulse	0.1000	3
Al	27	45	He	28.347	ppb	7.9	373.35	0.0169	Pulse	0.1000	3
K	39	45	He	114.172	ppb	8.1	7945.80	0.3602	Pulse	0.1000	3
Ca	44	45	He	336.062	ppb	3.8	570.03	0.0258	Pulse	0.1000	3
Ti	47	45	He	0.267	ppb	173.2	3.33	0.0002	Pulse	0.1000	3
V	51	45	He	0.135	ppb	12.1	317.34	0.0144	Pulse	0.5000	3
Cr	52	45	He	0.175	ppb	87.1	793.39	0.0360	Pulse	0.1000	3
Mn	55	72	He	27.960	ppb	1.1	8916.46	0.1021	Pulse	0.1000	3
Fe	57	72	He	23.047	ppb	24.4	473.36	0.0054	Pulse	0.1000	3
Co	59	72	He	1.492	ppb	6.5	3180.45	0.0364	Pulse	0.1000	3
Ni	60	72	He	1.422	ppb	18.9	933.40	0.0107	Pulse	0.1000	3
Cu	63	72	He	0.485	ppb	8.4	1083.41	0.0124	Pulse	0.1000	3
Zn	66	72	He	1.366	ppb	45.8	286.68	0.0033	Pulse	0.1000	3
As	75	72	He	0.210	ppb	48.8	44.67	0.0005	Pulse	0.5000	3
Sr	88	115	He	0.919	ppb	22.7	316.68	0.0081	Pulse	0.1000	3
Mo	98	115	He	0.085	ppb	18.1	120.01	0.0031	Pulse	0.1000	3
Ag	107	115	He	0.014	ppb	61.6	50.00	0.0013	Pulse	0.1000	3
Cd	111	115	He	0.024	ppb	44.9	7.33	0.0002	Pulse	0.5000	3
Sn	120	115	He	-0.180	ppb	N/A	736.71	0.0187	Pulse	0.1000	3
Sb	121	115	He	0.074	ppb	43.9	56.67	0.0014	Pulse	0.1000	3
Ba	137	115	He	8.204	ppb	6.2	1703.52	0.0433	Pulse	0.1000	3
Tl	205	209	He	0.090	ppb	8.7	810.06	0.0034	Pulse	0.1000	3
Pb	208	209	He	0.029	ppb	13.1	1286.75	0.0054	Pulse	0.1000	3
U	238	209	He	0.046	ppb	2.9	743.38	0.0031	Pulse	0.1000	3

ISTD Table:

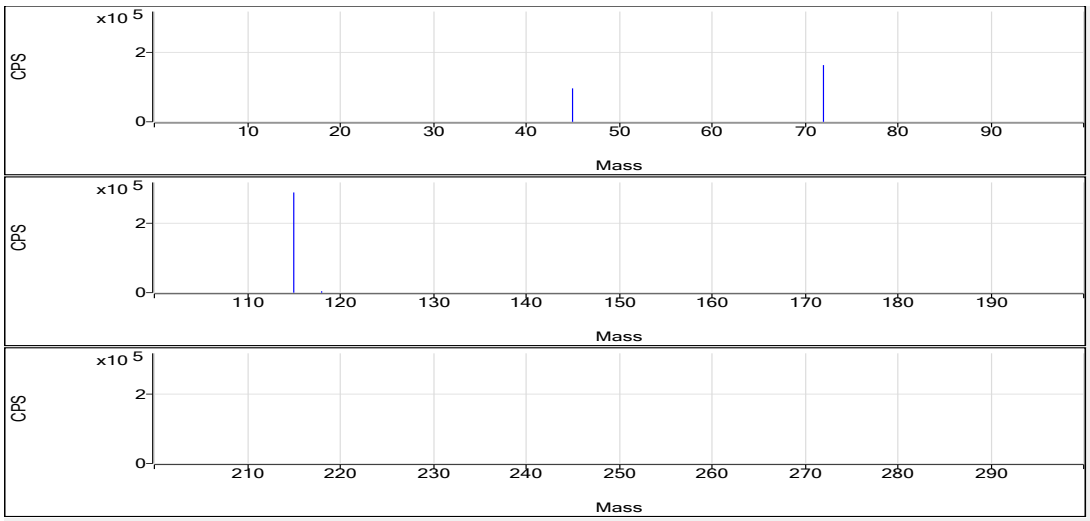
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1639785.24	1.1	100.8	Analog	0.1000	3
No Gas	Ge	72	1959166.69	0.6	104.6	Analog	0.1000	3
H2	Sc	45	97030.06	2.5	98.3	Pulse	0.1000	3
H2	Ge	72	164544.95	2.0	103.1	Pulse	0.1000	3
H2	In	115	290767.40	0.8	102.3	Pulse	0.1000	3
He	Sc	45	22060.67	1.5	104.5	Pulse	0.1000	3
He	Ge	72	87353.61	1.3	106.1	Pulse	0.1000	3
He	In	115	39279.88	1.5	104.8	Pulse	0.1000	3
He	Tb	159	252537.71	1.3	100.5	Pulse	0.1000	3
He	Bi	209	236355.31	0.5	103.9	Pulse	0.1000	3

No Gas

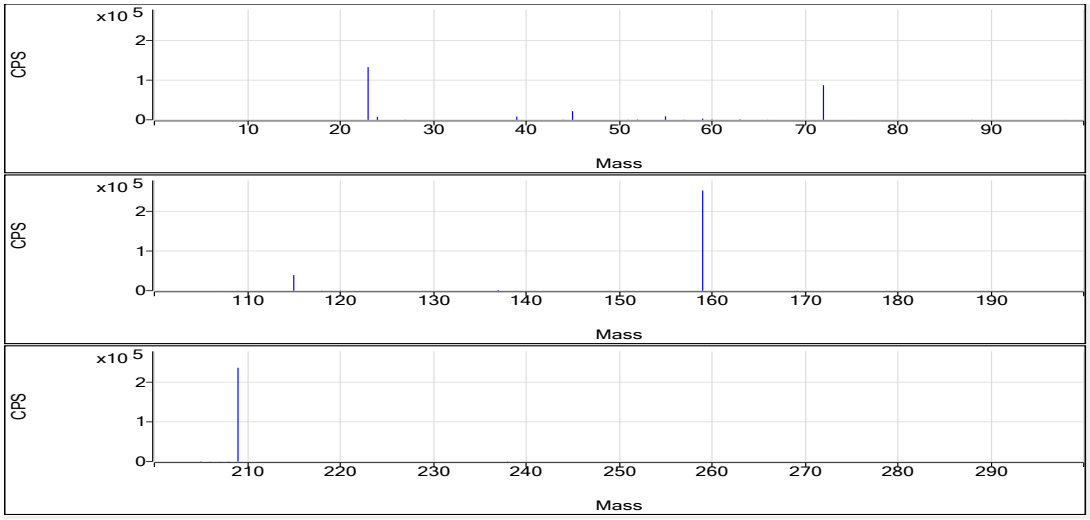


H2



Quantitation Report

He



Quantitation Report

Data File Name	034SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 11:21:46 AM
Sample Name	410-60700-A-7-C MS
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

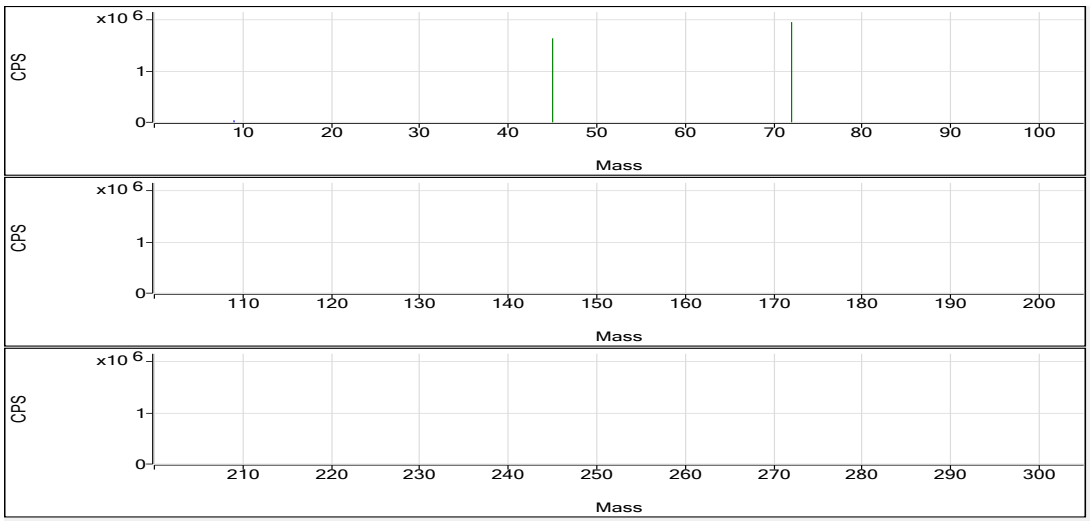
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	48.119	ppb	0.1	38335.58	0.0234	Pulse	0.5000	3
Se	78	115	H2	102.357	ppb	1.0	4389.34	0.0151	Pulse	1.5000	3
Na	23	45	He	6375.729	ppb	3.6	650289.86	29.3455	Pulse	0.1000	3
Mg	24	45	He	5316.171	ppb	3.4	259110.79	11.6924	Pulse	0.1000	3
Al	27	45	He	5077.389	ppb	2.4	61572.90	2.7777	Pulse	0.1000	3
K	39	45	He	5239.333	ppb	3.9	132436.46	5.9768	Pulse	0.1000	3
Ca	44	45	He	5636.602	ppb	4.8	8052.47	0.3635	Pulse	0.1000	3
Ti	47	45	He	522.744	ppb	6.3	6535.02	0.2950	Pulse	0.1000	3
V	51	45	He	513.332	ppb	3.3	330469.06	14.9123	Pulse	0.5000	3
Cr	52	45	He	515.482	ppb	4.7	453741.81	20.4813	Pulse	0.1000	3
Mn	55	72	He	521.599	ppb	1.0	165609.43	1.9007	Pulse	0.1000	3
Fe	57	72	He	4923.933	ppb	2.1	84477.39	0.9697	Pulse	0.1000	3
Co	59	72	He	466.151	ppb	1.2	973070.82	11.1683	Pulse	0.1000	3
Ni	60	72	He	485.461	ppb	1.8	282204.20	3.2391	Pulse	0.1000	3
Cu	63	72	He	469.933	ppb	1.5	832365.12	9.5536	Pulse	0.1000	3
Zn	66	72	He	489.674	ppb	1.9	75046.03	0.8614	Pulse	0.1000	3
As	75	72	He	467.890	ppb	1.7	45867.80	0.5265	Pulse	0.5000	3
Sr	88	115	He	52.962	ppb	1.9	16319.93	0.4201	Pulse	0.1000	3
Mo	98	115	He	54.024	ppb	0.7	66775.83	1.7188	Pulse	0.1000	3
Ag	107	115	He	51.041	ppb	1.9	154584.06	3.9791	Pulse	0.1000	3
Cd	111	115	He	52.688	ppb	2.6	14117.19	0.3634	Pulse	0.5000	3
Sn	120	115	He	104.563	ppb	0.5	75978.56	1.9557	Pulse	0.1000	3
Sb	121	115	He	106.245	ppb	2.0	65485.29	1.6856	Pulse	0.1000	3
Ba	137	115	He	528.240	ppb	1.2	107764.78	2.7740	Pulse	0.1000	3
Tl	205	209	He	103.212	ppb	0.9	864802.15	3.7090	Pulse	0.1000	3
Pb	208	209	He	51.070	ppb	0.6	567966.08	2.4359	Pulse	0.1000	3
U	238	209	He	48.512	ppb	0.8	723995.28	3.1051	Pulse	0.1000	3

ISTD Table:

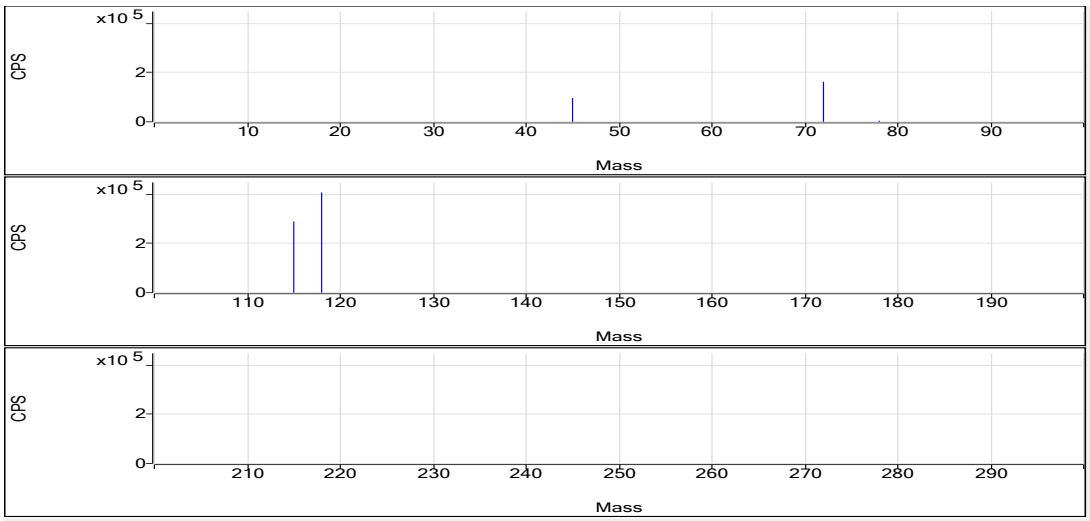
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1641029.14	1.0	100.8	Analog	0.1000	3
No Gas	Ge	72	1958627.84	0.7	104.5	Analog	0.1000	3
H2	Sc	45	97056.81	0.5	98.3	Pulse	0.1000	3
H2	Ge	72	163369.33	0.5	102.4	Pulse	0.1000	3
H2	In	115	289769.75	1.1	102.0	Pulse	0.1000	3
He	Sc	45	22177.57	3.4	105.1	Pulse	0.1000	3
He	Ge	72	87138.36	1.5	105.8	Pulse	0.1000	3
He	In	115	38851.79	1.1	103.7	Pulse	0.1000	3
He	Tb	159	252866.79	0.4	100.6	Pulse	0.1000	3
He	Bi	209	233172.89	1.0	102.5	Pulse	0.1000	3

No Gas

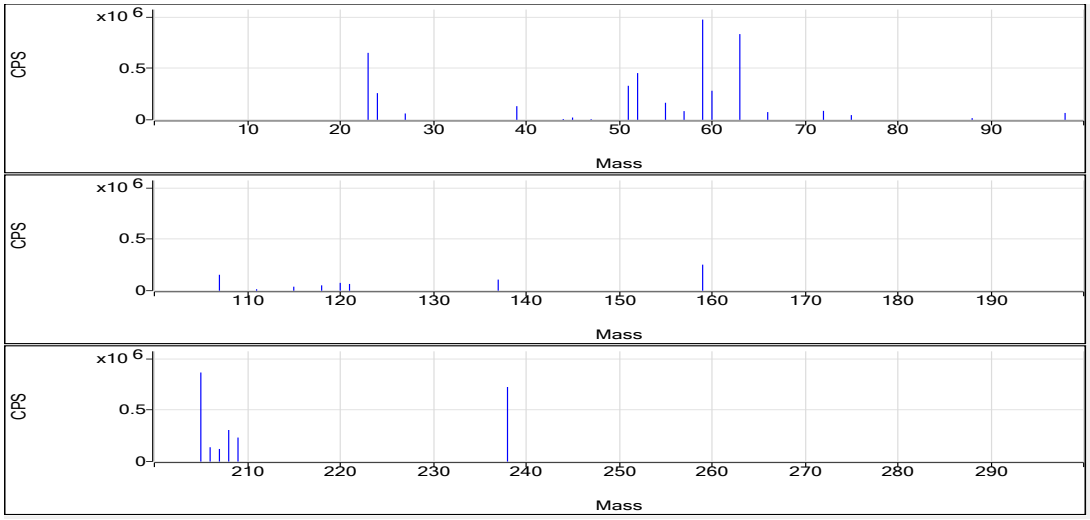


H2



Quantitation Report

He



Quantitation Report

Data File Name	035SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 11:23:50 AM
Sample Name	410-60700-A-7-D MSD
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

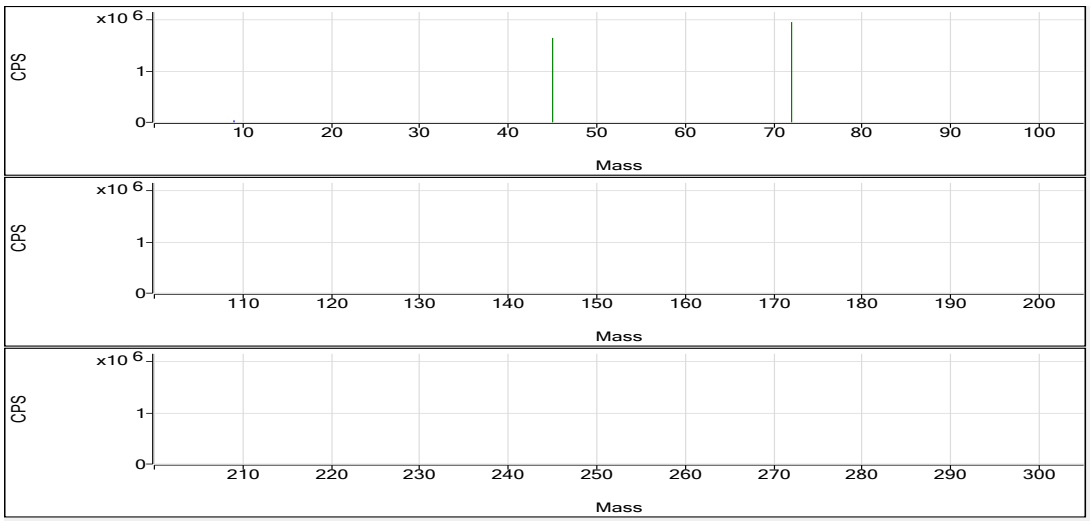
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	47.745	ppb	1.8	38195.92	0.0232	Pulse	0.5000	3
Se	78	115	H2	102.792	ppb	2.0	4382.23	0.0152	Pulse	1.5000	3
Na	23	45	He	6284.342	ppb	3.2	652882.33	28.9304	Pulse	0.1000	3
Mg	24	45	He	5259.355	ppb	2.8	261068.71	11.5675	Pulse	0.1000	3
Al	27	45	He	5092.794	ppb	1.7	62894.83	2.7861	Pulse	0.1000	3
K	39	45	He	5213.813	ppb	3.6	134242.91	5.9489	Pulse	0.1000	3
Ca	44	45	He	5582.562	ppb	6.9	8119.18	0.3600	Pulse	0.1000	3
Ti	47	45	He	534.969	ppb	3.1	6815.19	0.3019	Pulse	0.1000	3
V	51	45	He	505.803	ppb	2.5	331639.16	14.6937	Pulse	0.5000	3
Cr	52	45	He	506.600	ppb	3.2	454250.08	20.1289	Pulse	0.1000	3
Mn	55	72	He	507.755	ppb	1.9	164446.56	1.8503	Pulse	0.1000	3
Fe	57	72	He	4782.311	ppb	2.5	83702.56	0.9418	Pulse	0.1000	3
Co	59	72	He	456.055	ppb	2.0	971092.23	10.9264	Pulse	0.1000	3
Ni	60	72	He	479.169	ppb	1.6	284170.18	3.1972	Pulse	0.1000	3
Cu	63	72	He	461.890	ppb	1.9	834562.96	9.3901	Pulse	0.1000	3
Zn	66	72	He	474.176	ppb	1.2	74145.09	0.8342	Pulse	0.1000	3
As	75	72	He	463.191	ppb	2.5	46317.92	0.5212	Pulse	0.5000	3
Sr	88	115	He	52.463	ppb	1.5	16376.61	0.4161	Pulse	0.1000	3
Mo	98	115	He	53.618	ppb	0.2	67131.09	1.7059	Pulse	0.1000	3
Ag	107	115	He	50.308	ppb	1.6	154318.06	3.9220	Pulse	0.1000	3
Cd	111	115	He	52.027	ppb	2.1	14117.17	0.3588	Pulse	0.5000	3
Sn	120	115	He	105.515	ppb	1.8	77644.29	1.9733	Pulse	0.1000	3
Sb	121	115	He	105.446	ppb	1.6	65823.40	1.6729	Pulse	0.1000	3
Ba	137	115	He	529.925	ppb	1.2	109501.70	2.7828	Pulse	0.1000	3
Tl	205	209	He	104.095	ppb	1.1	863851.06	3.7408	Pulse	0.1000	3
Pb	208	209	He	51.760	ppb	0.8	570130.74	2.4688	Pulse	0.1000	3
U	238	209	He	49.106	ppb	1.3	725835.93	3.1431	Pulse	0.1000	3

ISTD Table:

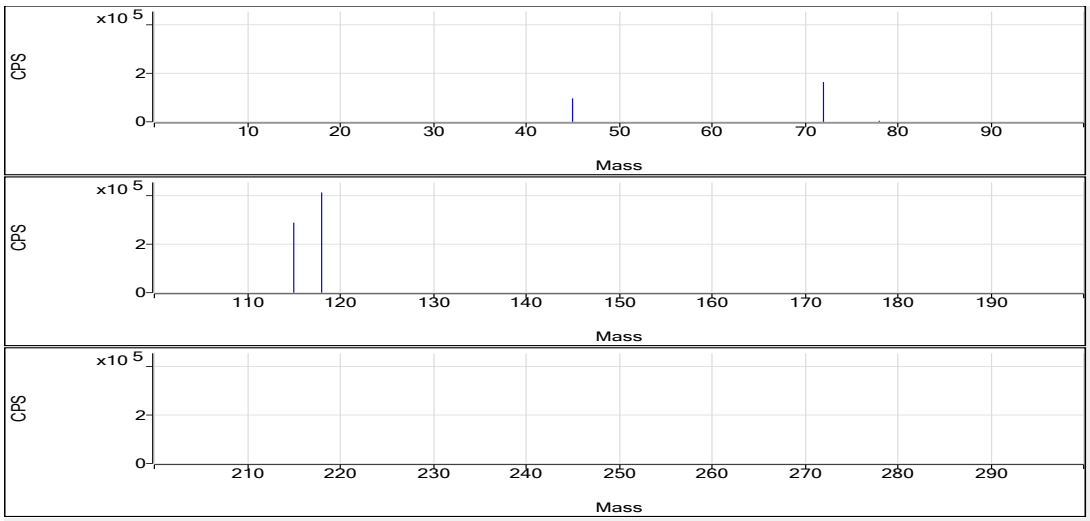
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1648038.00	1.0	101.3	Analog	0.1000	3
No Gas	Ge	72	1957404.76	0.7	104.5	Analog	0.1000	3
H2	Sc	45	96352.13	1.7	97.6	Pulse	0.1000	3
H2	Ge	72	163466.07	1.2	102.5	Pulse	0.1000	3
H2	In	115	288085.15	0.4	101.4	Pulse	0.1000	3
He	Sc	45	22581.53	3.0	107.0	Pulse	0.1000	3
He	Ge	72	88892.83	1.5	107.9	Pulse	0.1000	3
He	In	115	39353.28	1.5	105.0	Pulse	0.1000	3
He	Tb	159	251195.88	0.3	99.9	Pulse	0.1000	3
He	Bi	209	230952.05	1.4	101.5	Pulse	0.1000	3

No Gas

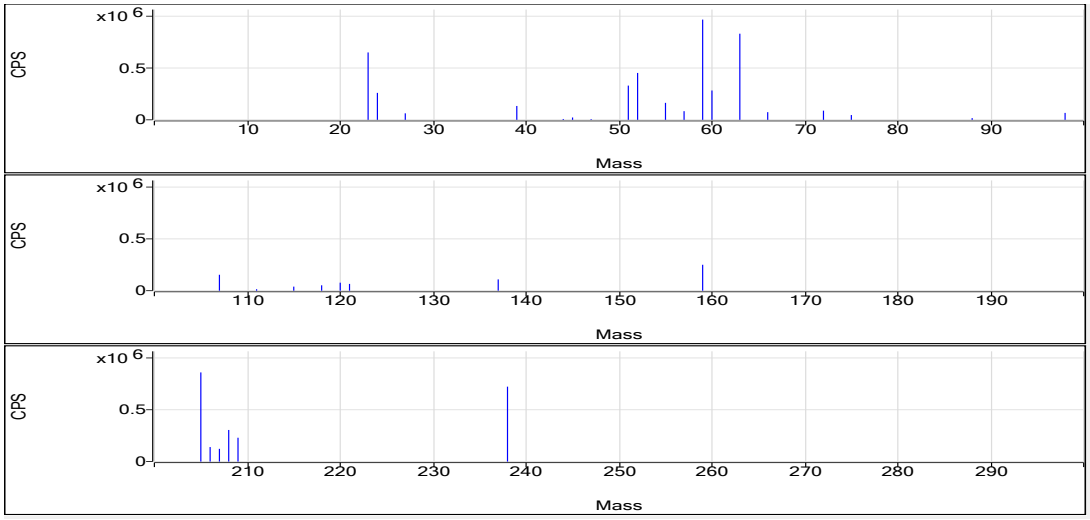


H2



Quantitation Report

He



Quantitation Report

Data File Name	036SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 11:25:52 AM
Sample Name	410-60700-A-7-A SD @5
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

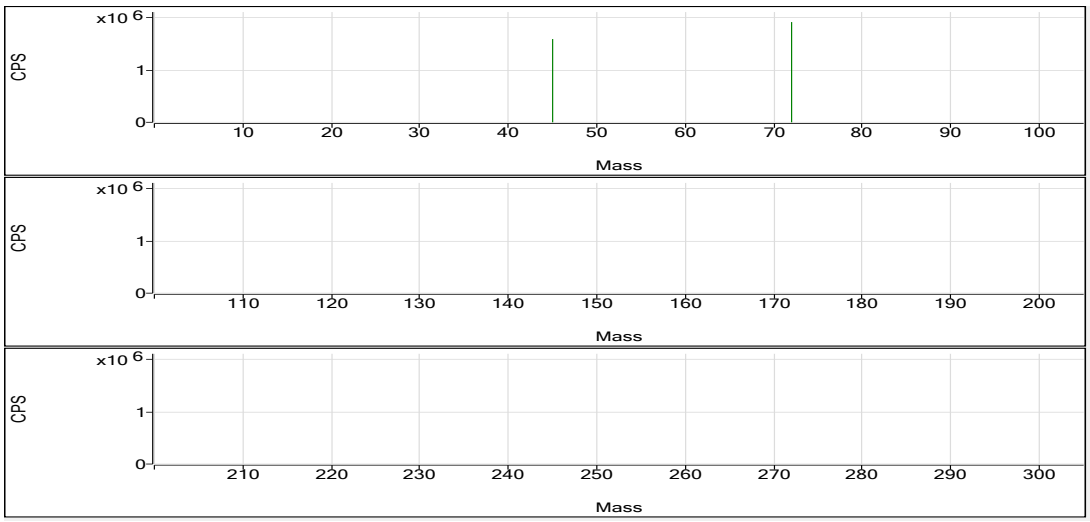
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.055	ppb	15.5	51.33	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.112	ppb	37.0	5.33	0.0000	Pulse	1.5000	3
Na	23	45	He	256.048	ppb	2.6	33488.70	1.5487	Pulse	0.1000	3
Mg	24	45	He	34.116	ppb	5.6	1706.83	0.0790	Pulse	0.1000	3
Al	27	45	He	8.151	ppb	27.8	126.67	0.0059	Pulse	0.1000	3
K	39	45	He	25.118	ppb	66.9	5674.61	0.2626	Pulse	0.1000	3
Ca	44	45	He	92.629	ppb	30.6	223.35	0.0103	Pulse	0.1000	3
Ti	47	45	He	0.833	ppb	100.8	10.00	0.0005	Pulse	0.1000	3
V	51	45	He	0.154	ppb	14.0	322.68	0.0149	Pulse	0.5000	3
Cr	52	45	He	0.165	ppb	52.4	770.04	0.0356	Pulse	0.1000	3
Mn	55	72	He	5.372	ppb	7.7	1740.16	0.0198	Pulse	0.1000	3
Fe	57	72	He	7.983	ppb	46.6	216.68	0.0025	Pulse	0.1000	3
Co	59	72	He	0.422	ppb	13.6	950.06	0.0108	Pulse	0.1000	3
Ni	60	72	He	0.472	ppb	51.0	383.35	0.0044	Pulse	0.1000	3
Cu	63	72	He	0.315	ppb	9.5	786.72	0.0089	Pulse	0.1000	3
Zn	66	72	He	1.781	ppb	28.3	353.35	0.0040	Pulse	0.1000	3
As	75	72	He	0.220	ppb	47.0	46.00	0.0005	Pulse	0.5000	3
Sr	88	115	He	0.153	ppb	33.2	76.67	0.0020	Pulse	0.1000	3
Mo	98	115	He	0.127	ppb	13.7	166.68	0.0044	Pulse	0.1000	3
Ag	107	115	He	0.019	ppb	54.1	63.33	0.0017	Pulse	0.1000	3
Cd	111	115	He	0.025	ppb	91.7	7.33	0.0002	Pulse	0.5000	3
Sn	120	115	He	-0.066	ppb	N/A	793.39	0.0208	Pulse	0.1000	3
Sb	121	115	He	0.083	ppb	69.6	60.00	0.0016	Pulse	0.1000	3
Ba	137	115	He	1.717	ppb	11.9	353.35	0.0093	Pulse	0.1000	3
Tl	205	209	He	0.121	ppb	6.2	1040.08	0.0045	Pulse	0.1000	3
Pb	208	209	He	0.021	ppb	47.2	1160.06	0.0051	Pulse	0.1000	3
U	238	209	He	0.030	ppb	29.7	480.03	0.0021	Pulse	0.1000	3

ISTD Table:

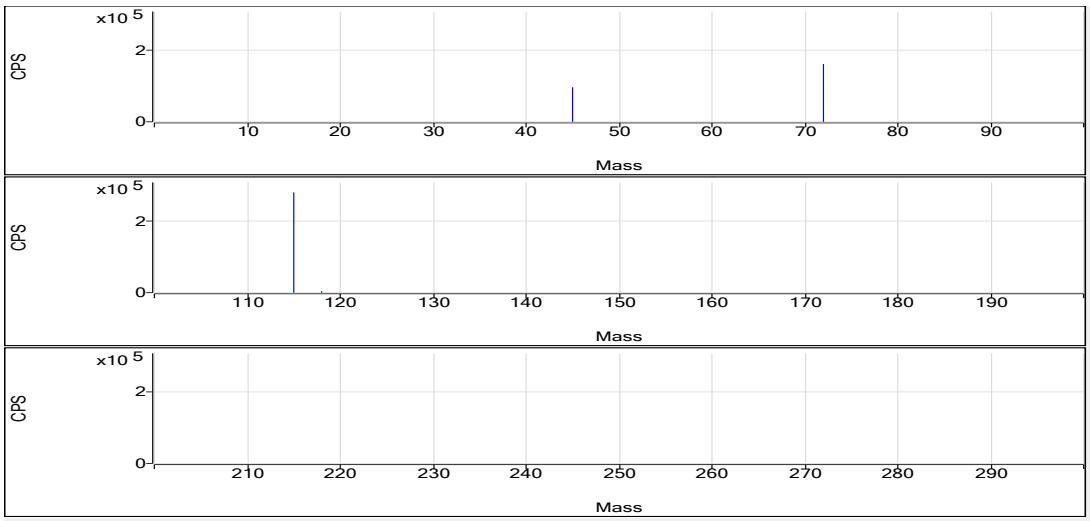
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1597073.36	0.5	98.1	Analog	0.1000	3
No Gas	Ge	72	1922726.64	0.2	102.6	Analog	0.1000	3
H2	Sc	45	96909.34	1.5	98.2	Pulse	0.1000	3
H2	Ge	72	161946.36	1.1	101.5	Pulse	0.1000	3
H2	In	115	280943.83	1.0	98.9	Pulse	0.1000	3
He	Sc	45	21629.96	2.4	102.5	Pulse	0.1000	3
He	Ge	72	87976.77	0.8	106.8	Pulse	0.1000	3
He	In	115	38053.07	0.1	101.6	Pulse	0.1000	3
He	Tb	159	247523.59	0.7	98.5	Pulse	0.1000	3
He	Bi	209	229218.17	0.9	100.8	Pulse	0.1000	3

No Gas

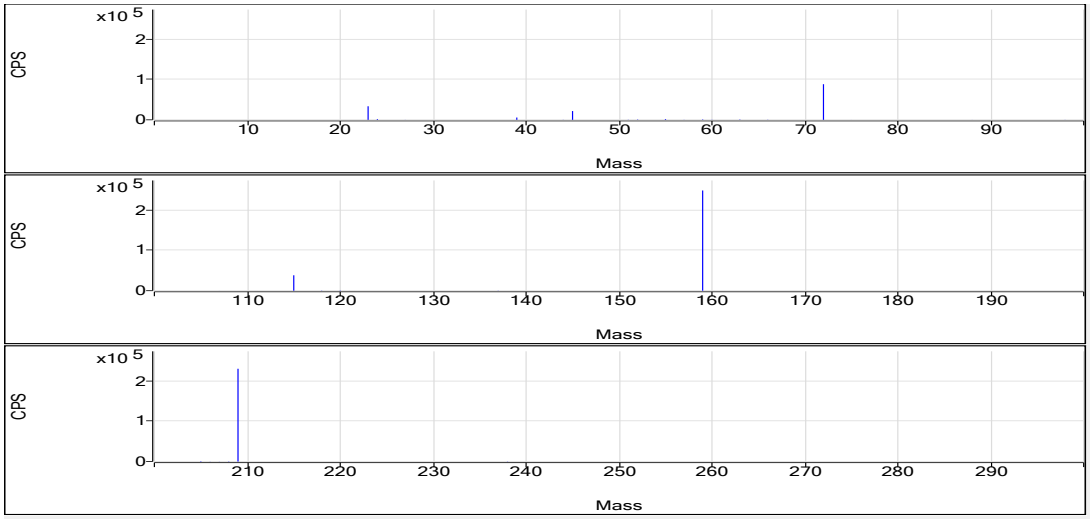


H2



Quantitation Report

He



Quantitation Report

Data File Name	037SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 11:27:53 AM
Sample Name	LCS 410-190422/2-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

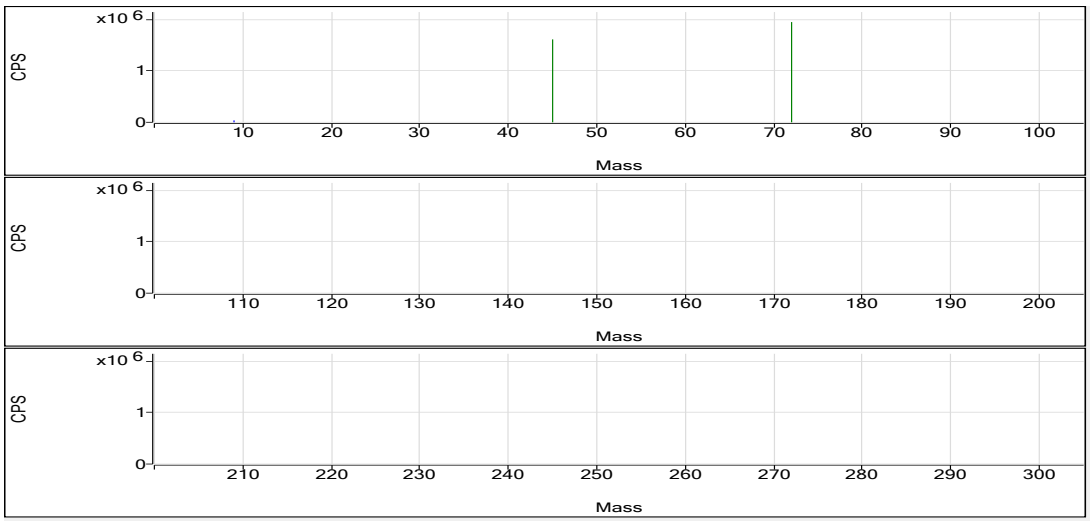
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	47.483	ppb	1.3	37101.21	0.0231	Pulse	0.5000	3
Se	78	115	H2	101.039	ppb	2.2	4265.09	0.0150	Pulse	1.5000	3
Na	23	45	He	5006.965	ppb	2.1	514984.86	23.1283	Pulse	0.1000	3
Mg	24	45	He	4996.698	ppb	2.4	244694.48	10.9900	Pulse	0.1000	3
Al	27	45	He	4902.535	ppb	1.7	59725.18	2.6821	Pulse	0.1000	3
K	39	45	He	4978.238	ppb	1.3	126729.17	5.6907	Pulse	0.1000	3
Ca	44	45	He	5413.693	ppb	4.7	7782.34	0.3493	Pulse	0.1000	3
Ti	47	45	He	532.260	ppb	8.9	6681.75	0.3004	Pulse	0.1000	3
V	51	45	He	495.895	ppb	1.9	320778.98	14.4061	Pulse	0.5000	3
Cr	52	45	He	497.404	ppb	2.6	440031.40	19.7640	Pulse	0.1000	3
Mn	55	72	He	483.398	ppb	0.7	151807.16	1.7615	Pulse	0.1000	3
Fe	57	72	He	4785.308	ppb	1.1	81205.56	0.9424	Pulse	0.1000	3
Co	59	72	He	455.953	ppb	0.9	941329.44	10.9239	Pulse	0.1000	3
Ni	60	72	He	483.534	ppb	1.5	277994.99	3.2263	Pulse	0.1000	3
Cu	63	72	He	461.847	ppb	1.5	809031.16	9.3893	Pulse	0.1000	3
Zn	66	72	He	475.987	ppb	1.2	72151.76	0.8373	Pulse	0.1000	3
As	75	72	He	462.391	ppb	0.8	44832.58	0.5203	Pulse	0.5000	3
Sr	88	115	He	51.976	ppb	3.7	15969.46	0.4123	Pulse	0.1000	3
Mo	98	115	He	52.792	ppb	0.7	65074.31	1.6796	Pulse	0.1000	3
Ag	107	115	He	49.927	ppb	2.1	150780.38	3.8923	Pulse	0.1000	3
Cd	111	115	He	51.304	ppb	2.5	13706.11	0.3538	Pulse	0.5000	3
Sn	120	115	He	105.026	ppb	2.3	76089.86	1.9642	Pulse	0.1000	3
Sb	121	115	He	105.233	ppb	1.5	64678.03	1.6695	Pulse	0.1000	3
Ba	137	115	He	517.180	ppb	1.2	105219.92	2.7159	Pulse	0.1000	3
Tl	205	209	He	102.775	ppb	1.0	845967.49	3.6933	Pulse	0.1000	3
Pb	208	209	He	51.392	ppb	0.1	561495.09	2.4512	Pulse	0.1000	3
U	238	209	He	48.211	ppb	1.2	706812.98	3.0859	Pulse	0.1000	3

ISTD Table:

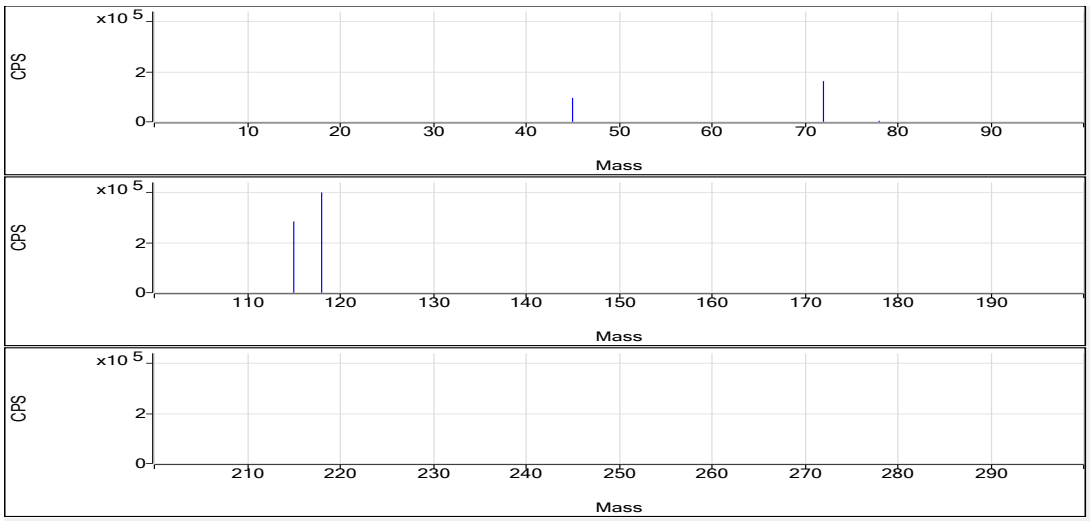
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1609696.18	1.8	98.9	Analog	0.1000	3
No Gas	Ge	72	1945838.20	1.3	103.9	Analog	0.1000	3
H2	Sc	45	95842.28	0.8	97.1	Pulse	0.1000	3
H2	Ge	72	162994.49	0.8	102.2	Pulse	0.1000	3
H2	In	115	285251.48	0.5	100.4	Pulse	0.1000	3
He	Sc	45	22274.23	2.6	105.5	Pulse	0.1000	3
He	Ge	72	86176.03	1.3	104.6	Pulse	0.1000	3
He	In	115	38744.75	1.2	103.4	Pulse	0.1000	3
He	Tb	159	251675.07	1.2	100.1	Pulse	0.1000	3
He	Bi	209	229068.26	1.1	100.7	Pulse	0.1000	3

No Gas

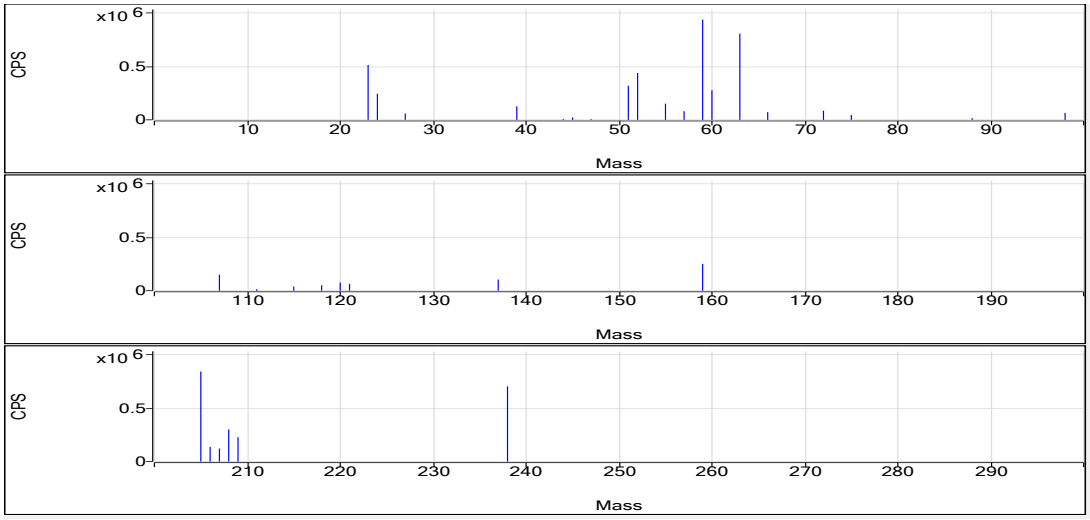


H2



Quantitation Report

He



Quantitation Report

Data File Name	038_CCV.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 11:29:56 AM
Sample Name	CCV 1942322
Sample Type	CCV
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

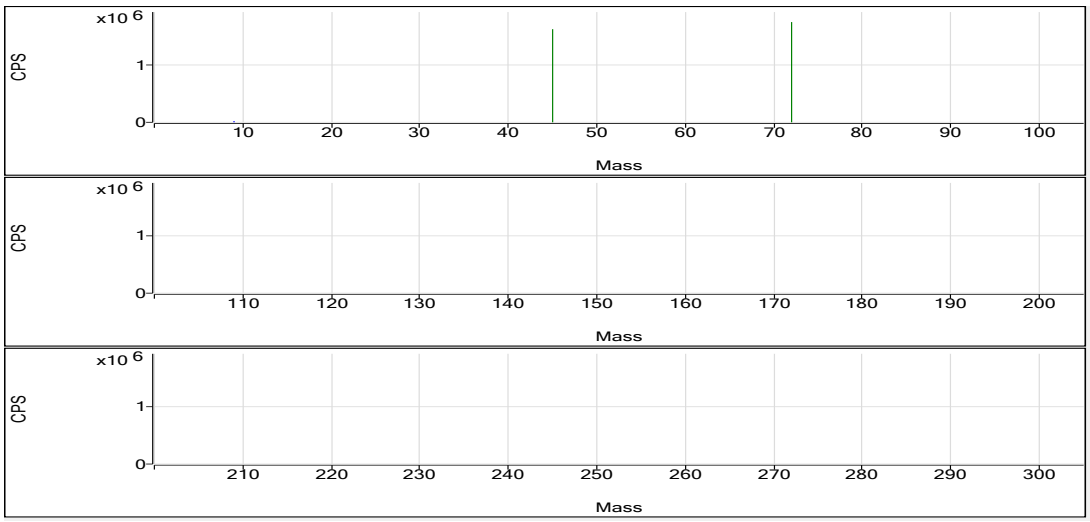
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	28.313	ppb	1.3	22127.05	0.0137	Pulse	0.5000	3
Se	78	115	H2	30.827	ppb	4.1	1280.51	0.0046	Pulse	1.5000	3
Na	23	45	He	5087.110	ppb	3.3	507071.88	23.4923	Pulse	0.1000	3
Mg	24	45	He	5119.591	ppb	3.6	243035.37	11.2602	Pulse	0.1000	3
Al	27	45	He	5092.469	ppb	3.0	60136.90	2.7860	Pulse	0.1000	3
K	39	45	He	5123.511	ppb	2.6	126285.98	5.8499	Pulse	0.1000	3
Ca	44	45	He	5153.552	ppb	0.0	7185.35	0.3327	Pulse	0.1000	3
Ti	47	45	He	313.404	ppb	3.8	3820.62	0.1769	Pulse	0.1000	3
V	51	45	He	302.181	ppb	2.0	189612.47	8.7827	Pulse	0.5000	3
Cr	52	45	He	305.697	ppb	3.1	262438.47	12.1579	Pulse	0.1000	3
Mn	55	72	He	309.599	ppb	1.1	87685.64	1.1283	Pulse	0.1000	3
Fe	57	72	He	5186.072	ppb	2.4	79358.31	1.0212	Pulse	0.1000	3
Co	59	72	He	301.800	ppb	2.3	561897.76	7.2309	Pulse	0.1000	3
Ni	60	72	He	315.047	ppb	2.5	163377.74	2.1025	Pulse	0.1000	3
Cu	63	72	He	307.714	ppb	1.8	486211.86	6.2566	Pulse	0.1000	3
Zn	66	72	He	314.800	ppb	2.9	43062.39	0.5541	Pulse	0.1000	3
As	75	72	He	313.762	ppb	1.7	27442.94	0.3531	Pulse	0.5000	3
Sr	88	115	He	32.373	ppb	5.9	9850.41	0.2571	Pulse	0.1000	3
Mo	98	115	He	30.646	ppb	2.4	37357.08	0.9752	Pulse	0.1000	3
Ag	107	115	He	30.915	ppb	2.4	92344.98	2.4102	Pulse	0.1000	3
Cd	111	115	He	31.374	ppb	2.5	8289.17	0.2164	Pulse	0.5000	3
Sn	120	115	He	31.414	ppb	2.5	23106.60	0.6030	Pulse	0.1000	3
Sb	121	115	He	30.939	ppb	2.8	18810.05	0.4910	Pulse	0.1000	3
Ba	137	115	He	305.881	ppb	3.8	61525.71	1.6064	Pulse	0.1000	3
Tl	205	209	He	31.025	ppb	1.4	251386.17	1.1151	Pulse	0.1000	3
Pb	208	209	He	30.755	ppb	1.2	331085.08	1.4685	Pulse	0.1000	3
U	238	209	He	256.583	ppb	2.0	3702337.24	16.4224	Analog	0.1000	3

ISTD Table:

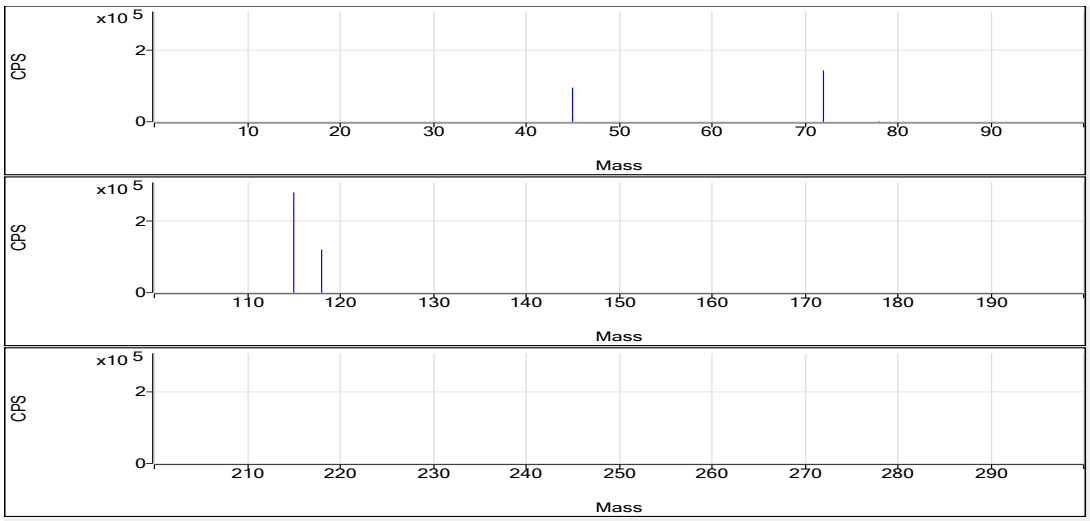
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1609594.35	0.3	98.9	Analog	0.1000	3
No Gas	Ge	72	1732252.11	1.9	92.5	Analog	0.1000	3
H2	Sc	45	95614.06	1.0	96.9	Pulse	0.1000	3
H2	Ge	72	143850.04	0.8	90.2	Pulse	0.1000	3
H2	In	115	280600.55	1.0	98.8	Pulse	0.1000	3
He	Sc	45	21596.64	2.6	102.3	Pulse	0.1000	3
He	Ge	72	77724.83	1.4	94.4	Pulse	0.1000	3
He	In	115	38323.52	2.4	102.3	Pulse	0.1000	3
He	Tb	159	246934.18	0.3	98.3	Pulse	0.1000	3
He	Bi	209	225471.61	1.1	99.1	Pulse	0.1000	3

No Gas

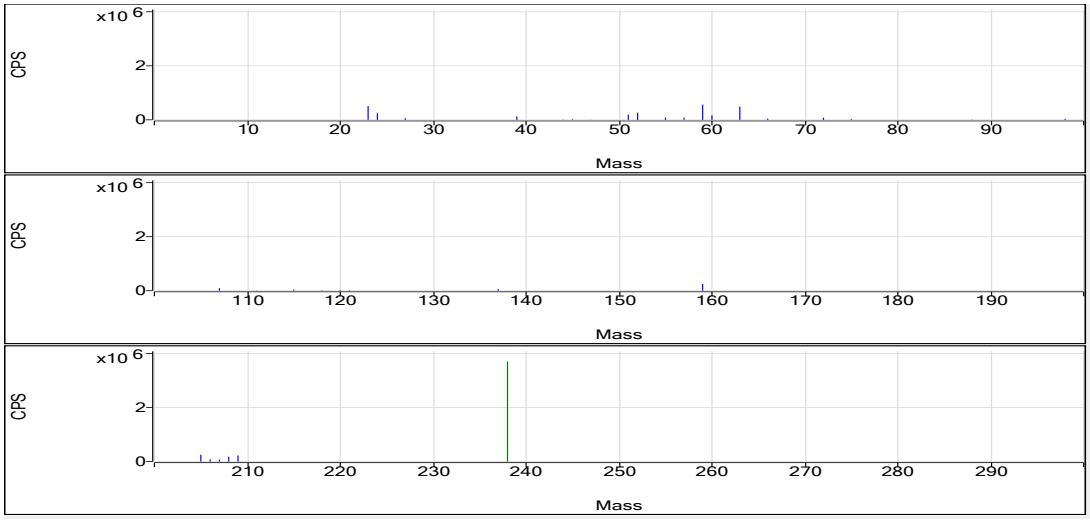


H2



Quantitation Report

He



Quantitation Report

Data File Name	039_CCB.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 11:31:59 AM
Sample Name	CCB 2014932
Sample Type	CCB
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

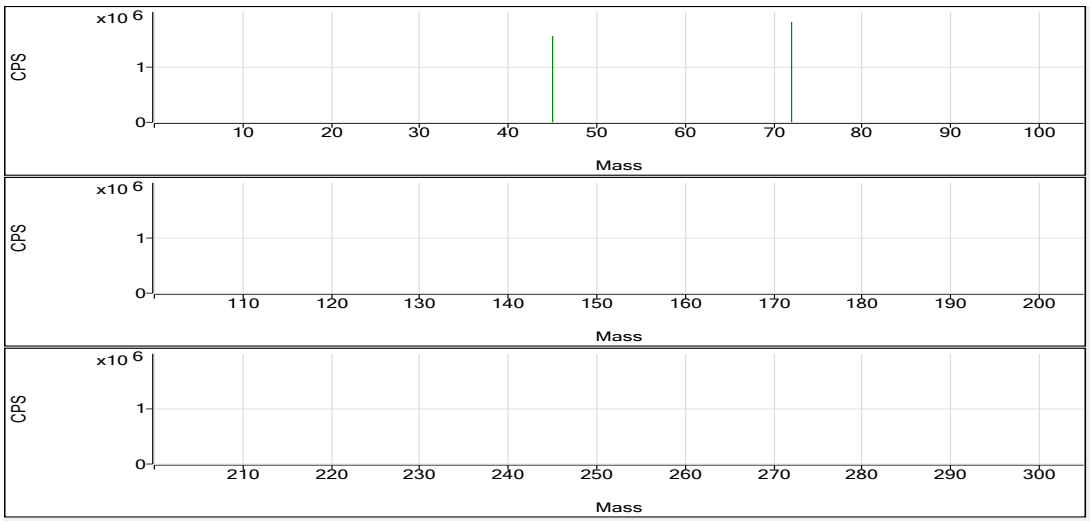
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.040	ppb	44.3	38.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.082	ppb	59.8	4.00	0.0000	Pulse	1.5000	3
Na	23	45	He	13.270	ppb	46.7	9349.94	0.4460	Pulse	0.1000	3
Mg	24	45	He	2.034	ppb	33.9	176.68	0.0084	Pulse	0.1000	3
Al	27	45	He	2.943	ppb	112.7	63.33	0.0030	Pulse	0.1000	3
K	39	45	He	12.034	ppb	9.6	5207.75	0.2483	Pulse	0.1000	3
Ca	44	45	He	-24.663	ppb	N/A	60.00	0.0029	Pulse	0.1000	3
Ti	47	45	He	0.284	ppb	173.2	3.33	0.0002	Pulse	0.1000	3
V	51	45	He	0.109	ppb	39.0	286.01	0.0136	Pulse	0.5000	3
Cr	52	45	He	0.165	ppb	83.9	746.72	0.0356	Pulse	0.1000	3
Mn	55	72	He	0.243	ppb	48.3	90.00	0.0011	Pulse	0.1000	3
Fe	57	72	He	0.390	ppb	150.1	80.00	0.0010	Pulse	0.1000	3
Co	59	72	He	0.163	ppb	18.5	380.02	0.0046	Pulse	0.1000	3
Ni	60	72	He	0.205	ppb	59.6	213.34	0.0026	Pulse	0.1000	3
Cu	63	72	He	0.164	ppb	26.4	486.69	0.0059	Pulse	0.1000	3
Zn	66	72	He	0.021	ppb	1179.9	76.67	0.0009	Pulse	0.1000	3
As	75	72	He	0.250	ppb	46.6	46.00	0.0006	Pulse	0.5000	3
Sr	88	115	He	-0.068	ppb	N/A	10.00	0.0003	Pulse	0.1000	3
Mo	98	115	He	0.050	ppb	10.4	73.33	0.0019	Pulse	0.1000	3
Ag	107	115	He	0.010	ppb	39.4	36.67	0.0010	Pulse	0.1000	3
Cd	111	115	He	0.013	ppb	58.7	4.00	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.026	ppb	N/A	813.39	0.0216	Pulse	0.1000	3
Sb	121	115	He	0.050	ppb	31.9	40.00	0.0011	Pulse	0.1000	3
Ba	137	115	He	0.067	ppb	175.5	23.33	0.0006	Pulse	0.1000	3
Tl	205	209	He	0.058	ppb	14.2	513.36	0.0023	Pulse	0.1000	3
Pb	208	209	He	0.011	ppb	105.2	1036.72	0.0046	Pulse	0.1000	3
U	238	209	He	0.079	ppb	18.6	1176.77	0.0052	Pulse	0.1000	3

ISTD Table:

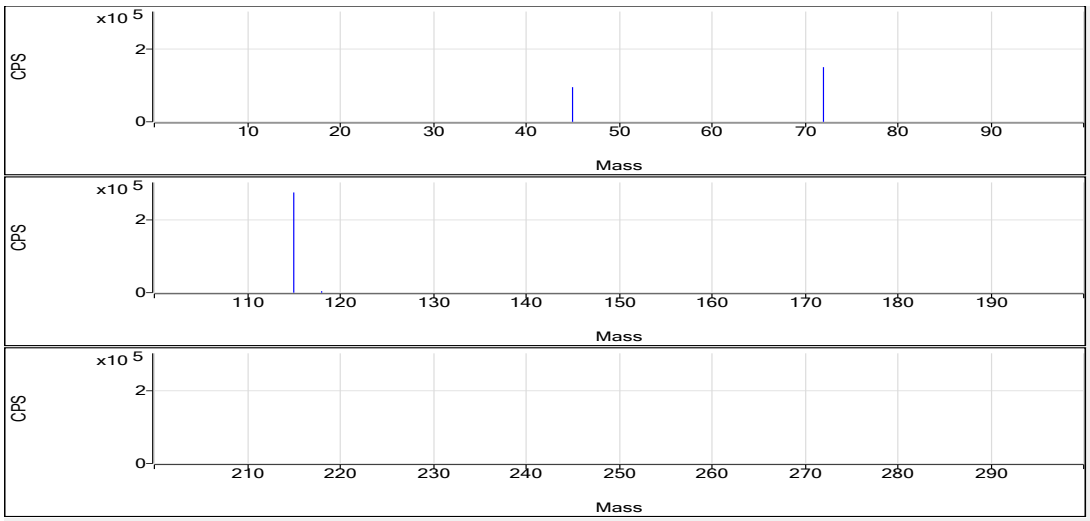
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1557129.46	0.5	95.7	Analog	0.1000	3
No Gas	Ge	72	1806429.82	0.5	96.4	Analog	0.1000	3
H2	Sc	45	95305.24	0.6	96.6	Pulse	0.1000	3
H2	Ge	72	150364.38	1.1	94.2	Pulse	0.1000	3
H2	In	115	275711.81	1.0	97.0	Pulse	0.1000	3
He	Sc	45	20972.39	0.8	99.4	Pulse	0.1000	3
He	Ge	72	82702.77	0.7	100.4	Pulse	0.1000	3
He	In	115	37678.61	1.2	100.6	Pulse	0.1000	3
He	Tb	159	247612.06	1.0	98.5	Pulse	0.1000	3
He	Bi	209	225759.12	0.6	99.2	Pulse	0.1000	3

No Gas

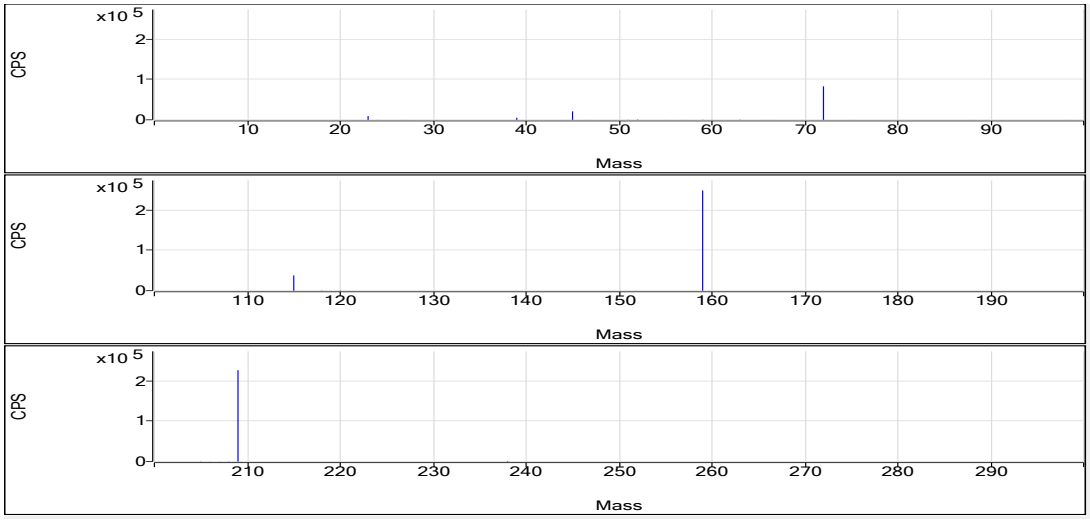


H2



Quantitation Report

He



Quantitation Report

Data File Name	040SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 11:34:02 AM
Sample Name	410-60475-A-1-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

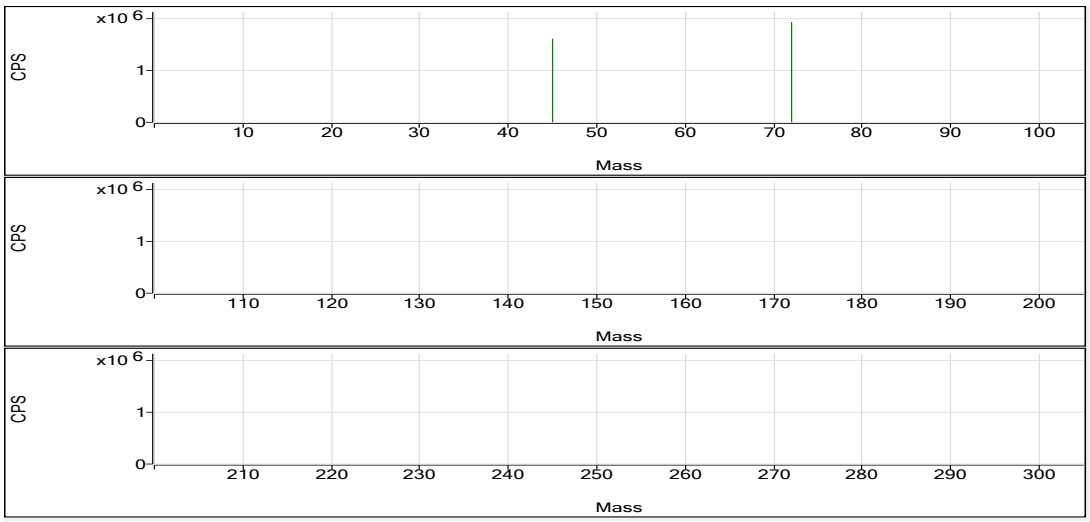
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.074	ppb	12.8	66.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.059	ppb	42.7	3.11	0.0000	Pulse	1.5000	3
Na	23	45	He	1197.576	ppb	1.6	127563.63	5.8253	Pulse	0.1000	3
Mg	24	45	He	748.309	ppb	1.5	36114.87	1.6492	Pulse	0.1000	3
Al	27	45	He	51.652	ppb	11.7	650.04	0.0297	Pulse	0.1000	3
K	39	45	He	320.241	ppb	2.0	12836.05	0.5861	Pulse	0.1000	3
Ca	44	45	He	594.639	ppb	19.8	926.73	0.0423	Pulse	0.1000	3
Ti	47	45	He	0.538	ppb	86.6	6.67	0.0003	Pulse	0.1000	3
V	51	45	He	-0.017	ppb	N/A	218.00	0.0100	Pulse	0.5000	3
Cr	52	45	He	0.180	ppb	39.3	793.38	0.0362	Pulse	0.1000	3
Mn	55	72	He	41.039	ppb	2.6	13002.89	0.1497	Pulse	0.1000	3
Fe	57	72	He	6.985	ppb	29.1	196.68	0.0023	Pulse	0.1000	3
Co	59	72	He	3.757	ppb	2.7	7875.71	0.0907	Pulse	0.1000	3
Ni	60	72	He	1.562	ppb	6.4	1010.07	0.0116	Pulse	0.1000	3
Cu	63	72	He	0.657	ppb	24.0	1380.12	0.0159	Pulse	0.1000	3
Zn	66	72	He	4.083	ppb	17.1	700.05	0.0081	Pulse	0.1000	3
As	75	72	He	0.151	ppb	39.1	38.67	0.0004	Pulse	0.5000	3
Sr	88	115	He	8.746	ppb	5.8	2697.03	0.0700	Pulse	0.1000	3
Mo	98	115	He	0.040	ppb	68.9	63.33	0.0016	Pulse	0.1000	3
Ag	107	115	He	0.007	ppb	75.9	26.67	0.0007	Pulse	0.1000	3
Cd	111	115	He	0.038	ppb	32.6	10.67	0.0003	Pulse	0.5000	3
Sn	120	115	He	-0.056	ppb	N/A	810.05	0.0210	Pulse	0.1000	3
Sb	121	115	He	0.027	ppb	33.0	26.67	0.0007	Pulse	0.1000	3
Ba	137	115	He	33.631	ppb	2.0	6805.25	0.1769	Pulse	0.1000	3
Tl	205	209	He	0.057	ppb	8.0	516.70	0.0022	Pulse	0.1000	3
Pb	208	209	He	0.393	ppb	4.7	5297.28	0.0228	Pulse	0.1000	3
U	238	209	He	0.076	ppb	3.8	1173.43	0.0050	Pulse	0.1000	3

ISTD Table:

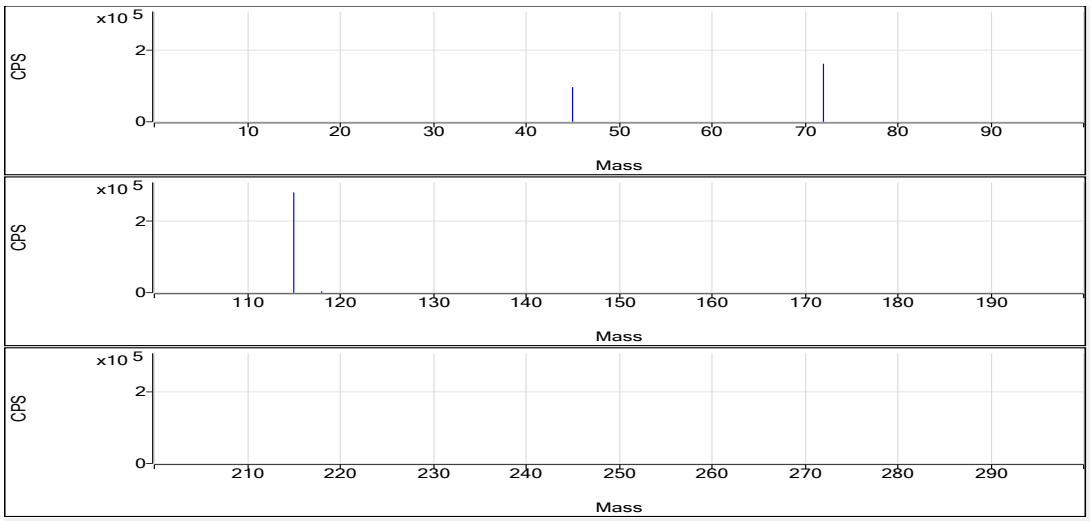
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1615157.27	1.5	99.2	Analog	0.1000	3
No Gas	Ge	72	1935487.00	0.1	103.3	Analog	0.1000	3
H2	Sc	45	97113.92	0.2	98.4	Pulse	0.1000	3
H2	Ge	72	162428.31	0.8	101.8	Pulse	0.1000	3
H2	In	115	280342.93	1.1	98.7	Pulse	0.1000	3
He	Sc	45	21900.41	1.2	103.8	Pulse	0.1000	3
He	Ge	72	86833.00	0.5	105.4	Pulse	0.1000	3
He	In	115	38487.42	1.8	102.7	Pulse	0.1000	3
He	Tb	159	250866.67	0.1	99.8	Pulse	0.1000	3
He	Bi	209	232362.20	1.1	102.1	Pulse	0.1000	3

No Gas

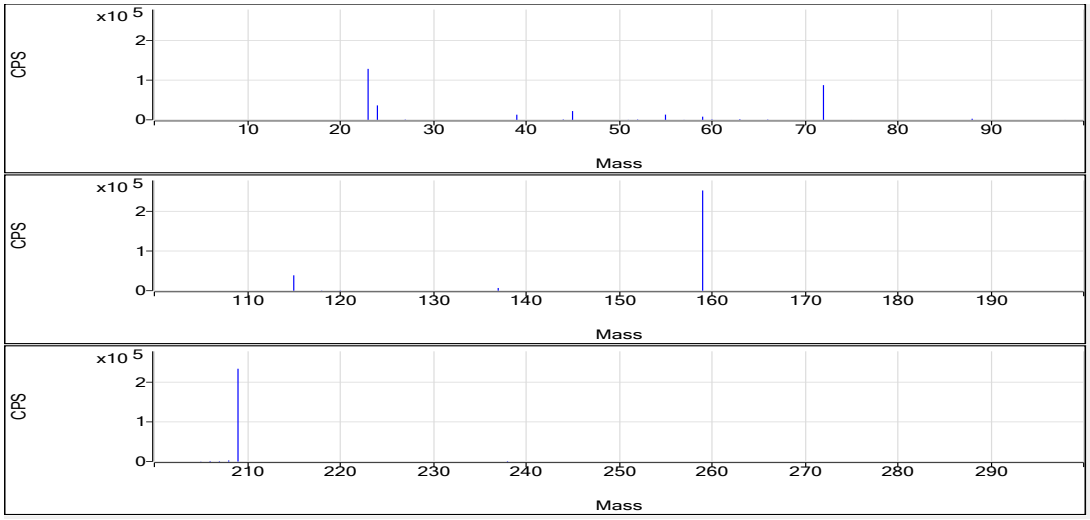


H2



Quantitation Report

He



Quantitation Report

Data File Name	041SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 11:36:04 AM
Sample Name	410-60700-A-4-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

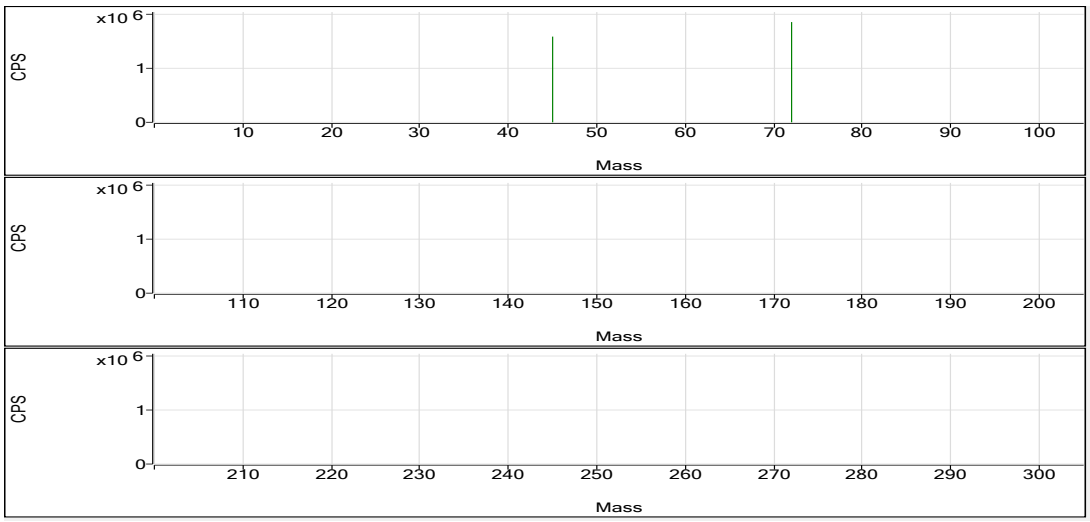
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.013	ppb	73.8	18.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.070	ppb	47.7	3.56	0.0000	Pulse	1.5000	3
Na	23	45	He	10.492	ppb	13.1	9433.33	0.4334	Pulse	0.1000	3
Mg	24	45	He	2.933	ppb	40.1	226.68	0.0104	Pulse	0.1000	3
Al	27	45	He	1.628	ppb	91.8	50.00	0.0023	Pulse	0.1000	3
K	39	45	He	-0.234	ppb	N/A	5114.41	0.2349	Pulse	0.1000	3
Ca	44	45	He	-7.209	ppb	N/A	86.67	0.0040	Pulse	0.1000	3
Ti	47	45	He	0.000	ppb	N/A	0.00	0.0000	Pulse	0.1000	3
V	51	45	He	-0.015	ppb	N/A	218.67	0.0100	Pulse	0.5000	3
Cr	52	45	He	0.241	ppb	78.4	840.05	0.0386	Pulse	0.1000	3
Mn	55	72	He	0.520	ppb	22.5	176.68	0.0021	Pulse	0.1000	3
Fe	57	72	He	6.954	ppb	30.1	190.01	0.0023	Pulse	0.1000	3
Co	59	72	He	0.052	ppb	45.1	163.34	0.0019	Pulse	0.1000	3
Ni	60	72	He	0.049	ppb	120.9	130.01	0.0015	Pulse	0.1000	3
Cu	63	72	He	0.087	ppb	12.5	363.35	0.0043	Pulse	0.1000	3
Zn	66	72	He	0.912	ppb	37.7	210.01	0.0025	Pulse	0.1000	3
As	75	72	He	0.136	ppb	57.7	36.00	0.0004	Pulse	0.5000	3
Sr	88	115	He	0.008	ppb	470.7	33.33	0.0009	Pulse	0.1000	3
Mo	98	115	He	0.024	ppb	39.4	43.33	0.0011	Pulse	0.1000	3
Ag	107	115	He	0.002	ppb	235.8	13.33	0.0003	Pulse	0.1000	3
Cd	111	115	He	0.002	ppb	176.0	1.33	0.0000	Pulse	0.5000	3
Sn	120	115	He	-0.182	ppb	N/A	716.71	0.0187	Pulse	0.1000	3
Sb	121	115	He	0.027	ppb	175.5	26.67	0.0007	Pulse	0.1000	3
Ba	137	115	He	0.197	ppb	24.3	50.00	0.0013	Pulse	0.1000	3
Tl	205	209	He	0.016	ppb	37.3	176.67	0.0008	Pulse	0.1000	3
Pb	208	209	He	-0.010	ppb	N/A	820.04	0.0036	Pulse	0.1000	3
U	238	209	He	0.007	ppb	18.5	150.01	0.0007	Pulse	0.1000	3

ISTD Table:

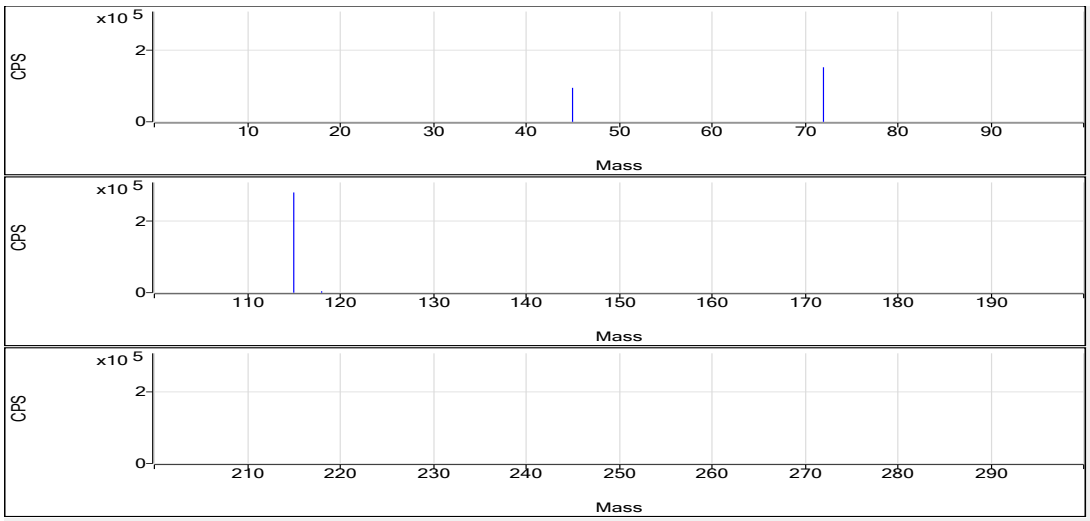
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1589241.17	1.4	97.7	Analog	0.1000	3
No Gas	Ge	72	1858747.26	0.6	99.2	Analog	0.1000	3
H2	Sc	45	94660.93	1.9	95.9	Pulse	0.1000	3
H2	Ge	72	151945.02	0.9	95.2	Pulse	0.1000	3
H2	In	115	279189.90	0.4	98.3	Pulse	0.1000	3
He	Sc	45	21770.19	1.4	103.1	Pulse	0.1000	3
He	Ge	72	84053.59	1.2	102.1	Pulse	0.1000	3
He	In	115	38360.40	0.9	102.4	Pulse	0.1000	3
He	Tb	159	247600.76	0.9	98.5	Pulse	0.1000	3
He	Bi	209	229575.76	0.5	100.9	Pulse	0.1000	3

No Gas

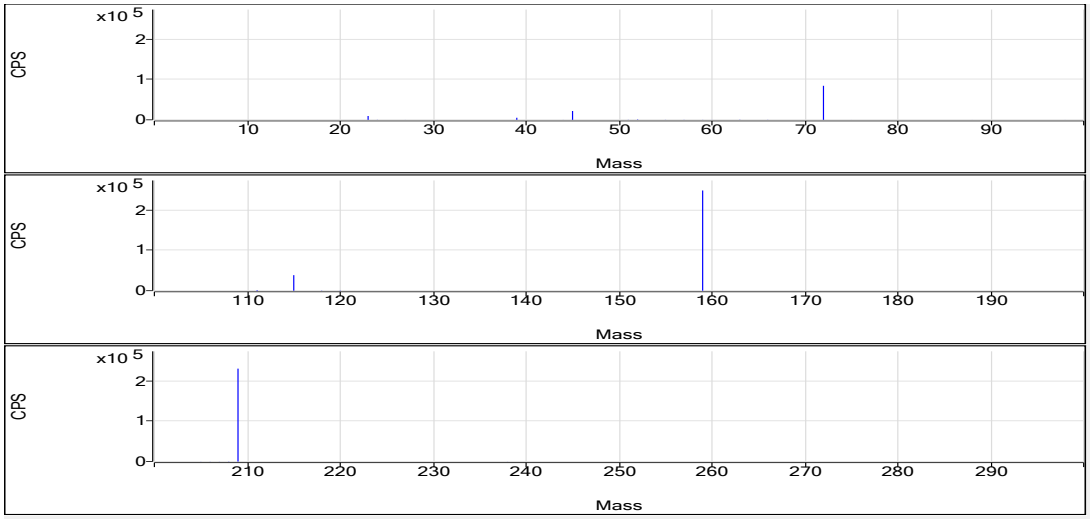


H2



Quantitation Report

He



Quantitation Report

Data File Name	042SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 11:38:06 AM
Sample Name	410-60475-A-4-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

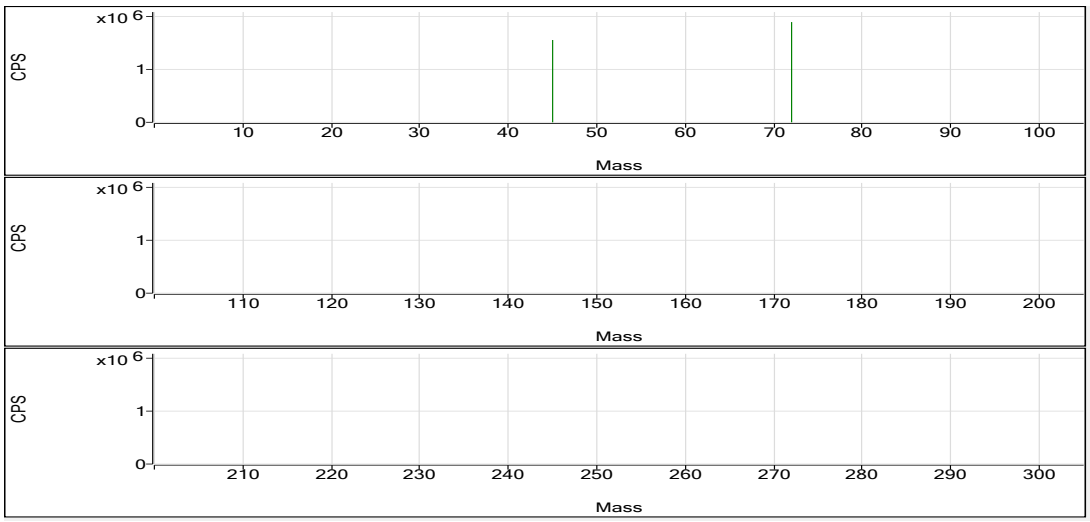
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.054	ppb	17.6	49.33	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.148	ppb	19.1	6.67	0.0000	Pulse	1.5000	3
Na	23	45	He	1096.747	ppb	2.8	113584.39	5.3673	Pulse	0.1000	3
Mg	24	45	He	9159.981	ppb	1.0	426330.10	20.1437	Pulse	0.1000	3
Al	27	45	He	15.025	ppb	38.7	203.34	0.0096	Pulse	0.1000	3
K	39	45	He	565.689	ppb	4.2	18101.77	0.8551	Pulse	0.1000	3
Ca	44	45	He	20898.405	ppb	3.3	28268.11	1.3356	Pulse	0.1000	3
Ti	47	45	He	0.279	ppb	173.2	3.33	0.0002	Pulse	0.1000	3
V	51	45	He	0.289	ppb	29.4	398.68	0.0189	Pulse	0.5000	3
Cr	52	45	He	0.411	ppb	13.0	960.07	0.0454	Pulse	0.1000	3
Mn	55	72	He	4.280	ppb	6.1	1350.11	0.0158	Pulse	0.1000	3
Fe	57	72	He	6.984	ppb	36.6	193.34	0.0023	Pulse	0.1000	3
Co	59	72	He	0.142	ppb	18.1	350.02	0.0041	Pulse	0.1000	3
Ni	60	72	He	0.589	ppb	15.4	440.02	0.0051	Pulse	0.1000	3
Cu	63	72	He	0.086	ppb	80.1	366.69	0.0043	Pulse	0.1000	3
Zn	66	72	He	1.957	ppb	9.5	370.02	0.0043	Pulse	0.1000	3
As	75	72	He	0.303	ppb	43.7	52.67	0.0006	Pulse	0.5000	3
Sr	88	115	He	32.317	ppb	1.4	9483.50	0.2566	Pulse	0.1000	3
Mo	98	115	He	0.386	ppb	7.0	466.69	0.0126	Pulse	0.1000	3
Ag	107	115	He	0.009	ppb	85.9	33.33	0.0009	Pulse	0.1000	3
Cd	111	115	He	0.060	ppb	34.7	16.00	0.0004	Pulse	0.5000	3
Sn	120	115	He	-0.066	ppb	N/A	770.05	0.0208	Pulse	0.1000	3
Sb	121	115	He	0.023	ppb	43.9	23.33	0.0006	Pulse	0.1000	3
Ba	137	115	He	13.818	ppb	8.4	2690.37	0.0728	Pulse	0.1000	3
Tl	205	209	He	0.037	ppb	21.1	346.69	0.0015	Pulse	0.1000	3
Pb	208	209	He	0.008	ppb	125.9	1003.39	0.0044	Pulse	0.1000	3
U	238	209	He	0.127	ppb	12.6	1876.88	0.0083	Pulse	0.1000	3

ISTD Table:

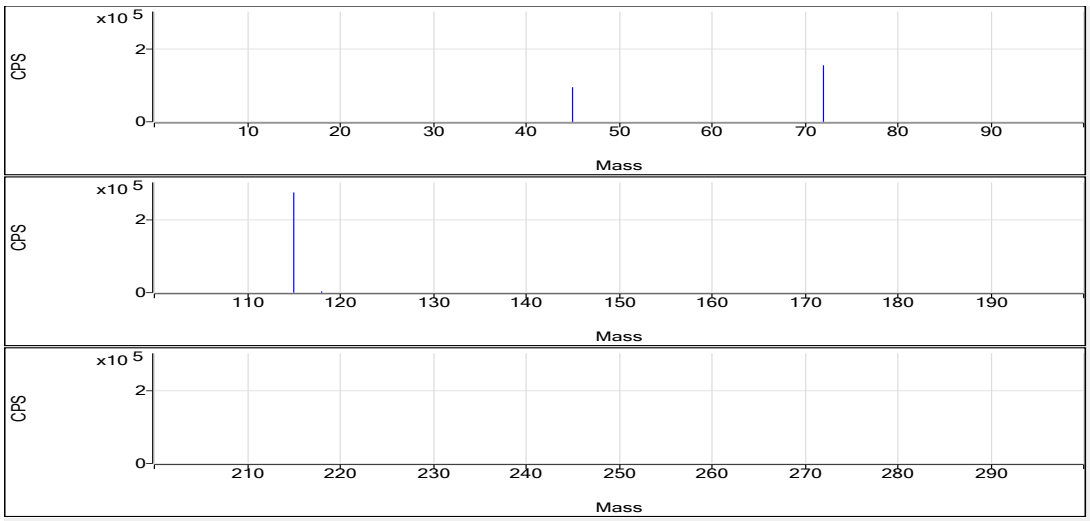
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1556052.17	1.6	95.6	Analog	0.1000	3
No Gas	Ge	72	1895301.32	0.9	101.2	Analog	0.1000	3
H2	Sc	45	94433.14	0.7	95.7	Pulse	0.1000	3
H2	Ge	72	154717.34	0.6	97.0	Pulse	0.1000	3
H2	In	115	274141.71	0.8	96.5	Pulse	0.1000	3
He	Sc	45	21165.96	1.0	100.3	Pulse	0.1000	3
He	Ge	72	85481.48	1.0	103.8	Pulse	0.1000	3
He	In	115	36953.53	0.6	98.6	Pulse	0.1000	3
He	Tb	159	246157.54	0.4	97.9	Pulse	0.1000	3
He	Bi	209	226099.97	0.4	99.4	Pulse	0.1000	3

No Gas

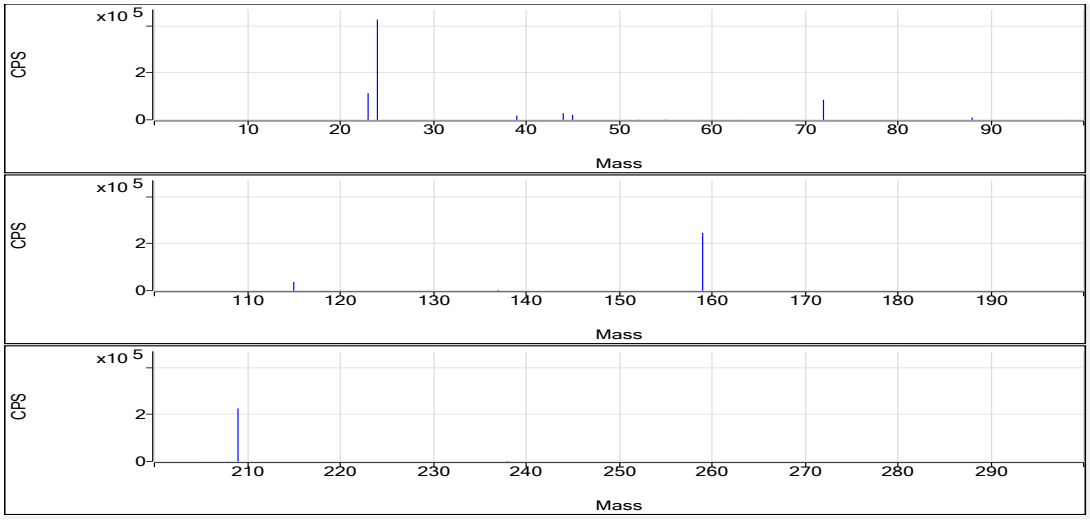


H2



Quantitation Report

He



Quantitation Report

Data File Name	043SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 11:40:08 AM
Sample Name	410-60700-A-1-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

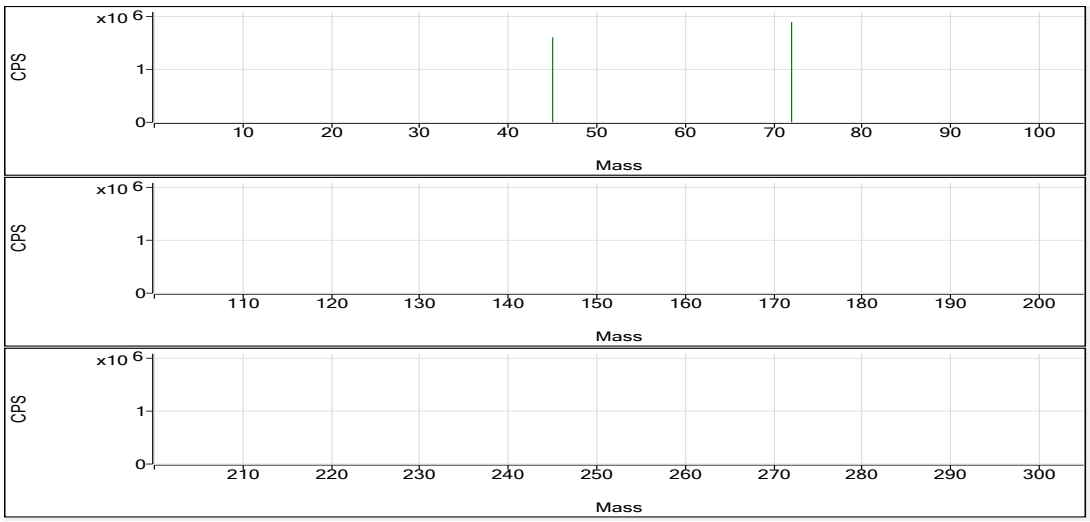
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.015	ppb	33.6	20.00	0.0000	Pulse	0.5000	3
Se	78	115	H2	1.308	ppb	9.6	54.00	0.0002	Pulse	1.5000	3
Na	23	45	He	6787.729	ppb	3.7	663066.53	31.2168	Pulse	0.1000	3
Mg	24	45	He	23453.216	ppb	4.4	1095170.92	51.5697	Mix	0.1000	3
Al	27	45	He	23.423	ppb	43.8	300.02	0.0142	Pulse	0.1000	3
K	39	45	He	1548.557	ppb	4.4	41038.46	1.9322	Pulse	0.1000	3
Ca	44	45	He	93162.296	ppb	3.5	126149.83	5.9388	Pulse	0.1000	3
Ti	47	45	He	0.289	ppb	173.2	3.33	0.0002	Pulse	0.1000	3
V	51	45	He	0.112	ppb	73.4	290.67	0.0137	Pulse	0.5000	3
Cr	52	45	He	0.283	ppb	77.0	853.39	0.0403	Pulse	0.1000	3
Mn	55	72	He	0.833	ppb	5.5	273.34	0.0032	Pulse	0.1000	3
Fe	57	72	He	19.974	ppb	10.5	406.69	0.0048	Pulse	0.1000	3
Co	59	72	He	0.052	ppb	5.3	163.34	0.0019	Pulse	0.1000	3
Ni	60	72	He	0.186	ppb	18.4	206.68	0.0025	Pulse	0.1000	3
Cu	63	72	He	0.083	ppb	7.7	356.69	0.0042	Pulse	0.1000	3
Zn	66	72	He	0.527	ppb	39.0	153.34	0.0018	Pulse	0.1000	3
As	75	72	He	0.218	ppb	38.7	44.00	0.0005	Pulse	0.5000	3
Sr	88	115	He	113.179	ppb	3.1	33340.03	0.8968	Pulse	0.1000	3
Mo	98	115	He	0.217	ppb	5.1	270.01	0.0073	Pulse	0.1000	3
Ag	107	115	He	0.014	ppb	39.2	46.67	0.0013	Pulse	0.1000	3
Cd	111	115	He	0.008	ppb	151.8	2.67	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.088	ppb	N/A	760.05	0.0204	Pulse	0.1000	3
Sb	121	115	He	0.017	ppb	4.5	20.00	0.0005	Pulse	0.1000	3
Ba	137	115	He	27.511	ppb	3.2	5384.58	0.1447	Pulse	0.1000	3
Tl	205	209	He	0.019	ppb	23.3	196.68	0.0009	Pulse	0.1000	3
Pb	208	209	He	0.000	ppb	N/A	906.71	0.0041	Pulse	0.1000	3
U	238	209	He	0.520	ppb	3.1	7479.11	0.0335	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1611910.86	0.9	99.0	Analog	0.1000	3
No Gas	Ge	72	1901306.48	0.3	101.5	Analog	0.1000	3
H2	Sc	45	96667.79	2.2	97.9	Pulse	0.1000	3
H2	Ge	72	159725.38	1.2	100.1	Pulse	0.1000	3
H2	In	115	275723.08	1.2	97.0	Pulse	0.1000	3
He	Sc	45	21259.45	3.6	100.7	Pulse	0.1000	3
He	Ge	72	84391.83	2.1	102.5	Pulse	0.1000	3
He	In	115	37194.10	2.3	99.3	Pulse	0.1000	3
He	Tb	159	247746.38	1.2	98.6	Pulse	0.1000	3
He	Bi	209	223462.13	0.5	98.2	Pulse	0.1000	3

No Gas



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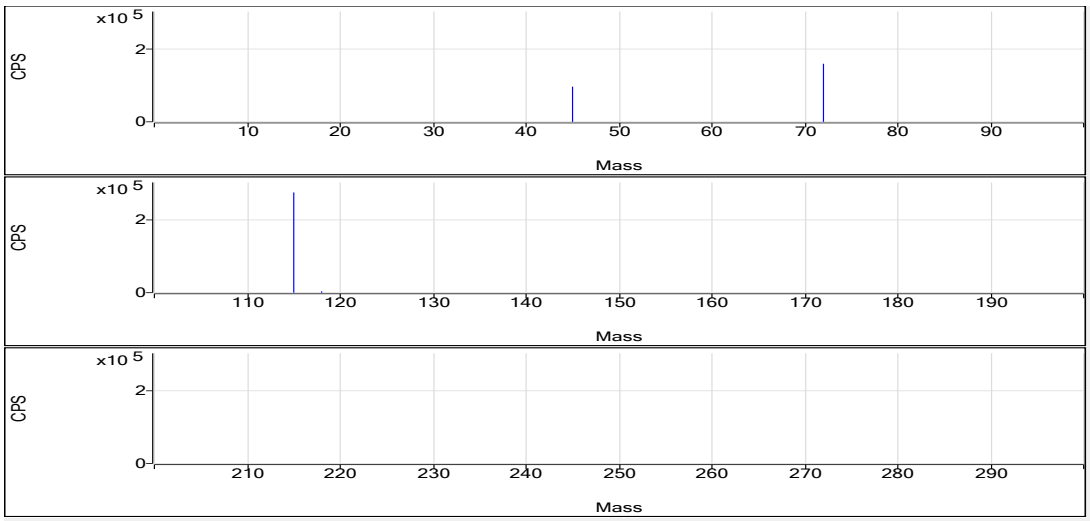
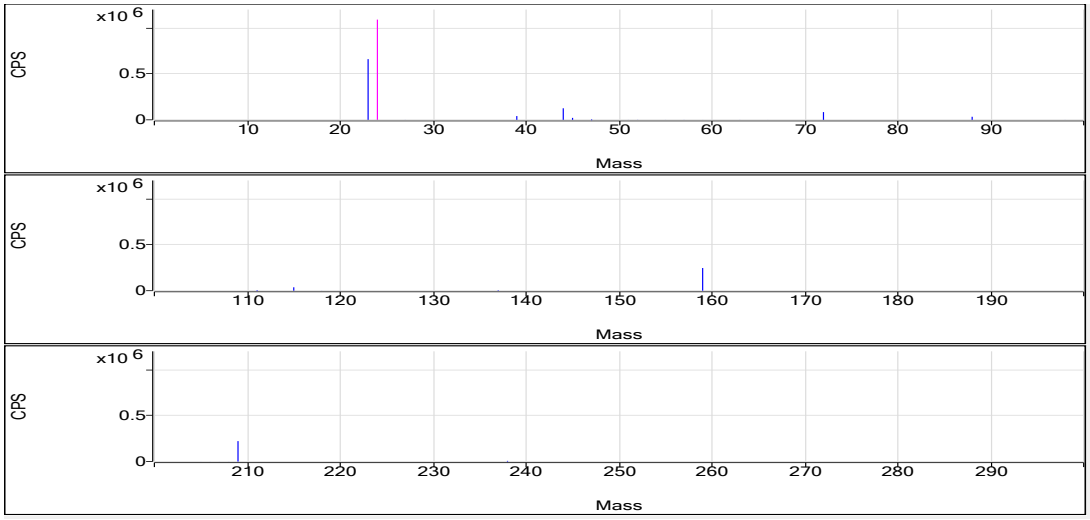


Quantitation Report

He



Quantitation Report

Data File Name	044SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 11:42:10 AM
Sample Name	410-60700-A-8-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

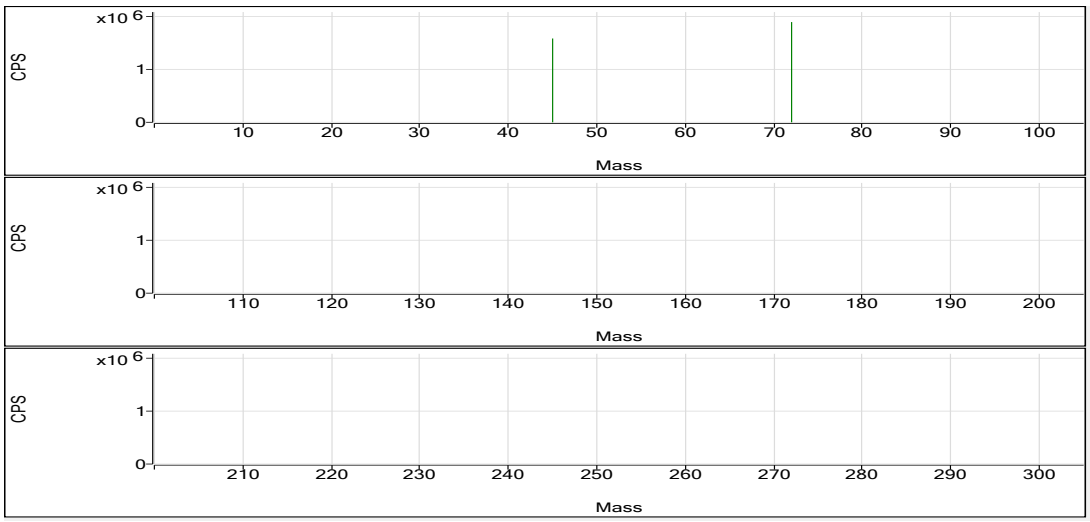
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.018	ppb	39.9	22.00	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.906	ppb	5.2	37.78	0.0001	Pulse	1.5000	3
Na	23	45	He	39212.818	ppb	2.3	3786856.82	178.4977	Analog	0.1000	3
Mg	24	45	He	6818.960	ppb	1.0	318189.41	14.9965	Pulse	0.1000	3
Al	27	45	He	245.773	ppb	6.5	2880.38	0.1358	Pulse	0.1000	3
K	39	45	He	19789.763	ppb	1.1	465133.65	21.9224	Pulse	0.1000	3
Ca	44	45	He	12174.945	ppb	2.3	16549.98	0.7800	Pulse	0.1000	3
Ti	47	45	He	0.837	ppb	99.3	10.00	0.0005	Pulse	0.1000	3
V	51	45	He	3.134	ppb	1.3	2152.84	0.1015	Pulse	0.5000	3
Cr	52	45	He	77.634	ppb	2.1	65964.30	3.1093	Pulse	0.1000	3
Mn	55	72	He	12.912	ppb	8.2	3950.67	0.0473	Pulse	0.1000	3
Fe	57	72	He	60.298	ppb	8.1	1066.74	0.0128	Pulse	0.1000	3
Co	59	72	He	0.113	ppb	22.3	283.34	0.0034	Pulse	0.1000	3
Ni	60	72	He	0.529	ppb	21.1	396.69	0.0047	Pulse	0.1000	3
Cu	63	72	He	0.396	ppb	16.0	886.73	0.0106	Pulse	0.1000	3
Zn	66	72	He	1.150	ppb	25.6	243.34	0.0029	Pulse	0.1000	3
As	75	72	He	1.441	ppb	6.6	158.67	0.0019	Pulse	0.5000	3
Sr	88	115	He	65.662	ppb	1.8	19520.71	0.5206	Pulse	0.1000	3
Mo	98	115	He	18.821	ppb	5.5	22451.87	0.5990	Pulse	0.1000	3
Ag	107	115	He	0.001	ppb	301.2	10.00	0.0003	Pulse	0.1000	3
Cd	111	115	He	0.018	ppb	98.9	5.33	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.042	ppb	N/A	800.06	0.0213	Pulse	0.1000	3
Sb	121	115	He	0.180	ppb	30.6	116.67	0.0031	Pulse	0.1000	3
Ba	137	115	He	6.365	ppb	11.9	1263.44	0.0337	Pulse	0.1000	3
Tl	205	209	He	0.060	ppb	4.5	533.37	0.0023	Pulse	0.1000	3
Pb	208	209	He	0.057	ppb	29.8	1546.77	0.0068	Pulse	0.1000	3
U	238	209	He	0.447	ppb	4.8	6578.58	0.0288	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1578088.26	0.6	97.0	Analog	0.1000	3
No Gas	Ge	72	1887155.18	0.5	100.7	Analog	0.1000	3
H2	Sc	45	94848.84	2.4	96.1	Pulse	0.1000	3
H2	Ge	72	156216.67	1.1	97.9	Pulse	0.1000	3
H2	In	115	277036.91	1.7	97.5	Pulse	0.1000	3
He	Sc	45	21219.33	1.4	100.5	Pulse	0.1000	3
He	Ge	72	83668.05	1.5	101.6	Pulse	0.1000	3
He	In	115	37501.27	1.7	100.1	Pulse	0.1000	3
He	Tb	159	247533.43	0.9	98.5	Pulse	0.1000	3
He	Bi	209	228518.78	0.7	100.4	Pulse	0.1000	3

No Gas



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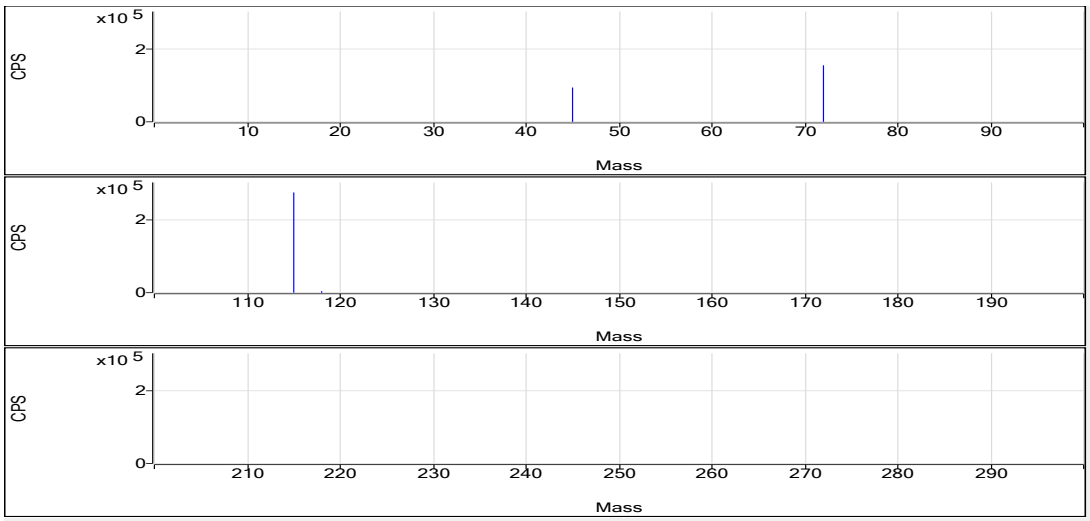
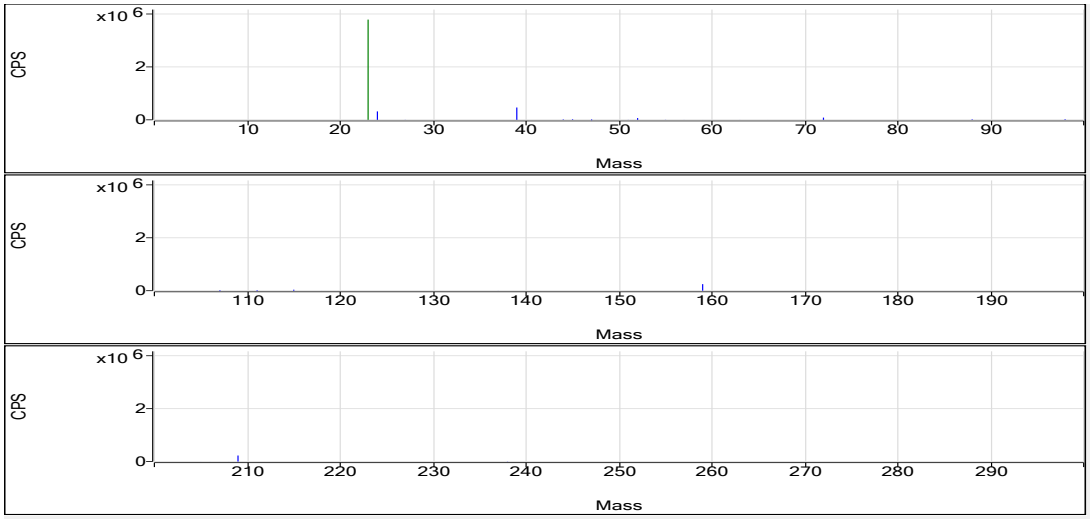


Quantitation Report

He



Quantitation Report

Data File Name	045SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 11:44:11 AM
Sample Name	410-60700-A-3-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

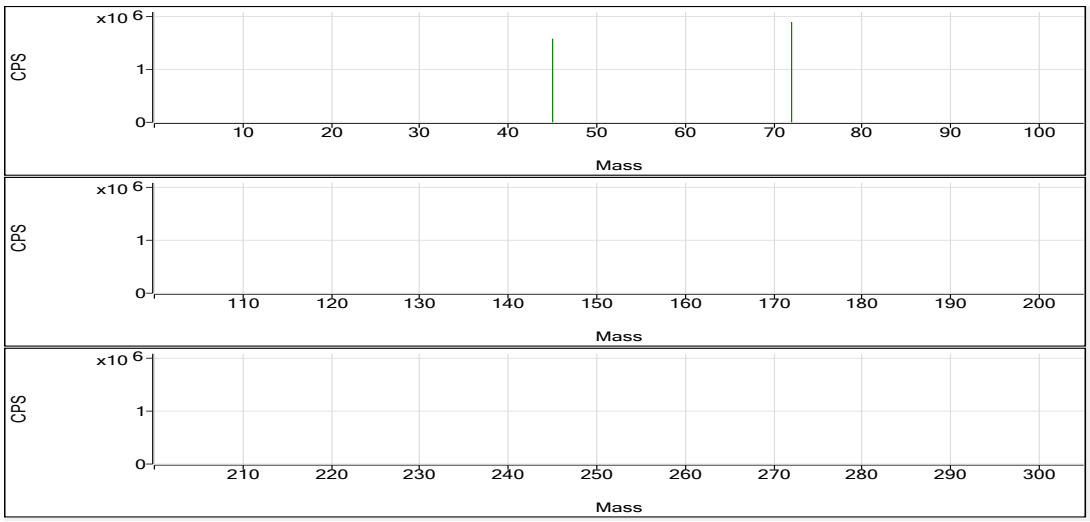
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.072	ppb	17.5	63.33	0.0000	Pulse	0.5000	3
Se	78	115	H2	1.524	ppb	6.3	62.67	0.0002	Pulse	1.5000	3
Na	23	45	He	3921.131	ppb	0.6	381357.39	18.1962	Pulse	0.1000	3
Mg	24	45	He	5988.927	ppb	2.4	276020.68	13.1716	Pulse	0.1000	3
Al	27	45	He	57.965	ppb	11.6	693.38	0.0331	Pulse	0.1000	3
K	39	45	He	1358.645	ppb	1.5	36132.15	1.7240	Pulse	0.1000	3
Ca	44	45	He	16552.065	ppb	2.5	22187.48	1.0588	Pulse	0.1000	3
Ti	47	45	He	0.840	ppb	99.3	10.00	0.0005	Pulse	0.1000	3
V	51	45	He	0.125	ppb	24.1	295.33	0.0141	Pulse	0.5000	3
Cr	52	45	He	1.300	ppb	9.9	1690.17	0.0807	Pulse	0.1000	3
Mn	55	72	He	92.009	ppb	3.9	28609.03	0.3355	Pulse	0.1000	3
Fe	57	72	He	122.884	ppb	8.3	2136.90	0.0251	Pulse	0.1000	3
Co	59	72	He	0.440	ppb	11.6	956.73	0.0112	Pulse	0.1000	3
Ni	60	72	He	1.363	ppb	8.6	880.06	0.0103	Pulse	0.1000	3
Cu	63	72	He	0.397	ppb	11.0	906.73	0.0106	Pulse	0.1000	3
Zn	66	72	He	2.201	ppb	17.7	406.68	0.0048	Pulse	0.1000	3
As	75	72	He	0.414	ppb	25.9	63.33	0.0007	Pulse	0.5000	3
Sr	88	115	He	41.618	ppb	2.8	12462.52	0.3303	Pulse	0.1000	3
Mo	98	115	He	0.072	ppb	36.2	100.00	0.0027	Pulse	0.1000	3
Ag	107	115	He	0.001	ppb	299.5	10.00	0.0003	Pulse	0.1000	3
Cd	111	115	He	0.056	ppb	41.9	15.33	0.0004	Pulse	0.5000	3
Sn	120	115	He	-0.128	ppb	N/A	743.38	0.0197	Pulse	0.1000	3
Sb	121	115	He	0.039	ppb	66.2	33.33	0.0009	Pulse	0.1000	3
Ba	137	115	He	54.956	ppb	4.3	10898.04	0.2888	Pulse	0.1000	3
Tl	205	209	He	0.049	ppb	20.3	433.36	0.0019	Pulse	0.1000	3
Pb	208	209	He	0.063	ppb	32.0	1583.44	0.0071	Pulse	0.1000	3
U	238	209	He	0.067	ppb	7.6	1003.42	0.0045	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1580522.01	1.1	97.1	Analog	0.1000	3
No Gas	Ge	72	1895714.66	0.6	101.2	Analog	0.1000	3
H2	Sc	45	93747.79	1.4	95.0	Pulse	0.1000	3
H2	Ge	72	158174.42	1.7	99.1	Pulse	0.1000	3
H2	In	115	275178.49	1.0	96.8	Pulse	0.1000	3
He	Sc	45	20959.03	1.1	99.3	Pulse	0.1000	3
He	Ge	72	85321.38	1.7	103.6	Pulse	0.1000	3
He	In	115	37752.16	2.6	100.7	Pulse	0.1000	3
He	Tb	159	247854.03	1.4	98.6	Pulse	0.1000	3
He	Bi	209	224046.40	0.8	98.5	Pulse	0.1000	3

No Gas



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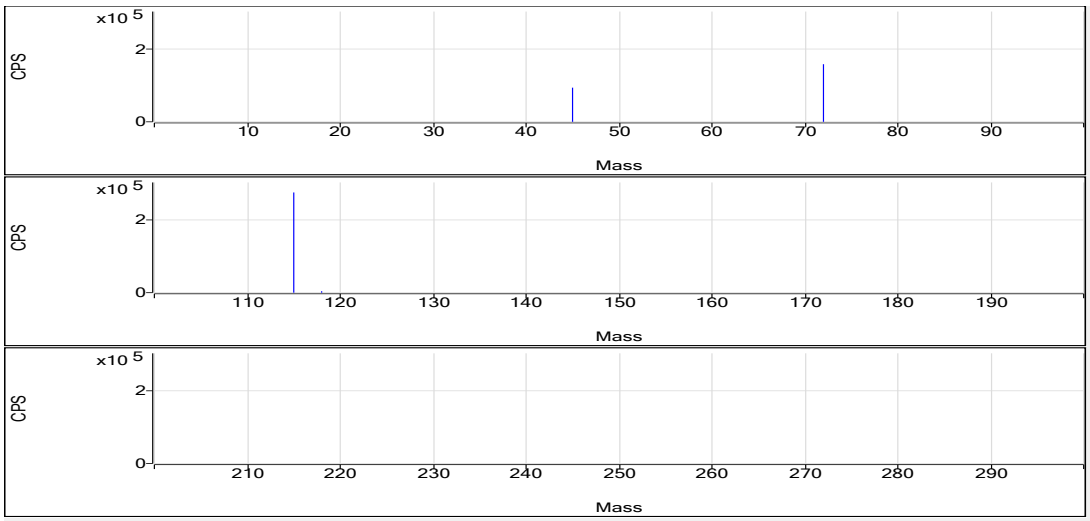
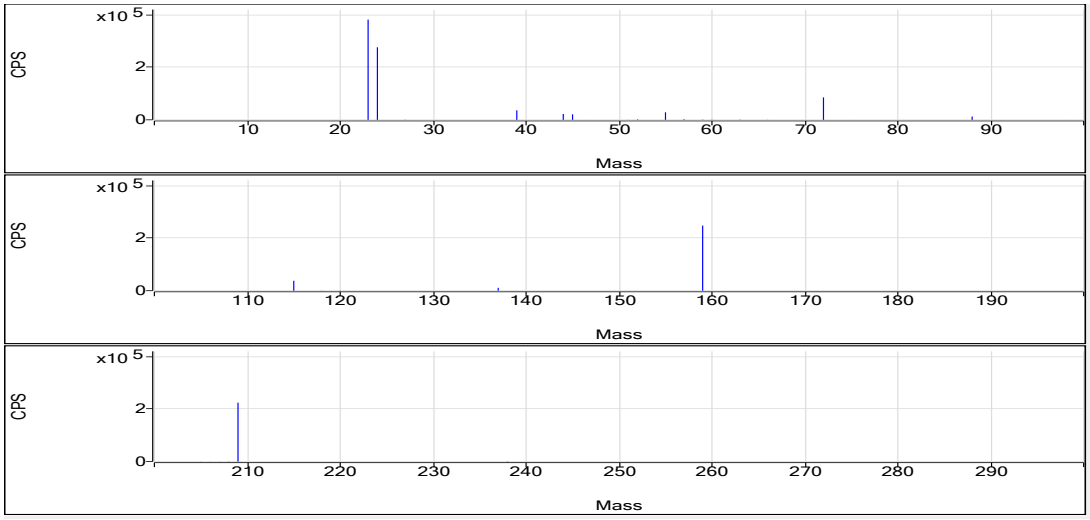


Quantitation Report

He



Quantitation Report

Data File Name	046SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 11:46:13 AM
Sample Name	410-60956-E-7-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

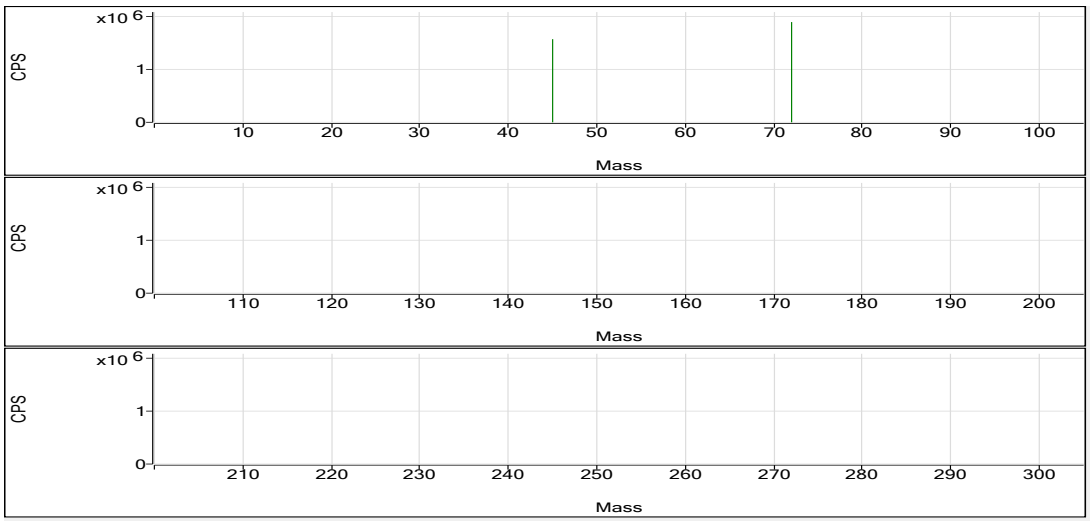
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.058	ppb	7.8	52.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.388	ppb	46.5	16.44	0.0001	Pulse	1.5000	3
Na	23	45	He	2191.835	ppb	1.5	222809.10	10.3414	Pulse	0.1000	3
Mg	24	45	He	1148.980	ppb	2.2	54511.55	2.5302	Pulse	0.1000	3
Al	27	45	He	1958.248	ppb	6.7	23096.25	1.0722	Pulse	0.1000	3
K	39	45	He	3974.497	ppb	0.8	98914.01	4.5907	Pulse	0.1000	3
Ca	44	45	He	6348.578	ppb	2.9	8809.59	0.4088	Pulse	0.1000	3
Ti	47	45	He	30.416	ppb	23.0	370.04	0.0172	Pulse	0.1000	3
V	51	45	He	5.256	ppb	1.5	3513.12	0.1631	Pulse	0.5000	3
Cr	52	45	He	11.236	ppb	4.2	10230.56	0.4749	Pulse	0.1000	3
Mn	55	72	He	31.486	ppb	2.8	9820.32	0.1149	Pulse	0.1000	3
Fe	57	72	He	2033.084	ppb	2.9	34254.72	0.4009	Pulse	0.1000	3
Co	59	72	He	0.536	ppb	9.1	1156.75	0.0135	Pulse	0.1000	3
Ni	60	72	He	1.931	ppb	15.4	1203.42	0.0141	Pulse	0.1000	3
Cu	63	72	He	18.232	ppb	3.1	31879.54	0.3731	Pulse	0.1000	3
Zn	66	72	He	146.361	ppb	2.1	22054.18	0.2581	Pulse	0.1000	3
As	75	72	He	3.093	ppb	13.1	320.68	0.0038	Pulse	0.5000	3
Sr	88	115	He	34.618	ppb	2.2	10244.05	0.2749	Pulse	0.1000	3
Mo	98	115	He	1.136	ppb	11.9	1360.12	0.0365	Pulse	0.1000	3
Ag	107	115	He	0.117	ppb	5.2	346.68	0.0093	Pulse	0.1000	3
Cd	111	115	He	0.210	ppb	4.2	54.67	0.0015	Pulse	0.5000	3
Sn	120	115	He	-0.062	ppb	N/A	780.05	0.0209	Pulse	0.1000	3
Sb	121	115	He	0.812	ppb	9.0	490.03	0.0132	Pulse	0.1000	3
Ba	137	115	He	70.298	ppb	2.7	13770.73	0.3694	Pulse	0.1000	3
Tl	205	209	He	0.057	ppb	10.2	516.70	0.0023	Pulse	0.1000	3
Pb	208	209	He	6.265	ppb	2.1	69297.31	0.3024	Pulse	0.1000	3
U	238	209	He	0.553	ppb	5.9	8149.56	0.0356	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1576540.18	0.8	96.9	Analog	0.1000	3
No Gas	Ge	72	1900722.16	0.4	101.5	Analog	0.1000	3
H2	Sc	45	95177.19	1.3	96.4	Pulse	0.1000	3
H2	Ge	72	156492.28	0.9	98.1	Pulse	0.1000	3
H2	In	115	274921.19	0.1	96.8	Pulse	0.1000	3
He	Sc	45	21546.62	0.6	102.1	Pulse	0.1000	3
He	Ge	72	85458.35	0.8	103.8	Pulse	0.1000	3
He	In	115	37274.13	1.0	99.5	Pulse	0.1000	3
He	Tb	159	246999.98	0.2	98.3	Pulse	0.1000	3
He	Bi	209	229169.16	0.5	100.7	Pulse	0.1000	3

No Gas



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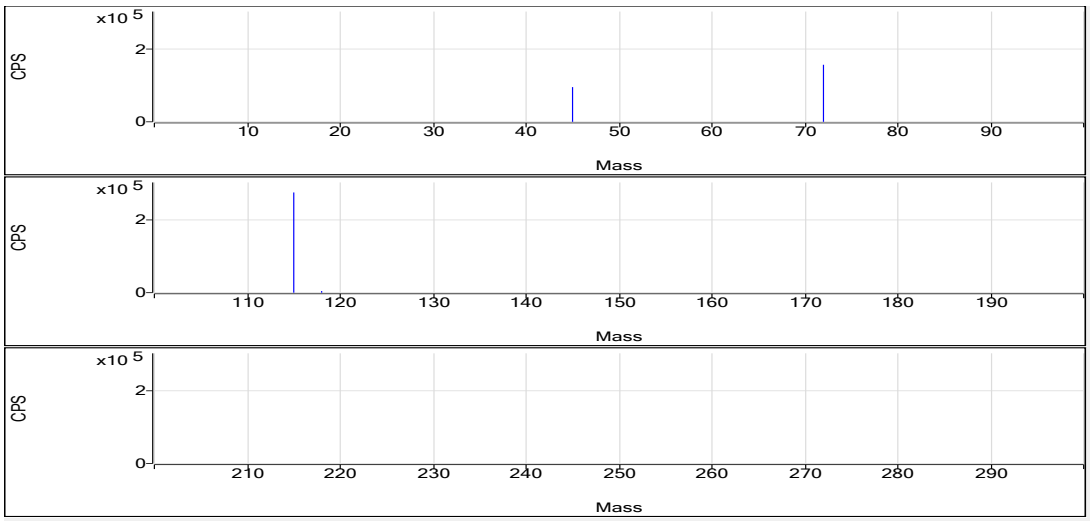
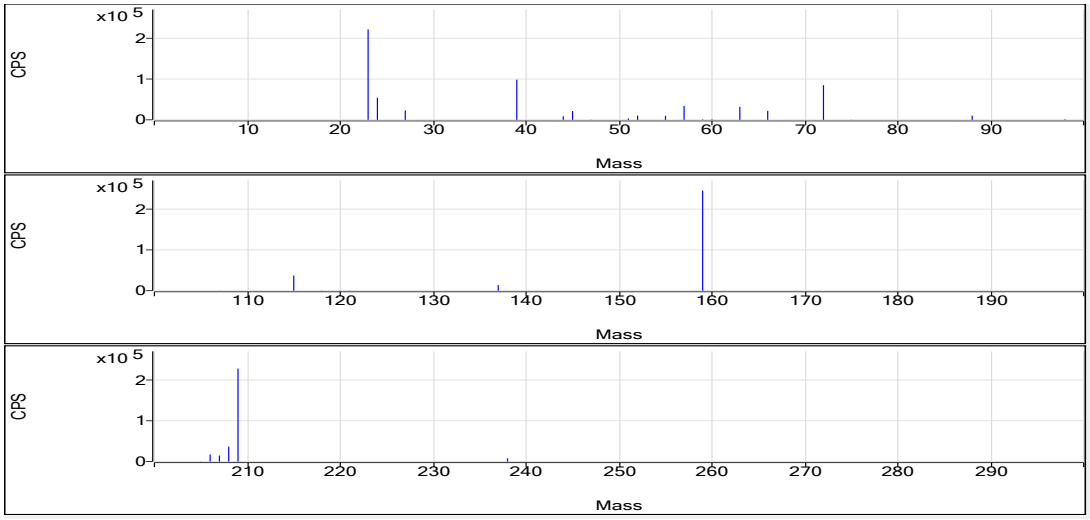


Quantitation Report

He



Quantitation Report

Data File Name	047SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 11:48:15 AM
Sample Name	410-60956-E-2-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

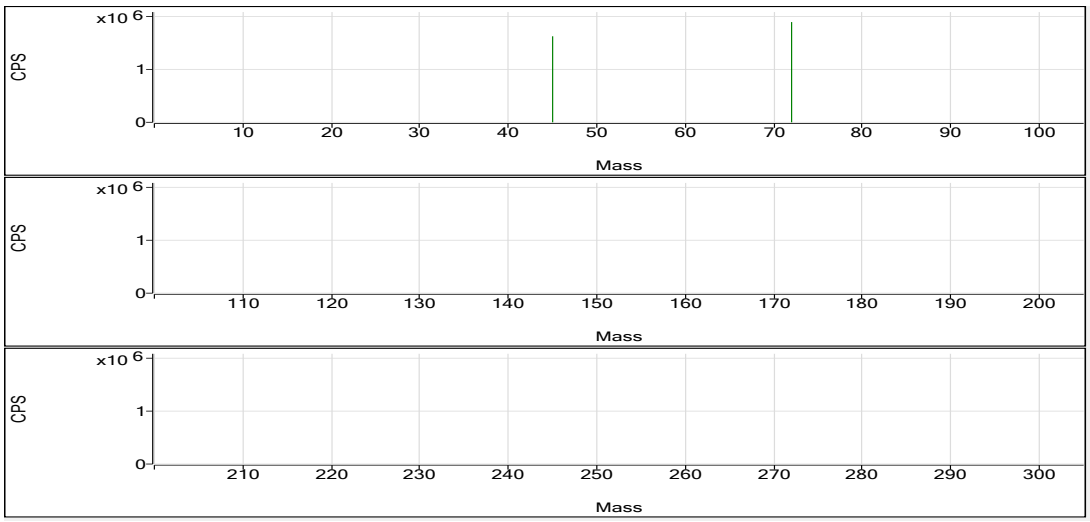
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.054	ppb	33.0	51.33	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.742	ppb	10.7	30.89	0.0001	Pulse	1.5000	3
Na	23	45	He	20217.378	ppb	5.1	2051948.25	92.2169	Analog	0.1000	3
Mg	24	45	He	973.905	ppb	6.3	47711.21	2.1452	Pulse	0.1000	3
Al	27	45	He	429.963	ppb	3.2	5267.81	0.2365	Pulse	0.1000	3
K	39	45	He	2174.074	ppb	5.4	58250.30	2.6177	Pulse	0.1000	3
Ca	44	45	He	1682.119	ppb	12.5	2480.30	0.1116	Pulse	0.1000	3
Ti	47	45	He	15.028	ppb	13.0	190.01	0.0085	Pulse	0.1000	3
V	51	45	He	2.338	ppb	8.8	1742.12	0.0783	Pulse	0.5000	3
Cr	52	45	He	6.063	ppb	4.4	6004.79	0.2696	Pulse	0.1000	3
Mn	55	72	He	9.574	ppb	7.0	2990.43	0.0351	Pulse	0.1000	3
Fe	57	72	He	21646.880	ppb	1.6	363102.74	4.2599	Pulse	0.1000	3
Co	59	72	He	0.824	ppb	15.6	1740.17	0.0204	Pulse	0.1000	3
Ni	60	72	He	2.473	ppb	6.1	1510.14	0.0177	Pulse	0.1000	3
Cu	63	72	He	5.890	ppb	8.2	10424.18	0.1223	Pulse	0.1000	3
Zn	66	72	He	36.959	ppb	3.1	5611.30	0.0658	Pulse	0.1000	3
As	75	72	He	2.634	ppb	12.6	276.00	0.0032	Pulse	0.5000	3
Sr	88	115	He	13.719	ppb	4.2	4094.09	0.1094	Pulse	0.1000	3
Mo	98	115	He	0.529	ppb	10.3	643.37	0.0172	Pulse	0.1000	3
Ag	107	115	He	0.019	ppb	50.7	63.33	0.0017	Pulse	0.1000	3
Cd	111	115	He	0.101	ppb	12.1	26.67	0.0007	Pulse	0.5000	3
Sn	120	115	He	-0.159	ppb	N/A	716.71	0.0191	Pulse	0.1000	3
Sb	121	115	He	0.174	ppb	23.6	113.34	0.0030	Pulse	0.1000	3
Ba	137	115	He	20.593	ppb	6.0	4057.40	0.1084	Pulse	0.1000	3
Tl	205	209	He	0.072	ppb	25.0	626.70	0.0028	Pulse	0.1000	3
Pb	208	209	He	0.623	ppb	3.9	7661.15	0.0337	Pulse	0.1000	3
U	238	209	He	1.003	ppb	2.5	14628.86	0.0644	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1622819.82	1.1	99.7	Analog	0.1000	3
No Gas	Ge	72	1890798.51	1.1	100.9	Analog	0.1000	3
H2	Sc	45	96264.80	1.9	97.5	Pulse	0.1000	3
H2	Ge	72	157521.05	0.5	98.7	Pulse	0.1000	3
H2	In	115	275582.33	1.1	97.0	Pulse	0.1000	3
He	Sc	45	22294.40	5.8	105.6	Pulse	0.1000	3
He	Ge	72	85250.91	1.5	103.5	Pulse	0.1000	3
He	In	115	37421.21	0.7	99.9	Pulse	0.1000	3
He	Tb	159	250419.24	0.4	99.6	Pulse	0.1000	3
He	Bi	209	227211.86	0.4	99.9	Pulse	0.1000	3

No Gas



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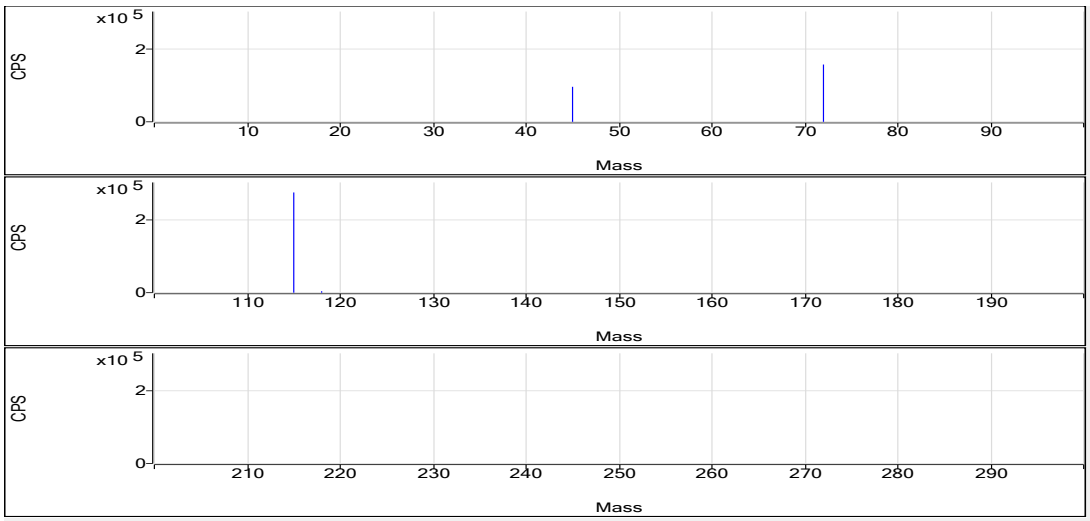
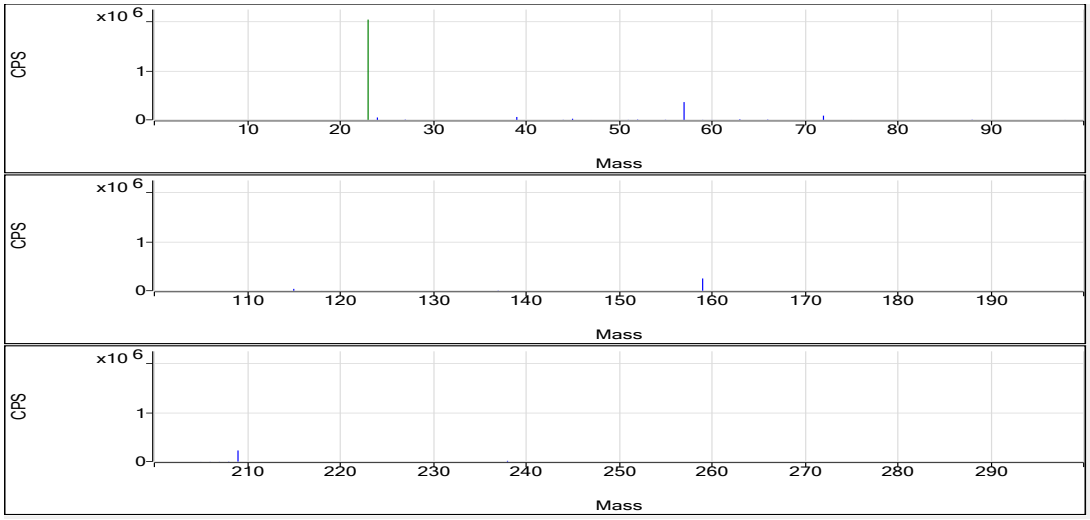


Quantitation Report

He



Quantitation Report

Data File Name	048_CCV.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 11:50:18 AM
Sample Name	CCV 1942322
Sample Type	CCV
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

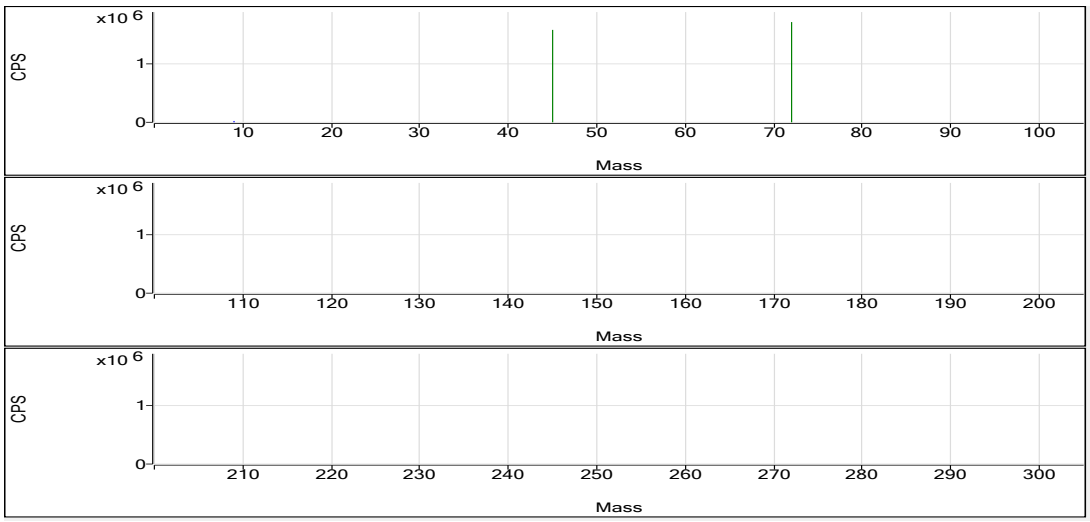
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	29.510	ppb	1.3	22567.01	0.0143	Pulse	0.5000	3
Se	78	115	H2	31.060	ppb	4.0	1258.73	0.0046	Pulse	1.5000	3
Na	23	45	He	5016.141	ppb	3.7	499878.50	23.1700	Pulse	0.1000	3
Mg	24	45	He	4988.266	ppb	3.3	236721.74	10.9715	Pulse	0.1000	3
Al	27	45	He	4953.863	ppb	2.5	58483.27	2.7102	Pulse	0.1000	3
K	39	45	He	4970.999	ppb	4.1	122594.03	5.6828	Pulse	0.1000	3
Ca	44	45	He	4898.158	ppb	7.6	6821.80	0.3164	Pulse	0.1000	3
Ti	47	45	He	293.089	ppb	5.5	3567.22	0.1654	Pulse	0.1000	3
V	51	45	He	297.431	ppb	3.3	186515.64	8.6448	Pulse	0.5000	3
Cr	52	45	He	300.115	ppb	2.3	257589.18	11.9364	Pulse	0.1000	3
Mn	55	72	He	314.449	ppb	0.6	86652.72	1.1459	Pulse	0.1000	3
Fe	57	72	He	5383.382	ppb	1.6	80152.38	1.0601	Pulse	0.1000	3
Co	59	72	He	301.375	ppb	0.6	546017.40	7.2207	Pulse	0.1000	3
Ni	60	72	He	317.461	ppb	1.2	160202.67	2.1186	Pulse	0.1000	3
Cu	63	72	He	308.052	ppb	0.2	473649.08	6.2635	Pulse	0.1000	3
Zn	66	72	He	311.506	ppb	0.7	41460.60	0.5483	Pulse	0.1000	3
As	75	72	He	317.542	ppb	0.9	27023.49	0.3574	Pulse	0.5000	3
Sr	88	115	He	31.502	ppb	0.9	9126.60	0.2502	Pulse	0.1000	3
Mo	98	115	He	31.581	ppb	1.4	36655.25	1.0049	Pulse	0.1000	3
Ag	107	115	He	31.697	ppb	1.4	90137.33	2.4711	Pulse	0.1000	3
Cd	111	115	He	32.170	ppb	0.9	8093.05	0.2219	Pulse	0.5000	3
Sn	120	115	He	32.814	ppb	1.6	22939.68	0.6289	Pulse	0.1000	3
Sb	121	115	He	31.767	ppb	1.7	18389.49	0.5042	Pulse	0.1000	3
Ba	137	115	He	312.668	ppb	1.6	59894.88	1.6421	Pulse	0.1000	3
Tl	205	209	He	31.164	ppb	0.6	246635.37	1.1201	Pulse	0.1000	3
Pb	208	209	He	31.089	ppb	1.5	326855.34	1.4844	Pulse	0.1000	3
U	238	209	He	262.047	ppb	1.8	3693380.98	16.7722	Analog	0.1000	3

ISTD Table:

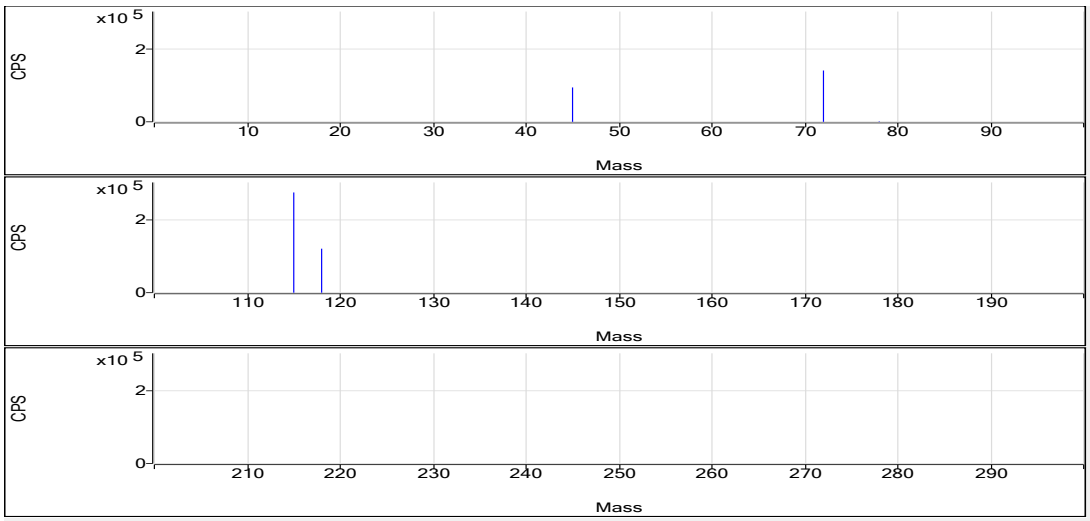
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1574968.10	0.7	96.8	Analog	0.1000	3
No Gas	Ge	72	1708149.92	1.2	91.2	Analog	0.1000	3
H2	Sc	45	93875.83	0.9	95.1	Pulse	0.1000	3
H2	Ge	72	140152.38	1.0	87.8	Pulse	0.1000	3
H2	In	115	273745.45	0.9	96.3	Pulse	0.1000	3
He	Sc	45	21589.89	3.0	102.3	Pulse	0.1000	3
He	Ge	72	75620.41	1.1	91.8	Pulse	0.1000	3
He	In	115	36478.93	0.9	97.4	Pulse	0.1000	3
He	Tb	159	244601.10	1.2	97.3	Pulse	0.1000	3
He	Bi	209	220206.65	0.8	96.8	Pulse	0.1000	3

No Gas

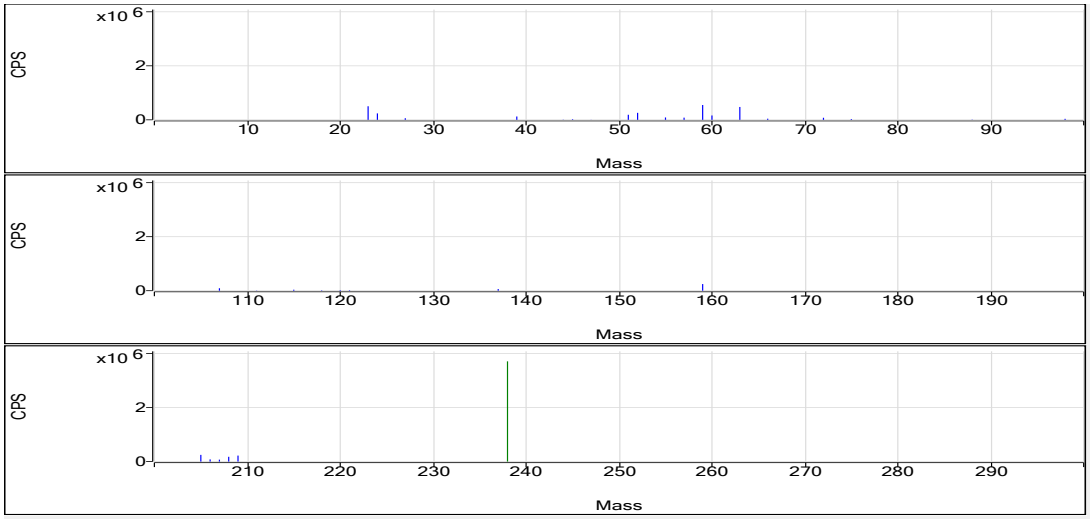


H2



Quantitation Report

He



Quantitation Report

Data File Name	049_CCB.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 11:52:20 AM
Sample Name	CCB 2014932
Sample Type	CCB
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

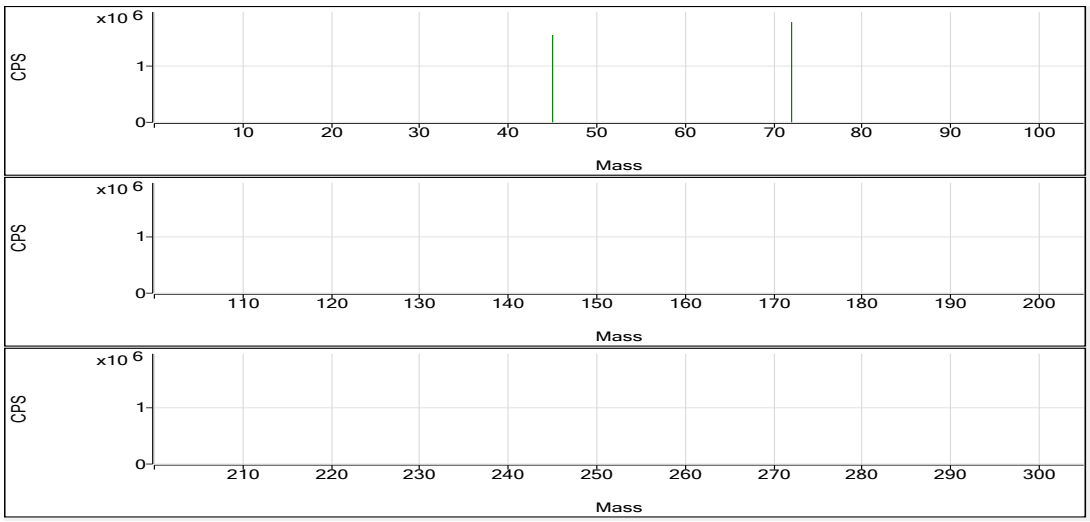
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.021	ppb	20.8	24.00	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.044	ppb	85.5	2.44	0.0000	Pulse	1.5000	3
Na	23	45	He	10.912	ppb	31.0	9213.14	0.4353	Pulse	0.1000	3
Mg	24	45	He	3.843	ppb	24.0	263.35	0.0124	Pulse	0.1000	3
Al	27	45	He	0.557	ppb	307.0	36.67	0.0017	Pulse	0.1000	3
K	39	45	He	10.196	ppb	100.0	5211.13	0.2463	Pulse	0.1000	3
Ca	44	45	He	-25.181	ppb	N/A	60.00	0.0028	Pulse	0.1000	3
Ti	47	45	He	0.000	ppb	N/A	0.00	0.0000	Pulse	0.1000	3
V	51	45	He	0.061	ppb	96.0	258.67	0.0122	Pulse	0.5000	3
Cr	52	45	He	0.248	ppb	36.5	823.39	0.0389	Pulse	0.1000	3
Mn	55	72	He	0.182	ppb	53.6	70.00	0.0009	Pulse	0.1000	3
Fe	57	72	He	5.416	ppb	50.9	156.67	0.0020	Pulse	0.1000	3
Co	59	72	He	0.143	ppb	10.1	330.01	0.0041	Pulse	0.1000	3
Ni	60	72	He	0.099	ppb	155.2	150.00	0.0019	Pulse	0.1000	3
Cu	63	72	He	0.134	ppb	3.2	423.35	0.0053	Pulse	0.1000	3
Zn	66	72	He	0.058	ppb	306.5	80.00	0.0010	Pulse	0.1000	3
As	75	72	He	0.308	ppb	44.1	50.00	0.0006	Pulse	0.5000	3
Sr	88	115	He	0.034	ppb	169.3	40.00	0.0011	Pulse	0.1000	3
Mo	98	115	He	0.062	ppb	18.9	86.67	0.0023	Pulse	0.1000	3
Ag	107	115	He	0.013	ppb	14.6	43.33	0.0012	Pulse	0.1000	3
Cd	111	115	He	0.008	ppb	114.5	2.67	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.076	ppb	N/A	766.71	0.0207	Pulse	0.1000	3
Sb	121	115	He	0.067	ppb	128.8	50.00	0.0013	Pulse	0.1000	3
Ba	137	115	He	0.067	ppb	190.4	23.33	0.0006	Pulse	0.1000	3
Tl	205	209	He	0.035	ppb	21.3	323.35	0.0015	Pulse	0.1000	3
Pb	208	209	He	0.009	ppb	94.7	993.39	0.0045	Pulse	0.1000	3
U	238	209	He	0.084	ppb	5.1	1236.78	0.0056	Pulse	0.1000	3

ISTD Table:

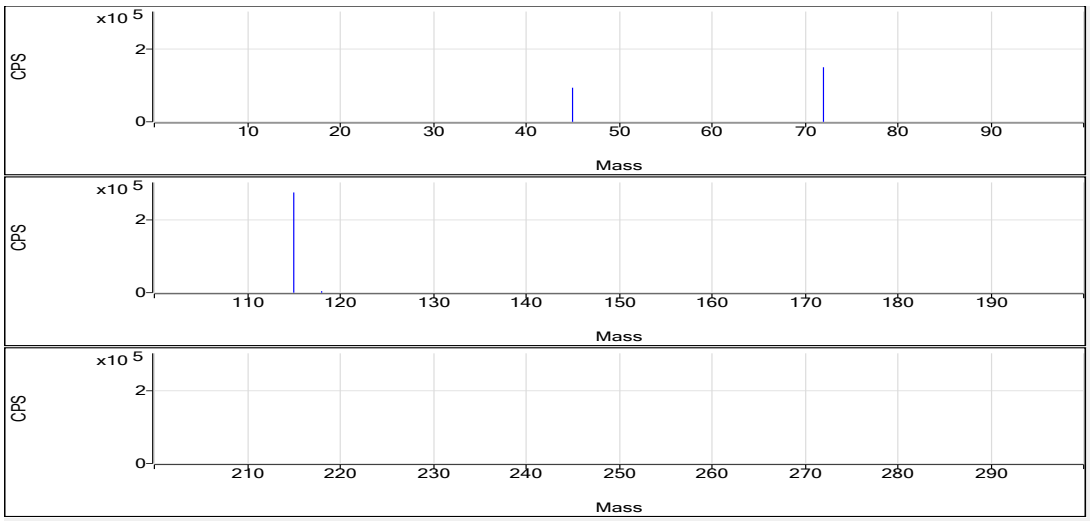
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1552820.71	1.6	95.4	Analog	0.1000	3
No Gas	Ge	72	1782533.88	0.7	95.1	Analog	0.1000	3
H2	Sc	45	93348.70	1.7	94.6	Pulse	0.1000	3
H2	Ge	72	149402.03	0.9	93.6	Pulse	0.1000	3
H2	In	115	274413.74	0.4	96.6	Pulse	0.1000	3
He	Sc	45	21172.72	2.3	100.3	Pulse	0.1000	3
He	Ge	72	80402.94	2.0	97.6	Pulse	0.1000	3
He	In	115	37177.25	1.9	99.2	Pulse	0.1000	3
He	Tb	159	246035.46	1.0	97.9	Pulse	0.1000	3
He	Bi	209	222507.18	0.5	97.8	Pulse	0.1000	3

No Gas

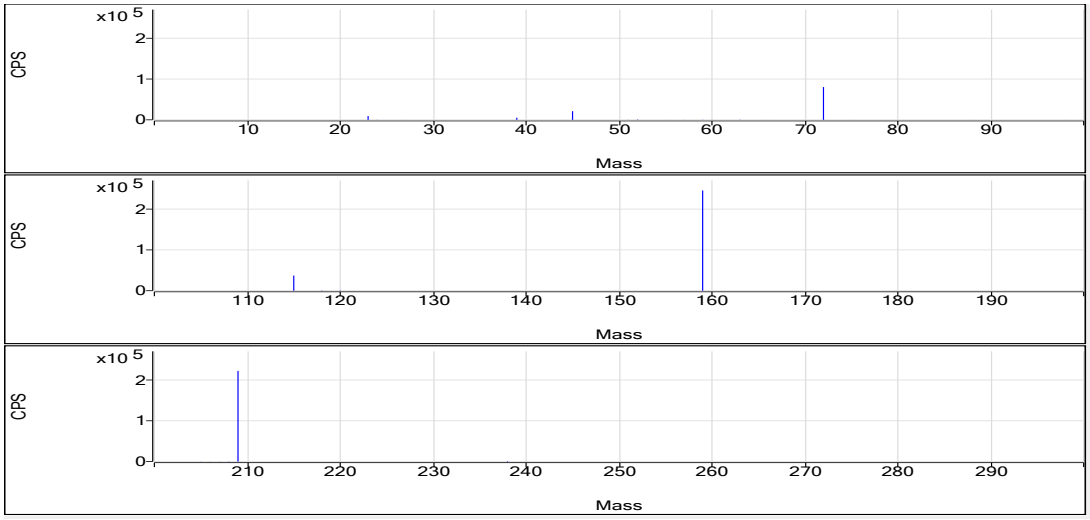


H2



Quantitation Report

He



Quantitation Report

Data File Name	050SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 11:54:22 AM
Sample Name	410-60956-E-6-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

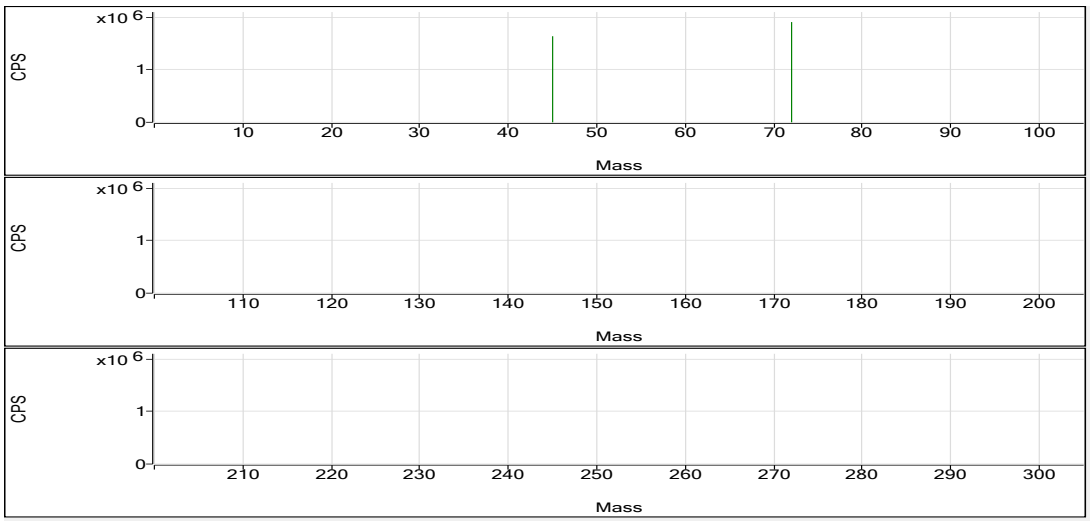
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.226	ppb	6.4	188.00	0.0001	Pulse	0.5000	3
Se	78	115	H2	1.450	ppb	3.9	60.00	0.0002	Pulse	1.5000	3
Na	23	45	He	23678.577	ppb	1.7	2322836.11	107.9383	Analog	0.1000	3
Mg	24	45	He	2602.423	ppb	3.8	123174.25	5.7258	Pulse	0.1000	3
Al	27	45	He	5688.589	ppb	4.6	66933.32	3.1119	Pulse	0.1000	3
K	39	45	He	2169.799	ppb	3.6	56215.62	2.6130	Pulse	0.1000	3
Ca	44	45	He	32713.711	ppb	3.4	44927.01	2.0883	Pulse	0.1000	3
Ti	47	45	He	125.772	ppb	22.6	1533.84	0.0710	Pulse	0.1000	3
V	51	45	He	15.576	ppb	1.2	9958.13	0.4626	Pulse	0.5000	3
Cr	52	45	He	32.940	ppb	5.1	28743.64	1.3360	Pulse	0.1000	3
Mn	55	72	He	12.011	ppb	6.9	3750.62	0.0440	Pulse	0.1000	3
Fe	57	72	He	19791.334	ppb	1.5	332315.74	3.8948	Pulse	0.1000	3
Co	59	72	He	0.852	ppb	2.9	1800.17	0.0211	Pulse	0.1000	3
Ni	60	72	He	3.320	ppb	2.3	1993.54	0.0234	Pulse	0.1000	3
Cu	63	72	He	5.823	ppb	3.4	10314.04	0.1209	Pulse	0.1000	3
Zn	66	72	He	69.830	ppb	0.9	10547.65	0.1236	Pulse	0.1000	3
As	75	72	He	11.662	ppb	3.2	1142.72	0.0134	Pulse	0.5000	3
Sr	88	115	He	157.597	ppb	0.8	46072.85	1.2485	Pulse	0.1000	3
Mo	98	115	He	6.148	ppb	4.9	7228.76	0.1959	Pulse	0.1000	3
Ag	107	115	He	0.043	ppb	21.3	130.01	0.0035	Pulse	0.1000	3
Cd	111	115	He	0.244	ppb	9.4	62.67	0.0017	Pulse	0.5000	3
Sn	120	115	He	0.320	ppb	82.6	1033.41	0.0280	Pulse	0.1000	3
Sb	121	115	He	0.860	ppb	23.5	513.36	0.0139	Pulse	0.1000	3
Ba	137	115	He	22.198	ppb	3.7	4310.82	0.1168	Pulse	0.1000	3
Tl	205	209	He	0.112	ppb	4.8	950.07	0.0042	Pulse	0.1000	3
Pb	208	209	He	2.838	ppb	4.2	31389.49	0.1392	Pulse	0.1000	3
U	238	209	He	2.606	ppb	1.8	37665.93	0.1670	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1638380.66	0.8	100.7	Analog	0.1000	3
No Gas	Ge	72	1907711.90	0.2	101.8	Analog	0.1000	3
H2	Sc	45	98301.82	1.5	99.6	Pulse	0.1000	3
H2	Ge	72	158470.44	1.1	99.3	Pulse	0.1000	3
H2	In	115	276736.39	0.9	97.4	Pulse	0.1000	3
He	Sc	45	21526.58	2.7	102.0	Pulse	0.1000	3
He	Ge	72	85330.92	0.9	103.6	Pulse	0.1000	3
He	In	115	36903.18	0.4	98.5	Pulse	0.1000	3
He	Tb	159	251823.07	1.1	100.2	Pulse	0.1000	3
He	Bi	209	225578.59	1.0	99.2	Pulse	0.1000	3

No Gas



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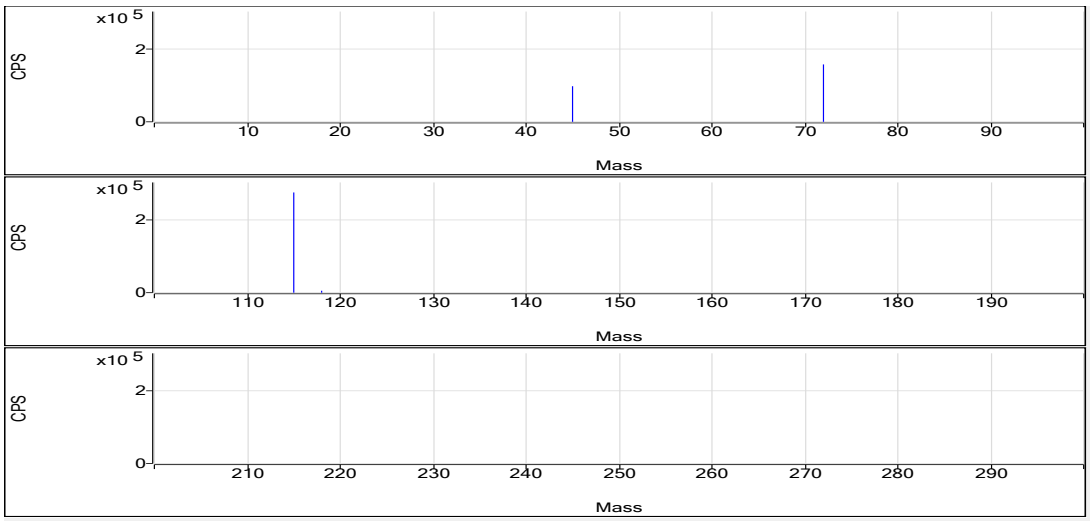
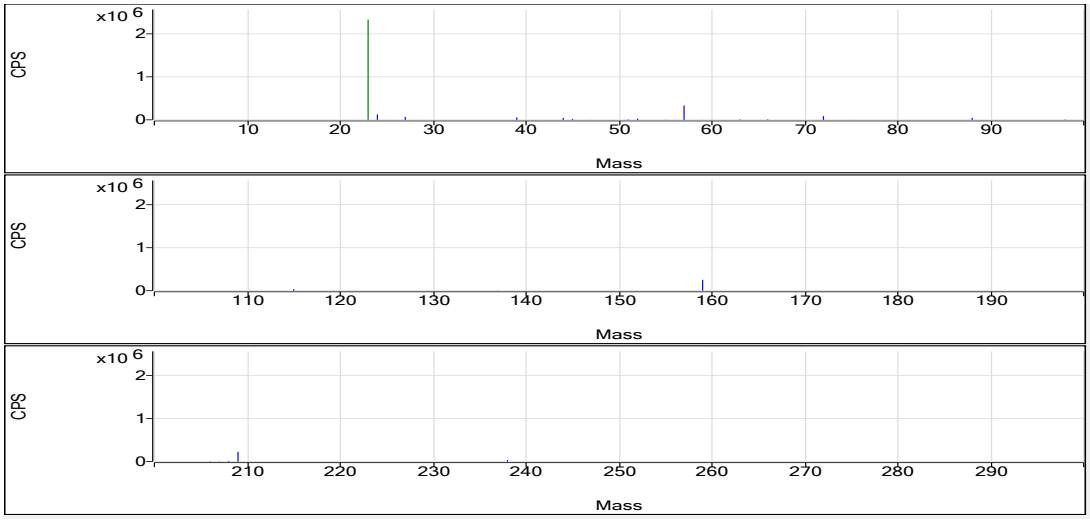


Quantitation Report

He



Quantitation Report

Data File Name	051SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 11:56:24 AM
Sample Name	410-60956-E-5-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

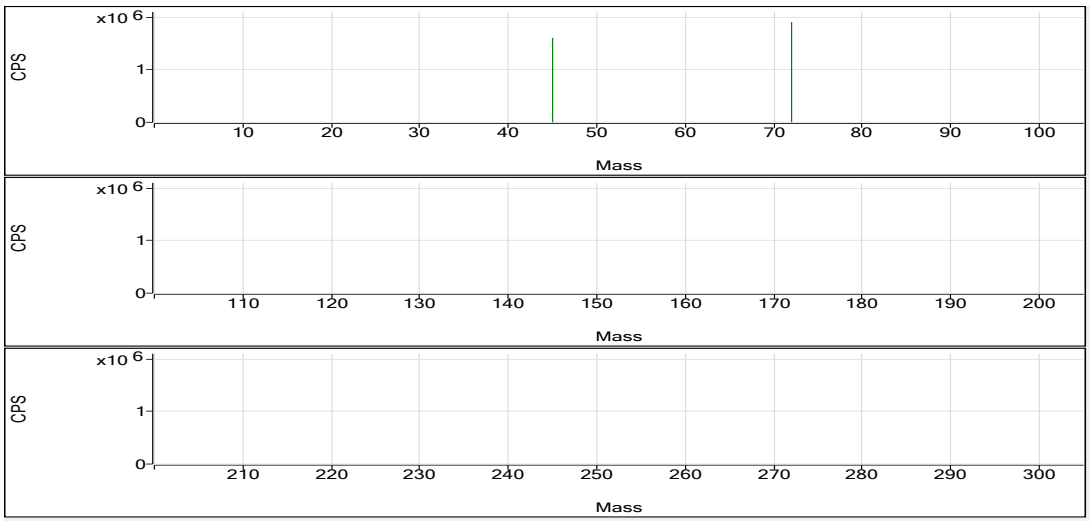
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.044	ppb	23.2	43.33	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.369	ppb	8.2	16.00	0.0001	Pulse	1.5000	3
Na	23	45	He	9407.283	ppb	1.2	960096.68	43.1154	Pulse	0.1000	3
Mg	24	45	He	1279.433	ppb	2.9	62717.21	2.8170	Pulse	0.1000	3
Al	27	45	He	1128.141	ppb	4.8	13774.99	0.6183	Pulse	0.1000	3
K	39	45	He	3613.927	ppb	3.1	93405.46	4.1956	Pulse	0.1000	3
Ca	44	45	He	8087.966	ppb	4.3	11571.66	0.5196	Pulse	0.1000	3
Ti	47	45	He	42.503	ppb	65.2	533.70	0.0240	Pulse	0.1000	3
V	51	45	He	3.930	ppb	1.4	2773.61	0.1246	Pulse	0.5000	3
Cr	52	45	He	6.878	ppb	4.4	6721.78	0.3020	Pulse	0.1000	3
Mn	55	72	He	31.482	ppb	0.8	9907.06	0.1149	Pulse	0.1000	3
Fe	57	72	He	1711.219	ppb	1.0	29103.39	0.3376	Pulse	0.1000	3
Co	59	72	He	0.268	ppb	7.2	613.37	0.0071	Pulse	0.1000	3
Ni	60	72	He	0.943	ppb	6.8	646.71	0.0075	Pulse	0.1000	3
Cu	63	72	He	2.621	ppb	6.6	4810.98	0.0558	Pulse	0.1000	3
Zn	66	72	He	41.677	ppb	2.9	6391.69	0.0741	Pulse	0.1000	3
As	75	72	He	2.553	ppb	8.7	271.34	0.0031	Pulse	0.5000	3
Sr	88	115	He	21.674	ppb	10.0	6535.14	0.1724	Pulse	0.1000	3
Mo	98	115	He	1.110	ppb	4.5	1353.45	0.0357	Pulse	0.1000	3
Ag	107	115	He	0.022	ppb	21.8	73.33	0.0019	Pulse	0.1000	3
Cd	111	115	He	0.143	ppb	32.6	38.00	0.0010	Pulse	0.5000	3
Sn	120	115	He	-0.025	ppb	N/A	820.05	0.0216	Pulse	0.1000	3
Sb	121	115	He	0.200	ppb	42.7	130.01	0.0034	Pulse	0.1000	3
Ba	137	115	He	13.366	ppb	8.3	2673.74	0.0705	Pulse	0.1000	3
Tl	205	209	He	0.127	ppb	3.2	1080.09	0.0048	Pulse	0.1000	3
Pb	208	209	He	1.037	ppb	3.8	12126.00	0.0534	Pulse	0.1000	3
U	238	209	He	1.168	ppb	3.0	17005.14	0.0749	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1611169.04	0.4	99.0	Analog	0.1000	3
No Gas	Ge	72	1913124.61	1.0	102.1	Analog	0.1000	3
H2	Sc	45	96584.26	2.1	97.8	Pulse	0.1000	3
H2	Ge	72	160367.12	0.7	100.5	Pulse	0.1000	3
H2	In	115	280877.56	0.7	98.9	Pulse	0.1000	3
He	Sc	45	22271.02	1.9	105.5	Pulse	0.1000	3
He	Ge	72	86216.22	1.0	104.7	Pulse	0.1000	3
He	In	115	37935.86	1.4	101.2	Pulse	0.1000	3
He	Tb	159	250611.30	0.8	99.7	Pulse	0.1000	3
He	Bi	209	226931.07	0.6	99.7	Pulse	0.1000	3

No Gas



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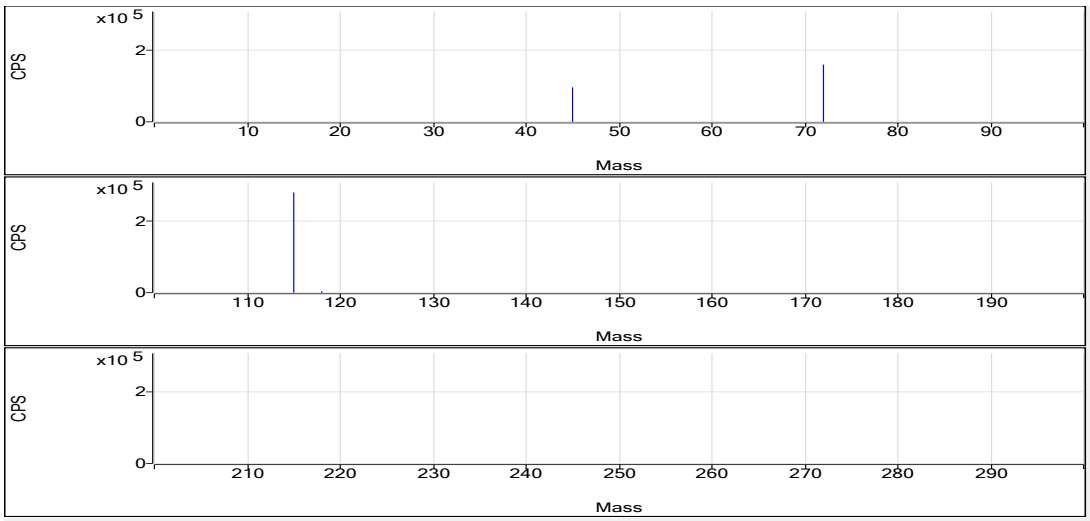
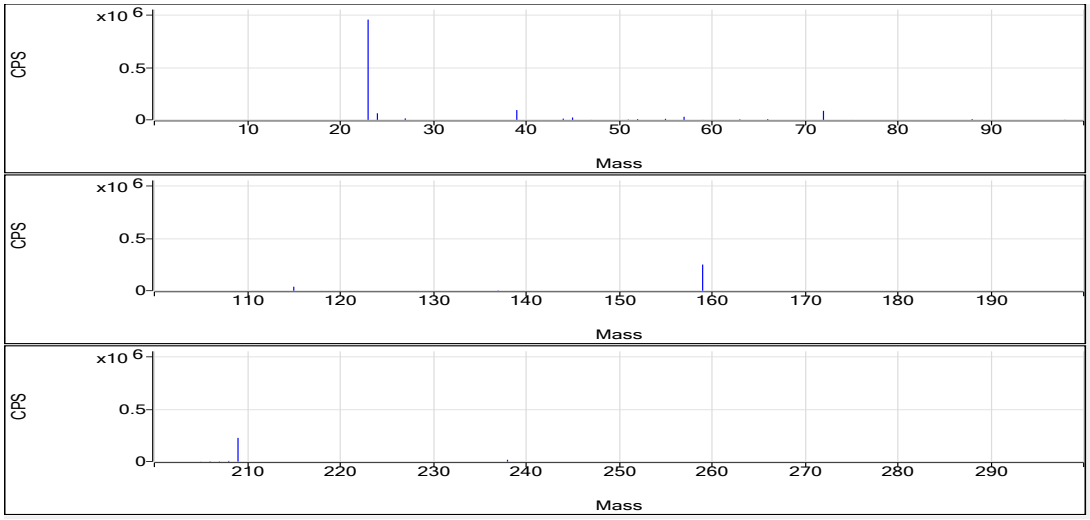


Quantitation Report

He



Quantitation Report

Data File Name	052SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 11:58:26 AM
Sample Name	410-60956-E-1-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

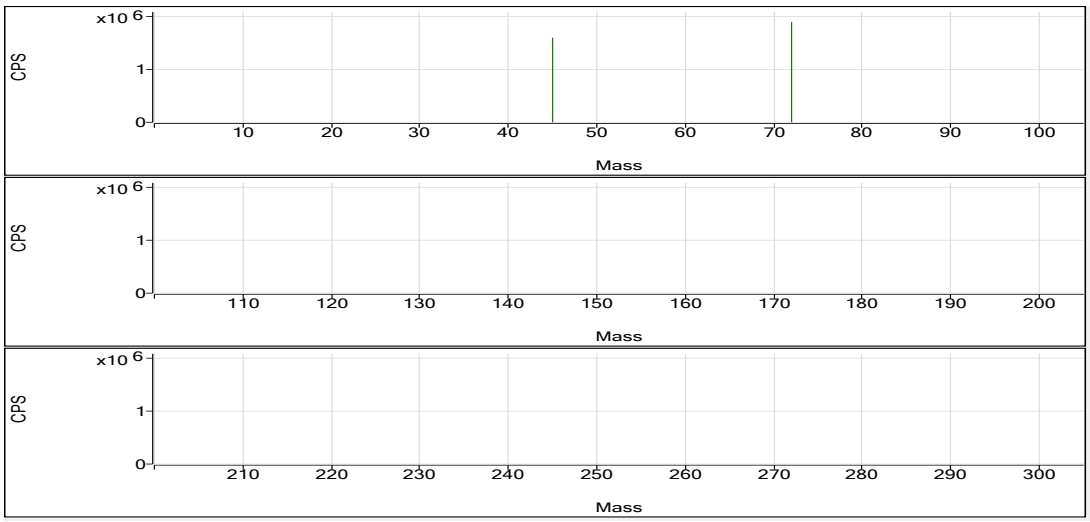
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.099	ppb	13.5	85.33	0.0001	Pulse	0.5000	3
Se	78	115	H2	0.539	ppb	23.8	22.89	0.0001	Pulse	1.5000	3
Na	23	45	He	53854.060	ppb	2.6	5326255.76	245.0010	Analog	0.1000	3
Mg	24	45	He	2731.168	ppb	2.5	130638.37	6.0089	Pulse	0.1000	3
Al	27	45	He	3429.906	ppb	4.2	40790.89	1.8769	Pulse	0.1000	3
K	39	45	He	1491.517	ppb	1.8	40654.01	1.8697	Pulse	0.1000	3
Ca	44	45	He	21220.560	ppb	2.6	29483.94	1.3562	Pulse	0.1000	3
Ti	47	45	He	60.878	ppb	28.1	750.07	0.0344	Pulse	0.1000	3
V	51	45	He	6.734	ppb	2.5	4477.38	0.2059	Pulse	0.5000	3
Cr	52	45	He	4.612	ppb	3.2	4614.21	0.2120	Pulse	0.1000	3
Mn	55	72	He	29.680	ppb	0.4	9340.00	0.1083	Pulse	0.1000	3
Fe	57	72	He	3637.723	ppb	1.5	61769.37	0.7166	Pulse	0.1000	3
Co	59	72	He	1.108	ppb	7.2	2346.92	0.0272	Pulse	0.1000	3
Ni	60	72	He	1.884	ppb	13.5	1186.75	0.0138	Pulse	0.1000	3
Cu	63	72	He	32.931	ppb	1.0	57914.08	0.6719	Pulse	0.1000	3
Zn	66	72	He	37.243	ppb	9.3	5714.69	0.0663	Pulse	0.1000	3
As	75	72	He	8.734	ppb	7.2	870.03	0.0101	Pulse	0.5000	3
Sr	88	115	He	112.068	ppb	3.4	34098.59	0.8880	Pulse	0.1000	3
Mo	98	115	He	1.877	ppb	11.1	2303.60	0.0601	Pulse	0.1000	3
Ag	107	115	He	0.061	ppb	9.3	190.01	0.0049	Pulse	0.1000	3
Cd	111	115	He	0.273	ppb	32.0	72.67	0.0019	Pulse	0.5000	3
Sn	120	115	He	0.526	ppb	31.9	1220.10	0.0318	Pulse	0.1000	3
Sb	121	115	He	0.957	ppb	13.3	593.37	0.0154	Pulse	0.1000	3
Ba	137	115	He	21.894	ppb	4.1	4424.22	0.1152	Pulse	0.1000	3
Tl	205	209	He	0.071	ppb	12.1	620.04	0.0028	Pulse	0.1000	3
Pb	208	209	He	15.500	ppb	1.3	166847.00	0.7421	Pulse	0.1000	3
U	238	209	He	1.981	ppb	2.0	28549.17	0.1270	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1592757.84	0.8	97.9	Analog	0.1000	3
No Gas	Ge	72	1886812.37	0.6	100.7	Analog	0.1000	3
H2	Sc	45	95412.08	1.0	96.7	Pulse	0.1000	3
H2	Ge	72	160607.34	0.5	100.7	Pulse	0.1000	3
H2	In	115	278967.44	0.8	98.2	Pulse	0.1000	3
He	Sc	45	21750.07	2.8	103.1	Pulse	0.1000	3
He	Ge	72	86206.07	1.1	104.7	Pulse	0.1000	3
He	In	115	38417.21	2.1	102.5	Pulse	0.1000	3
He	Tb	159	252197.58	0.5	100.3	Pulse	0.1000	3
He	Bi	209	224838.39	0.9	98.8	Pulse	0.1000	3

No Gas



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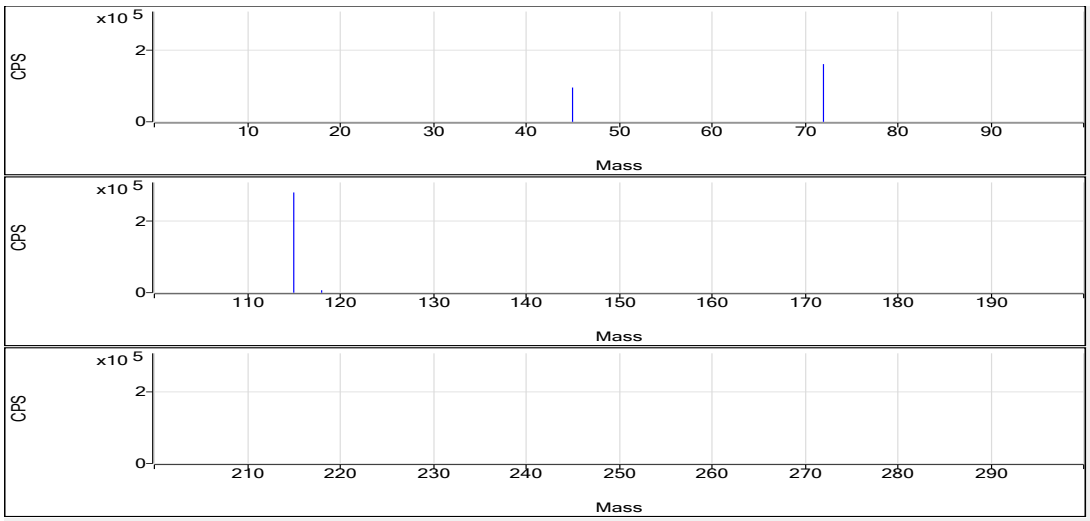
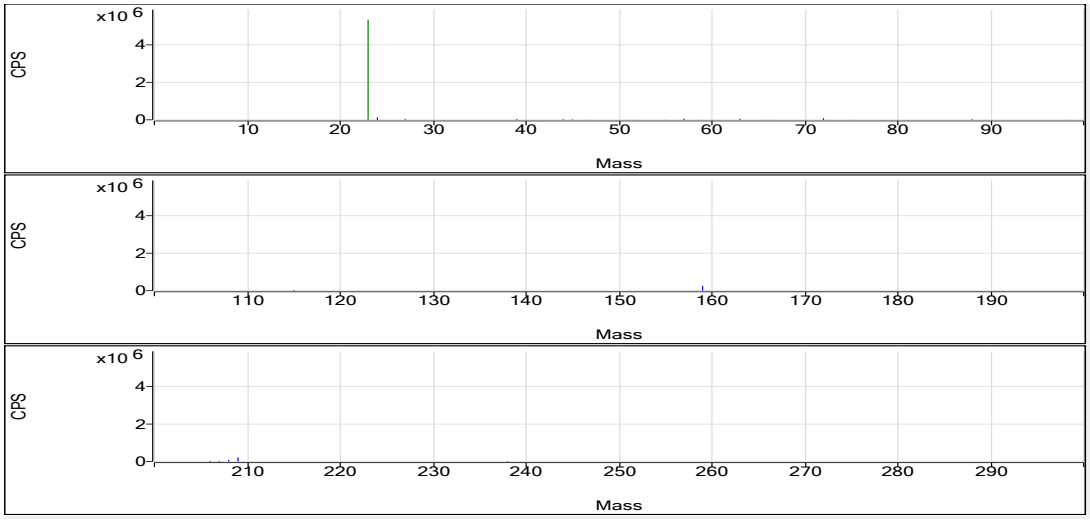


Quantitation Report

He



Quantitation Report

Data File Name	053SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 12:00:28 PM
Sample Name	410-60956-E-4-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

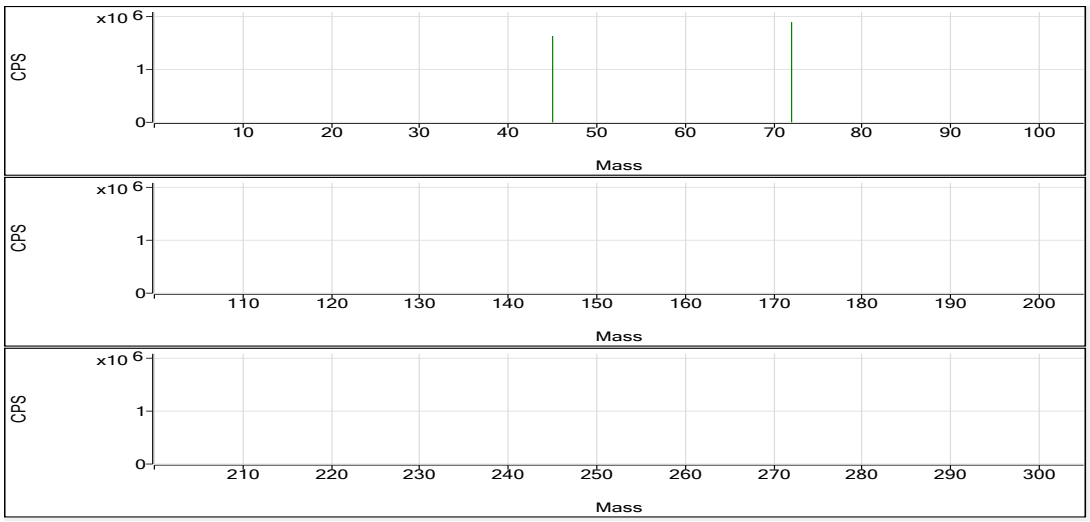
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.127	ppb	9.0	109.33	0.0001	Pulse	0.5000	3
Se	78	115	H2	0.851	ppb	6.5	36.00	0.0001	Pulse	1.5000	3
Na	23	45	He	23724.175	ppb	1.4	2400233.19	108.1454	Analog	0.1000	3
Mg	24	45	He	1363.537	ppb	1.7	66624.01	3.0019	Pulse	0.1000	3
Al	27	45	He	2905.624	ppb	2.0	35293.47	1.5902	Pulse	0.1000	3
K	39	45	He	2411.583	ppb	2.8	63867.42	2.8779	Pulse	0.1000	3
Ca	44	45	He	2660.239	ppb	6.4	3857.31	0.1739	Pulse	0.1000	3
Ti	47	45	He	54.848	ppb	5.1	686.71	0.0310	Pulse	0.1000	3
V	51	45	He	13.401	ppb	1.7	8866.08	0.3995	Pulse	0.5000	3
Cr	52	45	He	29.409	ppb	1.4	26549.25	1.1959	Pulse	0.1000	3
Mn	55	72	He	35.043	ppb	1.4	10951.22	0.1279	Pulse	0.1000	3
Fe	57	72	He	29611.464	ppb	1.3	498943.46	5.8269	Pulse	0.1000	3
Co	59	72	He	1.351	ppb	12.5	2830.37	0.0331	Pulse	0.1000	3
Ni	60	72	He	3.985	ppb	12.9	2380.28	0.0278	Pulse	0.1000	3
Cu	63	72	He	4.593	ppb	0.2	8212.60	0.0959	Pulse	0.1000	3
Zn	66	72	He	64.152	ppb	6.1	9730.26	0.1136	Pulse	0.1000	3
As	75	72	He	9.108	ppb	7.6	900.70	0.0105	Pulse	0.5000	3
Sr	88	115	He	30.516	ppb	3.0	9153.28	0.2424	Pulse	0.1000	3
Mo	98	115	He	1.718	ppb	8.6	2076.89	0.0550	Pulse	0.1000	3
Ag	107	115	He	0.035	ppb	29.5	110.00	0.0029	Pulse	0.1000	3
Cd	111	115	He	0.996	ppb	1.8	260.00	0.0069	Pulse	0.5000	3
Sn	120	115	He	0.143	ppb	134.4	933.40	0.0247	Pulse	0.1000	3
Sb	121	115	He	0.445	ppb	15.9	276.68	0.0073	Pulse	0.1000	3
Ba	137	115	He	66.522	ppb	5.7	13200.15	0.3496	Pulse	0.1000	3
Tl	205	209	He	0.468	ppb	5.3	3840.70	0.0170	Pulse	0.1000	3
Pb	208	209	He	2.487	ppb	0.7	27659.37	0.1225	Pulse	0.1000	3
U	238	209	He	1.708	ppb	1.8	24731.13	0.1095	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1630015.39	1.1	100.2	Analog	0.1000	3
No Gas	Ge	72	1893530.34	1.9	101.1	Analog	0.1000	3
H2	Sc	45	98113.86	0.7	99.4	Pulse	0.1000	3
H2	Ge	72	160482.67	1.9	100.6	Pulse	0.1000	3
H2	In	115	280501.97	0.6	98.7	Pulse	0.1000	3
He	Sc	45	22197.58	1.6	105.2	Pulse	0.1000	3
He	Ge	72	85629.60	0.3	104.0	Pulse	0.1000	3
He	In	115	37765.71	0.4	100.8	Pulse	0.1000	3
He	Tb	159	254199.13	0.1	101.1	Pulse	0.1000	3
He	Bi	209	225829.92	0.3	99.3	Pulse	0.1000	3

No Gas



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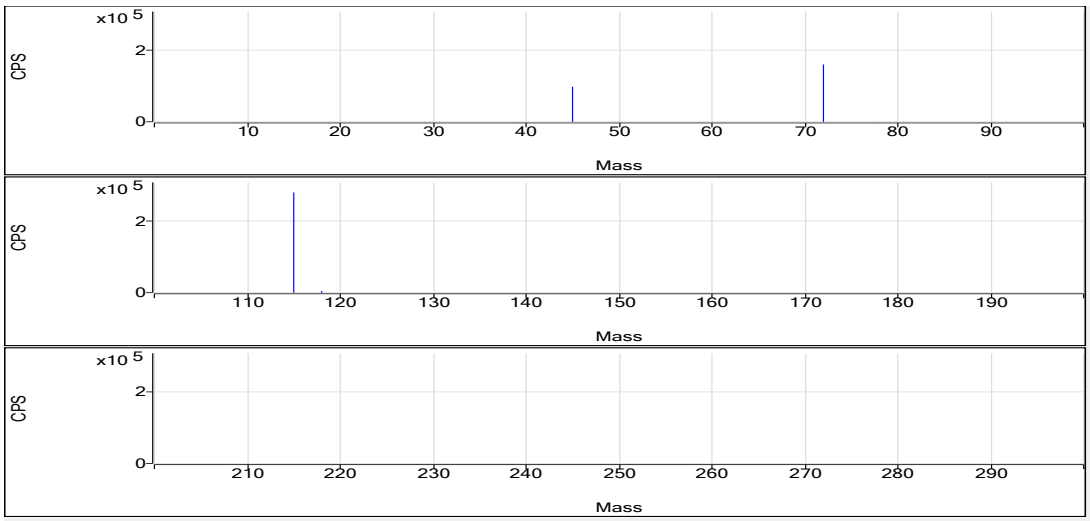
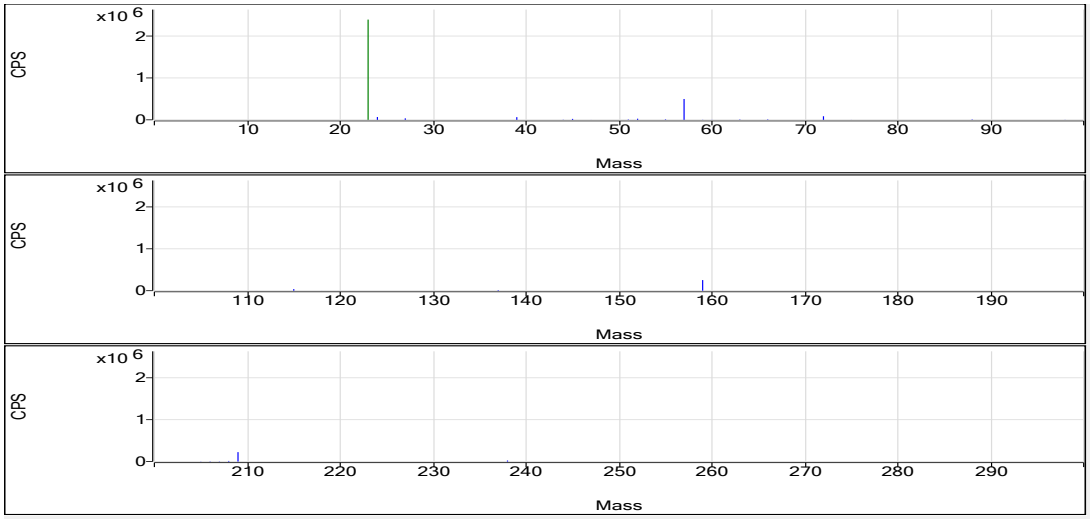


Quantitation Report

He



Quantitation Report

Data File Name	054SMPL.d
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Acq Time	11/4/2021 12:02:29 PM
Sample Name	410-60956-E-8-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

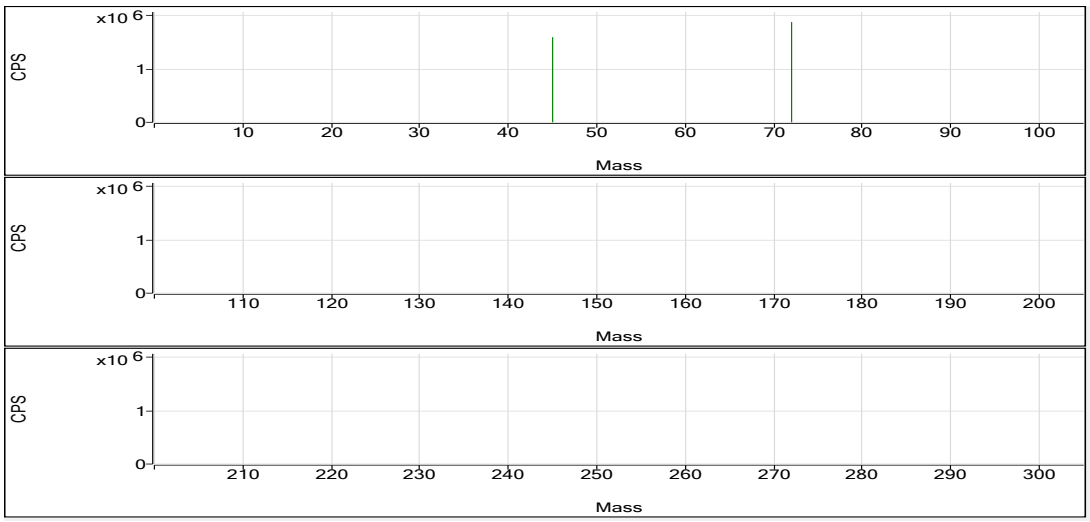
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.102	ppb	13.1	88.00	0.0001	Pulse	0.5000	3
Se	78	115	H2	0.339	ppb	20.8	14.89	0.0001	Pulse	1.5000	3
Na	23	45	He	15937.248	ppb	1.5	1605623.52	72.7757	Analog	0.1000	3
Mg	24	45	He	6047.018	ppb	3.0	293366.36	13.2993	Pulse	0.1000	3
Al	27	45	He	821.969	ppb	7.2	9944.12	0.4509	Pulse	0.1000	3
K	39	45	He	1925.098	ppb	3.9	51722.39	2.3448	Pulse	0.1000	3
Ca	44	45	He	88992.568	ppb	2.7	125144.53	5.6732	Pulse	0.1000	3
Ti	47	45	He	12.872	ppb	18.1	160.01	0.0073	Pulse	0.1000	3
V	51	45	He	11.727	ppb	3.2	7740.09	0.3509	Pulse	0.5000	3
Cr	52	45	He	7.750	ppb	2.9	7425.49	0.3366	Pulse	0.1000	3
Mn	55	72	He	16.290	ppb	1.9	5197.82	0.0596	Pulse	0.1000	3
Fe	57	72	He	15986.764	ppb	1.6	274558.37	3.1462	Pulse	0.1000	3
Co	59	72	He	0.295	ppb	12.9	676.71	0.0078	Pulse	0.1000	3
Ni	60	72	He	1.427	ppb	1.7	936.74	0.0107	Pulse	0.1000	3
Cu	63	72	He	3.061	ppb	5.2	5651.29	0.0648	Pulse	0.1000	3
Zn	66	72	He	9.667	ppb	12.4	1560.14	0.0179	Pulse	0.1000	3
As	75	72	He	35.089	ppb	2.0	3467.78	0.0397	Pulse	0.5000	3
Sr	88	115	He	455.210	ppb	1.7	137248.78	3.6046	Pulse	0.1000	3
Mo	98	115	He	4.755	ppb	3.6	5771.41	0.1516	Pulse	0.1000	3
Ag	107	115	He	0.002	ppb	232.1	13.33	0.0004	Pulse	0.1000	3
Cd	111	115	He	1.195	ppb	13.2	314.01	0.0083	Pulse	0.5000	3
Sn	120	115	He	0.057	ppb	74.1	880.05	0.0231	Pulse	0.1000	3
Sb	121	115	He	1.815	ppb	3.3	1106.75	0.0291	Pulse	0.1000	3
Ba	137	115	He	30.866	ppb	1.6	6181.61	0.1623	Pulse	0.1000	3
Tl	205	209	He	0.018	ppb	12.3	190.01	0.0008	Pulse	0.1000	3
Pb	208	209	He	3.875	ppb	0.5	43015.83	0.1886	Pulse	0.1000	3
U	238	209	He	0.604	ppb	7.9	8866.88	0.0389	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1597534.19	0.3	98.2	Analog	0.1000	3
No Gas	Ge	72	1881745.39	0.6	100.4	Analog	0.1000	3
H2	Sc	45	96516.90	1.3	97.8	Pulse	0.1000	3
H2	Ge	72	161247.73	1.4	101.1	Pulse	0.1000	3
H2	In	115	283121.66	1.0	99.6	Pulse	0.1000	3
He	Sc	45	22067.41	2.2	104.6	Pulse	0.1000	3
He	Ge	72	87272.16	0.8	106.0	Pulse	0.1000	3
He	In	115	38082.83	1.9	101.6	Pulse	0.1000	3
He	Tb	159	252875.63	1.6	100.6	Pulse	0.1000	3
He	Bi	209	228128.06	0.5	100.3	Pulse	0.1000	3

No Gas



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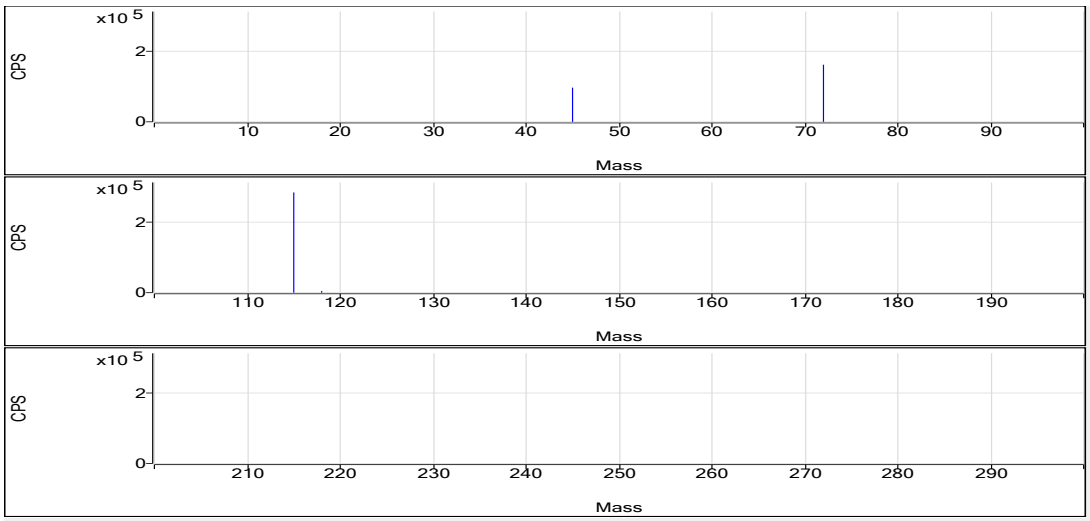
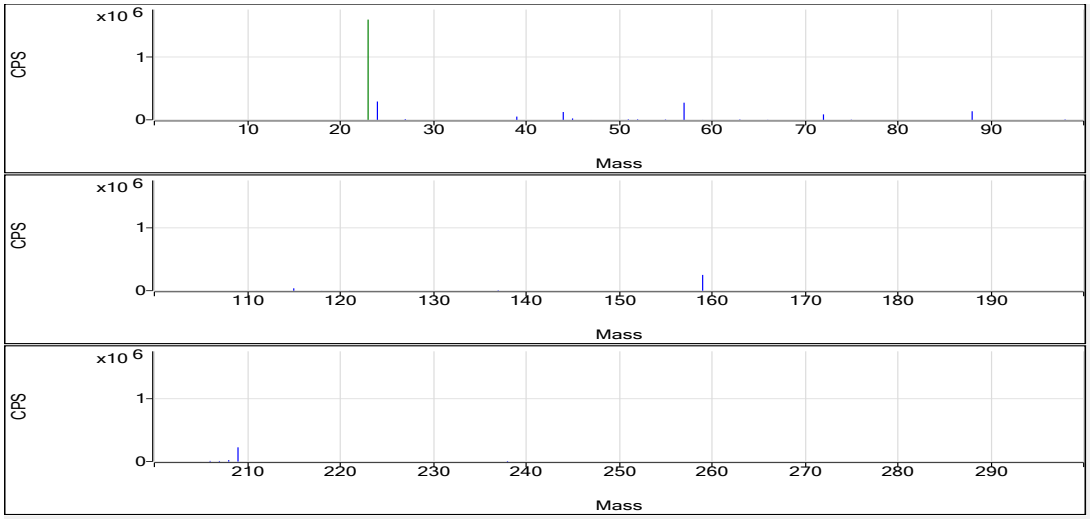


Quantitation Report

He



Quantitation Report

Data File Name	055SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 12:04:30 PM
Sample Name	410-60956-E-3-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

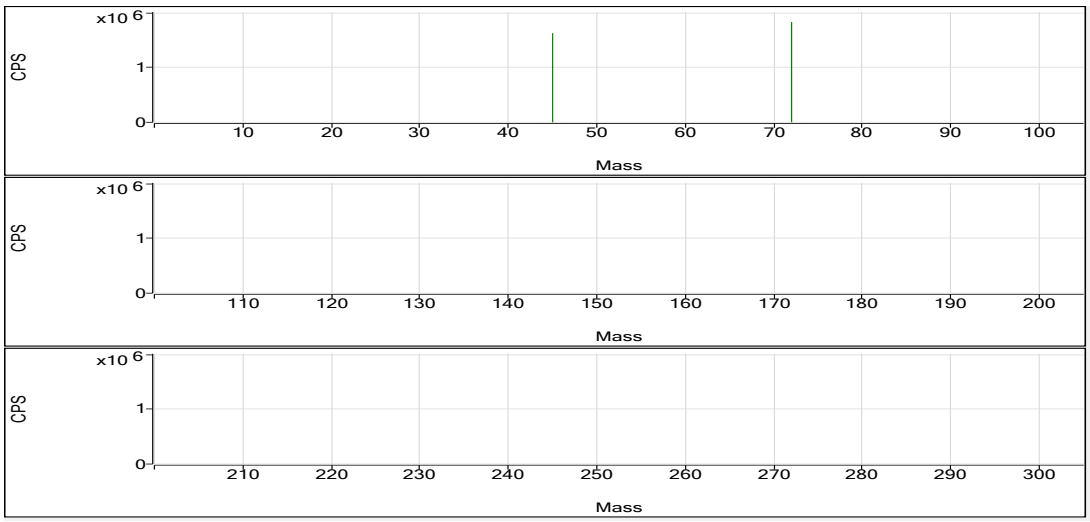
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.703	ppb	2.2	564.68	0.0003	Pulse	0.5000	3
Se	78	115	H2	0.389	ppb	22.9	16.67	0.0001	Pulse	1.5000	3
Na	23	45	He	349995.554	ppb	2.0	33878987.83	1 590.1317	Analog	0.1000	3
Mg	24	45	He	4741.773	ppb	2.3	222200.87	10.4295	Pulse	0.1000	3
Al	27	45	He	14276.820	ppb	2.0	166355.13	7.8079	Pulse	0.1000	3
K	39	45	He	3215.783	ppb	3.0	80086.22	3.7593	Pulse	0.1000	3
Ca	44	45	He	10561.531	ppb	5.2	14424.23	0.6772	Pulse	0.1000	3
Ti	47	45	He	0.278	ppb	173.2	3.33	0.0002	Pulse	0.1000	3
V	51	45	He	0.708	ppb	11.2	660.69	0.0310	Pulse	0.5000	3
Cr	52	45	He	3.899	ppb	8.5	3914.01	0.1838	Pulse	0.1000	3
Mn	55	72	He	179.612	ppb	1.4	54587.27	0.6546	Pulse	0.1000	3
Fe	57	72	He	4621.253	ppb	2.8	75879.51	0.9101	Pulse	0.1000	3
Co	59	72	He	7.967	ppb	3.2	15969.33	0.1915	Pulse	0.1000	3
Ni	60	72	He	25.980	ppb	2.3	14551.14	0.1745	Pulse	0.1000	3
Cu	63	72	He	0.394	ppb	17.4	880.06	0.0106	Pulse	0.1000	3
Zn	66	72	He	36.275	ppb	3.5	5391.20	0.0646	Pulse	0.1000	3
As	75	72	He	0.922	ppb	28.8	109.33	0.0013	Pulse	0.5000	3
Sr	88	115	He	115.022	ppb	0.9	34208.80	0.9114	Pulse	0.1000	3
Mo	98	115	He	0.006	ppb	149.2	20.00	0.0005	Pulse	0.1000	3
Ag	107	115	He	0.105	ppb	24.3	313.35	0.0083	Pulse	0.1000	3
Cd	111	115	He	19.510	ppb	2.5	5050.94	0.1346	Pulse	0.5000	3
Sn	120	115	He	-0.170	ppb	N/A	710.05	0.0189	Pulse	0.1000	3
Sb	121	115	He	0.073	ppb	35.2	53.33	0.0014	Pulse	0.1000	3
Ba	137	115	He	239.757	ppb	1.6	47262.53	1.2592	Pulse	0.1000	3
Tl	205	209	He	0.643	ppb	2.6	5171.20	0.0233	Pulse	0.1000	3
Pb	208	209	He	11.055	ppb	0.4	117755.06	0.5304	Pulse	0.1000	3
U	238	209	He	0.848	ppb	4.8	12092.79	0.0545	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1630618.47	0.5	100.2	Analog	0.1000	3
No Gas	Ge	72	1833924.30	0.7	97.9	Analog	0.1000	3
H2	Sc	45	99280.84	0.9	100.6	Pulse	0.1000	3
H2	Ge	72	158314.80	1.3	99.2	Pulse	0.1000	3
H2	In	115	278478.12	1.3	98.0	Pulse	0.1000	3
He	Sc	45	21312.85	2.5	101.0	Pulse	0.1000	3
He	Ge	72	83397.31	1.8	101.3	Pulse	0.1000	3
He	In	115	37534.74	0.4	100.2	Pulse	0.1000	3
He	Tb	159	256386.68	0.7	102.0	Pulse	0.1000	3
He	Bi	209	221994.51	0.3	97.6	Pulse	0.1000	3

No Gas



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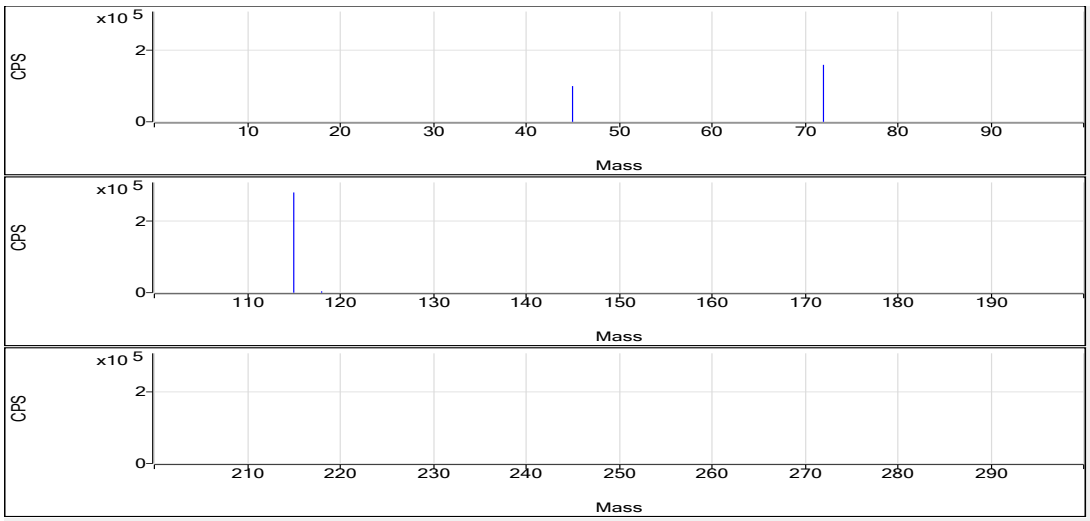
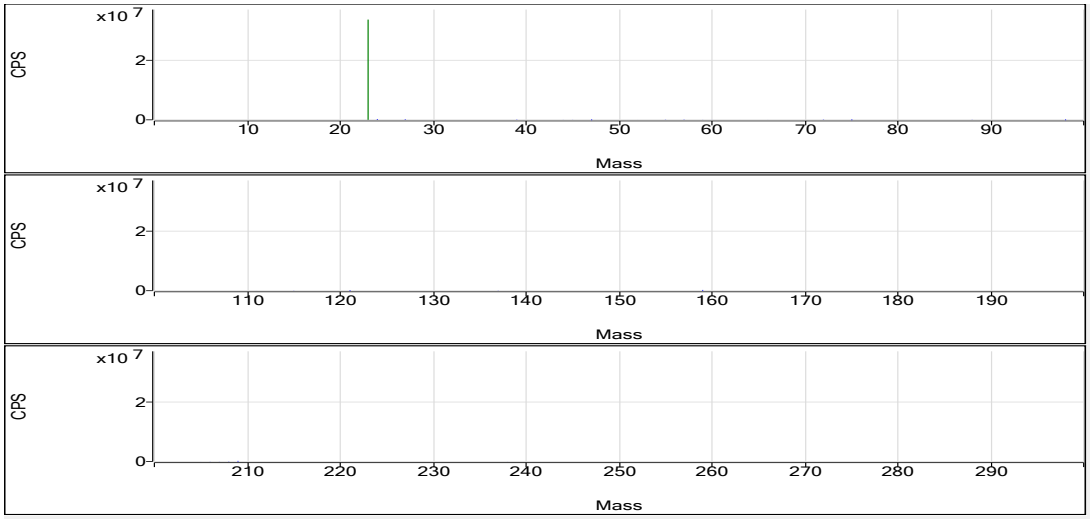


Quantitation Report

He



Quantitation Report

Data File Name	056_CCV.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 12:06:33 PM
Sample Name	CCV 1942322
Sample Type	CCV
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

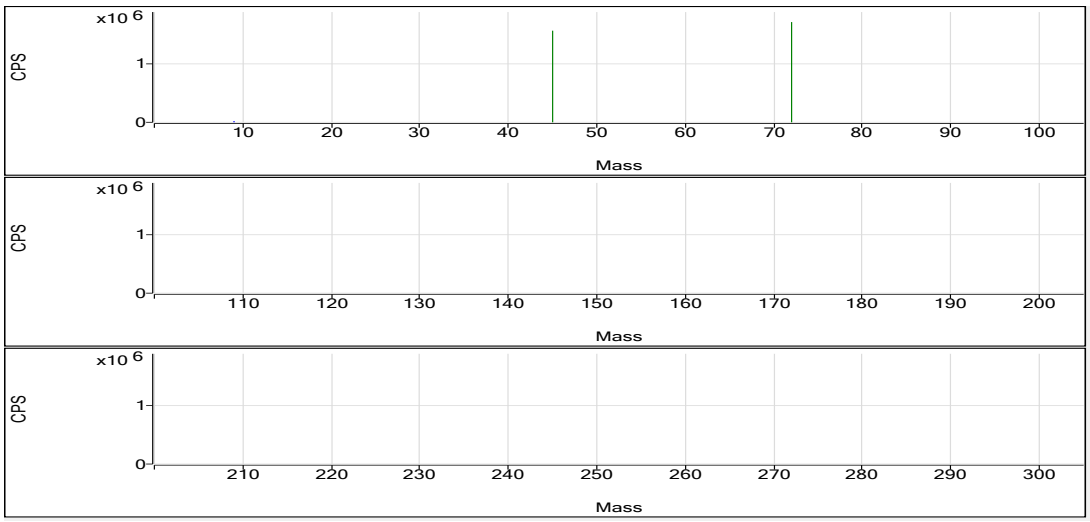
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	29.060	ppb	2.4	22189.13	0.0141	Pulse	0.5000	3
Se	78	115	H2	30.741	ppb	2.2	1287.62	0.0046	Pulse	1.5000	3
Na	23	45	He	5283.406	ppb	0.8	518706.92	24.3839	Pulse	0.1000	3
Mg	24	45	He	5161.520	ppb	0.7	241492.24	11.3524	Pulse	0.1000	3
Al	27	45	He	5120.438	ppb	0.9	59591.10	2.8013	Pulse	0.1000	3
K	39	45	He	5174.504	ppb	1.5	125626.38	5.9058	Pulse	0.1000	3
Ca	44	45	He	5271.169	ppb	6.7	7235.39	0.3402	Pulse	0.1000	3
Ti	47	45	He	301.941	ppb	6.4	3623.91	0.1704	Pulse	0.1000	3
V	51	45	He	307.931	ppb	0.5	190379.21	8.9496	Pulse	0.5000	3
Cr	52	45	He	312.173	ppb	0.2	264096.80	12.4148	Pulse	0.1000	3
Mn	55	72	He	313.031	ppb	2.5	89328.47	1.1408	Pulse	0.1000	3
Fe	57	72	He	5267.802	ppb	4.0	81204.77	1.0373	Pulse	0.1000	3
Co	59	72	He	299.588	ppb	2.9	562027.13	7.1779	Pulse	0.1000	3
Ni	60	72	He	316.629	ppb	4.0	165418.15	2.1131	Pulse	0.1000	3
Cu	63	72	He	305.942	ppb	2.6	487084.59	6.2206	Pulse	0.1000	3
Zn	66	72	He	306.085	ppb	3.1	42182.80	0.5388	Pulse	0.1000	3
As	75	72	He	314.481	ppb	2.9	27712.76	0.3539	Pulse	0.5000	3
Sr	88	115	He	32.173	ppb	5.6	9817.06	0.2555	Pulse	0.1000	3
Mo	98	115	He	30.366	ppb	2.8	37123.13	0.9663	Pulse	0.1000	3
Ag	107	115	He	31.185	ppb	2.1	93411.89	2.4313	Pulse	0.1000	3
Cd	111	115	He	31.444	ppb	0.2	8333.86	0.2169	Pulse	0.5000	3
Sn	120	115	He	31.461	ppb	2.7	23200.14	0.6039	Pulse	0.1000	3
Sb	121	115	He	31.654	ppb	2.2	19303.99	0.5024	Pulse	0.1000	3
Ba	137	115	He	310.876	ppb	1.3	62734.00	1.6326	Pulse	0.1000	3
Tl	205	209	He	30.656	ppb	1.3	249241.24	1.1018	Pulse	0.1000	3
Pb	208	209	He	30.582	ppb	1.4	330343.54	1.4603	Pulse	0.1000	3
U	238	209	He	255.634	ppb	1.3	3701337.34	16.3617	Analog	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1572774.46	0.8	96.6	Analog	0.1000	3
No Gas	Ge	72	1720554.92	0.6	91.8	Analog	0.1000	3
H2	Sc	45	96064.64	0.5	97.3	Pulse	0.1000	3
H2	Ge	72	144875.33	0.5	90.8	Pulse	0.1000	3
H2	In	115	282926.51	0.6	99.6	Pulse	0.1000	3
He	Sc	45	21272.81	0.5	100.8	Pulse	0.1000	3
He	Ge	72	78338.23	2.7	95.1	Pulse	0.1000	3
He	In	115	38430.74	1.9	102.6	Pulse	0.1000	3
He	Tb	159	249433.04	0.5	99.2	Pulse	0.1000	3
He	Bi	209	226252.24	1.8	99.4	Pulse	0.1000	3

No Gas



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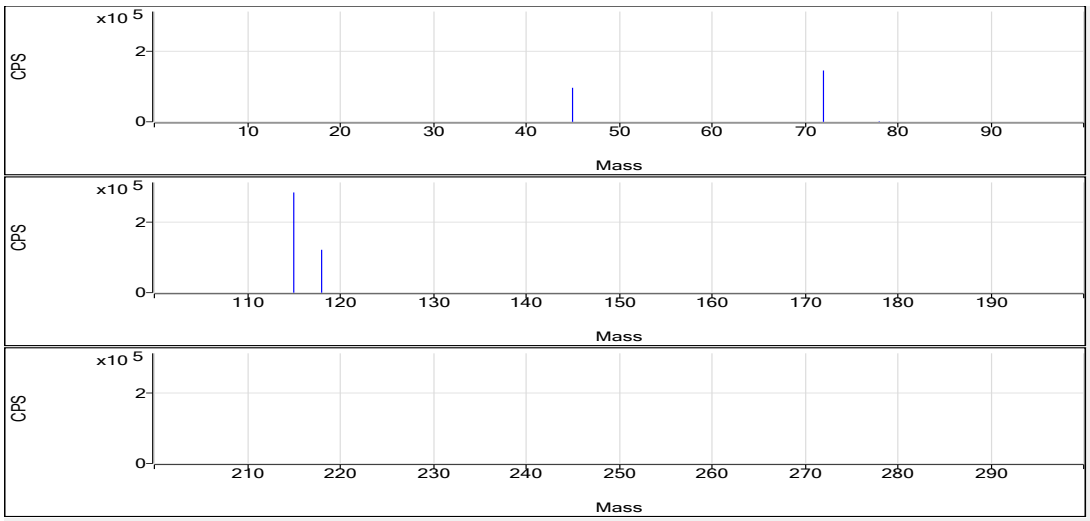
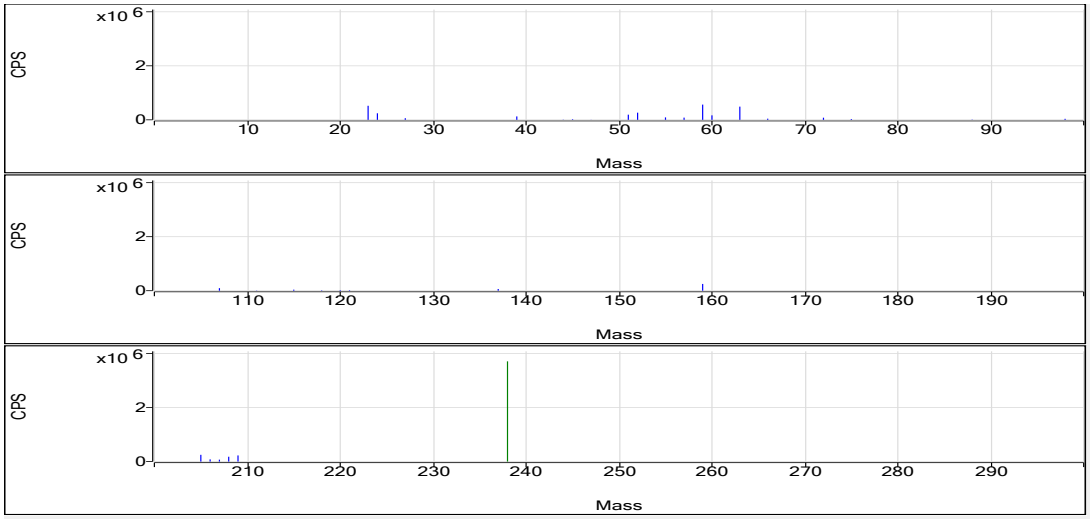


Quantitation Report

He



Quantitation Report

Data File Name	057_CCB.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 12:08:36 PM
Sample Name	CCB 2014932
Sample Type	CCB
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

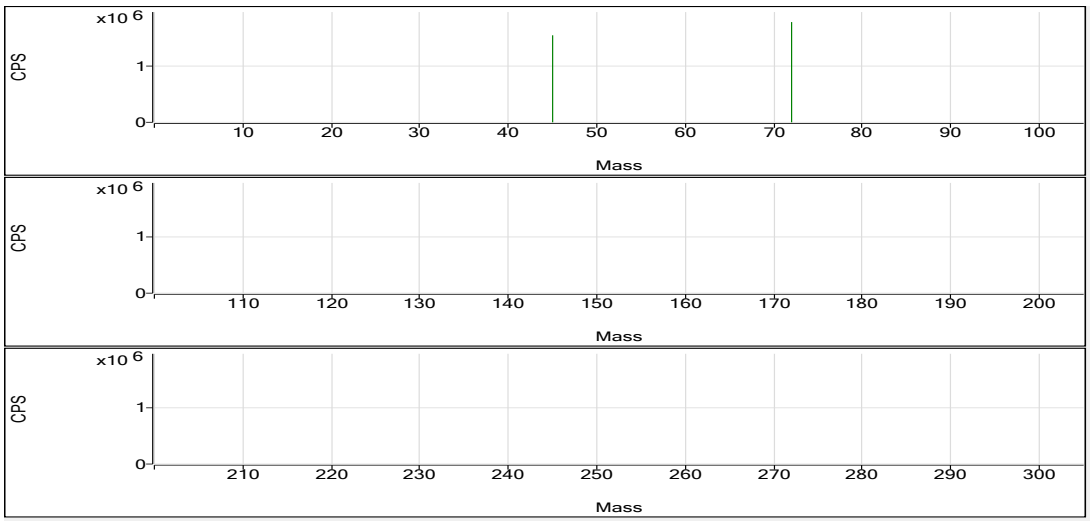
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.024	ppb	7.0	26.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.049	ppb	66.3	2.67	0.0000	Pulse	1.5000	3
Na	23	45	He	44.809	ppb	5.0	12532.32	0.5892	Pulse	0.1000	3
Mg	24	45	He	2.124	ppb	76.1	183.34	0.0086	Pulse	0.1000	3
Al	27	45	He	3.441	ppb	66.7	70.00	0.0033	Pulse	0.1000	3
K	39	45	He	8.885	ppb	121.3	5207.77	0.2449	Pulse	0.1000	3
Ca	44	45	He	-5.593	ppb	N/A	86.67	0.0041	Pulse	0.1000	3
Ti	47	45	He	0.000	ppb	N/A	0.00	0.0000	Pulse	0.1000	3
V	51	45	He	0.012	ppb	334.7	230.00	0.0108	Pulse	0.5000	3
Cr	52	45	He	0.014	ppb	191.6	630.04	0.0296	Pulse	0.1000	3
Mn	55	72	He	0.155	ppb	43.2	63.33	0.0008	Pulse	0.1000	3
Fe	57	72	He	2.262	ppb	106.6	110.00	0.0013	Pulse	0.1000	3
Co	59	72	He	0.086	ppb	9.1	226.68	0.0028	Pulse	0.1000	3
Ni	60	72	He	0.062	ppb	94.8	133.34	0.0016	Pulse	0.1000	3
Cu	63	72	He	0.084	ppb	56.1	350.02	0.0043	Pulse	0.1000	3
Zn	66	72	He	0.025	ppb	448.3	76.67	0.0009	Pulse	0.1000	3
As	75	72	He	0.203	ppb	90.5	41.33	0.0005	Pulse	0.5000	3
Sr	88	115	He	0.043	ppb	225.4	43.33	0.0011	Pulse	0.1000	3
Mo	98	115	He	0.019	ppb	24.0	36.67	0.0010	Pulse	0.1000	3
Ag	107	115	He	0.014	ppb	16.2	46.67	0.0012	Pulse	0.1000	3
Cd	111	115	He	0.008	ppb	58.7	2.67	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.034	ppb	N/A	810.06	0.0214	Pulse	0.1000	3
Sb	121	115	He	0.056	ppb	36.4	43.33	0.0011	Pulse	0.1000	3
Ba	137	115	He	0.032	ppb	236.5	16.67	0.0004	Pulse	0.1000	3
Tl	205	209	He	0.024	ppb	23.6	240.01	0.0011	Pulse	0.1000	3
Pb	208	209	He	-0.003	ppb	N/A	893.39	0.0039	Pulse	0.1000	3
U	238	209	He	0.062	ppb	24.1	946.74	0.0042	Pulse	0.1000	3

ISTD Table:

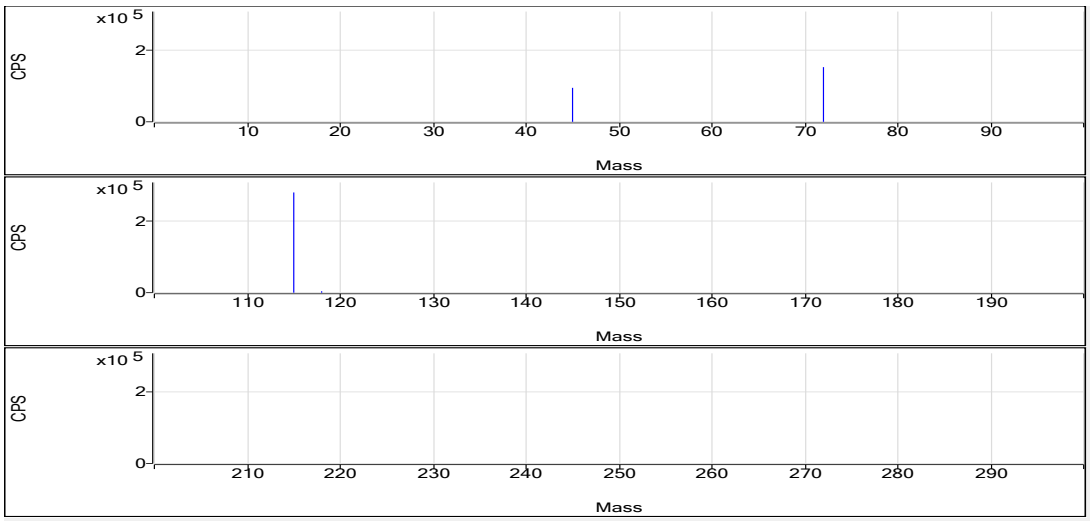
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1559052.01	0.5	95.8	Analog	0.1000	3
No Gas	Ge	72	1795908.83	0.8	95.9	Analog	0.1000	3
H2	Sc	45	94714.70	1.5	96.0	Pulse	0.1000	3
H2	Ge	72	152426.37	0.7	95.5	Pulse	0.1000	3
H2	In	115	279408.69	0.2	98.3	Pulse	0.1000	3
He	Sc	45	21269.56	0.4	100.8	Pulse	0.1000	3
He	Ge	72	82169.51	1.7	99.8	Pulse	0.1000	3
He	In	115	37839.09	1.7	101.0	Pulse	0.1000	3
He	Tb	159	249978.75	0.4	99.5	Pulse	0.1000	3
He	Bi	209	228001.42	0.4	100.2	Pulse	0.1000	3

No Gas

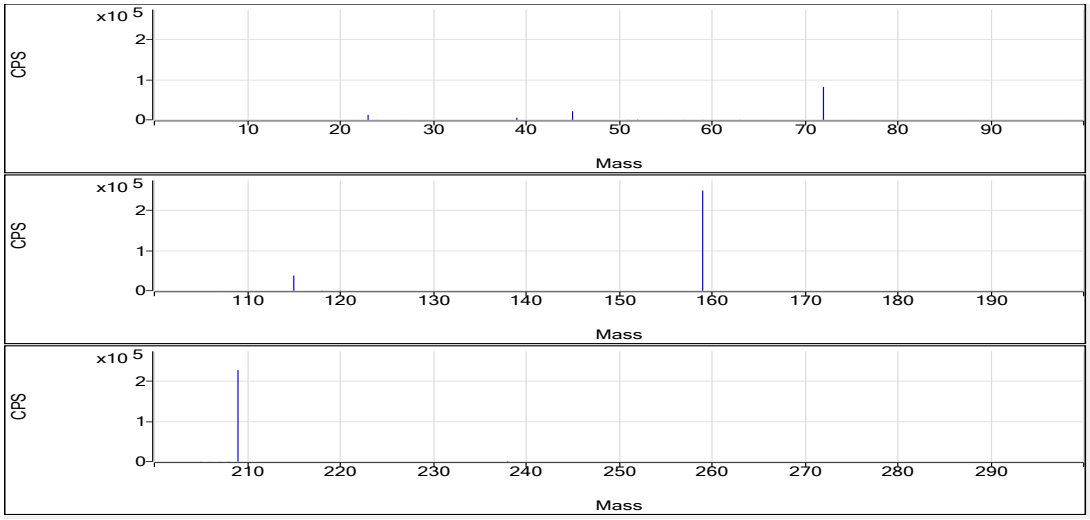


H2



Quantitation Report

He



Quantitation Report

Data File Name	058SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 12:10:38 PM
Sample Name	MB 410-190535/1-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

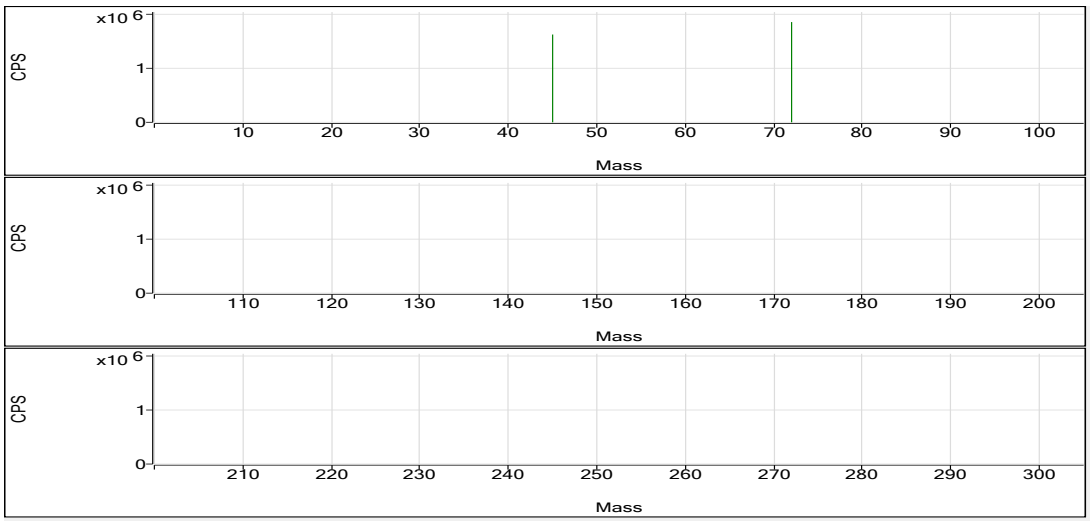
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.014	ppb	65.2	19.33	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.021	ppb	116.5	1.56	0.0000	Pulse	1.5000	3
Na	23	45	He	23.818	ppb	9.1	10924.36	0.4939	Pulse	0.1000	3
Mg	24	45	He	0.664	ppb	122.4	120.00	0.0054	Pulse	0.1000	3
Al	27	45	He	0.167	ppb	1587.3	33.33	0.0015	Pulse	0.1000	3
K	39	45	He	3.483	ppb	325.1	5284.45	0.2389	Pulse	0.1000	3
Ca	44	45	He	10.906	ppb	105.3	113.34	0.0051	Pulse	0.1000	3
Ti	47	45	He	0.000	ppb	N/A	0.00	0.0000	Pulse	0.1000	3
V	51	45	He	-0.045	ppb	N/A	202.67	0.0092	Pulse	0.5000	3
Cr	52	45	He	-0.011	ppb	N/A	633.37	0.0286	Pulse	0.1000	3
Mn	55	72	He	0.076	ppb	43.3	40.00	0.0005	Pulse	0.1000	3
Fe	57	72	He	1.351	ppb	230.6	96.67	0.0012	Pulse	0.1000	3
Co	59	72	He	0.056	ppb	56.0	170.01	0.0020	Pulse	0.1000	3
Ni	60	72	He	-0.021	ppb	N/A	90.00	0.0011	Pulse	0.1000	3
Cu	63	72	He	0.059	ppb	5.1	313.35	0.0037	Pulse	0.1000	3
Zn	66	72	He	0.672	ppb	21.3	173.34	0.0021	Pulse	0.1000	3
As	75	72	He	0.089	ppb	205.3	31.33	0.0004	Pulse	0.5000	3
Sr	88	115	He	0.029	ppb	124.5	40.00	0.0010	Pulse	0.1000	3
Mo	98	115	He	0.005	ppb	278.4	20.00	0.0005	Pulse	0.1000	3
Ag	107	115	He	0.003	ppb	57.4	16.67	0.0004	Pulse	0.1000	3
Cd	111	115	He	-0.003	ppb	N/A	0.00	0.0000	Pulse	0.5000	3
Sn	120	115	He	-0.349	ppb	N/A	606.70	0.0156	Pulse	0.1000	3
Sb	121	115	He	-0.006	ppb	N/A	6.67	0.0002	Pulse	0.1000	3
Ba	137	115	He	0.031	ppb	189.0	16.67	0.0004	Pulse	0.1000	3
Tl	205	209	He	0.011	ppb	4.9	136.67	0.0006	Pulse	0.1000	3
Pb	208	209	He	-0.019	ppb	N/A	730.04	0.0031	Pulse	0.1000	3
U	238	209	He	0.014	ppb	19.7	253.34	0.0011	Pulse	0.1000	3

ISTD Table:

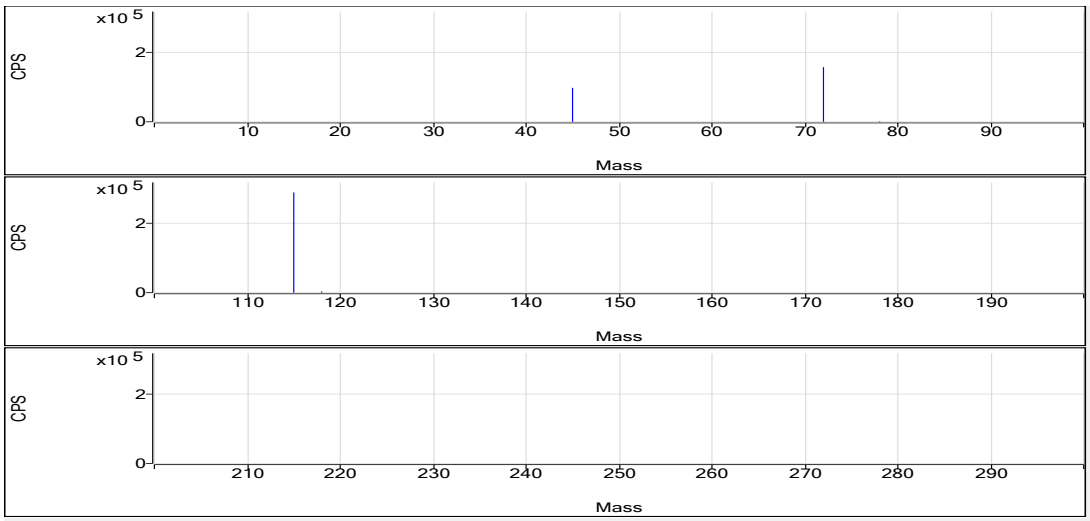
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1617694.56	0.8	99.4	Analog	0.1000	3
No Gas	Ge	72	1847063.20	0.6	98.6	Analog	0.1000	3
H2	Sc	45	97311.57	1.0	98.6	Pulse	0.1000	3
H2	Ge	72	156694.34	1.2	98.2	Pulse	0.1000	3
H2	In	115	287032.83	0.9	101.0	Pulse	0.1000	3
He	Sc	45	22120.70	0.8	104.8	Pulse	0.1000	3
He	Ge	72	83667.14	0.6	101.6	Pulse	0.1000	3
He	In	115	38905.22	2.9	103.8	Pulse	0.1000	3
He	Tb	159	253181.32	0.7	100.7	Pulse	0.1000	3
He	Bi	209	232247.56	1.6	102.1	Pulse	0.1000	3

No Gas

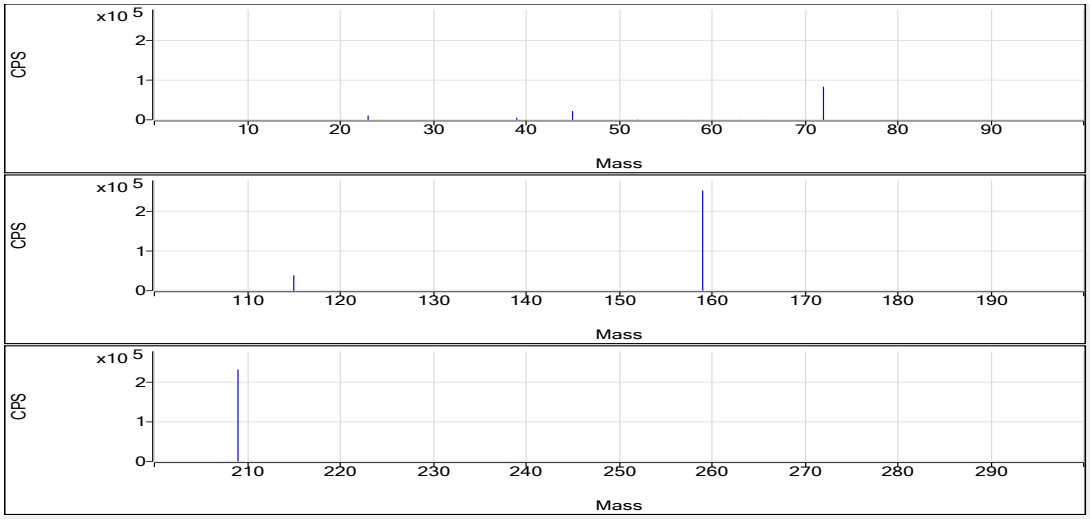


H2



Quantitation Report

He



Quantitation Report

Data File Name	059SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 12:12:40 PM
Sample Name	LCS 410-190535/2-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

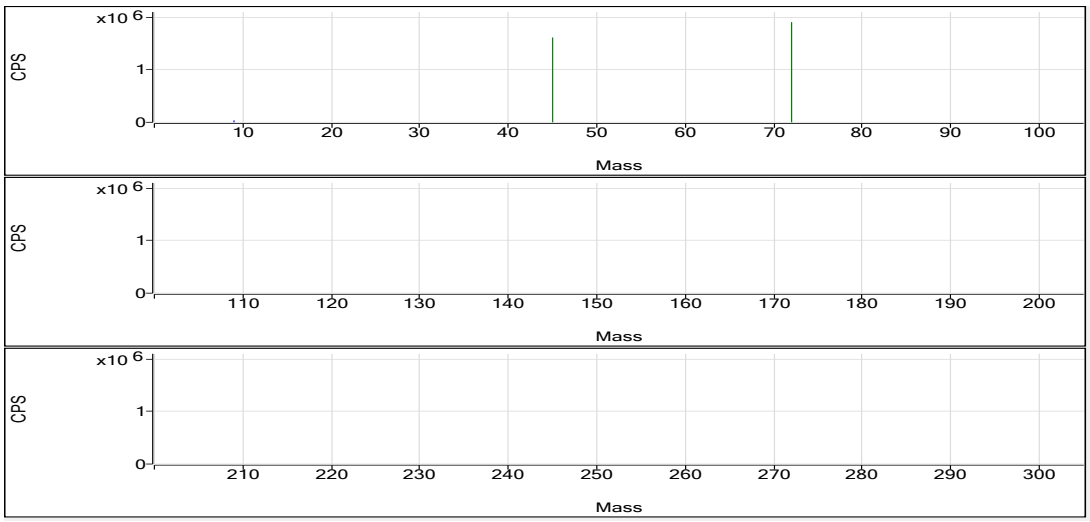
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	46.124	ppb	2.3	36229.75	0.0224	Pulse	0.5000	3
Se	78	115	H2	97.089	ppb	0.8	4115.49	0.0144	Pulse	1.5000	3
Na	23	45	He	4827.488	ppb	2.5	504533.69	22.3131	Pulse	0.1000	3
Mg	24	45	He	4823.571	ppb	2.6	239892.81	10.6094	Pulse	0.1000	3
Al	27	45	He	4749.778	ppb	3.8	58747.91	2.5986	Pulse	0.1000	3
K	39	45	He	4863.196	ppb	2.5	125825.26	5.5646	Pulse	0.1000	3
Ca	44	45	He	5159.546	ppb	6.0	7528.81	0.3331	Pulse	0.1000	3
Ti	47	45	He	471.583	ppb	2.2	6018.12	0.2661	Pulse	0.1000	3
V	51	45	He	476.959	ppb	2.0	313332.36	13.8564	Pulse	0.5000	3
Cr	52	45	He	475.351	ppb	1.7	427154.14	18.8891	Pulse	0.1000	3
Mn	55	72	He	453.135	ppb	1.5	144954.43	1.6513	Pulse	0.1000	3
Fe	57	72	He	4542.618	ppb	1.5	78533.71	0.8946	Pulse	0.1000	3
Co	59	72	He	437.653	ppb	1.6	920442.33	10.4855	Pulse	0.1000	3
Ni	60	72	He	458.039	ppb	2.7	268252.47	3.0562	Pulse	0.1000	3
Cu	63	72	He	442.538	ppb	1.6	789768.24	8.9968	Pulse	0.1000	3
Zn	66	72	He	453.159	ppb	0.2	69994.24	0.7972	Pulse	0.1000	3
As	75	72	He	445.717	ppb	1.4	44026.07	0.5015	Pulse	0.5000	3
Sr	88	115	He	50.186	ppb	2.3	15759.36	0.3981	Pulse	0.1000	3
Mo	98	115	He	49.750	ppb	2.5	62650.35	1.5828	Pulse	0.1000	3
Ag	107	115	He	48.406	ppb	0.9	149358.53	3.7737	Pulse	0.1000	3
Cd	111	115	He	49.571	ppb	0.6	13531.28	0.3419	Pulse	0.5000	3
Sn	120	115	He	98.599	ppb	1.1	73039.59	1.8454	Pulse	0.1000	3
Sb	121	115	He	97.031	ppb	0.8	60928.06	1.5394	Pulse	0.1000	3
Ba	137	115	He	494.002	ppb	1.4	102673.21	2.5942	Pulse	0.1000	3
Tl	205	209	He	98.957	ppb	0.3	812756.47	3.5561	Pulse	0.1000	3
Pb	208	209	He	49.481	ppb	0.1	539429.32	2.3602	Pulse	0.1000	3
U	238	209	He	46.711	ppb	0.2	683340.04	2.9899	Pulse	0.1000	3

ISTD Table:

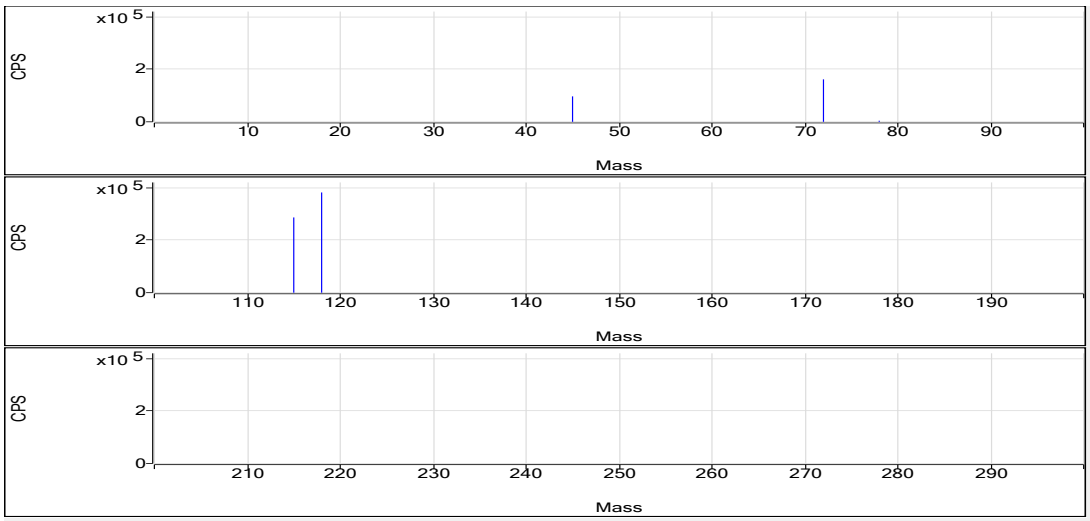
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1618337.16	1.5	99.4	Analog	0.1000	3
No Gas	Ge	72	1911668.15	0.5	102.0	Analog	0.1000	3
H2	Sc	45	96871.87	1.2	98.1	Pulse	0.1000	3
H2	Ge	72	161626.53	2.5	101.3	Pulse	0.1000	3
H2	In	115	286430.56	0.5	100.8	Pulse	0.1000	3
He	Sc	45	22618.26	1.8	107.2	Pulse	0.1000	3
He	Ge	72	87796.08	1.5	106.6	Pulse	0.1000	3
He	In	115	39580.56	0.8	105.6	Pulse	0.1000	3
He	Tb	159	252384.08	0.5	100.4	Pulse	0.1000	3
He	Bi	209	228551.57	0.3	100.5	Pulse	0.1000	3

No Gas

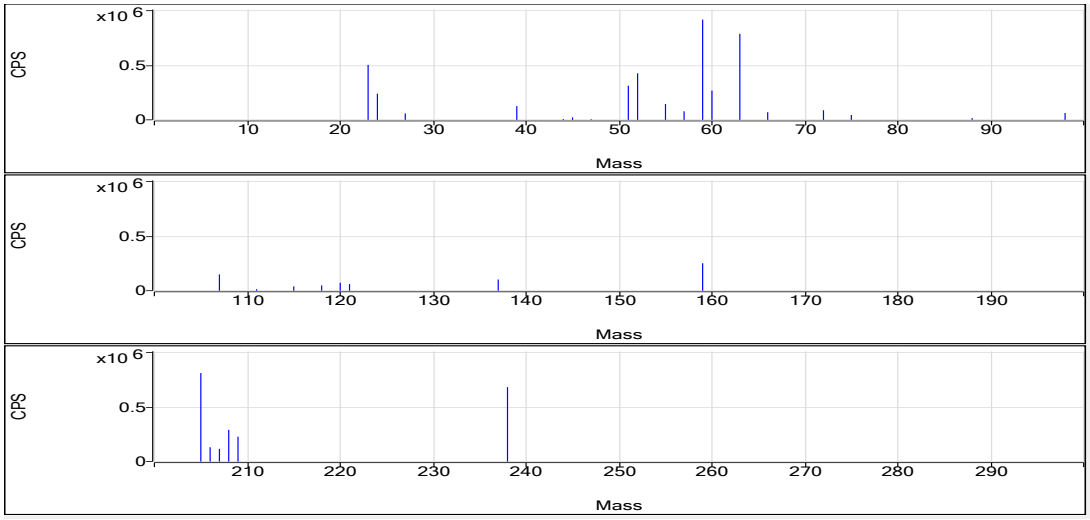


H2



Quantitation Report

He



Quantitation Report

Data File Name	060SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 12:14:41 PM
Sample Name	410-60911-F-2-G
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

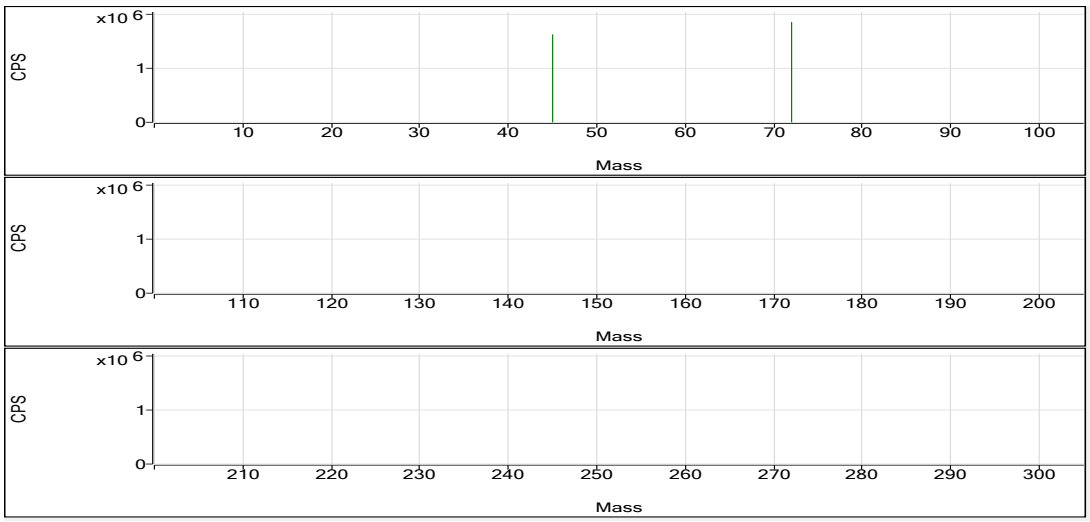
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	1.434	ppb	8.5	1141.38	0.0007	Pulse	0.5000	3
Se	78	115	H2	0.488	ppb	21.3	21.11	0.0001	Pulse	1.5000	3
Na	23	45	He	330894.318	ppb	2.4	33424176.17	1 503.3703	Analog	0.1000	3
Mg	24	45	He	4301.438	ppb	2.7	210350.98	9.4614	Pulse	0.1000	3
Al	27	45	He	1787.812	ppb	2.8	21766.70	0.9790	Pulse	0.1000	3
K	39	45	He	5318.879	ppb	2.1	134831.00	6.0640	Pulse	0.1000	3
Ca	44	45	He	28024.094	ppb	1.0	39795.26	1.7895	Pulse	0.1000	3
Ti	47	45	He	0.266	ppb	173.2	3.33	0.0001	Pulse	0.1000	3
V	51	45	He	0.319	ppb	17.2	438.01	0.0197	Pulse	0.5000	3
Cr	52	45	He	0.297	ppb	49.7	910.07	0.0409	Pulse	0.1000	3
Mn	55	72	He	728.080	ppb	0.5	223353.57	2.6531	Pulse	0.1000	3
Fe	57	72	He	55.282	ppb	8.6	990.07	0.0118	Pulse	0.1000	3
Co	59	72	He	29.668	ppb	3.0	59888.22	0.7114	Pulse	0.1000	3
Ni	60	72	He	56.184	ppb	2.2	31645.55	0.3760	Pulse	0.1000	3
Cu	63	72	He	2.353	ppb	2.2	4240.77	0.0504	Pulse	0.1000	3
Zn	66	72	He	192.605	ppb	2.1	28565.80	0.3394	Pulse	0.1000	3
As	75	72	He	0.312	ppb	11.6	52.67	0.0006	Pulse	0.5000	3
Sr	88	115	He	107.330	ppb	2.8	33186.51	0.8505	Pulse	0.1000	3
Mo	98	115	He	0.228	ppb	13.6	296.68	0.0076	Pulse	0.1000	3
Ag	107	115	He	0.018	ppb	34.7	60.00	0.0015	Pulse	0.1000	3
Cd	111	115	He	2.756	ppb	0.7	742.69	0.0190	Pulse	0.5000	3
Sn	120	115	He	-0.098	ppb	N/A	790.06	0.0203	Pulse	0.1000	3
Sb	121	115	He	0.236	ppb	33.7	156.67	0.0040	Pulse	0.1000	3
Ba	137	115	He	41.242	ppb	3.7	8459.58	0.2168	Pulse	0.1000	3
Tl	205	209	He	0.290	ppb	6.4	2380.29	0.0106	Pulse	0.1000	3
Pb	208	209	He	0.548	ppb	5.7	6770.97	0.0302	Pulse	0.1000	3
U	238	209	He	0.027	ppb	8.6	423.36	0.0019	Pulse	0.1000	3

ISTD Table:

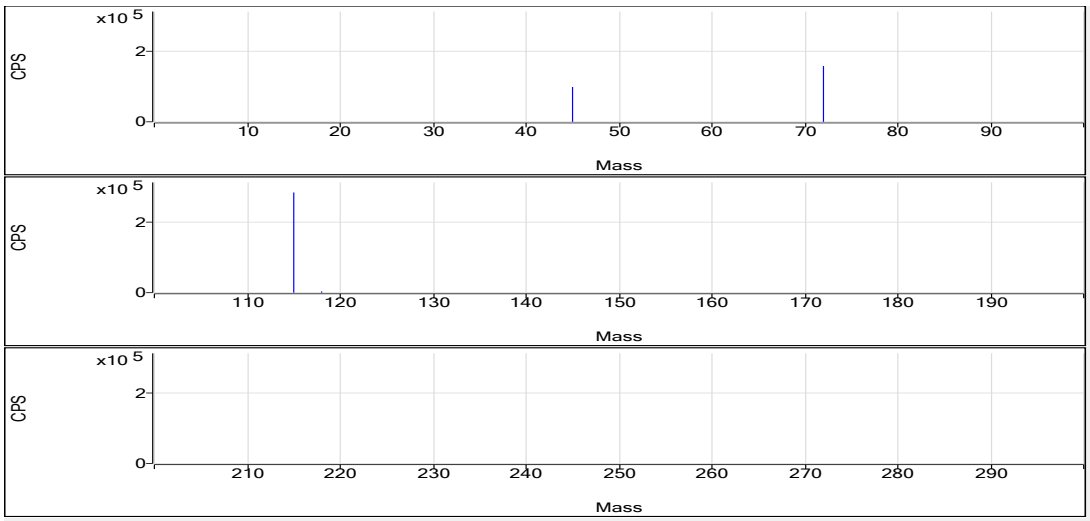
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1627360.44	0.4	100.0	Analog	0.1000	3
No Gas	Ge	72	1855075.80	0.2	99.0	Analog	0.1000	3
H2	Sc	45	98355.34	0.1	99.6	Pulse	0.1000	3
H2	Ge	72	157686.62	0.9	98.8	Pulse	0.1000	3
H2	In	115	283254.01	1.2	99.7	Pulse	0.1000	3
He	Sc	45	22240.95	2.4	105.4	Pulse	0.1000	3
He	Ge	72	84184.30	1.0	102.2	Pulse	0.1000	3
He	In	115	39038.87	2.6	104.2	Pulse	0.1000	3
He	Tb	159	251357.68	1.4	100.0	Pulse	0.1000	3
He	Bi	209	224404.71	0.3	98.6	Pulse	0.1000	3

No Gas

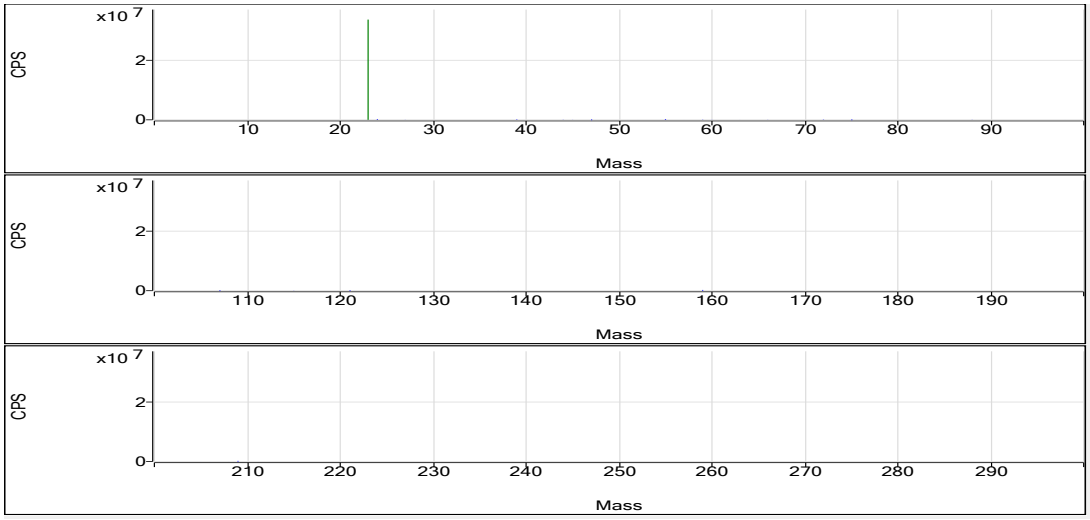


H2



Quantitation Report

He



Quantitation Report

Data File Name	061SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 12:16:42 PM
Sample Name	410-60911-F-2-G PDS
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

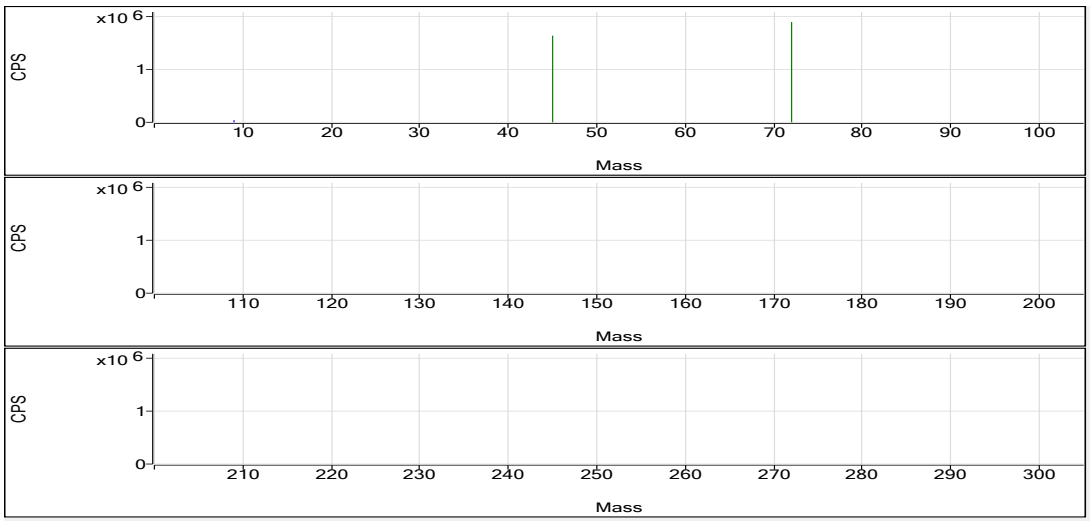
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	49.945	ppb	0.8	39715.79	0.0242	Pulse	0.5000	3
Se	78	115	H2	101.434	ppb	1.2	4336.44	0.0150	Pulse	1.5000	3
Na	23	45	He	328880.973	ppb	1.1	33050983.67	1 494.2253	Analog	0.1000	3
Mg	24	45	He	9133.044	ppb	1.6	444221.66	20.0844	Pulse	0.1000	3
Al	27	45	He	6676.603	ppb	1.0	80781.25	3.6522	Pulse	0.1000	3
K	39	45	He	10098.008	ppb	2.1	249950.25	11.3014	Pulse	0.1000	3
Ca	44	45	He	32976.891	ppb	1.7	46558.49	2.1050	Pulse	0.1000	3
Ti	47	45	He	517.522	ppb	3.6	6458.30	0.2920	Pulse	0.1000	3
V	51	45	He	498.573	ppb	1.7	320347.03	14.4838	Pulse	0.5000	3
Cr	52	45	He	487.067	ppb	2.1	428047.52	19.3539	Pulse	0.1000	3
Mn	55	72	He	1165.269	ppb	2.0	365888.23	4.2460	Pulse	0.1000	3
Fe	57	72	He	4692.628	ppb	1.9	79635.84	0.9242	Pulse	0.1000	3
Co	59	72	He	471.782	ppb	0.7	974092.90	11.3031	Pulse	0.1000	3
Ni	60	72	He	514.160	ppb	1.5	295624.90	3.4306	Pulse	0.1000	3
Cu	63	72	He	449.341	ppb	1.0	787239.34	9.1351	Pulse	0.1000	3
Zn	66	72	He	656.566	ppb	2.2	99497.16	1.1547	Pulse	0.1000	3
As	75	72	He	467.761	ppb	1.3	45356.82	0.5263	Pulse	0.5000	3
Sr	88	115	He	157.917	ppb	1.9	49346.93	1.2510	Pulse	0.1000	3
Mo	98	115	He	51.826	ppb	2.5	65034.11	1.6489	Pulse	0.1000	3
Ag	107	115	He	32.469	ppb	3.4	99818.39	2.5313	Pulse	0.1000	3
Cd	111	115	He	52.629	ppb	2.1	14316.05	0.3630	Pulse	0.5000	3
Sn	120	115	He	99.240	ppb	3.0	73250.42	1.8572	Pulse	0.1000	3
Sb	121	115	He	103.044	ppb	3.4	64467.35	1.6348	Pulse	0.1000	3
Ba	137	115	He	540.563	ppb	2.0	111975.17	2.8387	Pulse	0.1000	3
Tl	205	209	He	100.199	ppb	0.8	812453.69	3.6007	Pulse	0.1000	3
Pb	208	209	He	50.655	ppb	0.9	545156.19	2.4161	Pulse	0.1000	3
U	238	209	He	48.075	ppb	0.9	694311.84	3.0772	Pulse	0.1000	3

ISTD Table:

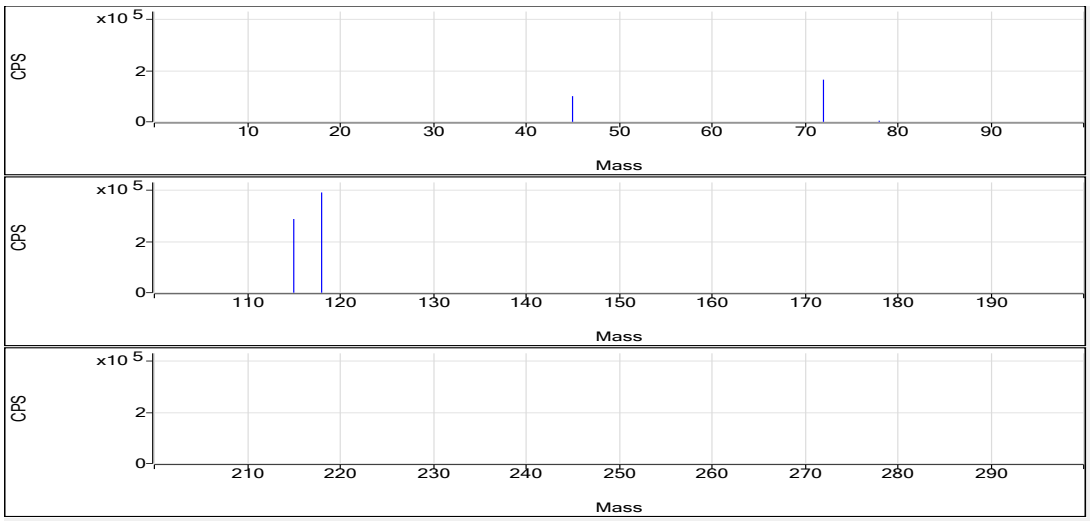
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1638019.40	0.5	100.7	Analog	0.1000	3
No Gas	Ge	72	1894925.75	0.9	101.1	Analog	0.1000	3
H2	Sc	45	100643.96	1.0	102.0	Pulse	0.1000	3
H2	Ge	72	165235.87	0.5	103.6	Pulse	0.1000	3
H2	In	115	288885.44	0.5	101.7	Pulse	0.1000	3
He	Sc	45	22120.76	1.3	104.8	Pulse	0.1000	3
He	Ge	72	86183.15	1.1	104.6	Pulse	0.1000	3
He	In	115	39456.87	2.6	105.3	Pulse	0.1000	3
He	Tb	159	252518.72	0.5	100.5	Pulse	0.1000	3
He	Bi	209	225643.45	0.7	99.2	Pulse	0.1000	3

No Gas

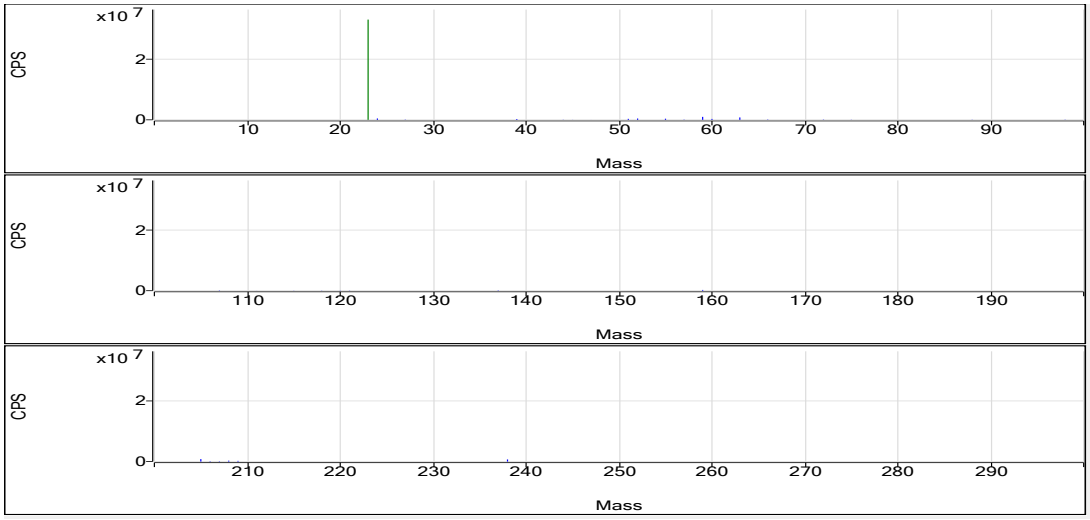


H2



Quantitation Report

He



Quantitation Report

Data File Name	062SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 12:18:43 PM
Sample Name	410-60911-A-2-F DU
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

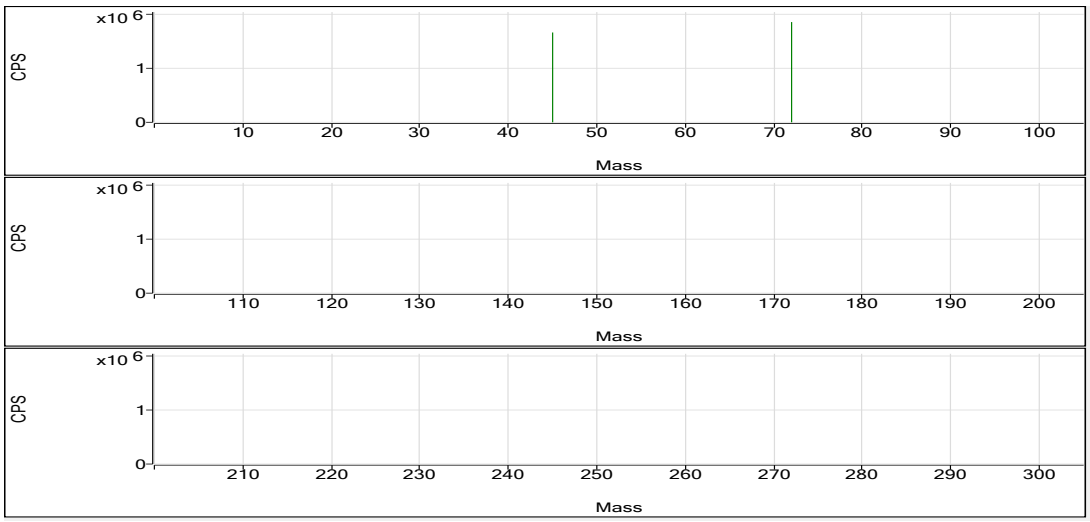
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	1.435	ppb	1.8	1168.05	0.0007	Pulse	0.5000	3
Se	78	115	H2	0.411	ppb	11.5	18.00	0.0001	Pulse	1.5000	3
Na	23	45	He	332968.844	ppb	1.4	33414783.67	1 512.7932	Analog	0.1000	3
Mg	24	45	He	4360.882	ppb	1.7	211872.15	9.5921	Pulse	0.1000	3
Al	27	45	He	1831.585	ppb	4.6	22147.29	1.0029	Pulse	0.1000	3
K	39	45	He	5301.351	ppb	0.5	133528.28	6.0448	Pulse	0.1000	3
Ca	44	45	He	28898.743	ppb	3.6	40751.27	1.8453	Pulse	0.1000	3
Ti	47	45	He	0.800	ppb	99.2	10.00	0.0005	Pulse	0.1000	3
V	51	45	He	0.370	ppb	13.8	468.01	0.0212	Pulse	0.5000	3
Cr	52	45	He	0.286	ppb	14.8	893.40	0.0404	Pulse	0.1000	3
Mn	55	72	He	729.098	ppb	1.2	223721.38	2.6568	Pulse	0.1000	3
Fe	57	72	He	56.880	ppb	12.7	1016.74	0.0121	Pulse	0.1000	3
Co	59	72	He	29.925	ppb	3.1	60420.78	0.7176	Pulse	0.1000	3
Ni	60	72	He	54.952	ppb	2.1	30963.97	0.3677	Pulse	0.1000	3
Cu	63	72	He	2.480	ppb	7.3	4457.52	0.0530	Pulse	0.1000	3
Zn	66	72	He	193.583	ppb	2.0	28719.49	0.3411	Pulse	0.1000	3
As	75	72	He	0.283	ppb	18.2	50.00	0.0006	Pulse	0.5000	3
Sr	88	115	He	107.995	ppb	2.4	33443.61	0.8558	Pulse	0.1000	3
Mo	98	115	He	0.255	ppb	24.5	330.01	0.0085	Pulse	0.1000	3
Ag	107	115	He	0.015	ppb	14.9	53.33	0.0014	Pulse	0.1000	3
Cd	111	115	He	2.759	ppb	2.7	744.69	0.0190	Pulse	0.5000	3
Sn	120	115	He	-0.230	ppb	N/A	696.71	0.0178	Pulse	0.1000	3
Sb	121	115	He	0.139	ppb	80.2	96.67	0.0025	Pulse	0.1000	3
Ba	137	115	He	39.364	ppb	7.1	8082.66	0.2070	Pulse	0.1000	3
Tl	205	209	He	0.302	ppb	5.9	2487.00	0.0110	Pulse	0.1000	3
Pb	208	209	He	0.549	ppb	7.3	6814.29	0.0302	Pulse	0.1000	3
U	238	209	He	0.028	ppb	16.0	446.69	0.0020	Pulse	0.1000	3

ISTD Table:

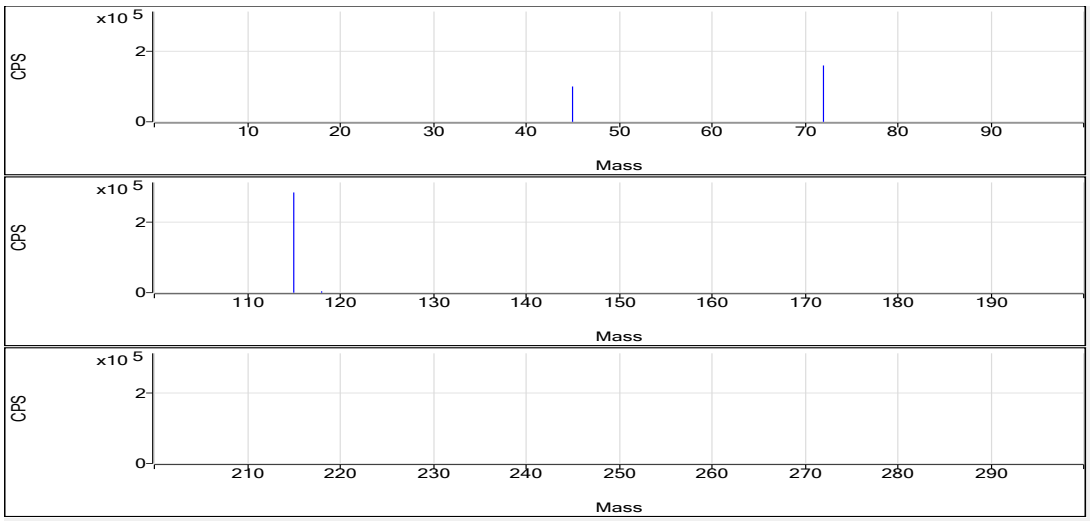
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1665023.99	0.8	102.3	Analog	0.1000	3
No Gas	Ge	72	1857981.07	0.9	99.2	Analog	0.1000	3
H2	Sc	45	100409.46	1.6	101.7	Pulse	0.1000	3
H2	Ge	72	160108.56	0.8	100.4	Pulse	0.1000	3
H2	In	115	284828.00	0.6	100.2	Pulse	0.1000	3
He	Sc	45	22090.62	1.2	104.7	Pulse	0.1000	3
He	Ge	72	84214.47	1.0	102.3	Pulse	0.1000	3
He	In	115	39089.14	2.0	104.3	Pulse	0.1000	3
He	Tb	159	254080.24	0.4	101.1	Pulse	0.1000	3
He	Bi	209	225588.79	0.9	99.2	Pulse	0.1000	3

No Gas

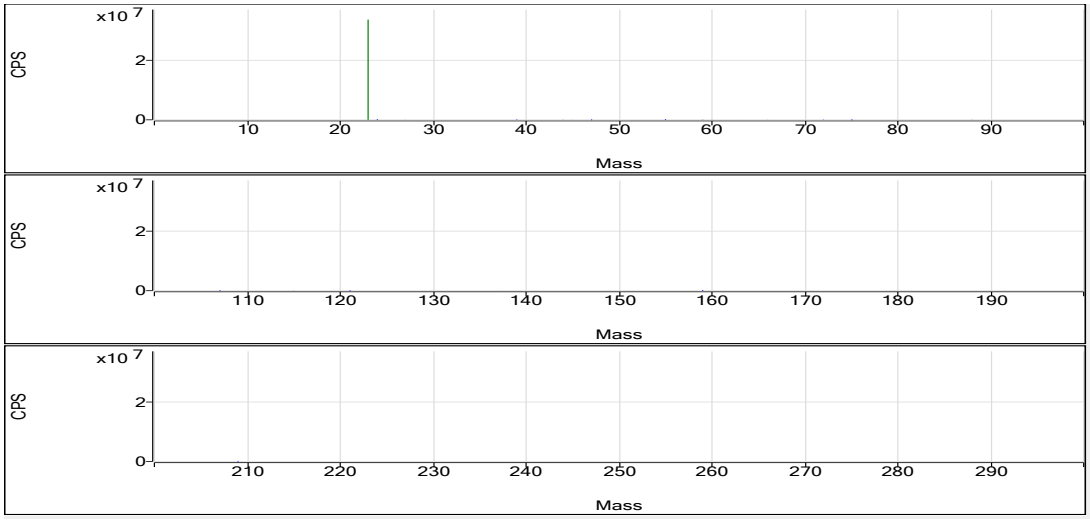


H2



Quantitation Report

He



Quantitation Report

Data File Name	063SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 12:20:46 PM
Sample Name	410-60911-F-2-H MS
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

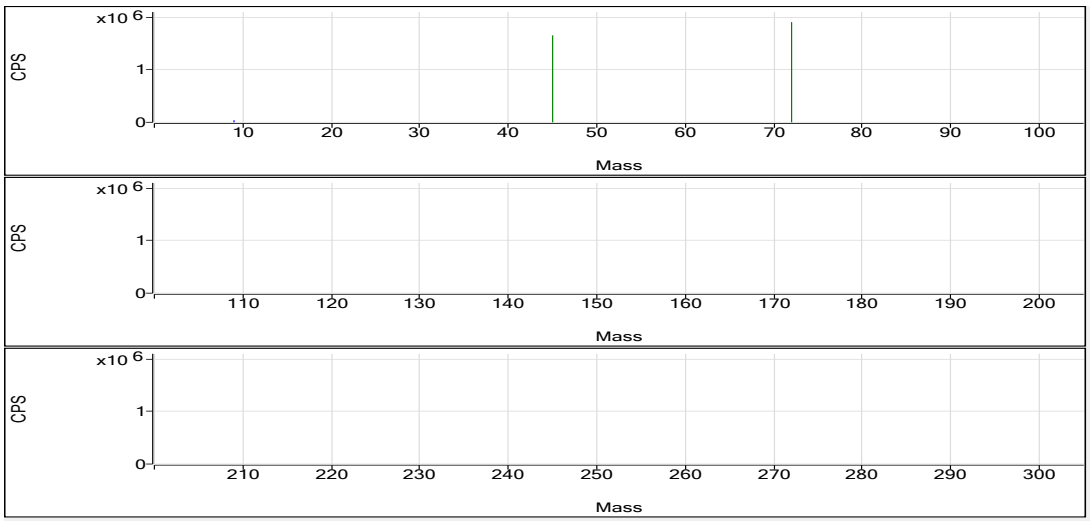
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	49.065	ppb	1.3	39453.86	0.0238	Pulse	0.5000	3
Se	78	115	H2	98.466	ppb	0.7	4194.17	0.0146	Pulse	1.5000	3
Na	23	45	He	360603.476	ppb	2.8	36185288.63	1 638.3149	Analog	0.1000	3
Mg	24	45	He	9285.574	ppb	1.9	451081.84	20.4198	Pulse	0.1000	3
Al	27	45	He	6929.075	ppb	2.3	83721.28	3.7902	Pulse	0.1000	3
K	39	45	He	10395.411	ppb	2.7	256814.42	11.6273	Pulse	0.1000	3
Ca	44	45	He	33653.052	ppb	2.4	47447.92	2.1481	Pulse	0.1000	3
Ti	47	45	He	488.307	ppb	2.1	6088.14	0.2756	Pulse	0.1000	3
V	51	45	He	473.878	ppb	1.9	304117.22	13.7670	Pulse	0.5000	3
Cr	52	45	He	464.303	ppb	2.1	407570.92	18.4507	Pulse	0.1000	3
Mn	55	72	He	1203.329	ppb	0.9	376763.04	4.3847	Pulse	0.1000	3
Fe	57	72	He	4541.116	ppb	0.9	76847.95	0.8943	Pulse	0.1000	3
Co	59	72	He	453.478	ppb	1.6	933497.98	10.8646	Pulse	0.1000	3
Ni	60	72	He	499.804	ppb	1.2	286550.33	3.3348	Pulse	0.1000	3
Cu	63	72	He	431.315	ppb	1.0	753452.07	8.7687	Pulse	0.1000	3
Zn	66	72	He	650.328	ppb	2.2	98262.17	1.1437	Pulse	0.1000	3
As	75	72	He	448.082	ppb	1.7	43320.58	0.5042	Pulse	0.5000	3
Sr	88	115	He	162.713	ppb	3.3	49932.43	1.2890	Pulse	0.1000	3
Mo	98	115	He	50.500	ppb	2.0	62245.16	1.6067	Pulse	0.1000	3
Ag	107	115	He	46.155	ppb	0.4	139407.42	3.5982	Pulse	0.1000	3
Cd	111	115	He	51.189	ppb	1.8	13676.72	0.3530	Pulse	0.5000	3
Sn	120	115	He	97.871	ppb	1.6	70978.57	1.8319	Pulse	0.1000	3
Sb	121	115	He	98.435	ppb	1.1	60506.27	1.5617	Pulse	0.1000	3
Ba	137	115	He	536.577	ppb	0.3	109173.14	2.8178	Pulse	0.1000	3
Tl	205	209	He	97.701	ppb	0.9	783848.74	3.5110	Pulse	0.1000	3
Pb	208	209	He	49.139	ppb	0.8	523302.06	2.3439	Pulse	0.1000	3
U	238	209	He	46.871	ppb	1.1	669783.40	3.0001	Pulse	0.1000	3

ISTD Table:

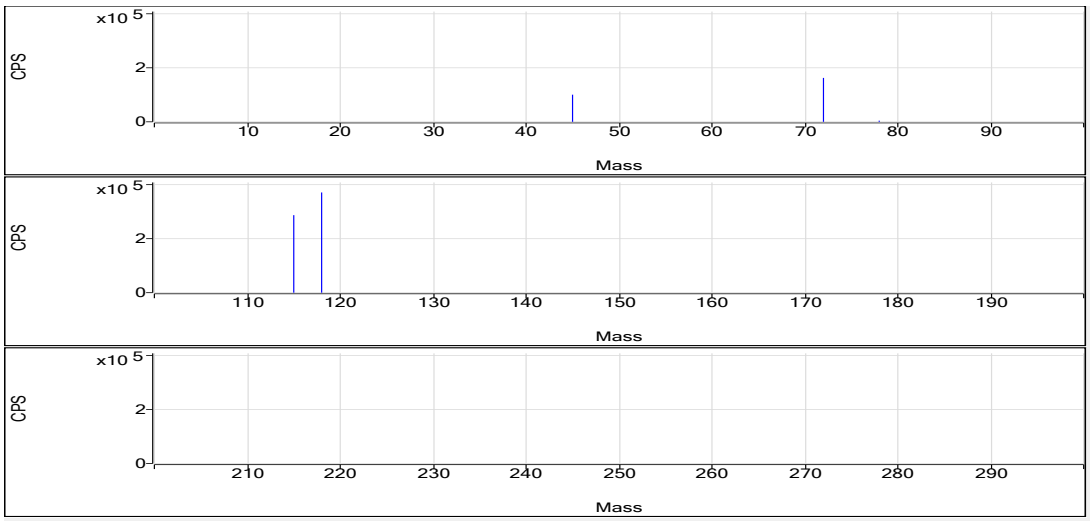
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1656402.32	0.7	101.8	Analog	0.1000	3
No Gas	Ge	72	1909585.65	0.6	101.9	Analog	0.1000	3
H2	Sc	45	100721.11	0.8	102.0	Pulse	0.1000	3
H2	Ge	72	163010.31	0.7	102.2	Pulse	0.1000	3
H2	In	115	287816.56	0.7	101.3	Pulse	0.1000	3
He	Sc	45	22097.44	2.6	104.7	Pulse	0.1000	3
He	Ge	72	85931.14	1.2	104.3	Pulse	0.1000	3
He	In	115	38744.79	1.0	103.4	Pulse	0.1000	3
He	Tb	159	256242.29	0.9	102.0	Pulse	0.1000	3
He	Bi	209	223267.44	0.9	98.1	Pulse	0.1000	3

No Gas

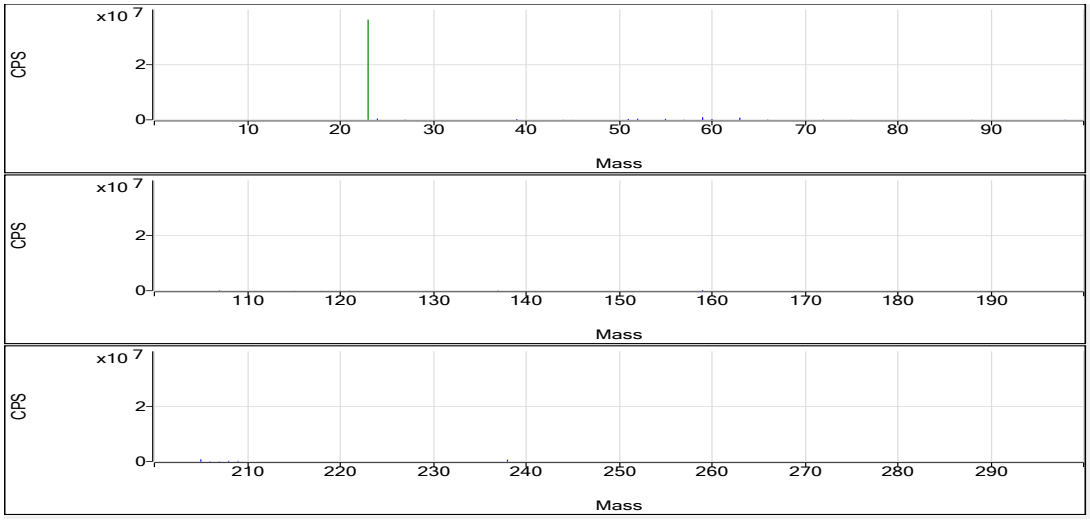


H2



Quantitation Report

He



Quantitation Report

Data File Name	064SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 12:22:47 PM
Sample Name	410-60911-F-2-I MSD
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

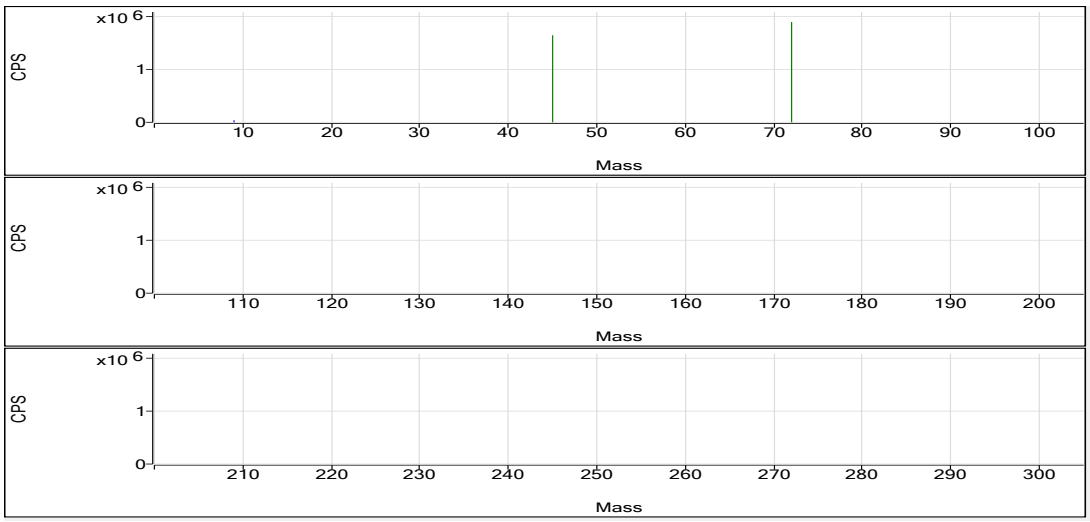
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	46.975	ppb	0.8	37367.14	0.0228	Pulse	0.5000	3
Se	78	115	H2	97.190	ppb	1.3	4135.49	0.0144	Pulse	1.5000	3
Na	23	45	He	287199.770	ppb	1.8	28820922.90	1 304.9014	Analog	0.1000	3
Mg	24	45	He	8316.754	ppb	0.9	403988.01	18.2897	Pulse	0.1000	3
Al	27	45	He	5939.164	ppb	1.3	71761.69	3.2489	Pulse	0.1000	3
K	39	45	He	9256.873	ppb	1.0	229267.65	10.3796	Pulse	0.1000	3
Ca	44	45	He	31942.698	ppb	2.4	45034.05	2.0392	Pulse	0.1000	3
Ti	47	45	He	482.738	ppb	0.7	6018.10	0.2724	Pulse	0.1000	3
V	51	45	He	477.641	ppb	1.3	306487.24	13.8762	Pulse	0.5000	3
Cr	52	45	He	470.481	ppb	0.7	412968.67	18.6958	Pulse	0.1000	3
Mn	55	72	He	1072.357	ppb	0.7	329435.54	3.9075	Pulse	0.1000	3
Fe	57	72	He	4606.629	ppb	1.1	76489.28	0.9072	Pulse	0.1000	3
Co	59	72	He	461.342	ppb	1.3	931827.15	11.0531	Pulse	0.1000	3
Ni	60	72	He	505.152	ppb	1.9	284147.34	3.3705	Pulse	0.1000	3
Cu	63	72	He	445.136	ppb	1.0	762946.60	9.0496	Pulse	0.1000	3
Zn	66	72	He	627.739	ppb	1.3	93074.43	1.1040	Pulse	0.1000	3
As	75	72	He	453.120	ppb	0.6	42986.91	0.5099	Pulse	0.5000	3
Sr	88	115	He	148.477	ppb	3.1	44781.77	1.1762	Pulse	0.1000	3
Mo	98	115	He	51.492	ppb	2.5	62389.23	1.6383	Pulse	0.1000	3
Ag	107	115	He	47.176	ppb	1.7	140053.75	3.6779	Pulse	0.1000	3
Cd	111	115	He	52.335	ppb	1.4	13744.80	0.3609	Pulse	0.5000	3
Sn	120	115	He	99.611	ppb	1.1	70989.25	1.8641	Pulse	0.1000	3
Sb	121	115	He	98.109	ppb	3.2	59261.11	1.5565	Pulse	0.1000	3
Ba	137	115	He	536.539	ppb	2.0	107287.69	2.8176	Pulse	0.1000	3
Tl	205	209	He	97.683	ppb	1.2	787552.51	3.5103	Pulse	0.1000	3
Pb	208	209	He	48.750	ppb	0.8	521718.09	2.3254	Pulse	0.1000	3
U	238	209	He	47.082	ppb	0.8	676130.22	3.0136	Pulse	0.1000	3

ISTD Table:

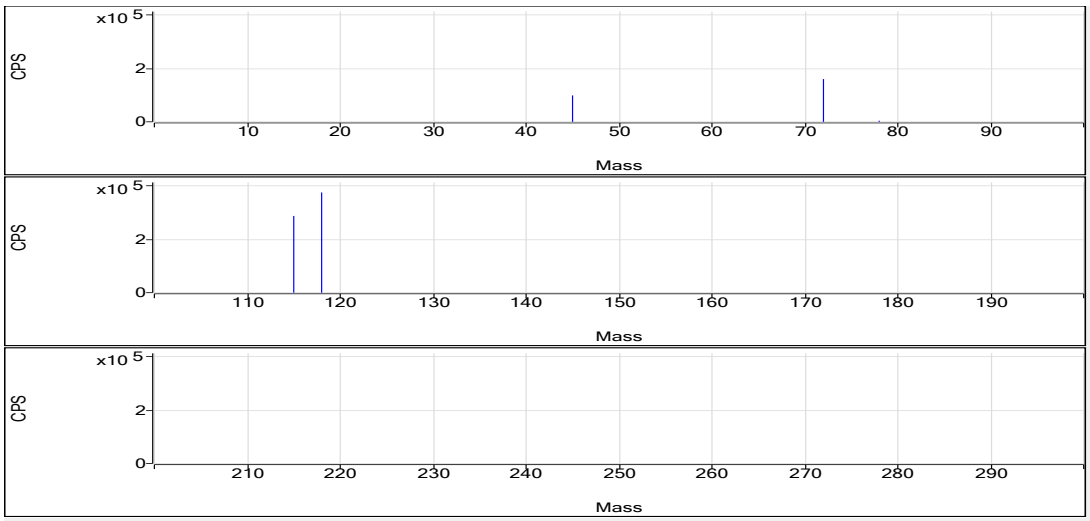
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1638504.82	0.5	100.7	Analog	0.1000	3
No Gas	Ge	72	1886731.74	0.9	100.7	Analog	0.1000	3
H2	Sc	45	98939.11	1.5	100.2	Pulse	0.1000	3
H2	Ge	72	160197.41	1.1	100.4	Pulse	0.1000	3
H2	In	115	287539.10	1.2	101.2	Pulse	0.1000	3
He	Sc	45	22090.59	1.7	104.7	Pulse	0.1000	3
He	Ge	72	84311.45	0.9	102.4	Pulse	0.1000	3
He	In	115	38086.48	1.9	101.6	Pulse	0.1000	3
He	Tb	159	253381.84	0.4	100.8	Pulse	0.1000	3
He	Bi	209	224362.76	0.6	98.6	Pulse	0.1000	3

No Gas

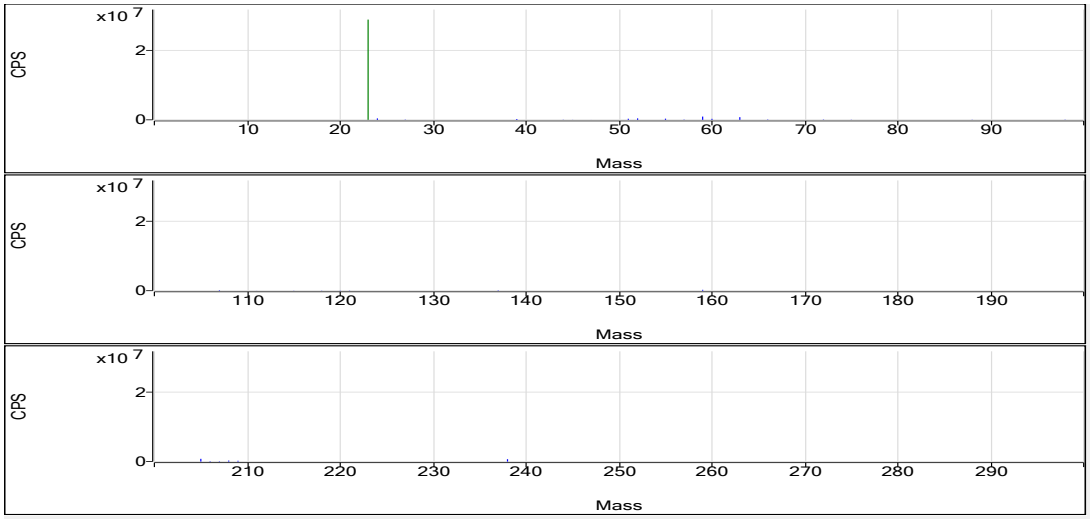


H2



Quantitation Report

He



Quantitation Report

Data File Name	065SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 12:24:49 PM
Sample Name	410-60911-F-2-G SD @5
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

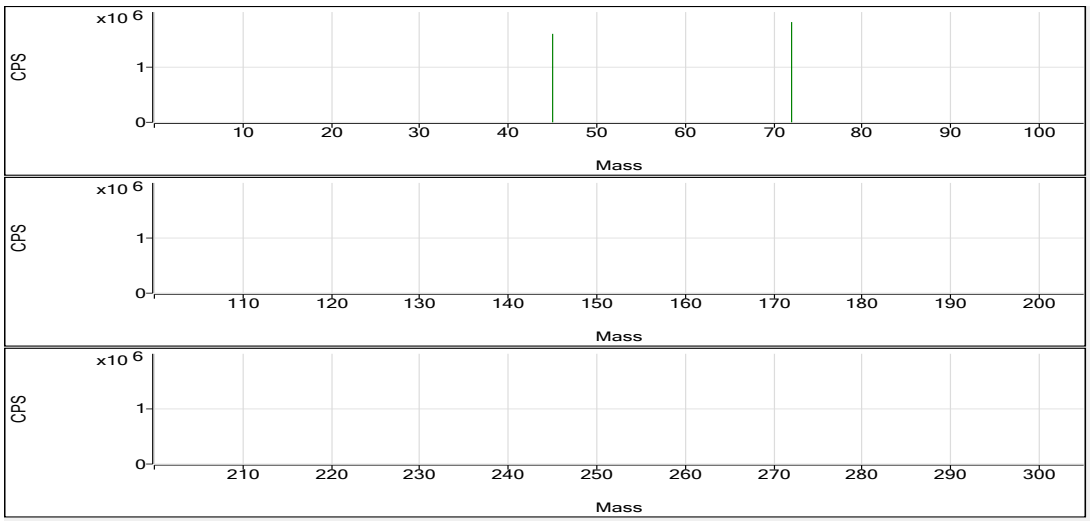
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.305	ppb	4.4	245.33	0.0002	Pulse	0.5000	3
Se	78	115	H2	0.362	ppb	10.1	15.78	0.0001	Pulse	1.5000	3
Na	23	45	He	70389.502	ppb	1.5	6757253.65	320.1081	Analog	0.1000	3
Mg	24	45	He	929.274	ppb	3.7	43204.24	2.0471	Pulse	0.1000	3
Al	27	45	He	370.380	ppb	3.8	4307.45	0.2039	Pulse	0.1000	3
K	39	45	He	1101.332	ppb	1.0	30445.72	1.4421	Pulse	0.1000	3
Ca	44	45	He	6060.304	ppb	5.0	8242.64	0.3905	Pulse	0.1000	3
Ti	47	45	He	0.280	ppb	173.2	3.33	0.0002	Pulse	0.1000	3
V	51	45	He	0.249	ppb	18.3	374.01	0.0177	Pulse	0.5000	3
Cr	52	45	He	0.310	ppb	6.4	873.39	0.0414	Pulse	0.1000	3
Mn	55	72	He	151.684	ppb	1.4	45031.16	0.5529	Pulse	0.1000	3
Fe	57	72	He	18.142	ppb	13.7	363.35	0.0045	Pulse	0.1000	3
Co	59	72	He	6.572	ppb	0.9	12879.49	0.1581	Pulse	0.1000	3
Ni	60	72	He	11.486	ppb	4.3	6338.28	0.0778	Pulse	0.1000	3
Cu	63	72	He	0.807	ppb	11.6	1543.47	0.0190	Pulse	0.1000	3
Zn	66	72	He	41.737	ppb	5.7	6048.18	0.0742	Pulse	0.1000	3
As	75	72	He	0.402	ppb	26.4	59.33	0.0007	Pulse	0.5000	3
Sr	88	115	He	21.738	ppb	1.3	6465.04	0.1729	Pulse	0.1000	3
Mo	98	115	He	0.171	ppb	22.5	216.68	0.0058	Pulse	0.1000	3
Ag	107	115	He	0.015	ppb	80.6	50.00	0.0013	Pulse	0.1000	3
Cd	111	115	He	0.579	ppb	4.3	150.00	0.0040	Pulse	0.5000	3
Sn	120	115	He	-0.022	ppb	N/A	810.05	0.0217	Pulse	0.1000	3
Sb	121	115	He	0.393	ppb	8.8	243.34	0.0065	Pulse	0.1000	3
Ba	137	115	He	9.050	ppb	3.3	1786.85	0.0478	Pulse	0.1000	3
Tl	205	209	He	0.130	ppb	2.6	1093.42	0.0049	Pulse	0.1000	3
Pb	208	209	He	0.123	ppb	2.3	2230.16	0.0099	Pulse	0.1000	3
U	238	209	He	0.031	ppb	11.9	490.03	0.0022	Pulse	0.1000	3

ISTD Table:

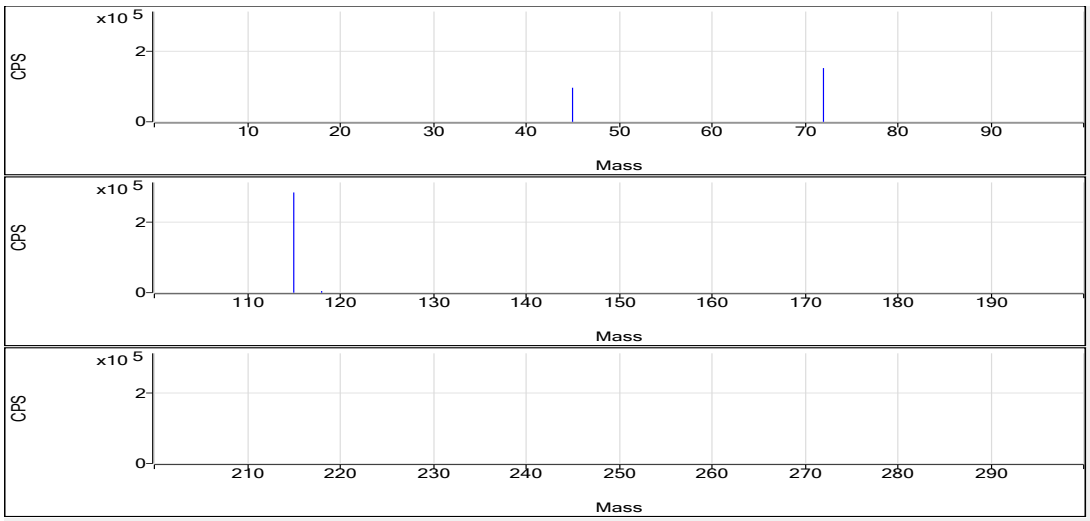
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1599424.66	1.4	98.3	Analog	0.1000	3
No Gas	Ge	72	1812072.00	0.9	96.7	Analog	0.1000	3
H2	Sc	45	95942.82	1.9	97.2	Pulse	0.1000	3
H2	Ge	72	151293.80	1.5	94.8	Pulse	0.1000	3
H2	In	115	282189.68	2.0	99.3	Pulse	0.1000	3
He	Sc	45	21112.65	1.7	100.0	Pulse	0.1000	3
He	Ge	72	81452.12	0.7	98.9	Pulse	0.1000	3
He	In	115	37394.54	0.6	99.8	Pulse	0.1000	3
He	Tb	159	249256.06	0.9	99.2	Pulse	0.1000	3
He	Bi	209	225234.31	0.5	99.0	Pulse	0.1000	3

No Gas

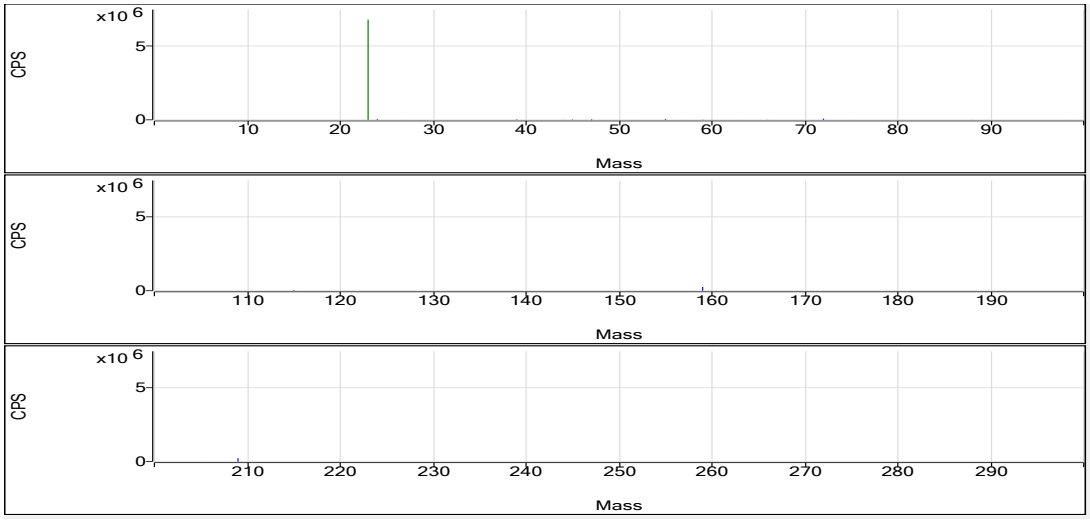


H2



Quantitation Report

He



Quantitation Report

Data File Name	066_CCV.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 12:26:51 PM
Sample Name	CCV 1942322
Sample Type	CCV
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

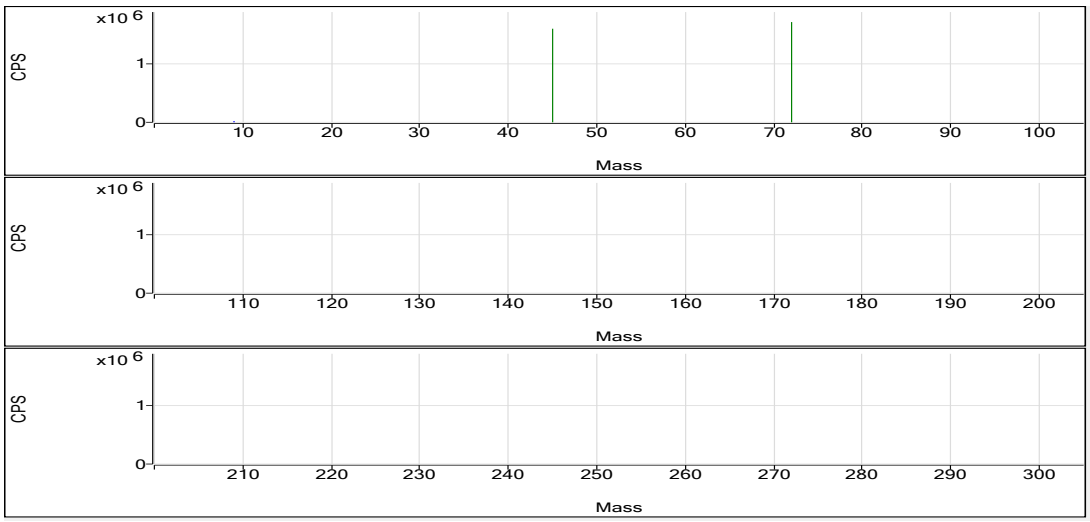
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	28.528	ppb	2.1	22125.03	0.0139	Pulse	0.5000	3
Se	78	115	H2	30.814	ppb	2.7	1284.28	0.0046	Pulse	1.5000	3
Na	23	45	He	5172.776	ppb	1.3	509976.47	23.8814	Pulse	0.1000	3
Mg	24	45	He	5185.267	ppb	1.1	243537.38	11.4046	Pulse	0.1000	3
Al	27	45	He	5063.737	ppb	2.7	59152.56	2.7703	Pulse	0.1000	3
K	39	45	He	5163.546	ppb	1.6	125853.37	5.8938	Pulse	0.1000	3
Ca	44	45	He	5368.761	ppb	3.1	7398.79	0.3464	Pulse	0.1000	3
Ti	47	45	He	304.054	ppb	1.7	3663.93	0.1716	Pulse	0.1000	3
V	51	45	He	306.395	ppb	1.6	190153.32	8.9050	Pulse	0.5000	3
Cr	52	45	He	310.657	ppb	2.2	263801.77	12.3547	Pulse	0.1000	3
Mn	55	72	He	314.314	ppb	1.2	89319.15	1.1455	Pulse	0.1000	3
Fe	57	72	He	5269.306	ppb	1.9	80904.02	1.0376	Pulse	0.1000	3
Co	59	72	He	299.835	ppb	1.5	560147.18	7.1838	Pulse	0.1000	3
Ni	60	72	He	313.206	ppb	0.8	162988.97	2.0902	Pulse	0.1000	3
Cu	63	72	He	306.803	ppb	0.6	486429.65	6.2381	Pulse	0.1000	3
Zn	66	72	He	306.454	ppb	2.0	42059.07	0.5394	Pulse	0.1000	3
As	75	72	He	315.962	ppb	1.8	27727.49	0.3556	Pulse	0.5000	3
Sr	88	115	He	31.256	ppb	2.5	9516.89	0.2482	Pulse	0.1000	3
Mo	98	115	He	30.895	ppb	2.0	37687.90	0.9831	Pulse	0.1000	3
Ag	107	115	He	31.113	ppb	2.4	92981.97	2.4256	Pulse	0.1000	3
Cd	111	115	He	31.452	ppb	2.4	8315.86	0.2169	Pulse	0.5000	3
Sn	120	115	He	31.786	ppb	3.9	23373.64	0.6099	Pulse	0.1000	3
Sb	121	115	He	31.200	ppb	3.3	18980.22	0.4952	Pulse	0.1000	3
Ba	137	115	He	313.085	ppb	2.2	63035.81	1.6442	Pulse	0.1000	3
Tl	205	209	He	30.700	ppb	0.5	250677.48	1.1034	Pulse	0.1000	3
Pb	208	209	He	30.835	ppb	0.6	334487.86	1.4723	Pulse	0.1000	3
U	238	209	He	254.420	ppb	0.8	3699404.32	16.2840	Analog	0.1000	3

ISTD Table:

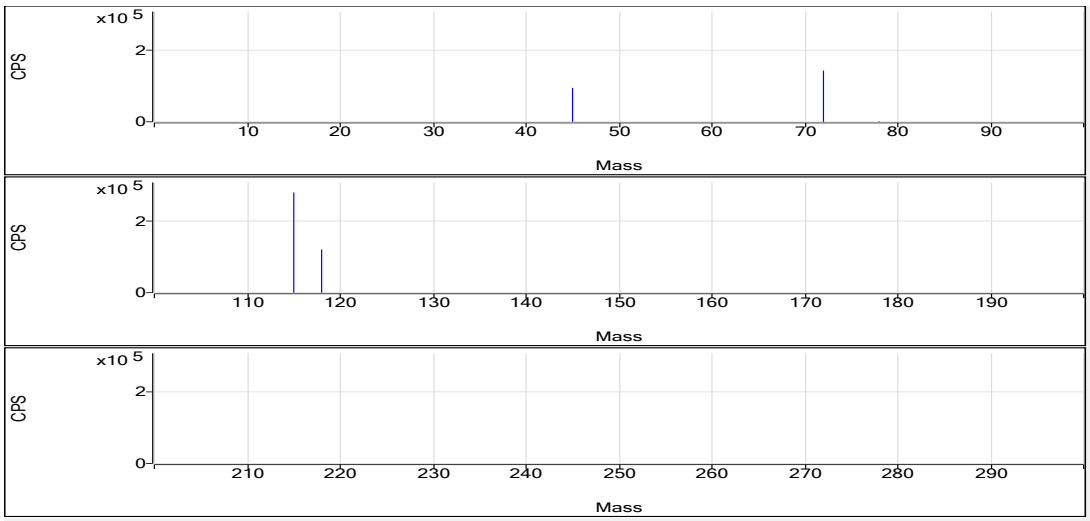
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1597706.48	2.1	98.2	Analog	0.1000	3
No Gas	Ge	72	1711209.45	1.4	91.3	Analog	0.1000	3
H2	Sc	45	95285.62	2.2	96.5	Pulse	0.1000	3
H2	Ge	72	143936.26	0.5	90.2	Pulse	0.1000	3
H2	In	115	281504.05	1.1	99.1	Pulse	0.1000	3
He	Sc	45	21356.34	1.3	101.2	Pulse	0.1000	3
He	Ge	72	77979.48	0.8	94.7	Pulse	0.1000	3
He	In	115	38347.24	2.2	102.3	Pulse	0.1000	3
He	Tb	159	253164.14	0.3	100.7	Pulse	0.1000	3
He	Bi	209	227187.84	0.8	99.9	Pulse	0.1000	3

No Gas

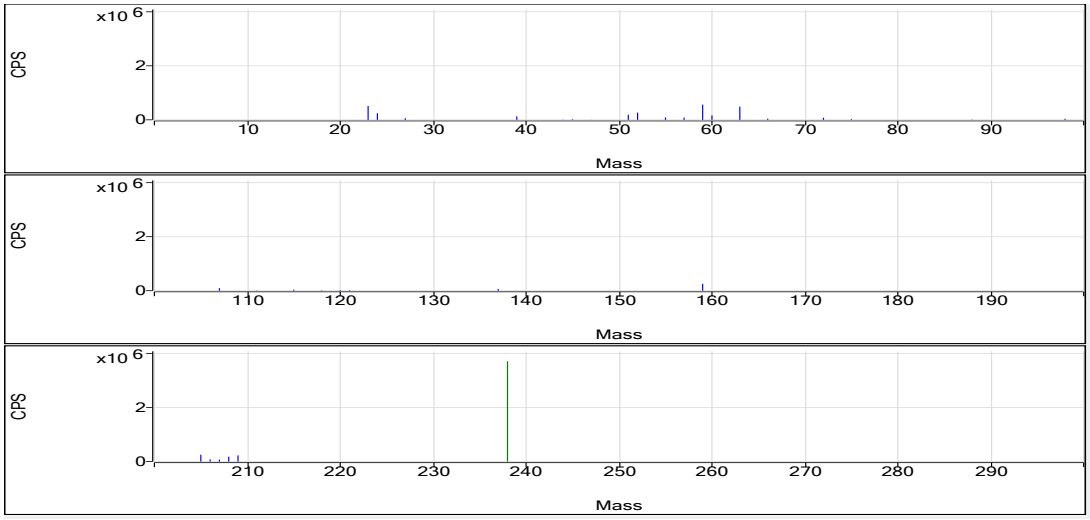


H2



Quantitation Report

He



Quantitation Report

Data File Name	067_CCB.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 12:28:52 PM
Sample Name	CCB 2014932
Sample Type	CCB
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

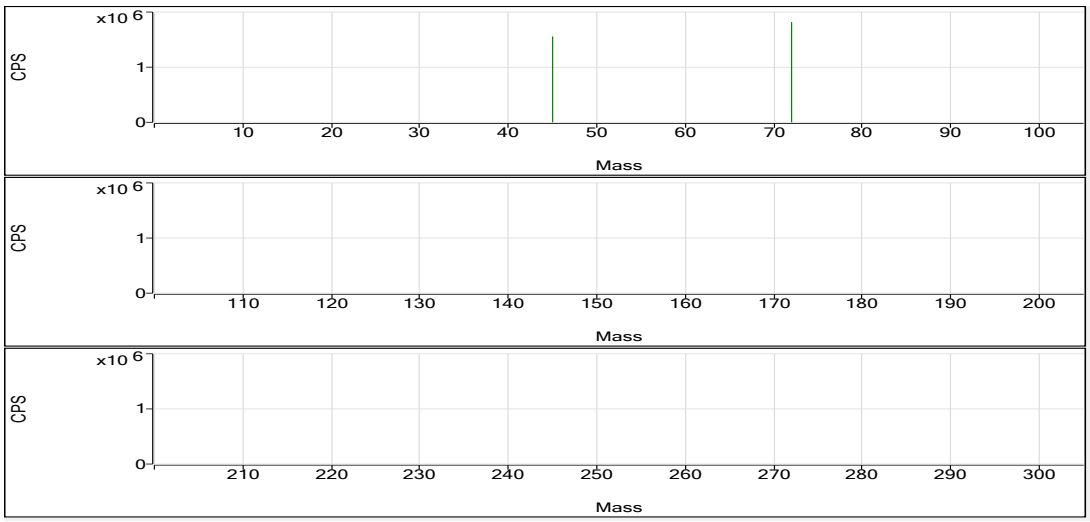
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.032	ppb	26.4	32.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.027	ppb	183.5	1.78	0.0000	Pulse	1.5000	3
Na	23	45	He	47.700	ppb	4.4	13002.75	0.6024	Pulse	0.1000	3
Mg	24	45	He	2.249	ppb	60.7	193.34	0.0089	Pulse	0.1000	3
Al	27	45	He	0.507	ppb	242.4	36.67	0.0017	Pulse	0.1000	3
K	39	45	He	8.212	ppb	181.7	5261.13	0.2441	Pulse	0.1000	3
Ca	44	45	He	-20.617	ppb	N/A	66.67	0.0031	Pulse	0.1000	3
Ti	47	45	He	0.000	ppb	N/A	0.00	0.0000	Pulse	0.1000	3
V	51	45	He	0.082	ppb	52.8	276.67	0.0128	Pulse	0.5000	3
Cr	52	45	He	0.083	ppb	158.6	696.71	0.0324	Pulse	0.1000	3
Mn	55	72	He	0.270	ppb	24.4	96.67	0.0012	Pulse	0.1000	3
Fe	57	72	He	1.314	ppb	145.4	93.33	0.0011	Pulse	0.1000	3
Co	59	72	He	0.163	ppb	10.1	373.35	0.0046	Pulse	0.1000	3
Ni	60	72	He	0.095	ppb	101.6	150.01	0.0019	Pulse	0.1000	3
Cu	63	72	He	0.135	ppb	28.5	430.02	0.0053	Pulse	0.1000	3
Zn	66	72	He	0.214	ppb	89.3	103.34	0.0013	Pulse	0.1000	3
As	75	72	He	0.230	ppb	23.6	43.33	0.0005	Pulse	0.5000	3
Sr	88	115	He	-0.024	ppb	N/A	23.33	0.0006	Pulse	0.1000	3
Mo	98	115	He	0.053	ppb	44.2	76.67	0.0020	Pulse	0.1000	3
Ag	107	115	He	0.008	ppb	76.2	30.00	0.0008	Pulse	0.1000	3
Cd	111	115	He	0.015	ppb	77.6	4.67	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.137	ppb	N/A	736.71	0.0195	Pulse	0.1000	3
Sb	121	115	He	0.123	ppb	56.0	83.33	0.0022	Pulse	0.1000	3
Ba	137	115	He	0.033	ppb	86.8	16.67	0.0004	Pulse	0.1000	3
Tl	205	209	He	0.044	ppb	10.7	396.69	0.0018	Pulse	0.1000	3
Pb	208	209	He	-0.002	ppb	N/A	900.05	0.0040	Pulse	0.1000	3
U	238	209	He	0.076	ppb	10.1	1143.43	0.0051	Pulse	0.1000	3

ISTD Table:

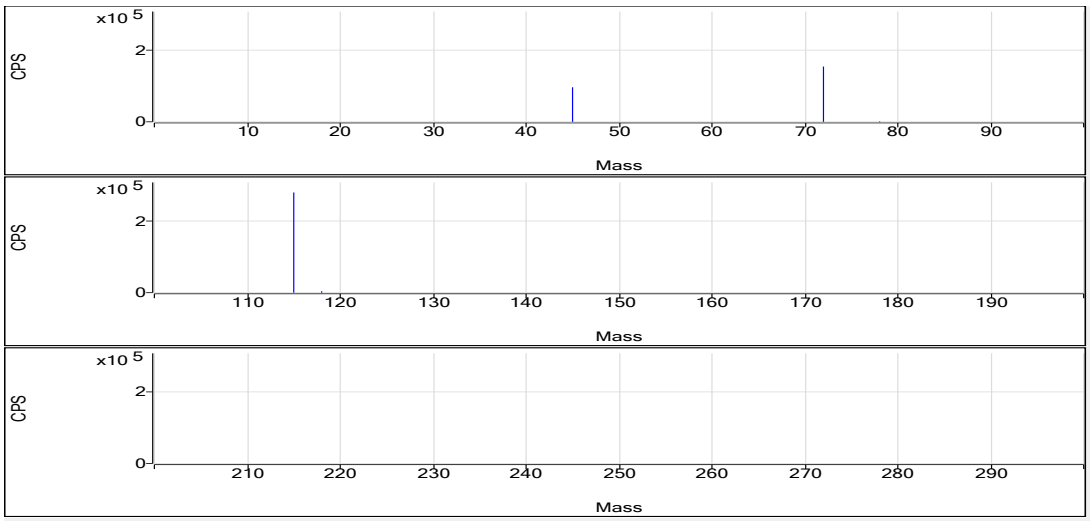
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1559400.81	1.4	95.8	Analog	0.1000	3
No Gas	Ge	72	1821017.68	1.2	97.2	Analog	0.1000	3
H2	Sc	45	96593.57	1.4	97.9	Pulse	0.1000	3
H2	Ge	72	154627.17	2.0	96.9	Pulse	0.1000	3
H2	In	115	280371.42	1.2	98.7	Pulse	0.1000	3
He	Sc	45	21579.90	3.0	102.2	Pulse	0.1000	3
He	Ge	72	81324.27	1.8	98.7	Pulse	0.1000	3
He	In	115	37742.15	1.3	100.7	Pulse	0.1000	3
He	Tb	159	248548.41	0.3	98.9	Pulse	0.1000	3
He	Bi	209	225733.75	1.1	99.2	Pulse	0.1000	3

No Gas

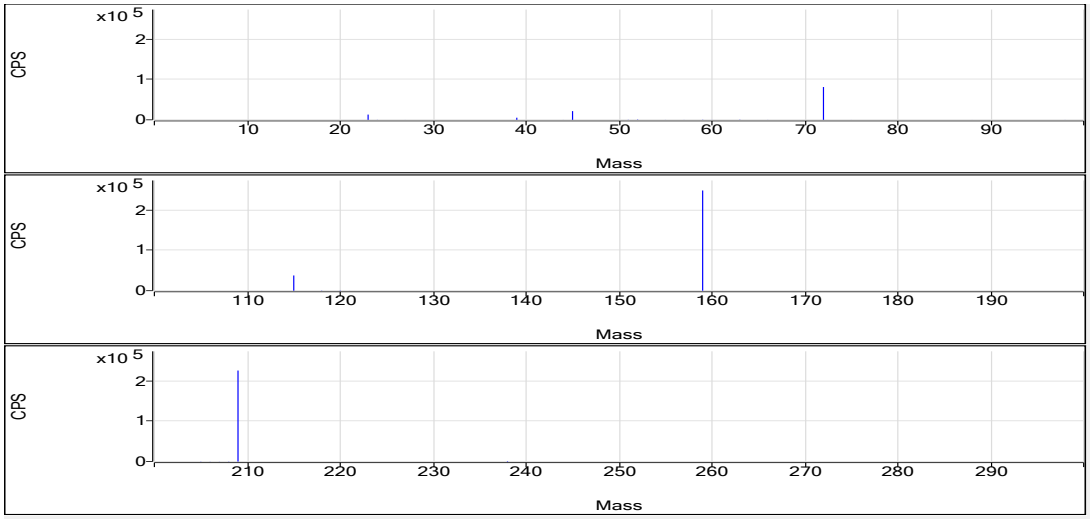


H2



Quantitation Report

He



Quantitation Report

Data File Name	068SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 12:30:54 PM
Sample Name	410-60911-F-7-C
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

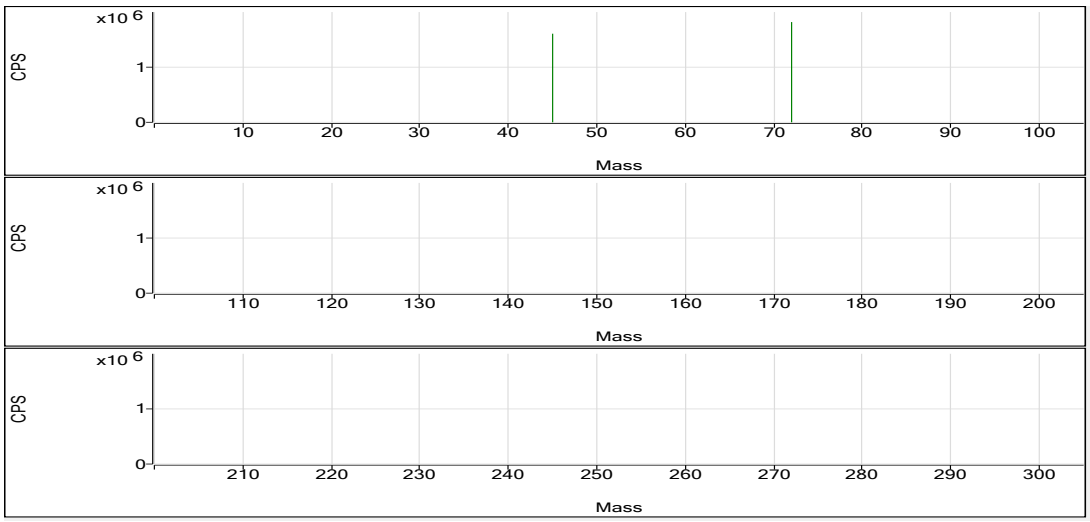
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.150	ppb	21.1	125.33	0.0001	Pulse	0.5000	3
Se	78	115	H2	0.471	ppb	29.5	19.55	0.0001	Pulse	1.5000	3
Na	23	45	He	796954.721	ppb	1.1	77915558.84	3 620.3049	Analog	0.1000	3
Mg	24	45	He	89180.611	ppb	1.0	4220073.90	196.0820	Analog	0.1000	3
Al	27	45	He	9.864	ppb	20.3	146.67	0.0068	Pulse	0.1000	3
K	39	45	He	5811.441	ppb	1.6	142149.32	6.6038	Pulse	0.1000	3
Ca	44	45	He	360482.827	ppb	1.6	494271.48	22.9669	Pulse	0.1000	3
Ti	47	45	He	0.271	ppb	173.2	3.33	0.0002	Pulse	0.1000	3
V	51	45	He	0.049	ppb	178.4	255.34	0.0119	Pulse	0.5000	3
Cr	52	45	He	0.243	ppb	5.3	833.39	0.0387	Pulse	0.1000	3
Mn	55	72	He	23442.586	ppb	1.2	6948183.65	85.4168	Analog	0.1000	3
Fe	57	72	He	381293.247	ppb	0.5	6102910.74	75.0193	Analog	0.1000	3
Co	59	72	He	230.073	ppb	1.6	448401.33	5.5125	Pulse	0.1000	3
Ni	60	72	He	35.426	ppb	2.3	19320.11	0.2375	Pulse	0.1000	3
Cu	63	72	He	0.169	ppb	13.8	486.70	0.0060	Pulse	0.1000	3
Zn	66	72	He	40.588	ppb	0.6	5874.75	0.0722	Pulse	0.1000	3
As	75	72	He	0.973	ppb	11.4	111.33	0.0014	Pulse	0.5000	3
Sr	88	115	He	1325.990	ppb	0.7	394828.90	10.4983	Pulse	0.1000	3
Mo	98	115	He	0.025	ppb	108.5	43.33	0.0012	Pulse	0.1000	3
Ag	107	115	He	0.005	ppb	76.3	20.00	0.0005	Pulse	0.1000	3
Cd	111	115	He	0.154	ppb	4.8	40.67	0.0011	Pulse	0.5000	3
Sn	120	115	He	-0.322	ppb	N/A	606.70	0.0161	Pulse	0.1000	3
Sb	121	115	He	0.050	ppb	33.3	40.00	0.0011	Pulse	0.1000	3
Ba	137	115	He	748.016	ppb	1.7	147719.41	3.9280	Pulse	0.1000	3
Tl	205	209	He	0.061	ppb	19.3	513.37	0.0024	Pulse	0.1000	3
Pb	208	209	He	-0.009	ppb	N/A	780.04	0.0036	Pulse	0.1000	3
U	238	209	He	0.105	ppb	7.2	1480.14	0.0069	Pulse	0.1000	3

ISTD Table:

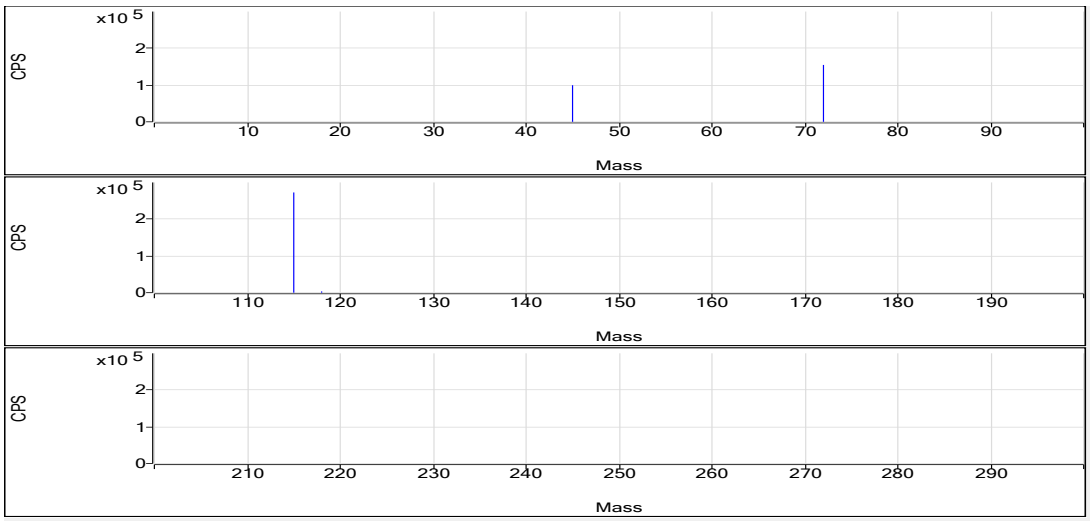
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1601634.14	1.3	98.4	Analog	0.1000	3
No Gas	Ge	72	1811858.25	0.4	96.7	Analog	0.1000	3
H2	Sc	45	99090.01	1.4	100.4	Pulse	0.1000	3
H2	Ge	72	154063.93	0.4	96.6	Pulse	0.1000	3
H2	In	115	271455.87	0.6	95.5	Pulse	0.1000	3
He	Sc	45	21523.23	1.1	102.0	Pulse	0.1000	3
He	Ge	72	81354.60	1.5	98.8	Pulse	0.1000	3
He	In	115	37611.81	1.7	100.4	Pulse	0.1000	3
He	Tb	159	247047.79	0.9	98.3	Pulse	0.1000	3
He	Bi	209	214633.85	0.4	94.3	Pulse	0.1000	3

No Gas

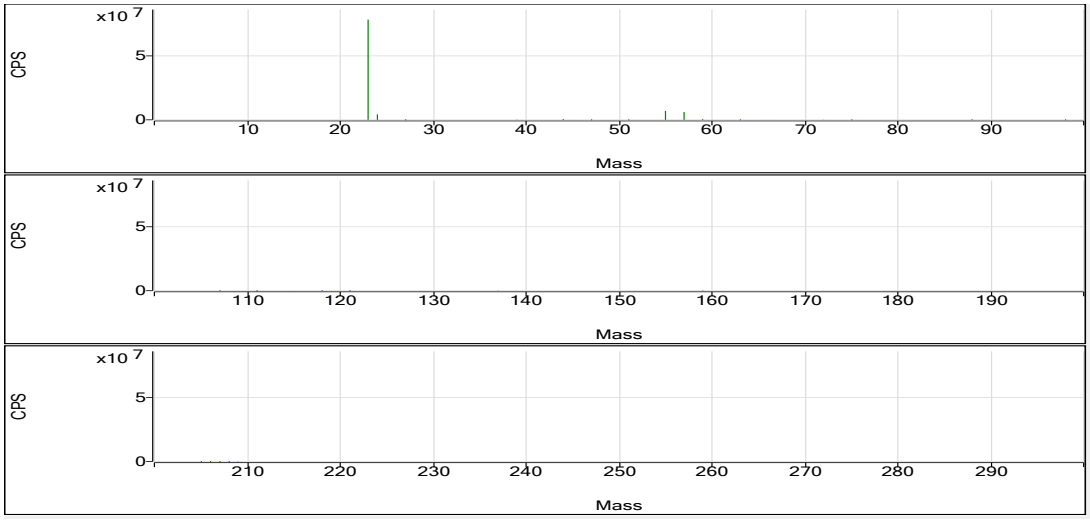


H2



Quantitation Report

He



Quantitation Report

Data File Name	069SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 12:32:54 PM
Sample Name	410-60911-F-8-C
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

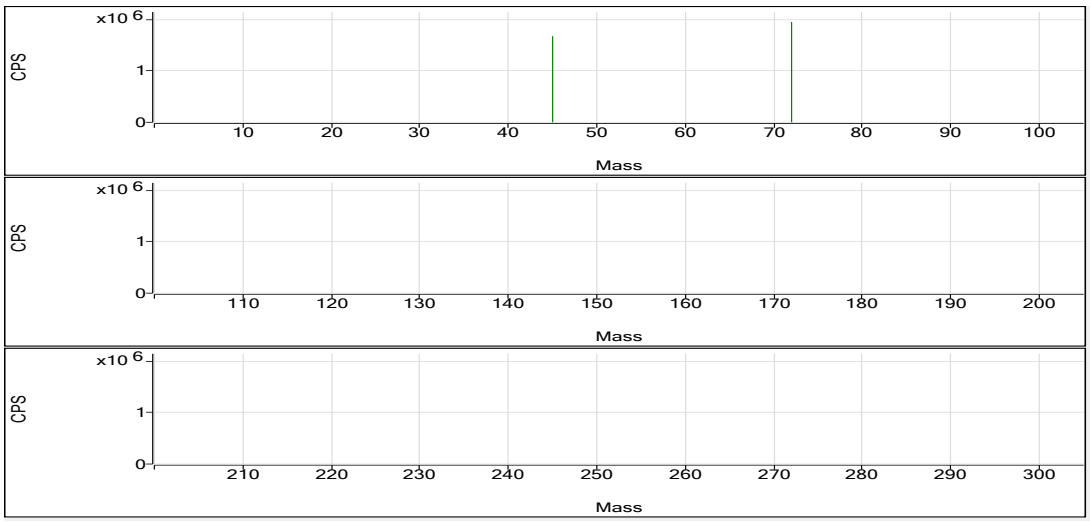
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.042	ppb	46.8	42.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.112	ppb	66.9	5.55	0.0000	Pulse	1.5000	3
Na	23	45	He	11811.481	ppb	1.2	1203672.72	54.0357	Analog	0.1000	3
Mg	24	45	He	2054.795	ppb	1.0	100728.67	4.5218	Pulse	0.1000	3
Al	27	45	He	7.290	ppb	35.6	120.00	0.0054	Pulse	0.1000	3
K	39	45	He	18437.526	ppb	2.3	455281.79	20.4405	Pulse	0.1000	3
Ca	44	45	He	14845.872	ppb	1.1	21166.07	0.9501	Pulse	0.1000	3
Ti	47	45	He	0.265	ppb	173.2	3.33	0.0001	Pulse	0.1000	3
V	51	45	He	0.001	ppb	2119.2	234.00	0.0105	Pulse	0.5000	3
Cr	52	45	He	0.417	ppb	15.1	1016.74	0.0456	Pulse	0.1000	3
Mn	55	72	He	773.334	ppb	0.8	250162.48	2.8180	Pulse	0.1000	3
Fe	57	72	He	16628.305	ppb	1.4	290515.20	3.2725	Pulse	0.1000	3
Co	59	72	He	2.426	ppb	3.0	5221.14	0.0588	Pulse	0.1000	3
Ni	60	72	He	30.323	ppb	1.0	18061.85	0.2035	Pulse	0.1000	3
Cu	63	72	He	3.850	ppb	1.3	7172.01	0.0808	Pulse	0.1000	3
Zn	66	72	He	14.580	ppb	1.5	2353.60	0.0265	Pulse	0.1000	3
As	75	72	He	0.576	ppb	9.1	82.00	0.0009	Pulse	0.5000	3
Sr	88	115	He	68.267	ppb	0.5	21179.78	0.5413	Pulse	0.1000	3
Mo	98	115	He	0.056	ppb	23.7	83.33	0.0021	Pulse	0.1000	3
Ag	107	115	He	0.002	ppb	243.4	13.33	0.0003	Pulse	0.1000	3
Cd	111	115	He	5.314	ppb	3.9	1434.08	0.0367	Pulse	0.5000	3
Sn	120	115	He	-0.281	ppb	N/A	660.04	0.0169	Pulse	0.1000	3
Sb	121	115	He	0.031	ppb	51.4	30.00	0.0008	Pulse	0.1000	3
Ba	137	115	He	36.873	ppb	1.6	7585.72	0.1939	Pulse	0.1000	3
Tl	205	209	He	0.029	ppb	21.9	286.68	0.0012	Pulse	0.1000	3
Pb	208	209	He	0.298	ppb	4.0	4230.42	0.0182	Pulse	0.1000	3
U	238	209	He	0.020	ppb	25.8	333.35	0.0014	Pulse	0.1000	3

ISTD Table:

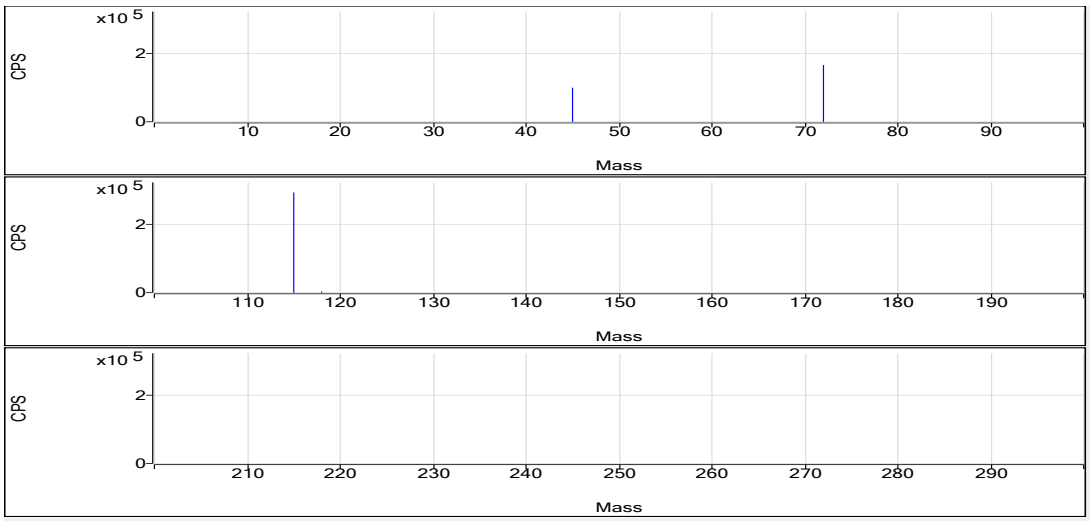
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1670836.43	1.5	102.7	Analog	0.1000	3
No Gas	Ge	72	1944779.03	0.7	103.8	Analog	0.1000	3
H2	Sc	45	99235.00	1.3	100.5	Pulse	0.1000	3
H2	Ge	72	165344.13	1.8	103.6	Pulse	0.1000	3
H2	In	115	291945.31	0.6	102.8	Pulse	0.1000	3
He	Sc	45	22277.66	1.3	105.6	Pulse	0.1000	3
He	Ge	72	88774.84	0.2	107.8	Pulse	0.1000	3
He	In	115	39129.40	1.8	104.4	Pulse	0.1000	3
He	Tb	159	256557.63	0.9	102.1	Pulse	0.1000	3
He	Bi	209	231934.68	0.6	101.9	Pulse	0.1000	3

No Gas

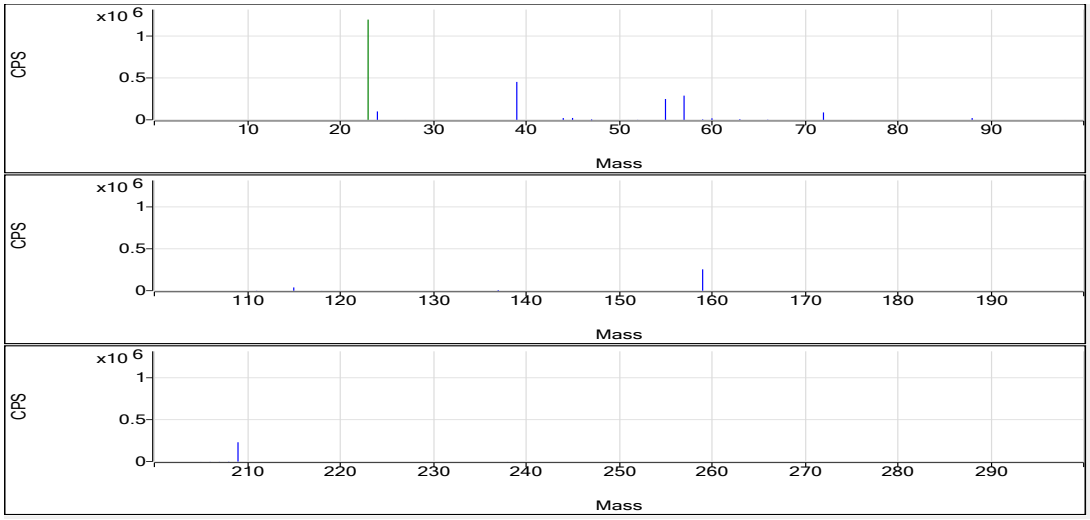


H2



Quantitation Report

He



Quantitation Report

Data File Name	070SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 12:34:56 PM
Sample Name	410-60911-F-15-C
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

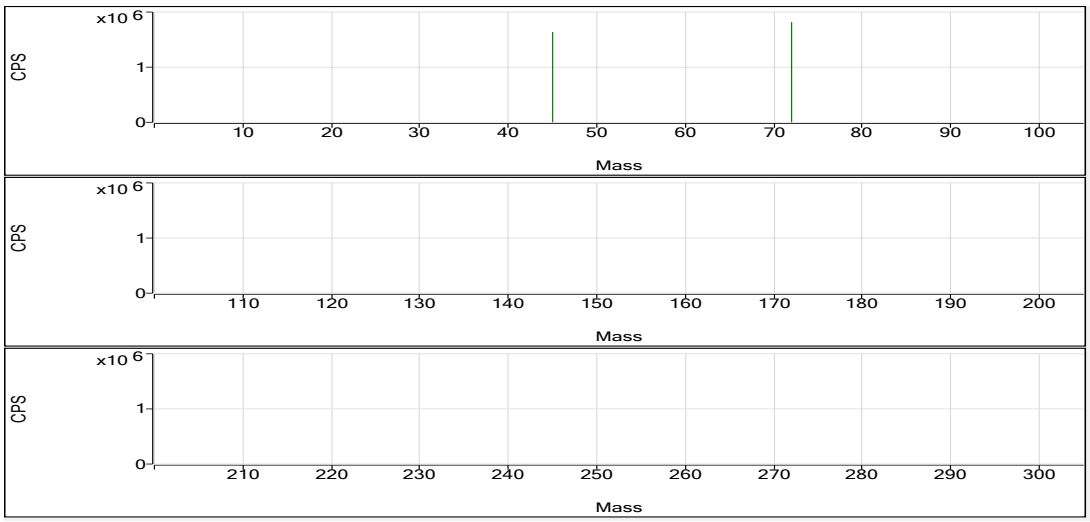
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.018	ppb	8.3	23.33	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.093	ppb	37.4	4.44	0.0000	Pulse	1.5000	3
Na	23	45	He	1290528.612	ppb	1.8	124205814.82	5 862.2109	Analog	0.1000	3
Mg	24	45	He	33675.951	ppb	2.0	1568802.43	74.0460	Analog	0.1000	3
Al	27	45	He	2.870	ppb	85.8	63.33	0.0030	Pulse	0.1000	3
K	39	45	He	10583.768	ppb	0.9	250744.59	11.8337	Pulse	0.1000	3
Ca	44	45	He	172868.348	ppb	0.8	233411.91	11.0160	Pulse	0.1000	3
Ti	47	45	He	0.281	ppb	173.2	3.33	0.0002	Pulse	0.1000	3
V	51	45	He	-0.037	ppb	N/A	198.67	0.0094	Pulse	0.5000	3
Cr	52	45	He	0.317	ppb	60.7	883.39	0.0417	Pulse	0.1000	3
Mn	55	72	He	8747.408	ppb	1.4	2558795.54	31.8727	Analog	0.1000	3
Fe	57	72	He	30477.622	ppb	1.7	481458.51	5.9973	Pulse	0.1000	3
Co	59	72	He	0.351	ppb	6.6	730.05	0.0091	Pulse	0.1000	3
Ni	60	72	He	0.604	ppb	25.1	420.02	0.0052	Pulse	0.1000	3
Cu	63	72	He	0.199	ppb	11.6	530.03	0.0066	Pulse	0.1000	3
Zn	66	72	He	3.626	ppb	24.2	583.36	0.0073	Pulse	0.1000	3
As	75	72	He	0.295	ppb	24.9	48.67	0.0006	Pulse	0.5000	3
Sr	88	115	He	564.517	ppb	1.2	169222.86	4.4699	Pulse	0.1000	3
Mo	98	115	He	0.036	ppb	52.6	56.67	0.0015	Pulse	0.1000	3
Ag	107	115	He	0.001	ppb	314.4	10.00	0.0003	Pulse	0.1000	3
Cd	111	115	He	0.010	ppb	155.2	3.33	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.237	ppb	N/A	670.04	0.0177	Pulse	0.1000	3
Sb	121	115	He	0.022	ppb	175.3	23.33	0.0006	Pulse	0.1000	3
Ba	137	115	He	302.874	ppb	3.2	60209.57	1.5906	Pulse	0.1000	3
Tl	205	209	He	0.013	ppb	31.7	140.01	0.0006	Pulse	0.1000	3
Pb	208	209	He	-0.016	ppb	N/A	716.71	0.0033	Pulse	0.1000	3
U	238	209	He	0.011	ppb	36.9	193.34	0.0009	Pulse	0.1000	3

ISTD Table:

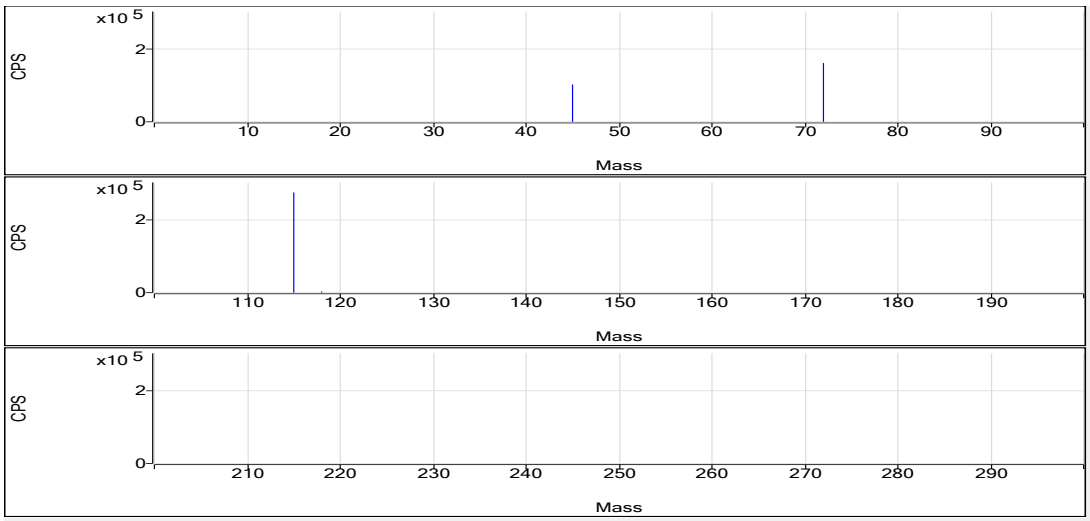
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1639700.18	0.8	100.8	Analog	0.1000	3
No Gas	Ge	72	1821150.75	0.6	97.2	Analog	0.1000	3
H2	Sc	45	103141.16	0.9	104.5	Pulse	0.1000	3
H2	Ge	72	162302.51	0.7	101.7	Pulse	0.1000	3
H2	In	115	276545.71	0.7	97.3	Pulse	0.1000	3
He	Sc	45	21189.38	0.9	100.4	Pulse	0.1000	3
He	Ge	72	80292.12	1.4	97.5	Pulse	0.1000	3
He	In	115	37862.41	1.4	101.0	Pulse	0.1000	3
He	Tb	159	249877.62	1.6	99.4	Pulse	0.1000	3
He	Bi	209	216765.88	1.2	95.3	Pulse	0.1000	3

No Gas

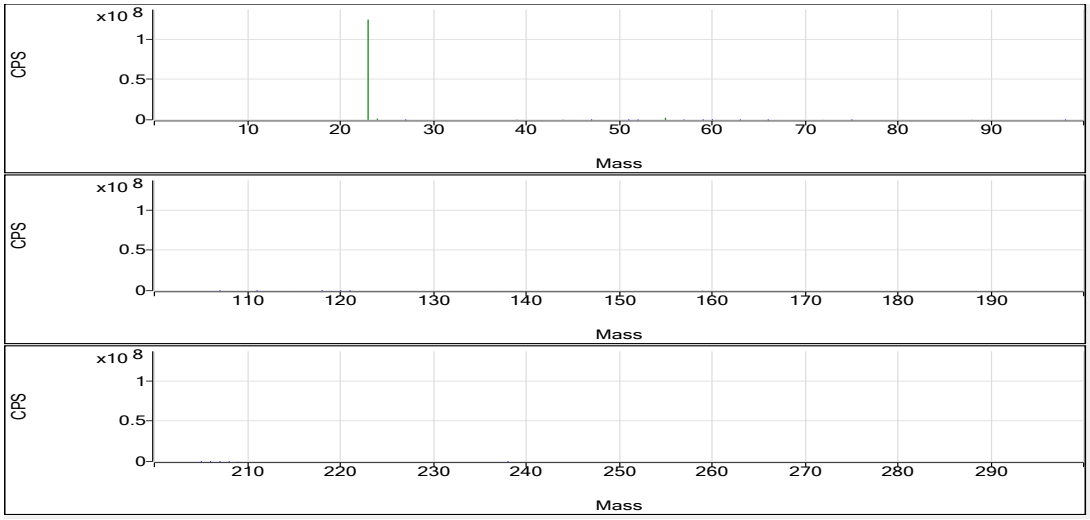


H2



Quantitation Report

He



Quantitation Report

Data File Name	071SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 12:37:01 PM
Sample Name	410-60911-F-5-C
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

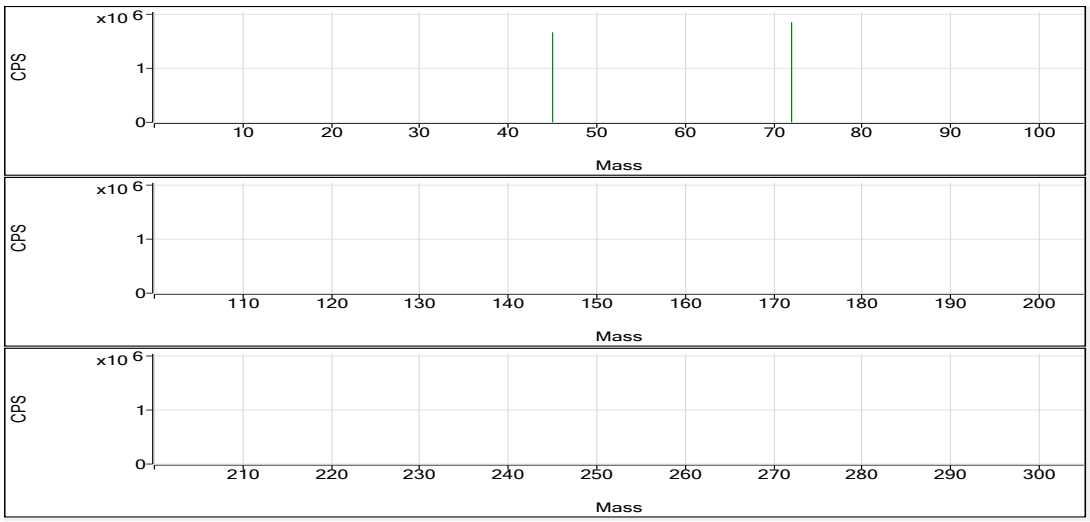
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.008	ppb	37.8	15.33	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.467	ppb	16.0	20.22	0.0001	Pulse	1.5000	3
Na	23	45	He	927286.353	ppb	2.3	91382125.30	4 212.2958	Analog	0.1000	3
Mg	24	45	He	6831.771	ppb	2.0	325961.00	15.0247	Pulse	0.1000	3
Al	27	45	He	8.086	ppb	10.5	126.67	0.0058	Pulse	0.1000	3
K	39	45	He	2482.887	ppb	1.8	64134.60	2.9561	Pulse	0.1000	3
Ca	44	45	He	78139.692	ppb	0.9	108095.85	4.9819	Pulse	0.1000	3
Ti	47	45	He	0.539	ppb	86.6	6.67	0.0003	Pulse	0.1000	3
V	51	45	He	-0.003	ppb	N/A	225.33	0.0104	Pulse	0.5000	3
Cr	52	45	He	0.375	ppb	18.6	953.40	0.0439	Pulse	0.1000	3
Mn	55	72	He	865.409	ppb	1.1	260209.28	3.1535	Pulse	0.1000	3
Fe	57	72	He	1108.682	ppb	3.9	18075.25	0.2190	Pulse	0.1000	3
Co	59	72	He	4.183	ppb	2.0	8326.00	0.1009	Pulse	0.1000	3
Ni	60	72	He	3.482	ppb	6.5	2016.89	0.0244	Pulse	0.1000	3
Cu	63	72	He	2.225	ppb	5.0	3944.02	0.0478	Pulse	0.1000	3
Zn	66	72	He	41.367	ppb	2.2	6071.47	0.0736	Pulse	0.1000	3
As	75	72	He	0.589	ppb	11.3	77.33	0.0009	Pulse	0.5000	3
Sr	88	115	He	345.878	ppb	2.6	106972.98	2.7390	Pulse	0.1000	3
Mo	98	115	He	0.786	ppb	11.1	990.07	0.0254	Pulse	0.1000	3
Ag	107	115	He	-0.001	ppb	N/A	3.33	0.0001	Pulse	0.1000	3
Cd	111	115	He	0.462	ppb	8.8	125.33	0.0032	Pulse	0.5000	3
Sn	120	115	He	-0.178	ppb	N/A	733.38	0.0188	Pulse	0.1000	3
Sb	121	115	He	0.199	ppb	25.7	133.34	0.0034	Pulse	0.1000	3
Ba	137	115	He	180.259	ppb	5.2	36960.79	0.9468	Pulse	0.1000	3
Tl	205	209	He	0.028	ppb	8.7	270.01	0.0012	Pulse	0.1000	3
Pb	208	209	He	0.013	ppb	75.2	1046.73	0.0047	Pulse	0.1000	3
U	238	209	He	0.081	ppb	8.1	1200.10	0.0054	Pulse	0.1000	3

ISTD Table:

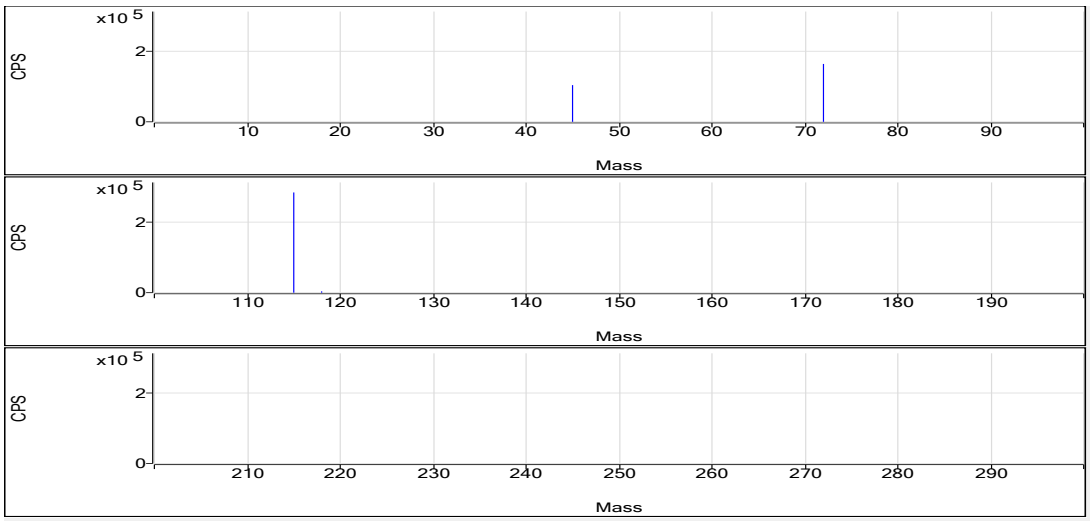
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1668624.77	1.4	102.5	Analog	0.1000	3
No Gas	Ge	72	1858119.66	0.7	99.2	Analog	0.1000	3
H2	Sc	45	103568.00	1.3	104.9	Pulse	0.1000	3
H2	Ge	72	163307.55	0.6	102.4	Pulse	0.1000	3
H2	In	115	282819.24	0.8	99.5	Pulse	0.1000	3
He	Sc	45	21700.16	1.8	102.8	Pulse	0.1000	3
He	Ge	72	82521.35	1.0	100.2	Pulse	0.1000	3
He	In	115	39072.46	2.6	104.3	Pulse	0.1000	3
He	Tb	159	253990.41	0.6	101.1	Pulse	0.1000	3
He	Bi	209	223068.63	0.3	98.1	Pulse	0.1000	3

No Gas

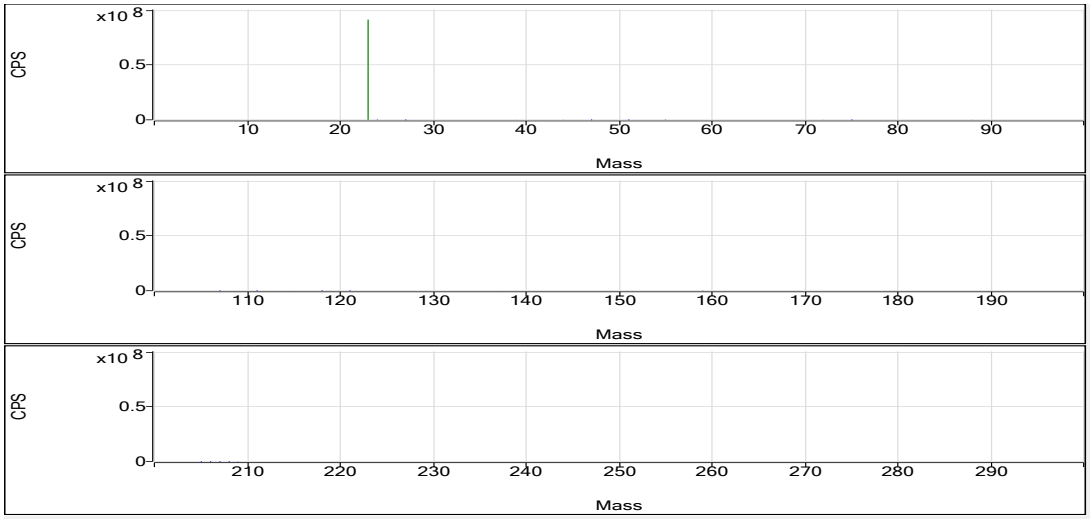


H2



Quantitation Report

He



Quantitation Report

Data File Name	072SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 12:39:03 PM
Sample Name	410-60911-F-12-C
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

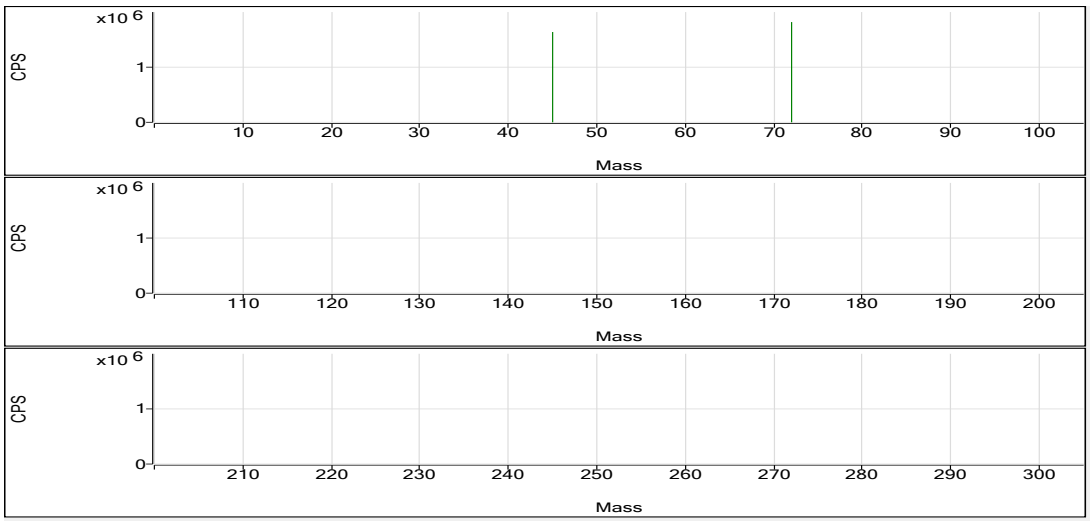
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.088	ppb	19.9	78.00	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.077	ppb	32.4	3.78	0.0000	Pulse	1.5000	3
Na	23	45	He	1777642.847	ppb	1.1	170250570.80	8 074.7759	Analog	0.1000	3
Mg	24	45	He	43430.109	ppb	1.8	2013332.47	95.4921	Analog	0.1000	3
Al	27	45	He	7.539	ppb	29.4	116.68	0.0055	Pulse	0.1000	3
K	39	45	He	6964.275	ppb	0.9	165889.37	7.8672	Pulse	0.1000	3
Ca	44	45	He	151353.635	ppb	1.0	203369.90	9.6455	Pulse	0.1000	3
Ti	47	45	He	0.000	ppb	N/A	0.00	0.0000	Pulse	0.1000	3
V	51	45	He	-0.067	ppb	N/A	179.33	0.0085	Pulse	0.5000	3
Cr	52	45	He	0.208	ppb	62.6	786.71	0.0373	Pulse	0.1000	3
Mn	55	72	He	13761.765	ppb	0.5	3974133.38	50.1433	Analog	0.1000	3
Fe	57	72	He	82724.749	ppb	0.9	1290018.00	16.2768	Pulse	0.1000	3
Co	59	72	He	5.527	ppb	3.2	10547.54	0.1331	Pulse	0.1000	3
Ni	60	72	He	2.013	ppb	10.8	1160.09	0.0146	Pulse	0.1000	3
Cu	63	72	He	0.189	ppb	12.7	506.69	0.0064	Pulse	0.1000	3
Zn	66	72	He	10.075	ppb	8.3	1473.46	0.0186	Pulse	0.1000	3
As	75	72	He	0.091	ppb	105.2	30.00	0.0004	Pulse	0.5000	3
Sr	88	115	He	624.733	ppb	2.9	186469.10	4.9466	Pulse	0.1000	3
Mo	98	115	He	0.000	ppb	N/A	13.33	0.0003	Pulse	0.1000	3
Ag	107	115	He	0.003	ppb	120.0	16.67	0.0004	Pulse	0.1000	3
Cd	111	115	He	0.229	ppb	18.9	60.00	0.0016	Pulse	0.5000	3
Sn	120	115	He	-0.391	ppb	N/A	560.03	0.0148	Pulse	0.1000	3
Sb	121	115	He	0.034	ppb	131.4	30.00	0.0008	Pulse	0.1000	3
Ba	137	115	He	978.890	ppb	3.3	193757.69	5.1403	Pulse	0.1000	3
Tl	205	209	He	0.010	ppb	46.7	116.67	0.0005	Pulse	0.1000	3
Pb	208	209	He	-0.010	ppb	N/A	773.37	0.0036	Pulse	0.1000	3
U	238	209	He	0.029	ppb	20.8	440.03	0.0020	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1628373.73	1.1	100.1	Analog	0.1000	3
No Gas	Ge	72	1807974.50	0.7	96.5	Analog	0.1000	3
H2	Sc	45	101919.18	0.8	103.3	Pulse	0.1000	3
H2	Ge	72	159157.38	0.3	99.8	Pulse	0.1000	3
H2	In	115	274262.24	0.3	96.5	Pulse	0.1000	3
He	Sc	45	21085.88	1.0	99.9	Pulse	0.1000	3
He	Ge	72	79256.71	0.4	96.2	Pulse	0.1000	3
He	In	115	37715.36	2.7	100.7	Pulse	0.1000	3
He	Tb	159	249477.22	0.4	99.3	Pulse	0.1000	3
He	Bi	209	216274.22	0.5	95.1	Pulse	0.1000	3

No Gas



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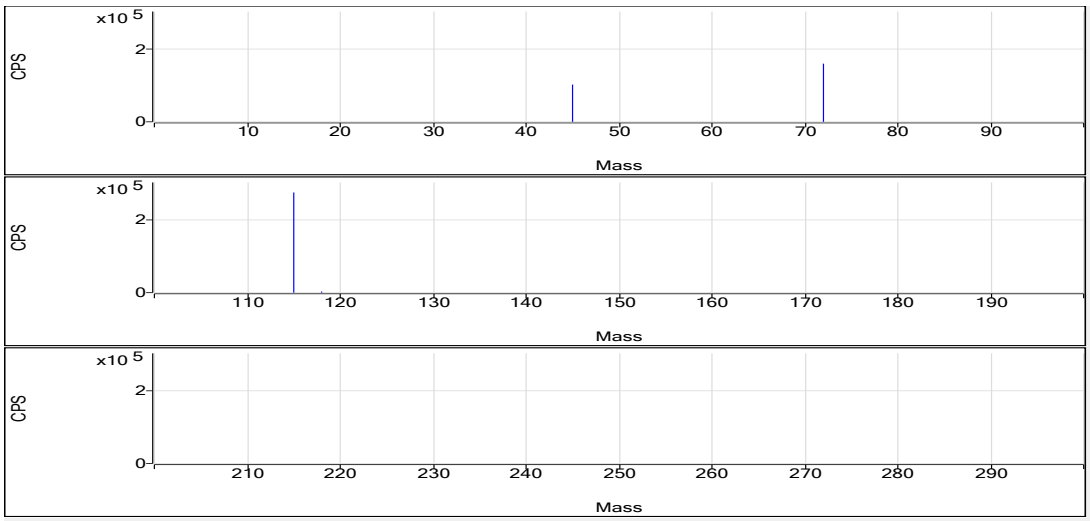
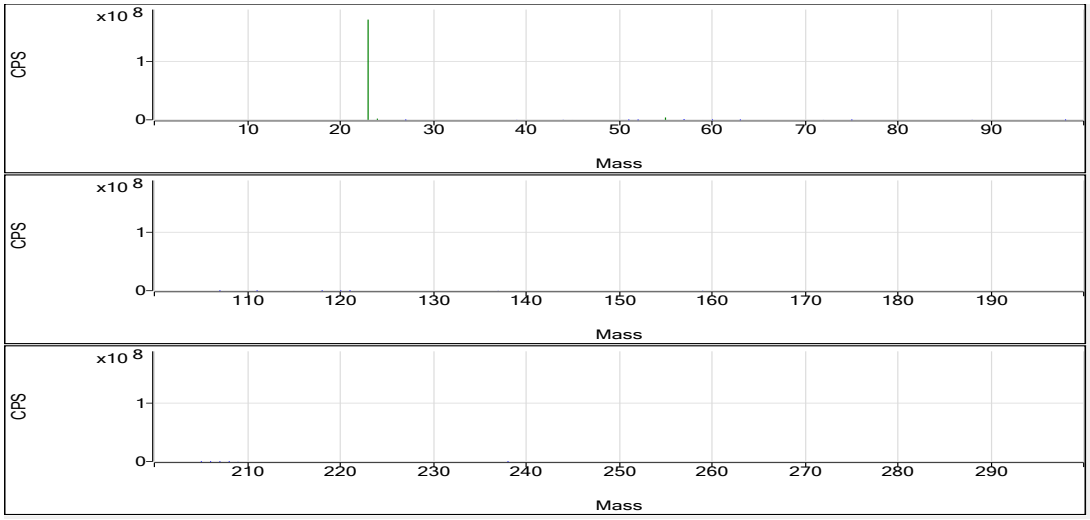


Quantitation Report

He



Quantitation Report

Data File Name	073SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 12:41:08 PM
Sample Name	410-60911-F-3-C
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

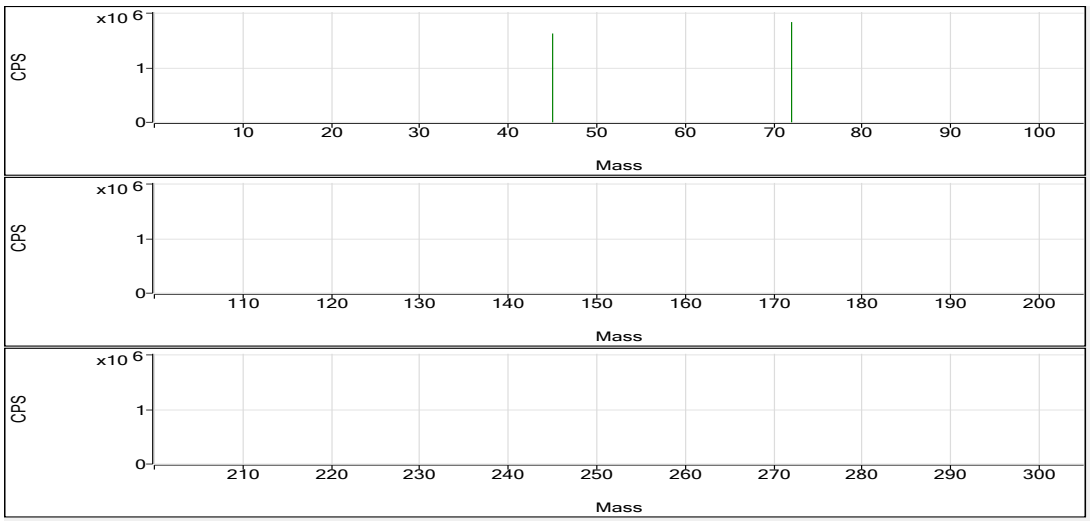
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.060	ppb	37.7	56.00	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.113	ppb	29.0	5.33	0.0000	Pulse	1.5000	3
Na	23	45	He	1506078.630	ppb	1.7	145413751.17	6 841.2798	Analog	0.1000	3
Mg	24	45	He	33606.202	ppb	2.5	1570478.26	73.8926	Analog	0.1000	3
Al	27	45	He	4.554	ppb	57.5	83.33	0.0039	Pulse	0.1000	3
K	39	45	He	5059.111	ppb	1.2	122856.47	5.7793	Pulse	0.1000	3
Ca	44	45	He	188141.177	ppb	1.0	254849.39	11.9889	Pulse	0.1000	3
Ti	47	45	He	0.000	ppb	N/A	0.00	0.0000	Pulse	0.1000	3
V	51	45	He	-0.040	ppb	N/A	198.00	0.0093	Pulse	0.5000	3
Cr	52	45	He	0.382	ppb	28.8	940.06	0.0442	Pulse	0.1000	3
Mn	55	72	He	7934.146	ppb	2.4	2346297.51	28.9095	Analog	0.1000	3
Fe	57	72	He	121710.924	ppb	1.2	1943798.98	23.9472	Analog	0.1000	3
Co	59	72	He	21.954	ppb	3.0	42744.07	0.5266	Pulse	0.1000	3
Ni	60	72	He	15.487	ppb	1.7	8482.82	0.1045	Pulse	0.1000	3
Cu	63	72	He	0.150	ppb	39.8	453.36	0.0056	Pulse	0.1000	3
Zn	66	72	He	8.321	ppb	16.3	1260.10	0.0155	Pulse	0.1000	3
As	75	72	He	0.530	ppb	18.8	70.67	0.0009	Pulse	0.5000	3
Sr	88	115	He	745.693	ppb	1.4	221691.91	5.9042	Pulse	0.1000	3
Mo	98	115	He	1.190	ppb	9.6	1433.46	0.0382	Pulse	0.1000	3
Ag	107	115	He	0.001	ppb	308.9	10.00	0.0003	Pulse	0.1000	3
Cd	111	115	He	0.008	ppb	59.0	2.67	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.191	ppb	N/A	696.71	0.0185	Pulse	0.1000	3
Sb	121	115	He	1.042	ppb	17.3	630.03	0.0168	Pulse	0.1000	3
Ba	137	115	He	1077.133	ppb	1.0	212383.90	5.6562	Pulse	0.1000	3
Tl	205	209	He	0.005	ppb	74.3	83.33	0.0004	Pulse	0.1000	3
Pb	208	209	He	-0.011	ppb	N/A	773.38	0.0035	Pulse	0.1000	3
U	238	209	He	0.113	ppb	3.6	1620.17	0.0074	Pulse	0.1000	3

ISTD Table:

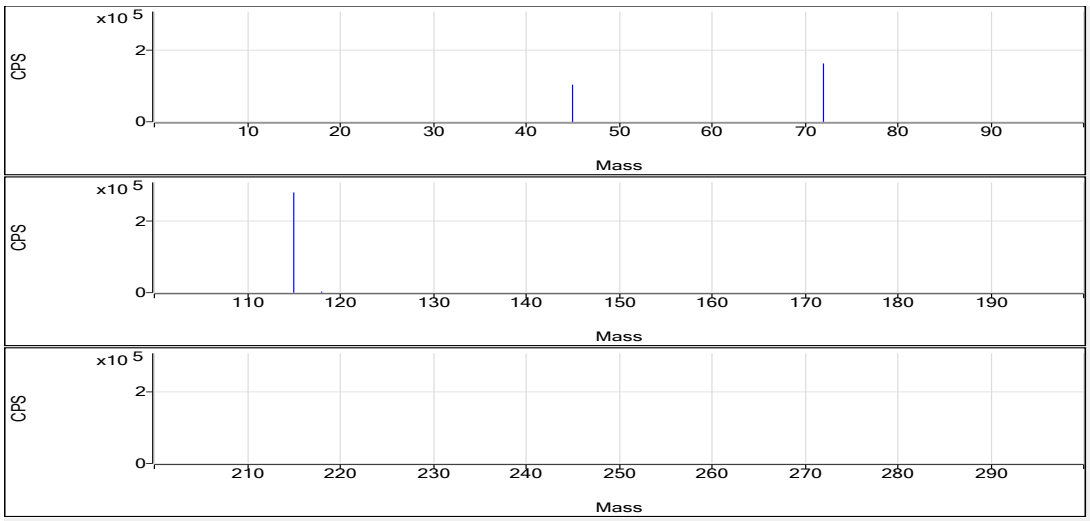
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1634192.68	1.3	100.4	Analog	0.1000	3
No Gas	Ge	72	1844262.84	1.1	98.4	Analog	0.1000	3
H2	Sc	45	103429.30	0.3	104.8	Pulse	0.1000	3
H2	Ge	72	162416.43	0.4	101.8	Pulse	0.1000	3
H2	In	115	278943.60	0.6	98.2	Pulse	0.1000	3
He	Sc	45	21259.48	1.7	100.7	Pulse	0.1000	3
He	Ge	72	81180.64	1.7	98.6	Pulse	0.1000	3
He	In	115	37551.56	1.0	100.2	Pulse	0.1000	3
He	Tb	159	251178.44	0.6	99.9	Pulse	0.1000	3
He	Bi	209	219609.39	0.5	96.5	Pulse	0.1000	3

No Gas

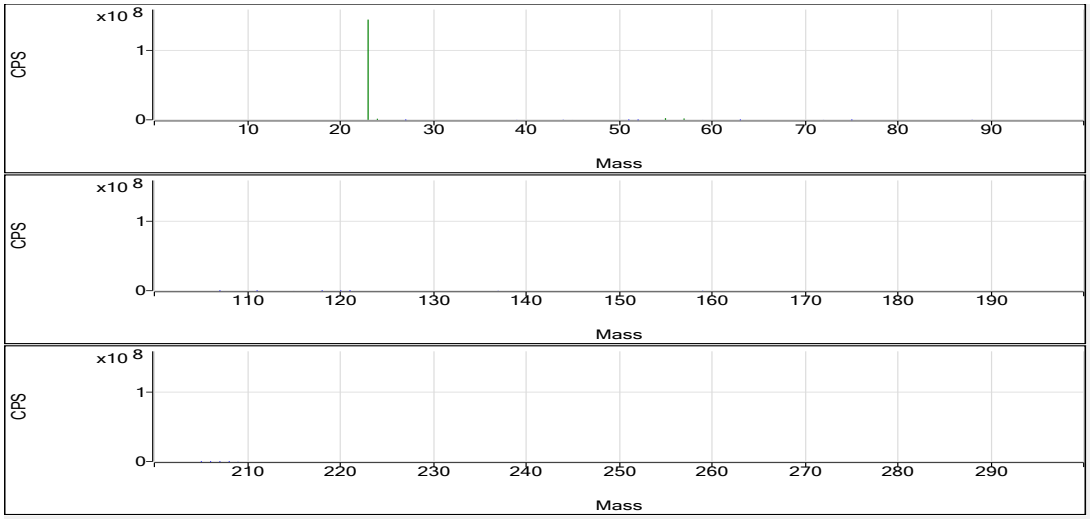


H2



Quantitation Report

He



Quantitation Report

Data File Name	074SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 12:43:14 PM
Sample Name	410-60911-F-9-C
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

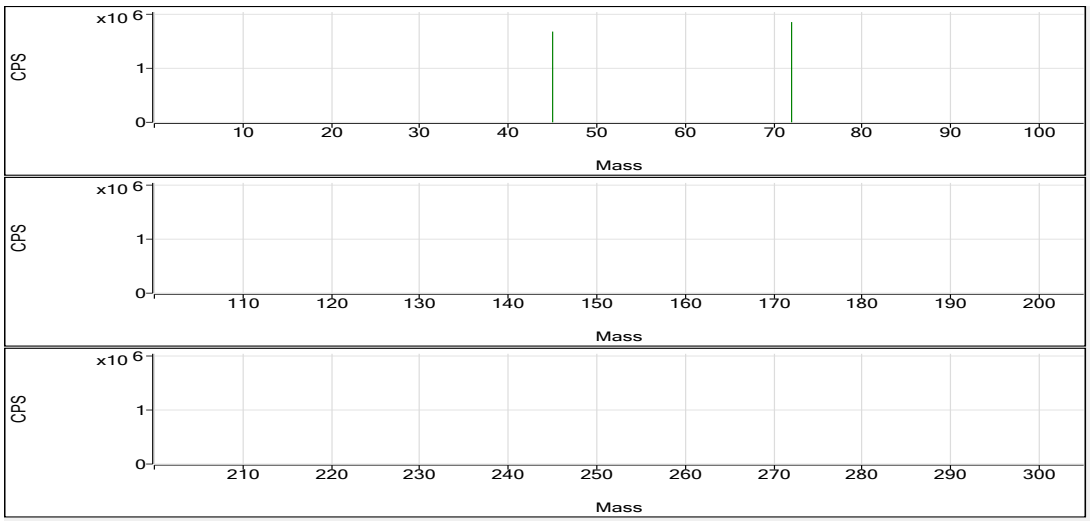
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.014	ppb	14.0	20.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.095	ppb	44.4	4.67	0.0000	Pulse	1.5000	3
Na	23	45	He	654584.443	ppb	1.5	63690062.38	2 973.6321	Analog	0.1000	3
Mg	24	45	He	14565.806	ppb	1.5	685993.87	32.0292	Pulse	0.1000	3
Al	27	45	He	2.248	ppb	41.7	56.67	0.0026	Pulse	0.1000	3
K	39	45	He	22630.428	ppb	1.4	536211.14	25.0355	Pulse	0.1000	3
Ca	44	45	He	87249.020	ppb	1.1	119133.84	5.5621	Pulse	0.1000	3
Ti	47	45	He	0.000	ppb	N/A	0.00	0.0000	Pulse	0.1000	3
V	51	45	He	-0.012	ppb	N/A	216.67	0.0101	Pulse	0.5000	3
Cr	52	45	He	0.237	ppb	48.4	823.39	0.0385	Pulse	0.1000	3
Mn	55	72	He	5594.159	ppb	0.4	1703826.33	20.3834	Analog	0.1000	3
Fe	57	72	He	33647.765	ppb	1.7	553352.35	6.6210	Pulse	0.1000	3
Co	59	72	He	0.168	ppb	8.5	393.35	0.0047	Pulse	0.1000	3
Ni	60	72	He	0.856	ppb	26.5	580.03	0.0069	Pulse	0.1000	3
Cu	63	72	He	0.112	ppb	10.8	403.35	0.0048	Pulse	0.1000	3
Zn	66	72	He	5.469	ppb	14.4	876.73	0.0105	Pulse	0.1000	3
As	75	72	He	0.172	ppb	106.4	39.33	0.0005	Pulse	0.5000	3
Sr	88	115	He	349.317	ppb	0.8	109015.62	2.7662	Pulse	0.1000	3
Mo	98	115	He	0.116	ppb	51.3	160.01	0.0040	Pulse	0.1000	3
Ag	107	115	He	0.009	ppb	97.6	33.33	0.0009	Pulse	0.1000	3
Cd	111	115	He	0.007	ppb	58.7	2.67	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.266	ppb	N/A	676.71	0.0171	Pulse	0.1000	3
Sb	121	115	He	0.053	ppb	48.6	43.33	0.0011	Pulse	0.1000	3
Ba	137	115	He	335.075	ppb	2.1	69335.58	1.7597	Pulse	0.1000	3
Tl	205	209	He	0.005	ppb	48.8	80.00	0.0004	Pulse	0.1000	3
Pb	208	209	He	0.056	ppb	5.7	1523.43	0.0067	Pulse	0.1000	3
U	238	209	He	0.031	ppb	17.8	490.03	0.0022	Pulse	0.1000	3

ISTD Table:

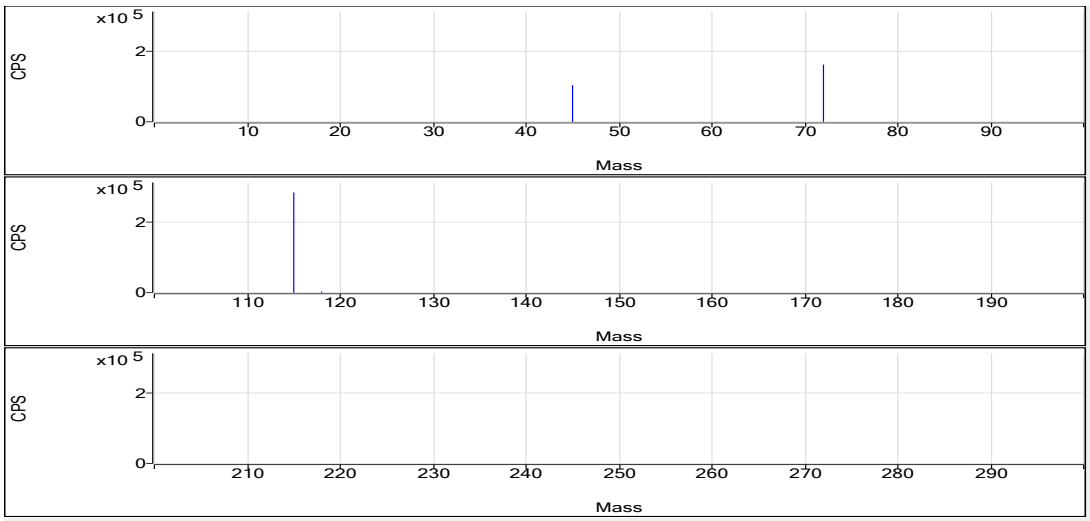
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1684436.90	2.4	103.5	Analog	0.1000	3
No Gas	Ge	72	1860954.82	0.6	99.3	Analog	0.1000	3
H2	Sc	45	104561.22	1.6	105.9	Pulse	0.1000	3
H2	Ge	72	163206.75	0.6	102.3	Pulse	0.1000	3
H2	In	115	285655.21	0.3	100.5	Pulse	0.1000	3
He	Sc	45	21419.72	0.9	101.5	Pulse	0.1000	3
He	Ge	72	83590.58	1.6	101.5	Pulse	0.1000	3
He	In	115	39413.15	2.1	105.2	Pulse	0.1000	3
He	Tb	159	257781.79	0.4	102.6	Pulse	0.1000	3
He	Bi	209	226988.10	1.2	99.8	Pulse	0.1000	3

No Gas

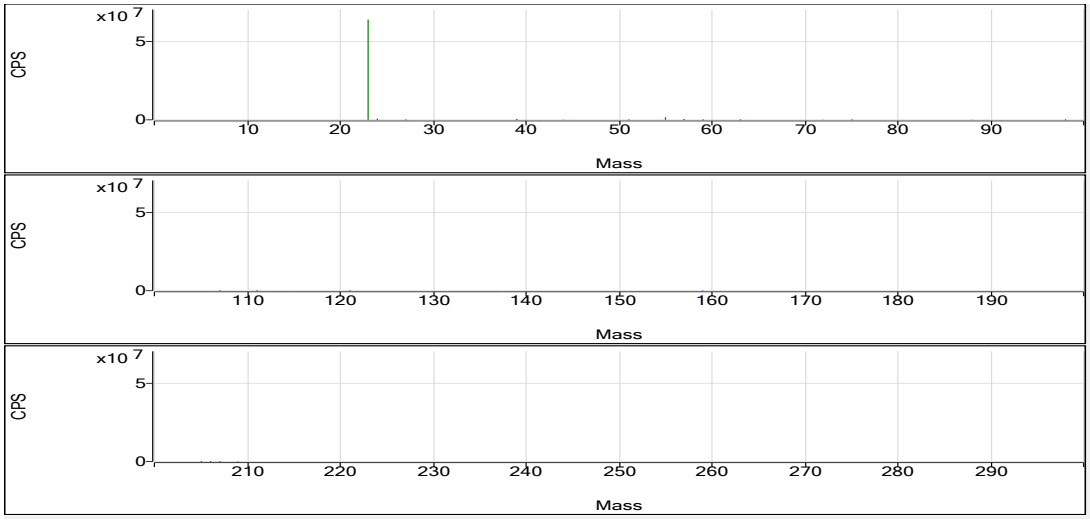


H2



Quantitation Report

He



Quantitation Report

Data File Name	075SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 12:45:16 PM
Sample Name	410-60911-F-1-C
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

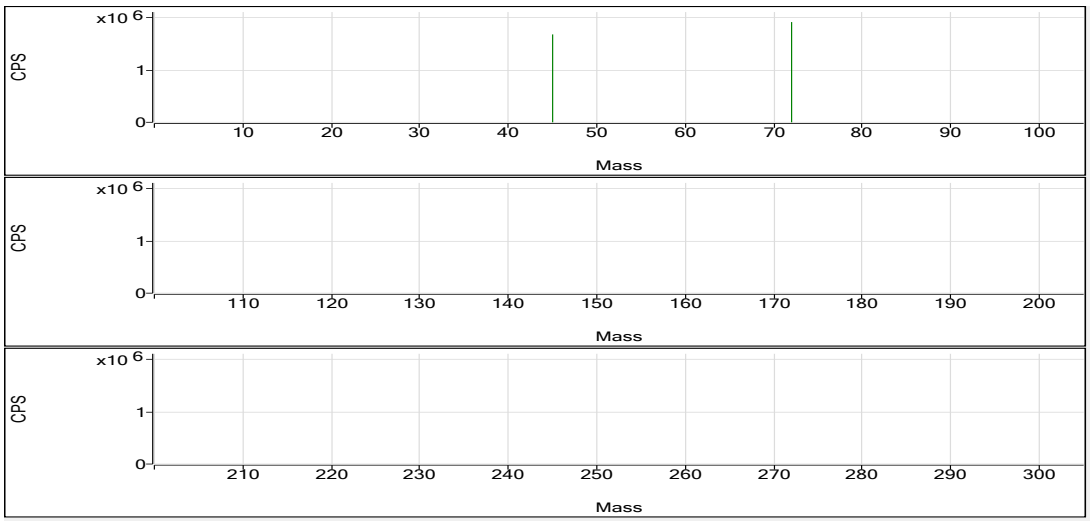
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.007	ppb	122.3	14.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.248	ppb	40.2	11.33	0.0000	Pulse	1.5000	3
Na	23	45	He	307271.046	ppb	2.8	30515567.88	1 396.0689	Analog	0.1000	3
Mg	24	45	He	8828.562	ppb	2.8	424374.23	19.4150	Pulse	0.1000	3
Al	27	45	He	0.443	ppb	456.2	36.67	0.0017	Pulse	0.1000	3
K	39	45	He	6384.814	ppb	2.6	158093.77	7.2321	Pulse	0.1000	3
Ca	44	45	He	51815.613	ppb	3.7	72229.35	3.3050	Pulse	0.1000	3
Ti	47	45	He	0.000	ppb	N/A	0.00	0.0000	Pulse	0.1000	3
V	51	45	He	-0.050	ppb	N/A	197.33	0.0090	Pulse	0.5000	3
Cr	52	45	He	-0.028	ppb	N/A	613.37	0.0280	Pulse	0.1000	3
Mn	55	72	He	361.688	ppb	1.7	113100.02	1.3181	Pulse	0.1000	3
Fe	57	72	He	10984.024	ppb	1.3	185521.66	2.1620	Pulse	0.1000	3
Co	59	72	He	0.281	ppb	21.4	636.70	0.0074	Pulse	0.1000	3
Ni	60	72	He	0.708	ppb	24.4	510.03	0.0059	Pulse	0.1000	3
Cu	63	72	He	0.072	ppb	74.8	343.35	0.0040	Pulse	0.1000	3
Zn	66	72	He	4.072	ppb	8.8	690.04	0.0080	Pulse	0.1000	3
As	75	72	He	0.218	ppb	23.2	44.67	0.0005	Pulse	0.5000	3
Sr	88	115	He	138.259	ppb	0.9	43129.87	1.0954	Pulse	0.1000	3
Mo	98	115	He	0.076	ppb	57.5	110.00	0.0028	Pulse	0.1000	3
Ag	107	115	He	0.005	ppb	155.0	23.33	0.0006	Pulse	0.1000	3
Cd	111	115	He	0.002	ppb	179.4	1.33	0.0000	Pulse	0.5000	3
Sn	120	115	He	-0.118	ppb	N/A	783.39	0.0199	Pulse	0.1000	3
Sb	121	115	He	0.015	ppb	183.1	20.00	0.0005	Pulse	0.1000	3
Ba	137	115	He	115.232	ppb	2.1	23834.73	0.6053	Pulse	0.1000	3
Tl	205	209	He	0.007	ppb	23.6	106.67	0.0005	Pulse	0.1000	3
Pb	208	209	He	0.030	ppb	28.8	1276.74	0.0055	Pulse	0.1000	3
U	238	209	He	0.034	ppb	29.0	540.03	0.0023	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1681271.17	0.5	103.3	Analog	0.1000	3
No Gas	Ge	72	1917387.53	1.9	102.3	Analog	0.1000	3
H2	Sc	45	103792.46	0.9	105.2	Pulse	0.1000	3
H2	Ge	72	168816.41	0.9	105.8	Pulse	0.1000	3
H2	In	115	290684.39	1.2	102.3	Pulse	0.1000	3
He	Sc	45	21870.31	3.0	103.6	Pulse	0.1000	3
He	Ge	72	85820.73	1.4	104.2	Pulse	0.1000	3
He	In	115	39376.66	0.7	105.1	Pulse	0.1000	3
He	Tb	159	258829.64	0.2	103.0	Pulse	0.1000	3
He	Bi	209	232327.40	1.0	102.1	Pulse	0.1000	3

No Gas



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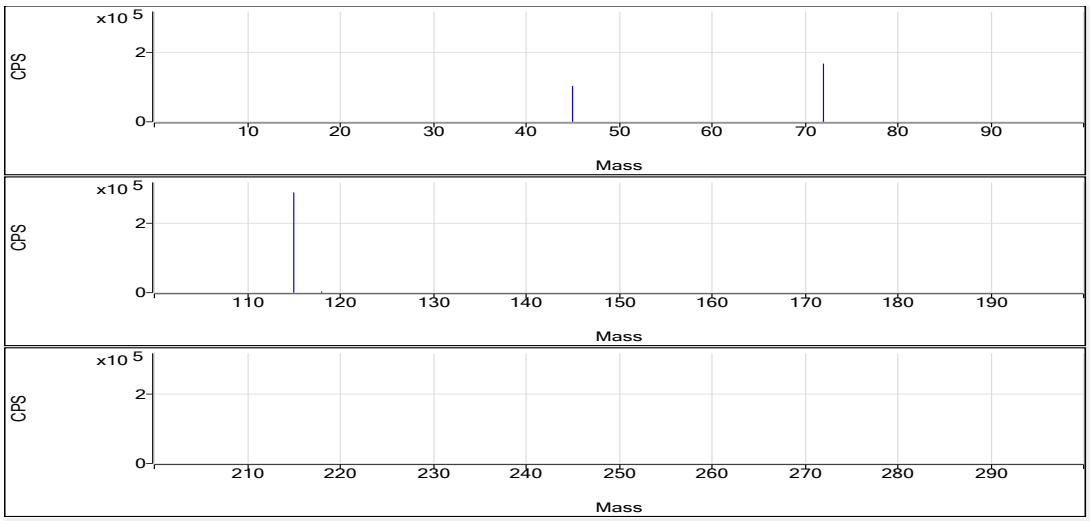
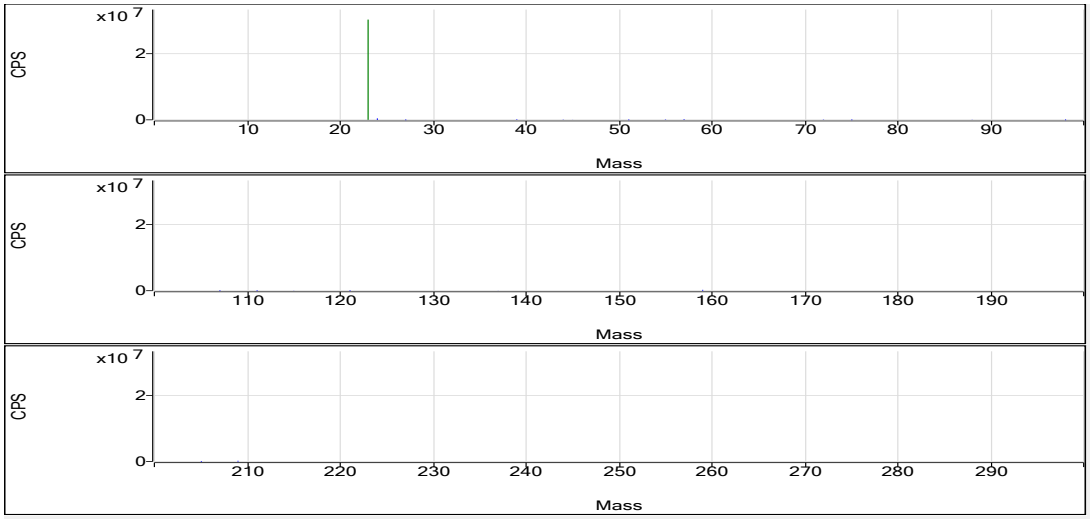


Quantitation Report

He



Quantitation Report

Data File Name	076_CCV.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 12:47:18 PM
Sample Name	CCV 1942322
Sample Type	CCV
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

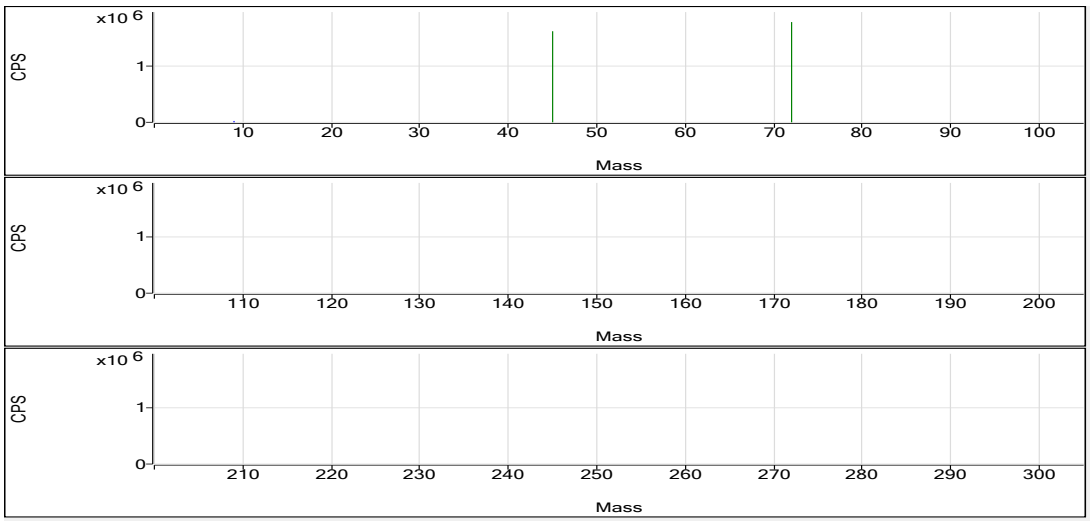
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	30.163	ppb	1.9	23886.40	0.0146	Pulse	0.5000	3
Se	78	115	H2	30.680	ppb	1.9	1292.73	0.0045	Pulse	1.5000	3
Na	23	45	He	5416.691	ppb	0.6	539164.86	24.9893	Pulse	0.1000	3
Mg	24	45	He	4928.326	ppb	0.5	233876.27	10.8397	Pulse	0.1000	3
Al	27	45	He	4961.889	ppb	1.2	58570.16	2.7146	Pulse	0.1000	3
K	39	45	He	4991.490	ppb	2.0	123085.57	5.7052	Pulse	0.1000	3
Ca	44	45	He	5034.019	ppb	6.4	7011.95	0.3251	Pulse	0.1000	3
Ti	47	45	He	292.405	ppb	1.7	3560.55	0.1650	Pulse	0.1000	3
V	51	45	He	299.020	ppb	1.2	187507.24	8.6909	Pulse	0.5000	3
Cr	52	45	He	300.107	ppb	1.0	257524.40	11.9361	Pulse	0.1000	3
Mn	55	72	He	314.837	ppb	0.5	89097.21	1.1474	Pulse	0.1000	3
Fe	57	72	He	5272.846	ppb	1.8	80615.06	1.0383	Pulse	0.1000	3
Co	59	72	He	295.382	ppb	1.5	549496.97	7.0771	Pulse	0.1000	3
Ni	60	72	He	312.066	ppb	1.4	161706.25	2.0826	Pulse	0.1000	3
Cu	63	72	He	303.124	ppb	1.5	478544.20	6.1633	Pulse	0.1000	3
Zn	66	72	He	310.082	ppb	1.8	42376.60	0.5458	Pulse	0.1000	3
As	75	72	He	312.557	ppb	1.5	27313.36	0.3518	Pulse	0.5000	3
Sr	88	115	He	30.987	ppb	2.6	9530.20	0.2461	Pulse	0.1000	3
Mo	98	115	He	30.496	ppb	4.5	37554.23	0.9704	Pulse	0.1000	3
Ag	107	115	He	30.857	ppb	3.1	93126.63	2.4056	Pulse	0.1000	3
Cd	111	115	He	31.317	ppb	2.8	8361.88	0.2160	Pulse	0.5000	3
Sn	120	115	He	31.087	ppb	5.7	23096.51	0.5969	Pulse	0.1000	3
Sb	121	115	He	31.393	ppb	3.1	19290.74	0.4982	Pulse	0.1000	3
Ba	137	115	He	310.563	ppb	3.5	63132.49	1.6310	Pulse	0.1000	3
Tl	205	209	He	30.250	ppb	0.3	254653.46	1.0872	Pulse	0.1000	3
Pb	208	209	He	30.478	ppb	0.8	340870.62	1.4553	Pulse	0.1000	3
U	238	209	He	250.001	ppb	0.8	3747809.11	16.0012	Analog	0.1000	3

ISTD Table:

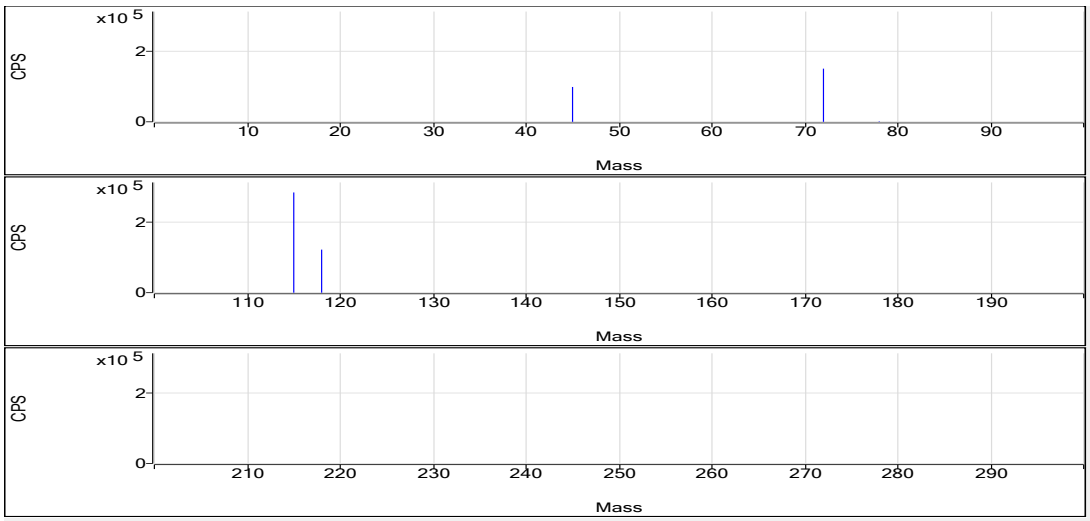
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1631245.60	1.4	100.2	Analog	0.1000	3
No Gas	Ge	72	1795181.33	0.7	95.8	Analog	0.1000	3
H2	Sc	45	98953.04	1.1	100.2	Pulse	0.1000	3
H2	Ge	72	150970.98	1.0	94.6	Pulse	0.1000	3
H2	In	115	284638.61	0.8	100.2	Pulse	0.1000	3
He	Sc	45	21576.59	0.9	102.2	Pulse	0.1000	3
He	Ge	72	77658.23	1.8	94.3	Pulse	0.1000	3
He	In	115	38738.11	3.4	103.4	Pulse	0.1000	3
He	Tb	159	255418.32	0.5	101.6	Pulse	0.1000	3
He	Bi	209	234234.87	1.1	103.0	Pulse	0.1000	3

No Gas

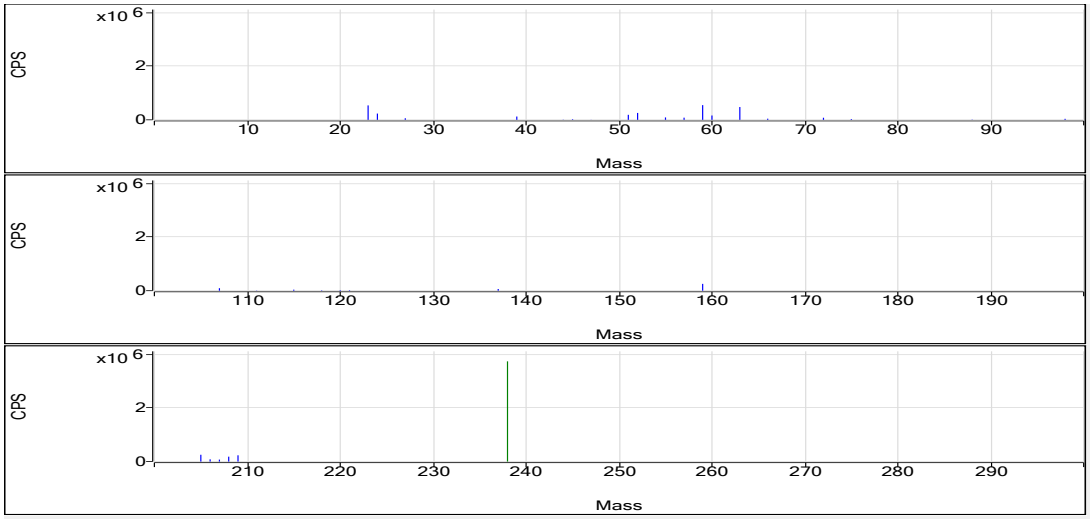


H2



Quantitation Report

He



Quantitation Report

Data File Name	077_CCB.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 12:49:20 PM
Sample Name	CCB 2014932
Sample Type	CCB
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

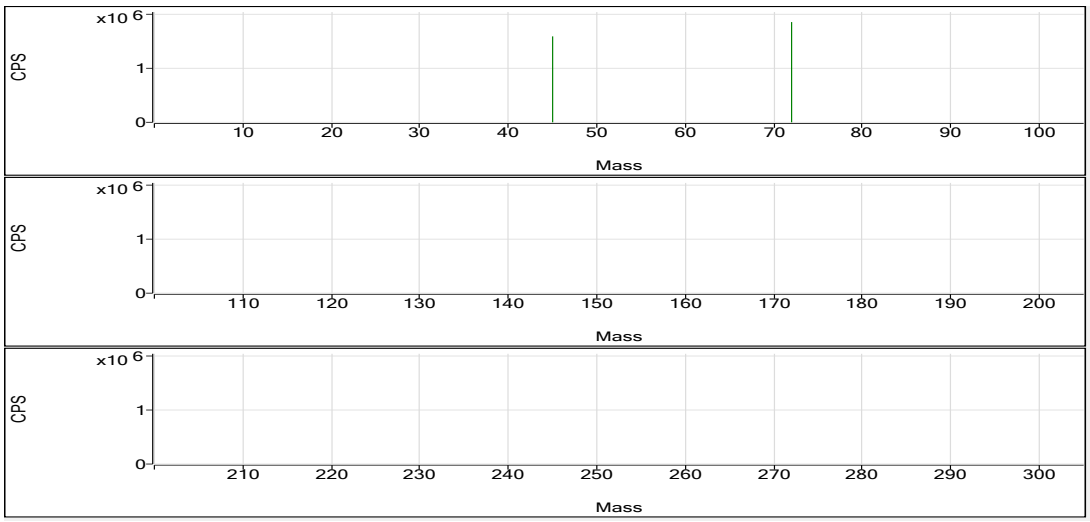
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.022	ppb	47.3	25.33	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.048	ppb	34.5	2.67	0.0000	Pulse	1.5000	3
Na	23	45	He	447.171	ppb	1.0	50176.03	2.4168	Pulse	0.1000	3
Mg	24	45	He	4.179	ppb	44.8	273.35	0.0131	Pulse	0.1000	3
Al	27	45	He	1.519	ppb	86.7	46.67	0.0022	Pulse	0.1000	3
K	39	45	He	0.556	ppb	1732.2	4894.32	0.2357	Pulse	0.1000	3
Ca	44	45	He	-4.085	ppb	N/A	86.67	0.0042	Pulse	0.1000	3
Ti	47	45	He	0.283	ppb	173.2	3.33	0.0002	Pulse	0.1000	3
V	51	45	He	0.066	ppb	73.9	256.67	0.0124	Pulse	0.5000	3
Cr	52	45	He	0.105	ppb	73.8	690.04	0.0332	Pulse	0.1000	3
Mn	55	72	He	1.362	ppb	19.4	426.69	0.0052	Pulse	0.1000	3
Fe	57	72	He	9.638	ppb	23.9	230.01	0.0028	Pulse	0.1000	3
Co	59	72	He	0.093	ppb	26.6	240.01	0.0029	Pulse	0.1000	3
Ni	60	72	He	0.078	ppb	17.1	143.34	0.0017	Pulse	0.1000	3
Cu	63	72	He	0.145	ppb	15.1	453.36	0.0055	Pulse	0.1000	3
Zn	66	72	He	0.251	ppb	98.3	110.01	0.0013	Pulse	0.1000	3
As	75	72	He	0.236	ppb	68.1	44.67	0.0005	Pulse	0.5000	3
Sr	88	115	He	0.028	ppb	225.6	40.00	0.0010	Pulse	0.1000	3
Mo	98	115	He	0.040	ppb	31.9	63.33	0.0016	Pulse	0.1000	3
Ag	107	115	He	0.012	ppb	56.1	43.33	0.0011	Pulse	0.1000	3
Cd	111	115	He	0.010	ppb	43.2	3.33	0.0001	Pulse	0.5000	3
Sn	120	115	He	0.004	ppb	2594.0	860.05	0.0221	Pulse	0.1000	3
Sb	121	115	He	0.021	ppb	46.4	23.33	0.0006	Pulse	0.1000	3
Ba	137	115	He	0.160	ppb	95.9	43.33	0.0011	Pulse	0.1000	3
Tl	205	209	He	0.023	ppb	24.5	236.68	0.0010	Pulse	0.1000	3
Pb	208	209	He	-0.002	ppb	N/A	920.05	0.0040	Pulse	0.1000	3
U	238	209	He	0.071	ppb	12.3	1093.42	0.0047	Pulse	0.1000	3

ISTD Table:

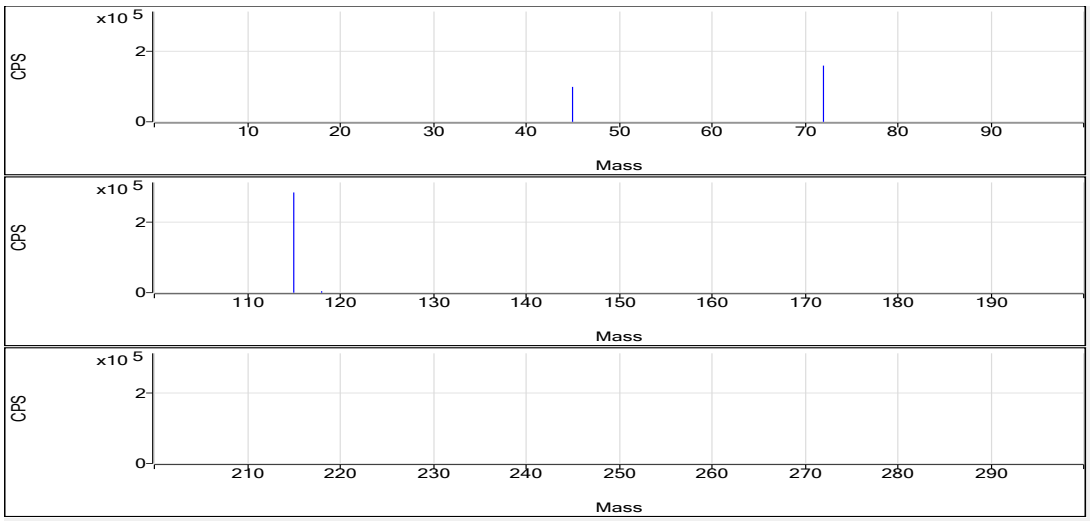
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1591355.81	1.7	97.8	Analog	0.1000	3
No Gas	Ge	72	1856188.41	0.6	99.1	Analog	0.1000	3
H2	Sc	45	98935.19	1.3	100.2	Pulse	0.1000	3
H2	Ge	72	159202.20	1.0	99.8	Pulse	0.1000	3
H2	In	115	283953.36	1.2	99.9	Pulse	0.1000	3
He	Sc	45	20762.03	0.9	98.4	Pulse	0.1000	3
He	Ge	72	82614.90	1.1	100.3	Pulse	0.1000	3
He	In	115	38791.54	1.5	103.5	Pulse	0.1000	3
He	Tb	159	253011.12	1.1	100.7	Pulse	0.1000	3
He	Bi	209	231351.30	0.1	101.7	Pulse	0.1000	3

No Gas

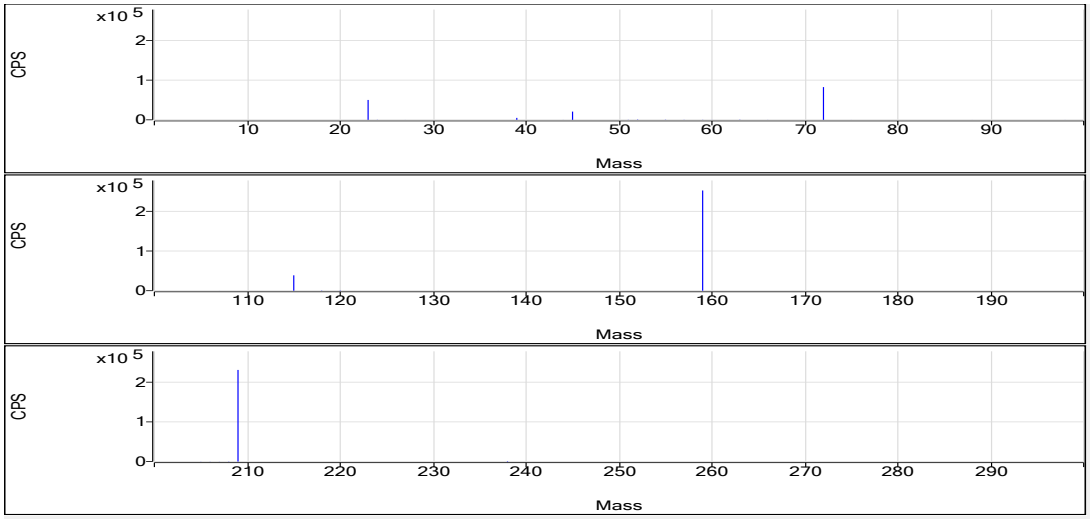


H2



Quantitation Report

He



Quantitation Report

Data File Name	078SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 12:51:22 PM
Sample Name	410-60911-F-11-C
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

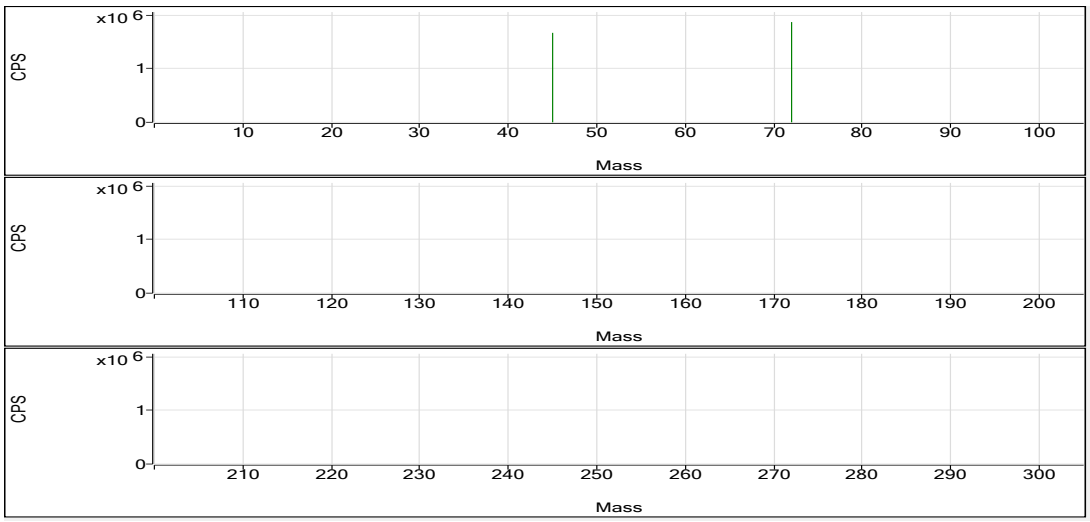
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.020	ppb	46.0	25.33	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.472	ppb	9.7	20.45	0.0001	Pulse	1.5000	3
Na	23	45	He	877760.900	ppb	0.5	85459792.06	3 987.3418	Analog	0.1000	3
Mg	24	45	He	6501.974	ppb	0.7	306489.51	14.2996	Pulse	0.1000	3
Al	27	45	He	7.659	ppb	58.0	120.01	0.0056	Pulse	0.1000	3
K	39	45	He	2480.110	ppb	0.7	63293.86	2.9530	Pulse	0.1000	3
Ca	44	45	He	74775.111	ppb	1.5	102187.29	4.7675	Pulse	0.1000	3
Ti	47	45	He	0.277	ppb	173.2	3.33	0.0002	Pulse	0.1000	3
V	51	45	He	0.081	ppb	32.8	274.67	0.0128	Pulse	0.5000	3
Cr	52	45	He	0.424	ppb	16.8	983.40	0.0459	Pulse	0.1000	3
Mn	55	72	He	1667.383	ppb	1.5	500749.32	6.0756	Pulse	0.1000	3
Fe	57	72	He	169.957	ppb	4.4	2830.37	0.0343	Pulse	0.1000	3
Co	59	72	He	6.502	ppb	1.7	12896.16	0.1565	Pulse	0.1000	3
Ni	60	72	He	4.627	ppb	5.5	2643.67	0.0321	Pulse	0.1000	3
Cu	63	72	He	2.082	ppb	8.4	3697.28	0.0449	Pulse	0.1000	3
Zn	66	72	He	47.816	ppb	2.0	6998.59	0.0849	Pulse	0.1000	3
As	75	72	He	0.617	ppb	31.6	80.00	0.0010	Pulse	0.5000	3
Sr	88	115	He	345.118	ppb	1.4	103490.81	2.7330	Pulse	0.1000	3
Mo	98	115	He	1.071	ppb	4.4	1303.45	0.0344	Pulse	0.1000	3
Ag	107	115	He	0.015	ppb	61.1	50.00	0.0013	Pulse	0.1000	3
Cd	111	115	He	0.243	ppb	28.0	64.00	0.0017	Pulse	0.5000	3
Sn	120	115	He	-0.232	ppb	N/A	673.37	0.0178	Pulse	0.1000	3
Sb	121	115	He	0.421	ppb	18.1	263.35	0.0070	Pulse	0.1000	3
Ba	137	115	He	196.973	ppb	2.0	39173.32	1.0346	Pulse	0.1000	3
Tl	205	209	He	0.018	ppb	27.2	190.01	0.0008	Pulse	0.1000	3
Pb	208	209	He	0.052	ppb	16.8	1470.08	0.0065	Pulse	0.1000	3
U	238	209	He	0.148	ppb	9.8	2166.92	0.0096	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1669117.53	0.1	102.6	Analog	0.1000	3
No Gas	Ge	72	1869941.85	1.2	99.8	Analog	0.1000	3
H2	Sc	45	103083.75	0.7	104.4	Pulse	0.1000	3
H2	Ge	72	163585.00	1.5	102.5	Pulse	0.1000	3
H2	In	115	283117.80	0.6	99.6	Pulse	0.1000	3
He	Sc	45	21433.00	0.5	101.6	Pulse	0.1000	3
He	Ge	72	82431.22	1.5	100.1	Pulse	0.1000	3
He	In	115	37869.07	0.9	101.1	Pulse	0.1000	3
He	Tb	159	253650.69	0.9	100.9	Pulse	0.1000	3
He	Bi	209	224793.68	0.6	98.8	Pulse	0.1000	3

No Gas



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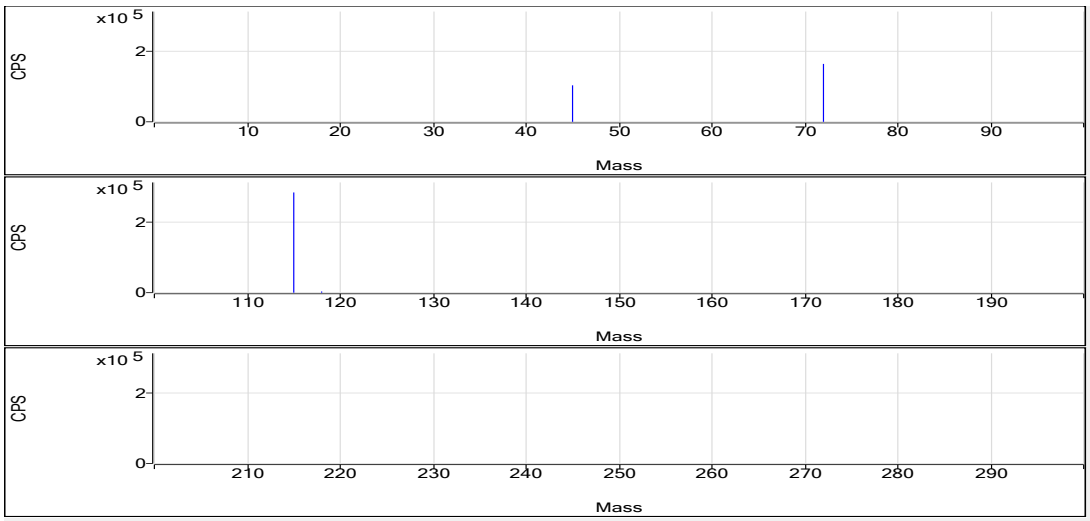
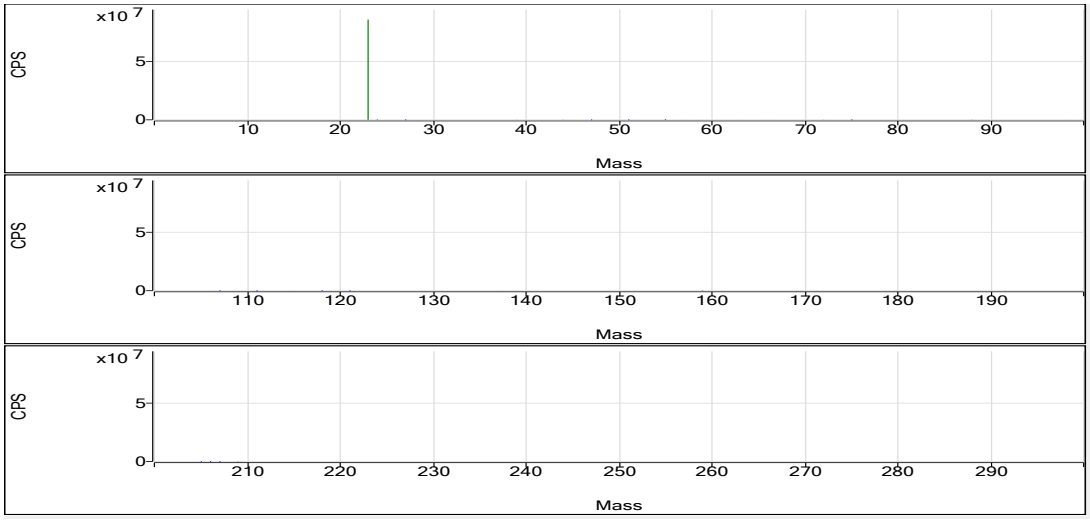


Quantitation Report

He



Quantitation Report

Data File Name	079SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 12:53:23 PM
Sample Name	410-60911-F-10-C
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

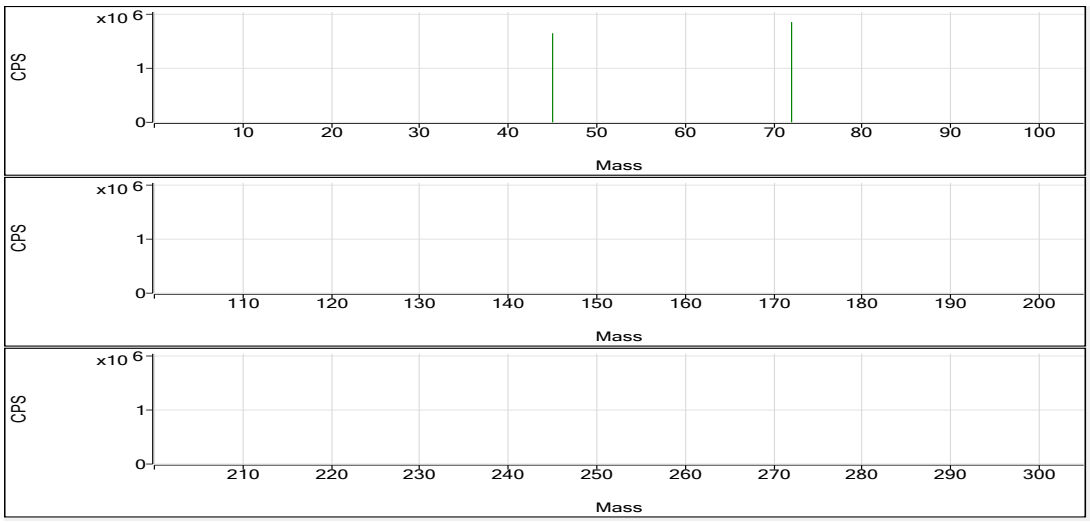
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.025	ppb	15.8	28.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.147	ppb	5.9	6.89	0.0000	Pulse	1.5000	3
Na	23	45	He	798352.464	ppb	0.5	78320892.17	3 626.6537	Analog	0.1000	3
Mg	24	45	He	16920.418	ppb	1.0	803472.10	37.2062	Pulse	0.1000	3
Al	27	45	He	7.003	ppb	36.0	113.34	0.0052	Pulse	0.1000	3
K	39	45	He	15598.467	ppb	0.7	374234.80	17.3293	Pulse	0.1000	3
Ca	44	45	He	99504.818	ppb	0.1	136982.88	6.3428	Pulse	0.1000	3
Ti	47	45	He	0.000	ppb	N/A	0.00	0.0000	Pulse	0.1000	3
V	51	45	He	0.059	ppb	131.6	262.67	0.0122	Pulse	0.5000	3
Cr	52	45	He	0.256	ppb	41.8	846.72	0.0392	Pulse	0.1000	3
Mn	55	72	He	6933.444	ppb	2.8	2061239.03	25.2633	Analog	0.1000	3
Fe	57	72	He	37973.317	ppb	2.0	609707.93	7.4720	Pulse	0.1000	3
Co	59	72	He	0.260	ppb	22.4	563.36	0.0069	Pulse	0.1000	3
Ni	60	72	He	0.896	ppb	18.8	586.70	0.0072	Pulse	0.1000	3
Cu	63	72	He	0.238	ppb	8.7	603.37	0.0074	Pulse	0.1000	3
Zn	66	72	He	7.897	ppb	14.4	1203.43	0.0148	Pulse	0.1000	3
As	75	72	He	0.328	ppb	20.6	52.67	0.0006	Pulse	0.5000	3
Sr	88	115	He	390.704	ppb	2.2	120523.19	3.0939	Pulse	0.1000	3
Mo	98	115	He	0.075	ppb	23.2	106.67	0.0027	Pulse	0.1000	3
Ag	107	115	He	0.021	ppb	26.0	70.00	0.0018	Pulse	0.1000	3
Cd	111	115	He	0.020	ppb	38.6	6.00	0.0002	Pulse	0.5000	3
Sn	120	115	He	-0.439	ppb	N/A	543.36	0.0140	Pulse	0.1000	3
Sb	121	115	He	0.031	ppb	100.1	30.00	0.0008	Pulse	0.1000	3
Ba	137	115	He	385.192	ppb	2.8	78790.19	2.0229	Pulse	0.1000	3
Tl	205	209	He	0.026	ppb	3.9	253.34	0.0011	Pulse	0.1000	3
Pb	208	209	He	0.082	ppb	10.4	1806.79	0.0080	Pulse	0.1000	3
U	238	209	He	0.113	ppb	11.8	1680.17	0.0074	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1656550.03	0.5	101.8	Analog	0.1000	3
No Gas	Ge	72	1864395.49	0.6	99.5	Analog	0.1000	3
H2	Sc	45	105142.21	1.6	106.5	Pulse	0.1000	3
H2	Ge	72	165363.85	2.6	103.7	Pulse	0.1000	3
H2	In	115	286464.43	1.3	100.8	Pulse	0.1000	3
He	Sc	45	21596.55	1.0	102.3	Pulse	0.1000	3
He	Ge	72	81616.34	1.8	99.1	Pulse	0.1000	3
He	In	115	38965.68	2.2	104.0	Pulse	0.1000	3
He	Tb	159	256276.30	0.4	102.0	Pulse	0.1000	3
He	Bi	209	226375.29	1.5	99.5	Pulse	0.1000	3

No Gas



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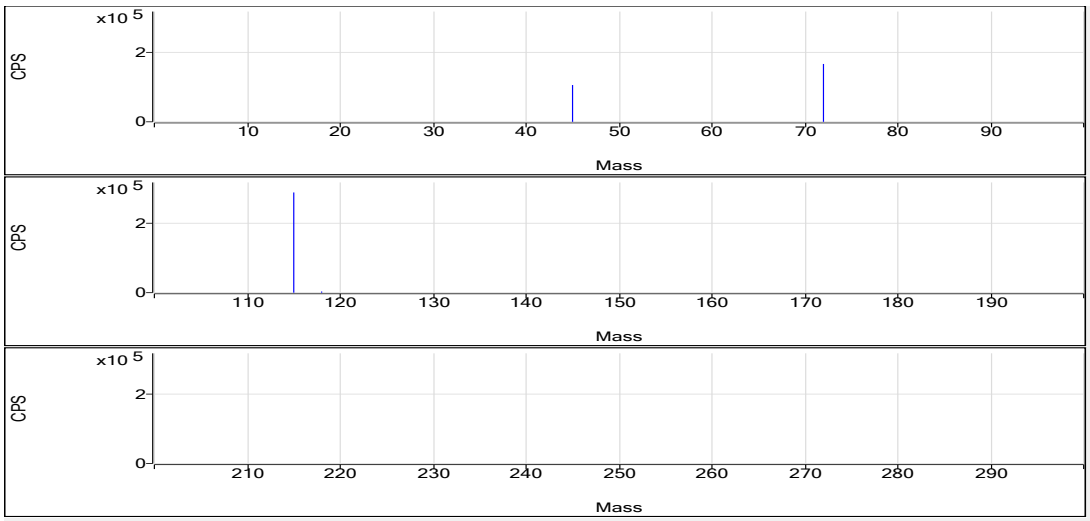
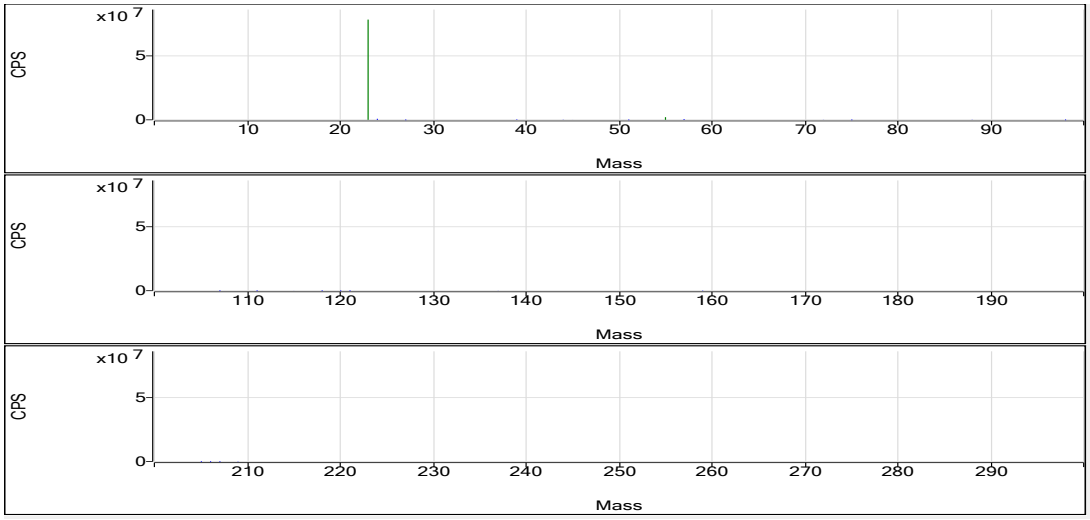


Quantitation Report

He



Quantitation Report

Data File Name	080SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 12:55:23 PM
Sample Name	410-60911-F-13-C
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

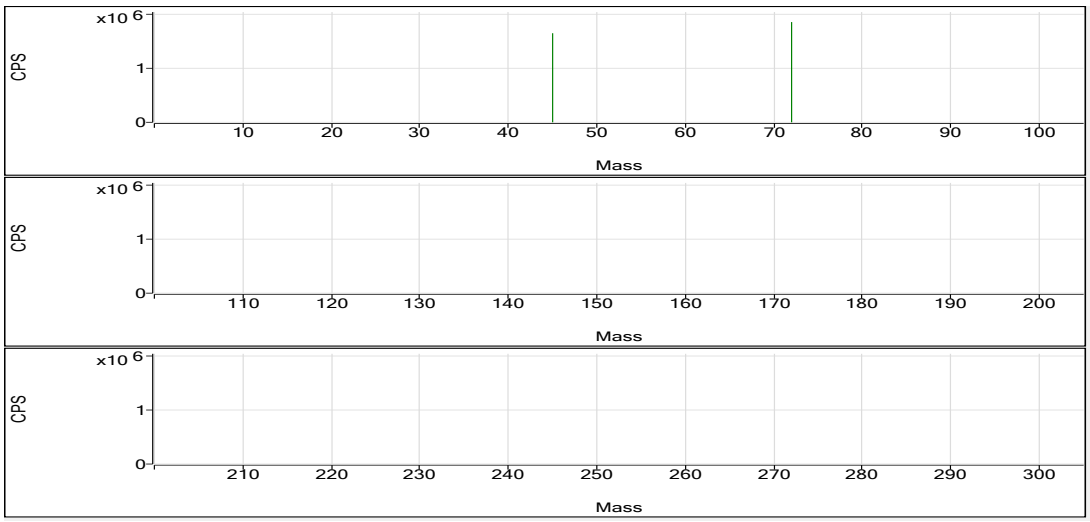
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.014	ppb	45.3	20.00	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.091	ppb	9.7	4.45	0.0000	Pulse	1.5000	3
Na	23	45	He	1257776.123	ppb	1.5	122492038.18	5 713.4429	Analog	0.1000	3
Mg	24	45	He	32936.236	ppb	1.6	1552631.12	72.4196	Analog	0.1000	3
Al	27	45	He	0.233	ppb	896.0	33.33	0.0015	Pulse	0.1000	3
K	39	45	He	10201.290	ppb	2.8	244681.60	11.4146	Pulse	0.1000	3
Ca	44	45	He	170099.077	ppb	1.8	232386.43	10.8396	Pulse	0.1000	3
Ti	47	45	He	0.276	ppb	173.2	3.33	0.0002	Pulse	0.1000	3
V	51	45	He	-0.062	ppb	N/A	186.00	0.0087	Pulse	0.5000	3
Cr	52	45	He	0.195	ppb	73.0	790.05	0.0368	Pulse	0.1000	3
Mn	55	72	He	8443.785	ppb	0.6	2481083.77	30.7664	Analog	0.1000	3
Fe	57	72	He	23852.102	ppb	1.4	378481.66	4.6937	Pulse	0.1000	3
Co	59	72	He	0.306	ppb	16.8	646.71	0.0080	Pulse	0.1000	3
Ni	60	72	He	0.504	ppb	40.4	370.02	0.0046	Pulse	0.1000	3
Cu	63	72	He	0.166	ppb	23.9	476.69	0.0059	Pulse	0.1000	3
Zn	66	72	He	2.388	ppb	4.9	410.02	0.0051	Pulse	0.1000	3
As	75	72	He	0.189	ppb	27.9	39.33	0.0005	Pulse	0.5000	3
Sr	88	115	He	550.858	ppb	1.6	167643.75	4.3618	Pulse	0.1000	3
Mo	98	115	He	0.032	ppb	37.7	53.33	0.0014	Pulse	0.1000	3
Ag	107	115	He	0.010	ppb	19.5	36.67	0.0010	Pulse	0.1000	3
Cd	111	115	He	0.008	ppb	115.9	2.67	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.284	ppb	N/A	646.71	0.0168	Pulse	0.1000	3
Sb	121	115	He	0.010	ppb	89.2	16.67	0.0004	Pulse	0.1000	3
Ba	137	115	He	293.828	ppb	0.6	59311.96	1.5431	Pulse	0.1000	3
Tl	205	209	He	0.003	ppb	70.7	63.33	0.0003	Pulse	0.1000	3
Pb	208	209	He	-0.013	ppb	N/A	763.37	0.0034	Pulse	0.1000	3
U	238	209	He	0.019	ppb	11.4	310.01	0.0014	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1650025.44	1.1	101.4	Analog	0.1000	3
No Gas	Ge	72	1856372.89	1.0	99.1	Analog	0.1000	3
H2	Sc	45	103301.90	0.3	104.7	Pulse	0.1000	3
H2	Ge	72	164342.41	1.2	103.0	Pulse	0.1000	3
H2	In	115	282098.28	1.3	99.3	Pulse	0.1000	3
He	Sc	45	21443.09	1.9	101.6	Pulse	0.1000	3
He	Ge	72	80647.27	1.6	97.9	Pulse	0.1000	3
He	In	115	38437.18	0.6	102.6	Pulse	0.1000	3
He	Tb	159	255962.37	0.3	101.8	Pulse	0.1000	3
He	Bi	209	221453.08	0.8	97.3	Pulse	0.1000	3

No Gas



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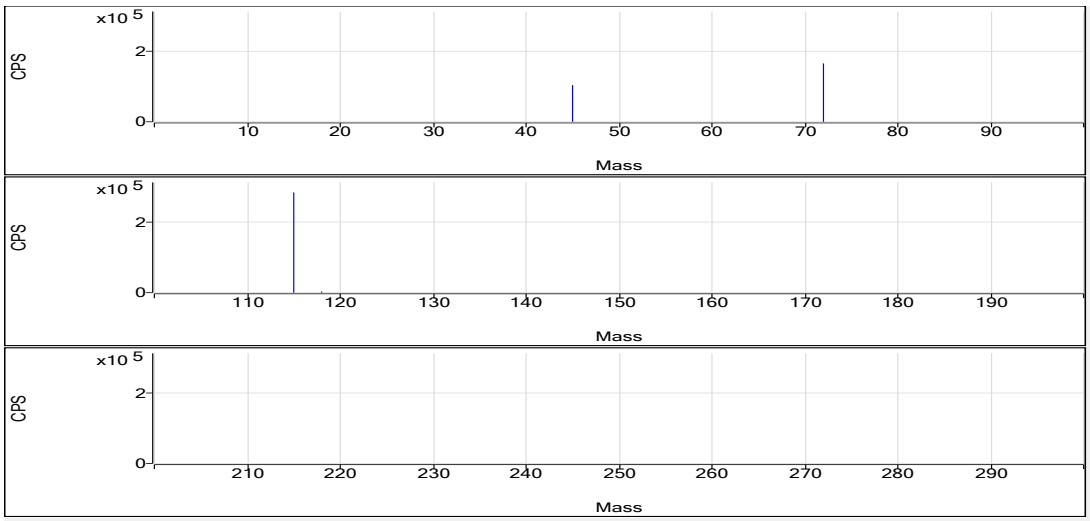
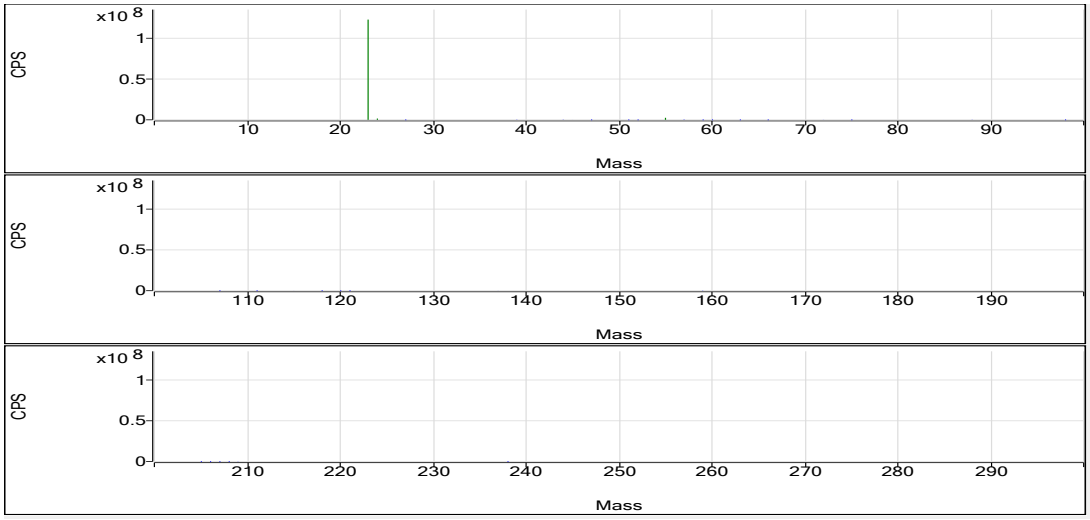


Quantitation Report

He



Quantitation Report

Data File Name	081SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 12:57:29 PM
Sample Name	410-60911-F-4-C
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

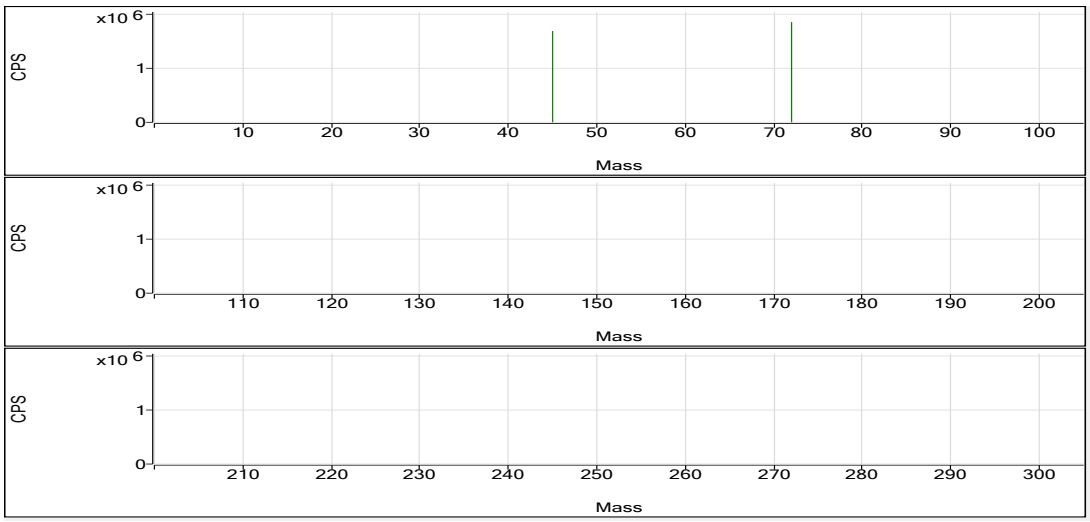
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.021	ppb	10.2	26.00	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.486	ppb	15.2	20.89	0.0001	Pulse	1.5000	3
Na	23	45	He	1203175.117	ppb	1.1	117136281.59	5 465.4348	Analog	0.1000	3
Mg	24	45	He	34625.429	ppb	1.8	1631683.99	76.1336	Analog	0.1000	3
Al	27	45	He	2.825	ppb	63.5	63.33	0.0030	Pulse	0.1000	3
K	39	45	He	5198.000	ppb	1.9	127123.26	5.9315	Pulse	0.1000	3
Ca	44	45	He	176342.854	ppb	0.9	240842.67	11.2373	Pulse	0.1000	3
Ti	47	45	He	0.277	ppb	173.2	3.33	0.0002	Pulse	0.1000	3
V	51	45	He	0.031	ppb	129.0	243.33	0.0114	Pulse	0.5000	3
Cr	52	45	He	0.345	ppb	11.5	916.73	0.0428	Pulse	0.1000	3
Mn	55	72	He	8287.295	ppb	0.5	2492597.83	30.1962	Analog	0.1000	3
Fe	57	72	He	42171.776	ppb	0.6	684966.42	8.2981	Pulse	0.1000	3
Co	59	72	He	1.008	ppb	5.3	2050.22	0.0248	Pulse	0.1000	3
Ni	60	72	He	1.489	ppb	11.4	920.06	0.0111	Pulse	0.1000	3
Cu	63	72	He	0.165	ppb	28.2	486.69	0.0059	Pulse	0.1000	3
Zn	66	72	He	3.259	ppb	27.3	546.70	0.0066	Pulse	0.1000	3
As	75	72	He	1.012	ppb	6.8	116.67	0.0014	Pulse	0.5000	3
Sr	88	115	He	606.717	ppb	1.4	184311.52	4.8040	Pulse	0.1000	3
Mo	98	115	He	0.491	ppb	6.2	613.37	0.0160	Pulse	0.1000	3
Ag	107	115	He	0.010	ppb	96.7	36.67	0.0010	Pulse	0.1000	3
Cd	111	115	He	0.000	ppb	N/A	0.67	0.0000	Pulse	0.5000	3
Sn	120	115	He	-0.268	ppb	N/A	656.71	0.0171	Pulse	0.1000	3
Sb	121	115	He	0.054	ppb	17.5	43.33	0.0011	Pulse	0.1000	3
Ba	137	115	He	626.432	ppb	0.2	126211.00	3.2896	Pulse	0.1000	3
Tl	205	209	He	0.001	ppb	268.3	50.00	0.0002	Pulse	0.1000	3
Pb	208	209	He	-0.016	ppb	N/A	733.37	0.0033	Pulse	0.1000	3
U	238	209	He	0.315	ppb	0.4	4547.65	0.0204	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1691750.65	1.0	104.0	Analog	0.1000	3
No Gas	Ge	72	1858368.78	1.2	99.2	Analog	0.1000	3
H2	Sc	45	104221.75	1.2	105.6	Pulse	0.1000	3
H2	Ge	72	167613.17	1.7	105.1	Pulse	0.1000	3
H2	In	115	281149.88	0.4	99.0	Pulse	0.1000	3
He	Sc	45	21433.05	0.5	101.6	Pulse	0.1000	3
He	Ge	72	82547.89	0.8	100.2	Pulse	0.1000	3
He	In	115	38366.99	0.2	102.4	Pulse	0.1000	3
He	Tb	159	257567.50	0.4	102.5	Pulse	0.1000	3
He	Bi	209	223406.13	0.5	98.2	Pulse	0.1000	3

No Gas



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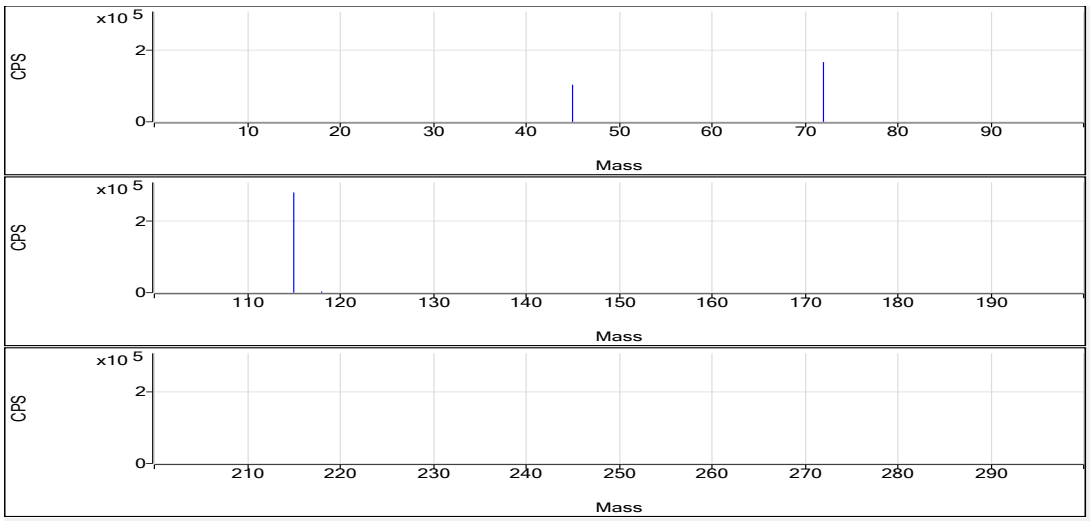
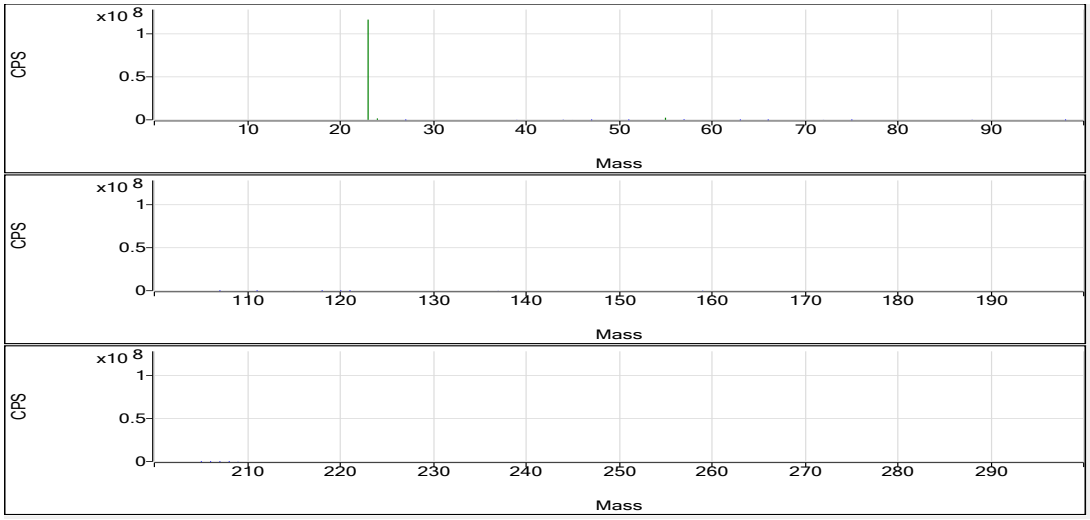


Quantitation Report

He



Quantitation Report

Data File Name	082SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 12:59:33 PM
Sample Name	410-60911-F-14-C
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

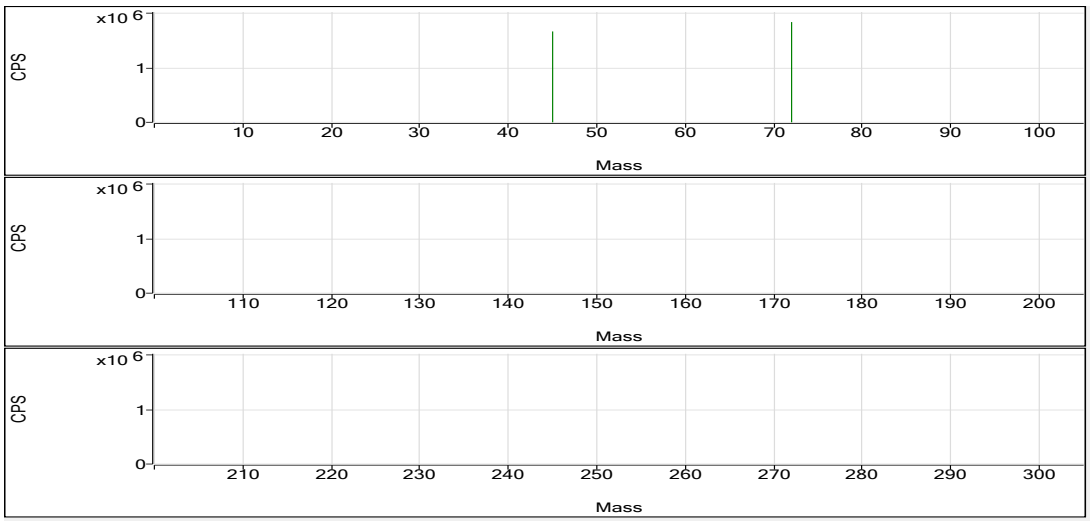
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	2.678	ppb	6.9	2181.50	0.0013	Pulse	0.5000	3
Se	78	115	H2	0.435	ppb	48.1	18.44	0.0001	Pulse	1.5000	3
Na	23	45	He	2843238.663	ppb	1.9	277491609.20	12 914.9138	Analog	0.1000	3
Mg	24	45	He	18385.911	ppb	0.7	868746.73	40.4284	Pulse	0.1000	3
Al	27	45	He	8089.929	ppb	1.8	95079.50	4.4250	Pulse	0.1000	3
K	39	45	He	8084.505	ppb	1.3	195424.32	9.0948	Pulse	0.1000	3
Ca	44	45	He	93151.839	ppb	1.6	127591.82	5.9381	Pulse	0.1000	3
Ti	47	45	He	0.000	ppb	N/A	0.00	0.0000	Pulse	0.1000	3
V	51	45	He	0.005	ppb	152.8	228.00	0.0106	Pulse	0.5000	3
Cr	52	45	He	0.284	ppb	23.3	866.72	0.0403	Pulse	0.1000	3
Mn	55	72	He	1176.231	ppb	0.8	346989.30	4.2860	Pulse	0.1000	3
Fe	57	72	He	80931.611	ppb	1.0	1289177.04	15.9240	Pulse	0.1000	3
Co	59	72	He	36.956	ppb	1.1	71735.58	0.8860	Pulse	0.1000	3
Ni	60	72	He	40.292	ppb	2.3	21853.78	0.2700	Pulse	0.1000	3
Cu	63	72	He	34.145	ppb	0.5	56391.09	0.6965	Pulse	0.1000	3
Zn	66	72	He	230.975	ppb	2.7	32938.61	0.4068	Pulse	0.1000	3
As	75	72	He	0.670	ppb	8.5	83.33	0.0010	Pulse	0.5000	3
Sr	88	115	He	551.509	ppb	2.7	168722.86	4.3669	Pulse	0.1000	3
Mo	98	115	He	0.032	ppb	41.5	53.33	0.0014	Pulse	0.1000	3
Ag	107	115	He	0.119	ppb	14.0	363.35	0.0094	Pulse	0.1000	3
Cd	111	115	He	1.136	ppb	6.8	303.34	0.0079	Pulse	0.5000	3
Sn	120	115	He	-0.229	ppb	N/A	686.71	0.0178	Pulse	0.1000	3
Sb	121	115	He	0.015	ppb	205.7	20.00	0.0005	Pulse	0.1000	3
Ba	137	115	He	241.166	ppb	2.9	48935.06	1.2666	Pulse	0.1000	3
Tl	205	209	He	0.290	ppb	5.2	2300.28	0.0106	Pulse	0.1000	3
Pb	208	209	He	31.978	ppb	0.5	330456.72	1.5267	Pulse	0.1000	3
U	238	209	He	0.091	ppb	9.4	1293.45	0.0060	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1672410.29	1.2	102.8	Analog	0.1000	3
No Gas	Ge	72	1844879.40	0.4	98.5	Analog	0.1000	3
H2	Sc	45	106027.88	0.6	107.4	Pulse	0.1000	3
H2	Ge	72	166017.94	1.9	104.1	Pulse	0.1000	3
H2	In	115	276519.36	0.6	97.3	Pulse	0.1000	3
He	Sc	45	21489.87	1.4	101.8	Pulse	0.1000	3
He	Ge	72	80962.71	0.8	98.3	Pulse	0.1000	3
He	In	115	38654.64	2.6	103.2	Pulse	0.1000	3
He	Tb	159	262460.32	0.9	104.4	Pulse	0.1000	3
He	Bi	209	216444.95	0.4	95.1	Pulse	0.1000	3

No Gas



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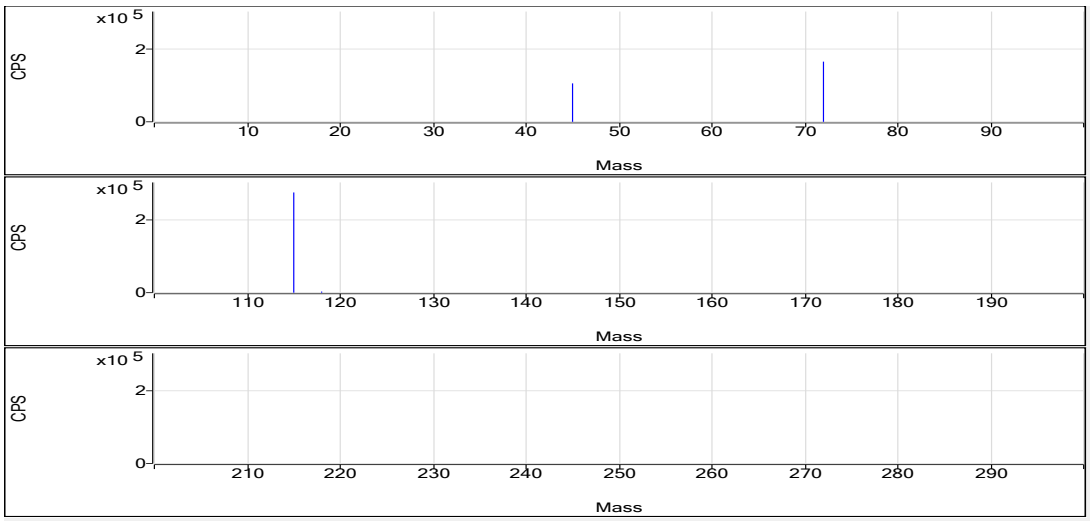
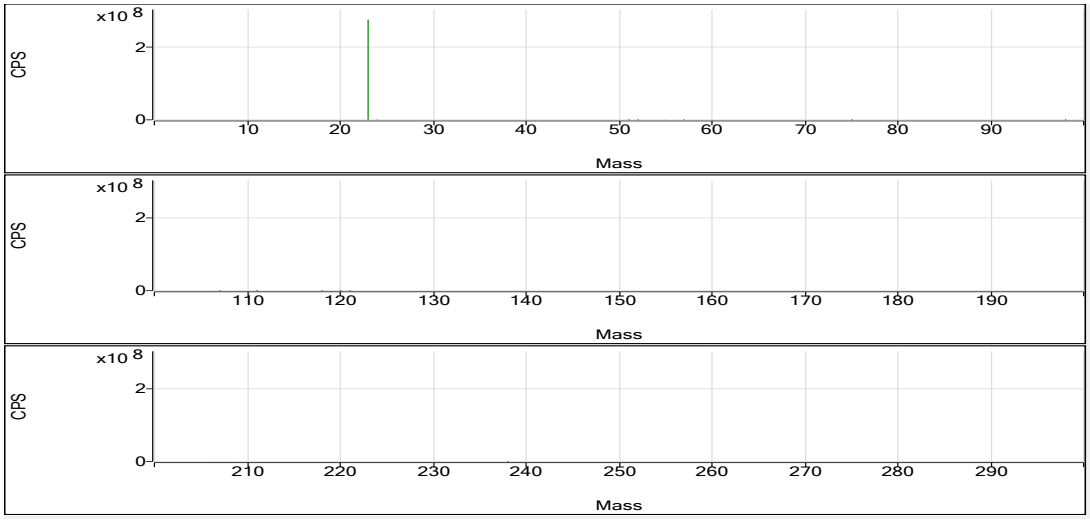


Quantitation Report

He



Quantitation Report

Data File Name	083SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 1:01:38 PM
Sample Name	410-60911-F-6-C
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

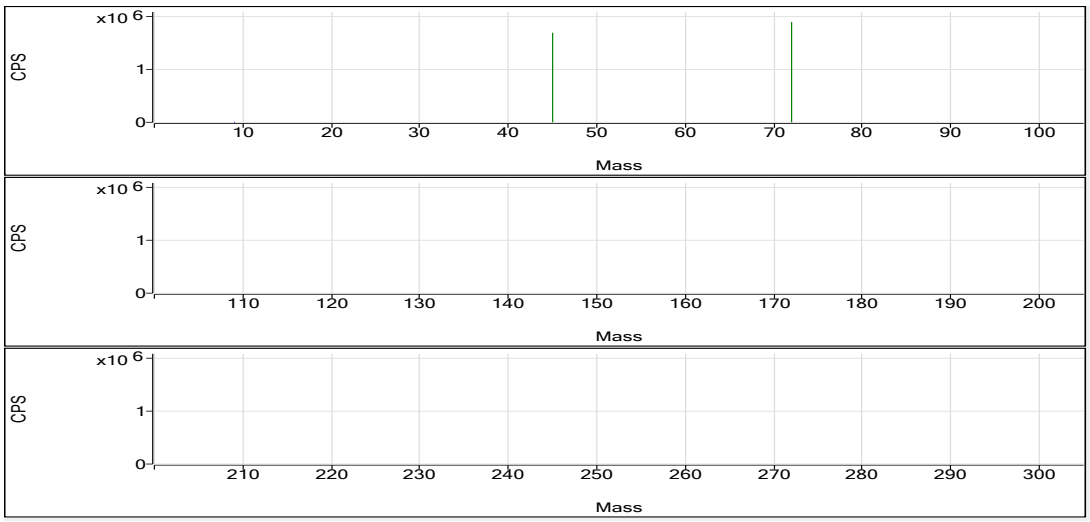
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.005	ppb	107.4	13.33	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.116	ppb	7.9	5.55	0.0000	Pulse	1.5000	3
Na	23	45	He	1275287.130	ppb	1.6	124453181.48	5 792.9812	Analog	0.1000	3
Mg	24	45	He	33467.888	ppb	0.3	1581113.26	73.5885	Analog	0.1000	3
Al	27	45	He	5.377	ppb	34.7	93.34	0.0044	Pulse	0.1000	3
K	39	45	He	10328.481	ppb	1.3	248225.70	11.5540	Pulse	0.1000	3
Ca	44	45	He	172581.440	ppb	0.8	236285.65	10.9977	Pulse	0.1000	3
Ti	47	45	He	0.000	ppb	N/A	0.00	0.0000	Pulse	0.1000	3
V	51	45	He	-0.077	ppb	N/A	176.67	0.0082	Pulse	0.5000	3
Cr	52	45	He	0.129	ppb	91.1	733.38	0.0342	Pulse	0.1000	3
Mn	55	72	He	8265.813	ppb	0.4	2511201.16	30.1179	Analog	0.1000	3
Fe	57	72	He	23172.448	ppb	0.6	380206.36	4.5600	Pulse	0.1000	3
Co	59	72	He	0.323	ppb	8.3	703.37	0.0084	Pulse	0.1000	3
Ni	60	72	He	0.531	ppb	20.3	396.69	0.0048	Pulse	0.1000	3
Cu	63	72	He	0.124	ppb	27.4	423.36	0.0051	Pulse	0.1000	3
Zn	66	72	He	3.133	ppb	1.6	533.36	0.0064	Pulse	0.1000	3
As	75	72	He	0.146	ppb	17.2	36.67	0.0004	Pulse	0.5000	3
Sr	88	115	He	568.889	ppb	2.2	174597.27	4.5045	Pulse	0.1000	3
Mo	98	115	He	0.005	ppb	276.6	20.00	0.0005	Pulse	0.1000	3
Ag	107	115	He	0.008	ppb	42.4	30.00	0.0008	Pulse	0.1000	3
Cd	111	115	He	0.005	ppb	150.5	2.00	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.207	ppb	N/A	706.71	0.0182	Pulse	0.1000	3
Sb	121	115	He	-0.001	ppb	N/A	10.00	0.0003	Pulse	0.1000	3
Ba	137	115	He	305.141	ppb	1.1	62121.36	1.6025	Pulse	0.1000	3
Tl	205	209	He	0.005	ppb	71.3	80.00	0.0004	Pulse	0.1000	3
Pb	208	209	He	-0.006	ppb	N/A	853.38	0.0038	Pulse	0.1000	3
U	238	209	He	0.014	ppb	3.2	243.34	0.0011	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1687128.36	1.1	103.7	Analog	0.1000	3
No Gas	Ge	72	1887427.37	0.5	100.7	Analog	0.1000	3
H2	Sc	45	106400.78	1.0	107.8	Pulse	0.1000	3
H2	Ge	72	169171.14	0.7	106.0	Pulse	0.1000	3
H2	In	115	284695.56	0.2	100.2	Pulse	0.1000	3
He	Sc	45	21486.47	1.3	101.8	Pulse	0.1000	3
He	Ge	72	83379.41	0.3	101.2	Pulse	0.1000	3
He	In	115	38768.24	1.5	103.5	Pulse	0.1000	3
He	Tb	159	259224.59	0.6	103.1	Pulse	0.1000	3
He	Bi	209	226904.24	0.4	99.7	Pulse	0.1000	3

No Gas



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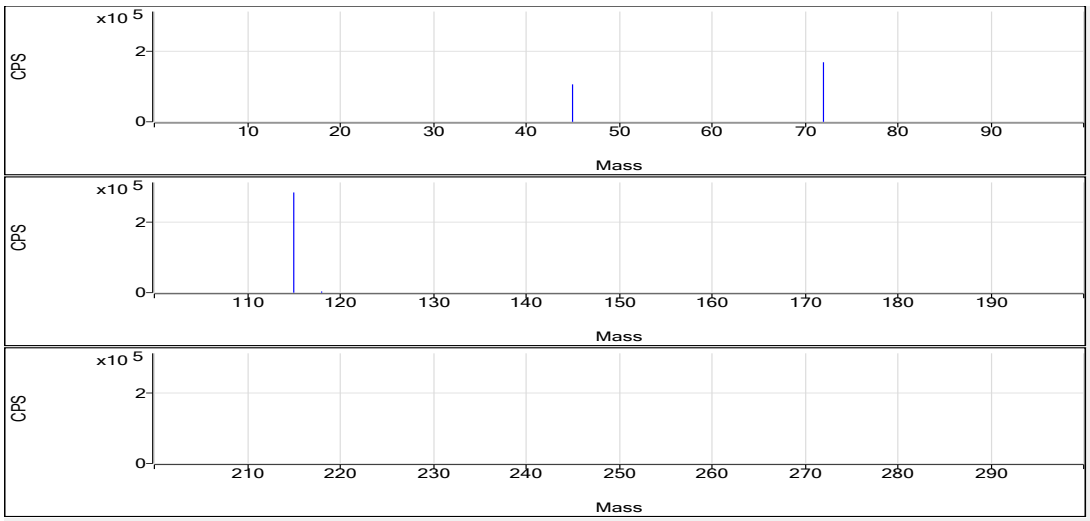
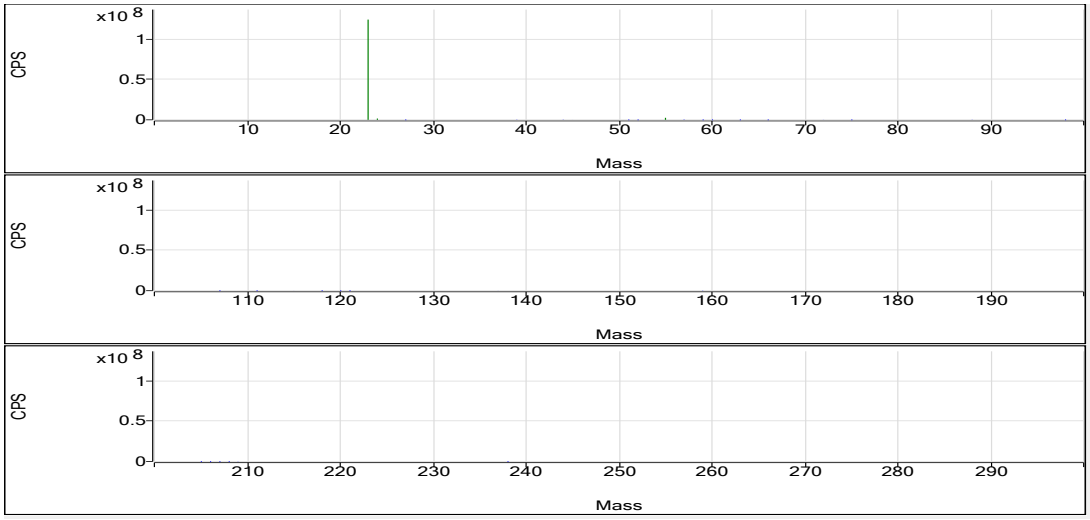


Quantitation Report

He



Quantitation Report

Data File Name	084_CCV.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 1:03:45 PM
Sample Name	CCV 1942322
Sample Type	CCV
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

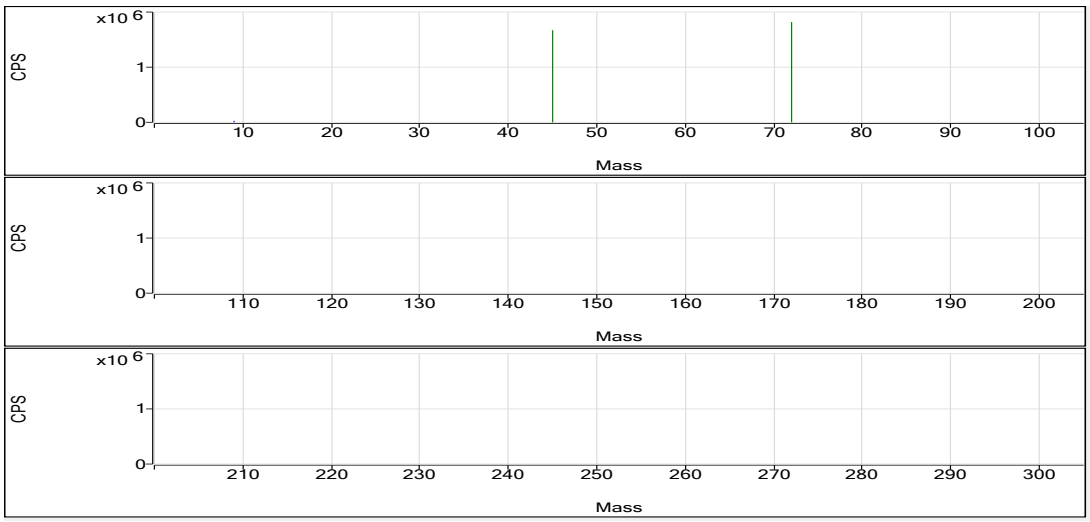
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	32.196	ppb	1.8	26187.54	0.0156	Pulse	0.5000	3
Se	78	115	H2	30.375	ppb	2.2	1343.18	0.0045	Pulse	1.5000	3
Na	23	45	He	6513.144	ppb	0.5	640842.83	29.9696	Pulse	0.1000	3
Mg	24	45	He	5059.664	ppb	1.4	237960.77	11.1284	Pulse	0.1000	3
Al	27	45	He	5089.216	ppb	0.7	59534.13	2.7842	Pulse	0.1000	3
K	39	45	He	5059.280	ppb	1.1	123583.11	5.7795	Pulse	0.1000	3
Ca	44	45	He	5345.336	ppb	3.4	7375.48	0.3449	Pulse	0.1000	3
Ti	47	45	He	306.945	ppb	7.3	3703.93	0.1732	Pulse	0.1000	3
V	51	45	He	301.939	ppb	0.3	187649.45	8.7756	Pulse	0.5000	3
Cr	52	45	He	303.125	ppb	0.9	257789.83	12.0558	Pulse	0.1000	3
Mn	55	72	He	311.822	ppb	1.5	90620.43	1.1364	Pulse	0.1000	3
Fe	57	72	He	5139.037	ppb	1.9	80702.09	1.0120	Pulse	0.1000	3
Co	59	72	He	289.182	ppb	1.0	552539.69	6.9286	Pulse	0.1000	3
Ni	60	72	He	305.351	ppb	1.2	162514.46	2.0378	Pulse	0.1000	3
Cu	63	72	He	296.088	ppb	0.4	480111.06	6.0203	Pulse	0.1000	3
Zn	66	72	He	303.801	ppb	1.7	42644.02	0.5348	Pulse	0.1000	3
As	75	72	He	308.568	ppb	1.6	27695.45	0.3473	Pulse	0.5000	3
Sr	88	115	He	30.881	ppb	5.4	10003.85	0.2453	Pulse	0.1000	3
Mo	98	115	He	29.234	ppb	0.9	37978.88	0.9303	Pulse	0.1000	3
Ag	107	115	He	29.908	ppb	2.6	95142.50	2.3316	Pulse	0.1000	3
Cd	111	115	He	30.202	ppb	4.5	8496.64	0.2083	Pulse	0.5000	3
Sn	120	115	He	30.121	ppb	3.0	23627.40	0.5791	Pulse	0.1000	3
Sb	121	115	He	30.656	ppb	3.2	19851.54	0.4865	Pulse	0.1000	3
Ba	137	115	He	306.364	ppb	2.3	65654.36	1.6089	Pulse	0.1000	3
Tl	205	209	He	30.597	ppb	1.2	262416.34	1.0997	Pulse	0.1000	3
Pb	208	209	He	30.304	ppb	1.1	345318.27	1.4470	Pulse	0.1000	3
U	238	209	He	252.269	ppb	1.5	3852956.82	16.1463	Analog	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1675386.59	0.9	103.0	Analog	0.1000	3
No Gas	Ge	72	1823744.03	0.4	97.3	Analog	0.1000	3
H2	Sc	45	103822.93	0.6	105.2	Pulse	0.1000	3
H2	Ge	72	159097.10	0.1	99.7	Pulse	0.1000	3
H2	In	115	298682.88	0.8	105.1	Pulse	0.1000	3
He	Sc	45	21383.04	0.1	101.3	Pulse	0.1000	3
He	Ge	72	79748.87	0.5	96.8	Pulse	0.1000	3
He	In	115	40820.51	2.4	108.9	Pulse	0.1000	3
He	Tb	159	265225.40	0.6	105.5	Pulse	0.1000	3
He	Bi	209	238643.88	0.7	104.9	Pulse	0.1000	3

No Gas



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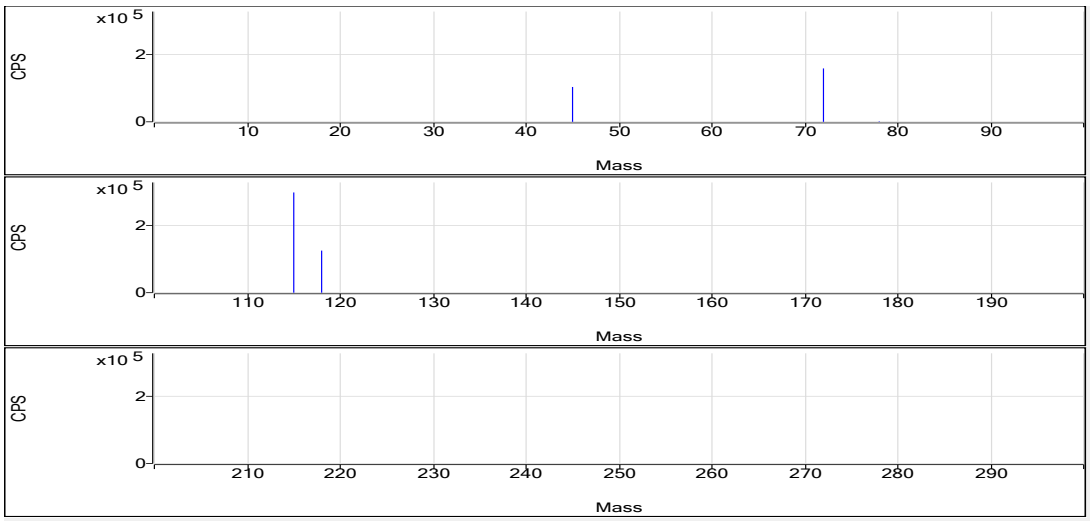
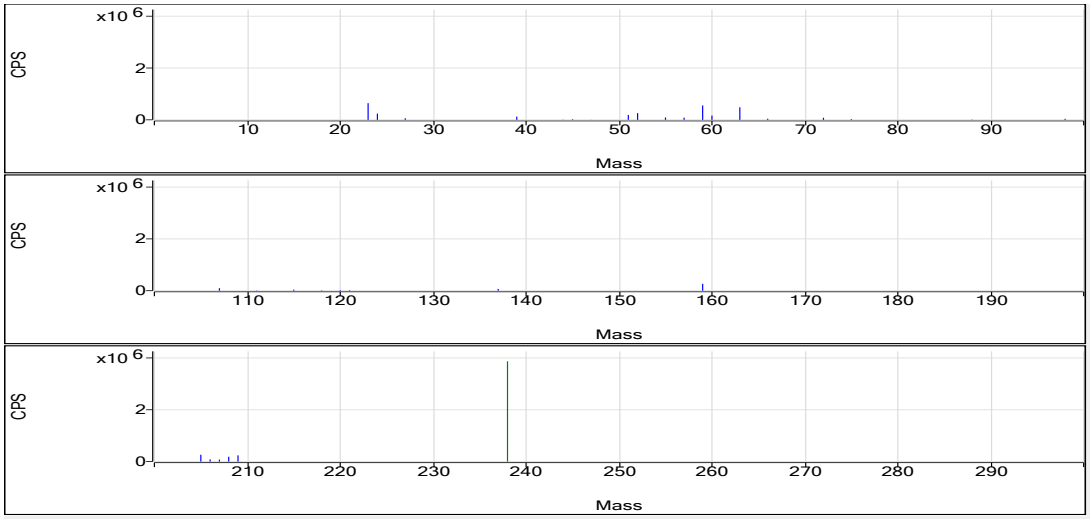


Quantitation Report

He



Quantitation Report

Data File Name	085_CCB.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 1:05:47 PM
Sample Name	CCB 2014932
Sample Type	CCB
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

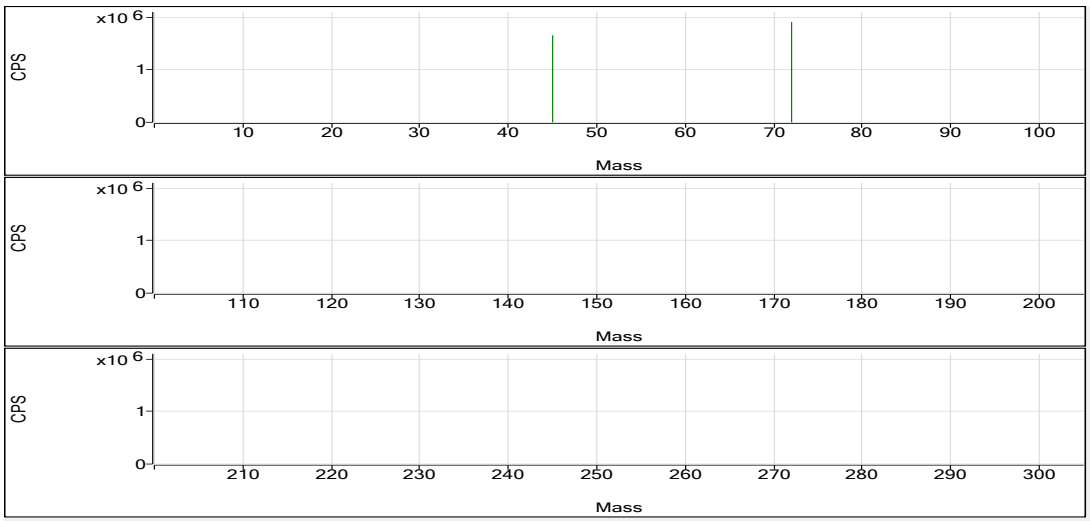
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.023	ppb	35.1	27.33	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.061	ppb	44.4	3.34	0.0000	Pulse	1.5000	3
Na	23	45	He	1051.999	ppb	2.9	106472.05	5.1641	Pulse	0.1000	3
Mg	24	45	He	9.215	ppb	27.6	500.03	0.0242	Pulse	0.1000	3
Al	27	45	He	2.443	ppb	21.1	56.67	0.0027	Pulse	0.1000	3
K	39	45	He	-4.457	ppb	N/A	4747.61	0.2302	Pulse	0.1000	3
Ca	44	45	He	19.312	ppb	62.9	116.67	0.0057	Pulse	0.1000	3
Ti	47	45	He	0.000	ppb	N/A	0.00	0.0000	Pulse	0.1000	3
V	51	45	He	0.046	ppb	65.5	243.33	0.0118	Pulse	0.5000	3
Cr	52	45	He	0.033	ppb	326.9	626.70	0.0304	Pulse	0.1000	3
Mn	55	72	He	2.780	ppb	15.5	860.05	0.0103	Pulse	0.1000	3
Fe	57	72	He	9.320	ppb	10.5	226.68	0.0027	Pulse	0.1000	3
Co	59	72	He	0.092	ppb	24.6	240.01	0.0029	Pulse	0.1000	3
Ni	60	72	He	0.052	ppb	104.2	130.01	0.0016	Pulse	0.1000	3
Cu	63	72	He	0.160	ppb	14.8	483.36	0.0058	Pulse	0.1000	3
Zn	66	72	He	0.039	ppb	619.4	80.00	0.0010	Pulse	0.1000	3
As	75	72	He	0.282	ppb	30.5	49.33	0.0006	Pulse	0.5000	3
Sr	88	115	He	0.117	ppb	93.5	70.00	0.0017	Pulse	0.1000	3
Mo	98	115	He	0.028	ppb	31.6	50.00	0.0013	Pulse	0.1000	3
Ag	107	115	He	0.017	ppb	34.7	60.00	0.0015	Pulse	0.1000	3
Cd	111	115	He	0.022	ppb	40.4	6.67	0.0002	Pulse	0.5000	3
Sn	120	115	He	-0.084	ppb	N/A	820.05	0.0205	Pulse	0.1000	3
Sb	121	115	He	0.062	ppb	67.1	50.00	0.0013	Pulse	0.1000	3
Ba	137	115	He	0.203	ppb	35.5	53.33	0.0013	Pulse	0.1000	3
Tl	205	209	He	0.025	ppb	28.2	256.68	0.0011	Pulse	0.1000	3
Pb	208	209	He	0.001	ppb	808.0	973.38	0.0041	Pulse	0.1000	3
U	238	209	He	0.076	ppb	11.1	1196.77	0.0051	Pulse	0.1000	3

ISTD Table:

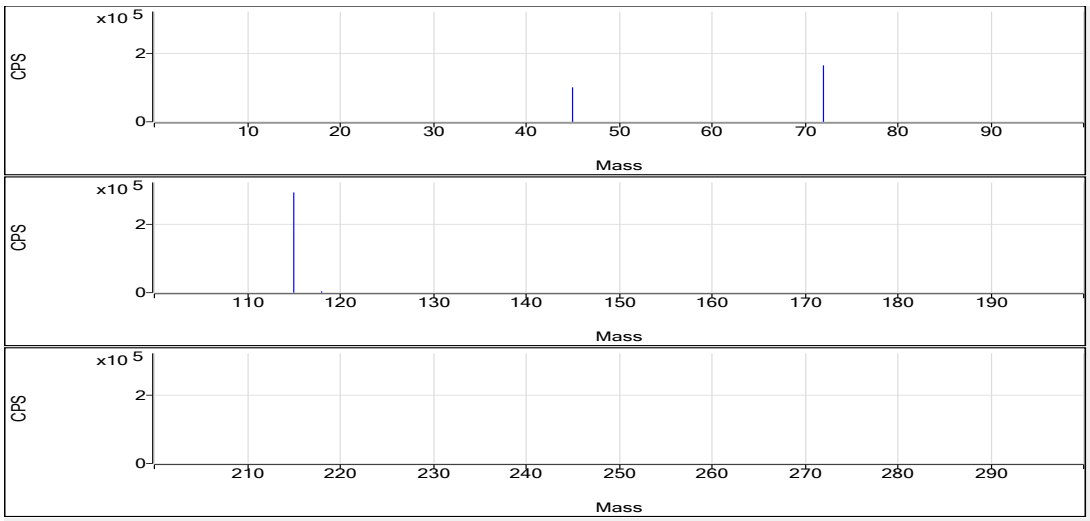
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1654608.57	0.8	101.7	Analog	0.1000	3
No Gas	Ge	72	1905884.87	0.8	101.7	Analog	0.1000	3
H2	Sc	45	100965.75	0.5	102.3	Pulse	0.1000	3
H2	Ge	72	165338.75	0.4	103.6	Pulse	0.1000	3
H2	In	115	293453.55	1.3	103.3	Pulse	0.1000	3
He	Sc	45	20615.29	1.0	97.7	Pulse	0.1000	3
He	Ge	72	83232.17	0.6	101.1	Pulse	0.1000	3
He	In	115	40018.37	3.1	106.8	Pulse	0.1000	3
He	Tb	159	261458.43	0.5	104.0	Pulse	0.1000	3
He	Bi	209	236724.19	0.5	104.1	Pulse	0.1000	3

No Gas

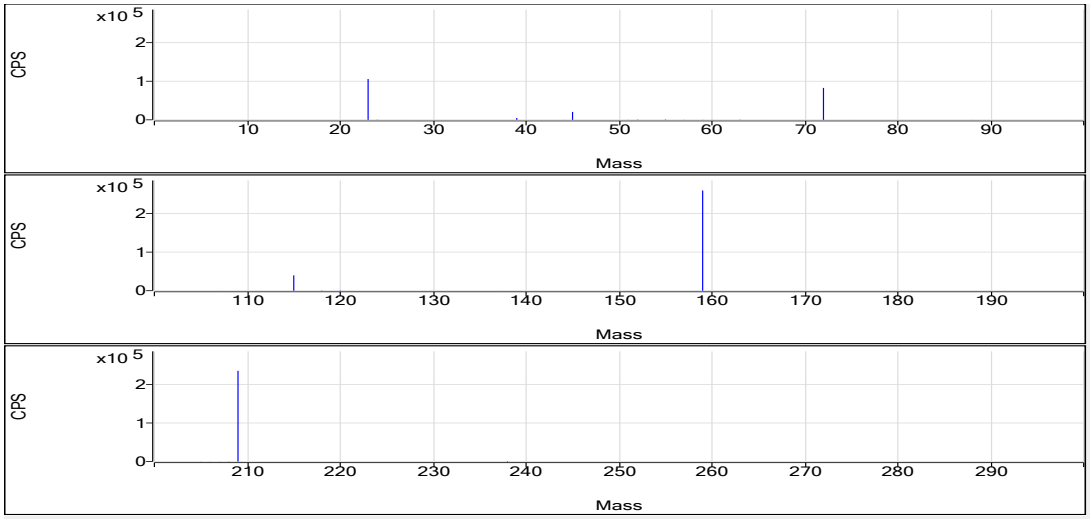


H2



Quantitation Report

He



Quantitation Report

Data File Name	092_CCV.d
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Acq Time	11/4/2021 1:33:12 PM
Sample Name	CCV 1942322
Sample Type	CCV
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

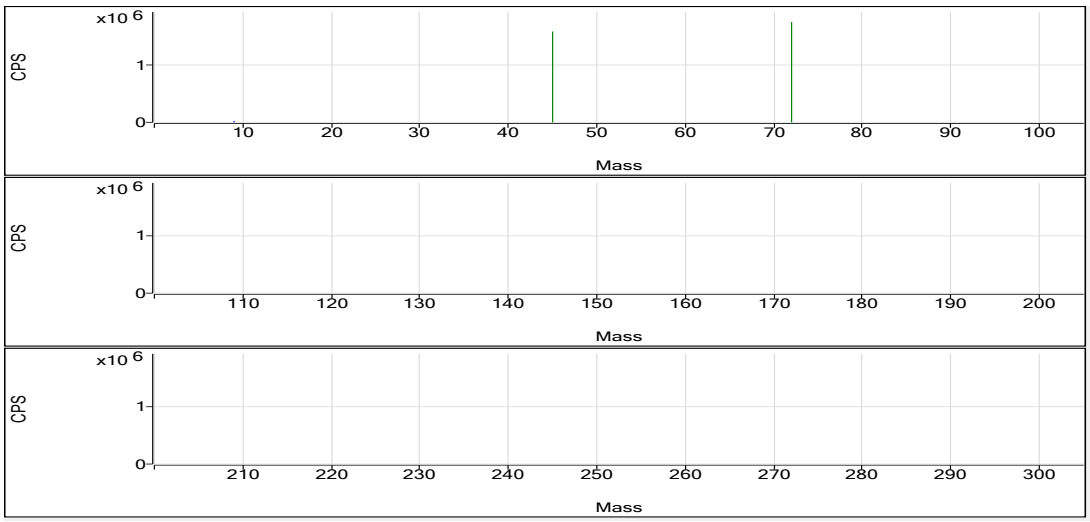
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	30.957	ppb	1.2	23617.97	0.0150	Pulse	0.5000	3
Se	78	115	H2	30.929	ppb	2.2	1276.72	0.0046	Pulse	1.5000	3
Na	23	45	He	5034.408	ppb	2.0	488931.44	23.2529	Pulse	0.1000	3
Mg	24	45	He	5073.105	ppb	2.6	234595.65	11.1580	Pulse	0.1000	3
Al	27	45	He	4990.894	ppb	1.5	57415.70	2.7304	Pulse	0.1000	3
K	39	45	He	4982.202	ppb	3.2	119731.30	5.6950	Pulse	0.1000	3
Ca	44	45	He	4961.046	ppb	2.5	6741.78	0.3204	Pulse	0.1000	3
Ti	47	45	He	290.781	ppb	15.6	3443.85	0.1641	Pulse	0.1000	3
V	51	45	He	298.468	ppb	2.0	182402.84	8.6749	Pulse	0.5000	3
Cr	52	45	He	301.714	ppb	2.4	252300.75	11.9999	Pulse	0.1000	3
Mn	55	72	He	308.650	ppb	1.5	85898.58	1.1248	Pulse	0.1000	3
Fe	57	72	He	5152.755	ppb	1.6	77488.62	1.0147	Pulse	0.1000	3
Co	59	72	He	294.417	ppb	1.6	538695.83	7.0540	Pulse	0.1000	3
Ni	60	72	He	305.855	ppb	3.0	155849.02	2.0412	Pulse	0.1000	3
Cu	63	72	He	298.979	ppb	1.8	464221.06	6.0791	Pulse	0.1000	3
Zn	66	72	He	302.843	ppb	1.6	40708.38	0.5331	Pulse	0.1000	3
As	75	72	He	306.773	ppb	1.7	26367.60	0.3453	Pulse	0.5000	3
Sr	88	115	He	30.917	ppb	3.4	9343.34	0.2456	Pulse	0.1000	3
Mo	98	115	He	30.637	ppb	2.5	37096.57	0.9749	Pulse	0.1000	3
Ag	107	115	He	31.079	ppb	3.0	92194.12	2.4230	Pulse	0.1000	3
Cd	111	115	He	30.116	ppb	1.1	7904.29	0.2077	Pulse	0.5000	3
Sn	120	115	He	31.048	ppb	1.2	22692.62	0.5962	Pulse	0.1000	3
Sb	121	115	He	30.635	ppb	1.5	18502.79	0.4862	Pulse	0.1000	3
Ba	137	115	He	306.012	ppb	2.2	61153.67	1.6071	Pulse	0.1000	3
Tl	205	209	He	30.801	ppb	0.9	251916.42	1.1070	Pulse	0.1000	3
Pb	208	209	He	30.544	ppb	1.0	331899.77	1.4585	Pulse	0.1000	3
U	238	209	He	255.632	ppb	0.7	3723394.74	16.3615	Analog	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1571501.70	1.3	96.6	Analog	0.1000	3
No Gas	Ge	72	1734825.70	2.2	92.6	Analog	0.1000	3
H2	Sc	45	96700.73	0.8	98.0	Pulse	0.1000	3
H2	Ge	72	146467.99	1.0	91.8	Pulse	0.1000	3
H2	In	115	278832.06	1.6	98.1	Pulse	0.1000	3
He	Sc	45	21032.44	2.1	99.7	Pulse	0.1000	3
He	Ge	72	76381.18	1.9	92.7	Pulse	0.1000	3
He	In	115	38059.62	1.3	101.6	Pulse	0.1000	3
He	Tb	159	250204.44	0.5	99.6	Pulse	0.1000	3
He	Bi	209	227581.30	1.1	100.0	Pulse	0.1000	3

No Gas



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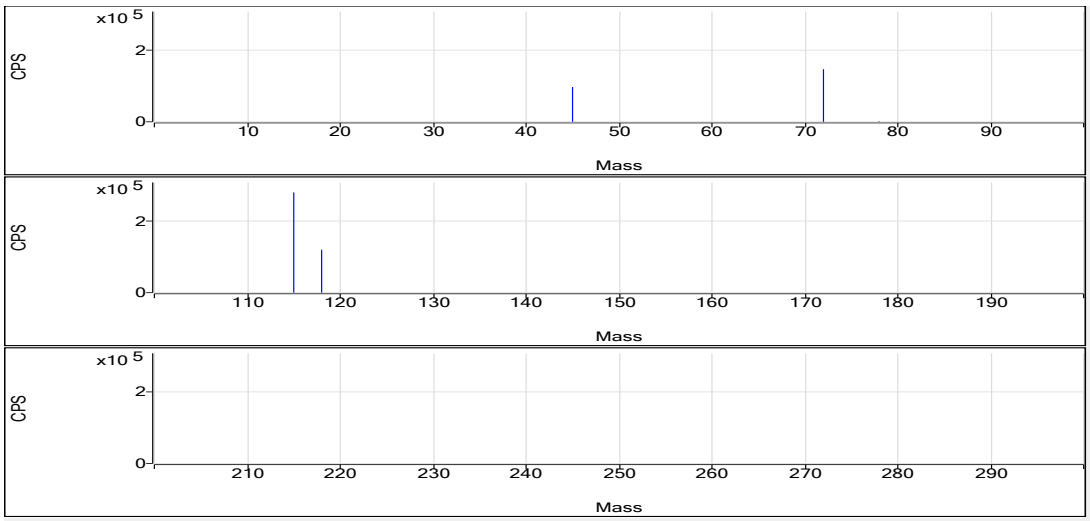
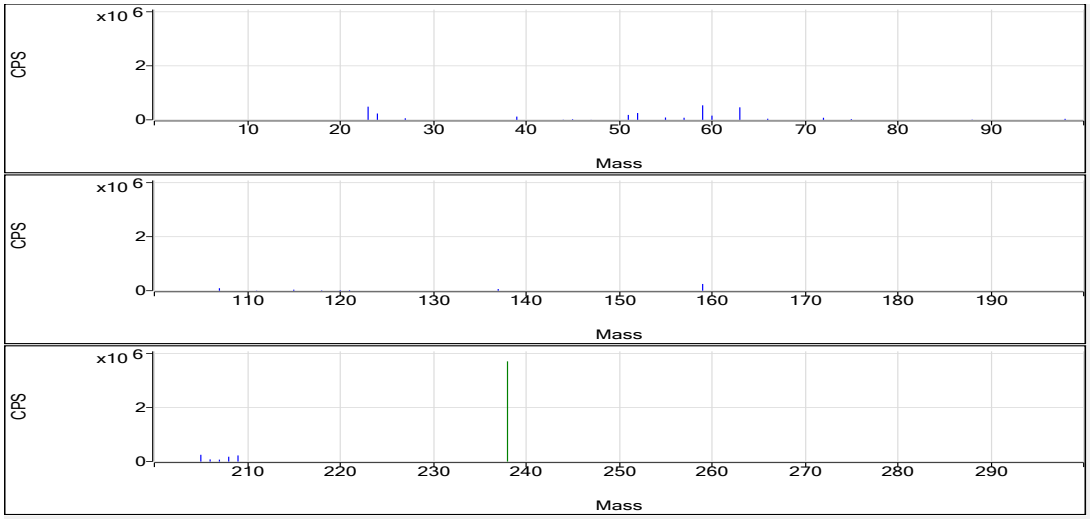


Quantitation Report

He



Quantitation Report

Data File Name	093_CCB.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 1:35:14 PM
Sample Name	CCB 2014932
Sample Type	CCB
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

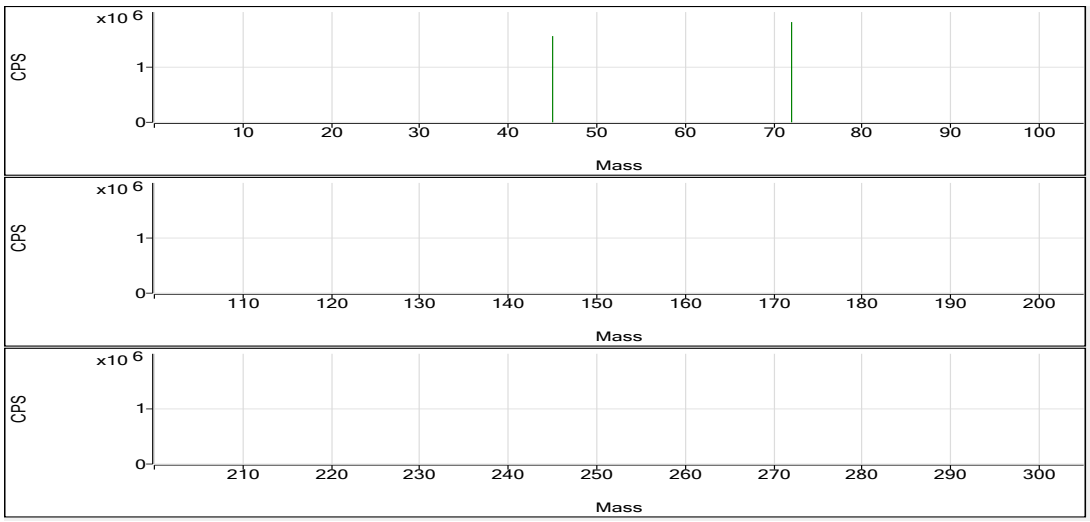
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.012	ppb	88.6	17.33	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.006	ppb	159.0	0.89	0.0000	Pulse	1.5000	3
Na	23	45	He	77.324	ppb	6.1	15725.46	0.7369	Pulse	0.1000	3
Mg	24	45	He	1.193	ppb	82.2	140.01	0.0066	Pulse	0.1000	3
Al	27	45	He	-0.586	ppb	N/A	23.33	0.0011	Pulse	0.1000	3
K	39	45	He	-8.882	ppb	N/A	4807.61	0.2254	Pulse	0.1000	3
Ca	44	45	He	-18.105	ppb	N/A	70.00	0.0033	Pulse	0.1000	3
Ti	47	45	He	0.274	ppb	173.2	3.33	0.0002	Pulse	0.1000	3
V	51	45	He	0.020	ppb	181.3	236.00	0.0111	Pulse	0.5000	3
Cr	52	45	He	0.125	ppb	65.0	726.71	0.0340	Pulse	0.1000	3
Mn	55	72	He	0.540	ppb	12.9	176.68	0.0022	Pulse	0.1000	3
Fe	57	72	He	1.721	ppb	62.8	100.00	0.0012	Pulse	0.1000	3
Co	59	72	He	0.106	ppb	33.8	263.35	0.0032	Pulse	0.1000	3
Ni	60	72	He	0.137	ppb	47.1	173.34	0.0021	Pulse	0.1000	3
Cu	63	72	He	0.068	ppb	46.3	320.02	0.0039	Pulse	0.1000	3
Zn	66	72	He	0.076	ppb	281.3	83.33	0.0010	Pulse	0.1000	3
As	75	72	He	0.250	ppb	51.0	45.33	0.0006	Pulse	0.5000	3
Sr	88	115	He	-0.068	ppb	N/A	10.00	0.0003	Pulse	0.1000	3
Mo	98	115	He	0.026	ppb	107.3	43.33	0.0012	Pulse	0.1000	3
Ag	107	115	He	0.010	ppb	52.1	36.67	0.0010	Pulse	0.1000	3
Cd	111	115	He	0.013	ppb	2.2	4.00	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.138	ppb	N/A	723.38	0.0195	Pulse	0.1000	3
Sb	121	115	He	0.039	ppb	96.1	33.33	0.0009	Pulse	0.1000	3
Ba	137	115	He	0.086	ppb	125.4	26.67	0.0007	Pulse	0.1000	3
Tl	205	209	He	0.017	ppb	48.0	180.01	0.0008	Pulse	0.1000	3
Pb	208	209	He	-0.008	ppb	N/A	830.04	0.0037	Pulse	0.1000	3
U	238	209	He	0.076	ppb	7.3	1140.10	0.0050	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1553678.52	0.9	95.5	Analog	0.1000	3
No Gas	Ge	72	1806253.88	0.3	96.4	Analog	0.1000	3
H2	Sc	45	95456.59	2.6	96.7	Pulse	0.1000	3
H2	Ge	72	155387.33	1.3	97.4	Pulse	0.1000	3
H2	In	115	274966.87	0.5	96.8	Pulse	0.1000	3
He	Sc	45	21339.57	1.5	101.1	Pulse	0.1000	3
He	Ge	72	81378.19	0.1	98.8	Pulse	0.1000	3
He	In	115	37150.49	1.9	99.1	Pulse	0.1000	3
He	Tb	159	246997.70	0.8	98.3	Pulse	0.1000	3
He	Bi	209	226247.82	0.4	99.4	Pulse	0.1000	3

No Gas



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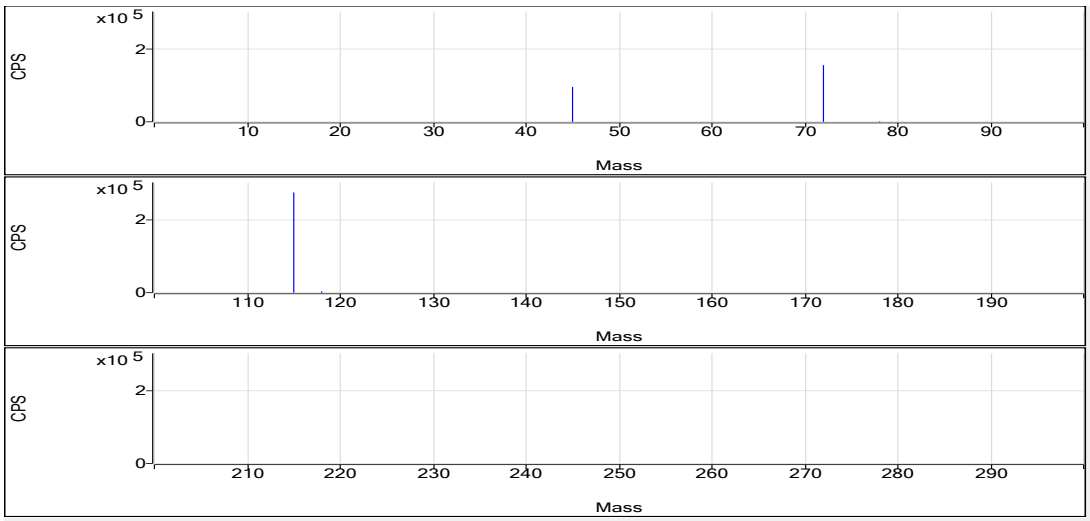
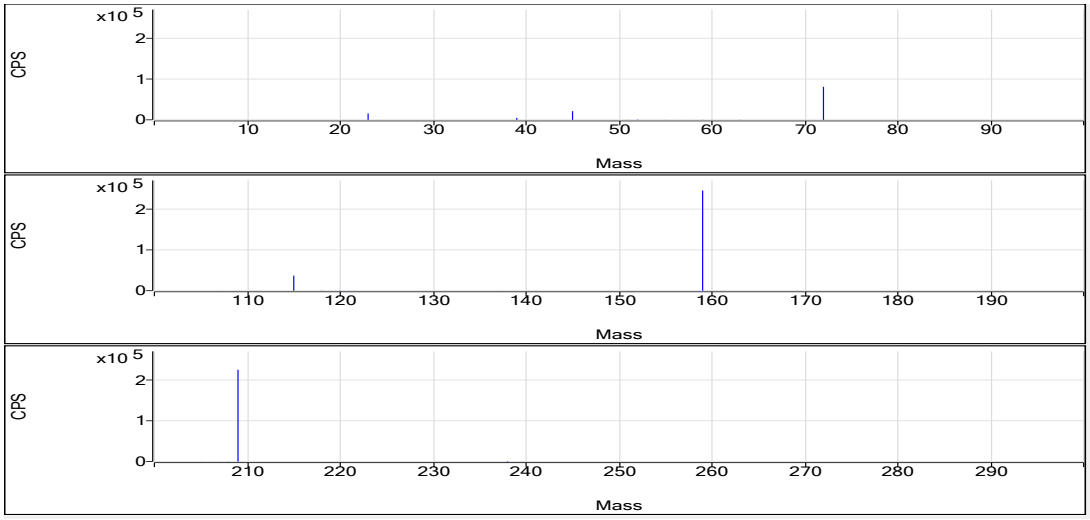


Quantitation Report

He



Quantitation Report

Data File Name	094SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 1:37:16 PM
Sample Name	MB 410-190591/1-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

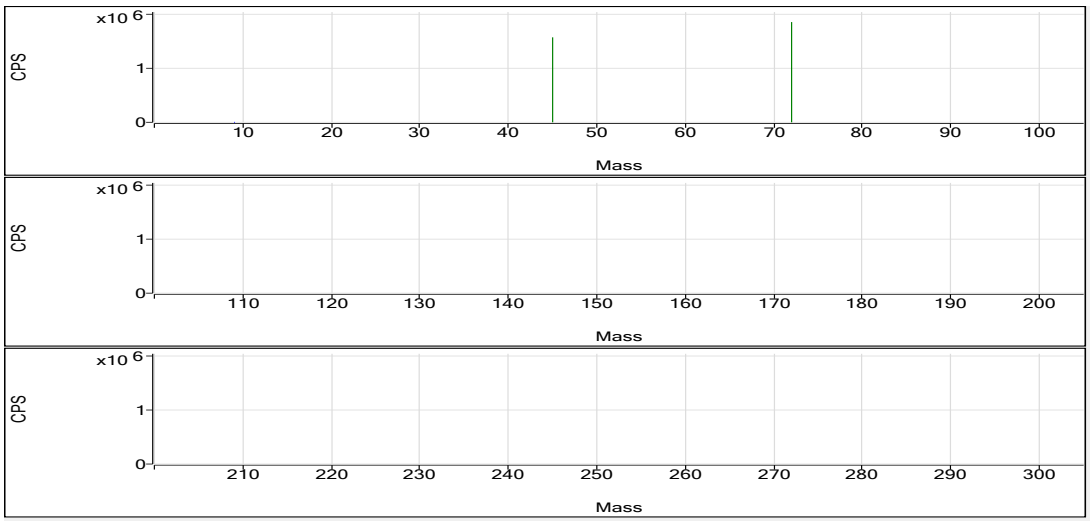
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.002	ppb	241.8	10.00	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.033	ppb	99.6	2.00	0.0000	Pulse	1.5000	3
Na	23	45	He	77.957	ppb	5.6	15598.68	0.7398	Pulse	0.1000	3
Mg	24	45	He	1.076	ppb	95.8	133.34	0.0063	Pulse	0.1000	3
Al	27	45	He	0.011	ppb	7852.1	30.00	0.0014	Pulse	0.1000	3
K	39	45	He	-11.216	ppb	N/A	4700.90	0.2228	Pulse	0.1000	3
Ca	44	45	He	-27.338	ppb	N/A	56.67	0.0027	Pulse	0.1000	3
Ti	47	45	He	0.000	ppb	N/A	0.00	0.0000	Pulse	0.1000	3
V	51	45	He	-0.038	ppb	N/A	197.33	0.0093	Pulse	0.5000	3
Cr	52	45	He	-0.016	ppb	N/A	600.04	0.0284	Pulse	0.1000	3
Mn	55	72	He	0.645	ppb	21.5	206.68	0.0026	Pulse	0.1000	3
Fe	57	72	He	1.948	ppb	187.0	103.34	0.0013	Pulse	0.1000	3
Co	59	72	He	0.037	ppb	15.6	126.67	0.0016	Pulse	0.1000	3
Ni	60	72	He	0.108	ppb	52.7	156.68	0.0019	Pulse	0.1000	3
Cu	63	72	He	0.085	ppb	15.3	346.68	0.0043	Pulse	0.1000	3
Zn	66	72	He	-0.016	ppb	N/A	70.00	0.0009	Pulse	0.1000	3
As	75	72	He	0.187	ppb	46.7	39.33	0.0005	Pulse	0.5000	3
Sr	88	115	He	0.034	ppb	95.8	40.00	0.0011	Pulse	0.1000	3
Mo	98	115	He	0.000	ppb	N/A	13.33	0.0004	Pulse	0.1000	3
Ag	107	115	He	0.000	ppb	10029.1	6.67	0.0002	Pulse	0.1000	3
Cd	111	115	He	0.005	ppb	2.9	2.00	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.140	ppb	N/A	726.71	0.0195	Pulse	0.1000	3
Sb	121	115	He	0.028	ppb	66.1	26.67	0.0007	Pulse	0.1000	3
Ba	137	115	He	0.017	ppb	175.7	13.33	0.0004	Pulse	0.1000	3
Tl	205	209	He	0.003	ppb	155.8	66.67	0.0003	Pulse	0.1000	3
Pb	208	209	He	-0.024	ppb	N/A	676.71	0.0029	Pulse	0.1000	3
U	238	209	He	0.016	ppb	29.2	283.35	0.0012	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1572618.99	1.9	96.6	Analog	0.1000	3
No Gas	Ge	72	1855205.29	1.0	99.0	Analog	0.1000	3
H2	Sc	45	95274.80	1.8	96.5	Pulse	0.1000	3
H2	Ge	72	156724.78	0.5	98.2	Pulse	0.1000	3
H2	In	115	275851.83	1.5	97.1	Pulse	0.1000	3
He	Sc	45	21092.51	1.9	99.9	Pulse	0.1000	3
He	Ge	72	81036.34	0.4	98.4	Pulse	0.1000	3
He	In	115	37291.05	1.9	99.5	Pulse	0.1000	3
He	Tb	159	249239.96	0.6	99.2	Pulse	0.1000	3
He	Bi	209	231212.24	0.7	101.6	Pulse	0.1000	3

No Gas



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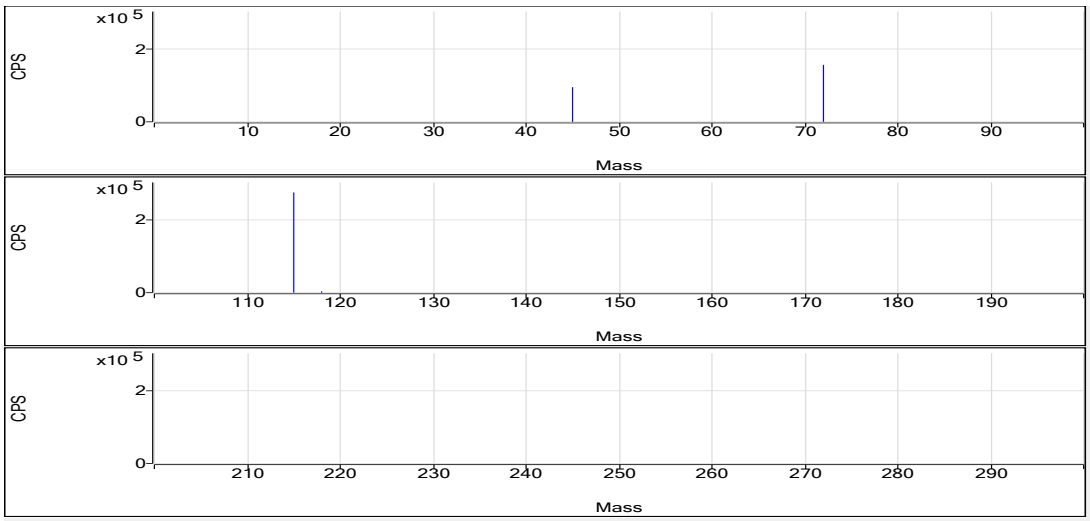
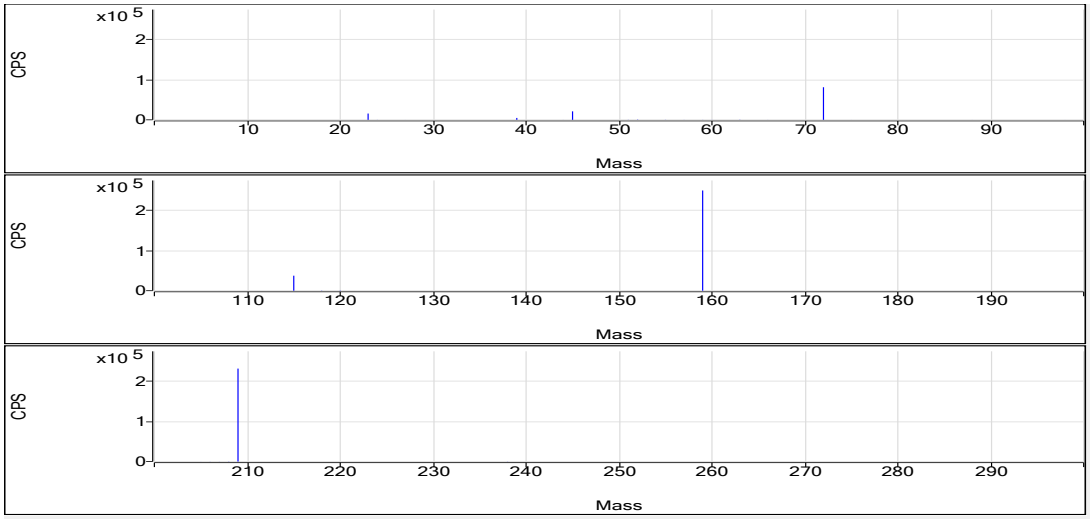


Quantitation Report

He



Quantitation Report

Data File Name	095SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 1:39:18 PM
Sample Name	LCS 410-190591/2-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

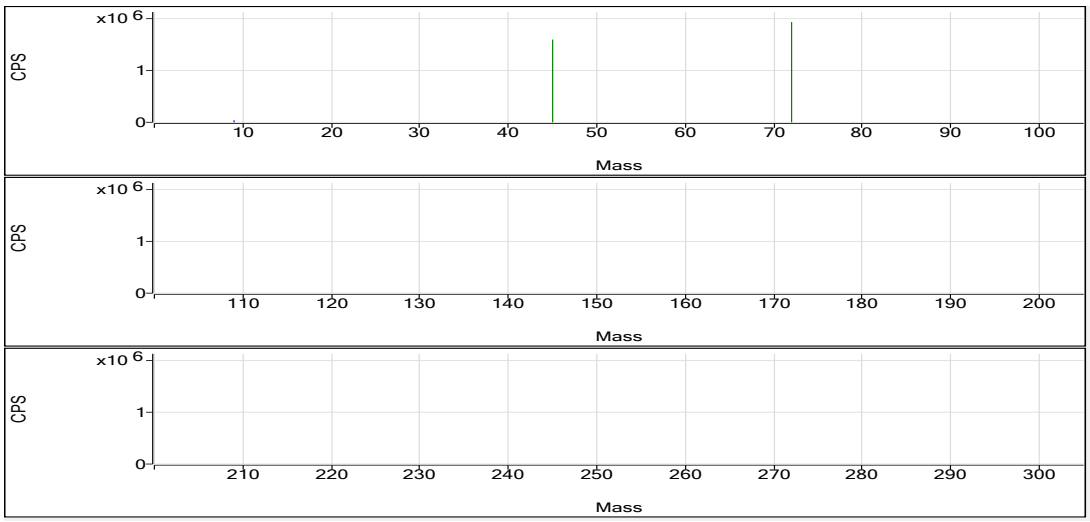
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	49.186	ppb	1.4	38014.09	0.0239	Pulse	0.5000	3
Se	78	115	H2	100.316	ppb	2.8	4167.94	0.0148	Pulse	1.5000	3
Na	23	45	He	4942.892	ppb	1.3	489789.52	22.8372	Pulse	0.1000	3
Mg	24	45	He	4879.265	ppb	1.2	230166.45	10.7318	Pulse	0.1000	3
Al	27	45	He	4874.969	ppb	3.2	57188.48	2.6670	Pulse	0.1000	3
K	39	45	He	4901.481	ppb	1.1	120248.13	5.6066	Pulse	0.1000	3
Ca	44	45	He	5003.299	ppb	4.4	6928.54	0.3231	Pulse	0.1000	3
Ti	47	45	He	524.544	ppb	1.7	6348.28	0.2960	Pulse	0.1000	3
V	51	45	He	487.482	ppb	1.5	303721.73	14.1619	Pulse	0.5000	3
Cr	52	45	He	487.918	ppb	2.1	415775.34	19.3877	Pulse	0.1000	3
Mn	55	72	He	462.258	ppb	0.5	143934.96	1.6845	Pulse	0.1000	3
Fe	57	72	He	4555.531	ppb	2.3	76650.43	0.8972	Pulse	0.1000	3
Co	59	72	He	441.017	ppb	0.9	902802.93	10.5661	Pulse	0.1000	3
Ni	60	72	He	460.517	ppb	1.3	262539.87	3.0728	Pulse	0.1000	3
Cu	63	72	He	445.325	ppb	0.5	773572.51	9.0535	Pulse	0.1000	3
Zn	66	72	He	454.736	ppb	1.4	68352.91	0.8000	Pulse	0.1000	3
As	75	72	He	442.952	ppb	0.7	42587.74	0.4984	Pulse	0.5000	3
Sr	88	115	He	52.345	ppb	5.3	15522.30	0.4152	Pulse	0.1000	3
Mo	98	115	He	53.428	ppb	2.9	63567.69	1.6998	Pulse	0.1000	3
Ag	107	115	He	50.909	ppb	2.8	148414.42	3.9688	Pulse	0.1000	3
Cd	111	115	He	51.870	ppb	2.0	13378.44	0.3577	Pulse	0.5000	3
Sn	120	115	He	106.177	ppb	2.4	74252.91	1.9855	Pulse	0.1000	3
Sb	121	115	He	104.307	ppb	1.8	61895.95	1.6548	Pulse	0.1000	3
Ba	137	115	He	517.562	ppb	2.0	101649.54	2.7179	Pulse	0.1000	3
Tl	205	209	He	101.258	ppb	1.7	829143.30	3.6388	Pulse	0.1000	3
Pb	208	209	He	50.751	ppb	1.6	551575.90	2.4207	Pulse	0.1000	3
U	238	209	He	48.063	ppb	1.3	701001.06	3.0764	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1591975.60	0.5	97.8	Analog	0.1000	3
No Gas	Ge	72	1927924.14	0.2	102.9	Analog	0.1000	3
H2	Sc	45	95788.05	1.0	97.0	Pulse	0.1000	3
H2	Ge	72	161483.42	0.9	101.2	Pulse	0.1000	3
H2	In	115	280788.18	0.8	98.8	Pulse	0.1000	3
He	Sc	45	21449.82	1.6	101.6	Pulse	0.1000	3
He	Ge	72	85447.92	1.0	103.8	Pulse	0.1000	3
He	In	115	37407.75	1.8	99.8	Pulse	0.1000	3
He	Tb	159	251515.94	0.1	100.1	Pulse	0.1000	3
He	Bi	209	227886.64	1.0	100.2	Pulse	0.1000	3

No Gas



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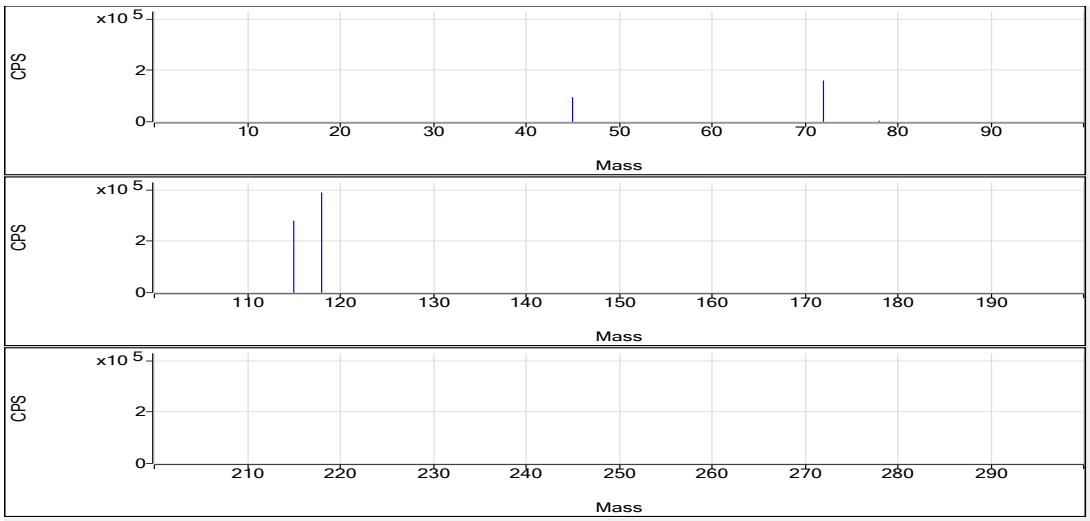
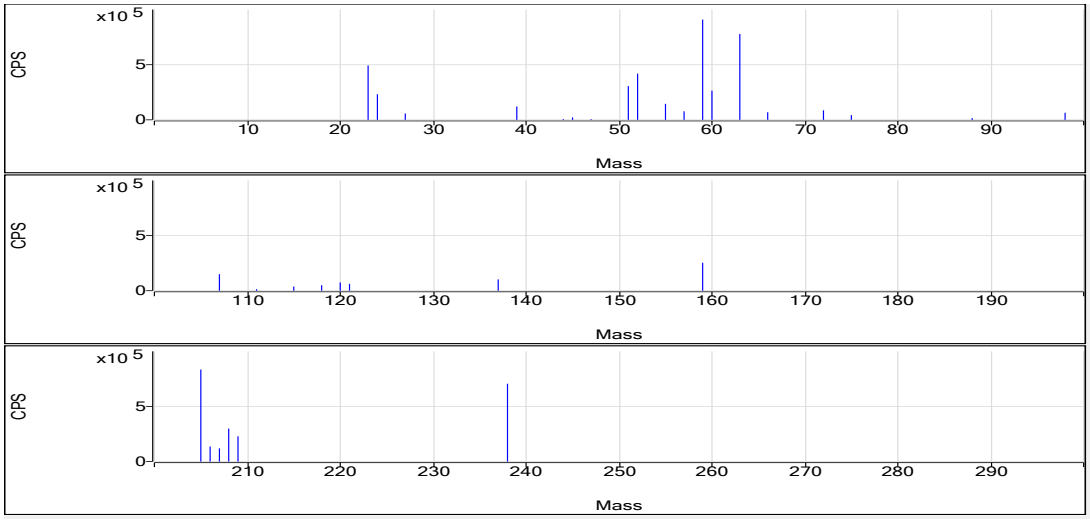


Quantitation Report

He



Quantitation Report

Data File Name	096SMPL.d
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Sample Name	410-59722-A-2-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

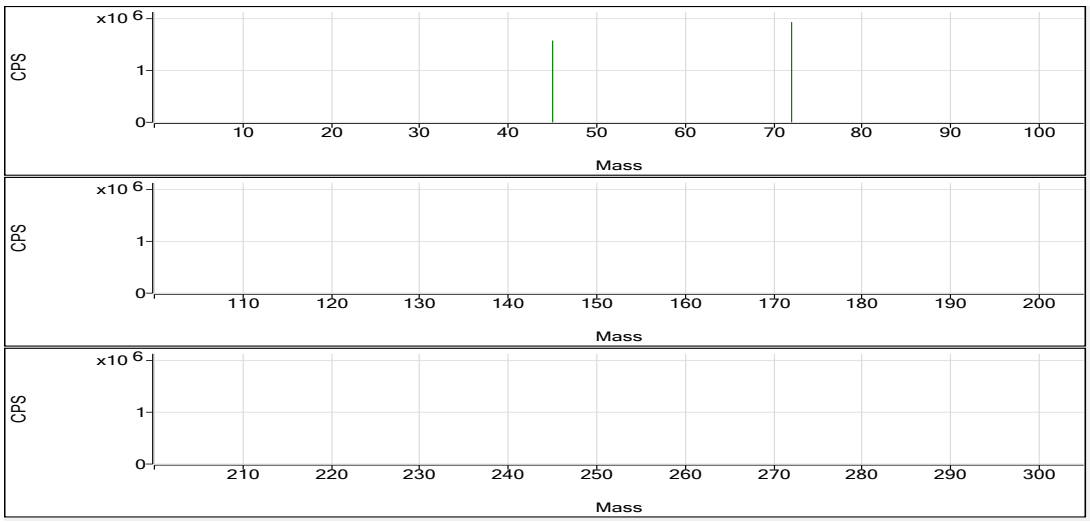
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.039	ppb	20.6	38.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	1.296	ppb	11.4	54.00	0.0002	Pulse	1.5000	3
Na	23	45	He	31593.819	ppb	2.2	2976742.56	143.8908	Analog	0.1000	3
Mg	24	45	He	10231.132	ppb	3.9	465230.36	22.4988	Pulse	0.1000	3
Al	27	45	He	2.456	ppb	60.5	56.67	0.0028	Pulse	0.1000	3
K	39	45	He	2167.381	ppb	2.6	53997.18	2.6103	Pulse	0.1000	3
Ca	44	45	He	48454.977	ppb	3.4	63924.02	3.0910	Pulse	0.1000	3
Ti	47	45	He	0.588	ppb	173.2	6.67	0.0003	Pulse	0.1000	3
V	51	45	He	1.162	ppb	10.2	914.04	0.0442	Pulse	0.5000	3
Cr	52	45	He	0.720	ppb	19.2	1193.43	0.0576	Pulse	0.1000	3
Mn	55	72	He	47.298	ppb	4.1	14737.98	0.1725	Pulse	0.1000	3
Fe	57	72	He	36.507	ppb	17.8	690.04	0.0081	Pulse	0.1000	3
Co	59	72	He	1.144	ppb	4.7	2400.29	0.0281	Pulse	0.1000	3
Ni	60	72	He	11.790	ppb	5.3	6821.87	0.0798	Pulse	0.1000	3
Cu	63	72	He	0.143	ppb	28.0	466.69	0.0055	Pulse	0.1000	3
Zn	66	72	He	3.380	ppb	5.8	583.36	0.0068	Pulse	0.1000	3
As	75	72	He	17790.871	ppb	1.8	1709142.63	20.0079	Analog	0.5000	3
Sr	88	115	He	245.024	ppb	2.6	73377.07	1.9406	Pulse	0.1000	3
Mo	98	115	He	0.540	ppb	8.9	663.37	0.0175	Pulse	0.1000	3
Ag	107	115	He	0.011	ppb	52.7	40.00	0.0011	Pulse	0.1000	3
Cd	111	115	He	0.020	ppb	37.1	6.00	0.0002	Pulse	0.5000	3
Sn	120	115	He	0.684	ppb	9.4	1313.45	0.0347	Pulse	0.1000	3
Sb	121	115	He	11.342	ppb	4.2	6811.94	0.1802	Pulse	0.1000	3
Ba	137	115	He	3.173	ppb	8.2	640.04	0.0169	Pulse	0.1000	3
Tl	205	209	He	0.079	ppb	21.5	690.04	0.0030	Pulse	0.1000	3
Pb	208	209	He	0.557	ppb	3.1	7004.32	0.0306	Pulse	0.1000	3
U	238	209	He	0.065	ppb	14.3	996.74	0.0044	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1578389.77	0.7	97.0	Analog	0.1000	3
No Gas	Ge	72	1935457.78	0.2	103.3	Analog	0.1000	3
H2	Sc	45	95834.60	0.7	97.1	Pulse	0.1000	3
H2	Ge	72	160685.95	0.4	100.7	Pulse	0.1000	3
H2	In	115	277762.37	1.5	97.8	Pulse	0.1000	3
He	Sc	45	20698.66	3.9	98.1	Pulse	0.1000	3
He	Ge	72	85428.29	0.7	103.7	Pulse	0.1000	3
He	In	115	37818.85	1.2	100.9	Pulse	0.1000	3
He	Tb	159	252124.52	0.8	100.3	Pulse	0.1000	3
He	Bi	209	229115.25	0.3	100.7	Pulse	0.1000	3

No Gas



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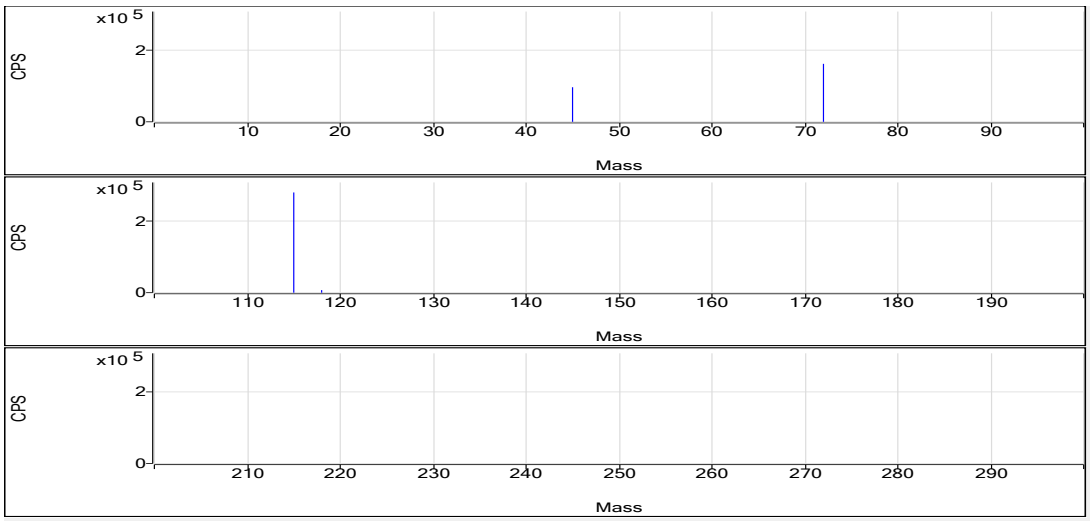
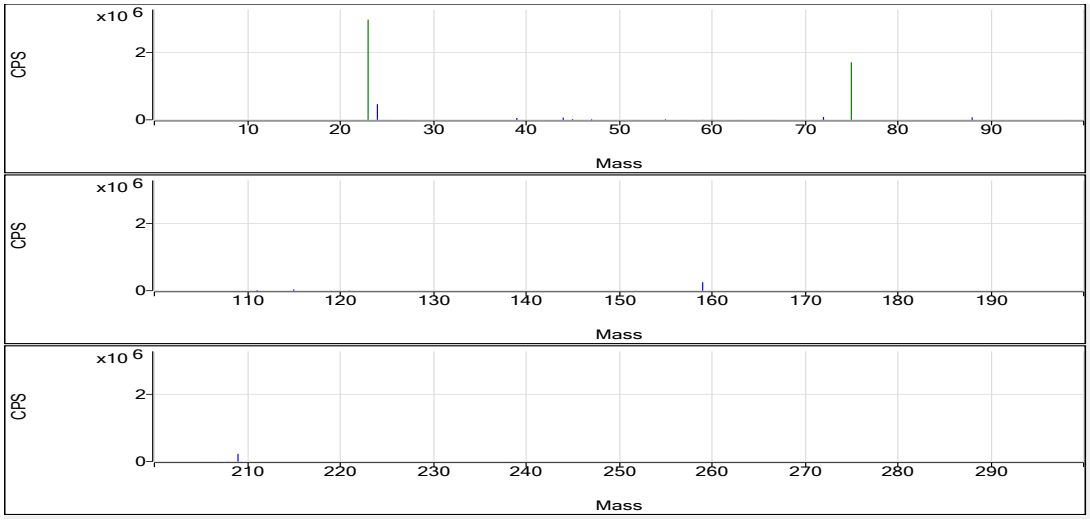


Quantitation Report

He



Quantitation Report

Data File Name	097SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 1:43:19 PM
Sample Name	410-59722-A-2-A PDS
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

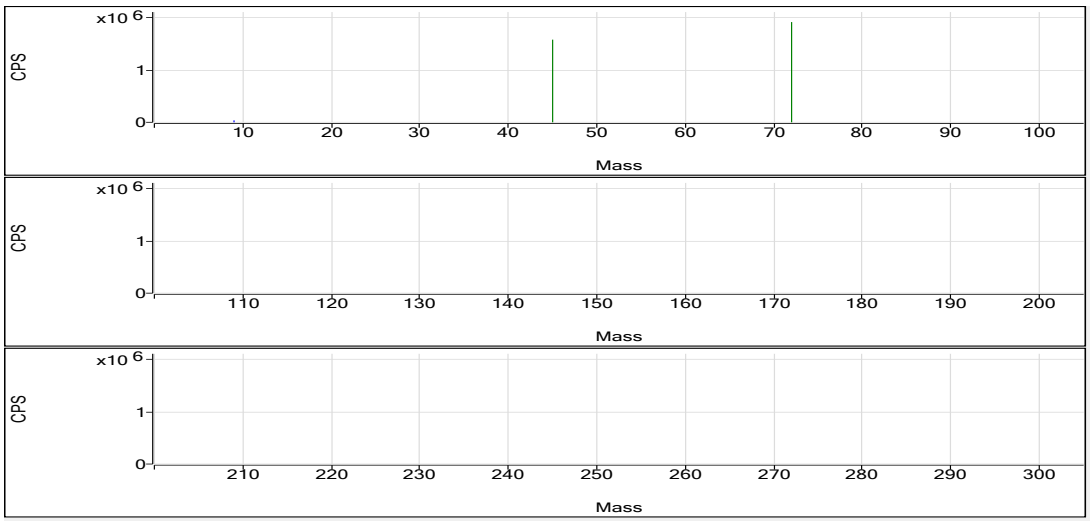
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	47.975	ppb	0.9	36849.92	0.0233	Pulse	0.5000	3
Se	78	115	H2	100.843	ppb	1.6	4223.74	0.0149	Pulse	1.5000	3
Na	23	45	He	35264.304	ppb	2.0	3442316.09	160.5628	Analog	0.1000	3
Mg	24	45	He	14755.282	ppb	3.4	695430.75	32.4458	Pulse	0.1000	3
Al	27	45	He	4932.040	ppb	2.1	57847.53	2.6982	Pulse	0.1000	3
K	39	45	He	7178.632	ppb	2.5	173688.86	8.1021	Pulse	0.1000	3
Ca	44	45	He	52906.654	ppb	2.3	72343.42	3.3745	Pulse	0.1000	3
Ti	47	45	He	490.769	ppb	4.9	5934.74	0.2770	Pulse	0.1000	3
V	51	45	He	511.689	ppb	2.6	318645.34	14.8646	Pulse	0.5000	3
Cr	52	45	He	501.930	ppb	2.7	427518.25	19.9436	Pulse	0.1000	3
Mn	55	72	He	506.522	ppb	1.7	161800.54	1.8458	Pulse	0.1000	3
Fe	57	72	He	4648.947	ppb	1.5	80260.08	0.9156	Pulse	0.1000	3
Co	59	72	He	437.039	ppb	1.2	917899.26	10.4708	Pulse	0.1000	3
Ni	60	72	He	466.608	ppb	1.0	272933.79	3.1134	Pulse	0.1000	3
Cu	63	72	He	439.959	ppb	1.3	784101.61	8.9444	Pulse	0.1000	3
Zn	66	72	He	455.924	ppb	3.4	70299.34	0.8021	Pulse	0.1000	3
As	75	72	He	17629.959	ppb	1.3	1738098.29	19.8269	Analog	0.5000	3
Sr	88	115	He	290.132	ppb	1.5	88342.43	2.2977	Pulse	0.1000	3
Mo	98	115	He	54.772	ppb	2.1	66996.92	1.7426	Pulse	0.1000	3
Ag	107	115	He	39.843	ppb	2.4	119417.79	3.1062	Pulse	0.1000	3
Cd	111	115	He	51.866	ppb	2.9	13750.80	0.3577	Pulse	0.5000	3
Sn	120	115	He	106.590	ppb	0.9	76638.49	1.9932	Pulse	0.1000	3
Sb	121	115	He	117.146	ppb	1.8	71454.82	1.8585	Pulse	0.1000	3
Ba	137	115	He	517.330	ppb	1.6	104453.42	2.7167	Pulse	0.1000	3
Tl	205	209	He	103.514	ppb	0.4	846013.69	3.7199	Pulse	0.1000	3
Pb	208	209	He	51.950	ppb	1.3	563509.46	2.4778	Pulse	0.1000	3
U	238	209	He	49.058	ppb	1.0	714119.60	3.1400	Pulse	0.1000	3

ISTD Table:

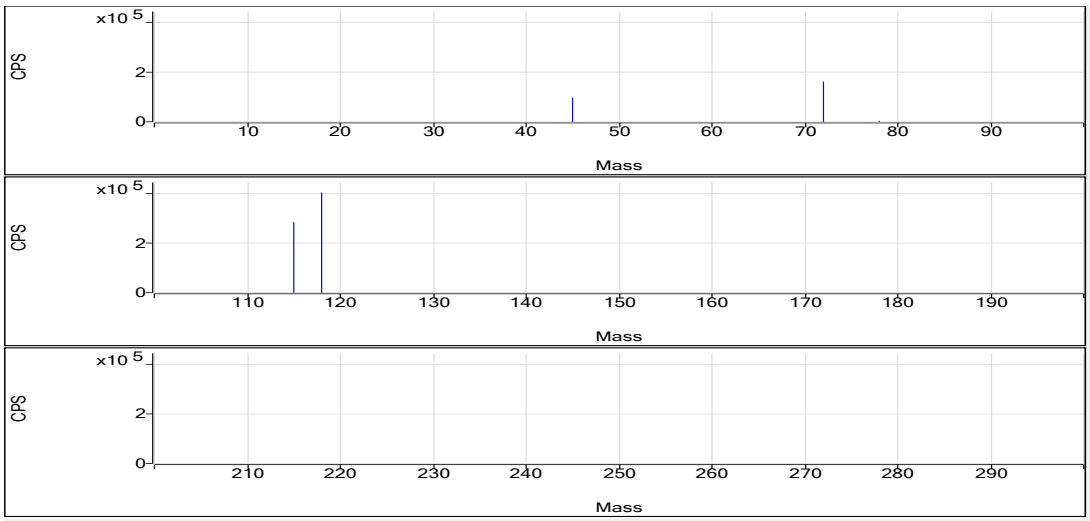
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1582076.54	1.3	97.2	Analog	0.1000	3
No Gas	Ge	72	1918678.56	1.0	102.4	Analog	0.1000	3
H2	Sc	45	96411.73	1.2	97.7	Pulse	0.1000	3
H2	Ge	72	161579.50	0.6	101.3	Pulse	0.1000	3
H2	In	115	283009.14	1.1	99.6	Pulse	0.1000	3
He	Sc	45	21446.35	2.6	101.6	Pulse	0.1000	3
He	Ge	72	87671.73	1.3	106.5	Pulse	0.1000	3
He	In	115	38454.39	1.6	102.6	Pulse	0.1000	3
He	Tb	159	251720.04	0.8	100.2	Pulse	0.1000	3
He	Bi	209	227436.36	0.9	100.0	Pulse	0.1000	3

No Gas

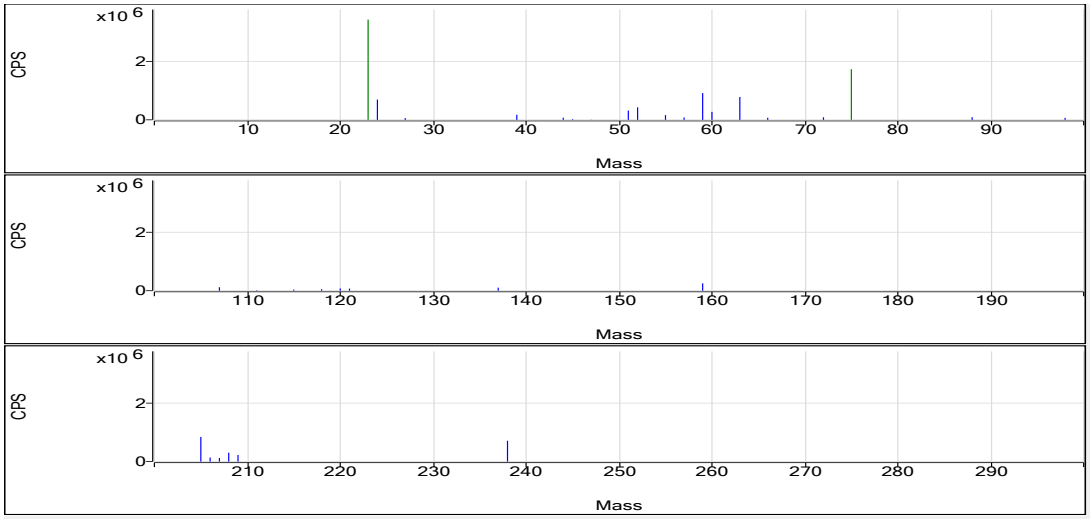


H2



Quantitation Report

He



Quantitation Report

Data File Name	098SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 1:45:18 PM
Sample Name	410-59722-A-2-B DU
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

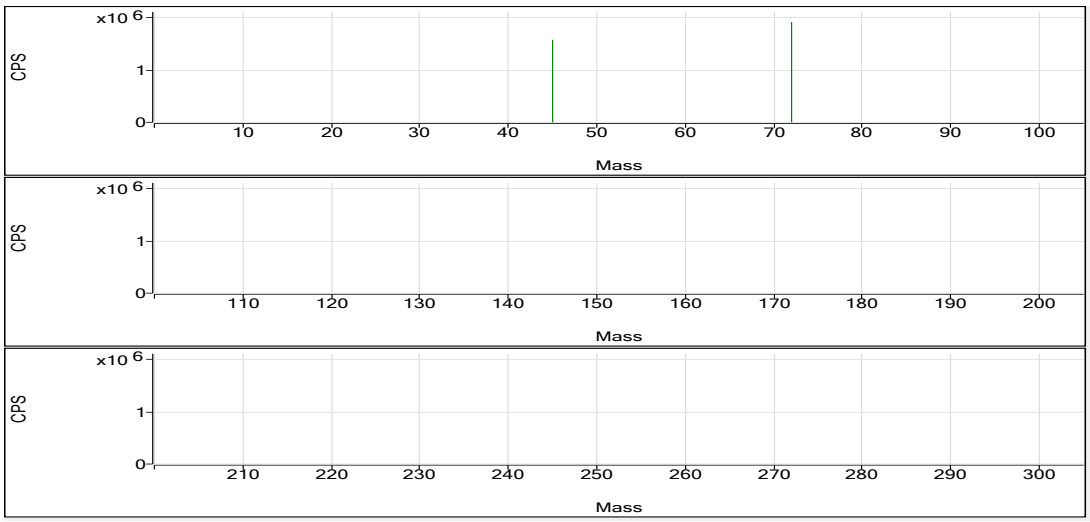
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.039	ppb	24.2	38.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	1.438	ppb	14.2	60.89	0.0002	Pulse	1.5000	3
Na	23	45	He	30600.985	ppb	2.0	2937259.23	139.3812	Analog	0.1000	3
Mg	24	45	He	10009.390	ppb	1.3	463894.11	22.0112	Pulse	0.1000	3
Al	27	45	He	2.342	ppb	59.2	56.67	0.0027	Pulse	0.1000	3
K	39	45	He	2136.715	ppb	0.4	54314.96	2.5767	Pulse	0.1000	3
Ca	44	45	He	48067.974	ppb	3.3	64607.32	3.0663	Pulse	0.1000	3
Ti	47	45	He	0.287	ppb	173.2	3.33	0.0002	Pulse	0.1000	3
V	51	45	He	1.204	ppb	2.6	957.37	0.0454	Pulse	0.5000	3
Cr	52	45	He	0.911	ppb	16.7	1373.45	0.0652	Pulse	0.1000	3
Mn	55	72	He	47.335	ppb	2.0	15161.82	0.1727	Pulse	0.1000	3
Fe	57	72	He	43.150	ppb	11.9	823.39	0.0094	Pulse	0.1000	3
Co	59	72	He	1.288	ppb	5.7	2770.37	0.0316	Pulse	0.1000	3
Ni	60	72	He	11.852	ppb	3.0	7048.61	0.0803	Pulse	0.1000	3
Cu	63	72	He	0.171	ppb	16.6	530.03	0.0060	Pulse	0.1000	3
Zn	66	72	He	3.252	ppb	13.1	580.03	0.0066	Pulse	0.1000	3
As	75	72	He	19980.599	ppb	1.5	1973067.42	22.4704	Analog	0.5000	3
Sr	88	115	He	238.735	ppb	1.4	73112.60	1.8908	Pulse	0.1000	3
Mo	98	115	He	0.648	ppb	6.4	810.05	0.0210	Pulse	0.1000	3
Ag	107	115	He	0.019	ppb	26.1	63.33	0.0016	Pulse	0.1000	3
Cd	111	115	He	0.010	ppb	115.7	3.33	0.0001	Pulse	0.5000	3
Sn	120	115	He	0.821	ppb	9.0	1440.13	0.0372	Pulse	0.1000	3
Sb	121	115	He	12.641	ppb	3.4	7765.80	0.2008	Pulse	0.1000	3
Ba	137	115	He	3.298	ppb	1.8	680.04	0.0176	Pulse	0.1000	3
Tl	205	209	He	0.073	ppb	9.7	656.71	0.0028	Pulse	0.1000	3
Pb	208	209	He	0.664	ppb	2.9	8277.98	0.0357	Pulse	0.1000	3
U	238	209	He	0.067	ppb	13.6	1030.08	0.0044	Pulse	0.1000	3

ISTD Table:

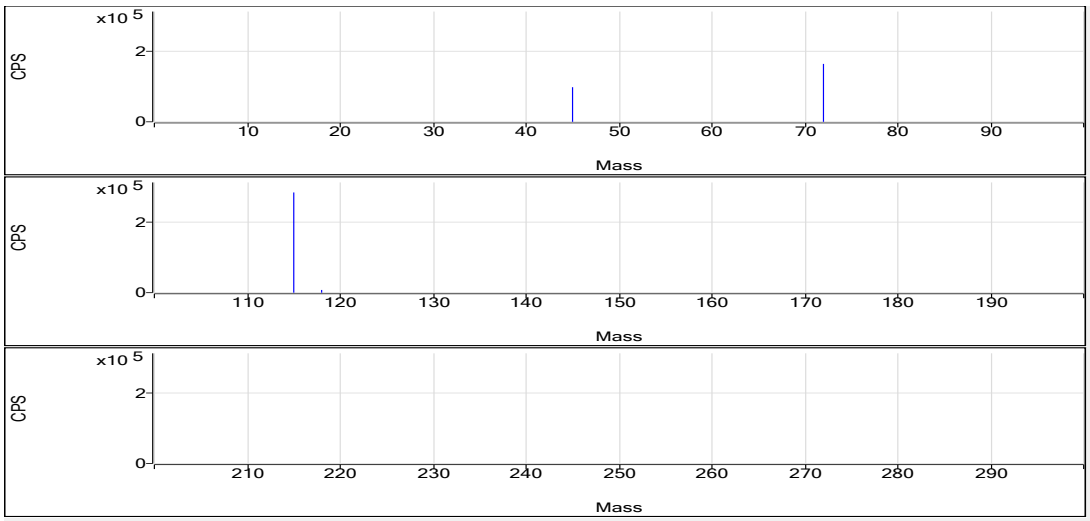
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1582030.08	0.9	97.2	Analog	0.1000	3
No Gas	Ge	72	1922535.08	1.6	102.6	Analog	0.1000	3
H2	Sc	45	97828.44	2.1	99.1	Pulse	0.1000	3
H2	Ge	72	163709.42	0.9	102.6	Pulse	0.1000	3
H2	In	115	283298.11	1.9	99.7	Pulse	0.1000	3
He	Sc	45	21079.11	2.0	99.9	Pulse	0.1000	3
He	Ge	72	87809.31	0.5	106.6	Pulse	0.1000	3
He	In	115	38671.19	1.1	103.2	Pulse	0.1000	3
He	Tb	159	252025.14	1.3	100.3	Pulse	0.1000	3
He	Bi	209	232109.99	0.7	102.0	Pulse	0.1000	3

No Gas

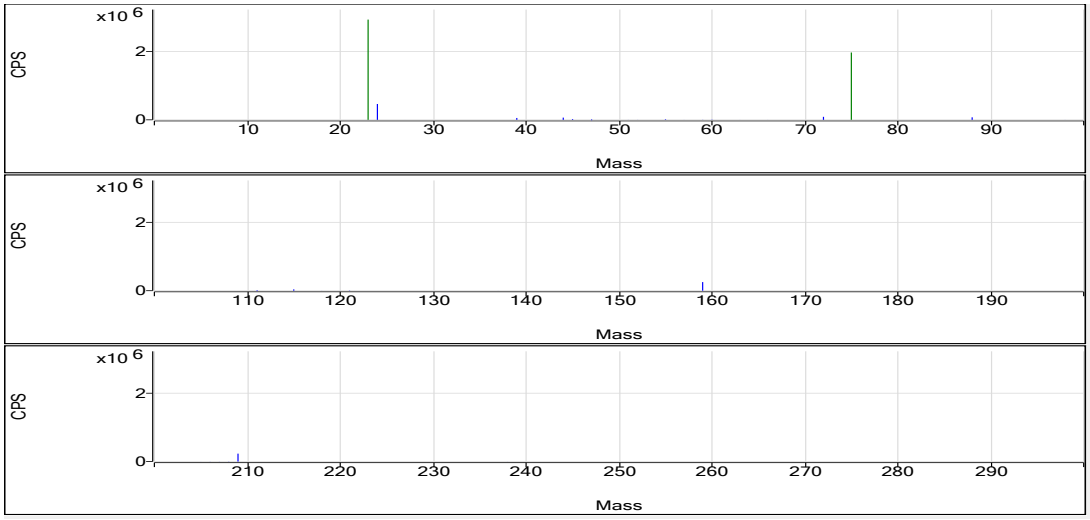


H2



Quantitation Report

He



Quantitation Report

Data File Name	099SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 1:47:17 PM
Sample Name	410-59722-A-2-C MS
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

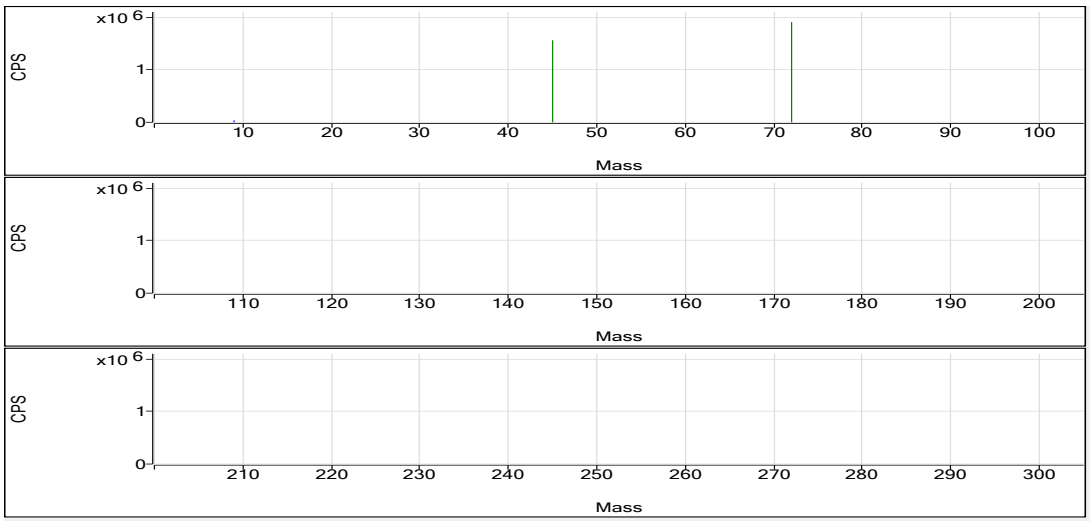
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	47.652	ppb	1.0	36213.74	0.0231	Pulse	0.5000	3
Se	78	115	H2	73.514	ppb	1.0	3055.89	0.0109	Pulse	1.5000	3
Na	23	45	He	34305.187	ppb	2.0	3381124.32	156.2063	Analog	0.1000	3
Mg	24	45	He	14465.378	ppb	1.4	688538.95	31.8084	Pulse	0.1000	3
Al	27	45	He	4841.618	ppb	1.7	57335.71	2.6488	Pulse	0.1000	3
K	39	45	He	6897.416	ppb	1.8	168704.96	7.7939	Pulse	0.1000	3
Ca	44	45	He	51715.768	ppb	2.2	71398.73	3.2987	Pulse	0.1000	3
Ti	47	45	He	509.209	ppb	0.4	6221.53	0.2874	Pulse	0.1000	3
V	51	45	He	497.194	ppb	1.3	312661.52	14.4438	Pulse	0.5000	3
Cr	52	45	He	493.515	ppb	1.8	424472.80	19.6097	Pulse	0.1000	3
Mn	55	72	He	511.543	ppb	2.2	160310.94	1.8641	Pulse	0.1000	3
Fe	57	72	He	4663.811	ppb	1.2	79000.03	0.9185	Pulse	0.1000	3
Co	59	72	He	436.635	ppb	1.1	899711.71	10.4611	Pulse	0.1000	3
Ni	60	72	He	470.654	ppb	0.8	270096.39	3.1404	Pulse	0.1000	3
Cu	63	72	He	440.384	ppb	0.5	770047.07	8.9530	Pulse	0.1000	3
Zn	66	72	He	455.304	ppb	2.6	68885.44	0.8010	Pulse	0.1000	3
As	75	72	He	7146.396	ppb	1.0	691239.40	8.0371	Pulse	0.5000	3
Sr	88	115	He	287.554	ppb	2.8	88080.66	2.2773	Pulse	0.1000	3
Mo	98	115	He	52.801	ppb	2.3	64981.35	1.6799	Pulse	0.1000	3
Ag	107	115	He	48.465	ppb	2.2	146151.78	3.7783	Pulse	0.1000	3
Cd	111	115	He	50.536	ppb	2.6	13480.55	0.3485	Pulse	0.5000	3
Sn	120	115	He	102.842	ppb	2.4	74416.77	1.9238	Pulse	0.1000	3
Sb	121	115	He	107.806	ppb	3.6	66145.15	1.7103	Pulse	0.1000	3
Ba	137	115	He	502.361	ppb	3.5	102025.15	2.6381	Pulse	0.1000	3
Tl	205	209	He	101.594	ppb	0.7	831664.60	3.6509	Pulse	0.1000	3
Pb	208	209	He	50.541	ppb	0.3	549141.28	2.4107	Pulse	0.1000	3
U	238	209	He	47.990	ppb	0.4	699726.34	3.0717	Pulse	0.1000	3

ISTD Table:

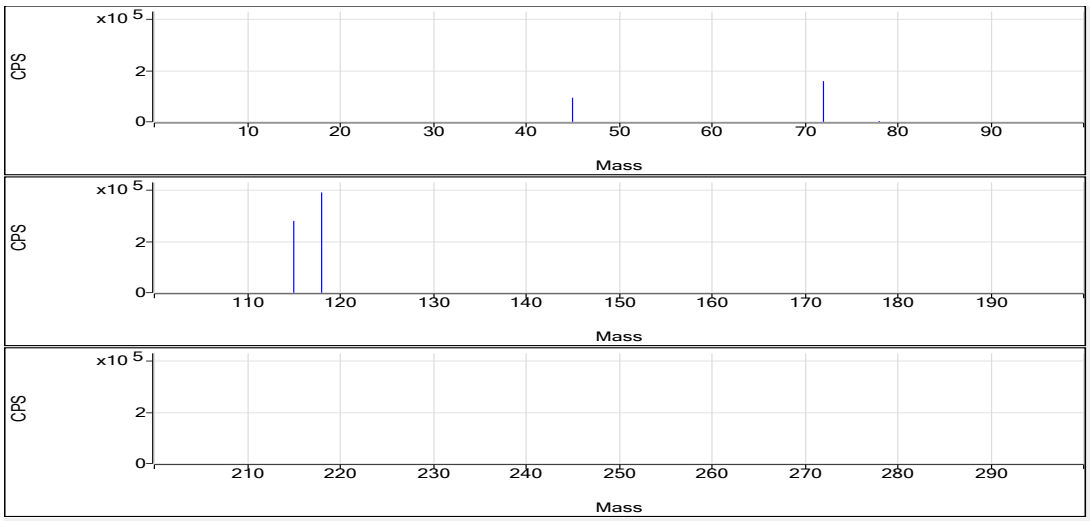
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1565470.13	1.2	96.2	Analog	0.1000	3
No Gas	Ge	72	1911924.81	0.7	102.1	Analog	0.1000	3
H2	Sc	45	94154.22	0.5	95.4	Pulse	0.1000	3
H2	Ge	72	159239.23	1.4	99.8	Pulse	0.1000	3
H2	In	115	280866.02	0.7	98.9	Pulse	0.1000	3
He	Sc	45	21649.92	1.7	102.6	Pulse	0.1000	3
He	Ge	72	86011.95	1.1	104.4	Pulse	0.1000	3
He	In	115	38694.54	2.3	103.3	Pulse	0.1000	3
He	Tb	159	250618.25	0.6	99.7	Pulse	0.1000	3
He	Bi	209	227798.38	0.4	100.1	Pulse	0.1000	3

No Gas

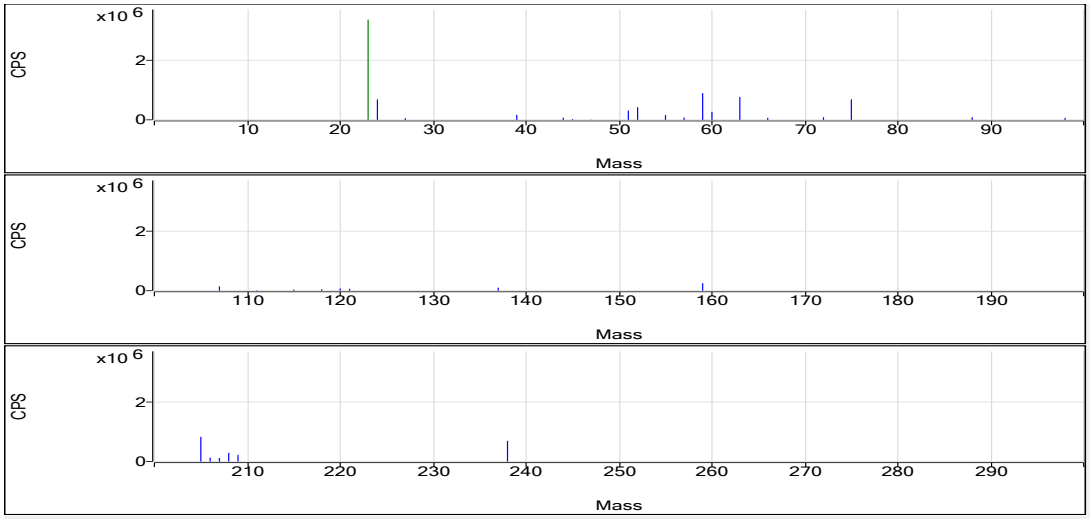


H2



Quantitation Report

He



Quantitation Report

Data File Name	100SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 1:49:18 PM
Sample Name	410-59722-A-2-D MSD
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

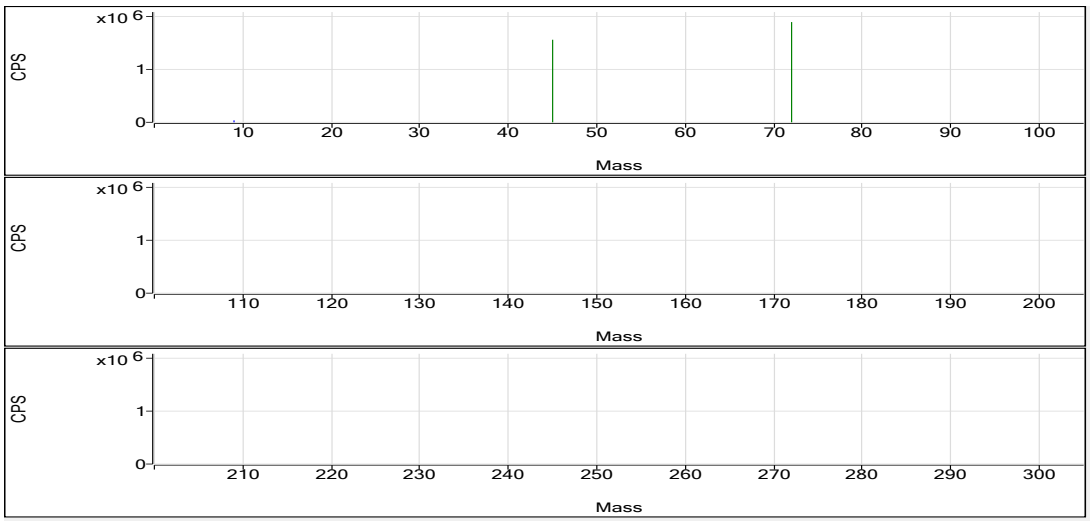
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	48.145	ppb	0.4	36602.65	0.0234	Pulse	0.5000	3
Se	78	115	H2	76.429	ppb	0.9	3194.14	0.0113	Pulse	1.5000	3
Na	23	45	He	36139.904	ppb	1.5	3531331.82	164.5400	Analog	0.1000	3
Mg	24	45	He	15145.616	ppb	1.2	714775.17	33.3041	Pulse	0.1000	3
Al	27	45	He	4851.568	ppb	1.7	56964.27	2.6542	Pulse	0.1000	3
K	39	45	He	7136.380	ppb	1.4	172892.99	8.0558	Pulse	0.1000	3
Ca	44	45	He	54376.650	ppb	1.2	74440.81	3.4682	Pulse	0.1000	3
Ti	47	45	He	507.835	ppb	4.1	6151.52	0.2866	Pulse	0.1000	3
V	51	45	He	496.979	ppb	0.6	309867.99	14.4376	Pulse	0.5000	3
Cr	52	45	He	492.659	ppb	1.2	420138.68	19.5758	Pulse	0.1000	3
Mn	55	72	He	504.950	ppb	1.0	159096.79	1.8401	Pulse	0.1000	3
Fe	57	72	He	4656.371	ppb	1.9	79284.30	0.9170	Pulse	0.1000	3
Co	59	72	He	433.142	ppb	0.8	897269.99	10.3775	Pulse	0.1000	3
Ni	60	72	He	466.532	ppb	0.9	269147.64	3.1129	Pulse	0.1000	3
Cu	63	72	He	437.755	ppb	1.2	769477.13	8.8996	Pulse	0.1000	3
Zn	66	72	He	449.790	ppb	1.3	68419.94	0.7913	Pulse	0.1000	3
As	75	72	He	6267.683	ppb	1.2	609455.96	7.0489	Pulse	0.5000	3
Sr	88	115	He	298.666	ppb	1.2	91794.01	2.3653	Pulse	0.1000	3
Mo	98	115	He	53.017	ppb	2.6	65452.89	1.6868	Pulse	0.1000	3
Ag	107	115	He	48.885	ppb	2.3	147883.40	3.8110	Pulse	0.1000	3
Cd	111	115	He	50.591	ppb	3.7	13536.60	0.3489	Pulse	0.5000	3
Sn	120	115	He	102.007	ppb	1.6	74061.94	1.9084	Pulse	0.1000	3
Sb	121	115	He	106.348	ppb	1.4	65478.93	1.6872	Pulse	0.1000	3
Ba	137	115	He	505.750	ppb	2.2	103069.72	2.6559	Pulse	0.1000	3
Tl	205	209	He	102.869	ppb	0.5	832647.26	3.6967	Pulse	0.1000	3
Pb	208	209	He	51.092	ppb	0.4	548887.69	2.4369	Pulse	0.1000	3
U	238	209	He	48.964	ppb	0.2	705926.55	3.1341	Pulse	0.1000	3

ISTD Table:

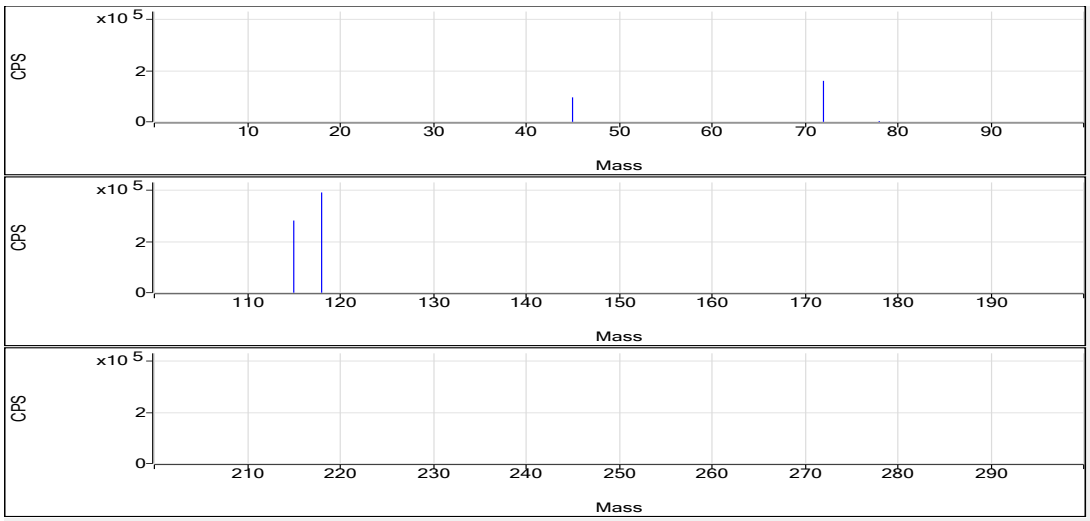
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1566016.12	0.4	96.2	Analog	0.1000	3
No Gas	Ge	72	1901163.30	0.5	101.5	Analog	0.1000	3
H2	Sc	45	95738.36	0.5	97.0	Pulse	0.1000	3
H2	Ge	72	160395.46	0.5	100.5	Pulse	0.1000	3
H2	In	115	282385.10	0.3	99.4	Pulse	0.1000	3
He	Sc	45	21463.14	0.6	101.7	Pulse	0.1000	3
He	Ge	72	86468.09	1.1	105.0	Pulse	0.1000	3
He	In	115	38815.13	1.8	103.6	Pulse	0.1000	3
He	Tb	159	250097.35	0.7	99.5	Pulse	0.1000	3
He	Bi	209	225241.53	0.4	99.0	Pulse	0.1000	3

No Gas

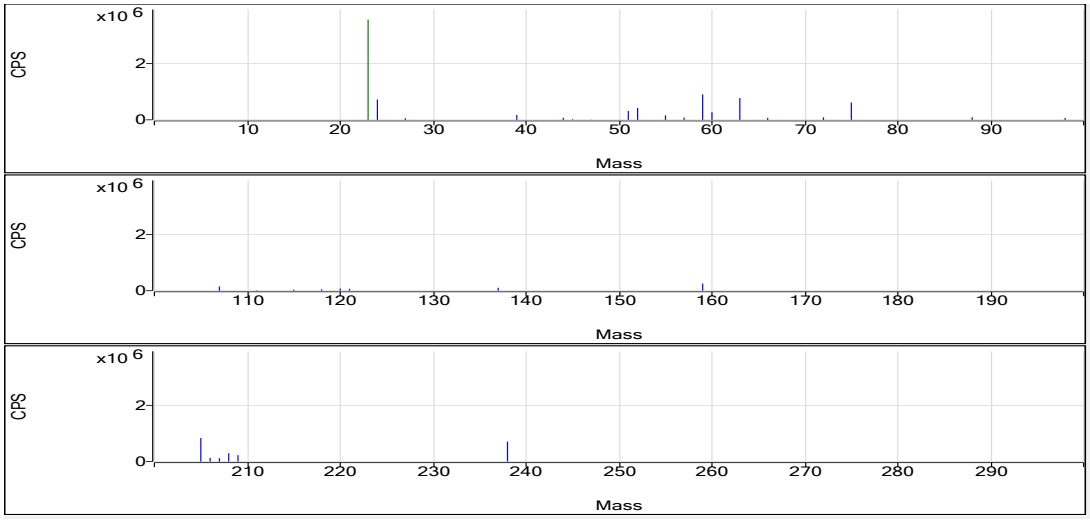


H2



Quantitation Report

He



Quantitation Report

Data File Name	101SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 1:51:19 PM
Sample Name	410-59722-A-2-A SD @5
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

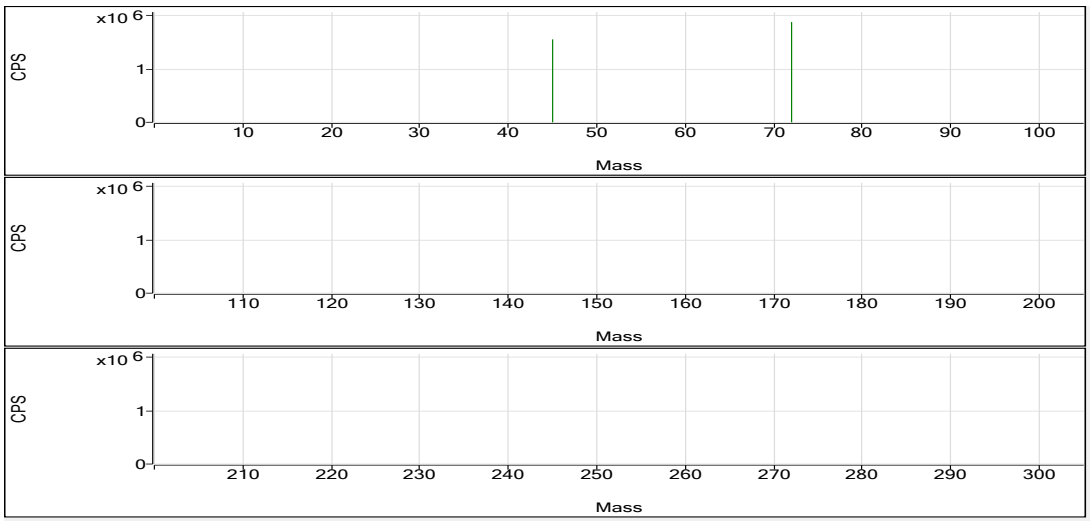
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.044	ppb	24.1	41.33	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.311	ppb	28.1	13.55	0.0000	Pulse	1.5000	3
Na	23	45	He	6412.818	ppb	1.1	617927.59	29.5139	Pulse	0.1000	3
Mg	24	45	He	2147.519	ppb	0.4	98951.42	4.7256	Pulse	0.1000	3
Al	27	45	He	3.248	ppb	111.9	66.67	0.0032	Pulse	0.1000	3
K	39	45	He	440.826	ppb	4.5	15034.79	0.7182	Pulse	0.1000	3
Ca	44	45	He	10016.714	ppb	5.3	13446.66	0.6425	Pulse	0.1000	3
Ti	47	45	He	0.567	ppb	86.6	6.67	0.0003	Pulse	0.1000	3
V	51	45	He	0.416	ppb	8.1	472.01	0.0225	Pulse	0.5000	3
Cr	52	45	He	0.330	ppb	42.8	883.39	0.0421	Pulse	0.1000	3
Mn	55	72	He	11.219	ppb	6.3	3520.57	0.0411	Pulse	0.1000	3
Fe	57	72	He	12.696	ppb	23.1	290.01	0.0034	Pulse	0.1000	3
Co	59	72	He	0.410	ppb	20.8	900.06	0.0105	Pulse	0.1000	3
Ni	60	72	He	2.598	ppb	8.1	1590.14	0.0185	Pulse	0.1000	3
Cu	63	72	He	0.233	ppb	22.5	623.37	0.0073	Pulse	0.1000	3
Zn	66	72	He	1.921	ppb	34.8	366.68	0.0043	Pulse	0.1000	3
As	75	72	He	3618.555	ppb	1.5	348822.62	4.0697	Pulse	0.5000	3
Sr	88	115	He	49.732	ppb	0.2	15248.70	0.3945	Pulse	0.1000	3
Mo	98	115	He	0.177	ppb	32.0	230.01	0.0060	Pulse	0.1000	3
Ag	107	115	He	0.014	ppb	40.1	50.00	0.0013	Pulse	0.1000	3
Cd	111	115	He	0.025	ppb	96.3	7.33	0.0002	Pulse	0.5000	3
Sn	120	115	He	-0.010	ppb	N/A	846.72	0.0219	Pulse	0.1000	3
Sb	121	115	He	2.536	ppb	8.7	1563.48	0.0405	Pulse	0.1000	3
Ba	137	115	He	0.866	ppb	25.0	186.68	0.0048	Pulse	0.1000	3
Tl	205	209	He	0.104	ppb	3.6	906.73	0.0039	Pulse	0.1000	3
Pb	208	209	He	0.128	ppb	4.4	2336.84	0.0102	Pulse	0.1000	3
U	238	209	He	0.039	ppb	19.2	613.37	0.0027	Pulse	0.1000	3

ISTD Table:

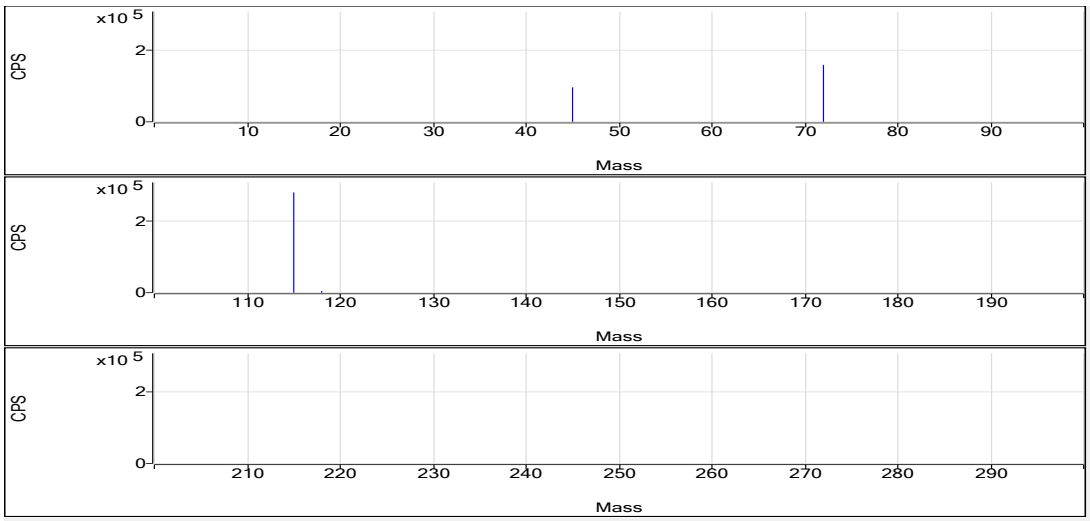
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1554363.21	0.6	95.5	Analog	0.1000	3
No Gas	Ge	72	1878069.40	0.9	100.2	Analog	0.1000	3
H2	Sc	45	96402.22	1.4	97.7	Pulse	0.1000	3
H2	Ge	72	158919.01	1.6	99.6	Pulse	0.1000	3
H2	In	115	279881.09	1.9	98.5	Pulse	0.1000	3
He	Sc	45	20938.92	1.4	99.2	Pulse	0.1000	3
He	Ge	72	85723.80	1.4	104.1	Pulse	0.1000	3
He	In	115	38651.10	1.8	103.1	Pulse	0.1000	3
He	Tb	159	249831.08	0.4	99.4	Pulse	0.1000	3
He	Bi	209	229775.88	1.3	101.0	Pulse	0.1000	3

No Gas

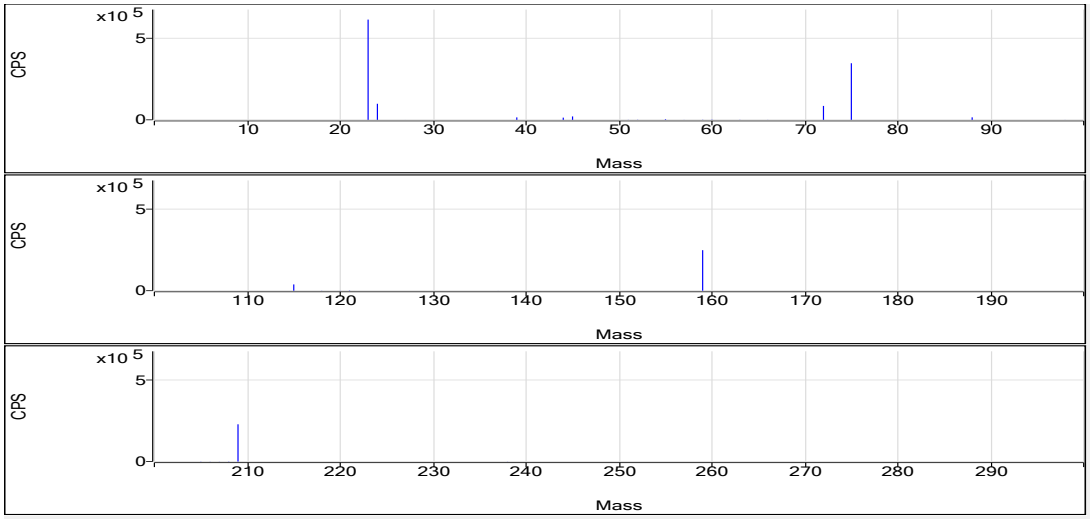


H2



Quantitation Report

He



Quantitation Report

Data File Name	102_CCV.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 1:53:21 PM
Sample Name	CCV 1942322
Sample Type	CCV
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

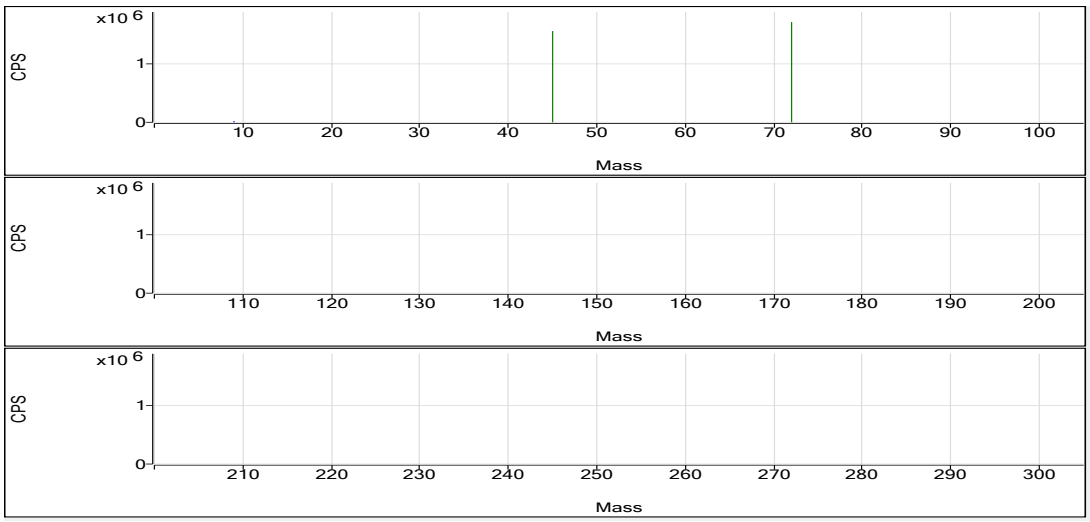
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	28.978	ppb	0.8	21769.21	0.0141	Pulse	0.5000	3
Se	78	115	H2	29.797	ppb	3.2	1211.61	0.0044	Pulse	1.5000	3
Na	23	45	He	5085.796	ppb	0.4	481982.47	23.4863	Pulse	0.1000	3
Mg	24	45	He	5034.130	ppb	1.9	227219.89	11.0723	Pulse	0.1000	3
Al	27	45	He	4971.196	ppb	2.1	55813.16	2.7196	Pulse	0.1000	3
K	39	45	He	5098.428	ppb	0.8	119485.54	5.8224	Pulse	0.1000	3
Ca	44	45	He	5215.320	ppb	2.0	6908.52	0.3366	Pulse	0.1000	3
Ti	47	45	He	306.570	ppb	6.2	3550.56	0.1730	Pulse	0.1000	3
V	51	45	He	300.319	ppb	0.4	179127.00	8.7286	Pulse	0.5000	3
Cr	52	45	He	304.695	ppb	0.5	248684.37	12.1181	Pulse	0.1000	3
Mn	55	72	He	305.316	ppb	2.1	84715.18	1.1127	Pulse	0.1000	3
Fe	57	72	He	5119.471	ppb	1.0	76760.81	1.0081	Pulse	0.1000	3
Co	59	72	He	292.923	ppb	0.4	534383.83	7.0182	Pulse	0.1000	3
Ni	60	72	He	305.601	ppb	1.5	155285.84	2.0395	Pulse	0.1000	3
Cu	63	72	He	299.263	ppb	0.7	463314.42	6.0849	Pulse	0.1000	3
Zn	66	72	He	303.045	ppb	1.3	40614.94	0.5334	Pulse	0.1000	3
As	75	72	He	308.105	ppb	1.8	26402.32	0.3468	Pulse	0.5000	3
Sr	88	115	He	29.477	ppb	4.1	8806.34	0.2342	Pulse	0.1000	3
Mo	98	115	He	30.025	ppb	2.7	35936.70	0.9554	Pulse	0.1000	3
Ag	107	115	He	30.776	ppb	4.2	90227.29	2.3994	Pulse	0.1000	3
Cd	111	115	He	30.805	ppb	2.5	7990.99	0.2125	Pulse	0.5000	3
Sn	120	115	He	30.260	ppb	3.8	21874.57	0.5816	Pulse	0.1000	3
Sb	121	115	He	30.780	ppb	3.4	18372.76	0.4885	Pulse	0.1000	3
Ba	137	115	He	308.728	ppb	2.7	60983.04	1.6214	Pulse	0.1000	3
Tl	205	209	He	30.553	ppb	1.0	247514.90	1.0981	Pulse	0.1000	3
Pb	208	209	He	30.362	ppb	0.4	326803.02	1.4498	Pulse	0.1000	3
U	238	209	He	250.884	ppb	0.5	3619573.91	16.0576	Analog	0.1000	3

ISTD Table:

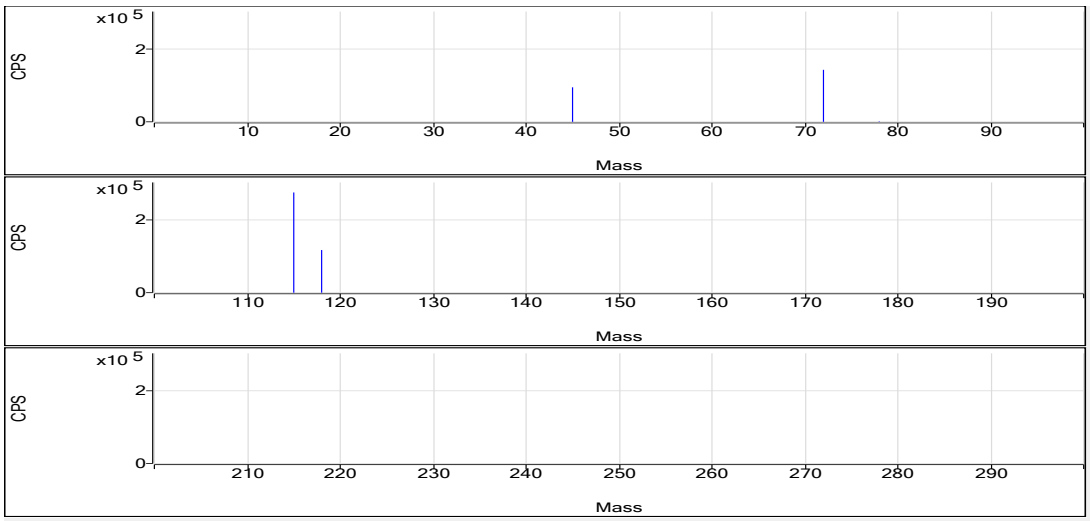
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1547240.13	1.5	95.1	Analog	0.1000	3
No Gas	Ge	72	1700220.08	1.2	90.8	Analog	0.1000	3
H2	Sc	45	94574.15	1.1	95.8	Pulse	0.1000	3
H2	Ge	72	142498.55	1.3	89.3	Pulse	0.1000	3
H2	In	115	274691.81	1.0	96.7	Pulse	0.1000	3
He	Sc	45	20521.74	0.2	97.2	Pulse	0.1000	3
He	Ge	72	76143.19	0.6	92.5	Pulse	0.1000	3
He	In	115	37625.27	2.0	100.4	Pulse	0.1000	3
He	Tb	159	247465.05	1.3	98.5	Pulse	0.1000	3
He	Bi	209	225416.91	0.8	99.1	Pulse	0.1000	3

No Gas

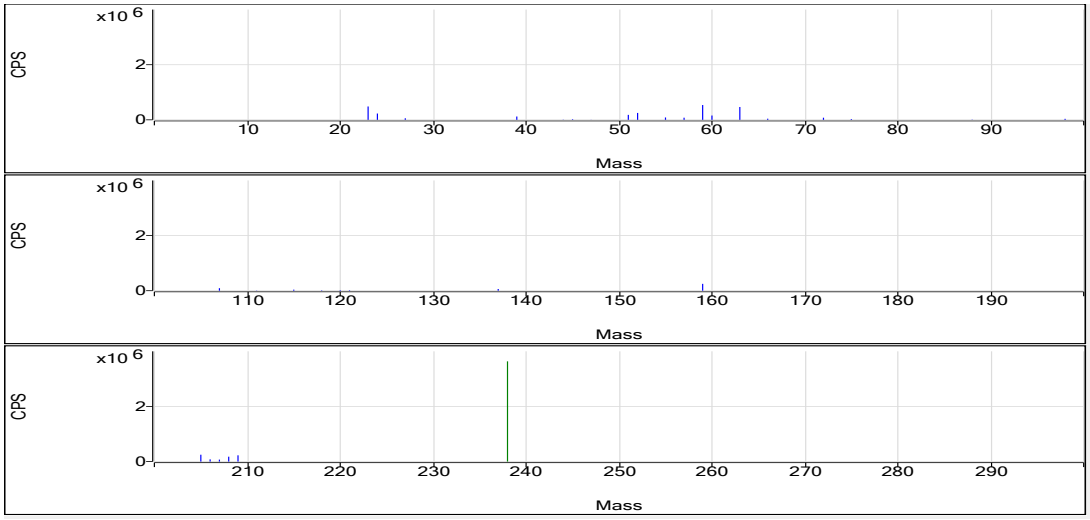


H2



Quantitation Report

He



Quantitation Report

Data File Name	103_CCB.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 1:55:22 PM
Sample Name	CCB 2014932
Sample Type	CCB
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

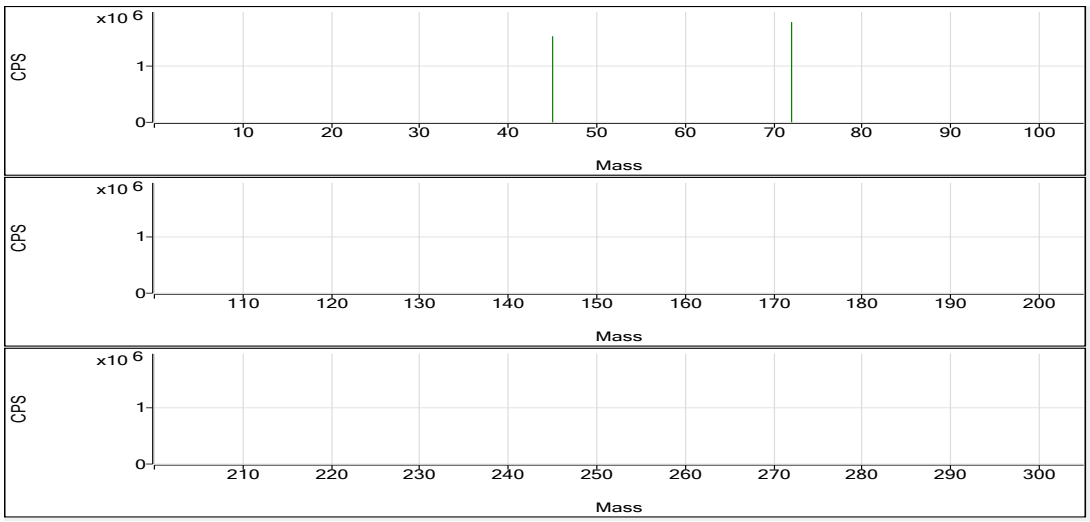
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.013	ppb	34.1	18.00	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.050	ppb	66.8	2.67	0.0000	Pulse	1.5000	3
Na	23	45	He	76.437	ppb	7.9	15104.80	0.7329	Pulse	0.1000	3
Mg	24	45	He	1.603	ppb	98.8	153.34	0.0075	Pulse	0.1000	3
Al	27	45	He	1.820	ppb	124.8	50.00	0.0024	Pulse	0.1000	3
K	39	45	He	-4.944	ppb	N/A	4734.27	0.2297	Pulse	0.1000	3
Ca	44	45	He	6.570	ppb	105.9	100.00	0.0049	Pulse	0.1000	3
Ti	47	45	He	0.287	ppb	173.2	3.33	0.0002	Pulse	0.1000	3
V	51	45	He	0.090	ppb	24.3	269.33	0.0131	Pulse	0.5000	3
Cr	52	45	He	0.166	ppb	116.1	736.71	0.0356	Pulse	0.1000	3
Mn	55	72	He	0.660	ppb	31.5	210.01	0.0026	Pulse	0.1000	3
Fe	57	72	He	2.429	ppb	72.9	110.00	0.0014	Pulse	0.1000	3
Co	59	72	He	0.127	ppb	27.6	300.01	0.0037	Pulse	0.1000	3
Ni	60	72	He	0.209	ppb	60.0	210.01	0.0026	Pulse	0.1000	3
Cu	63	72	He	0.125	ppb	59.6	410.02	0.0051	Pulse	0.1000	3
Zn	66	72	He	0.104	ppb	98.3	86.67	0.0011	Pulse	0.1000	3
As	75	72	He	1.948	ppb	12.4	198.67	0.0025	Pulse	0.5000	3
Sr	88	115	He	-0.011	ppb	N/A	26.67	0.0007	Pulse	0.1000	3
Mo	98	115	He	0.026	ppb	71.3	43.33	0.0012	Pulse	0.1000	3
Ag	107	115	He	0.017	ppb	21.0	56.67	0.0015	Pulse	0.1000	3
Cd	111	115	He	0.013	ppb	62.5	4.00	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.129	ppb	N/A	730.05	0.0197	Pulse	0.1000	3
Sb	121	115	He	0.040	ppb	28.9	33.33	0.0009	Pulse	0.1000	3
Ba	137	115	He	0.121	ppb	89.0	33.33	0.0009	Pulse	0.1000	3
Tl	205	209	He	0.036	ppb	24.3	340.02	0.0015	Pulse	0.1000	3
Pb	208	209	He	-0.001	ppb	N/A	910.05	0.0040	Pulse	0.1000	3
U	238	209	He	0.079	ppb	16.2	1183.44	0.0052	Pulse	0.1000	3

ISTD Table:

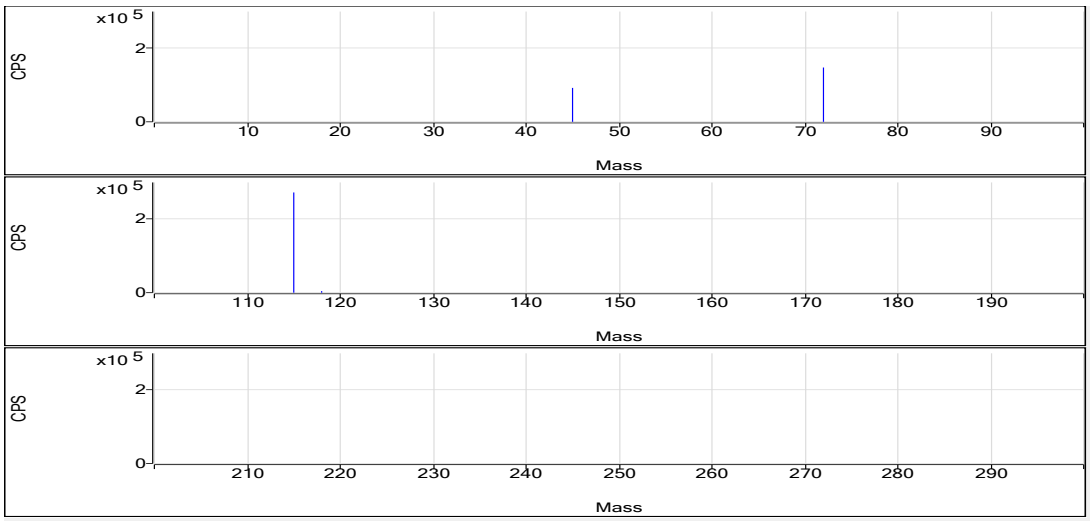
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1516897.27	0.7	93.2	Analog	0.1000	3
No Gas	Ge	72	1766998.30	1.1	94.3	Analog	0.1000	3
H2	Sc	45	92292.65	0.6	93.5	Pulse	0.1000	3
H2	Ge	72	147787.55	1.4	92.6	Pulse	0.1000	3
H2	In	115	272803.58	0.9	96.0	Pulse	0.1000	3
He	Sc	45	20605.14	2.3	97.6	Pulse	0.1000	3
He	Ge	72	80634.13	1.7	97.9	Pulse	0.1000	3
He	In	115	37103.93	2.8	99.0	Pulse	0.1000	3
He	Tb	159	243542.02	1.3	96.9	Pulse	0.1000	3
He	Bi	209	226742.03	0.2	99.7	Pulse	0.1000	3

No Gas

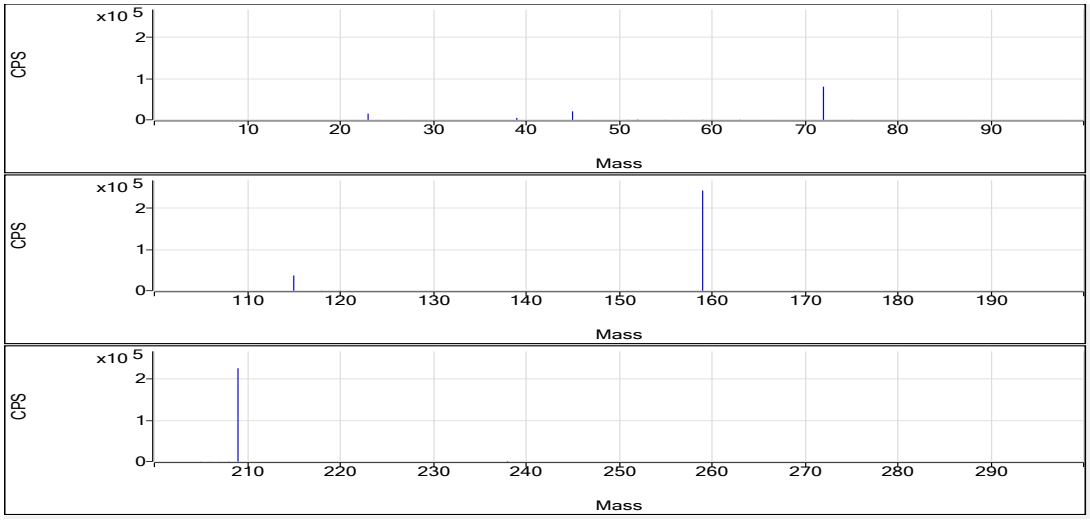


H2



Quantitation Report

He



Quantitation Report

Data File Name	104SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 1:57:24 PM
Sample Name	410-59920-B-2-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

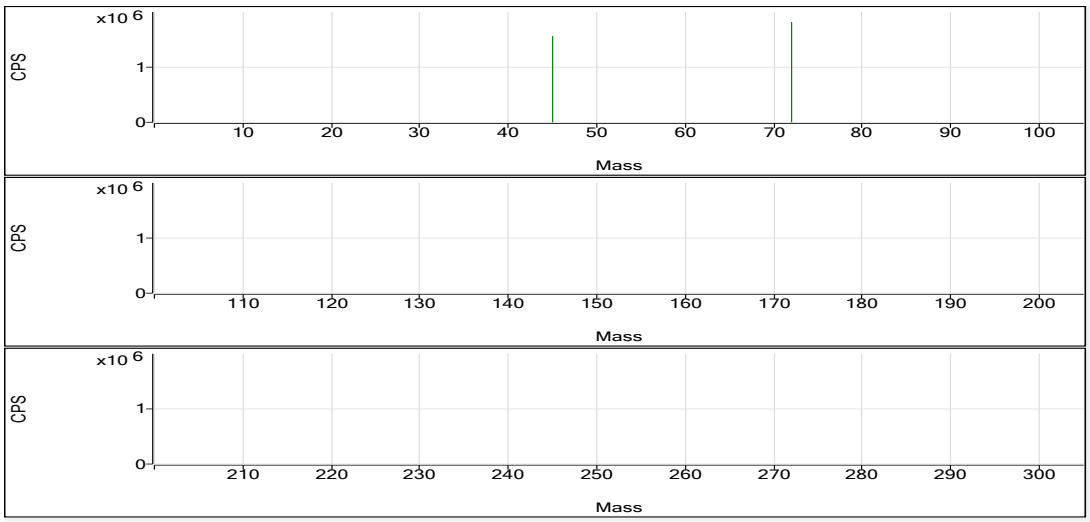
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.022	ppb	31.2	25.33	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.322	ppb	8.9	13.33	0.0000	Pulse	1.5000	3
Na	23	45	He	767270.250	ppb	4.8	71720257.27	3 485.4724	Analog	0.1000	3
Mg	24	45	He	127137.501	ppb	3.8	5753626.37	279.5364	Analog	0.1000	3
Al	27	45	He	11.274	ppb	37.9	156.67	0.0076	Pulse	0.1000	3
K	39	45	He	31579.219	ppb	3.9	717118.71	34.8423	Pulse	0.1000	3
Ca	44	45	He	118642.186	ppb	3.3	155664.38	7.5618	Pulse	0.1000	3
Ti	47	45	He	0.564	ppb	86.7	6.67	0.0003	Pulse	0.1000	3
V	51	45	He	1.394	ppb	13.2	1048.05	0.0509	Pulse	0.5000	3
Cr	52	45	He	2.522	ppb	7.7	2657.00	0.1291	Pulse	0.1000	3
Mn	55	72	He	1720.781	ppb	1.1	504739.93	6.2701	Pulse	0.1000	3
Fe	57	72	He	33056.888	ppb	0.2	523630.89	6.5047	Pulse	0.1000	3
Co	59	72	He	5.975	ppb	3.9	11578.36	0.1438	Pulse	0.1000	3
Ni	60	72	He	22.656	ppb	2.1	12262.24	0.1523	Pulse	0.1000	3
Cu	63	72	He	5.434	ppb	1.3	9096.50	0.1130	Pulse	0.1000	3
Zn	66	72	He	29.543	ppb	3.9	4250.78	0.0528	Pulse	0.1000	3
As	75	72	He	3076.849	ppb	0.4	278568.12	3.4605	Pulse	0.5000	3
Sr	88	115	He	1257.779	ppb	1.1	364285.63	9.9583	Pulse	0.1000	3
Mo	98	115	He	10.345	ppb	2.7	12048.91	0.3294	Pulse	0.1000	3
Ag	107	115	He	0.009	ppb	59.1	33.34	0.0009	Pulse	0.1000	3
Cd	111	115	He	0.021	ppb	64.0	6.00	0.0002	Pulse	0.5000	3
Sn	120	115	He	-0.012	ppb	N/A	800.05	0.0218	Pulse	0.1000	3
Sb	121	115	He	0.466	ppb	14.6	280.02	0.0077	Pulse	0.1000	3
Ba	137	115	He	223.172	ppb	1.2	42877.70	1.1721	Pulse	0.1000	3
Tl	205	209	He	0.042	ppb	28.9	356.68	0.0017	Pulse	0.1000	3
Pb	208	209	He	0.409	ppb	3.0	4980.56	0.0235	Pulse	0.1000	3
U	238	209	He	0.199	ppb	2.6	2730.41	0.0129	Pulse	0.1000	3

ISTD Table:

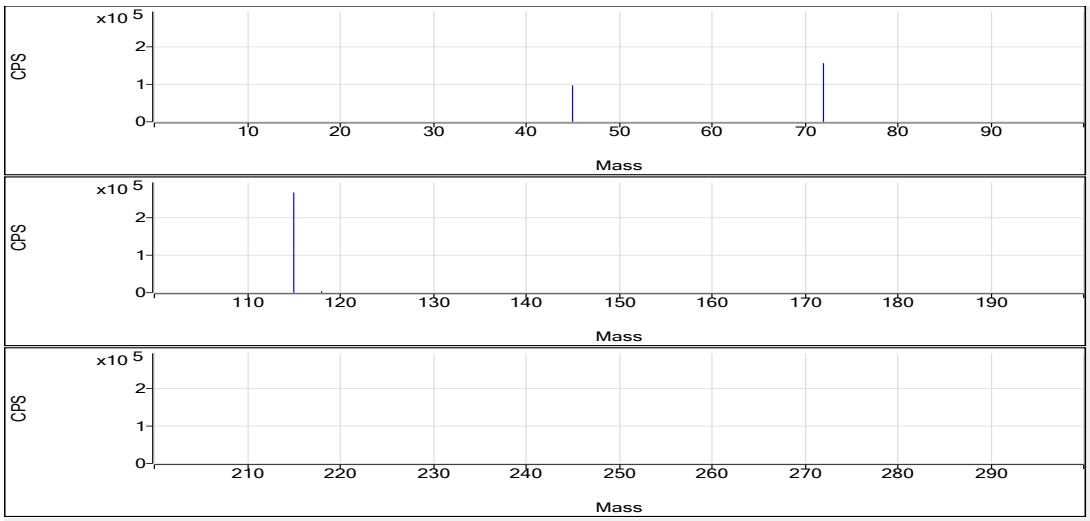
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1561267.58	1.7	95.9	Analog	0.1000	3
No Gas	Ge	72	1815773.83	0.9	96.9	Analog	0.1000	3
H2	Sc	45	96865.60	0.5	98.1	Pulse	0.1000	3
H2	Ge	72	156259.89	1.1	97.9	Pulse	0.1000	3
H2	In	115	266982.94	0.7	94.0	Pulse	0.1000	3
He	Sc	45	20605.18	4.3	97.6	Pulse	0.1000	3
He	Ge	72	80499.88	0.2	97.7	Pulse	0.1000	3
He	In	115	36585.68	1.6	97.6	Pulse	0.1000	3
He	Tb	159	243653.64	1.6	96.9	Pulse	0.1000	3
He	Bi	209	211609.70	1.0	93.0	Pulse	0.1000	3

No Gas

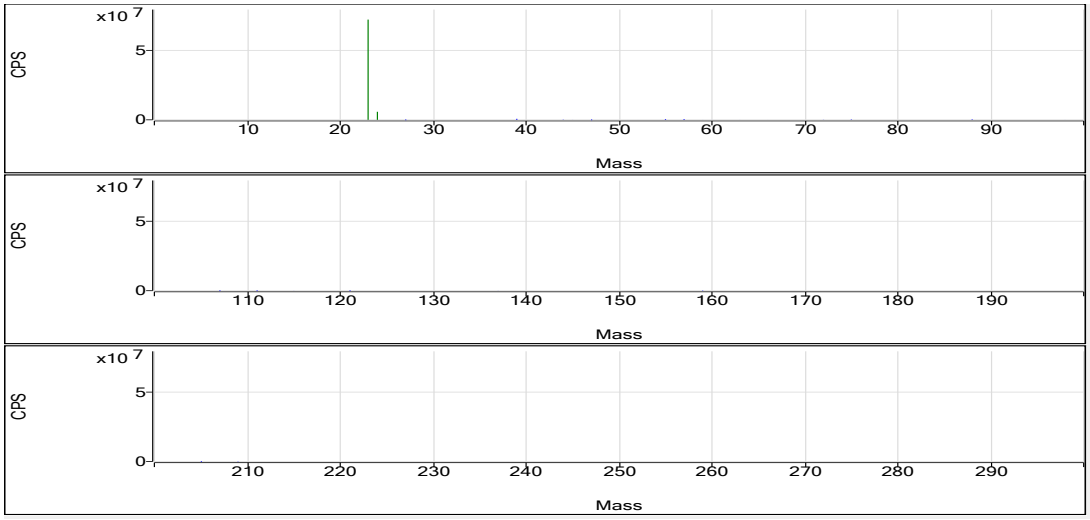


H2



Quantitation Report

He



Quantitation Report

Data File Name	105SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 1:59:25 PM
Sample Name	410-59920-B-3-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

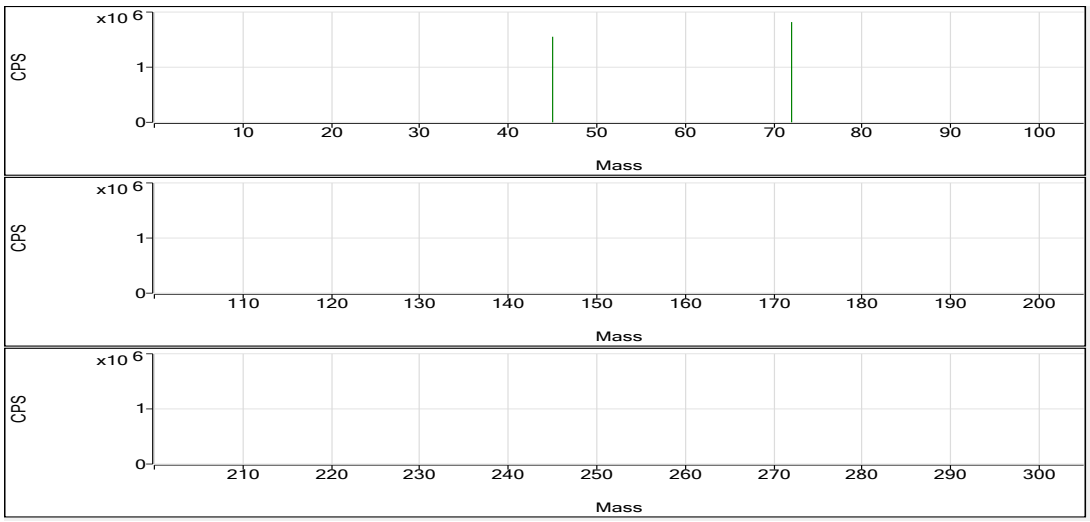
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.013	ppb	72.7	18.00	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.022	ppb	85.1	1.56	0.0000	Pulse	1.5000	3
Na	23	45	He	270.386	ppb	9.2	32677.01	1.6138	Pulse	0.1000	3
Mg	24	45	He	34.740	ppb	10.4	1626.81	0.0803	Pulse	0.1000	3
Al	27	45	He	0.437	ppb	484.1	33.33	0.0017	Pulse	0.1000	3
K	39	45	He	7.490	ppb	156.6	4924.34	0.2433	Pulse	0.1000	3
Ca	44	45	He	31.115	ppb	106.5	130.00	0.0064	Pulse	0.1000	3
Ti	47	45	He	0.000	ppb	N/A	0.00	0.0000	Pulse	0.1000	3
V	51	45	He	0.023	ppb	130.1	225.33	0.0111	Pulse	0.5000	3
Cr	52	45	He	0.151	ppb	119.6	710.04	0.0351	Pulse	0.1000	3
Mn	55	72	He	1.051	ppb	13.0	330.02	0.0040	Pulse	0.1000	3
Fe	57	72	He	14.153	ppb	28.2	300.01	0.0037	Pulse	0.1000	3
Co	59	72	He	0.053	ppb	16.8	160.01	0.0020	Pulse	0.1000	3
Ni	60	72	He	0.033	ppb	261.6	116.67	0.0014	Pulse	0.1000	3
Cu	63	72	He	0.142	ppb	30.8	443.36	0.0054	Pulse	0.1000	3
Zn	66	72	He	0.561	ppb	38.8	153.34	0.0019	Pulse	0.1000	3
As	75	72	He	2.009	ppb	16.5	207.33	0.0025	Pulse	0.5000	3
Sr	88	115	He	0.291	ppb	47.0	116.67	0.0031	Pulse	0.1000	3
Mo	98	115	He	0.014	ppb	60.0	30.00	0.0008	Pulse	0.1000	3
Ag	107	115	He	0.005	ppb	130.1	20.00	0.0005	Pulse	0.1000	3
Cd	111	115	He	0.003	ppb	343.1	1.33	0.0000	Pulse	0.5000	3
Sn	120	115	He	-0.104	ppb	N/A	756.71	0.0202	Pulse	0.1000	3
Sb	121	115	He	0.017	ppb	100.8	20.00	0.0005	Pulse	0.1000	3
Ba	137	115	He	-0.017	ppb	N/A	6.67	0.0002	Pulse	0.1000	3
Tl	205	209	He	0.021	ppb	13.6	213.34	0.0009	Pulse	0.1000	3
Pb	208	209	He	-0.001	ppb	N/A	916.72	0.0040	Pulse	0.1000	3
U	238	209	He	0.010	ppb	7.4	190.01	0.0008	Pulse	0.1000	3

ISTD Table:

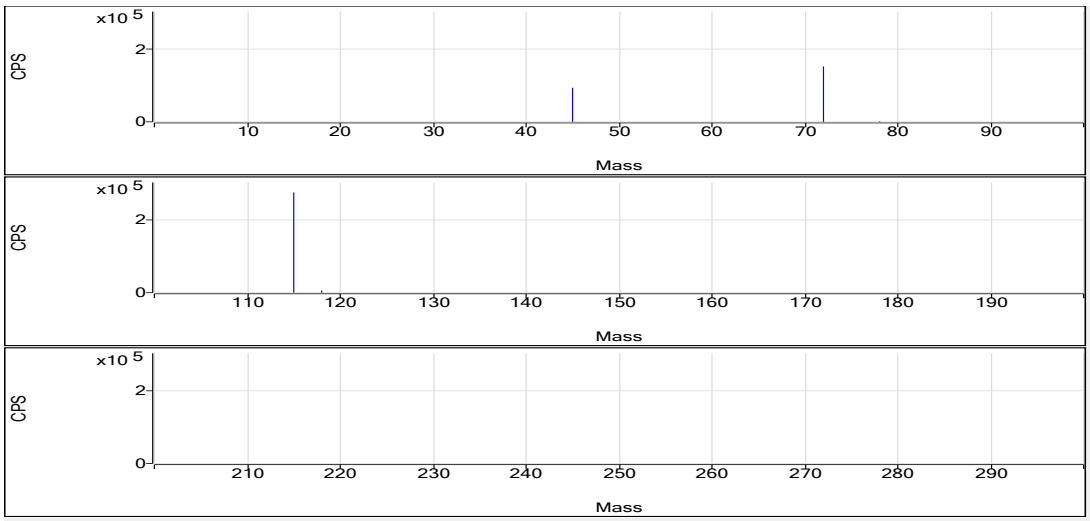
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1554035.45	1.7	95.5	Analog	0.1000	3
No Gas	Ge	72	1820576.12	0.6	97.2	Analog	0.1000	3
H2	Sc	45	93399.50	1.1	94.6	Pulse	0.1000	3
H2	Ge	72	151859.57	0.4	95.2	Pulse	0.1000	3
H2	In	115	275008.39	0.9	96.8	Pulse	0.1000	3
He	Sc	45	20241.38	0.7	95.9	Pulse	0.1000	3
He	Ge	72	81757.54	1.2	99.3	Pulse	0.1000	3
He	In	115	37548.20	0.4	100.2	Pulse	0.1000	3
He	Tb	159	248517.63	0.3	98.9	Pulse	0.1000	3
He	Bi	209	227803.31	1.1	100.1	Pulse	0.1000	3

No Gas

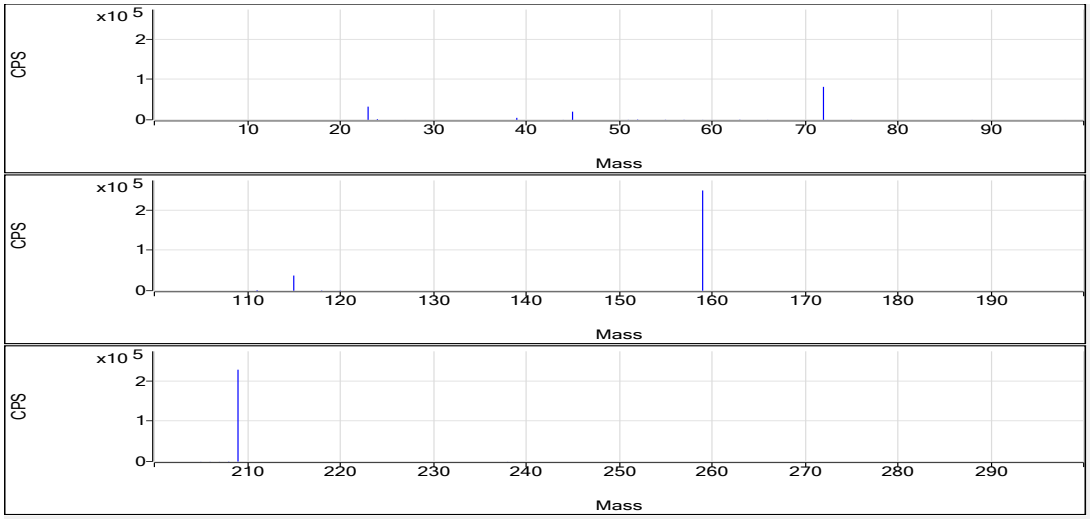


H2



Quantitation Report

He



Quantitation Report

Data File Name	106SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 2:01:27 PM
Sample Name	410-61675-G-5-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

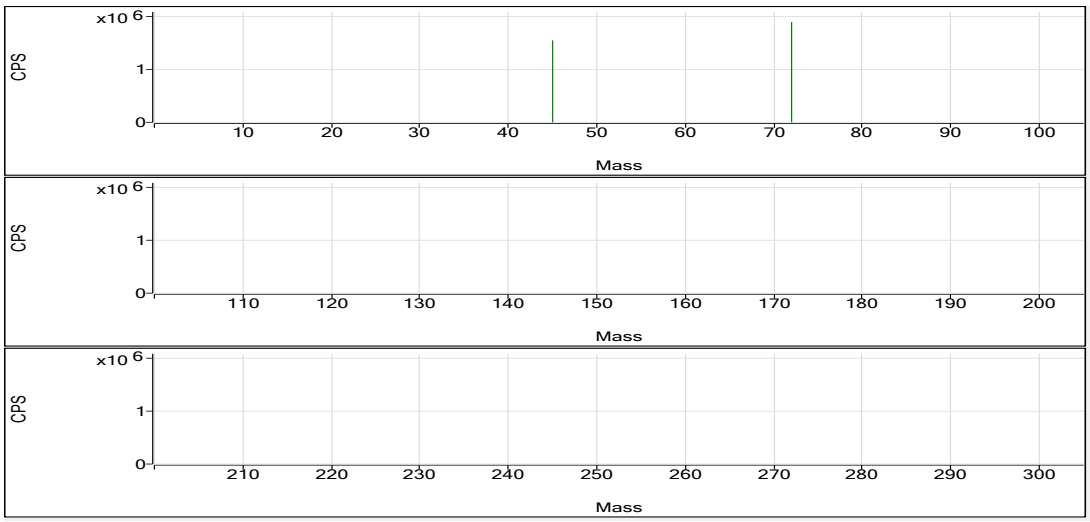
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.012	ppb	104.7	17.33	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.038	ppb	149.7	2.22	0.0000	Pulse	1.5000	3
Na	23	45	He	991.591	ppb	1.6	101732.56	4.8897	Pulse	0.1000	3
Mg	24	45	He	37.921	ppb	5.3	1816.85	0.0873	Pulse	0.1000	3
Al	27	45	He	53.049	ppb	5.7	633.39	0.0304	Pulse	0.1000	3
K	39	45	He	30.177	ppb	26.9	5581.27	0.2682	Pulse	0.1000	3
Ca	44	45	He	417.683	ppb	28.9	646.71	0.0310	Pulse	0.1000	3
Ti	47	45	He	3.110	ppb	40.8	36.67	0.0018	Pulse	0.1000	3
V	51	45	He	0.035	ppb	138.1	238.67	0.0115	Pulse	0.5000	3
Cr	52	45	He	0.387	ppb	44.7	923.40	0.0444	Pulse	0.1000	3
Mn	55	72	He	1.214	ppb	23.1	393.35	0.0046	Pulse	0.1000	3
Fe	57	72	He	35.035	ppb	10.3	660.04	0.0078	Pulse	0.1000	3
Co	59	72	He	0.057	ppb	39.3	173.34	0.0020	Pulse	0.1000	3
Ni	60	72	He	0.130	ppb	99.2	176.67	0.0021	Pulse	0.1000	3
Cu	63	72	He	0.701	ppb	8.1	1426.79	0.0168	Pulse	0.1000	3
Zn	66	72	He	0.742	ppb	47.9	186.67	0.0022	Pulse	0.1000	3
As	75	72	He	1.018	ppb	18.2	120.67	0.0014	Pulse	0.5000	3
Sr	88	115	He	0.733	ppb	15.4	250.01	0.0066	Pulse	0.1000	3
Mo	98	115	He	0.011	ppb	42.9	26.67	0.0007	Pulse	0.1000	3
Ag	107	115	He	0.001	ppb	531.4	10.00	0.0003	Pulse	0.1000	3
Cd	111	115	He	0.000	ppb	19269.6	0.67	0.0000	Pulse	0.5000	3
Sn	120	115	He	4.866	ppb	14.3	4241.54	0.1120	Pulse	0.1000	3
Sb	121	115	He	0.100	ppb	43.6	70.00	0.0018	Pulse	0.1000	3
Ba	137	115	He	1.172	ppb	20.8	243.34	0.0064	Pulse	0.1000	3
Tl	205	209	He	0.012	ppb	8.2	143.34	0.0006	Pulse	0.1000	3
Pb	208	209	He	0.121	ppb	9.1	2273.50	0.0098	Pulse	0.1000	3
U	238	209	He	0.004	ppb	23.9	106.67	0.0005	Pulse	0.1000	3

ISTD Table:

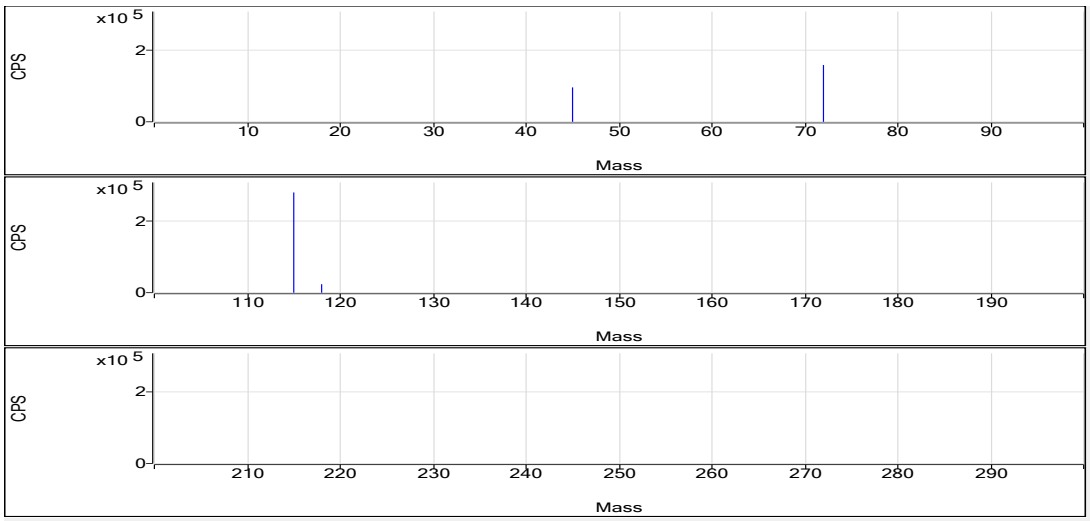
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1546341.59	0.5	95.0	Analog	0.1000	3
No Gas	Ge	72	1891025.86	1.5	100.9	Analog	0.1000	3
H2	Sc	45	95663.27	1.5	96.9	Pulse	0.1000	3
H2	Ge	72	157842.10	1.5	98.9	Pulse	0.1000	3
H2	In	115	278550.56	0.2	98.0	Pulse	0.1000	3
He	Sc	45	20808.72	1.8	98.6	Pulse	0.1000	3
He	Ge	72	84875.41	1.8	103.1	Pulse	0.1000	3
He	In	115	37835.53	1.0	101.0	Pulse	0.1000	3
He	Tb	159	249448.57	0.9	99.3	Pulse	0.1000	3
He	Bi	209	231020.03	2.0	101.5	Pulse	0.1000	3

No Gas

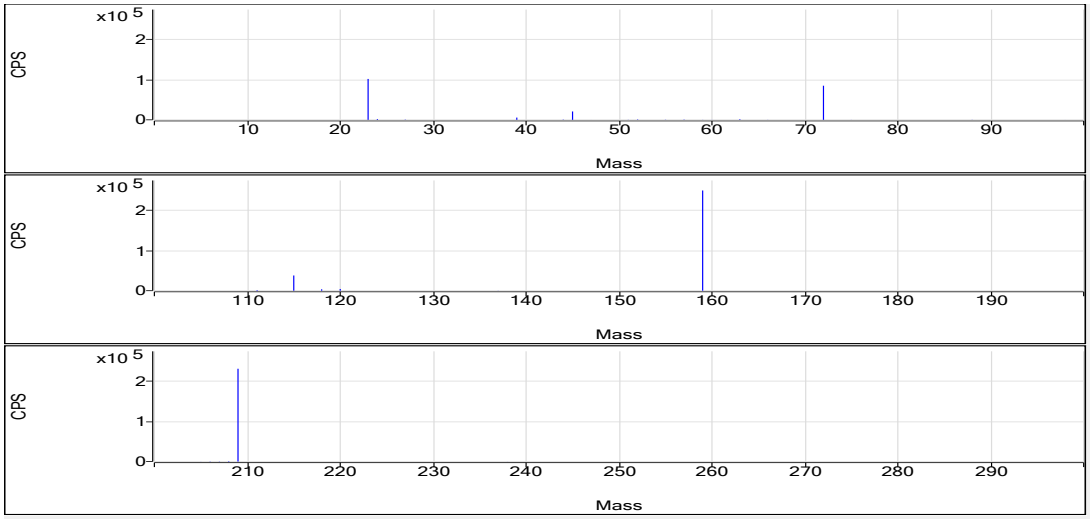


H2



Quantitation Report

He



Quantitation Report

Data File Name	107SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 2:03:28 PM
Sample Name	410-61097-E-24-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

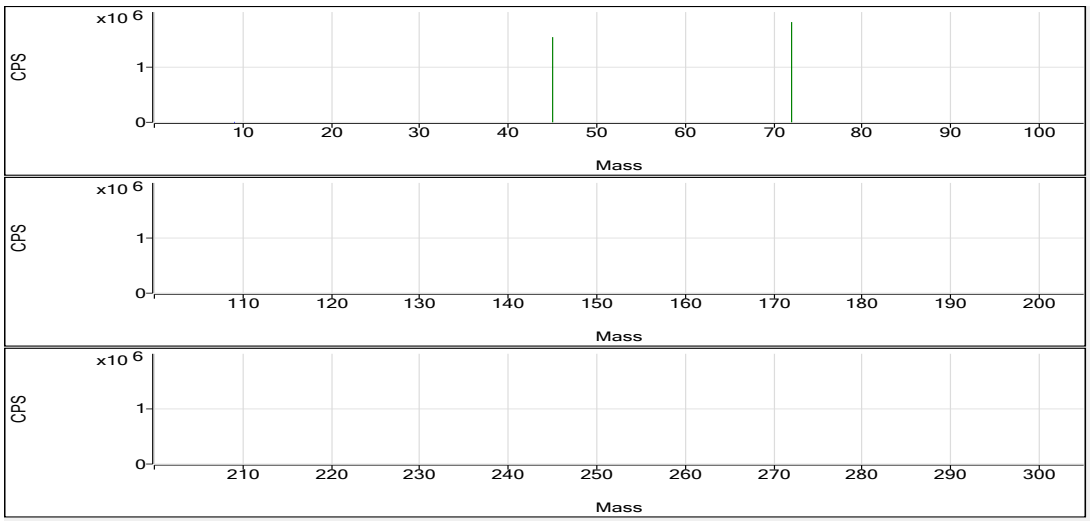
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.002	ppb	110.3	10.00	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.022	ppb	186.1	1.55	0.0000	Pulse	1.5000	3
Na	23	45	He	171.462	ppb	2.8	24207.16	1.1645	Pulse	0.1000	3
Mg	24	45	He	7.516	ppb	27.5	426.69	0.0205	Pulse	0.1000	3
Al	27	45	He	5.023	ppb	23.7	86.67	0.0042	Pulse	0.1000	3
K	39	45	He	6.508	ppb	149.5	5037.72	0.2423	Pulse	0.1000	3
Ca	44	45	He	20.669	ppb	115.4	120.00	0.0057	Pulse	0.1000	3
Ti	47	45	He	0.563	ppb	86.6	6.67	0.0003	Pulse	0.1000	3
V	51	45	He	0.009	ppb	592.0	222.67	0.0107	Pulse	0.5000	3
Cr	52	45	He	1.135	ppb	7.0	1540.14	0.0741	Pulse	0.1000	3
Mn	55	72	He	0.586	ppb	19.9	190.01	0.0023	Pulse	0.1000	3
Fe	57	72	He	8.399	ppb	41.1	206.68	0.0025	Pulse	0.1000	3
Co	59	72	He	0.055	ppb	24.5	163.34	0.0020	Pulse	0.1000	3
Ni	60	72	He	0.785	ppb	6.8	523.36	0.0064	Pulse	0.1000	3
Cu	63	72	He	0.073	ppb	76.1	326.68	0.0040	Pulse	0.1000	3
Zn	66	72	He	1.106	ppb	26.2	230.01	0.0028	Pulse	0.1000	3
As	75	72	He	0.800	ppb	25.7	95.33	0.0012	Pulse	0.5000	3
Sr	88	115	He	0.100	ppb	58.7	60.00	0.0016	Pulse	0.1000	3
Mo	98	115	He	0.176	ppb	26.3	223.34	0.0059	Pulse	0.1000	3
Ag	107	115	He	0.003	ppb	59.0	16.67	0.0004	Pulse	0.1000	3
Cd	111	115	He	-0.003	ppb	N/A	0.00	0.0000	Pulse	0.5000	3
Sn	120	115	He	0.008	ppb	3634.1	836.82	0.0222	Pulse	0.1000	3
Sb	121	115	He	0.017	ppb	100.3	20.00	0.0005	Pulse	0.1000	3
Ba	137	115	He	0.066	ppb	86.7	23.33	0.0006	Pulse	0.1000	3
Tl	205	209	He	0.008	ppb	55.3	106.67	0.0005	Pulse	0.1000	3
Pb	208	209	He	-0.006	ppb	N/A	860.04	0.0038	Pulse	0.1000	3
U	238	209	He	0.004	ppb	89.5	100.00	0.0004	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1532149.67	1.7	94.1	Analog	0.1000	3
No Gas	Ge	72	1802879.29	1.5	96.2	Analog	0.1000	3
H2	Sc	45	93433.28	0.6	94.7	Pulse	0.1000	3
H2	Ge	72	150334.50	1.7	94.2	Pulse	0.1000	3
H2	In	115	274846.13	0.9	96.7	Pulse	0.1000	3
He	Sc	45	20792.21	2.3	98.5	Pulse	0.1000	3
He	Ge	72	81183.77	1.0	98.6	Pulse	0.1000	3
He	In	115	37628.37	1.1	100.4	Pulse	0.1000	3
He	Tb	159	248137.65	0.6	98.7	Pulse	0.1000	3
He	Bi	209	228984.69	0.6	100.7	Pulse	0.1000	3

No Gas



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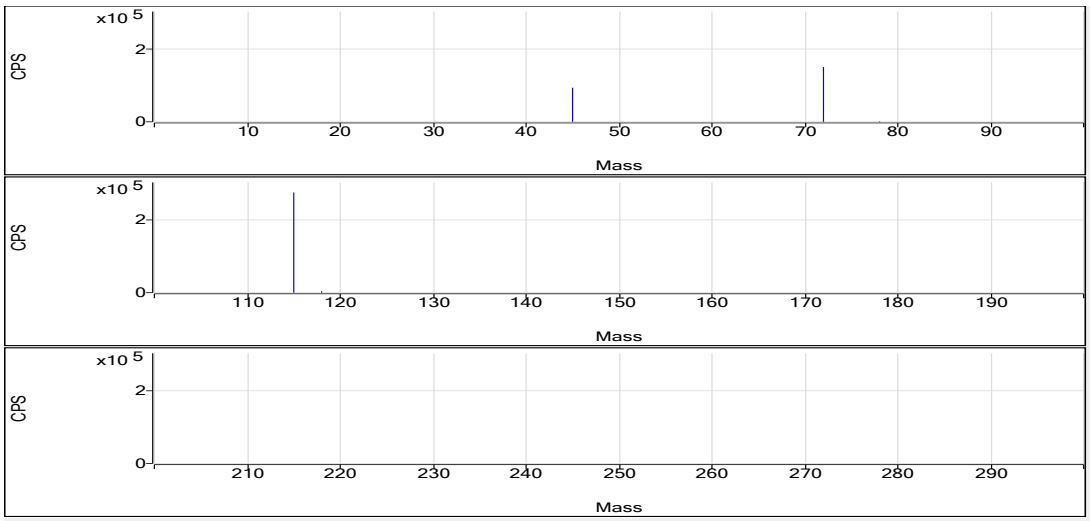
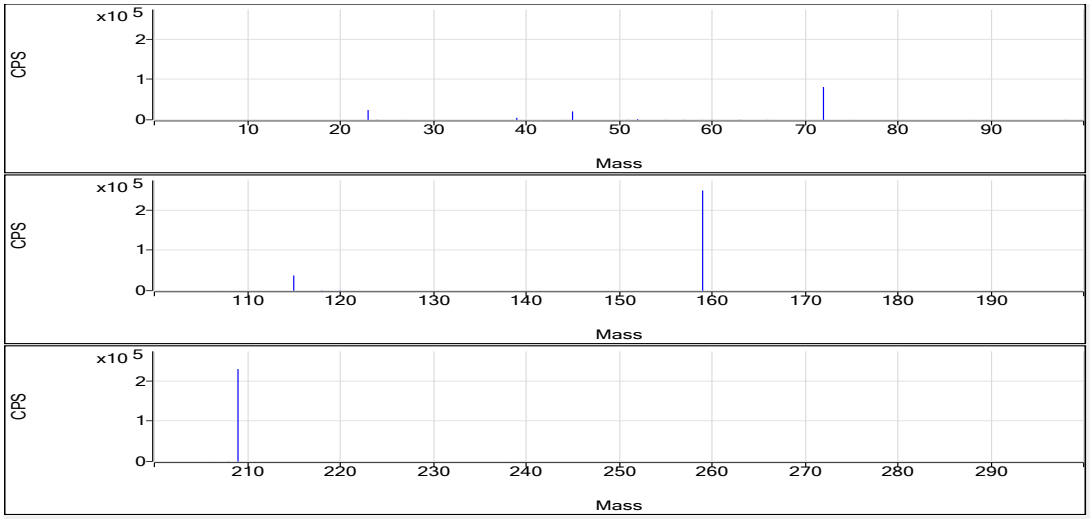


Quantitation Report

He



Quantitation Report

Data File Name	108SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 2:05:29 PM
Sample Name	410-61097-N-8-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

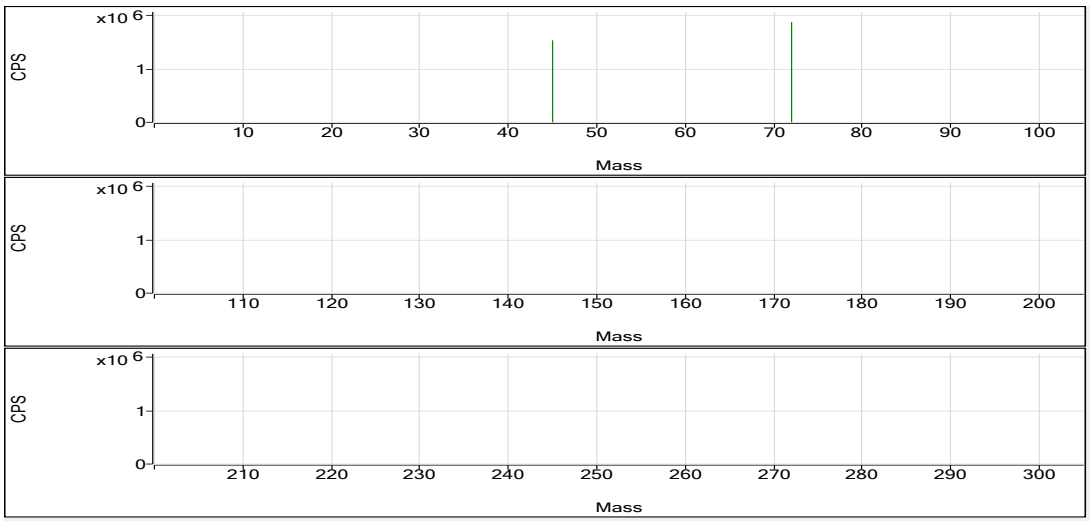
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.011	ppb	71.4	16.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.239	ppb	4.7	10.22	0.0000	Pulse	1.5000	3
Na	23	45	He	24797.978	ppb	1.9	2393394.18	113.0228	Analog	0.1000	3
Mg	24	45	He	30898.371	ppb	0.7	1438850.86	67.9390	Analog	0.1000	3
Al	27	45	He	4.906	ppb	44.7	86.67	0.0041	Pulse	0.1000	3
K	39	45	He	14413.359	ppb	0.9	339492.69	16.0305	Pulse	0.1000	3
Ca	44	45	He	66283.988	ppb	1.9	89504.58	4.2267	Pulse	0.1000	3
Ti	47	45	He	0.553	ppb	173.2	6.67	0.0003	Pulse	0.1000	3
V	51	45	He	0.302	ppb	10.8	407.34	0.0192	Pulse	0.5000	3
Cr	52	45	He	0.163	ppb	96.1	753.38	0.0355	Pulse	0.1000	3
Mn	55	72	He	20.100	ppb	2.3	6218.20	0.0734	Pulse	0.1000	3
Fe	57	72	He	224.850	ppb	2.0	3820.64	0.0451	Pulse	0.1000	3
Co	59	72	He	0.223	ppb	4.9	510.02	0.0060	Pulse	0.1000	3
Ni	60	72	He	6.312	ppb	0.8	3667.26	0.0433	Pulse	0.1000	3
Cu	63	72	He	0.127	ppb	46.8	433.36	0.0051	Pulse	0.1000	3
Zn	66	72	He	1.327	ppb	44.5	273.35	0.0032	Pulse	0.1000	3
As	75	72	He	2.000	ppb	24.5	214.00	0.0025	Pulse	0.5000	3
Sr	88	115	He	479.802	ppb	1.7	140566.36	3.7993	Pulse	0.1000	3
Mo	98	115	He	0.994	ppb	9.4	1183.42	0.0320	Pulse	0.1000	3
Ag	107	115	He	0.002	ppb	171.3	13.33	0.0004	Pulse	0.1000	3
Cd	111	115	He	0.000	ppb	4460.0	0.67	0.0000	Pulse	0.5000	3
Sn	120	115	He	-0.122	ppb	N/A	733.38	0.0198	Pulse	0.1000	3
Sb	121	115	He	0.245	ppb	32.9	153.34	0.0042	Pulse	0.1000	3
Ba	137	115	He	50.818	ppb	0.2	9883.88	0.2671	Pulse	0.1000	3
Tl	205	209	He	0.014	ppb	14.5	153.34	0.0007	Pulse	0.1000	3
Pb	208	209	He	0.486	ppb	2.0	6104.14	0.0272	Pulse	0.1000	3
U	238	209	He	0.122	ppb	11.6	1786.86	0.0080	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1533463.20	0.4	94.2	Analog	0.1000	3
No Gas	Ge	72	1874629.24	1.3	100.1	Analog	0.1000	3
H2	Sc	45	93134.50	1.5	94.4	Pulse	0.1000	3
H2	Ge	72	157062.52	0.3	98.4	Pulse	0.1000	3
H2	In	115	271345.91	0.7	95.5	Pulse	0.1000	3
He	Sc	45	21179.33	1.2	100.3	Pulse	0.1000	3
He	Ge	72	84670.57	0.9	102.8	Pulse	0.1000	3
He	In	115	37003.54	1.3	98.8	Pulse	0.1000	3
He	Tb	159	248633.36	0.5	98.9	Pulse	0.1000	3
He	Bi	209	224227.89	1.0	98.6	Pulse	0.1000	3

No Gas



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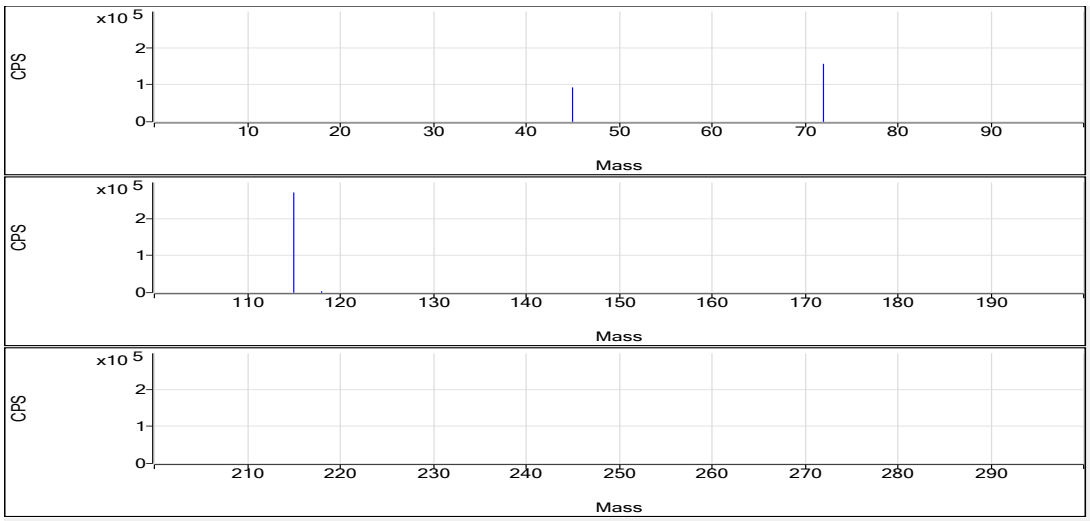
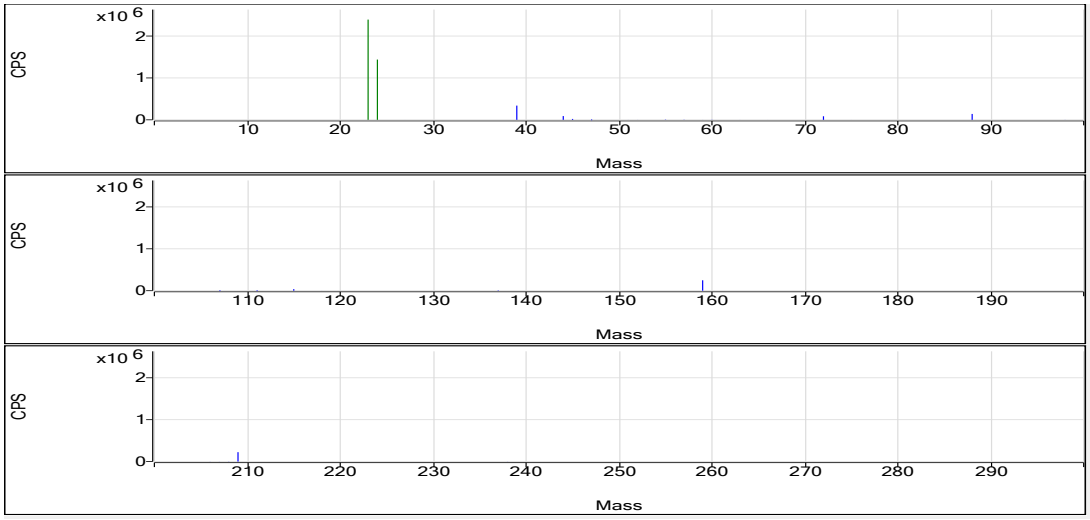


Quantitation Report

He



Quantitation Report

Data File Name	109SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 2:07:30 PM
Sample Name	410-61097-N-11-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

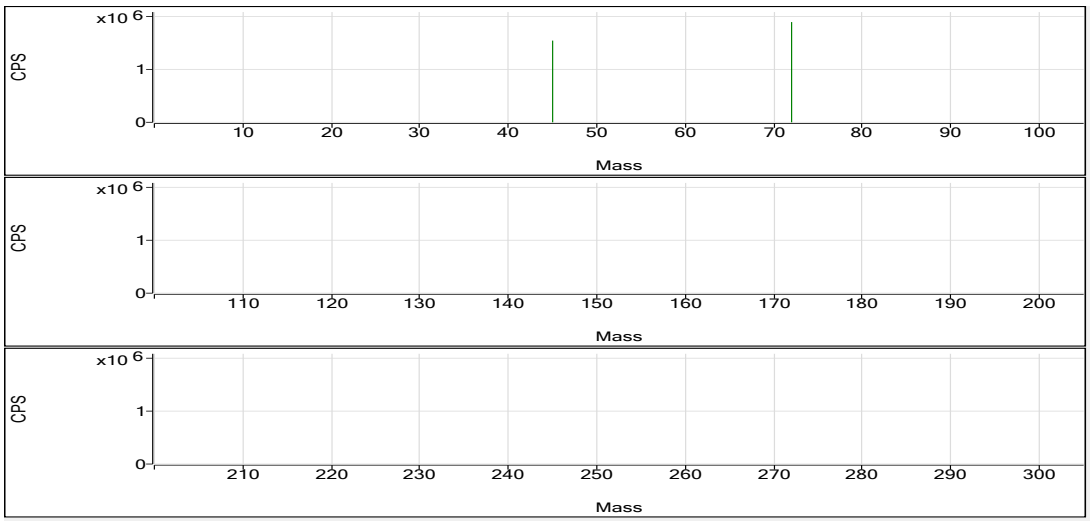
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.012	ppb	47.1	17.33	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.149	ppb	21.6	6.67	0.0000	Pulse	1.5000	3
Na	23	45	He	16057.503	ppb	0.9	1527452.01	73.3219	Analog	0.1000	3
Mg	24	45	He	21359.239	ppb	0.4	978387.30	46.9657	Pulse	0.1000	3
Al	27	45	He	8.826	ppb	77.5	130.00	0.0062	Pulse	0.1000	3
K	39	45	He	4499.181	ppb	0.6	107611.47	5.1657	Pulse	0.1000	3
Ca	44	45	He	57288.787	ppb	0.7	76112.52	3.6537	Pulse	0.1000	3
Ti	47	45	He	1.700	ppb	86.5	20.00	0.0010	Pulse	0.1000	3
V	51	45	He	0.305	ppb	24.6	402.68	0.0193	Pulse	0.5000	3
Cr	52	45	He	0.272	ppb	5.6	830.05	0.0398	Pulse	0.1000	3
Mn	55	72	He	37.462	ppb	1.4	11605.05	0.1367	Pulse	0.1000	3
Fe	57	72	He	171.139	ppb	2.9	2933.72	0.0346	Pulse	0.1000	3
Co	59	72	He	0.148	ppb	23.1	360.02	0.0042	Pulse	0.1000	3
Ni	60	72	He	1.203	ppb	17.7	783.38	0.0092	Pulse	0.1000	3
Cu	63	72	He	0.064	ppb	14.8	326.68	0.0038	Pulse	0.1000	3
Zn	66	72	He	2.686	ppb	19.4	476.69	0.0056	Pulse	0.1000	3
As	75	72	He	1.458	ppb	9.1	162.67	0.0019	Pulse	0.5000	3
Sr	88	115	He	262.848	ppb	1.2	79121.90	2.0817	Pulse	0.1000	3
Mo	98	115	He	0.427	ppb	15.2	530.03	0.0139	Pulse	0.1000	3
Ag	107	115	He	0.003	ppb	116.8	16.67	0.0004	Pulse	0.1000	3
Cd	111	115	He	-0.003	ppb	N/A	0.00	0.0000	Pulse	0.5000	3
Sn	120	115	He	-0.012	ppb	N/A	830.05	0.0218	Pulse	0.1000	3
Sb	121	115	He	0.072	ppb	87.9	53.33	0.0014	Pulse	0.1000	3
Ba	137	115	He	31.947	ppb	8.0	6385.03	0.1680	Pulse	0.1000	3
Tl	205	209	He	0.009	ppb	73.0	113.34	0.0005	Pulse	0.1000	3
Pb	208	209	He	0.051	ppb	29.0	1476.76	0.0065	Pulse	0.1000	3
U	238	209	He	0.196	ppb	1.1	2903.77	0.0127	Pulse	0.1000	3

ISTD Table:

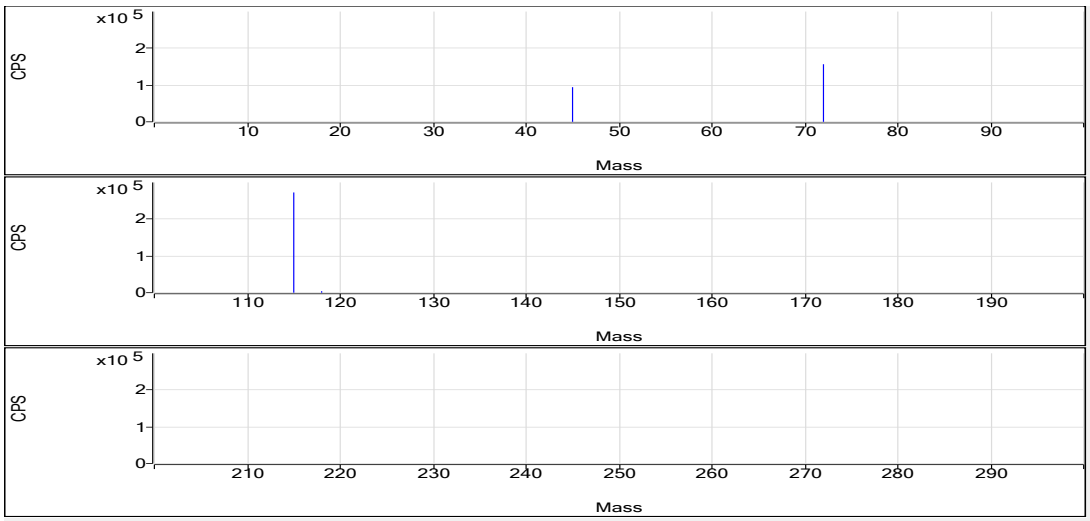
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1540936.75	1.0	94.7	Analog	0.1000	3
No Gas	Ge	72	1890348.83	0.5	100.9	Analog	0.1000	3
H2	Sc	45	94143.86	1.2	95.4	Pulse	0.1000	3
H2	Ge	72	156510.05	0.9	98.1	Pulse	0.1000	3
H2	In	115	272393.82	0.8	95.9	Pulse	0.1000	3
He	Sc	45	20832.14	0.4	98.7	Pulse	0.1000	3
He	Ge	72	84902.32	1.2	103.1	Pulse	0.1000	3
He	In	115	38006.06	0.7	101.4	Pulse	0.1000	3
He	Tb	159	248430.38	0.5	98.8	Pulse	0.1000	3
He	Bi	209	227954.10	0.4	100.2	Pulse	0.1000	3

No Gas

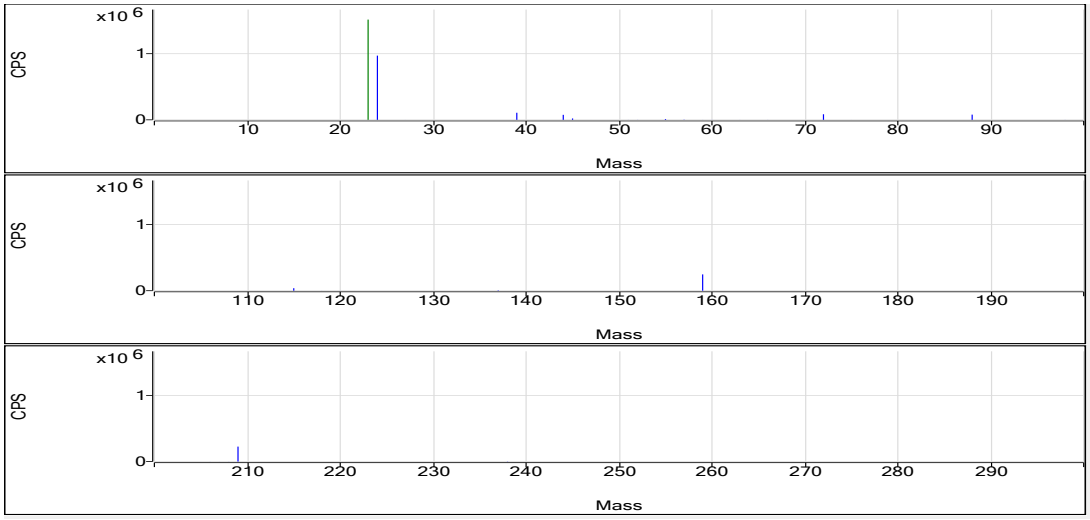


H2



Quantitation Report

He



Quantitation Report

Data File Name	110SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 2:09:31 PM
Sample Name	410-60870-E-7-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

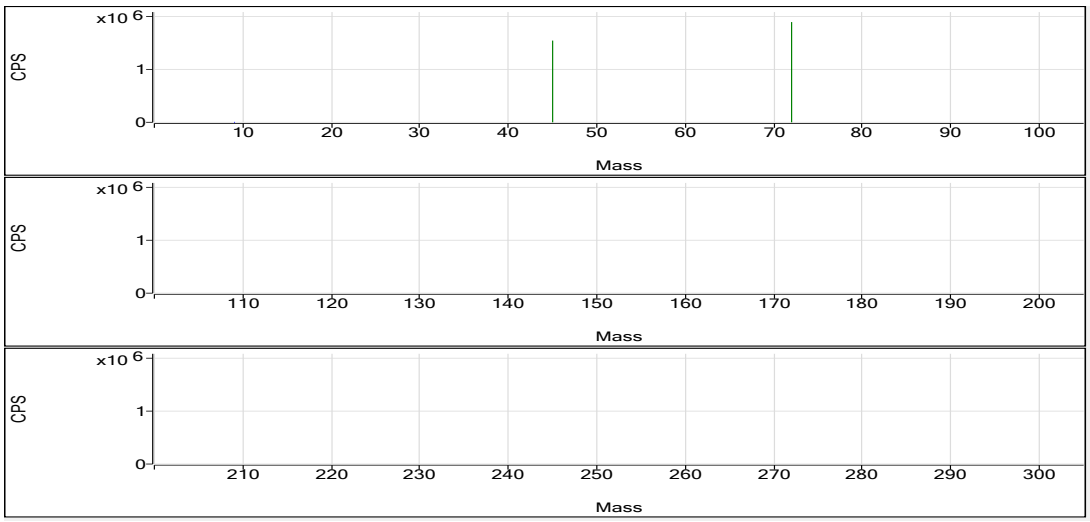
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.006	ppb	190.9	12.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.032	ppb	49.5	2.00	0.0000	Pulse	1.5000	3
Na	23	45	He	1573.629	ppb	2.6	157673.39	7.5334	Pulse	0.1000	3
Mg	24	45	He	67.586	ppb	2.3	3193.79	0.1526	Pulse	0.1000	3
Al	27	45	He	61.270	ppb	14.1	730.04	0.0349	Pulse	0.1000	3
K	39	45	He	63.786	ppb	13.9	6384.98	0.3050	Pulse	0.1000	3
Ca	44	45	He	858.827	ppb	11.4	1236.76	0.0591	Pulse	0.1000	3
Ti	47	45	He	3.646	ppb	73.1	43.33	0.0021	Pulse	0.1000	3
V	51	45	He	0.063	ppb	68.8	257.33	0.0123	Pulse	0.5000	3
Cr	52	45	He	0.583	ppb	13.5	1093.42	0.0522	Pulse	0.1000	3
Mn	55	72	He	1.379	ppb	13.9	446.69	0.0052	Pulse	0.1000	3
Fe	57	72	He	68.394	ppb	6.5	1226.77	0.0143	Pulse	0.1000	3
Co	59	72	He	0.012	ppb	60.0	83.33	0.0010	Pulse	0.1000	3
Ni	60	72	He	0.087	ppb	29.0	153.34	0.0018	Pulse	0.1000	3
Cu	63	72	He	1.872	ppb	3.5	3473.87	0.0406	Pulse	0.1000	3
Zn	66	72	He	1.288	ppb	24.8	270.01	0.0032	Pulse	0.1000	3
As	75	72	He	0.587	ppb	14.8	80.00	0.0009	Pulse	0.5000	3
Sr	88	115	He	1.811	ppb	7.7	576.70	0.0151	Pulse	0.1000	3
Mo	98	115	He	0.019	ppb	65.2	36.67	0.0010	Pulse	0.1000	3
Ag	107	115	He	0.001	ppb	313.3	10.00	0.0003	Pulse	0.1000	3
Cd	111	115	He	-0.003	ppb	N/A	0.00	0.0000	Pulse	0.5000	3
Sn	120	115	He	0.602	ppb	30.2	1263.51	0.0332	Pulse	0.1000	3
Sb	121	115	He	0.077	ppb	53.5	56.67	0.0015	Pulse	0.1000	3
Ba	137	115	He	2.217	ppb	13.5	453.36	0.0119	Pulse	0.1000	3
Tl	205	209	He	0.008	ppb	84.5	116.67	0.0005	Pulse	0.1000	3
Pb	208	209	He	0.140	ppb	14.9	2520.19	0.0107	Pulse	0.1000	3
U	238	209	He	0.008	ppb	17.5	156.68	0.0007	Pulse	0.1000	3

ISTD Table:

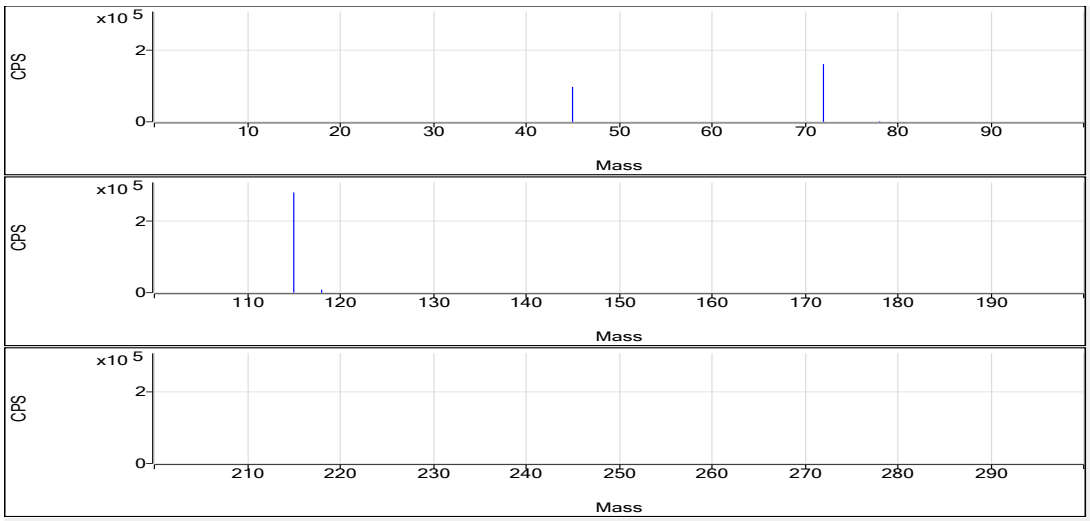
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1551149.87	1.9	95.3	Analog	0.1000	3
No Gas	Ge	72	1902363.57	0.2	101.5	Analog	0.1000	3
H2	Sc	45	97412.00	0.8	98.7	Pulse	0.1000	3
H2	Ge	72	161140.24	0.6	101.0	Pulse	0.1000	3
H2	In	115	279811.40	0.5	98.5	Pulse	0.1000	3
He	Sc	45	20935.70	1.7	99.2	Pulse	0.1000	3
He	Ge	72	85538.98	1.0	103.9	Pulse	0.1000	3
He	In	115	38066.51	0.7	101.6	Pulse	0.1000	3
He	Tb	159	250326.98	0.8	99.6	Pulse	0.1000	3
He	Bi	209	235113.13	0.4	103.3	Pulse	0.1000	3

No Gas

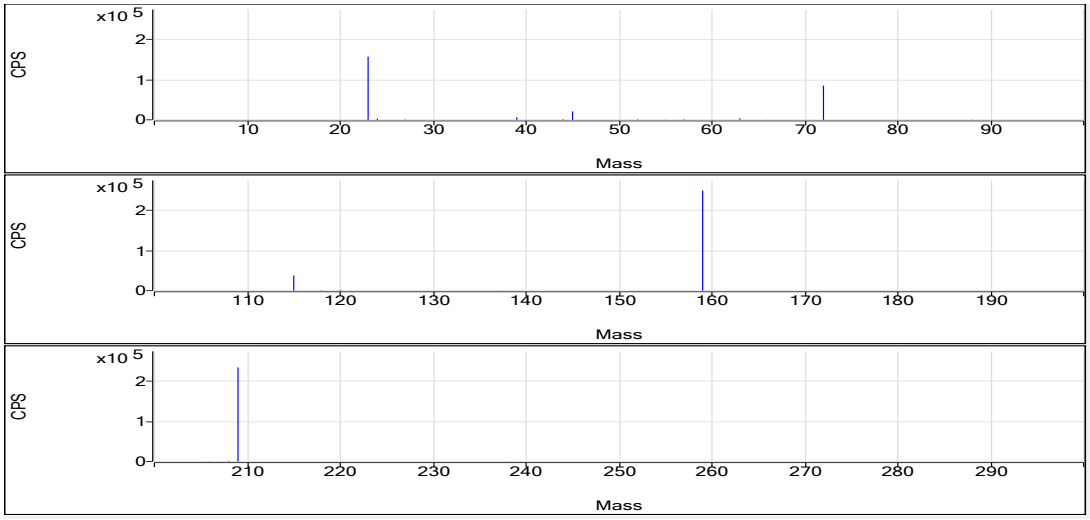


H2



Quantitation Report

He



Quantitation Report

Data File Name	111SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 2:11:32 PM
Sample Name	410-61097-N-4-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

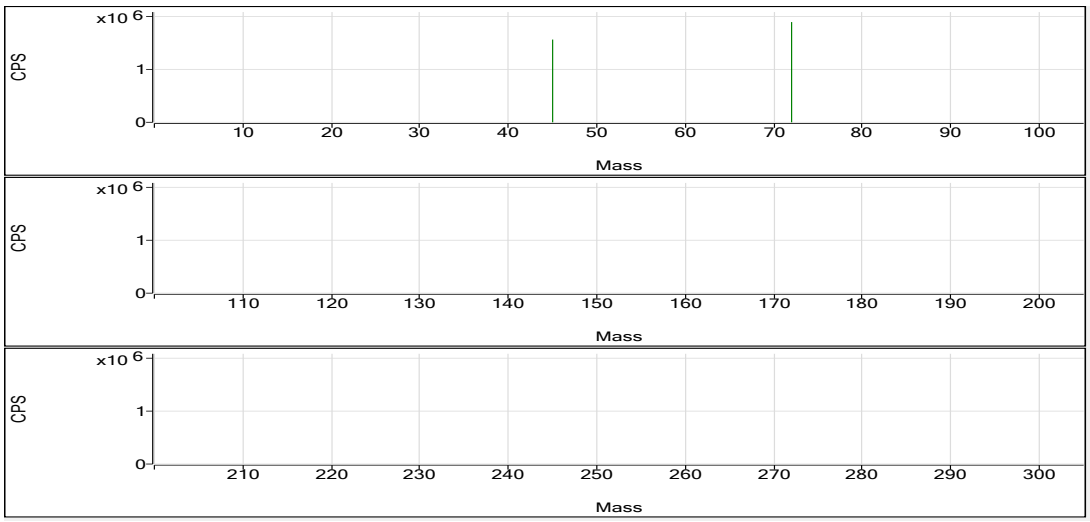
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.015	ppb	57.7	19.33	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.396	ppb	23.8	16.89	0.0001	Pulse	1.5000	3
Na	23	45	He	26402.196	ppb	1.7	2502322.25	120.3095	Analog	0.1000	3
Mg	24	45	He	29459.871	ppb	2.0	1347227.53	64.7763	Analog	0.1000	3
Al	27	45	He	11.515	ppb	29.1	160.01	0.0077	Pulse	0.1000	3
K	39	45	He	16720.420	ppb	1.2	386020.27	18.5588	Pulse	0.1000	3
Ca	44	45	He	74321.824	ppb	2.1	98556.01	4.7387	Pulse	0.1000	3
Ti	47	45	He	0.564	ppb	86.6	6.67	0.0003	Pulse	0.1000	3
V	51	45	He	0.476	ppb	10.7	505.34	0.0243	Pulse	0.5000	3
Cr	52	45	He	0.474	ppb	15.9	996.74	0.0479	Pulse	0.1000	3
Mn	55	72	He	59.452	ppb	2.9	18505.76	0.2168	Pulse	0.1000	3
Fe	57	72	He	271.586	ppb	9.3	4634.24	0.0543	Pulse	0.1000	3
Co	59	72	He	0.234	ppb	24.2	536.70	0.0063	Pulse	0.1000	3
Ni	60	72	He	5.905	ppb	7.3	3463.87	0.0406	Pulse	0.1000	3
Cu	63	72	He	0.115	ppb	25.3	416.69	0.0049	Pulse	0.1000	3
Zn	66	72	He	1.473	ppb	27.6	296.68	0.0035	Pulse	0.1000	3
As	75	72	He	1.470	ppb	9.3	164.67	0.0019	Pulse	0.5000	3
Sr	88	115	He	566.970	ppb	1.9	165516.16	4.4893	Pulse	0.1000	3
Mo	98	115	He	1.214	ppb	17.9	1433.46	0.0390	Pulse	0.1000	3
Ag	107	115	He	0.002	ppb	86.9	13.33	0.0004	Pulse	0.1000	3
Cd	111	115	He	-0.003	ppb	N/A	0.00	0.0000	Pulse	0.5000	3
Sn	120	115	He	-0.058	ppb	N/A	773.39	0.0210	Pulse	0.1000	3
Sb	121	115	He	0.097	ppb	24.4	66.67	0.0018	Pulse	0.1000	3
Ba	137	115	He	59.463	ppb	2.1	11521.93	0.3125	Pulse	0.1000	3
Tl	205	209	He	0.010	ppb	80.0	123.34	0.0005	Pulse	0.1000	3
Pb	208	209	He	0.135	ppb	4.5	2363.51	0.0105	Pulse	0.1000	3
U	238	209	He	0.087	ppb	4.1	1290.12	0.0057	Pulse	0.1000	3

ISTD Table:

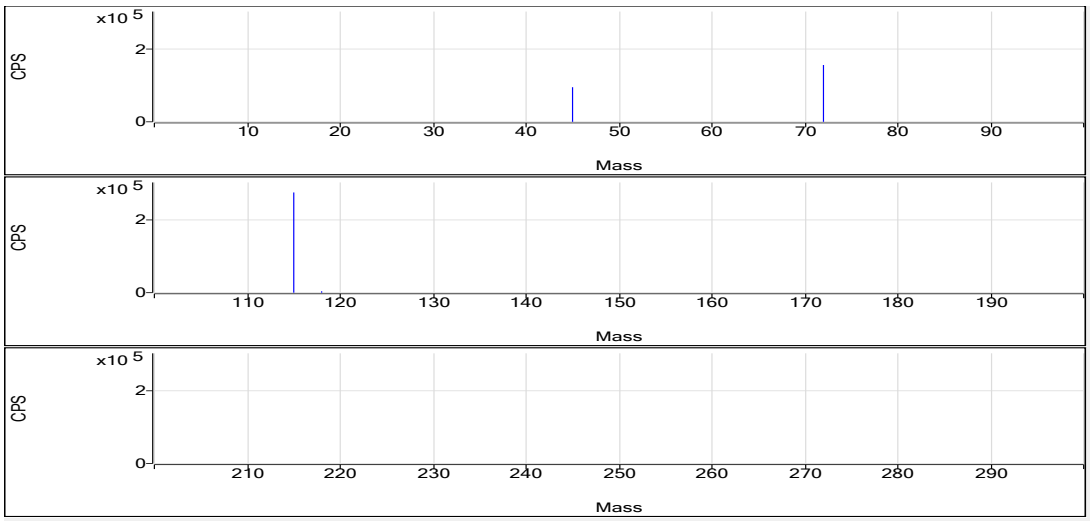
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1559910.29	0.5	95.9	Analog	0.1000	3
No Gas	Ge	72	1889747.42	1.0	100.9	Analog	0.1000	3
H2	Sc	45	95523.29	2.6	96.8	Pulse	0.1000	3
H2	Ge	72	156826.48	0.6	98.3	Pulse	0.1000	3
H2	In	115	276695.48	1.0	97.4	Pulse	0.1000	3
He	Sc	45	20802.14	1.4	98.6	Pulse	0.1000	3
He	Ge	72	85371.57	1.4	103.7	Pulse	0.1000	3
He	In	115	36879.88	2.5	98.4	Pulse	0.1000	3
He	Tb	159	251794.66	0.8	100.2	Pulse	0.1000	3
He	Bi	209	225753.17	0.3	99.2	Pulse	0.1000	3

No Gas

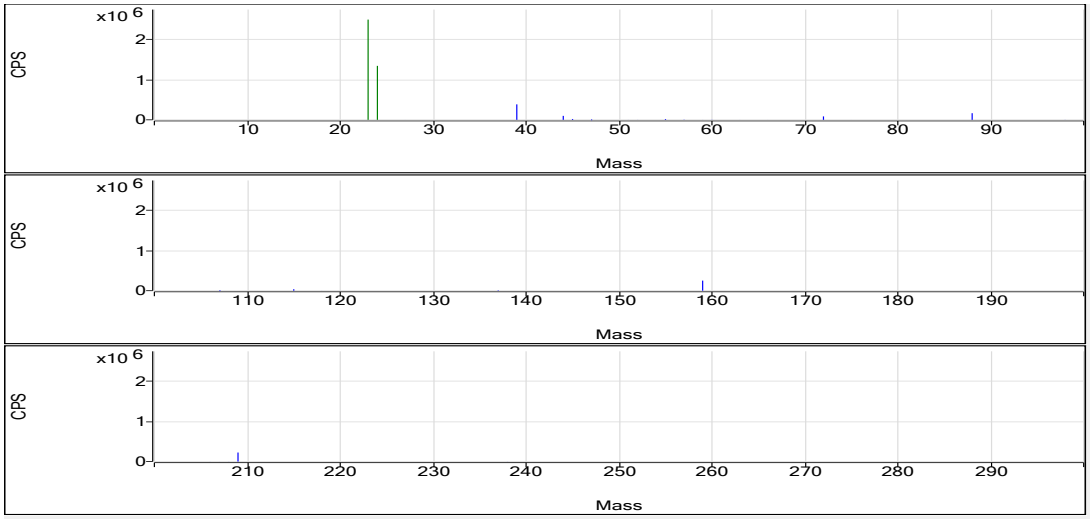


H2



Quantitation Report

He



Quantitation Report

Data File Name	112SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 2:13:34 PM
Sample Name	410-61097-N-13-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

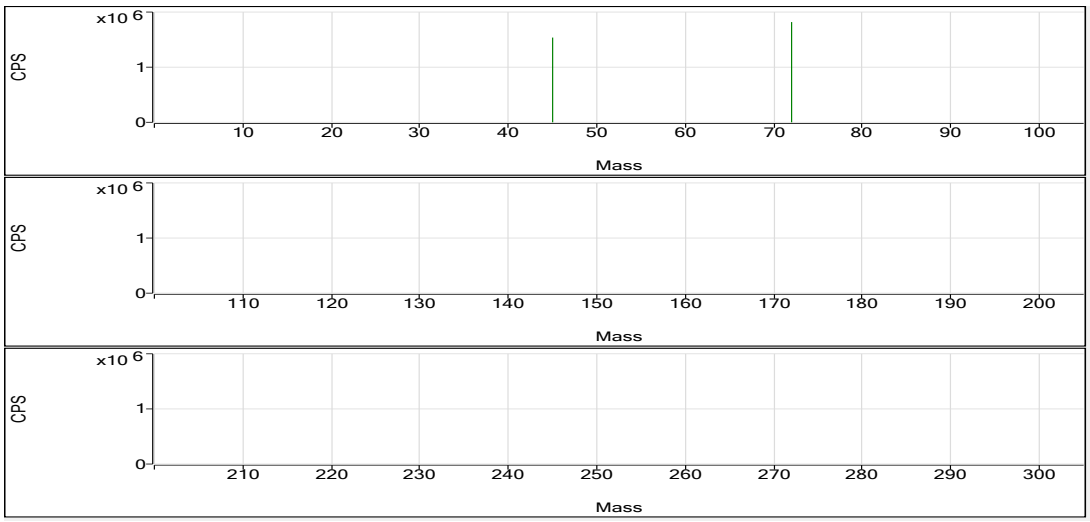
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.035	ppb	39.3	34.00	0.0000	Pulse	0.5000	3
Se	78	115	H2	4.086	ppb	4.7	164.44	0.0006	Pulse	1.5000	3
Na	23	45	He	6768.207	ppb	1.6	671054.08	31.1282	Pulse	0.1000	3
Mg	24	45	He	134.238	ppb	2.3	6448.32	0.2991	Pulse	0.1000	3
Al	27	45	He	626.534	ppb	2.9	7415.57	0.3440	Pulse	0.1000	3
K	39	45	He	14534.273	ppb	3.1	348406.06	16.1630	Pulse	0.1000	3
Ca	44	45	He	677835.564	ppb	1.7	930901.47	43.1820	Pulse	0.1000	3
Ti	47	45	He	14.796	ppb	1.0	180.01	0.0083	Pulse	0.1000	3
V	51	45	He	1.590	ppb	6.9	1220.73	0.0566	Pulse	0.5000	3
Cr	52	45	He	1.085	ppb	19.9	1553.47	0.0721	Pulse	0.1000	3
Mn	55	72	He	2.850	ppb	23.2	870.06	0.0106	Pulse	0.1000	3
Fe	57	72	He	366.425	ppb	2.6	5994.78	0.0730	Pulse	0.1000	3
Co	59	72	He	3.199	ppb	4.2	6351.64	0.0773	Pulse	0.1000	3
Ni	60	72	He	37.891	ppb	1.6	20862.43	0.2539	Pulse	0.1000	3
Cu	63	72	He	2.705	ppb	5.9	4724.29	0.0575	Pulse	0.1000	3
Zn	66	72	He	2.424	ppb	13.5	423.36	0.0052	Pulse	0.1000	3
As	75	72	He	4.959	ppb	5.7	480.68	0.0059	Pulse	0.5000	3
Sr	88	115	He	715.705	ppb	0.5	211932.13	5.6668	Pulse	0.1000	3
Mo	98	115	He	5.476	ppb	2.5	6528.41	0.1745	Pulse	0.1000	3
Ag	107	115	He	0.003	ppb	152.1	16.67	0.0004	Pulse	0.1000	3
Cd	111	115	He	0.034	ppb	54.2	9.33	0.0003	Pulse	0.5000	3
Sn	120	115	He	-0.041	ppb	N/A	796.72	0.0213	Pulse	0.1000	3
Sb	121	115	He	0.303	ppb	18.3	190.01	0.0051	Pulse	0.1000	3
Ba	137	115	He	455.848	ppb	2.2	89508.91	2.3939	Pulse	0.1000	3
Tl	205	209	He	0.014	ppb	35.7	153.34	0.0007	Pulse	0.1000	3
Pb	208	209	He	17.915	ppb	0.2	190360.69	0.8571	Pulse	0.1000	3
U	238	209	He	0.086	ppb	4.2	1263.44	0.0057	Pulse	0.1000	3

ISTD Table:

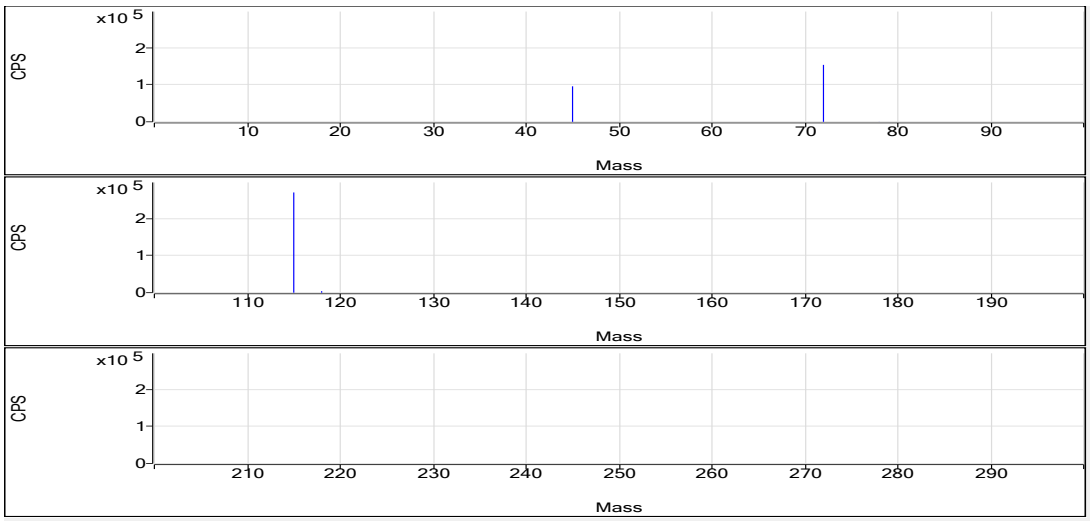
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1539966.38	0.6	94.6	Analog	0.1000	3
No Gas	Ge	72	1821651.33	0.5	97.2	Analog	0.1000	3
H2	Sc	45	96026.56	0.8	97.3	Pulse	0.1000	3
H2	Ge	72	153985.21	1.6	96.5	Pulse	0.1000	3
H2	In	115	271032.93	1.5	95.4	Pulse	0.1000	3
He	Sc	45	21559.88	1.0	102.2	Pulse	0.1000	3
He	Ge	72	82149.48	0.8	99.7	Pulse	0.1000	3
He	In	115	37401.14	1.9	99.8	Pulse	0.1000	3
He	Tb	159	247823.71	0.7	98.6	Pulse	0.1000	3
He	Bi	209	222092.58	0.5	97.6	Pulse	0.1000	3

No Gas

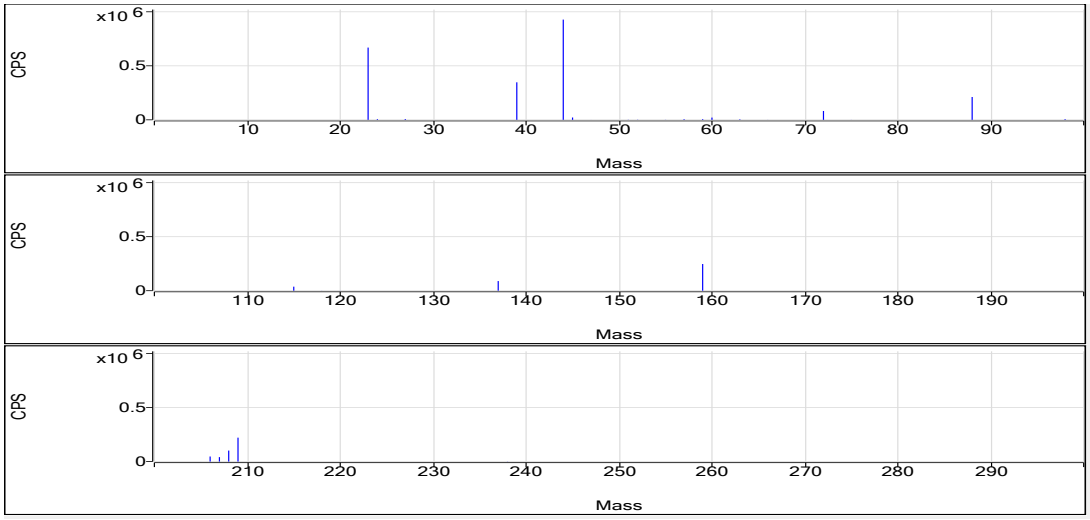


H2



Quantitation Report

He



Quantitation Report

Data File Name	113SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 2:15:36 PM
Sample Name	410-60870-E-3-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

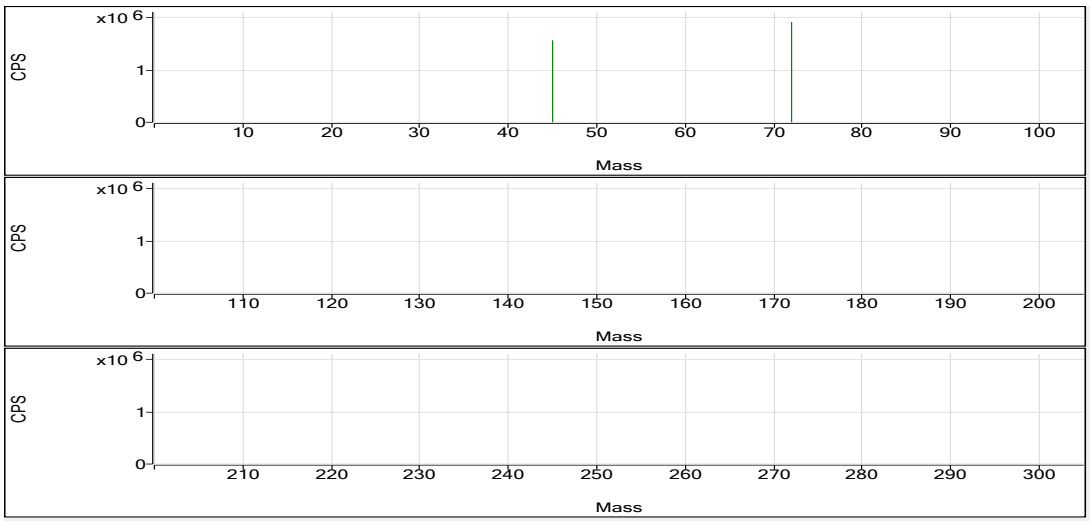
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.035	ppb	11.1	35.33	0.0000	Pulse	0.5000	3
Se	78	115	H2	1.596	ppb	10.2	66.89	0.0002	Pulse	1.5000	3
Na	23	45	He	9093.652	ppb	3.1	892336.75	41.6908	Pulse	0.1000	3
Mg	24	45	He	1579.591	ppb	4.5	74400.81	3.4769	Pulse	0.1000	3
Al	27	45	He	1447.790	ppb	2.2	16977.43	0.7931	Pulse	0.1000	3
K	39	45	He	2334.296	ppb	2.7	59792.96	2.7932	Pulse	0.1000	3
Ca	44	45	He	16934.337	ppb	4.1	23178.98	1.0831	Pulse	0.1000	3
Ti	47	45	He	29.317	ppb	18.8	353.35	0.0165	Pulse	0.1000	3
V	51	45	He	2.550	ppb	6.4	1808.13	0.0845	Pulse	0.5000	3
Cr	52	45	He	1.719	ppb	15.6	2080.23	0.0973	Pulse	0.1000	3
Mn	55	72	He	7.180	ppb	7.2	2286.93	0.0264	Pulse	0.1000	3
Fe	57	72	He	2392.674	ppb	2.7	40908.69	0.4716	Pulse	0.1000	3
Co	59	72	He	0.270	ppb	17.1	620.03	0.0072	Pulse	0.1000	3
Ni	60	72	He	22.778	ppb	1.9	13283.19	0.1531	Pulse	0.1000	3
Cu	63	72	He	2.333	ppb	6.8	4334.13	0.0500	Pulse	0.1000	3
Zn	66	72	He	11.267	ppb	15.8	1793.52	0.0207	Pulse	0.1000	3
As	75	72	He	1.655	ppb	4.4	185.33	0.0021	Pulse	0.5000	3
Sr	88	115	He	118.094	ppb	1.0	35746.16	0.9357	Pulse	0.1000	3
Mo	98	115	He	0.115	ppb	24.9	153.34	0.0040	Pulse	0.1000	3
Ag	107	115	He	0.045	ppb	46.0	140.01	0.0037	Pulse	0.1000	3
Cd	111	115	He	3.566	ppb	4.1	940.04	0.0246	Pulse	0.5000	3
Sn	120	115	He	-0.061	ppb	N/A	800.05	0.0209	Pulse	0.1000	3
Sb	121	115	He	0.071	ppb	36.0	53.33	0.0014	Pulse	0.1000	3
Ba	137	115	He	7.365	ppb	16.5	1486.81	0.0389	Pulse	0.1000	3
Tl	205	209	He	0.017	ppb	25.1	183.34	0.0008	Pulse	0.1000	3
Pb	208	209	He	0.588	ppb	4.8	7374.47	0.0320	Pulse	0.1000	3
U	238	209	He	0.113	ppb	38.3	1705.01	0.0074	Pulse	0.1000	3

ISTD Table:

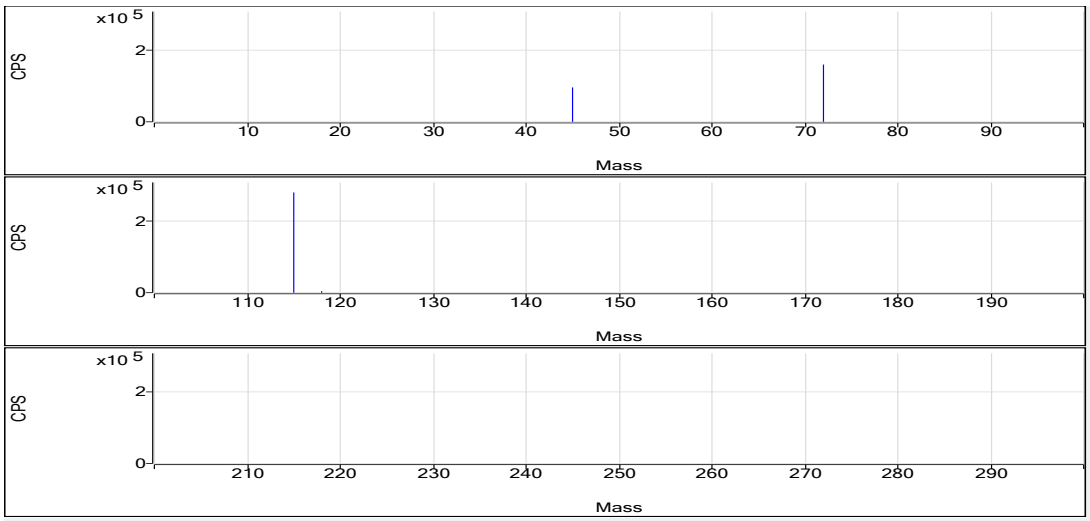
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1567874.71	0.4	96.3	Analog	0.1000	3
No Gas	Ge	72	1916428.10	0.9	102.3	Analog	0.1000	3
H2	Sc	45	96281.91	2.1	97.5	Pulse	0.1000	3
H2	Ge	72	160301.62	1.2	100.5	Pulse	0.1000	3
H2	In	115	280554.77	1.0	98.7	Pulse	0.1000	3
He	Sc	45	21416.23	2.8	101.5	Pulse	0.1000	3
He	Ge	72	86746.19	0.7	105.3	Pulse	0.1000	3
He	In	115	38203.21	0.7	102.0	Pulse	0.1000	3
He	Tb	159	252452.35	0.8	100.4	Pulse	0.1000	3
He	Bi	209	230136.51	0.5	101.2	Pulse	0.1000	3

No Gas

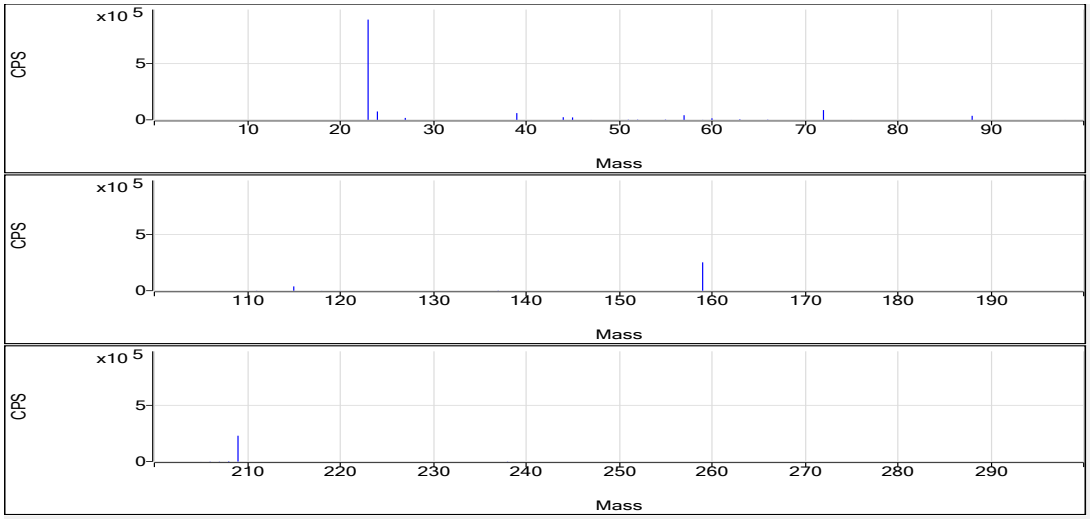


H2



Quantitation Report

He



Quantitation Report

Data File Name	114_CCV.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 2:17:38 PM
Sample Name	CCV 1942322
Sample Type	CCV
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

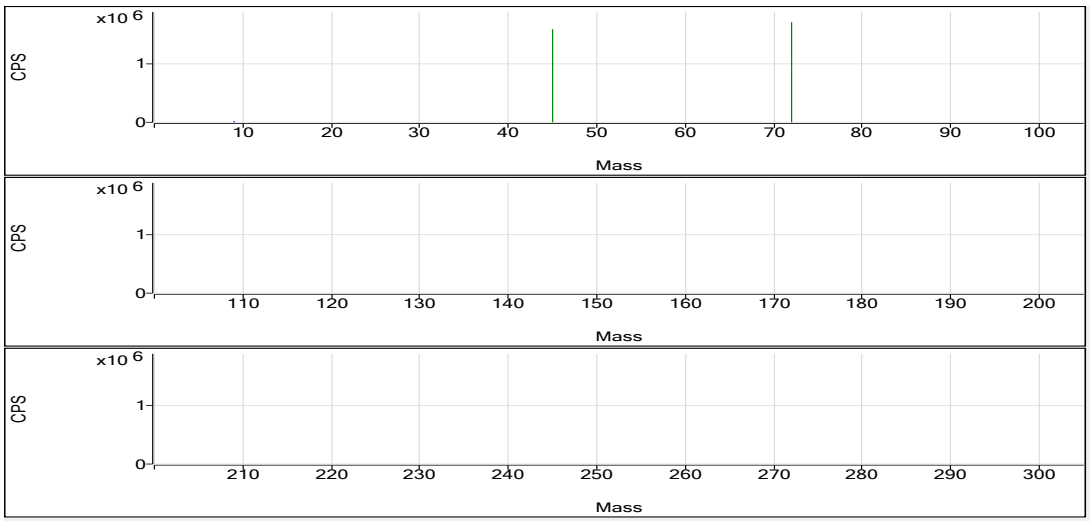
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	28.712	ppb	0.5	22077.63	0.0139	Pulse	0.5000	3
Se	78	115	H2	30.414	ppb	1.9	1254.06	0.0045	Pulse	1.5000	3
Na	23	45	He	4967.275	ppb	1.4	492502.73	22.9480	Pulse	0.1000	3
Mg	24	45	He	4985.050	ppb	1.0	235321.46	10.9644	Pulse	0.1000	3
Al	27	45	He	4845.591	ppb	2.3	56894.01	2.6510	Pulse	0.1000	3
K	39	45	He	4945.611	ppb	1.6	121363.96	5.6549	Pulse	0.1000	3
Ca	44	45	He	5215.442	ppb	1.6	7225.37	0.3367	Pulse	0.1000	3
Ti	47	45	He	319.754	ppb	5.3	3874.01	0.1804	Pulse	0.1000	3
V	51	45	He	296.584	ppb	1.1	185003.51	8.6202	Pulse	0.5000	3
Cr	52	45	He	299.011	ppb	0.9	255238.75	11.8926	Pulse	0.1000	3
Mn	55	72	He	309.308	ppb	1.6	87658.08	1.1272	Pulse	0.1000	3
Fe	57	72	He	5171.472	ppb	1.4	79193.89	1.0184	Pulse	0.1000	3
Co	59	72	He	292.688	ppb	1.4	545339.72	7.0126	Pulse	0.1000	3
Ni	60	72	He	308.969	ppb	1.4	160350.79	2.0620	Pulse	0.1000	3
Cu	63	72	He	303.906	ppb	1.2	480539.59	6.1792	Pulse	0.1000	3
Zn	66	72	He	303.283	ppb	1.9	41514.14	0.5338	Pulse	0.1000	3
As	75	72	He	307.099	ppb	1.5	26878.55	0.3456	Pulse	0.5000	3
Sr	88	115	He	30.794	ppb	4.2	9410.14	0.2446	Pulse	0.1000	3
Mo	98	115	He	30.280	ppb	4.5	37033.08	0.9635	Pulse	0.1000	3
Ag	107	115	He	30.557	ppb	3.8	91569.92	2.3823	Pulse	0.1000	3
Cd	111	115	He	30.771	ppb	4.2	8157.09	0.2122	Pulse	0.5000	3
Sn	120	115	He	30.578	ppb	3.6	22585.79	0.5875	Pulse	0.1000	3
Sb	121	115	He	31.510	ppb	3.7	19223.95	0.5001	Pulse	0.1000	3
Ba	137	115	He	307.558	ppb	1.2	62114.58	1.6152	Pulse	0.1000	3
Tl	205	209	He	30.596	ppb	2.2	251106.25	1.0996	Pulse	0.1000	3
Pb	208	209	He	30.332	ppb	1.1	330785.44	1.4484	Pulse	0.1000	3
U	238	209	He	254.498	ppb	1.1	3720049.74	16.2889	Analog	0.1000	3

ISTD Table:

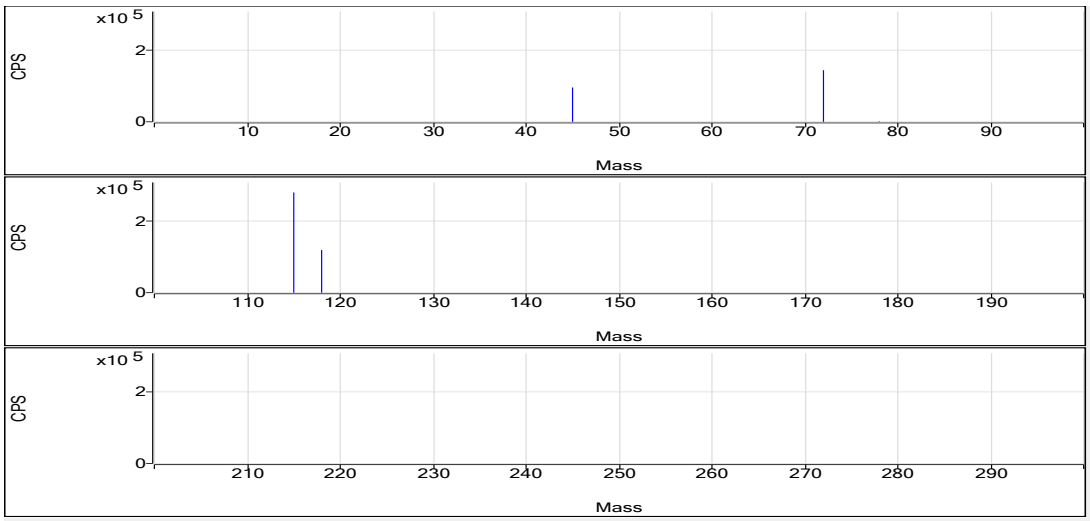
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1583635.29	0.4	97.3	Analog	0.1000	3
No Gas	Ge	72	1704489.98	0.7	91.0	Analog	0.1000	3
H2	Sc	45	95355.67	1.9	96.6	Pulse	0.1000	3
H2	Ge	72	143377.18	1.5	89.9	Pulse	0.1000	3
H2	In	115	278514.23	0.4	98.0	Pulse	0.1000	3
He	Sc	45	21463.23	1.0	101.7	Pulse	0.1000	3
He	Ge	72	77775.27	1.4	94.4	Pulse	0.1000	3
He	In	115	38464.29	2.7	102.6	Pulse	0.1000	3
He	Tb	159	252144.49	0.9	100.3	Pulse	0.1000	3
He	Bi	209	228403.90	1.5	100.4	Pulse	0.1000	3

No Gas

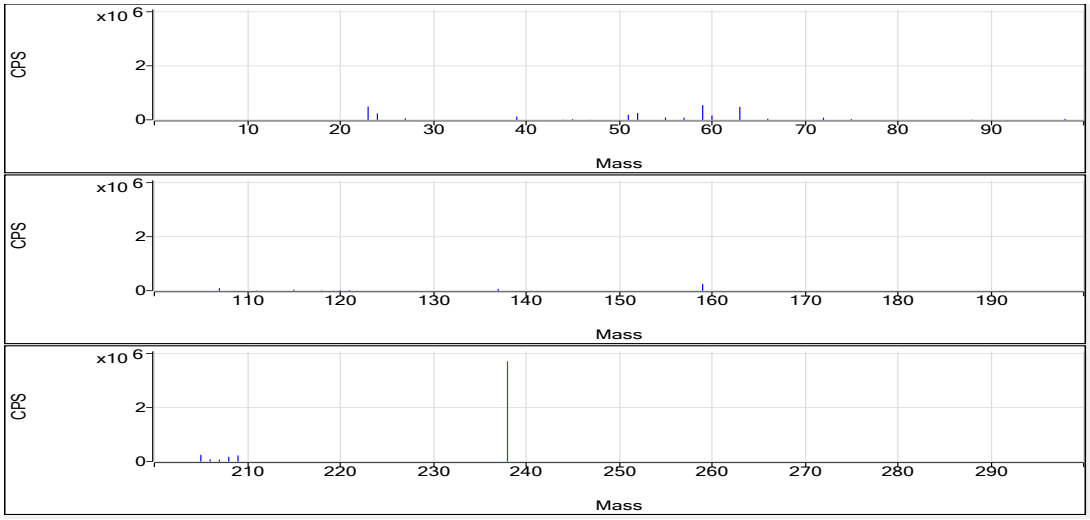


H2



Quantitation Report

He



Quantitation Report

Data File Name	115_CCB.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 2:19:39 PM
Sample Name	CCB 2014932
Sample Type	CCB
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

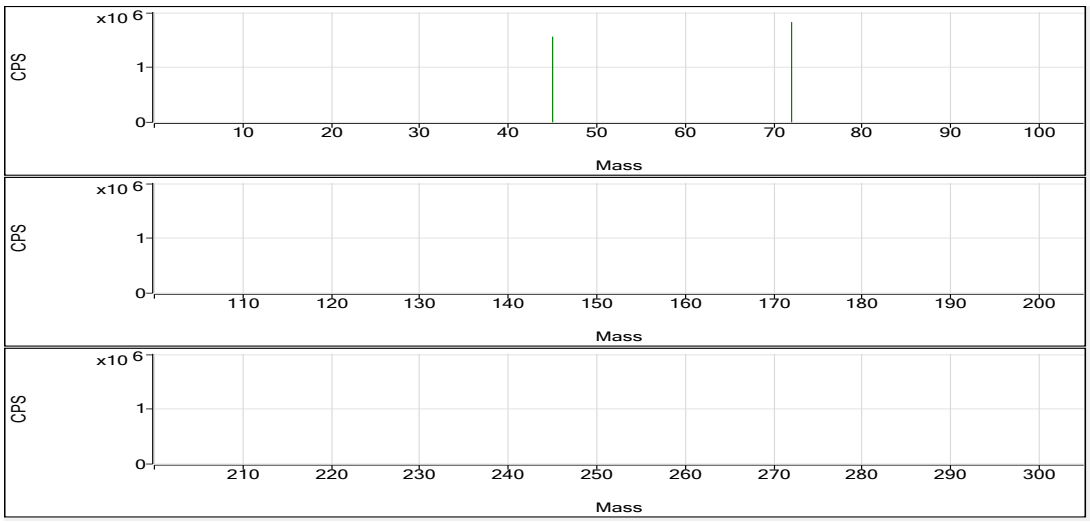
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.021	ppb	45.8	24.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.032	ppb	50.1	2.00	0.0000	Pulse	1.5000	3
Na	23	45	He	59.779	ppb	2.6	13850.24	0.6572	Pulse	0.1000	3
Mg	24	45	He	2.964	ppb	29.6	220.01	0.0105	Pulse	0.1000	3
Al	27	45	He	1.186	ppb	171.2	43.33	0.0021	Pulse	0.1000	3
K	39	45	He	0.240	ppb	4444.2	4954.33	0.2354	Pulse	0.1000	3
Ca	44	45	He	-14.824	ppb	N/A	73.33	0.0035	Pulse	0.1000	3
Ti	47	45	He	0.553	ppb	86.7	6.67	0.0003	Pulse	0.1000	3
V	51	45	He	0.090	ppb	38.7	275.34	0.0131	Pulse	0.5000	3
Cr	52	45	He	0.109	ppb	86.5	703.38	0.0334	Pulse	0.1000	3
Mn	55	72	He	0.356	ppb	11.2	123.34	0.0015	Pulse	0.1000	3
Fe	57	72	He	-0.604	ppb	N/A	63.33	0.0008	Pulse	0.1000	3
Co	59	72	He	0.095	ppb	39.1	243.35	0.0030	Pulse	0.1000	3
Ni	60	72	He	0.098	ppb	12.7	153.34	0.0019	Pulse	0.1000	3
Cu	63	72	He	0.100	ppb	23.6	376.69	0.0046	Pulse	0.1000	3
Zn	66	72	He	0.140	ppb	117.7	93.33	0.0011	Pulse	0.1000	3
As	75	72	He	0.397	ppb	29.9	59.33	0.0007	Pulse	0.5000	3
Sr	88	115	He	0.052	ppb	76.5	46.67	0.0012	Pulse	0.1000	3
Mo	98	115	He	0.054	ppb	39.4	80.00	0.0021	Pulse	0.1000	3
Ag	107	115	He	0.004	ppb	2.9	20.00	0.0005	Pulse	0.1000	3
Cd	111	115	He	0.012	ppb	102.1	4.00	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.035	ppb	N/A	820.06	0.0214	Pulse	0.1000	3
Sb	121	115	He	0.043	ppb	56.0	36.67	0.0010	Pulse	0.1000	3
Ba	137	115	He	0.065	ppb	46.5	23.33	0.0006	Pulse	0.1000	3
Tl	205	209	He	0.025	ppb	12.7	250.01	0.0011	Pulse	0.1000	3
Pb	208	209	He	-0.005	ppb	N/A	873.38	0.0038	Pulse	0.1000	3
U	238	209	He	0.067	ppb	13.8	1016.74	0.0044	Pulse	0.1000	3

ISTD Table:

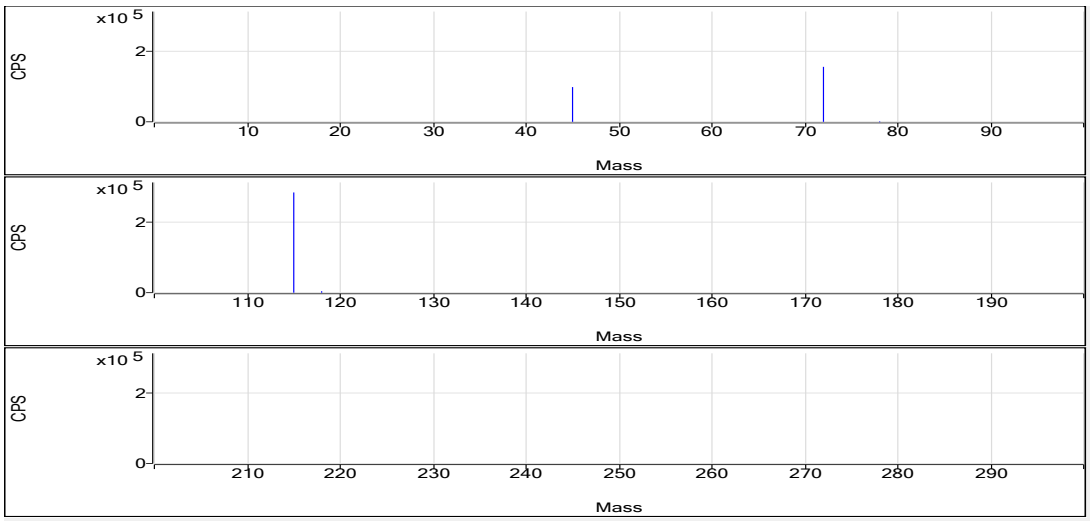
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1567494.20	1.0	96.3	Analog	0.1000	3
No Gas	Ge	72	1834067.94	0.3	97.9	Analog	0.1000	3
H2	Sc	45	97858.65	1.8	99.1	Pulse	0.1000	3
H2	Ge	72	154898.69	1.5	97.1	Pulse	0.1000	3
H2	In	115	282429.16	0.1	99.4	Pulse	0.1000	3
He	Sc	45	21069.23	3.1	99.8	Pulse	0.1000	3
He	Ge	72	82209.87	0.7	99.8	Pulse	0.1000	3
He	In	115	38330.48	1.9	102.3	Pulse	0.1000	3
He	Tb	159	252576.58	0.7	100.5	Pulse	0.1000	3
He	Bi	209	229152.98	0.2	100.7	Pulse	0.1000	3

No Gas

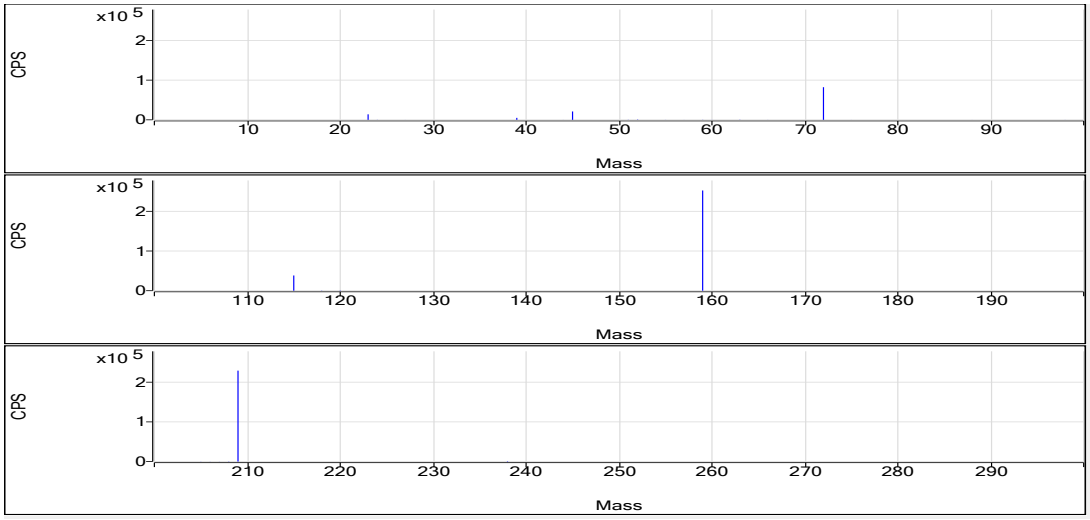


H2



Quantitation Report

He



Quantitation Report

Data File Name	116SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 2:21:41 PM
Sample Name	410-61097-E-7-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

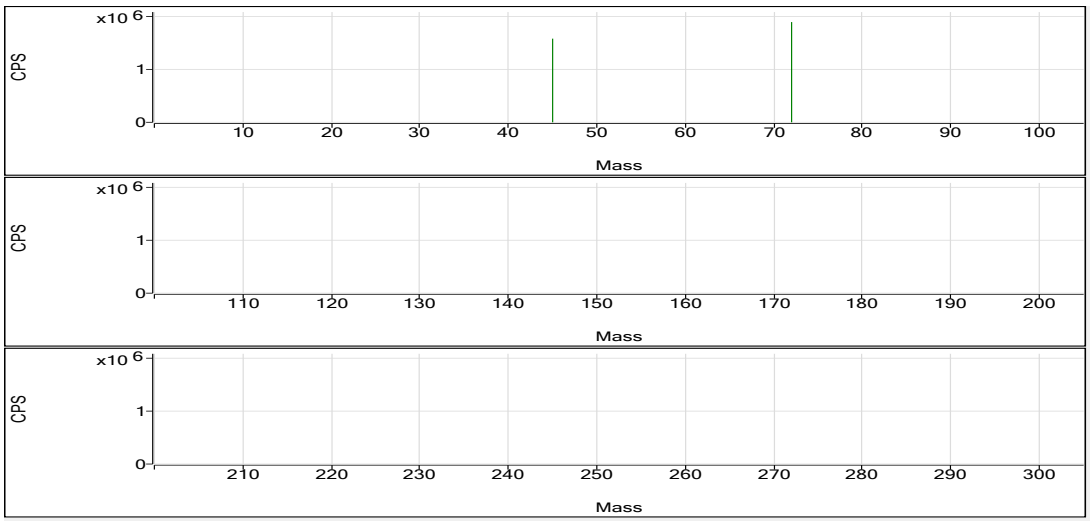
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.013	ppb	2.1	18.00	0.0000	Pulse	0.5000	3
Se	78	115	H2	5.044	ppb	5.6	207.78	0.0007	Pulse	1.5000	3
Na	23	45	He	13717.083	ppb	1.5	1312965.22	62.6913	Analog	0.1000	3
Mg	24	45	He	210.589	ppb	5.7	9776.86	0.4670	Pulse	0.1000	3
Al	27	45	He	658.533	ppb	4.8	7572.22	0.3615	Pulse	0.1000	3
K	39	45	He	21190.047	ppb	0.5	491231.57	23.4570	Pulse	0.1000	3
Ca	44	45	He	545834.754	ppb	0.3	728230.40	34.7736	Pulse	0.1000	3
Ti	47	45	He	3.949	ppb	32.6	46.67	0.0022	Pulse	0.1000	3
V	51	45	He	12.269	ppb	1.1	7678.07	0.3666	Pulse	0.5000	3
Cr	52	45	He	0.331	ppb	87.8	883.40	0.0422	Pulse	0.1000	3
Mn	55	72	He	1.871	ppb	10.4	596.70	0.0070	Pulse	0.1000	3
Fe	57	72	He	86.793	ppb	13.8	1526.83	0.0180	Pulse	0.1000	3
Co	59	72	He	0.531	ppb	2.7	1140.09	0.0134	Pulse	0.1000	3
Ni	60	72	He	32.881	ppb	0.3	18746.02	0.2205	Pulse	0.1000	3
Cu	63	72	He	0.287	ppb	14.5	713.38	0.0084	Pulse	0.1000	3
Zn	66	72	He	2.595	ppb	27.5	463.36	0.0055	Pulse	0.1000	3
As	75	72	He	3.341	ppb	10.2	342.68	0.0040	Pulse	0.5000	3
Sr	88	115	He	1488.668	ppb	1.2	441657.21	11.7861	Pulse	0.1000	3
Mo	98	115	He	6.655	ppb	4.1	7945.85	0.2120	Pulse	0.1000	3
Ag	107	115	He	0.006	ppb	91.4	23.33	0.0006	Pulse	0.1000	3
Cd	111	115	He	0.034	ppb	53.7	9.33	0.0002	Pulse	0.5000	3
Sn	120	115	He	-0.072	ppb	N/A	776.72	0.0207	Pulse	0.1000	3
Sb	121	115	He	0.202	ppb	21.0	130.01	0.0035	Pulse	0.1000	3
Ba	137	115	He	217.678	ppb	1.6	42837.60	1.1433	Pulse	0.1000	3
Tl	205	209	He	0.007	ppb	44.8	100.00	0.0004	Pulse	0.1000	3
Pb	208	209	He	0.690	ppb	3.5	8284.66	0.0369	Pulse	0.1000	3
U	238	209	He	0.037	ppb	22.6	573.37	0.0026	Pulse	0.1000	3

ISTD Table:

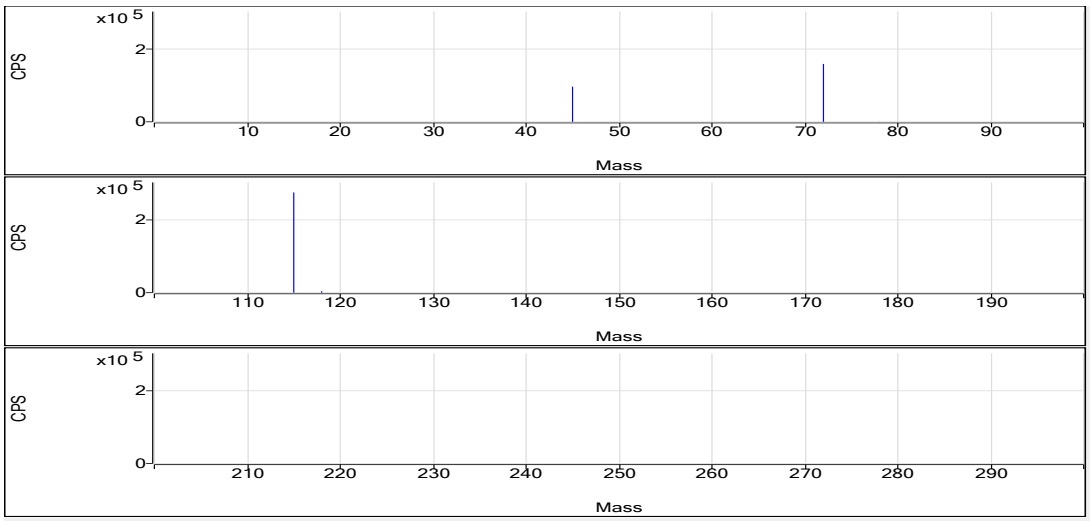
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1577462.79	1.1	96.9	Analog	0.1000	3
No Gas	Ge	72	1890245.44	1.0	100.9	Analog	0.1000	3
H2	Sc	45	97271.23	1.1	98.5	Pulse	0.1000	3
H2	Ge	72	160207.20	0.7	100.4	Pulse	0.1000	3
H2	In	115	277418.18	1.2	97.6	Pulse	0.1000	3
He	Sc	45	20942.26	0.7	99.2	Pulse	0.1000	3
He	Ge	72	85006.09	0.3	103.2	Pulse	0.1000	3
He	In	115	37474.52	1.2	100.0	Pulse	0.1000	3
He	Tb	159	251442.16	0.6	100.0	Pulse	0.1000	3
He	Bi	209	224381.82	0.8	98.6	Pulse	0.1000	3

No Gas

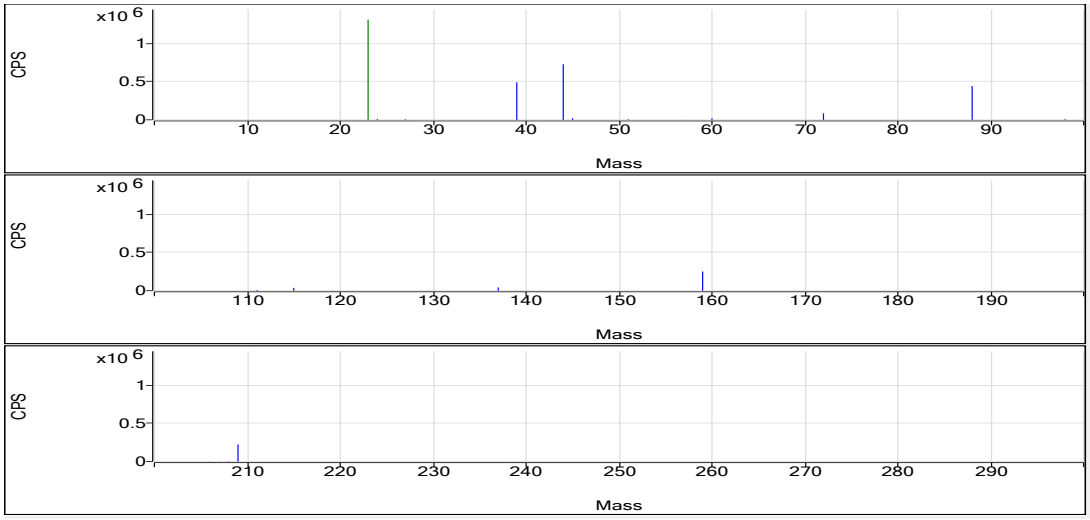


H2



Quantitation Report

He



Quantitation Report

Data File Name	117SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 2:23:42 PM
Sample Name	410-61097-N-15-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

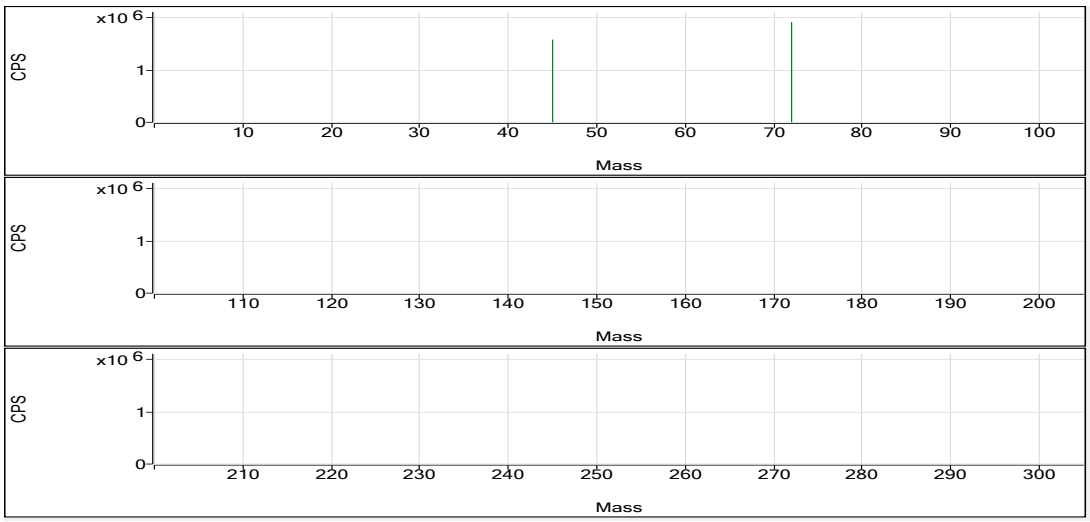
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.048	ppb	3.6	45.33	0.0000	Pulse	0.5000	3
Se	78	115	H2	1.289	ppb	1.8	54.00	0.0002	Pulse	1.5000	3
Na	23	45	He	16654.851	ppb	2.5	1625571.17	76.0352	Analog	0.1000	3
Mg	24	45	He	14839.756	ppb	2.8	697609.70	32.6316	Pulse	0.1000	3
Al	27	45	He	550.867	ppb	2.6	6471.64	0.3026	Pulse	0.1000	3
K	39	45	He	18276.024	ppb	2.5	433225.31	20.2636	Pulse	0.1000	3
Ca	44	45	He	144432.714	ppb	2.1	196798.62	9.2047	Pulse	0.1000	3
Ti	47	45	He	19.019	ppb	15.4	230.01	0.0107	Pulse	0.1000	3
V	51	45	He	2.894	ppb	4.0	2020.82	0.0945	Pulse	0.5000	3
Cr	52	45	He	4.159	ppb	2.9	4150.72	0.1941	Pulse	0.1000	3
Mn	55	72	He	64.840	ppb	2.5	20395.00	0.2365	Pulse	0.1000	3
Fe	57	72	He	567.173	ppb	5.4	9700.22	0.1125	Pulse	0.1000	3
Co	59	72	He	1.049	ppb	8.1	2226.94	0.0258	Pulse	0.1000	3
Ni	60	72	He	13.184	ppb	4.1	7688.98	0.0892	Pulse	0.1000	3
Cu	63	72	He	0.654	ppb	8.2	1366.77	0.0158	Pulse	0.1000	3
Zn	66	72	He	6.002	ppb	9.1	986.73	0.0114	Pulse	0.1000	3
As	75	72	He	4.016	ppb	5.1	413.34	0.0048	Pulse	0.5000	3
Sr	88	115	He	196.552	ppb	1.0	58314.56	1.5568	Pulse	0.1000	3
Mo	98	115	He	6.485	ppb	2.8	7739.08	0.2066	Pulse	0.1000	3
Ag	107	115	He	0.015	ppb	82.7	50.00	0.0013	Pulse	0.1000	3
Cd	111	115	He	0.031	ppb	39.2	8.67	0.0002	Pulse	0.5000	3
Sn	120	115	He	0.144	ppb	85.5	926.73	0.0247	Pulse	0.1000	3
Sb	121	115	He	0.275	ppb	26.3	173.34	0.0046	Pulse	0.1000	3
Ba	137	115	He	59.969	ppb	3.3	11802.17	0.3152	Pulse	0.1000	3
Tl	205	209	He	0.010	ppb	36.1	126.67	0.0006	Pulse	0.1000	3
Pb	208	209	He	2.268	ppb	0.5	25347.32	0.1121	Pulse	0.1000	3
U	238	209	He	0.074	ppb	4.5	1106.76	0.0049	Pulse	0.1000	3

ISTD Table:

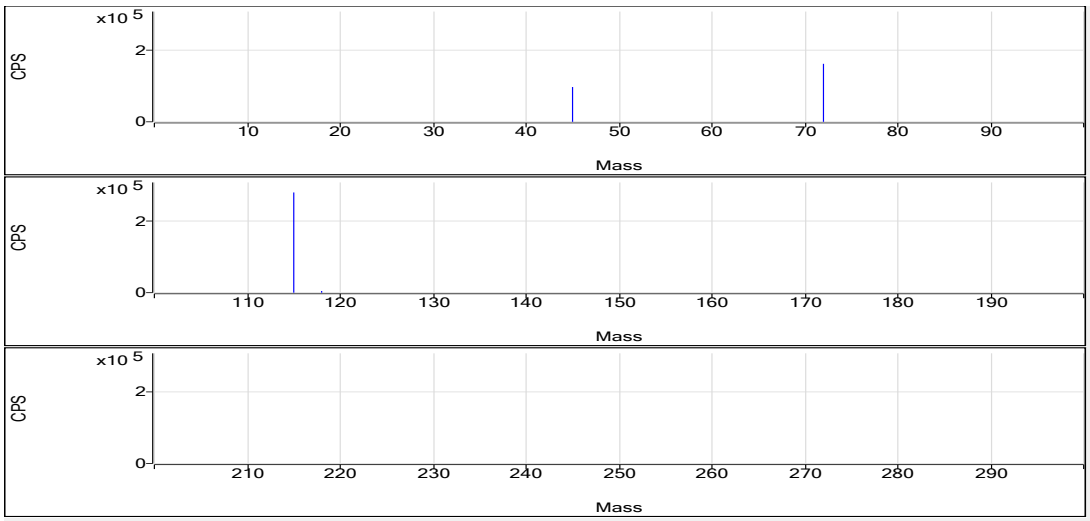
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1585518.83	0.7	97.4	Analog	0.1000	3
No Gas	Ge	72	1922154.97	1.0	102.6	Analog	0.1000	3
H2	Sc	45	97003.39	0.7	98.3	Pulse	0.1000	3
H2	Ge	72	161757.32	0.8	101.4	Pulse	0.1000	3
H2	In	115	279532.29	0.7	98.4	Pulse	0.1000	3
He	Sc	45	21386.40	2.1	101.3	Pulse	0.1000	3
He	Ge	72	86262.96	0.8	104.7	Pulse	0.1000	3
He	In	115	37457.95	1.2	100.0	Pulse	0.1000	3
He	Tb	159	251044.24	0.6	99.9	Pulse	0.1000	3
He	Bi	209	226161.20	1.0	99.4	Pulse	0.1000	3

No Gas

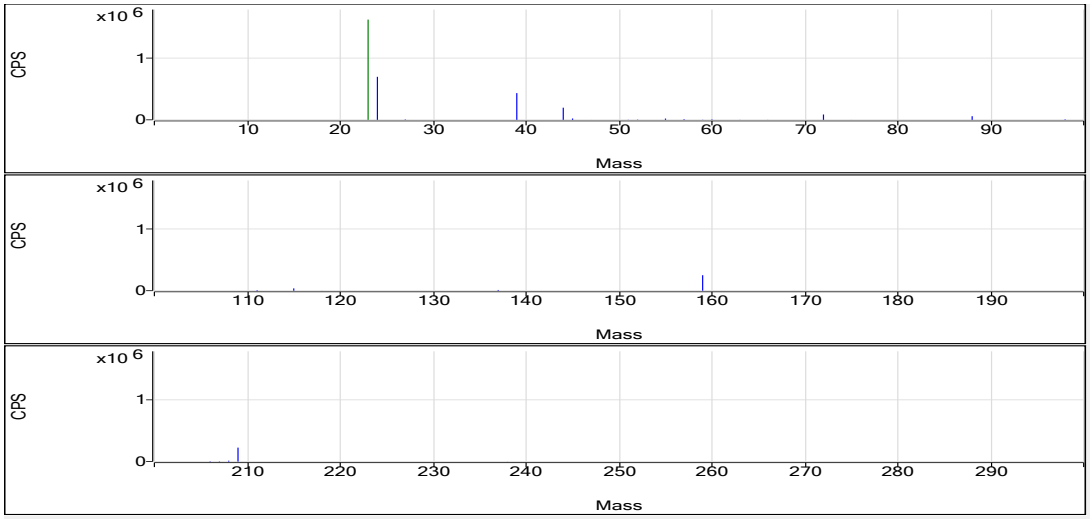


H2



Quantitation Report

He



Quantitation Report

Data File Name	118SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 2:25:43 PM
Sample Name	410-61097-N-5-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

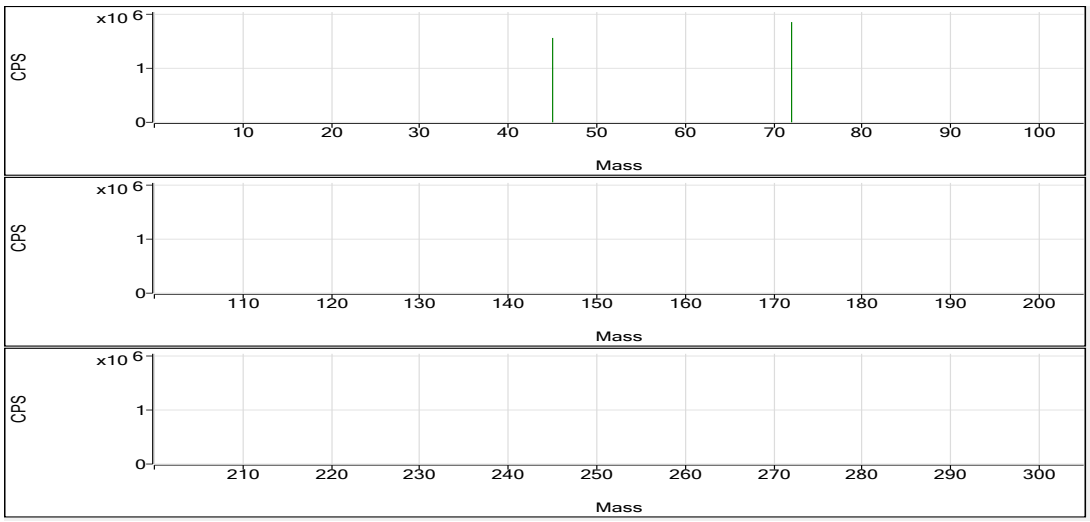
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.017	ppb	69.5	21.33	0.0000	Pulse	0.5000	3
Se	78	115	H2	5.303	ppb	0.6	217.56	0.0008	Pulse	1.5000	3
Na	23	45	He	13584.913	ppb	0.3	1305687.48	62.0909	Analog	0.1000	3
Mg	24	45	He	190.985	ppb	2.5	8912.98	0.4239	Pulse	0.1000	3
Al	27	45	He	657.724	ppb	5.5	7592.22	0.3611	Pulse	0.1000	3
K	39	45	He	21143.378	ppb	1.3	492158.00	23.4058	Pulse	0.1000	3
Ca	44	45	He	555037.779	ppb	1.1	743527.93	35.3599	Pulse	0.1000	3
Ti	47	45	He	5.894	ppb	24.3	70.00	0.0033	Pulse	0.1000	3
V	51	45	He	12.760	ppb	1.3	8008.91	0.3809	Pulse	0.5000	3
Cr	52	45	He	0.250	ppb	14.9	820.05	0.0390	Pulse	0.1000	3
Mn	55	72	He	1.817	ppb	17.4	573.37	0.0068	Pulse	0.1000	3
Fe	57	72	He	90.413	ppb	3.9	1566.80	0.0187	Pulse	0.1000	3
Co	59	72	He	0.517	ppb	9.2	1096.75	0.0131	Pulse	0.1000	3
Ni	60	72	He	34.486	ppb	1.7	19400.20	0.2312	Pulse	0.1000	3
Cu	63	72	He	0.258	ppb	2.6	653.37	0.0078	Pulse	0.1000	3
Zn	66	72	He	2.142	ppb	22.3	390.02	0.0047	Pulse	0.1000	3
As	75	72	He	3.779	ppb	11.1	379.34	0.0045	Pulse	0.5000	3
Sr	88	115	He	1460.235	ppb	1.7	448684.14	11.5610	Pulse	0.1000	3
Mo	98	115	He	6.529	ppb	3.6	8072.55	0.2080	Pulse	0.1000	3
Ag	107	115	He	0.002	ppb	180.1	13.33	0.0003	Pulse	0.1000	3
Cd	111	115	He	0.025	ppb	69.8	7.33	0.0002	Pulse	0.5000	3
Sn	120	115	He	-0.102	ppb	N/A	783.38	0.0202	Pulse	0.1000	3
Sb	121	115	He	0.146	ppb	48.9	100.00	0.0026	Pulse	0.1000	3
Ba	137	115	He	216.685	ppb	3.4	44158.75	1.1381	Pulse	0.1000	3
Tl	205	209	He	0.003	ppb	96.3	70.00	0.0003	Pulse	0.1000	3
Pb	208	209	He	0.619	ppb	5.8	7457.80	0.0335	Pulse	0.1000	3
U	238	209	He	0.020	ppb	25.0	323.35	0.0015	Pulse	0.1000	3

ISTD Table:

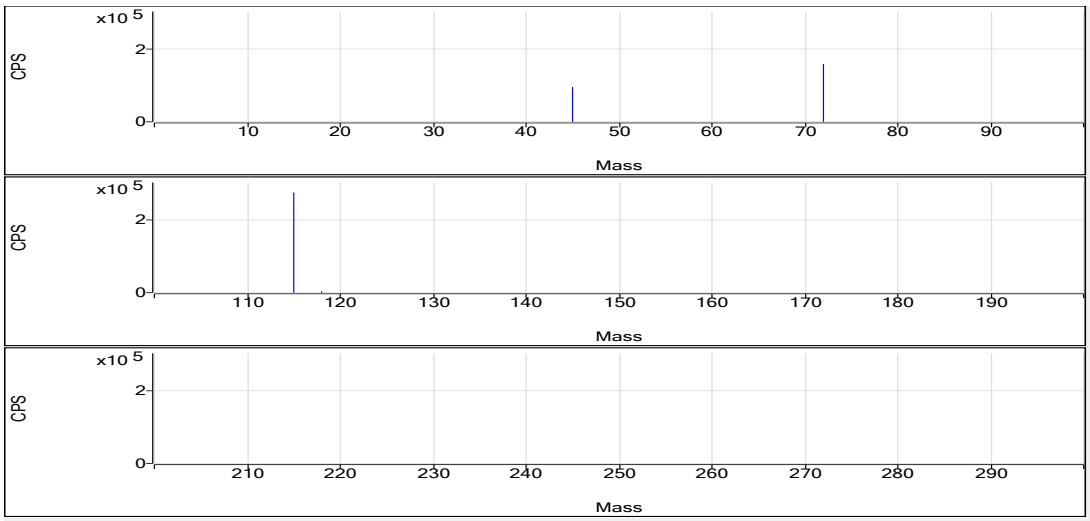
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1567285.45	1.0	96.3	Analog	0.1000	3
No Gas	Ge	72	1862201.59	0.8	99.4	Analog	0.1000	3
H2	Sc	45	96103.58	0.7	97.4	Pulse	0.1000	3
H2	Ge	72	159578.73	0.6	100.0	Pulse	0.1000	3
H2	In	115	276432.43	0.5	97.3	Pulse	0.1000	3
He	Sc	45	21029.00	1.0	99.6	Pulse	0.1000	3
He	Ge	72	83916.09	1.7	101.9	Pulse	0.1000	3
He	In	115	38818.22	1.9	103.6	Pulse	0.1000	3
He	Tb	159	249731.71	0.9	99.4	Pulse	0.1000	3
He	Bi	209	222362.29	0.5	97.7	Pulse	0.1000	3

No Gas

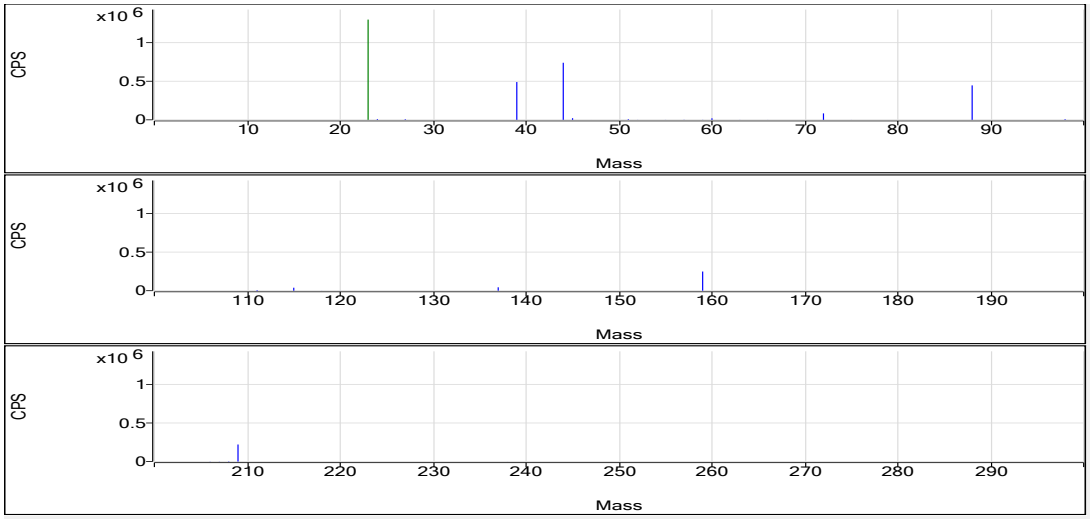


H2



Quantitation Report

He



Quantitation Report

Data File Name	119SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 2:27:45 PM
Sample Name	410-61097-E-17-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

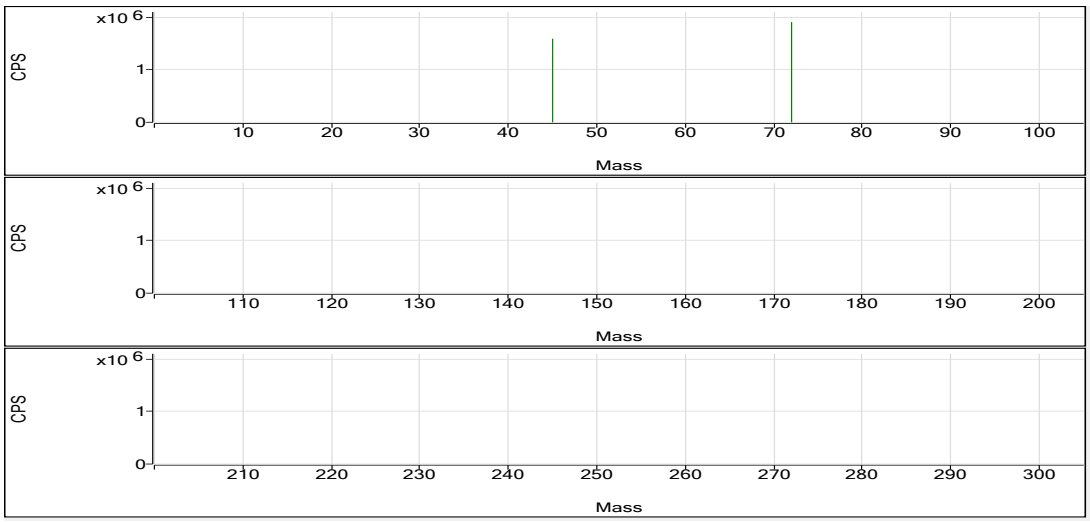
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.046	ppb	14.7	44.00	0.0000	Pulse	0.5000	3
Se	78	115	H2	2.361	ppb	13.0	98.22	0.0004	Pulse	1.5000	3
Na	23	45	He	18624.516	ppb	2.0	1855982.26	84.9818	Analog	0.1000	3
Mg	24	45	He	504.226	ppb	2.9	24300.62	1.1126	Pulse	0.1000	3
Al	27	45	He	460.813	ppb	2.5	5534.55	0.2534	Pulse	0.1000	3
K	39	45	He	22121.408	ppb	2.6	534544.12	24.4777	Pulse	0.1000	3
Ca	44	45	He	316847.810	ppb	2.8	440839.56	20.1874	Pulse	0.1000	3
Ti	47	45	He	12.971	ppb	26.8	160.01	0.0073	Pulse	0.1000	3
V	51	45	He	2.459	ppb	3.6	1787.45	0.0818	Pulse	0.5000	3
Cr	52	45	He	1.684	ppb	6.1	2093.56	0.0959	Pulse	0.1000	3
Mn	55	72	He	10.245	ppb	5.9	3207.14	0.0375	Pulse	0.1000	3
Fe	57	72	He	649.501	ppb	3.3	10997.82	0.1287	Pulse	0.1000	3
Co	59	72	He	0.820	ppb	11.8	1740.17	0.0203	Pulse	0.1000	3
Ni	60	72	He	14.930	ppb	3.0	8616.20	0.1008	Pulse	0.1000	3
Cu	63	72	He	0.903	ppb	14.6	1786.84	0.0209	Pulse	0.1000	3
Zn	66	72	He	10.701	ppb	4.6	1683.50	0.0197	Pulse	0.1000	3
As	75	72	He	3.270	ppb	7.9	338.01	0.0040	Pulse	0.5000	3
Sr	88	115	He	404.613	ppb	1.0	121582.92	3.2040	Pulse	0.1000	3
Mo	98	115	He	14.445	ppb	2.0	17448.07	0.4598	Pulse	0.1000	3
Ag	107	115	He	0.009	ppb	20.4	33.33	0.0009	Pulse	0.1000	3
Cd	111	115	He	0.028	ppb	46.0	8.00	0.0002	Pulse	0.5000	3
Sn	120	115	He	0.059	ppb	471.4	880.07	0.0232	Pulse	0.1000	3
Sb	121	115	He	0.155	ppb	38.0	103.34	0.0027	Pulse	0.1000	3
Ba	137	115	He	113.005	ppb	2.2	22529.19	0.5936	Pulse	0.1000	3
Tl	205	209	He	0.012	ppb	37.2	140.00	0.0006	Pulse	0.1000	3
Pb	208	209	He	1.304	ppb	2.9	14983.87	0.0662	Pulse	0.1000	3
U	238	209	He	0.043	ppb	14.9	666.71	0.0029	Pulse	0.1000	3

ISTD Table:

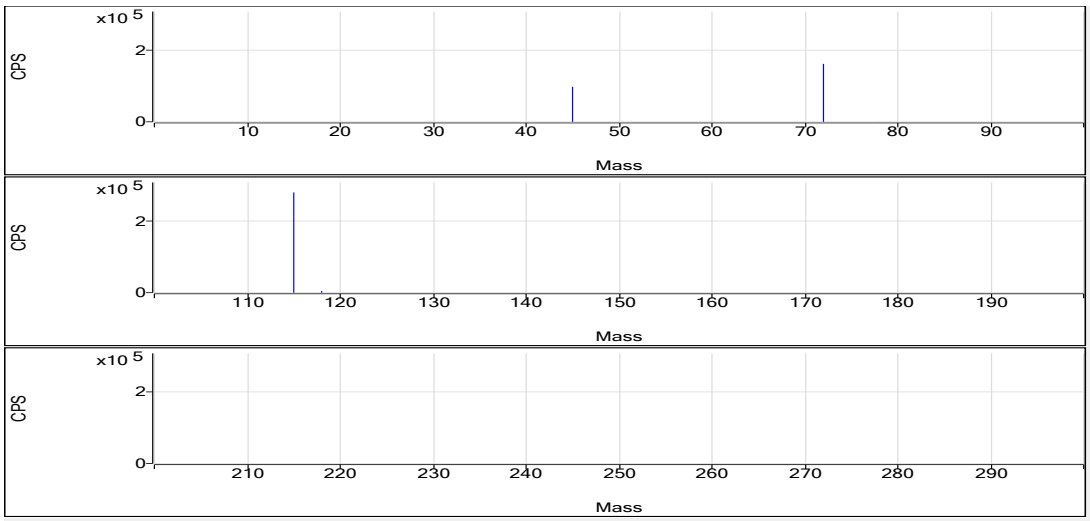
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1594883.98	0.2	98.0	Analog	0.1000	3
No Gas	Ge	72	1912339.71	0.7	102.1	Analog	0.1000	3
H2	Sc	45	97593.29	0.6	98.9	Pulse	0.1000	3
H2	Ge	72	161503.56	1.9	101.2	Pulse	0.1000	3
H2	In	115	279390.09	1.1	98.3	Pulse	0.1000	3
He	Sc	45	21846.98	2.5	103.5	Pulse	0.1000	3
He	Ge	72	85488.73	1.2	103.8	Pulse	0.1000	3
He	In	115	37949.69	1.0	101.3	Pulse	0.1000	3
He	Tb	159	253808.98	0.1	101.0	Pulse	0.1000	3
He	Bi	209	226493.91	0.7	99.6	Pulse	0.1000	3

No Gas

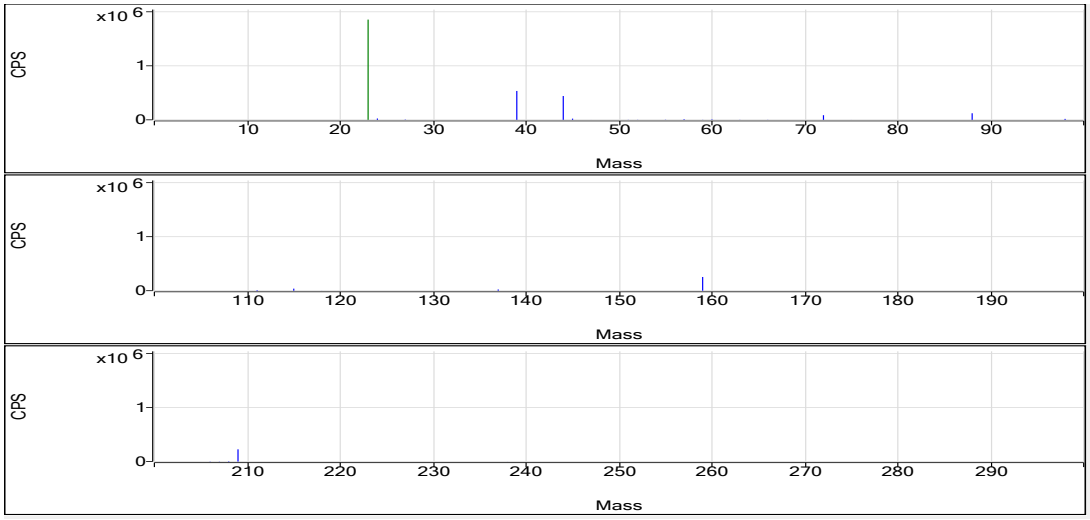


H2



Quantitation Report

He



Quantitation Report

Data File Name	120SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 2:29:46 PM
Sample Name	410-61097-N-12-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

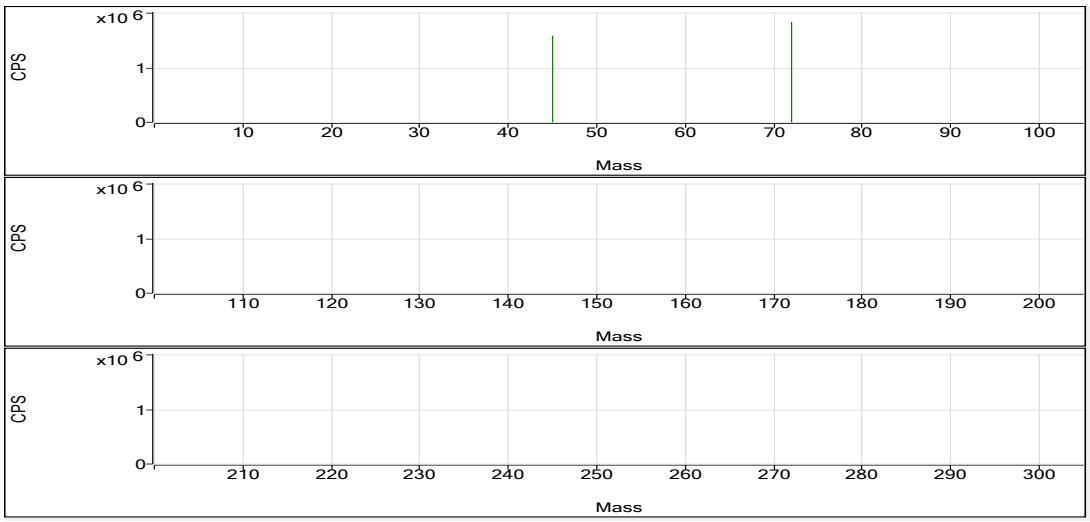
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.017	ppb	26.8	22.00	0.0000	Pulse	0.5000	3
Se	78	115	H2	2.759	ppb	2.8	114.67	0.0004	Pulse	1.5000	3
Na	23	45	He	7367.774	ppb	2.2	710605.36	33.8515	Pulse	0.1000	3
Mg	24	45	He	117.284	ppb	4.1	5494.54	0.2618	Pulse	0.1000	3
Al	27	45	He	62.396	ppb	13.2	746.71	0.0355	Pulse	0.1000	3
K	39	45	He	15034.717	ppb	3.4	350730.75	16.7115	Pulse	0.1000	3
Ca	44	45	He	486607.645	ppb	2.3	650754.08	31.0009	Pulse	0.1000	3
Ti	47	45	He	1.698	ppb	52.0	20.00	0.0010	Pulse	0.1000	3
V	51	45	He	0.424	ppb	7.9	478.01	0.0228	Pulse	0.5000	3
Cr	52	45	He	0.100	ppb	82.5	693.37	0.0330	Pulse	0.1000	3
Mn	55	72	He	0.762	ppb	20.1	246.68	0.0030	Pulse	0.1000	3
Fe	57	72	He	28.721	ppb	5.3	540.03	0.0065	Pulse	0.1000	3
Co	59	72	He	0.426	ppb	17.7	900.06	0.0109	Pulse	0.1000	3
Ni	60	72	He	27.877	ppb	2.6	15462.17	0.1871	Pulse	0.1000	3
Cu	63	72	He	0.212	ppb	10.2	566.70	0.0069	Pulse	0.1000	3
Zn	66	72	He	1.325	ppb	37.2	266.68	0.0032	Pulse	0.1000	3
As	75	72	He	3.703	ppb	9.3	366.68	0.0044	Pulse	0.5000	3
Sr	88	115	He	697.636	ppb	2.1	211395.79	5.5238	Pulse	0.1000	3
Mo	98	115	He	7.762	ppb	7.0	9460.22	0.2473	Pulse	0.1000	3
Ag	107	115	He	0.001	ppb	323.0	10.00	0.0003	Pulse	0.1000	3
Cd	111	115	He	0.002	ppb	350.7	1.33	0.0000	Pulse	0.5000	3
Sn	120	115	He	-0.157	ppb	N/A	733.38	0.0192	Pulse	0.1000	3
Sb	121	115	He	0.642	ppb	8.6	400.02	0.0104	Pulse	0.1000	3
Ba	137	115	He	276.639	ppb	2.0	55603.62	1.4529	Pulse	0.1000	3
Tl	205	209	He	0.002	ppb	108.3	56.67	0.0003	Pulse	0.1000	3
Pb	208	209	He	0.243	ppb	5.3	3520.32	0.0156	Pulse	0.1000	3
U	238	209	He	0.008	ppb	47.7	156.67	0.0007	Pulse	0.1000	3

ISTD Table:

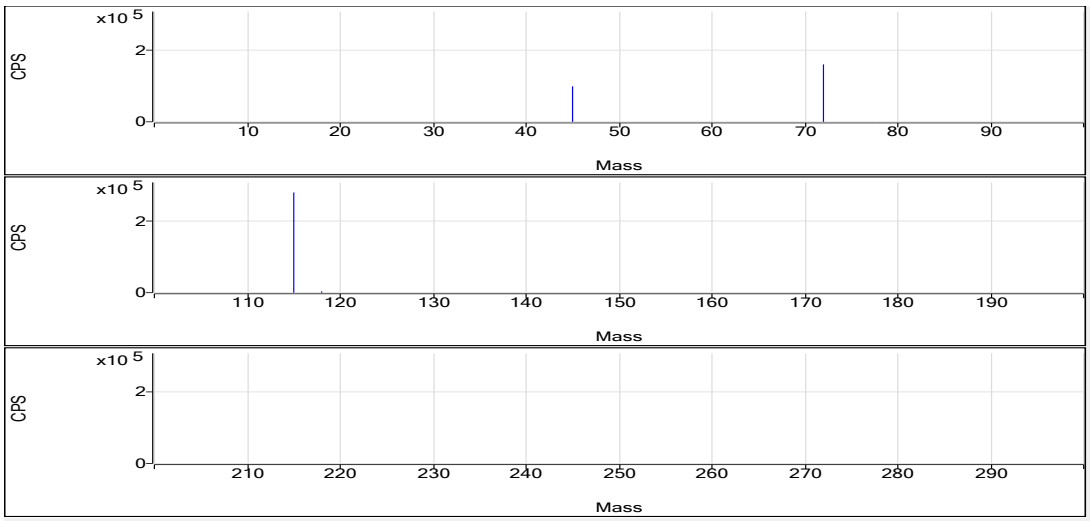
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1594006.07	0.7	97.9	Analog	0.1000	3
No Gas	Ge	72	1842126.85	0.2	98.3	Analog	0.1000	3
H2	Sc	45	98780.79	1.8	100.1	Pulse	0.1000	3
H2	Ge	72	160017.16	0.4	100.3	Pulse	0.1000	3
H2	In	115	279173.19	1.5	98.3	Pulse	0.1000	3
He	Sc	45	20999.15	2.5	99.5	Pulse	0.1000	3
He	Ge	72	82598.58	1.7	100.3	Pulse	0.1000	3
He	In	115	38276.71	1.3	102.1	Pulse	0.1000	3
He	Tb	159	252418.81	0.4	100.4	Pulse	0.1000	3
He	Bi	209	225088.71	1.1	98.9	Pulse	0.1000	3

No Gas

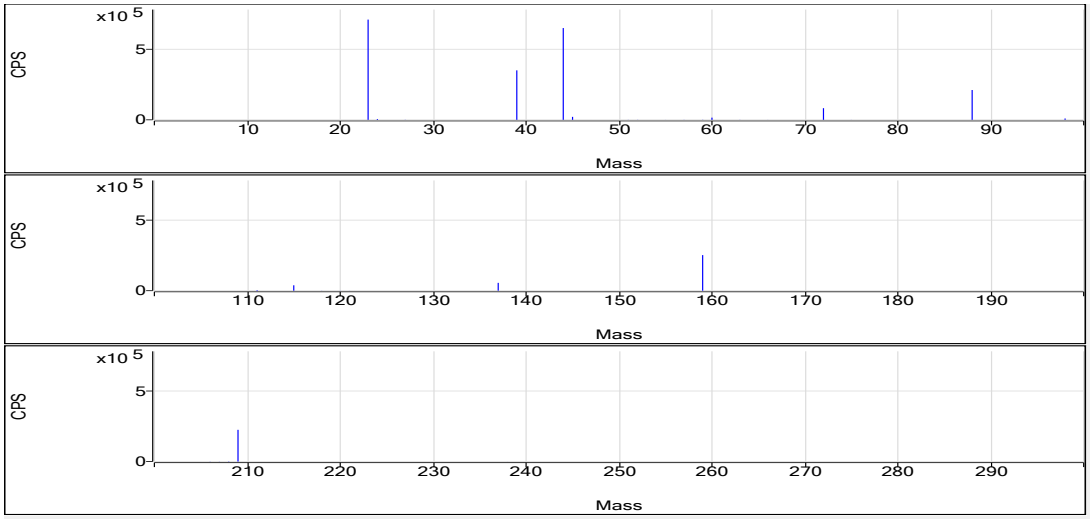


H2



Quantitation Report

He



Quantitation Report

Data File Name	121SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 2:31:47 PM
Sample Name	410-61097-N-10-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

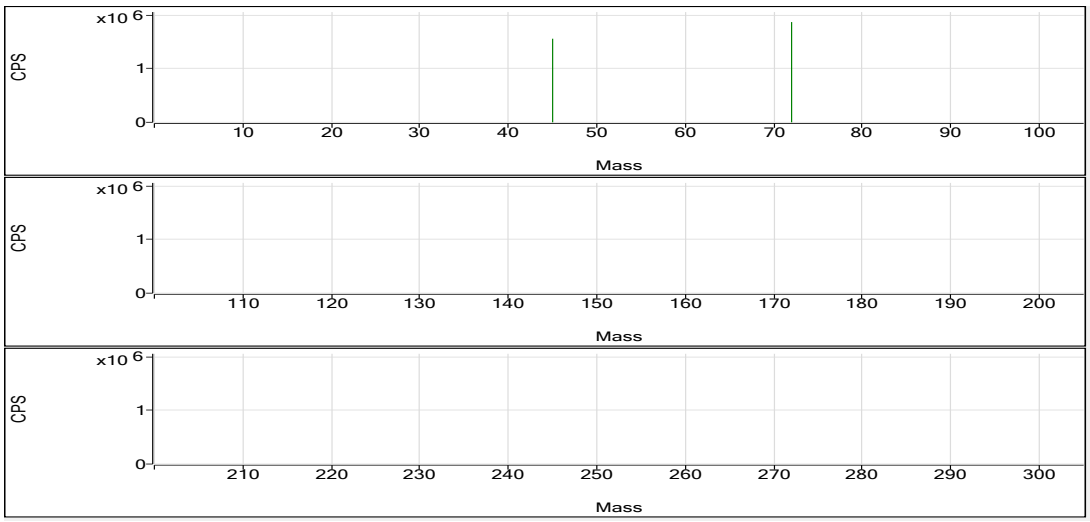
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.011	ppb	26.5	16.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	3.211	ppb	5.5	130.67	0.0005	Pulse	1.5000	3
Na	23	45	He	6025.083	ppb	1.7	580100.93	27.7528	Pulse	0.1000	3
Mg	24	45	He	36.604	ppb	10.9	1766.84	0.0844	Pulse	0.1000	3
Al	27	45	He	52.055	ppb	22.0	623.38	0.0299	Pulse	0.1000	3
K	39	45	He	16086.617	ppb	1.8	373398.84	17.8642	Pulse	0.1000	3
Ca	44	45	He	833436.803	ppb	1.6	1109775.01	53.0936	Pulse	0.1000	3
Ti	47	45	He	1.982	ppb	26.2	23.33	0.0011	Pulse	0.1000	3
V	51	45	He	31.118	ppb	2.4	19099.92	0.9138	Pulse	0.5000	3
Cr	52	45	He	0.204	ppb	46.7	776.72	0.0372	Pulse	0.1000	3
Mn	55	72	He	0.794	ppb	9.6	256.68	0.0031	Pulse	0.1000	3
Fe	57	72	He	50.655	ppb	5.3	900.07	0.0109	Pulse	0.1000	3
Co	59	72	He	1.997	ppb	6.2	4024.02	0.0485	Pulse	0.1000	3
Ni	60	72	He	168.617	ppb	1.4	93314.43	1.1259	Pulse	0.1000	3
Cu	63	72	He	0.735	ppb	8.6	1450.12	0.0175	Pulse	0.1000	3
Zn	66	72	He	4.299	ppb	1.0	700.04	0.0084	Pulse	0.1000	3
As	75	72	He	4.645	ppb	6.3	456.01	0.0055	Pulse	0.5000	3
Sr	88	115	He	2543.531	ppb	1.9	743204.47	20.1372	Pulse	0.1000	3
Mo	98	115	He	11.180	ppb	1.2	13139.91	0.3560	Pulse	0.1000	3
Ag	107	115	He	0.000	ppb	19206.7	6.67	0.0002	Pulse	0.1000	3
Cd	111	115	He	0.011	ppb	214.2	3.33	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.149	ppb	N/A	713.37	0.0193	Pulse	0.1000	3
Sb	121	115	He	0.408	ppb	30.2	250.01	0.0067	Pulse	0.1000	3
Ba	137	115	He	985.514	ppb	2.0	190994.62	5.1751	Pulse	0.1000	3
Tl	205	209	He	0.005	ppb	69.6	80.00	0.0004	Pulse	0.1000	3
Pb	208	209	He	0.274	ppb	2.4	3813.70	0.0171	Pulse	0.1000	3
U	238	209	He	0.020	ppb	1.4	323.35	0.0014	Pulse	0.1000	3

ISTD Table:

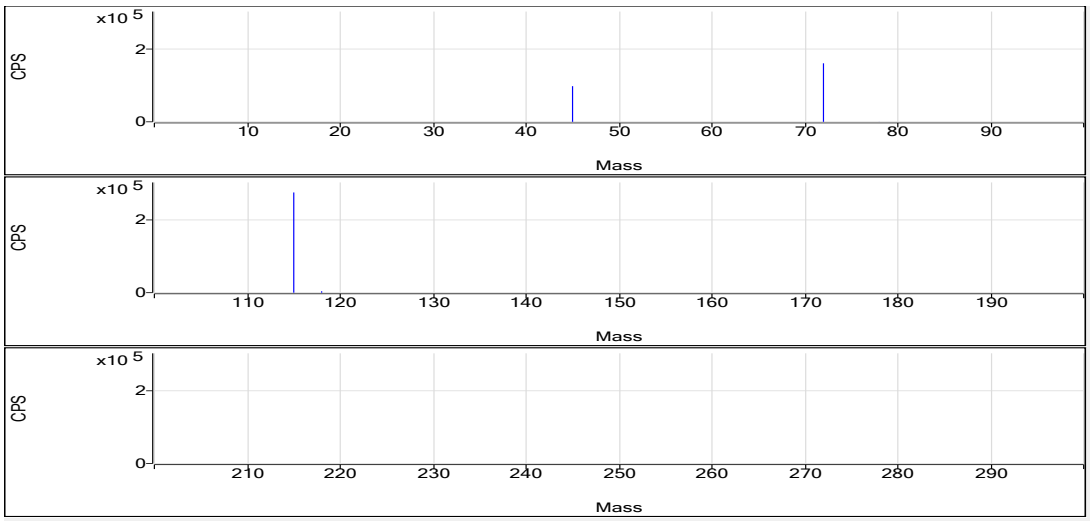
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1559798.15	0.7	95.8	Analog	0.1000	3
No Gas	Ge	72	1870424.81	0.8	99.8	Analog	0.1000	3
H2	Sc	45	97308.00	1.8	98.6	Pulse	0.1000	3
H2	Ge	72	159693.75	0.6	100.1	Pulse	0.1000	3
H2	In	115	273555.47	1.4	96.3	Pulse	0.1000	3
He	Sc	45	20905.54	1.4	99.1	Pulse	0.1000	3
He	Ge	72	82889.98	0.9	100.6	Pulse	0.1000	3
He	In	115	36916.67	2.1	98.5	Pulse	0.1000	3
He	Tb	159	250194.73	0.8	99.6	Pulse	0.1000	3
He	Bi	209	223147.04	0.6	98.1	Pulse	0.1000	3

No Gas

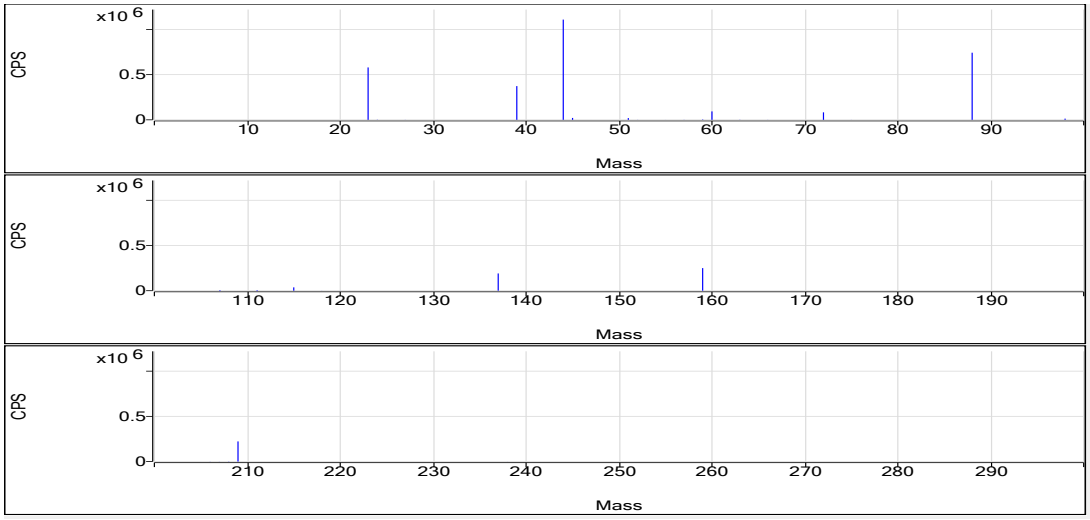


H2



Quantitation Report

He



Quantitation Report

Data File Name	122SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 2:33:49 PM
Sample Name	410-61097-N-16-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

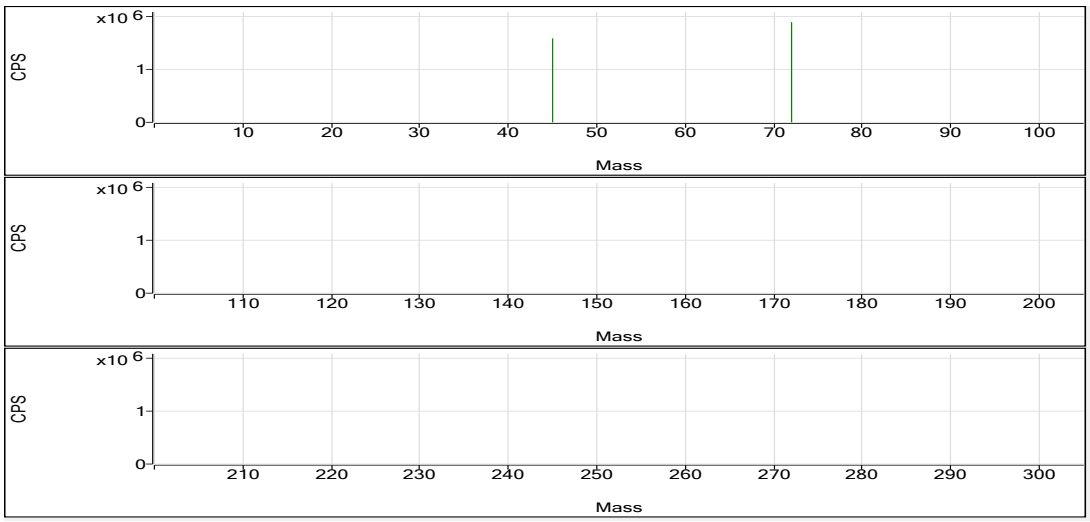
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.017	ppb	24.6	21.33	0.0000	Pulse	0.5000	3
Se	78	115	H2	1.999	ppb	5.5	83.11	0.0003	Pulse	1.5000	3
Na	23	45	He	18827.015	ppb	3.4	1763233.46	85.9016	Analog	0.1000	3
Mg	24	45	He	332.035	ppb	2.4	15068.20	0.7340	Pulse	0.1000	3
Al	27	45	He	270.850	ppb	9.0	3067.09	0.1495	Pulse	0.1000	3
K	39	45	He	22150.788	ppb	2.1	503177.10	24.5099	Pulse	0.1000	3
Ca	44	45	He	306013.281	ppb	3.3	400207.47	19.4972	Pulse	0.1000	3
Ti	47	45	He	7.178	ppb	24.1	83.33	0.0041	Pulse	0.1000	3
V	51	45	He	2.070	ppb	5.0	1448.08	0.0705	Pulse	0.5000	3
Cr	52	45	He	0.802	ppb	14.1	1250.10	0.0609	Pulse	0.1000	3
Mn	55	72	He	6.343	ppb	7.5	1973.53	0.0233	Pulse	0.1000	3
Fe	57	72	He	309.113	ppb	3.9	5224.47	0.0617	Pulse	0.1000	3
Co	59	72	He	0.741	ppb	12.6	1560.14	0.0184	Pulse	0.1000	3
Ni	60	72	He	14.281	ppb	3.6	8165.90	0.0965	Pulse	0.1000	3
Cu	63	72	He	0.374	ppb	5.5	860.06	0.0102	Pulse	0.1000	3
Zn	66	72	He	4.446	ppb	14.6	736.71	0.0087	Pulse	0.1000	3
As	75	72	He	3.194	ppb	10.4	327.34	0.0039	Pulse	0.5000	3
Sr	88	115	He	377.587	ppb	0.8	113144.34	2.9900	Pulse	0.1000	3
Mo	98	115	He	13.409	ppb	2.5	16153.07	0.4269	Pulse	0.1000	3
Ag	107	115	He	0.002	ppb	176.0	13.33	0.0004	Pulse	0.1000	3
Cd	111	115	He	0.018	ppb	25.6	5.33	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.069	ppb	N/A	786.71	0.0208	Pulse	0.1000	3
Sb	121	115	He	0.216	ppb	35.0	140.01	0.0037	Pulse	0.1000	3
Ba	137	115	He	107.236	ppb	3.3	21313.80	0.5634	Pulse	0.1000	3
Tl	205	209	He	0.008	ppb	20.2	103.33	0.0005	Pulse	0.1000	3
Pb	208	209	He	0.667	ppb	2.6	8044.58	0.0358	Pulse	0.1000	3
U	238	209	He	0.020	ppb	27.2	320.01	0.0014	Pulse	0.1000	3

ISTD Table:

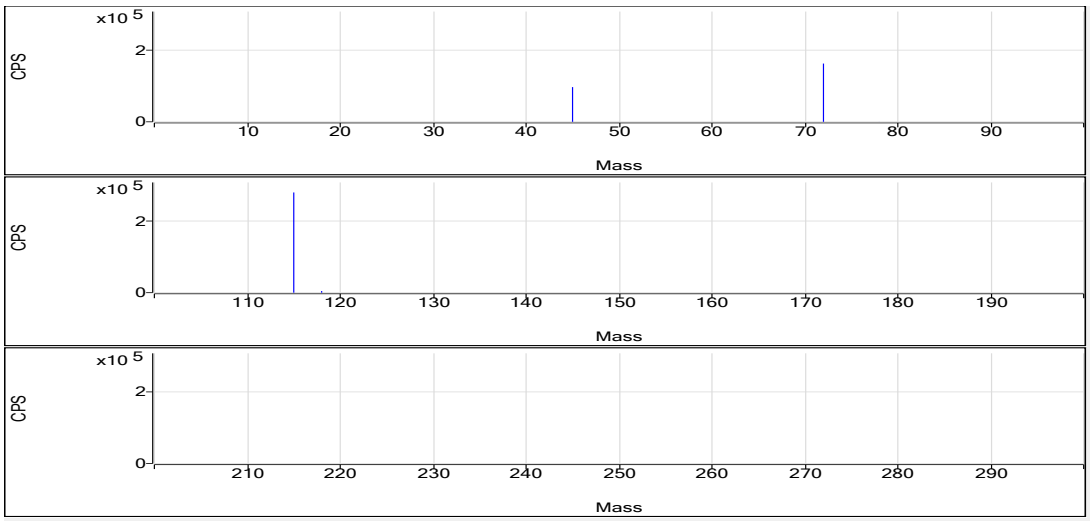
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1583603.52	0.8	97.3	Analog	0.1000	3
No Gas	Ge	72	1891196.22	0.7	100.9	Analog	0.1000	3
H2	Sc	45	96475.90	0.6	97.7	Pulse	0.1000	3
H2	Ge	72	161931.22	1.2	101.5	Pulse	0.1000	3
H2	In	115	278597.96	1.1	98.1	Pulse	0.1000	3
He	Sc	45	20534.98	1.9	97.3	Pulse	0.1000	3
He	Ge	72	84656.95	0.4	102.8	Pulse	0.1000	3
He	In	115	37842.61	1.1	101.0	Pulse	0.1000	3
He	Tb	159	253206.73	0.3	100.7	Pulse	0.1000	3
He	Bi	209	224537.84	1.4	98.7	Pulse	0.1000	3

No Gas

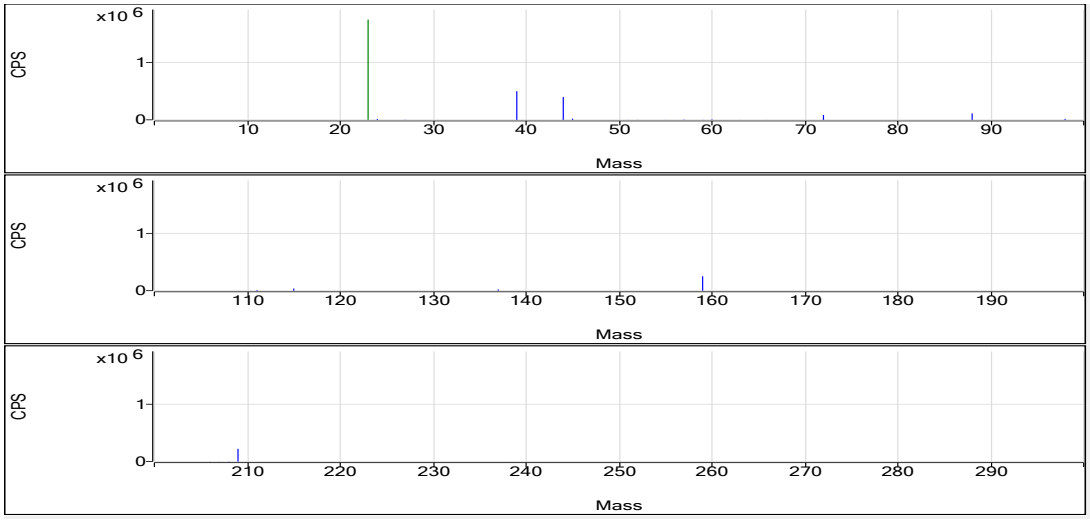


H2



Quantitation Report

He



Quantitation Report

Data File Name	123SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 2:35:50 PM
Sample Name	410-61097-N-2-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

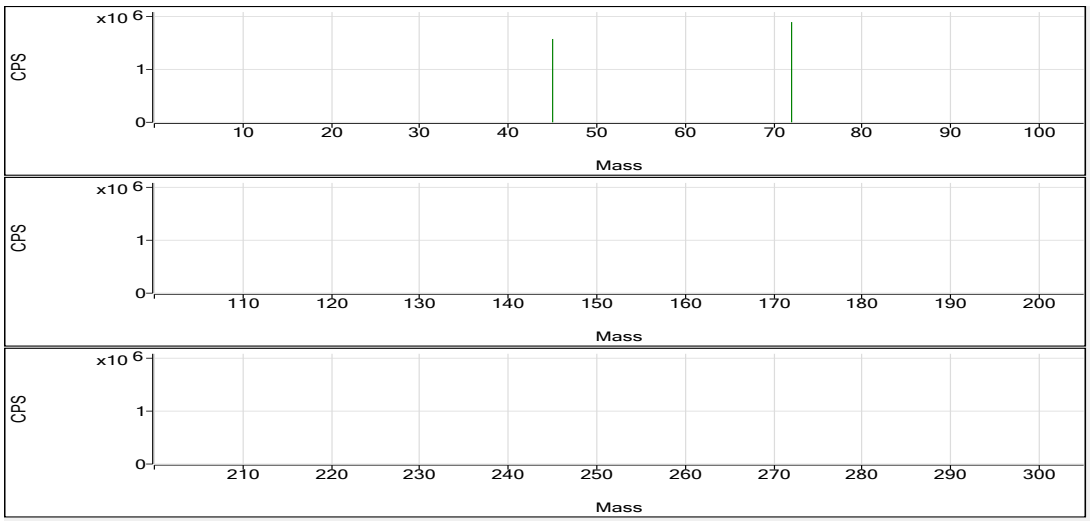
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.039	ppb	33.8	38.00	0.0000	Pulse	0.5000	3
Se	78	115	H2	1.089	ppb	6.6	45.56	0.0002	Pulse	1.5000	3
Na	23	45	He	23590.637	ppb	0.9	2211455.18	107.5388	Analog	0.1000	3
Mg	24	45	He	17476.899	ppb	0.7	790283.35	38.4298	Pulse	0.1000	3
Al	27	45	He	128.384	ppb	11.8	1473.46	0.0716	Pulse	0.1000	3
K	39	45	He	24513.831	ppb	0.7	557288.38	27.0995	Pulse	0.1000	3
Ca	44	45	He	131690.081	ppb	1.1	172596.10	8.3930	Pulse	0.1000	3
Ti	47	45	He	6.330	ppb	39.8	73.33	0.0036	Pulse	0.1000	3
V	51	45	He	1.799	ppb	2.1	1289.40	0.0627	Pulse	0.5000	3
Cr	52	45	He	1.134	ppb	18.7	1523.47	0.0741	Pulse	0.1000	3
Mn	55	72	He	17.692	ppb	5.4	5497.90	0.0647	Pulse	0.1000	3
Fe	57	72	He	4405.777	ppb	0.3	73835.51	0.8677	Pulse	0.1000	3
Co	59	72	He	1.857	ppb	7.6	3840.64	0.0452	Pulse	0.1000	3
Ni	60	72	He	48.409	ppb	3.2	27563.76	0.3241	Pulse	0.1000	3
Cu	63	72	He	0.721	ppb	4.5	1463.46	0.0172	Pulse	0.1000	3
Zn	66	72	He	4.446	ppb	18.8	740.05	0.0087	Pulse	0.1000	3
As	75	72	He	4.444	ppb	1.9	448.68	0.0053	Pulse	0.5000	3
Sr	88	115	He	1302.985	ppb	2.4	382729.43	10.3161	Pulse	0.1000	3
Mo	98	115	He	6.215	ppb	3.0	7348.87	0.1980	Pulse	0.1000	3
Ag	107	115	He	0.001	ppb	303.2	10.00	0.0003	Pulse	0.1000	3
Cd	111	115	He	0.044	ppb	35.4	12.00	0.0003	Pulse	0.5000	3
Sn	120	115	He	0.099	ppb	37.4	886.72	0.0239	Pulse	0.1000	3
Sb	121	115	He	0.295	ppb	8.9	183.34	0.0049	Pulse	0.1000	3
Ba	137	115	He	158.019	ppb	2.0	30795.28	0.8300	Pulse	0.1000	3
Tl	205	209	He	0.010	ppb	37.6	123.34	0.0005	Pulse	0.1000	3
Pb	208	209	He	1.580	ppb	1.9	17888.82	0.0793	Pulse	0.1000	3
U	238	209	He	0.066	ppb	9.8	993.41	0.0044	Pulse	0.1000	3

ISTD Table:

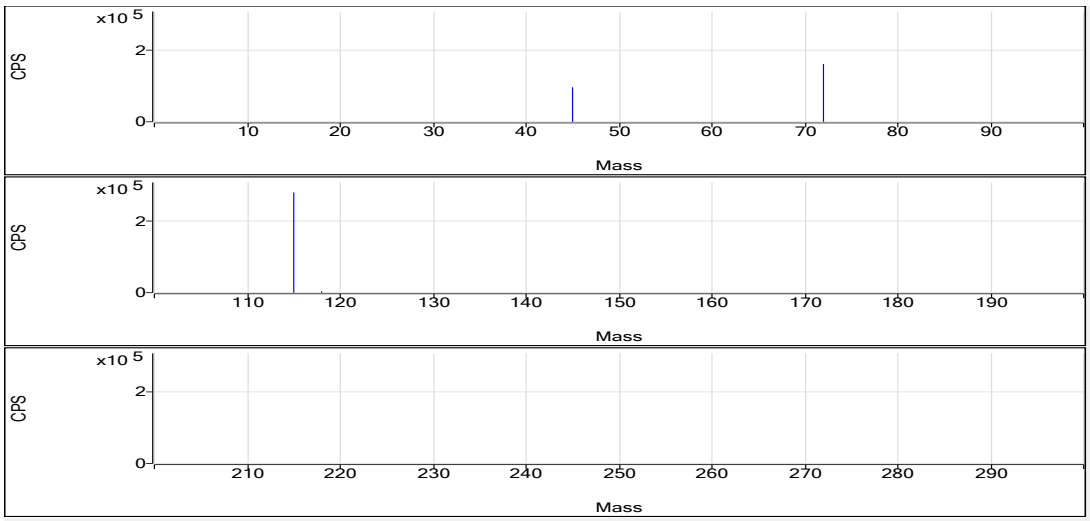
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1573728.05	0.1	96.7	Analog	0.1000	3
No Gas	Ge	72	1893004.03	1.3	101.0	Analog	0.1000	3
H2	Sc	45	95995.92	0.2	97.3	Pulse	0.1000	3
H2	Ge	72	160577.84	1.4	100.7	Pulse	0.1000	3
H2	In	115	278649.95	0.4	98.1	Pulse	0.1000	3
He	Sc	45	20565.02	0.7	97.4	Pulse	0.1000	3
He	Ge	72	85089.52	2.3	103.3	Pulse	0.1000	3
He	In	115	37113.75	2.3	99.0	Pulse	0.1000	3
He	Tb	159	251772.27	1.9	100.2	Pulse	0.1000	3
He	Bi	209	225627.17	0.6	99.2	Pulse	0.1000	3

No Gas

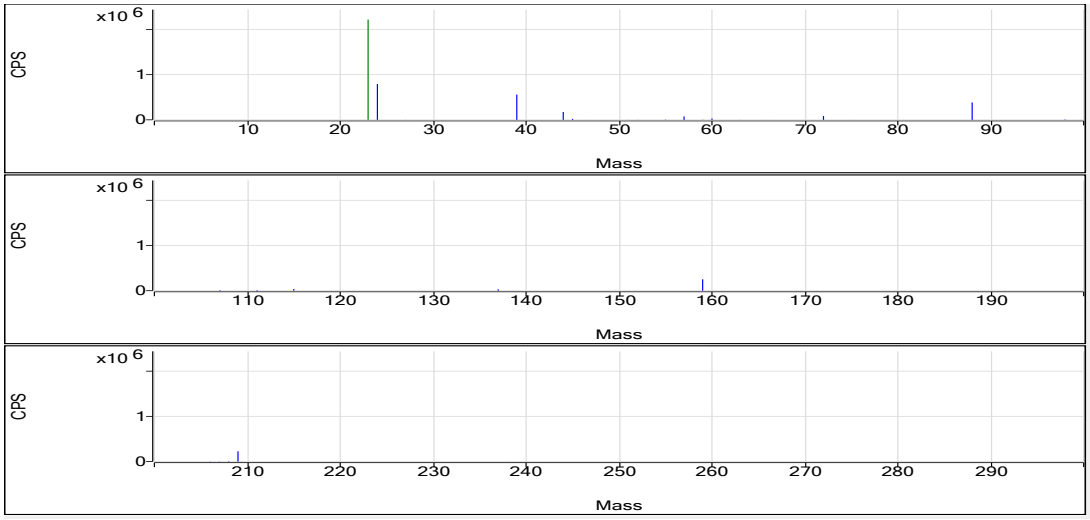


H2



Quantitation Report

He



Quantitation Report

Data File Name	124SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 2:37:51 PM
Sample Name	410-61097-N-9-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

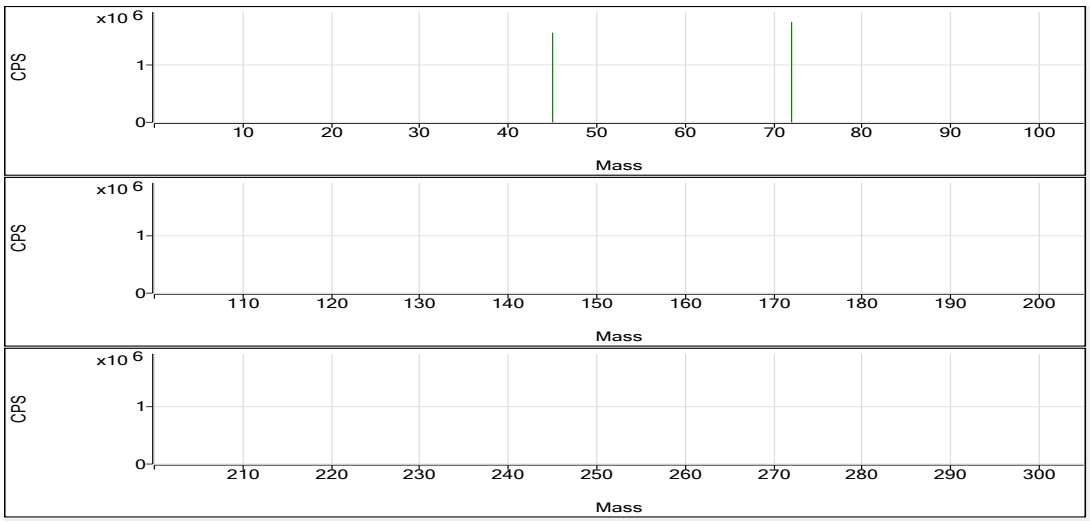
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.076	ppb	21.7	65.33	0.0000	Pulse	0.5000	3
Se	78	115	H2	2.868	ppb	13.0	115.11	0.0004	Pulse	1.5000	3
Na	23	45	He	6342.708	ppb	2.6	598604.81	29.1955	Pulse	0.1000	3
Mg	24	45	He	12313.817	ppb	2.6	555182.80	27.0779	Pulse	0.1000	3
Al	27	45	He	682.159	ppb	0.8	7678.93	0.3744	Pulse	0.1000	3
K	39	45	He	17963.860	ppb	3.2	408420.29	19.9215	Pulse	0.1000	3
Ca	44	45	He	968226.656	ppb	2.2	1264754.17	61.6796	Mix	0.1000	3
Ti	47	45	He	33.990	ppb	8.2	393.35	0.0192	Pulse	0.1000	3
V	51	45	He	0.890	ppb	14.3	744.03	0.0363	Pulse	0.5000	3
Cr	52	45	He	3.388	ppb	7.9	3350.51	0.1635	Pulse	0.1000	3
Mn	55	72	He	5.345	ppb	5.0	1516.80	0.0197	Pulse	0.1000	3
Fe	57	72	He	333.311	ppb	3.3	5124.44	0.0665	Pulse	0.1000	3
Co	59	72	He	1.047	ppb	5.6	1986.88	0.0258	Pulse	0.1000	3
Ni	60	72	He	110.449	ppb	2.4	56886.36	0.7379	Pulse	0.1000	3
Cu	63	72	He	1.488	ppb	10.6	2530.32	0.0328	Pulse	0.1000	3
Zn	66	72	He	5.247	ppb	11.3	780.04	0.0101	Pulse	0.1000	3
As	75	72	He	2.078	ppb	15.4	201.33	0.0026	Pulse	0.5000	3
Sr	88	115	He	1614.696	ppb	1.6	479927.12	12.7839	Pulse	0.1000	3
Mo	98	115	He	1.541	ppb	2.1	1853.52	0.0494	Pulse	0.1000	3
Ag	107	115	He	0.007	ppb	29.9	26.67	0.0007	Pulse	0.1000	3
Cd	111	115	He	0.005	ppb	2.5	2.00	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.040	ppb	N/A	800.06	0.0213	Pulse	0.1000	3
Sb	121	115	He	1.007	ppb	13.8	610.04	0.0162	Pulse	0.1000	3
Ba	137	115	He	978.379	ppb	2.0	192867.58	5.1376	Pulse	0.1000	3
Tl	205	209	He	0.014	ppb	16.5	150.01	0.0007	Pulse	0.1000	3
Pb	208	209	He	243.198	ppb	0.3	2517617.23	11.5845	Pulse	0.1000	3
U	238	209	He	0.046	ppb	9.6	680.04	0.0031	Pulse	0.1000	3

ISTD Table:

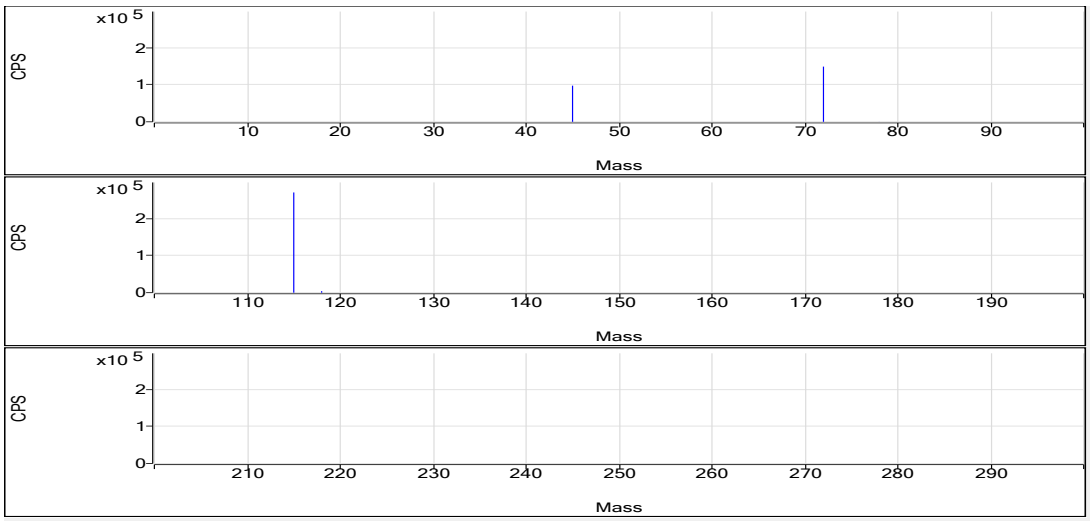
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1554458.57	2.6	95.5	Analog	0.1000	3
No Gas	Ge	72	1738133.73	0.5	92.8	Analog	0.1000	3
H2	Sc	45	97405.63	1.0	98.7	Pulse	0.1000	3
H2	Ge	72	148686.73	0.6	93.2	Pulse	0.1000	3
H2	In	115	269963.99	1.0	95.0	Pulse	0.1000	3
He	Sc	45	20511.65	2.4	97.2	Pulse	0.1000	3
He	Ge	72	77111.18	1.4	93.6	Pulse	0.1000	3
He	In	115	37548.33	1.7	100.2	Pulse	0.1000	3
He	Tb	159	250558.44	0.8	99.7	Pulse	0.1000	3
He	Bi	209	217328.74	0.5	95.5	Pulse	0.1000	3

No Gas

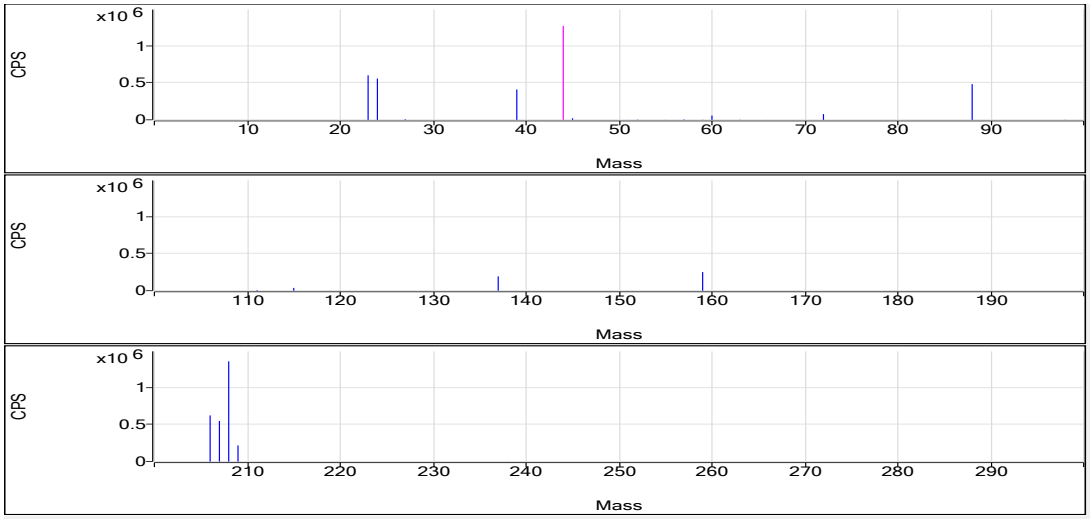


H2



Quantitation Report

He



Quantitation Report

Data File Name	125_CCV.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 2:39:54 PM
Sample Name	CCV 1942322
Sample Type	CCV
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

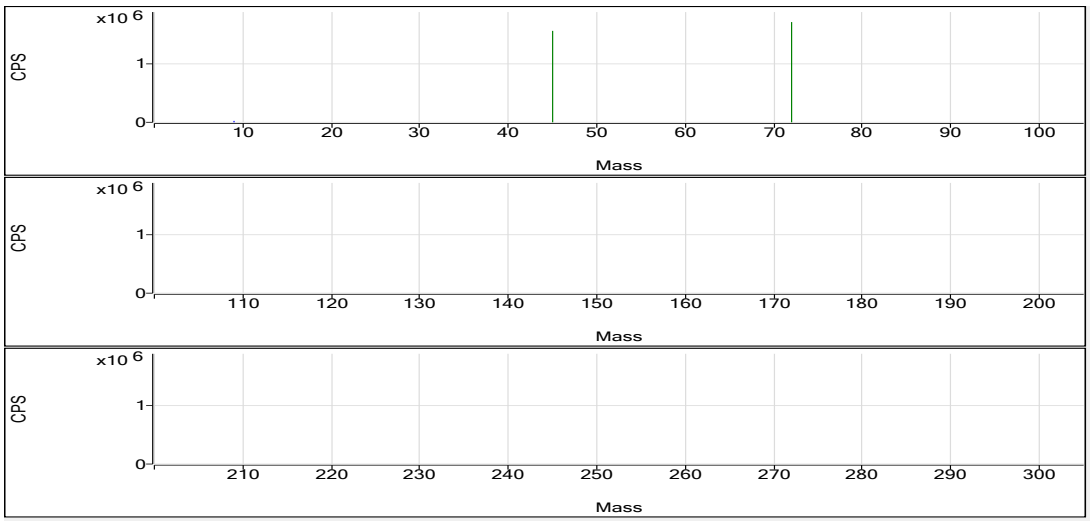
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	31.675	ppb	1.5	23940.50	0.0154	Pulse	0.5000	3
Se	78	115	H2	30.349	ppb	1.0	1250.95	0.0045	Pulse	1.5000	3
Na	23	45	He	5028.238	ppb	1.7	490000.80	23.2249	Pulse	0.1000	3
Mg	24	45	He	4946.424	ppb	2.0	229530.00	10.8795	Pulse	0.1000	3
Al	27	45	He	4950.494	ppb	0.7	57147.87	2.7083	Pulse	0.1000	3
K	39	45	He	4927.508	ppb	1.2	118897.24	5.6351	Pulse	0.1000	3
Ca	44	45	He	5335.304	ppb	7.0	7258.69	0.3443	Pulse	0.1000	3
Ti	47	45	He	285.351	ppb	2.1	3397.18	0.1610	Pulse	0.1000	3
V	51	45	He	293.643	ppb	1.8	180063.92	8.5348	Pulse	0.5000	3
Cr	52	45	He	297.833	ppb	2.0	249913.75	11.8459	Pulse	0.1000	3
Mn	55	72	He	304.591	ppb	2.1	84499.91	1.1100	Pulse	0.1000	3
Fe	57	72	He	5089.489	ppb	2.0	76295.11	1.0022	Pulse	0.1000	3
Co	59	72	He	292.174	ppb	1.0	532923.35	7.0003	Pulse	0.1000	3
Ni	60	72	He	309.526	ppb	1.2	157256.55	2.0657	Pulse	0.1000	3
Cu	63	72	He	299.934	ppb	1.7	464255.70	6.0985	Pulse	0.1000	3
Zn	66	72	He	301.008	ppb	0.7	40337.32	0.5298	Pulse	0.1000	3
As	75	72	He	305.670	ppb	1.4	26189.94	0.3440	Pulse	0.5000	3
Sr	88	115	He	30.785	ppb	2.4	9236.66	0.2445	Pulse	0.1000	3
Mo	98	115	He	30.485	ppb	2.0	36648.55	0.9700	Pulse	0.1000	3
Ag	107	115	He	30.929	ppb	0.9	91089.93	2.4112	Pulse	0.1000	3
Cd	111	115	He	30.304	ppb	0.6	7895.61	0.2090	Pulse	0.5000	3
Sn	120	115	He	30.878	ppb	3.4	22408.77	0.5931	Pulse	0.1000	3
Sb	121	115	He	31.610	ppb	2.5	18953.56	0.5017	Pulse	0.1000	3
Ba	137	115	He	311.523	ppb	0.6	61806.86	1.6360	Pulse	0.1000	3
Tl	205	209	He	30.274	ppb	1.1	250326.25	1.0880	Pulse	0.1000	3
Pb	208	209	He	30.399	ppb	1.1	333971.41	1.4516	Pulse	0.1000	3
U	238	209	He	250.654	ppb	1.5	3690896.51	16.0429	Analog	0.1000	3

ISTD Table:

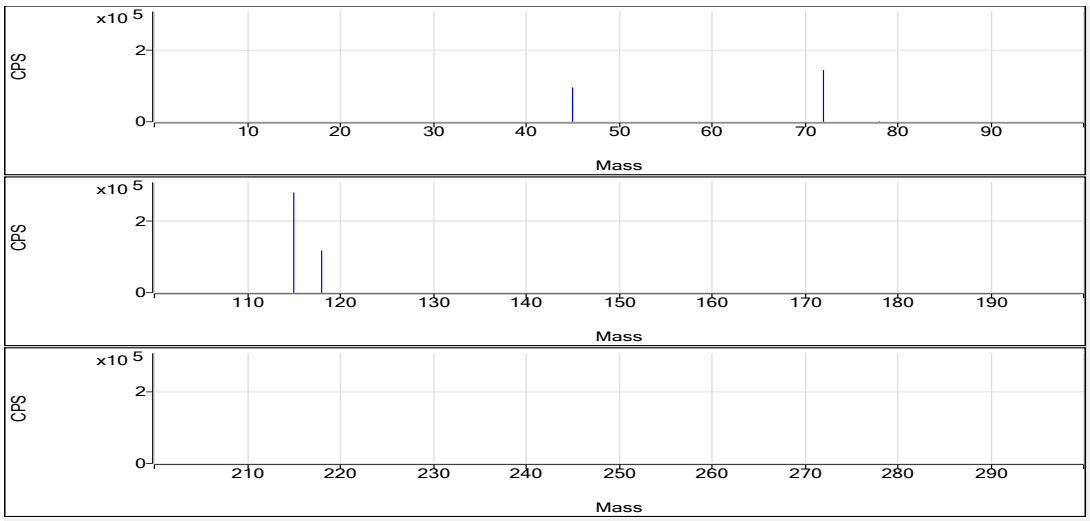
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1556764.30	0.6	95.7	Analog	0.1000	3
No Gas	Ge	72	1706280.13	0.3	91.1	Analog	0.1000	3
H2	Sc	45	95271.32	2.1	96.5	Pulse	0.1000	3
H2	Ge	72	143626.66	0.9	90.0	Pulse	0.1000	3
H2	In	115	278405.03	0.8	98.0	Pulse	0.1000	3
He	Sc	45	21102.58	2.0	100.0	Pulse	0.1000	3
He	Ge	72	76132.62	0.8	92.4	Pulse	0.1000	3
He	In	115	37778.75	0.7	100.8	Pulse	0.1000	3
He	Tb	159	251985.19	0.6	100.3	Pulse	0.1000	3
He	Bi	209	230082.91	0.8	101.1	Pulse	0.1000	3

No Gas

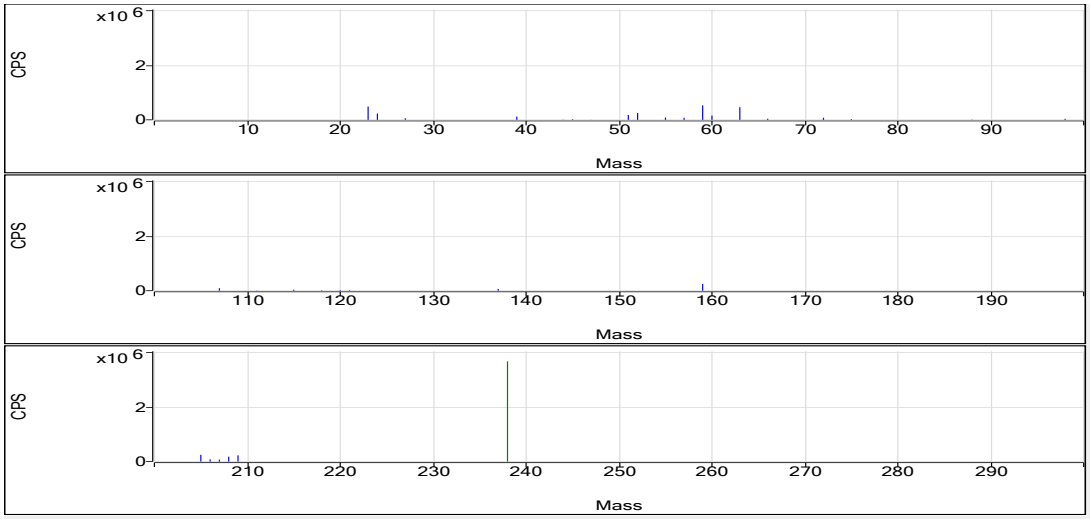


H2



Quantitation Report

He



Quantitation Report

Data File Name	126_CCB.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 2:41:55 PM
Sample Name	CCB 2014932
Sample Type	CCB
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

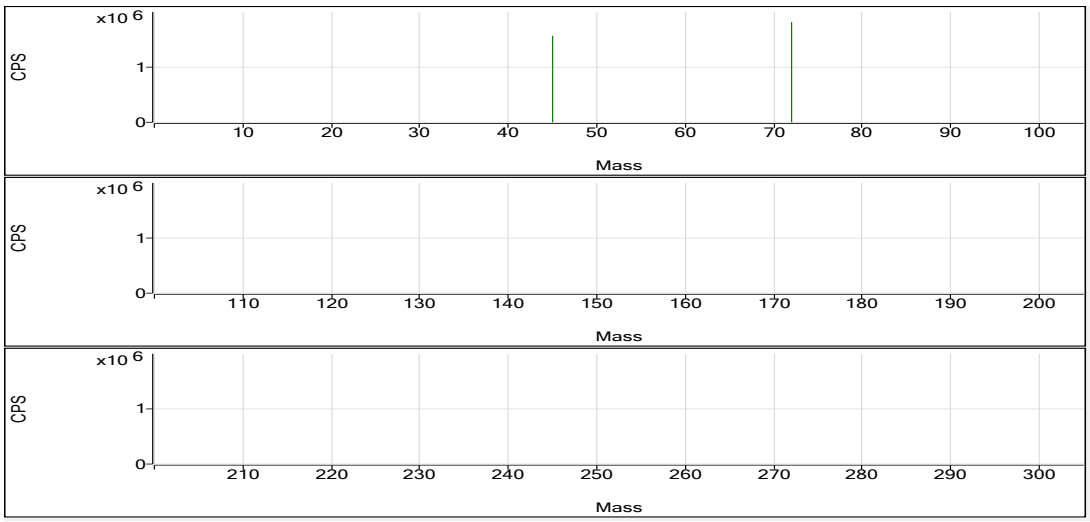
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.030	ppb	6.3	30.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.050	ppb	32.2	2.67	0.0000	Pulse	1.5000	3
Na	23	45	He	114.529	ppb	4.8	18695.74	0.9059	Pulse	0.1000	3
Mg	24	45	He	4.022	ppb	53.9	263.35	0.0128	Pulse	0.1000	3
Al	27	45	He	-0.217	ppb	N/A	26.67	0.0013	Pulse	0.1000	3
K	39	45	He	6.727	ppb	150.7	5007.71	0.2425	Pulse	0.1000	3
Ca	44	45	He	82.995	ppb	59.5	200.01	0.0097	Pulse	0.1000	3
Ti	47	45	He	0.000	ppb	N/A	0.00	0.0000	Pulse	0.1000	3
V	51	45	He	0.080	ppb	44.7	264.00	0.0128	Pulse	0.5000	3
Cr	52	45	He	0.093	ppb	60.7	676.71	0.0328	Pulse	0.1000	3
Mn	55	72	He	0.378	ppb	13.7	126.67	0.0016	Pulse	0.1000	3
Fe	57	72	He	0.125	ppb	794.1	73.33	0.0009	Pulse	0.1000	3
Co	59	72	He	0.092	ppb	41.7	233.34	0.0029	Pulse	0.1000	3
Ni	60	72	He	0.123	ppb	25.6	163.34	0.0020	Pulse	0.1000	3
Cu	63	72	He	0.087	ppb	37.8	346.68	0.0043	Pulse	0.1000	3
Zn	66	72	He	0.228	ppb	98.4	103.34	0.0013	Pulse	0.1000	3
As	75	72	He	0.443	ppb	19.5	62.00	0.0008	Pulse	0.5000	3
Sr	88	115	He	0.292	ppb	16.9	116.67	0.0031	Pulse	0.1000	3
Mo	98	115	He	0.022	ppb	74.9	40.00	0.0011	Pulse	0.1000	3
Ag	107	115	He	0.009	ppb	22.7	33.33	0.0009	Pulse	0.1000	3
Cd	111	115	He	0.008	ppb	229.2	2.67	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.042	ppb	N/A	796.72	0.0213	Pulse	0.1000	3
Sb	121	115	He	0.022	ppb	42.0	23.33	0.0006	Pulse	0.1000	3
Ba	137	115	He	0.118	ppb	65.7	33.33	0.0009	Pulse	0.1000	3
Tl	205	209	He	0.023	ppb	31.9	233.34	0.0010	Pulse	0.1000	3
Pb	208	209	He	0.018	ppb	82.9	1116.73	0.0049	Pulse	0.1000	3
U	238	209	He	0.067	ppb	17.8	1016.75	0.0045	Pulse	0.1000	3

ISTD Table:

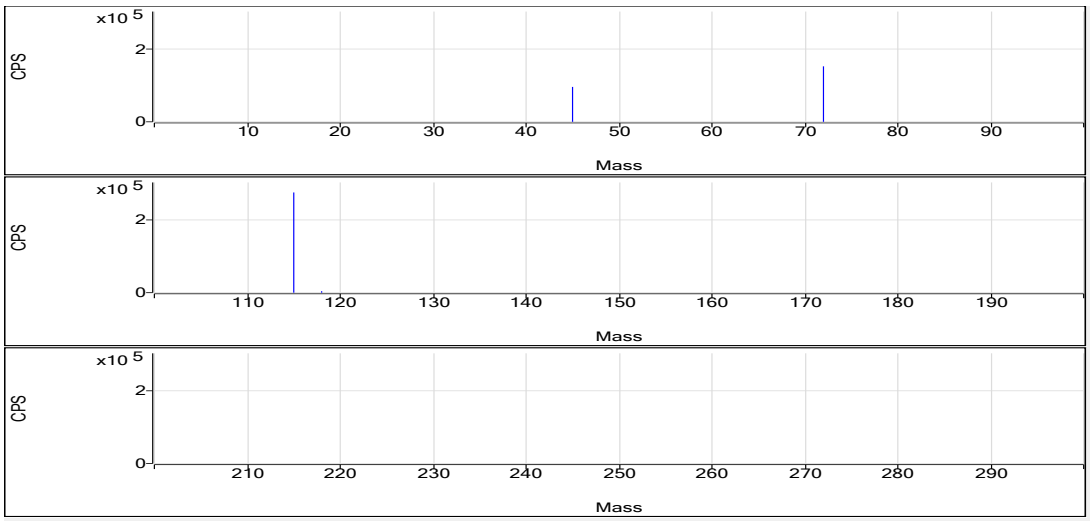
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1558547.74	1.0	95.8	Analog	0.1000	3
No Gas	Ge	72	1804877.74	0.1	96.3	Analog	0.1000	3
H2	Sc	45	95459.49	0.1	96.7	Pulse	0.1000	3
H2	Ge	72	151755.97	0.2	95.1	Pulse	0.1000	3
H2	In	115	274171.10	0.6	96.5	Pulse	0.1000	3
He	Sc	45	20641.93	1.4	97.8	Pulse	0.1000	3
He	Ge	72	80218.76	1.3	97.4	Pulse	0.1000	3
He	In	115	37427.99	0.8	99.9	Pulse	0.1000	3
He	Tb	159	248598.30	0.9	98.9	Pulse	0.1000	3
He	Bi	209	227670.58	1.6	100.1	Pulse	0.1000	3

No Gas

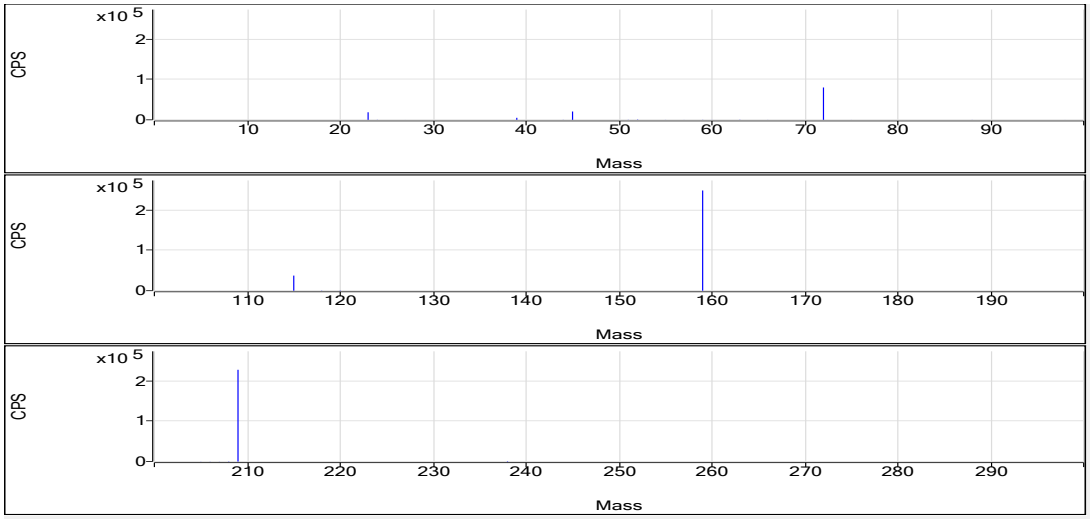


H2



Quantitation Report

He



Quantitation Report

Data File Name	127SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 2:43:57 PM
Sample Name	RINSE
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

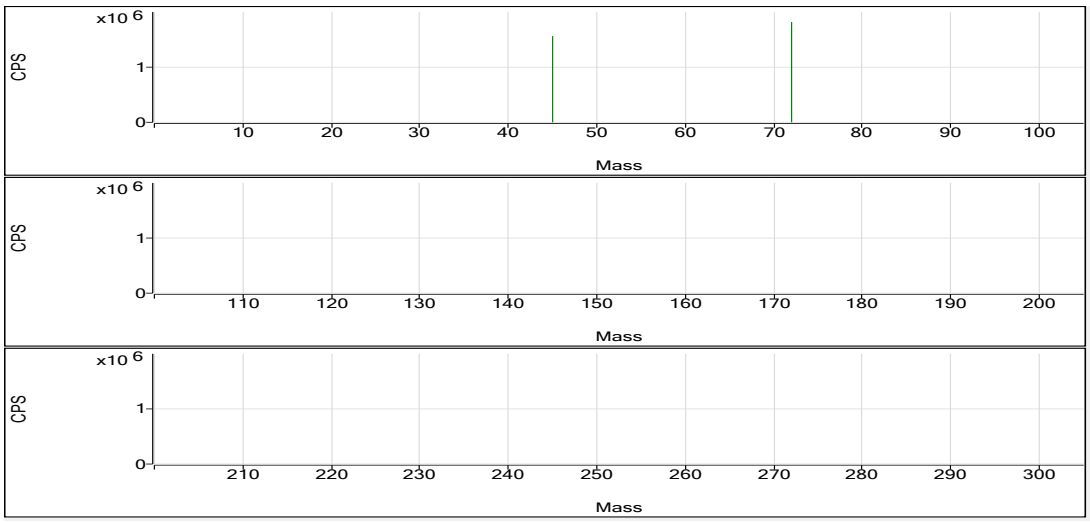
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.014	ppb	72.4	18.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.033	ppb	85.4	2.00	0.0000	Pulse	1.5000	3
Na	23	45	He	87.081	ppb	9.3	16239.43	0.7812	Pulse	0.1000	3
Mg	24	45	He	3.012	ppb	14.8	220.01	0.0106	Pulse	0.1000	3
Al	27	45	He	-0.523	ppb	N/A	23.33	0.0011	Pulse	0.1000	3
K	39	45	He	0.375	ppb	1452.8	4901.03	0.2355	Pulse	0.1000	3
Ca	44	45	He	45.716	ppb	57.2	153.34	0.0073	Pulse	0.1000	3
Ti	47	45	He	0.280	ppb	173.2	3.33	0.0002	Pulse	0.1000	3
V	51	45	He	0.012	ppb	415.0	224.67	0.0108	Pulse	0.5000	3
Cr	52	45	He	0.054	ppb	142.0	650.04	0.0312	Pulse	0.1000	3
Mn	55	72	He	0.251	ppb	21.6	90.00	0.0011	Pulse	0.1000	3
Fe	57	72	He	2.431	ppb	79.6	110.00	0.0014	Pulse	0.1000	3
Co	59	72	He	0.033	ppb	14.2	120.00	0.0015	Pulse	0.1000	3
Ni	60	72	He	0.072	ppb	78.2	136.67	0.0017	Pulse	0.1000	3
Cu	63	72	He	0.051	ppb	120.4	290.01	0.0036	Pulse	0.1000	3
Zn	66	72	He	0.176	ppb	17.6	96.67	0.0012	Pulse	0.1000	3
As	75	72	He	0.387	ppb	26.6	57.33	0.0007	Pulse	0.5000	3
Sr	88	115	He	0.178	ppb	39.2	83.33	0.0022	Pulse	0.1000	3
Mo	98	115	He	0.025	ppb	78.2	43.33	0.0012	Pulse	0.1000	3
Ag	107	115	He	0.007	ppb	29.2	26.67	0.0007	Pulse	0.1000	3
Cd	111	115	He	0.010	ppb	156.1	3.33	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.179	ppb	N/A	706.71	0.0188	Pulse	0.1000	3
Sb	121	115	He	0.028	ppb	91.9	26.67	0.0007	Pulse	0.1000	3
Ba	137	115	He	0.050	ppb	175.4	20.00	0.0005	Pulse	0.1000	3
Tl	205	209	He	0.006	ppb	66.2	93.34	0.0004	Pulse	0.1000	3
Pb	208	209	He	0.014	ppb	83.9	1073.39	0.0047	Pulse	0.1000	3
U	238	209	He	0.022	ppb	24.9	356.69	0.0016	Pulse	0.1000	3

ISTD Table:

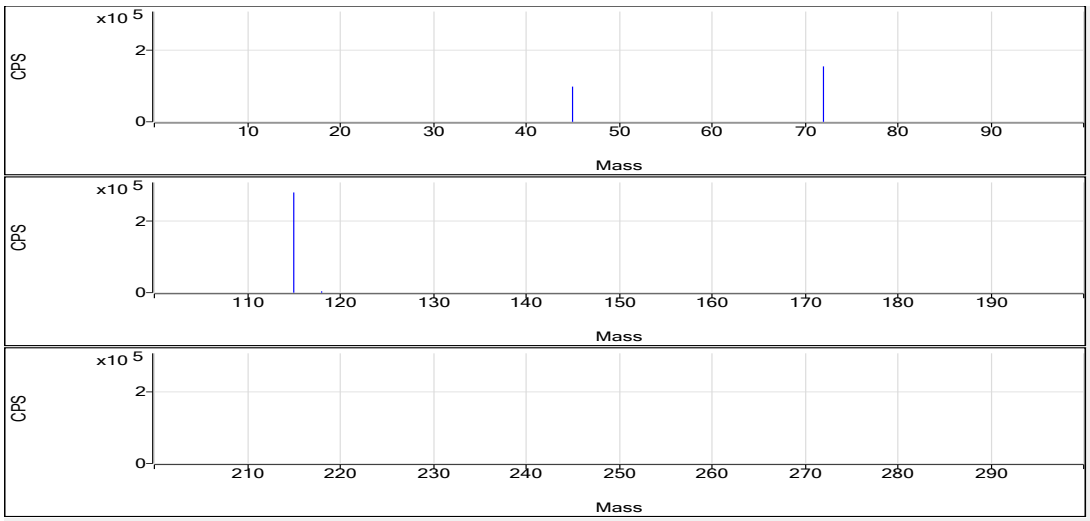
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1562271.44	1.3	96.0	Analog	0.1000	3
No Gas	Ge	72	1816740.18	0.8	97.0	Analog	0.1000	3
H2	Sc	45	97690.19	1.4	99.0	Pulse	0.1000	3
H2	Ge	72	153754.42	1.2	96.4	Pulse	0.1000	3
H2	In	115	278054.03	1.0	97.9	Pulse	0.1000	3
He	Sc	45	20801.99	2.4	98.6	Pulse	0.1000	3
He	Ge	72	80520.11	1.7	97.8	Pulse	0.1000	3
He	In	115	37658.54	0.8	100.5	Pulse	0.1000	3
He	Tb	159	248804.22	0.7	99.0	Pulse	0.1000	3
He	Bi	209	228366.12	1.0	100.4	Pulse	0.1000	3

No Gas

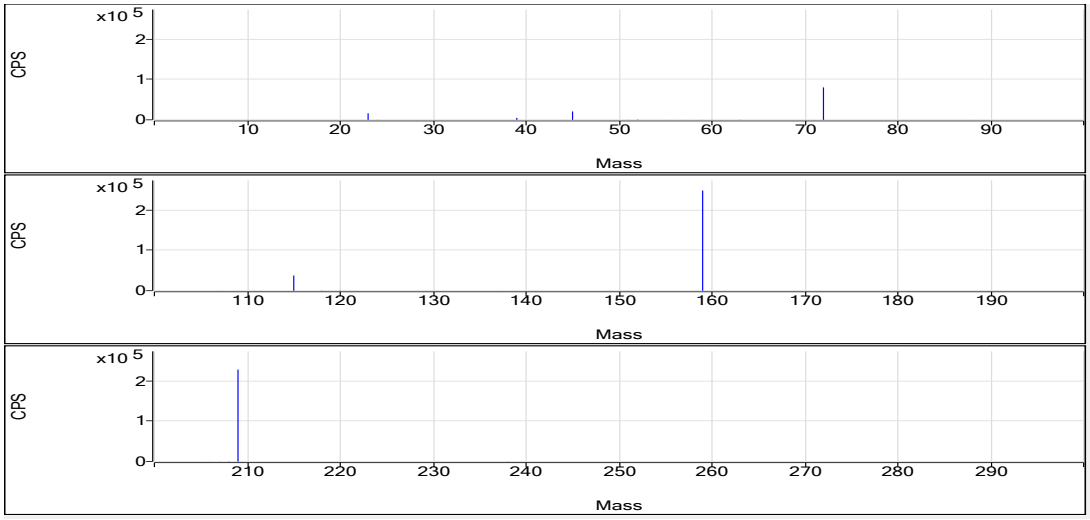


H2



Quantitation Report

He



Quantitation Report

Data File Name	128SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 2:46:00 PM
Sample Name	RINSE
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

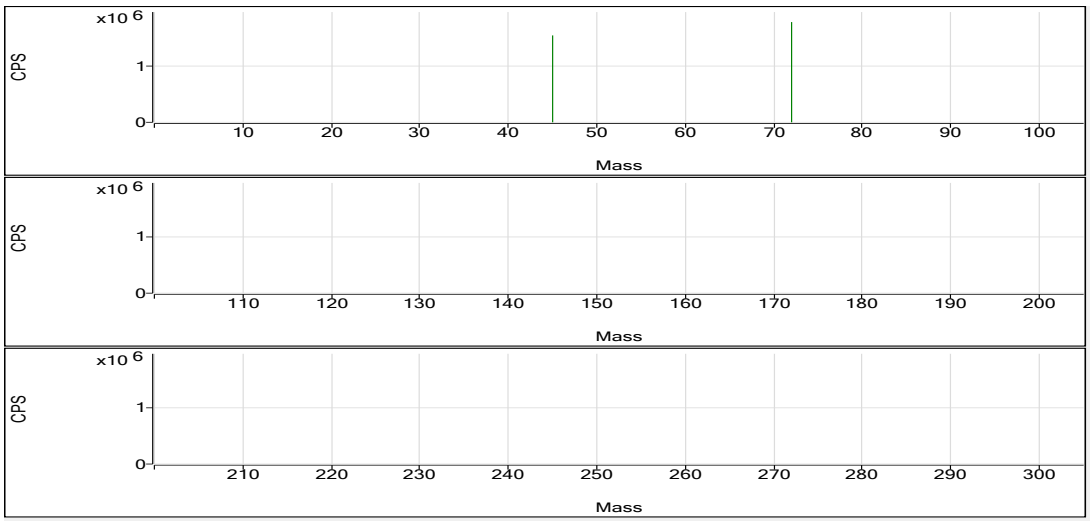
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.008	ppb	108.8	14.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	-0.005	ppb	N/A	0.45	0.0000	Pulse	1.5000	3
Na	23	45	He	77.123	ppb	2.5	15702.19	0.7360	Pulse	0.1000	3
Mg	24	45	He	1.474	ppb	37.3	153.34	0.0072	Pulse	0.1000	3
Al	27	45	He	0.278	ppb	362.3	33.33	0.0016	Pulse	0.1000	3
K	39	45	He	-9.007	ppb	N/A	4804.30	0.2253	Pulse	0.1000	3
Ca	44	45	He	30.948	ppb	8.7	136.67	0.0064	Pulse	0.1000	3
Ti	47	45	He	0.000	ppb	N/A	0.00	0.0000	Pulse	0.1000	3
V	51	45	He	0.002	ppb	317.6	224.67	0.0105	Pulse	0.5000	3
Cr	52	45	He	0.035	ppb	391.5	650.04	0.0305	Pulse	0.1000	3
Mn	55	72	He	0.403	ppb	16.6	133.34	0.0017	Pulse	0.1000	3
Fe	57	72	He	0.574	ppb	219.6	80.00	0.0010	Pulse	0.1000	3
Co	59	72	He	0.041	ppb	18.8	133.34	0.0017	Pulse	0.1000	3
Ni	60	72	He	0.069	ppb	86.9	133.34	0.0017	Pulse	0.1000	3
Cu	63	72	He	0.033	ppb	104.4	256.68	0.0032	Pulse	0.1000	3
Zn	66	72	He	0.040	ppb	196.1	76.67	0.0010	Pulse	0.1000	3
As	75	72	He	0.164	ppb	17.6	36.67	0.0005	Pulse	0.5000	3
Sr	88	115	He	0.289	ppb	49.4	116.67	0.0031	Pulse	0.1000	3
Mo	98	115	He	-0.006	ppb	N/A	6.67	0.0002	Pulse	0.1000	3
Ag	107	115	He	0.002	ppb	82.8	13.33	0.0004	Pulse	0.1000	3
Cd	111	115	He	0.000	ppb	11501.6	0.67	0.0000	Pulse	0.5000	3
Sn	120	115	He	0.012	ppb	810.3	836.72	0.0223	Pulse	0.1000	3
Sb	121	115	He	0.000	ppb	N/A	10.00	0.0003	Pulse	0.1000	3
Ba	137	115	He	0.154	ppb	69.2	40.00	0.0011	Pulse	0.1000	3
Tl	205	209	He	0.007	ppb	31.1	100.00	0.0004	Pulse	0.1000	3
Pb	208	209	He	-0.004	ppb	N/A	893.38	0.0039	Pulse	0.1000	3
U	238	209	He	0.014	ppb	55.5	243.35	0.0011	Pulse	0.1000	3

ISTD Table:

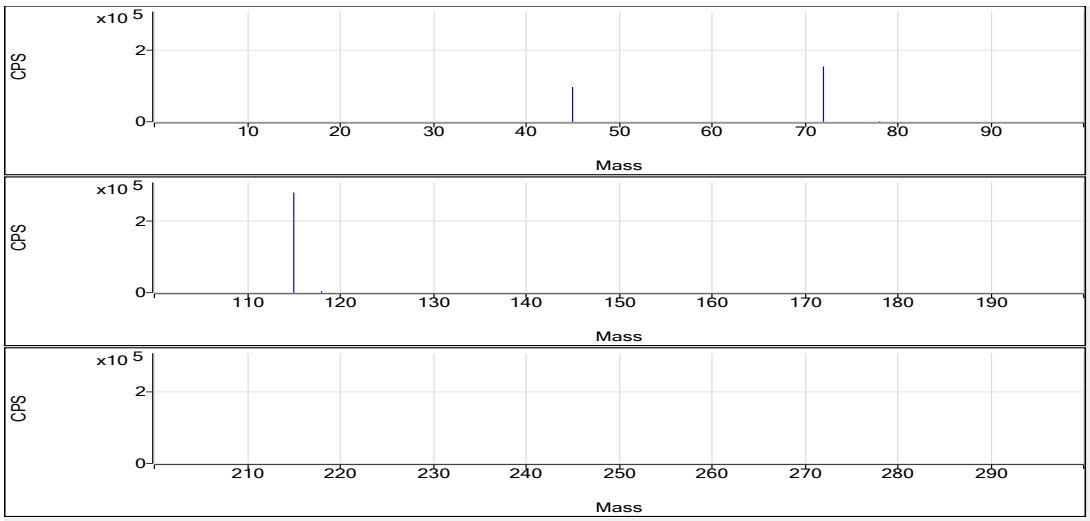
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1560138.31	1.1	95.9	Analog	0.1000	3
No Gas	Ge	72	1799715.96	0.2	96.1	Analog	0.1000	3
H2	Sc	45	96459.30	0.4	97.7	Pulse	0.1000	3
H2	Ge	72	153322.87	0.6	96.1	Pulse	0.1000	3
H2	In	115	277703.65	0.3	97.7	Pulse	0.1000	3
He	Sc	45	21336.19	1.6	101.1	Pulse	0.1000	3
He	Ge	72	79746.35	1.2	96.8	Pulse	0.1000	3
He	In	115	37498.09	2.4	100.1	Pulse	0.1000	3
He	Tb	159	248247.81	0.4	98.8	Pulse	0.1000	3
He	Bi	209	231974.14	0.4	102.0	Pulse	0.1000	3

No Gas

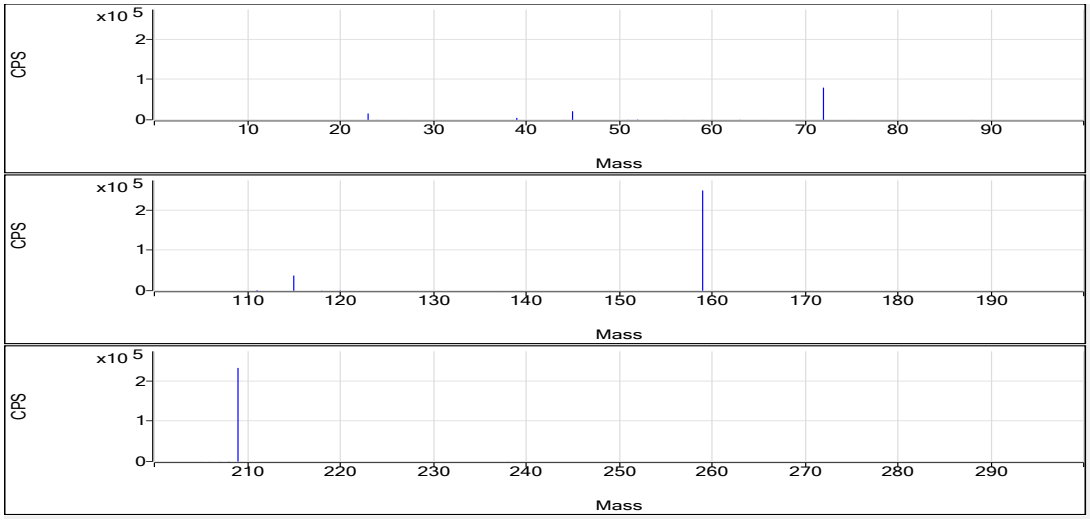


H2



Quantitation Report

He



Quantitation Report

Data File Name	129SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 2:48:01 PM
Sample Name	RINSE
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

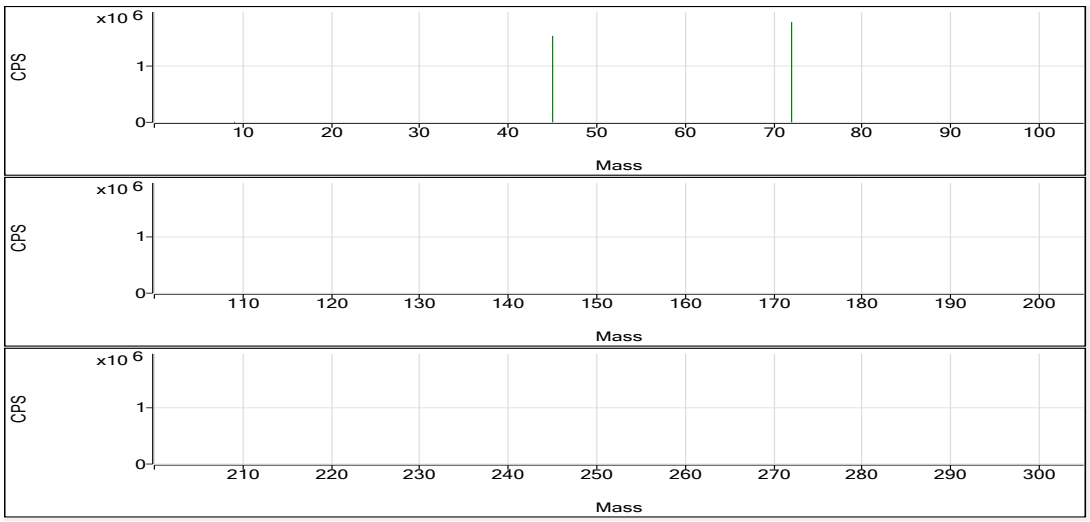
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.006	ppb	94.3	12.67	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.022	ppb	43.3	1.55	0.0000	Pulse	1.5000	3
Na	23	45	He	66.606	ppb	14.2	14217.26	0.6882	Pulse	0.1000	3
Mg	24	45	He	1.645	ppb	19.6	156.68	0.0076	Pulse	0.1000	3
Al	27	45	He	0.679	ppb	166.7	36.67	0.0018	Pulse	0.1000	3
K	39	45	He	-3.424	ppb	N/A	4780.95	0.2314	Pulse	0.1000	3
Ca	44	45	He	-6.213	ppb	N/A	83.33	0.0040	Pulse	0.1000	3
Ti	47	45	He	0.285	ppb	173.2	3.33	0.0002	Pulse	0.1000	3
V	51	45	He	-0.013	ppb	N/A	208.67	0.0101	Pulse	0.5000	3
Cr	52	45	He	0.059	ppb	34.5	650.04	0.0314	Pulse	0.1000	3
Mn	55	72	He	0.265	ppb	8.6	93.33	0.0012	Pulse	0.1000	3
Fe	57	72	He	-1.131	ppb	N/A	53.33	0.0007	Pulse	0.1000	3
Co	59	72	He	0.041	ppb	39.8	133.34	0.0017	Pulse	0.1000	3
Ni	60	72	He	0.124	ppb	67.3	163.34	0.0020	Pulse	0.1000	3
Cu	63	72	He	0.018	ppb	222.5	233.34	0.0029	Pulse	0.1000	3
Zn	66	72	He	-0.034	ppb	N/A	66.67	0.0008	Pulse	0.1000	3
As	75	72	He	0.288	ppb	32.3	48.00	0.0006	Pulse	0.5000	3
Sr	88	115	He	0.112	ppb	87.6	63.33	0.0017	Pulse	0.1000	3
Mo	98	115	He	0.012	ppb	48.9	26.67	0.0007	Pulse	0.1000	3
Ag	107	115	He	0.000	ppb	N/A	6.67	0.0002	Pulse	0.1000	3
Cd	111	115	He	0.003	ppb	331.6	1.33	0.0000	Pulse	0.5000	3
Sn	120	115	He	-0.211	ppb	N/A	676.71	0.0182	Pulse	0.1000	3
Sb	121	115	He	0.012	ppb	173.7	16.67	0.0005	Pulse	0.1000	3
Ba	137	115	He	0.052	ppb	103.0	20.00	0.0005	Pulse	0.1000	3
Tl	205	209	He	0.000	ppb	N/A	40.00	0.0002	Pulse	0.1000	3
Pb	208	209	He	-0.003	ppb	N/A	890.05	0.0039	Pulse	0.1000	3
U	238	209	He	0.004	ppb	36.5	96.67	0.0004	Pulse	0.1000	3

ISTD Table:

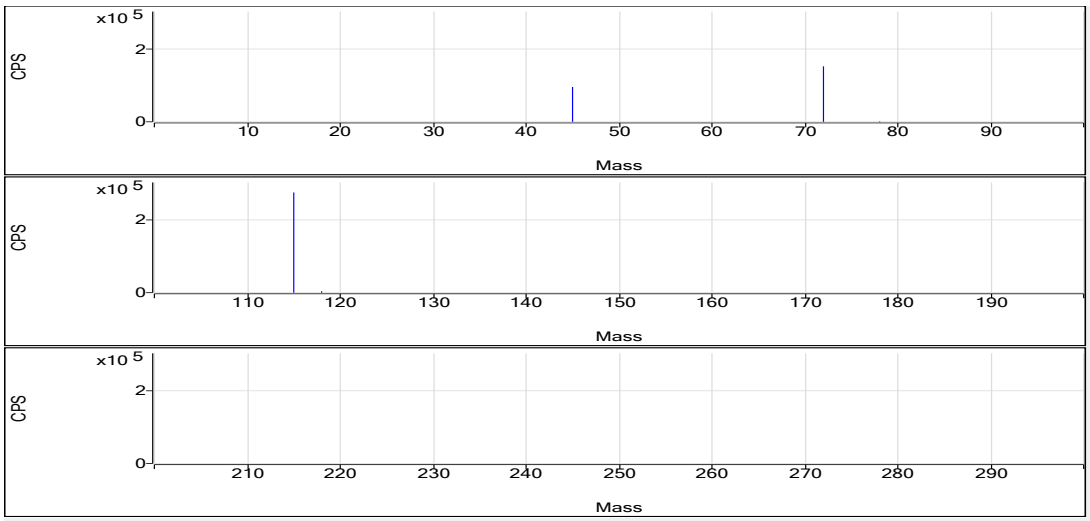
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1551704.77	0.5	95.4	Analog	0.1000	3
No Gas	Ge	72	1799177.58	0.7	96.0	Analog	0.1000	3
H2	Sc	45	95996.42	0.9	97.3	Pulse	0.1000	3
H2	Ge	72	152851.91	2.6	95.8	Pulse	0.1000	3
H2	In	115	276181.31	1.1	97.2	Pulse	0.1000	3
He	Sc	45	20685.33	3.2	98.0	Pulse	0.1000	3
He	Ge	72	79987.15	0.9	97.1	Pulse	0.1000	3
He	In	115	37197.25	3.9	99.3	Pulse	0.1000	3
He	Tb	159	247037.27	0.8	98.3	Pulse	0.1000	3
He	Bi	209	228192.39	0.5	100.3	Pulse	0.1000	3

No Gas

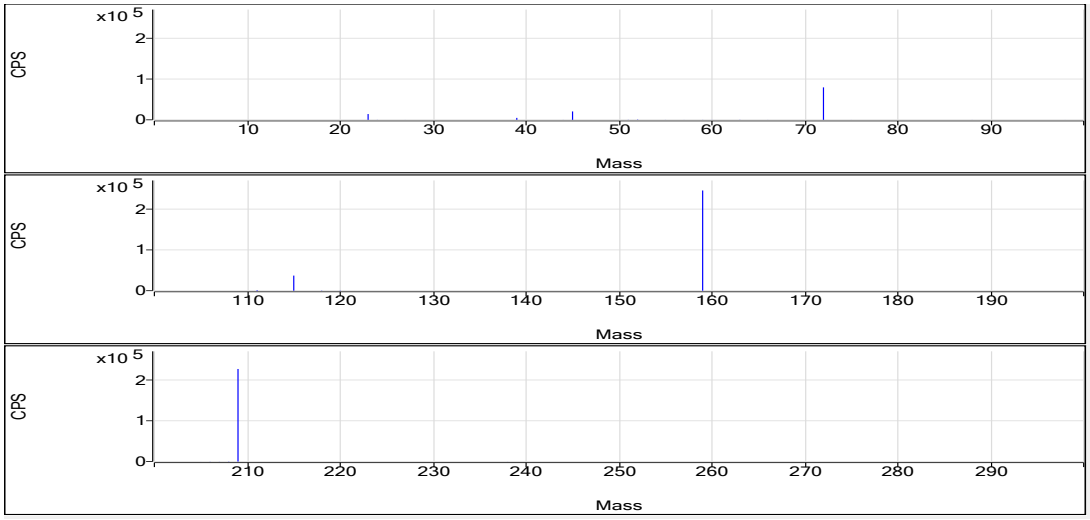


H2



Quantitation Report

He



Quantitation Report

Data File Name	130SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 2:50:02 PM
Sample Name	RINSE
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

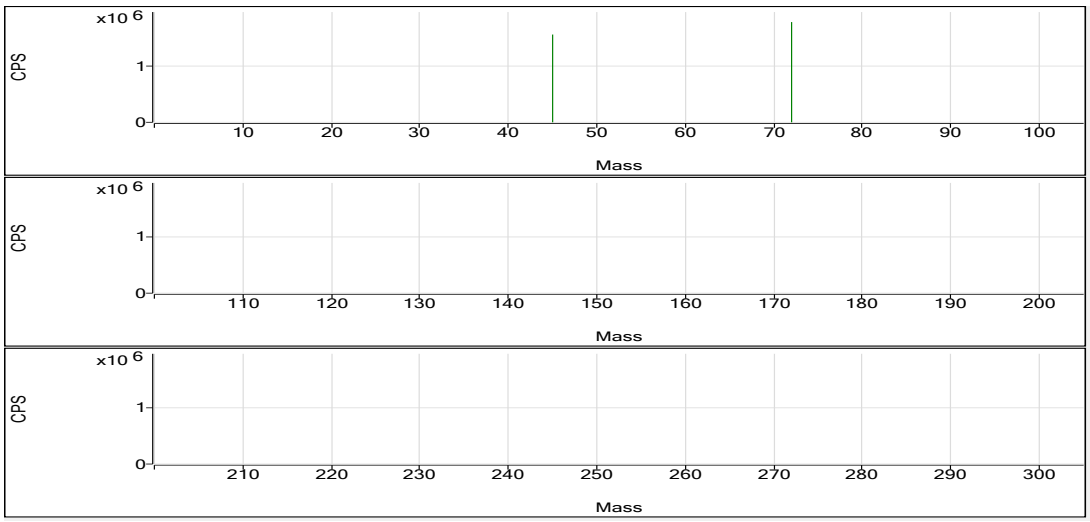
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.016	ppb	30.6	20.00	0.0000	Pulse	0.5000	3
Se	78	115	H2	0.006	ppb	152.3	0.89	0.0000	Pulse	1.5000	3
Na	23	45	He	59.996	ppb	7.7	13766.79	0.6582	Pulse	0.1000	3
Mg	24	45	He	1.096	ppb	19.1	133.33	0.0064	Pulse	0.1000	3
Al	27	45	He	0.036	ppb	2375.7	30.00	0.0014	Pulse	0.1000	3
K	39	45	He	-2.196	ppb	N/A	4870.96	0.2327	Pulse	0.1000	3
Ca	44	45	He	-9.570	ppb	N/A	80.00	0.0038	Pulse	0.1000	3
Ti	47	45	He	0.566	ppb	86.6	6.67	0.0003	Pulse	0.1000	3
V	51	45	He	-0.011	ppb	N/A	212.00	0.0101	Pulse	0.5000	3
Cr	52	45	He	0.094	ppb	95.2	686.71	0.0328	Pulse	0.1000	3
Mn	55	72	He	0.195	ppb	44.8	73.33	0.0009	Pulse	0.1000	3
Fe	57	72	He	-1.144	ppb	N/A	53.33	0.0007	Pulse	0.1000	3
Co	59	72	He	0.016	ppb	44.7	86.67	0.0011	Pulse	0.1000	3
Ni	60	72	He	0.098	ppb	51.4	150.01	0.0019	Pulse	0.1000	3
Cu	63	72	He	0.042	ppb	168.5	273.35	0.0034	Pulse	0.1000	3
Zn	66	72	He	0.130	ppb	49.9	90.00	0.0011	Pulse	0.1000	3
As	75	72	He	0.243	ppb	27.3	44.00	0.0005	Pulse	0.5000	3
Sr	88	115	He	0.124	ppb	63.9	66.67	0.0018	Pulse	0.1000	3
Mo	98	115	He	-0.003	ppb	N/A	10.00	0.0003	Pulse	0.1000	3
Ag	107	115	He	0.002	ppb	173.6	13.33	0.0004	Pulse	0.1000	3
Cd	111	115	He	-0.003	ppb	N/A	0.00	0.0000	Pulse	0.5000	3
Sn	120	115	He	-0.125	ppb	N/A	740.05	0.0198	Pulse	0.1000	3
Sb	121	115	He	-0.006	ppb	N/A	6.67	0.0002	Pulse	0.1000	3
Ba	137	115	He	0.000	ppb	N/A	10.00	0.0003	Pulse	0.1000	3
Tl	205	209	He	0.002	ppb	58.1	63.33	0.0003	Pulse	0.1000	3
Pb	208	209	He	0.005	ppb	114.1	976.71	0.0043	Pulse	0.1000	3
U	238	209	He	0.004	ppb	76.4	100.01	0.0004	Pulse	0.1000	3

ISTD Table:

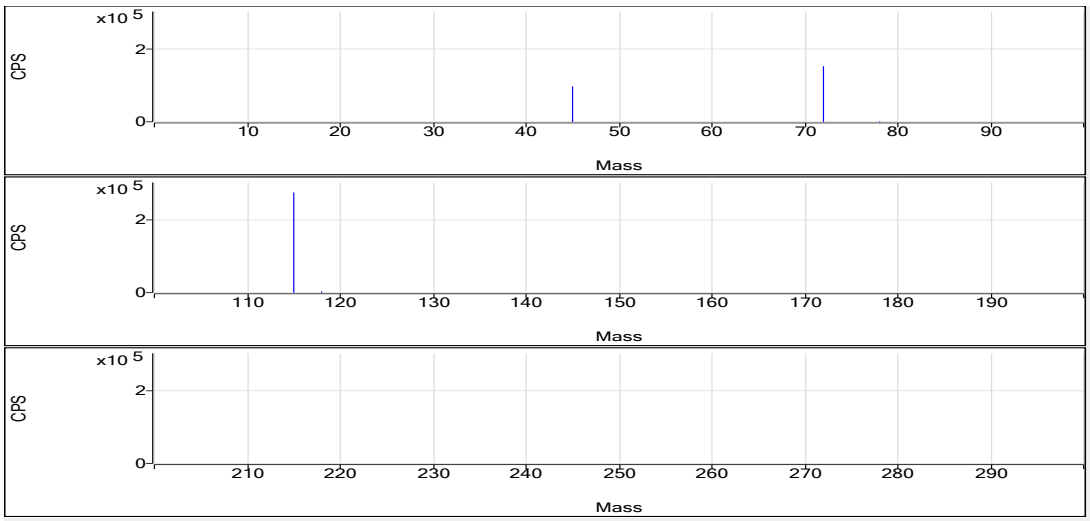
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1550997.74	1.4	95.3	Analog	0.1000	3
No Gas	Ge	72	1771298.52	1.1	94.5	Analog	0.1000	3
H2	Sc	45	96864.97	0.5	98.1	Pulse	0.1000	3
H2	Ge	72	152012.68	1.8	95.3	Pulse	0.1000	3
H2	In	115	274162.83	1.5	96.5	Pulse	0.1000	3
He	Sc	45	20922.33	1.6	99.1	Pulse	0.1000	3
He	Ge	72	80386.00	1.6	97.6	Pulse	0.1000	3
He	In	115	37421.00	1.0	99.9	Pulse	0.1000	3
He	Tb	159	248467.57	0.6	98.9	Pulse	0.1000	3
He	Bi	209	227372.54	0.6	99.9	Pulse	0.1000	3

No Gas

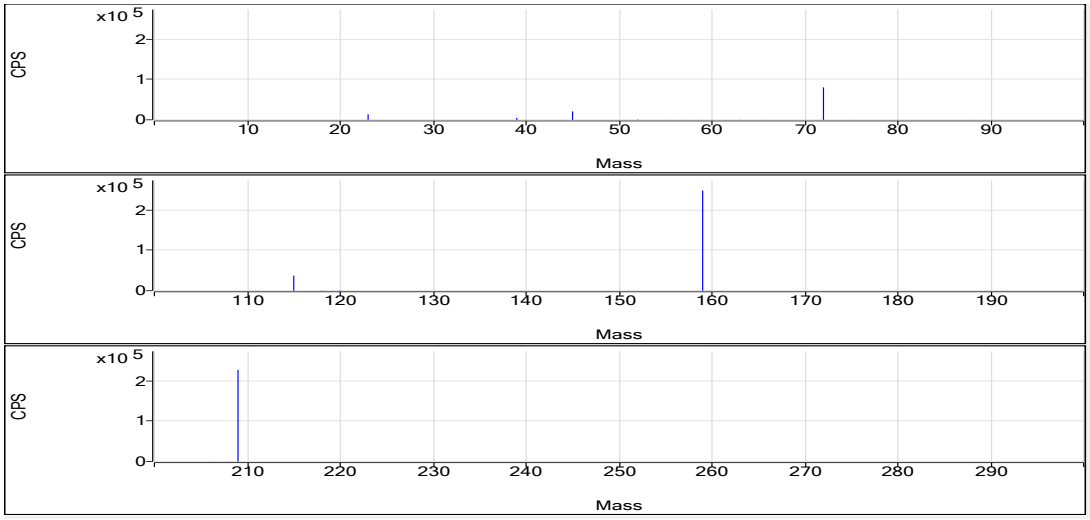


H2



Quantitation Report

He



Quantitation Report

Data File Name	131_LLC.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K04A00.b
Acq Time	11/4/2021 2:52:06 PM
Sample Name	CRI 2020343
Sample Type	CRI
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/4/2021 10:43:26 AM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

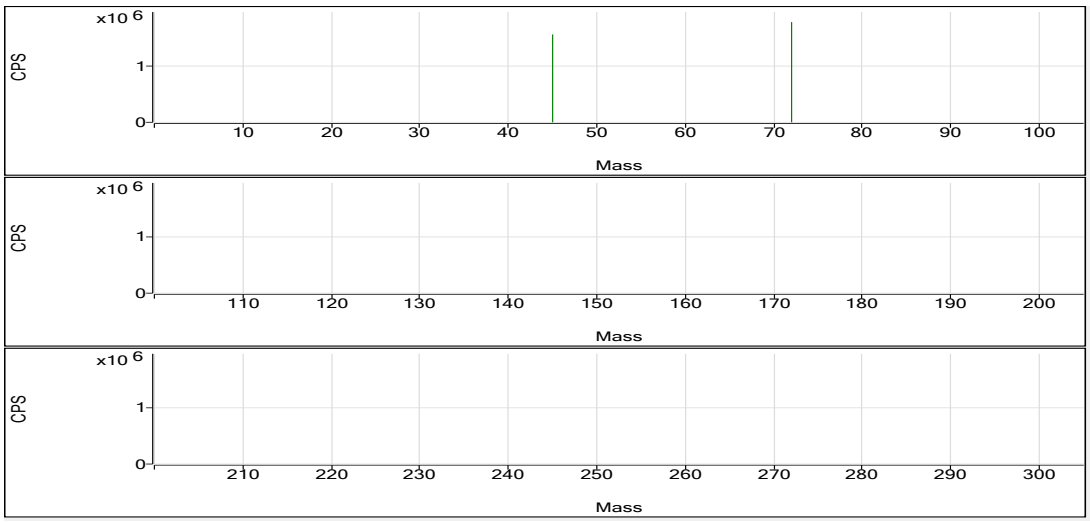
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.490	ppb	11.5	378.68	0.0002	Pulse	0.5000	3
Se	78	115	H2	0.928	ppb	17.8	38.67	0.0001	Pulse	1.5000	3
Na	23	45	He	254.416	ppb	4.2	31898.48	1.5413	Pulse	0.1000	3
Mg	24	45	He	46.932	ppb	5.6	2216.91	0.1071	Pulse	0.1000	3
Al	27	45	He	22.194	ppb	28.6	280.01	0.0135	Pulse	0.1000	3
K	39	45	He	198.090	ppb	6.8	9356.63	0.4522	Pulse	0.1000	3
Ca	44	45	He	110.180	ppb	28.1	236.68	0.0115	Pulse	0.1000	3
Ti	47	45	He	8.802	ppb	63.5	103.34	0.0050	Pulse	0.1000	3
V	51	45	He	2.000	ppb	2.7	1418.08	0.0685	Pulse	0.5000	3
Cr	52	45	He	2.163	ppb	7.2	2376.95	0.1149	Pulse	0.1000	3
Mn	55	72	He	2.121	ppb	14.6	633.37	0.0079	Pulse	0.1000	3
Fe	57	72	He	49.807	ppb	10.0	853.39	0.0107	Pulse	0.1000	3
Co	59	72	He	0.516	ppb	9.6	1040.07	0.0131	Pulse	0.1000	3
Ni	60	72	He	1.096	ppb	4.6	680.04	0.0085	Pulse	0.1000	3
Cu	63	72	He	0.954	ppb	3.6	1750.16	0.0220	Pulse	0.1000	3
Zn	66	72	He	9.421	ppb	9.8	1390.11	0.0174	Pulse	0.1000	3
As	75	72	He	2.171	ppb	12.3	216.67	0.0027	Pulse	0.5000	3
Sr	88	115	He	1.077	ppb	30.6	353.35	0.0093	Pulse	0.1000	3
Mo	98	115	He	0.473	ppb	25.0	583.36	0.0154	Pulse	0.1000	3
Ag	107	115	He	0.478	ppb	11.0	1416.80	0.0374	Pulse	0.1000	3
Cd	111	115	He	0.493	ppb	13.5	129.33	0.0034	Pulse	0.5000	3
Sn	120	115	He	1.861	ppb	19.1	2136.90	0.0565	Pulse	0.1000	3
Sb	121	115	He	0.994	ppb	11.5	606.70	0.0160	Pulse	0.1000	3
Ba	137	115	He	2.096	ppb	7.0	426.70	0.0113	Pulse	0.1000	3
Tl	205	209	He	0.485	ppb	4.6	4020.77	0.0176	Pulse	0.1000	3
Pb	208	209	He	0.490	ppb	6.5	6240.83	0.0274	Pulse	0.1000	3
U	238	209	He	0.921	ppb	3.7	13470.89	0.0591	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1558103.62	1.3	95.7	Analog	0.1000	3
No Gas	Ge	72	1777267.27	0.7	94.9	Analog	0.1000	3
H2	Sc	45	96784.95	1.1	98.1	Pulse	0.1000	3
H2	Ge	72	151651.80	1.0	95.1	Pulse	0.1000	3
H2	In	115	276945.38	0.3	97.5	Pulse	0.1000	3
He	Sc	45	20698.67	1.8	98.1	Pulse	0.1000	3
He	Ge	72	79745.99	1.9	96.8	Pulse	0.1000	3
He	In	115	37835.60	0.6	101.0	Pulse	0.1000	3
He	Tb	159	247818.10	0.9	98.6	Pulse	0.1000	3
He	Bi	209	227963.17	0.4	100.2	Pulse	0.1000	3

No Gas



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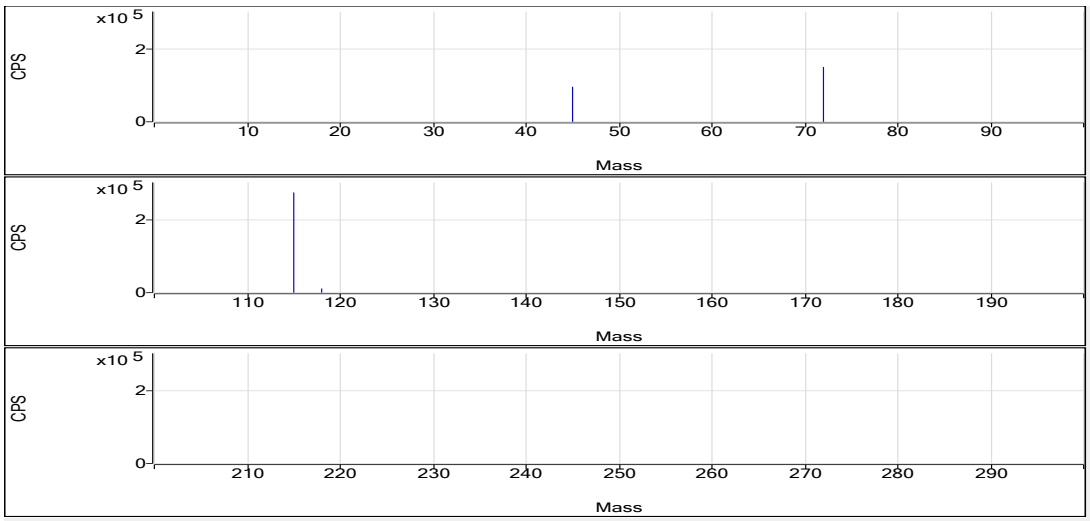
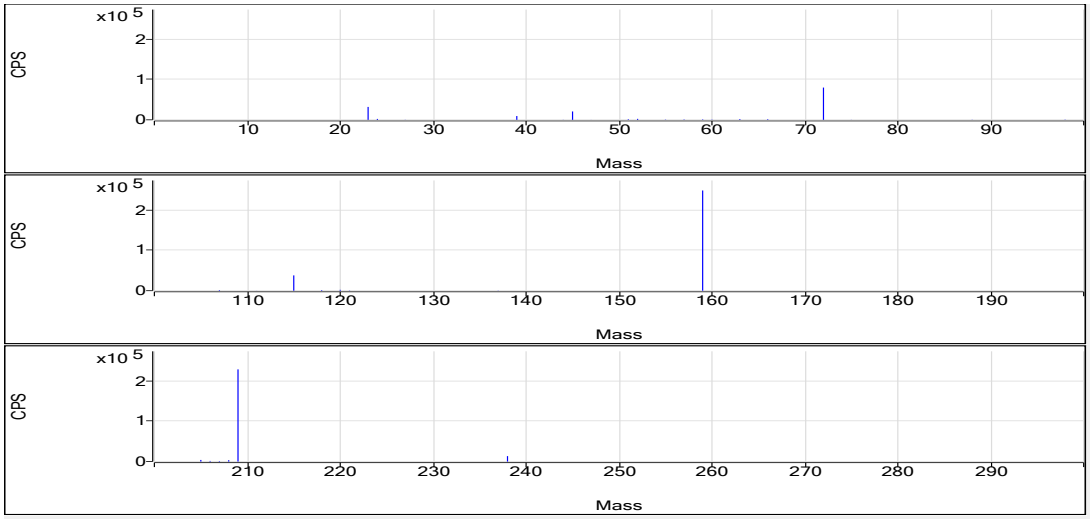


Quantitation Report

He



US EPA Tune Check Report

Operator Name	us19_usr_ins22323
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\~ICPMS.b
Acq. Date-Time	11/4/2021 9:11:04 AM
Report Comment	E09 Tune Report
Instrument Name	G8403A SG20064740

[No Gas]

Sensitivity

Mass	Conc. [ug/l]	Count	CPS	Resp (Required) [cps/ug/l]	Resp (Flag)	RSD%	RSD% (Required)
9	10.00	3343	33428.82			0.459	5.000
24	10.00	15761	157613.03			0.181	5.000
25	10.00	2156	21557.75			0.467	5.000
26	10.00	2554	25538.75			0.168	5.000
59	10.00	32024	320239.86			0.276	5.000
115	10.00	65066	650658.64			0.430	5.000
206	10.00	17452	174518.94			0.568	5.000
207	10.00	15559	155589.72			0.682	5.000
208	10.00	37085	370849.46			0.768	5.000

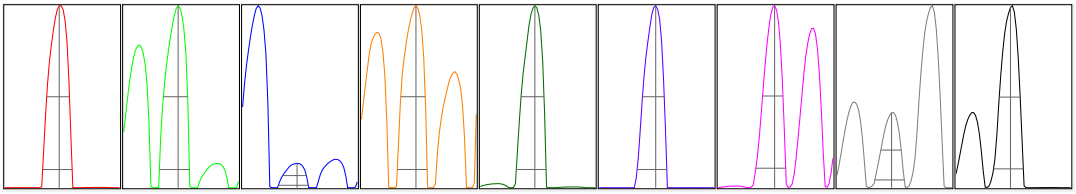
Mass	RSD% (Flag)
9	
24	
25	
26	
59	
115	
206	
207	
208	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
9	3349	3333	3323	3347	3363
24	15759	15740	15753	15743	15811
25	2161	2158	2142	2150	2168
26	2547	2554	2558	2556	2555
59	31965	31933	31985	32108	32129
115	64583	65158	65106	65178	65305
206	17342	17359	17477	17506	17575
207	15411	15537	15669	15523	15655
208	36686	36896	37226	37239	37377

Integration Time [sec] 0.1

Resolution/Axis

US EPA Tune Check Report



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
9	6013.78	8.95	8.90 - 9.10	
24	27904.36	23.95	23.90 - 24.10	
25	3728.84	24.95	24.90 - 25.10	
26	4367.45	25.95	25.90 - 26.10	
59	58565.96	58.95	58.90 - 59.10	
115	122060.52	115.00	114.90 - 115.10	
206	33724.59	206.00	205.90 - 206.10	
207	29470.46	206.95	206.90 - 207.10	
208	70901.03	207.95	207.90 - 208.10	

Mass	W-50%	W-10%	W-10% (Required)	W-10% (Flag)
9	0.59	0.759	0.900	
24	0.62	0.772	0.900	
25	0.61	0.768	0.900	
26	0.63	0.769	0.900	
59	0.59	0.765	0.900	
115	0.56	0.763	0.900	
206	0.52	0.768	0.900	
207	0.52	0.758	0.900	
208	0.54	0.766	0.900	

Integration Time [sec]	0.1
Acquisition Time [sec]	235
Y Axis	Linear

Tune Parameters

Plasma Parameters

Plasma Mode	General Purpose	Nebulizer Gas	1.06 L/min	Makeup Gas	0.00 L/min
RF Power	1550 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	0.90 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	10.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	9.3 V	Deflect	15.2 V
Extract 2	-215.0 V	Cell Entrance	-30 V	Plate Bias	-35 V
Omega Bias	-90 V	Cell Exit	-50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.5 V

US EPA Tune Check Report

He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	150 V		

QP Parameters

Mass Gain	130	Axis Gain	1.0003	QP Bias	-2.5 V
Mass Offset	124	Axis Offset	-0.02		

Hardware Settings

Torch

Torch H	-1.1 mm	Torch V	-0.4 mm		

EM

Discriminator	3.9 mV	Analog HV	2150 V	Pulse HV	1291 V

Quantitation Report

Data File Name	012CALB.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 9:47:00 AM
Sample Name	ICIS 2014932
Sample Type	CalBlk
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

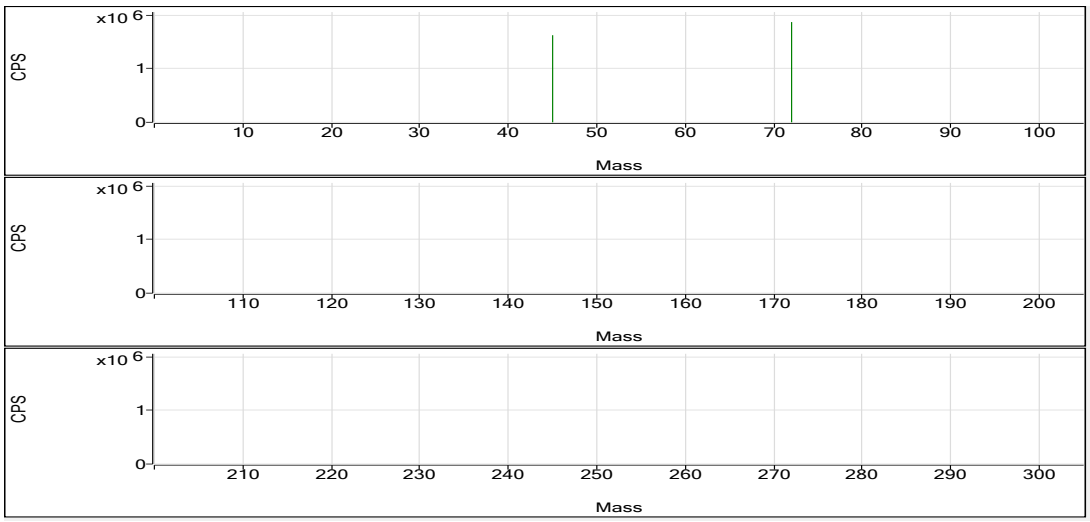
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.000	ppb	N/A	32.00	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.000	ppb	N/A	1.11	0.0000	Pulse	1.5000	3
Na	23	45	He	0.000	ppb	N/A	8696.19	0.4073	Pulse	0.1000	3
Mg	24	45	He	0.000	ppb	N/A	93.33	0.0044	Pulse	0.1000	3
Al	27	45	He	0.000	ppb	N/A	30.00	0.0014	Pulse	0.1000	3
K	39	45	He	0.000	ppb	N/A	4640.87	0.2174	Pulse	0.1000	3
Ca	44	45	He	0.000	ppb	N/A	70.00	0.0033	Pulse	0.1000	3
Ti	47	45	He	0.000	ppb	N/A	0.00	0.0000	Pulse	0.1000	3
V	51	45	He	0.000	ppb	N/A	247.33	0.0116	Pulse	0.5000	3
Cr	52	45	He	0.000	ppb	N/A	670.04	0.0314	Pulse	0.1000	3
Mn	55	45	He	0.000	ppb	N/A	46.67	0.0022	Pulse	0.1000	3
Fe	57	45	He	0.000	ppb	N/A	53.33	0.0025	Pulse	0.1000	3
Co	59	45	He	0.000	ppb	N/A	90.00	0.0042	Pulse	0.1000	3
Ni	60	72	He	0.000	ppb	N/A	106.67	0.0013	Pulse	0.1000	3
Cu	63	72	He	0.000	ppb	N/A	273.34	0.0034	Pulse	0.1000	3
Zn	66	72	He	0.000	ppb	N/A	63.33	0.0008	Pulse	0.1000	3
As	75	72	He	0.000	ppb	N/A	35.33	0.0004	Pulse	0.5000	3
Sr	88	72	He	0.000	ppb	N/A	36.67	0.0005	Pulse	0.1000	3
Mo	98	72	He	0.000	ppb	N/A	26.67	0.0003	Pulse	0.1000	3
Ag	107	115	He	0.000	ppb	N/A	20.00	0.0005	Pulse	0.1000	3
Cd	111	115	He	0.000	ppb	N/A	2.00	0.0001	Pulse	0.5000	3
Sn	120	115	He	0.000	ppb	N/A	736.71	0.0202	Pulse	0.1000	3
Sb	121	115	He	0.000	ppb	N/A	26.67	0.0007	Pulse	0.1000	3
Ba	137	115	He	0.000	ppb	N/A	0.00	0.0000	Pulse	0.1000	3
Tl	205	209	He	0.000	ppb	N/A	76.67	0.0003	Pulse	0.1000	3
Pb	208	209	He	0.000	ppb	N/A	870.05	0.0039	Pulse	0.1000	3
U	238	209	He	0.000	ppb	N/A	53.33	0.0002	Pulse	0.1000	3

ISTD Table:

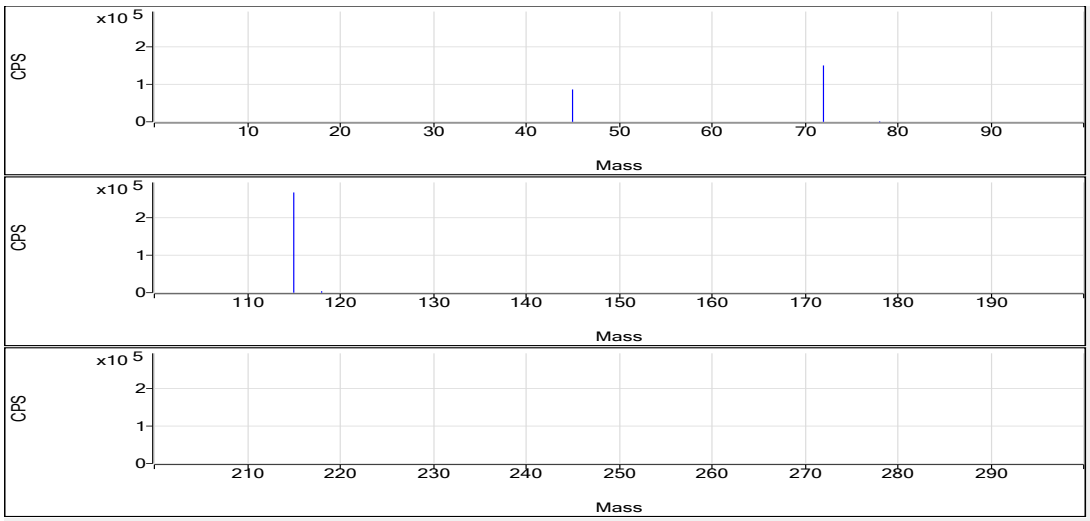
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1627449.04	0.5	100.0	Analog	0.1000	3
No Gas	Ge	72	1872926.53	1.2	100.0	Analog	0.1000	3
H2	Sc	45	86899.40	0.5	100.0	Pulse	0.1000	3
H2	Ge	72	151378.60	1.3	100.0	Pulse	0.1000	3
H2	In	115	269193.68	0.9	100.0	Pulse	0.1000	3
He	Sc	45	21346.24	1.2	100.0	Pulse	0.1000	3
He	Ge	72	80493.20	1.9	100.0	Pulse	0.1000	3
He	In	115	36458.80	2.0	100.0	Pulse	0.1000	3
He	Tb	159	245016.58	0.9	100.0	Pulse	0.1000	3
He	Bi	209	220975.36	0.7	100.0	Pulse	0.1000	3

No Gas

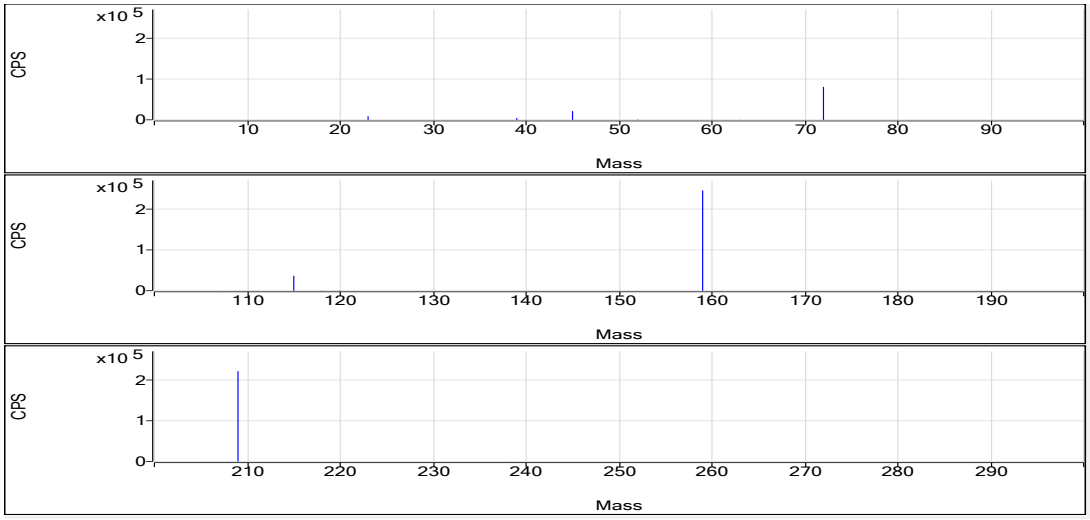


H2



Quantitation Report

He



Quantitation Report

Data File Name	013CALS.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 9:49:04 AM
Sample Name	STD1 1990993
Sample Type	CalStd
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

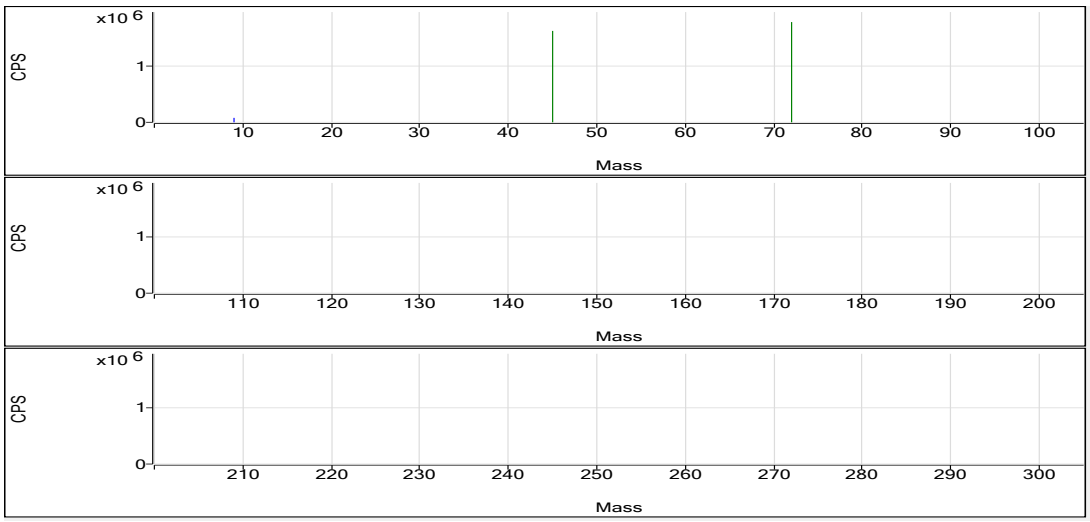
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	100.000	ppb	0.3	79499.76	0.0485	Pulse	0.5000	3
Se	78	72	H2	100.000	ppb	0.9	3944.11	0.0276	Pulse	1.5000	3
Na	23	45	He	10000.000	ppb	6.9	1033686.55	48.3175	Mix	0.1000	3
Mg	24	45	He	10000.000	ppb	3.2	474377.56	22.1790	Pulse	0.1000	3
Al	27	45	He	10000.000	ppb	4.7	117445.10	5.4931	Pulse	0.1000	3
K	39	45	He	10000.000	ppb	4.3	235663.75	11.0209	Pulse	0.1000	3
Ca	44	45	He	10000.000	ppb	8.3	13947.16	0.6529	Pulse	0.1000	3
Ti	47	45	He	1000.000	ppb	1.6	11952.02	0.5585	Pulse	0.1000	3
V	51	45	He	1000.000	ppb	3.9	618940.54	28.9431	Pulse	0.5000	3
Cr	52	45	He	1000.000	ppb	3.5	846017.20	39.5574	Pulse	0.1000	3
Mn	55	45	He	1000.000	ppb	4.2	288354.55	13.4851	Pulse	0.1000	3
Fe	57	45	He	10000.000	ppb	3.5	155457.44	7.2686	Pulse	0.1000	3
Co	59	45	He	1000.000	ppb	4.1	1886602.00	88.2248	Analog	0.1000	3
Ni	60	72	He	1000.000	ppb	2.4	525967.15	6.6907	Pulse	0.1000	3
Cu	63	72	He	1000.000	ppb	2.8	1601159.56	20.3694	Analog	0.1000	3
Zn	66	72	He	1000.000	ppb	2.3	135717.26	1.7264	Pulse	0.1000	3
As	75	72	He	1000.000	ppb	3.1	88574.39	1.1269	Pulse	0.5000	3
Sr	88	72	He	100.000	ppb	3.6	30567.18	0.3886	Pulse	0.1000	3
Mo	98	72	He	100.000	ppb	4.5	121091.65	1.5410	Pulse	0.1000	3
Ag	107	115	He	100.000	ppb	3.4	293232.70	7.6680	Pulse	0.1000	3
Cd	111	115	He	100.000	ppb	3.5	26230.60	0.6860	Pulse	0.5000	3
Sn	120	115	He	100.000	ppb	3.1	70630.66	1.8466	Pulse	0.1000	3
Sb	121	115	He	100.000	ppb	2.6	60543.31	1.5829	Pulse	0.1000	3
Ba	137	115	He	1000.000	ppb	1.3	199165.54	5.2066	Pulse	0.1000	3
Tl	205	209	He	100.000	ppb	1.7	809387.75	3.6122	Pulse	0.1000	3
Pb	208	209	He	100.000	ppb	1.1	1085502.93	4.8427	Pulse	0.1000	3
U	238	209	He	500.000	ppb	1.5	7136212.81	31.8465	Analog	0.1000	3

ISTD Table:

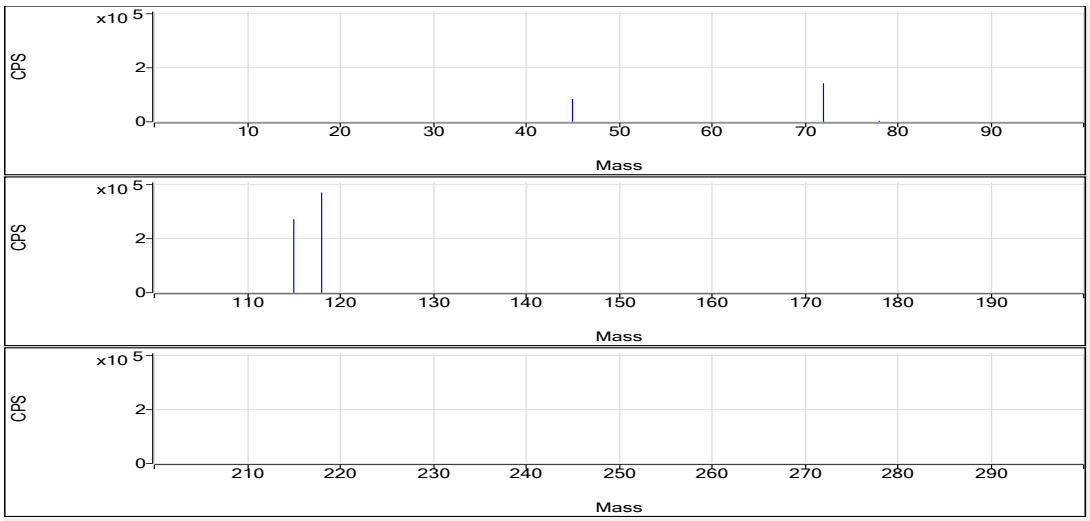
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1638753.00	0.6	100.7	Analog	0.1000	3
No Gas	Ge	72	1797014.45	0.9	95.9	Analog	0.1000	3
H2	Sc	45	84475.64	0.7	97.2	Pulse	0.1000	3
H2	Ge	72	142919.91	1.5	94.4	Pulse	0.1000	3
H2	In	115	271709.84	1.3	100.9	Pulse	0.1000	3
He	Sc	45	21406.29	3.8	100.3	Pulse	0.1000	3
He	Ge	72	78646.25	2.8	97.7	Pulse	0.1000	3
He	In	115	38260.27	2.3	104.9	Pulse	0.1000	3
He	Tb	159	249984.18	1.5	102.0	Pulse	0.1000	3
He	Bi	209	224122.08	2.1	101.4	Pulse	0.1000	3

No Gas

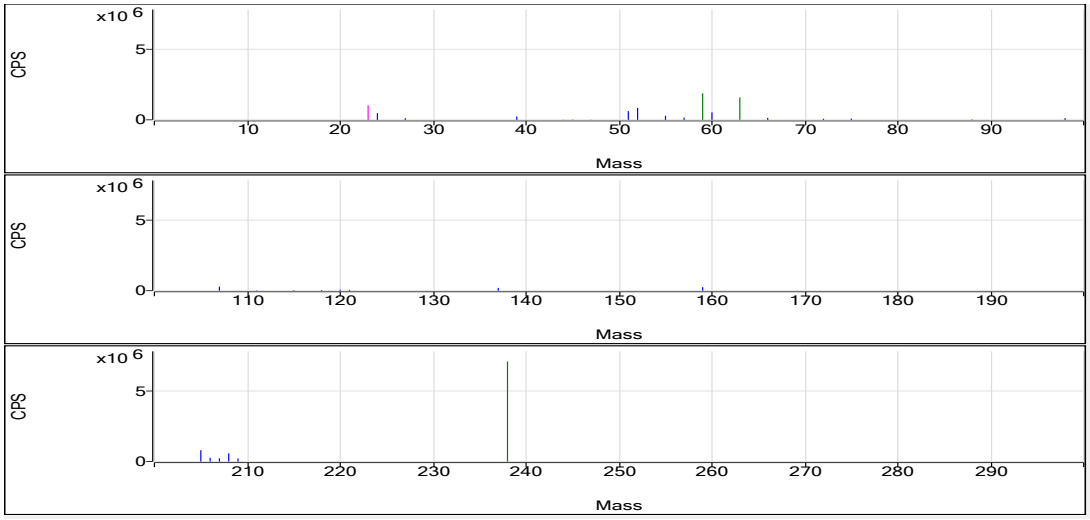


H2



Quantitation Report

He



Quantitation Report

Data File Name	014_ICV.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 9:51:06 AM
Sample Name	ICV 1973334
Sample Type	ICV
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

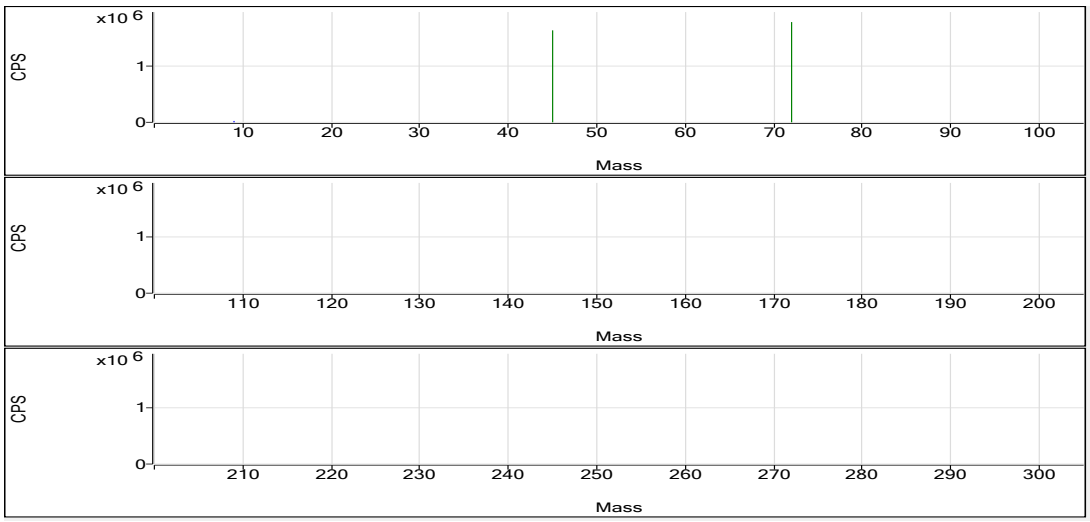
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	30.111	ppb	0.5	24029.96	0.0146	Pulse	0.5000	3
Se	78	72	H2	30.723	ppb	1.3	1206.94	0.0085	Pulse	1.5000	3
Na	23	45	He	5131.311	ppb	2.1	540565.56	24.9915	Pulse	0.1000	3
Mg	24	45	He	5089.109	ppb	2.8	244157.28	11.2893	Pulse	0.1000	3
Al	27	45	He	5080.598	ppb	3.0	60373.93	2.7915	Pulse	0.1000	3
K	39	45	He	5058.322	ppb	2.5	122900.08	5.6821	Pulse	0.1000	3
Ca	44	45	He	4950.540	ppb	3.9	7025.25	0.3249	Pulse	0.1000	3
Ti	47	45	He	287.878	ppb	4.4	3477.20	0.1608	Pulse	0.1000	3
V	51	45	He	300.431	ppb	2.3	188247.90	8.7035	Pulse	0.5000	3
Cr	52	45	He	299.506	ppb	1.6	256757.24	11.8697	Pulse	0.1000	3
Mn	55	45	He	302.668	ppb	2.1	88322.13	4.0830	Pulse	0.1000	3
Fe	57	45	He	5015.001	ppb	3.2	78858.48	3.6465	Pulse	0.1000	3
Co	59	45	He	288.726	ppb	2.2	551024.37	25.4758	Pulse	0.1000	3
Ni	60	72	He	307.237	ppb	2.6	161911.05	2.0565	Pulse	0.1000	3
Cu	63	72	He	293.900	ppb	1.7	471544.81	5.9890	Pulse	0.1000	3
Zn	66	72	He	308.746	ppb	2.7	42009.10	0.5336	Pulse	0.1000	3
As	75	72	He	304.238	ppb	0.9	27018.78	0.3431	Pulse	0.5000	3
Sr	88	72	He	29.875	ppb	2.7	9166.60	0.1164	Pulse	0.1000	3
Mo	98	72	He	30.918	ppb	1.4	37530.86	0.4767	Pulse	0.1000	3
Ag	107	115	He	31.164	ppb	4.7	89731.04	2.3900	Pulse	0.1000	3
Cd	111	115	He	31.034	ppb	4.4	7993.67	0.2129	Pulse	0.5000	3
Sn	120	115	He	31.327	ppb	4.9	22238.46	0.5924	Pulse	0.1000	3
Sb	121	115	He	31.549	ppb	4.4	18769.93	0.4999	Pulse	0.1000	3
Ba	137	115	He	308.670	ppb	2.8	60360.44	1.6071	Pulse	0.1000	3
Tl	205	209	He	30.245	ppb	1.4	244926.07	1.0927	Pulse	0.1000	3
Pb	208	209	He	30.938	ppb	1.1	336429.64	1.5010	Pulse	0.1000	3
U	238	209	He	306.464	ppb	0.7	4375341.60	19.5197	Analog	0.1000	3

ISTD Table:

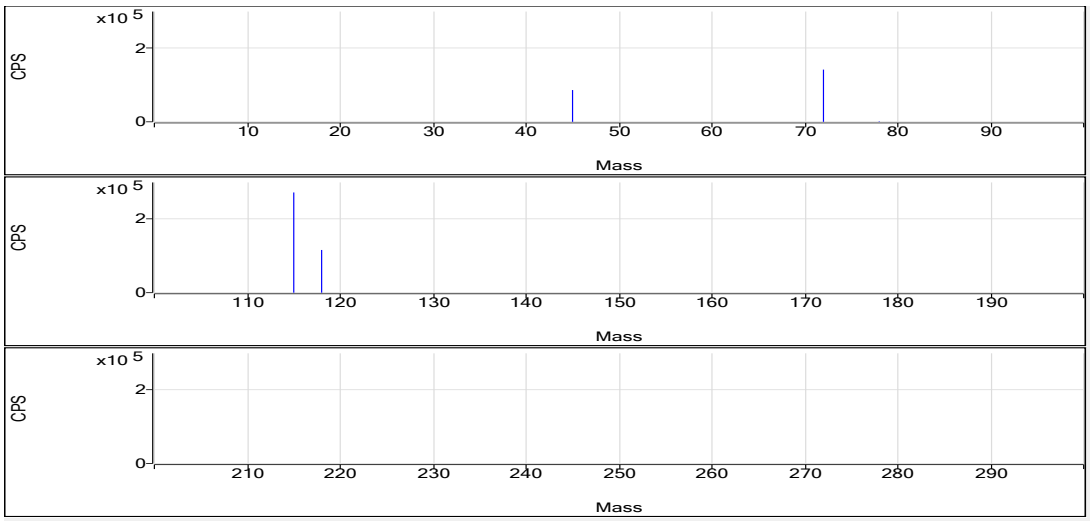
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1643514.30	0.5	101.0	Analog	0.1000	3
No Gas	Ge	72	1791299.56	0.4	95.6	Analog	0.1000	3
H2	Sc	45	86551.06	0.6	99.6	Pulse	0.1000	3
H2	Ge	72	142259.77	1.0	94.0	Pulse	0.1000	3
H2	In	115	273116.38	0.2	101.5	Pulse	0.1000	3
He	Sc	45	21636.64	2.3	101.4	Pulse	0.1000	3
He	Ge	72	78743.85	1.1	97.8	Pulse	0.1000	3
He	In	115	37581.50	3.4	103.1	Pulse	0.1000	3
He	Tb	159	247572.41	1.1	101.0	Pulse	0.1000	3
He	Bi	209	224155.22	0.8	101.4	Pulse	0.1000	3

No Gas

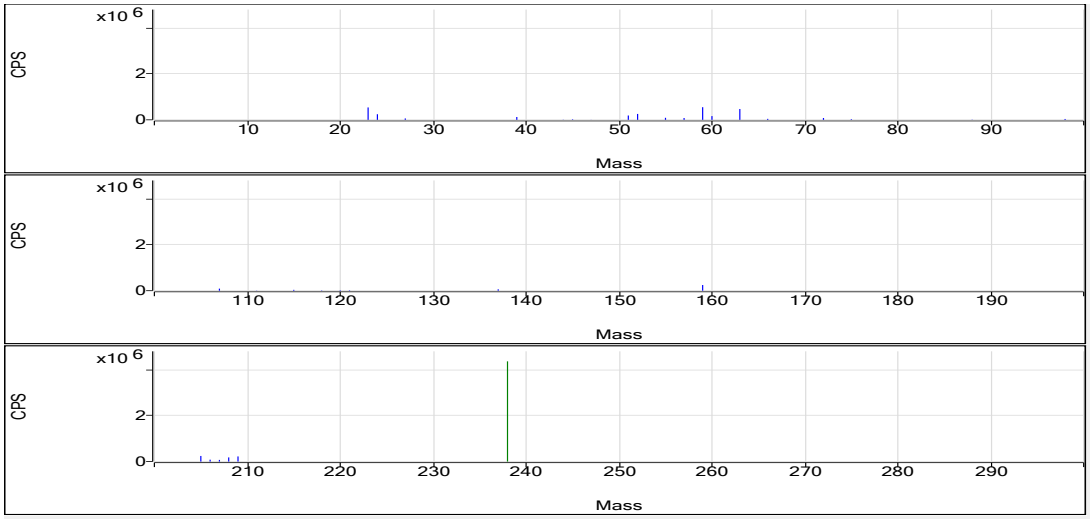


H2



Quantitation Report

He



Quantitation Report

Data File Name	015_ICB.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 9:53:07 AM
Sample Name	ICB 2014932
Sample Type	ICB
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

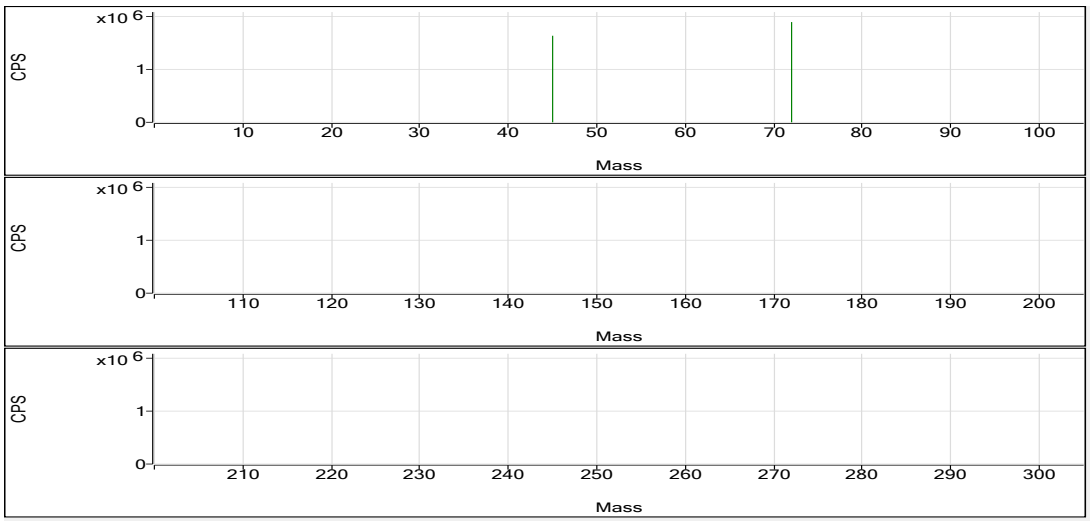
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.035	ppb	51.3	60.00	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.021	ppb	77.2	2.00	0.0000	Pulse	1.5000	3
Na	23	45	He	56.601	ppb	20.0	14310.66	0.6785	Pulse	0.1000	3
Mg	24	45	He	10.438	ppb	22.0	580.03	0.0275	Pulse	0.1000	3
Al	27	45	He	9.562	ppb	64.4	140.00	0.0067	Pulse	0.1000	3
K	39	45	He	18.332	ppb	13.8	5004.34	0.2372	Pulse	0.1000	3
Ca	44	45	He	24.875	ppb	42.8	103.34	0.0049	Pulse	0.1000	3
Ti	47	45	He	0.281	ppb	173.2	3.33	0.0002	Pulse	0.1000	3
V	51	45	He	0.207	ppb	17.0	370.68	0.0176	Pulse	0.5000	3
Cr	52	45	He	0.172	ppb	85.0	806.72	0.0382	Pulse	0.1000	3
Mn	55	45	He	0.400	ppb	14.2	160.01	0.0076	Pulse	0.1000	3
Fe	57	45	He	9.639	ppb	54.9	200.01	0.0095	Pulse	0.1000	3
Co	59	45	He	0.257	ppb	27.1	566.70	0.0268	Pulse	0.1000	3
Ni	60	72	He	0.275	ppb	13.7	260.01	0.0032	Pulse	0.1000	3
Cu	63	72	He	0.170	ppb	23.9	563.37	0.0069	Pulse	0.1000	3
Zn	66	72	He	0.249	ppb	46.0	100.00	0.0012	Pulse	0.1000	3
As	75	72	He	0.222	ppb	41.9	56.67	0.0007	Pulse	0.5000	3
Sr	88	72	He	0.051	ppb	254.8	53.33	0.0007	Pulse	0.1000	3
Mo	98	72	He	0.076	ppb	61.3	123.34	0.0015	Pulse	0.1000	3
Ag	107	115	He	0.029	ppb	33.9	100.01	0.0027	Pulse	0.1000	3
Cd	111	115	He	0.019	ppb	67.1	6.67	0.0002	Pulse	0.5000	3
Sn	120	115	He	0.001	ppb	10102.9	736.71	0.0202	Pulse	0.1000	3
Sb	121	115	He	0.058	ppb	52.6	60.00	0.0016	Pulse	0.1000	3
Ba	137	115	He	0.281	ppb	27.8	53.33	0.0015	Pulse	0.1000	3
Tl	205	209	He	0.049	ppb	21.9	470.03	0.0021	Pulse	0.1000	3
Pb	208	209	He	0.326	ppb	10.2	4377.14	0.0197	Pulse	0.1000	3
U	238	209	He	0.150	ppb	6.4	2170.27	0.0098	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1633051.02	0.3	100.3	Analog	0.1000	3
No Gas	Ge	72	1891026.69	0.8	101.0	Analog	0.1000	3
H2	Sc	45	86712.10	0.4	99.8	Pulse	0.1000	3
H2	Ge	72	152096.16	0.2	100.5	Pulse	0.1000	3
H2	In	115	272727.29	0.2	101.3	Pulse	0.1000	3
He	Sc	45	21095.97	0.8	98.8	Pulse	0.1000	3
He	Ge	72	82200.24	1.4	102.1	Pulse	0.1000	3
He	In	115	36445.46	1.2	100.0	Pulse	0.1000	3
He	Tb	159	245474.82	1.4	100.2	Pulse	0.1000	3
He	Bi	209	221874.45	0.3	100.4	Pulse	0.1000	3

No Gas



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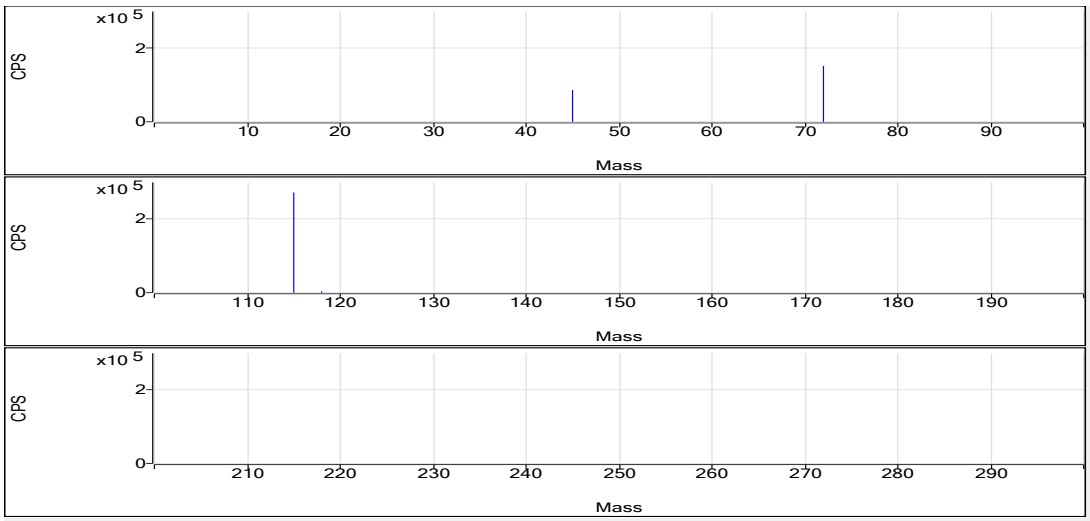
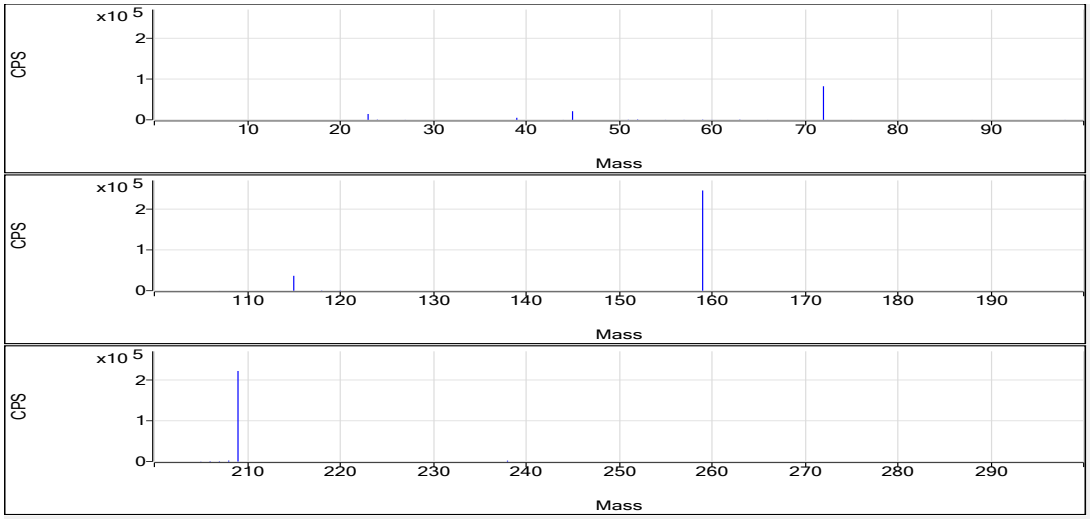


Quantitation Report

He



Quantitation Report

Data File Name	016ICSA.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 9:55:13 AM
Sample Name	ICSA 1942766
Sample Type	ICSA
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

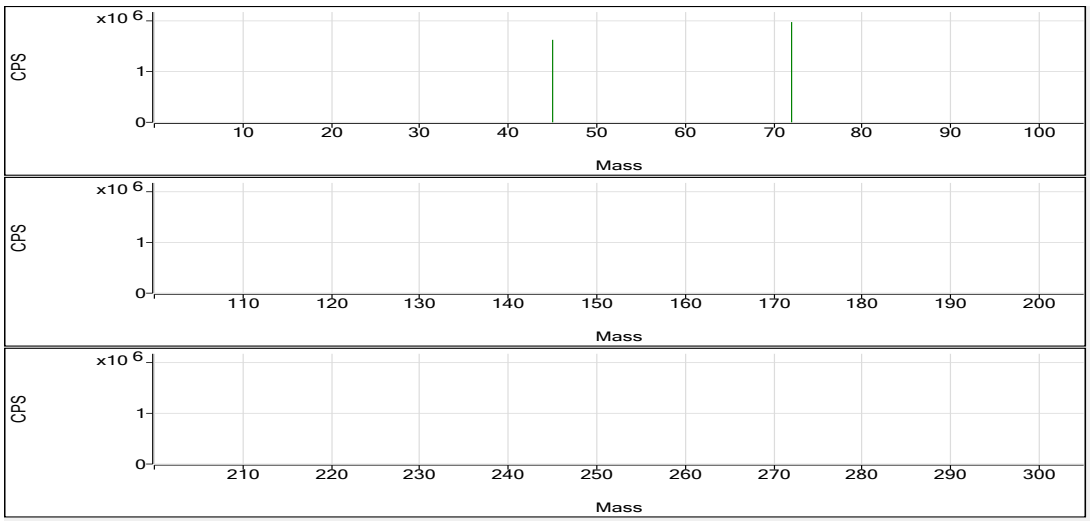
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.015	ppb	77.9	44.00	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.126	ppb	31.7	6.67	0.0000	Pulse	1.5000	3
Na	23	45	He	255089.294	ppb	1.5	25074607.96	1 222.5453	Analog	0.1000	3
Mg	24	45	He	106974.595	ppb	1.2	4865295.14	237.2171	Analog	0.1000	3
Al	27	45	He	110414.037	ppb	1.6	1243696.39	60.6370	Analog	0.1000	3
K	39	45	He	111534.236	ppb	1.0	2475967.98	120.7128	Analog	0.1000	3
Ca	44	45	He	310721.729	ppb	1.0	414035.40	20.1871	Pulse	0.1000	3
Ti	47	45	He	2116.896	ppb	1.7	24247.61	1.1823	Pulse	0.1000	3
V	51	45	He	0.053	ppb	44.7	268.67	0.0131	Pulse	0.5000	3
Cr	52	45	He	1.891	ppb	9.4	2176.91	0.1062	Pulse	0.1000	3
Mn	55	45	He	1.983	ppb	9.6	593.36	0.0289	Pulse	0.1000	3
Fe	57	45	He	264031.863	ppb	1.8	3934600.25	191.8516	Analog	0.1000	3
Co	59	45	He	1.702	ppb	1.4	3167.11	0.1544	Pulse	0.1000	3
Ni	60	72	He	1.363	ppb	5.0	890.06	0.0104	Pulse	0.1000	3
Cu	63	72	He	0.513	ppb	8.6	1180.09	0.0138	Pulse	0.1000	3
Zn	66	72	He	2.560	ppb	7.6	443.36	0.0052	Pulse	0.1000	3
As	75	72	He	0.430	ppb	48.0	78.67	0.0009	Pulse	0.5000	3
Sr	88	72	He	2.360	ppb	7.1	820.06	0.0096	Pulse	0.1000	3
Mo	98	72	He	2033.190	ppb	1.8	2670048.61	31.3244	Analog	0.1000	3
Ag	107	115	He	0.071	ppb	31.6	210.01	0.0060	Pulse	0.1000	3
Cd	111	115	He	0.241	ppb	18.8	60.00	0.0017	Pulse	0.5000	3
Sn	120	115	He	0.180	ppb	117.4	826.72	0.0235	Pulse	0.1000	3
Sb	121	115	He	0.241	ppb	21.1	160.01	0.0045	Pulse	0.1000	3
Ba	137	115	He	0.599	ppb	7.5	110.01	0.0031	Pulse	0.1000	3
Tl	205	209	He	0.022	ppb	23.0	236.68	0.0011	Pulse	0.1000	3
Pb	208	209	He	0.332	ppb	4.3	4140.43	0.0200	Pulse	0.1000	3
U	238	209	He	0.089	ppb	7.0	1226.78	0.0059	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1627886.95	0.7	100.0	Analog	0.1000	3
No Gas	Ge	72	1978333.41	1.4	105.6	Analog	0.1000	3
H2	Sc	45	87674.10	1.1	100.9	Pulse	0.1000	3
H2	Ge	72	157726.23	0.7	104.2	Pulse	0.1000	3
H2	In	115	256310.88	1.2	95.2	Pulse	0.1000	3
He	Sc	45	20511.70	1.3	96.1	Pulse	0.1000	3
He	Ge	72	85247.19	0.9	105.9	Pulse	0.1000	3
He	In	115	35228.90	1.6	96.6	Pulse	0.1000	3
He	Tb	159	244286.62	1.1	99.7	Pulse	0.1000	3
He	Bi	209	207191.12	0.3	93.8	Pulse	0.1000	3

No Gas



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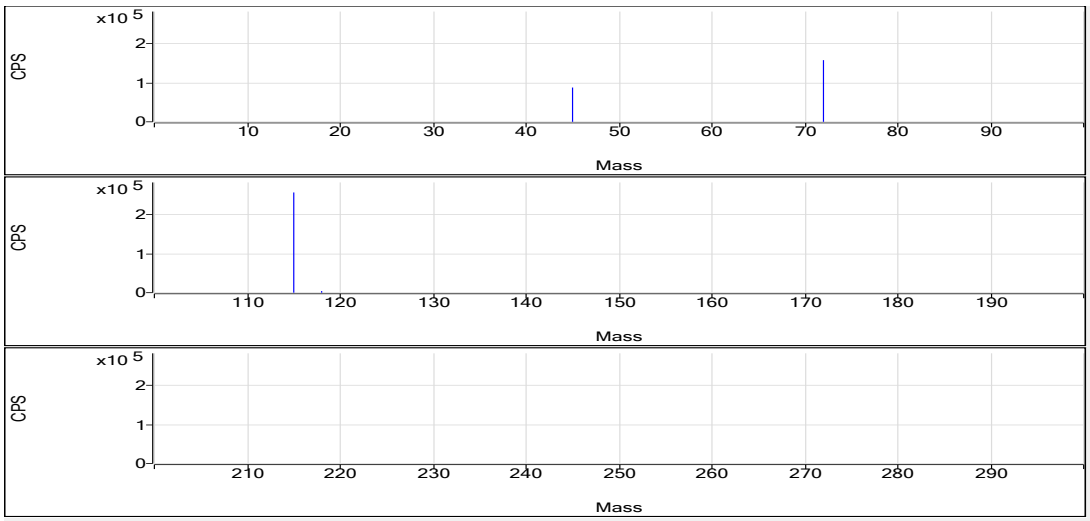
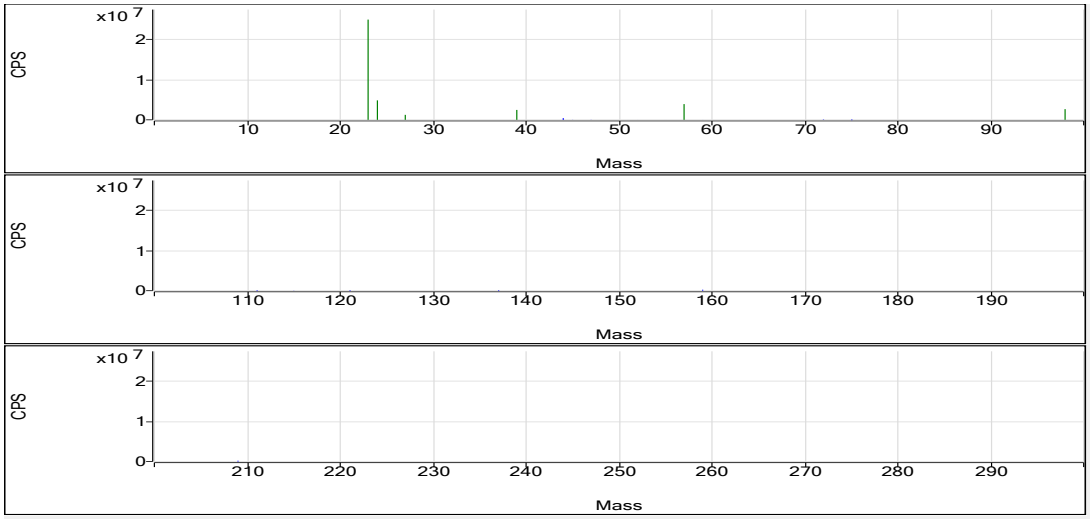


Quantitation Report

He



Quantitation Report

Data File Name	017ICSB.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 9:57:15 AM
Sample Name	ICSAB 1942785
Sample Type	ICSAB
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

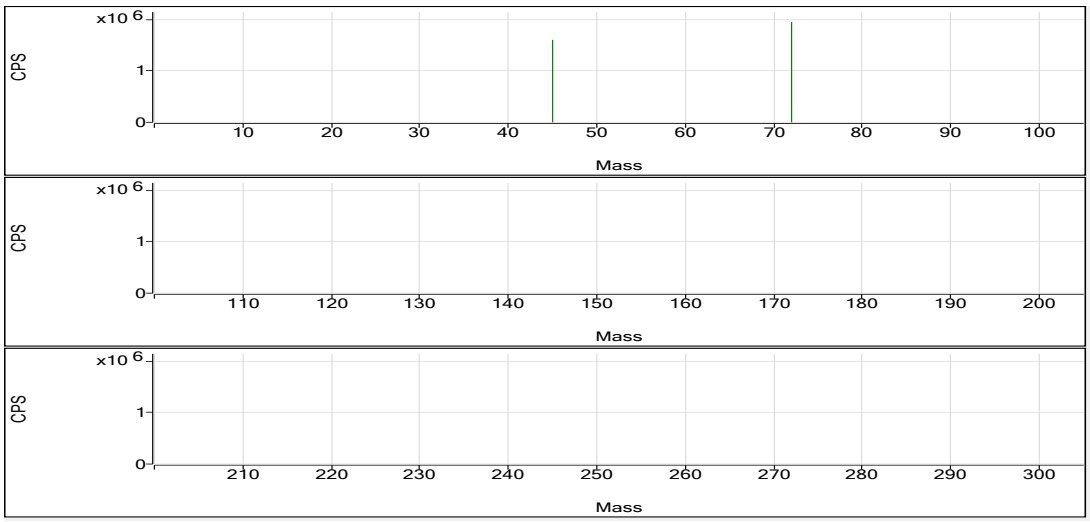
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	-0.005	ppb	N/A	28.00	0.0000	Pulse	0.5000	3
Se	78	72	H2	97.087	ppb	1.7	4165.72	0.0268	Pulse	1.5000	3
Na	23	45	He	256517.790	ppb	2.7	25242635.45	1 229.3893	Analog	0.1000	3
Mg	24	45	He	106378.682	ppb	2.0	4844109.09	235.8956	Analog	0.1000	3
Al	27	45	He	110870.166	ppb	3.6	1249993.08	60.8875	Analog	0.1000	3
K	39	45	He	111709.838	ppb	2.7	2482575.54	120.9026	Analog	0.1000	3
Ca	44	45	He	307021.116	ppb	2.5	409569.73	19.9467	Pulse	0.1000	3
Ti	47	45	He	2153.341	ppb	0.9	24705.07	1.2027	Pulse	0.1000	3
V	51	45	He	216.183	ppb	2.4	128665.79	6.2661	Pulse	0.5000	3
Cr	52	45	He	211.484	ppb	2.1	172298.32	8.3905	Pulse	0.1000	3
Mn	55	45	He	210.966	ppb	2.3	58455.61	2.8466	Pulse	0.1000	3
Fe	57	45	He	263314.401	ppb	2.8	3928484.52	191.3303	Analog	0.1000	3
Co	59	45	He	200.397	ppb	2.8	363081.26	17.6833	Pulse	0.1000	3
Ni	60	72	He	183.047	ppb	0.9	105061.74	1.2258	Pulse	0.1000	3
Cu	63	72	He	174.903	ppb	0.8	305594.30	3.5655	Pulse	0.1000	3
Zn	66	72	He	94.945	ppb	0.4	14110.74	0.1646	Pulse	0.1000	3
As	75	72	He	92.022	ppb	1.0	8922.82	0.1041	Pulse	0.5000	3
Sr	88	72	He	2.478	ppb	7.4	863.39	0.0101	Pulse	0.1000	3
Mo	98	72	He	2025.998	ppb	1.2	2675250.79	31.2136	Analog	0.1000	3
Ag	107	115	He	52.533	ppb	2.2	142167.36	4.0285	Pulse	0.1000	3
Cd	111	115	He	108.275	ppb	1.4	26212.59	0.7427	Pulse	0.5000	3
Sn	120	115	He	0.000	ppb	N/A	713.37	0.0202	Pulse	0.1000	3
Sb	121	115	He	0.121	ppb	67.7	93.34	0.0026	Pulse	0.1000	3
Ba	137	115	He	0.488	ppb	48.1	90.00	0.0025	Pulse	0.1000	3
Tl	205	209	He	0.014	ppb	52.5	176.68	0.0009	Pulse	0.1000	3
Pb	208	209	He	0.282	ppb	5.8	3613.68	0.0176	Pulse	0.1000	3
U	238	209	He	0.051	ppb	11.1	720.05	0.0035	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1600668.26	1.3	98.4	Analog	0.1000	3
No Gas	Ge	72	1945291.43	1.1	103.9	Analog	0.1000	3
H2	Sc	45	85169.18	1.4	98.0	Pulse	0.1000	3
H2	Ge	72	155486.15	1.1	102.7	Pulse	0.1000	3
H2	In	115	254724.10	0.5	94.6	Pulse	0.1000	3
He	Sc	45	20541.74	2.5	96.2	Pulse	0.1000	3
He	Ge	72	85714.16	0.9	106.5	Pulse	0.1000	3
He	In	115	35298.87	1.7	96.8	Pulse	0.1000	3
He	Tb	159	241969.54	0.7	98.8	Pulse	0.1000	3
He	Bi	209	205366.54	0.3	92.9	Pulse	0.1000	3

No Gas



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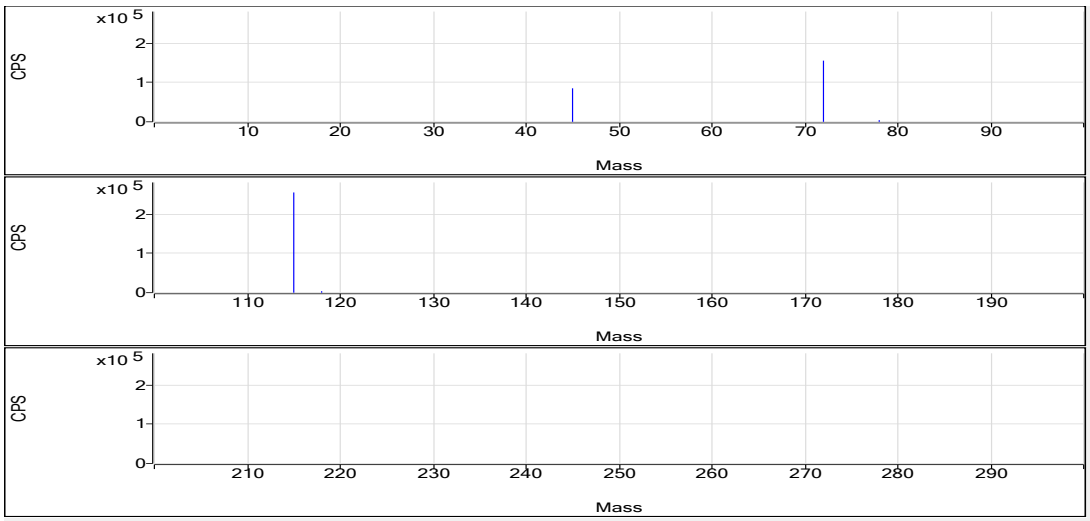
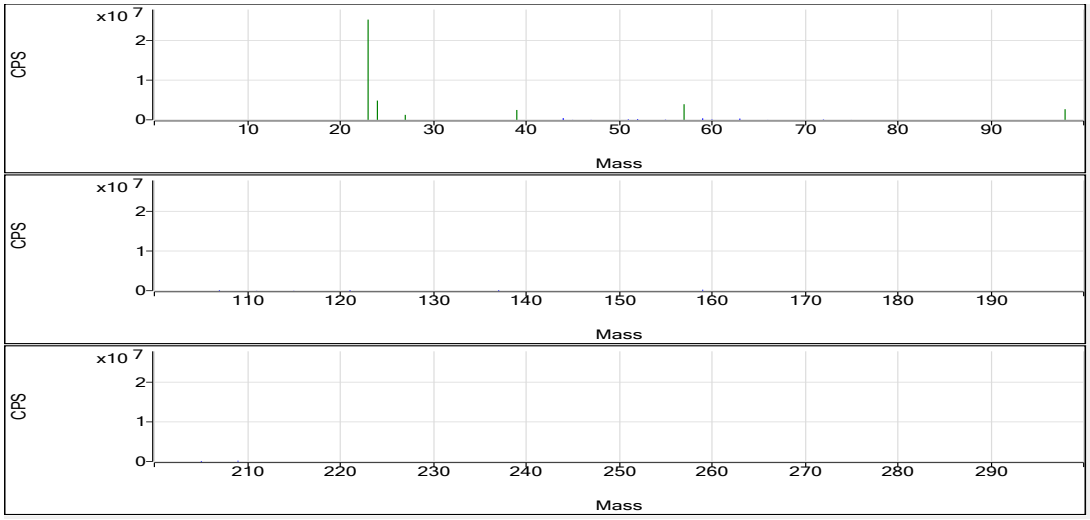


Quantitation Report

He



Quantitation Report

Data File Name	018_LRC.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 9:59:16 AM
Sample Name	LRC 1932659
Sample Type	LRC
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

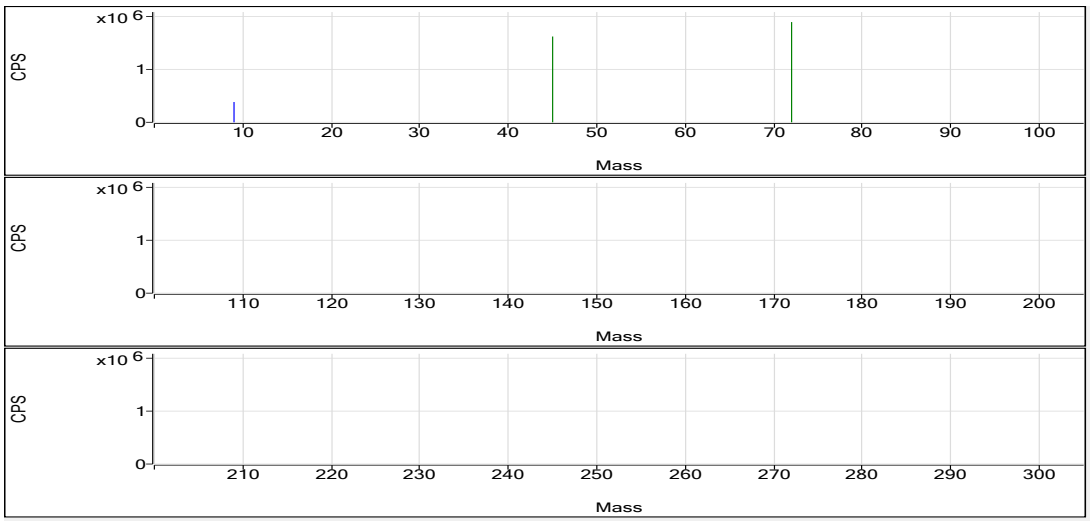
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	487.279	ppb	1.6	382011.58	0.2363	Pulse	0.5000	3
Se	78	72	H2	491.669	ppb	0.7	20068.92	0.1357	Pulse	1.5000	3
Na	23	45	He	49330.713	ppb	2.4	5210483.78	236.7518	Analog	0.1000	3
Mg	24	45	He	50392.920	ppb	1.7	2459762.15	111.7490	Analog	0.1000	3
Al	27	45	He	49727.305	ppb	1.8	601069.58	27.3099	Pulse	0.1000	3
K	39	45	He	50144.661	ppb	2.1	1197066.86	54.3909	Pulse	0.1000	3
Ca	44	45	He	50651.516	ppb	2.9	72477.59	3.2935	Pulse	0.1000	3
Ti	47	45	He	493.757	ppb	1.5	6071.49	0.2758	Pulse	0.1000	3
V	51	45	He	494.770	ppb	1.9	315301.77	14.3260	Pulse	0.5000	3
Cr	52	45	He	491.821	ppb	2.2	428525.49	19.4711	Pulse	0.1000	3
Mn	55	45	He	492.574	ppb	2.3	146209.74	6.6435	Pulse	0.1000	3
Fe	57	45	He	49149.005	ppb	2.2	786044.24	35.7148	Pulse	0.1000	3
Co	59	45	He	471.211	ppb	2.0	914999.54	41.5747	Pulse	0.1000	3
Ni	60	72	He	478.912	ppb	2.3	266560.64	3.2049	Pulse	0.1000	3
Cu	63	72	He	467.368	ppb	0.8	791934.65	9.5218	Pulse	0.1000	3
Zn	66	72	He	494.845	ppb	2.0	71079.60	0.8547	Pulse	0.1000	3
As	75	72	He	487.485	ppb	1.1	45706.61	0.5496	Pulse	0.5000	3
Sr	88	72	He	484.987	ppb	0.7	156622.77	1.8831	Pulse	0.1000	3
Mo	98	72	He	486.882	ppb	0.6	623907.30	7.5014	Pulse	0.1000	3
Ag	107	115	He	491.074	ppb	1.9	1476615.14	37.6533	Pulse	0.1000	3
Cd	111	115	He	494.411	ppb	1.9	132989.21	3.3912	Pulse	0.5000	3
Sn	120	115	He	489.189	ppb	1.6	351184.11	8.9548	Pulse	0.1000	3
Sb	121	115	He	493.143	ppb	2.2	306001.34	7.8033	Pulse	0.1000	3
Ba	137	115	He	489.951	ppb	2.1	100037.29	2.5510	Pulse	0.1000	3
Tl	205	209	He	543.504	ppb	1.4	4191098.27	19.6308	Analog	0.1000	3
Pb	208	209	He	520.321	ppb	1.1	5376212.01	25.1812	Analog	0.1000	3
U	238	209	He	514.546	ppb	1.0	6997381.98	32.7730	Analog	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1616671.33	1.6	99.3	Analog	0.1000	3
No Gas	Ge	72	1888661.85	1.8	100.8	Analog	0.1000	3
H2	Sc	45	84150.65	1.6	96.8	Pulse	0.1000	3
H2	Ge	72	147939.54	1.4	97.7	Pulse	0.1000	3
H2	In	115	285815.46	0.9	106.2	Pulse	0.1000	3
He	Sc	45	22013.91	1.8	103.1	Pulse	0.1000	3
He	Ge	72	83175.14	1.0	103.3	Pulse	0.1000	3
He	In	115	39226.11	2.1	107.6	Pulse	0.1000	3
He	Tb	159	244818.83	0.4	99.9	Pulse	0.1000	3
He	Bi	209	213518.23	1.1	96.6	Pulse	0.1000	3

No Gas



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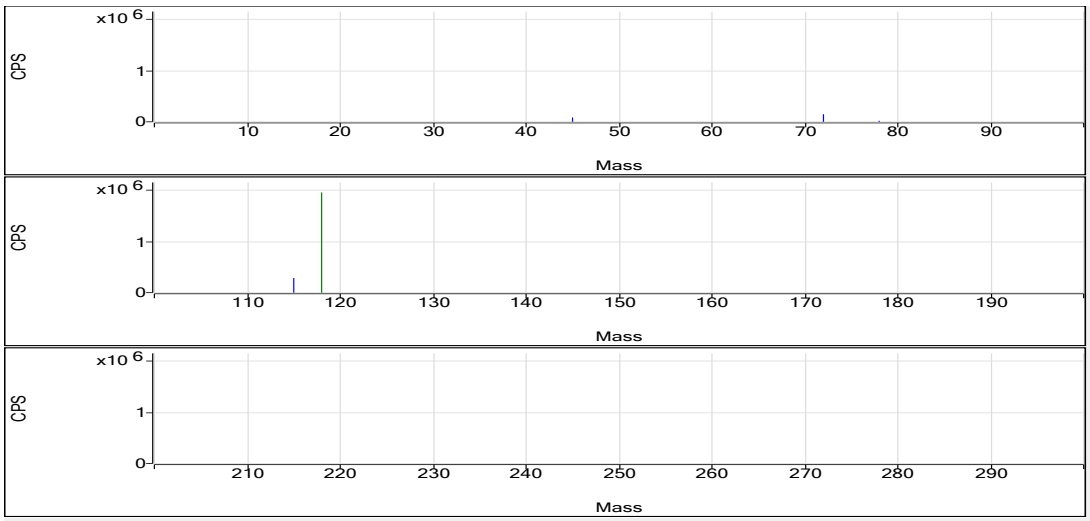
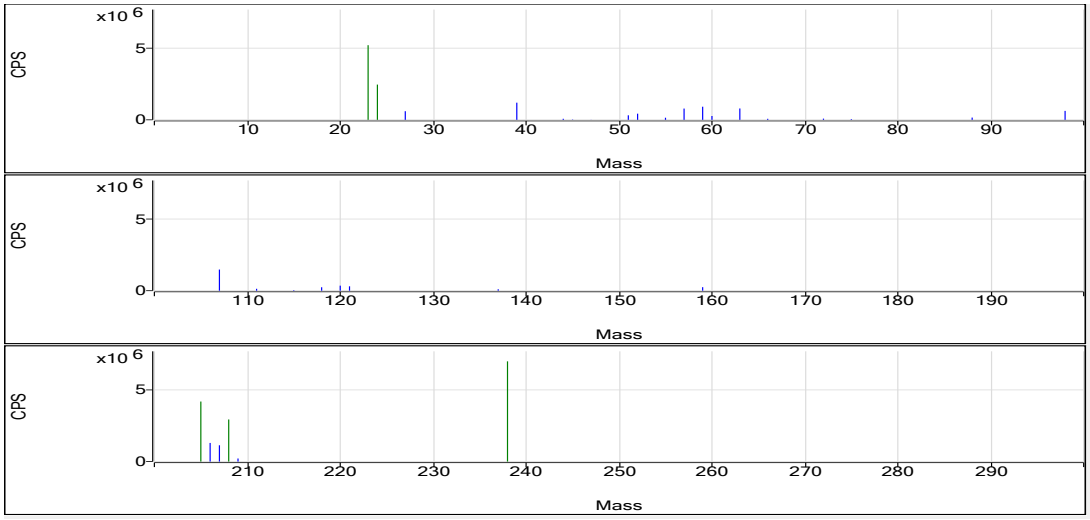


Quantitation Report

He



Quantitation Report

Data File Name	067_LLC.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 11:47:18 AM
Sample Name	CRI 2020343
Sample Type	CRI
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

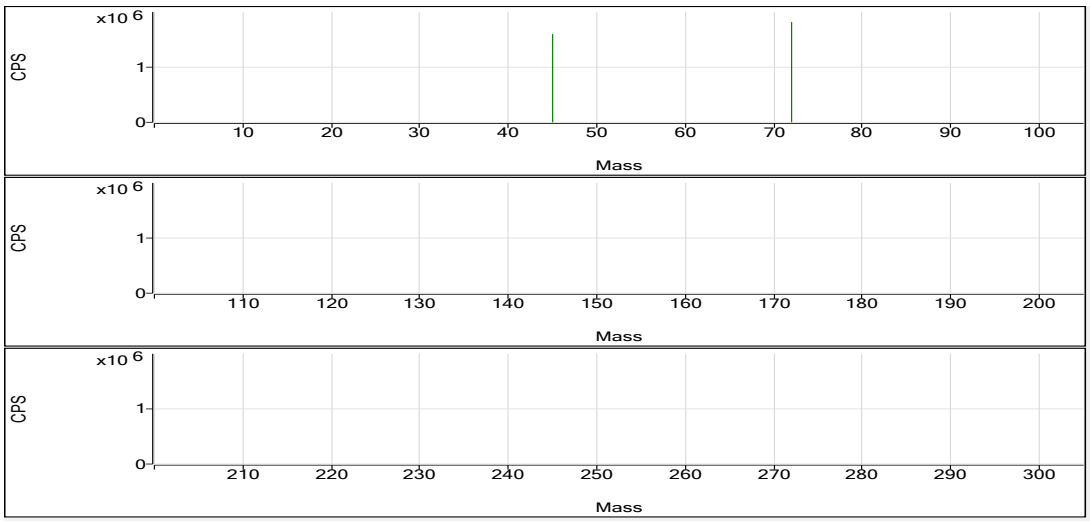
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.497	ppb	12.1	414.01	0.0003	Pulse	0.5000	3
Se	78	72	H2	0.996	ppb	5.7	40.22	0.0003	Pulse	1.5000	3
Na	23	45	He	204.841	ppb	3.7	30185.09	1.3887	Pulse	0.1000	3
Mg	24	45	He	51.188	ppb	8.6	2563.65	0.1179	Pulse	0.1000	3
Al	27	45	He	26.756	ppb	19.1	350.02	0.0161	Pulse	0.1000	3
K	39	45	He	231.124	ppb	1.9	10153.88	0.4671	Pulse	0.1000	3
Ca	44	45	He	95.614	ppb	29.0	206.68	0.0095	Pulse	0.1000	3
Ti	47	45	He	7.952	ppb	29.1	96.67	0.0044	Pulse	0.1000	3
V	51	45	He	1.944	ppb	0.6	1474.75	0.0678	Pulse	0.5000	3
Cr	52	45	He	1.916	ppb	11.6	2330.26	0.1072	Pulse	0.1000	3
Mn	55	45	He	2.188	ppb	17.6	690.04	0.0317	Pulse	0.1000	3
Fe	57	45	He	58.227	ppb	7.9	973.40	0.0448	Pulse	0.1000	3
Co	59	45	He	0.510	ppb	19.2	1070.08	0.0492	Pulse	0.1000	3
Ni	60	72	He	1.016	ppb	14.3	660.04	0.0081	Pulse	0.1000	3
Cu	63	72	He	0.944	ppb	12.8	1840.19	0.0226	Pulse	0.1000	3
Zn	66	72	He	11.089	ppb	3.1	1620.15	0.0199	Pulse	0.1000	3
As	75	72	He	1.875	ppb	4.3	207.33	0.0025	Pulse	0.5000	3
Sr	88	72	He	1.034	ppb	14.9	363.35	0.0045	Pulse	0.1000	3
Mo	98	72	He	0.527	ppb	12.6	686.71	0.0084	Pulse	0.1000	3
Ag	107	115	He	0.586	ppb	6.7	1640.17	0.0455	Pulse	0.1000	3
Cd	111	115	He	0.538	ppb	11.6	135.33	0.0037	Pulse	0.5000	3
Sn	120	115	He	2.217	ppb	3.4	2190.26	0.0607	Pulse	0.1000	3
Sb	121	115	He	1.011	ppb	6.9	603.37	0.0167	Pulse	0.1000	3
Ba	137	115	He	2.692	ppb	58.1	506.91	0.0140	Pulse	0.1000	3
Tl	205	209	He	0.525	ppb	6.2	4174.18	0.0193	Pulse	0.1000	3
Pb	208	209	He	0.579	ppb	6.7	6907.67	0.0320	Pulse	0.1000	3
U	238	209	He	0.972	ppb	1.7	13420.75	0.0622	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1588691.75	0.7	97.6	Analog	0.1000	3
No Gas	Ge	72	1806056.17	0.8	96.4	Analog	0.1000	3
H2	Sc	45	81853.59	0.8	94.2	Pulse	0.1000	3
H2	Ge	72	142623.95	1.9	94.2	Pulse	0.1000	3
H2	In	115	265658.45	1.2	98.7	Pulse	0.1000	3
He	Sc	45	21740.19	1.4	101.8	Pulse	0.1000	3
He	Ge	72	81324.86	0.5	101.0	Pulse	0.1000	3
He	In	115	36084.39	1.2	99.0	Pulse	0.1000	3
He	Tb	159	240200.60	0.4	98.0	Pulse	0.1000	3
He	Bi	209	215939.53	0.9	97.7	Pulse	0.1000	3

No Gas



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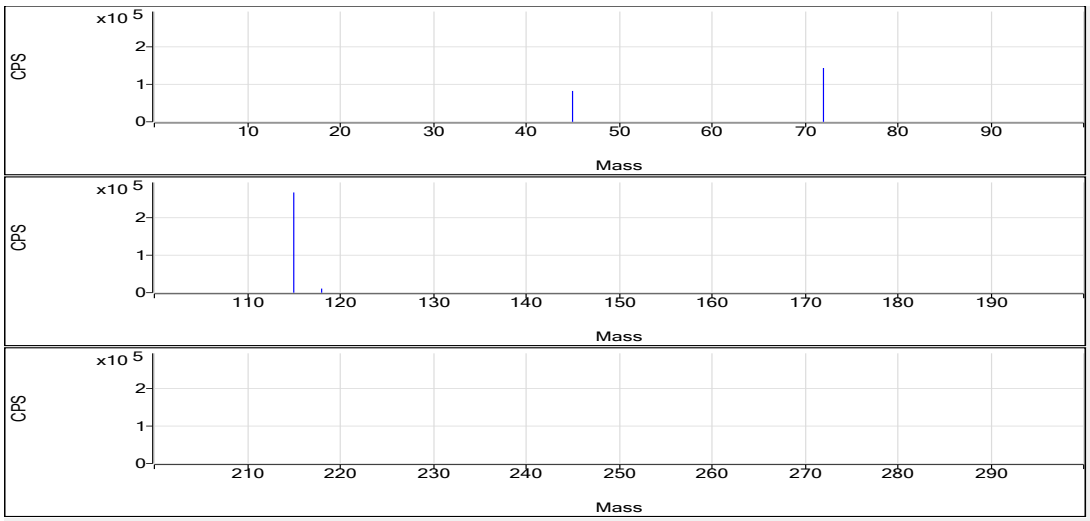
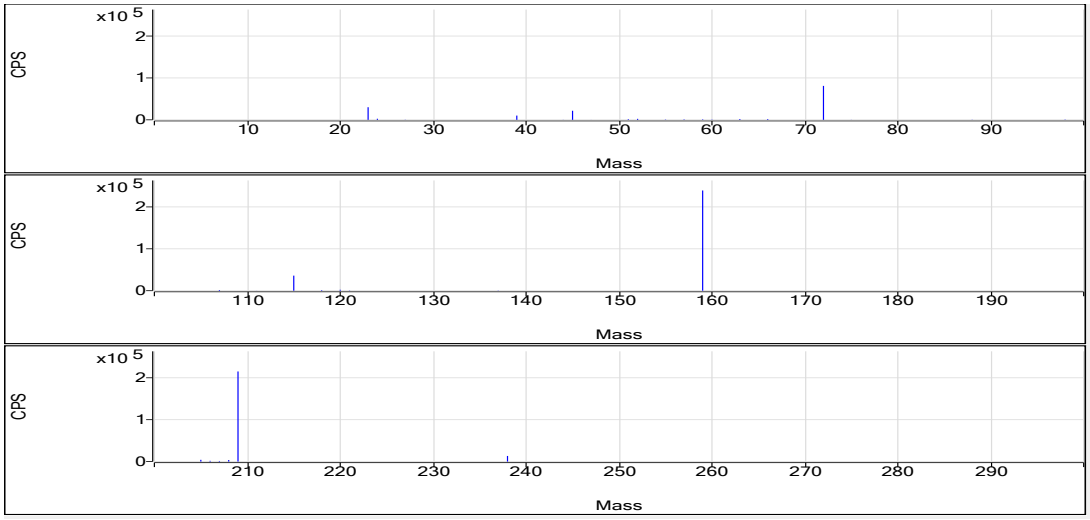


Quantitation Report

He



Quantitation Report

Data File Name	068_CCV.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 1:11:36 PM
Sample Name	CCV 1942322
Sample Type	CCV
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

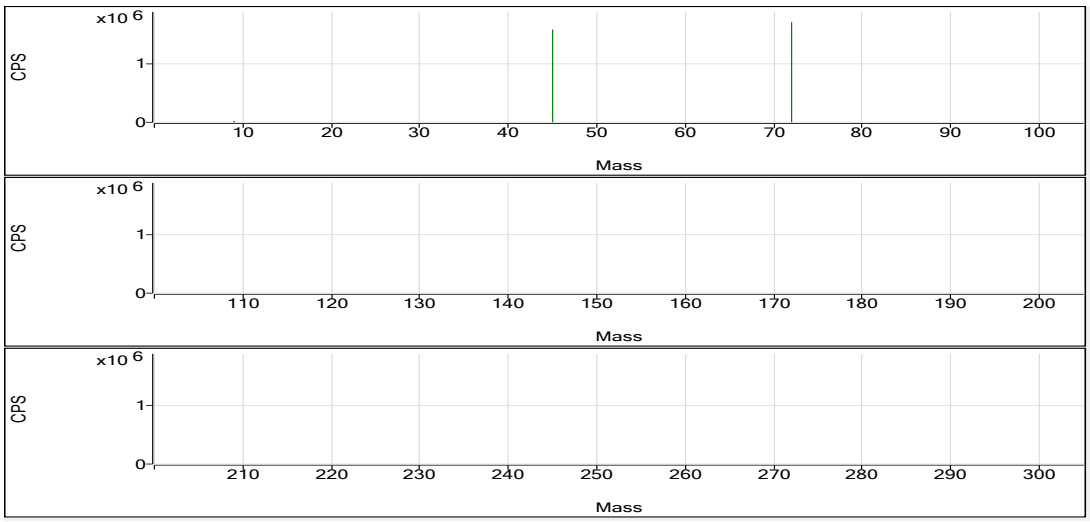
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	29.603	ppb	1.5	22759.37	0.0144	Pulse	0.5000	3
Se	78	72	H2	31.441	ppb	1.8	1139.16	0.0087	Pulse	1.5000	3
Na	23	45	He	4878.382	ppb	1.9	492899.52	23.7798	Pulse	0.1000	3
Mg	24	45	He	5084.510	ppb	2.4	233765.28	11.2791	Pulse	0.1000	3
Al	27	45	He	5084.630	ppb	2.6	57904.40	2.7937	Pulse	0.1000	3
K	39	45	He	5095.432	ppb	1.6	118608.99	5.7222	Pulse	0.1000	3
Ca	44	45	He	4933.380	ppb	0.8	6711.76	0.3237	Pulse	0.1000	3
Ti	47	45	He	316.519	ppb	9.9	3660.58	0.1768	Pulse	0.1000	3
V	51	45	He	300.709	ppb	2.7	180544.31	8.7116	Pulse	0.5000	3
Cr	52	45	He	302.017	ppb	2.5	248062.80	11.9689	Pulse	0.1000	3
Mn	55	45	He	295.408	ppb	1.6	82602.64	3.9851	Pulse	0.1000	3
Fe	57	45	He	5036.425	ppb	2.9	75892.86	3.6620	Pulse	0.1000	3
Co	59	45	He	284.149	ppb	2.1	519663.30	25.0720	Pulse	0.1000	3
Ni	60	72	He	309.237	ppb	1.2	151904.13	2.0699	Pulse	0.1000	3
Cu	63	72	He	302.901	ppb	0.3	453003.93	6.1723	Pulse	0.1000	3
Zn	66	72	He	310.756	ppb	1.6	39415.00	0.5370	Pulse	0.1000	3
As	75	72	He	309.090	ppb	3.2	25578.20	0.3486	Pulse	0.5000	3
Sr	88	72	He	30.249	ppb	3.2	8649.60	0.1179	Pulse	0.1000	3
Mo	98	72	He	30.744	ppb	2.7	34780.55	0.4740	Pulse	0.1000	3
Ag	107	115	He	32.011	ppb	1.8	84847.43	2.4549	Pulse	0.1000	3
Cd	111	115	He	31.939	ppb	3.8	7571.42	0.2191	Pulse	0.5000	3
Sn	120	115	He	32.058	ppb	2.7	20946.35	0.6057	Pulse	0.1000	3
Sb	121	115	He	32.079	ppb	2.8	17565.04	0.5083	Pulse	0.1000	3
Ba	137	115	He	311.273	ppb	1.7	56014.93	1.6207	Pulse	0.1000	3
Tl	205	209	He	30.647	ppb	1.3	229247.94	1.1073	Pulse	0.1000	3
Pb	208	209	He	30.209	ppb	1.1	303470.35	1.4657	Pulse	0.1000	3
U	238	209	He	265.004	ppb	0.6	3494845.99	16.8790	Analog	0.1000	3

ISTD Table:

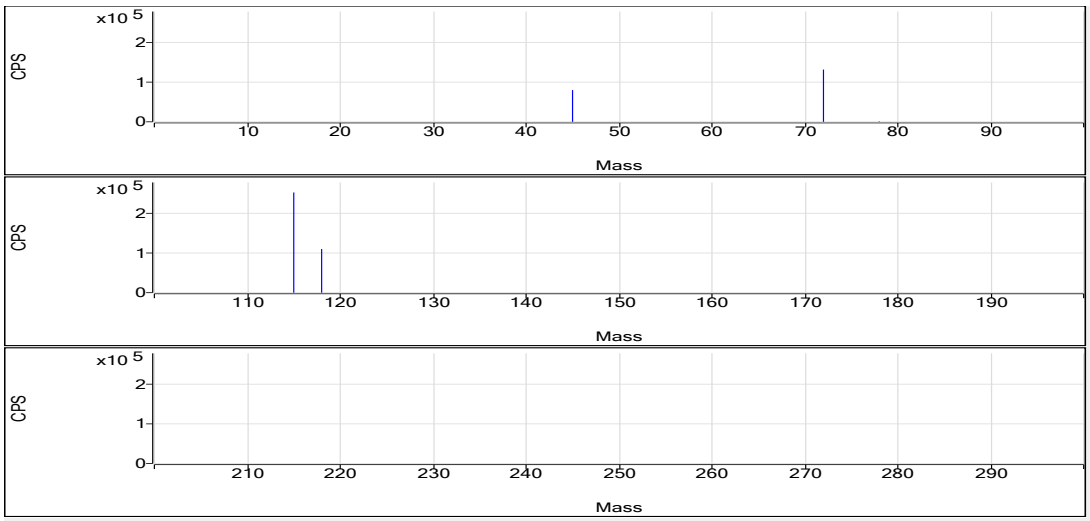
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1583338.47	0.9	97.3	Analog	0.1000	3
No Gas	Ge	72	1710970.18	0.6	91.4	Analog	0.1000	3
H2	Sc	45	79642.25	1.2	91.6	Pulse	0.1000	3
H2	Ge	72	131218.53	1.7	86.7	Pulse	0.1000	3
H2	In	115	251760.04	0.8	93.5	Pulse	0.1000	3
He	Sc	45	20731.96	2.0	97.1	Pulse	0.1000	3
He	Ge	72	73395.10	1.5	91.2	Pulse	0.1000	3
He	In	115	34570.54	2.1	94.8	Pulse	0.1000	3
He	Tb	159	230354.08	0.6	94.0	Pulse	0.1000	3
He	Bi	209	207058.82	1.2	93.7	Pulse	0.1000	3

No Gas

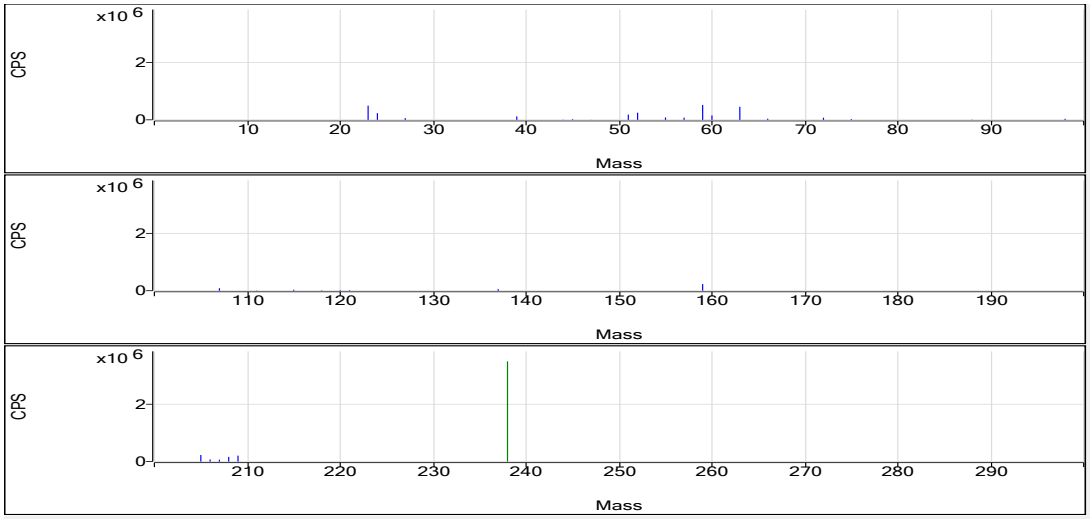


H2



Quantitation Report

He



Quantitation Report

Data File Name	069_CCB.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 1:13:37 PM
Sample Name	CCB 2014932
Sample Type	CCB
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

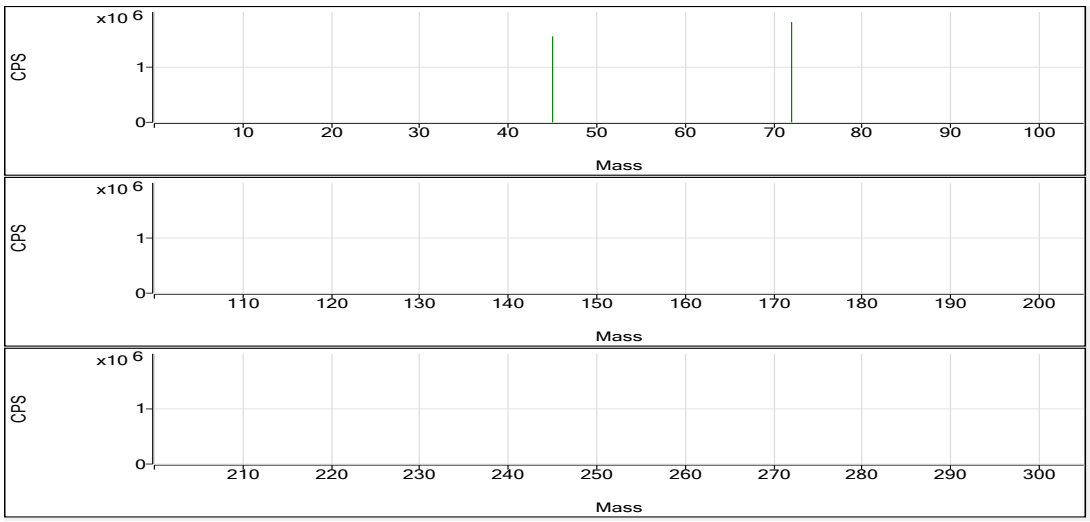
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	-0.023	ppb	N/A	13.33	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.031	ppb	84.9	2.22	0.0000	Pulse	1.5000	3
Na	23	45	He	-1.627	ppb	N/A	8115.82	0.3995	Pulse	0.1000	3
Mg	24	45	He	0.989	ppb	105.0	133.34	0.0066	Pulse	0.1000	3
Al	27	45	He	1.622	ppb	59.9	46.67	0.0023	Pulse	0.1000	3
K	39	45	He	17.989	ppb	80.8	4814.31	0.2368	Pulse	0.1000	3
Ca	44	45	He	-9.886	ppb	N/A	53.33	0.0026	Pulse	0.1000	3
Ti	47	45	He	0.000	ppb	N/A	0.00	0.0000	Pulse	0.1000	3
V	51	45	He	0.036	ppb	111.9	256.67	0.0126	Pulse	0.5000	3
Cr	52	45	He	0.115	ppb	54.3	730.04	0.0359	Pulse	0.1000	3
Mn	55	45	He	0.155	ppb	108.6	86.67	0.0043	Pulse	0.1000	3
Fe	57	45	He	3.111	ppb	32.3	96.67	0.0048	Pulse	0.1000	3
Co	59	45	He	0.067	ppb	79.1	206.68	0.0101	Pulse	0.1000	3
Ni	60	72	He	0.062	ppb	121.5	136.67	0.0017	Pulse	0.1000	3
Cu	63	72	He	0.011	ppb	288.5	283.35	0.0036	Pulse	0.1000	3
Zn	66	72	He	0.112	ppb	103.4	76.67	0.0010	Pulse	0.1000	3
As	75	72	He	0.042	ppb	54.2	38.00	0.0005	Pulse	0.5000	3
Sr	88	72	He	-0.063	ppb	N/A	16.67	0.0002	Pulse	0.1000	3
Mo	98	72	He	0.006	ppb	152.9	33.33	0.0004	Pulse	0.1000	3
Ag	107	115	He	-0.001	ppb	N/A	16.67	0.0005	Pulse	0.1000	3
Cd	111	115	He	-0.005	ppb	N/A	0.67	0.0000	Pulse	0.5000	3
Sn	120	115	He	-0.002	ppb	N/A	706.71	0.0202	Pulse	0.1000	3
Sb	121	115	He	0.014	ppb	149.5	33.33	0.0010	Pulse	0.1000	3
Ba	137	115	He	0.110	ppb	50.1	20.00	0.0006	Pulse	0.1000	3
Tl	205	209	He	0.028	ppb	5.6	280.01	0.0013	Pulse	0.1000	3
Pb	208	209	He	-0.012	ppb	N/A	696.70	0.0034	Pulse	0.1000	3
U	238	209	He	0.065	ppb	4.7	906.74	0.0044	Pulse	0.1000	3

ISTD Table:

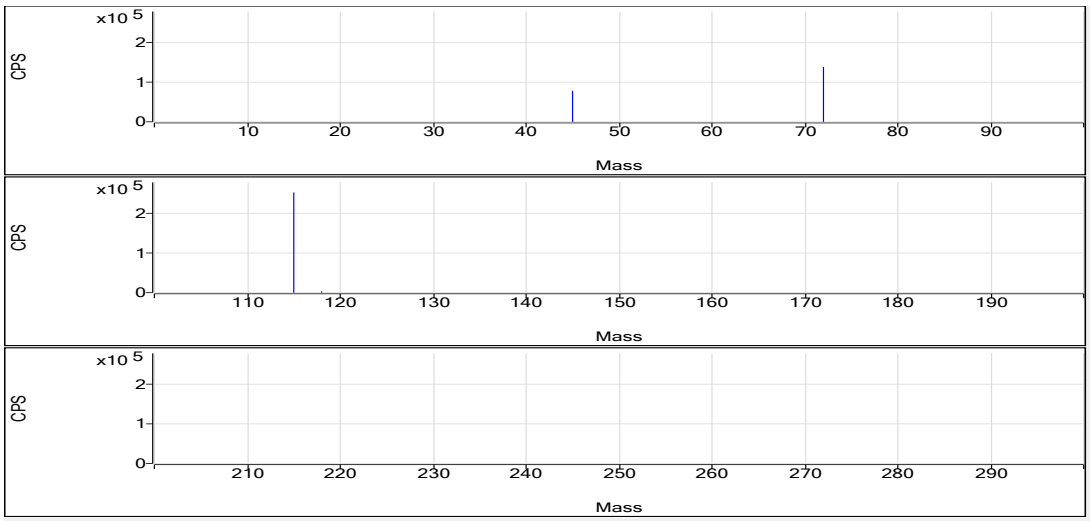
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1553248.36	1.8	95.4	Analog	0.1000	3
No Gas	Ge	72	1811325.24	0.5	96.7	Analog	0.1000	3
H2	Sc	45	78730.36	0.6	90.6	Pulse	0.1000	3
H2	Ge	72	139230.33	0.5	92.0	Pulse	0.1000	3
H2	In	115	254144.09	0.6	94.4	Pulse	0.1000	3
He	Sc	45	20314.83	1.6	95.2	Pulse	0.1000	3
He	Ge	72	78384.96	0.7	97.4	Pulse	0.1000	3
He	In	115	35058.24	1.0	96.2	Pulse	0.1000	3
He	Tb	159	231879.55	0.5	94.6	Pulse	0.1000	3
He	Bi	209	207616.75	0.6	94.0	Pulse	0.1000	3

No Gas

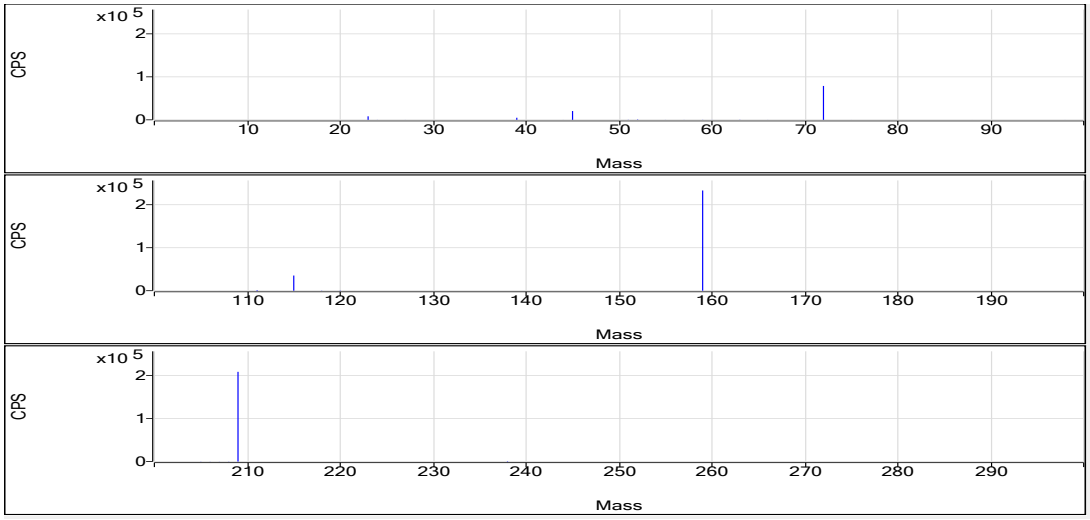


H2



Quantitation Report

He



Quantitation Report

Data File Name	070SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 1:15:39 PM
Sample Name	MB 410-190873/1-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

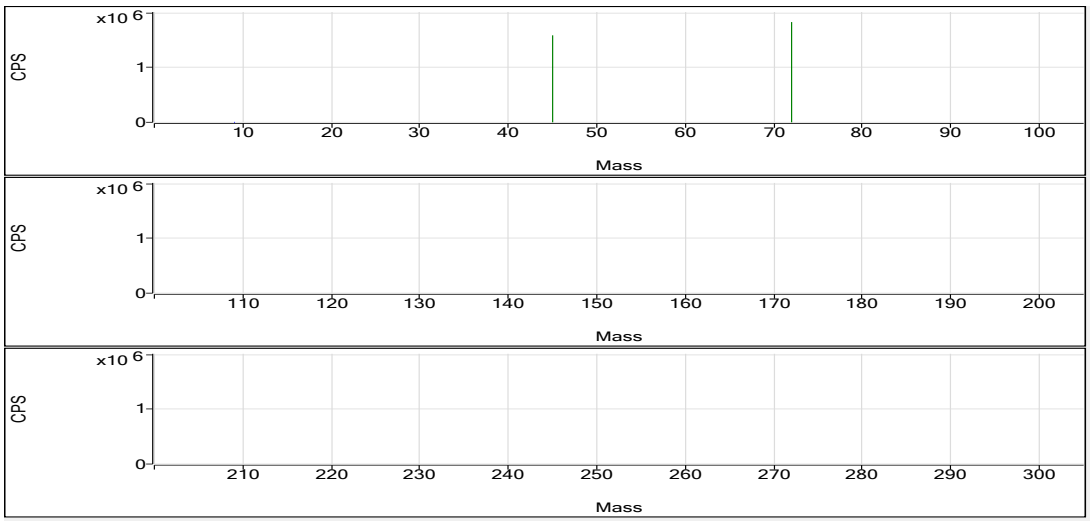
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	-0.031	ppb	N/A	7.33	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.024	ppb	212.4	2.00	0.0000	Pulse	1.5000	3
Na	23	45	He	-2.755	ppb	N/A	8152.48	0.3941	Pulse	0.1000	3
Mg	24	45	He	1.305	ppb	33.5	150.01	0.0073	Pulse	0.1000	3
Al	27	45	He	1.284	ppb	87.1	43.33	0.0021	Pulse	0.1000	3
K	39	45	He	19.007	ppb	72.1	4917.65	0.2379	Pulse	0.1000	3
Ca	44	45	He	-17.645	ppb	N/A	43.33	0.0021	Pulse	0.1000	3
Ti	47	45	He	0.000	ppb	N/A	0.00	0.0000	Pulse	0.1000	3
V	51	45	He	-0.076	ppb	N/A	194.00	0.0094	Pulse	0.5000	3
Cr	52	45	He	0.011	ppb	832.5	660.04	0.0318	Pulse	0.1000	3
Mn	55	45	He	0.147	ppb	43.5	86.67	0.0042	Pulse	0.1000	3
Fe	57	45	He	2.840	ppb	113.2	93.33	0.0046	Pulse	0.1000	3
Co	59	45	He	0.002	ppb	945.2	90.00	0.0044	Pulse	0.1000	3
Ni	60	72	He	0.029	ppb	72.3	120.01	0.0015	Pulse	0.1000	3
Cu	63	72	He	0.002	ppb	1499.7	270.01	0.0034	Pulse	0.1000	3
Zn	66	72	He	0.353	ppb	56.0	110.00	0.0014	Pulse	0.1000	3
As	75	72	He	-0.036	ppb	N/A	31.33	0.0004	Pulse	0.5000	3
Sr	88	72	He	-0.053	ppb	N/A	20.00	0.0003	Pulse	0.1000	3
Mo	98	72	He	-0.005	ppb	N/A	20.00	0.0003	Pulse	0.1000	3
Ag	107	115	He	-0.001	ppb	N/A	16.67	0.0005	Pulse	0.1000	3
Cd	111	115	He	0.000	ppb	4729.6	2.00	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.181	ppb	N/A	596.71	0.0169	Pulse	0.1000	3
Sb	121	115	He	-0.016	ppb	N/A	16.67	0.0005	Pulse	0.1000	3
Ba	137	115	He	0.072	ppb	41.3	13.33	0.0004	Pulse	0.1000	3
Tl	205	209	He	-0.004	ppb	N/A	40.00	0.0002	Pulse	0.1000	3
Pb	208	209	He	-0.017	ppb	N/A	670.03	0.0031	Pulse	0.1000	3
U	238	209	He	0.023	ppb	20.4	360.02	0.0017	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1588529.51	1.4	97.6	Analog	0.1000	3
No Gas	Ge	72	1830462.94	0.3	97.7	Analog	0.1000	3
H2	Sc	45	81736.89	1.0	94.1	Pulse	0.1000	3
H2	Ge	72	143599.67	1.0	94.9	Pulse	0.1000	3
H2	In	115	260141.15	1.4	96.6	Pulse	0.1000	3
He	Sc	45	20695.35	3.2	97.0	Pulse	0.1000	3
He	Ge	72	78951.29	2.3	98.1	Pulse	0.1000	3
He	In	115	35248.80	2.6	96.7	Pulse	0.1000	3
He	Tb	159	234469.43	0.8	95.7	Pulse	0.1000	3
He	Bi	209	213628.96	0.7	96.7	Pulse	0.1000	3

No Gas



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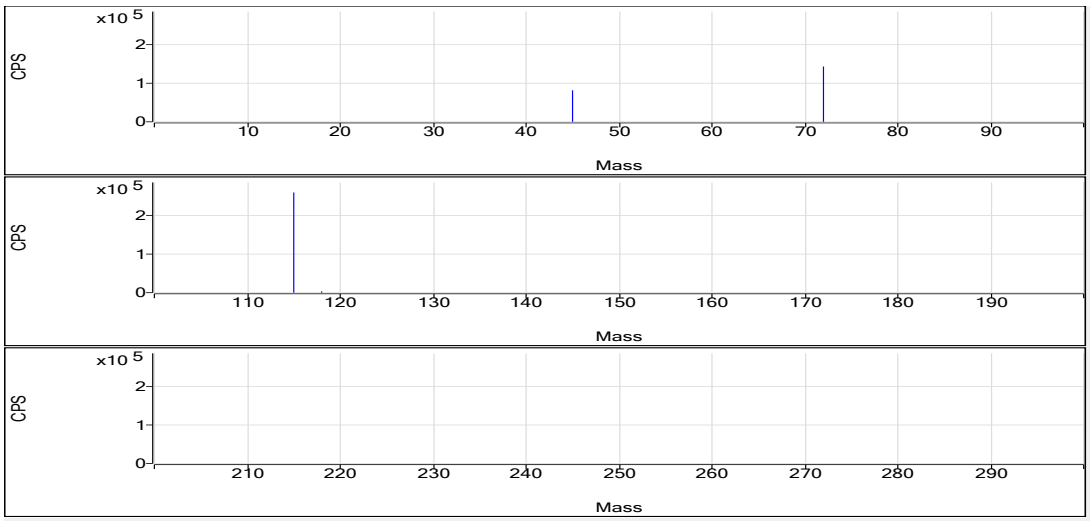
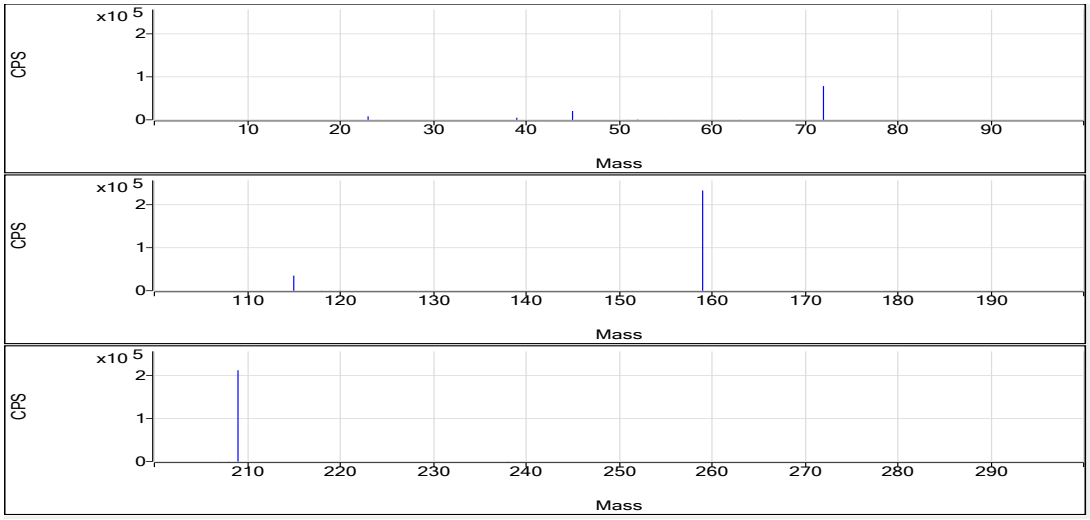


Quantitation Report

He



Quantitation Report

Data File Name	071SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 1:17:41 PM
Sample Name	LCS 410-190873/2-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

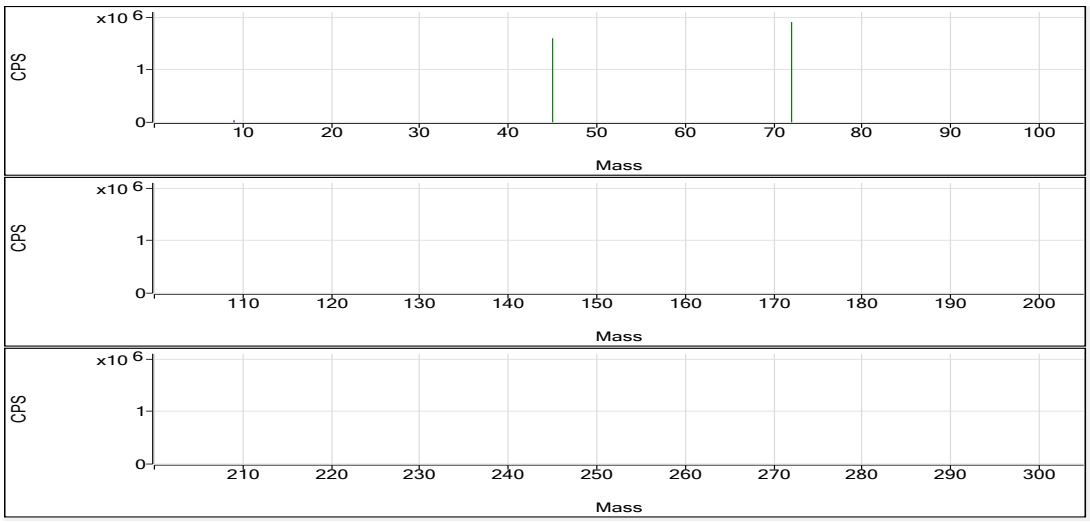
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	48.307	ppb	3.1	37528.31	0.0234	Pulse	0.5000	3
Se	78	72	H2	92.762	ppb	2.4	3778.28	0.0256	Pulse	1.5000	3
Na	23	45	He	4609.715	ppb	2.2	485390.00	22.4926	Pulse	0.1000	3
Mg	24	45	He	4802.148	ppb	2.7	229869.12	10.6530	Pulse	0.1000	3
Al	27	45	He	4751.459	ppb	2.8	56334.94	2.6107	Pulse	0.1000	3
K	39	45	He	4819.703	ppb	2.7	117052.70	5.4243	Pulse	0.1000	3
Ca	44	45	He	4917.167	ppb	6.5	6961.88	0.3227	Pulse	0.1000	3
Ti	47	45	He	491.558	ppb	3.6	5924.73	0.2745	Pulse	0.1000	3
V	51	45	He	477.291	ppb	2.5	298224.41	13.8203	Pulse	0.5000	3
Cr	52	45	He	473.166	ppb	2.7	404242.68	18.7337	Pulse	0.1000	3
Mn	55	45	He	470.731	ppb	1.8	137021.74	6.3490	Pulse	0.1000	3
Fe	57	45	He	4820.483	ppb	2.6	75645.26	3.5051	Pulse	0.1000	3
Co	59	45	He	451.074	ppb	1.7	858893.32	39.7982	Pulse	0.1000	3
Ni	60	72	He	459.906	ppb	2.3	251242.75	3.0778	Pulse	0.1000	3
Cu	63	72	He	443.707	ppb	1.1	737943.01	9.0399	Pulse	0.1000	3
Zn	66	72	He	459.944	ppb	0.9	64854.32	0.7945	Pulse	0.1000	3
As	75	72	He	442.108	ppb	1.4	40687.61	0.4984	Pulse	0.5000	3
Sr	88	72	He	45.562	ppb	2.6	14474.59	0.1773	Pulse	0.1000	3
Mo	98	72	He	46.446	ppb	2.7	58431.95	0.7159	Pulse	0.1000	3
Ag	107	115	He	49.977	ppb	1.5	137185.84	3.8325	Pulse	0.1000	3
Cd	111	115	He	50.384	ppb	0.5	12372.86	0.3456	Pulse	0.5000	3
Sn	120	115	He	100.019	ppb	2.1	66111.70	1.8470	Pulse	0.1000	3
Sb	121	115	He	100.354	ppb	1.0	56864.09	1.5885	Pulse	0.1000	3
Ba	137	115	He	502.451	ppb	1.6	93642.39	2.6161	Pulse	0.1000	3
Tl	205	209	He	99.728	ppb	1.7	758344.15	3.6023	Pulse	0.1000	3
Pb	208	209	He	49.239	ppb	1.3	502415.57	2.3865	Pulse	0.1000	3
U	238	209	He	47.644	ppb	1.3	638896.53	3.0348	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1601216.85	1.7	98.4	Analog	0.1000	3
No Gas	Ge	72	1910259.50	0.8	102.0	Analog	0.1000	3
H2	Sc	45	79618.03	1.0	91.6	Pulse	0.1000	3
H2	Ge	72	147592.78	2.3	97.5	Pulse	0.1000	3
H2	In	115	261149.05	0.7	97.0	Pulse	0.1000	3
He	Sc	45	21586.57	2.2	101.1	Pulse	0.1000	3
He	Ge	72	81639.51	1.5	101.4	Pulse	0.1000	3
He	In	115	35796.74	0.4	98.2	Pulse	0.1000	3
He	Tb	159	235294.71	1.1	96.0	Pulse	0.1000	3
He	Bi	209	210546.52	1.4	95.3	Pulse	0.1000	3

No Gas



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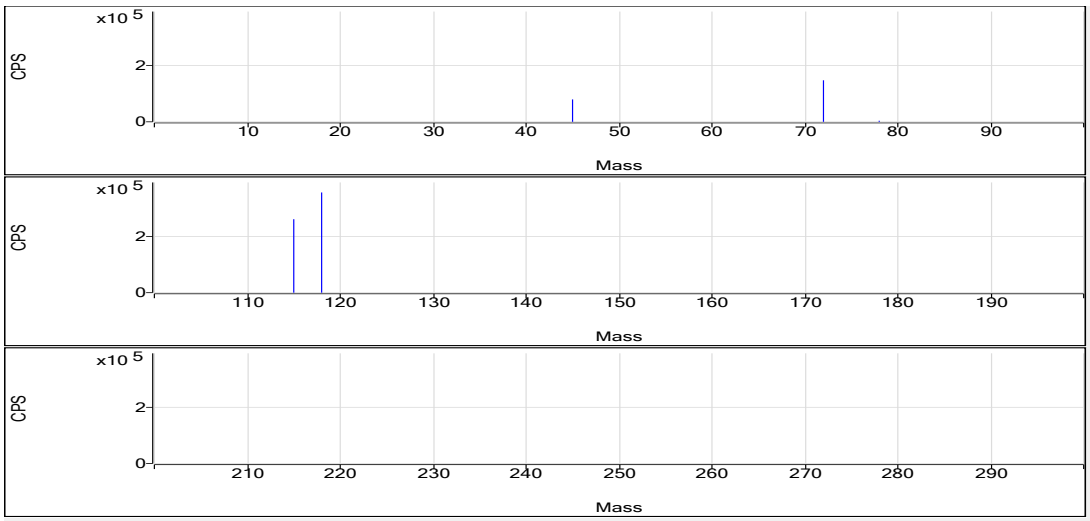
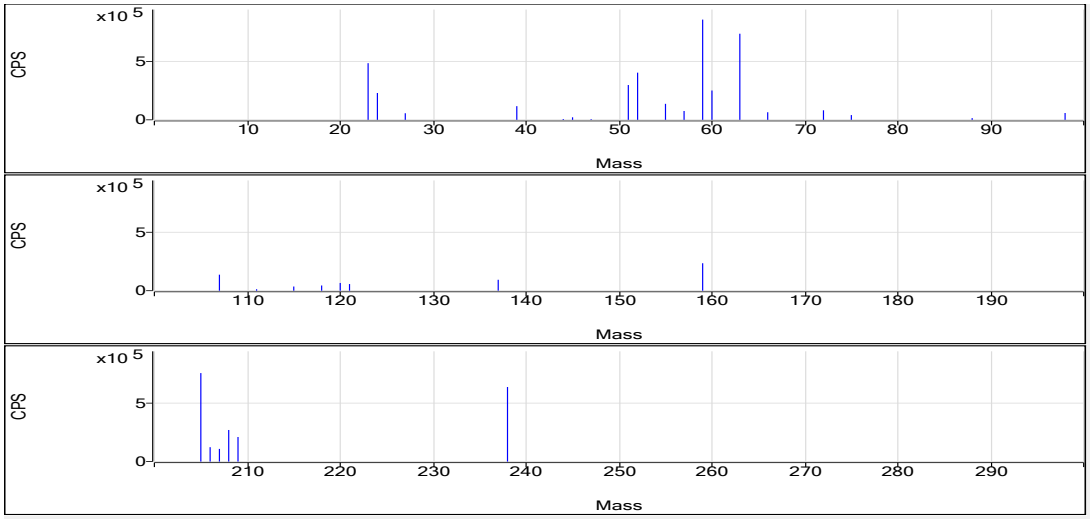


Quantitation Report

He



Quantitation Report

Data File Name	072SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 1:19:43 PM
Sample Name	410-61294-E-3-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

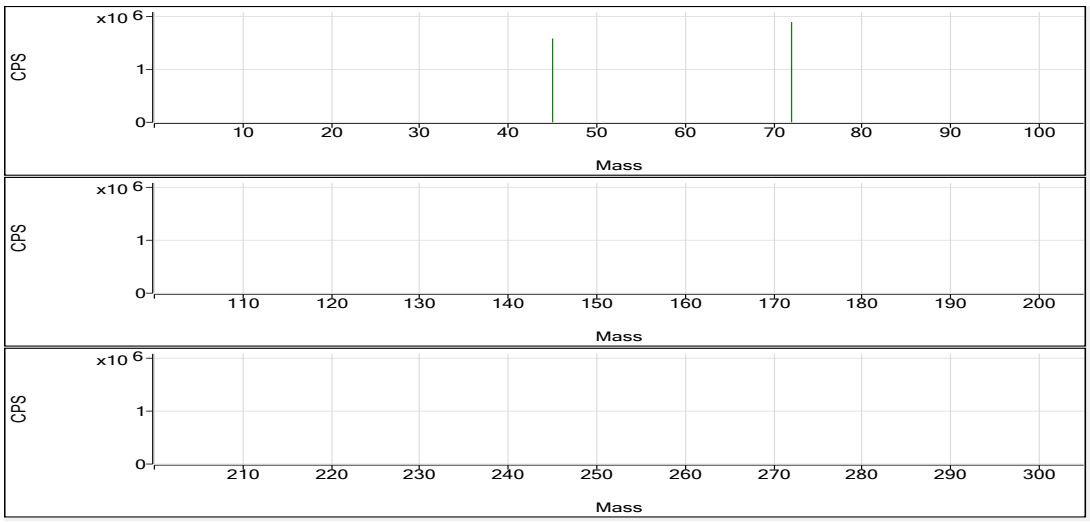
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.012	ppb	101.9	40.00	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.210	ppb	31.9	9.56	0.0001	Pulse	1.5000	3
Na	23	45	He	66960.879	ppb	1.5	6519639.07	321.2183	Analog	0.1000	3
Mg	24	45	He	25775.850	ppb	1.3	1160224.98	57.1615	Analog	0.1000	3
Al	27	45	He	8.517	ppb	12.9	123.34	0.0061	Pulse	0.1000	3
K	39	45	He	2215.134	ppb	1.8	52986.82	2.6105	Pulse	0.1000	3
Ca	44	45	He	78587.778	ppb	1.4	103678.00	5.1082	Pulse	0.1000	3
Ti	47	45	He	0.000	ppb	N/A	0.00	0.0000	Pulse	0.1000	3
V	51	45	He	0.335	ppb	17.7	432.01	0.0213	Pulse	0.5000	3
Cr	52	45	He	0.353	ppb	41.6	920.06	0.0454	Pulse	0.1000	3
Mn	55	45	He	6313.615	ppb	0.7	1727918.36	85.1279	Analog	0.1000	3
Fe	57	45	He	2850.134	ppb	1.7	42085.53	2.0734	Pulse	0.1000	3
Co	59	45	He	0.522	ppb	17.3	1020.08	0.0502	Pulse	0.1000	3
Ni	60	72	He	0.735	ppb	10.4	513.36	0.0062	Pulse	0.1000	3
Cu	63	72	He	0.341	ppb	21.9	850.05	0.0103	Pulse	0.1000	3
Zn	66	72	He	1.025	ppb	25.2	210.01	0.0026	Pulse	0.1000	3
As	75	72	He	8.953	ppb	3.6	865.36	0.0105	Pulse	0.5000	3
Sr	88	72	He	534.665	ppb	1.0	170733.16	2.0760	Pulse	0.1000	3
Mo	98	72	He	17.006	ppb	2.7	21573.77	0.2623	Pulse	0.1000	3
Ag	107	115	He	0.014	ppb	75.1	56.67	0.0016	Pulse	0.1000	3
Cd	111	115	He	0.028	ppb	45.0	8.67	0.0002	Pulse	0.5000	3
Sn	120	115	He	-0.106	ppb	N/A	643.37	0.0183	Pulse	0.1000	3
Sb	121	115	He	0.049	ppb	109.2	53.33	0.0015	Pulse	0.1000	3
Ba	137	115	He	541.044	ppb	1.0	99120.18	2.8170	Pulse	0.1000	3
Tl	205	209	He	0.067	ppb	19.6	573.37	0.0028	Pulse	0.1000	3
Pb	208	209	He	0.053	ppb	15.0	1343.41	0.0065	Pulse	0.1000	3
U	238	209	He	1.004	ppb	1.5	13260.61	0.0642	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1577525.81	0.6	96.9	Analog	0.1000	3
No Gas	Ge	72	1885973.98	1.2	100.7	Analog	0.1000	3
H2	Sc	45	79732.29	1.7	91.8	Pulse	0.1000	3
H2	Ge	72	146206.45	1.6	96.6	Pulse	0.1000	3
H2	In	115	255484.89	1.1	94.9	Pulse	0.1000	3
He	Sc	45	20298.16	0.9	95.1	Pulse	0.1000	3
He	Ge	72	82243.64	0.3	102.2	Pulse	0.1000	3
He	In	115	35188.73	1.2	96.5	Pulse	0.1000	3
He	Tb	159	233304.40	0.4	95.2	Pulse	0.1000	3
He	Bi	209	206653.82	0.1	93.5	Pulse	0.1000	3

No Gas



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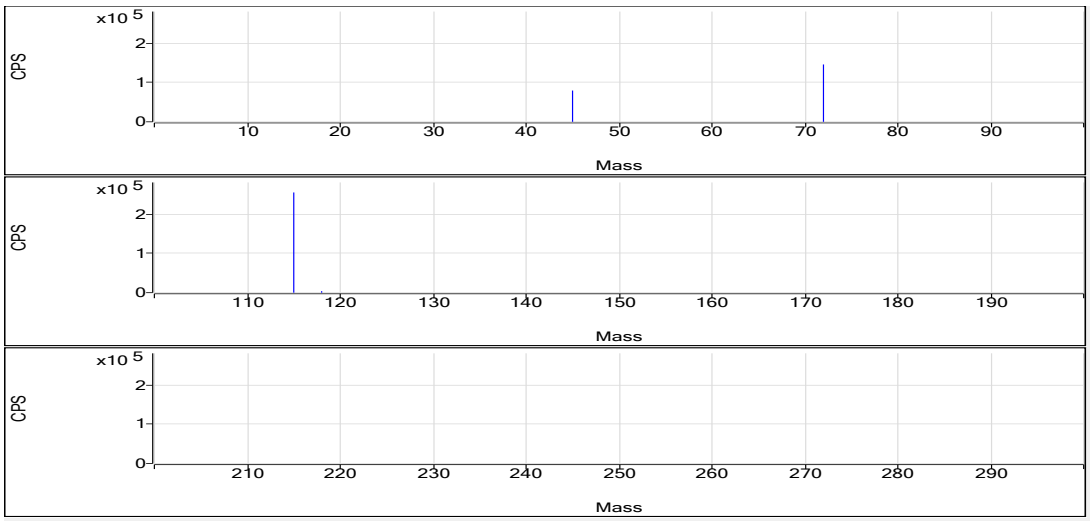
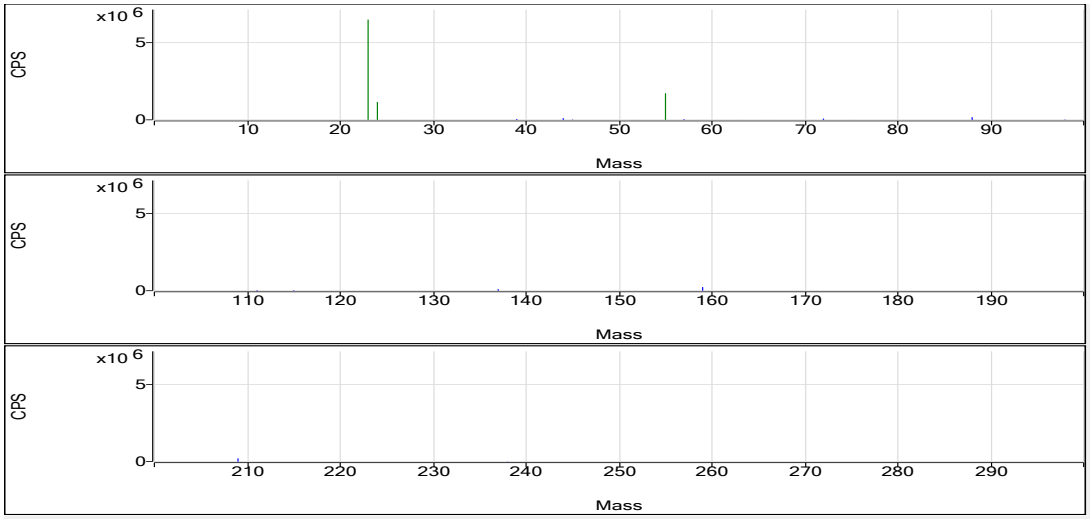


Quantitation Report

He



Quantitation Report

Data File Name	073SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 1:21:44 PM
Sample Name	410-61294-E-3-A PDS
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

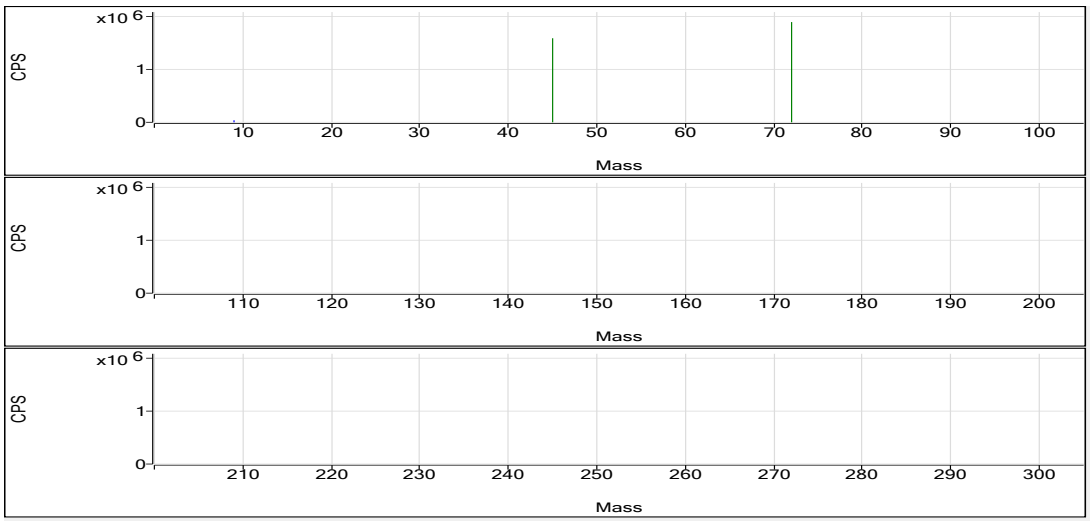
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	49.290	ppb	0.7	37983.43	0.0239	Pulse	0.5000	3
Se	78	72	H2	96.277	ppb	1.2	3815.85	0.0266	Pulse	1.5000	3
Na	23	45	He	67928.796	ppb	3.5	6797740.94	325.8556	Analog	0.1000	3
Mg	24	45	He	29717.250	ppb	3.7	1374704.20	65.9014	Analog	0.1000	3
Al	27	45	He	5062.190	ppb	4.2	58014.96	2.7814	Pulse	0.1000	3
K	39	45	He	7139.380	ppb	3.1	165452.96	7.9304	Pulse	0.1000	3
Ca	44	45	He	78762.947	ppb	2.6	106817.21	5.1196	Pulse	0.1000	3
Ti	47	45	He	507.861	ppb	2.7	5918.06	0.2836	Pulse	0.1000	3
V	51	45	He	512.286	ppb	3.0	309460.21	14.8328	Pulse	0.5000	3
Cr	52	45	He	501.751	ppb	3.1	414405.83	19.8636	Pulse	0.1000	3
Mn	55	45	He	6505.136	ppb	3.0	1829891.80	87.7102	Analog	0.1000	3
Fe	57	45	He	7705.535	ppb	2.1	116884.72	5.6014	Pulse	0.1000	3
Co	59	45	He	474.206	ppb	2.9	872901.55	41.8390	Pulse	0.1000	3
Ni	60	72	He	468.859	ppb	0.6	253933.26	3.1377	Pulse	0.1000	3
Cu	63	72	He	454.126	ppb	1.7	748715.59	9.2521	Pulse	0.1000	3
Zn	66	72	He	480.520	ppb	0.6	67174.51	0.8300	Pulse	0.1000	3
As	75	72	He	476.331	ppb	0.8	43459.72	0.5370	Pulse	0.5000	3
Sr	88	72	He	585.954	ppb	1.7	184106.75	2.2751	Pulse	0.1000	3
Mo	98	72	He	64.851	ppb	0.6	80886.25	0.9994	Pulse	0.1000	3
Ag	107	115	He	38.983	ppb	0.3	104657.29	2.9895	Pulse	0.1000	3
Cd	111	115	He	52.772	ppb	2.7	12671.78	0.3620	Pulse	0.5000	3
Sn	120	115	He	106.471	ppb	2.2	68771.15	1.9648	Pulse	0.1000	3
Sb	121	115	He	105.702	ppb	0.1	58574.34	1.6732	Pulse	0.1000	3
Ba	137	115	He	1046.809	ppb	1.1	190786.93	5.4503	Pulse	0.1000	3
Tl	205	209	He	102.972	ppb	0.2	765726.45	3.7195	Pulse	0.1000	3
Pb	208	209	He	50.970	ppb	0.4	508535.03	2.4702	Pulse	0.1000	3
U	238	209	He	51.411	ppb	0.2	674148.82	3.2747	Pulse	0.1000	3

ISTD Table:

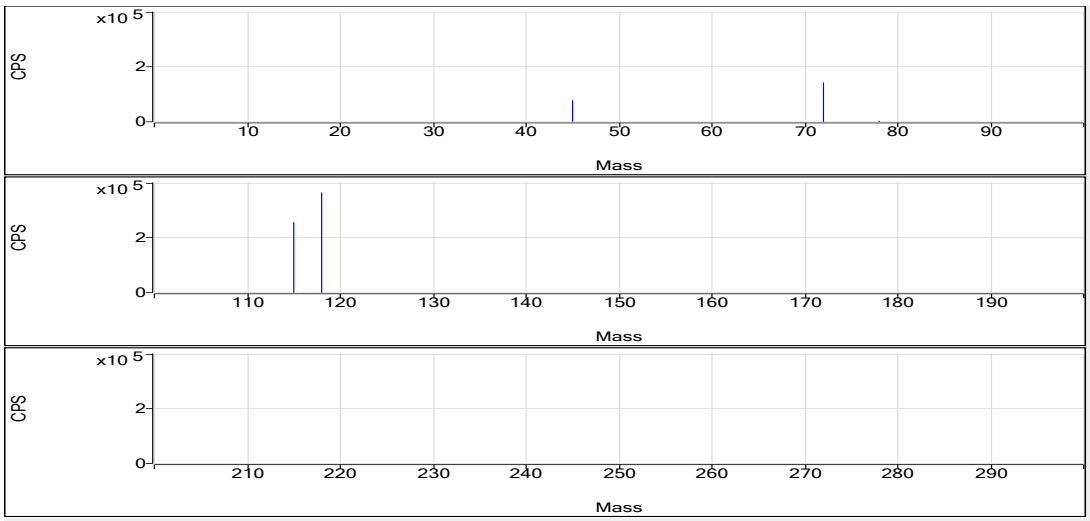
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1587886.54	1.3	97.6	Analog	0.1000	3
No Gas	Ge	72	1893321.59	0.3	101.1	Analog	0.1000	3
H2	Sc	45	78945.32	1.6	90.8	Pulse	0.1000	3
H2	Ge	72	143622.38	1.3	94.9	Pulse	0.1000	3
H2	In	115	256928.97	0.9	95.4	Pulse	0.1000	3
He	Sc	45	20875.50	3.0	97.8	Pulse	0.1000	3
He	Ge	72	80932.92	1.0	100.5	Pulse	0.1000	3
He	In	115	35008.12	1.4	96.0	Pulse	0.1000	3
He	Tb	159	232697.81	0.7	95.0	Pulse	0.1000	3
He	Bi	209	205865.52	0.2	93.2	Pulse	0.1000	3

No Gas

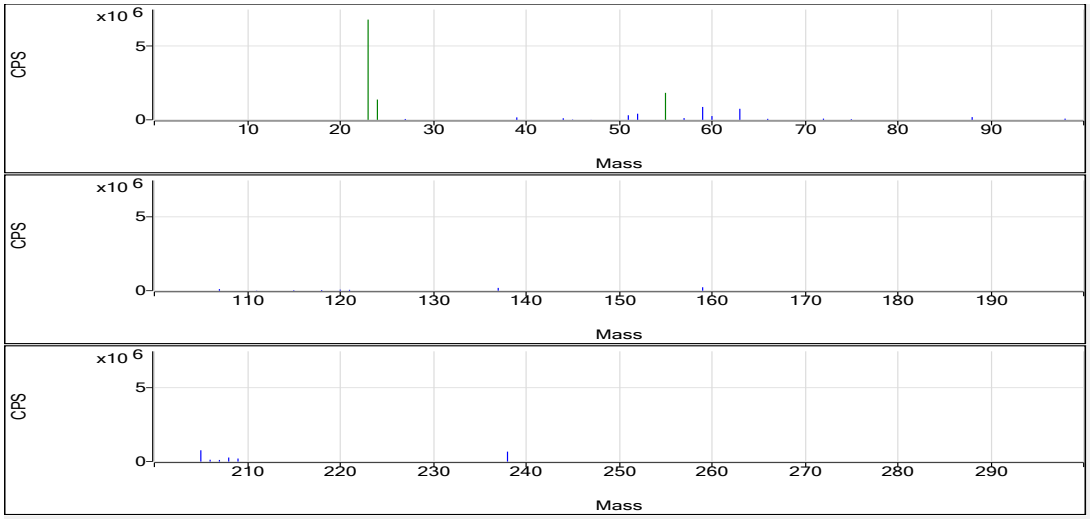


H2



Quantitation Report

He



Quantitation Report

Data File Name	074SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 1:23:44 PM
Sample Name	410-61294-E-3-B DU
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

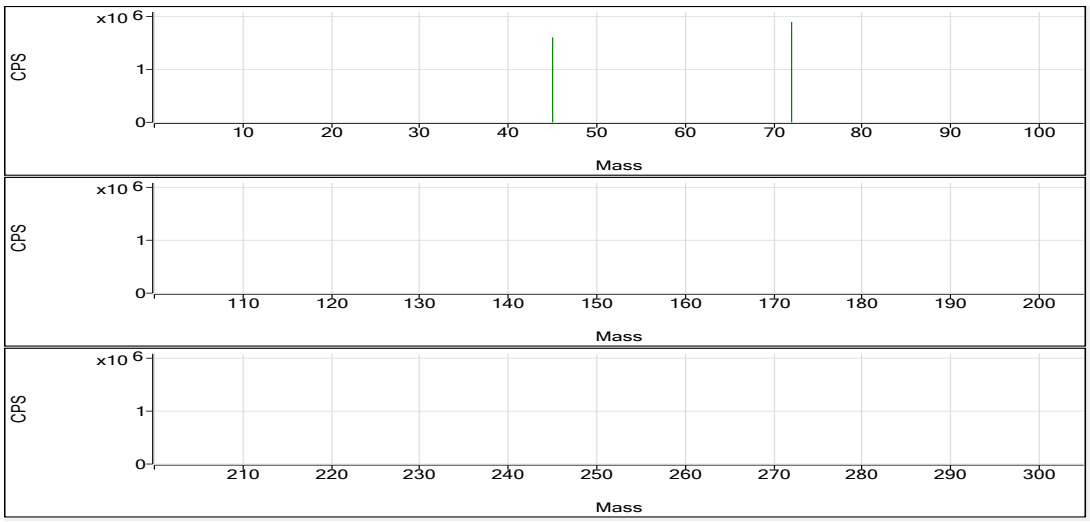
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.001	ppb	1333.8	32.00	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.209	ppb	24.3	9.56	0.0001	Pulse	1.5000	3
Na	23	45	He	60133.174	ppb	1.0	6067786.16	288.5066	Analog	0.1000	3
Mg	24	45	He	22554.234	ppb	0.8	1051953.97	50.0176	Pulse	0.1000	3
Al	27	45	He	13.619	ppb	20.9	186.68	0.0089	Pulse	0.1000	3
K	39	45	He	1972.686	ppb	3.0	49390.78	2.3486	Pulse	0.1000	3
Ca	44	45	He	70978.390	ppb	0.6	97039.12	4.6139	Pulse	0.1000	3
Ti	47	45	He	0.570	ppb	86.6	6.67	0.0003	Pulse	0.1000	3
V	51	45	He	0.347	ppb	9.4	454.68	0.0216	Pulse	0.5000	3
Cr	52	45	He	0.348	ppb	25.8	950.06	0.0452	Pulse	0.1000	3
Mn	55	45	He	5695.719	ppb	1.1	1615179.30	76.7969	Analog	0.1000	3
Fe	57	45	He	2523.922	ppb	0.6	38625.82	1.8364	Pulse	0.1000	3
Co	59	45	He	0.477	ppb	8.5	973.40	0.0463	Pulse	0.1000	3
Ni	60	72	He	0.748	ppb	7.1	526.69	0.0063	Pulse	0.1000	3
Cu	63	72	He	0.343	ppb	17.0	863.39	0.0104	Pulse	0.1000	3
Zn	66	72	He	1.077	ppb	16.7	220.01	0.0026	Pulse	0.1000	3
As	75	72	He	8.293	ppb	2.6	813.36	0.0098	Pulse	0.5000	3
Sr	88	72	He	499.926	ppb	2.8	161435.95	1.9411	Pulse	0.1000	3
Mo	98	72	He	15.767	ppb	2.1	20235.16	0.2432	Pulse	0.1000	3
Ag	107	115	He	0.010	ppb	77.8	46.67	0.0013	Pulse	0.1000	3
Cd	111	115	He	0.022	ppb	21.7	7.33	0.0002	Pulse	0.5000	3
Sn	120	115	He	0.005	ppb	3983.9	720.04	0.0203	Pulse	0.1000	3
Sb	121	115	He	0.079	ppb	61.8	70.00	0.0020	Pulse	0.1000	3
Ba	137	115	He	507.411	ppb	0.9	93770.05	2.6419	Pulse	0.1000	3
Tl	205	209	He	0.080	ppb	22.7	670.04	0.0032	Pulse	0.1000	3
Pb	208	209	He	0.077	ppb	17.7	1583.43	0.0077	Pulse	0.1000	3
U	238	209	He	0.919	ppb	3.4	12139.49	0.0588	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1601005.39	0.1	98.4	Analog	0.1000	3
No Gas	Ge	72	1889303.88	1.3	100.9	Analog	0.1000	3
H2	Sc	45	79564.74	1.2	91.6	Pulse	0.1000	3
H2	Ge	72	146474.32	1.1	96.8	Pulse	0.1000	3
H2	In	115	258076.81	0.7	95.9	Pulse	0.1000	3
He	Sc	45	21032.54	0.9	98.5	Pulse	0.1000	3
He	Ge	72	83185.56	1.2	103.3	Pulse	0.1000	3
He	In	115	35496.10	1.2	97.4	Pulse	0.1000	3
He	Tb	159	236160.76	0.7	96.4	Pulse	0.1000	3
He	Bi	209	206624.04	0.4	93.5	Pulse	0.1000	3

No Gas



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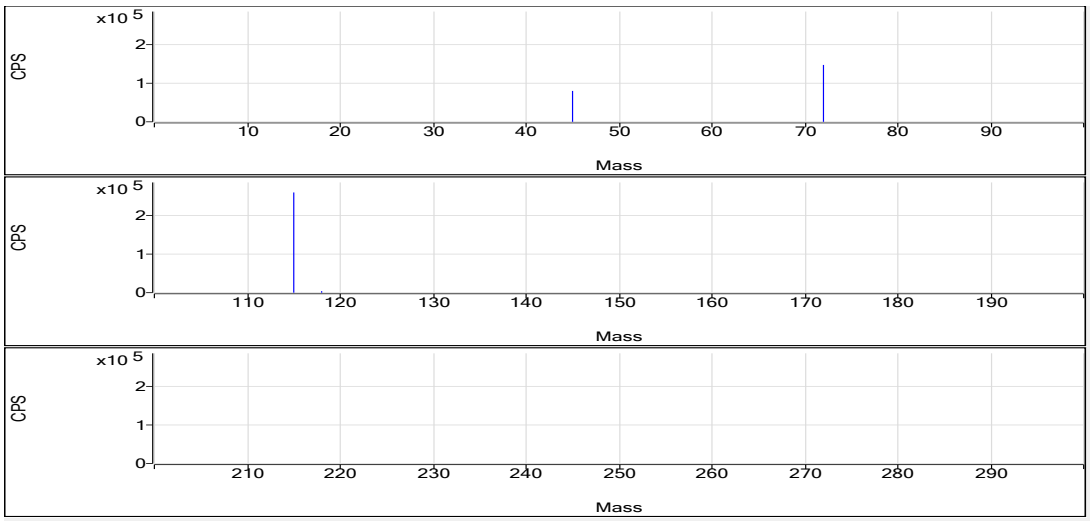
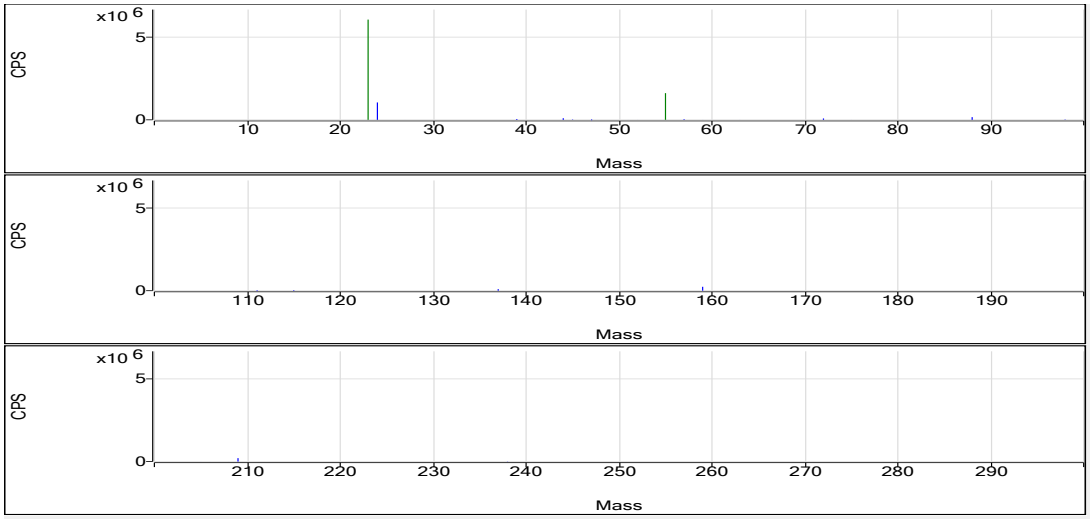


Quantitation Report

He



Quantitation Report

Data File Name	075SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 1:25:45 PM
Sample Name	410-61294-E-3-C MS
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

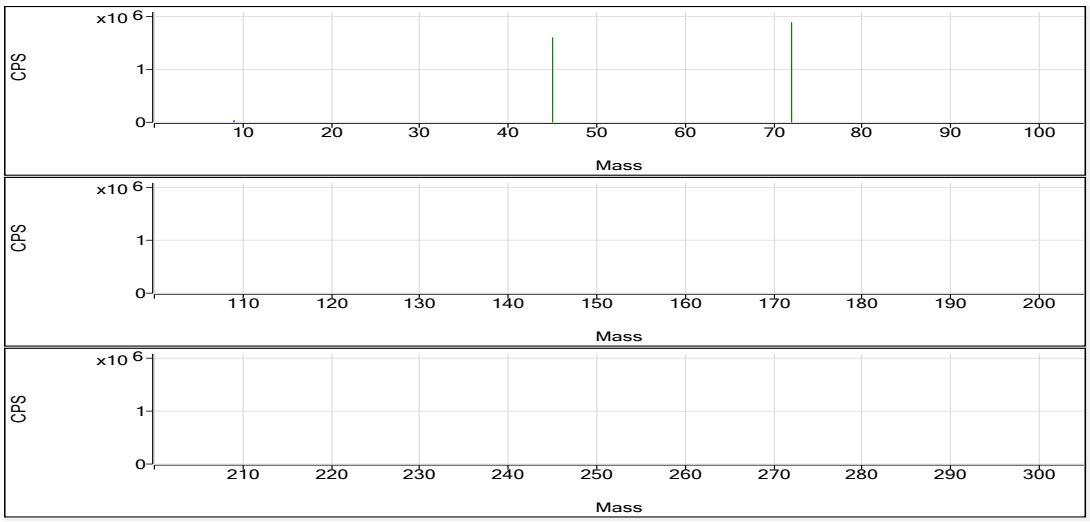
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	48.700	ppb	1.7	38003.46	0.0236	Pulse	0.5000	3
Se	78	72	H2	93.534	ppb	1.4	3800.29	0.0258	Pulse	1.5000	3
Na	23	45	He	63672.945	ppb	0.7	6441680.53	305.4657	Analog	0.1000	3
Mg	24	45	He	27947.987	ppb	1.3	1306971.88	61.9781	Analog	0.1000	3
Al	27	45	He	4926.625	ppb	1.3	57087.99	2.7069	Pulse	0.1000	3
K	39	45	He	6869.238	ppb	0.9	161082.44	7.6386	Pulse	0.1000	3
Ca	44	45	He	75024.872	ppb	2.6	102828.10	4.8767	Pulse	0.1000	3
Ti	47	45	He	513.785	ppb	7.6	6048.14	0.2870	Pulse	0.1000	3
V	51	45	He	494.864	ppb	1.0	302157.83	14.3288	Pulse	0.5000	3
Cr	52	45	He	482.229	ppb	2.1	402577.36	19.0920	Pulse	0.1000	3
Mn	55	45	He	5925.917	ppb	2.2	1684762.47	79.9007	Analog	0.1000	3
Fe	57	45	He	7181.707	ppb	2.5	110084.63	5.2208	Pulse	0.1000	3
Co	59	45	He	456.098	ppb	1.3	848570.82	40.2415	Pulse	0.1000	3
Ni	60	72	He	455.762	ppb	1.9	248565.76	3.0501	Pulse	0.1000	3
Cu	63	72	He	441.294	ppb	0.5	732796.53	8.9908	Pulse	0.1000	3
Zn	66	72	He	470.581	ppb	1.4	66243.57	0.8128	Pulse	0.1000	3
As	75	72	He	464.822	ppb	1.8	42707.38	0.5240	Pulse	0.5000	3
Sr	88	72	He	541.707	ppb	0.5	171432.08	2.1033	Pulse	0.1000	3
Mo	98	72	He	63.347	ppb	2.4	79558.55	0.9763	Pulse	0.1000	3
Ag	107	115	He	49.426	ppb	2.0	135142.72	3.7903	Pulse	0.1000	3
Cd	111	115	He	50.505	ppb	0.8	12355.51	0.3465	Pulse	0.5000	3
Sn	120	115	He	102.118	ppb	2.1	67220.33	1.8853	Pulse	0.1000	3
Sb	121	115	He	102.792	ppb	1.8	58015.76	1.6271	Pulse	0.1000	3
Ba	137	115	He	994.158	ppb	1.3	184566.61	5.1762	Pulse	0.1000	3
Tl	205	209	He	100.577	ppb	1.3	757594.10	3.6330	Pulse	0.1000	3
Pb	208	209	He	49.346	ppb	0.9	498744.20	2.3917	Pulse	0.1000	3
U	238	209	He	49.648	ppb	1.1	659459.91	3.1624	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1607970.18	0.7	98.8	Analog	0.1000	3
No Gas	Ge	72	1898445.28	0.7	101.4	Analog	0.1000	3
H2	Sc	45	80771.11	1.4	92.9	Pulse	0.1000	3
H2	Ge	72	147215.47	0.9	97.2	Pulse	0.1000	3
H2	In	115	258331.57	0.8	96.0	Pulse	0.1000	3
He	Sc	45	21089.23	1.2	98.8	Pulse	0.1000	3
He	Ge	72	81509.18	1.4	101.3	Pulse	0.1000	3
He	In	115	35659.98	1.1	97.8	Pulse	0.1000	3
He	Tb	159	235623.52	0.9	96.2	Pulse	0.1000	3
He	Bi	209	208545.93	1.0	94.4	Pulse	0.1000	3

No Gas



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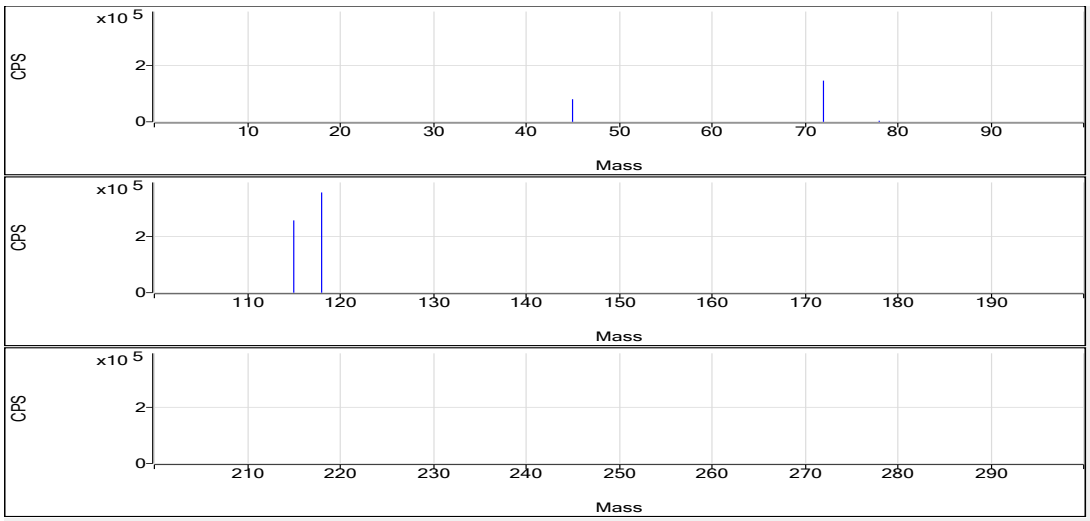
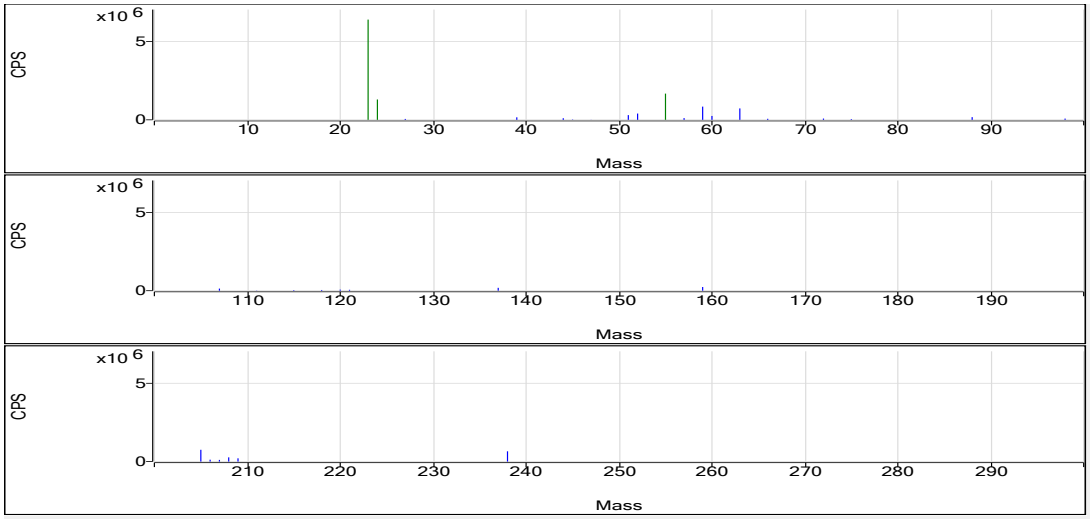


Quantitation Report

He



Quantitation Report

Data File Name	076SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 1:27:45 PM
Sample Name	410-61294-E-3-D MSD
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

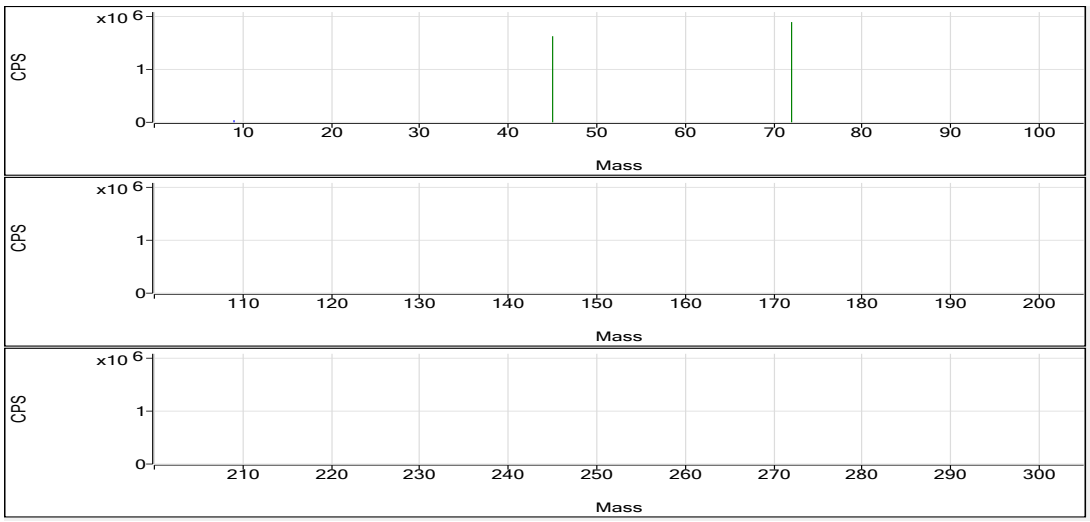
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	50.114	ppb	2.0	39472.55	0.0243	Pulse	0.5000	3
Se	78	72	H2	95.234	ppb	2.4	3866.97	0.0263	Pulse	1.5000	3
Na	23	45	He	64812.590	ppb	1.3	6650662.82	310.9258	Analog	0.1000	3
Mg	24	45	He	28521.078	ppb	1.6	1352862.95	63.2489	Analog	0.1000	3
Al	27	45	He	4962.876	ppb	2.4	58319.43	2.7268	Pulse	0.1000	3
K	39	45	He	6994.926	ppb	0.7	166303.88	7.7743	Pulse	0.1000	3
Ca	44	45	He	76895.000	ppb	1.6	106907.56	4.9982	Pulse	0.1000	3
Ti	47	45	He	499.568	ppb	1.5	5968.10	0.2790	Pulse	0.1000	3
V	51	45	He	504.163	ppb	1.6	312235.51	14.5978	Pulse	0.5000	3
Cr	52	45	He	492.419	ppb	1.8	416969.20	19.4947	Pulse	0.1000	3
Mn	55	45	He	6009.229	ppb	1.5	1733047.58	81.0239	Analog	0.1000	3
Fe	57	45	He	7379.226	ppb	2.0	114734.40	5.3643	Pulse	0.1000	3
Co	59	45	He	471.554	ppb	1.7	889891.47	41.6050	Pulse	0.1000	3
Ni	60	72	He	470.266	ppb	2.2	259637.69	3.1471	Pulse	0.1000	3
Cu	63	72	He	452.821	ppb	1.2	761174.44	9.2256	Pulse	0.1000	3
Zn	66	72	He	483.858	ppb	0.8	68955.89	0.8357	Pulse	0.1000	3
As	75	72	He	472.232	ppb	0.9	43926.45	0.5324	Pulse	0.5000	3
Sr	88	72	He	564.724	ppb	0.4	180923.34	2.1927	Pulse	0.1000	3
Mo	98	72	He	65.399	ppb	1.2	83159.65	1.0079	Pulse	0.1000	3
Ag	107	115	He	51.729	ppb	0.5	140050.28	3.9668	Pulse	0.1000	3
Cd	111	115	He	52.655	ppb	1.3	12752.53	0.3612	Pulse	0.5000	3
Sn	120	115	He	108.707	ppb	0.9	70811.56	2.0056	Pulse	0.1000	3
Sb	121	115	He	107.985	ppb	1.1	60345.55	1.7093	Pulse	0.1000	3
Ba	137	115	He	1037.533	ppb	0.8	190725.18	5.4020	Pulse	0.1000	3
Tl	205	209	He	102.931	ppb	0.8	781760.33	3.7181	Pulse	0.1000	3
Pb	208	209	He	50.774	ppb	1.0	517408.94	2.4608	Pulse	0.1000	3
U	238	209	He	51.312	ppb	1.1	687209.94	3.2684	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1623087.11	0.8	99.7	Analog	0.1000	3
No Gas	Ge	72	1889627.89	1.6	100.9	Analog	0.1000	3
H2	Sc	45	81850.40	0.6	94.2	Pulse	0.1000	3
H2	Ge	72	147138.49	0.6	97.2	Pulse	0.1000	3
H2	In	115	263254.94	0.8	97.8	Pulse	0.1000	3
He	Sc	45	21392.97	1.7	100.2	Pulse	0.1000	3
He	Ge	72	82515.35	1.3	102.5	Pulse	0.1000	3
He	In	115	35305.64	0.4	96.8	Pulse	0.1000	3
He	Tb	159	238181.97	0.7	97.2	Pulse	0.1000	3
He	Bi	209	210272.56	1.1	95.2	Pulse	0.1000	3

No Gas



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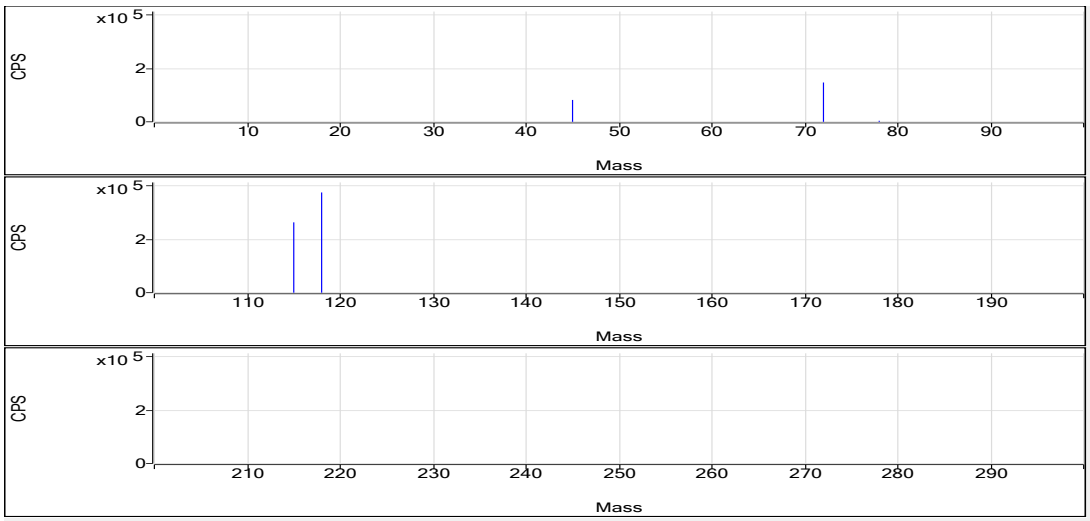
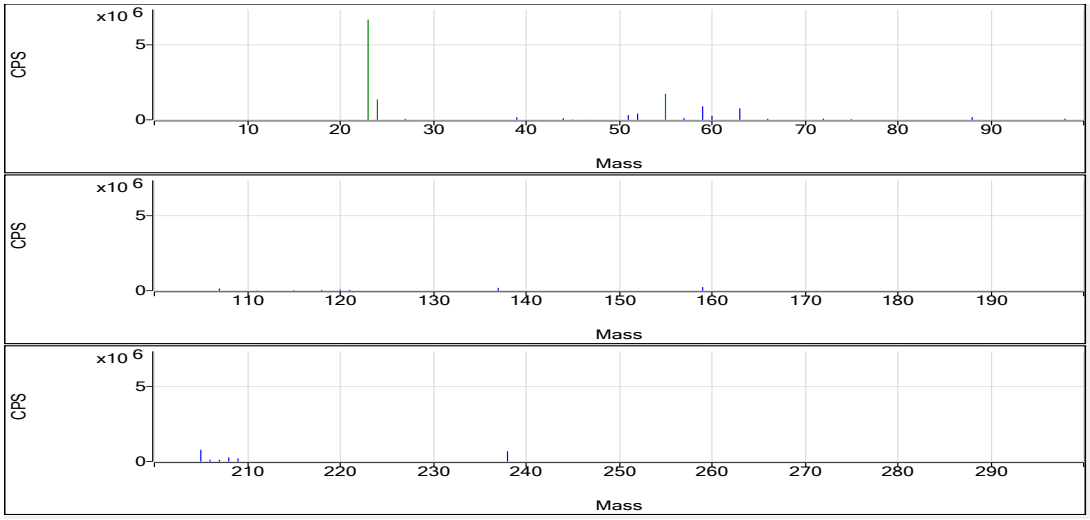


Quantitation Report

He



Quantitation Report

Data File Name	077SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 1:29:45 PM
Sample Name	410-61294-E-3-A SD @5
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

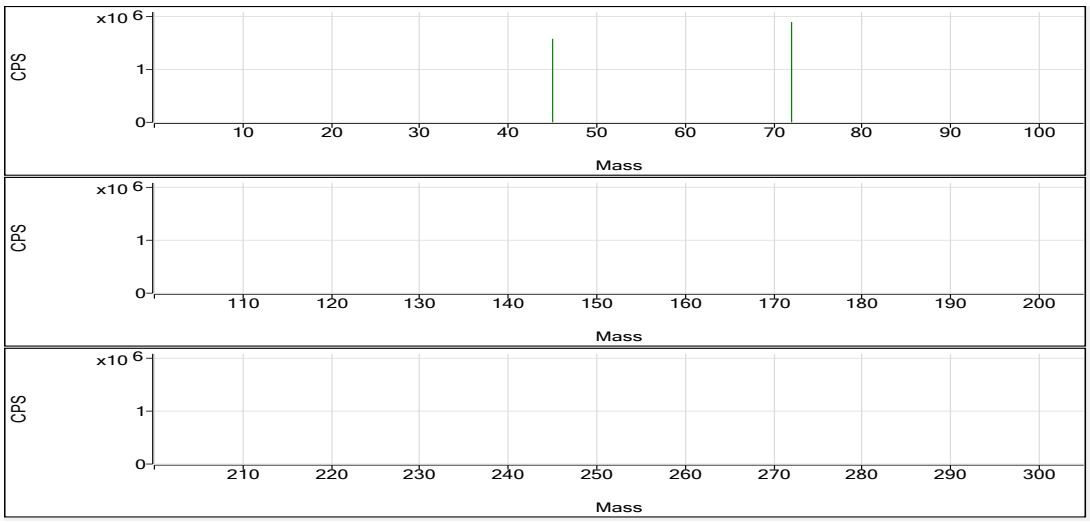
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.023	ppb	66.4	48.67	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.129	ppb	53.7	6.22	0.0000	Pulse	1.5000	3
Na	23	45	He	13697.935	ppb	1.7	1394146.49	66.0344	Analog	0.1000	3
Mg	24	45	He	4976.163	ppb	1.8	233056.93	11.0388	Pulse	0.1000	3
Al	27	45	He	4.636	ppb	59.7	83.34	0.0039	Pulse	0.1000	3
K	39	45	He	459.683	ppb	1.1	15078.22	0.7140	Pulse	0.1000	3
Ca	44	45	He	15796.024	ppb	4.2	21726.74	1.0294	Pulse	0.1000	3
Ti	47	45	He	0.287	ppb	173.2	3.33	0.0002	Pulse	0.1000	3
V	51	45	He	0.211	ppb	3.3	373.34	0.0177	Pulse	0.5000	3
Cr	52	45	He	0.244	ppb	47.6	866.72	0.0411	Pulse	0.1000	3
Mn	55	45	He	1217.659	ppb	1.5	346667.31	16.4197	Pulse	0.1000	3
Fe	57	45	He	567.148	ppb	2.0	8752.95	0.4146	Pulse	0.1000	3
Co	59	45	He	0.268	ppb	18.3	586.70	0.0278	Pulse	0.1000	3
Ni	60	72	He	0.366	ppb	28.0	310.02	0.0038	Pulse	0.1000	3
Cu	63	72	He	0.282	ppb	11.7	750.04	0.0091	Pulse	0.1000	3
Zn	66	72	He	1.096	ppb	40.2	220.01	0.0027	Pulse	0.1000	3
As	75	72	He	2.001	ppb	9.1	221.33	0.0027	Pulse	0.5000	3
Sr	88	72	He	109.913	ppb	1.2	35104.45	0.4271	Pulse	0.1000	3
Mo	98	72	He	3.599	ppb	3.8	4584.24	0.0558	Pulse	0.1000	3
Ag	107	115	He	0.015	ppb	43.2	60.00	0.0017	Pulse	0.1000	3
Cd	111	115	He	0.006	ppb	222.8	3.33	0.0001	Pulse	0.5000	3
Sn	120	115	He	0.243	ppb	68.3	890.12	0.0247	Pulse	0.1000	3
Sb	121	115	He	0.047	ppb	53.6	53.33	0.0015	Pulse	0.1000	3
Ba	137	115	He	111.040	ppb	3.0	20839.90	0.5781	Pulse	0.1000	3
Tl	205	209	He	0.113	ppb	8.5	930.07	0.0044	Pulse	0.1000	3
Pb	208	209	He	0.015	ppb	92.6	976.72	0.0047	Pulse	0.1000	3
U	238	209	He	0.231	ppb	2.0	3130.50	0.0149	Pulse	0.1000	3

ISTD Table:

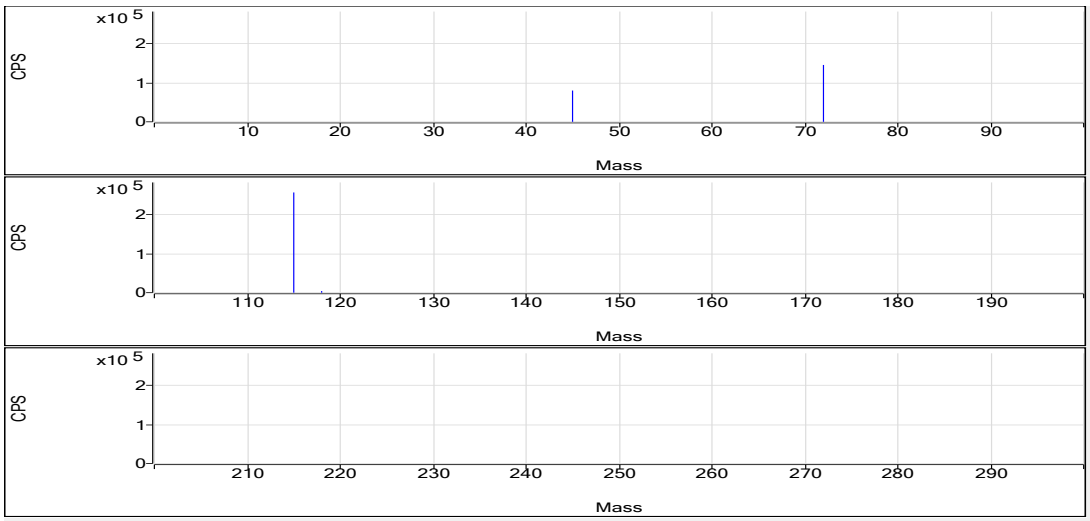
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1571843.15	1.7	96.6	Analog	0.1000	3
No Gas	Ge	72	1886520.91	1.2	100.7	Analog	0.1000	3
H2	Sc	45	80033.94	0.5	92.1	Pulse	0.1000	3
H2	Ge	72	145480.85	1.2	96.1	Pulse	0.1000	3
H2	In	115	256446.70	0.6	95.3	Pulse	0.1000	3
He	Sc	45	21115.99	1.5	98.9	Pulse	0.1000	3
He	Ge	72	82189.65	0.5	102.1	Pulse	0.1000	3
He	In	115	36054.28	1.7	98.9	Pulse	0.1000	3
He	Tb	159	235567.81	1.2	96.1	Pulse	0.1000	3
He	Bi	209	209479.64	0.7	94.8	Pulse	0.1000	3

No Gas

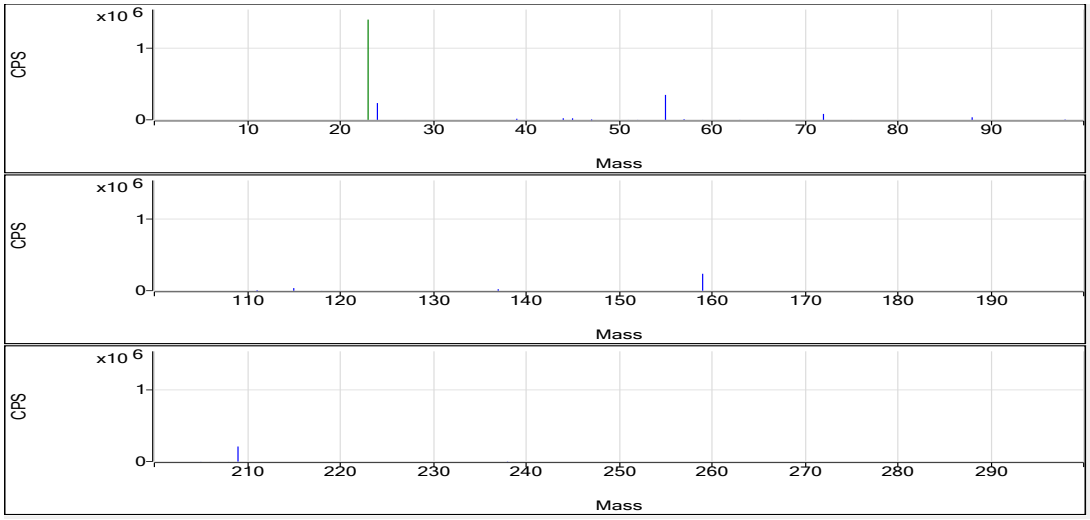


H2



Quantitation Report

He



Quantitation Report

Data File Name	078_CCV.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 1:31:47 PM
Sample Name	CCV 1942322
Sample Type	CCV
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

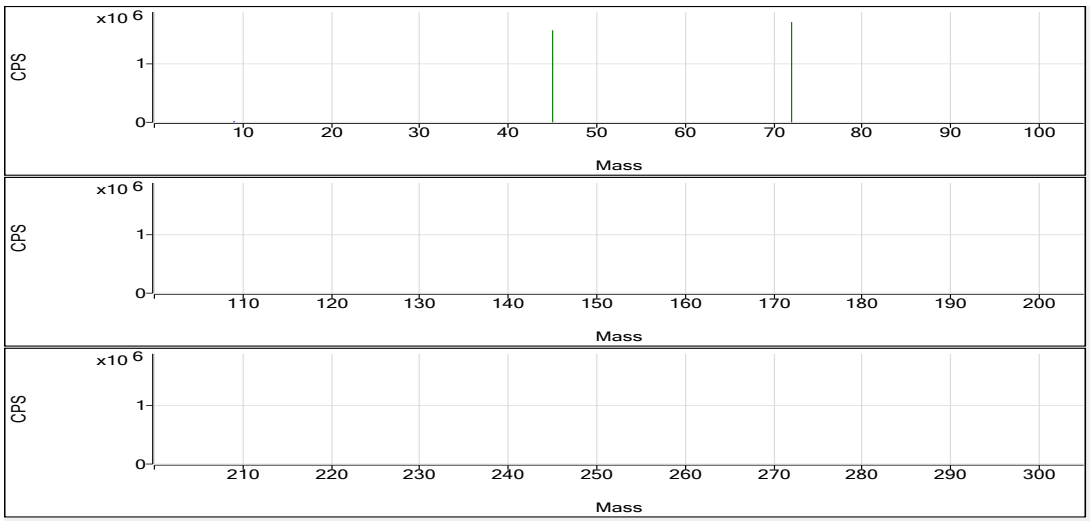
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	29.651	ppb	1.1	22573.05	0.0144	Pulse	0.5000	3
Se	78	72	H2	31.408	ppb	2.1	1141.60	0.0087	Pulse	1.5000	3
Na	23	45	He	5003.499	ppb	1.5	503847.92	24.3792	Pulse	0.1000	3
Mg	24	45	He	5163.050	ppb	1.5	236705.36	11.4533	Pulse	0.1000	3
Al	27	45	He	5249.770	ppb	0.6	59614.63	2.8844	Pulse	0.1000	3
K	39	45	He	5196.297	ppb	1.7	120514.62	5.8312	Pulse	0.1000	3
Ca	44	45	He	5026.581	ppb	4.3	6815.15	0.3298	Pulse	0.1000	3
Ti	47	45	He	293.160	ppb	4.8	3383.84	0.1637	Pulse	0.1000	3
V	51	45	He	310.904	ppb	1.0	186145.38	9.0065	Pulse	0.5000	3
Cr	52	45	He	309.822	ppb	0.2	253754.84	12.2774	Pulse	0.1000	3
Mn	55	45	He	307.853	ppb	2.6	85824.35	4.1529	Pulse	0.1000	3
Fe	57	45	He	5156.003	ppb	0.2	77484.78	3.7489	Pulse	0.1000	3
Co	59	45	He	293.217	ppb	1.2	534706.84	25.8720	Pulse	0.1000	3
Ni	60	72	He	310.422	ppb	0.5	156569.67	2.0779	Pulse	0.1000	3
Cu	63	72	He	303.402	ppb	0.5	465851.21	6.1825	Pulse	0.1000	3
Zn	66	72	He	315.288	ppb	1.7	41059.49	0.5448	Pulse	0.1000	3
As	75	72	He	311.219	ppb	1.2	26447.08	0.3510	Pulse	0.5000	3
Sr	88	72	He	29.960	ppb	3.0	8796.38	0.1168	Pulse	0.1000	3
Mo	98	72	He	31.150	ppb	1.8	36183.92	0.4802	Pulse	0.1000	3
Ag	107	115	He	32.062	ppb	2.3	87054.39	2.4589	Pulse	0.1000	3
Cd	111	115	He	31.805	ppb	3.0	7724.86	0.2182	Pulse	0.5000	3
Sn	120	115	He	31.172	ppb	4.5	20866.24	0.5895	Pulse	0.1000	3
Sb	121	115	He	31.907	ppb	5.1	17892.10	0.5056	Pulse	0.1000	3
Ba	137	115	He	317.643	ppb	3.7	58545.87	1.6538	Pulse	0.1000	3
Tl	205	209	He	31.058	ppb	1.6	236393.03	1.1221	Pulse	0.1000	3
Pb	208	209	He	30.632	ppb	0.6	313075.22	1.4862	Pulse	0.1000	3
U	238	209	He	261.536	ppb	0.2	3509279.01	16.6581	Analog	0.1000	3

ISTD Table:

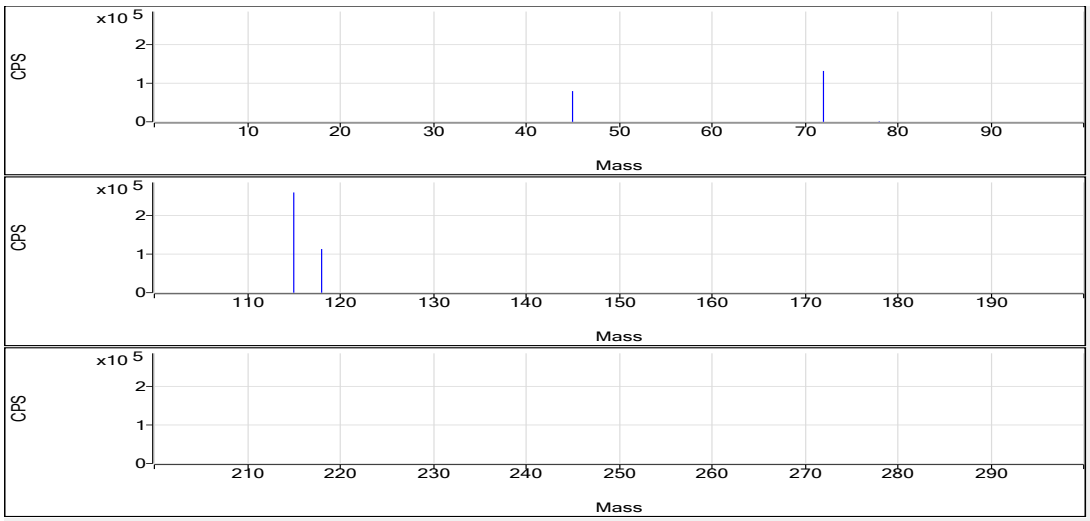
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1568025.97	2.3	96.3	Analog	0.1000	3
No Gas	Ge	72	1708619.92	1.5	91.2	Analog	0.1000	3
H2	Sc	45	79474.59	1.2	91.5	Pulse	0.1000	3
H2	Ge	72	131615.57	1.1	86.9	Pulse	0.1000	3
H2	In	115	259278.56	0.1	96.3	Pulse	0.1000	3
He	Sc	45	20668.55	0.7	96.8	Pulse	0.1000	3
He	Ge	72	75351.66	1.0	93.6	Pulse	0.1000	3
He	In	115	35415.89	2.2	97.1	Pulse	0.1000	3
He	Tb	159	235917.89	1.0	96.3	Pulse	0.1000	3
He	Bi	209	210666.22	0.7	95.3	Pulse	0.1000	3

No Gas

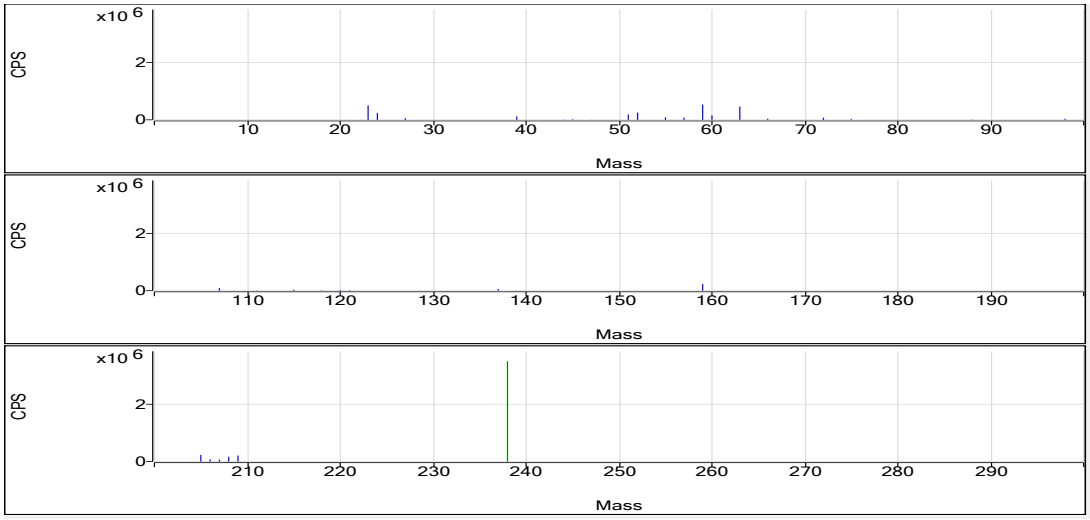


H2



Quantitation Report

He



Quantitation Report

Data File Name	079_CCB.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 1:33:49 PM
Sample Name	CCB 2014932
Sample Type	CCB
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

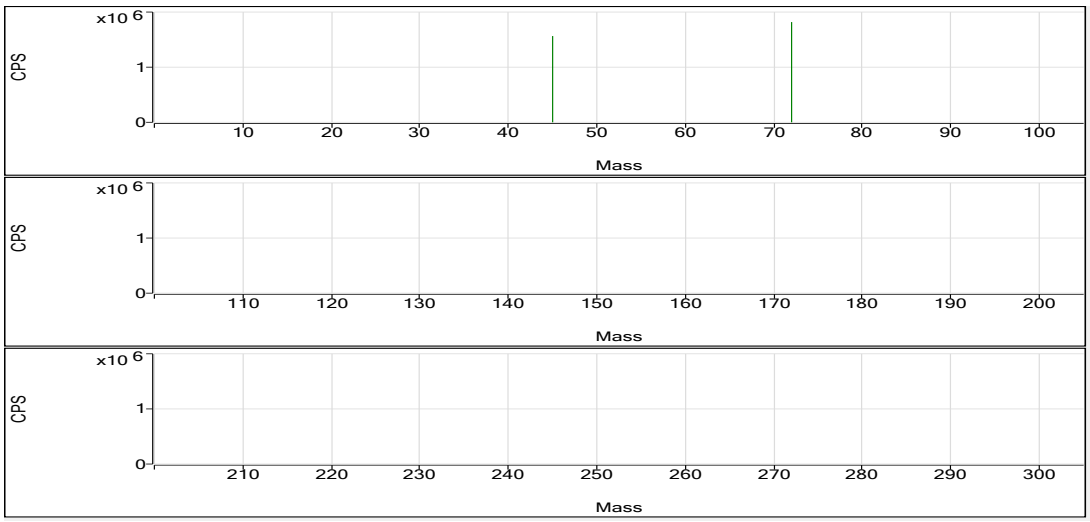
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	-0.006	ppb	N/A	26.67	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.072	ppb	133.7	3.78	0.0000	Pulse	1.5000	3
Na	23	45	He	10.891	ppb	15.0	9523.43	0.4595	Pulse	0.1000	3
Mg	24	45	He	4.334	ppb	20.3	290.01	0.0140	Pulse	0.1000	3
Al	27	45	He	0.369	ppb	358.5	33.33	0.0016	Pulse	0.1000	3
K	39	45	He	12.299	ppb	51.0	4780.96	0.2307	Pulse	0.1000	3
Ca	44	45	He	16.361	ppb	5.6	90.00	0.0043	Pulse	0.1000	3
Ti	47	45	He	0.292	ppb	173.2	3.33	0.0002	Pulse	0.1000	3
V	51	45	He	0.050	ppb	18.6	270.00	0.0130	Pulse	0.5000	3
Cr	52	45	He	0.049	ppb	299.5	690.04	0.0333	Pulse	0.1000	3
Mn	55	45	He	1.532	ppb	35.5	473.36	0.0228	Pulse	0.1000	3
Fe	57	45	He	3.192	ppb	52.6	100.00	0.0048	Pulse	0.1000	3
Co	59	45	He	0.135	ppb	30.7	333.35	0.0161	Pulse	0.1000	3
Ni	60	72	He	0.087	ppb	74.9	150.00	0.0019	Pulse	0.1000	3
Cu	63	72	He	0.104	ppb	29.6	433.36	0.0055	Pulse	0.1000	3
Zn	66	72	He	0.231	ppb	141.5	93.34	0.0012	Pulse	0.1000	3
As	75	72	He	0.093	ppb	82.9	42.67	0.0005	Pulse	0.5000	3
Sr	88	72	He	0.079	ppb	40.2	60.00	0.0008	Pulse	0.1000	3
Mo	98	72	He	0.033	ppb	69.7	66.67	0.0008	Pulse	0.1000	3
Ag	107	115	He	0.004	ppb	96.2	30.00	0.0008	Pulse	0.1000	3
Cd	111	115	He	-0.003	ppb	N/A	1.33	0.0000	Pulse	0.5000	3
Sn	120	115	He	-0.033	ppb	N/A	700.04	0.0196	Pulse	0.1000	3
Sb	121	115	He	0.007	ppb	678.8	30.00	0.0008	Pulse	0.1000	3
Ba	137	115	He	0.215	ppb	1.2	40.00	0.0011	Pulse	0.1000	3
Tl	205	209	He	0.049	ppb	11.2	446.69	0.0021	Pulse	0.1000	3
Pb	208	209	He	0.000	ppb	21872.0	833.38	0.0039	Pulse	0.1000	3
U	238	209	He	0.062	ppb	19.5	890.07	0.0042	Pulse	0.1000	3

ISTD Table:

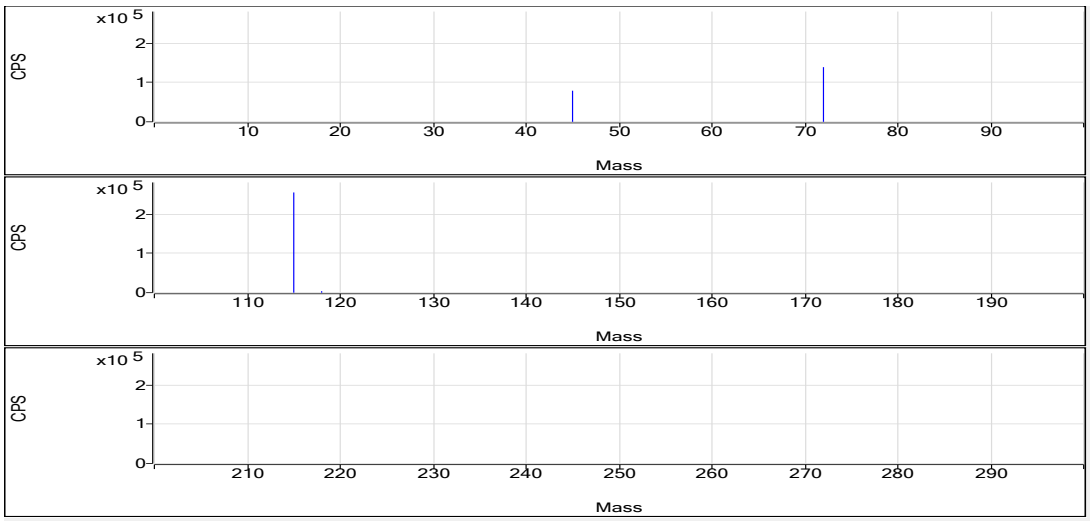
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1569787.22	0.8	96.5	Analog	0.1000	3
No Gas	Ge	72	1823928.93	1.3	97.4	Analog	0.1000	3
H2	Sc	45	79242.64	0.3	91.2	Pulse	0.1000	3
H2	Ge	72	139223.85	1.2	92.0	Pulse	0.1000	3
H2	In	115	255276.30	0.5	94.8	Pulse	0.1000	3
He	Sc	45	20728.62	1.4	97.1	Pulse	0.1000	3
He	Ge	72	78669.81	1.0	97.7	Pulse	0.1000	3
He	In	115	35683.23	1.2	97.9	Pulse	0.1000	3
He	Tb	159	234513.21	0.7	95.7	Pulse	0.1000	3
He	Bi	209	211456.06	0.8	95.7	Pulse	0.1000	3

No Gas

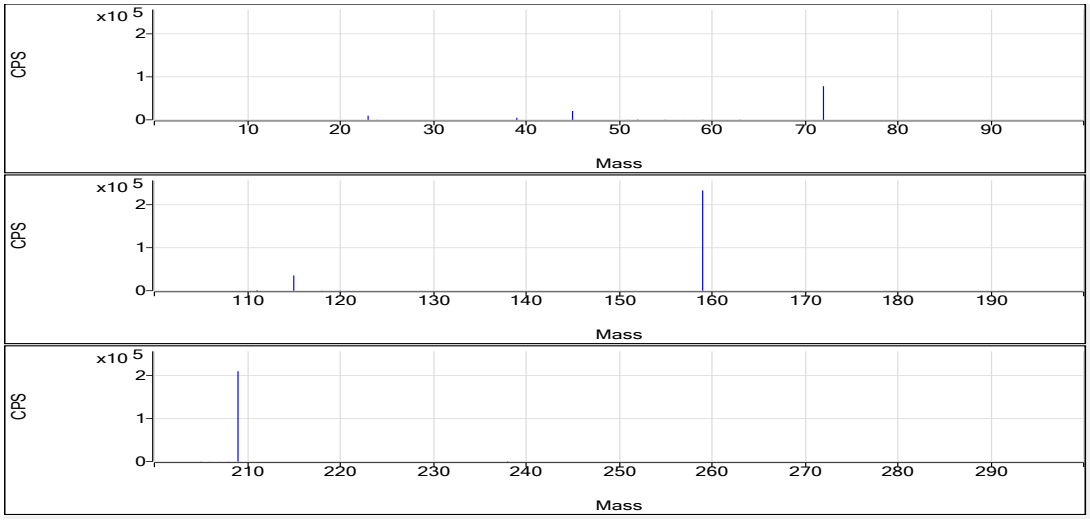


H2



Quantitation Report

He



Quantitation Report

Data File Name	080SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 1:35:50 PM
Sample Name	410-61294-E-2-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

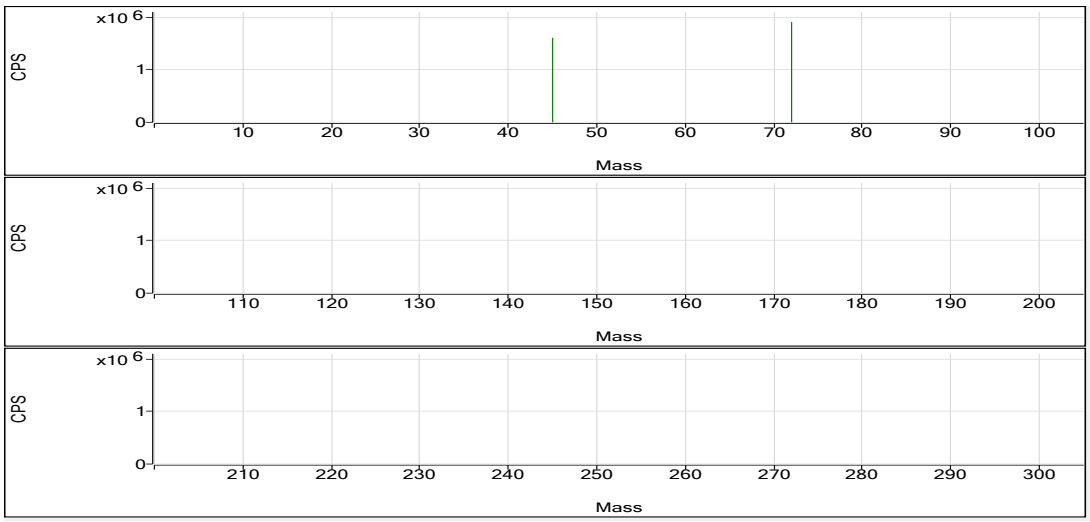
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	-0.017	ppb	N/A	18.67	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.017	ppb	147.9	1.78	0.0000	Pulse	1.5000	3
Na	23	45	He	322.692	ppb	5.0	41786.41	1.9533	Pulse	0.1000	3
Mg	24	45	He	25.472	ppb	9.9	1300.11	0.0608	Pulse	0.1000	3
Al	27	45	He	4.980	ppb	100.4	90.00	0.0041	Pulse	0.1000	3
K	39	45	He	8.925	ppb	117.3	4857.62	0.2270	Pulse	0.1000	3
Ca	44	45	He	106.987	ppb	40.6	220.01	0.0102	Pulse	0.1000	3
Ti	47	45	He	0.274	ppb	173.2	3.33	0.0002	Pulse	0.1000	3
V	51	45	He	0.095	ppb	46.9	306.01	0.0143	Pulse	0.5000	3
Cr	52	45	He	0.062	ppb	99.3	726.71	0.0339	Pulse	0.1000	3
Mn	55	45	He	2.287	ppb	3.2	706.71	0.0330	Pulse	0.1000	3
Fe	57	45	He	1.574	ppb	219.7	76.67	0.0036	Pulse	0.1000	3
Co	59	45	He	0.135	ppb	28.2	343.35	0.0161	Pulse	0.1000	3
Ni	60	72	He	0.165	ppb	2.7	200.01	0.0024	Pulse	0.1000	3
Cu	63	72	He	0.171	ppb	25.9	566.70	0.0069	Pulse	0.1000	3
Zn	66	72	He	0.599	ppb	50.0	150.01	0.0018	Pulse	0.1000	3
As	75	72	He	-0.109	ppb	N/A	26.00	0.0003	Pulse	0.5000	3
Sr	88	72	He	0.133	ppb	24.8	80.00	0.0010	Pulse	0.1000	3
Mo	98	72	He	0.055	ppb	21.3	96.67	0.0012	Pulse	0.1000	3
Ag	107	115	He	0.011	ppb	89.5	50.00	0.0014	Pulse	0.1000	3
Cd	111	115	He	0.013	ppb	139.8	5.33	0.0001	Pulse	0.5000	3
Sn	120	115	He	0.678	ppb	6.7	1196.76	0.0326	Pulse	0.1000	3
Sb	121	115	He	-0.023	ppb	N/A	13.33	0.0004	Pulse	0.1000	3
Ba	137	115	He	0.399	ppb	44.2	76.67	0.0021	Pulse	0.1000	3
Tl	205	209	He	0.020	ppb	51.4	233.35	0.0011	Pulse	0.1000	3
Pb	208	209	He	-0.001	ppb	N/A	836.71	0.0039	Pulse	0.1000	3
U	238	209	He	0.044	ppb	10.7	660.05	0.0031	Pulse	0.1000	3

ISTD Table:

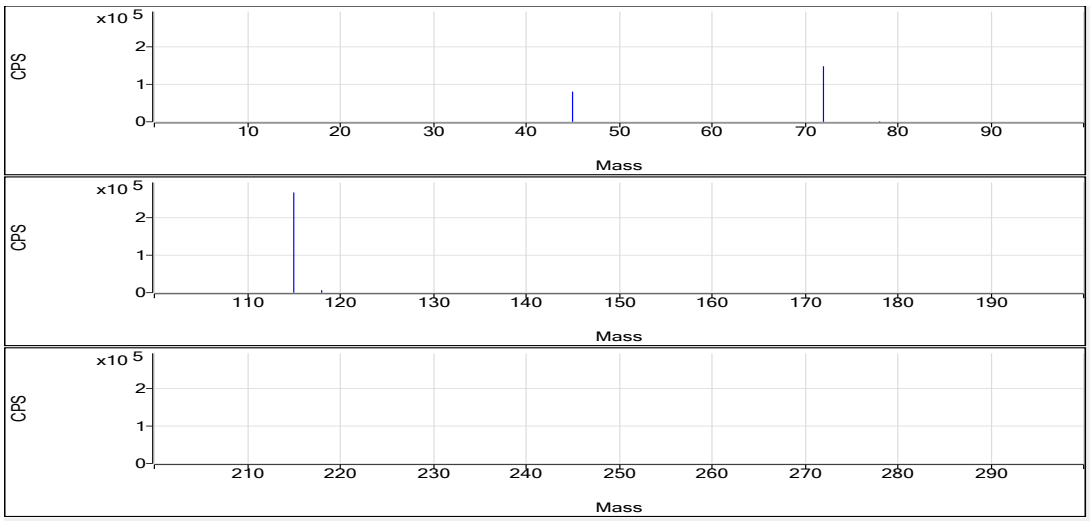
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1606013.36	0.8	98.7	Analog	0.1000	3
No Gas	Ge	72	1904522.42	0.1	101.7	Analog	0.1000	3
H2	Sc	45	80228.53	1.3	92.3	Pulse	0.1000	3
H2	Ge	72	147640.11	1.1	97.5	Pulse	0.1000	3
H2	In	115	266250.16	0.8	98.9	Pulse	0.1000	3
He	Sc	45	21413.00	3.7	100.3	Pulse	0.1000	3
He	Ge	72	82319.84	1.2	102.3	Pulse	0.1000	3
He	In	115	36729.41	2.1	100.7	Pulse	0.1000	3
He	Tb	159	239680.01	0.6	97.8	Pulse	0.1000	3
He	Bi	209	215212.72	0.9	97.4	Pulse	0.1000	3

No Gas

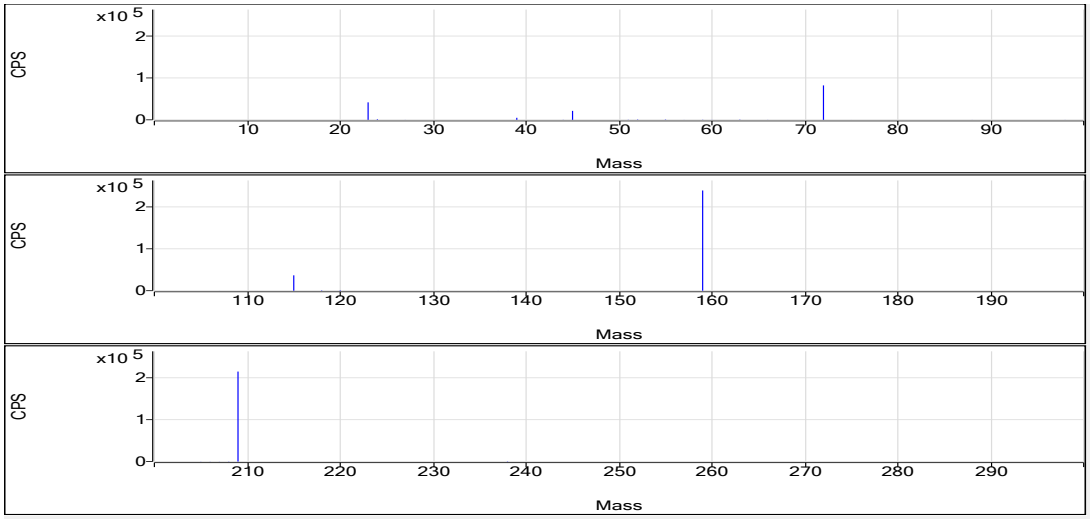


H2



Quantitation Report

He



Quantitation Report

Data File Name	081SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 1:37:52 PM
Sample Name	410-61294-E-4-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

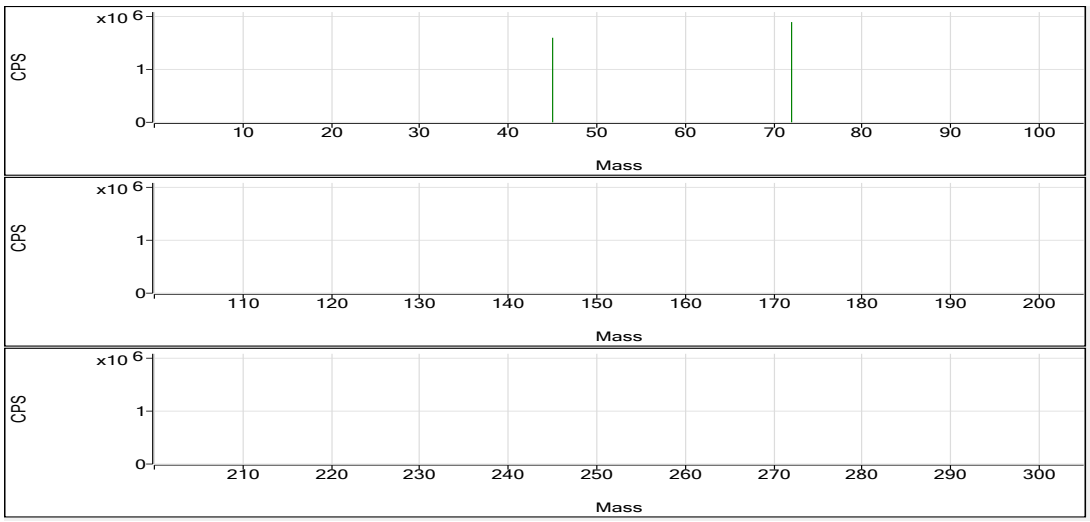
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	-0.019	ppb	N/A	16.67	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.120	ppb	27.0	6.00	0.0000	Pulse	1.5000	3
Na	23	45	He	59534.066	ppb	2.5	6087194.07	285.6362	Analog	0.1000	3
Mg	24	45	He	22169.774	ppb	2.9	1047700.46	49.1651	Pulse	0.1000	3
Al	27	45	He	5.465	ppb	58.6	93.34	0.0044	Pulse	0.1000	3
K	39	45	He	1967.807	ppb	1.6	49946.62	2.3433	Pulse	0.1000	3
Ca	44	45	He	71088.490	ppb	2.3	98495.36	4.6210	Pulse	0.1000	3
Ti	47	45	He	0.275	ppb	173.2	3.33	0.0002	Pulse	0.1000	3
V	51	45	He	0.233	ppb	17.3	390.01	0.0183	Pulse	0.5000	3
Cr	52	45	He	0.086	ppb	64.3	743.38	0.0348	Pulse	0.1000	3
Mn	55	45	He	5451.535	ppb	2.3	1566510.86	73.5046	Analog	0.1000	3
Fe	57	45	He	2251.821	ppb	3.6	34916.34	1.6387	Pulse	0.1000	3
Co	59	45	He	0.377	ppb	11.6	800.04	0.0375	Pulse	0.1000	3
Ni	60	72	He	0.632	ppb	2.6	456.69	0.0056	Pulse	0.1000	3
Cu	63	72	He	0.238	ppb	6.7	676.71	0.0082	Pulse	0.1000	3
Zn	66	72	He	1.566	ppb	7.9	286.68	0.0035	Pulse	0.1000	3
As	75	72	He	7.579	ppb	9.2	738.02	0.0090	Pulse	0.5000	3
Sr	88	72	He	508.700	ppb	1.0	162403.90	1.9752	Pulse	0.1000	3
Mo	98	72	He	16.078	ppb	2.9	20392.01	0.2480	Pulse	0.1000	3
Ag	107	115	He	0.009	ppb	48.5	43.33	0.0012	Pulse	0.1000	3
Cd	111	115	He	0.003	ppb	624.7	2.67	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.127	ppb	N/A	633.38	0.0179	Pulse	0.1000	3
Sb	121	115	He	0.025	ppb	210.3	40.00	0.0011	Pulse	0.1000	3
Ba	137	115	He	507.878	ppb	1.8	93713.46	2.6443	Pulse	0.1000	3
Tl	205	209	He	0.014	ppb	15.4	176.68	0.0008	Pulse	0.1000	3
Pb	208	209	He	0.028	ppb	2.0	1103.39	0.0053	Pulse	0.1000	3
U	238	209	He	0.938	ppb	3.7	12516.59	0.0600	Pulse	0.1000	3

ISTD Table:

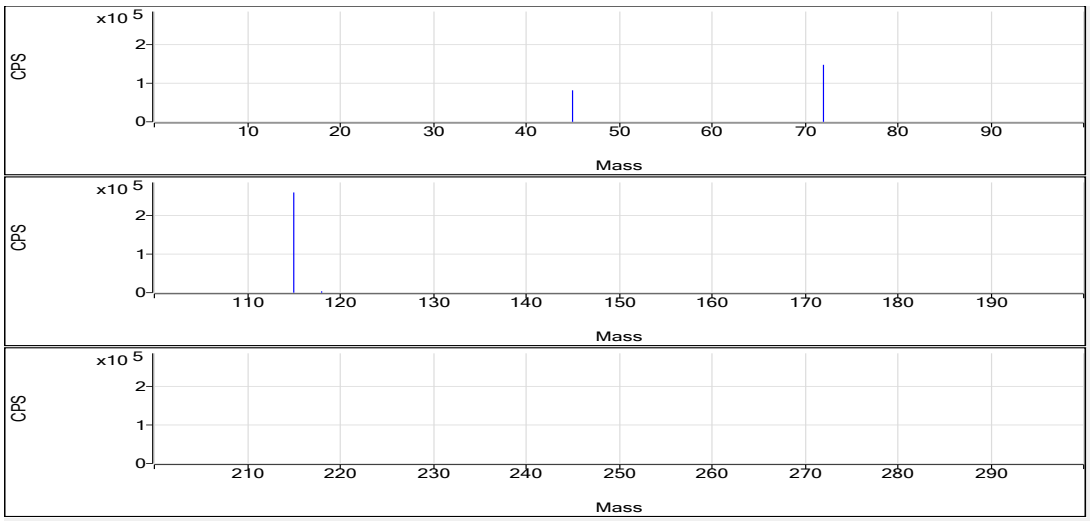
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1597430.60	1.5	98.2	Analog	0.1000	3
No Gas	Ge	72	1893932.47	0.4	101.1	Analog	0.1000	3
H2	Sc	45	81729.71	0.7	94.1	Pulse	0.1000	3
H2	Ge	72	147892.28	0.2	97.7	Pulse	0.1000	3
H2	In	115	260012.85	0.5	96.6	Pulse	0.1000	3
He	Sc	45	21319.60	2.4	99.9	Pulse	0.1000	3
He	Ge	72	82226.54	0.9	102.2	Pulse	0.1000	3
He	In	115	35442.77	0.8	97.2	Pulse	0.1000	3
He	Tb	159	235197.59	0.8	96.0	Pulse	0.1000	3
He	Bi	209	208788.77	0.6	94.5	Pulse	0.1000	3

No Gas

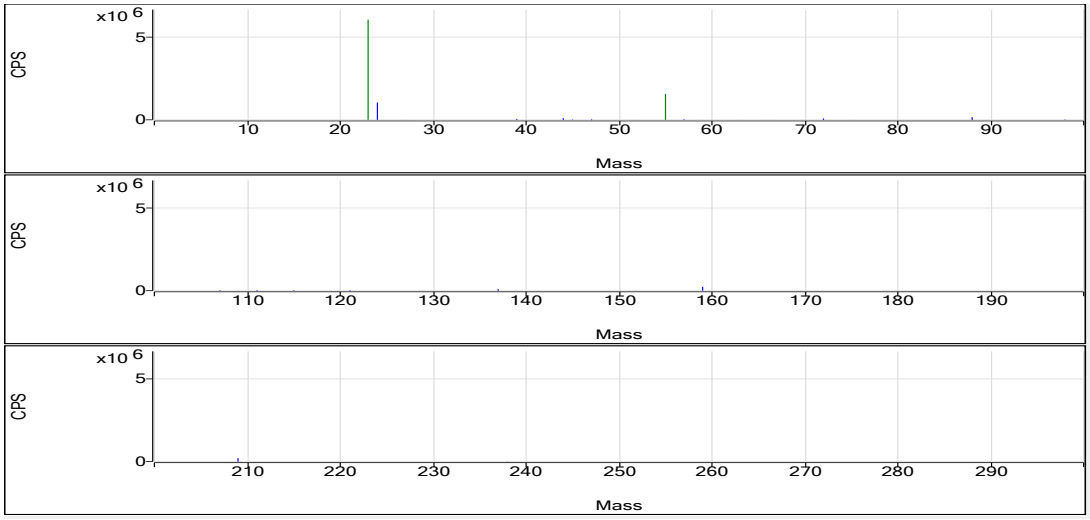


H2



Quantitation Report

He



Quantitation Report

Data File Name	082SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 1:39:53 PM
Sample Name	410-61243-M-6-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

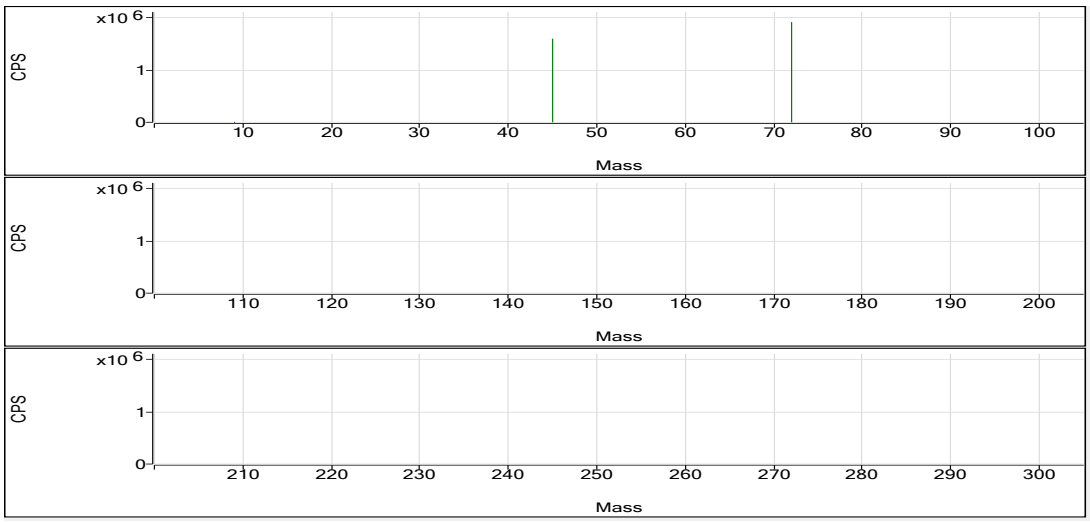
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	-0.023	ppb	N/A	13.33	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.517	ppb	16.6	22.22	0.0002	Pulse	1.5000	3
Na	23	45	He	20436.635	ppb	1.3	2073618.62	98.3197	Analog	0.1000	3
Mg	24	45	He	5381.334	ppb	1.5	251761.97	11.9373	Pulse	0.1000	3
Al	27	45	He	4.627	ppb	45.2	83.33	0.0039	Pulse	0.1000	3
K	39	45	He	2295.345	ppb	1.9	56884.45	2.6972	Pulse	0.1000	3
Ca	44	45	He	35057.225	ppb	3.7	48090.12	2.2805	Pulse	0.1000	3
Ti	47	45	He	0.280	ppb	173.2	3.33	0.0002	Pulse	0.1000	3
V	51	45	He	7.312	ppb	3.5	4705.45	0.2231	Pulse	0.5000	3
Cr	52	45	He	2.288	ppb	3.8	2570.32	0.1219	Pulse	0.1000	3
Mn	55	45	He	2.452	ppb	9.3	743.39	0.0352	Pulse	0.1000	3
Fe	57	45	He	3.530	ppb	70.5	106.67	0.0051	Pulse	0.1000	3
Co	59	45	He	0.056	ppb	29.3	193.34	0.0092	Pulse	0.1000	3
Ni	60	72	He	0.323	ppb	14.8	286.68	0.0035	Pulse	0.1000	3
Cu	63	72	He	0.473	ppb	17.2	1070.08	0.0130	Pulse	0.1000	3
Zn	66	72	He	7.231	ppb	10.2	1090.08	0.0133	Pulse	0.1000	3
As	75	72	He	1.400	ppb	17.3	166.00	0.0020	Pulse	0.5000	3
Sr	88	72	He	229.383	ppb	0.2	73293.63	0.8909	Pulse	0.1000	3
Mo	98	72	He	4.050	ppb	3.0	5161.11	0.0627	Pulse	0.1000	3
Ag	107	115	He	0.195	ppb	10.3	556.70	0.0155	Pulse	0.1000	3
Cd	111	115	He	-0.005	ppb	N/A	0.67	0.0000	Pulse	0.5000	3
Sn	120	115	He	-0.062	ppb	N/A	686.71	0.0191	Pulse	0.1000	3
Sb	121	115	He	0.042	ppb	110.1	50.00	0.0014	Pulse	0.1000	3
Ba	137	115	He	109.893	ppb	2.0	20592.67	0.5722	Pulse	0.1000	3
Tl	205	209	He	0.016	ppb	26.6	196.68	0.0009	Pulse	0.1000	3
Pb	208	209	He	-0.010	ppb	N/A	746.71	0.0035	Pulse	0.1000	3
U	238	209	He	1.099	ppb	1.7	15176.14	0.0703	Pulse	0.1000	3

ISTD Table:

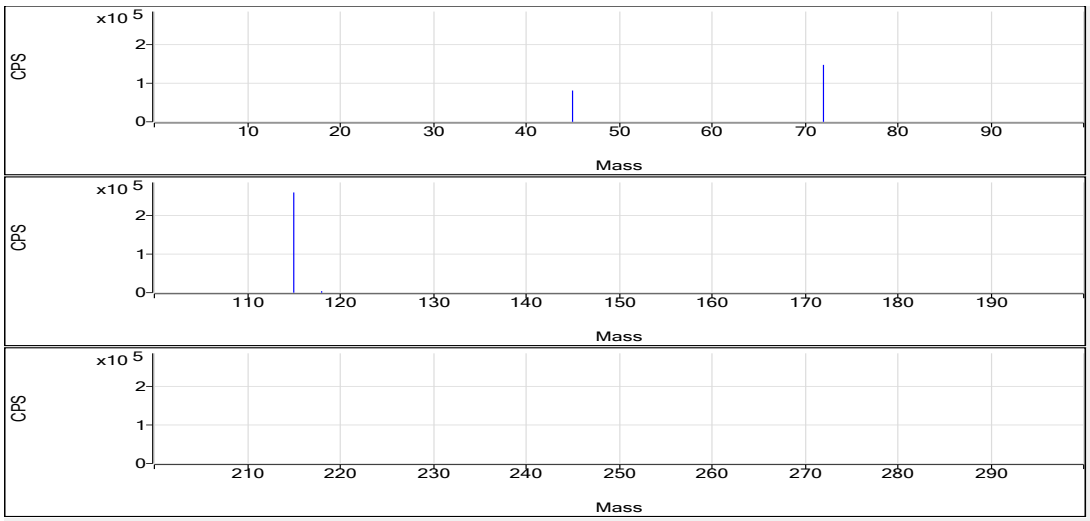
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1605361.33	1.5	98.6	Analog	0.1000	3
No Gas	Ge	72	1923914.71	0.3	102.7	Analog	0.1000	3
H2	Sc	45	81321.22	0.9	93.6	Pulse	0.1000	3
H2	Ge	72	148014.15	0.9	97.8	Pulse	0.1000	3
H2	In	115	260509.48	0.6	96.8	Pulse	0.1000	3
He	Sc	45	21092.58	1.1	98.8	Pulse	0.1000	3
He	Ge	72	82266.74	1.9	102.2	Pulse	0.1000	3
He	In	115	35993.96	1.2	98.7	Pulse	0.1000	3
He	Tb	159	236535.09	0.8	96.5	Pulse	0.1000	3
He	Bi	209	215997.96	0.1	97.7	Pulse	0.1000	3

No Gas

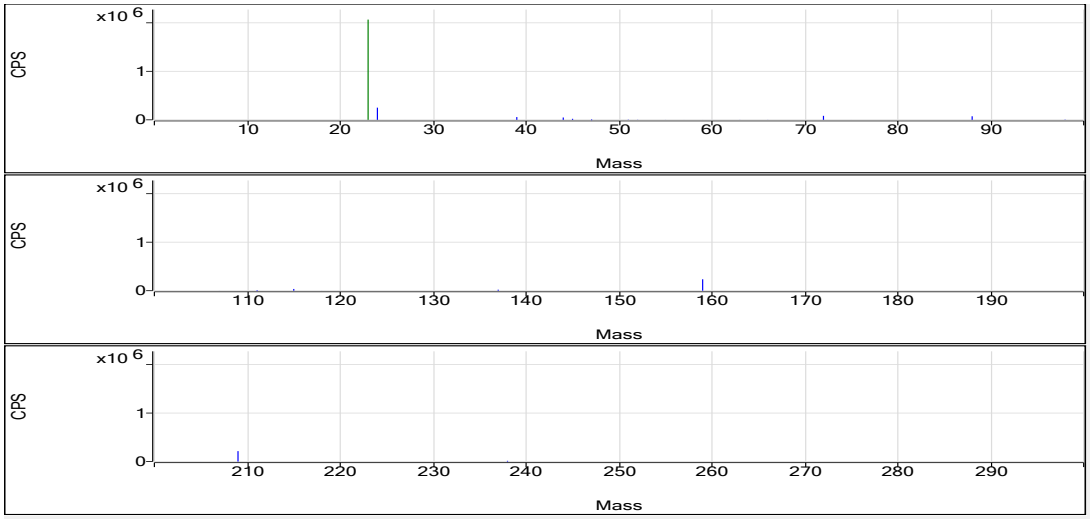


H2



Quantitation Report

He



Quantitation Report

Data File Name	083SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 1:41:54 PM
Sample Name	410-61243-O-4-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

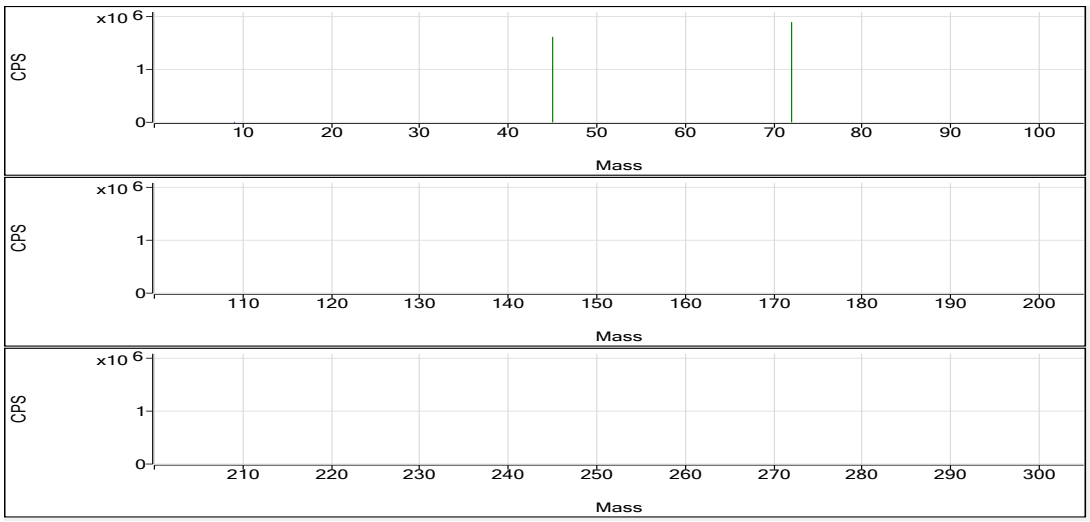
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	-0.030	ppb	N/A	8.00	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.215	ppb	52.3	9.78	0.0001	Pulse	1.5000	3
Na	23	45	He	21703.870	ppb	1.0	2130727.05	104.3910	Analog	0.1000	3
Mg	24	45	He	4686.624	ppb	1.7	212200.30	10.3968	Pulse	0.1000	3
Al	27	45	He	11.399	ppb	51.2	156.67	0.0077	Pulse	0.1000	3
K	39	45	He	2041.889	ppb	0.3	49464.45	2.4233	Pulse	0.1000	3
Ca	44	45	He	33273.432	ppb	1.5	44184.66	2.1647	Pulse	0.1000	3
Ti	47	45	He	0.000	ppb	N/A	0.00	0.0000	Pulse	0.1000	3
V	51	45	He	8.023	ppb	2.7	4974.21	0.2437	Pulse	0.5000	3
Cr	52	45	He	4.606	ppb	1.0	4357.45	0.2135	Pulse	0.1000	3
Mn	55	45	He	4.611	ppb	2.3	1313.45	0.0644	Pulse	0.1000	3
Fe	57	45	He	972.036	ppb	1.4	14467.64	0.7088	Pulse	0.1000	3
Co	59	45	He	0.047	ppb	30.4	170.01	0.0083	Pulse	0.1000	3
Ni	60	72	He	0.124	ppb	65.2	180.01	0.0022	Pulse	0.1000	3
Cu	63	72	He	2.173	ppb	8.0	3977.34	0.0477	Pulse	0.1000	3
Zn	66	72	He	28.529	ppb	1.8	4174.07	0.0500	Pulse	0.1000	3
As	75	72	He	1.150	ppb	9.9	144.67	0.0017	Pulse	0.5000	3
Sr	88	72	He	193.496	ppb	1.6	62726.43	0.7516	Pulse	0.1000	3
Mo	98	72	He	2.756	ppb	10.2	3570.59	0.0428	Pulse	0.1000	3
Ag	107	115	He	6.212	ppb	5.0	17257.87	0.4768	Pulse	0.1000	3
Cd	111	115	He	0.005	ppb	86.5	3.33	0.0001	Pulse	0.5000	3
Sn	120	115	He	3.761	ppb	17.6	3213.83	0.0889	Pulse	0.1000	3
Sb	121	115	He	0.000	ppb	19441.1	26.67	0.0007	Pulse	0.1000	3
Ba	137	115	He	100.023	ppb	3.1	18853.56	0.5208	Pulse	0.1000	3
Tl	205	209	He	0.007	ppb	49.4	133.34	0.0006	Pulse	0.1000	3
Pb	208	209	He	0.022	ppb	55.7	1076.72	0.0050	Pulse	0.1000	3
U	238	209	He	1.000	ppb	1.9	13821.21	0.0640	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1609817.68	0.8	98.9	Analog	0.1000	3
No Gas	Ge	72	1888932.52	0.9	100.9	Analog	0.1000	3
H2	Sc	45	80057.59	2.1	92.1	Pulse	0.1000	3
H2	Ge	72	146795.12	1.7	97.0	Pulse	0.1000	3
H2	In	115	262492.64	1.5	97.5	Pulse	0.1000	3
He	Sc	45	20411.64	0.7	95.6	Pulse	0.1000	3
He	Ge	72	83457.27	0.4	103.7	Pulse	0.1000	3
He	In	115	36217.99	2.4	99.3	Pulse	0.1000	3
He	Tb	159	237530.07	1.2	96.9	Pulse	0.1000	3
He	Bi	209	216092.11	0.1	97.8	Pulse	0.1000	3

No Gas



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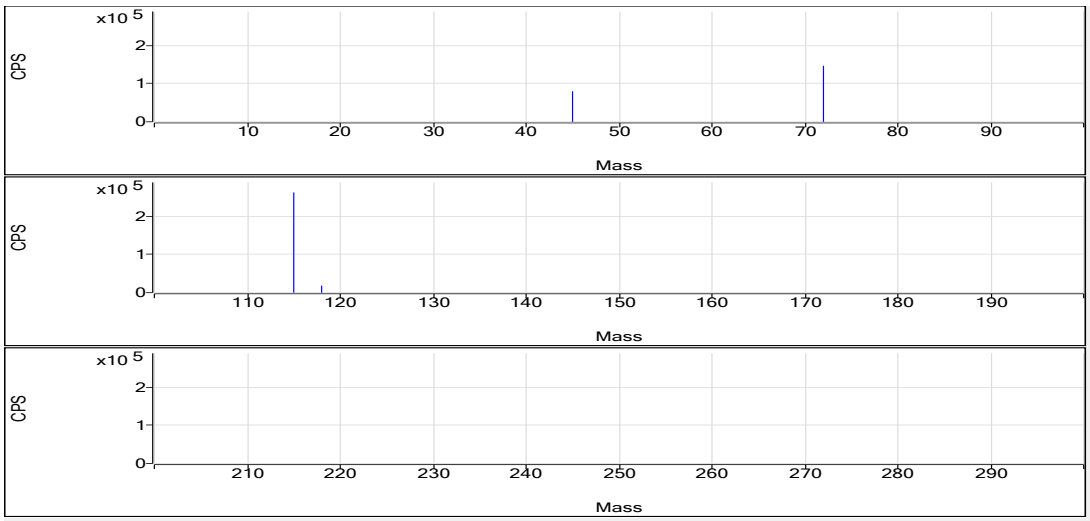
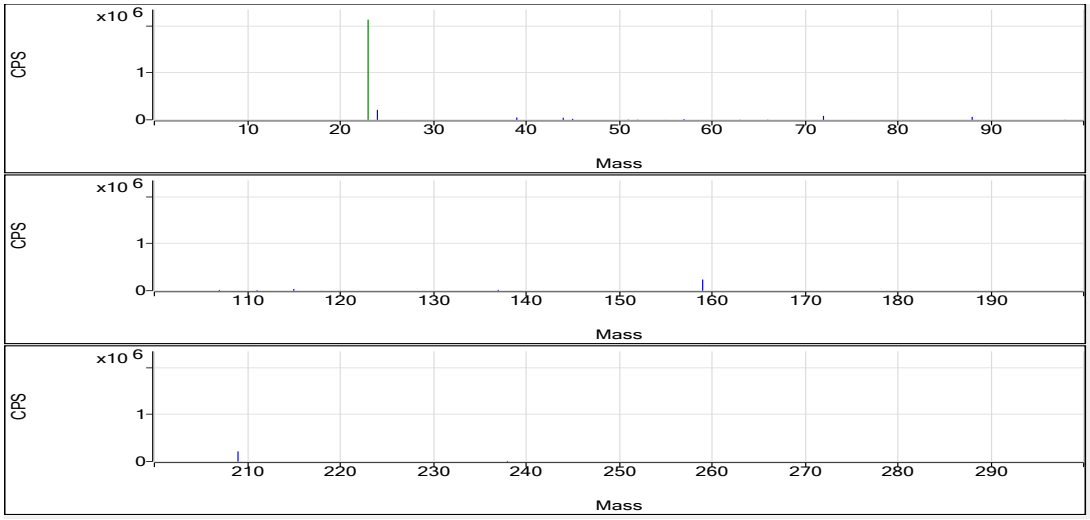


Quantitation Report

He



Quantitation Report

Data File Name	084SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 1:43:54 PM
Sample Name	410-61243-M-3-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

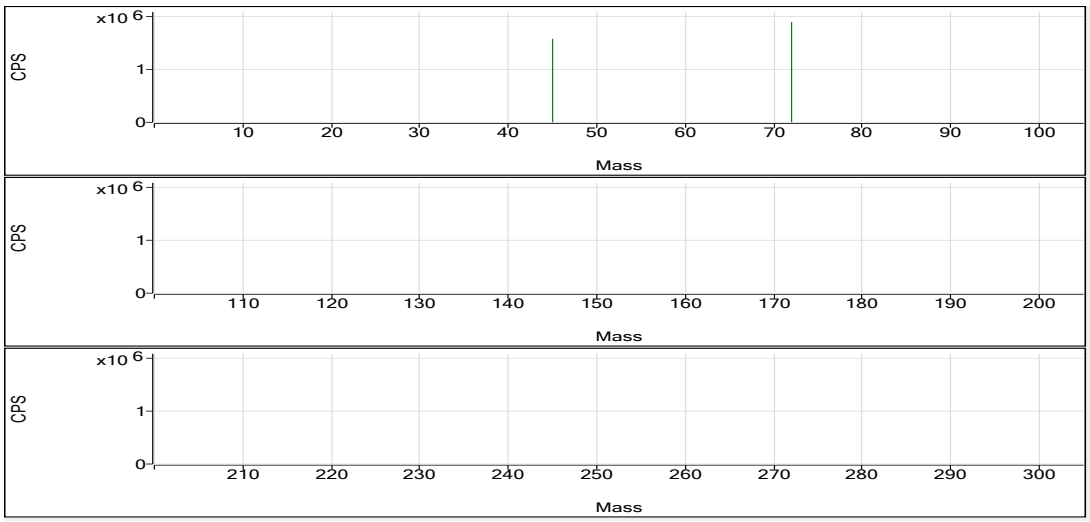
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	-0.021	ppb	N/A	14.67	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.246	ppb	34.2	11.11	0.0001	Pulse	1.5000	3
Na	23	45	He	12643.938	ppb	3.1	1287950.19	60.9847	Analog	0.1000	3
Mg	24	45	He	2468.949	ppb	2.9	115727.55	5.4792	Pulse	0.1000	3
Al	27	45	He	17.459	ppb	47.5	233.34	0.0110	Pulse	0.1000	3
K	39	45	He	2658.469	ppb	2.1	65273.11	3.0895	Pulse	0.1000	3
Ca	44	45	He	25431.571	ppb	1.3	34976.10	1.6553	Pulse	0.1000	3
Ti	47	45	He	0.288	ppb	173.2	3.33	0.0002	Pulse	0.1000	3
V	51	45	He	1.381	ppb	7.9	1088.05	0.0515	Pulse	0.5000	3
Cr	52	45	He	7.657	ppb	7.8	7051.97	0.3341	Pulse	0.1000	3
Mn	55	45	He	19.347	ppb	7.5	5551.23	0.2630	Pulse	0.1000	3
Fe	57	45	He	26.155	ppb	13.1	453.35	0.0215	Pulse	0.1000	3
Co	59	45	He	0.555	ppb	3.0	1123.42	0.0532	Pulse	0.1000	3
Ni	60	72	He	54.274	ppb	1.5	30032.06	0.3644	Pulse	0.1000	3
Cu	63	72	He	2.157	ppb	4.5	3900.68	0.0473	Pulse	0.1000	3
Zn	66	72	He	21.676	ppb	2.8	3147.14	0.0382	Pulse	0.1000	3
As	75	72	He	0.264	ppb	62.0	60.67	0.0007	Pulse	0.5000	3
Sr	88	72	He	107.417	ppb	3.7	34405.92	0.4174	Pulse	0.1000	3
Mo	98	72	He	1.720	ppb	3.5	2210.25	0.0268	Pulse	0.1000	3
Ag	107	115	He	0.008	ppb	144.9	40.00	0.0011	Pulse	0.1000	3
Cd	111	115	He	0.008	ppb	169.1	4.00	0.0001	Pulse	0.5000	3
Sn	120	115	He	0.240	ppb	134.5	873.39	0.0246	Pulse	0.1000	3
Sb	121	115	He	4.336	ppb	2.6	2463.64	0.0693	Pulse	0.1000	3
Ba	137	115	He	40.870	ppb	4.1	7562.37	0.2128	Pulse	0.1000	3
Tl	205	209	He	0.005	ppb	72.6	116.67	0.0005	Pulse	0.1000	3
Pb	208	209	He	0.108	ppb	9.4	1986.80	0.0092	Pulse	0.1000	3
U	238	209	He	0.180	ppb	3.8	2527.00	0.0117	Pulse	0.1000	3

ISTD Table:

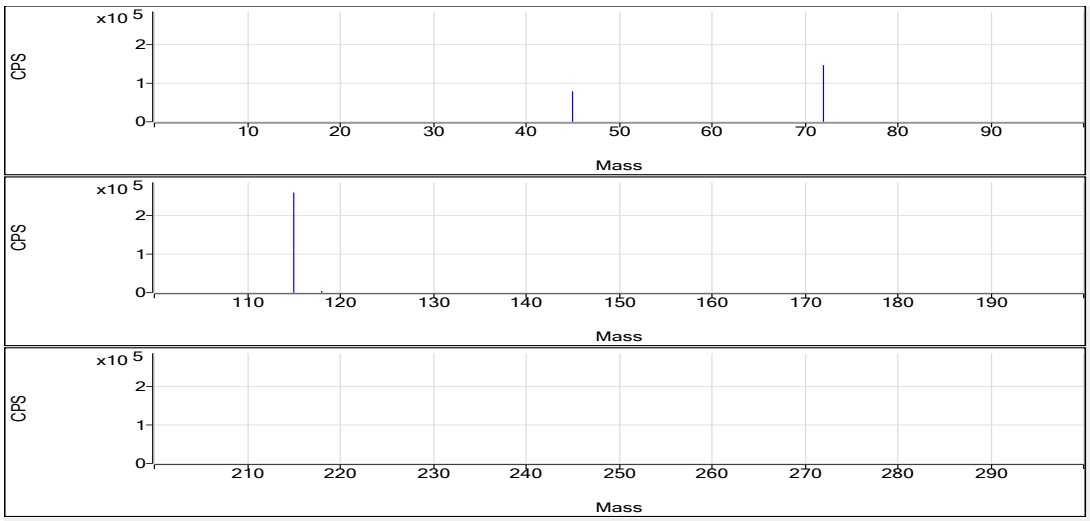
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1573899.93	1.3	96.7	Analog	0.1000	3
No Gas	Ge	72	1889017.57	0.5	100.9	Analog	0.1000	3
H2	Sc	45	79584.74	2.2	91.6	Pulse	0.1000	3
H2	Ge	72	147734.39	0.2	97.6	Pulse	0.1000	3
H2	In	115	261490.73	1.3	97.1	Pulse	0.1000	3
He	Sc	45	21132.72	3.1	99.0	Pulse	0.1000	3
He	Ge	72	82417.11	0.7	102.4	Pulse	0.1000	3
He	In	115	35536.28	0.6	97.5	Pulse	0.1000	3
He	Tb	159	236991.19	0.3	96.7	Pulse	0.1000	3
He	Bi	209	216177.50	0.8	97.8	Pulse	0.1000	3

No Gas

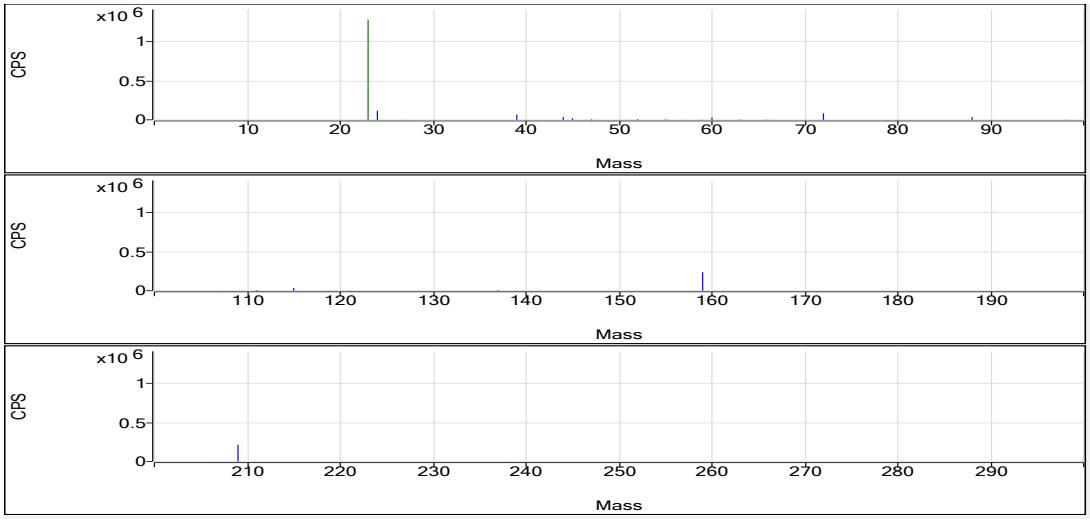


H2



Quantitation Report

He



Quantitation Report

Data File Name	085SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 1:45:55 PM
Sample Name	410-61243-L-2-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

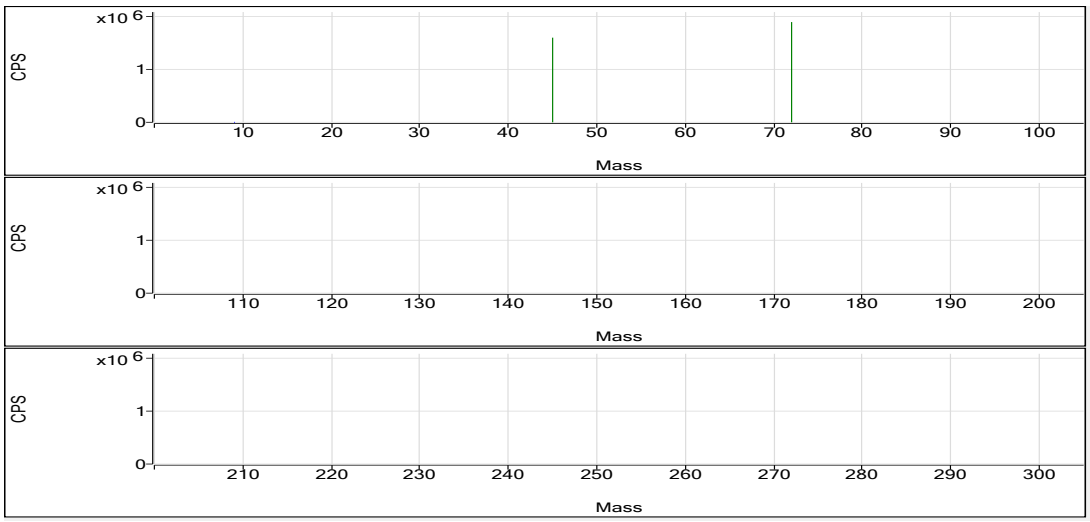
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	-0.026	ppb	N/A	11.33	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.023	ppb	249.8	2.00	0.0000	Pulse	1.5000	3
Na	23	45	He	27052.745	ppb	0.2	2657324.23	130.0176	Analog	0.1000	3
Mg	24	45	He	7436.404	ppb	0.7	337115.24	16.4944	Pulse	0.1000	3
Al	27	45	He	2.792	ppb	84.3	60.00	0.0029	Pulse	0.1000	3
K	39	45	He	2645.147	ppb	1.7	62849.12	3.0751	Pulse	0.1000	3
Ca	44	45	He	51849.707	ppb	1.2	68903.71	3.3713	Pulse	0.1000	3
Ti	47	45	He	0.000	ppb	N/A	0.00	0.0000	Pulse	0.1000	3
V	51	45	He	0.094	ppb	25.4	292.00	0.0143	Pulse	0.5000	3
Cr	52	45	He	0.476	ppb	18.2	1026.75	0.0502	Pulse	0.1000	3
Mn	55	45	He	196.448	ppb	0.6	54178.92	2.6509	Pulse	0.1000	3
Fe	57	45	He	140.232	ppb	10.2	2133.58	0.1044	Pulse	0.1000	3
Co	59	45	He	0.272	ppb	14.3	576.69	0.0282	Pulse	0.1000	3
Ni	60	72	He	1.346	ppb	12.0	850.05	0.0103	Pulse	0.1000	3
Cu	63	72	He	0.046	ppb	22.2	356.69	0.0043	Pulse	0.1000	3
Zn	66	72	He	0.721	ppb	69.3	166.67	0.0020	Pulse	0.1000	3
As	75	72	He	0.714	ppb	23.7	102.00	0.0012	Pulse	0.5000	3
Sr	88	72	He	312.090	ppb	0.7	99616.32	1.2120	Pulse	0.1000	3
Mo	98	72	He	4.464	ppb	2.5	5681.33	0.0691	Pulse	0.1000	3
Ag	107	115	He	0.027	ppb	43.1	93.33	0.0026	Pulse	0.1000	3
Cd	111	115	He	0.003	ppb	161.4	2.67	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.240	ppb	N/A	566.70	0.0158	Pulse	0.1000	3
Sb	121	115	He	0.007	ppb	503.3	30.00	0.0008	Pulse	0.1000	3
Ba	137	115	He	162.340	ppb	1.9	30317.59	0.8452	Pulse	0.1000	3
Tl	205	209	He	0.006	ppb	78.6	120.00	0.0006	Pulse	0.1000	3
Pb	208	209	He	-0.010	ppb	N/A	736.70	0.0035	Pulse	0.1000	3
U	238	209	He	1.824	ppb	2.9	24767.83	0.1164	Pulse	0.1000	3

ISTD Table:

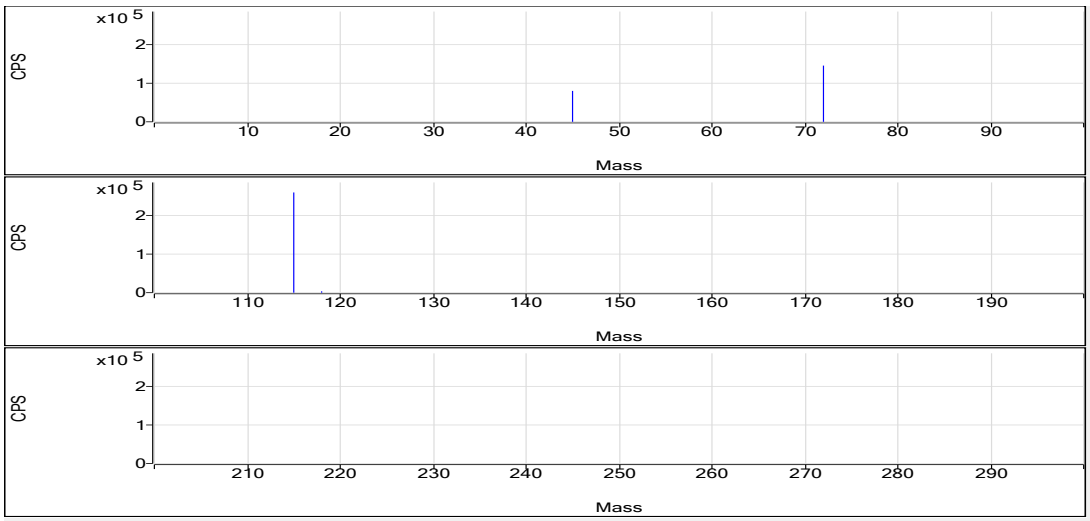
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1592654.30	0.3	97.9	Analog	0.1000	3
No Gas	Ge	72	1886260.75	0.4	100.7	Analog	0.1000	3
H2	Sc	45	80047.83	1.0	92.1	Pulse	0.1000	3
H2	Ge	72	145538.33	0.8	96.1	Pulse	0.1000	3
H2	In	115	259521.90	1.5	96.4	Pulse	0.1000	3
He	Sc	45	20438.17	0.1	95.7	Pulse	0.1000	3
He	Ge	72	82199.90	1.6	102.1	Pulse	0.1000	3
He	In	115	35870.43	1.8	98.4	Pulse	0.1000	3
He	Tb	159	235480.18	0.8	96.1	Pulse	0.1000	3
He	Bi	209	212774.94	0.2	96.3	Pulse	0.1000	3

No Gas

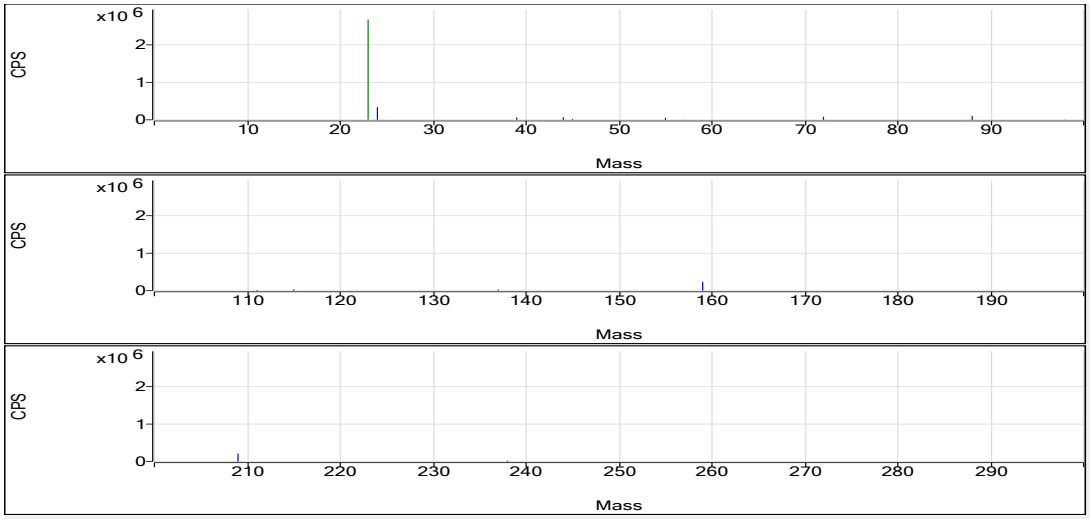


H2



Quantitation Report

He



Quantitation Report

Data File Name	086SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 1:47:56 PM
Sample Name	410-61730-F-8-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

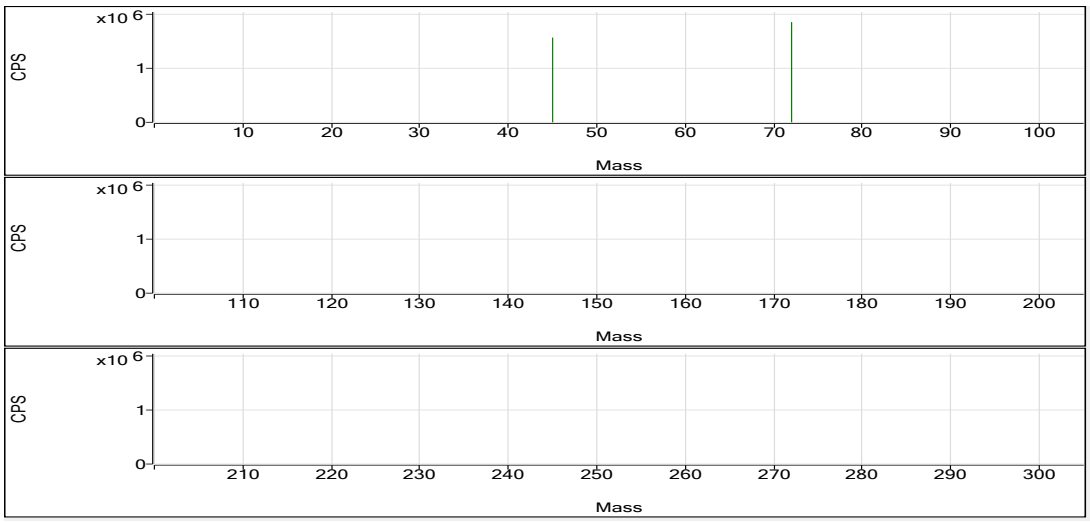
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.041	ppb	44.5	62.00	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.348	ppb	22.8	14.89	0.0001	Pulse	1.5000	3
Na	23	45	He	4849.914	ppb	4.0	494767.26	23.6434	Pulse	0.1000	3
Mg	24	45	He	15683.415	ppb	3.3	727932.23	34.7818	Pulse	0.1000	3
Al	27	45	He	7.798	ppb	42.8	120.00	0.0057	Pulse	0.1000	3
K	39	45	He	1052.341	ppb	4.3	28341.65	1.3543	Pulse	0.1000	3
Ca	44	45	He	59701.644	ppb	2.5	81249.81	3.8814	Pulse	0.1000	3
Ti	47	45	He	0.854	ppb	102.1	10.00	0.0005	Pulse	0.1000	3
V	51	45	He	0.126	ppb	35.6	318.67	0.0152	Pulse	0.5000	3
Cr	52	45	He	0.249	ppb	16.9	863.39	0.0413	Pulse	0.1000	3
Mn	55	45	He	0.526	ppb	31.1	193.34	0.0093	Pulse	0.1000	3
Fe	57	45	He	11.040	ppb	34.5	220.01	0.0105	Pulse	0.1000	3
Co	59	45	He	0.012	ppb	246.0	110.01	0.0052	Pulse	0.1000	3
Ni	60	72	He	0.090	ppb	20.8	156.68	0.0019	Pulse	0.1000	3
Cu	63	72	He	-0.007	ppb	N/A	263.35	0.0032	Pulse	0.1000	3
Zn	66	72	He	0.780	ppb	14.1	173.34	0.0021	Pulse	0.1000	3
As	75	72	He	-0.069	ppb	N/A	29.33	0.0004	Pulse	0.5000	3
Sr	88	72	He	58.392	ppb	1.9	18475.94	0.2271	Pulse	0.1000	3
Mo	98	72	He	0.069	ppb	25.1	113.34	0.0014	Pulse	0.1000	3
Ag	107	115	He	-0.005	ppb	N/A	6.67	0.0002	Pulse	0.1000	3
Cd	111	115	He	0.019	ppb	62.3	6.67	0.0002	Pulse	0.5000	3
Sn	120	115	He	0.015	ppb	1346.8	723.38	0.0205	Pulse	0.1000	3
Sb	121	115	He	-0.022	ppb	N/A	13.33	0.0004	Pulse	0.1000	3
Ba	137	115	He	27.092	ppb	2.4	4987.78	0.1411	Pulse	0.1000	3
Tl	205	209	He	0.014	ppb	30.4	176.68	0.0008	Pulse	0.1000	3
Pb	208	209	He	2.453	ppb	1.8	25724.32	0.1226	Pulse	0.1000	3
U	238	209	He	0.466	ppb	3.0	6271.76	0.0299	Pulse	0.1000	3

ISTD Table:

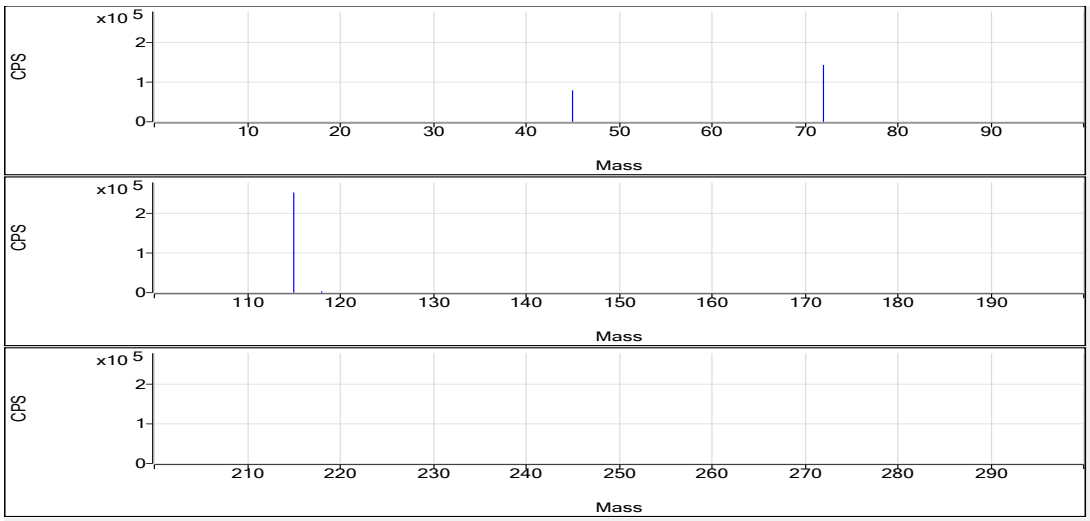
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1576233.00	0.6	96.9	Analog	0.1000	3
No Gas	Ge	72	1864650.08	1.0	99.6	Analog	0.1000	3
H2	Sc	45	79705.88	1.9	91.7	Pulse	0.1000	3
H2	Ge	72	143899.64	1.3	95.1	Pulse	0.1000	3
H2	In	115	253582.24	1.1	94.2	Pulse	0.1000	3
He	Sc	45	20945.69	3.7	98.1	Pulse	0.1000	3
He	Ge	72	81358.24	1.4	101.1	Pulse	0.1000	3
He	In	115	35372.40	2.2	97.0	Pulse	0.1000	3
He	Tb	159	237111.37	0.9	96.8	Pulse	0.1000	3
He	Bi	209	209760.86	0.5	94.9	Pulse	0.1000	3

No Gas

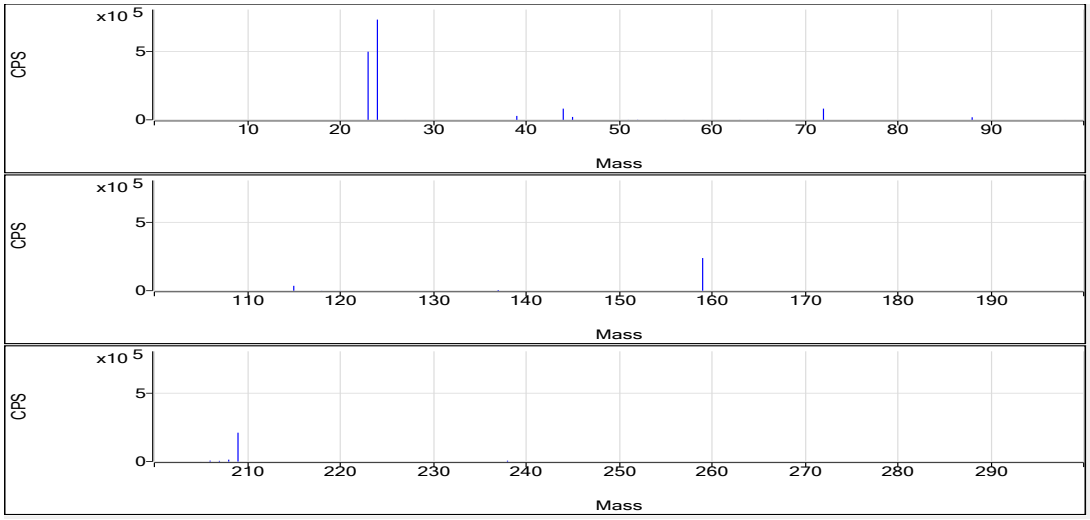


H2



Quantitation Report

He



Quantitation Report

Data File Name	087SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 1:49:57 PM
Sample Name	410-61243-N-7-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

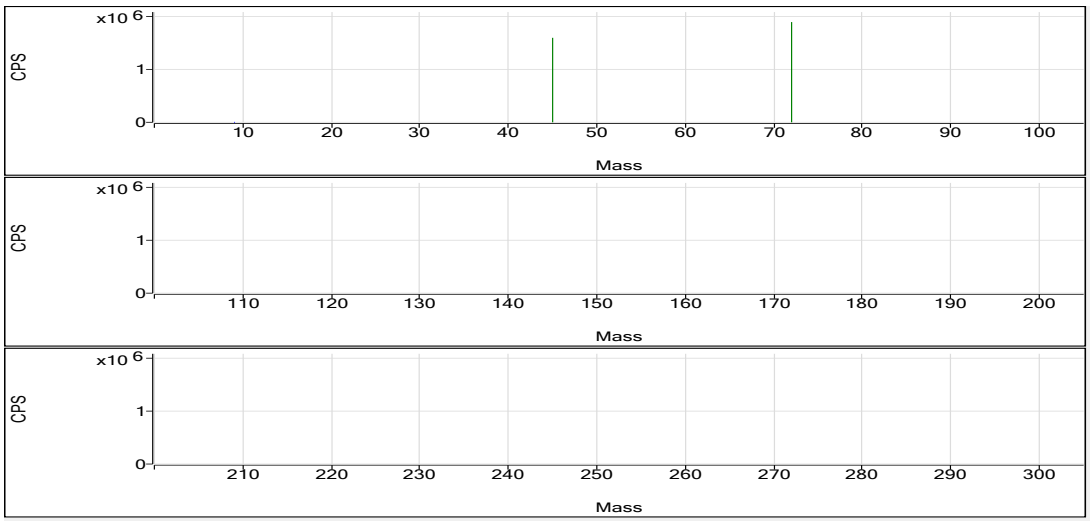
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	-0.029	ppb	N/A	9.33	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.158	ppb	31.4	7.55	0.0001	Pulse	1.5000	3
Na	23	45	He	26664.052	ppb	3.1	2677924.44	128.1553	Analog	0.1000	3
Mg	24	45	He	7119.807	ppb	1.1	330024.59	15.7923	Pulse	0.1000	3
Al	27	45	He	4.415	ppb	51.8	80.00	0.0038	Pulse	0.1000	3
K	39	45	He	2469.782	ppb	2.0	60301.91	2.8856	Pulse	0.1000	3
Ca	44	45	He	49124.374	ppb	1.2	66753.55	3.1943	Pulse	0.1000	3
Ti	47	45	He	0.288	ppb	173.2	3.33	0.0002	Pulse	0.1000	3
V	51	45	He	8.345	ppb	2.9	5287.65	0.2530	Pulse	0.5000	3
Cr	52	45	He	0.516	ppb	19.7	1083.41	0.0518	Pulse	0.1000	3
Mn	55	45	He	2.157	ppb	8.3	653.37	0.0313	Pulse	0.1000	3
Fe	57	45	He	10.168	ppb	19.0	206.68	0.0099	Pulse	0.1000	3
Co	59	45	He	0.032	ppb	70.1	146.67	0.0070	Pulse	0.1000	3
Ni	60	72	He	0.528	ppb	7.2	403.35	0.0049	Pulse	0.1000	3
Cu	63	72	He	0.486	ppb	3.5	1103.42	0.0133	Pulse	0.1000	3
Zn	66	72	He	8.218	ppb	10.5	1243.43	0.0150	Pulse	0.1000	3
As	75	72	He	0.396	ppb	36.2	73.33	0.0009	Pulse	0.5000	3
Sr	88	72	He	302.907	ppb	1.7	97696.23	1.1763	Pulse	0.1000	3
Mo	98	72	He	2.266	ppb	2.3	2927.07	0.0352	Pulse	0.1000	3
Ag	107	115	He	0.037	ppb	18.3	120.01	0.0033	Pulse	0.1000	3
Cd	111	115	He	-0.003	ppb	N/A	1.33	0.0000	Pulse	0.5000	3
Sn	120	115	He	16.198	ppb	4.4	11334.99	0.3161	Pulse	0.1000	3
Sb	121	115	He	0.013	ppb	290.7	33.33	0.0009	Pulse	0.1000	3
Ba	137	115	He	168.423	ppb	2.5	31460.43	0.8769	Pulse	0.1000	3
Tl	205	209	He	0.008	ppb	24.7	133.34	0.0006	Pulse	0.1000	3
Pb	208	209	He	0.027	ppb	73.9	1113.39	0.0053	Pulse	0.1000	3
U	238	209	He	3.152	ppb	1.0	42571.23	0.2010	Pulse	0.1000	3

ISTD Table:

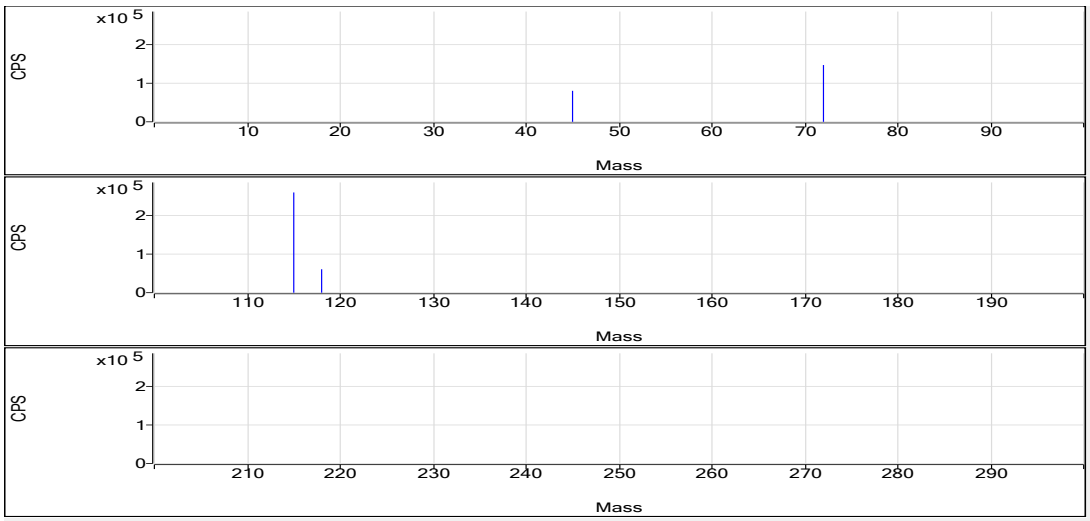
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1600256.02	0.6	98.3	Analog	0.1000	3
No Gas	Ge	72	1898409.55	1.7	101.4	Analog	0.1000	3
H2	Sc	45	80788.11	0.6	93.0	Pulse	0.1000	3
H2	Ge	72	147953.63	1.4	97.7	Pulse	0.1000	3
H2	In	115	261157.18	1.4	97.0	Pulse	0.1000	3
He	Sc	45	20898.96	0.7	97.9	Pulse	0.1000	3
He	Ge	72	83058.08	0.5	103.2	Pulse	0.1000	3
He	In	115	35873.74	1.4	98.4	Pulse	0.1000	3
He	Tb	159	235412.46	0.6	96.1	Pulse	0.1000	3
He	Bi	209	211823.13	0.5	95.9	Pulse	0.1000	3

No Gas

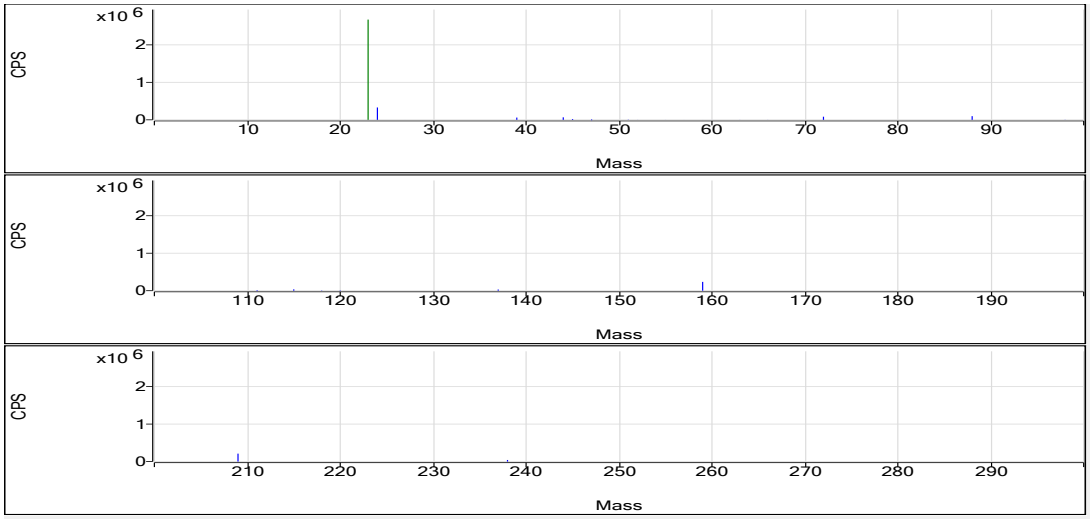


H2



Quantitation Report

He



Quantitation Report

Data File Name	088SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 1:51:58 PM
Sample Name	410-60870-E-8-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

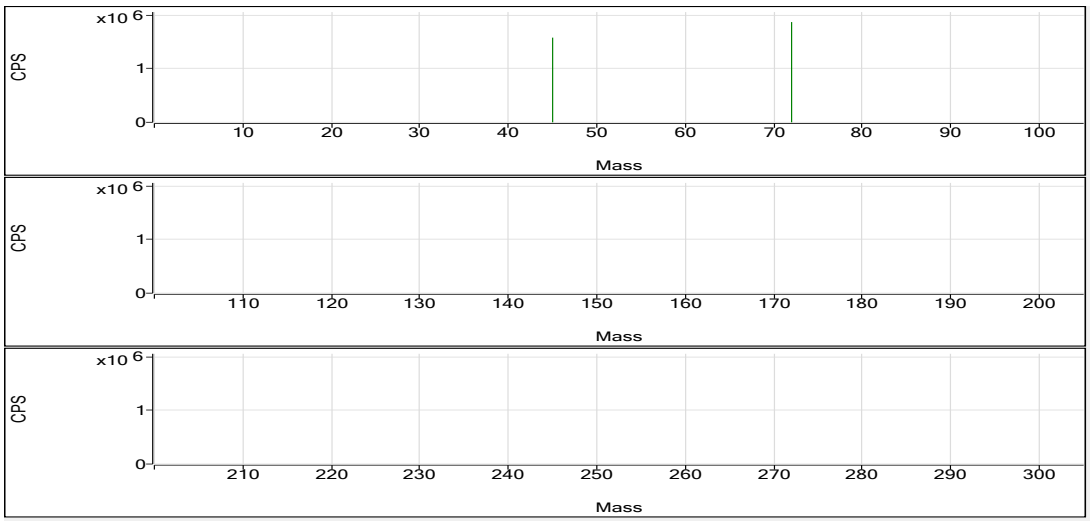
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	-0.022	ppb	N/A	14.00	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.034	ppb	148.8	2.45	0.0000	Pulse	1.5000	3
Na	23	45	He	1586.718	ppb	1.7	165990.33	8.0093	Pulse	0.1000	3
Mg	24	45	He	63.083	ppb	11.7	2987.07	0.1443	Pulse	0.1000	3
Al	27	45	He	70.486	ppb	17.6	830.05	0.0401	Pulse	0.1000	3
K	39	45	He	69.999	ppb	13.3	6074.79	0.2930	Pulse	0.1000	3
Ca	44	45	He	834.159	ppb	11.4	1190.09	0.0575	Pulse	0.1000	3
Ti	47	45	He	6.898	ppb	37.2	80.00	0.0039	Pulse	0.1000	3
V	51	45	He	0.083	ppb	15.2	290.01	0.0140	Pulse	0.5000	3
Cr	52	45	He	0.468	ppb	26.2	1033.41	0.0499	Pulse	0.1000	3
Mn	55	45	He	1.486	ppb	16.7	460.02	0.0222	Pulse	0.1000	3
Fe	57	45	He	82.736	ppb	9.7	1296.77	0.0626	Pulse	0.1000	3
Co	59	45	He	0.047	ppb	52.0	173.34	0.0084	Pulse	0.1000	3
Ni	60	72	He	0.129	ppb	42.5	180.01	0.0022	Pulse	0.1000	3
Cu	63	72	He	1.943	ppb	2.8	3530.55	0.0430	Pulse	0.1000	3
Zn	66	72	He	1.027	ppb	19.7	210.01	0.0026	Pulse	0.1000	3
As	75	72	He	0.044	ppb	182.2	40.00	0.0005	Pulse	0.5000	3
Sr	88	72	He	1.410	ppb	24.9	486.69	0.0059	Pulse	0.1000	3
Mo	98	72	He	0.008	ppb	65.9	36.67	0.0004	Pulse	0.1000	3
Ag	107	115	He	0.002	ppb	368.0	23.33	0.0007	Pulse	0.1000	3
Cd	111	115	He	-0.003	ppb	N/A	1.33	0.0000	Pulse	0.5000	3
Sn	120	115	He	1.089	ppb	33.7	1423.68	0.0401	Pulse	0.1000	3
Sb	121	115	He	0.091	ppb	51.4	76.67	0.0022	Pulse	0.1000	3
Ba	137	115	He	2.488	ppb	9.3	460.02	0.0130	Pulse	0.1000	3
Tl	205	209	He	0.002	ppb	32.9	93.33	0.0004	Pulse	0.1000	3
Pb	208	209	He	0.183	ppb	9.9	2760.24	0.0128	Pulse	0.1000	3
U	238	209	He	0.017	ppb	12.7	280.01	0.0013	Pulse	0.1000	3

ISTD Table:

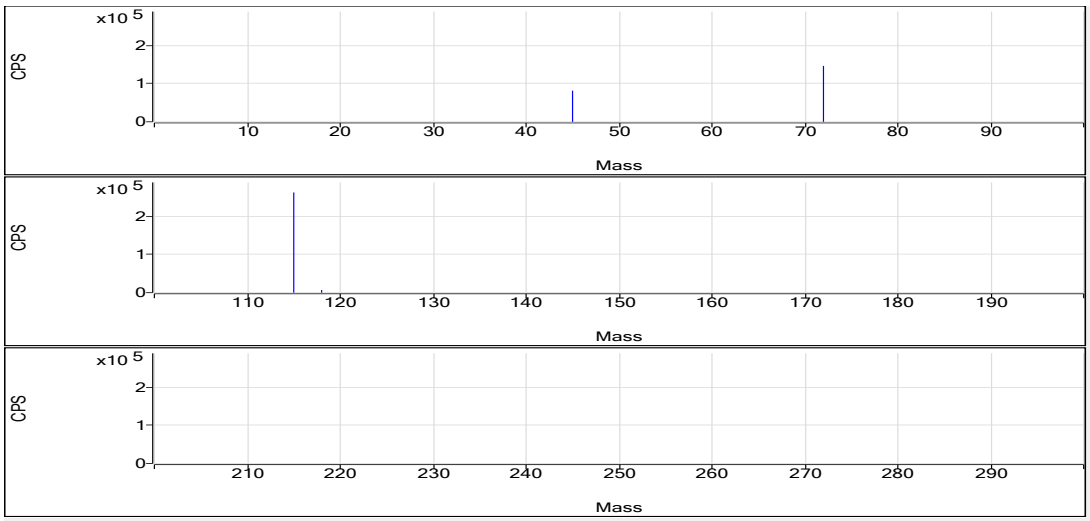
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1575146.02	1.0	96.8	Analog	0.1000	3
No Gas	Ge	72	1864849.35	1.4	99.6	Analog	0.1000	3
H2	Sc	45	81310.89	1.2	93.6	Pulse	0.1000	3
H2	Ge	72	146090.38	0.7	96.5	Pulse	0.1000	3
H2	In	115	261889.88	0.7	97.3	Pulse	0.1000	3
He	Sc	45	20728.73	1.9	97.1	Pulse	0.1000	3
He	Ge	72	82212.96	1.7	102.1	Pulse	0.1000	3
He	In	115	35543.10	1.5	97.5	Pulse	0.1000	3
He	Tb	159	234215.56	0.7	95.6	Pulse	0.1000	3
He	Bi	209	215959.35	1.0	97.7	Pulse	0.1000	3

No Gas

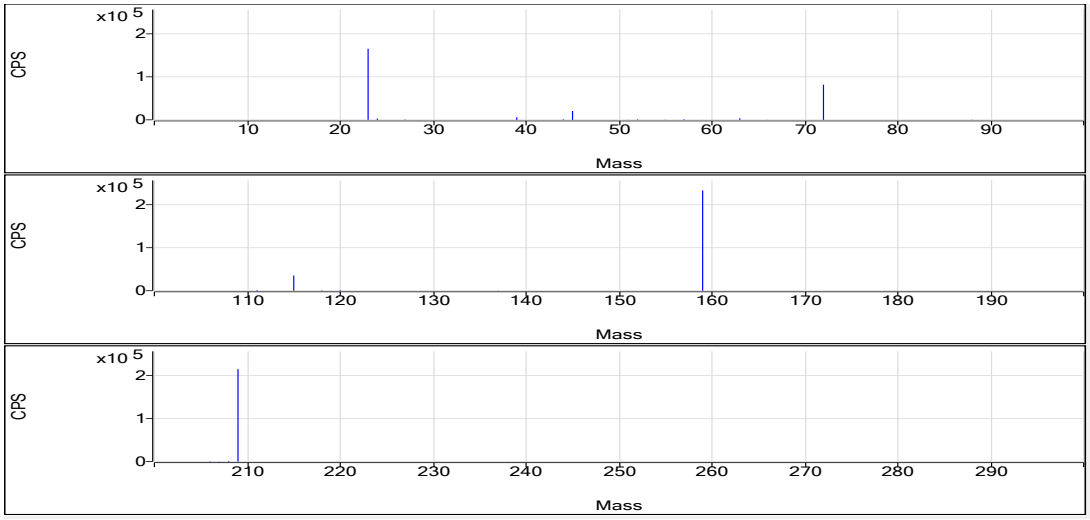


H2



Quantitation Report

He



Quantitation Report

Data File Name	089SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 1:53:59 PM
Sample Name	410-60967-F-3-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

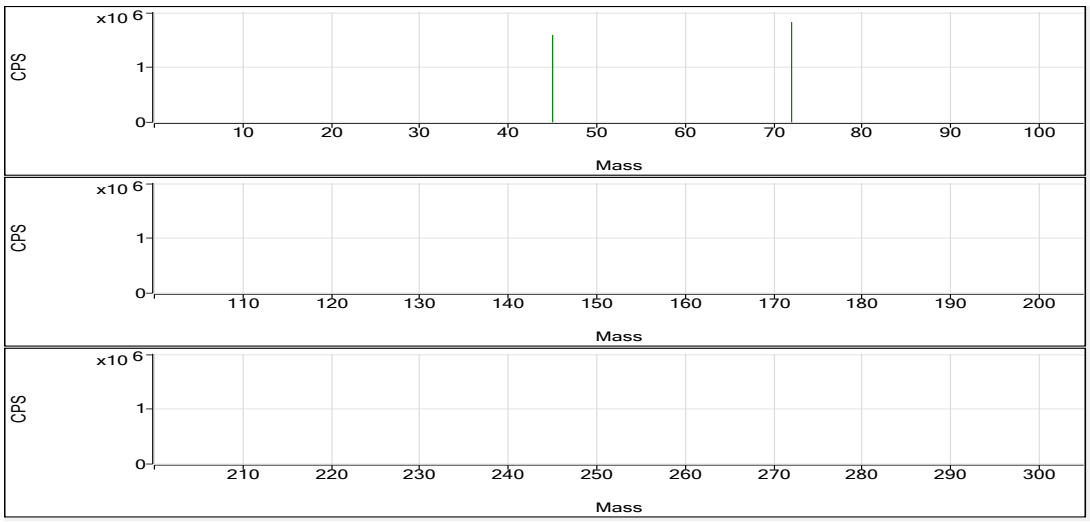
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	-0.018	ppb	N/A	17.33	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.203	ppb	46.5	9.11	0.0001	Pulse	1.5000	3
Na	23	45	He	60012.860	ppb	3.3	5929036.16	287.9302	Analog	0.1000	3
Mg	24	45	He	7164.029	ppb	2.8	327236.16	15.8904	Pulse	0.1000	3
Al	27	45	He	0.963	ppb	238.4	40.00	0.0019	Pulse	0.1000	3
K	39	45	He	8250.551	ppb	2.9	188032.21	9.1308	Pulse	0.1000	3
Ca	44	45	He	40158.583	ppb	1.2	53800.22	2.6119	Pulse	0.1000	3
Ti	47	45	He	0.575	ppb	86.6	6.67	0.0003	Pulse	0.1000	3
V	51	45	He	0.664	ppb	7.3	634.02	0.0308	Pulse	0.5000	3
Cr	52	45	He	0.700	ppb	7.3	1216.76	0.0591	Pulse	0.1000	3
Mn	55	45	He	95.666	ppb	3.5	26608.42	1.2920	Pulse	0.1000	3
Fe	57	45	He	1309.001	ppb	0.9	19643.98	0.9536	Pulse	0.1000	3
Co	59	45	He	3.237	ppb	6.5	5964.77	0.2898	Pulse	0.1000	3
Ni	60	72	He	5.570	ppb	11.1	3087.13	0.0386	Pulse	0.1000	3
Cu	63	72	He	0.874	ppb	4.2	1693.50	0.0212	Pulse	0.1000	3
Zn	66	72	He	0.969	ppb	13.9	196.68	0.0025	Pulse	0.1000	3
As	75	72	He	5.704	ppb	6.6	548.68	0.0069	Pulse	0.5000	3
Sr	88	72	He	182.296	ppb	2.5	56610.57	0.7081	Pulse	0.1000	3
Mo	98	72	He	0.493	ppb	11.5	633.37	0.0079	Pulse	0.1000	3
Ag	107	115	He	-0.001	ppb	N/A	16.67	0.0005	Pulse	0.1000	3
Cd	111	115	He	0.016	ppb	99.8	6.00	0.0002	Pulse	0.5000	3
Sn	120	115	He	0.191	ppb	106.6	860.06	0.0237	Pulse	0.1000	3
Sb	121	115	He	-0.017	ppb	N/A	16.67	0.0005	Pulse	0.1000	3
Ba	137	115	He	78.750	ppb	4.7	14871.98	0.4100	Pulse	0.1000	3
Tl	205	209	He	0.020	ppb	84.6	223.34	0.0011	Pulse	0.1000	3
Pb	208	209	He	0.021	ppb	100.3	1043.39	0.0050	Pulse	0.1000	3
U	238	209	He	0.071	ppb	5.2	1006.74	0.0048	Pulse	0.1000	3

ISTD Table:

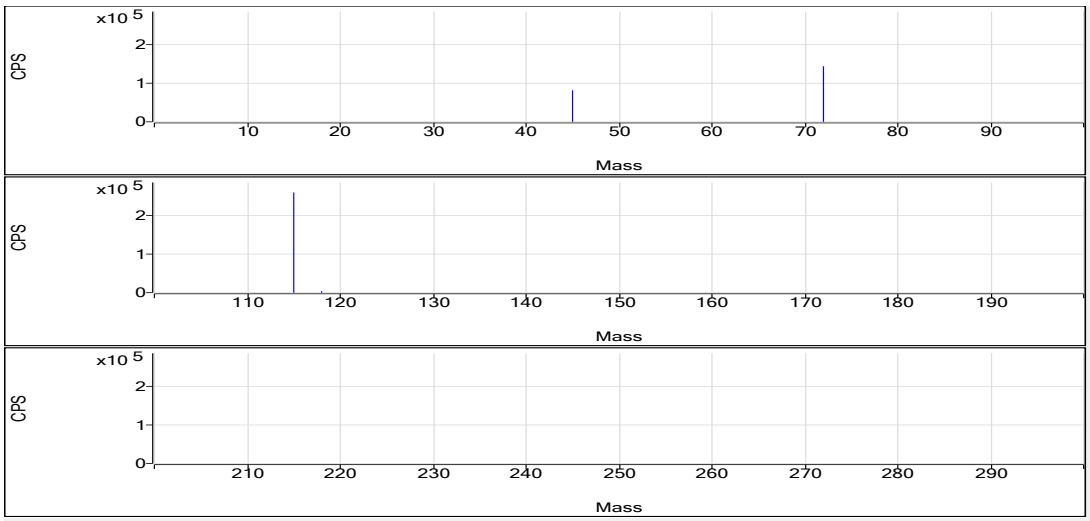
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1594172.32	1.7	98.0	Analog	0.1000	3
No Gas	Ge	72	1829064.14	0.3	97.7	Analog	0.1000	3
H2	Sc	45	81780.30	1.3	94.1	Pulse	0.1000	3
H2	Ge	72	144216.34	1.4	95.3	Pulse	0.1000	3
H2	In	115	260122.73	1.5	96.6	Pulse	0.1000	3
He	Sc	45	20601.92	2.2	96.5	Pulse	0.1000	3
He	Ge	72	79963.91	1.4	99.3	Pulse	0.1000	3
He	In	115	36291.42	1.8	99.5	Pulse	0.1000	3
He	Tb	159	235612.15	0.7	96.2	Pulse	0.1000	3
He	Bi	209	210143.00	0.6	95.1	Pulse	0.1000	3

No Gas

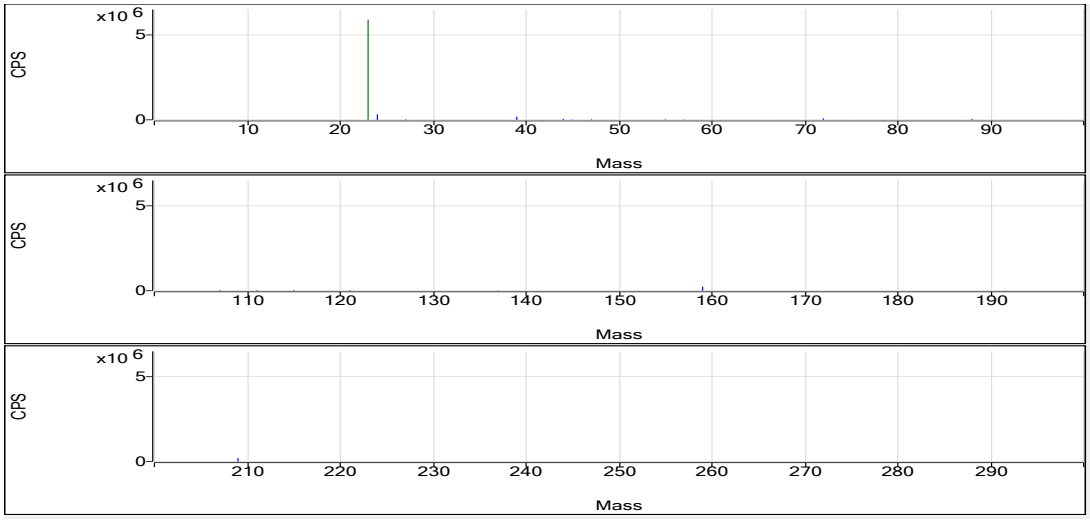


H2



Quantitation Report

He



Quantitation Report

Data File Name	090_CCV.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 1:56:01 PM
Sample Name	CCV 1942322
Sample Type	CCV
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

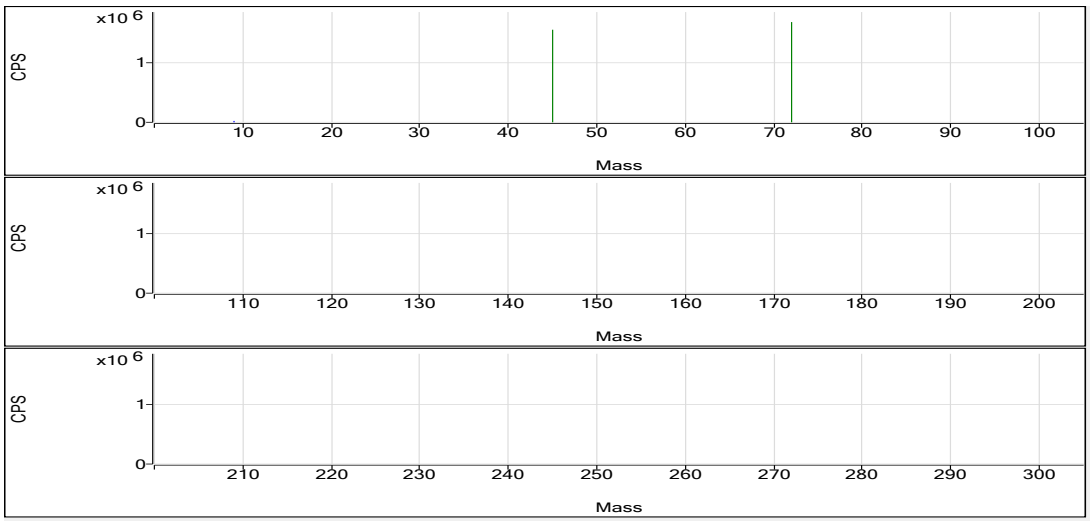
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	30.592	ppb	0.4	23027.73	0.0149	Pulse	0.5000	3
Se	78	72	H2	32.269	ppb	2.4	1144.49	0.0089	Pulse	1.5000	3
Na	23	45	He	5055.826	ppb	1.7	494170.15	24.6299	Pulse	0.1000	3
Mg	24	45	He	5242.044	ppb	1.6	233311.81	11.6284	Pulse	0.1000	3
Al	27	45	He	5168.171	ppb	1.2	56977.29	2.8396	Pulse	0.1000	3
K	39	45	He	5294.472	ppb	2.3	119113.25	5.9373	Pulse	0.1000	3
Ca	44	45	He	5345.988	ppb	2.9	7031.95	0.3505	Pulse	0.1000	3
Ti	47	45	He	316.421	ppb	1.6	3547.22	0.1767	Pulse	0.1000	3
V	51	45	He	313.432	ppb	1.9	182161.61	9.0796	Pulse	0.5000	3
Cr	52	45	He	312.752	ppb	2.6	248618.93	12.3932	Pulse	0.1000	3
Mn	55	45	He	311.395	ppb	2.5	84272.43	4.2007	Pulse	0.1000	3
Fe	57	45	He	5255.899	ppb	2.0	76670.15	3.8215	Pulse	0.1000	3
Co	59	45	He	299.196	ppb	1.6	529665.58	26.3995	Pulse	0.1000	3
Ni	60	72	He	317.190	ppb	2.3	154572.60	2.1231	Pulse	0.1000	3
Cu	63	72	He	310.460	ppb	2.2	460595.51	6.3262	Pulse	0.1000	3
Zn	66	72	He	310.184	ppb	3.2	39033.95	0.5360	Pulse	0.1000	3
As	75	72	He	317.197	ppb	1.0	26051.01	0.3577	Pulse	0.5000	3
Sr	88	72	He	31.911	ppb	4.0	9049.90	0.1243	Pulse	0.1000	3
Mo	98	72	He	31.032	ppb	1.7	34834.26	0.4784	Pulse	0.1000	3
Ag	107	115	He	31.815	ppb	3.4	85944.57	2.4399	Pulse	0.1000	3
Cd	111	115	He	31.456	ppb	3.5	7604.78	0.2158	Pulse	0.5000	3
Sn	120	115	He	31.264	ppb	2.5	20829.66	0.5912	Pulse	0.1000	3
Sb	121	115	He	31.283	ppb	2.0	17464.84	0.4957	Pulse	0.1000	3
Ba	137	115	He	315.576	ppb	3.6	57872.76	1.6431	Pulse	0.1000	3
Tl	205	209	He	30.674	ppb	0.9	231734.36	1.1082	Pulse	0.1000	3
Pb	208	209	He	30.338	ppb	0.2	307789.10	1.4719	Pulse	0.1000	3
U	238	209	He	261.542	ppb	0.3	3483441.72	16.6585	Analog	0.1000	3

ISTD Table:

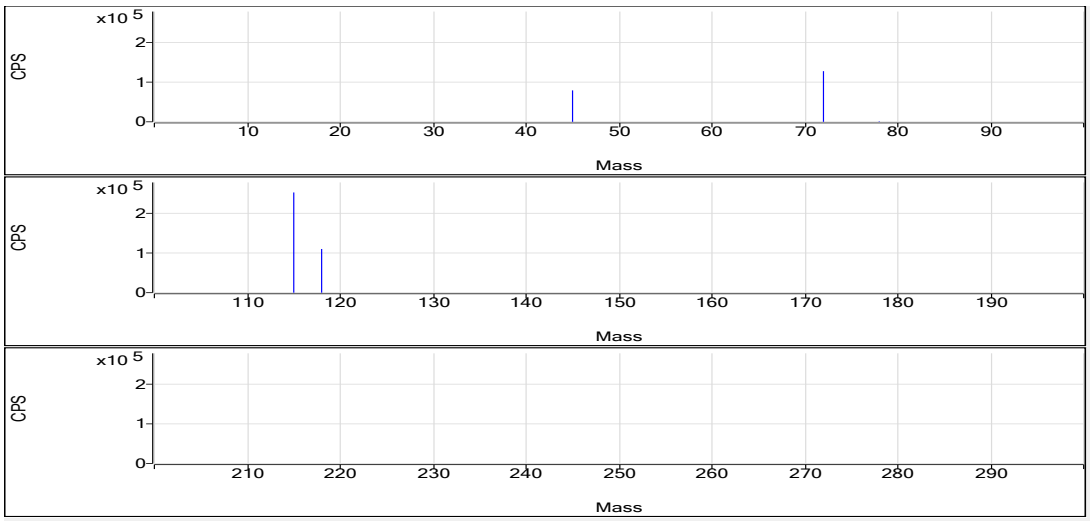
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1550251.80	1.0	95.3	Analog	0.1000	3
No Gas	Ge	72	1678409.30	0.3	89.6	Analog	0.1000	3
H2	Sc	45	79725.29	1.4	91.7	Pulse	0.1000	3
H2	Ge	72	128466.92	1.4	84.9	Pulse	0.1000	3
H2	In	115	254191.16	0.4	94.4	Pulse	0.1000	3
He	Sc	45	20067.75	2.0	94.0	Pulse	0.1000	3
He	Ge	72	72829.04	2.2	90.5	Pulse	0.1000	3
He	In	115	35245.51	2.8	96.7	Pulse	0.1000	3
He	Tb	159	232676.84	0.8	95.0	Pulse	0.1000	3
He	Bi	209	209108.02	0.4	94.6	Pulse	0.1000	3

No Gas

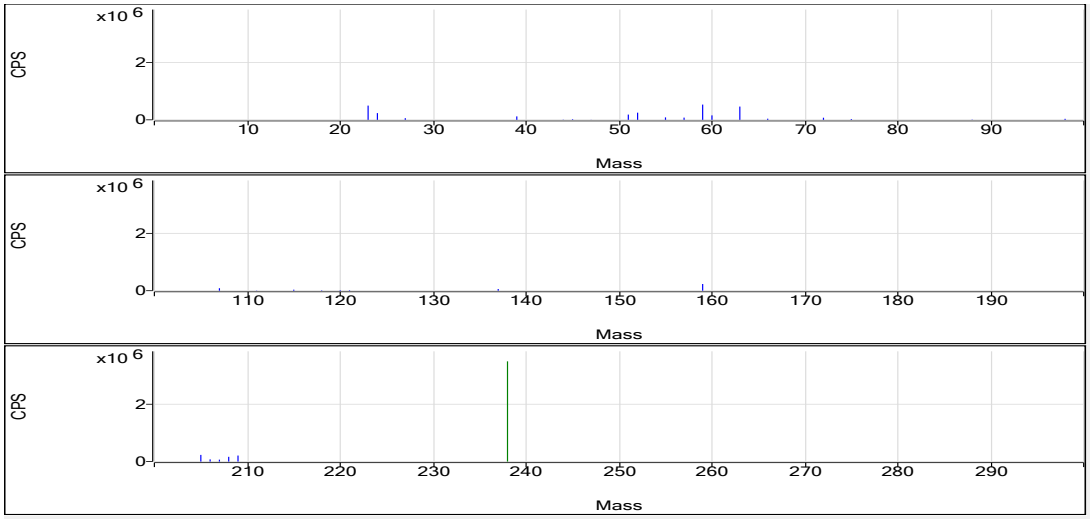


H2



Quantitation Report

He



Quantitation Report

Data File Name	091_CCB.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 1:58:02 PM
Sample Name	CCB 2014932
Sample Type	CCB
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

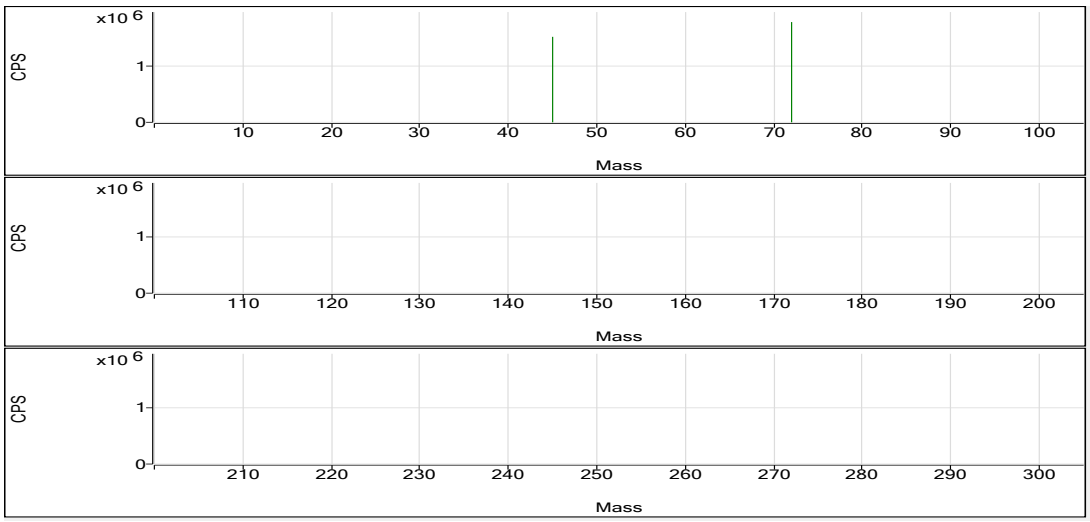
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	-0.007	ppb	N/A	24.67	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.055	ppb	47.0	3.11	0.0000	Pulse	1.5000	3
Na	23	45	He	20.629	ppb	14.4	10417.33	0.5062	Pulse	0.1000	3
Mg	24	45	He	5.184	ppb	15.9	326.68	0.0159	Pulse	0.1000	3
Al	27	45	He	2.157	ppb	59.5	53.33	0.0026	Pulse	0.1000	3
K	39	45	He	5.535	ppb	157.0	4600.87	0.2234	Pulse	0.1000	3
Ca	44	45	He	17.029	ppb	122.5	90.00	0.0044	Pulse	0.1000	3
Ti	47	45	He	0.000	ppb	N/A	0.00	0.0000	Pulse	0.1000	3
V	51	45	He	0.062	ppb	93.7	274.67	0.0134	Pulse	0.5000	3
Cr	52	45	He	-0.022	ppb	N/A	630.04	0.0306	Pulse	0.1000	3
Mn	55	45	He	0.595	ppb	3.6	210.01	0.0102	Pulse	0.1000	3
Fe	57	45	He	0.354	ppb	286.2	56.67	0.0028	Pulse	0.1000	3
Co	59	45	He	0.088	ppb	23.2	246.68	0.0120	Pulse	0.1000	3
Ni	60	72	He	0.208	ppb	75.0	210.01	0.0027	Pulse	0.1000	3
Cu	63	72	He	0.028	ppb	117.2	306.68	0.0040	Pulse	0.1000	3
Zn	66	72	He	0.295	ppb	70.5	100.00	0.0013	Pulse	0.1000	3
As	75	72	He	0.146	ppb	72.6	46.67	0.0006	Pulse	0.5000	3
Sr	88	72	He	0.104	ppb	17.5	66.67	0.0009	Pulse	0.1000	3
Mo	98	72	He	0.034	ppb	71.8	66.67	0.0009	Pulse	0.1000	3
Ag	107	115	He	0.005	ppb	287.9	33.33	0.0009	Pulse	0.1000	3
Cd	111	115	He	0.003	ppb	307.5	2.67	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.002	ppb	N/A	700.04	0.0202	Pulse	0.1000	3
Sb	121	115	He	0.015	ppb	258.7	33.33	0.0010	Pulse	0.1000	3
Ba	137	115	He	0.204	ppb	33.0	36.67	0.0011	Pulse	0.1000	3
Tl	205	209	He	0.025	ppb	33.6	263.35	0.0013	Pulse	0.1000	3
Pb	208	209	He	0.002	ppb	463.8	840.04	0.0040	Pulse	0.1000	3
U	238	209	He	0.074	ppb	9.2	1040.08	0.0050	Pulse	0.1000	3

ISTD Table:

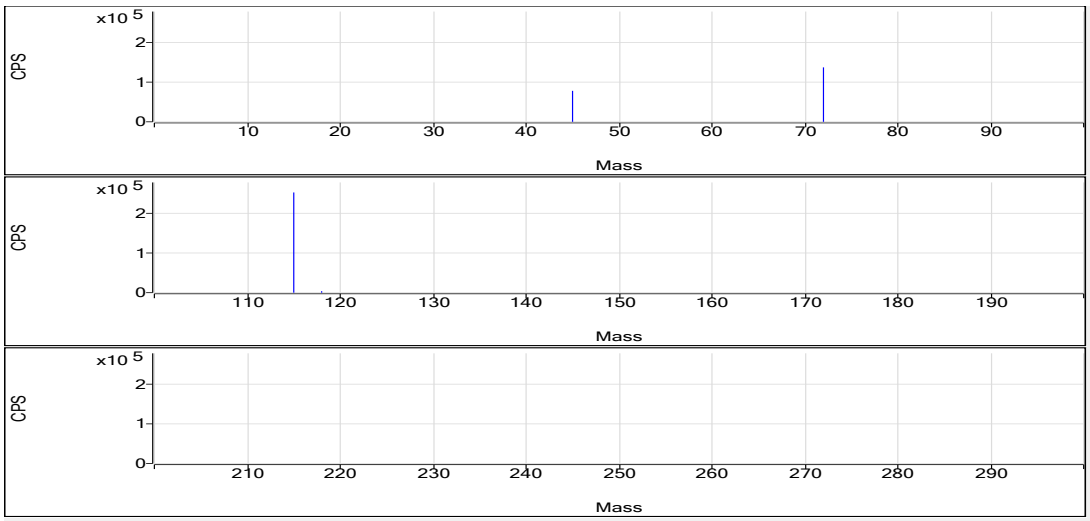
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1518116.49	0.8	93.3	Analog	0.1000	3
No Gas	Ge	72	1780274.81	2.0	95.1	Analog	0.1000	3
H2	Sc	45	78106.76	1.2	89.9	Pulse	0.1000	3
H2	Ge	72	137237.71	1.7	90.7	Pulse	0.1000	3
H2	In	115	252668.84	0.4	93.9	Pulse	0.1000	3
He	Sc	45	20588.42	2.8	96.4	Pulse	0.1000	3
He	Ge	72	77453.77	1.7	96.2	Pulse	0.1000	3
He	In	115	34647.32	2.0	95.0	Pulse	0.1000	3
He	Tb	159	232171.57	0.6	94.8	Pulse	0.1000	3
He	Bi	209	209233.70	1.4	94.7	Pulse	0.1000	3

No Gas

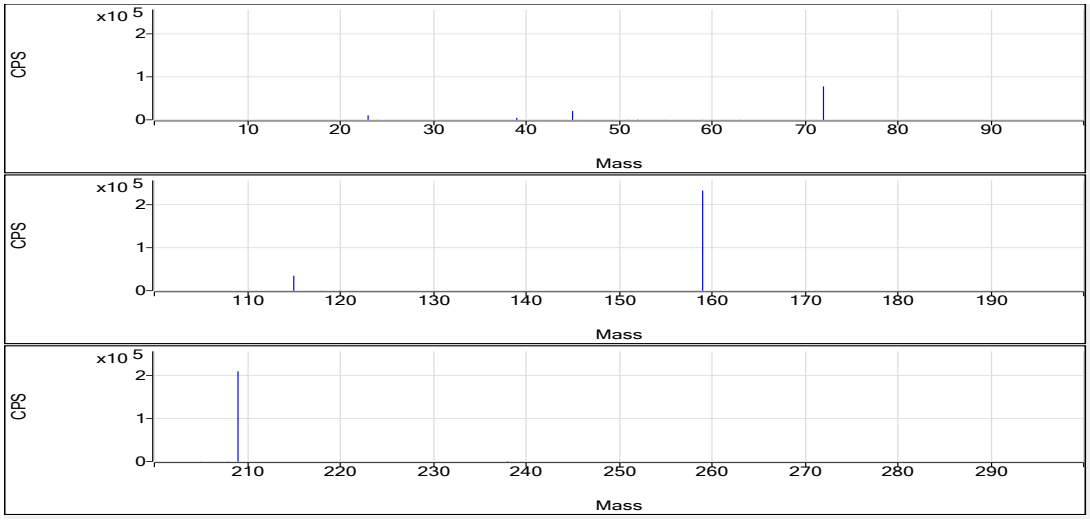


H2



Quantitation Report

He



Quantitation Report

Data File Name	092SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 2:00:03 PM
Sample Name	410-60967-F-1-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

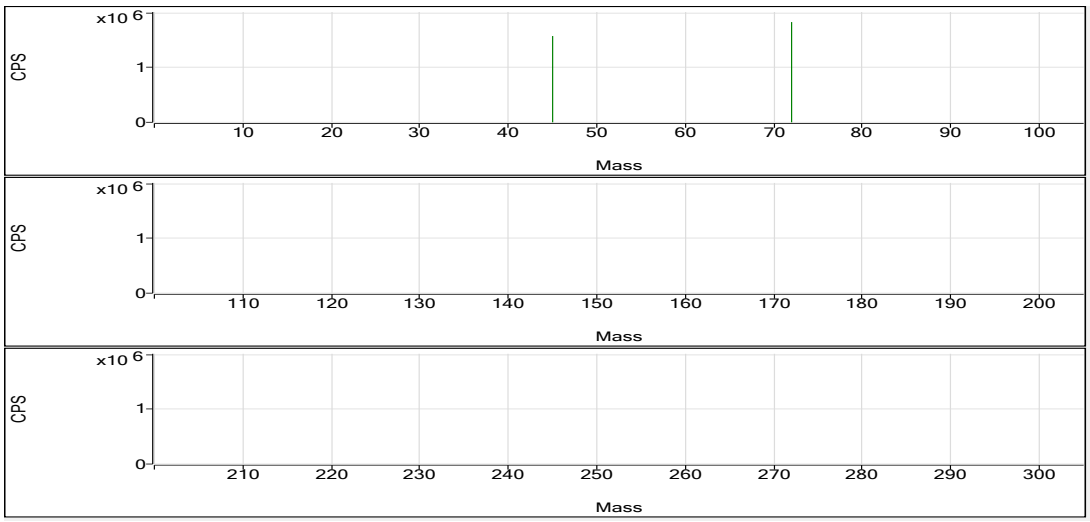
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	-0.017	ppb	N/A	18.00	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.256	ppb	22.2	11.11	0.0001	Pulse	1.5000	3
Na	23	45	He	57931.658	ppb	4.4	5751304.70	277.9591	Analog	0.1000	3
Mg	24	45	He	6911.310	ppb	4.4	317207.29	15.3300	Pulse	0.1000	3
Al	27	45	He	-0.516	ppb	N/A	23.33	0.0011	Pulse	0.1000	3
K	39	45	He	7979.716	ppb	5.6	182830.62	8.8383	Pulse	0.1000	3
Ca	44	45	He	38928.022	ppb	5.6	52374.76	2.5320	Pulse	0.1000	3
Ti	47	45	He	0.568	ppb	86.8	6.67	0.0003	Pulse	0.1000	3
V	51	45	He	0.665	ppb	8.6	638.02	0.0308	Pulse	0.5000	3
Cr	52	45	He	0.434	ppb	39.6	1003.40	0.0486	Pulse	0.1000	3
Mn	55	45	He	129.411	ppb	4.1	36152.76	1.7470	Pulse	0.1000	3
Fe	57	45	He	1038.083	ppb	5.8	15652.30	0.7568	Pulse	0.1000	3
Co	59	45	He	1.751	ppb	4.2	3283.82	0.1587	Pulse	0.1000	3
Ni	60	72	He	4.040	ppb	6.0	2250.26	0.0283	Pulse	0.1000	3
Cu	63	72	He	0.541	ppb	12.2	1143.41	0.0144	Pulse	0.1000	3
Zn	66	72	He	1.010	ppb	39.0	200.01	0.0025	Pulse	0.1000	3
As	75	72	He	4.086	ppb	3.7	400.01	0.0050	Pulse	0.5000	3
Sr	88	72	He	181.853	ppb	0.7	56058.57	0.7064	Pulse	0.1000	3
Mo	98	72	He	0.477	ppb	21.0	610.04	0.0077	Pulse	0.1000	3
Ag	107	115	He	-0.002	ppb	N/A	13.33	0.0004	Pulse	0.1000	3
Cd	111	115	He	-0.003	ppb	N/A	1.33	0.0000	Pulse	0.5000	3
Sn	120	115	He	0.116	ppb	11.7	800.06	0.0223	Pulse	0.1000	3
Sb	121	115	He	0.060	ppb	129.9	60.00	0.0017	Pulse	0.1000	3
Ba	137	115	He	42.951	ppb	0.8	8009.30	0.2236	Pulse	0.1000	3
Tl	205	209	He	0.006	ppb	36.4	116.67	0.0006	Pulse	0.1000	3
Pb	208	209	He	-0.017	ppb	N/A	653.37	0.0031	Pulse	0.1000	3
U	238	209	He	0.102	ppb	9.5	1413.47	0.0067	Pulse	0.1000	3

ISTD Table:

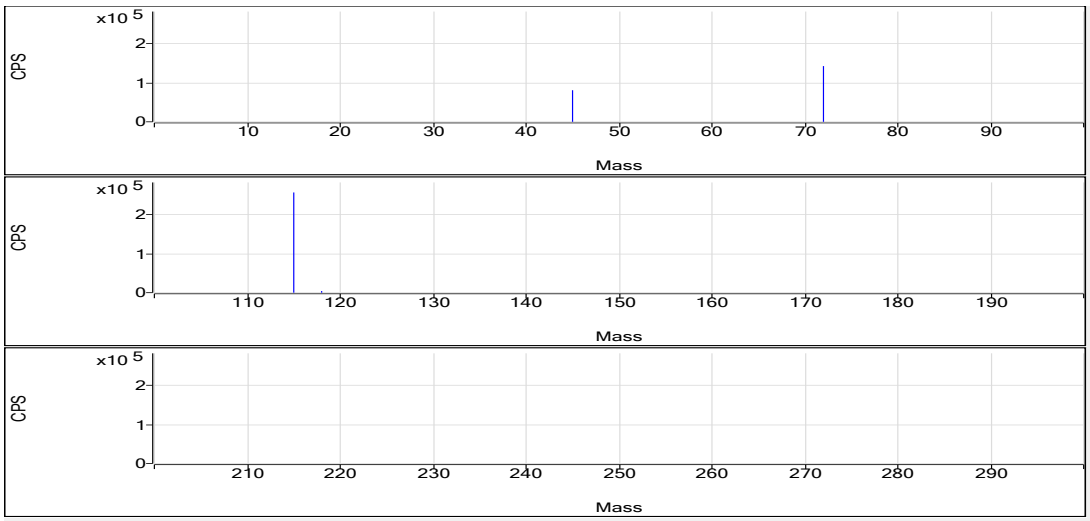
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1576103.47	0.3	96.8	Analog	0.1000	3
No Gas	Ge	72	1830968.57	1.3	97.8	Analog	0.1000	3
H2	Sc	45	80714.34	0.9	92.9	Pulse	0.1000	3
H2	Ge	72	142390.28	0.9	94.1	Pulse	0.1000	3
H2	In	115	256115.97	1.0	95.1	Pulse	0.1000	3
He	Sc	45	20718.57	4.5	97.1	Pulse	0.1000	3
He	Ge	72	79364.00	2.0	98.6	Pulse	0.1000	3
He	In	115	35813.71	1.1	98.2	Pulse	0.1000	3
He	Tb	159	234420.93	0.8	95.7	Pulse	0.1000	3
He	Bi	209	209756.65	1.5	94.9	Pulse	0.1000	3

No Gas

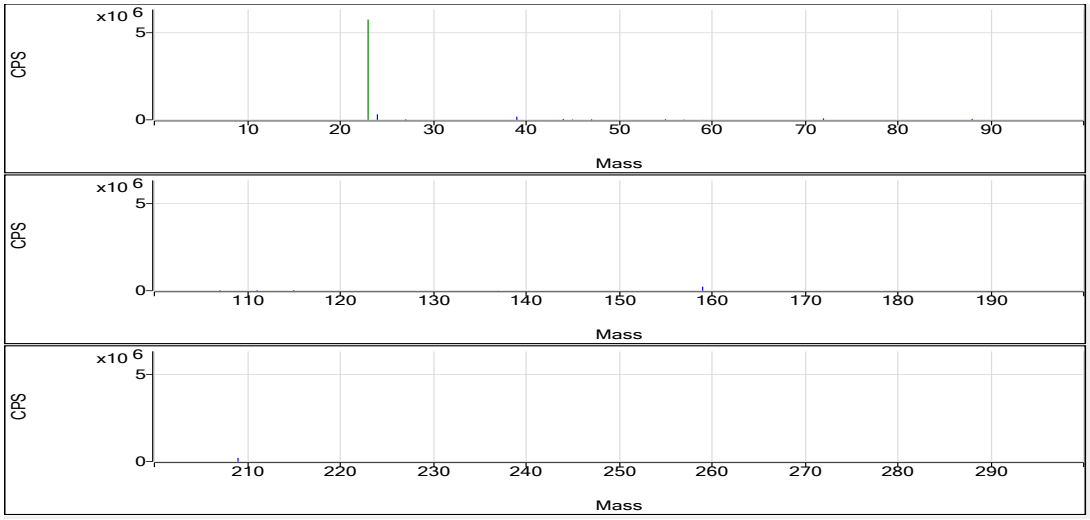


H2



Quantitation Report

He



Quantitation Report

Data File Name	093SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 2:02:04 PM
Sample Name	410-61730-F-5-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

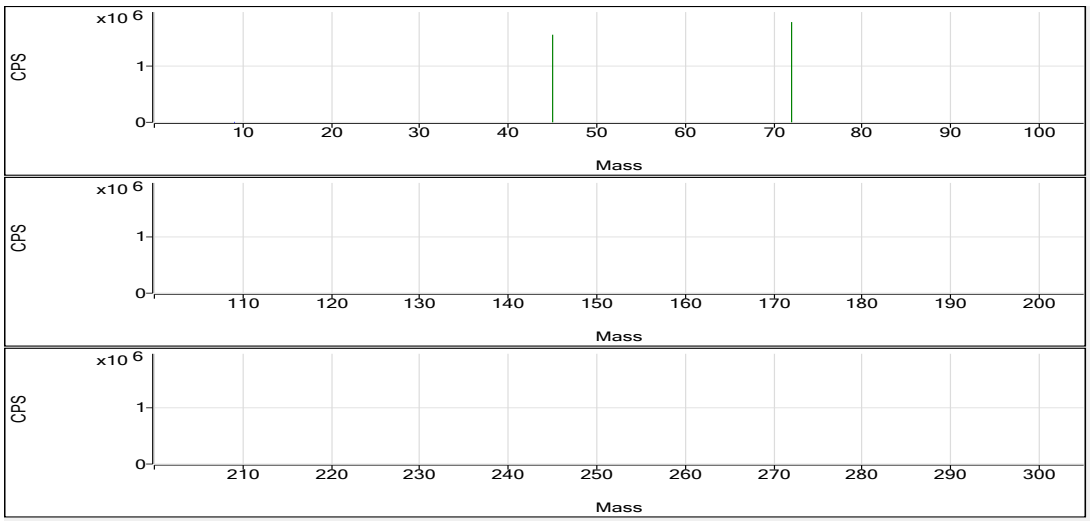
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	-0.029	ppb	N/A	8.67	0.0000	Pulse	0.5000	3
Se	78	72	H2	-0.010	ppb	N/A	0.67	0.0000	Pulse	1.5000	3
Na	23	45	He	20.867	ppb	4.6	10243.86	0.5073	Pulse	0.1000	3
Mg	24	45	He	5.254	ppb	10.3	323.35	0.0160	Pulse	0.1000	3
Al	27	45	He	1.070	ppb	174.9	40.00	0.0020	Pulse	0.1000	3
K	39	45	He	14.102	ppb	9.9	4697.58	0.2326	Pulse	0.1000	3
Ca	44	45	He	12.751	ppb	137.9	83.33	0.0041	Pulse	0.1000	3
Ti	47	45	He	0.000	ppb	N/A	0.00	0.0000	Pulse	0.1000	3
V	51	45	He	-0.011	ppb	N/A	227.33	0.0113	Pulse	0.5000	3
Cr	52	45	He	-0.076	ppb	N/A	573.36	0.0284	Pulse	0.1000	3
Mn	55	45	He	0.411	ppb	41.5	156.67	0.0077	Pulse	0.1000	3
Fe	57	45	He	6.769	ppb	38.1	150.01	0.0074	Pulse	0.1000	3
Co	59	45	He	0.023	ppb	106.9	126.67	0.0063	Pulse	0.1000	3
Ni	60	72	He	0.168	ppb	13.4	190.01	0.0024	Pulse	0.1000	3
Cu	63	72	He	0.285	ppb	5.7	713.38	0.0092	Pulse	0.1000	3
Zn	66	72	He	0.541	ppb	58.2	133.34	0.0017	Pulse	0.1000	3
As	75	72	He	-0.160	ppb	N/A	20.00	0.0003	Pulse	0.5000	3
Sr	88	72	He	-0.051	ppb	N/A	20.00	0.0003	Pulse	0.1000	3
Mo	98	72	He	-0.010	ppb	N/A	13.33	0.0002	Pulse	0.1000	3
Ag	107	115	He	-0.001	ppb	N/A	16.67	0.0005	Pulse	0.1000	3
Cd	111	115	He	-0.005	ppb	N/A	0.67	0.0000	Pulse	0.5000	3
Sn	120	115	He	-0.157	ppb	N/A	620.04	0.0173	Pulse	0.1000	3
Sb	121	115	He	0.007	ppb	15.3	30.00	0.0008	Pulse	0.1000	3
Ba	137	115	He	0.178	ppb	33.9	33.33	0.0009	Pulse	0.1000	3
Tl	205	209	He	0.001	ppb	451.2	80.00	0.0004	Pulse	0.1000	3
Pb	208	209	He	-0.008	ppb	N/A	753.37	0.0036	Pulse	0.1000	3
U	238	209	He	0.014	ppb	35.9	233.35	0.0011	Pulse	0.1000	3

ISTD Table:

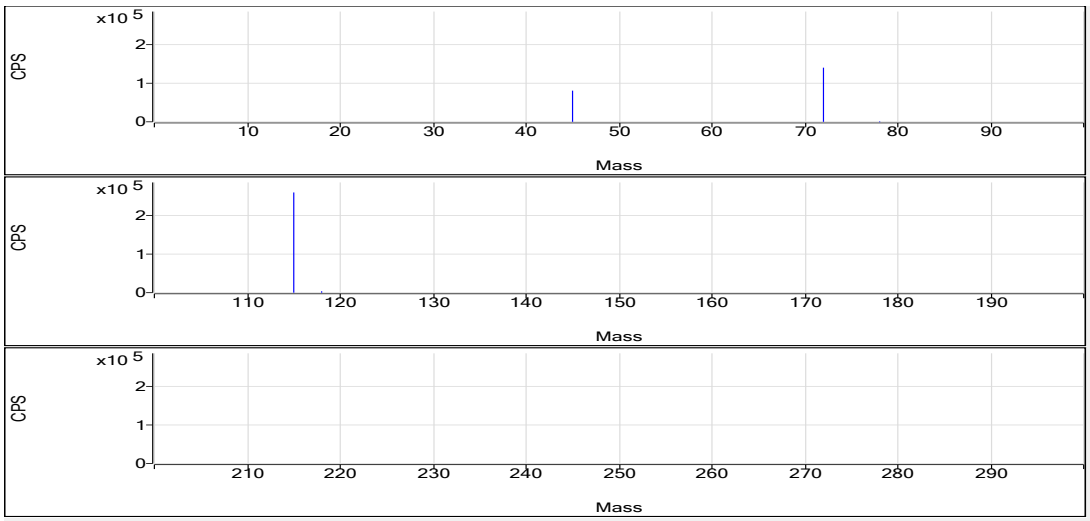
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1571752.22	1.8	96.6	Analog	0.1000	3
No Gas	Ge	72	1798449.40	0.5	96.0	Analog	0.1000	3
H2	Sc	45	80781.10	0.7	93.0	Pulse	0.1000	3
H2	Ge	72	140307.01	0.7	92.7	Pulse	0.1000	3
H2	In	115	259761.83	0.8	96.5	Pulse	0.1000	3
He	Sc	45	20194.61	2.5	94.6	Pulse	0.1000	3
He	Ge	72	77631.25	1.0	96.4	Pulse	0.1000	3
He	In	115	35810.43	2.0	98.2	Pulse	0.1000	3
He	Tb	159	234636.92	0.6	95.8	Pulse	0.1000	3
He	Bi	209	211388.98	0.6	95.7	Pulse	0.1000	3

No Gas

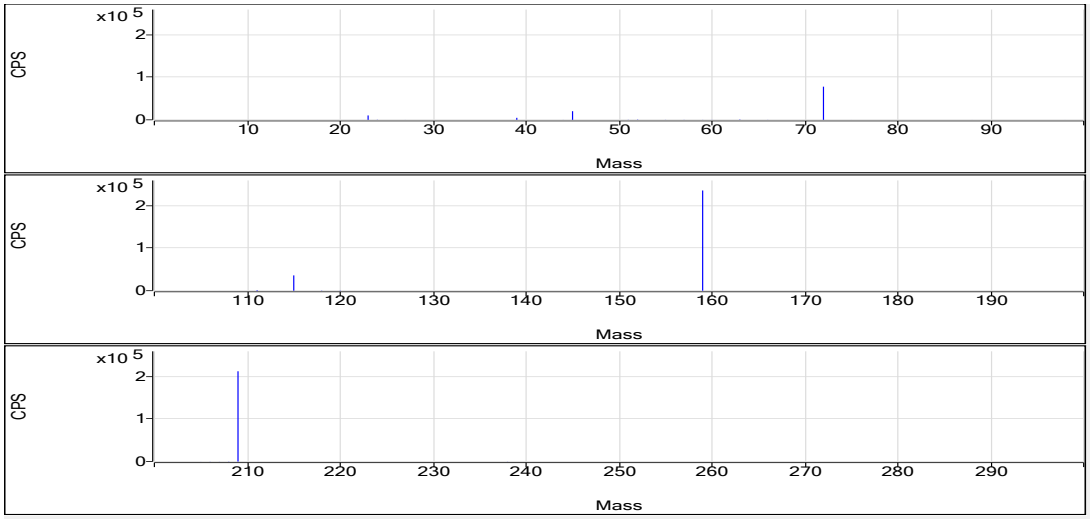


H2



Quantitation Report

He



Quantitation Report

Data File Name	094SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 2:04:05 PM
Sample Name	410-61730-F-6-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

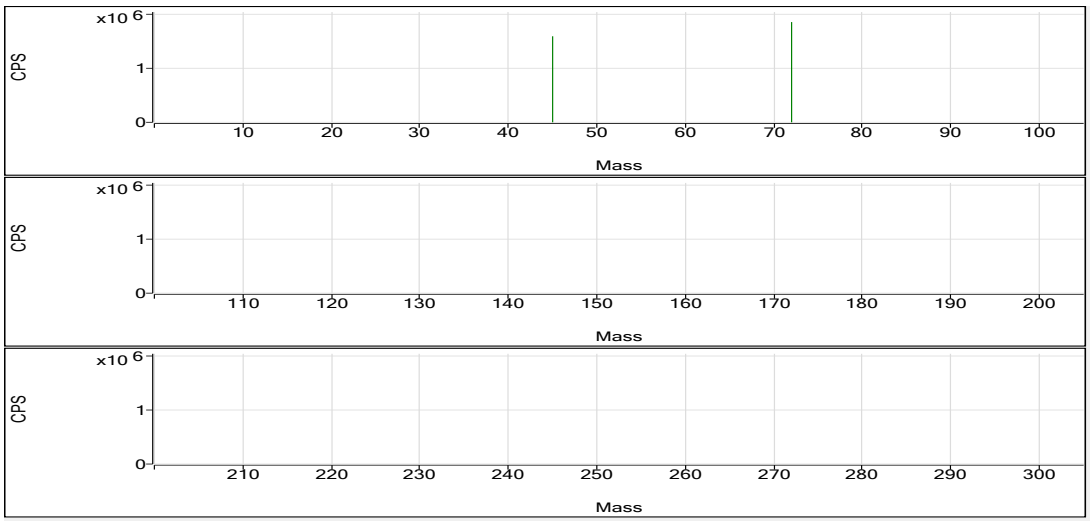
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	-0.003	ppb	N/A	28.67	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.490	ppb	19.9	20.66	0.0001	Pulse	1.5000	3
Na	23	45	He	4133.411	ppb	4.5	411809.56	20.2106	Pulse	0.1000	3
Mg	24	45	He	15071.679	ppb	4.7	680995.48	33.4253	Pulse	0.1000	3
Al	27	45	He	381.954	ppb	16.0	4290.88	0.2112	Pulse	0.1000	3
K	39	45	He	1083.996	ppb	4.6	28296.77	1.3885	Pulse	0.1000	3
Ca	44	45	He	63778.686	ppb	4.8	84471.28	4.1462	Pulse	0.1000	3
Ti	47	45	He	14.148	ppb	59.0	160.03	0.0079	Pulse	0.1000	3
V	51	45	He	0.638	ppb	12.7	613.35	0.0300	Pulse	0.5000	3
Cr	52	45	He	0.494	ppb	48.0	1036.74	0.0509	Pulse	0.1000	3
Mn	55	45	He	25.700	ppb	2.7	7111.98	0.3487	Pulse	0.1000	3
Fe	57	45	He	323.190	ppb	4.1	4837.65	0.2373	Pulse	0.1000	3
Co	59	45	He	0.178	ppb	9.3	406.69	0.0199	Pulse	0.1000	3
Ni	60	72	He	0.373	ppb	36.0	310.02	0.0038	Pulse	0.1000	3
Cu	63	72	He	0.219	ppb	38.6	636.71	0.0079	Pulse	0.1000	3
Zn	66	72	He	1.474	ppb	9.5	270.01	0.0033	Pulse	0.1000	3
As	75	72	He	0.202	ppb	10.6	54.00	0.0007	Pulse	0.5000	3
Sr	88	72	He	59.244	ppb	1.6	18702.93	0.2304	Pulse	0.1000	3
Mo	98	72	He	0.328	ppb	25.2	436.69	0.0054	Pulse	0.1000	3
Ag	107	115	He	-0.005	ppb	N/A	6.67	0.0002	Pulse	0.1000	3
Cd	111	115	He	0.026	ppb	97.5	8.00	0.0002	Pulse	0.5000	3
Sn	120	115	He	0.114	ppb	132.9	770.05	0.0223	Pulse	0.1000	3
Sb	121	115	He	0.009	ppb	205.3	30.00	0.0009	Pulse	0.1000	3
Ba	137	115	He	25.880	ppb	3.9	4657.65	0.1347	Pulse	0.1000	3
Tl	205	209	He	0.018	ppb	53.4	206.68	0.0010	Pulse	0.1000	3
Pb	208	209	He	0.155	ppb	6.8	2410.18	0.0114	Pulse	0.1000	3
U	238	209	He	0.306	ppb	6.0	4154.17	0.0197	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1588094.61	1.4	97.6	Analog	0.1000	3
No Gas	Ge	72	1850120.86	0.3	98.8	Analog	0.1000	3
H2	Sc	45	80436.10	0.3	92.6	Pulse	0.1000	3
H2	Ge	72	144653.61	1.7	95.6	Pulse	0.1000	3
H2	In	115	255679.89	0.7	95.0	Pulse	0.1000	3
He	Sc	45	20401.63	4.4	95.6	Pulse	0.1000	3
He	Ge	72	81167.42	0.9	100.8	Pulse	0.1000	3
He	In	115	34570.16	1.4	94.8	Pulse	0.1000	3
He	Tb	159	235477.82	0.2	96.1	Pulse	0.1000	3
He	Bi	209	210834.72	0.8	95.4	Pulse	0.1000	3

No Gas



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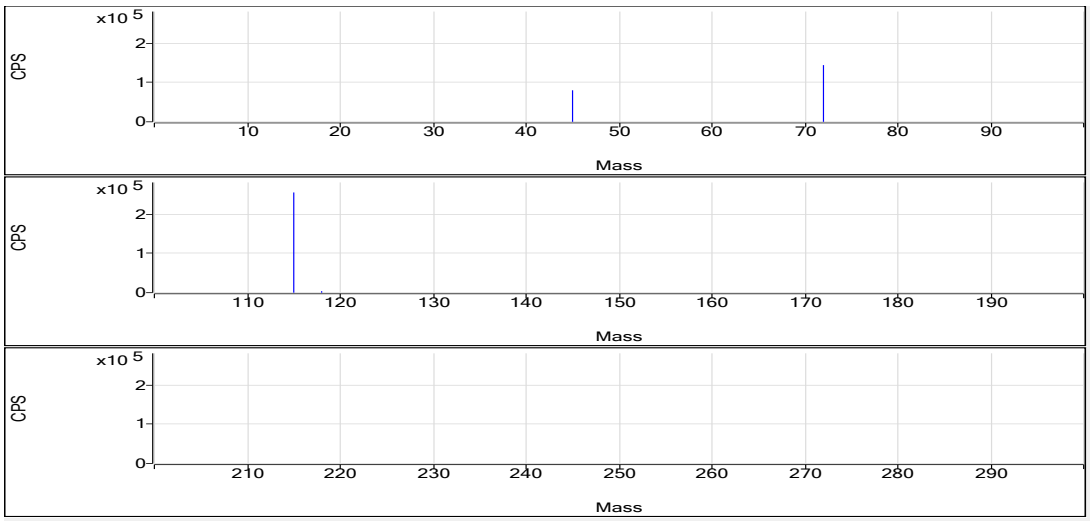
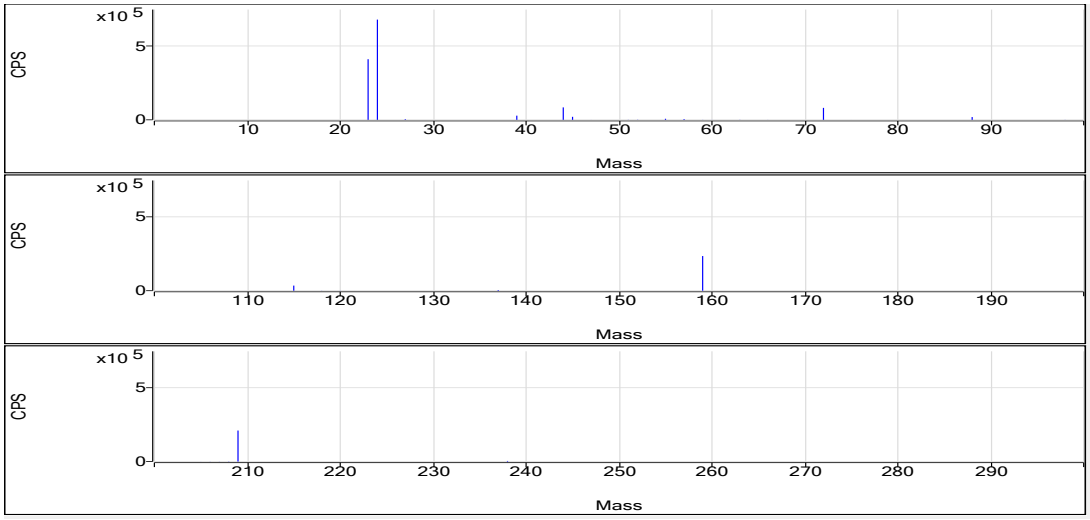


Quantitation Report

He



Quantitation Report

Data File Name	095SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 2:06:06 PM
Sample Name	410-60967-F-2-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

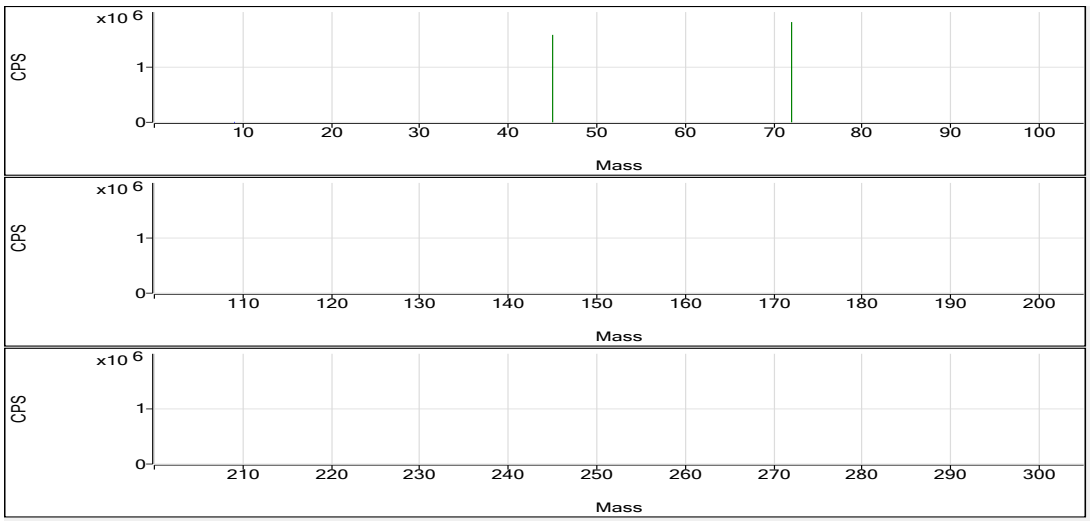
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	-0.027	ppb	N/A	10.67	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.309	ppb	19.3	13.11	0.0001	Pulse	1.5000	3
Na	23	45	He	59056.277	ppb	2.3	5910343.45	283.3471	Analog	0.1000	3
Mg	24	45	He	6986.649	ppb	0.8	323286.30	15.4970	Pulse	0.1000	3
Al	27	45	He	-0.228	ppb	N/A	26.67	0.0013	Pulse	0.1000	3
K	39	45	He	8192.074	ppb	1.8	189149.62	9.0677	Pulse	0.1000	3
Ca	44	45	He	39396.570	ppb	1.1	53455.74	2.5624	Pulse	0.1000	3
Ti	47	45	He	0.000	ppb	N/A	0.00	0.0000	Pulse	0.1000	3
V	51	45	He	0.589	ppb	17.1	596.68	0.0286	Pulse	0.5000	3
Cr	52	45	He	0.422	ppb	11.6	1003.40	0.0481	Pulse	0.1000	3
Mn	55	45	He	49.787	ppb	1.1	14050.59	0.6735	Pulse	0.1000	3
Fe	57	45	He	1096.388	ppb	1.8	16670.14	0.7991	Pulse	0.1000	3
Co	59	45	He	1.599	ppb	4.8	3030.43	0.1453	Pulse	0.1000	3
Ni	60	72	He	5.886	ppb	2.3	3283.82	0.0407	Pulse	0.1000	3
Cu	63	72	He	1.003	ppb	8.9	1923.53	0.0238	Pulse	0.1000	3
Zn	66	72	He	1.673	ppb	26.9	296.68	0.0037	Pulse	0.1000	3
As	75	72	He	5.775	ppb	9.3	560.01	0.0069	Pulse	0.5000	3
Sr	88	72	He	180.060	ppb	1.1	56426.51	0.6994	Pulse	0.1000	3
Mo	98	72	He	0.539	ppb	20.5	696.71	0.0086	Pulse	0.1000	3
Ag	107	115	He	0.001	ppb	1277.4	20.00	0.0006	Pulse	0.1000	3
Cd	111	115	He	-0.002	ppb	N/A	1.33	0.0000	Pulse	0.5000	3
Sn	120	115	He	0.338	ppb	101.6	906.89	0.0264	Pulse	0.1000	3
Sb	121	115	He	-0.009	ppb	N/A	20.00	0.0006	Pulse	0.1000	3
Ba	137	115	He	82.920	ppb	1.9	14898.56	0.4317	Pulse	0.1000	3
Tl	205	209	He	0.009	ppb	38.5	140.01	0.0007	Pulse	0.1000	3
Pb	208	209	He	-0.010	ppb	N/A	720.03	0.0034	Pulse	0.1000	3
U	238	209	He	0.051	ppb	25.7	730.05	0.0035	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1580714.56	0.8	97.1	Analog	0.1000	3
No Gas	Ge	72	1811952.21	1.4	96.7	Analog	0.1000	3
H2	Sc	45	81813.45	1.5	94.1	Pulse	0.1000	3
H2	Ge	72	141575.67	0.2	93.5	Pulse	0.1000	3
H2	In	115	258938.04	0.1	96.2	Pulse	0.1000	3
He	Sc	45	20862.21	1.0	97.7	Pulse	0.1000	3
He	Ge	72	80677.13	1.3	100.2	Pulse	0.1000	3
He	In	115	34500.47	2.2	94.6	Pulse	0.1000	3
He	Tb	159	236831.36	0.4	96.7	Pulse	0.1000	3
He	Bi	209	209113.85	0.4	94.6	Pulse	0.1000	3

No Gas



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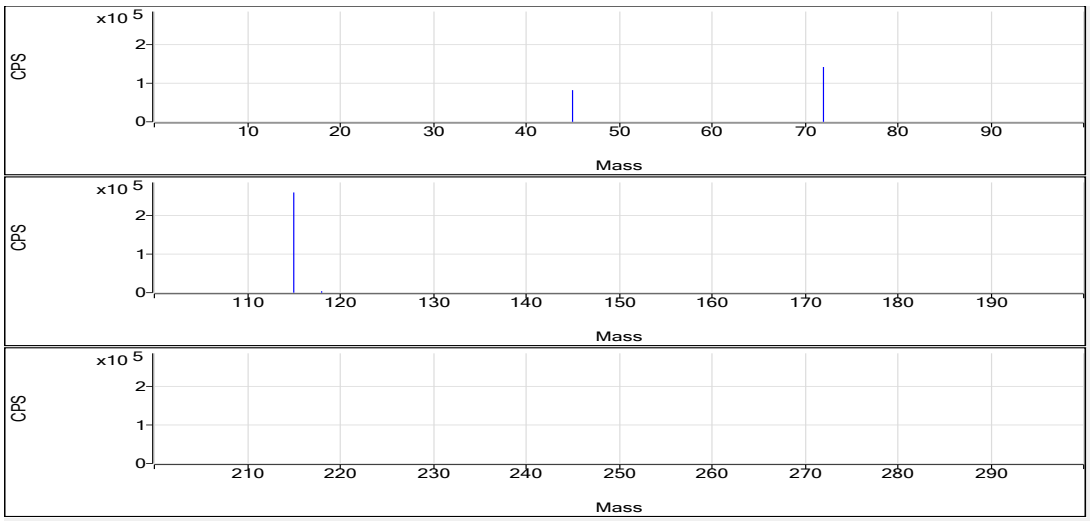
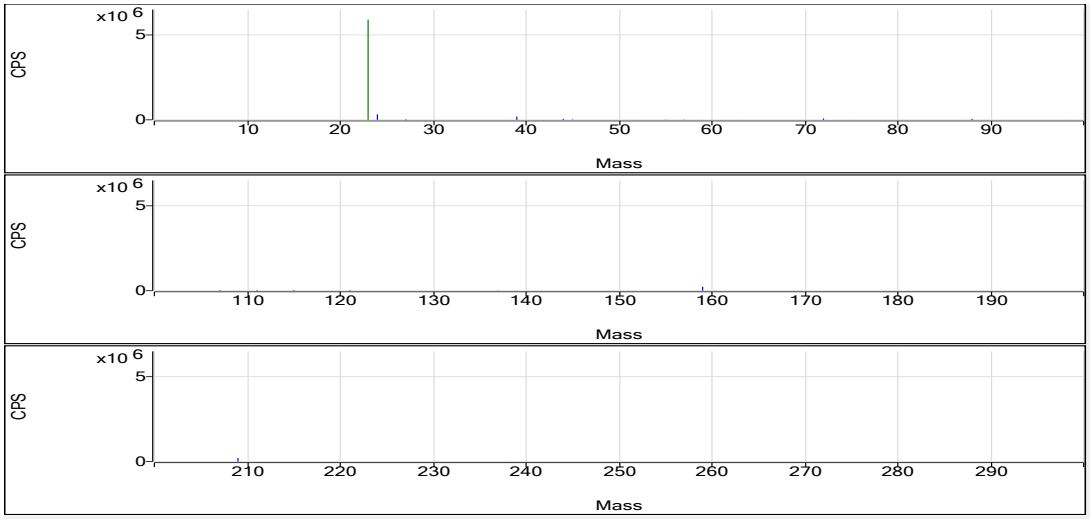


Quantitation Report

He



Quantitation Report

Data File Name	096SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 2:08:07 PM
Sample Name	410-61796-S-3-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

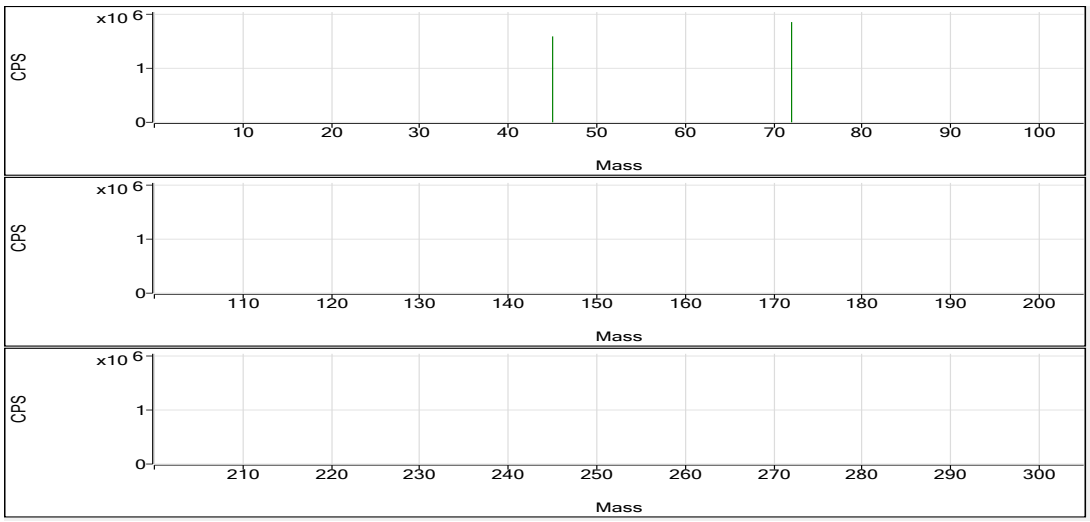
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.092	ppb	43.8	102.00	0.0001	Pulse	0.5000	3
Se	78	72	H2	0.092	ppb	0.7	4.67	0.0000	Pulse	1.5000	3
Na	23	45	He	21746.154	ppb	4.1	2157714.76	104.5936	Analog	0.1000	3
Mg	24	45	He	14342.093	ppb	3.3	656247.98	31.8075	Pulse	0.1000	3
Al	27	45	He	28.804	ppb	36.0	356.68	0.0172	Pulse	0.1000	3
K	39	45	He	1935.191	ppb	2.1	47638.21	2.3081	Pulse	0.1000	3
Ca	44	45	He	13733.019	ppb	4.4	18468.85	0.8953	Pulse	0.1000	3
Ti	47	45	He	1.151	ppb	41.1	13.33	0.0006	Pulse	0.1000	3
V	51	45	He	0.038	ppb	37.0	262.00	0.0127	Pulse	0.5000	3
Cr	52	45	He	1.288	ppb	16.8	1696.99	0.0823	Pulse	0.1000	3
Mn	55	45	He	18.128	ppb	3.2	5091.07	0.2466	Pulse	0.1000	3
Fe	57	45	He	2351.933	ppb	2.9	35313.93	1.7114	Pulse	0.1000	3
Co	59	45	He	0.145	ppb	28.6	350.02	0.0170	Pulse	0.1000	3
Ni	60	72	He	3.007	ppb	0.6	1753.50	0.0214	Pulse	0.1000	3
Cu	63	72	He	2.568	ppb	0.4	4554.22	0.0557	Pulse	0.1000	3
Zn	66	72	He	31.621	ppb	2.9	4527.52	0.0554	Pulse	0.1000	3
As	75	72	He	0.110	ppb	90.0	46.00	0.0006	Pulse	0.5000	3
Sr	88	72	He	113.027	ppb	1.3	35920.01	0.4392	Pulse	0.1000	3
Mo	98	72	He	0.050	ppb	15.6	90.00	0.0011	Pulse	0.1000	3
Ag	107	115	He	0.000	ppb	853.4	20.00	0.0006	Pulse	0.1000	3
Cd	111	115	He	6.206	ppb	5.8	1476.75	0.0426	Pulse	0.5000	3
Sn	120	115	He	-0.028	ppb	N/A	683.38	0.0197	Pulse	0.1000	3
Sb	121	115	He	0.002	ppb	1685.0	26.67	0.0008	Pulse	0.1000	3
Ba	137	115	He	74.852	ppb	3.0	13513.74	0.3897	Pulse	0.1000	3
Tl	205	209	He	0.004	ppb	35.9	100.00	0.0005	Pulse	0.1000	3
Pb	208	209	He	0.169	ppb	10.0	2540.20	0.0121	Pulse	0.1000	3
U	238	209	He	0.012	ppb	32.3	206.68	0.0010	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1583685.08	0.8	97.3	Analog	0.1000	3
No Gas	Ge	72	1847739.45	0.8	98.7	Analog	0.1000	3
H2	Sc	45	80295.61	3.1	92.4	Pulse	0.1000	3
H2	Ge	72	142939.27	0.6	94.4	Pulse	0.1000	3
H2	In	115	257867.99	0.8	95.8	Pulse	0.1000	3
He	Sc	45	20645.23	2.9	96.7	Pulse	0.1000	3
He	Ge	72	81787.03	0.8	101.6	Pulse	0.1000	3
He	In	115	34670.74	1.8	95.1	Pulse	0.1000	3
He	Tb	159	234520.60	0.7	95.7	Pulse	0.1000	3
He	Bi	209	209880.06	0.9	95.0	Pulse	0.1000	3

No Gas



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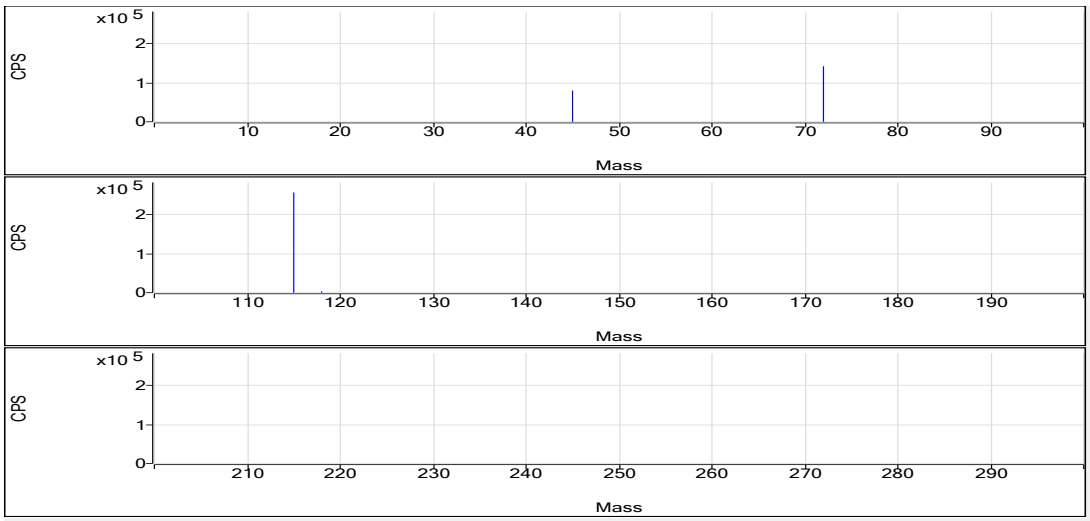
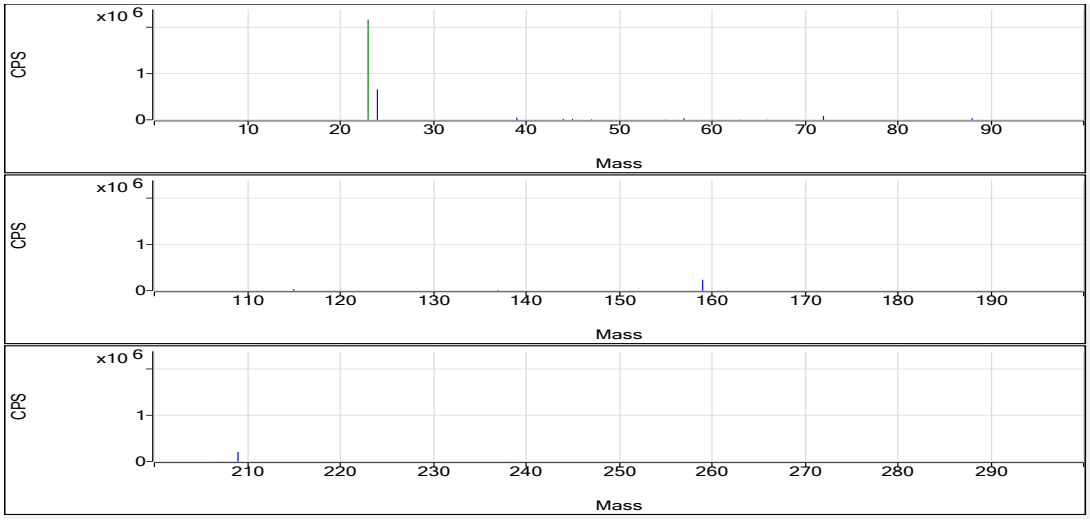


Quantitation Report

He



Quantitation Report

Data File Name	097SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 2:10:09 PM
Sample Name	410-61243-L-1-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

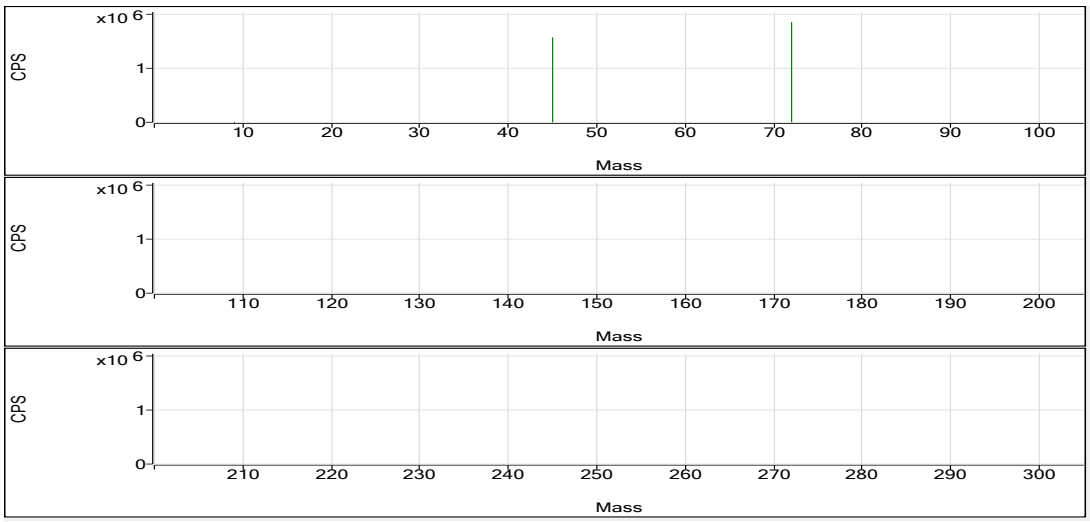
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	-0.030	ppb	N/A	8.00	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.023	ppb	190.1	2.00	0.0000	Pulse	1.5000	3
Na	23	45	He	25968.736	ppb	4.1	2580723.40	124.8241	Analog	0.1000	3
Mg	24	45	He	7163.154	ppb	4.6	328451.65	15.8884	Pulse	0.1000	3
Al	27	45	He	2.225	ppb	139.0	53.34	0.0026	Pulse	0.1000	3
K	39	45	He	2520.578	ppb	6.0	60770.50	2.9405	Pulse	0.1000	3
Ca	44	45	He	49887.741	ppb	4.8	67055.20	3.2439	Pulse	0.1000	3
Ti	47	45	He	0.000	ppb	N/A	0.00	0.0000	Pulse	0.1000	3
V	51	45	He	0.042	ppb	77.8	264.67	0.0128	Pulse	0.5000	3
Cr	52	45	He	0.422	ppb	31.2	993.40	0.0481	Pulse	0.1000	3
Mn	55	45	He	187.120	ppb	4.7	52198.46	2.5251	Pulse	0.1000	3
Fe	57	45	He	129.661	ppb	3.4	2000.21	0.0967	Pulse	0.1000	3
Co	59	45	He	0.242	ppb	21.5	526.69	0.0255	Pulse	0.1000	3
Ni	60	72	He	1.512	ppb	9.0	950.07	0.0114	Pulse	0.1000	3
Cu	63	72	He	0.092	ppb	13.6	436.69	0.0053	Pulse	0.1000	3
Zn	66	72	He	0.403	ppb	85.7	123.34	0.0015	Pulse	0.1000	3
As	75	72	He	0.480	ppb	31.9	81.33	0.0010	Pulse	0.5000	3
Sr	88	72	He	299.900	ppb	0.8	96673.04	1.1646	Pulse	0.1000	3
Mo	98	72	He	4.396	ppb	7.1	5648.00	0.0681	Pulse	0.1000	3
Ag	107	115	He	-0.005	ppb	N/A	6.67	0.0002	Pulse	0.1000	3
Cd	111	115	He	0.000	ppb	5392.8	2.00	0.0001	Pulse	0.5000	3
Sn	120	115	He	0.070	ppb	380.0	763.63	0.0215	Pulse	0.1000	3
Sb	121	115	He	0.014	ppb	305.9	33.33	0.0009	Pulse	0.1000	3
Ba	137	115	He	166.551	ppb	1.7	30735.26	0.8672	Pulse	0.1000	3
Tl	205	209	He	0.002	ppb	227.3	86.67	0.0004	Pulse	0.1000	3
Pb	208	209	He	-0.008	ppb	N/A	750.04	0.0036	Pulse	0.1000	3
U	238	209	He	1.829	ppb	1.3	24627.78	0.1168	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1574270.97	1.1	96.7	Analog	0.1000	3
No Gas	Ge	72	1857733.15	0.8	99.2	Analog	0.1000	3
H2	Sc	45	80342.05	1.1	92.5	Pulse	0.1000	3
H2	Ge	72	145145.15	1.1	95.9	Pulse	0.1000	3
H2	In	115	259499.93	1.2	96.4	Pulse	0.1000	3
He	Sc	45	20698.60	4.2	97.0	Pulse	0.1000	3
He	Ge	72	83010.81	1.5	103.1	Pulse	0.1000	3
He	In	115	35439.37	2.5	97.2	Pulse	0.1000	3
He	Tb	159	234460.10	1.5	95.7	Pulse	0.1000	3
He	Bi	209	210949.57	0.5	95.5	Pulse	0.1000	3

No Gas



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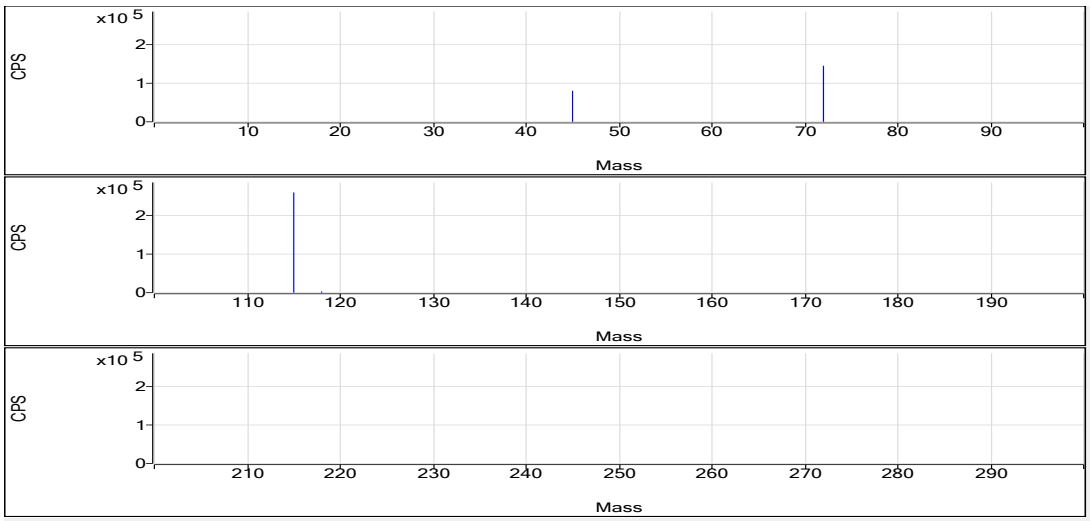
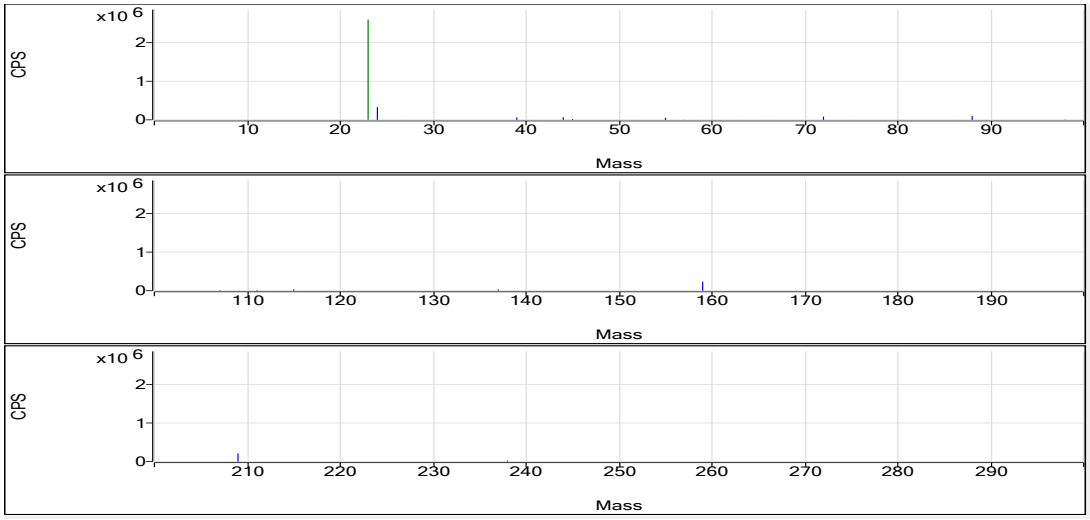


Quantitation Report

He



Quantitation Report

Data File Name	098SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 2:12:10 PM
Sample Name	410-61796-S-5-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

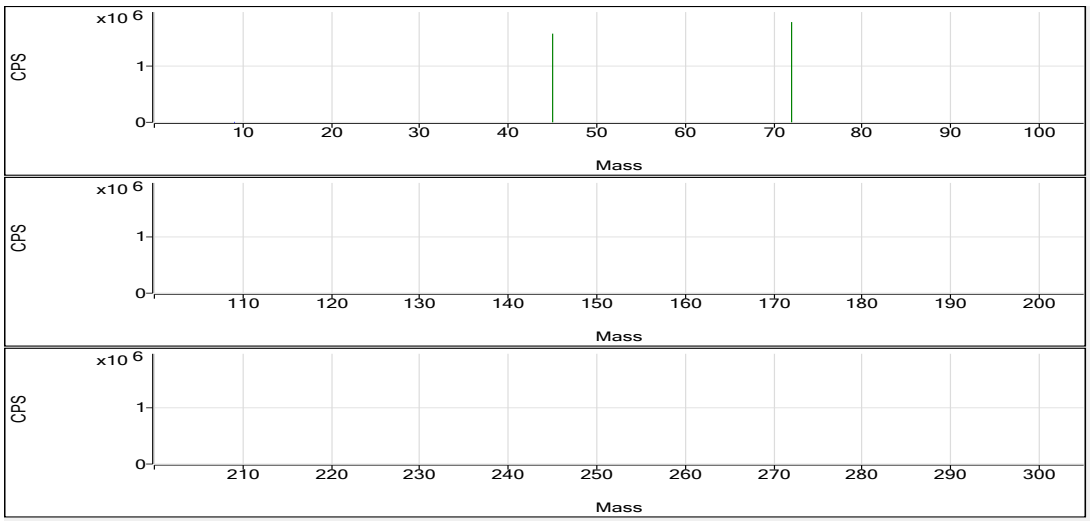
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	-0.028	ppb	N/A	10.00	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.014	ppb	191.1	1.56	0.0000	Pulse	1.5000	3
Na	23	45	He	18.053	ppb	31.0	10427.34	0.4938	Pulse	0.1000	3
Mg	24	45	He	3.646	ppb	21.7	263.34	0.0125	Pulse	0.1000	3
Al	27	45	He	0.310	ppb	574.6	33.33	0.0016	Pulse	0.1000	3
K	39	45	He	9.812	ppb	57.7	4817.63	0.2280	Pulse	0.1000	3
Ca	44	45	He	22.327	ppb	28.3	100.00	0.0047	Pulse	0.1000	3
Ti	47	45	He	0.000	ppb	N/A	0.00	0.0000	Pulse	0.1000	3
V	51	45	He	-0.056	ppb	N/A	210.67	0.0100	Pulse	0.5000	3
Cr	52	45	He	-0.116	ppb	N/A	566.70	0.0268	Pulse	0.1000	3
Mn	55	45	He	0.282	ppb	17.0	126.67	0.0060	Pulse	0.1000	3
Fe	57	45	He	2.437	ppb	48.9	90.00	0.0043	Pulse	0.1000	3
Co	59	45	He	-0.008	ppb	N/A	73.34	0.0035	Pulse	0.1000	3
Ni	60	72	He	0.077	ppb	52.9	143.34	0.0018	Pulse	0.1000	3
Cu	63	72	He	0.037	ppb	48.5	323.35	0.0041	Pulse	0.1000	3
Zn	66	72	He	1.032	ppb	41.0	200.01	0.0026	Pulse	0.1000	3
As	75	72	He	-0.070	ppb	N/A	28.00	0.0004	Pulse	0.5000	3
Sr	88	72	He	0.003	ppb	2928.3	36.67	0.0005	Pulse	0.1000	3
Mo	98	72	He	0.009	ppb	189.7	36.67	0.0005	Pulse	0.1000	3
Ag	107	115	He	-0.002	ppb	N/A	13.33	0.0004	Pulse	0.1000	3
Cd	111	115	He	-0.008	ppb	N/A	0.00	0.0000	Pulse	0.5000	3
Sn	120	115	He	-0.056	ppb	N/A	680.04	0.0192	Pulse	0.1000	3
Sb	121	115	He	-0.010	ppb	N/A	20.00	0.0006	Pulse	0.1000	3
Ba	137	115	He	0.108	ppb	49.7	20.00	0.0006	Pulse	0.1000	3
Tl	205	209	He	-0.006	ppb	N/A	30.00	0.0001	Pulse	0.1000	3
Pb	208	209	He	-0.022	ppb	N/A	610.03	0.0029	Pulse	0.1000	3
U	238	209	He	-0.001	ppb	N/A	40.00	0.0002	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1590502.68	1.1	97.7	Analog	0.1000	3
No Gas	Ge	72	1797975.96	0.7	96.0	Analog	0.1000	3
H2	Sc	45	81894.23	1.8	94.2	Pulse	0.1000	3
H2	Ge	72	137763.12	1.0	91.0	Pulse	0.1000	3
H2	In	115	259111.56	1.0	96.3	Pulse	0.1000	3
He	Sc	45	21125.91	1.3	99.0	Pulse	0.1000	3
He	Ge	72	78036.14	0.8	96.9	Pulse	0.1000	3
He	In	115	35436.10	0.9	97.2	Pulse	0.1000	3
He	Tb	159	233387.64	0.5	95.3	Pulse	0.1000	3
He	Bi	209	212964.88	0.4	96.4	Pulse	0.1000	3

No Gas



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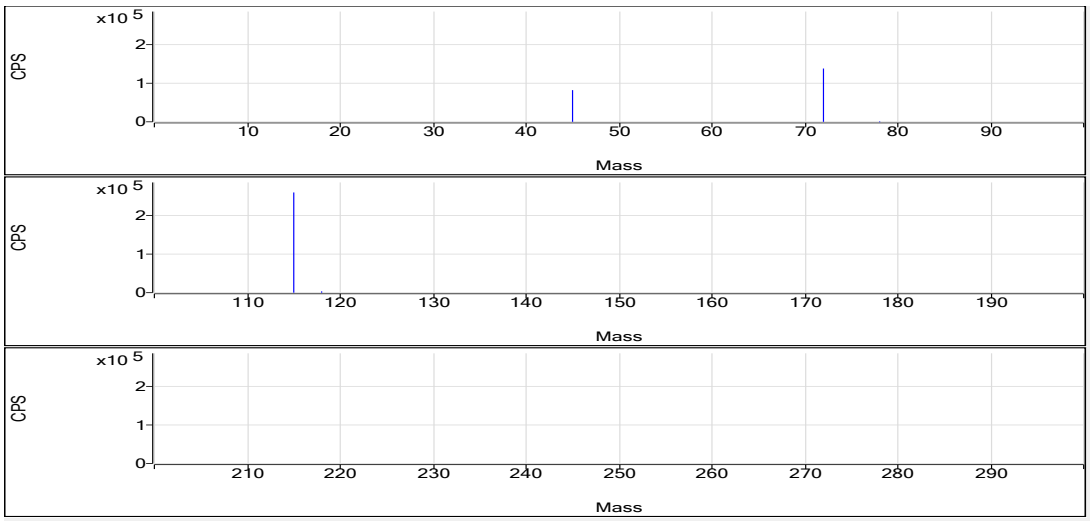
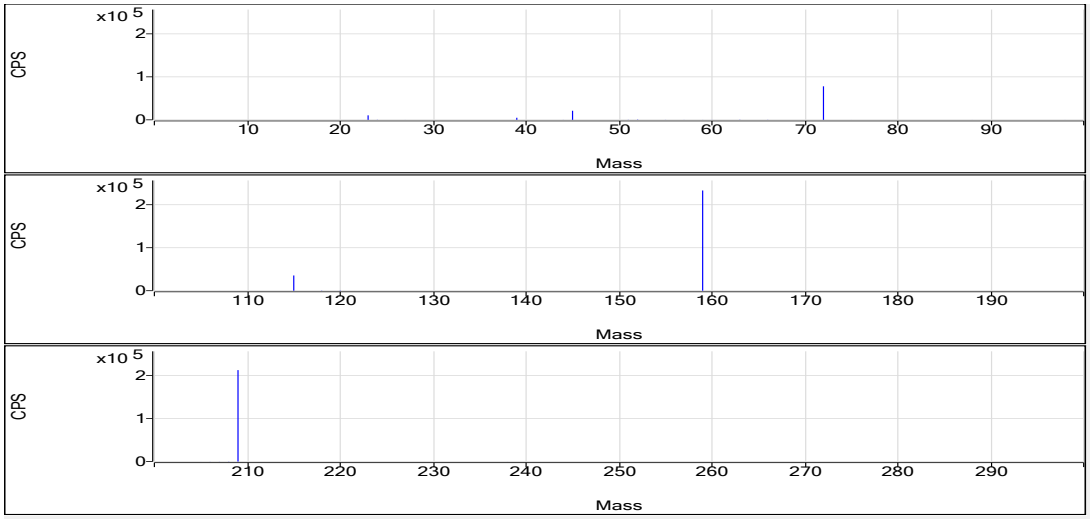


Quantitation Report

He



Quantitation Report

Data File Name	099SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 2:14:12 PM
Sample Name	410-61730-F-1-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

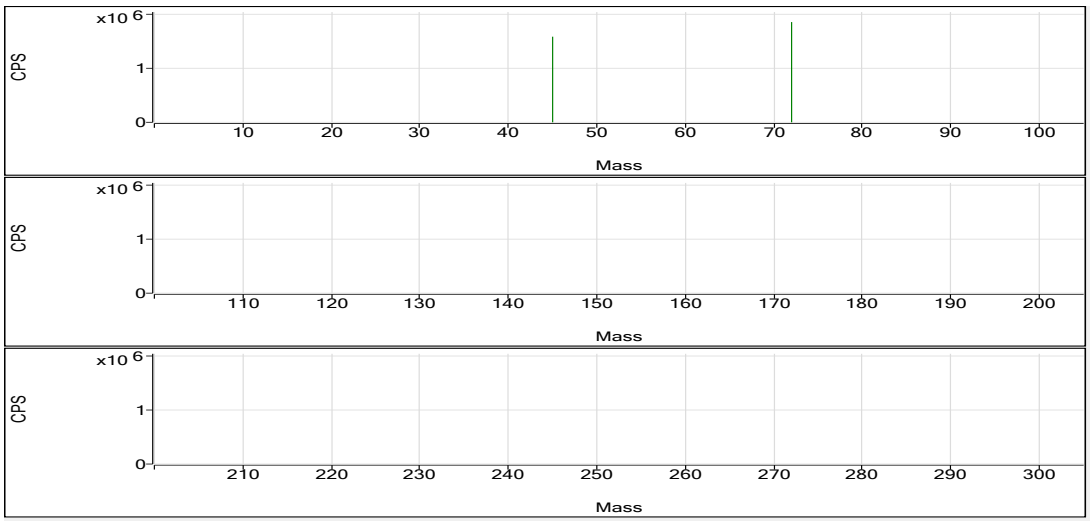
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	-0.007	ppb	N/A	26.00	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.113	ppb	22.4	5.56	0.0000	Pulse	1.5000	3
Na	23	45	He	33839.849	ppb	2.5	3377472.34	162.5347	Analog	0.1000	3
Mg	24	45	He	14251.515	ppb	2.1	656818.98	31.6066	Pulse	0.1000	3
Al	27	45	He	289.891	ppb	6.4	3337.19	0.1606	Pulse	0.1000	3
K	39	45	He	15277.845	ppb	2.9	347486.25	16.7227	Pulse	0.1000	3
Ca	44	45	He	8704.871	ppb	5.0	11815.23	0.5687	Pulse	0.1000	3
Ti	47	45	He	4.868	ppb	40.1	56.67	0.0027	Pulse	0.1000	3
V	51	45	He	3.136	ppb	4.5	2126.17	0.1023	Pulse	0.5000	3
Cr	52	45	He	8.948	ppb	3.0	8002.50	0.3851	Pulse	0.1000	3
Mn	55	45	He	49.624	ppb	3.6	13950.56	0.6713	Pulse	0.1000	3
Fe	57	45	He	145.629	ppb	4.7	2250.25	0.1083	Pulse	0.1000	3
Co	59	45	He	0.374	ppb	6.4	773.38	0.0372	Pulse	0.1000	3
Ni	60	72	He	0.682	ppb	17.8	470.03	0.0059	Pulse	0.1000	3
Cu	63	72	He	0.116	ppb	13.0	460.02	0.0058	Pulse	0.1000	3
Zn	66	72	He	3.827	ppb	19.7	590.04	0.0074	Pulse	0.1000	3
As	75	72	He	2.977	ppb	3.8	302.67	0.0038	Pulse	0.5000	3
Sr	88	72	He	99.853	ppb	3.0	30984.72	0.3881	Pulse	0.1000	3
Mo	98	72	He	32.016	ppb	2.8	39406.31	0.4936	Pulse	0.1000	3
Ag	107	115	He	-0.006	ppb	N/A	3.33	0.0001	Pulse	0.1000	3
Cd	111	115	He	0.012	ppb	84.4	4.67	0.0001	Pulse	0.5000	3
Sn	120	115	He	0.189	ppb	37.6	823.39	0.0237	Pulse	0.1000	3
Sb	121	115	He	0.154	ppb	35.0	110.00	0.0032	Pulse	0.1000	3
Ba	137	115	He	117.977	ppb	1.8	21390.66	0.6143	Pulse	0.1000	3
Tl	205	209	He	0.040	ppb	24.0	376.69	0.0018	Pulse	0.1000	3
Pb	208	209	He	0.085	ppb	6.0	1703.44	0.0081	Pulse	0.1000	3
U	238	209	He	0.105	ppb	11.4	1466.82	0.0070	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1587103.73	0.7	97.5	Analog	0.1000	3
No Gas	Ge	72	1858158.35	1.3	99.2	Analog	0.1000	3
H2	Sc	45	82403.54	0.4	94.8	Pulse	0.1000	3
H2	Ge	72	144306.74	0.4	95.3	Pulse	0.1000	3
H2	In	115	258645.41	0.3	96.1	Pulse	0.1000	3
He	Sc	45	20785.33	1.6	97.4	Pulse	0.1000	3
He	Ge	72	79849.47	1.3	99.2	Pulse	0.1000	3
He	In	115	34827.87	1.6	95.5	Pulse	0.1000	3
He	Tb	159	235282.63	1.2	96.0	Pulse	0.1000	3
He	Bi	209	211020.80	0.7	95.5	Pulse	0.1000	3

No Gas



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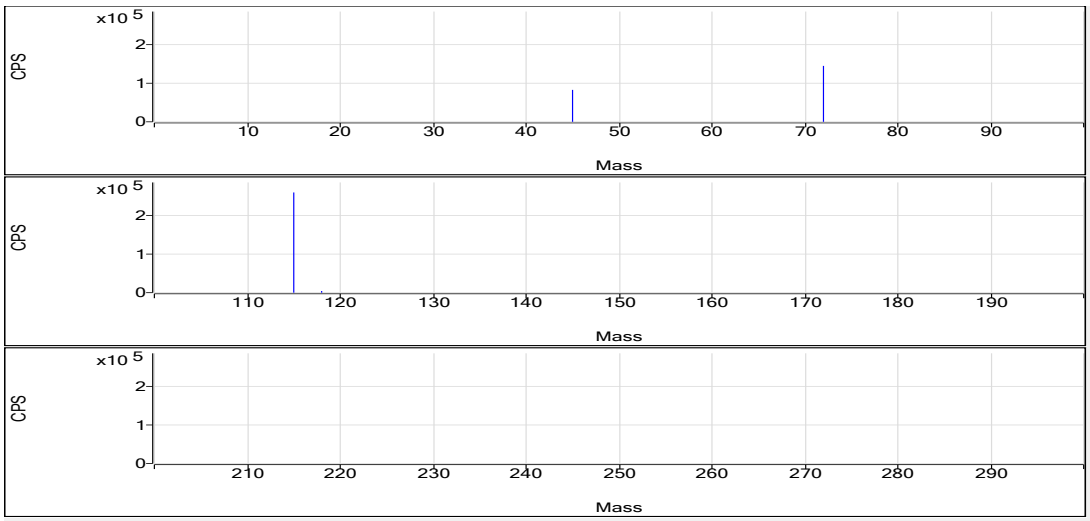
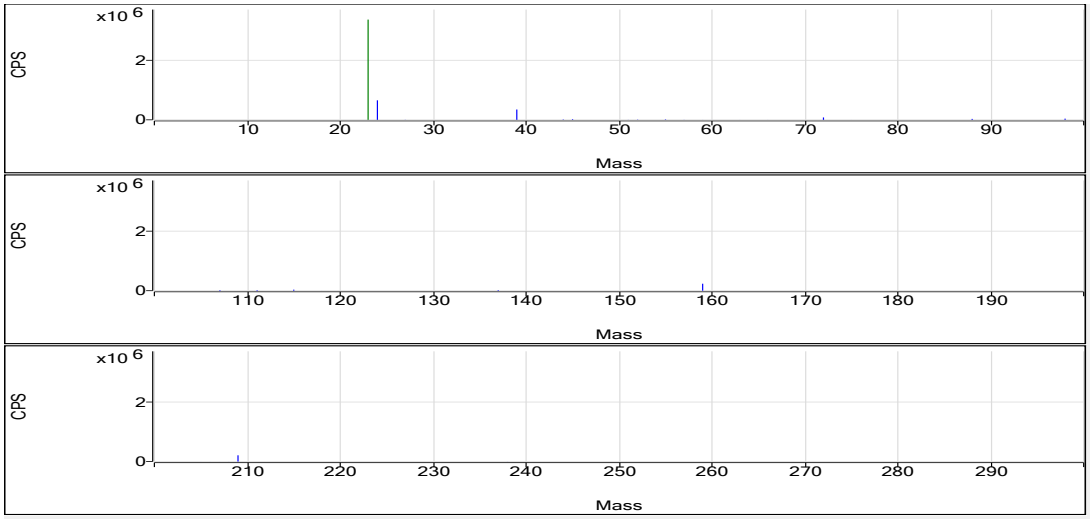


Quantitation Report

He



Quantitation Report

Data File Name	100SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 2:16:12 PM
Sample Name	410-61730-F-9-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

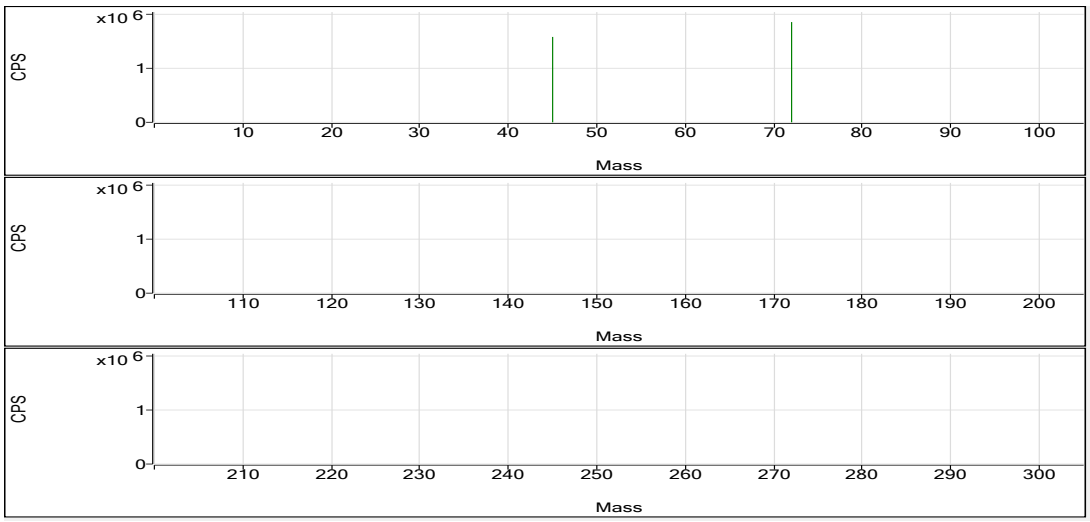
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	-0.006	ppb	N/A	26.67	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.537	ppb	12.9	22.44	0.0002	Pulse	1.5000	3
Na	23	45	He	4314.913	ppb	1.8	441338.01	21.0802	Pulse	0.1000	3
Mg	24	45	He	19841.153	ppb	3.0	921023.27	44.0015	Pulse	0.1000	3
Al	27	45	He	320.951	ppb	10.7	3714.03	0.1777	Pulse	0.1000	3
K	39	45	He	1489.742	ppb	4.9	38232.00	1.8268	Pulse	0.1000	3
Ca	44	45	He	70291.965	ppb	3.0	95646.36	4.5693	Pulse	0.1000	3
Ti	47	45	He	7.470	ppb	48.8	86.67	0.0042	Pulse	0.1000	3
V	51	45	He	0.490	ppb	15.8	538.68	0.0258	Pulse	0.5000	3
Cr	52	45	He	0.259	ppb	70.6	870.05	0.0417	Pulse	0.1000	3
Mn	55	45	He	582.281	ppb	2.8	164385.94	7.8530	Pulse	0.1000	3
Fe	57	45	He	683.978	ppb	7.6	10447.46	0.4995	Pulse	0.1000	3
Co	59	45	He	3.158	ppb	8.8	5914.78	0.2828	Pulse	0.1000	3
Ni	60	72	He	0.479	ppb	14.6	366.68	0.0045	Pulse	0.1000	3
Cu	63	72	He	0.161	ppb	17.0	540.03	0.0067	Pulse	0.1000	3
Zn	66	72	He	1.714	ppb	23.1	303.35	0.0037	Pulse	0.1000	3
As	75	72	He	0.481	ppb	14.7	79.33	0.0010	Pulse	0.5000	3
Sr	88	72	He	76.948	ppb	1.1	24228.10	0.2992	Pulse	0.1000	3
Mo	98	72	He	0.585	ppb	6.1	756.72	0.0093	Pulse	0.1000	3
Ag	107	115	He	-0.007	ppb	0.0	0.00	0.0000	Pulse	0.1000	3
Cd	111	115	He	-0.002	ppb	N/A	1.33	0.0000	Pulse	0.5000	3
Sn	120	115	He	0.021	ppb	1088.2	713.38	0.0206	Pulse	0.1000	3
Sb	121	115	He	0.027	ppb	71.3	40.00	0.0012	Pulse	0.1000	3
Ba	137	115	He	58.989	ppb	2.6	10647.87	0.3071	Pulse	0.1000	3
Tl	205	209	He	0.026	ppb	32.6	270.01	0.0013	Pulse	0.1000	3
Pb	208	209	He	0.159	ppb	3.3	2450.18	0.0116	Pulse	0.1000	3
U	238	209	He	0.551	ppb	6.7	7452.43	0.0353	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1580896.49	0.9	97.1	Analog	0.1000	3
No Gas	Ge	72	1856030.03	1.4	99.1	Analog	0.1000	3
H2	Sc	45	81666.23	1.7	94.0	Pulse	0.1000	3
H2	Ge	72	144215.79	1.2	95.3	Pulse	0.1000	3
H2	In	115	255649.96	0.4	95.0	Pulse	0.1000	3
He	Sc	45	20942.24	2.5	98.1	Pulse	0.1000	3
He	Ge	72	80989.24	0.6	100.6	Pulse	0.1000	3
He	In	115	34674.29	1.5	95.1	Pulse	0.1000	3
He	Tb	159	233467.83	0.4	95.3	Pulse	0.1000	3
He	Bi	209	210998.26	1.0	95.5	Pulse	0.1000	3

No Gas



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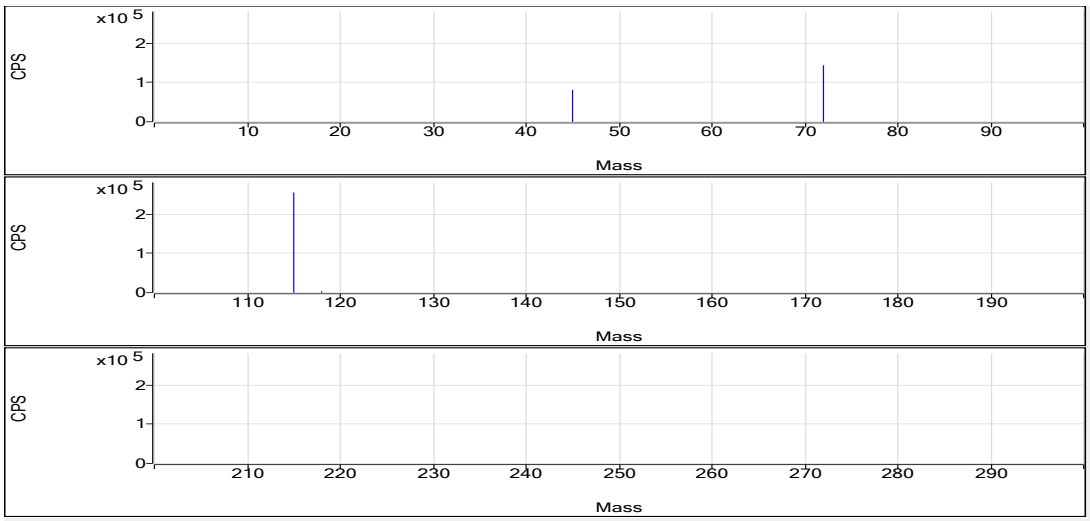
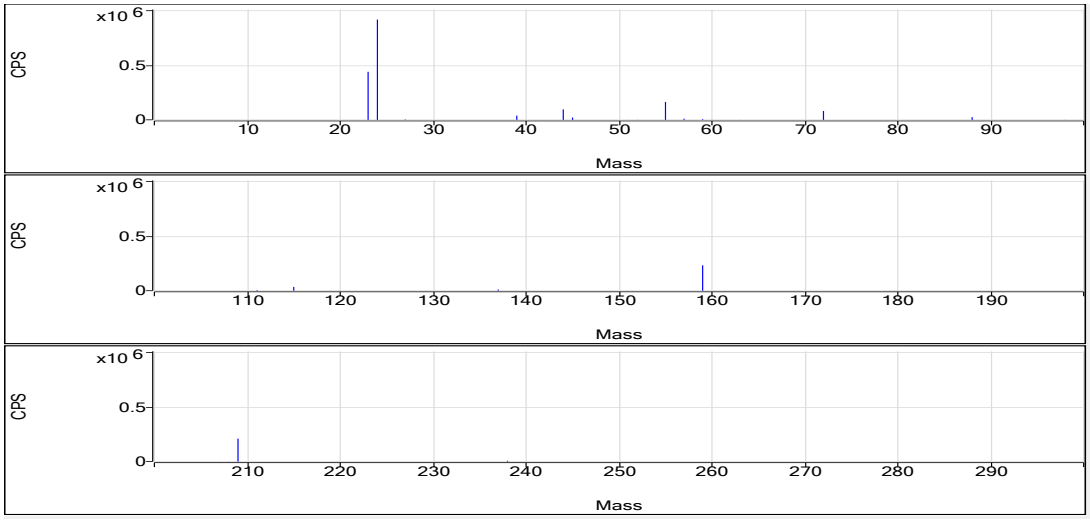


Quantitation Report

He



Quantitation Report

Data File Name	101_CCV.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 2:18:14 PM
Sample Name	CCV 1942322
Sample Type	CCV
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

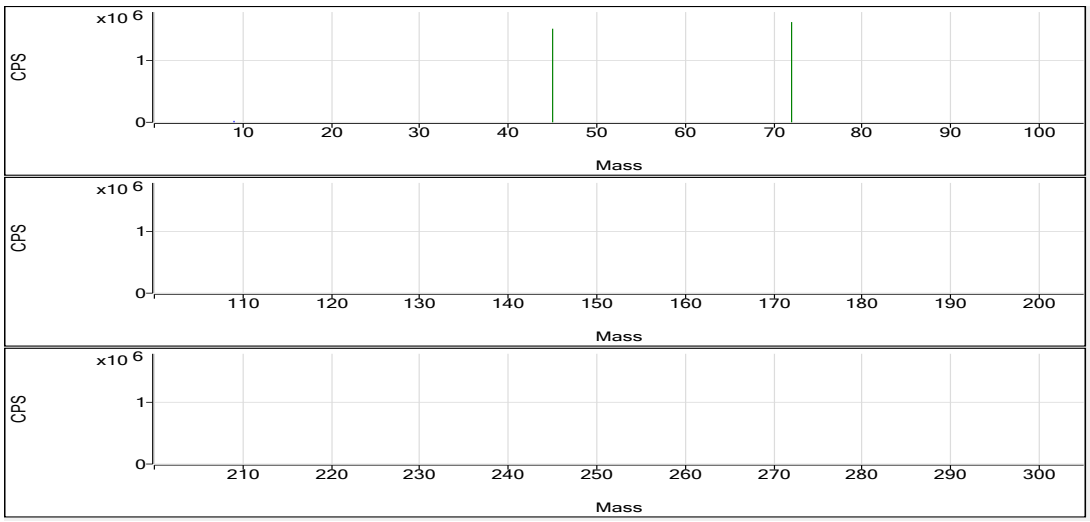
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	31.608	ppb	1.0	23464.42	0.0153	Pulse	0.5000	3
Se	78	72	H2	30.825	ppb	1.1	1093.15	0.0085	Pulse	1.5000	3
Na	23	45	He	4951.474	ppb	1.4	491907.60	24.1299	Pulse	0.1000	3
Mg	24	45	He	5173.142	ppb	2.0	233925.14	11.4756	Pulse	0.1000	3
Al	27	45	He	5150.688	ppb	2.3	57687.00	2.8300	Pulse	0.1000	3
K	39	45	He	5175.910	ppb	2.5	118413.90	5.8092	Pulse	0.1000	3
Ca	44	45	He	4991.753	ppb	4.6	6675.09	0.3275	Pulse	0.1000	3
Ti	47	45	He	325.063	ppb	8.0	3700.58	0.1816	Pulse	0.1000	3
V	51	45	He	305.021	ppb	2.0	180123.92	8.8363	Pulse	0.5000	3
Cr	52	45	He	304.500	ppb	2.6	245971.53	12.0671	Pulse	0.1000	3
Mn	55	45	He	302.254	ppb	0.9	83125.84	4.0774	Pulse	0.1000	3
Fe	57	45	He	5114.628	ppb	1.0	75819.40	3.7189	Pulse	0.1000	3
Co	59	45	He	291.652	ppb	1.0	524620.75	25.7339	Pulse	0.1000	3
Ni	60	72	He	312.592	ppb	1.3	150232.48	2.0924	Pulse	0.1000	3
Cu	63	72	He	306.809	ppb	0.4	448919.54	6.2519	Pulse	0.1000	3
Zn	66	72	He	318.994	ppb	2.8	39578.68	0.5512	Pulse	0.1000	3
As	75	72	He	315.239	ppb	0.3	25528.78	0.3555	Pulse	0.5000	3
Sr	88	72	He	31.021	ppb	2.2	8679.61	0.1209	Pulse	0.1000	3
Mo	98	72	He	31.748	ppb	1.4	35144.88	0.4895	Pulse	0.1000	3
Ag	107	115	He	31.522	ppb	1.5	84532.35	2.4175	Pulse	0.1000	3
Cd	111	115	He	31.984	ppb	2.3	7672.16	0.2194	Pulse	0.5000	3
Sn	120	115	He	31.693	ppb	2.0	20946.51	0.5991	Pulse	0.1000	3
Sb	121	115	He	31.727	ppb	5.8	17568.25	0.5027	Pulse	0.1000	3
Ba	137	115	He	318.949	ppb	2.3	58070.07	1.6606	Pulse	0.1000	3
Tl	205	209	He	30.331	ppb	0.3	229118.38	1.0959	Pulse	0.1000	3
Pb	208	209	He	30.169	ppb	1.4	306027.94	1.4638	Pulse	0.1000	3
U	238	209	He	259.972	ppb	0.8	3462016.72	16.5585	Analog	0.1000	3

ISTD Table:

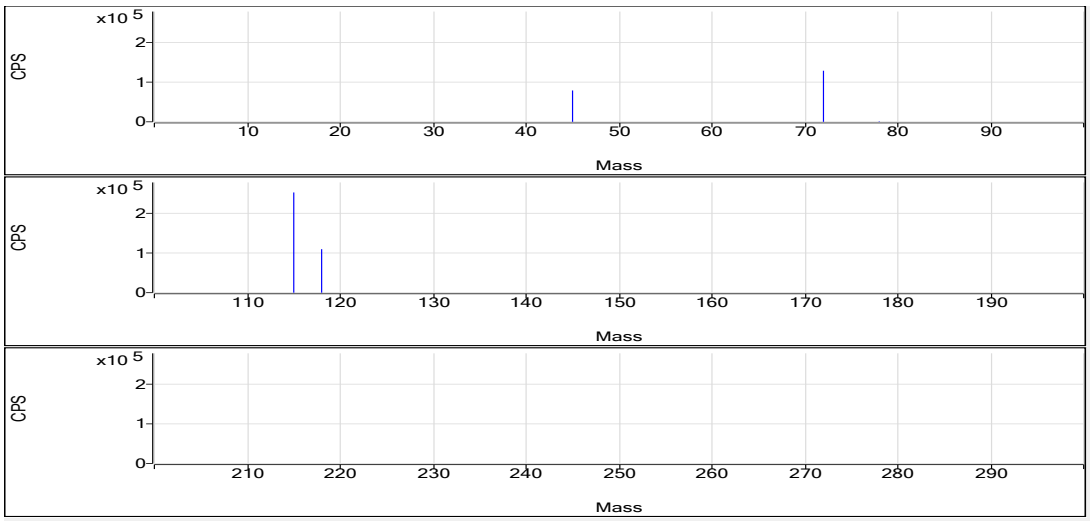
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1528818.67	0.4	93.9	Analog	0.1000	3
No Gas	Ge	72	1637199.97	0.9	87.4	Analog	0.1000	3
H2	Sc	45	78810.42	0.2	90.7	Pulse	0.1000	3
H2	Ge	72	128403.96	2.2	84.8	Pulse	0.1000	3
H2	In	115	251920.01	0.3	93.6	Pulse	0.1000	3
He	Sc	45	20388.10	1.3	95.5	Pulse	0.1000	3
He	Ge	72	71804.34	0.7	89.2	Pulse	0.1000	3
He	In	115	34974.78	2.1	95.9	Pulse	0.1000	3
He	Tb	159	233324.75	0.2	95.2	Pulse	0.1000	3
He	Bi	209	209078.71	0.6	94.6	Pulse	0.1000	3

No Gas

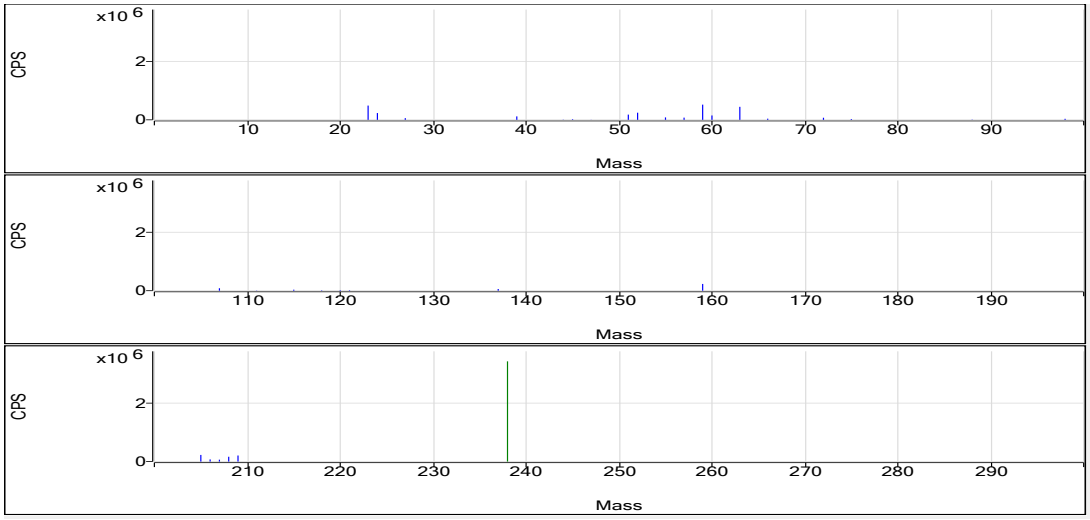


H2



Quantitation Report

He



Quantitation Report

Data File Name	102_CCB.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 2:20:16 PM
Sample Name	CCB 2014932
Sample Type	CCB
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

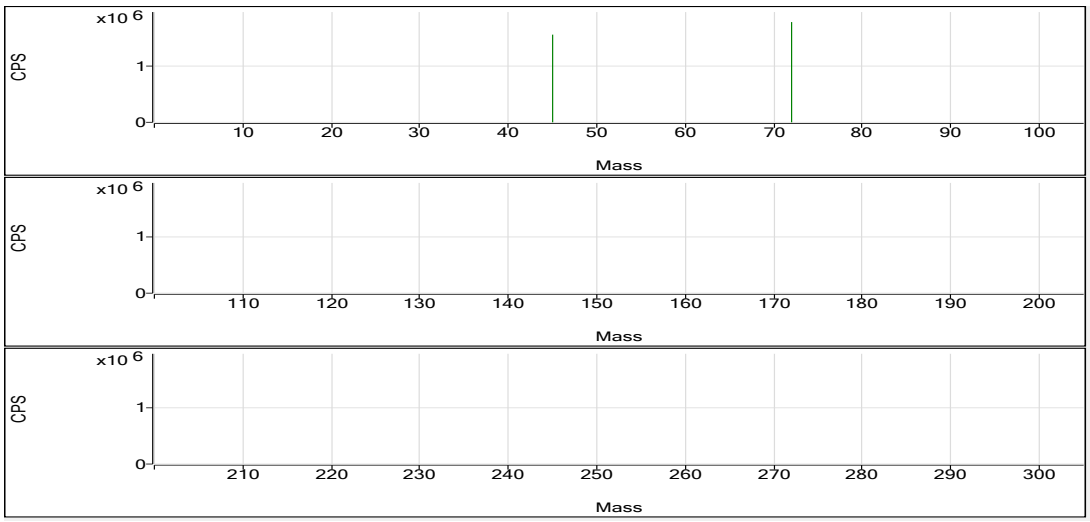
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	-0.016	ppb	N/A	18.67	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.020	ppb	184.1	1.78	0.0000	Pulse	1.5000	3
Na	23	45	He	5.452	ppb	68.2	8836.29	0.4334	Pulse	0.1000	3
Mg	24	45	He	4.372	ppb	6.7	286.68	0.0141	Pulse	0.1000	3
Al	27	45	He	1.315	ppb	77.5	43.33	0.0021	Pulse	0.1000	3
K	39	45	He	27.134	ppb	16.1	5031.03	0.2467	Pulse	0.1000	3
Ca	44	45	He	22.728	ppb	152.2	96.67	0.0048	Pulse	0.1000	3
Ti	47	45	He	0.583	ppb	86.6	6.67	0.0003	Pulse	0.1000	3
V	51	45	He	0.037	ppb	104.5	258.00	0.0126	Pulse	0.5000	3
Cr	52	45	He	0.077	ppb	123.0	703.37	0.0345	Pulse	0.1000	3
Mn	55	45	He	0.250	ppb	68.9	113.34	0.0056	Pulse	0.1000	3
Fe	57	45	He	2.627	ppb	65.9	90.00	0.0044	Pulse	0.1000	3
Co	59	45	He	0.047	ppb	60.3	170.01	0.0083	Pulse	0.1000	3
Ni	60	72	He	0.181	ppb	19.3	196.68	0.0025	Pulse	0.1000	3
Cu	63	72	He	0.070	ppb	48.3	373.35	0.0048	Pulse	0.1000	3
Zn	66	72	He	0.217	ppb	86.9	90.00	0.0012	Pulse	0.1000	3
As	75	72	He	0.040	ppb	293.1	37.33	0.0005	Pulse	0.5000	3
Sr	88	72	He	-0.029	ppb	N/A	26.67	0.0003	Pulse	0.1000	3
Mo	98	72	He	0.020	ppb	80.5	50.00	0.0006	Pulse	0.1000	3
Ag	107	115	He	-0.002	ppb	N/A	13.33	0.0004	Pulse	0.1000	3
Cd	111	115	He	0.000	ppb	2437.7	2.00	0.0001	Pulse	0.5000	3
Sn	120	115	He	0.089	ppb	211.6	766.72	0.0218	Pulse	0.1000	3
Sb	121	115	He	0.014	ppb	296.9	33.33	0.0009	Pulse	0.1000	3
Ba	137	115	He	0.201	ppb	31.9	36.67	0.0010	Pulse	0.1000	3
Tl	205	209	He	0.021	ppb	46.4	233.34	0.0011	Pulse	0.1000	3
Pb	208	209	He	-0.020	ppb	N/A	630.04	0.0030	Pulse	0.1000	3
U	238	209	He	0.068	ppb	21.8	960.07	0.0046	Pulse	0.1000	3

ISTD Table:

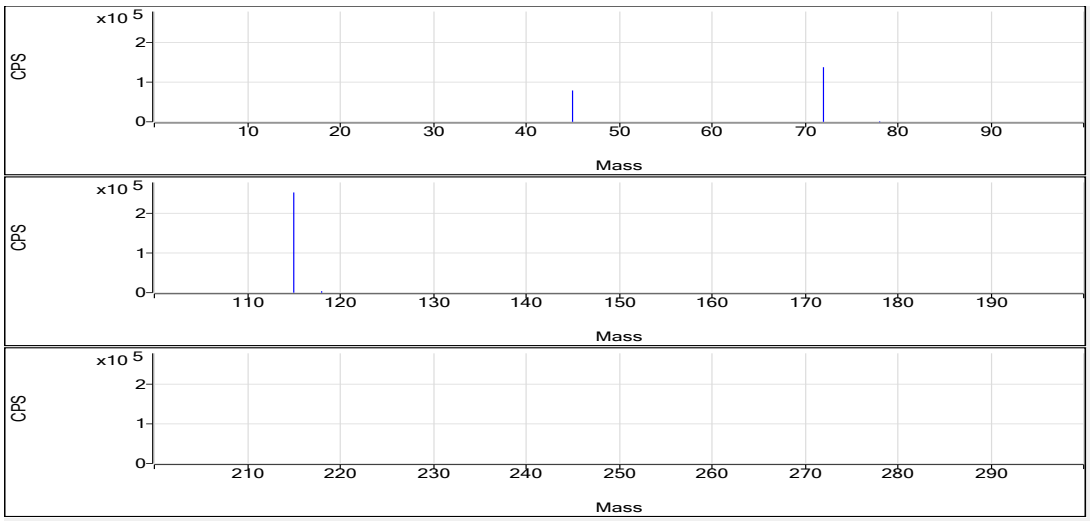
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1550759.25	0.8	95.3	Analog	0.1000	3
No Gas	Ge	72	1773121.38	1.4	94.7	Analog	0.1000	3
H2	Sc	45	79393.62	1.1	91.4	Pulse	0.1000	3
H2	Ge	72	138308.03	0.4	91.4	Pulse	0.1000	3
H2	In	115	253867.22	0.6	94.3	Pulse	0.1000	3
He	Sc	45	20391.59	1.3	95.5	Pulse	0.1000	3
He	Ge	72	77433.16	1.6	96.2	Pulse	0.1000	3
He	In	115	35115.25	0.8	96.3	Pulse	0.1000	3
He	Tb	159	231636.84	0.3	94.5	Pulse	0.1000	3
He	Bi	209	210584.64	0.7	95.3	Pulse	0.1000	3

No Gas

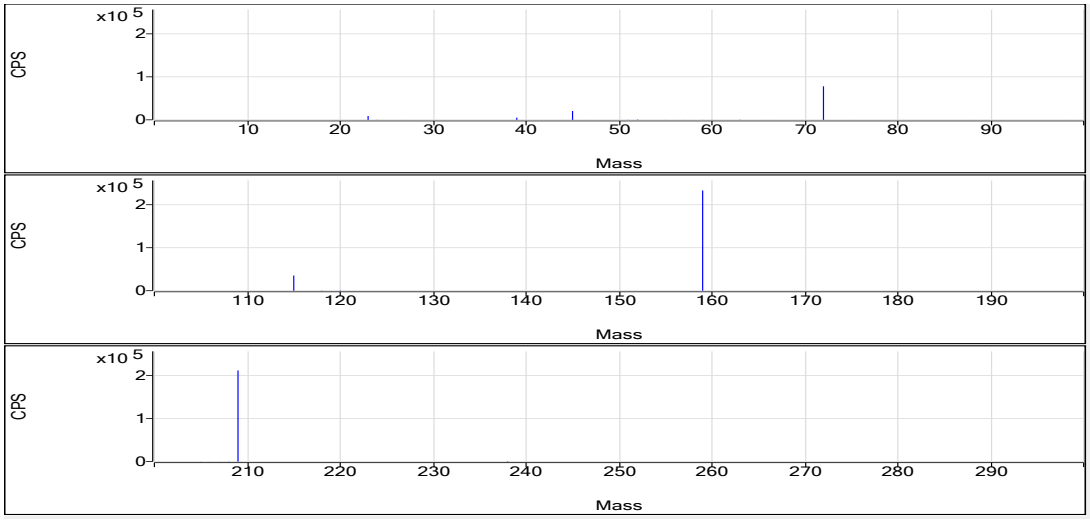


H2



Quantitation Report

He



Quantitation Report

Data File Name	103SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 2:22:18 PM
Sample Name	MB 410-190893/1-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

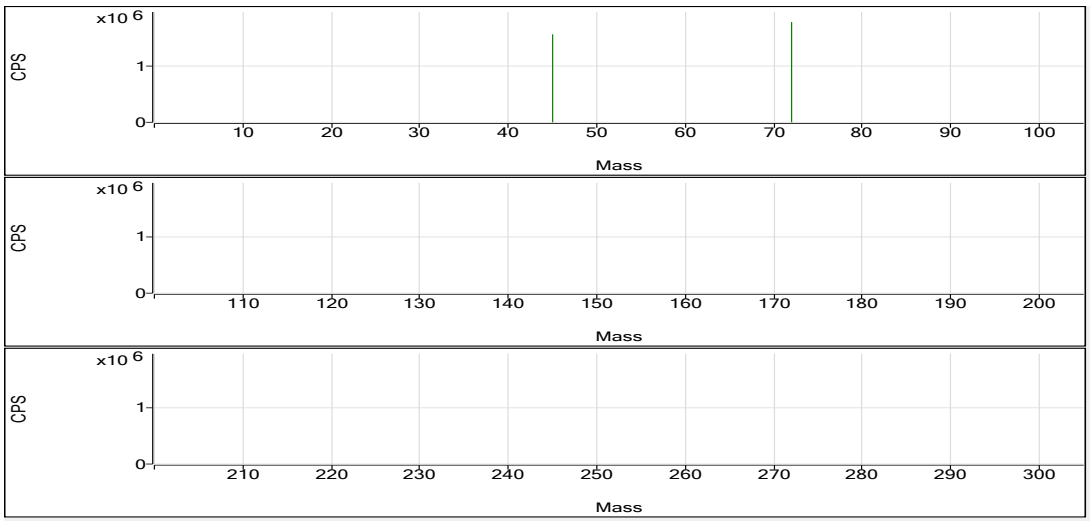
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	-0.021	ppb	N/A	15.33	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.012	ppb	311.0	1.56	0.0000	Pulse	1.5000	3
Na	23	45	He	2.013	ppb	197.5	8699.44	0.4170	Pulse	0.1000	3
Mg	24	45	He	0.974	ppb	88.0	136.67	0.0065	Pulse	0.1000	3
Al	27	45	He	0.075	ppb	1229.5	30.00	0.0014	Pulse	0.1000	3
K	39	45	He	12.604	ppb	65.0	4820.95	0.2310	Pulse	0.1000	3
Ca	44	45	He	18.475	ppb	123.7	93.33	0.0045	Pulse	0.1000	3
Ti	47	45	He	0.000	ppb	N/A	0.00	0.0000	Pulse	0.1000	3
V	51	45	He	-0.014	ppb	N/A	233.33	0.0112	Pulse	0.5000	3
Cr	52	45	He	-0.075	ppb	N/A	593.37	0.0284	Pulse	0.1000	3
Mn	55	45	He	0.218	ppb	81.6	106.67	0.0051	Pulse	0.1000	3
Fe	57	45	He	2.525	ppb	134.2	90.00	0.0043	Pulse	0.1000	3
Co	59	45	He	0.023	ppb	20.7	130.01	0.0062	Pulse	0.1000	3
Ni	60	72	He	-0.035	ppb	N/A	86.67	0.0011	Pulse	0.1000	3
Cu	63	72	He	0.046	ppb	108.5	343.35	0.0043	Pulse	0.1000	3
Zn	66	72	He	0.344	ppb	103.5	110.00	0.0014	Pulse	0.1000	3
As	75	72	He	-0.091	ppb	N/A	26.67	0.0003	Pulse	0.5000	3
Sr	88	72	He	-0.042	ppb	N/A	23.33	0.0003	Pulse	0.1000	3
Mo	98	72	He	-0.011	ppb	N/A	13.33	0.0002	Pulse	0.1000	3
Ag	107	115	He	-0.003	ppb	N/A	10.00	0.0003	Pulse	0.1000	3
Cd	111	115	He	0.003	ppb	453.8	2.67	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.222	ppb	N/A	586.70	0.0162	Pulse	0.1000	3
Sb	121	115	He	-0.017	ppb	N/A	16.67	0.0005	Pulse	0.1000	3
Ba	137	115	He	0.053	ppb	0.1	10.00	0.0003	Pulse	0.1000	3
Tl	205	209	He	0.001	ppb	318.3	83.34	0.0004	Pulse	0.1000	3
Pb	208	209	He	-0.020	ppb	N/A	636.70	0.0030	Pulse	0.1000	3
U	238	209	He	0.019	ppb	38.3	310.02	0.0014	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1578449.77	1.4	97.0	Analog	0.1000	3
No Gas	Ge	72	1798018.26	1.0	96.0	Analog	0.1000	3
H2	Sc	45	82675.37	1.0	95.1	Pulse	0.1000	3
H2	Ge	72	143256.43	1.1	94.6	Pulse	0.1000	3
H2	In	115	261917.71	0.3	97.3	Pulse	0.1000	3
He	Sc	45	20872.18	1.6	97.8	Pulse	0.1000	3
He	Ge	72	79471.50	1.3	98.7	Pulse	0.1000	3
He	In	115	36324.93	0.1	99.6	Pulse	0.1000	3
He	Tb	159	237526.65	1.2	96.9	Pulse	0.1000	3
He	Bi	209	214048.30	0.6	96.9	Pulse	0.1000	3

No Gas



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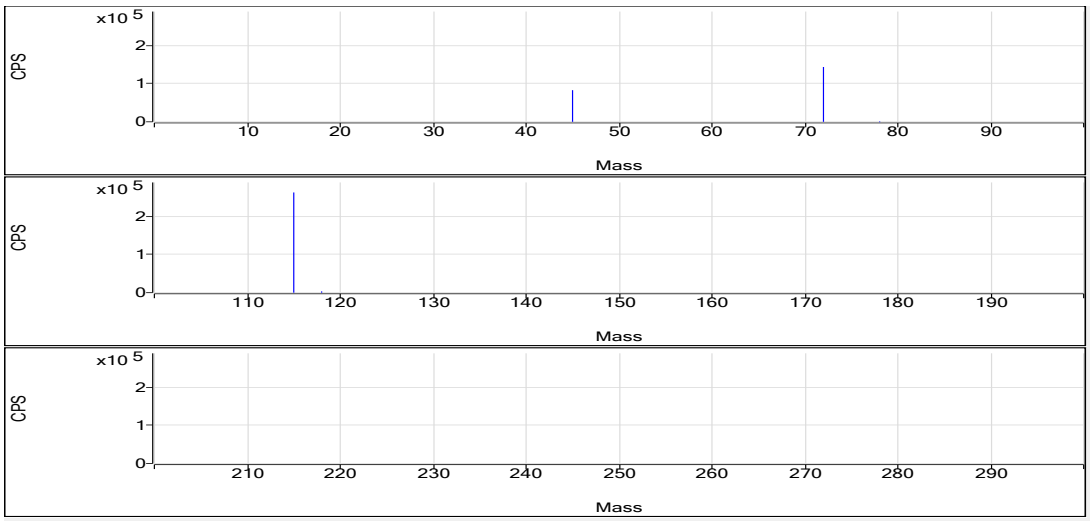
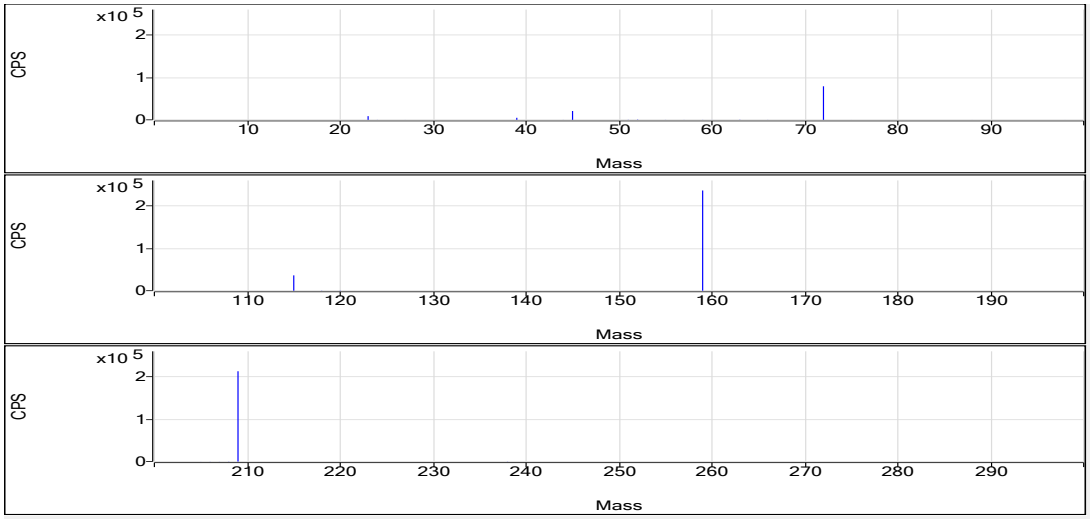


Quantitation Report

He



Quantitation Report

Data File Name	104SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 2:24:21 PM
Sample Name	LCS 410-190893/2-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

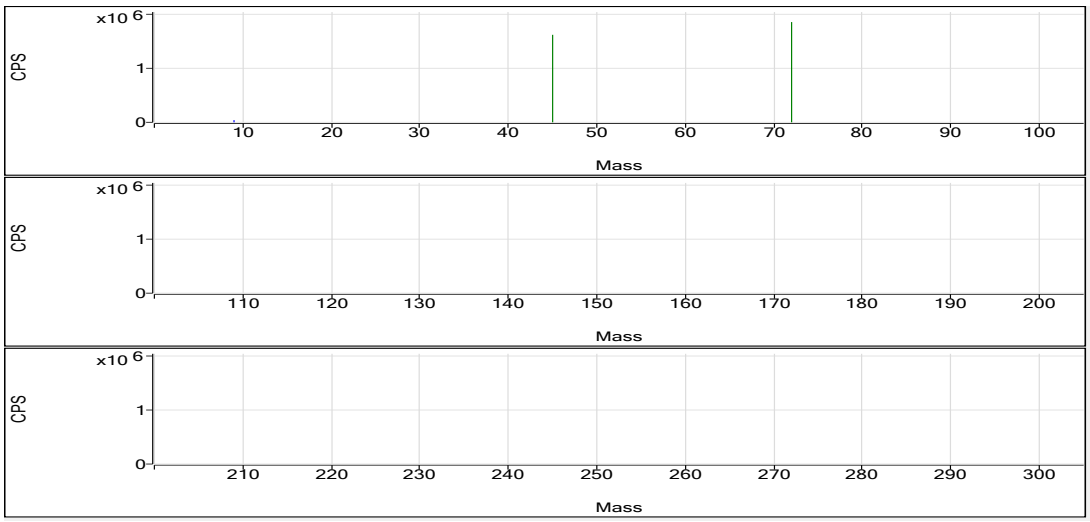
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	50.483	ppb	0.2	39807.45	0.0245	Pulse	0.5000	3
Se	78	72	H2	94.873	ppb	0.3	3848.30	0.0262	Pulse	1.5000	3
Na	23	45	He	4920.081	ppb	2.5	498080.53	23.9795	Pulse	0.1000	3
Mg	24	45	He	5091.472	ppb	1.4	234636.05	11.2945	Pulse	0.1000	3
Al	27	45	He	5115.375	ppb	4.1	58362.99	2.8106	Pulse	0.1000	3
K	39	45	He	5143.022	ppb	1.8	119939.43	5.7736	Pulse	0.1000	3
Ca	44	45	He	5123.396	ppb	3.1	6981.89	0.3361	Pulse	0.1000	3
Ti	47	45	He	522.551	ppb	3.5	6064.79	0.2918	Pulse	0.1000	3
V	51	45	He	506.274	ppb	1.8	304510.69	14.6589	Pulse	0.5000	3
Cr	52	45	He	501.271	ppb	1.1	412277.71	19.8446	Pulse	0.1000	3
Mn	55	45	He	508.081	ppb	1.7	142355.70	6.8526	Pulse	0.1000	3
Fe	57	45	He	5047.754	ppb	2.6	76238.06	3.6703	Pulse	0.1000	3
Co	59	45	He	482.633	ppb	2.4	884489.05	42.5824	Pulse	0.1000	3
Ni	60	72	He	471.281	ppb	2.9	257130.98	3.1539	Pulse	0.1000	3
Cu	63	72	He	456.856	ppb	3.0	758828.50	9.3077	Pulse	0.1000	3
Zn	66	72	He	476.687	ppb	2.4	67134.46	0.8234	Pulse	0.1000	3
As	75	72	He	458.105	ppb	1.7	42114.34	0.5165	Pulse	0.5000	3
Sr	88	72	He	46.517	ppb	3.4	14758.14	0.1810	Pulse	0.1000	3
Mo	98	72	He	47.202	ppb	2.1	59322.64	0.7275	Pulse	0.1000	3
Ag	107	115	He	50.177	ppb	1.1	139558.70	3.8478	Pulse	0.1000	3
Cd	111	115	He	51.662	ppb	1.5	12853.96	0.3544	Pulse	0.5000	3
Sn	120	115	He	103.390	ppb	1.6	69223.53	1.9085	Pulse	0.1000	3
Sb	121	115	He	103.816	ppb	3.0	59595.30	1.6433	Pulse	0.1000	3
Ba	137	115	He	510.366	ppb	2.1	96371.55	2.6573	Pulse	0.1000	3
Tl	205	209	He	101.584	ppb	0.4	785213.09	3.6694	Pulse	0.1000	3
Pb	208	209	He	50.143	ppb	0.5	520056.75	2.4302	Pulse	0.1000	3
U	238	209	He	48.386	ppb	0.6	659522.52	3.0821	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1624738.52	0.8	99.8	Analog	0.1000	3
No Gas	Ge	72	1861110.39	0.9	99.4	Analog	0.1000	3
H2	Sc	45	81733.43	0.5	94.1	Pulse	0.1000	3
H2	Ge	72	146970.47	1.5	97.1	Pulse	0.1000	3
H2	In	115	262047.50	1.5	97.3	Pulse	0.1000	3
He	Sc	45	20778.71	2.4	97.3	Pulse	0.1000	3
He	Ge	72	81562.53	2.2	101.3	Pulse	0.1000	3
He	In	115	36271.78	0.9	99.5	Pulse	0.1000	3
He	Tb	159	236178.24	0.1	96.4	Pulse	0.1000	3
He	Bi	209	213991.90	0.6	96.8	Pulse	0.1000	3

No Gas



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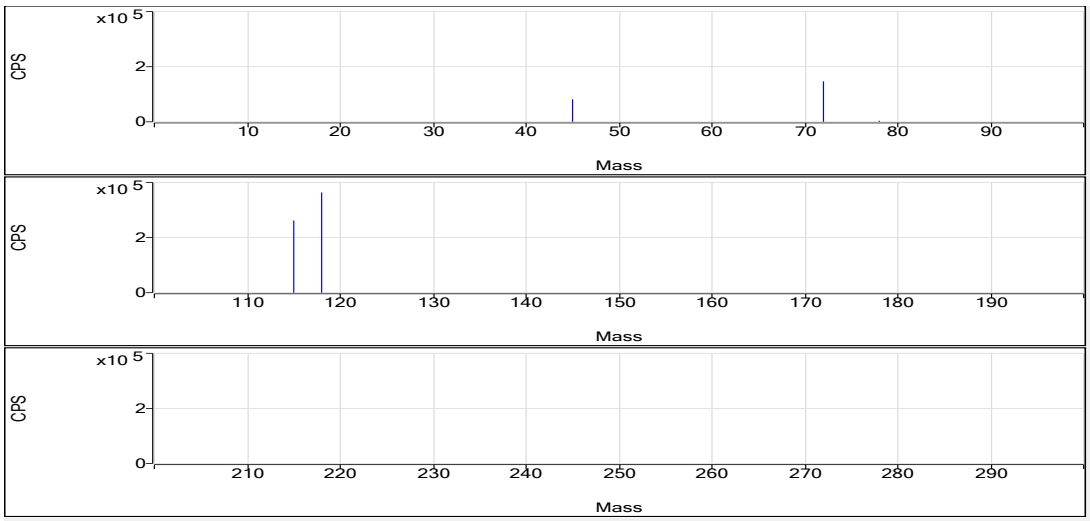
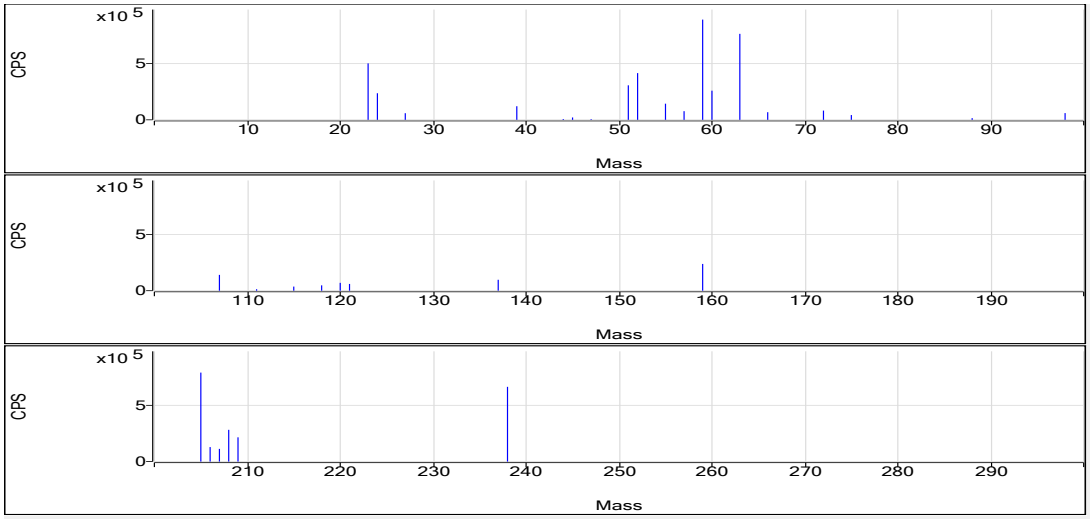


Quantitation Report

He



Quantitation Report

Data File Name	105SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 2:26:23 PM
Sample Name	LCSD 410-190893/3-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

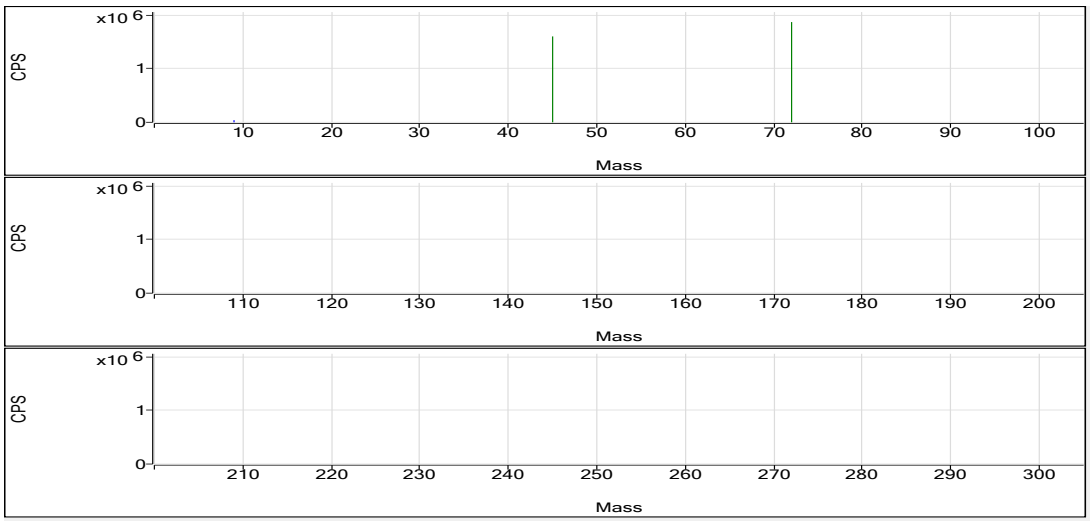
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	50.667	ppb	1.2	39306.85	0.0246	Pulse	0.5000	3
Se	78	72	H2	93.874	ppb	0.7	3769.17	0.0259	Pulse	1.5000	3
Na	23	45	He	4759.354	ppb	0.7	501001.23	23.2095	Pulse	0.1000	3
Mg	24	45	He	4951.394	ppb	1.9	237074.51	10.9839	Pulse	0.1000	3
Al	27	45	He	4981.428	ppb	3.2	59072.59	2.7370	Pulse	0.1000	3
K	39	45	He	4968.884	ppb	1.0	120565.37	5.5855	Pulse	0.1000	3
Ca	44	45	He	4960.499	ppb	3.9	7025.29	0.3255	Pulse	0.1000	3
Ti	47	45	He	492.578	ppb	5.5	5938.07	0.2751	Pulse	0.1000	3
V	51	45	He	491.471	ppb	1.0	307166.10	14.2306	Pulse	0.5000	3
Cr	52	45	He	485.659	ppb	0.3	415046.37	19.2275	Pulse	0.1000	3
Mn	55	45	He	485.818	ppb	0.7	141440.21	6.5524	Pulse	0.1000	3
Fe	57	45	He	4892.175	ppb	0.7	76788.06	3.5572	Pulse	0.1000	3
Co	59	45	He	465.267	ppb	1.2	886055.35	41.0504	Pulse	0.1000	3
Ni	60	72	He	475.645	ppb	1.9	261415.28	3.1831	Pulse	0.1000	3
Cu	63	72	He	454.519	ppb	0.5	760544.08	9.2601	Pulse	0.1000	3
Zn	66	72	He	478.233	ppb	0.2	67844.02	0.8260	Pulse	0.1000	3
As	75	72	He	457.910	ppb	0.6	42399.86	0.5162	Pulse	0.5000	3
Sr	88	72	He	44.951	ppb	2.6	14371.06	0.1750	Pulse	0.1000	3
Mo	98	72	He	47.651	ppb	2.2	60316.99	0.7345	Pulse	0.1000	3
Ag	107	115	He	51.059	ppb	1.3	141525.05	3.9155	Pulse	0.1000	3
Cd	111	115	He	51.345	ppb	0.5	12731.85	0.3522	Pulse	0.5000	3
Sn	120	115	He	102.150	ppb	0.7	68168.08	1.8859	Pulse	0.1000	3
Sb	121	115	He	102.682	ppb	0.6	58752.21	1.6254	Pulse	0.1000	3
Ba	137	115	He	511.442	ppb	2.5	96243.26	2.6629	Pulse	0.1000	3
Tl	205	209	He	100.757	ppb	1.2	779133.45	3.6395	Pulse	0.1000	3
Pb	208	209	He	49.914	ppb	0.8	517893.66	2.4192	Pulse	0.1000	3
U	238	209	He	48.195	ppb	0.3	657211.19	3.0699	Pulse	0.1000	3

ISTD Table:

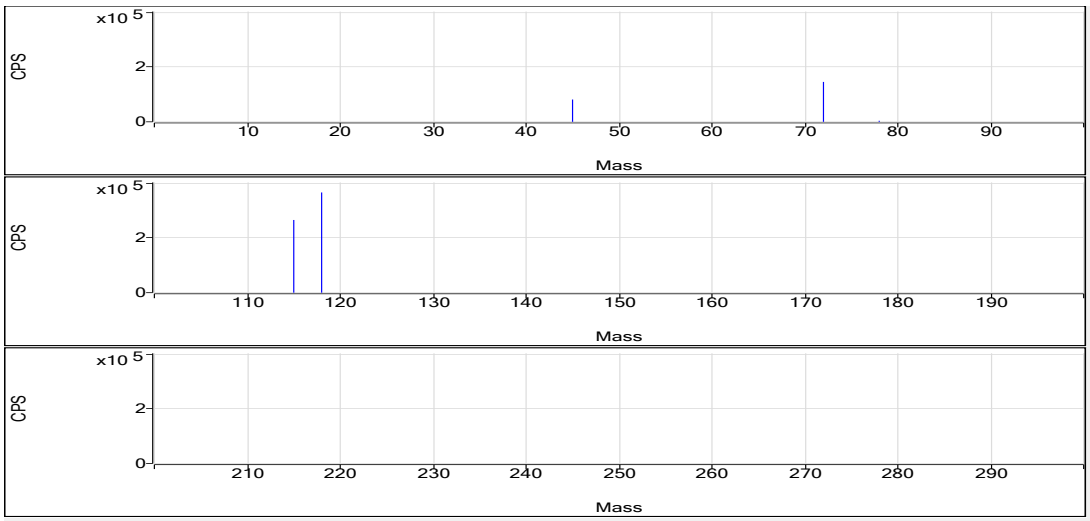
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1598622.22	1.3	98.2	Analog	0.1000	3
No Gas	Ge	72	1865444.56	0.4	99.6	Analog	0.1000	3
H2	Sc	45	81304.48	1.6	93.6	Pulse	0.1000	3
H2	Ge	72	145487.84	0.6	96.1	Pulse	0.1000	3
H2	In	115	265182.84	1.0	98.5	Pulse	0.1000	3
He	Sc	45	21586.50	1.1	101.1	Pulse	0.1000	3
He	Ge	72	82132.72	0.7	102.0	Pulse	0.1000	3
He	In	115	36147.85	0.9	99.1	Pulse	0.1000	3
He	Tb	159	239748.45	0.4	97.8	Pulse	0.1000	3
He	Bi	209	214086.72	0.7	96.9	Pulse	0.1000	3

No Gas

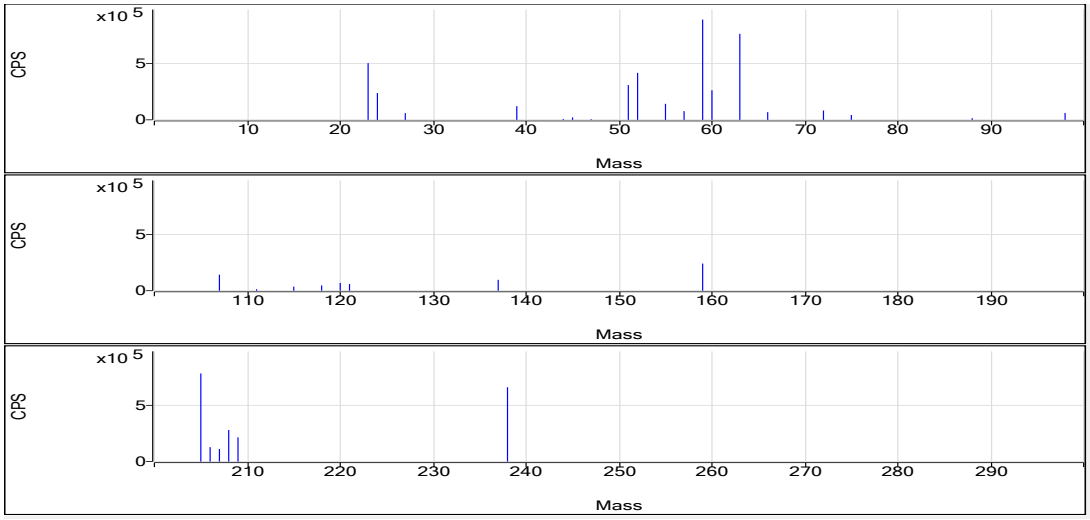


H2



Quantitation Report

He



Quantitation Report

Data File Name	106SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 2:28:25 PM
Sample Name	410-60949-B-1-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

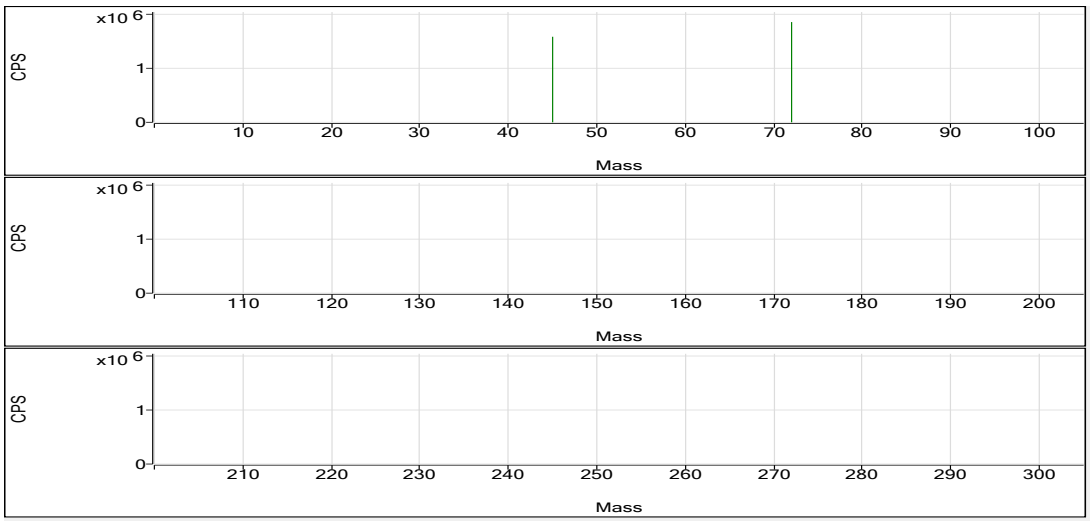
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.027	ppb	34.6	52.00	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.236	ppb	30.4	10.66	0.0001	Pulse	1.5000	3
Na	23	45	He	32447.798	ppb	2.8	3335068.39	155.8654	Analog	0.1000	3
Mg	24	45	He	1847.296	ppb	2.2	87747.41	4.1007	Pulse	0.1000	3
Al	27	45	He	333.984	ppb	5.6	3954.03	0.1848	Pulse	0.1000	3
K	39	45	He	1937.062	ppb	2.7	49430.84	2.3101	Pulse	0.1000	3
Ca	44	45	He	9511.238	ppb	5.6	13286.55	0.6211	Pulse	0.1000	3
Ti	47	45	He	12.260	ppb	13.2	146.67	0.0068	Pulse	0.1000	3
V	51	45	He	8.376	ppb	3.6	5433.72	0.2539	Pulse	0.5000	3
Cr	52	45	He	2.277	ppb	11.7	2596.98	0.1214	Pulse	0.1000	3
Mn	55	45	He	35.270	ppb	7.4	10217.26	0.4777	Pulse	0.1000	3
Fe	57	45	He	1063.318	ppb	1.5	16590.01	0.7751	Pulse	0.1000	3
Co	59	45	He	0.637	ppb	16.3	1290.11	0.0604	Pulse	0.1000	3
Ni	60	72	He	3.855	ppb	6.3	2233.59	0.0271	Pulse	0.1000	3
Cu	63	72	He	29.418	ppb	3.5	49643.08	0.6025	Pulse	0.1000	3
Zn	66	72	He	210.920	ppb	1.3	30065.62	0.3647	Pulse	0.1000	3
As	75	72	He	1.061	ppb	2.2	134.67	0.0016	Pulse	0.5000	3
Sr	88	72	He	46.142	ppb	3.9	14798.19	0.1796	Pulse	0.1000	3
Mo	98	72	He	2.663	ppb	5.4	3407.20	0.0414	Pulse	0.1000	3
Ag	107	115	He	0.078	ppb	33.7	233.34	0.0066	Pulse	0.1000	3
Cd	111	115	He	0.177	ppb	37.0	45.33	0.0013	Pulse	0.5000	3
Sn	120	115	He	0.936	ppb	11.2	1330.11	0.0373	Pulse	0.1000	3
Sb	121	115	He	1.751	ppb	8.1	1013.41	0.0284	Pulse	0.1000	3
Ba	137	115	He	19.264	ppb	5.2	3577.28	0.1003	Pulse	0.1000	3
Tl	205	209	He	0.074	ppb	14.8	653.38	0.0030	Pulse	0.1000	3
Pb	208	209	He	10.483	ppb	1.9	110619.28	0.5112	Pulse	0.1000	3
U	238	209	He	0.114	ppb	10.7	1623.50	0.0075	Pulse	0.1000	3

ISTD Table:

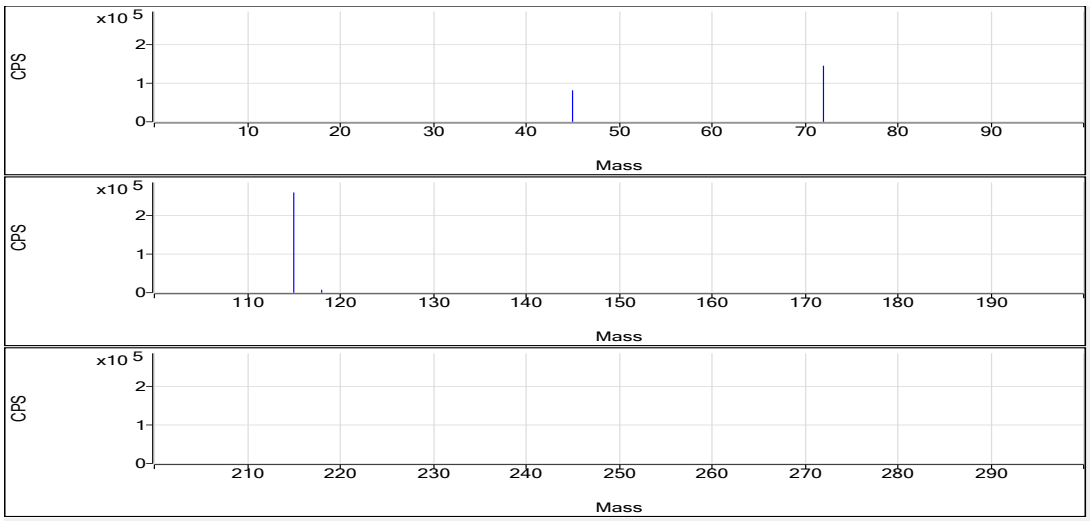
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1589707.01	0.5	97.7	Analog	0.1000	3
No Gas	Ge	72	1862646.54	1.1	99.5	Analog	0.1000	3
H2	Sc	45	82055.32	1.2	94.4	Pulse	0.1000	3
H2	Ge	72	146347.51	1.6	96.7	Pulse	0.1000	3
H2	In	115	261410.38	0.2	97.1	Pulse	0.1000	3
He	Sc	45	21402.95	1.5	100.3	Pulse	0.1000	3
He	Ge	72	82427.49	1.8	102.4	Pulse	0.1000	3
He	In	115	35669.99	1.4	97.8	Pulse	0.1000	3
He	Tb	159	238335.98	0.5	97.3	Pulse	0.1000	3
He	Bi	209	216397.72	0.5	97.9	Pulse	0.1000	3

No Gas

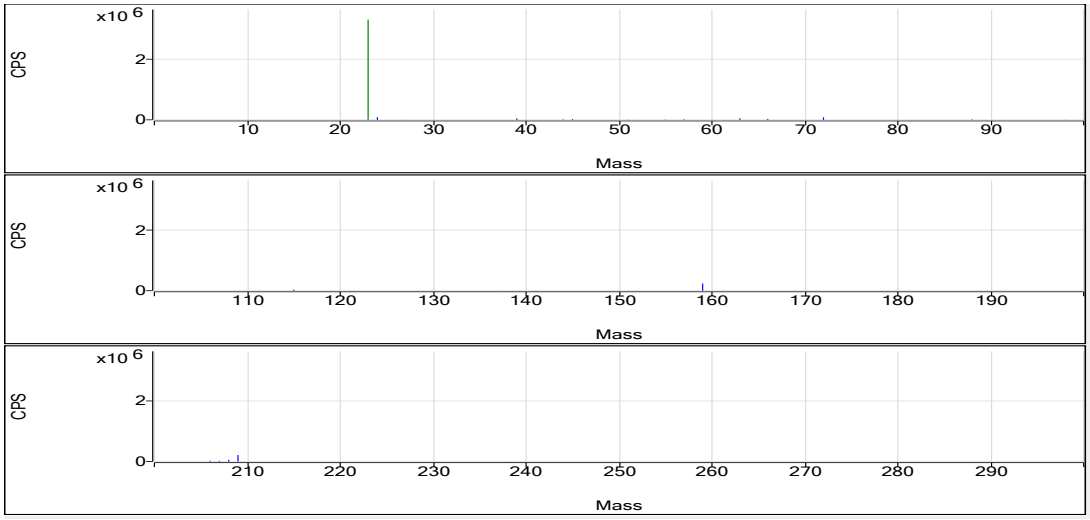


H2



Quantitation Report

He



Quantitation Report

Data File Name	107SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 2:30:26 PM
Sample Name	410-60949-B-1-A PDS
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

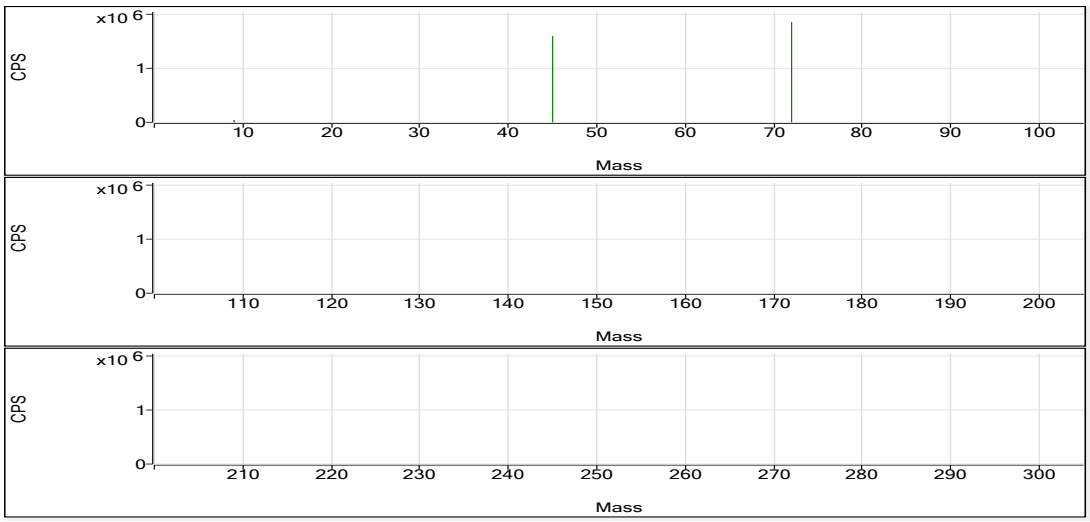
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	50.911	ppb	0.7	39339.52	0.0247	Pulse	0.5000	3
Se	78	72	H2	93.714	ppb	0.7	3780.73	0.0259	Pulse	1.5000	3
Na	23	45	He	36845.327	ppb	2.0	3689782.24	176.9340	Analog	0.1000	3
Mg	24	45	He	6855.450	ppb	1.8	317112.20	15.2061	Pulse	0.1000	3
Al	27	45	He	5372.388	ppb	1.3	61559.48	2.9517	Pulse	0.1000	3
K	39	45	He	6913.367	ppb	2.0	160287.75	7.6862	Pulse	0.1000	3
Ca	44	45	He	14384.251	ppb	1.0	19557.08	0.9377	Pulse	0.1000	3
Ti	47	45	He	506.829	ppb	1.4	5904.75	0.2831	Pulse	0.1000	3
V	51	45	He	510.263	ppb	1.4	308119.34	14.7743	Pulse	0.5000	3
Cr	52	45	He	494.303	ppb	2.0	408089.16	19.5692	Pulse	0.1000	3
Mn	55	45	He	525.916	ppb	2.8	147899.83	7.0931	Pulse	0.1000	3
Fe	57	45	He	5915.376	ppb	1.2	89697.56	4.3007	Pulse	0.1000	3
Co	59	45	He	474.055	ppb	2.2	872192.41	41.8257	Pulse	0.1000	3
Ni	60	72	He	472.201	ppb	2.8	255068.40	3.1600	Pulse	0.1000	3
Cu	63	72	He	486.508	ppb	1.1	800139.75	9.9116	Pulse	0.1000	3
Zn	66	72	He	675.739	ppb	1.3	94194.92	1.1668	Pulse	0.1000	3
As	75	72	He	453.697	ppb	1.8	41290.01	0.5115	Pulse	0.5000	3
Sr	88	72	He	89.832	ppb	2.1	28192.17	0.3492	Pulse	0.1000	3
Mo	98	72	He	50.915	ppb	1.2	63350.42	0.7847	Pulse	0.1000	3
Ag	107	115	He	35.940	ppb	2.9	100600.77	2.7562	Pulse	0.1000	3
Cd	111	115	He	50.538	ppb	1.0	12657.78	0.3467	Pulse	0.5000	3
Sn	120	115	He	100.826	ppb	2.0	67967.01	1.8617	Pulse	0.1000	3
Sb	121	115	He	102.429	ppb	0.8	59200.46	1.6214	Pulse	0.1000	3
Ba	137	115	He	516.901	ppb	1.5	98251.67	2.6913	Pulse	0.1000	3
Tl	205	209	He	98.399	ppb	1.4	766079.31	3.5544	Pulse	0.1000	3
Pb	208	209	He	59.413	ppb	1.2	620480.13	2.8788	Pulse	0.1000	3
U	238	209	He	47.445	ppb	0.4	651403.02	3.0221	Pulse	0.1000	3

ISTD Table:

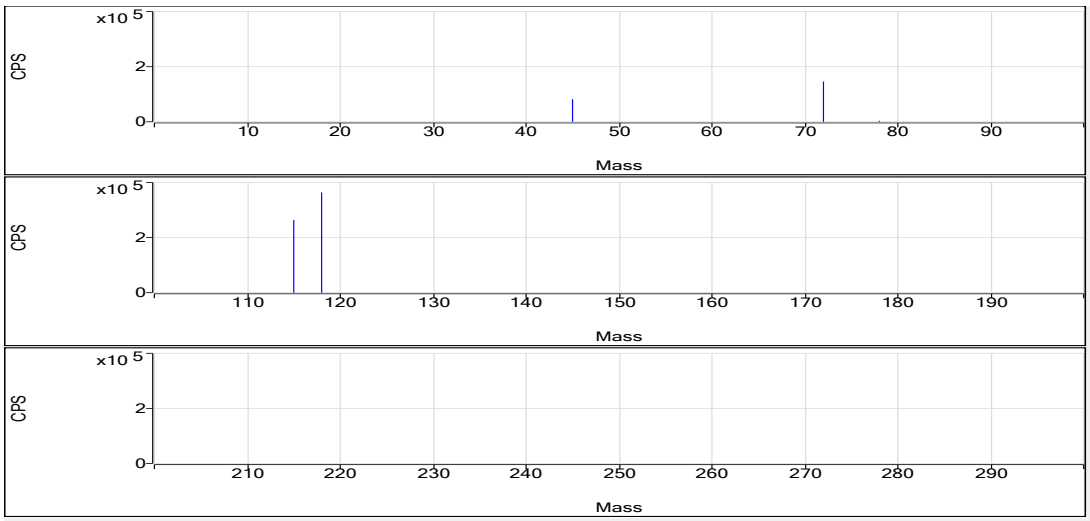
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1592204.71	0.3	97.8	Analog	0.1000	3
No Gas	Ge	72	1849972.47	0.8	98.8	Analog	0.1000	3
H2	Sc	45	82018.77	1.9	94.4	Pulse	0.1000	3
H2	Ge	72	146177.93	0.4	96.6	Pulse	0.1000	3
H2	In	115	263553.09	0.5	97.9	Pulse	0.1000	3
He	Sc	45	20858.91	1.9	97.7	Pulse	0.1000	3
He	Ge	72	80734.57	1.2	100.3	Pulse	0.1000	3
He	In	115	36515.36	2.3	100.2	Pulse	0.1000	3
He	Tb	159	239074.90	0.7	97.6	Pulse	0.1000	3
He	Bi	209	215549.08	0.8	97.5	Pulse	0.1000	3

No Gas

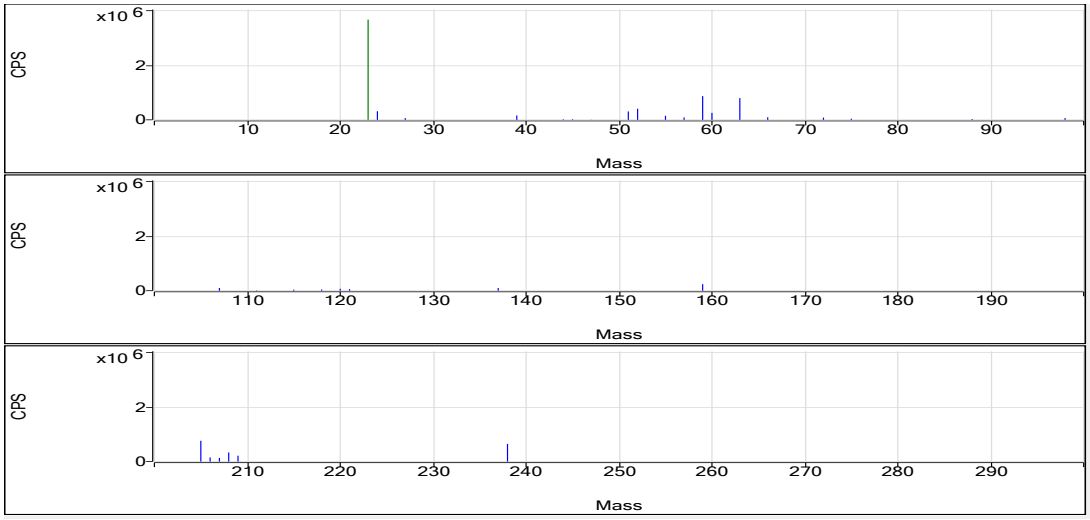


H2



Quantitation Report

He



Quantitation Report

Data File Name	108SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 2:32:27 PM
Sample Name	410-60949-B-1-A SD @5
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

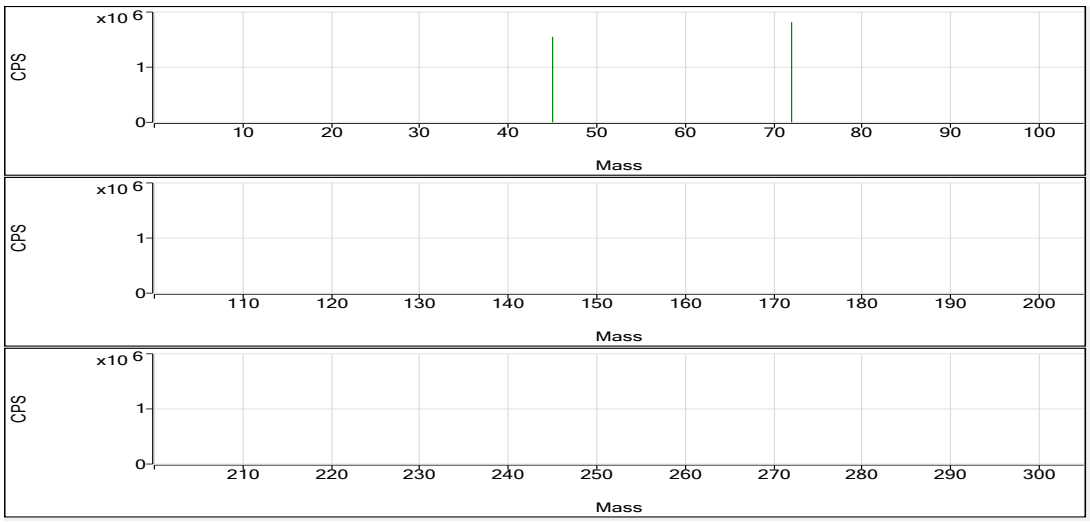
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.005	ppb	258.5	34.00	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.190	ppb	41.3	8.45	0.0001	Pulse	1.5000	3
Na	23	45	He	6674.580	ppb	0.3	667521.08	32.3854	Pulse	0.1000	3
Mg	24	45	He	402.196	ppb	2.9	18472.06	0.8962	Pulse	0.1000	3
Al	27	45	He	71.964	ppb	6.3	843.39	0.0409	Pulse	0.1000	3
K	39	45	He	411.004	ppb	3.7	13633.48	0.6614	Pulse	0.1000	3
Ca	44	45	He	2110.530	ppb	5.3	2893.72	0.1404	Pulse	0.1000	3
Ti	47	45	He	1.449	ppb	69.4	16.67	0.0008	Pulse	0.1000	3
V	51	45	He	1.869	ppb	3.0	1353.41	0.0657	Pulse	0.5000	3
Cr	52	45	He	0.727	ppb	7.2	1240.10	0.0602	Pulse	0.1000	3
Mn	55	45	He	7.816	ppb	7.0	2216.92	0.1076	Pulse	0.1000	3
Fe	57	45	He	235.408	ppb	1.5	3577.24	0.1735	Pulse	0.1000	3
Co	59	45	He	0.258	ppb	4.7	556.70	0.0270	Pulse	0.1000	3
Ni	60	72	He	1.061	ppb	11.4	680.04	0.0084	Pulse	0.1000	3
Cu	63	72	He	6.370	ppb	1.1	10751.01	0.1331	Pulse	0.1000	3
Zn	66	72	He	43.722	ppb	5.3	6158.19	0.0762	Pulse	0.1000	3
As	75	72	He	0.440	ppb	31.2	75.33	0.0009	Pulse	0.5000	3
Sr	88	72	He	9.167	ppb	7.4	2910.41	0.0360	Pulse	0.1000	3
Mo	98	72	He	0.688	ppb	12.0	883.40	0.0109	Pulse	0.1000	3
Ag	107	115	He	0.026	ppb	28.9	90.00	0.0025	Pulse	0.1000	3
Cd	111	115	He	0.066	ppb	31.3	18.00	0.0005	Pulse	0.5000	3
Sn	120	115	He	0.419	ppb	21.4	990.08	0.0279	Pulse	0.1000	3
Sb	121	115	He	0.334	ppb	27.1	213.34	0.0060	Pulse	0.1000	3
Ba	137	115	He	4.190	ppb	12.0	773.39	0.0218	Pulse	0.1000	3
Tl	205	209	He	0.103	ppb	10.1	866.73	0.0041	Pulse	0.1000	3
Pb	208	209	He	2.188	ppb	0.6	23368.97	0.1098	Pulse	0.1000	3
U	238	209	He	0.052	ppb	17.7	753.39	0.0035	Pulse	0.1000	3

ISTD Table:

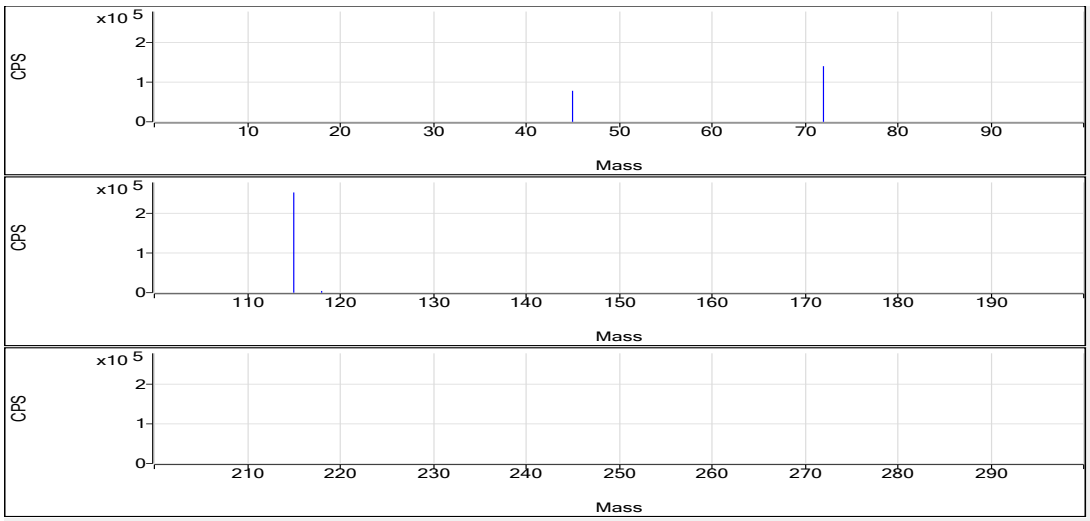
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1551570.40	1.5	95.3	Analog	0.1000	3
No Gas	Ge	72	1819159.97	0.5	97.1	Analog	0.1000	3
H2	Sc	45	78679.77	0.9	90.5	Pulse	0.1000	3
H2	Ge	72	141054.36	0.3	93.2	Pulse	0.1000	3
H2	In	115	254141.79	0.9	94.4	Pulse	0.1000	3
He	Sc	45	20611.85	0.4	96.6	Pulse	0.1000	3
He	Ge	72	80764.39	0.7	100.3	Pulse	0.1000	3
He	In	115	35522.98	2.8	97.4	Pulse	0.1000	3
He	Tb	159	234415.51	1.6	95.7	Pulse	0.1000	3
He	Bi	209	212782.70	0.1	96.3	Pulse	0.1000	3

No Gas

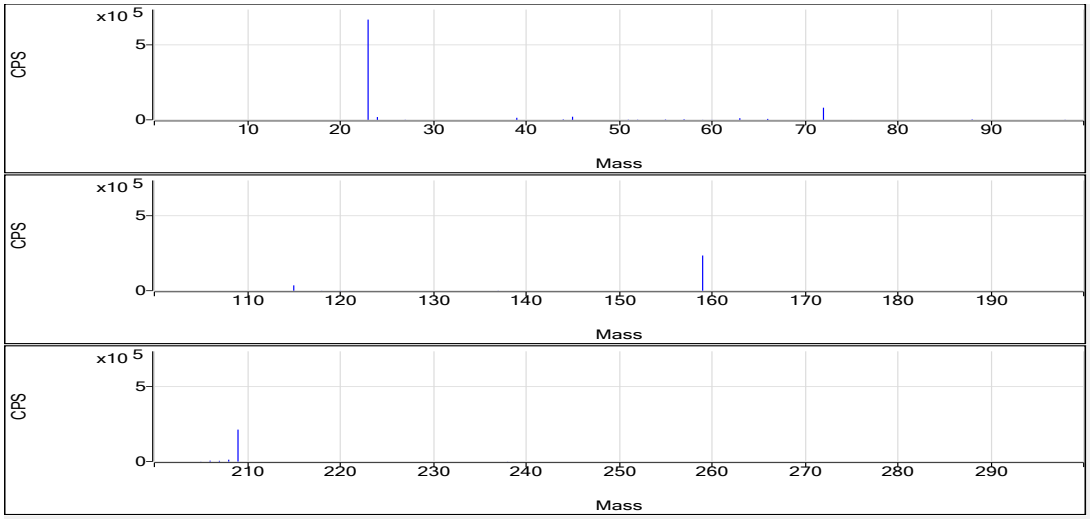


H2



Quantitation Report

He



Quantitation Report

Data File Name	109_CCV.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 2:34:29 PM
Sample Name	CCV 1942322
Sample Type	CCV
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

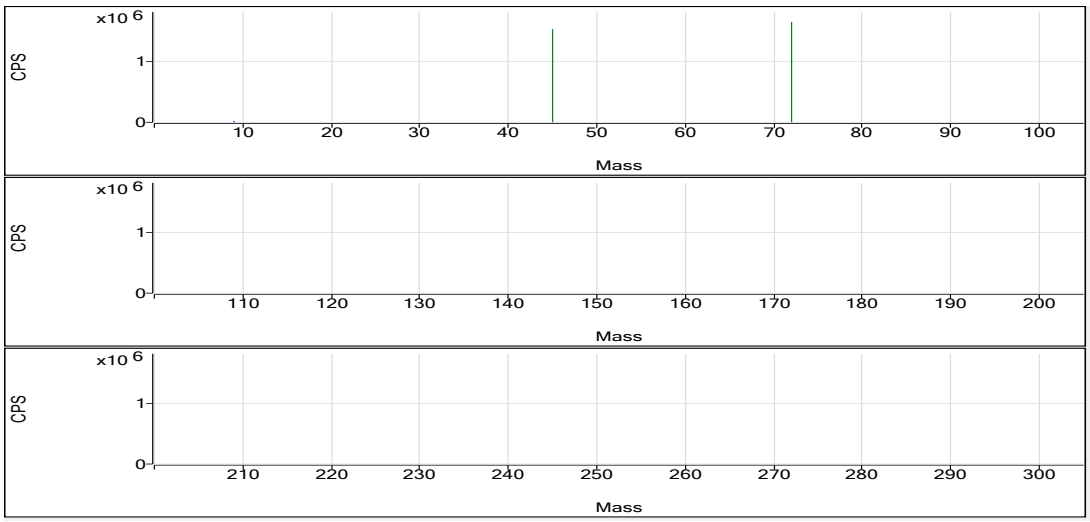
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	30.258	ppb	1.9	22694.56	0.0147	Pulse	0.5000	3
Se	78	72	H2	31.868	ppb	2.3	1139.38	0.0088	Pulse	1.5000	3
Na	23	45	He	4911.167	ppb	2.2	495790.85	23.9368	Pulse	0.1000	3
Mg	24	45	He	5117.817	ppb	2.2	235155.83	11.3530	Pulse	0.1000	3
Al	27	45	He	5164.232	ppb	1.6	58774.66	2.8374	Pulse	0.1000	3
K	39	45	He	5132.546	ppb	2.5	119347.47	5.7623	Pulse	0.1000	3
Ca	44	45	He	5131.379	ppb	1.6	6975.28	0.3366	Pulse	0.1000	3
Ti	47	45	He	299.565	ppb	1.6	3467.20	0.1673	Pulse	0.1000	3
V	51	45	He	304.284	ppb	2.3	182574.59	8.8150	Pulse	0.5000	3
Cr	52	45	He	301.957	ppb	1.6	247877.65	11.9665	Pulse	0.1000	3
Mn	55	45	He	301.821	ppb	2.7	84326.52	4.0716	Pulse	0.1000	3
Fe	57	45	He	5077.551	ppb	1.2	76483.42	3.6919	Pulse	0.1000	3
Co	59	45	He	291.600	ppb	1.7	532950.75	25.7294	Pulse	0.1000	3
Ni	60	72	He	312.268	ppb	2.9	153408.00	2.0902	Pulse	0.1000	3
Cu	63	72	He	306.648	ppb	3.4	458553.16	6.2486	Pulse	0.1000	3
Zn	66	72	He	314.457	ppb	4.7	39869.51	0.5434	Pulse	0.1000	3
As	75	72	He	310.552	ppb	3.7	25703.07	0.3503	Pulse	0.5000	3
Sr	88	72	He	31.202	ppb	3.4	8923.17	0.1216	Pulse	0.1000	3
Mo	98	72	He	31.324	ppb	5.0	35428.68	0.4829	Pulse	0.1000	3
Ag	107	115	He	30.991	ppb	1.0	85853.76	2.3768	Pulse	0.1000	3
Cd	111	115	He	30.605	ppb	2.1	7584.10	0.2100	Pulse	0.5000	3
Sn	120	115	He	31.329	ppb	0.4	21400.56	0.5924	Pulse	0.1000	3
Sb	121	115	He	30.735	ppb	2.9	17595.02	0.4870	Pulse	0.1000	3
Ba	137	115	He	304.627	ppb	1.5	57290.20	1.5861	Pulse	0.1000	3
Tl	205	209	He	30.824	ppb	0.2	232746.81	1.1137	Pulse	0.1000	3
Pb	208	209	He	30.403	ppb	0.4	308273.20	1.4751	Pulse	0.1000	3
U	238	209	He	262.308	ppb	0.3	3491683.91	16.7073	Analog	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1544662.22	0.9	94.9	Analog	0.1000	3
No Gas	Ge	72	1661734.04	0.5	88.7	Analog	0.1000	3
H2	Sc	45	79329.95	1.9	91.3	Pulse	0.1000	3
H2	Ge	72	129492.67	1.0	85.5	Pulse	0.1000	3
H2	In	115	256629.41	1.8	95.3	Pulse	0.1000	3
He	Sc	45	20718.64	2.1	97.1	Pulse	0.1000	3
He	Ge	72	73435.94	3.0	91.2	Pulse	0.1000	3
He	In	115	36124.51	1.1	99.1	Pulse	0.1000	3
He	Tb	159	234892.66	0.9	95.9	Pulse	0.1000	3
He	Bi	209	208991.63	0.1	94.6	Pulse	0.1000	3

No Gas



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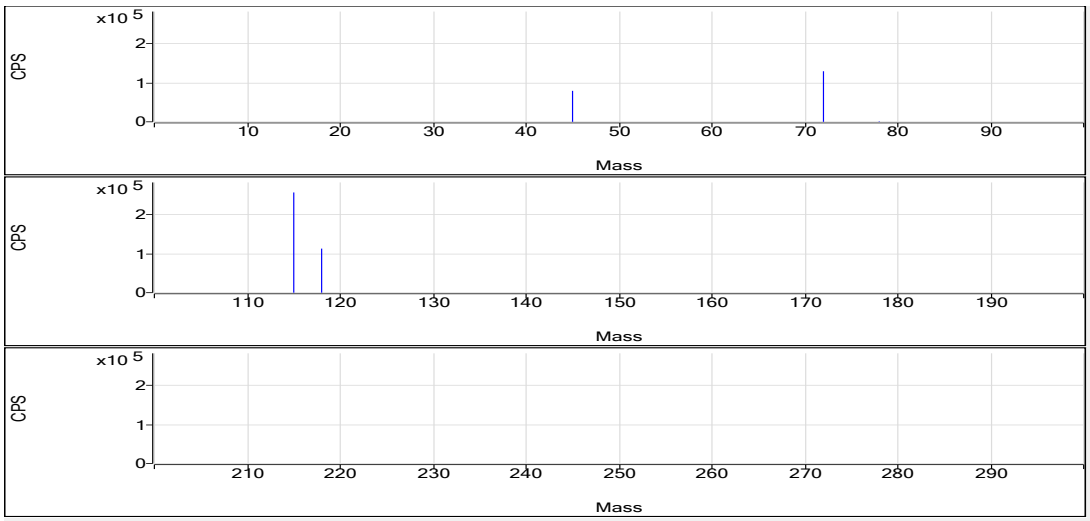
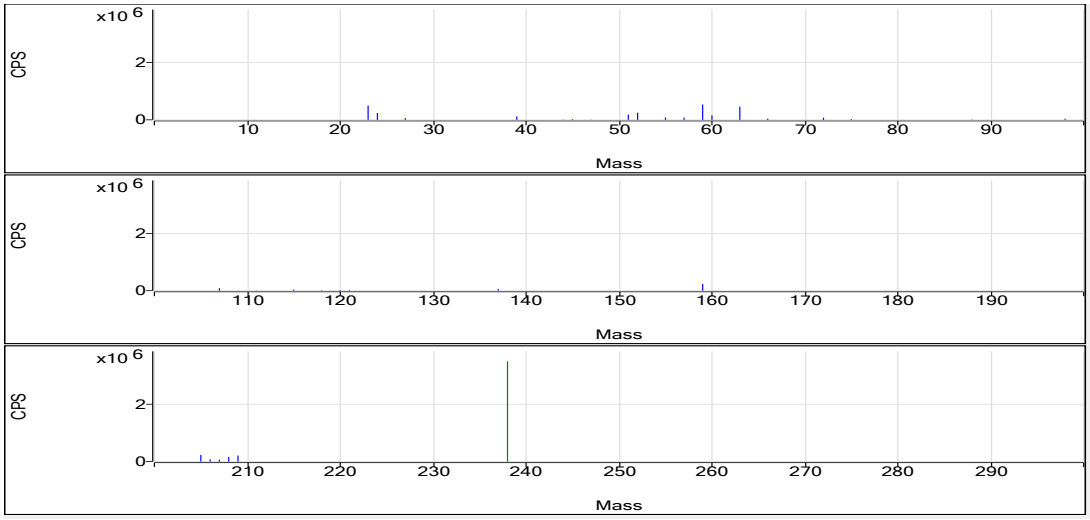


Quantitation Report

He



Quantitation Report

Data File Name	110_CCB.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 2:36:31 PM
Sample Name	CCB 2014932
Sample Type	CCB
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

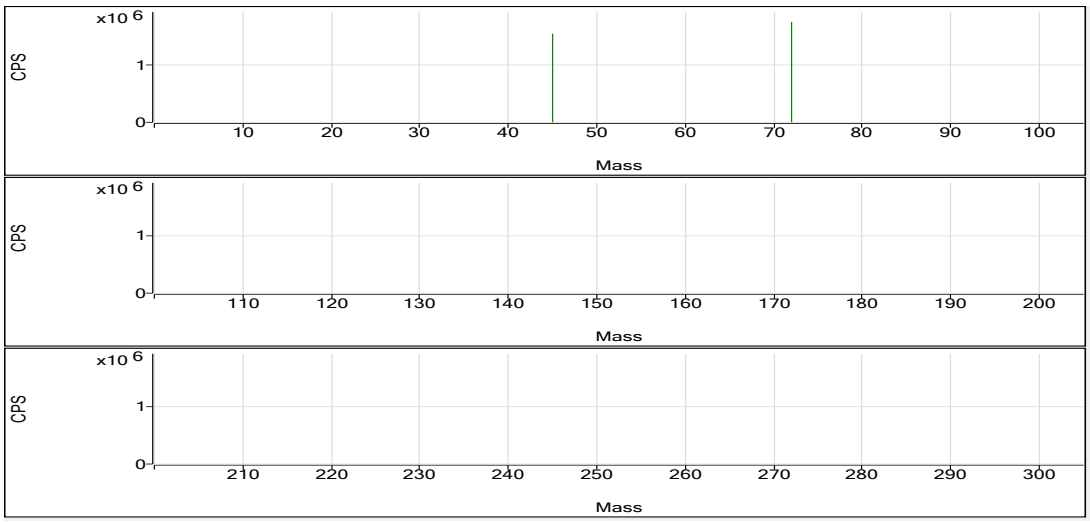
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	-0.002	ppb	N/A	29.33	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.049	ppb	74.6	2.89	0.0000	Pulse	1.5000	3
Na	23	45	He	8.667	ppb	22.1	9009.67	0.4488	Pulse	0.1000	3
Mg	24	45	He	1.701	ppb	21.5	163.34	0.0081	Pulse	0.1000	3
Al	27	45	He	1.987	ppb	47.2	50.00	0.0025	Pulse	0.1000	3
K	39	45	He	14.450	ppb	15.5	4677.58	0.2330	Pulse	0.1000	3
Ca	44	45	He	18.632	ppb	126.0	90.00	0.0045	Pulse	0.1000	3
Ti	47	45	He	0.000	ppb	N/A	0.00	0.0000	Pulse	0.1000	3
V	51	45	He	0.118	ppb	42.0	301.34	0.0150	Pulse	0.5000	3
Cr	52	45	He	0.100	ppb	95.8	710.04	0.0354	Pulse	0.1000	3
Mn	55	45	He	0.231	ppb	50.4	106.67	0.0053	Pulse	0.1000	3
Fe	57	45	He	2.962	ppb	12.3	93.33	0.0046	Pulse	0.1000	3
Co	59	45	He	0.135	ppb	23.8	323.35	0.0161	Pulse	0.1000	3
Ni	60	72	He	0.079	ppb	124.3	143.34	0.0019	Pulse	0.1000	3
Cu	63	72	He	0.096	ppb	10.7	413.35	0.0053	Pulse	0.1000	3
Zn	66	72	He	0.171	ppb	106.4	83.34	0.0011	Pulse	0.1000	3
As	75	72	He	0.108	ppb	76.0	43.33	0.0006	Pulse	0.5000	3
Sr	88	72	He	-0.007	ppb	N/A	33.33	0.0004	Pulse	0.1000	3
Mo	98	72	He	0.040	ppb	95.6	73.33	0.0010	Pulse	0.1000	3
Ag	107	115	He	0.004	ppb	242.0	30.00	0.0009	Pulse	0.1000	3
Cd	111	115	He	0.006	ppb	216.9	3.33	0.0001	Pulse	0.5000	3
Sn	120	115	He	0.003	ppb	3987.2	713.38	0.0203	Pulse	0.1000	3
Sb	121	115	He	0.019	ppb	322.5	36.67	0.0010	Pulse	0.1000	3
Ba	137	115	He	0.290	ppb	45.9	53.33	0.0015	Pulse	0.1000	3
Tl	205	209	He	0.025	ppb	24.3	263.35	0.0012	Pulse	0.1000	3
Pb	208	209	He	-0.011	ppb	N/A	720.04	0.0034	Pulse	0.1000	3
U	238	209	He	0.077	ppb	11.1	1090.09	0.0052	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1558158.94	0.5	95.7	Analog	0.1000	3
No Gas	Ge	72	1762862.47	0.5	94.1	Analog	0.1000	3
H2	Sc	45	78344.97	2.2	90.2	Pulse	0.1000	3
H2	Ge	72	137019.91	0.9	90.5	Pulse	0.1000	3
H2	In	115	253660.85	1.3	94.2	Pulse	0.1000	3
He	Sc	45	20074.47	0.7	94.0	Pulse	0.1000	3
He	Ge	72	77363.22	1.2	96.1	Pulse	0.1000	3
He	In	115	35161.97	1.5	96.4	Pulse	0.1000	3
He	Tb	159	231783.58	0.2	94.6	Pulse	0.1000	3
He	Bi	209	211027.90	0.5	95.5	Pulse	0.1000	3

No Gas



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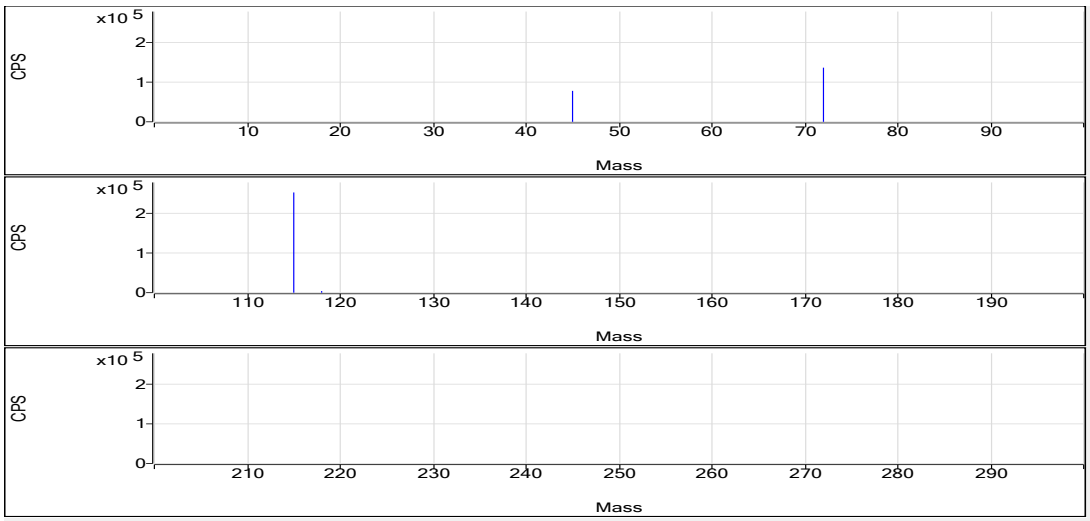
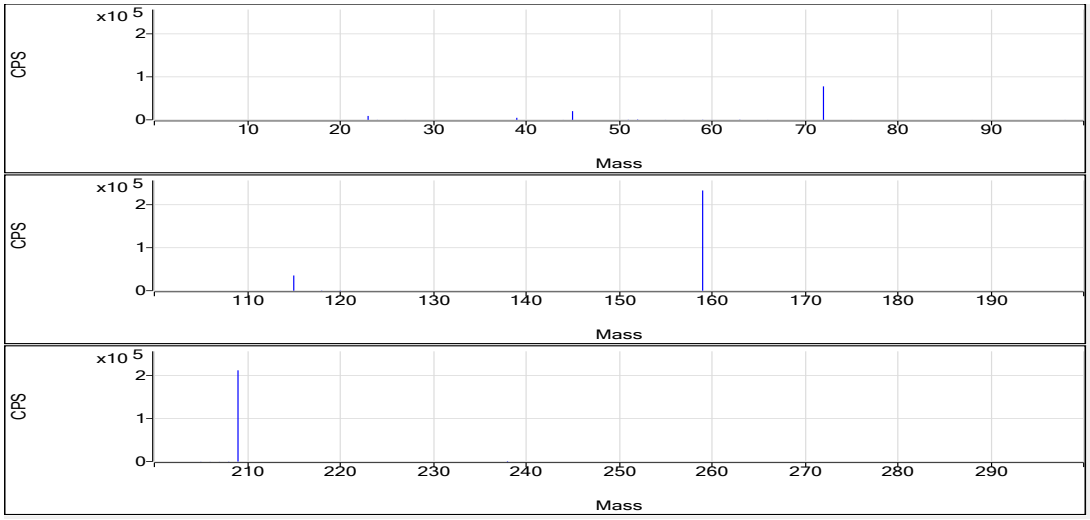


Quantitation Report

He



Quantitation Report

Data File Name	111SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 2:38:33 PM
Sample Name	410-60949-B-2-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

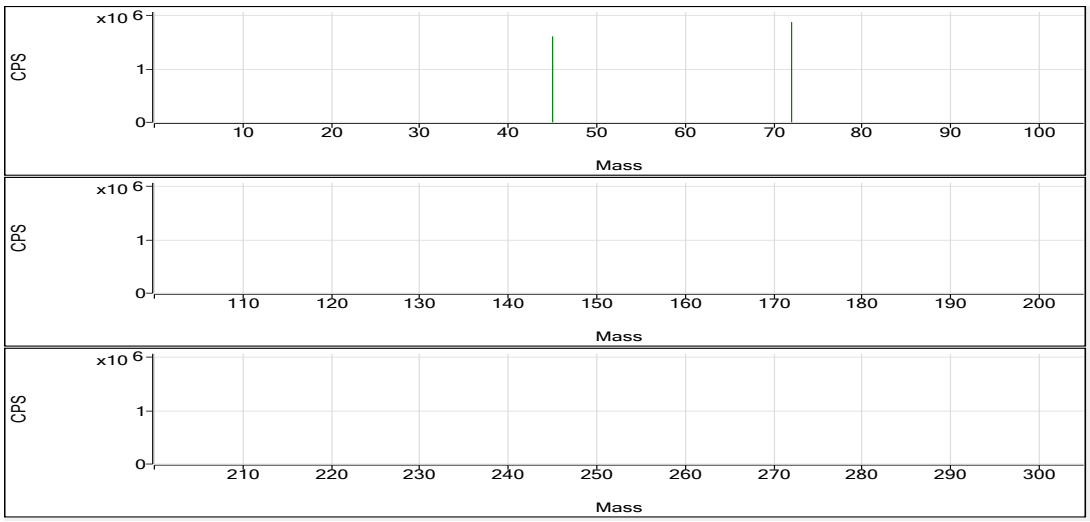
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.249	ppb	11.6	226.00	0.0001	Pulse	0.5000	3
Se	78	72	H2	0.145	ppb	35.4	6.89	0.0000	Pulse	1.5000	3
Na	23	45	He	11350.238	ppb	1.3	1112899.05	54.7865	Analog	0.1000	3
Mg	24	45	He	4244.912	ppb	1.9	191297.49	9.4173	Pulse	0.1000	3
Al	27	45	He	2414.302	ppb	2.5	26965.95	1.3273	Pulse	0.1000	3
K	39	45	He	1909.534	ppb	1.3	46327.73	2.2804	Pulse	0.1000	3
Ca	44	45	He	12019.699	ppb	3.0	15925.82	0.7841	Pulse	0.1000	3
Ti	47	45	He	71.298	ppb	31.3	810.17	0.0398	Pulse	0.1000	3
V	51	45	He	16.951	ppb	1.0	10197.61	0.5020	Pulse	0.5000	3
Cr	52	45	He	10.943	ppb	3.4	9423.34	0.4639	Pulse	0.1000	3
Mn	55	45	He	129.874	ppb	0.9	35617.97	1.7533	Pulse	0.1000	3
Fe	57	45	He	4182.915	ppb	1.9	61789.36	3.0419	Pulse	0.1000	3
Co	59	45	He	3.631	ppb	8.1	6591.72	0.3245	Pulse	0.1000	3
Ni	60	72	He	14.964	ppb	1.0	8366.13	0.1014	Pulse	0.1000	3
Cu	63	72	He	45.445	ppb	2.8	76618.23	0.9289	Pulse	0.1000	3
Zn	66	72	He	1181.670	ppb	0.4	168260.71	2.0399	Pulse	0.1000	3
As	75	72	He	1.614	ppb	16.6	186.00	0.0023	Pulse	0.5000	3
Sr	88	72	He	29.971	ppb	2.6	9633.66	0.1168	Pulse	0.1000	3
Mo	98	72	He	1.002	ppb	10.0	1300.11	0.0158	Pulse	0.1000	3
Ag	107	115	He	0.097	ppb	5.3	290.01	0.0080	Pulse	0.1000	3
Cd	111	115	He	0.383	ppb	5.0	97.33	0.0027	Pulse	0.5000	3
Sn	120	115	He	1.163	ppb	13.2	1503.47	0.0415	Pulse	0.1000	3
Sb	121	115	He	1.637	ppb	5.6	966.74	0.0266	Pulse	0.1000	3
Ba	137	115	He	39.760	ppb	6.3	7508.97	0.2070	Pulse	0.1000	3
Tl	205	209	He	0.043	ppb	14.2	413.36	0.0019	Pulse	0.1000	3
Pb	208	209	He	58.835	ppb	0.8	617641.65	2.8508	Pulse	0.1000	3
U	238	209	He	0.303	ppb	4.3	4237.52	0.0196	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1609752.01	0.9	98.9	Analog	0.1000	3
No Gas	Ge	72	1877682.94	0.1	100.3	Analog	0.1000	3
H2	Sc	45	81820.84	0.3	94.2	Pulse	0.1000	3
H2	Ge	72	145780.67	0.9	96.3	Pulse	0.1000	3
H2	In	115	261024.36	1.2	97.0	Pulse	0.1000	3
He	Sc	45	20314.75	0.8	95.2	Pulse	0.1000	3
He	Ge	72	82487.46	0.8	102.5	Pulse	0.1000	3
He	In	115	36294.87	1.6	99.6	Pulse	0.1000	3
He	Tb	159	240389.94	0.8	98.1	Pulse	0.1000	3
He	Bi	209	216652.89	1.1	98.0	Pulse	0.1000	3

No Gas



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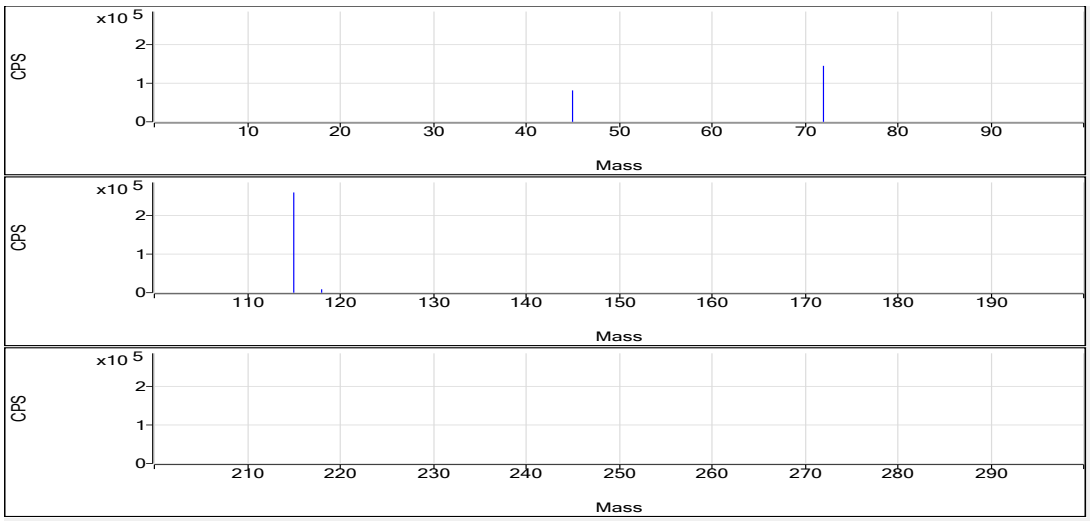
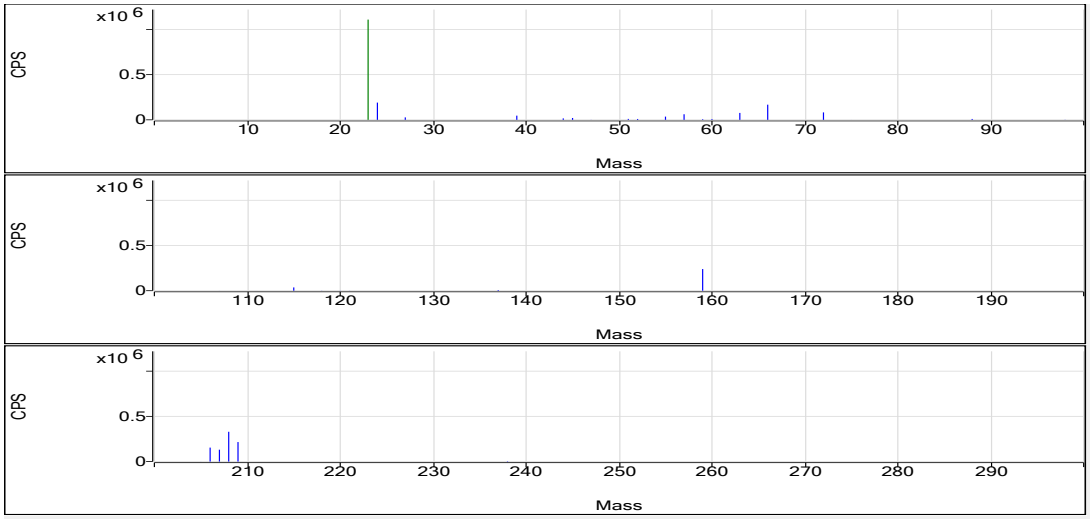


Quantitation Report

He



Quantitation Report

Data File Name	112SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 2:40:34 PM
Sample Name	410-60949-B-5-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

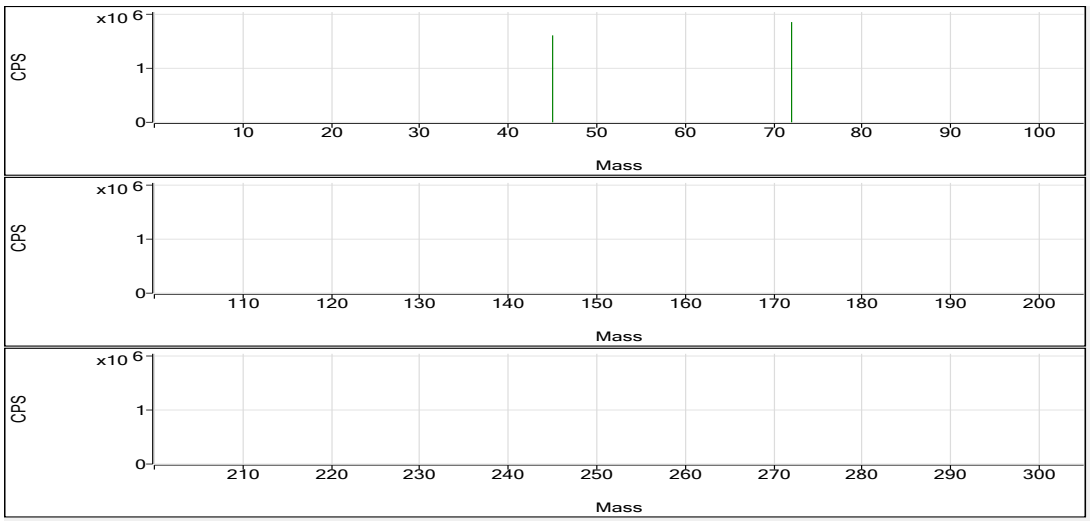
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.075	ppb	21.7	90.00	0.0001	Pulse	0.5000	3
Se	78	72	H2	0.263	ppb	34.3	11.78	0.0001	Pulse	1.5000	3
Na	23	45	He	17605.290	ppb	1.9	1773183.41	84.7546	Analog	0.1000	3
Mg	24	45	He	6345.826	ppb	3.2	294416.99	14.0760	Pulse	0.1000	3
Al	27	45	He	2367.170	ppb	4.6	27213.12	1.3014	Pulse	0.1000	3
K	39	45	He	2504.454	ppb	2.3	61152.23	2.9231	Pulse	0.1000	3
Ca	44	45	He	16308.415	ppb	2.4	22231.03	1.0626	Pulse	0.1000	3
Ti	47	45	He	59.818	ppb	6.1	700.04	0.0334	Pulse	0.1000	3
V	51	45	He	15.245	ppb	4.3	9467.15	0.4526	Pulse	0.5000	3
Cr	52	45	He	10.526	ppb	3.2	9359.96	0.4475	Pulse	0.1000	3
Mn	55	45	He	86.614	ppb	4.7	24464.52	1.1700	Pulse	0.1000	3
Fe	57	45	He	4066.869	ppb	3.3	61861.74	2.9575	Pulse	0.1000	3
Co	59	45	He	3.073	ppb	5.7	5761.54	0.2753	Pulse	0.1000	3
Ni	60	72	He	13.897	ppb	2.2	7792.37	0.0943	Pulse	0.1000	3
Cu	63	72	He	57.555	ppb	2.3	97144.00	1.1756	Pulse	0.1000	3
Zn	66	72	He	919.065	ppb	1.5	131138.12	1.5867	Pulse	0.1000	3
As	75	72	He	1.961	ppb	13.4	218.67	0.0026	Pulse	0.5000	3
Sr	88	72	He	35.800	ppb	3.4	11525.07	0.1394	Pulse	0.1000	3
Mo	98	72	He	2.198	ppb	7.7	2823.72	0.0342	Pulse	0.1000	3
Ag	107	115	He	0.452	ppb	7.9	1280.11	0.0352	Pulse	0.1000	3
Cd	111	115	He	0.382	ppb	1.7	97.33	0.0027	Pulse	0.5000	3
Sn	120	115	He	31.876	ppb	5.3	21911.30	0.6024	Pulse	0.1000	3
Sb	121	115	He	4.279	ppb	4.2	2490.31	0.0684	Pulse	0.1000	3
Ba	137	115	He	45.967	ppb	8.9	8699.75	0.2393	Pulse	0.1000	3
Tl	205	209	He	0.027	ppb	25.9	283.35	0.0013	Pulse	0.1000	3
Pb	208	209	He	43.972	ppb	0.8	461378.29	2.1316	Pulse	0.1000	3
U	238	209	He	0.192	ppb	5.5	2697.05	0.0125	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1611777.94	1.2	99.0	Analog	0.1000	3
No Gas	Ge	72	1858200.59	0.6	99.2	Analog	0.1000	3
H2	Sc	45	82695.83	1.5	95.2	Pulse	0.1000	3
H2	Ge	72	147013.62	0.0	97.1	Pulse	0.1000	3
H2	In	115	264258.44	0.3	98.2	Pulse	0.1000	3
He	Sc	45	20928.98	2.9	98.0	Pulse	0.1000	3
He	Ge	72	82658.71	1.8	102.7	Pulse	0.1000	3
He	In	115	36398.38	2.3	99.8	Pulse	0.1000	3
He	Tb	159	238528.24	0.6	97.4	Pulse	0.1000	3
He	Bi	209	216453.82	0.8	98.0	Pulse	0.1000	3

No Gas



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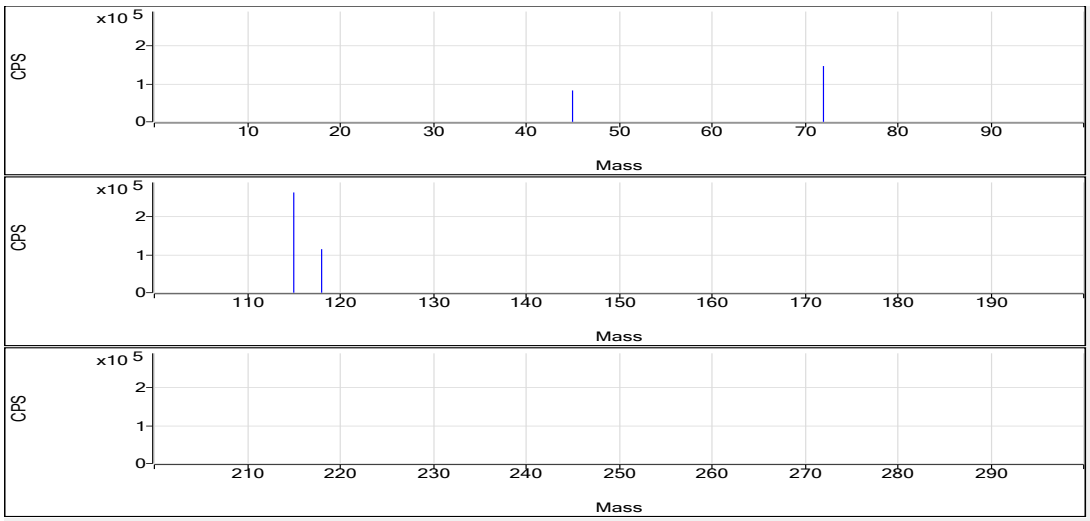
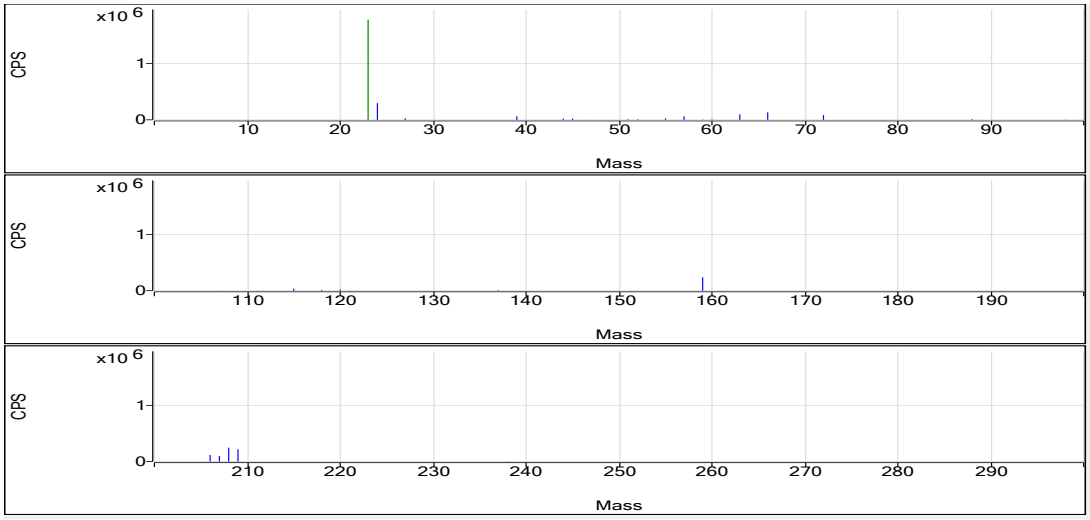


Quantitation Report

He



Quantitation Report

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Sample Name	410-60949-B-4-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

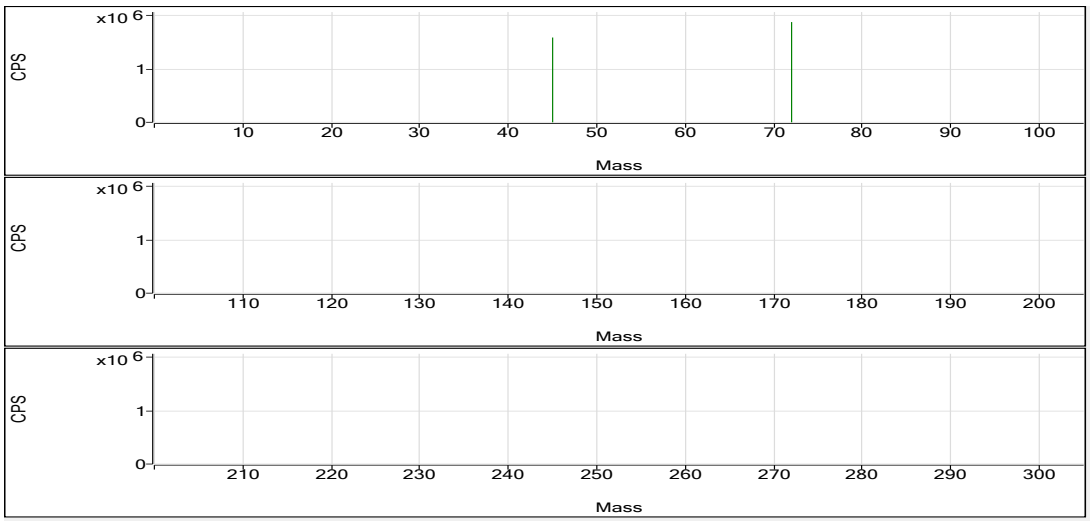
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.006	ppb	149.8	36.00	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.120	ppb	71.4	6.00	0.0000	Pulse	1.5000	3
Na	23	45	He	27577.477	ppb	2.3	2790035.48	132.5316	Analog	0.1000	3
Mg	24	45	He	5403.722	ppb	2.5	252336.02	11.9869	Pulse	0.1000	3
Al	27	45	He	435.745	ppb	2.9	5067.68	0.2407	Pulse	0.1000	3
K	39	45	He	5639.752	ppb	2.8	132829.52	6.3103	Pulse	0.1000	3
Ca	44	45	He	20559.476	ppb	2.2	28184.72	1.3388	Pulse	0.1000	3
Ti	47	45	He	12.749	ppb	59.6	150.01	0.0071	Pulse	0.1000	3
V	51	45	He	7.063	ppb	4.6	4544.74	0.2159	Pulse	0.5000	3
Cr	52	45	He	1.812	ppb	7.6	2170.24	0.1031	Pulse	0.1000	3
Mn	55	45	He	287.919	ppb	2.7	81761.34	3.8842	Pulse	0.1000	3
Fe	57	45	He	1413.320	ppb	1.6	21673.45	1.0294	Pulse	0.1000	3
Co	59	45	He	2.674	ppb	3.4	5054.38	0.2401	Pulse	0.1000	3
Ni	60	72	He	7.374	ppb	5.1	4150.74	0.0507	Pulse	0.1000	3
Cu	63	72	He	10.941	ppb	4.2	18535.72	0.2262	Pulse	0.1000	3
Zn	66	72	He	68.878	ppb	4.0	9803.75	0.1196	Pulse	0.1000	3
As	75	72	He	2.912	ppb	5.0	304.68	0.0037	Pulse	0.5000	3
Sr	88	72	He	43.510	ppb	1.4	13880.66	0.1694	Pulse	0.1000	3
Mo	98	72	He	2.728	ppb	7.7	3470.55	0.0424	Pulse	0.1000	3
Ag	107	115	He	0.030	ppb	18.6	103.34	0.0029	Pulse	0.1000	3
Cd	111	115	He	0.107	ppb	24.1	28.67	0.0008	Pulse	0.5000	3
Sn	120	115	He	0.339	ppb	35.9	956.73	0.0264	Pulse	0.1000	3
Sb	121	115	He	1.353	ppb	7.1	803.39	0.0221	Pulse	0.1000	3
Ba	137	115	He	27.174	ppb	7.5	5127.84	0.1415	Pulse	0.1000	3
Tl	205	209	He	0.030	ppb	33.8	303.35	0.0014	Pulse	0.1000	3
Pb	208	209	He	7.720	ppb	1.7	80997.02	0.3775	Pulse	0.1000	3
U	238	209	He	0.265	ppb	3.6	3670.67	0.0171	Pulse	0.1000	3

ISTD Table:

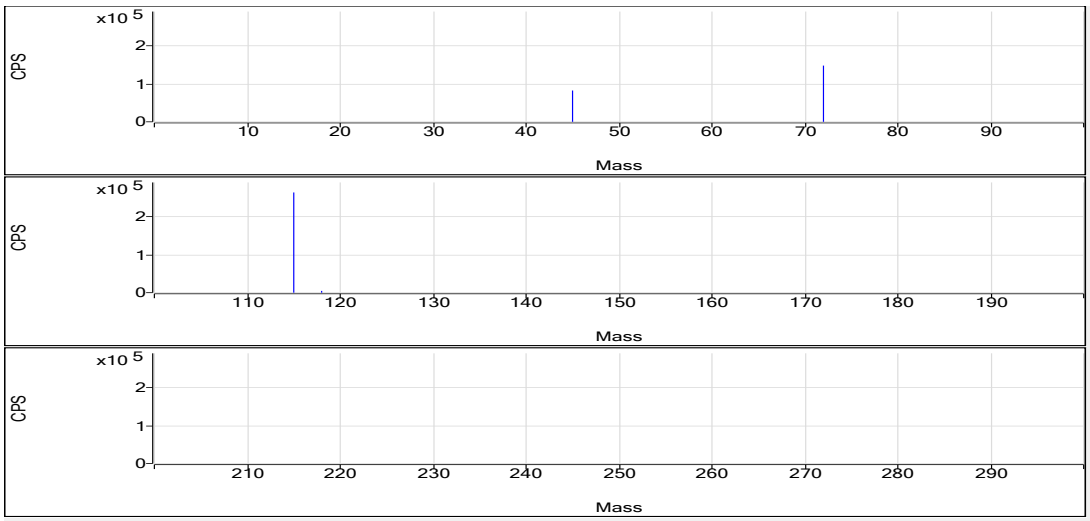
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1586052.84	0.1	97.5	Analog	0.1000	3
No Gas	Ge	72	1875049.87	0.6	100.1	Analog	0.1000	3
H2	Sc	45	82353.76	1.4	94.8	Pulse	0.1000	3
H2	Ge	72	147864.71	1.2	97.7	Pulse	0.1000	3
H2	In	115	263655.94	1.1	97.9	Pulse	0.1000	3
He	Sc	45	21059.19	2.5	98.7	Pulse	0.1000	3
He	Ge	72	81964.71	1.1	101.8	Pulse	0.1000	3
He	In	115	36268.31	1.4	99.5	Pulse	0.1000	3
He	Tb	159	238386.58	0.2	97.3	Pulse	0.1000	3
He	Bi	209	214582.78	1.0	97.1	Pulse	0.1000	3

No Gas

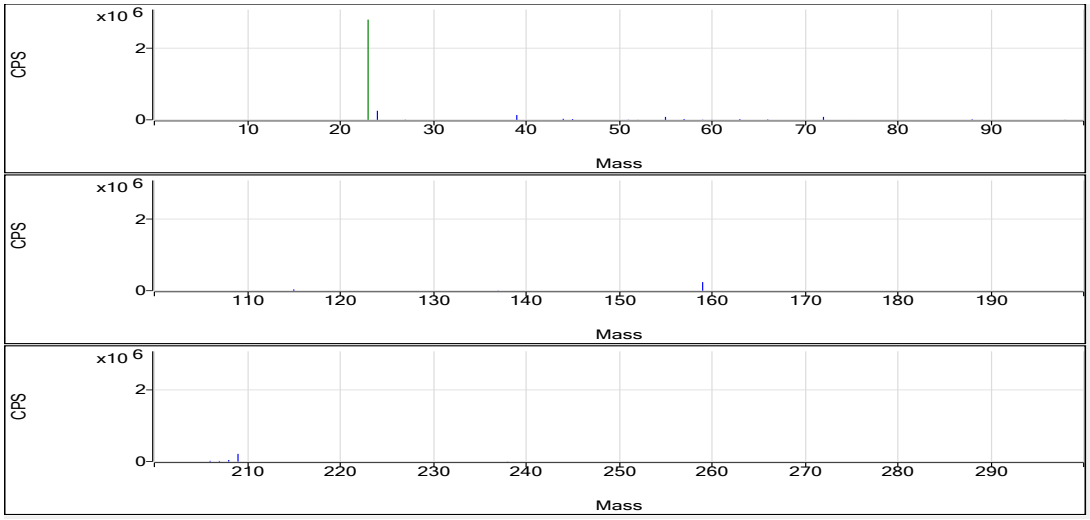


H2



Quantitation Report

He



Quantitation Report

Data File Name	114SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 2:44:37 PM
Sample Name	410-60949-B-3-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

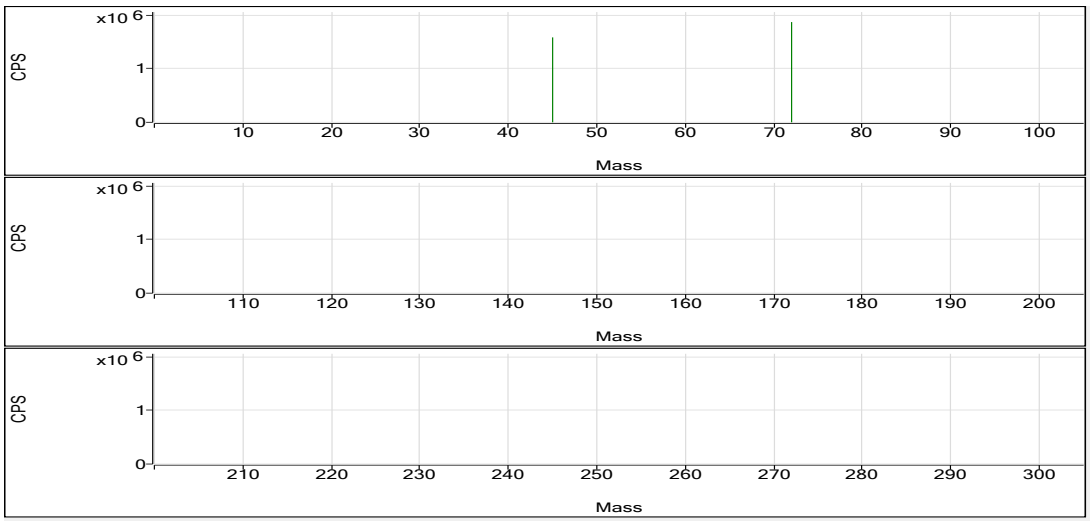
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	-0.013	ppb	N/A	21.33	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.109	ppb	46.3	5.56	0.0000	Pulse	1.5000	3
Na	23	45	He	15304.875	ppb	1.9	1551727.47	73.7333	Analog	0.1000	3
Mg	24	45	He	519.712	ppb	2.6	24344.03	1.1568	Pulse	0.1000	3
Al	27	45	He	261.958	ppb	10.9	3057.14	0.1453	Pulse	0.1000	3
K	39	45	He	781.580	ppb	4.4	22341.12	1.0618	Pulse	0.1000	3
Ca	44	45	He	2225.733	ppb	4.9	3113.78	0.1479	Pulse	0.1000	3
Ti	47	45	He	7.378	ppb	35.8	86.67	0.0041	Pulse	0.1000	3
V	51	45	He	10.762	ppb	2.5	6796.29	0.3230	Pulse	0.5000	3
Cr	52	45	He	1.093	ppb	6.3	1570.14	0.0746	Pulse	0.1000	3
Mn	55	45	He	11.166	ppb	6.5	3213.79	0.1527	Pulse	0.1000	3
Fe	57	45	He	383.009	ppb	1.7	5911.45	0.2808	Pulse	0.1000	3
Co	59	45	He	0.288	ppb	7.3	623.37	0.0296	Pulse	0.1000	3
Ni	60	72	He	1.886	ppb	17.5	1153.42	0.0139	Pulse	0.1000	3
Cu	63	72	He	23.703	ppb	1.3	40253.81	0.4861	Pulse	0.1000	3
Zn	66	72	He	45.587	ppb	2.7	6578.38	0.0795	Pulse	0.1000	3
As	75	72	He	0.341	ppb	45.3	68.00	0.0008	Pulse	0.5000	3
Sr	88	72	He	8.198	ppb	6.6	2673.68	0.0323	Pulse	0.1000	3
Mo	98	72	He	1.750	ppb	2.6	2260.26	0.0273	Pulse	0.1000	3
Ag	107	115	He	0.015	ppb	43.8	60.00	0.0017	Pulse	0.1000	3
Cd	111	115	He	0.038	ppb	25.5	11.33	0.0003	Pulse	0.5000	3
Sn	120	115	He	1.141	ppb	28.1	1483.47	0.0410	Pulse	0.1000	3
Sb	121	115	He	1.180	ppb	15.6	703.37	0.0194	Pulse	0.1000	3
Ba	137	115	He	6.285	ppb	11.0	1183.47	0.0327	Pulse	0.1000	3
Tl	205	209	He	0.006	ppb	80.8	120.00	0.0005	Pulse	0.1000	3
Pb	208	209	He	13.253	ppb	0.8	140917.07	0.6452	Pulse	0.1000	3
U	238	209	He	0.066	ppb	9.2	970.08	0.0044	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1582336.38	0.7	97.2	Analog	0.1000	3
No Gas	Ge	72	1867691.17	1.0	99.7	Analog	0.1000	3
H2	Sc	45	82584.95	0.8	95.0	Pulse	0.1000	3
H2	Ge	72	147795.69	1.7	97.6	Pulse	0.1000	3
H2	In	115	264311.29	1.2	98.2	Pulse	0.1000	3
He	Sc	45	21049.15	1.6	98.6	Pulse	0.1000	3
He	Ge	72	82812.99	1.3	102.9	Pulse	0.1000	3
He	In	115	36201.08	1.8	99.3	Pulse	0.1000	3
He	Tb	159	241016.20	1.7	98.4	Pulse	0.1000	3
He	Bi	209	218406.51	0.3	98.8	Pulse	0.1000	3

No Gas



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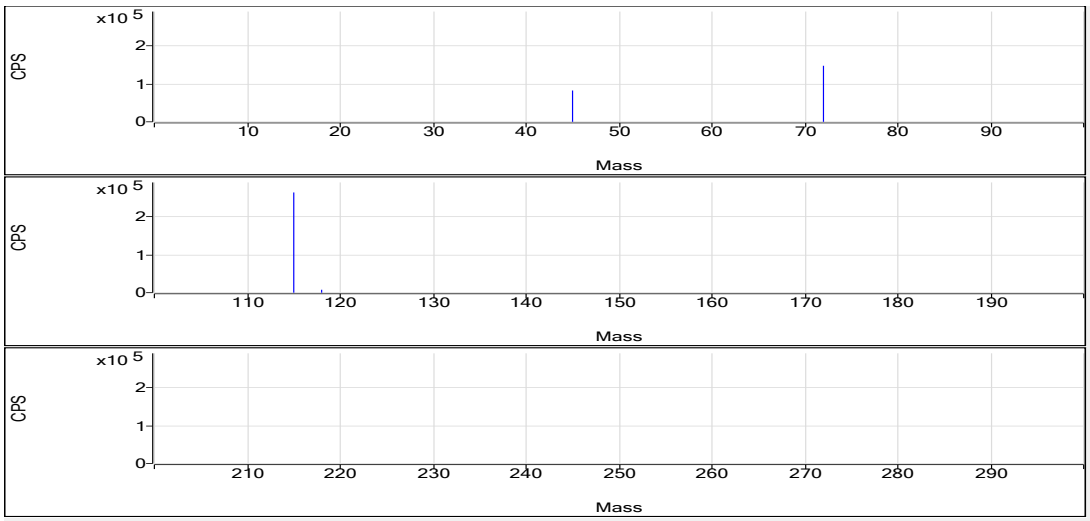
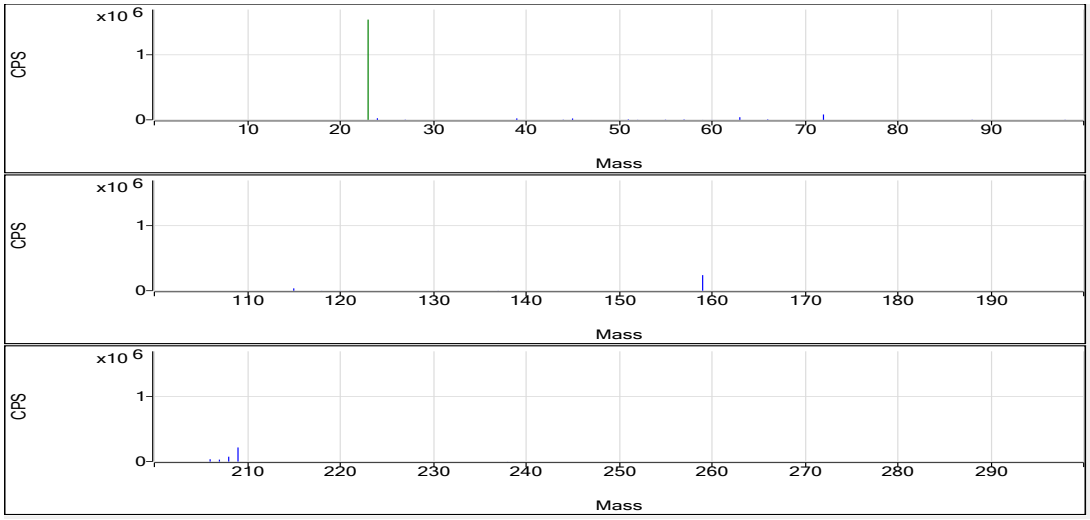


Quantitation Report

He



Quantitation Report

Data File Name	115SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 2:46:39 PM
Sample Name	410-61792-B-1-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

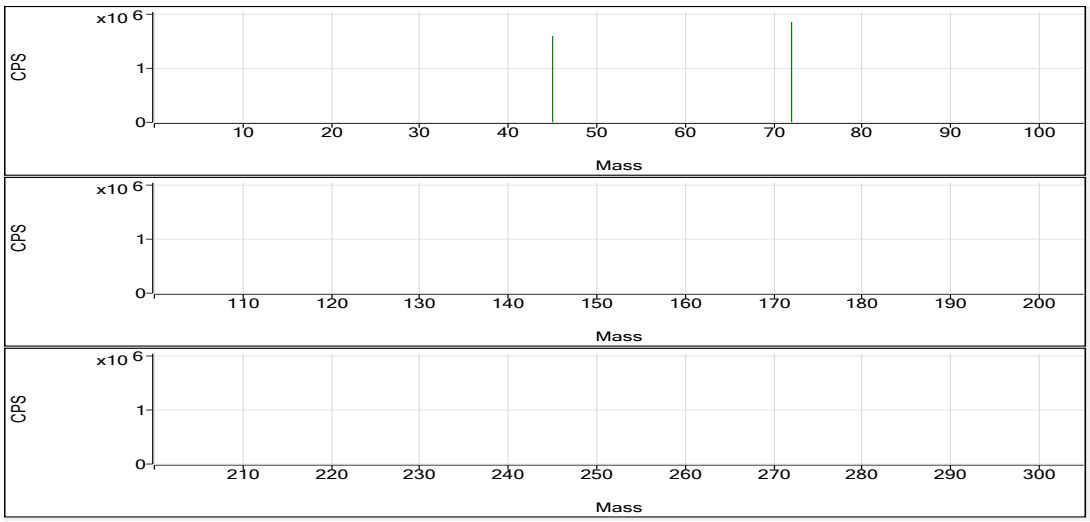
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	-0.004	ppb	N/A	28.67	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.224	ppb	18.5	10.22	0.0001	Pulse	1.5000	3
Na	23	45	He	40264.322	ppb	1.3	4091034.84	193.3145	Analog	0.1000	3
Mg	24	45	He	6373.897	ppb	2.1	299169.84	14.1383	Pulse	0.1000	3
Al	27	45	He	409.712	ppb	6.9	4787.61	0.2264	Pulse	0.1000	3
K	39	45	He	5347.859	ppb	1.2	126870.38	5.9949	Pulse	0.1000	3
Ca	44	45	He	26189.703	ppb	3.9	36062.39	1.7045	Pulse	0.1000	3
Ti	47	45	He	5.657	ppb	24.7	66.67	0.0032	Pulse	0.1000	3
V	51	45	He	4.031	ppb	4.9	2713.60	0.1282	Pulse	0.5000	3
Cr	52	45	He	1.737	ppb	13.2	2120.23	0.1001	Pulse	0.1000	3
Mn	55	45	He	151.660	ppb	1.9	43315.70	2.0470	Pulse	0.1000	3
Fe	57	45	He	1921.961	ppb	1.0	29607.81	1.3990	Pulse	0.1000	3
Co	59	45	He	0.357	ppb	12.0	756.71	0.0357	Pulse	0.1000	3
Ni	60	72	He	2.114	ppb	9.5	1276.77	0.0155	Pulse	0.1000	3
Cu	63	72	He	4.893	ppb	4.8	8502.80	0.1030	Pulse	0.1000	3
Zn	66	72	He	19.187	ppb	5.6	2797.05	0.0339	Pulse	0.1000	3
As	75	72	He	3.187	ppb	17.8	332.67	0.0040	Pulse	0.5000	3
Sr	88	72	He	185.994	ppb	1.4	59629.82	0.7225	Pulse	0.1000	3
Mo	98	72	He	11.305	ppb	3.3	14401.17	0.1745	Pulse	0.1000	3
Ag	107	115	He	0.017	ppb	87.9	66.67	0.0018	Pulse	0.1000	3
Cd	111	115	He	0.029	ppb	31.7	9.33	0.0003	Pulse	0.5000	3
Sn	120	115	He	-0.094	ppb	N/A	673.38	0.0185	Pulse	0.1000	3
Sb	121	115	He	1.557	ppb	8.4	923.40	0.0254	Pulse	0.1000	3
Ba	137	115	He	39.325	ppb	3.8	7455.62	0.2047	Pulse	0.1000	3
Tl	205	209	He	0.009	ppb	67.7	140.01	0.0007	Pulse	0.1000	3
Pb	208	209	He	2.748	ppb	1.7	29117.17	0.1369	Pulse	0.1000	3
U	238	209	He	0.146	ppb	8.7	2023.57	0.0095	Pulse	0.1000	3

ISTD Table:

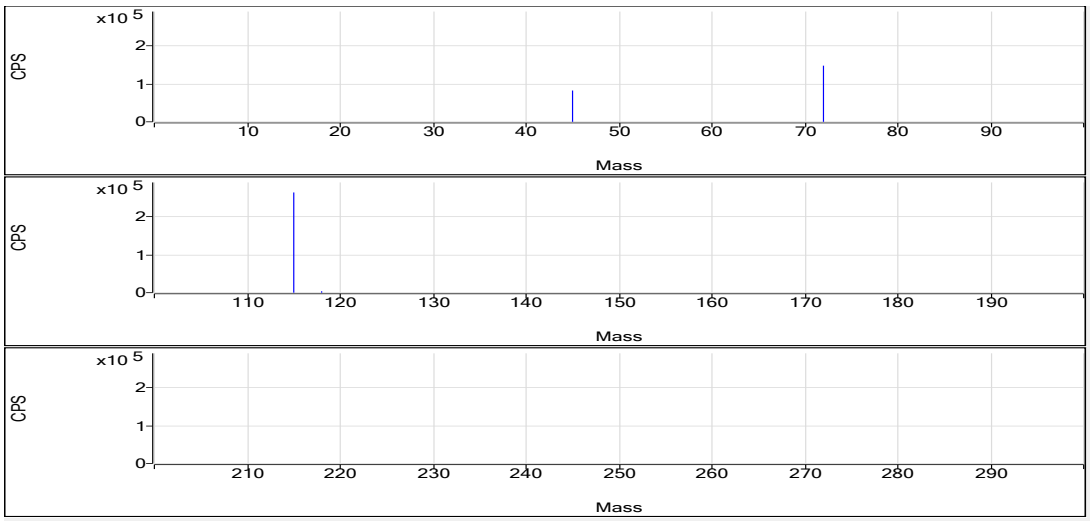
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1598185.96	1.4	98.2	Analog	0.1000	3
No Gas	Ge	72	1855185.18	0.5	99.1	Analog	0.1000	3
H2	Sc	45	82436.91	0.2	94.9	Pulse	0.1000	3
H2	Ge	72	147871.57	0.5	97.7	Pulse	0.1000	3
H2	In	115	263990.53	0.3	98.1	Pulse	0.1000	3
He	Sc	45	21166.04	2.0	99.2	Pulse	0.1000	3
He	Ge	72	82541.89	0.7	102.5	Pulse	0.1000	3
He	In	115	36418.52	1.2	99.9	Pulse	0.1000	3
He	Tb	159	240394.81	0.4	98.1	Pulse	0.1000	3
He	Bi	209	212666.53	0.8	96.2	Pulse	0.1000	3

No Gas

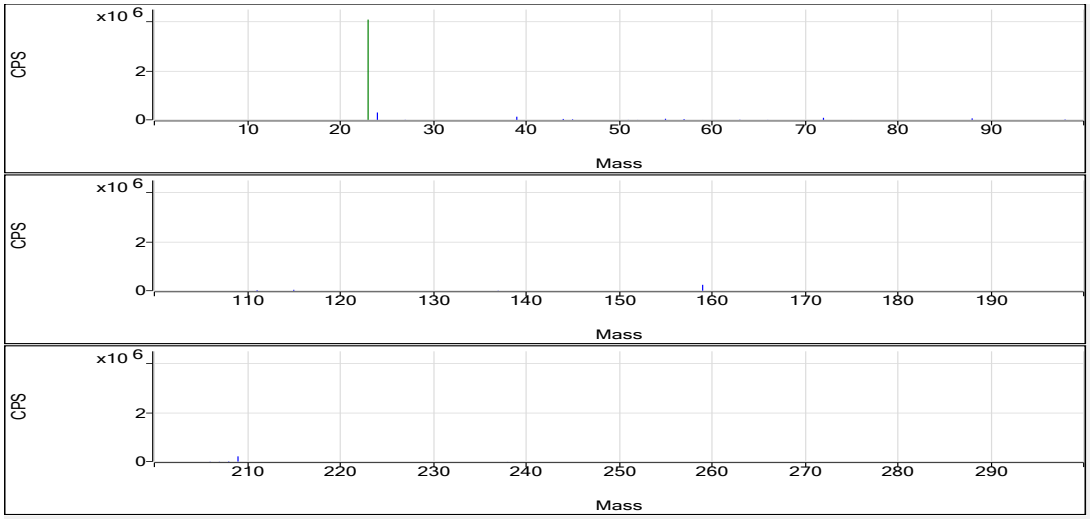


H2



Quantitation Report

He



Quantitation Report

Data File Name	116SMPL.d
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Acq Time	11/5/2021 2:48:40 PM
Sample Name	410-61134-D-1-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

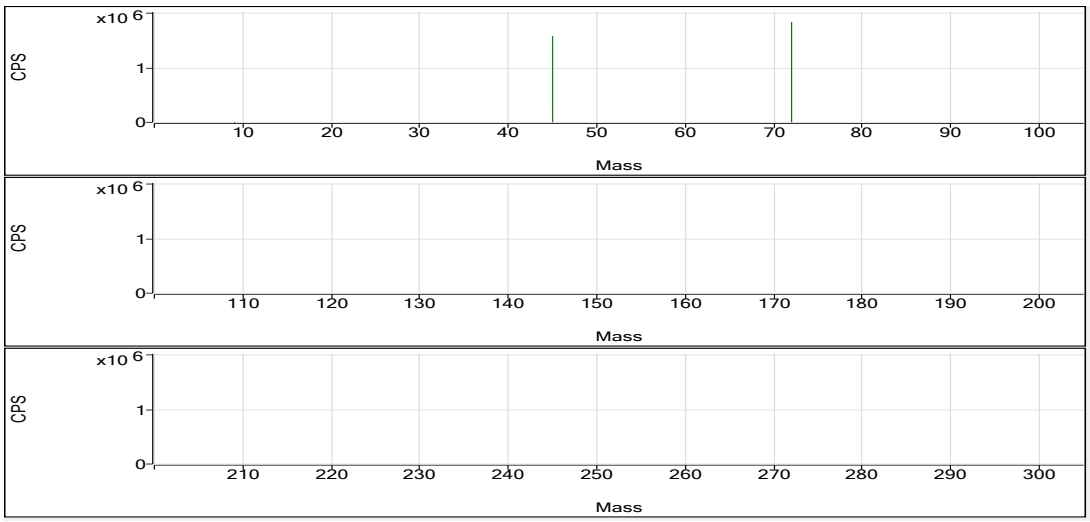
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	-0.028	ppb	N/A	10.00	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.398	ppb	21.0	17.11	0.0001	Pulse	1.5000	3
Na	23	45	He	73979.178	ppb	1.7	7488197.59	354.8431	Analog	0.1000	3
Mg	24	45	He	10084.505	ppb	0.9	472021.91	22.3664	Pulse	0.1000	3
Al	27	45	He	27.614	ppb	14.3	350.02	0.0166	Pulse	0.1000	3
K	39	45	He	7656.813	ppb	0.6	179166.80	8.4894	Pulse	0.1000	3
Ca	44	45	He	34575.692	ppb	3.6	47457.87	2.2492	Pulse	0.1000	3
Ti	47	45	He	0.846	ppb	99.2	10.00	0.0005	Pulse	0.1000	3
V	51	45	He	0.256	ppb	27.4	400.68	0.0190	Pulse	0.5000	3
Cr	52	45	He	0.395	ppb	42.3	993.40	0.0470	Pulse	0.1000	3
Mn	55	45	He	38.046	ppb	2.2	10871.18	0.5152	Pulse	0.1000	3
Fe	57	45	He	377.836	ppb	4.8	5844.72	0.2770	Pulse	0.1000	3
Co	59	45	He	0.187	ppb	20.1	436.69	0.0207	Pulse	0.1000	3
Ni	60	72	He	3.606	ppb	7.6	2060.22	0.0254	Pulse	0.1000	3
Cu	63	72	He	9.744	ppb	2.5	16349.80	0.2018	Pulse	0.1000	3
Zn	66	72	He	26.546	ppb	0.7	3773.98	0.0466	Pulse	0.1000	3
As	75	72	He	0.312	ppb	42.0	64.00	0.0008	Pulse	0.5000	3
Sr	88	72	He	185.553	ppb	1.3	58377.74	0.7208	Pulse	0.1000	3
Mo	98	72	He	4.879	ppb	1.8	6114.90	0.0755	Pulse	0.1000	3
Ag	107	115	He	0.036	ppb	17.0	120.00	0.0033	Pulse	0.1000	3
Cd	111	115	He	0.077	ppb	20.6	21.33	0.0006	Pulse	0.5000	3
Sn	120	115	He	0.093	ppb	17.3	800.05	0.0219	Pulse	0.1000	3
Sb	121	115	He	0.479	ppb	8.2	303.35	0.0083	Pulse	0.1000	3
Ba	137	115	He	30.319	ppb	4.5	5764.78	0.1579	Pulse	0.1000	3
Tl	205	209	He	0.005	ppb	77.2	116.67	0.0005	Pulse	0.1000	3
Pb	208	209	He	0.153	ppb	12.0	2450.18	0.0114	Pulse	0.1000	3
U	238	209	He	0.205	ppb	5.0	2870.42	0.0133	Pulse	0.1000	3

ISTD Table:

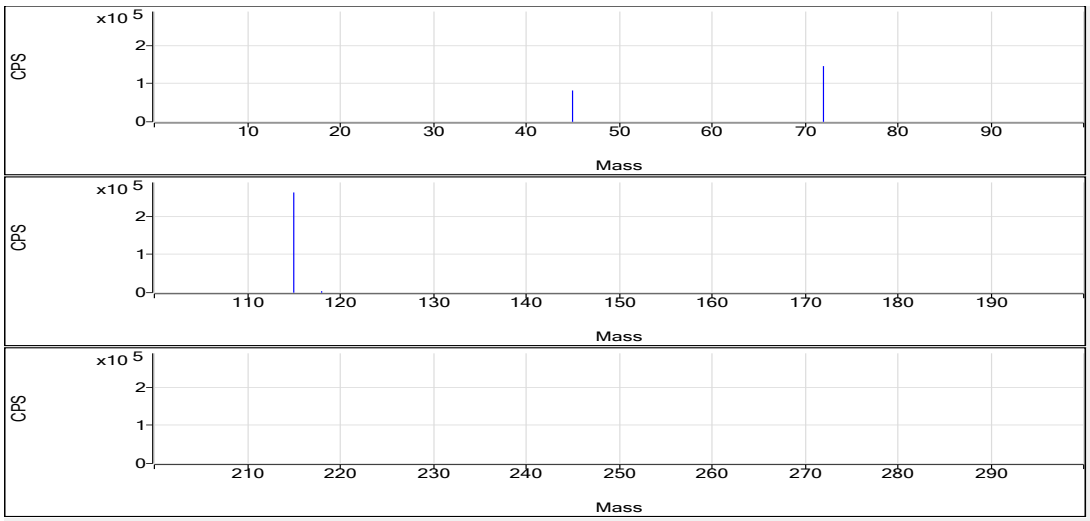
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1585679.66	1.0	97.4	Analog	0.1000	3
No Gas	Ge	72	1844720.91	1.0	98.5	Analog	0.1000	3
H2	Sc	45	82249.31	1.1	94.6	Pulse	0.1000	3
H2	Ge	72	146161.91	1.6	96.6	Pulse	0.1000	3
H2	In	115	263016.76	1.5	97.7	Pulse	0.1000	3
He	Sc	45	21105.69	1.3	98.9	Pulse	0.1000	3
He	Ge	72	80999.79	1.0	100.6	Pulse	0.1000	3
He	In	115	36512.11	0.8	100.1	Pulse	0.1000	3
He	Tb	159	237290.20	0.9	96.8	Pulse	0.1000	3
He	Bi	209	215716.37	0.3	97.6	Pulse	0.1000	3

No Gas

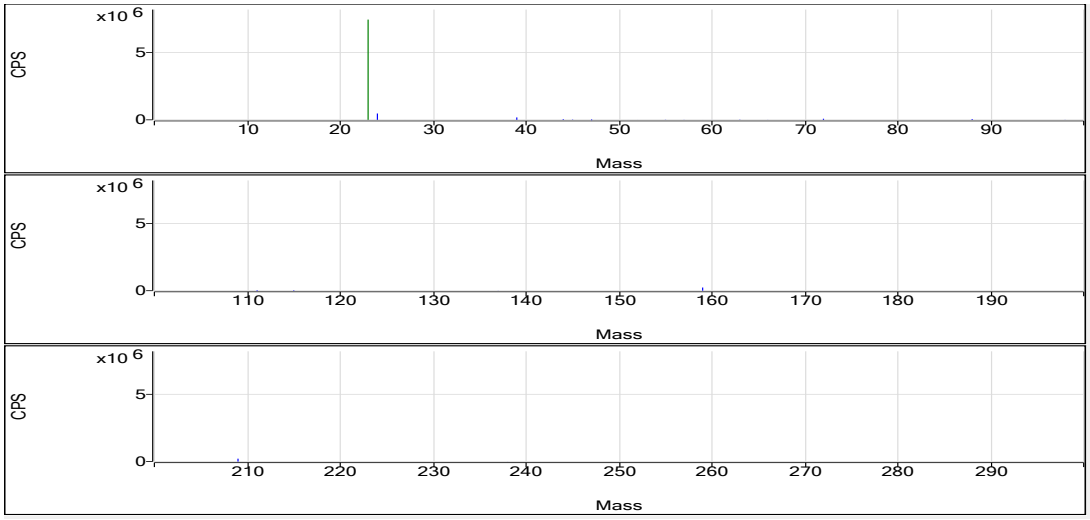


H2



Quantitation Report

He



Quantitation Report

Data File Name	117SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 2:50:41 PM
Sample Name	410-60947-C-1-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

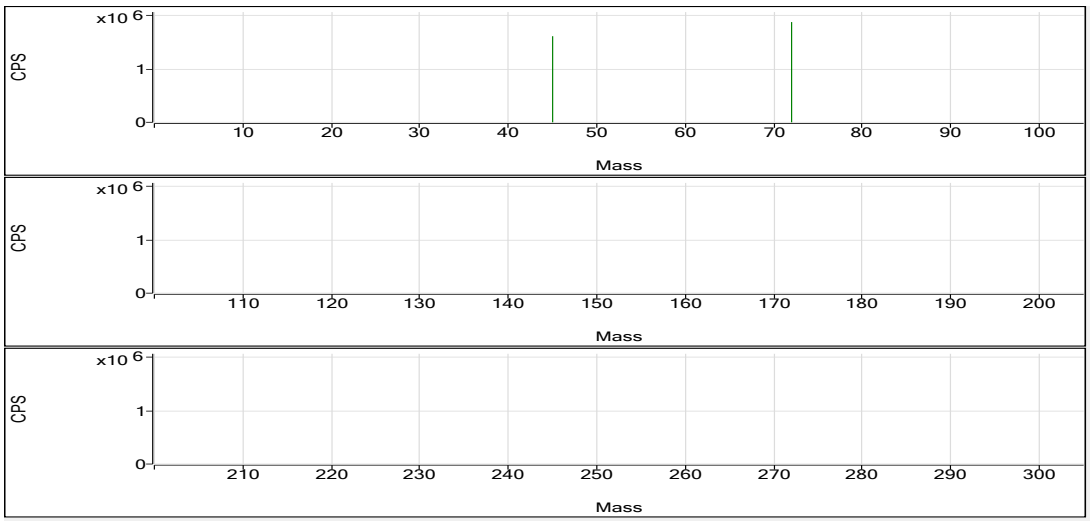
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.003	ppb	9.0	34.00	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.210	ppb	16.8	9.56	0.0001	Pulse	1.5000	3
Na	23	45	He	80651.549	ppb	1.2	8146823.63	386.8105	Analog	0.1000	3
Mg	24	45	He	8256.576	ppb	0.7	385711.80	18.3131	Pulse	0.1000	3
Al	27	45	He	609.398	ppb	2.1	7078.84	0.3361	Pulse	0.1000	3
K	39	45	He	9601.088	ppb	0.2	223047.10	10.5899	Pulse	0.1000	3
Ca	44	45	He	50306.389	ppb	0.8	68897.13	3.2711	Pulse	0.1000	3
Ti	47	45	He	14.510	ppb	82.2	170.04	0.0081	Pulse	0.1000	3
V	51	45	He	5.348	ppb	0.3	3503.11	0.1663	Pulse	0.5000	3
Cr	52	45	He	1.604	ppb	12.2	1996.87	0.0948	Pulse	0.1000	3
Mn	55	45	He	211.808	ppb	1.3	60192.80	2.8580	Pulse	0.1000	3
Fe	57	45	He	1463.018	ppb	1.5	22441.43	1.0655	Pulse	0.1000	3
Co	59	45	He	1.225	ppb	9.5	2363.61	0.1122	Pulse	0.1000	3
Ni	60	72	He	4.909	ppb	8.4	2780.40	0.0342	Pulse	0.1000	3
Cu	63	72	He	13.190	ppb	0.9	22137.77	0.2720	Pulse	0.1000	3
Zn	66	72	He	236.833	ppb	2.8	33319.63	0.4095	Pulse	0.1000	3
As	75	72	He	0.913	ppb	7.0	119.33	0.0015	Pulse	0.5000	3
Sr	88	72	He	271.049	ppb	1.4	85666.12	1.0526	Pulse	0.1000	3
Mo	98	72	He	5.584	ppb	0.6	7028.66	0.0864	Pulse	0.1000	3
Ag	107	115	He	0.010	ppb	56.6	46.67	0.0013	Pulse	0.1000	3
Cd	111	115	He	0.350	ppb	4.8	89.33	0.0025	Pulse	0.5000	3
Sn	120	115	He	0.872	ppb	38.4	1310.12	0.0361	Pulse	0.1000	3
Sb	121	115	He	1.265	ppb	4.1	753.39	0.0207	Pulse	0.1000	3
Ba	137	115	He	57.666	ppb	2.2	10904.66	0.3002	Pulse	0.1000	3
Tl	205	209	He	0.008	ppb	59.1	136.67	0.0006	Pulse	0.1000	3
Pb	208	209	He	169.311	ppb	1.2	1732626.76	8.1965	Pulse	0.1000	3
U	238	209	He	0.264	ppb	5.2	3603.98	0.0170	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1612865.76	0.6	99.1	Analog	0.1000	3
No Gas	Ge	72	1877510.33	0.9	100.2	Analog	0.1000	3
H2	Sc	45	83409.43	0.5	96.0	Pulse	0.1000	3
H2	Ge	72	146050.99	0.5	96.5	Pulse	0.1000	3
H2	In	115	262026.19	0.4	97.3	Pulse	0.1000	3
He	Sc	45	21062.43	0.8	98.7	Pulse	0.1000	3
He	Ge	72	81384.47	0.8	101.1	Pulse	0.1000	3
He	In	115	36331.54	2.6	99.7	Pulse	0.1000	3
He	Tb	159	240353.10	1.2	98.1	Pulse	0.1000	3
He	Bi	209	211394.21	0.6	95.7	Pulse	0.1000	3

No Gas



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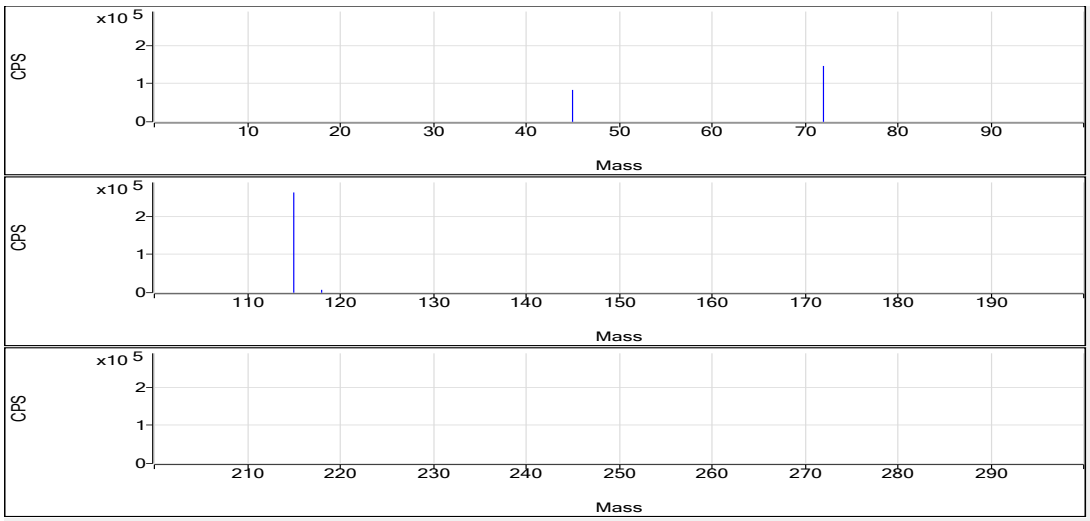
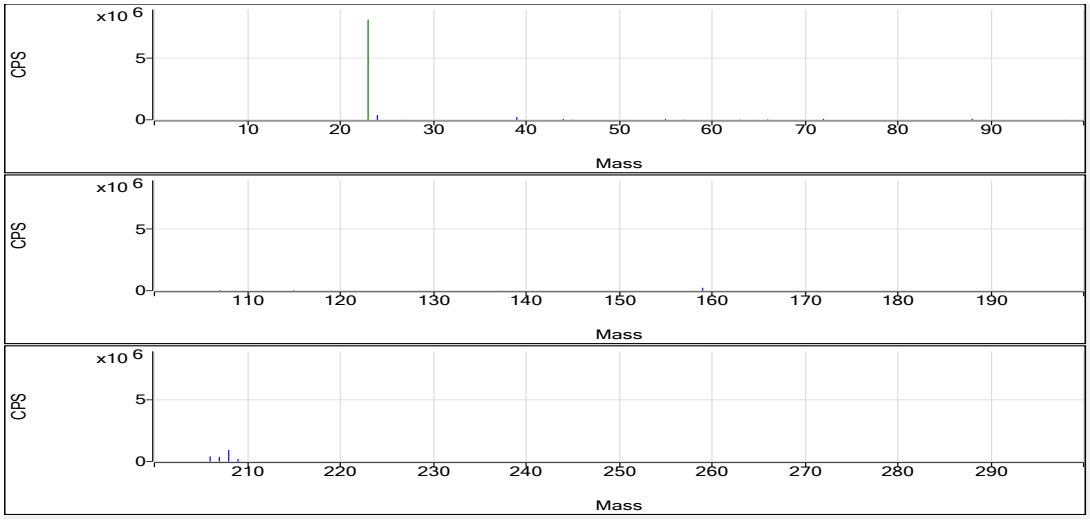


Quantitation Report

He



Quantitation Report

Data File Name	118SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 2:52:42 PM
Sample Name	410-61202-O-4-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

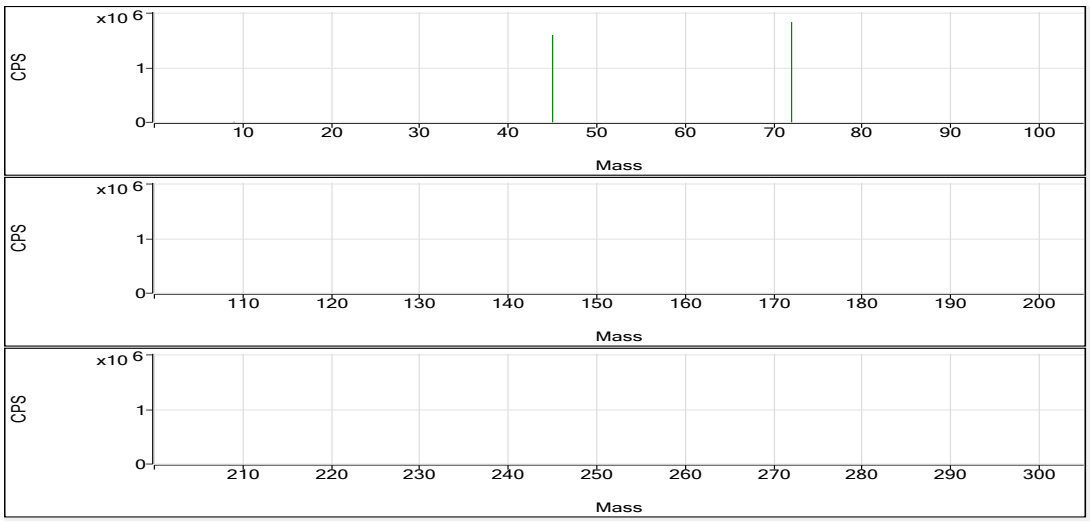
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	13.756	ppb	1.6	10744.57	0.0067	Pulse	0.5000	3
Se	78	72	H2	0.106	ppb	55.5	5.33	0.0000	Pulse	1.5000	3
Na	23	45	He	194640.202	ppb	2.6	19872976.79	932.9325	Analog	0.1000	3
Mg	24	45	He	51545.313	ppb	2.2	2434992.52	114.3044	Analog	0.1000	3
Al	27	45	He	17064.210	ppb	2.4	199654.14	9.3725	Pulse	0.1000	3
K	39	45	He	1130.246	ppb	3.8	30639.53	1.4385	Pulse	0.1000	3
Ca	44	45	He	81397.025	ppb	2.4	112704.60	5.2907	Pulse	0.1000	3
Ti	47	45	He	0.000	ppb	N/A	0.00	0.0000	Pulse	0.1000	3
V	51	45	He	0.717	ppb	14.9	688.02	0.0323	Pulse	0.5000	3
Cr	52	45	He	0.933	ppb	15.3	1453.46	0.0683	Pulse	0.1000	3
Mn	55	45	He	2017.795	ppb	2.2	579604.90	27.2079	Pulse	0.1000	3
Fe	57	45	He	10214.734	ppb	1.8	158175.78	7.4247	Pulse	0.1000	3
Co	59	45	He	53.837	ppb	2.0	101270.75	4.7537	Pulse	0.1000	3
Ni	60	72	He	100.109	ppb	0.8	54406.63	0.6710	Pulse	0.1000	3
Cu	63	72	He	3.586	ppb	3.6	6198.21	0.0764	Pulse	0.1000	3
Zn	66	72	He	359.989	ppb	1.7	50419.08	0.6220	Pulse	0.1000	3
As	75	72	He	3.291	ppb	3.6	336.01	0.0041	Pulse	0.5000	3
Sr	88	72	He	832.489	ppb	1.3	262014.63	3.2321	Pulse	0.1000	3
Mo	98	72	He	0.027	ppb	79.7	60.00	0.0007	Pulse	0.1000	3
Ag	107	115	He	-0.001	ppb	N/A	16.67	0.0005	Pulse	0.1000	3
Cd	111	115	He	6.694	ppb	7.0	1622.77	0.0460	Pulse	0.5000	3
Sn	120	115	He	-0.202	ppb	N/A	583.37	0.0165	Pulse	0.1000	3
Sb	121	115	He	0.002	ppb	1755.6	26.67	0.0008	Pulse	0.1000	3
Ba	137	115	He	25.870	ppb	4.3	4757.69	0.1347	Pulse	0.1000	3
Tl	205	209	He	0.141	ppb	12.1	1120.09	0.0054	Pulse	0.1000	3
Pb	208	209	He	0.388	ppb	6.4	4670.51	0.0227	Pulse	0.1000	3
U	238	209	He	21.273	ppb	1.0	278659.21	1.3552	Pulse	0.1000	3

ISTD Table:

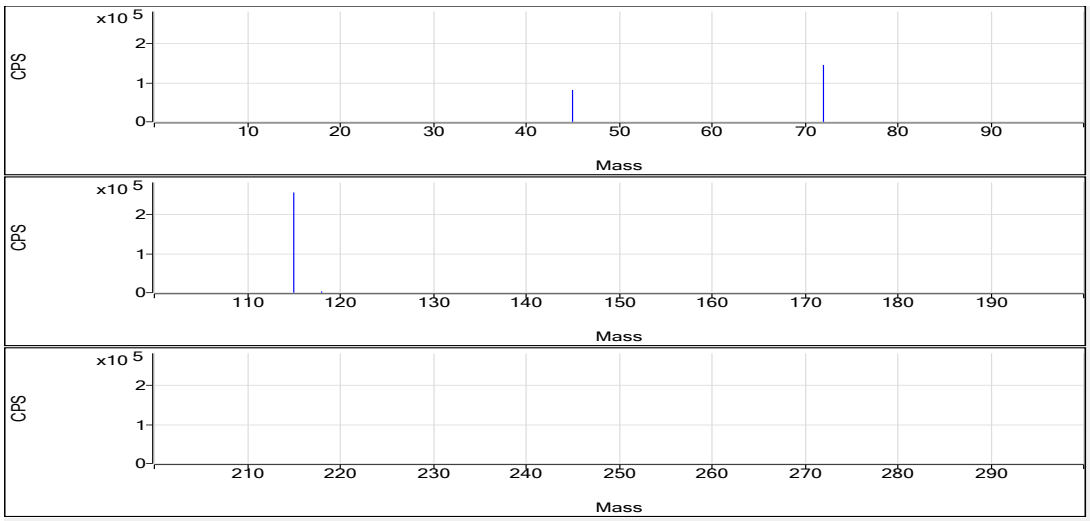
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1605859.40	1.1	98.7	Analog	0.1000	3
No Gas	Ge	72	1842956.33	1.1	98.4	Analog	0.1000	3
H2	Sc	45	81418.34	1.0	93.7	Pulse	0.1000	3
H2	Ge	72	145400.72	1.1	96.1	Pulse	0.1000	3
H2	In	115	256382.44	0.5	95.2	Pulse	0.1000	3
He	Sc	45	21309.58	2.2	99.8	Pulse	0.1000	3
He	Ge	72	81079.92	2.0	100.7	Pulse	0.1000	3
He	In	115	35322.55	1.2	96.9	Pulse	0.1000	3
He	Tb	159	286489.94	0.3	116.9	Pulse	0.1000	3
He	Bi	209	205632.64	0.9	93.1	Pulse	0.1000	3

No Gas

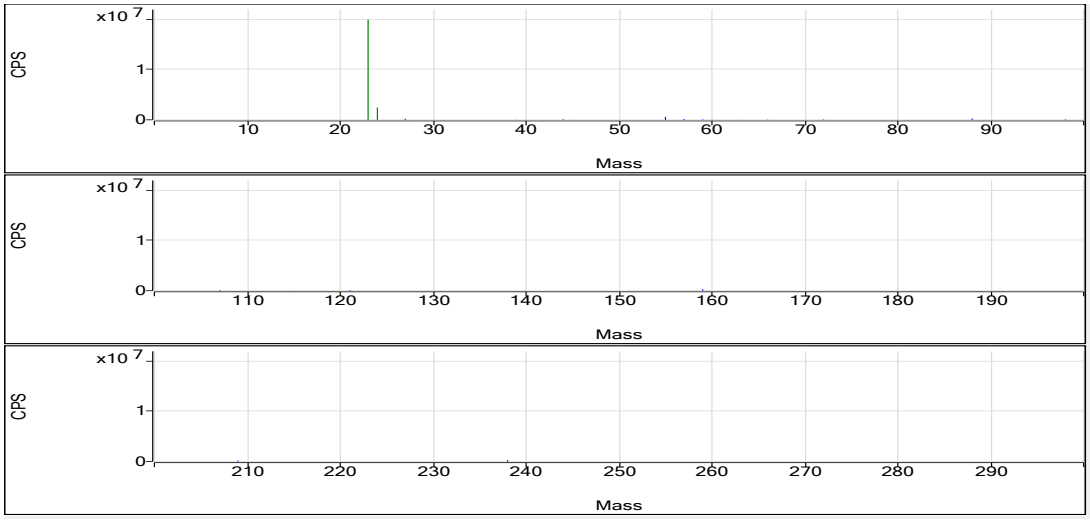


H2



Quantitation Report

He



Quantitation Report

Data File Name	119SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 2:54:48 PM
Sample Name	410-61202-O-5-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

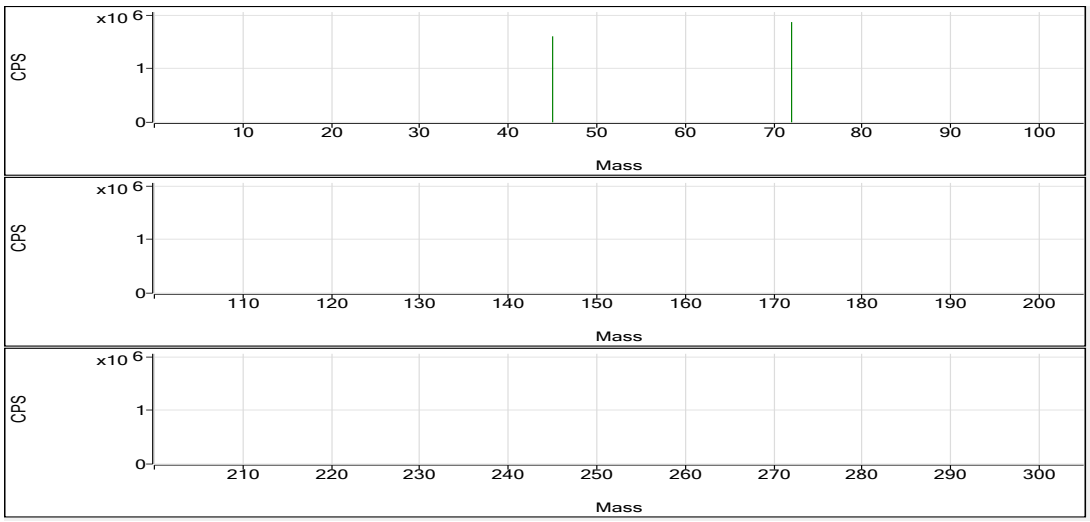
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	-0.021	ppb	N/A	15.33	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.012	ppb	84.2	1.55	0.0000	Pulse	1.5000	3
Na	23	45	He	6917.872	ppb	1.7	705644.34	33.5510	Pulse	0.1000	3
Mg	24	45	He	5290.904	ppb	0.7	246875.65	11.7368	Pulse	0.1000	3
Al	27	45	He	4.407	ppb	72.8	80.00	0.0038	Pulse	0.1000	3
K	39	45	He	10298.134	ppb	1.5	238569.92	11.3429	Pulse	0.1000	3
Ca	44	45	He	18806.189	ppb	1.9	25763.51	1.2249	Pulse	0.1000	3
Ti	47	45	He	0.278	ppb	173.2	3.33	0.0002	Pulse	0.1000	3
V	51	45	He	0.243	ppb	26.7	391.34	0.0186	Pulse	0.5000	3
Cr	52	45	He	0.152	ppb	247.8	790.29	0.0374	Pulse	0.1000	3
Mn	55	45	He	16.586	ppb	1.7	4750.94	0.2258	Pulse	0.1000	3
Fe	57	45	He	106.965	ppb	3.7	1686.83	0.0802	Pulse	0.1000	3
Co	59	45	He	0.037	ppb	31.8	156.67	0.0075	Pulse	0.1000	3
Ni	60	72	He	0.861	ppb	11.9	580.04	0.0071	Pulse	0.1000	3
Cu	63	72	He	0.659	ppb	11.0	1376.78	0.0168	Pulse	0.1000	3
Zn	66	72	He	3.438	ppb	11.0	550.03	0.0067	Pulse	0.1000	3
As	75	72	He	0.181	ppb	41.1	52.67	0.0006	Pulse	0.5000	3
Sr	88	72	He	85.974	ppb	3.4	27380.56	0.3342	Pulse	0.1000	3
Mo	98	72	He	0.277	ppb	18.9	376.69	0.0046	Pulse	0.1000	3
Ag	107	115	He	-0.001	ppb	N/A	16.67	0.0005	Pulse	0.1000	3
Cd	111	115	He	0.019	ppb	65.3	6.67	0.0002	Pulse	0.5000	3
Sn	120	115	He	-0.182	ppb	N/A	603.37	0.0169	Pulse	0.1000	3
Sb	121	115	He	0.113	ppb	41.3	90.00	0.0025	Pulse	0.1000	3
Ba	137	115	He	0.197	ppb	56.5	36.67	0.0010	Pulse	0.1000	3
Tl	205	209	He	0.001	ppb	403.2	80.00	0.0004	Pulse	0.1000	3
Pb	208	209	He	0.014	ppb	45.4	1003.38	0.0046	Pulse	0.1000	3
U	238	209	He	0.014	ppb	15.4	246.68	0.0011	Pulse	0.1000	3

ISTD Table:

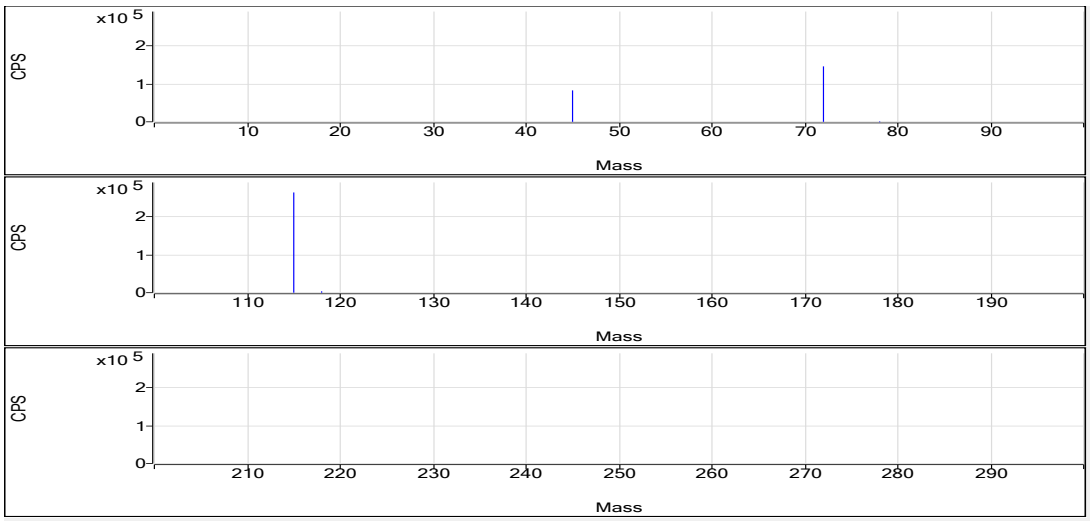
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1607381.23	0.9	98.8	Analog	0.1000	3
No Gas	Ge	72	1873555.02	1.1	100.0	Analog	0.1000	3
H2	Sc	45	82782.43	1.8	95.3	Pulse	0.1000	3
H2	Ge	72	146017.17	0.8	96.5	Pulse	0.1000	3
H2	In	115	263979.61	1.2	98.1	Pulse	0.1000	3
He	Sc	45	21035.86	1.7	98.5	Pulse	0.1000	3
He	Ge	72	81955.12	1.5	101.8	Pulse	0.1000	3
He	In	115	35753.58	0.3	98.1	Pulse	0.1000	3
He	Tb	159	236938.70	1.0	96.7	Pulse	0.1000	3
He	Bi	209	218359.68	0.8	98.8	Pulse	0.1000	3

No Gas

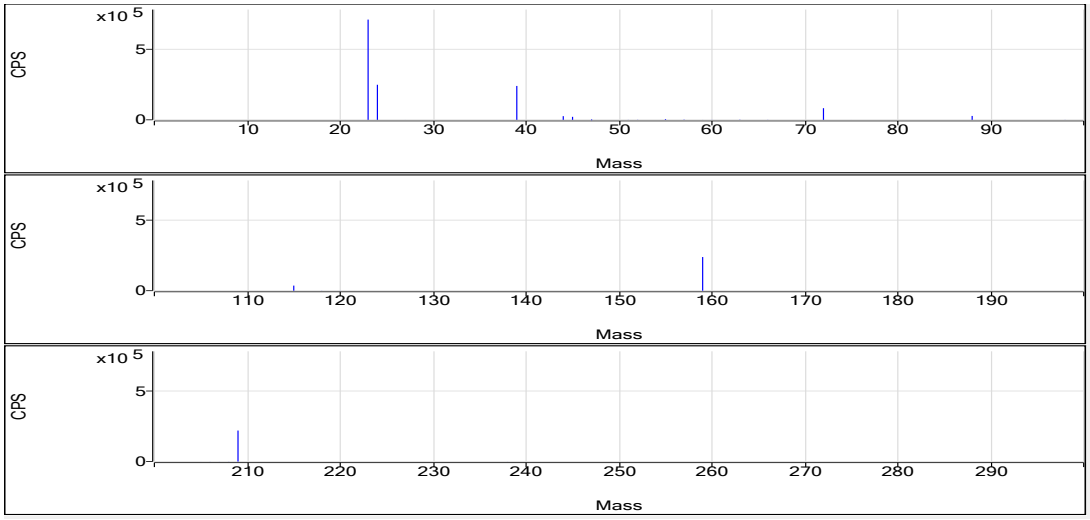


H2



Quantitation Report

He



Quantitation Report

Data File Name	120_CCV.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 2:56:51 PM
Sample Name	CCV 1942322
Sample Type	CCV
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

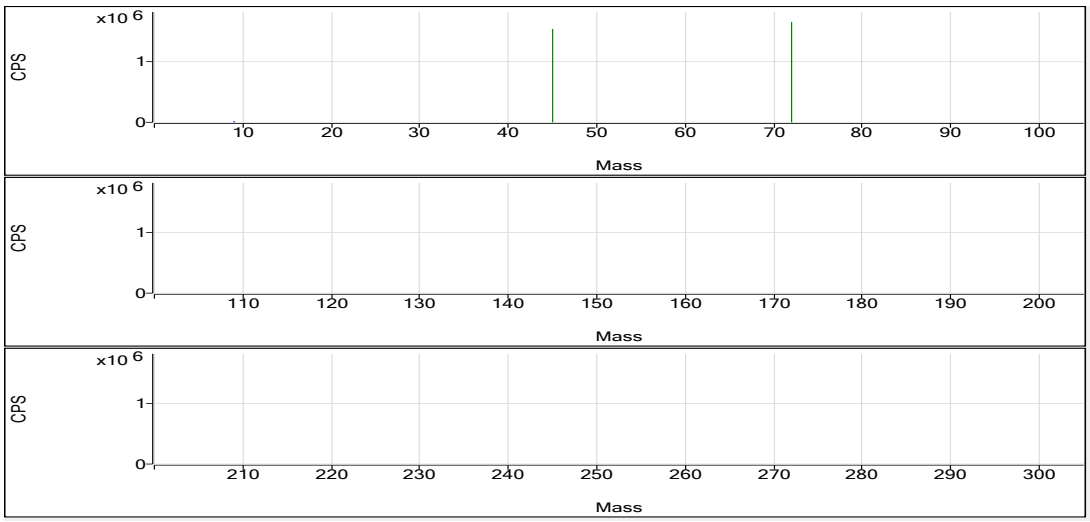
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	29.706	ppb	0.8	22352.71	0.0144	Pulse	0.5000	3
Se	78	72	H2	31.367	ppb	0.8	1114.27	0.0087	Pulse	1.5000	3
Na	23	45	He	5079.636	ppb	4.2	496649.25	24.7440	Pulse	0.1000	3
Mg	24	45	He	5253.603	ppb	4.0	233934.31	11.6541	Pulse	0.1000	3
Al	27	45	He	5219.993	ppb	5.4	57546.30	2.8680	Pulse	0.1000	3
K	39	45	He	5292.274	ppb	4.6	119115.82	5.9349	Pulse	0.1000	3
Ca	44	45	He	5231.295	ppb	4.8	6885.17	0.3431	Pulse	0.1000	3
Ti	47	45	He	304.215	ppb	6.2	3410.51	0.1699	Pulse	0.1000	3
V	51	45	He	314.188	ppb	4.9	182643.68	9.1015	Pulse	0.5000	3
Cr	52	45	He	314.765	ppb	4.7	250318.61	12.4728	Pulse	0.1000	3
Mn	55	45	He	313.194	ppb	5.2	84778.70	4.2249	Pulse	0.1000	3
Fe	57	45	He	5233.719	ppb	4.3	76379.00	3.8054	Pulse	0.1000	3
Co	59	45	He	298.312	ppb	3.7	528383.51	26.3215	Pulse	0.1000	3
Ni	60	72	He	315.734	ppb	1.1	155276.67	2.1134	Pulse	0.1000	3
Cu	63	72	He	305.247	ppb	1.3	456999.60	6.2201	Pulse	0.1000	3
Zn	66	72	He	321.071	ppb	1.9	40762.22	0.5548	Pulse	0.1000	3
As	75	72	He	312.126	ppb	1.5	25864.68	0.3520	Pulse	0.5000	3
Sr	88	72	He	31.351	ppb	4.8	8973.20	0.1222	Pulse	0.1000	3
Mo	98	72	He	31.027	ppb	1.6	35148.05	0.4783	Pulse	0.1000	3
Ag	107	115	He	31.271	ppb	1.5	84636.12	2.3982	Pulse	0.1000	3
Cd	111	115	He	31.131	ppb	0.8	7538.07	0.2136	Pulse	0.5000	3
Sn	120	115	He	31.908	ppb	1.1	21283.70	0.6030	Pulse	0.1000	3
Sb	121	115	He	31.446	ppb	3.2	17585.01	0.4983	Pulse	0.1000	3
Ba	137	115	He	314.711	ppb	2.2	57839.76	1.6386	Pulse	0.1000	3
Tl	205	209	He	30.400	ppb	1.0	231646.75	1.0983	Pulse	0.1000	3
Pb	208	209	He	30.420	ppb	0.3	311279.57	1.4759	Pulse	0.1000	3
U	238	209	He	259.395	ppb	1.6	3484339.95	16.5217	Analog	0.1000	3

ISTD Table:

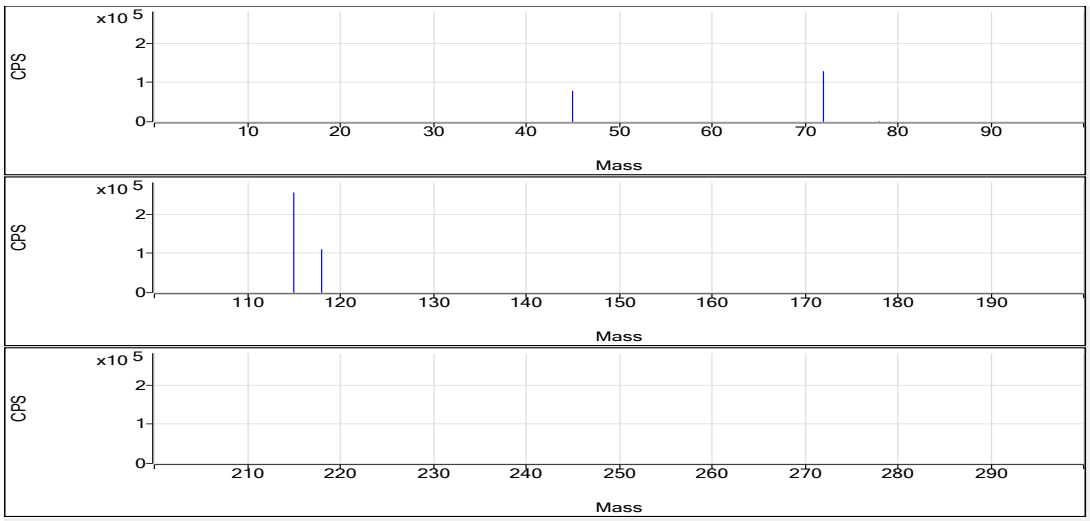
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1549503.26	1.5	95.2	Analog	0.1000	3
No Gas	Ge	72	1664010.81	0.8	88.8	Analog	0.1000	3
H2	Sc	45	78831.10	0.5	90.7	Pulse	0.1000	3
H2	Ge	72	128646.16	0.8	85.0	Pulse	0.1000	3
H2	In	115	254651.17	1.3	94.6	Pulse	0.1000	3
He	Sc	45	20094.50	4.1	94.1	Pulse	0.1000	3
He	Ge	72	73479.26	1.2	91.3	Pulse	0.1000	3
He	In	115	35295.55	1.1	96.8	Pulse	0.1000	3
He	Tb	159	235302.48	0.6	96.0	Pulse	0.1000	3
He	Bi	209	210906.47	0.9	95.4	Pulse	0.1000	3

No Gas

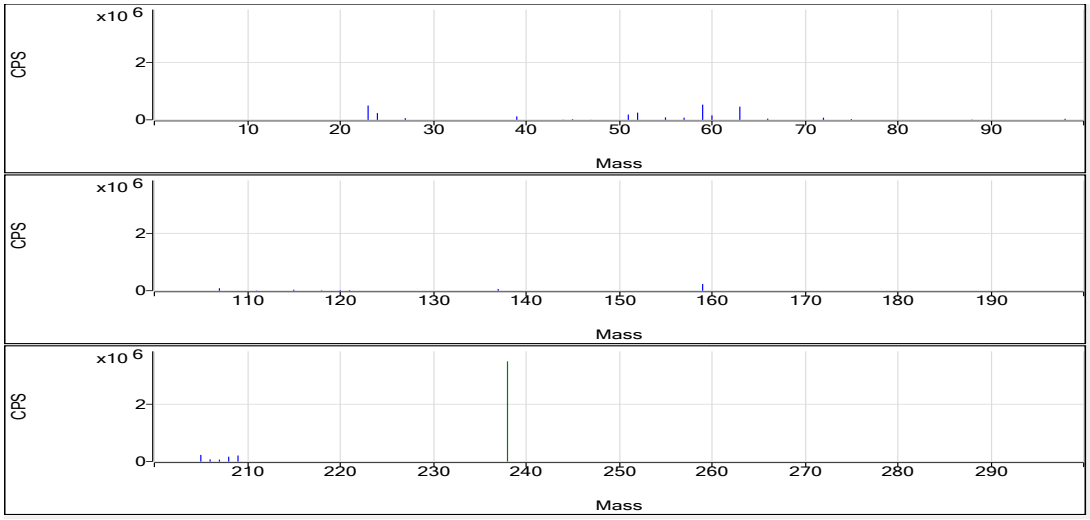


H2



Quantitation Report

He



Quantitation Report

Data File Name	121_CCB.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 2:58:52 PM
Sample Name	CCB 2014932
Sample Type	CCB
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

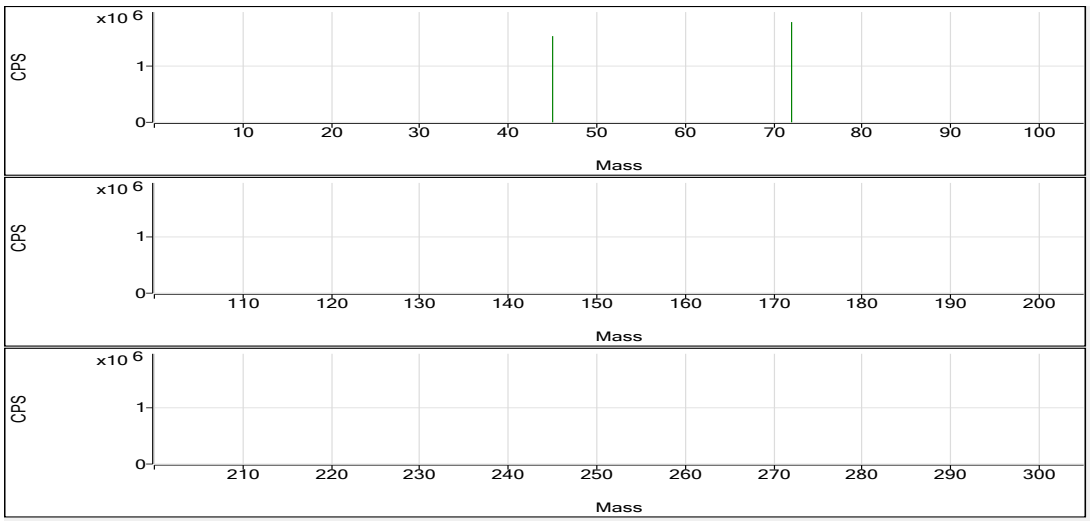
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	-0.012	ppb	N/A	21.33	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.069	ppb	40.1	3.56	0.0000	Pulse	1.5000	3
Na	23	45	He	24.162	ppb	28.2	10507.44	0.5231	Pulse	0.1000	3
Mg	24	45	He	5.960	ppb	20.0	353.35	0.0176	Pulse	0.1000	3
Al	27	45	He	1.668	ppb	110.4	46.67	0.0023	Pulse	0.1000	3
K	39	45	He	15.783	ppb	126.8	4710.93	0.2345	Pulse	0.1000	3
Ca	44	45	He	10.812	ppb	325.9	80.00	0.0040	Pulse	0.1000	3
Ti	47	45	He	0.299	ppb	173.2	3.33	0.0002	Pulse	0.1000	3
V	51	45	He	0.090	ppb	69.6	284.67	0.0142	Pulse	0.5000	3
Cr	52	45	He	0.091	ppb	86.5	703.38	0.0350	Pulse	0.1000	3
Mn	55	45	He	0.207	ppb	46.3	100.00	0.0050	Pulse	0.1000	3
Fe	57	45	He	4.785	ppb	37.7	120.01	0.0060	Pulse	0.1000	3
Co	59	45	He	0.059	ppb	57.2	190.01	0.0095	Pulse	0.1000	3
Ni	60	72	He	0.117	ppb	141.1	163.34	0.0021	Pulse	0.1000	3
Cu	63	72	He	0.037	ppb	103.3	320.01	0.0041	Pulse	0.1000	3
Zn	66	72	He	-0.030	ppb	N/A	56.67	0.0007	Pulse	0.1000	3
As	75	72	He	0.102	ppb	75.0	42.67	0.0006	Pulse	0.5000	3
Sr	88	72	He	0.048	ppb	178.0	50.00	0.0006	Pulse	0.1000	3
Mo	98	72	He	0.032	ppb	39.6	63.33	0.0008	Pulse	0.1000	3
Ag	107	115	He	0.003	ppb	197.5	26.67	0.0008	Pulse	0.1000	3
Cd	111	115	He	-0.005	ppb	N/A	0.67	0.0000	Pulse	0.5000	3
Sn	120	115	He	0.090	ppb	86.3	763.38	0.0218	Pulse	0.1000	3
Sb	121	115	He	0.014	ppb	261.9	33.33	0.0010	Pulse	0.1000	3
Ba	137	115	He	0.182	ppb	91.6	33.33	0.0009	Pulse	0.1000	3
Tl	205	209	He	0.019	ppb	45.6	216.68	0.0010	Pulse	0.1000	3
Pb	208	209	He	-0.005	ppb	N/A	780.05	0.0037	Pulse	0.1000	3
U	238	209	He	0.070	ppb	5.4	996.75	0.0047	Pulse	0.1000	3

ISTD Table:

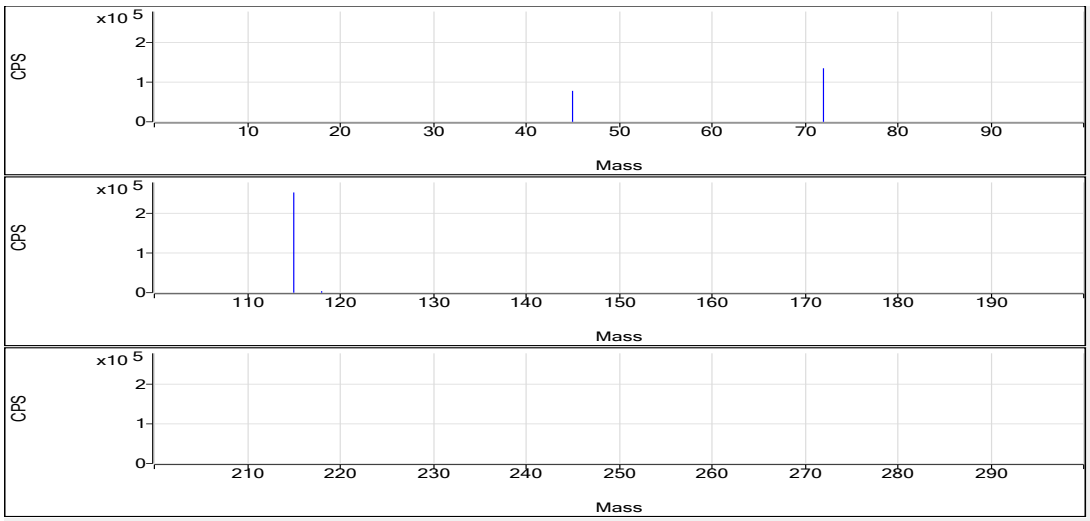
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1531122.11	0.8	94.1	Analog	0.1000	3
No Gas	Ge	72	1780646.17	0.4	95.1	Analog	0.1000	3
H2	Sc	45	78012.77	3.6	89.8	Pulse	0.1000	3
H2	Ge	72	134893.05	1.6	89.1	Pulse	0.1000	3
H2	In	115	252484.27	0.8	93.8	Pulse	0.1000	3
He	Sc	45	20084.42	0.9	94.1	Pulse	0.1000	3
He	Ge	72	77282.50	1.4	96.0	Pulse	0.1000	3
He	In	115	34941.44	1.0	95.8	Pulse	0.1000	3
He	Tb	159	232105.52	1.7	94.7	Pulse	0.1000	3
He	Bi	209	211324.67	0.2	95.6	Pulse	0.1000	3

No Gas

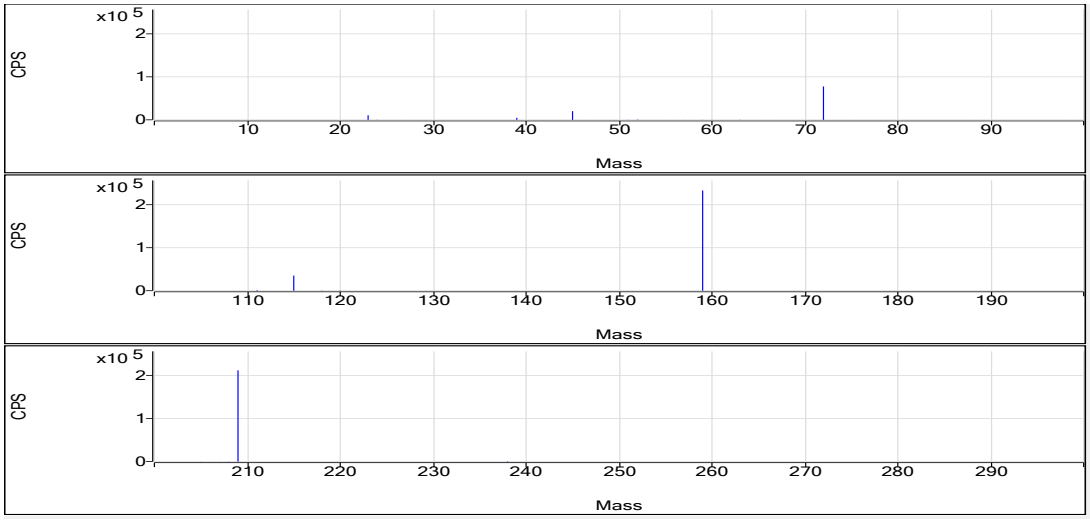


H2



Quantitation Report

He



Quantitation Report

Data File Name	122SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 3:00:54 PM
Sample Name	MB 410-191168/1-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

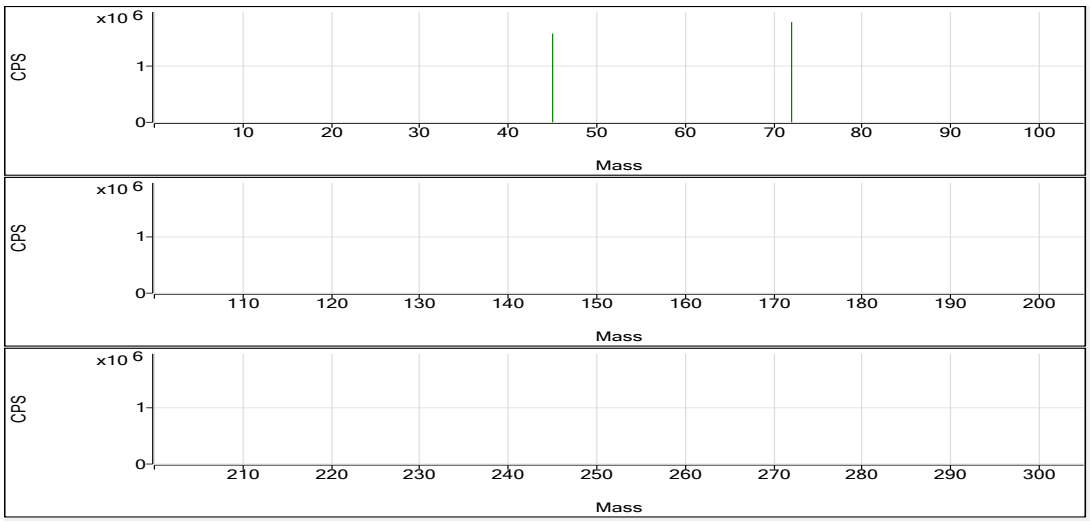
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	-0.021	ppb	N/A	14.67	0.0000	Pulse	0.5000	3
Se	78	72	H2	-0.004	ppb	N/A	0.89	0.0000	Pulse	1.5000	3
Na	23	45	He	15.916	ppb	38.5	10037.14	0.4836	Pulse	0.1000	3
Mg	24	45	He	3.315	ppb	24.9	243.34	0.0117	Pulse	0.1000	3
Al	27	45	He	-0.790	ppb	N/A	20.00	0.0010	Pulse	0.1000	3
K	39	45	He	25.761	ppb	18.7	5094.41	0.2452	Pulse	0.1000	3
Ca	44	45	He	-8.444	ppb	N/A	56.67	0.0027	Pulse	0.1000	3
Ti	47	45	He	0.000	ppb	N/A	0.00	0.0000	Pulse	0.1000	3
V	51	45	He	-0.061	ppb	N/A	204.00	0.0098	Pulse	0.5000	3
Cr	52	45	He	-0.065	ppb	N/A	600.03	0.0289	Pulse	0.1000	3
Mn	55	45	He	0.218	ppb	23.1	106.67	0.0051	Pulse	0.1000	3
Fe	57	45	He	2.502	ppb	74.3	90.00	0.0043	Pulse	0.1000	3
Co	59	45	He	0.023	ppb	93.8	130.01	0.0063	Pulse	0.1000	3
Ni	60	72	He	0.028	ppb	183.6	120.00	0.0015	Pulse	0.1000	3
Cu	63	72	He	0.047	ppb	44.3	346.69	0.0044	Pulse	0.1000	3
Zn	66	72	He	0.250	ppb	43.3	96.67	0.0012	Pulse	0.1000	3
As	75	72	He	-0.031	ppb	N/A	32.00	0.0004	Pulse	0.5000	3
Sr	88	72	He	-0.042	ppb	N/A	23.33	0.0003	Pulse	0.1000	3
Mo	98	72	He	-0.010	ppb	N/A	13.33	0.0002	Pulse	0.1000	3
Ag	107	115	He	0.003	ppb	401.8	26.67	0.0007	Pulse	0.1000	3
Cd	111	115	He	-0.005	ppb	N/A	0.67	0.0000	Pulse	0.5000	3
Sn	120	115	He	-0.079	ppb	N/A	680.04	0.0188	Pulse	0.1000	3
Sb	121	115	He	-0.022	ppb	N/A	13.33	0.0004	Pulse	0.1000	3
Ba	137	115	He	0.036	ppb	173.2	6.67	0.0002	Pulse	0.1000	3
Tl	205	209	He	-0.002	ppb	N/A	60.00	0.0003	Pulse	0.1000	3
Pb	208	209	He	-0.017	ppb	N/A	680.03	0.0031	Pulse	0.1000	3
U	238	209	He	0.028	ppb	13.1	440.02	0.0020	Pulse	0.1000	3

ISTD Table:

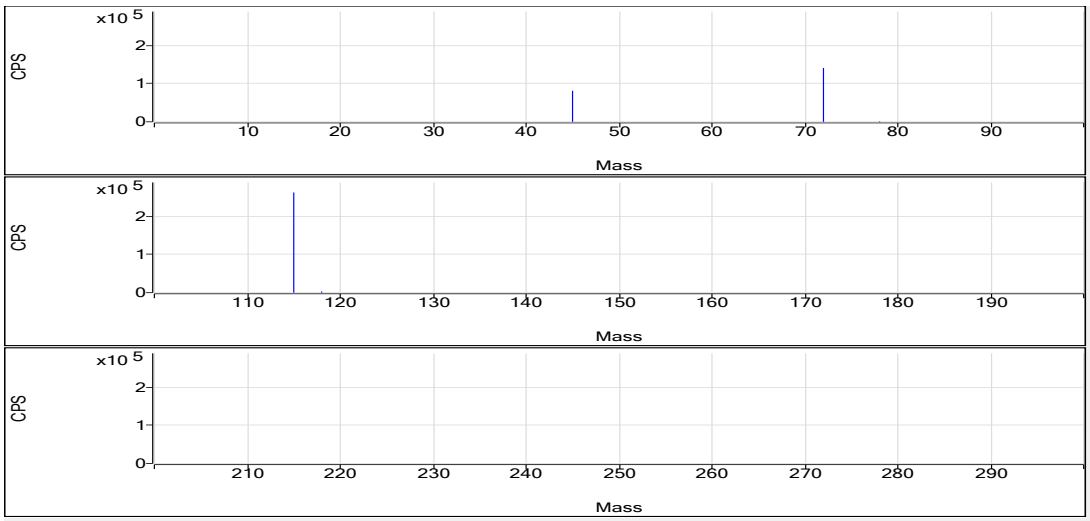
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1576341.90	0.7	96.9	Analog	0.1000	3
No Gas	Ge	72	1781193.10	1.0	95.1	Analog	0.1000	3
H2	Sc	45	80992.76	0.7	93.2	Pulse	0.1000	3
H2	Ge	72	140639.87	1.4	92.9	Pulse	0.1000	3
H2	In	115	261631.83	1.2	97.2	Pulse	0.1000	3
He	Sc	45	20768.77	2.2	97.3	Pulse	0.1000	3
He	Ge	72	79457.49	1.9	98.7	Pulse	0.1000	3
He	In	115	36224.59	1.7	99.4	Pulse	0.1000	3
He	Tb	159	237541.56	0.1	96.9	Pulse	0.1000	3
He	Bi	209	219182.65	0.4	99.2	Pulse	0.1000	3

No Gas

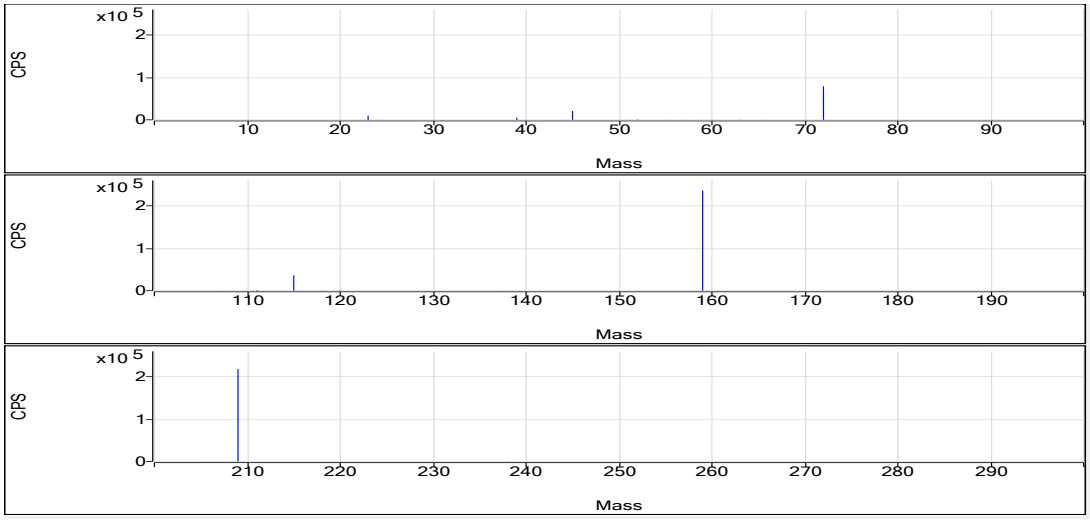


H2



Quantitation Report

He



Quantitation Report

Data File Name	123SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 3:02:56 PM
Sample Name	LCS 410-191168/2-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

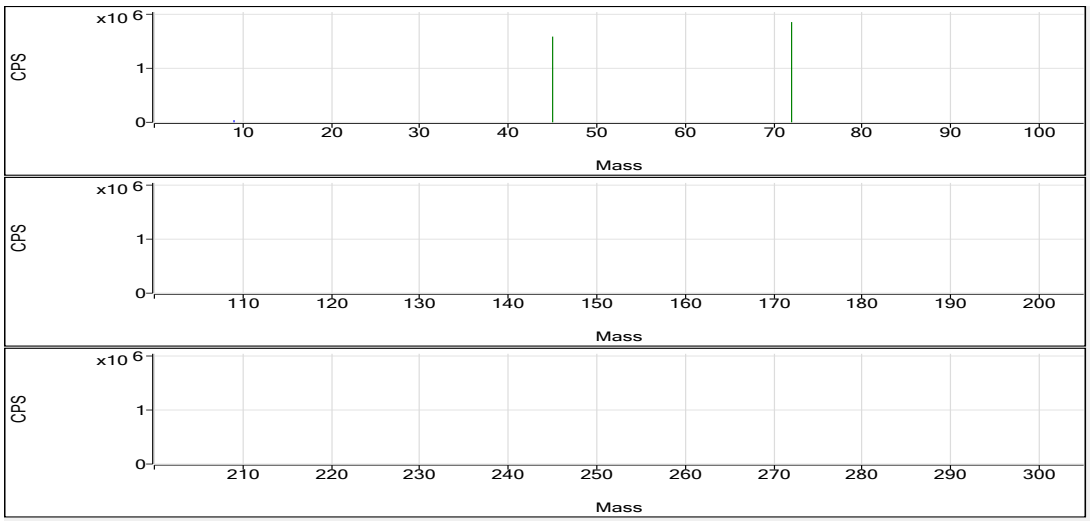
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	51.176	ppb	0.2	39443.85	0.0248	Pulse	0.5000	3
Se	78	72	H2	95.324	ppb	0.3	3833.63	0.0263	Pulse	1.5000	3
Na	23	45	He	4865.285	ppb	1.1	513895.24	23.7170	Pulse	0.1000	3
Mg	24	45	He	5073.529	ppb	1.0	243872.87	11.2548	Pulse	0.1000	3
Al	27	45	He	5058.311	ppb	1.7	60217.13	2.7793	Pulse	0.1000	3
K	39	45	He	5167.505	ppb	1.3	125674.12	5.8001	Pulse	0.1000	3
Ca	44	45	He	5019.260	ppb	2.1	7135.29	0.3293	Pulse	0.1000	3
Ti	47	45	He	503.392	ppb	1.8	6091.49	0.2811	Pulse	0.1000	3
V	51	45	He	501.600	ppb	0.8	314705.59	14.5237	Pulse	0.5000	3
Cr	52	45	He	492.115	ppb	1.1	422148.96	19.4827	Pulse	0.1000	3
Mn	55	45	He	496.998	ppb	1.1	145243.94	6.7032	Pulse	0.1000	3
Fe	57	45	He	5022.988	ppb	2.1	79137.07	3.6523	Pulse	0.1000	3
Co	59	45	He	477.024	ppb	1.4	911927.38	42.0876	Pulse	0.1000	3
Ni	60	72	He	481.217	ppb	0.8	268360.92	3.2204	Pulse	0.1000	3
Cu	63	72	He	460.914	ppb	0.9	782519.78	9.3904	Pulse	0.1000	3
Zn	66	72	He	482.401	ppb	0.7	69438.64	0.8332	Pulse	0.1000	3
As	75	72	He	461.457	ppb	1.8	43352.04	0.5202	Pulse	0.5000	3
Sr	88	72	He	45.871	ppb	1.3	14878.36	0.1785	Pulse	0.1000	3
Mo	98	72	He	49.378	ppb	1.4	63420.22	0.7611	Pulse	0.1000	3
Ag	107	115	He	50.881	ppb	2.4	144056.84	3.9018	Pulse	0.1000	3
Cd	111	115	He	52.084	ppb	3.0	13190.95	0.3573	Pulse	0.5000	3
Sn	120	115	He	103.992	ppb	0.9	70881.37	1.9195	Pulse	0.1000	3
Sb	121	115	He	102.457	ppb	2.5	59876.89	1.6218	Pulse	0.1000	3
Ba	137	115	He	519.264	ppb	1.7	99825.67	2.7036	Pulse	0.1000	3
Tl	205	209	He	103.726	ppb	0.9	802115.46	3.7468	Pulse	0.1000	3
Pb	208	209	He	51.365	ppb	0.3	532937.42	2.4894	Pulse	0.1000	3
U	238	209	He	49.753	ppb	1.2	678450.51	3.1692	Pulse	0.1000	3

ISTD Table:

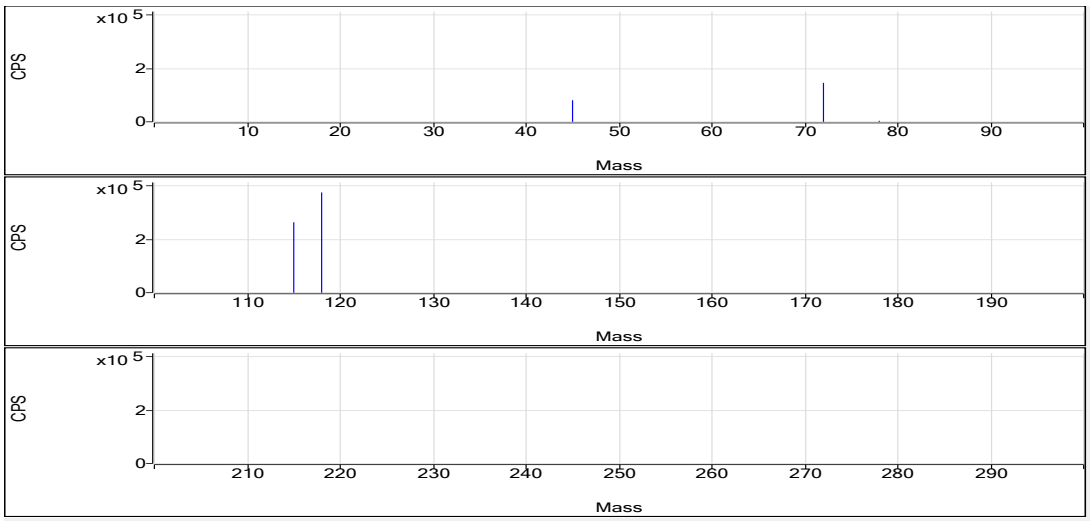
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1588140.50	0.5	97.6	Analog	0.1000	3
No Gas	Ge	72	1857379.92	0.1	99.2	Analog	0.1000	3
H2	Sc	45	80791.82	1.8	93.0	Pulse	0.1000	3
H2	Ge	72	145717.34	1.3	96.3	Pulse	0.1000	3
H2	In	115	263516.62	1.8	97.9	Pulse	0.1000	3
He	Sc	45	21670.11	1.5	101.5	Pulse	0.1000	3
He	Ge	72	83335.65	0.7	103.5	Pulse	0.1000	3
He	In	115	36929.85	1.6	101.3	Pulse	0.1000	3
He	Tb	159	238598.87	0.4	97.4	Pulse	0.1000	3
He	Bi	209	214088.32	0.6	96.9	Pulse	0.1000	3

No Gas

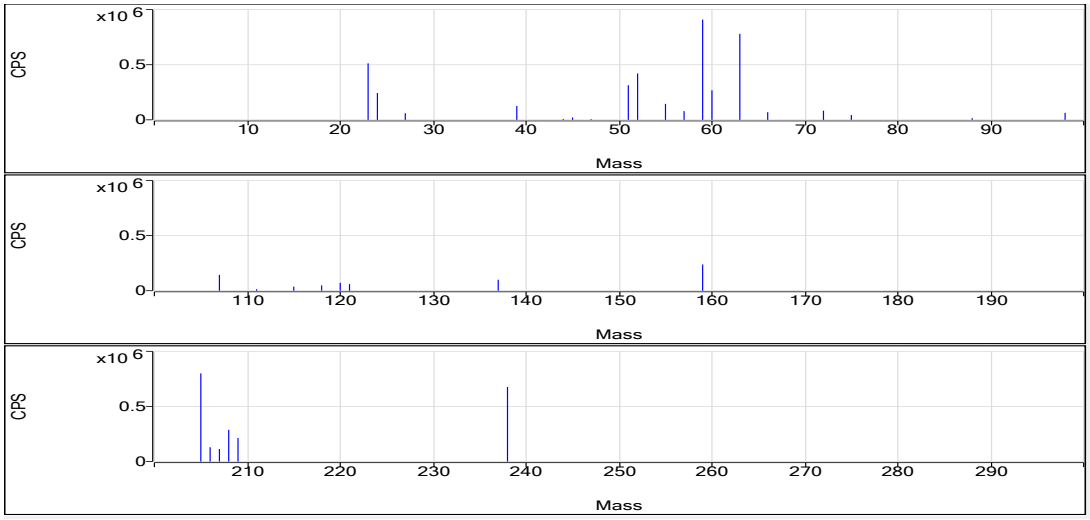


H2



Quantitation Report

He



Quantitation Report

Data File Name	124SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 3:04:58 PM
Sample Name	410-60944-P-1-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

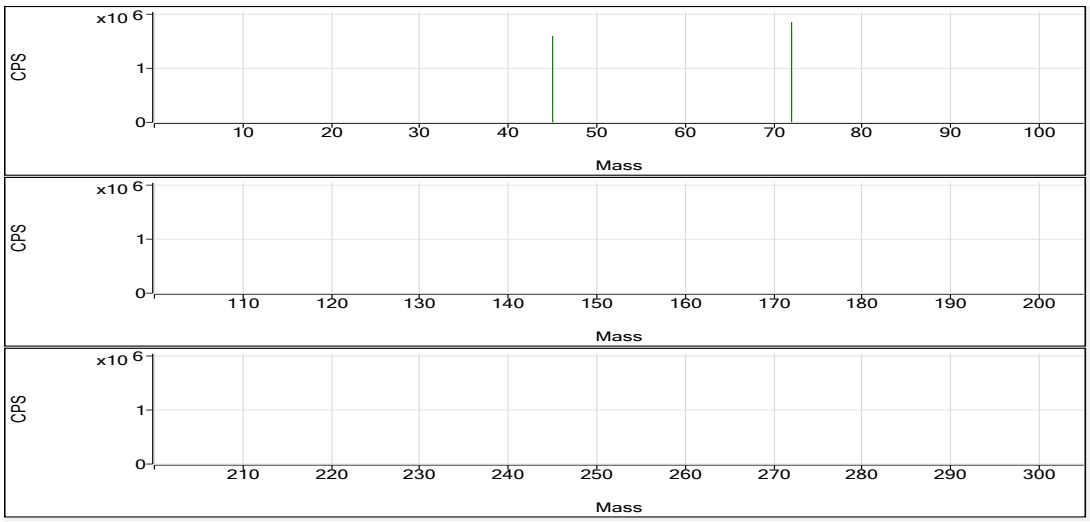
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.073	ppb	25.5	88.00	0.0001	Pulse	0.5000	3
Se	78	72	H2	0.338	ppb	10.9	14.67	0.0001	Pulse	1.5000	3
Na	23	45	He	5133.046	ppb	3.4	529328.34	24.9998	Pulse	0.1000	3
Mg	24	45	He	5149.994	ppb	2.3	241959.30	11.4243	Mix	0.1000	3
Al	27	45	He	2212.790	ppb	3.3	25798.95	1.2166	Pulse	0.1000	3
K	39	45	He	1633.237	ppb	3.4	41967.81	1.9819	Pulse	0.1000	3
Ca	44	45	He	7816.364	ppb	6.9	10811.01	0.5110	Pulse	0.1000	3
Ti	47	45	He	64.248	ppb	10.4	760.06	0.0359	Pulse	0.1000	3
V	51	45	He	29.381	ppb	2.5	18248.90	0.8616	Pulse	0.5000	3
Cr	52	45	He	14.070	ppb	22.8	12417.79	0.5876	Pulse	0.1000	3
Mn	55	45	He	69.373	ppb	6.7	19840.80	0.9375	Pulse	0.1000	3
Fe	57	45	He	2761.825	ppb	3.4	42547.36	2.0093	Pulse	0.1000	3
Co	59	45	He	3.083	ppb	5.1	5848.06	0.2762	Pulse	0.1000	3
Ni	60	72	He	37.101	ppb	4.2	20529.05	0.2495	Pulse	0.1000	3
Cu	63	72	He	54.835	ppb	1.0	92152.08	1.1202	Pulse	0.1000	3
Zn	66	72	He	114.482	ppb	1.1	16316.49	0.1983	Pulse	0.1000	3
As	75	72	He	2.258	ppb	5.5	245.33	0.0030	Pulse	0.5000	3
Sr	88	72	He	21.111	ppb	3.9	6778.53	0.0824	Pulse	0.1000	3
Mo	98	72	He	1.055	ppb	5.7	1363.45	0.0166	Pulse	0.1000	3
Ag	107	115	He	0.060	ppb	9.2	186.68	0.0052	Pulse	0.1000	3
Cd	111	115	He	0.306	ppb	19.5	78.00	0.0022	Pulse	0.5000	3
Sn	120	115	He	2.369	ppb	4.5	2300.30	0.0635	Pulse	0.1000	3
Sb	121	115	He	1.410	ppb	24.8	833.39	0.0230	Pulse	0.1000	3
Ba	137	115	He	26.065	ppb	5.5	4917.75	0.1357	Pulse	0.1000	3
Tl	205	209	He	0.089	ppb	10.4	783.39	0.0036	Pulse	0.1000	3
Pb	208	209	He	31.924	ppb	1.7	339753.14	1.5487	Pulse	0.1000	3
U	238	209	He	0.193	ppb	2.9	2747.10	0.0125	Pulse	0.1000	3

ISTD Table:

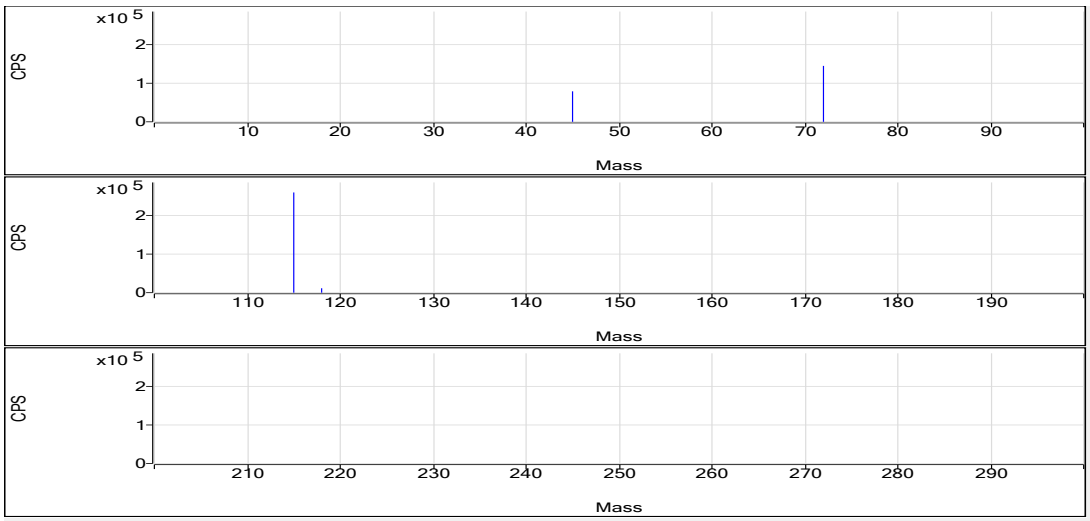
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1605536.80	0.7	98.7	Analog	0.1000	3
No Gas	Ge	72	1862491.07	1.6	99.4	Analog	0.1000	3
H2	Sc	45	79490.54	0.8	91.5	Pulse	0.1000	3
H2	Ge	72	145795.17	1.3	96.3	Pulse	0.1000	3
H2	In	115	261298.18	2.3	97.1	Pulse	0.1000	3
He	Sc	45	21189.47	3.5	99.3	Pulse	0.1000	3
He	Ge	72	82269.92	1.0	102.2	Pulse	0.1000	3
He	In	115	36228.11	1.1	99.4	Pulse	0.1000	3
He	Tb	159	237785.19	0.9	97.0	Pulse	0.1000	3
He	Bi	209	219405.39	1.0	99.3	Pulse	0.1000	3

No Gas

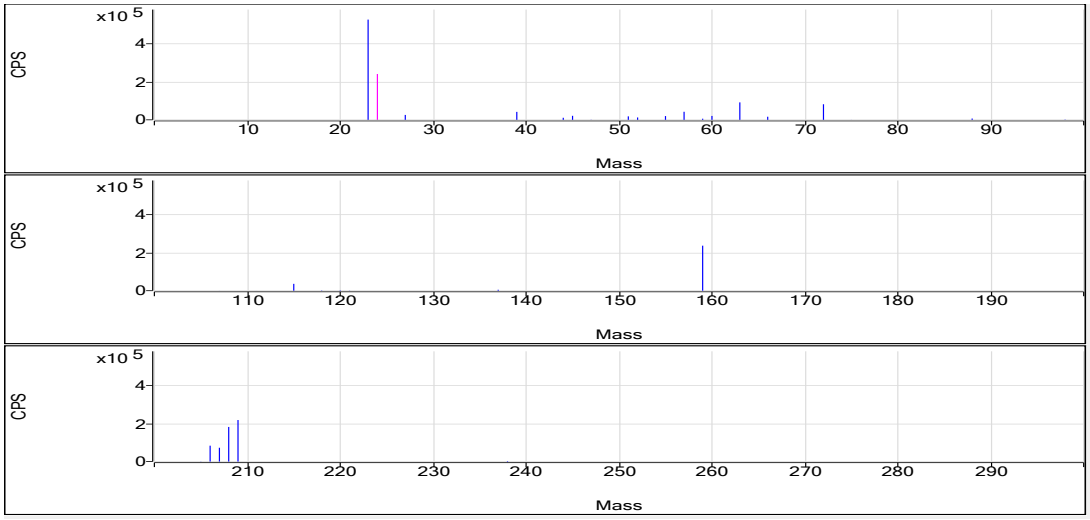


H2



Quantitation Report

He



Quantitation Report

Data File Name	125SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 3:07:00 PM
Sample Name	410-60944-P-1-A PDS
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

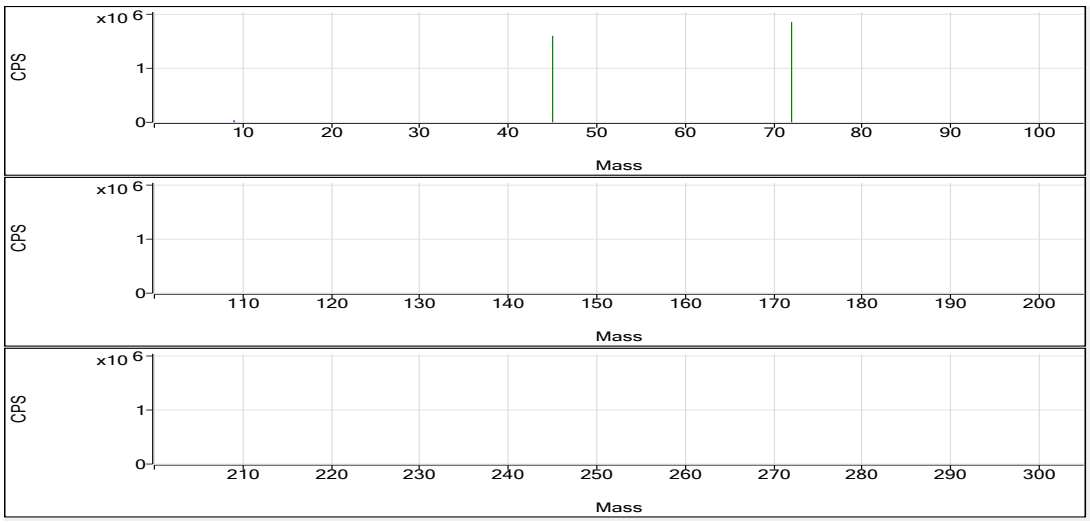
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	48.446	ppb	0.8	37623.17	0.0235	Pulse	0.5000	3
Se	78	72	H2	94.278	ppb	0.7	3811.85	0.0260	Pulse	1.5000	3
Na	23	45	He	9992.715	ppb	0.5	1023909.33	48.2826	Mix	0.1000	3
Mg	24	45	He	10033.959	ppb	2.3	471742.76	22.2543	Pulse	0.1000	3
Al	27	45	He	7326.577	ppb	2.5	85315.89	4.0249	Pulse	0.1000	3
K	39	45	He	6682.686	ppb	3.9	157611.31	7.4370	Pulse	0.1000	3
Ca	44	45	He	12639.115	ppb	5.1	17467.62	0.8243	Pulse	0.1000	3
Ti	47	45	He	581.405	ppb	4.4	6881.86	0.3247	Pulse	0.1000	3
V	51	45	He	527.807	ppb	2.2	323948.32	15.2818	Pulse	0.5000	3
Cr	52	45	He	507.050	ppb	2.1	425515.51	20.0731	Pulse	0.1000	3
Mn	55	45	He	560.622	ppb	3.5	160244.90	7.5610	Pulse	0.1000	3
Fe	57	45	He	7713.207	ppb	1.4	118874.38	5.6070	Pulse	0.1000	3
Co	59	45	He	478.377	ppb	2.8	894608.11	42.2070	Pulse	0.1000	3
Ni	60	72	He	508.333	ppb	2.9	278265.67	3.4018	Pulse	0.1000	3
Cu	63	72	He	509.885	ppb	1.8	849837.88	10.3877	Pulse	0.1000	3
Zn	66	72	He	590.151	ppb	1.9	83379.08	1.0192	Pulse	0.1000	3
As	75	72	He	460.994	ppb	2.3	42516.87	0.5197	Pulse	0.5000	3
Sr	88	72	He	67.673	ppb	3.6	21530.32	0.2632	Pulse	0.1000	3
Mo	98	72	He	49.517	ppb	2.2	62445.93	0.7632	Pulse	0.1000	3
Ag	107	115	He	32.318	ppb	3.6	90332.20	2.4785	Pulse	0.1000	3
Cd	111	115	He	51.521	ppb	4.2	12877.30	0.3534	Pulse	0.5000	3
Sn	120	115	He	104.858	ppb	3.7	70533.39	1.9353	Pulse	0.1000	3
Sb	121	115	He	103.115	ppb	2.5	59498.47	1.6322	Pulse	0.1000	3
Ba	137	115	He	542.541	ppb	3.5	102939.60	2.8248	Pulse	0.1000	3
Tl	205	209	He	99.071	ppb	0.8	777815.66	3.5786	Pulse	0.1000	3
Pb	208	209	He	80.788	ppb	1.3	850500.09	3.9131	Pulse	0.1000	3
U	238	209	He	47.820	ppb	0.3	662073.01	3.0460	Pulse	0.1000	3

ISTD Table:

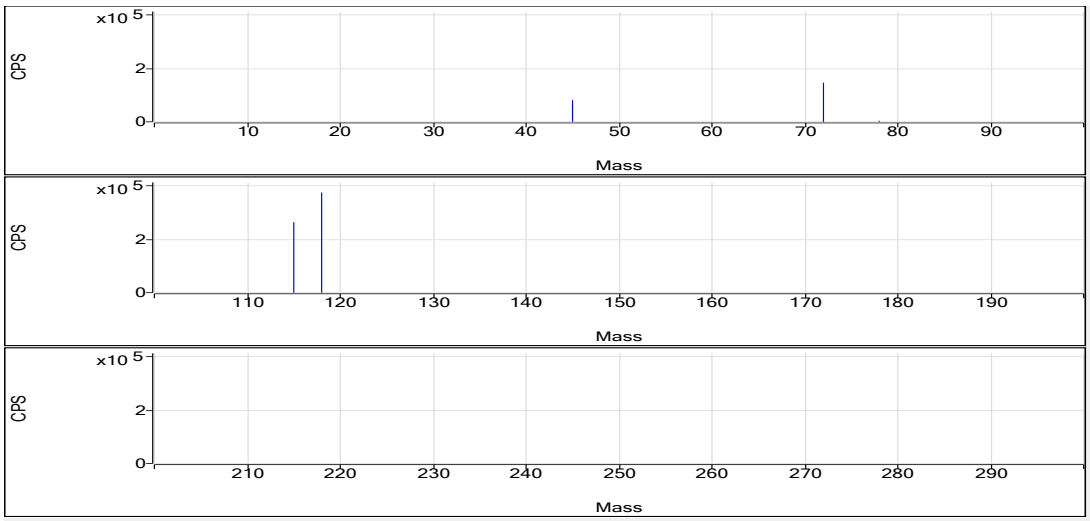
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1600167.26	1.0	98.3	Analog	0.1000	3
No Gas	Ge	72	1854557.27	1.2	99.0	Analog	0.1000	3
H2	Sc	45	81223.73	0.6	93.5	Pulse	0.1000	3
H2	Ge	72	146505.07	1.3	96.8	Pulse	0.1000	3
H2	In	115	264402.93	0.9	98.2	Pulse	0.1000	3
He	Sc	45	21206.13	2.6	99.3	Pulse	0.1000	3
He	Ge	72	81830.78	2.0	101.7	Pulse	0.1000	3
He	In	115	36475.51	4.0	100.0	Pulse	0.1000	3
He	Tb	159	237829.59	0.4	97.1	Pulse	0.1000	3
He	Bi	209	217356.94	0.6	98.4	Pulse	0.1000	3

No Gas

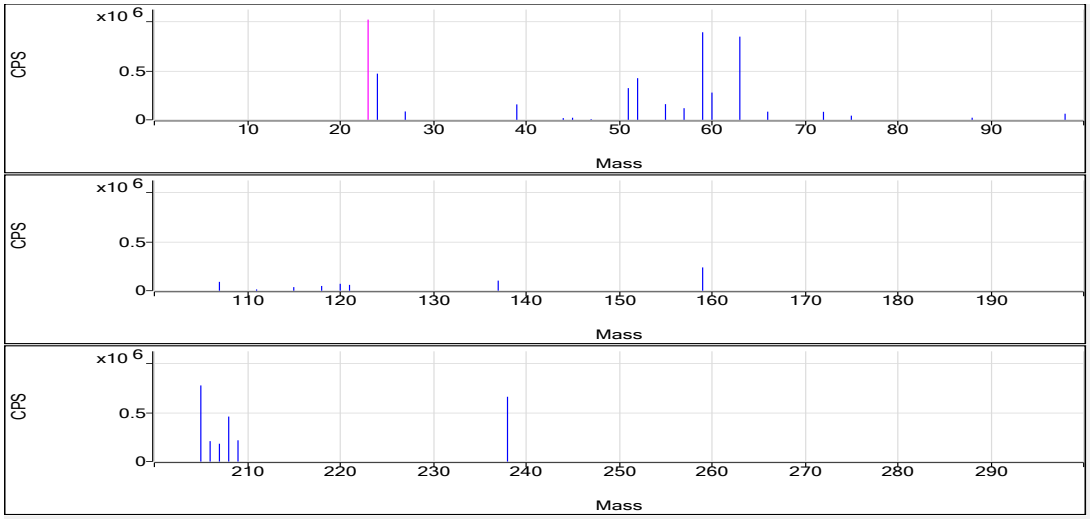


H2



Quantitation Report

He



Quantitation Report

Data File Name	126SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 3:09:04 PM
Sample Name	410-60944-Q-1-A DU
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

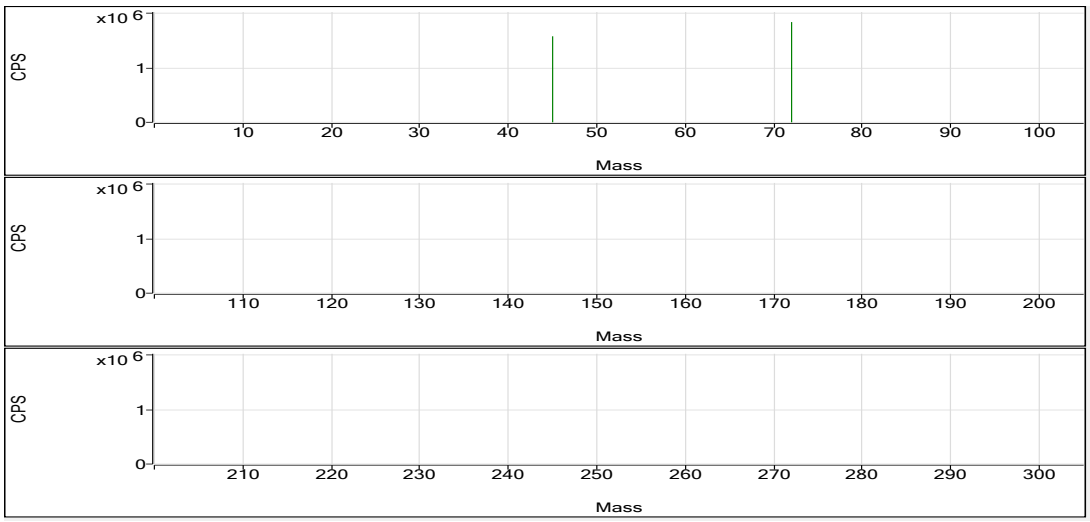
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.118	ppb	13.8	121.33	0.0001	Pulse	0.5000	3
Se	78	72	H2	0.359	ppb	14.0	15.33	0.0001	Pulse	1.5000	3
Na	23	45	He	5022.692	ppb	1.5	517552.83	24.4711	Pulse	0.1000	3
Mg	24	45	He	4744.003	ppb	1.1	222586.88	10.5240	Pulse	0.1000	3
Al	27	45	He	1926.649	ppb	6.3	22423.70	1.0595	Pulse	0.1000	3
K	39	45	He	1650.741	ppb	3.2	42327.20	2.0008	Pulse	0.1000	3
Ca	44	45	He	7619.594	ppb	1.8	10537.54	0.4982	Pulse	0.1000	3
Ti	47	45	He	71.797	ppb	22.7	850.25	0.0401	Pulse	0.1000	3
V	51	45	He	27.806	ppb	1.0	17260.94	0.8161	Pulse	0.5000	3
Cr	52	45	He	10.379	ppb	4.7	9343.40	0.4417	Pulse	0.1000	3
Mn	55	45	He	68.103	ppb	1.3	19467.07	0.9204	Pulse	0.1000	3
Fe	57	45	He	2384.598	ppb	2.6	36694.66	1.7352	Pulse	0.1000	3
Co	59	45	He	2.763	ppb	4.0	5244.47	0.2480	Pulse	0.1000	3
Ni	60	72	He	34.729	ppb	2.3	18969.65	0.2336	Pulse	0.1000	3
Cu	63	72	He	53.816	ppb	0.9	89263.57	1.0994	Pulse	0.1000	3
Zn	66	72	He	114.901	ppb	1.4	16162.93	0.1991	Pulse	0.1000	3
As	75	72	He	2.244	ppb	7.5	240.67	0.0030	Pulse	0.5000	3
Sr	88	72	He	20.184	ppb	6.5	6398.36	0.0788	Pulse	0.1000	3
Mo	98	72	He	0.997	ppb	6.8	1273.44	0.0157	Pulse	0.1000	3
Ag	107	115	He	0.059	ppb	8.4	183.34	0.0051	Pulse	0.1000	3
Cd	111	115	He	0.270	ppb	7.1	68.67	0.0019	Pulse	0.5000	3
Sn	120	115	He	1.998	ppb	11.3	2043.56	0.0567	Pulse	0.1000	3
Sb	121	115	He	1.093	ppb	4.9	650.04	0.0180	Pulse	0.1000	3
Ba	137	115	He	25.404	ppb	3.9	4767.69	0.1323	Pulse	0.1000	3
Tl	205	209	He	0.094	ppb	4.2	820.06	0.0037	Pulse	0.1000	3
Pb	208	209	He	31.312	ppb	1.0	333511.81	1.5191	Pulse	0.1000	3
U	238	209	He	0.172	ppb	9.0	2453.66	0.0112	Pulse	0.1000	3

ISTD Table:

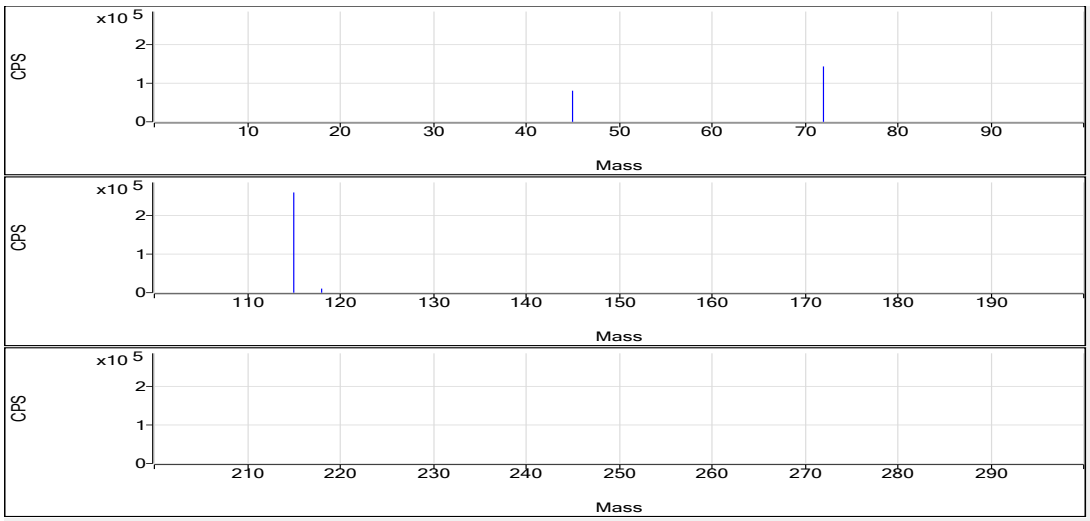
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1578984.67	0.8	97.0	Analog	0.1000	3
No Gas	Ge	72	1839913.77	0.7	98.2	Analog	0.1000	3
H2	Sc	45	80955.59	0.7	93.2	Pulse	0.1000	3
H2	Ge	72	144081.02	1.5	95.2	Pulse	0.1000	3
H2	In	115	260808.77	0.8	96.9	Pulse	0.1000	3
He	Sc	45	21152.74	1.6	99.1	Pulse	0.1000	3
He	Ge	72	81200.63	1.8	100.9	Pulse	0.1000	3
He	In	115	36054.27	0.9	98.9	Pulse	0.1000	3
He	Tb	159	239439.29	0.9	97.7	Pulse	0.1000	3
He	Bi	209	219566.18	1.1	99.4	Pulse	0.1000	3

No Gas

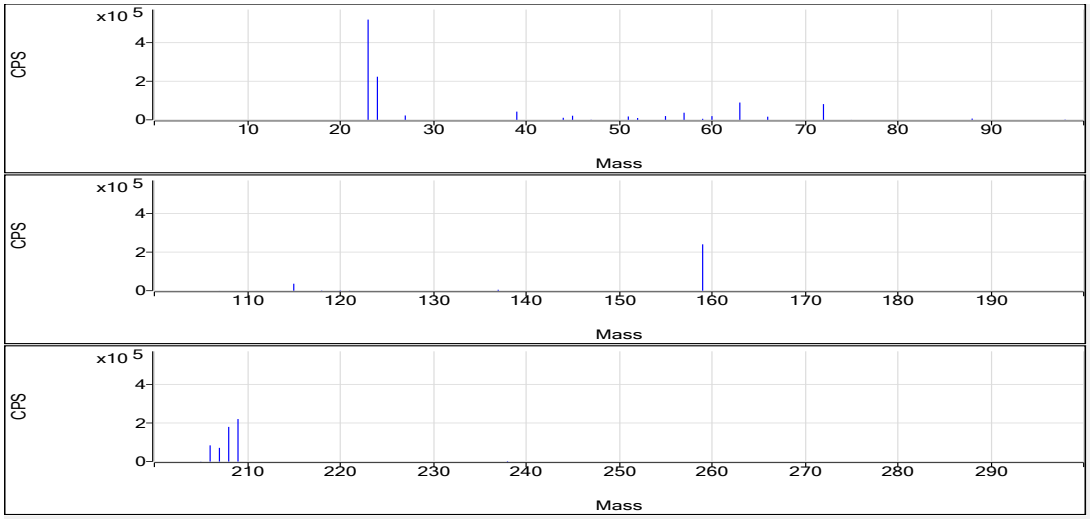


H2



Quantitation Report

He



Quantitation Report

Data File Name	127SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 3:11:10 PM
Sample Name	410-60944-F-1-A MS
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

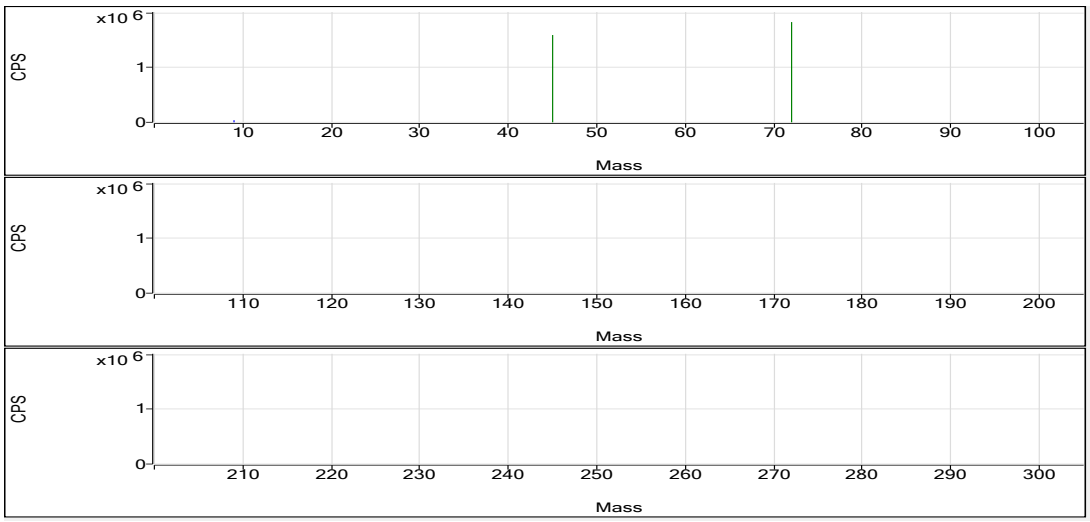
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	48.859	ppb	1.1	37754.82	0.0237	Pulse	0.5000	3
Se	78	72	H2	95.985	ppb	2.7	3834.30	0.0265	Pulse	1.5000	3
Na	23	45	He	9894.194	ppb	1.7	1036940.84	47.8106	Mix	0.1000	3
Mg	24	45	He	11970.415	ppb	1.8	575732.90	26.5484	Pulse	0.1000	3
Al	27	45	He	9282.058	ppb	3.4	110553.80	5.0988	Pulse	0.1000	3
K	39	45	He	6704.697	ppb	2.1	161793.24	7.4608	Pulse	0.1000	3
Ca	44	45	He	12825.966	ppb	2.0	18138.53	0.8364	Pulse	0.1000	3
Ti	47	45	He	622.912	ppb	6.8	7542.23	0.3479	Pulse	0.1000	3
V	51	45	He	523.703	ppb	1.4	328847.20	15.1631	Pulse	0.5000	3
Cr	52	45	He	512.651	ppb	1.5	440132.71	20.2944	Pulse	0.1000	3
Mn	55	45	He	567.940	ppb	1.8	166108.58	7.6597	Pulse	0.1000	3
Fe	57	45	He	8740.698	ppb	2.9	137768.29	6.3536	Pulse	0.1000	3
Co	59	45	He	472.211	ppb	2.3	903463.48	41.6630	Pulse	0.1000	3
Ni	60	72	He	529.486	ppb	1.9	286777.69	3.5433	Pulse	0.1000	3
Cu	63	72	He	519.406	ppb	1.8	856431.03	10.5816	Pulse	0.1000	3
Zn	66	72	He	603.705	ppb	2.0	84378.03	1.0425	Pulse	0.1000	3
As	75	72	He	466.221	ppb	1.2	42543.62	0.5256	Pulse	0.5000	3
Sr	88	72	He	71.226	ppb	3.0	22425.09	0.2769	Pulse	0.1000	3
Mo	98	72	He	50.053	ppb	1.2	62446.13	0.7715	Pulse	0.1000	3
Ag	107	115	He	51.591	ppb	0.6	140985.53	3.9563	Pulse	0.1000	3
Cd	111	115	He	53.444	ppb	0.5	13064.82	0.3666	Pulse	0.5000	3
Sn	120	115	He	109.006	ppb	1.8	71659.52	2.0111	Pulse	0.1000	3
Sb	121	115	He	107.097	ppb	2.0	60402.49	1.6952	Pulse	0.1000	3
Ba	137	115	He	558.856	ppb	2.6	103670.83	2.9097	Pulse	0.1000	3
Tl	205	209	He	101.410	ppb	1.2	790449.23	3.6631	Pulse	0.1000	3
Pb	208	209	He	83.174	ppb	0.8	869330.16	4.0285	Pulse	0.1000	3
U	238	209	He	48.967	ppb	0.4	673095.22	3.1191	Pulse	0.1000	3

ISTD Table:

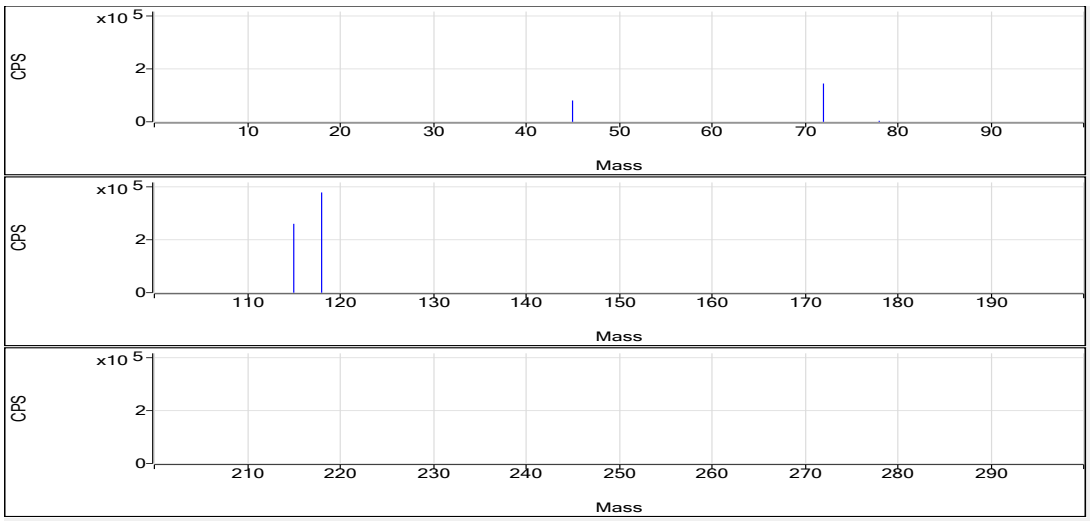
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1592272.94	0.8	97.8	Analog	0.1000	3
No Gas	Ge	72	1828499.09	1.1	97.6	Analog	0.1000	3
H2	Sc	45	80667.18	1.4	92.8	Pulse	0.1000	3
H2	Ge	72	144787.70	1.7	95.6	Pulse	0.1000	3
H2	In	115	260412.61	1.5	96.7	Pulse	0.1000	3
He	Sc	45	21690.17	1.6	101.6	Pulse	0.1000	3
He	Ge	72	80952.24	1.7	100.6	Pulse	0.1000	3
He	In	115	35636.68	1.3	97.7	Pulse	0.1000	3
He	Tb	159	238409.80	0.7	97.3	Pulse	0.1000	3
He	Bi	209	215804.33	1.0	97.7	Pulse	0.1000	3

No Gas

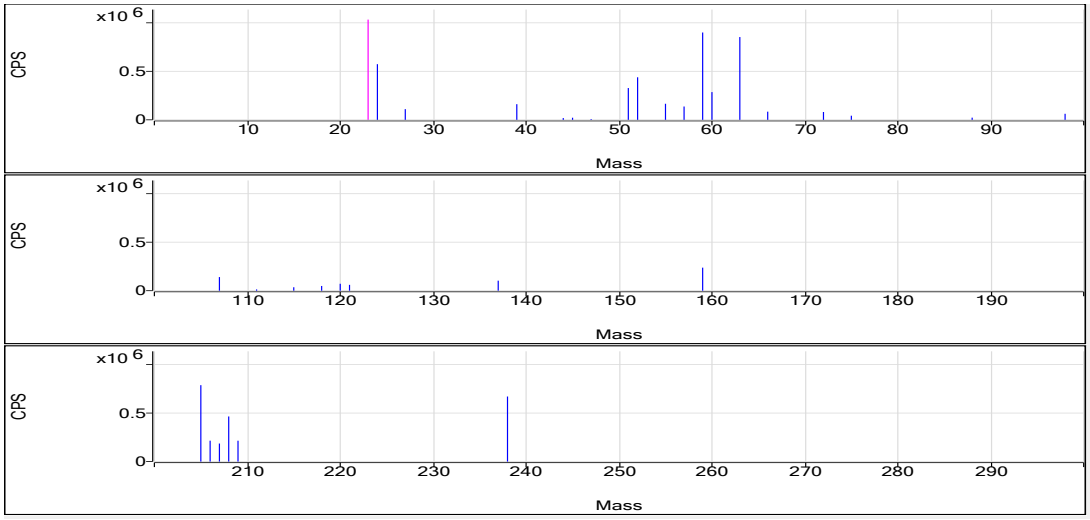


H2



Quantitation Report

He



Quantitation Report

Data File Name	128SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 3:13:11 PM
Sample Name	410-60944-P-1-A SD @5
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

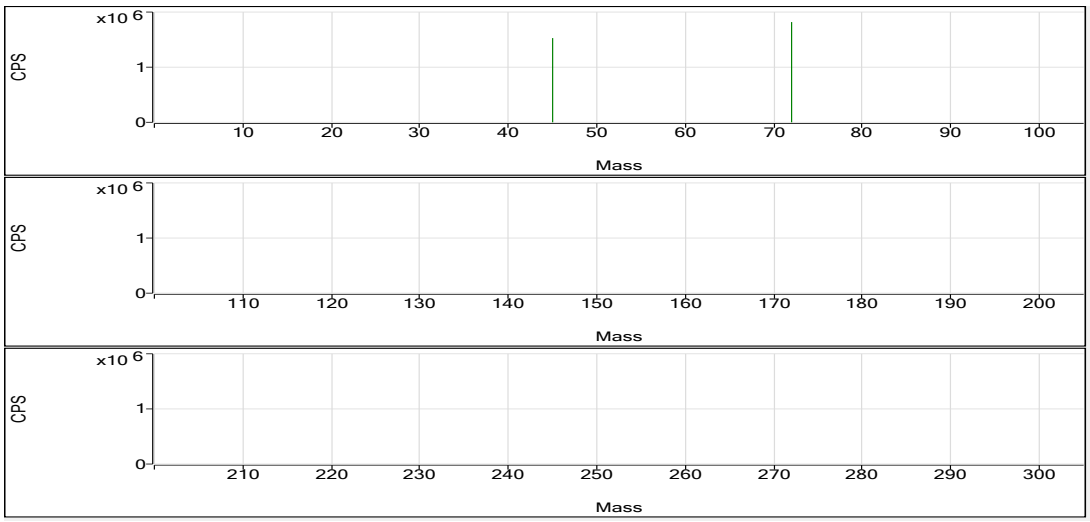
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.026	ppb	80.2	49.33	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.153	ppb	72.1	7.11	0.0000	Pulse	1.5000	3
Na	23	45	He	1107.533	ppb	2.8	118137.65	5.7135	Pulse	0.1000	3
Mg	24	45	He	1086.526	ppb	2.5	49909.06	2.4137	Pulse	0.1000	3
Al	27	45	He	480.213	ppb	14.9	5478.25	0.2651	Pulse	0.1000	3
K	39	45	He	359.471	ppb	7.7	12522.42	0.6058	Pulse	0.1000	3
Ca	44	45	He	1625.910	ppb	8.1	2253.59	0.1089	Pulse	0.1000	3
Ti	47	45	He	15.296	ppb	6.4	176.68	0.0085	Pulse	0.1000	3
V	51	45	He	6.240	ppb	3.0	3972.57	0.1921	Pulse	0.5000	3
Cr	52	45	He	2.645	ppb	8.6	2813.73	0.1360	Pulse	0.1000	3
Mn	55	45	He	15.858	ppb	2.4	4467.51	0.2160	Pulse	0.1000	3
Fe	57	45	He	595.812	ppb	3.5	9006.63	0.4354	Pulse	0.1000	3
Co	59	45	He	0.747	ppb	18.6	1450.13	0.0701	Pulse	0.1000	3
Ni	60	72	He	7.589	ppb	4.2	4270.81	0.0521	Pulse	0.1000	3
Cu	63	72	He	11.620	ppb	3.6	19677.33	0.2400	Pulse	0.1000	3
Zn	66	72	He	24.852	ppb	3.9	3580.56	0.0437	Pulse	0.1000	3
As	75	72	He	0.672	ppb	6.0	98.00	0.0012	Pulse	0.5000	3
Sr	88	72	He	4.093	ppb	8.0	1340.11	0.0163	Pulse	0.1000	3
Mo	98	72	He	0.309	ppb	13.1	416.68	0.0051	Pulse	0.1000	3
Ag	107	115	He	0.033	ppb	30.0	110.00	0.0031	Pulse	0.1000	3
Cd	111	115	He	0.082	ppb	68.2	22.00	0.0006	Pulse	0.5000	3
Sn	120	115	He	0.513	ppb	59.3	1050.10	0.0296	Pulse	0.1000	3
Sb	121	115	He	0.345	ppb	8.4	220.01	0.0062	Pulse	0.1000	3
Ba	137	115	He	5.806	ppb	7.2	1073.41	0.0302	Pulse	0.1000	3
Tl	205	209	He	0.069	ppb	7.9	600.04	0.0028	Pulse	0.1000	3
Pb	208	209	He	6.894	ppb	1.0	71616.35	0.3375	Pulse	0.1000	3
U	238	209	He	0.063	ppb	7.3	906.73	0.0043	Pulse	0.1000	3

ISTD Table:

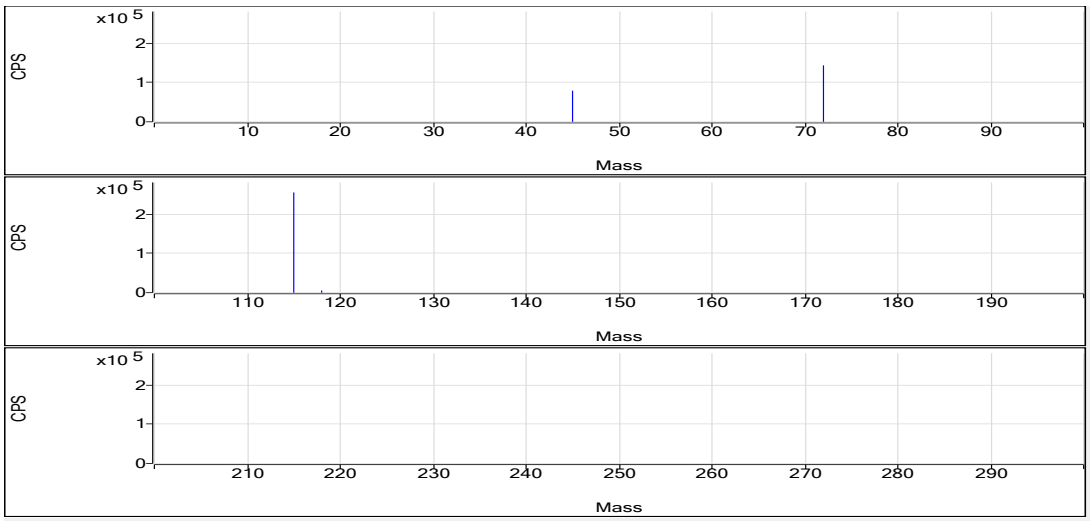
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1534361.12	1.7	94.3	Analog	0.1000	3
No Gas	Ge	72	1826237.42	0.5	97.5	Analog	0.1000	3
H2	Sc	45	79192.39	1.5	91.1	Pulse	0.1000	3
H2	Ge	72	143427.99	1.1	94.7	Pulse	0.1000	3
H2	In	115	254635.29	1.3	94.6	Pulse	0.1000	3
He	Sc	45	20681.91	1.5	96.9	Pulse	0.1000	3
He	Ge	72	81982.26	0.6	101.8	Pulse	0.1000	3
He	In	115	35536.14	2.8	97.5	Pulse	0.1000	3
He	Tb	159	232998.07	0.7	95.1	Pulse	0.1000	3
He	Bi	209	212172.85	0.4	96.0	Pulse	0.1000	3

No Gas

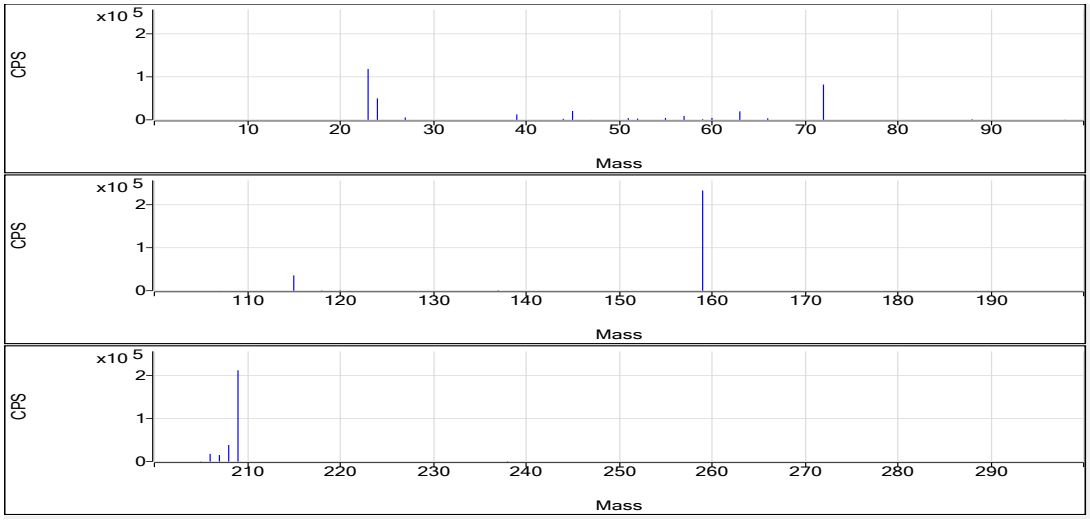


H2



Quantitation Report

He



Quantitation Report

Data File Name	129_CCV.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 3:15:14 PM
Sample Name	CCV 1942322
Sample Type	CCV
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

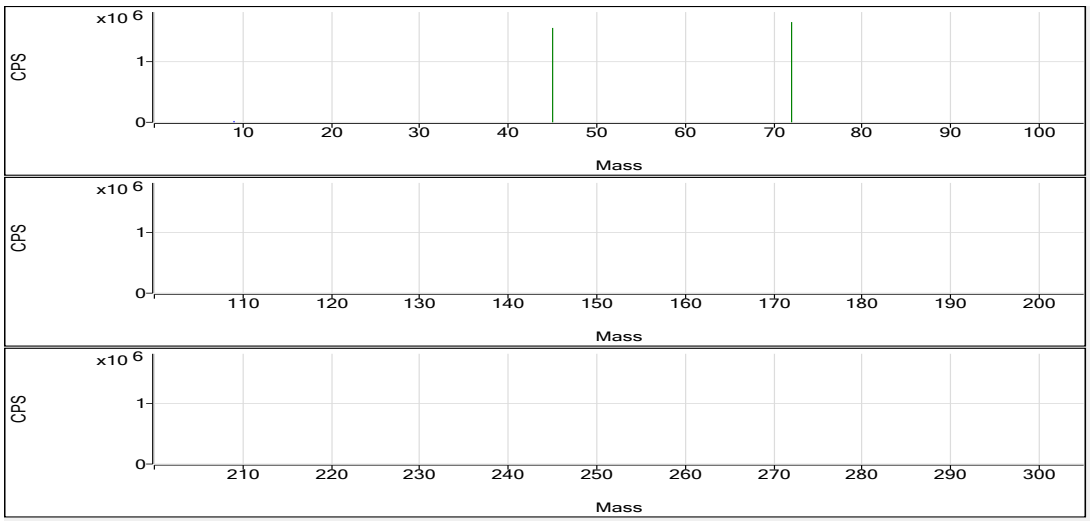
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	29.116	ppb	1.4	21948.13	0.0141	Pulse	0.5000	3
Se	78	72	H2	32.748	ppb	3.4	1150.71	0.0090	Pulse	1.5000	3
Na	23	45	He	4935.000	ppb	0.7	492578.95	24.0510	Pulse	0.1000	3
Mg	24	45	He	5144.251	ppb	1.7	233697.28	11.4116	Pulse	0.1000	3
Al	27	45	He	5084.974	ppb	1.2	57221.65	2.7939	Pulse	0.1000	3
K	39	45	He	5180.410	ppb	1.7	119069.10	5.8140	Pulse	0.1000	3
Ca	44	45	He	5090.408	ppb	4.0	6841.85	0.3339	Pulse	0.1000	3
Ti	47	45	He	289.320	ppb	3.6	3310.50	0.1616	Pulse	0.1000	3
V	51	45	He	307.505	ppb	1.3	182439.63	8.9082	Pulse	0.5000	3
Cr	52	45	He	304.579	ppb	1.0	247197.65	12.0702	Pulse	0.1000	3
Mn	55	45	He	305.871	ppb	1.3	84513.04	4.1262	Pulse	0.1000	3
Fe	57	45	He	5115.888	ppb	3.2	76168.32	3.7198	Pulse	0.1000	3
Co	59	45	He	293.187	ppb	1.7	529775.32	25.8694	Pulse	0.1000	3
Ni	60	72	He	312.369	ppb	1.3	154504.79	2.0909	Pulse	0.1000	3
Cu	63	72	He	301.823	ppb	1.2	454490.84	6.1503	Pulse	0.1000	3
Zn	66	72	He	309.840	ppb	1.5	39565.63	0.5354	Pulse	0.1000	3
As	75	72	He	313.201	ppb	1.2	26103.09	0.3532	Pulse	0.5000	3
Sr	88	72	He	30.937	ppb	1.5	8909.79	0.1206	Pulse	0.1000	3
Mo	98	72	He	30.648	ppb	0.3	34920.93	0.4725	Pulse	0.1000	3
Ag	107	115	He	32.289	ppb	3.0	85813.35	2.4763	Pulse	0.1000	3
Cd	111	115	He	32.259	ppb	1.5	7671.48	0.2213	Pulse	0.5000	3
Sn	120	115	He	32.135	ppb	1.6	21046.54	0.6071	Pulse	0.1000	3
Sb	121	115	He	32.198	ppb	1.1	17688.45	0.5102	Pulse	0.1000	3
Ba	137	115	He	317.512	ppb	3.9	57280.63	1.6532	Pulse	0.1000	3
Tl	205	209	He	30.788	ppb	0.8	233479.78	1.1124	Pulse	0.1000	3
Pb	208	209	He	30.306	ppb	1.2	308625.39	1.4704	Pulse	0.1000	3
U	238	209	He	262.539	ppb	0.8	3509898.07	16.7220	Analog	0.1000	3

ISTD Table:

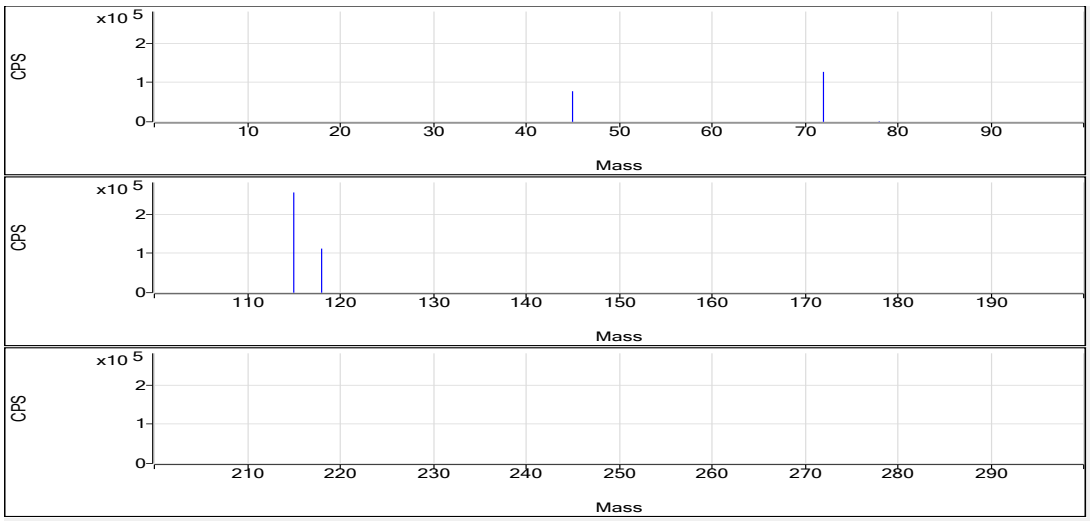
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1552392.22	0.7	95.4	Analog	0.1000	3
No Gas	Ge	72	1648659.45	0.9	88.0	Analog	0.1000	3
H2	Sc	45	77957.05	2.0	89.7	Pulse	0.1000	3
H2	Ge	72	127266.86	1.2	84.1	Pulse	0.1000	3
H2	In	115	255432.69	0.4	94.9	Pulse	0.1000	3
He	Sc	45	20481.64	1.2	95.9	Pulse	0.1000	3
He	Ge	72	73904.73	1.6	91.8	Pulse	0.1000	3
He	In	115	34670.94	2.4	95.1	Pulse	0.1000	3
He	Tb	159	235100.83	0.4	96.0	Pulse	0.1000	3
He	Bi	209	209900.90	0.4	95.0	Pulse	0.1000	3

No Gas

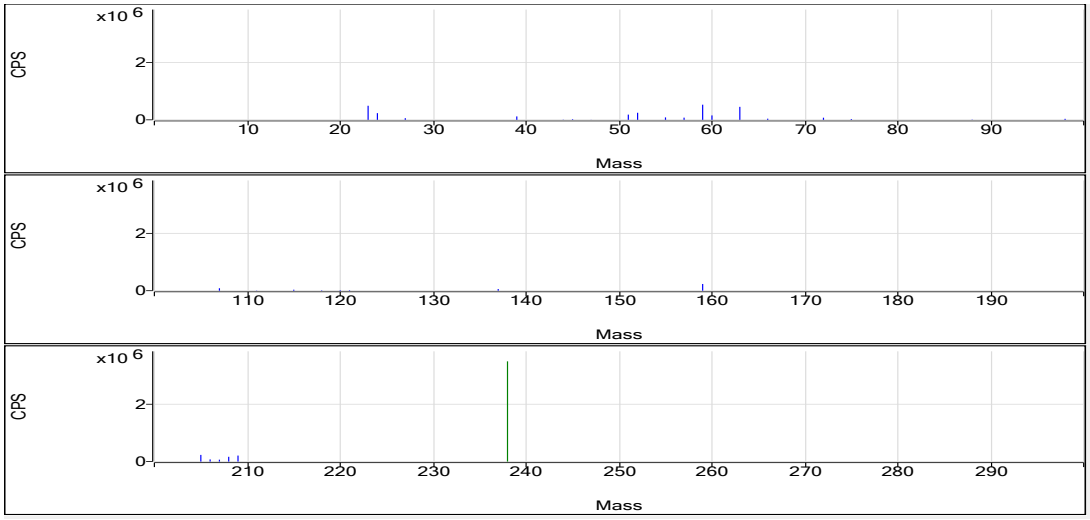


H2



Quantitation Report

He



Quantitation Report

Data File Name	130_CCB.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 3:17:15 PM
Sample Name	CCB 2014932
Sample Type	CCB
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

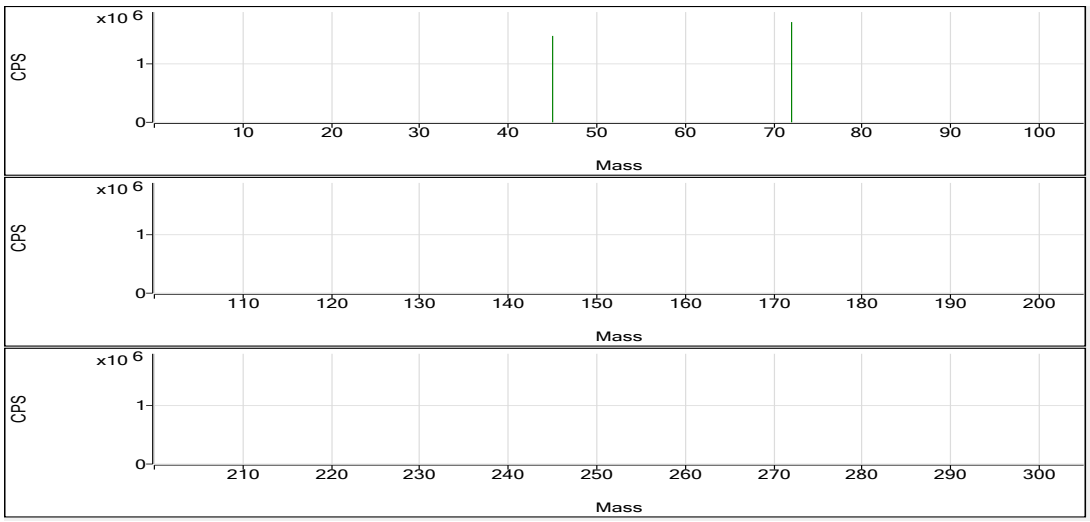
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	-0.004	ppb	N/A	26.00	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.052	ppb	142.2	2.89	0.0000	Pulse	1.5000	3
Na	23	45	He	13.648	ppb	11.1	9826.91	0.4727	Pulse	0.1000	3
Mg	24	45	He	2.729	ppb	31.5	216.68	0.0104	Pulse	0.1000	3
Al	27	45	He	1.826	ppb	47.3	50.00	0.0024	Pulse	0.1000	3
K	39	45	He	25.147	ppb	45.0	5084.38	0.2446	Pulse	0.1000	3
Ca	44	45	He	1.247	ppb	2039.1	70.00	0.0034	Pulse	0.1000	3
Ti	47	45	He	0.287	ppb	173.2	3.33	0.0002	Pulse	0.1000	3
V	51	45	He	0.074	ppb	88.8	285.34	0.0137	Pulse	0.5000	3
Cr	52	45	He	0.004	ppb	2203.0	656.71	0.0316	Pulse	0.1000	3
Mn	55	45	He	0.182	ppb	126.7	96.67	0.0046	Pulse	0.1000	3
Fe	57	45	He	3.178	ppb	54.2	100.00	0.0048	Pulse	0.1000	3
Co	59	45	He	0.119	ppb	17.6	306.68	0.0147	Pulse	0.1000	3
Ni	60	72	He	0.232	ppb	50.3	223.34	0.0029	Pulse	0.1000	3
Cu	63	72	He	0.097	ppb	19.7	416.69	0.0054	Pulse	0.1000	3
Zn	66	72	He	0.341	ppb	34.1	106.67	0.0014	Pulse	0.1000	3
As	75	72	He	0.159	ppb	96.7	48.00	0.0006	Pulse	0.5000	3
Sr	88	72	He	0.037	ppb	133.9	46.67	0.0006	Pulse	0.1000	3
Mo	98	72	He	0.023	ppb	74.6	53.33	0.0007	Pulse	0.1000	3
Ag	107	115	He	0.009	ppb	86.4	43.33	0.0012	Pulse	0.1000	3
Cd	111	115	He	0.003	ppb	605.4	2.67	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.065	ppb	N/A	666.71	0.0190	Pulse	0.1000	3
Sb	121	115	He	0.075	ppb	51.4	66.67	0.0019	Pulse	0.1000	3
Ba	137	115	He	0.256	ppb	49.1	46.67	0.0013	Pulse	0.1000	3
Tl	205	209	He	0.037	ppb	38.9	350.02	0.0017	Pulse	0.1000	3
Pb	208	209	He	0.003	ppb	328.5	860.05	0.0041	Pulse	0.1000	3
U	238	209	He	0.081	ppb	17.3	1136.76	0.0054	Pulse	0.1000	3

ISTD Table:

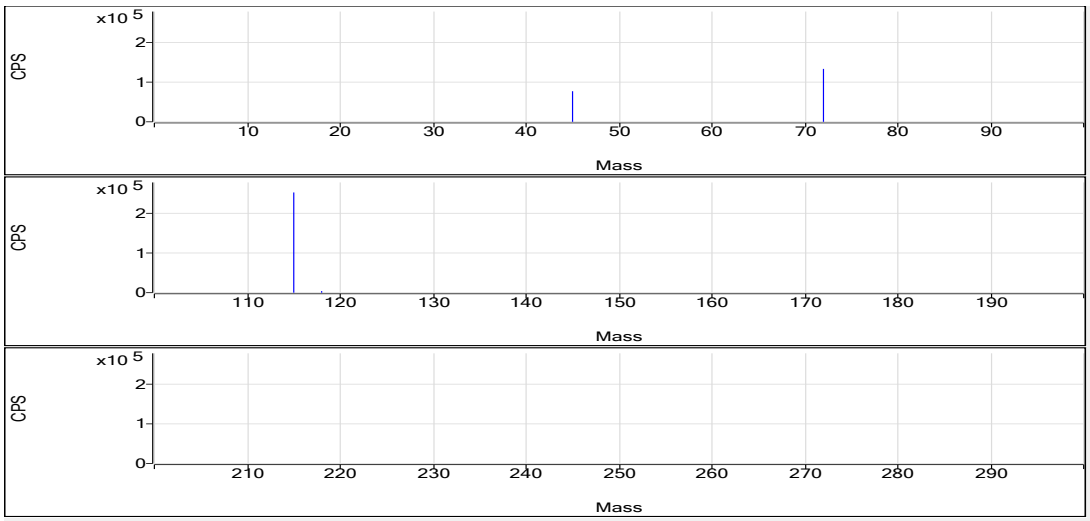
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1486182.42	1.2	91.3	Analog	0.1000	3
No Gas	Ge	72	1724241.54	1.0	92.1	Analog	0.1000	3
H2	Sc	45	77161.77	2.2	88.8	Pulse	0.1000	3
H2	Ge	72	133486.55	0.6	88.2	Pulse	0.1000	3
H2	In	115	252781.59	0.9	93.9	Pulse	0.1000	3
He	Sc	45	20788.86	0.6	97.4	Pulse	0.1000	3
He	Ge	72	77670.91	1.2	96.5	Pulse	0.1000	3
He	In	115	34991.72	1.4	96.0	Pulse	0.1000	3
He	Tb	159	233129.91	1.2	95.1	Pulse	0.1000	3
He	Bi	209	209751.62	0.7	94.9	Pulse	0.1000	3

No Gas

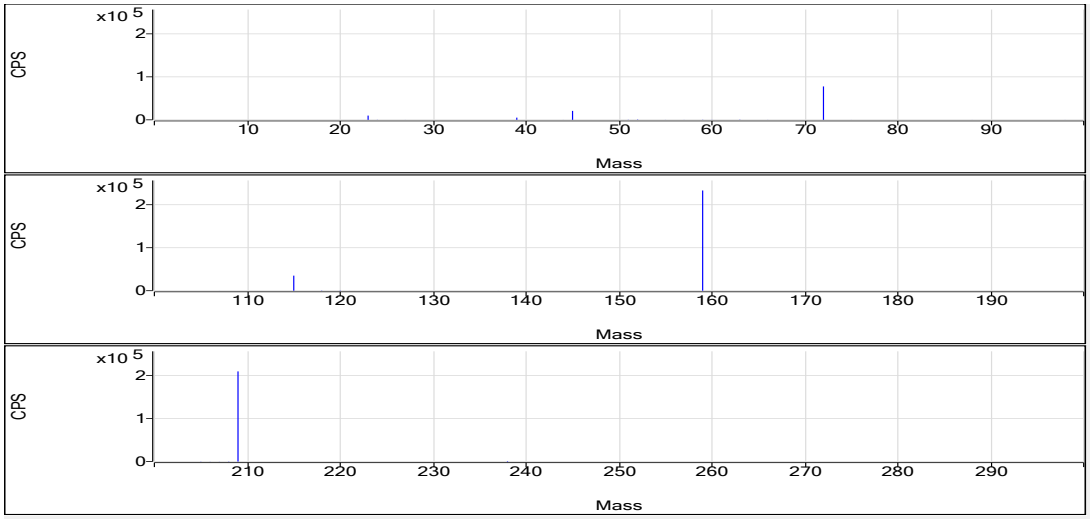


H2



Quantitation Report

He



Quantitation Report

Data File Name	131SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 3:19:18 PM
Sample Name	410-60944-P-2-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

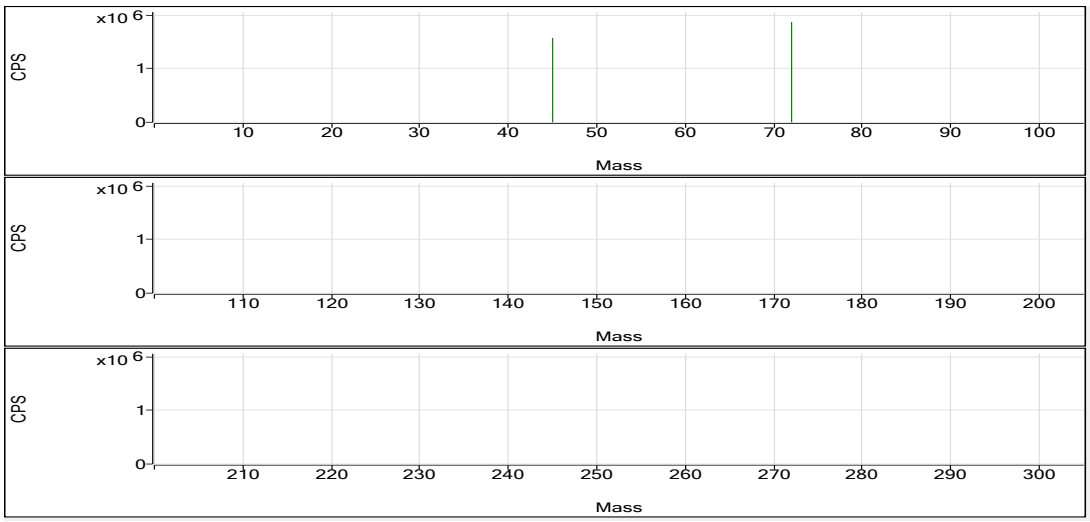
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.033	ppb	66.0	56.00	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.160	ppb	41.1	7.56	0.0001	Pulse	1.5000	3
Na	23	45	He	14483.030	ppb	0.8	1533417.63	69.7958	Analog	0.1000	3
Mg	24	45	He	2637.963	ppb	0.9	128610.54	5.8540	Pulse	0.1000	3
Al	27	45	He	792.954	ppb	4.7	9598.84	0.4369	Pulse	0.1000	3
K	39	45	He	2841.620	ppb	2.1	72228.96	3.2873	Pulse	0.1000	3
Ca	44	45	He	12317.839	ppb	1.1	17651.20	0.8034	Pulse	0.1000	3
Ti	47	45	He	20.650	ppb	6.5	253.34	0.0115	Pulse	0.1000	3
V	51	45	He	15.828	ppb	1.9	10315.70	0.4695	Pulse	0.5000	3
Cr	52	45	He	3.677	ppb	1.7	3884.03	0.1768	Pulse	0.1000	3
Mn	55	45	He	40.970	ppb	2.3	12185.53	0.5546	Pulse	0.1000	3
Fe	57	45	He	1157.128	ppb	2.8	18525.73	0.8433	Pulse	0.1000	3
Co	59	45	He	1.128	ppb	12.5	2280.27	0.1038	Pulse	0.1000	3
Ni	60	72	He	8.665	ppb	2.6	4934.36	0.0593	Pulse	0.1000	3
Cu	63	72	He	27.604	ppb	3.9	47061.00	0.5656	Pulse	0.1000	3
Zn	66	72	He	223.625	ppb	0.7	32180.30	0.3867	Pulse	0.1000	3
As	75	72	He	1.445	ppb	9.7	172.00	0.0021	Pulse	0.5000	3
Sr	88	72	He	31.007	ppb	6.0	10050.58	0.1208	Pulse	0.1000	3
Mo	98	72	He	1.541	ppb	1.1	2003.55	0.0241	Pulse	0.1000	3
Ag	107	115	He	0.071	ppb	16.5	213.34	0.0060	Pulse	0.1000	3
Cd	111	115	He	0.254	ppb	14.2	64.00	0.0018	Pulse	0.5000	3
Sn	120	115	He	0.857	ppb	34.8	1273.44	0.0359	Pulse	0.1000	3
Sb	121	115	He	1.670	ppb	37.1	970.35	0.0272	Pulse	0.1000	3
Ba	137	115	He	22.061	ppb	4.1	4080.76	0.1149	Pulse	0.1000	3
Tl	205	209	He	0.035	ppb	15.5	353.35	0.0016	Pulse	0.1000	3
Pb	208	209	He	8.365	ppb	0.9	89662.99	0.4087	Pulse	0.1000	3
U	238	209	He	0.133	ppb	6.3	1910.21	0.0087	Pulse	0.1000	3

ISTD Table:

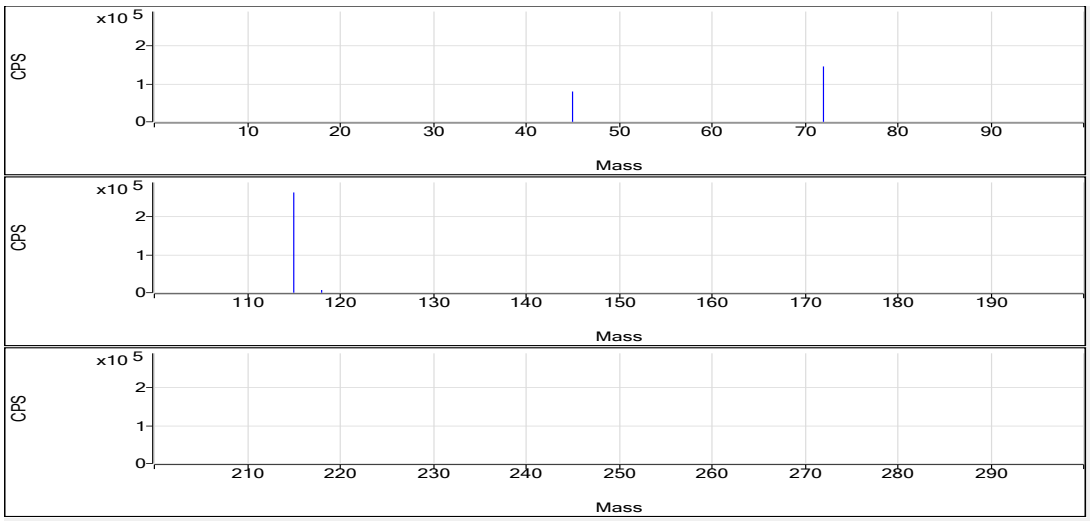
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1574270.97	0.4	96.7	Analog	0.1000	3
No Gas	Ge	72	1872648.78	1.0	100.0	Analog	0.1000	3
H2	Sc	45	80054.17	1.0	92.1	Pulse	0.1000	3
H2	Ge	72	146218.93	1.5	96.6	Pulse	0.1000	3
H2	In	115	264703.51	0.7	98.3	Pulse	0.1000	3
He	Sc	45	21970.63	0.6	102.9	Pulse	0.1000	3
He	Ge	72	83228.76	1.4	103.4	Pulse	0.1000	3
He	In	115	35542.98	2.6	97.5	Pulse	0.1000	3
He	Tb	159	239215.77	0.5	97.6	Pulse	0.1000	3
He	Bi	209	219382.10	0.8	99.3	Pulse	0.1000	3

No Gas

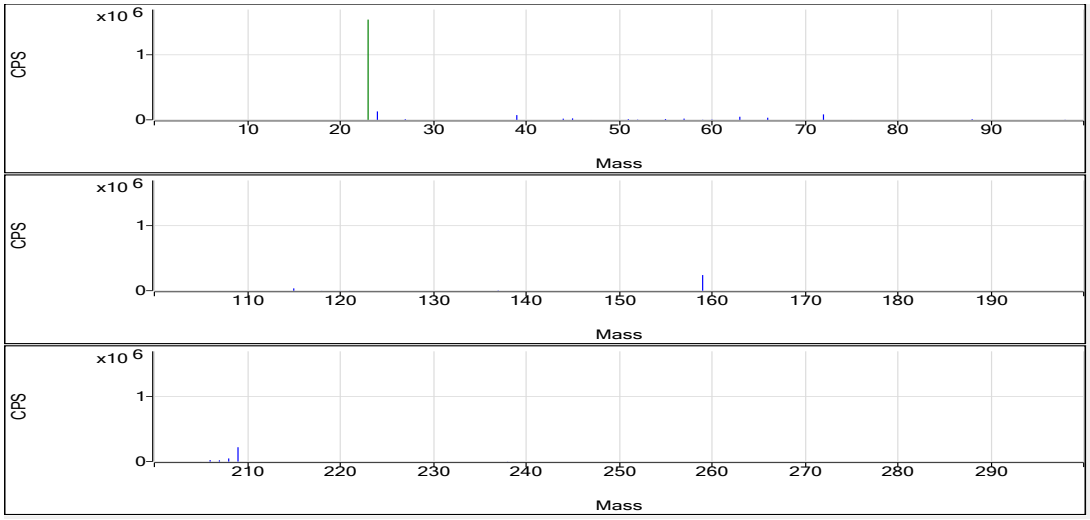


H2



Quantitation Report

He



Quantitation Report

Data File Name	132SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 3:21:21 PM
Sample Name	z630-23742-V-1-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

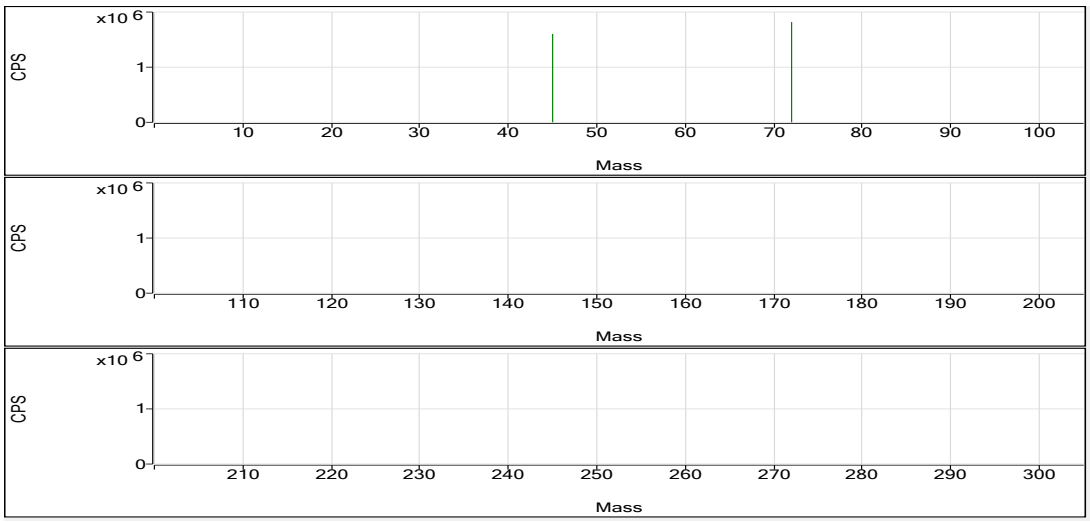
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	-0.013	ppb	N/A	21.33	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.020	ppb	158.3	2.22	0.0000	Pulse	1.5000	3
Na	23	45	He	-3.031	ppb	N/A	10107.14	0.3928	Pulse	0.1000	3
Mg	24	45	He	3.296	ppb	22.8	300.02	0.0117	Pulse	0.1000	3
Al	27	45	He	10.653	ppb	97.1	183.37	0.0073	Pulse	0.1000	3
K	39	45	He	-29.471	ppb	N/A	4814.38	0.1856	Pulse	0.1000	3
Ca	44	45	He	-2.590	ppb	N/A	80.00	0.0031	Pulse	0.1000	3
Ti	47	45	He	0.000	ppb	N/A	0.00	0.0000	Pulse	0.1000	3
V	51	45	He	-0.034	ppb	N/A	274.67	0.0106	Pulse	0.5000	3
Cr	52	45	He	-0.124	ppb	N/A	683.38	0.0265	Pulse	0.1000	3
Mn	55	45	He	0.135	ppb	34.8	103.33	0.0040	Pulse	0.1000	3
Fe	57	45	He	5.873	ppb	153.7	176.72	0.0068	Pulse	0.1000	3
Co	59	45	He	0.061	ppb	53.2	246.68	0.0096	Pulse	0.1000	3
Ni	60	72	He	0.081	ppb	141.2	173.34	0.0019	Pulse	0.1000	3
Cu	63	72	He	0.047	ppb	115.1	410.02	0.0043	Pulse	0.1000	3
Zn	66	72	He	0.372	ppb	10.8	136.67	0.0014	Pulse	0.1000	3
As	75	72	He	-0.084	ppb	N/A	32.00	0.0003	Pulse	0.5000	3
Sr	88	72	He	-0.076	ppb	N/A	16.67	0.0002	Pulse	0.1000	3
Mo	98	72	He	0.013	ppb	105.0	50.00	0.0005	Pulse	0.1000	3
Ag	107	115	He	0.004	ppb	216.7	36.67	0.0008	Pulse	0.1000	3
Cd	111	115	He	-0.003	ppb	N/A	1.33	0.0000	Pulse	0.5000	3
Sn	120	115	He	-0.251	ppb	N/A	683.37	0.0156	Pulse	0.1000	3
Sb	121	115	He	-0.019	ppb	N/A	20.00	0.0004	Pulse	0.1000	3
Ba	137	115	He	0.116	ppb	11.6	26.67	0.0006	Pulse	0.1000	3
Tl	205	209	He	0.016	ppb	41.7	243.35	0.0009	Pulse	0.1000	3
Pb	208	209	He	-0.002	ppb	N/A	996.72	0.0038	Pulse	0.1000	3
U	238	209	He	0.022	ppb	12.7	426.69	0.0016	Pulse	0.1000	3

ISTD Table:

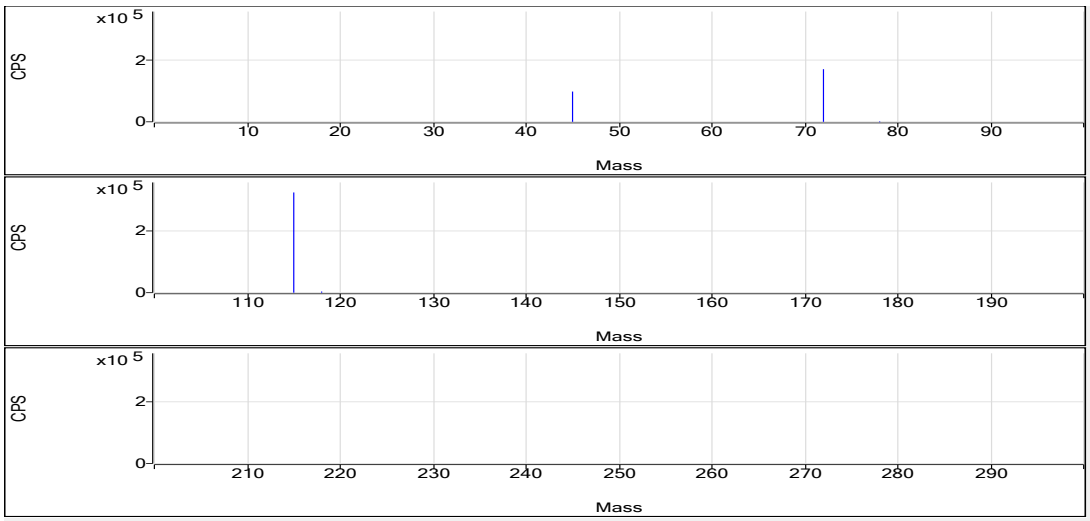
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1608546.69	4.2	98.8	Analog	0.1000	3
No Gas	Ge	72	1824511.07	4.8	97.4	Analog	0.1000	3
H2	Sc	45	97788.42	2.1	112.5	Pulse	0.1000	3
H2	Ge	72	170065.54	2.1	112.3	Pulse	0.1000	3
H2	In	115	323856.07	1.3	120.3	Pulse	0.1000	3
He	Sc	45	25870.56	8.8	121.2	Pulse	0.1000	3
He	Ge	72	95832.82	10.8	119.1	Pulse	0.1000	3
He	In	115	43924.78	11.2	120.5	Pulse	0.1000	3
He	Tb	159	292614.69	10.8	119.4	Pulse	0.1000	3
He	Bi	209	262229.39	12.2	118.7	Pulse	0.1000	3

No Gas

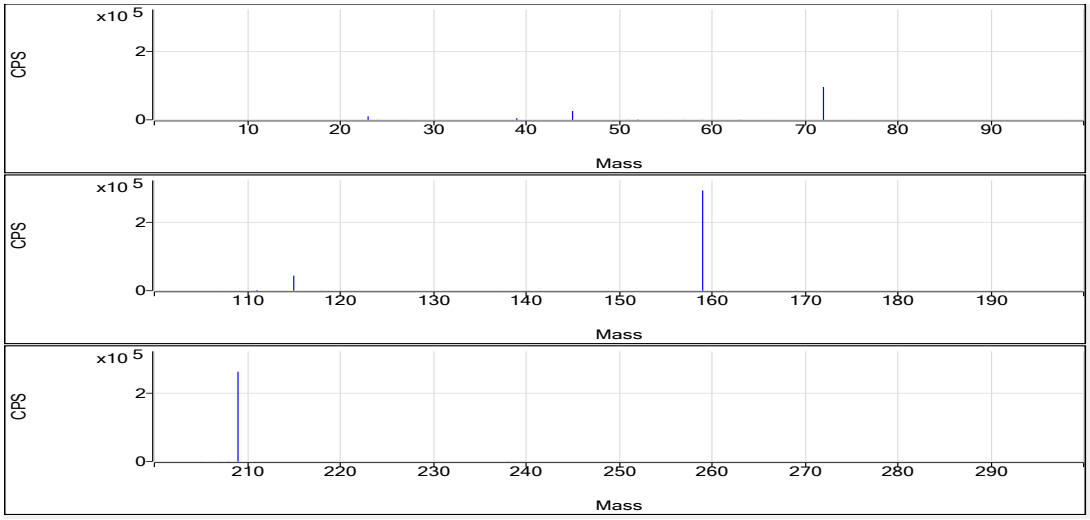


H2



Quantitation Report

He



Quantitation Report

Data File Name	133SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 3:23:23 PM
Sample Name	630-23707-X-5-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

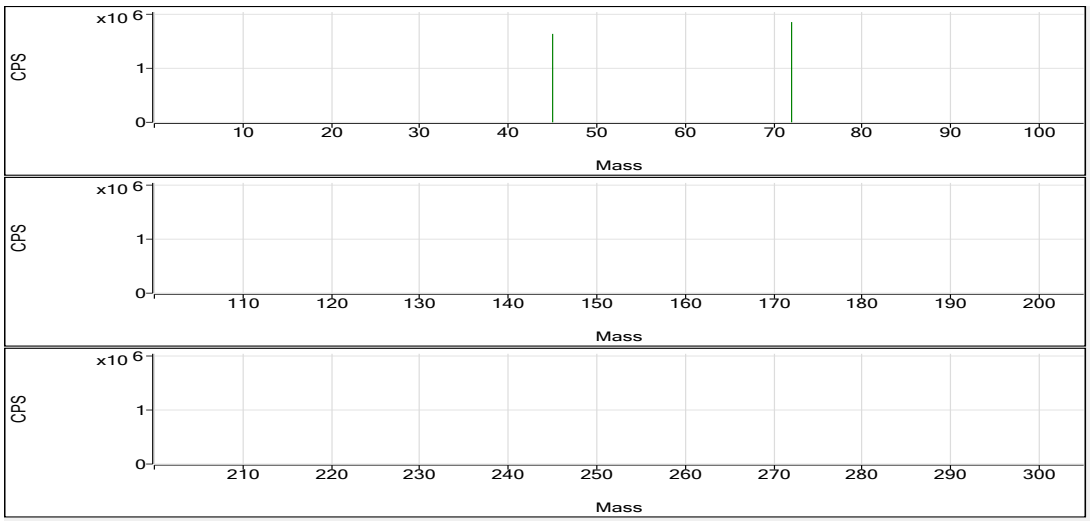
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	-0.007	ppb	N/A	26.67	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.779	ppb	13.0	33.78	0.0002	Pulse	1.5000	3
Na	23	45	He	634798.113	ppb	2.7	63747765.72	3 041.7380	Analog	0.1000	3
Mg	24	45	He	39588.223	ppb	4.3	1839245.59	87.7900	Analog	0.1000	3
Al	27	45	He	524.749	ppb	10.2	6071.97	0.2896	Pulse	0.1000	3
K	39	45	He	156154.784	ppb	3.3	3539622.45	168.9184	Analog	0.1000	3
Ca	44	45	He	40880.661	ppb	4.8	55700.50	2.6588	Pulse	0.1000	3
Ti	47	45	He	14.558	ppb	14.7	170.01	0.0081	Pulse	0.1000	3
V	51	45	He	8.767	ppb	2.5	5559.10	0.2652	Pulse	0.5000	3
Cr	52	45	He	13.388	ppb	5.9	11741.77	0.5606	Pulse	0.1000	3
Mn	55	45	He	50.953	ppb	5.8	14434.36	0.6892	Pulse	0.1000	3
Fe	57	45	He	7793.828	ppb	3.3	118733.23	5.6656	Pulse	0.1000	3
Co	59	45	He	13.708	ppb	6.3	25413.05	1.2135	Pulse	0.1000	3
Ni	60	72	He	143.746	ppb	0.7	78510.60	0.9629	Pulse	0.1000	3
Cu	63	72	He	4.805	ppb	6.2	8252.65	0.1013	Pulse	0.1000	3
Zn	66	72	He	38.445	ppb	4.5	5474.58	0.0671	Pulse	0.1000	3
As	75	72	He	2.551	ppb	5.7	270.00	0.0033	Pulse	0.5000	3
Sr	88	72	He	312.067	ppb	1.0	98807.73	1.2119	Pulse	0.1000	3
Mo	98	72	He	0.921	ppb	4.1	1183.43	0.0145	Pulse	0.1000	3
Ag	107	115	He	0.022	ppb	58.2	80.00	0.0022	Pulse	0.1000	3
Cd	111	115	He	0.255	ppb	3.4	65.33	0.0018	Pulse	0.5000	3
Sn	120	115	He	31.843	ppb	2.7	21774.48	0.6018	Pulse	0.1000	3
Sb	121	115	He	0.536	ppb	6.4	333.35	0.0092	Pulse	0.1000	3
Ba	137	115	He	329.727	ppb	1.4	62124.24	1.7168	Pulse	0.1000	3
Tl	205	209	He	0.024	ppb	27.4	253.35	0.0012	Pulse	0.1000	3
Pb	208	209	He	11.307	ppb	2.6	114009.48	0.5511	Pulse	0.1000	3
U	238	209	He	0.075	ppb	11.6	1040.09	0.0050	Pulse	0.1000	3

ISTD Table:

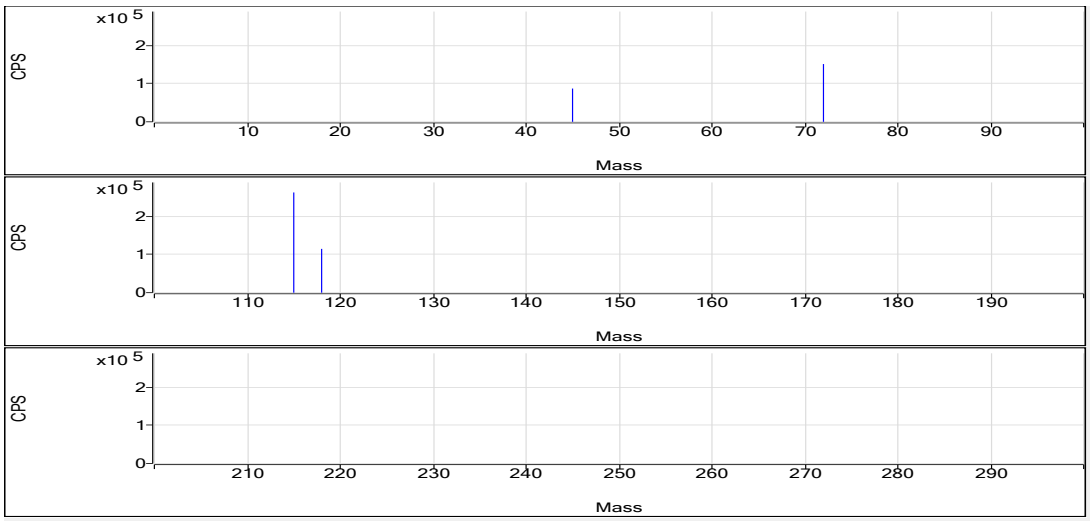
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1631960.18	1.7	100.3	Analog	0.1000	3
No Gas	Ge	72	1849871.80	1.0	98.8	Analog	0.1000	3
H2	Sc	45	87419.79	0.9	100.6	Pulse	0.1000	3
H2	Ge	72	151801.95	1.8	100.3	Pulse	0.1000	3
H2	In	115	263400.08	1.1	97.8	Pulse	0.1000	3
He	Sc	45	20969.00	3.1	98.2	Pulse	0.1000	3
He	Ge	72	81539.22	1.1	101.3	Pulse	0.1000	3
He	In	115	36191.07	1.4	99.3	Pulse	0.1000	3
He	Tb	159	239882.31	1.0	97.9	Pulse	0.1000	3
He	Bi	209	206902.59	0.7	93.6	Pulse	0.1000	3

No Gas

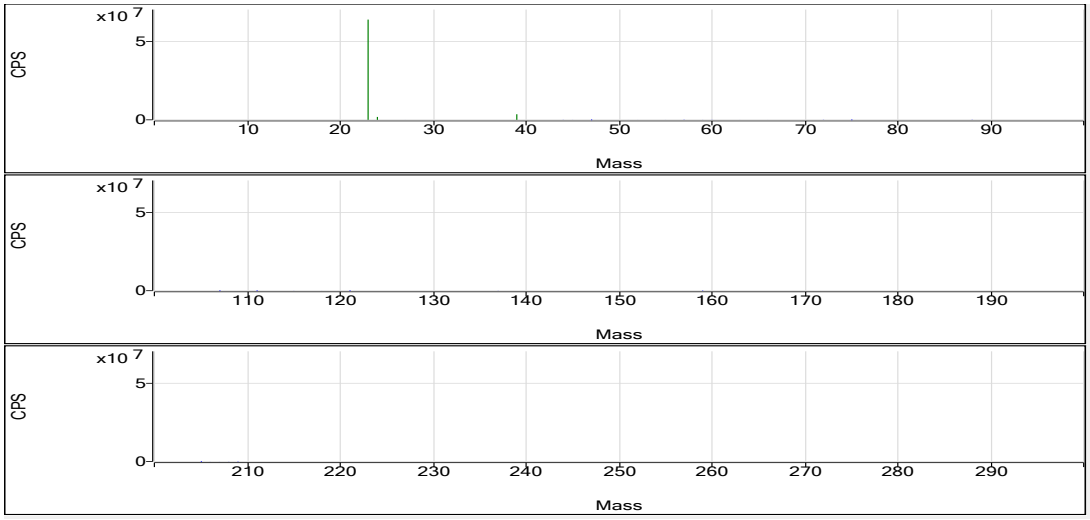


H2



Quantitation Report

He



Quantitation Report

Data File Name	134SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 3:25:24 PM
Sample Name	410-61995-O-1-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

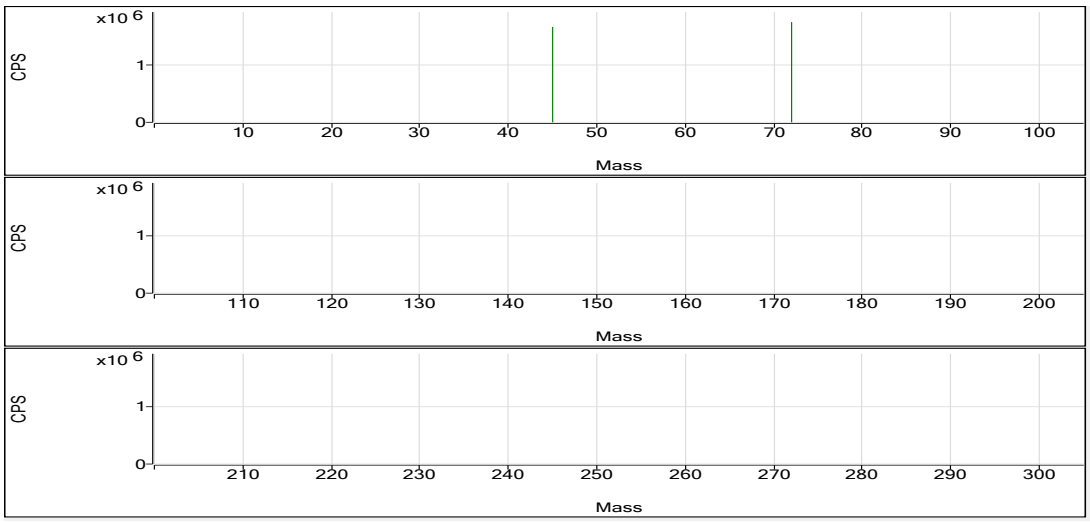
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	-0.012	ppb	N/A	23.33	0.0000	Pulse	0.5000	3
Se	78	72	H2	3.178	ppb	3.3	132.22	0.0009	Pulse	1.5000	3
Na	23	45	He	509367.238	ppb	2.0	52020400.89	2 440.7961	Analog	0.1000	3
Mg	24	45	He	5965.300	ppb	2.3	282008.69	13.2322	Pulse	0.1000	3
Al	27	45	He	20.166	ppb	19.3	266.68	0.0125	Pulse	0.1000	3
K	39	45	He	1032262.691	ppb	1.9	23773305.48	1 115.4171	Analog	0.1000	3
Ca	44	45	He	435014.508	ppb	3.1	602222.14	28.2609	Pulse	0.1000	3
Ti	47	45	He	0.861	ppb	173.2	10.00	0.0005	Pulse	0.1000	3
V	51	45	He	0.413	ppb	17.9	500.68	0.0235	Pulse	0.5000	3
Cr	52	45	He	2.184	ppb	3.6	2510.31	0.1177	Pulse	0.1000	3
Mn	55	45	He	6.516	ppb	3.1	1920.20	0.0900	Pulse	0.1000	3
Fe	57	45	He	18.799	ppb	25.4	343.35	0.0162	Pulse	0.1000	3
Co	59	45	He	0.416	ppb	13.8	873.39	0.0410	Pulse	0.1000	3
Ni	60	72	He	5.607	ppb	7.0	3023.76	0.0388	Pulse	0.1000	3
Cu	63	72	He	3.259	ppb	2.5	5431.23	0.0698	Pulse	0.1000	3
Zn	66	72	He	1.703	ppb	12.5	290.01	0.0037	Pulse	0.1000	3
As	75	72	He	63.596	ppb	2.9	5610.47	0.0721	Pulse	0.5000	3
Sr	88	72	He	1720.314	ppb	1.0	519896.80	6.6785	Pulse	0.1000	3
Mo	98	72	He	13.721	ppb	2.4	16483.47	0.2117	Pulse	0.1000	3
Ag	107	115	He	0.032	ppb	67.9	110.00	0.0030	Pulse	0.1000	3
Cd	111	115	He	0.028	ppb	110.5	9.33	0.0003	Pulse	0.5000	3
Sn	120	115	He	0.003	ppb	4289.5	753.38	0.0203	Pulse	0.1000	3
Sb	121	115	He	73.084	ppb	1.1	43031.13	1.1571	Pulse	0.1000	3
Ba	137	115	He	35.461	ppb	7.1	6865.33	0.1846	Pulse	0.1000	3
Tl	205	209	He	0.203	ppb	1.2	1603.50	0.0077	Pulse	0.1000	3
Pb	208	209	He	0.025	ppb	42.6	1070.06	0.0051	Pulse	0.1000	3
U	238	209	He	0.588	ppb	5.5	7849.31	0.0377	Pulse	0.1000	3

ISTD Table:

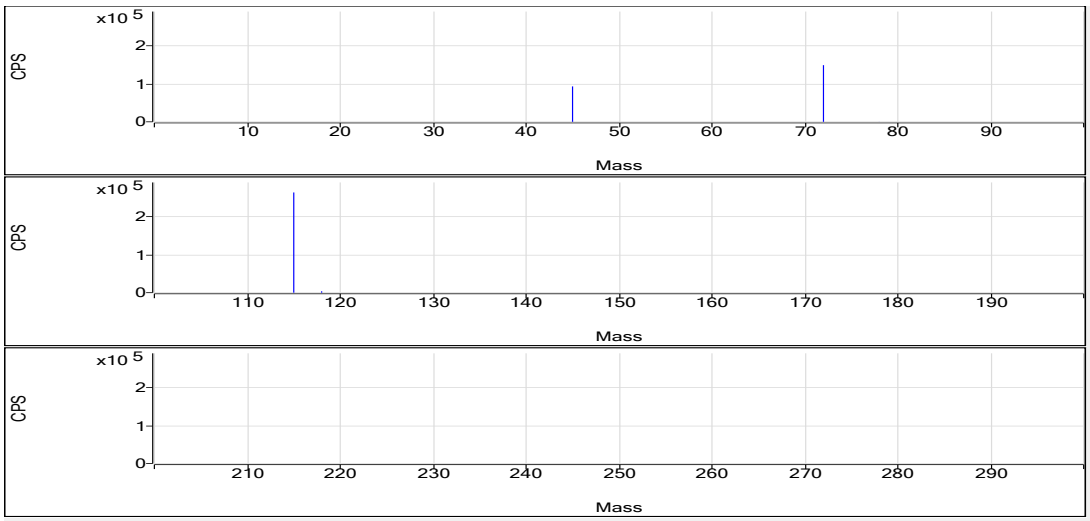
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1671358.83	1.2	102.7	Analog	0.1000	3
No Gas	Ge	72	1755743.26	1.0	93.7	Analog	0.1000	3
H2	Sc	45	93466.52	2.5	107.6	Pulse	0.1000	3
H2	Ge	72	149521.60	1.0	98.8	Pulse	0.1000	3
H2	In	115	264524.05	0.8	98.3	Pulse	0.1000	3
He	Sc	45	21319.52	2.3	99.9	Pulse	0.1000	3
He	Ge	72	77848.51	0.5	96.7	Pulse	0.1000	3
He	In	115	37190.54	0.5	102.0	Pulse	0.1000	3
He	Tb	159	244085.33	0.4	99.6	Pulse	0.1000	3
He	Bi	209	208371.90	0.8	94.3	Pulse	0.1000	3

No Gas

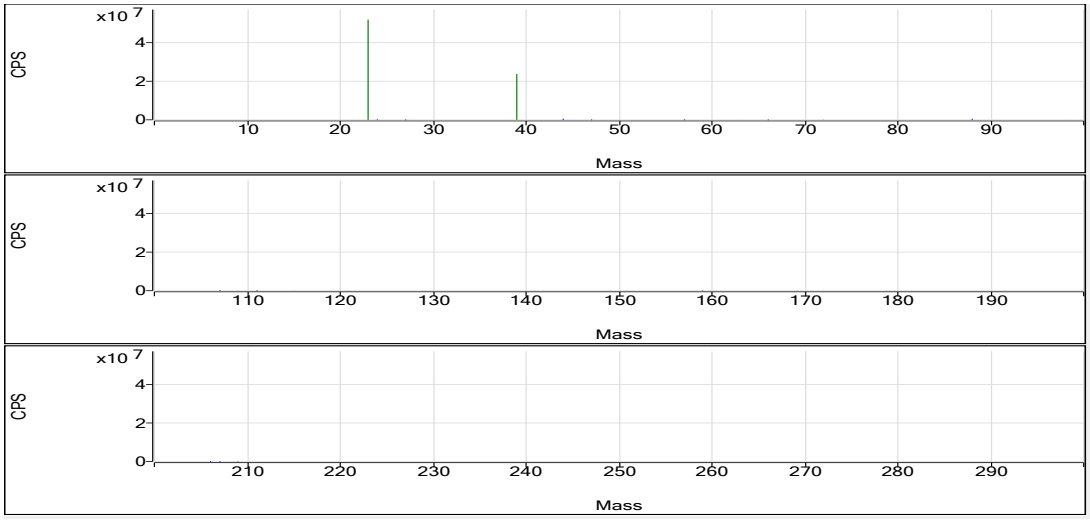


H2



Quantitation Report

He



Quantitation Report

Data File Name	135SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 3:27:26 PM
Sample Name	410-62002-J-1-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

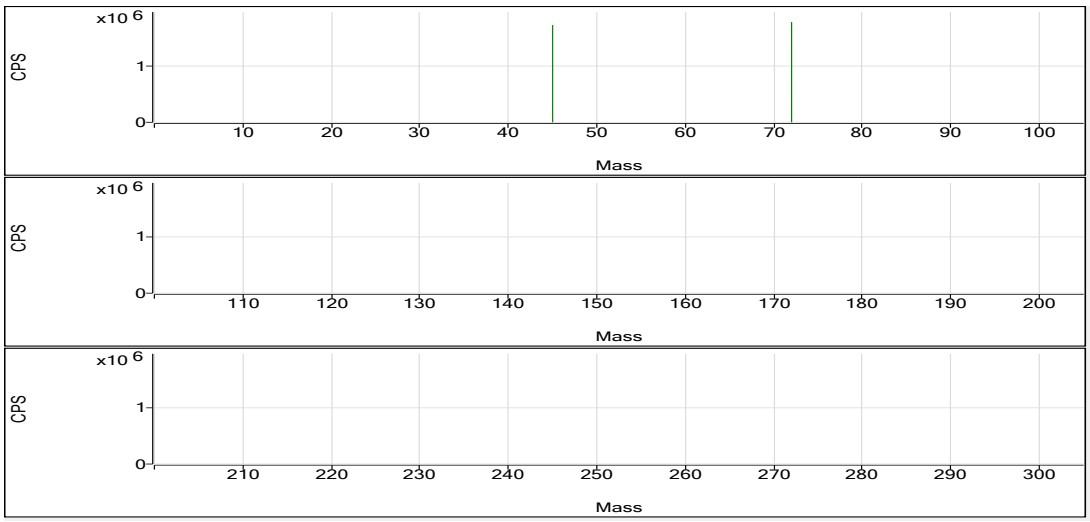
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	-0.006	ppb	N/A	28.67	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.352	ppb	19.8	16.44	0.0001	Pulse	1.5000	3
Na	23	45	He	626179.823	ppb	0.9	64494309.04	3 000.4475	Analog	0.1000	3
Mg	24	45	He	4489.079	ppb	1.4	214053.77	9.9588	Pulse	0.1000	3
Al	27	45	He	183.014	ppb	2.1	2190.24	0.1019	Pulse	0.1000	3
K	39	45	He	1418715.185	ppb	1.4	32948627.01	1 532.9191	Analog	0.1000	3
Ca	44	45	He	671329.499	ppb	1.9	937332.80	43.6114	Pulse	0.1000	3
Ti	47	45	He	0.844	ppb	173.2	10.00	0.0005	Pulse	0.1000	3
V	51	45	He	0.025	ppb	118.8	264.67	0.0123	Pulse	0.5000	3
Cr	52	45	He	4.976	ppb	5.3	4901.00	0.2281	Pulse	0.1000	3
Mn	55	45	He	2.300	ppb	13.1	713.37	0.0332	Pulse	0.1000	3
Fe	57	45	He	70.700	ppb	12.2	1156.76	0.0539	Pulse	0.1000	3
Co	59	45	He	0.638	ppb	11.0	1300.11	0.0605	Pulse	0.1000	3
Ni	60	72	He	4.324	ppb	10.6	2333.62	0.0302	Pulse	0.1000	3
Cu	63	72	He	5.053	ppb	2.8	8195.92	0.1063	Pulse	0.1000	3
Zn	66	72	He	1.625	ppb	14.8	276.68	0.0036	Pulse	0.1000	3
As	75	72	He	147.682	ppb	1.0	12861.17	0.1668	Pulse	0.5000	3
Sr	88	72	He	2411.903	ppb	0.3	721974.91	9.3632	Pulse	0.1000	3
Mo	98	72	He	8.976	ppb	3.4	10687.71	0.1386	Pulse	0.1000	3
Ag	107	115	He	0.003	ppb	177.6	30.00	0.0008	Pulse	0.1000	3
Cd	111	115	He	0.013	ppb	36.4	5.33	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.203	ppb	N/A	620.04	0.0165	Pulse	0.1000	3
Sb	121	115	He	126.713	ppb	1.6	75405.34	2.0056	Pulse	0.1000	3
Ba	137	115	He	38.862	ppb	5.8	7609.01	0.2023	Pulse	0.1000	3
Tl	205	209	He	0.220	ppb	10.2	1720.19	0.0083	Pulse	0.1000	3
Pb	208	209	He	0.042	ppb	34.9	1233.41	0.0059	Pulse	0.1000	3
U	238	209	He	0.050	ppb	20.5	713.38	0.0034	Pulse	0.1000	3

ISTD Table:

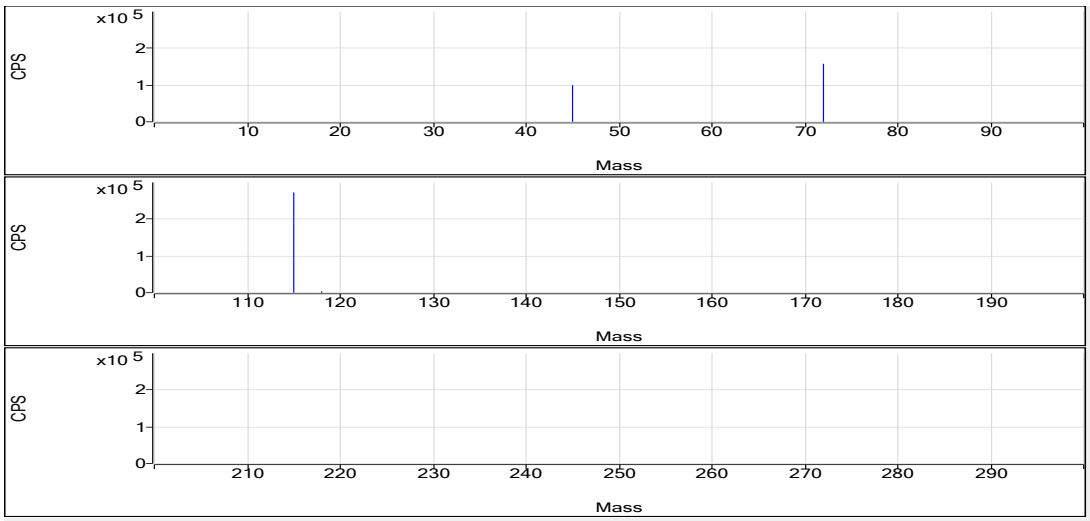
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1730069.87	1.1	106.3	Analog	0.1000	3
No Gas	Ge	72	1783175.02	1.2	95.2	Analog	0.1000	3
H2	Sc	45	99640.06	1.6	114.7	Pulse	0.1000	3
H2	Ge	72	157652.65	1.6	104.1	Pulse	0.1000	3
H2	In	115	272143.08	1.1	101.1	Pulse	0.1000	3
He	Sc	45	21496.43	1.4	100.7	Pulse	0.1000	3
He	Ge	72	77108.19	0.9	95.8	Pulse	0.1000	3
He	In	115	37594.87	0.8	103.1	Pulse	0.1000	3
He	Tb	159	243926.43	0.9	99.6	Pulse	0.1000	3
He	Bi	209	207478.36	0.8	93.9	Pulse	0.1000	3

No Gas

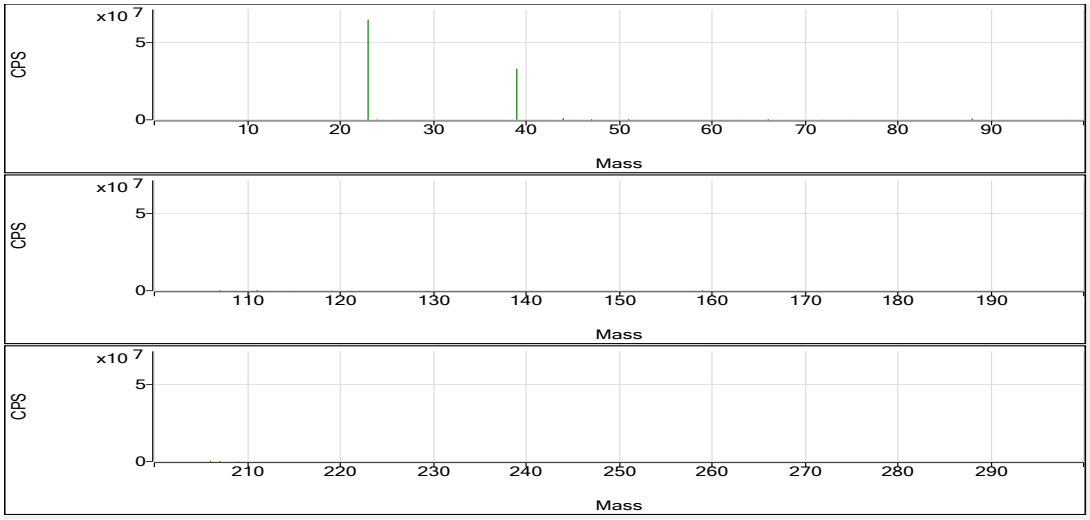


H2



Quantitation Report

He



Quantitation Report

Data File Name	136SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 3:29:27 PM
Sample Name	410-60944-P-3-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

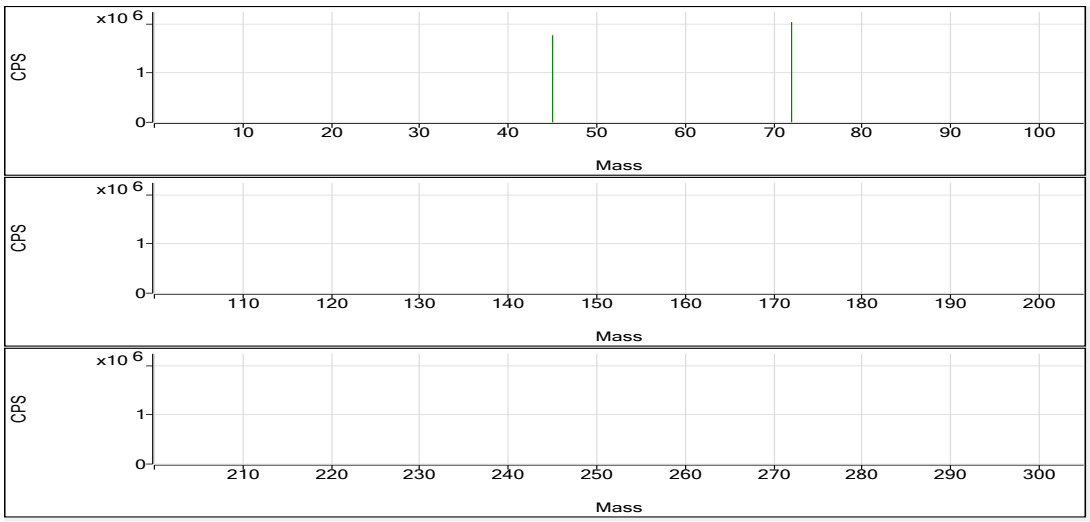
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.001	ppb	351.1	36.00	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.182	ppb	48.0	9.78	0.0001	Pulse	1.5000	3
Na	23	45	He	2101.326	ppb	1.5	226370.41	10.4748	Pulse	0.1000	3
Mg	24	45	He	1890.773	ppb	2.5	90694.79	4.1971	Pulse	0.1000	3
Al	27	45	He	105.246	ppb	14.2	1280.12	0.0592	Pulse	0.1000	3
K	39	45	He	1752.836	ppb	2.3	45635.36	2.1111	Pulse	0.1000	3
Ca	44	45	He	6436.047	ppb	4.9	9103.17	0.4214	Pulse	0.1000	3
Ti	47	45	He	8.658	ppb	102.0	103.37	0.0048	Pulse	0.1000	3
V	51	45	He	4.915	ppb	2.0	3324.40	0.1538	Pulse	0.5000	3
Cr	52	45	He	1.904	ppb	12.8	2303.60	0.1067	Pulse	0.1000	3
Mn	55	45	He	12.440	ppb	4.6	3673.95	0.1699	Pulse	0.1000	3
Fe	57	45	He	187.567	ppb	6.8	3000.45	0.1388	Pulse	0.1000	3
Co	59	45	He	0.256	ppb	21.2	580.05	0.0268	Pulse	0.1000	3
Ni	60	72	He	2.035	ppb	15.4	1290.11	0.0149	Pulse	0.1000	3
Cu	63	72	He	22.294	ppb	1.5	39485.10	0.4574	Pulse	0.1000	3
Zn	66	72	He	205.142	ppb	0.3	30623.33	0.3548	Pulse	0.1000	3
As	75	72	He	2.422	ppb	13.1	273.34	0.0032	Pulse	0.5000	3
Sr	88	72	He	19.995	ppb	4.2	6738.48	0.0781	Pulse	0.1000	3
Mo	98	72	He	0.863	ppb	3.3	1176.76	0.0136	Pulse	0.1000	3
Ag	107	115	He	0.064	ppb	6.5	210.01	0.0054	Pulse	0.1000	3
Cd	111	115	He	0.448	ppb	4.6	121.33	0.0031	Pulse	0.5000	3
Sn	120	115	He	-0.076	ppb	N/A	730.04	0.0188	Pulse	0.1000	3
Sb	121	115	He	7.618	ppb	3.3	4707.62	0.1213	Pulse	0.1000	3
Ba	137	115	He	15.056	ppb	1.6	3043.78	0.0784	Pulse	0.1000	3
Tl	205	209	He	0.015	ppb	23.7	200.01	0.0009	Pulse	0.1000	3
Pb	208	209	He	3.343	ppb	1.7	37646.23	0.1657	Pulse	0.1000	3
U	238	209	He	0.037	ppb	18.5	593.37	0.0026	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1771896.64	0.4	108.9	Analog	0.1000	3
No Gas	Ge	72	2038469.97	1.2	108.8	Analog	0.1000	3
H2	Sc	45	96086.43	1.8	110.6	Pulse	0.1000	3
H2	Ge	72	170132.49	0.6	112.4	Pulse	0.1000	3
H2	In	115	286826.43	0.7	106.6	Pulse	0.1000	3
He	Sc	45	21613.41	1.6	101.3	Pulse	0.1000	3
He	Ge	72	86316.49	0.5	107.2	Pulse	0.1000	3
He	In	115	38825.02	1.1	106.5	Pulse	0.1000	3
He	Tb	159	254718.96	1.3	104.0	Pulse	0.1000	3
He	Bi	209	227241.14	0.7	102.8	Pulse	0.1000	3

No Gas



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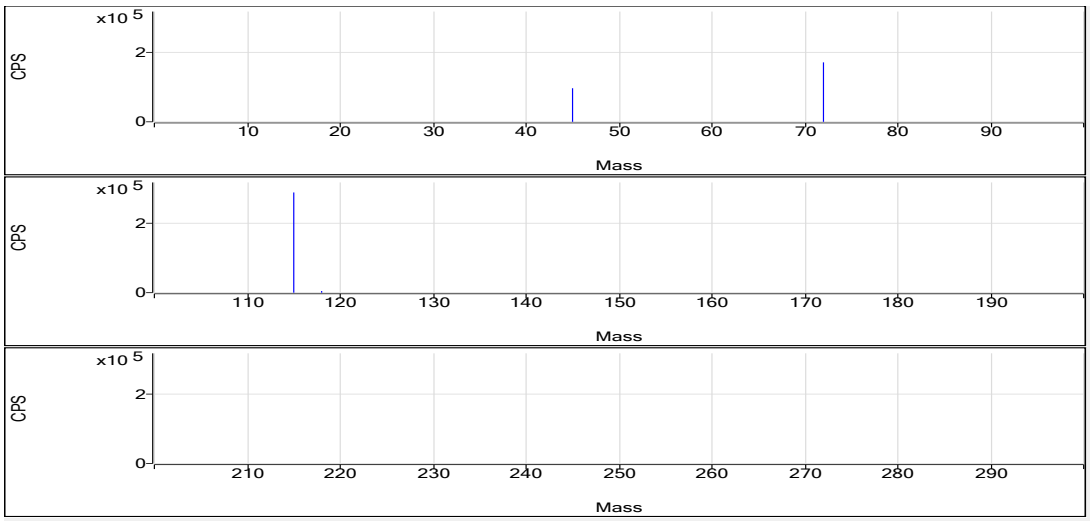
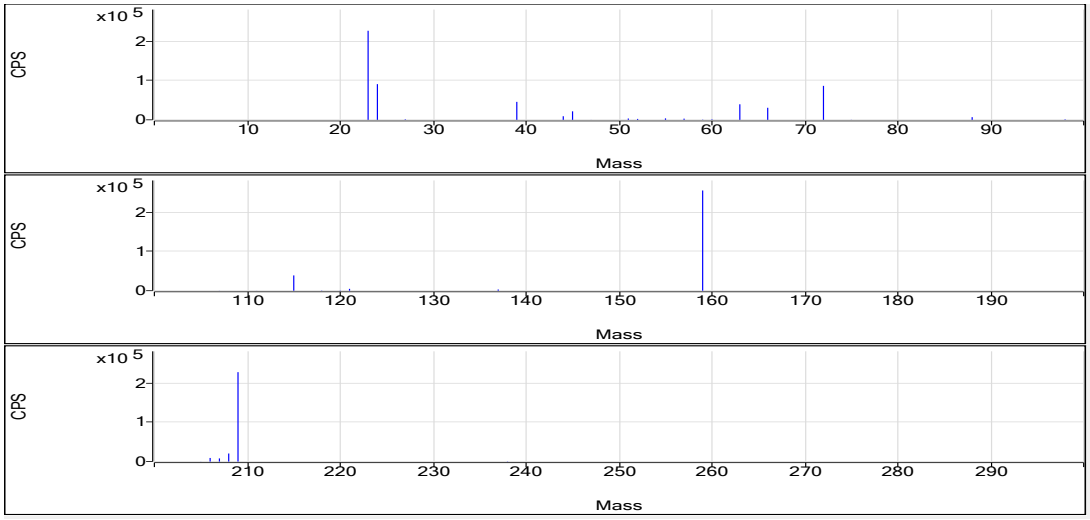


Quantitation Report

He



Quantitation Report

Data File Name	137SMPL.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 3:31:30 PM
Sample Name	630-23742-V-1-A
Sample Type	Sample
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

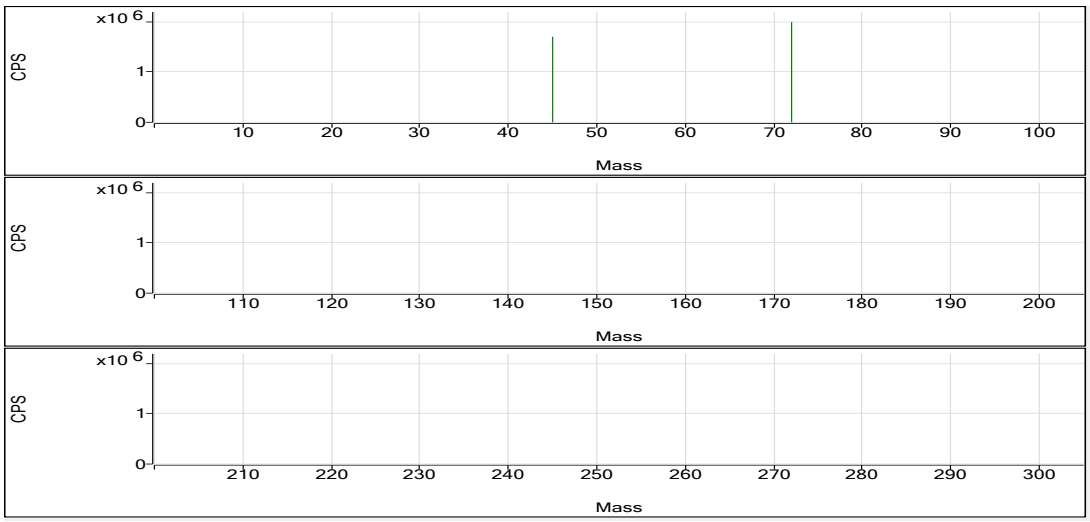
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	0.010	ppb	125.7	42.00	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.699	ppb	23.2	32.45	0.0002	Pulse	1.5000	3
Na	23	45	He	51199.714	ppb	1.6	5382668.05	245.7062	Analog	0.1000	3
Mg	24	45	He	9698.060	ppb	2.1	471152.79	21.5095	Pulse	0.1000	3
Al	27	45	He	397.947	ppb	4.5	4817.67	0.2199	Pulse	0.1000	3
K	39	45	He	10085.625	ppb	2.7	243407.63	11.1134	Pulse	0.1000	3
Ca	44	45	He	28937.134	ppb	4.1	41228.98	1.8830	Pulse	0.1000	3
Ti	47	45	He	29.921	ppb	98.6	373.66	0.0167	Pulse	0.1000	3
V	51	45	He	0.786	ppb	14.0	750.69	0.0343	Pulse	0.5000	3
Cr	52	45	He	2.794	ppb	5.8	3110.44	0.1418	Pulse	0.1000	3
Mn	55	45	He	37.021	ppb	3.6	10977.86	0.5013	Pulse	0.1000	3
Fe	57	45	He	713.468	ppb	1.8	11418.28	0.5209	Pulse	0.1000	3
Co	59	45	He	0.805	ppb	8.3	1646.81	0.0752	Pulse	0.1000	3
Ni	60	72	He	2.305	ppb	2.8	1446.79	0.0167	Pulse	0.1000	3
Cu	63	72	He	48.387	ppb	0.6	85447.44	0.9888	Pulse	0.1000	3
Zn	66	72	He	81.511	ppb	2.5	12222.29	0.1414	Pulse	0.1000	3
As	75	72	He	0.412	ppb	30.6	78.00	0.0009	Pulse	0.5000	3
Sr	88	72	He	163.493	ppb	0.2	54883.98	0.6351	Pulse	0.1000	3
Mo	98	72	He	1.629	ppb	5.7	2196.92	0.0254	Pulse	0.1000	3
Ag	107	115	He	0.085	ppb	20.4	270.01	0.0070	Pulse	0.1000	3
Cd	111	115	He	0.070	ppb	4.1	20.67	0.0005	Pulse	0.5000	3
Sn	120	115	He	1.447	ppb	4.1	1790.21	0.0466	Pulse	0.1000	3
Sb	121	115	He	0.439	ppb	32.8	293.35	0.0077	Pulse	0.1000	3
Ba	137	115	He	46.577	ppb	3.5	9306.80	0.2425	Pulse	0.1000	3
Tl	205	209	He	0.013	ppb	27.3	196.68	0.0008	Pulse	0.1000	3
Pb	208	209	He	2.962	ppb	1.2	35129.74	0.1473	Pulse	0.1000	3
U	238	209	He	0.304	ppb	8.9	4671.13	0.0196	Pulse	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1701144.30	0.4	104.5	Analog	0.1000	3
No Gas	Ge	72	1992531.01	0.2	106.4	Analog	0.1000	3
H2	Sc	45	91696.01	2.1	105.5	Pulse	0.1000	3
H2	Ge	72	162163.11	0.5	107.1	Pulse	0.1000	3
H2	In	115	276181.82	1.0	102.6	Pulse	0.1000	3
He	Sc	45	21913.80	3.1	102.7	Pulse	0.1000	3
He	Ge	72	86413.81	1.2	107.4	Pulse	0.1000	3
He	In	115	38390.60	1.9	105.3	Pulse	0.1000	3
He	Tb	159	250222.18	0.7	102.1	Pulse	0.1000	3
He	Bi	209	238500.61	0.8	107.9	Pulse	0.1000	3

No Gas



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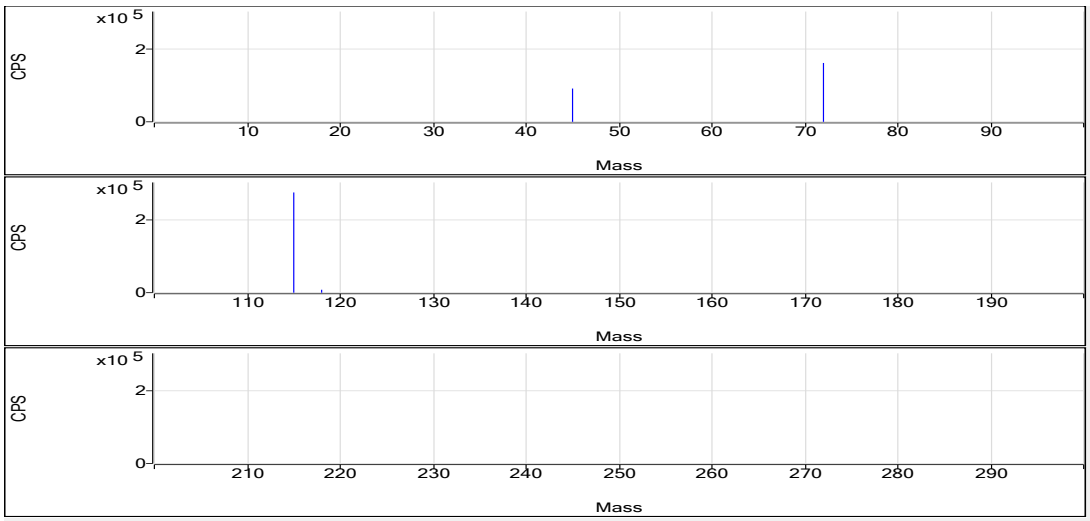
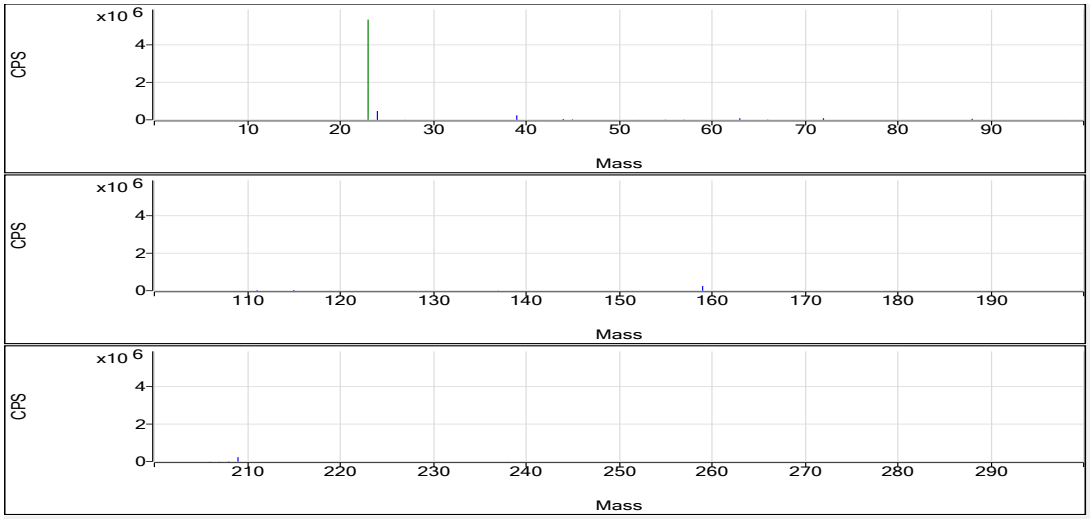


Quantitation Report

He



Quantitation Report

Data File Name	138_CCV.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 3:33:32 PM
Sample Name	CCV 1942322
Sample Type	CCV
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

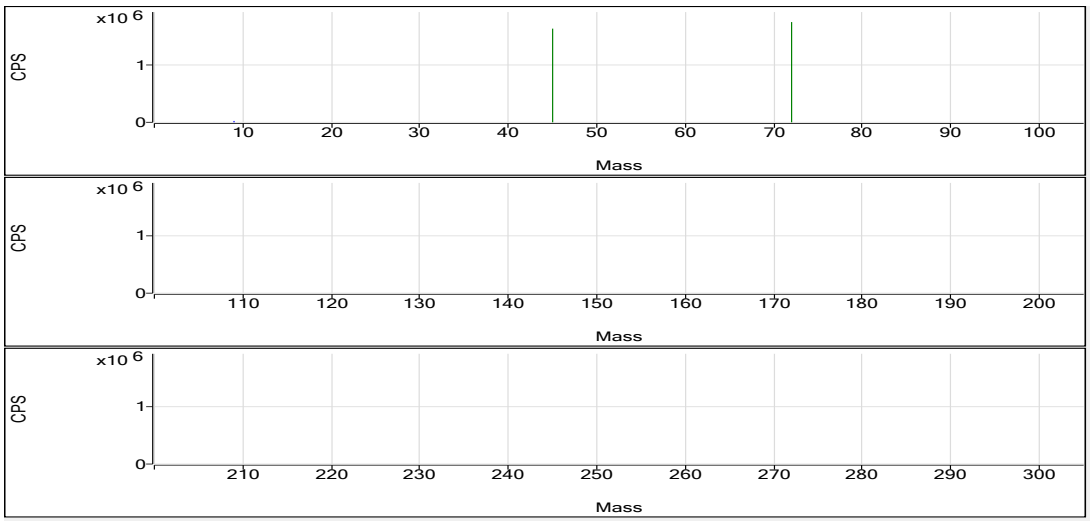
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	29.707	ppb	0.4	23689.41	0.0144	Pulse	0.5000	3
Se	78	72	H2	30.631	ppb	2.7	1182.50	0.0085	Pulse	1.5000	3
Na	23	45	He	5078.378	ppb	0.4	522686.60	24.7379	Pulse	0.1000	3
Mg	24	45	He	5100.958	ppb	0.9	239071.29	11.3156	Pulse	0.1000	3
Al	27	45	He	5134.704	ppb	1.3	59611.28	2.8212	Pulse	0.1000	3
K	39	45	He	5347.284	ppb	2.5	126632.81	5.9943	Pulse	0.1000	3
Ca	44	45	He	5195.195	ppb	3.6	7198.69	0.3407	Pulse	0.1000	3
Ti	47	45	He	315.962	ppb	6.4	3727.27	0.1765	Pulse	0.1000	3
V	51	45	He	310.727	ppb	1.4	190172.40	9.0014	Pulse	0.5000	3
Cr	52	45	He	308.056	ppb	1.0	257917.72	12.2076	Pulse	0.1000	3
Mn	55	45	He	309.360	ppb	1.4	88181.57	4.1732	Pulse	0.1000	3
Fe	57	45	He	5161.575	ppb	3.4	79274.14	3.7530	Pulse	0.1000	3
Co	59	45	He	296.604	ppb	1.2	552917.19	26.1708	Pulse	0.1000	3
Ni	60	72	He	311.871	ppb	1.5	160407.56	2.0875	Pulse	0.1000	3
Cu	63	72	He	302.734	ppb	1.1	474033.14	6.1689	Pulse	0.1000	3
Zn	66	72	He	312.947	ppb	2.4	41554.17	0.5408	Pulse	0.1000	3
As	75	72	He	312.090	ppb	2.3	27045.52	0.3520	Pulse	0.5000	3
Sr	88	72	He	30.962	ppb	6.5	9266.71	0.1207	Pulse	0.1000	3
Mo	98	72	He	30.889	ppb	1.6	36591.90	0.4762	Pulse	0.1000	3
Ag	107	115	He	32.057	ppb	2.7	90049.53	2.4585	Pulse	0.1000	3
Cd	111	115	He	31.486	ppb	0.4	7913.62	0.2160	Pulse	0.5000	3
Sn	120	115	He	31.936	ppb	0.6	22108.33	0.6035	Pulse	0.1000	3
Sb	121	115	He	32.559	ppb	2.0	18900.12	0.5159	Pulse	0.1000	3
Ba	137	115	He	320.648	ppb	2.5	61153.78	1.6695	Pulse	0.1000	3
Tl	205	209	He	30.613	ppb	1.2	240380.31	1.1061	Pulse	0.1000	3
Pb	208	209	He	30.179	ppb	0.5	318231.92	1.4642	Pulse	0.1000	3
U	238	209	He	258.264	ppb	0.4	3575089.11	16.4497	Analog	0.1000	3

ISTD Table:

Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1642213.26	0.6	100.9	Analog	0.1000	3
No Gas	Ge	72	1757306.64	0.7	93.8	Analog	0.1000	3
H2	Sc	45	85246.56	2.1	98.1	Pulse	0.1000	3
H2	Ge	72	139771.59	1.6	92.3	Pulse	0.1000	3
H2	In	115	268346.88	0.9	99.7	Pulse	0.1000	3
He	Sc	45	21129.33	1.3	99.0	Pulse	0.1000	3
He	Ge	72	76850.13	1.3	95.5	Pulse	0.1000	3
He	In	115	36635.84	1.6	100.5	Pulse	0.1000	3
He	Tb	159	243270.43	0.8	99.3	Pulse	0.1000	3
He	Bi	209	217335.09	0.2	98.4	Pulse	0.1000	3

No Gas



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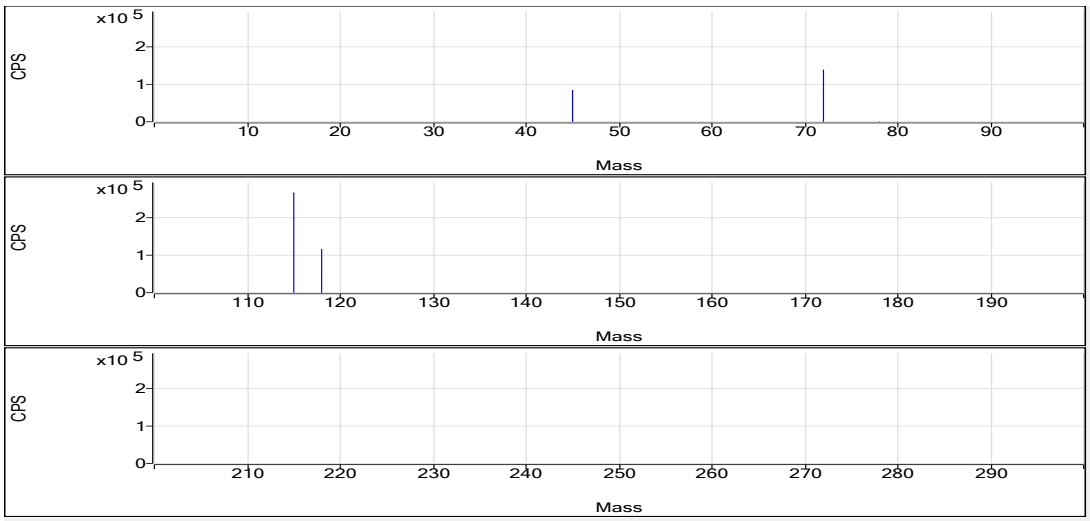
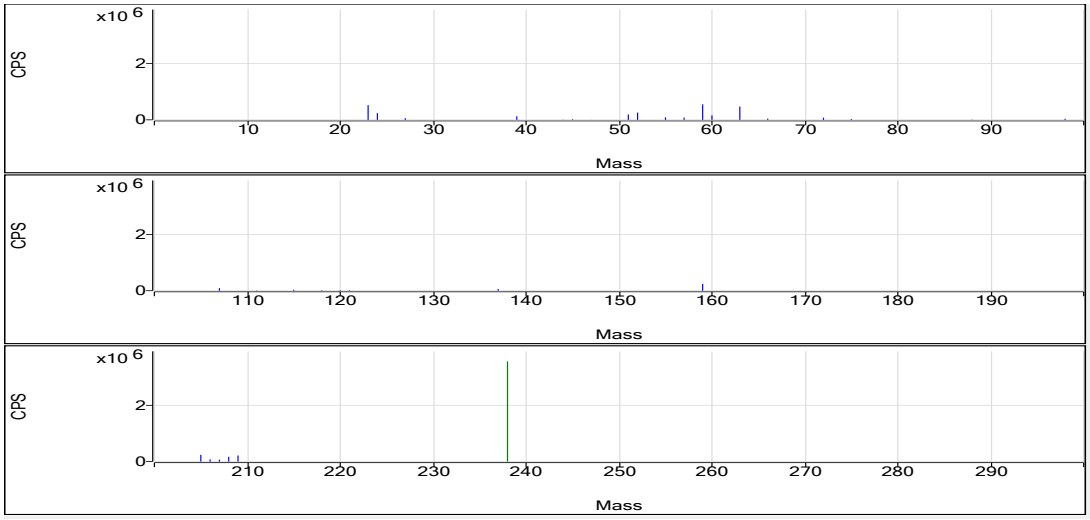


Quantitation Report

He



Quantitation Report

Data File Name	139_CCB.d
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\21K05A00.b
Acq Time	11/5/2021 3:35:33 PM
Sample Name	CCB 2014932
Sample Type	CCB
Comment	---
Prep Dilution	1.0000
Auto Dilution	1.0000
Total Dilution	1.0000
Operator Name	us19_usr_ins22323
Acq Mode	Spectrum
Cal Title	---
Cal Type	External Calibration
Last Calib	11/5/2021 12:55:59 PM
Bkg File	---
Bkg Mode	Count Subtraction except for ISTD
FQ BlankFile	---
VIS Fit	Point to Point

FullQuant Table

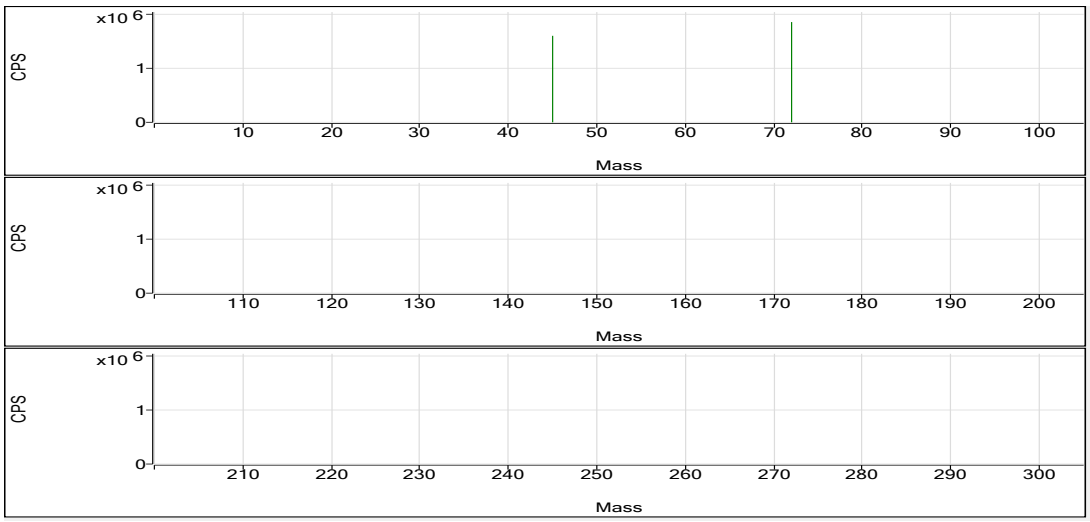
Element	Mass	ISTD	Tune Mode	Conc.	Units	RSD(%)	CPS	Ratio	Det.	Time(sec)	Rep
Be	9	45	No Gas	-0.003	ppb	N/A	29.33	0.0000	Pulse	0.5000	3
Se	78	72	H2	0.045	ppb	113.2	2.89	0.0000	Pulse	1.5000	3
Na	23	45	He	115.480	ppb	0.6	20247.75	0.9606	Pulse	0.1000	3
Mg	24	45	He	2.258	ppb	52.7	196.68	0.0094	Pulse	0.1000	3
Al	27	45	He	0.579	ppb	438.6	36.67	0.0017	Pulse	0.1000	3
K	39	45	He	75.322	ppb	3.5	6298.21	0.2988	Pulse	0.1000	3
Ca	44	45	He	27.129	ppb	105.4	106.67	0.0050	Pulse	0.1000	3
Ti	47	45	He	0.275	ppb	173.2	3.33	0.0002	Pulse	0.1000	3
V	51	45	He	0.043	ppb	121.5	270.01	0.0128	Pulse	0.5000	3
Cr	52	45	He	-0.030	ppb	N/A	636.70	0.0302	Pulse	0.1000	3
Mn	55	45	He	0.109	ppb	86.5	76.67	0.0037	Pulse	0.1000	3
Fe	57	45	He	4.229	ppb	68.0	116.67	0.0056	Pulse	0.1000	3
Co	59	45	He	0.097	ppb	11.2	270.01	0.0128	Pulse	0.1000	3
Ni	60	72	He	0.123	ppb	46.1	173.34	0.0021	Pulse	0.1000	3
Cu	63	72	He	0.081	ppb	13.9	406.69	0.0050	Pulse	0.1000	3
Zn	66	72	He	0.527	ppb	35.5	136.67	0.0017	Pulse	0.1000	3
As	75	72	He	0.074	ppb	134.7	42.00	0.0005	Pulse	0.5000	3
Sr	88	72	He	0.084	ppb	77.8	63.33	0.0008	Pulse	0.1000	3
Mo	98	72	He	0.008	ppb	56.6	36.67	0.0005	Pulse	0.1000	3
Ag	107	115	He	-0.001	ppb	N/A	16.67	0.0005	Pulse	0.1000	3
Cd	111	115	He	0.000	ppb	N/A	2.00	0.0001	Pulse	0.5000	3
Sn	120	115	He	-0.115	ppb	N/A	670.04	0.0181	Pulse	0.1000	3
Sb	121	115	He	0.028	ppb	126.0	43.33	0.0012	Pulse	0.1000	3
Ba	137	115	He	0.173	ppb	34.7	33.33	0.0009	Pulse	0.1000	3
Tl	205	209	He	0.015	ppb	37.6	196.68	0.0009	Pulse	0.1000	3
Pb	208	209	He	-0.012	ppb	N/A	726.70	0.0034	Pulse	0.1000	3
U	238	209	He	0.067	ppb	19.2	980.08	0.0045	Pulse	0.1000	3

ISTD Table:

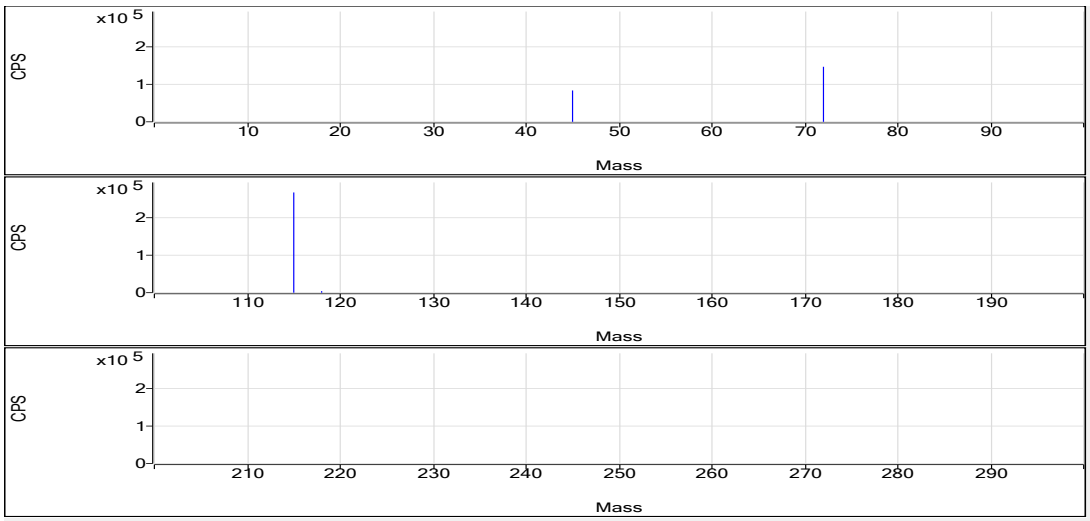
Quantitation Report

Tune Mode	Element	Mass	CPS	RSD(%)	ISTD Recovery %	Det.	Time(seq)	Rep
No Gas	Sc	45	1593006.43	1.2	97.9	Analog	0.1000	3
No Gas	Ge	72	1845941.12	1.1	98.6	Analog	0.1000	3
H2	Sc	45	83043.68	1.5	95.6	Pulse	0.1000	3
H2	Ge	72	145758.00	1.4	96.3	Pulse	0.1000	3
H2	In	115	265432.17	0.8	98.6	Pulse	0.1000	3
He	Sc	45	21079.16	2.5	98.7	Pulse	0.1000	3
He	Ge	72	80711.28	0.9	100.3	Pulse	0.1000	3
He	In	115	37023.41	0.9	101.5	Pulse	0.1000	3
He	Tb	159	239935.52	0.6	97.9	Pulse	0.1000	3
He	Bi	209	216935.57	0.6	98.2	Pulse	0.1000	3

No Gas

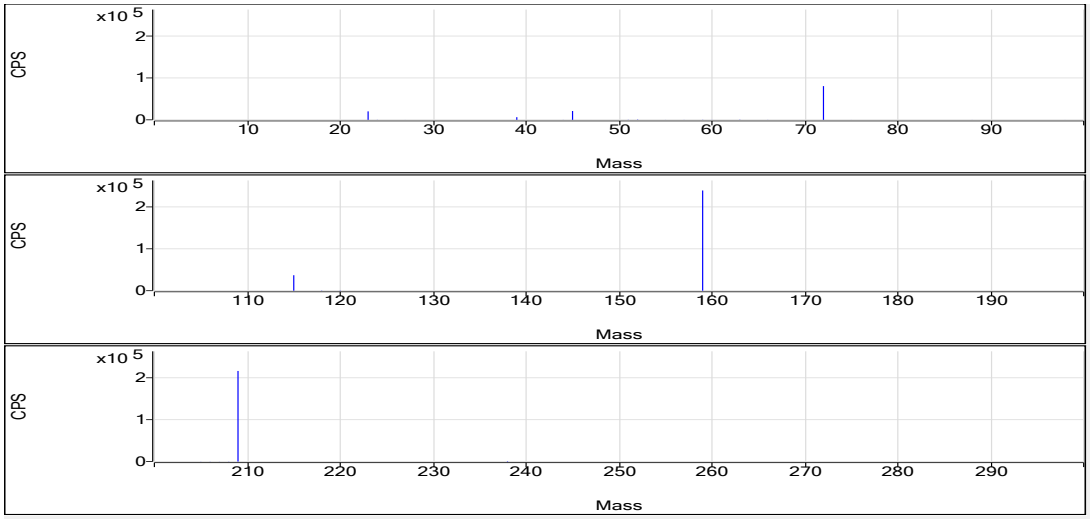


H2



Quantitation Report

He



US EPA Tune Check Report

Operator Name	us19_usr_ins22323
Acq/Data Batch	D:\Agilent\ICPMH\1\DATA\~ICPMS.b
Acq. Date-Time	11/5/2021 9:02:53 AM
Report Comment	E09 Tune Report
Instrument Name	G8403A SG20064740

[No Gas]

Sensitivity

Mass	Conc. [ug/l]	Count	CPS	Resp (Required) [cps/ug/l]	Resp (Flag)	RSD%	RSD% (Required)
9	10.00	3418	34176.75			0.330	5.000
24	10.00	16214	162139.95			0.526	5.000
25	10.00	2217	22170.18			0.199	5.000
26	10.00	2640	26402.86			0.327	5.000
59	10.00	31414	314143.96			0.510	5.000
115	10.00	61027	610266.76			0.539	5.000
206	10.00	15580	155797.17			0.805	5.000
207	10.00	13797	137970.41			0.537	5.000
208	10.00	33287	332871.85			0.440	5.000

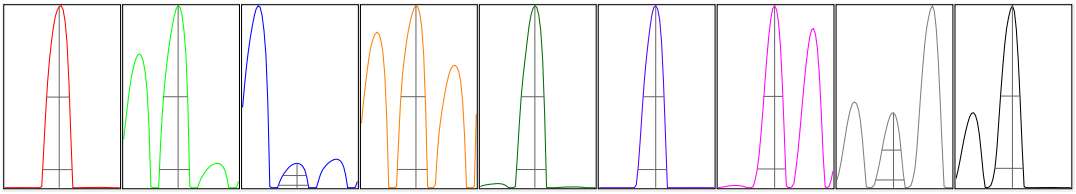
Mass	RSD% (Flag)
9	
24	
25	
26	
59	
115	
206	
207	
208	

Mass	Rep#1 Count	Rep#2 Count	Rep#3 Count	Rep#4 Count	Rep#5 Count
9	3407	3428	3415	3431	3407
24	16098	16199	16178	16291	16304
25	2219	2220	2216	2221	2210
26	2636	2640	2632	2655	2639
59	31166	31388	31406	31561	31551
115	60487	61301	60958	61250	61137
206	15410	15507	15584	15710	15688
207	13692	13828	13788	13781	13895
208	33028	33331	33386	33336	33355

Integration Time [sec] 0.1

Resolution/Axis

US EPA Tune Check Report



Mass	Peak Height	Axis	Axis (Required)	Axis (Flag)
9	6114.57	8.95	8.90 - 9.10	
24	28795.52	23.95	23.90 - 24.10	
25	3860.39	24.95	24.90 - 25.10	
26	4516.30	25.95	25.90 - 26.10	
59	57660.21	58.95	58.90 - 59.10	
115	118296.48	115.00	114.90 - 115.10	
206	32195.99	206.00	205.90 - 206.10	
207	28145.35	207.00	206.90 - 207.10	
208	68342.45	208.00	207.90 - 208.10	

Mass	W-50%	W-10%	W-10% (Required)	W-10% (Flag)
9	0.59	0.758	0.900	
24	0.62	0.770	0.900	
25	0.61	0.768	0.900	
26	0.63	0.769	0.900	
59	0.59	0.760	0.900	
115	0.54	0.740	0.900	
206	0.49	0.730	0.900	
207	0.49	0.733	0.900	
208	0.50	0.726	0.900	

Integration Time [sec]	0.1
Acquisition Time [sec]	235
Y Axis	Linear

Tune Parameters

Plasma Parameters

Plasma Mode	General Purpose	Nebulizer Gas	1.06 L/min	Makeup Gas	0.00 L/min
RF Power	1550 W	Option Gas	---	Auxiliary Gas	0.90 L/min
RF Matching	0.90 V	Nebulizer Pump	0.10 rps	Plasma Gas	15.0 L/min
Sample Depth	10.0 mm	S/C Temp	2 °C		

Lens Parameters

Extract 1	0.0 V	Omega Lens	8.7 V	Deflect	15.2 V
Extract 2	-200.0 V	Cell Entrance	-30 V	Plate Bias	-35 V
Omega Bias	-85 V	Cell Exit	-50 V		

Cell Parameters

Use Gas	No	3rd Gas Flow	---	Energy Discrimination	5.5 V

US EPA Tune Check Report

He Flow	0.0 mL/min	OctP Bias	-8.0 V		
H2 Flow	0.0 mL/min	OctP RF	160 V		

QP Parameters

Mass Gain	131	Axis Gain	1.0003	QP Bias	-2.5 V
Mass Offset	124	Axis Offset	-0.02		

Hardware Settings

Torch

Torch H	-1.0 mm	Torch V	-0.5 mm		

EM

Discriminator	3.9 mV	Analog HV	2150 V	Pulse HV	1291 V

Shipping and Receiving Documents

LLC

410-60870 Chain of Custody

Chain of Custody Record

eurofins Environment Testing America

Client Contact: Accounts Payable	Sampler: G. Bagshaw / T. Taylor	Lab PM: Weyandt, Barbara A	Carrier Tracking No(s):	COC No: 410-35626-11140.1
Company: ARCADIS U.S., Inc.	Phone: 570-362-2585	E-Mail: Barbara.Weyandt@eurofinset.com	State of Origin: NJ	Page: Page 1 of 2
Address: 630 Plaza Drive Suite 600	PWSID:	Analysis Requested		Job #:
City: Highlands Ranch	Due Date Requested:			
State, Zip: CO, 80129-2377	TAT Requested (days): Std			
Phone: 267-685-1844(Tel)	Compliance Project: Δ Yes Δ No			
Email: accountspayable.administration@arcadis.com	PO #: Purchase Order Requested			
Project Name: Fort Monmouth NJ	WO #: 30061472			
Site: Evans Area	Project #: 41008116			
	SSOW#:			

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	8260D_DOD5 - VOCs	6020B_DOD5 - Cadmium	Total Number of containers	Special Instructions/Note:
Preservation Code:						A	D		
3MW05R-102621	10/26/21	1425	G		N	X			
3MW01-102621	10/26/21	1555	G			X	X		
3MW01-102621 MS	10/26/21	1555	G			X	X		MS
3MW01-102621 MSD	10/26/21	1555	G			X	X		MSD
~~3MW~~ 3MW01-102621D	10/26/21	—	G			X	X		
3MW08-102721	10/27/21	1035	G			X			
3MW07-102721	10/27/21	1115	G			X			
3MW09-102721	10/27/21	1155	G			X			
FB-102621	10/26/21	1600	G	W		X	X		
FB-102721	10/27/21	0900	G	W		X	X		
Trip Blank	—	—	—	W		X			

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:			
Relinquished by:	Date/Time: 10/27/21 1430	Company	Received by:	Date/Time: 10/27/21 1442	Company		
Relinquished by:	Date/Time: 10.27.21 1716	Company	Received by:	Date/Time:	Company		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 10-27-21 1729	Company: ELLE		

Custody Seals Intact: Δ Yes (Δ No) | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 5.8

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 410-60870-1

Login Number: 60870
List Number: 1
Creator: Bryan, Debra A

List Source: Eurofins Lancaster Laboratories Env, LLC

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	True	

APPENDIX E
DATA VALIDATION REPORTS

DATA VALIDATION REPORT
MAY 2019 GROUNDWATER
FT. MONMOUTH CAMP EVANS AREA LTM
WALL TOWNSHIP, NEW JERSEY

Prepared For:

Watermark
175 Cabot Street
Lowell, MA 01854

Prepared By:

Wood Environment & Infrastructure Solutions, Inc.
511 Congress Street, Suite 200
Portland, ME 04101

June 28, 2019

Project Number: 3612152290

Chris Ricardi
Senior Chemist - Data Validation Lead

6/28/19
Date

1.0 INTRODUCTION

Data validation was completed on groundwater samples collected during sampling completed in May 2019. A summary of samples included in this review is presented on Table 1. Samples were analyzed by Chemtech, located in Mountainside, New Jersey, using the following U.S. Environmental Protection Agency (USEPA) analytical methods (USEPA, 1996):

- Volatile Organic Compounds by Method 8260C
- Metals (lead, nickel, cadmium) by Method 6010D

Data Validation was completed using procedures specified in the New Jersey Department of Environmental Protection (NJDEP) data quality assessment (DQA) technical guidelines [NJDEP, 2014]. Project quality control (QC) limits for analytical methods were based on the Appendix D-4 of the guideline. A summary of QC limits used during data validation is included on Table 2. Data qualifications were completed using the professional judgment of the validation chemist and general procedures specified in USEPA national data validation guidelines (USEPA, 2008; USEPA, 2010).
In accordance with general data reporting procedures in the Department of Defense (DOD) Quality Systems Manual (QSM) [DOD, 2018], the laboratory reported results using a combination of three detection limits including the limit of quantitation (LOQ), limit of detection (LOD), and the method detection limit (MDL). Results for compounds that are not detected in samples are reported as U qualified results at the LOD. The laboratory reports positive detections above the MDL. Values between the MDL and the LOQ are qualified as estimated (J) by the laboratory.

During the DQA review the following data quality indicators were reviewed:

- case narrative and data completeness
- sample identification
- sample collection and holding times
- QC blanks
- laboratory control samples (LCS)
- matrix spike/matrix spike duplicates (MS/MSD)
- field and lab duplicates
- surrogate recovery
- internal standard response and retention times
- interference check samples
- serial dilutions
- dilution factors
- reporting limits (RLs) and method detection limits (MDLs)
- electronic data verification

Data qualifications were completed if necessary in accordance with the validation guidelines and professional judgment using the following qualifiers:

U = The target compound was not detected at concentrations greater than the associated detection limit

J = The reported concentration is considered an estimated value

There were no data validation qualification actions. Final results are presented on Table 3.

2.0 DATA VALIDATION ACTIONS AND OBSERVATIONS

QC parameters and measurements checked during validation met analytical goals identified for this project. Unless specified below, results are usable without qualification.
The laboratory did not include a New Jersey Data of Known Quality Conformance/Non-Conformance Questionnaire Summary Form in the laboratory data report. A review of the data package narrative information available in the lab report was completed.

2.1 VOC Samples

The lab report narrative indicated that acetone was outside method requirements in the continuing calibration VN034793. Results for acetone were within method limits in the associated LCS and MS/MSD. Based on judgment the results for acetone in samples were accepted as reported by the laboratory.

The results for all other QC measurements were within control limits and results are interpreted to be usable as reported by the laboratory.

2.2 Metals

The results of quality control measurements were within control limits and results are interpreted to be usable as reported by the laboratory.

3.0 REFERENCES

Department of Defense (DOD), 2018. "Department of Defense (DOD) Department of Energy (DOE) Consolidated Quality Systems Manual for Environmental Laboratories"; Department of Navy; Version 5.1.1; February, 2018.

New Jersey Department of Environmental Protection (NJDEP), 2014. "Data Quality Assessment and Data Usability Evaluation Technical Guidance". Site Remediation Program; April 2014.

U.S. Environmental Protection Agency (USEPA), 1996. "Test Methods for Evaluating Solid Waste"; Laboratory Manual Physical/Chemical Methods; Office of Solid Waste and Emergency Response; Washington, DC; SW-846; December 1996 with revisions.

U.S. Environmental Protection Agency (USEPA), 2008. "USEPA Contract Laboratory Program National Functional Guidelines for Organic Superfund Data Review"; Office of Emergency and Remedial Response; EPA-540-/R-08-01; June 2008.

U.S. Environmental Protection Agency (USEPA), 2010. "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review"; Office of Emergency and Remedial Response; EPA-540-/R-10-011; June 2008.

Watermark
Ft Monmouth – Evans Area LTM
Data Validation Report – May 2019 Groundwater
Data Validation: Chris Ricardi, NRCC-EAC

June 26, 2019

Reviewed by: Julie Ricardi, Senior Chemist

June 26, 2019

TABLES

TABLE 1 - SAMPLE AND ANALYSIS SUMMARY
DATA VALIDATION REPORT
MAY 2019 GROUNDWATER
FT. MONMOUTH CAMP EVANS AREA LTM
WALL TOWNSHIP, NEW JERSEY

SDG	Location	Field Sample ID	Date	Media	Lab ID	Type	SW6010C Metals	SW8260C VOCs
K2902	MW-01	DUP-01	5/15/2019	GW	K2902-05	FD	1	52
K2902	MW-01	FM-EA-3MW01-051519	5/15/2019	GW	K2902-02	FS	1	52
K2902	MW-05R	FM-EA-3MW05-051519	5/15/2019	GW	K2902-01	FS		52
K2902	MW-06	DUP-02	5/15/2019	GW	K2902-09	FD	1	
K2902	MW-06	FM-EA-3MW06-051519	5/15/2019	GW	K2902-06	FS	1	
K2902	MW-07	FM-EA-3MW07-051619	5/16/2019	GW	K2902-14	FS		52
K2902	MW-08	FM-EA-3MW08-051619	5/16/2019	GW	K2902-12	FS		52
K2902	MW-09	FM-EA-3MW09-051619	5/16/2019	GW	K2902-11	FS		52
K2902	QC	FM-EA-RB01-051519	5/15/2019	BW	K2902-10	EB	2	52
K2902	QC	FM-EA-RB02-051619	5/16/2019	BW	K2902-13	EB		52
K2902	QC	TRIP-BLANK	5/9/2019	BW	K2902-15	TB		52

Notes:
GW = groundwater
BW = blank water
FS = field sample
FD = field duplicate
EB = equipment blank
TB = trip blank

prepared by WCG 6/20/19
reviewed by CR 6/27/19

TABLE 2 - PROJECT PRECISION AND ACCURACY GOALS
DATA VALIDATION REPORT
MAT 2019 GROUNDWATER
FT. MONMOUTH CAMP EVANS AREA LTM
WALL TOWNSHIP, NEW JERSEY

PARAMETER	QC TEST	ANALYTE	WATER (%R)	WATER (RPD)
Volatiles	Surrogate	All Surrogates	70-130	n/a
	LCS	All Target Compounds	70-130	n/a
	MS/MSD	All Target Compounds	70-130	30
	Field Duplicates	All Target Compounds	n/a	30
Inorganics	LCS	All Target Analytes	80-120	n/a
Metals	MS/MSD	All Target Analytes	75-125	20
	Field Duplicates	All Target Analytes	n/a	30

Notes:
%R = Percent Recovery
LCS = Laboratory Control Sample
MS/MSD = Matrix Spike/ Matrix Spike Duplicate
QC = Quality Control
RPD = Relative Percent Difference

TABLE 3 - FINAL SAMPLE RESULTS
DATA VALIDATION REPORT
MAY 2019 GROUNDWATER
FT. MONMOUTH CAMP EVANS AREA LTM
WALL TOWNSHIP, NEW JERSEY

			K2902 MW-01 5/15/2019 DUP-01 FD		K2902 MW-01 5/15/2019 FM-EA-3MW01-051519 FS		K2902 MW-05R 5/15/2019 FM-EA-3MW05-051519 FS		K2902 MW-06 5/15/2019 DUP-02 FD	
Method	**Parameter**	**Unit**	**Final Resul**	**Final Qualifi**	**Final Resul**	**Final Qualifi**	**Final Resul**	**Final Qualifi**	**Final Resul**	**Final Qualifi**
SW6010C	Cadmium	UG/L	8.32		7.82					
SW6010C	Lead	UG/L							3	U
SW8260C	1,1,1-Trichloroethane	UG/L	0.25	U	0.25	U	0.25	U		
SW8260C	1,1,2,2-Tetrachloroethane	UG/L	0.5	U	0.5	U	0.5	U		
SW8260C	1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0.5	U	0.5	U	0.5	U		
SW8260C	1,1,2-Trichloroethane	UG/L	0.25	U	0.25	U	0.25	U		
SW8260C	1,1-Dichloroethane	UG/L	0.5	U	0.5	U	0.5	U		
SW8260C	1,1-Dichloroethene	UG/L	0.5	U	0.5	U	0.5	U		
SW8260C	1,2,3-Trichlorobenzene	UG/L	0.75	U	0.75	U	0.75	U		
SW8260C	1,2,4-Trichlorobenzene	UG/L	0.5	U	0.5	U	0.5	U		
SW8260C	1,2-Dibromo-3-chloropropane	UG/L	0.75	U	0.75	U	0.75	U		
SW8260C	1,2-Dibromoethane	UG/L	0.5	U	0.5	U	0.5	U		
SW8260C	1,2-Dichlorobenzene	UG/L	0.25	U	0.25	U	0.25	U		
SW8260C	1,2-Dichloroethane	UG/L	0.5	U	0.5	U	0.5	U		
SW8260C	1,2-Dichloropropane	UG/L	0.5	U	0.5	U	0.5	U		
SW8260C	1,3-Dichlorobenzene	UG/L	0.5	U	0.5	U	0.5	U		
SW8260C	1,4-Dichlorobenzene	UG/L	0.5	U	0.5	U	0.5	U		
SW8260C	1,4-Dioxane	UG/L	50	U	50	U	50	U		
SW8260C	2-Butanone	UG/L	2.5	U	2.5	U	2.5	U		
SW8260C	2-Hexanone	UG/L	3.8	U	3.8	U	3.8	U		
SW8260C	4-Methyl-2-pentanone	UG/L	2.5	U	2.5	U	2.5	U		
SW8260C	Acetic acid, methyl ester	UG/L	0.75	U	0.75	U	0.75	U		
SW8260C	Acetone	UG/L	2.5	U	2.5	U	2.5	U		
SW8260C	Benzene	UG/L	0.25	U	0.25	U	0.25	U		

TABLE 3 - FINAL SAMPLE RESULTS
DATA VALIDATION REPORT
MAY 2019 GROUNDWATER
FT. MONMOUTH CAMP EVANS AREA LTM
WALL TOWNSHIP, NEW JERSEY

			K2902 MW-01 5/15/2019 DUP-01 FD	K2902 MW-01 5/15/2019 FM-EA-3MW01-051519 FS	K2902 MW-05R 5/15/2019 FM-EA-3MW05-051519 FS	K2902 MW-06 5/15/2019 DUP-02 FD
Method	**Parameter**	**Unit**	**Final Resul Final Qualifi**	**Final Resul Final Qualifi**	**Final Resul Final Qualifi**	**Final Resul Final Qualifi**
SW8260C	Bromochloromethane	UG/L	0.75 U	0.75 U	0.75 U	
SW8260C	Bromodichloromethane	UG/L	0.25 U	0.25 U	0.25 U	
SW8260C	Bromoform	UG/L	0.5 U	0.5 U	0.5 U	
SW8260C	Bromomethane	UG/L	3.8 U	3.8 U	3.8 U	
SW8260C	Carbon disulfide	UG/L	0.5 U	0.5 U	0.5 U	
SW8260C	Carbon tetrachloride	UG/L	0.5 U	0.5 U	0.5 U	
SW8260C	Chlorobenzene	UG/L	0.25 U	0.25 U	0.25 U	
SW8260C	Chloroethane	UG/L	0.75 U	0.75 U	0.75 U	
SW8260C	Chloroform	UG/L	0.5 U	0.5 U	0.5 U	
SW8260C	Chloromethane	UG/L	0.75 U	0.75 U	0.75 U	
SW8260C	cis-1,2-Dichloroethene	UG/L	0.75 U	0.75 U	0.75 U	
SW8260C	cis-1,3-Dichloropropene	UG/L	0.5 U	0.5 U	0.5 U	
SW8260C	Cyclohexane	UG/L	2.5 U	2.5 U	2.5 U	
SW8260C	Dibromochloromethane	UG/L	0.5 U	0.5 U	0.5 U	
SW8260C	Dichlorodifluoromethane	UG/L	0.5 U	0.5 U	0.5 U	
SW8260C	Ethylbenzene	UG/L	0.25 U	0.25 U	0.25 U	
SW8260C	Isopropylbenzene	UG/L	0.5 U	0.5 U	0.5 U	
SW8260C	Methyl cyclohexane	UG/L	0.5 U	0.5 U	0.5 U	
SW8260C	Methyl Tertbutyl Ether	UG/L	0.25 U	0.25 U	0.25 U	
SW8260C	Methylene chloride	UG/L	0.75 U	0.75 U	0.75 U	
SW8260C	Styrene	UG/L	0.25 U	0.25 U	0.25 U	
SW8260C	Tetrachloroethene	UG/L	0.5 U	0.5 U	0.5 U	
SW8260C	Toluene	UG/L	0.25 U	0.25 U	0.25 U	
SW8260C	trans-1,2-Dichloroethene	UG/L	0.5 U	0.5 U	0.5 U	

TABLE 3 - FINAL SAMPLE RESULTS
DATA VALIDATION REPORT
MAY 2019 GROUNDWATER
FT. MONMOUTH CAMP EVANS AREA LTM
WALL TOWNSHIP, NEW JERSEY

			K2902 MW-01 5/15/2019 DUP-01 FD		K2902 MW-01 5/15/2019 FM-EA-3MW01-051519 FS		K2902 MW-05R 5/15/2019 FM-EA-3MW05-051519 FS		K2902 MW-06 5/15/2019 DUP-02 FD	
Method	**Parameter**	**Unit**	**Final Resul**	**Final Qualifi**	**Final Resul**	**Final Qualifi**	**Final Resul**	**Final Qualifi**	**Final Resul**	**Final Qualifi**
SW8260C	trans-1,3-Dichloropropene	UG/L	0.25	U	0.25	U	0.25	U		
SW8260C	Trichloroethene	UG/L	0.75	U	0.75	U	0.75	U		
SW8260C	Trichlorofluoromethane	UG/L	0.5	U	0.5	U	0.5	U		
SW8260C	Vinyl chloride	UG/L	0.5	U	0.5	U	0.5	U		
SW8260C	Xylene, o	UG/L	0.5	U	0.5	U	0.5	U		
SW8260C	Xylenes (m&p)	UG/L	0.5	U	0.5	U	0.5	U		

Notes:
FS = field sample
FD = field duplicate
EB = equipment blank
TB = trip blank
U = undetected
J = estimated

TABLE 3 - FINAL SAMPLE RESULTS
DATA VALIDATION REPORT
MAY 2019 GROUNDWATER
FT. MONMOUTH CAMP EVANS AREA LTM
WALL TOWNSHIP, NEW JERSEY

			K2902 MW-06 5/15/2019 FM-EA-3MW06-051519 FS		K2902 MW-07 5/16/2019 FM-EA-3MW07-051619 FS		K2902 MW-08 5/16/2019 FM-EA-3MW08-051619 FS		K2902 MW-09 5/16/2019 FM-EA-3MW09-051619 FS	
Method	**Parameter**	**Unit**	**Final Resul**	**Final Qualifi**	**Final Resul**	**Final Qualifi**	**Final Resul**	**Final Qualifi**	**Final Resul**	**Final Qualifi**
SW6010C	Cadmium	UG/L								
SW6010C	Lead	UG/L	3	U						
SW8260C	1,1,1-Trichloroethane	UG/L			0.25	U	0.25	U	0.25	U
SW8260C	1,1,2,2-Tetrachloroethane	UG/L			0.5	U	0.5	U	0.5	U
SW8260C	1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L			0.5	U	0.5	U	0.5	U
SW8260C	1,1,2-Trichloroethane	UG/L			0.25	U	0.25	U	0.25	U
SW8260C	1,1-Dichloroethane	UG/L			0.5	U	0.5	U	0.5	U
SW8260C	1,1-Dichloroethene	UG/L			0.5	U	0.5	U	0.5	U
SW8260C	1,2,3-Trichlorobenzene	UG/L			0.75	U	0.75	U	0.75	U
SW8260C	1,2,4-Trichlorobenzene	UG/L			0.5	U	0.5	U	0.5	U
SW8260C	1,2-Dibromo-3-chloropropane	UG/L			0.75	U	0.75	U	0.75	U
SW8260C	1,2-Dibromoethane	UG/L			0.5	U	0.5	U	0.5	U
SW8260C	1,2-Dichlorobenzene	UG/L			0.25	U	0.25	U	0.25	U
SW8260C	1,2-Dichloroethane	UG/L			0.5	U	0.5	U	0.5	U
SW8260C	1,2-Dichloropropane	UG/L			0.5	U	0.5	U	0.5	U
SW8260C	1,3-Dichlorobenzene	UG/L			0.5	U	0.5	U	0.5	U
SW8260C	1,4-Dichlorobenzene	UG/L			0.5	U	0.5	U	0.5	U
SW8260C	1,4-Dioxane	UG/L			50	U	50	U	50	U
SW8260C	2-Butanone	UG/L			2.5	U	2.5	U	2.5	U
SW8260C	2-Hexanone	UG/L			3.8	U	3.8	U	3.8	U
SW8260C	4-Methyl-2-pentanone	UG/L			2.5	U	2.5	U	2.5	U
SW8260C	Acetic acid, methyl ester	UG/L			0.75	U	0.75	U	0.75	U
SW8260C	Acetone	UG/L			2.5	U	2.5	U	2.5	U
SW8260C	Benzene	UG/L			0.25	U	0.25	U	0.25	U

TABLE 3 - FINAL SAMPLE RESULTS
DATA VALIDATION REPORT
MAY 2019 GROUNDWATER
FT. MONMOUTH CAMP EVANS AREA LTM
WALL TOWNSHIP, NEW JERSEY

			K2902 MW-06 5/15/2019 FM-EA-3MW06-051519 FS		K2902 MW-07 5/16/2019 FM-EA-3MW07-051619 FS		K2902 MW-08 5/16/2019 FM-EA-3MW08-051619 FS		K2902 MW-09 5/16/2019 FM-EA-3MW09-051619 FS	
Method	**Parameter**	**Unit**	**Final Resul**	**Final Qualifi**	**Final Resul**	**Final Qualifi**	**Final Resul**	**Final Qualifi**	**Final Resul**	**Final Qualifi**
SW8260C	Bromochloromethane	UG/L			0.75	U	0.75	U	0.75	U
SW8260C	Bromodichloromethane	UG/L			0.25	U	0.25	U	0.25	U
SW8260C	Bromoform	UG/L			0.5	U	0.5	U	0.5	U
SW8260C	Bromomethane	UG/L			3.8	U	3.8	U	3.8	U
SW8260C	Carbon disulfide	UG/L			0.5	U	0.5	U	0.5	U
SW8260C	Carbon tetrachloride	UG/L			0.5	U	0.5	U	0.5	U
SW8260C	Chlorobenzene	UG/L			0.25	U	0.25	U	0.25	U
SW8260C	Chloroethane	UG/L			0.75	U	0.75	U	0.75	U
SW8260C	Chloroform	UG/L			0.5	U	0.5	U	0.5	U
SW8260C	Chloromethane	UG/L			0.75	U	0.75	U	0.75	U
SW8260C	cis-1,2-Dichloroethene	UG/L			0.36	J	0.75	U	0.75	U
SW8260C	cis-1,3-Dichloropropene	UG/L			0.5	U	0.5	U	0.5	U
SW8260C	Cyclohexane	UG/L			2.5	U	2.5	U	2.5	U
SW8260C	Dibromochloromethane	UG/L			0.5	U	0.5	U	0.5	U
SW8260C	Dichlorodifluoromethane	UG/L			0.5	U	0.5	U	0.5	U
SW8260C	Ethylbenzene	UG/L			0.25	U	0.25	U	0.25	U
SW8260C	Isopropylbenzene	UG/L			0.5	U	0.5	U	0.5	U
SW8260C	Methyl cyclohexane	UG/L			0.5	U	0.5	U	0.5	U
SW8260C	Methyl Tertbutyl Ether	UG/L			0.69	J	0.25	U	0.25	U
SW8260C	Methylene chloride	UG/L			0.75	U	0.75	U	0.75	U
SW8260C	Styrene	UG/L			0.25	U	0.25	U	0.25	U
SW8260C	Tetrachloroethene	UG/L			0.5	U	0.5	U	0.5	U
SW8260C	Toluene	UG/L			0.25	U	0.25	U	0.25	U
SW8260C	trans-1,2-Dichloroethene	UG/L			0.5	U	0.5	U	0.5	U

TABLE 3 - FINAL SAMPLE RESULTS
DATA VALIDATION REPORT
MAY 2019 GROUNDWATER
FT. MONMOUTH CAMP EVANS AREA LTM
WALL TOWNSHIP, NEW JERSEY

			K2902 MW-06 5/15/2019 FM-EA-3MW06-051519 FS		K2902 MW-07 5/16/2019 FM-EA-3MW07-051619 FS		K2902 MW-08 5/16/2019 FM-EA-3MW08-051619 FS		K2902 MW-09 5/16/2019 FM-EA-3MW09-051619 FS	
Method	**Parameter**	**Unit**	**Final Resul**	**Final Qualifi**	**Final Resul**	**Final Qualifi**	**Final Resul**	**Final Qualifi**	**Final Resul**	**Final Qualifi**
SW8260C	trans-1,3-Dichloropropene	UG/L			0.25	U	0.25	U	0.25	U
SW8260C	Trichloroethene	UG/L			17.7		0.75	U	0.75	U
SW8260C	Trichlorofluoromethane	UG/L			0.5	U	0.5	U	0.5	U
SW8260C	Vinyl chloride	UG/L			0.5	U	0.5	U	0.5	U
SW8260C	Xylene, o	UG/L			0.5	U	0.5	U	0.5	U
SW8260C	Xylenes (m&p)	UG/L			0.5	U	0.5	U	0.5	U

Notes:
FS = field sample
FD = field duplicate
EB = equipment blank
TB = trip blank
U = undetected
J = estimated

TABLE 3 - FINAL SAMPLE RESULTS
DATA VALIDATION REPORT
MAY 2019 GROUNDWATER
FT. MONMOUTH CAMP EVANS AREA LTM
WALL TOWNSHIP, NEW JERSEY

			K2902 QC 5/9/2019 TRIP-BLANK TB		K2902 QC 5/15/2019 FM-EA-RB01-051519 EB		K2902 QC 5/16/2019 FM-EA-RB02-051619 EB	
Method	**Parameter**	**Unit**	**Final Resul**	**Final Qualifi**	**Final Resul**	**Final Qualifi**	**Final Resul**	**Final Qualifi**
SW6010C	Cadmium	UG/L			1.5	U		
SW6010C	Lead	UG/L			3	U		
SW8260C	1,1,1-Trichloroethane	UG/L	0.25	U	0.25	U	0.25	U
SW8260C	1,1,2,2-Tetrachloroethane	UG/L	0.5	U	0.5	U	0.5	U
SW8260C	1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0.5	U	0.5	U	0.5	U
SW8260C	1,1,2-Trichloroethane	UG/L	0.25	U	0.25	U	0.25	U
SW8260C	1,1-Dichloroethane	UG/L	0.5	U	0.5	U	0.5	U
SW8260C	1,1-Dichloroethene	UG/L	0.5	U	0.5	U	0.5	U
SW8260C	1,2,3-Trichlorobenzene	UG/L	0.75	U	0.75	U	0.75	U
SW8260C	1,2,4-Trichlorobenzene	UG/L	0.5	U	0.5	U	0.5	U
SW8260C	1,2-Dibromo-3-chloropropane	UG/L	0.75	U	0.75	U	0.75	U
SW8260C	1,2-Dibromoethane	UG/L	0.5	U	0.5	U	0.5	U
SW8260C	1,2-Dichlorobenzene	UG/L	0.25	U	0.25	U	0.25	U
SW8260C	1,2-Dichloroethane	UG/L	0.5	U	0.5	U	0.5	U
SW8260C	1,2-Dichloropropane	UG/L	0.5	U	0.5	U	0.5	U
SW8260C	1,3-Dichlorobenzene	UG/L	0.5	U	0.5	U	0.5	U
SW8260C	1,4-Dichlorobenzene	UG/L	0.5	U	0.5	U	0.5	U
SW8260C	1,4-Dioxane	UG/L	50	U	50	U	50	U
SW8260C	2-Butanone	UG/L	2.5	U	2.5	U	2.5	U
SW8260C	2-Hexanone	UG/L	3.8	U	3.8	U	3.8	U
SW8260C	4-Methyl-2-pentanone	UG/L	2.5	U	2.5	U	2.5	U
SW8260C	Acetic acid, methyl ester	UG/L	0.75	U	0.75	U	0.75	U
SW8260C	Acetone	UG/L	2.5	U	4.1	J	6.9	
SW8260C	Benzene	UG/L	0.25	U	0.25	U	0.25	U

TABLE 3 - FINAL SAMPLE RESULTS
DATA VALIDATION REPORT
MAY 2019 GROUNDWATER
FT. MONMOUTH CAMP EVANS AREA LTM
WALL TOWNSHIP, NEW JERSEY

			K2902 QC 5/9/2019 TRIP-BLANK TB		K2902 QC 5/15/2019 FM-EA-RB01-051519 EB		K2902 QC 5/16/2019 FM-EA-RB02-051619 EB	
Method	**Parameter**	**Unit**	**Final Resul**	**Final Qualifi**	**Final Resul**	**Final Qualifi**	**Final Resul**	**Final Qualifi**
SW8260C	Bromochloromethane	UG/L	0.75	U	0.75	U	0.75	U
SW8260C	Bromodichloromethane	UG/L	0.25	U	0.25	U	0.25	U
SW8260C	Bromoform	UG/L	0.5	U	0.5	U	0.5	U
SW8260C	Bromomethane	UG/L	3.8	U	3.8	U	3.8	U
SW8260C	Carbon disulfide	UG/L	0.5	U	0.5	U	0.5	U
SW8260C	Carbon tetrachloride	UG/L	0.5	U	0.5	U	0.5	U
SW8260C	Chlorobenzene	UG/L	0.25	U	0.25	U	0.25	U
SW8260C	Chloroethane	UG/L	0.75	U	0.75	U	0.75	U
SW8260C	Chloroform	UG/L	0.5	U	0.5	U	0.5	U
SW8260C	Chloromethane	UG/L	0.75	U	0.75	U	0.75	U
SW8260C	cis-1,2-Dichloroethene	UG/L	0.75	U	0.75	U	0.75	U
SW8260C	cis-1,3-Dichloropropene	UG/L	0.5	U	0.5	U	0.5	U
SW8260C	Cyclohexane	UG/L	2.5	U	2.5	U	2.5	U
SW8260C	Dibromochloromethane	UG/L	0.5	U	0.5	U	0.5	U
SW8260C	Dichlorodifluoromethane	UG/L	0.5	U	0.5	U	0.5	U
SW8260C	Ethylbenzene	UG/L	0.25	U	0.25	U	0.25	U
SW8260C	Isopropylbenzene	UG/L	0.5	U	0.5	U	0.5	U
SW8260C	Methyl cyclohexane	UG/L	0.5	U	0.5	U	0.5	U
SW8260C	Methyl Tertbutyl Ether	UG/L	0.25	U	0.25	U	0.25	U
SW8260C	Methylene chloride	UG/L	0.75	U	0.75	U	0.75	U
SW8260C	Styrene	UG/L	0.25	U	0.25	U	0.25	U
SW8260C	Tetrachloroethene	UG/L	0.5	U	0.5	U	0.5	U
SW8260C	Toluene	UG/L	0.25	U	0.25	U	0.25	U
SW8260C	trans-1,2-Dichloroethene	UG/L	0.5	U	0.5	U	0.5	U

TABLE 3 - FINAL SAMPLE RESULTS
DATA VALIDATION REPORT
MAY 2019 GROUNDWATER
FT. MONMOUTH CAMP EVANS AREA LTM
WALL TOWNSHIP, NEW JERSEY

			K2902 QC 5/9/2019 TRIP-BLANK TB		K2902 QC 5/15/2019 FM-EA-RB01-051519 EB		K2902 QC 5/16/2019 FM-EA-RB02-051619 EB	
Method	**Parameter**	**Unit**	**Final Resul**	**Final Qualifi**	**Final Resul**	**Final Qualifi**	**Final Resul**	**Final Qualifi**
SW8260C	trans-1,3-Dichloropropene	UG/L	0.25	U	0.25	U	0.25	U
SW8260C	Trichloroethene	UG/L	0.75	U	0.75	U	0.75	U
SW8260C	Trichlorofluoromethane	UG/L	0.5	U	0.5	U	0.5	U
SW8260C	Vinyl chloride	UG/L	0.5	U	0.5	U	0.5	U
SW8260C	Xylene, o	UG/L	0.5	U	0.5	U	0.5	U
SW8260C	Xylenes (m&p)	UG/L	0.5	U	0.5	U	0.5	U

Notes:
FS = field sample
FD = field duplicate
EB = equipment blank
TB = trip blank
U = undetected
J = estimated

ATTACHMENTS
DATA VALIDATION CHECKLISTS AND RECORDS

NJ DATA QUALITY ASSESSMENT (DQA) VALIDATION CHECKLIST
Appendix C DATA QUALITY ASSESSMENT AND DATA USABILITY EVALUATION TECHNICAL GUIDANCE, April 2014

Project: Watermark - Ft Monmouth **Method:** VOCs
Project #: 3612152290 **Laboratory and SDG:** CHEMTECH K2902
Date: 6/8/15 **Reviewer:** CR

1. **Case Narrative and Data Package Completeness**
   - ☐ **DKQ Conformance/Nonconformance Summary Questionaire**

   No Questionaire in lab report. Reviewed Narrative. No QC issues identified except CCV/Acetone

2. **Sample IDs (COC Review)**

   OK

3. **Holding Time and Sample Preservation/Collection**

   Collected 5/15, 5/16 Analysis: 5/17 ok

4. **Sample Results Summary Review**
   - ☒ **RLs/MDLs reporting/dilution factors** LOQ = 1 µg/L MDL

   No dilutions

5. **QC Blanks** MK all ND RBO2 - acetone 6.9 RBO1 - acetone 4.1 J ND in samples ↓

   TBK - ND

6. **Laboratory Control Sample Review** (Blank Spike)

   All ~~within~~ limits

7. **Field and Lab Duplicate Precision** Dup-1 FM-EA-3MW01

   ND in ~~both~~

8. **Lab Duplicate Precision**

   NA

9. **Matrix Spike/Matrix Spike Duplicate Results (if applicable)** FM-EA-3MW01

   All ~~within~~ %R and RPD limits

10. **Surrogate Recovery (if applicable)**

    All within limits ↘ Internal Standard Response/RT

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CASE NARRATIVE

Watermark
Project Name: Camp Evans Area, Ft. Monmouth
Project # N/A
Chemtech Project # H4183
Test Name: VOCMS Group1

A. Number of Samples and Date of Receipt:
15 Water samples were received on 07/21/2016.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: Metals Group3, Metals Group4, Metals Group5 and VOCMS Group1. This data package contains results for VOCMS Group1.

C. Analytical Techniques:
The analysis performed on instrument MSVOA_N were done using GC column RXI-624SIL MS 30m 0.25mm 1.4 um. Cat#13868.The analysis of VOCMS Group1 was based on method 8260-Low.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria.
The Internal Standards Areas met the acceptable requirements.
The Retention Times were acceptable for all samples.
The MS recoveries met the requirements for all compounds .
The MSD recoveries met the acceptable requirements .
The RPD recoveries met criteria .
The Blank Spike met requirements for all samples .
The Blank analysis did not indicate the presence of lab contamination.

Calib OK

The %RSD is greater than 15% in the Initial Calibration (Method 82N071416W.M) for Chloromethane, Bromomethane, Chloroethane, Acetone, Carbon Disulfide, Methyl Acetate, Cyclohexane, 1,2-Dibromo-3-Chloropropane,1,4-Dioxane these compounds are passing on Linear regression.
The Continuous Calibration File ID VN034793.D met the requirements except for Acetone .
The Tuning criteria met requirements.

Out CCV. Within LCS limits. No Qual

E. Additional Comments:

Please use %D calculated based on Avg RF and CCRF for all compounds using Average Response Factor when the %RSD value for a compound is <15% for the Initial Calibration curve and use %D calculated based on Amount added and Calculated amount

NJ DATA QUALITY ASSESSMENT (DQA) VALIDATION CHECKLIST

Appendix C DATA QUALITY ASSESSMENT AND DATA USABILITY EVALUATION TECHNICAL GUIDANCE, April 2014

Project: Watermark - Ft Monmouth Method: Metals Cd, Pb,
Project #: 3612152290 Laboratory and SDG: CHEMTECH K2902
Date: 6/8/15 Reviewer: CR

1. **Case Narrative and Data Package Completeness**
   - ☐ DKQ Conformance/Nonconformance Summary Questionaire

   No Questionaire in lab report. No QC issues identified in Narrative.

2. **Sample IDs (COC Review)**

   ok

3. **Holding Time and Sample Preservation/Collection**

   Collected 5/15 + 5/16 5/20

4. **Sample Results Summary Review**
   - ☐ RLs/MDLs reporting/dilution factors

5. **QC Blanks** CCB Pb 3.51-5.87 ug/L ND in Samples
   MBK - ND

6. **Laboratory Control Sample Review** Within Limits

7. **Field and Lab Duplicate Precision** Dup-01 ~~Cd~~ Pb — FM-EA-3M06 ok ND
   FM-EA-3MW01 → Dup-01 Cd 7.82/8.32 RPD 6.

8. **Lab Duplicate Precision** FM-EW-3MW01
   within limits

9. **Matrix Spike/Matrix Spike Duplicate Results (if applicable)** FM-EA-3MW01, within limits
   FM-EA-3MW06 - within limits

10. **Surrogate Recovery (if applicable)**

    NA

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6

Metals
- 4 -
INTERFERENCE CHECK SAMPLE

Client: Watermark **SDG No.:** K2902

Contract: WATE05 **Lab Code:** CHEM **Case No.:** K2902 **SAS No.:** K2902

D

ICS Source: EPA **Instrument ID:** P4

Sample ID	Analyte	Result ug/L	True Value ug/L	% Recovery	Low Limit (ug/L)	High Limit (ug/L)	Analysis Date	Analysis Time	Run Number
ICSA01	Cadmium	-1.65	1.0	165	-5	7	05/21/2019	12:16	LB102904
	Lead	-11			-12	12	05/21/2019	12:16	LB102904
ICSAB01	Cadmium	1060	972	109.1	778	1166	05/21/2019	12:21	LB102904
	Lead	44.1	49.0	90	39	59	05/21/2019	12:21	LB102904
ICSA01	Cadmium	-1.36	1.0	136	-5	7	05/23/2019	12:49	LB102957
	Lead	1.66			-12	12	05/23/2019	12:49	LB102957
ICSAB01	Cadmium	1010	972	103.9	778	1166	05/23/2019	13:06	LB102957
	Lead	52.4	49.0	106.9	39	59	05/23/2019	13:06	LB102957

< QL possible high bias

All Pb Reported ND, No Action.

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Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: Watermark **SDG No.:** K2902

Contract: WATE05 **Lab Code:** CHEM **Case No.:** K2902 **SAS No.:** K2902

Sample ID	Analyte	Result ug/L	Acceptance Limit	Conc Qual	CRQL	M	Analysis Date	Analysis Time	Run Number
CCB01	Cadmium	6.0	+/-6.0	U	6.0	P	05/21/2019	12:41	LB102904
	Lead	12.0	+/-12.0	U	12.0	P	05/21/2019	12:41	LB102904
CCB02	Cadmium	6.0	+/-6.0	U	6.0	P	05/21/2019	13:46	LB102904
	Lead	12.0	+/-12.0	U	12.0	P	05/21/2019	13:46	LB102904
CCB03	Cadmium	6.0	+/-6.0	U	6.0	P	05/21/2019	14:44	LB102904
	Lead	5.87	+/-12.0	J	12.0	P	05/21/2019	14:44	LB102904
CCB04	Cadmium	6.0	+/-6.0	U	6.0	P	05/21/2019	16:04	LB102904
	Lead	12.0	+/-12.0	U	12.0	P	05/21/2019	16:04	LB102904
CCB05	Cadmium	6.0	+/-6.0	U	6.0	P	05/21/2019	17:09	LB102904
	Lead	12.0	+/-12.0	U	12.0	P	05/21/2019	17:09	LB102904
CCB06	Cadmium	6.0	+/-6.0	U	6.0	P	05/21/2019	18:02	LB102904
	Lead	3.51	+/-12.0	J	12.0	P	05/21/2019	18:02	LB102904
CCB07	Cadmium	6.0	+/-6.0	U	6.0	P	05/21/2019	19:04	LB102904
	Lead	12.0	+/-12.0	U	12.0	P	05/21/2019	19:04	LB102904
CCB08	Cadmium	6.0	+/-6.0	U	6.0	P	05/21/2019	19:57	LB102904
	Lead	12.0	+/-12.0	U	12.0	P	05/21/2019	19:57	LB102904

Pb Lab contamination < RL

No detections in sample. No Quals.

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6

Metals

-9 -

ICP SERIAL DILUTIONS

SAMPLE NO.

FM-EA-3MW01-051519L

D

E

Lab Name: Chemtech Consulting Group **Contract:** WATE05

Lab Code: CHEM **Lb No.:** lb102904 **Lab Sample ID :** K2902-02L **SDG No.:** K2902

Matrix (soil/water): Water **Level (low/med):** LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Cadmium	7.82		8.05	J	3		P
Lead	2.68	J	8.6	J	221		P

Large difference. Interpreted to be impacted from low lab Contamination. No action.

Fort Monmouth – Evans Area

Data Review Report

Oceanport, Monmouth County, New Jersey

Volatile Organic Compound (VOC) and Metals Analysis

SDG #410-60870-1

Analyses Performed By:
Eurofins Lancaster Laboratories
Lancaster, Pennsylvania

Report #43404R
Review Level: Stage 2A
Project: 30061472.19

Summary

This Data Review Report summarizes the review of Sample Delivery Group (SDG) #410-60870-1 for samples collected in association with the Fort Monmouth – Evans Area located in Oceanport, Monmouth County, New Jersey. The review was conducted as a Stage 2A evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis			
					VOC	SVOC	MET	MISC
3MW05R-102621	410-60870-1	Water	10/26/2021		X			
3MW01-102621	410-60870-2	Water	10/26/2021		X		X	
3MW01-102621D	410-60870-3	Water	10/26/2021	3MW01-102621	X		X	
3MW08-102721	410-60870-4	Water	10/27/2021		X			
3MW07-102721	410-60870-5	Water	10/27/2021		X			
3MW09-102721	410-60870-6	Water	10/27/2021		X			
FB-102621	410-60870-7	Water	10/26/2021		X		X	
FB-102721	410-60870-8	Water	10/27/2021		X		X	
Trip Blank	410-60870-9	Water	10/26/2021		X			

Analytical Data Package Documentation

The table below evaluates the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed chain-of-custody form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data package completeness and compliance		X		X	

Note:
QA = quality assurance

Organic Analysis Introduction

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Method 8260D. Data were reviewed in accordance with the Department of Defense (DoD) Environmental Data Quality Workgroup General Data Validation Guidelines, November 2019; DoD Environmental Data Quality Workgroup Data Validation Guidelines Module 1: Data Validation Procedure for Organic Analysis by GC/MS, May 2020; DoD Data Validation Guidelines Module 1, 2, and 4 Revised Blank Qualification Table, May 2021; USEPA National Functional Guidelines for Organic Superfund Methods Data Review, EPA 540-R-20-005, November 2020 (with reference to the historical USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, OSWER 9240.1-05A-P, October 1999, as appropriate); and the Draft Final Uniform Federal Policy-Quality Assurance Project Plan, Fort Monmouth, Oceanport, Monmouth County, New Jersey, August 2021.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with DoD General Data Validation Guidelines:

- Laboratory Data Qualifiers
  - U Undetected: The analyte/compound was analyzed for, but not detected. The associated value is the limit of detection (LOD).
  - B Blank contamination: The analyte has been found in the field sample as well as its associated blank, its presence in the sample may be suspect.
  - J Estimated: The compound was positively identified; however, the associated numerical value is an estimated concentration greater than the detection limit (DL) but less than the limit of quantitation (LOQ).
- Quantitation Qualifiers
  - E The compound was quantitated above the calibration range.
  - D Concentration is based on a diluted sample analysis.
- Data Validation Qualifiers
  - UB Compound is considered non-detect at the listed value due to associated blank contamination.
  - J The reported result was an estimated value with an unknown bias.
  - J+ The reported result was an estimated value, but the result may be biased high.
  - J- The reported result was an estimated value, but the result may be biased low.
  - UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

X The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project QC criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which would include a project chemist), but exclusion of the data is recommended.

No compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

Volatile Organic Compound (VOC) Analyses

1. Holding Times

The specified holding times for the following methods are presented in the table below.

Method	Matrix	Holding Time	Preservation
SW-846 8260D	Water	14 days from collection to analysis (preserved) 7 days from collection to analysis (non-preserved)	Cool to <6 °C; preserved to a pH of less than 2 s.u.

Note:
s.u. Standard units

All samples were analyzed within the specified holding time criterion.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

The quality assurance blank results are compared to the associated sample results to determine the appropriate qualification of the sample results, if needed. Blank results are evaluated using the DoD Data Validation Guidelines Module 1,2, and 4 Revised Blank Qualification Table, May 2021.

Chloroform was detected in the associated field blanks FB-102621 and FB-102721; however, the associated sample results were non-detect. No qualification of the sample results was required.

3. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the DoD QSM-established acceptance limits.

All surrogate recoveries were within control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the DoD QSM-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the DoD QSM-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS/MSD analysis performed on sample location 3MW01-102621 exhibited acceptable recoveries and RPDs between the MS/MSD recoveries.

5. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the DoD QSM-established acceptance limits.

The LCS analysis exhibited recoveries within the control limits.

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
3MW01-102621 / 3MW01-102621D	cis-1,2-Dichloroethene	0.32 J	0.33 J	AC
	Trichloroethene	6.2	5.8	6.7%

Note:
AC Acceptable

The differences in the results between the parent sample 3MW01-102621 and field duplicate sample 3MW01-102621D were in agreement.

7. System Performance and Overall Assessment

As noted in the case narrative, the response for cyclohexane and methylcyclohexane in the continuing calibration verification exceeded the acceptance criteria with a low bias. The laboratory-assigned “UQ” qualifiers were changed to “UJ” during data validation for all samples reported with SDG #410-60870-1.

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

Data Validation Checklist for VOCs

VOCs: SW-846 8260D	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Stage 2A Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Field blanks		X	X		
C. Trip blanks		X		X	
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate (LCSD) %R	X				X
LCS/LCSD Precision (RPD)	X				X
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)		X		X	
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	

Notes:
%R Percent recovery
RPD Relative percent difference

Inorganic Analysis Introduction

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Method 6020B. Data were reviewed in accordance with the Department of Defense (DoD) Environmental Data Quality Workgroup General Data Validation Guidelines, November 2019; DoD Environmental Data Quality Workgroup Data Validation Guidelines Module 2: Data Validation Procedure for Metals by ICP-OES, May 2020; DoD Data Validation Guidelines Module 1, 2, and 4 Revised Blank Qualification Table, May 2021; USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review, EPA 542-R-20-006, November 2020 (with reference to the historical USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, OSWER 9240.1-45, October 2004, as appropriate); and the Draft Final Uniform Federal Policy-Quality Assurance Project Plan, Fort Monmouth, Oceanport, Monmouth County, New Jersey, August 2021.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with DoD General Data Validation Guidelines:

- Laboratory Data Qualifiers
  - U Undetected: The analyte/compound was analyzed for, but not detected. The associated value is the limit of detection (LOD).
  - B Blank contamination: The analyte has been found in the field sample as well as its associated blank, its presence in the sample may be suspect.
  - J Estimated: The compound was positively identified; however, the associated numerical value is an estimated concentration greater than the detection limit (DL) but less than the limit of quantitation (LOQ).
- Quantitation Qualifiers
  - E The compound was quantitated above the calibration range.
  - D Concentration is based on a diluted sample analysis.
- Data Validation Qualifiers
  - UB Compound is considered non-detect at the listed value due to associated blank contamination.
  - J The reported result was an estimated value with an unknown bias.
  - J+ The reported result was an estimated value, but the result may be biased high.
  - J- The reported result was an estimated value, but the result may be biased low.
  - UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

X The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project QC criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team (which would include a project chemist), but exclusion of the data is recommended.

No compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

Metals Analyses

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 6020B	Water	180 days from collection to analysis	Cool to <6 °C; preserved to a pH of less than 2.

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

The quality assurance blank results are compared to the associated sample results to determine the appropriate qualification of the sample results, if needed. Blank results are evaluated using the DoD Data Validation Guidelines Module 1,2, and 4 Revised Blank Qualification Table, May 2021.

Metals were not detected above the DL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Matrix Spike/Matrix Spike Duplicate (MS/MSD)/Laboratory Duplicate Analysis

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

3.1 MS/MSD Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The analytes used to perform the MS/MSD analysis must exhibit a percent recovery within the DoD QSM-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the DoD QSM-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS/MSD analysis performed on sample location 3MW01-102621 exhibited acceptable recoveries and RPDs between the MS/MSD recoveries.

3.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the RL. A control limit of 20% for water matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of one time the RL is applied for water matrices.

The laboratory duplicate analysis performed on sample location 3MW01-102621 exhibited acceptable RPD between the sample results.

4. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
3MW01-102621 / 3MW01-102621D	Cadmium	3.5	3.6	2.8%

Note:
AC Acceptable

The difference in the results between the parent sample 3MW01-102621 and field duplicate sample 3MW01-102621D were in agreement.

5. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit a percent recovery within the DoD QSM-established control limits.

The LCS analysis exhibited recoveries within the control limits.

6. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

Data Validation Checklist for Metals

METALS: SW-846 6020B	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)					
Stage 2A Validation					
Holding Times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method Blanks		X		X	
B. Field Blanks		X		X	
Laboratory Control Sample (LCS)		X		X	
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)		X		X	

Notes:

%R Percent recovery

RPD Relative percent difference

VALIDATION PERFORMED BY: Jennifer Singer

SIGNATURE:

DATE: November 17, 2021

PEER REVIEW: Dennis Capria

DATE: December 2, 2021

Chain of Custody and Corrected Sample Analysis Data Sheets

LLC

Chain of Custody Record

eurofins Environment Testing America

Client Contact: Accounts Payable	Sampler: G. Basalyga / T. Taye	Lab PM: Weyandt, Barbara A	Carrier Tracking No(s):	COC No: 410-35626-11140 1
Company: ARCADIS U S , Inc.	Phone: 570-362-2585	E-Mail: Barbara.Weyandt@eurofinset.com	State of Origin: NJ	Page: Page 1 of 2
Address: 630 Plaza Drive Suite 600	PWSID:	Analysis Requested		Job #:
City: Highlands Ranch	Due Date Requested:			
State, Zip: CO, 80129-2377	TAT Requested (days): Std			
Phone: 267-685-1844(Tel)	Compliance Project: Δ Yes Δ No			
Email: accountspayable.administration@arcadis.com	PO #: Purchase Order Requested			
Project Name: Fort Monmouth NJ	WO #: 30061472			
Site: Evans Area	Project #: 41008116			
	SSOW#:			

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260D_DOD5 - VOCs	6020B_DOD5 - Cadmium	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A	D		
3MW05R-102621	10/26/21	1425	G		N		X			
3MW01-102621	10/26/21	1555	G			X	X	X		
3MW01-102621 MS	10/26/21	1555	G			X	X	X		MS
3MW01-102621 MSD	10/26/21	1555	G			X	X	X		MSD
~~3MW~~ 3MW01-102621D	10/26/21	—	G				X	X		
3MW06-102721	10/27/21	1035	G				X			
3MW07-102721	10/27/21	1115	G				X			
3MW09-102721	10/27/21	1155	G				X			
FB-102621	10/26/21	1600	G	W			X	X		
FB-102721	10/27/21	0900	G	W			X	X		
Trip Blank				W			X			

Possible Hazard Identification

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:	
Relinquished by:	Date/Time: 10/27/21 1430	Company	Received by:	Date/Time: 10/27/21 1442	Company		
Relinquished by:	Date/Time: 10.27.21 1716	Company	Received by:	Date/Time:	Company		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 10-27-21 1729	Company: ECLG		

Custody Seals Intact: Δ Yes (Δ No) | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 5.8

Ver: 06/08/2021

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Estimated: The analyte was positively identified; the quantitation is an estimation
M	Manual integrated compound.
Q	One or more quality control criteria failed.
U	Undetected at the Limit of Detection.

Metals

Qualifier	Qualifier Description
J1	Estimated: The quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
U	Undetected at the Limit of Detection.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Client: ARCADIS U.S., Inc.
Project/Site: Fort Monmouth NJ

Job ID: 410-60870-1

Client Sample ID: 3MW05R-102621
Date Collected: 10/26/21 14:25
Date Received: 10/27/21 17:29

Lab Sample ID: 410-60870-1
Matrix: Ground Water

Method: 8260D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 03:29	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 03:29	1
Ethylbenzene	0.80	U	1.0	0.40	ug/L			11/05/21 03:29	1
Styrene	0.60	U	5.0	0.30	ug/L			11/05/21 03:29	1
1,4-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 03:29	1
1,2-Dibromoethane (EDB)	0.50	U	1.0	0.20	ug/L			11/05/21 03:29	1
1,2-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
4-Methyl-2-pentanone	1.0	U	10	0.50	ug/L			11/05/21 03:29	1
Methylcyclohexane	1.0	~~U Q~~ UJ	5.0	0.50	ug/L			11/05/21 03:29	1
Toluene	0.50	U	1.0	0.20	ug/L			11/05/21 03:29	1
Chlorobenzene	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
Cyclohexane	2.0	~~U Q~~ UJ	5.0	1.0	ug/L			11/05/21 03:29	1
1,2,4-Trichlorobenzene	1.0	U	5.0	0.30	ug/L			11/05/21 03:29	1
Dibromochloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 03:29	1
Xylenes, Total	0.80	U	1.0	0.40	ug/L			11/05/21 03:29	1
Tetrachloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
cis-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
trans-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
Methyl tert-butyl ether	0.50	U	1.0	0.20	ug/L			11/05/21 03:29	1
1,3-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 03:29	1
Carbon tetrachloride	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
2-Hexanone	1.0	U	10	0.40	ug/L			11/05/21 03:29	1
Acetone	2.0	U	20	0.70	ug/L			11/05/21 03:29	1
Chloroform	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
Benzene	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
1,1,1-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
Bromomethane	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
Chloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 03:29	1
Chloroethane	0.50	U	1.0	0.20	ug/L			11/05/21 03:29	1
Vinyl chloride	0.50	U	1.0	0.20	ug/L			11/05/21 03:29	1
Methylene Chloride	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
Carbon disulfide	0.60	U	5.0	0.30	ug/L			11/05/21 03:29	1
Bromoform	2.0	U	4.0	1.0	ug/L			11/05/21 03:29	1
Bromodichloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 03:29	1
1,1-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
1,1-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
Trichlorofluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 03:29	1
Dichlorodifluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 03:29	1
Freon 113	0.60	U	10	0.30	ug/L			11/05/21 03:29	1
1,2-Dichloropropane	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
2-Butanone	1.0	U	10	0.50	ug/L			11/05/21 03:29	1
1,1,2-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
Trichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
Methyl acetate	0.60	U	5.0	0.30	ug/L			11/05/21 03:29	1
1,1,2,2-Tetrachloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 03:29	1
1,2-Dichlorobenzene	0.50	U	5.0	0.20	ug/L			11/05/21 03:29	1
1,2-Dibromo-3-Chloropropane	1.0	U	5.0	0.30	ug/L			11/05/21 03:29	1
Isopropylbenzene	0.50	U	5.0	0.20	ug/L			11/05/21 03:29	1

Client Sample ID: 3MW05R-102621
Lab Sample ID: 410-60870-1

Date Collected: 10/26/21 14:25
Matrix: Ground Water
Date Received: 10/27/21 17:29

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*11/05/21 03:29*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*81 - 118*		*11/05/21 03:29*	*1*
Dibromofluoromethane (Surr)	*105*		*80 - 119*		*11/05/21 03:29*	*1*
4-Bromofluorobenzene (Surr)	*102*		*85 - 114*		*11/05/21 03:29*	*1*
Toluene-d8 (Surr)	*104*		*89 - 112*		*11/05/21 03:29*	*1*

Client Sample ID: 3MW01-102621
Lab Sample ID: 410-60870-2

Date Collected: 10/26/21 15:55
Matrix: Ground Water
Date Received: 10/27/21 17:29

Method: 8260D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 00:52	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 00:52	1
Ethylbenzene	0.80	U	1.0	0.40	ug/L			11/05/21 00:52	1
Styrene	0.60	U	5.0	0.30	ug/L			11/05/21 00:52	1
1,4-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 00:52	1
1,2-Dibromoethane (EDB)	0.50	U	1.0	0.20	ug/L			11/05/21 00:52	1
1,2-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
4-Methyl-2-pentanone	1.0	U	10	0.50	ug/L			11/05/21 00:52	1
Methylcyclohexane	1.0	~~U Q~~ UJ	5.0	0.50	ug/L			11/05/21 00:52	1
Toluene	0.50	U	1.0	0.20	ug/L			11/05/21 00:52	1
Chlorobenzene	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
Cyclohexane	2.0	~~U Q~~ UJ	5.0	1.0	ug/L			11/05/21 00:52	1
1,2,4-Trichlorobenzene	1.0	U	5.0	0.30	ug/L			11/05/21 00:52	1
Dibromochloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:52	1
Xylenes, Total	0.80	U	1.0	0.40	ug/L			11/05/21 00:52	1
Tetrachloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
cis-1,2-Dichloroethene	**0.32**	**J M**	1.0	0.30	ug/L			11/05/21 00:52	1
trans-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
Methyl tert-butyl ether	0.50	U	1.0	0.20	ug/L			11/05/21 00:52	1
1,3-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 00:52	1
Carbon tetrachloride	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
2-Hexanone	1.0	U	10	0.40	ug/L			11/05/21 00:52	1
Acetone	2.0	U	20	0.70	ug/L			11/05/21 00:52	1
Chloroform	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
Benzene	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
1,1,1-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
Bromomethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
Chloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:52	1
Chloroethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:52	1
Vinyl chloride	0.50	U	1.0	0.20	ug/L			11/05/21 00:52	1
Methylene Chloride	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
Carbon disulfide	0.60	U	5.0	0.30	ug/L			11/05/21 00:52	1
Bromoform	2.0	U	4.0	1.0	ug/L			11/05/21 00:52	1
Bromodichloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:52	1
1,1-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
1,1-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
Trichlorofluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:52	1

Client Sample ID: 3MW01-102621

Lab Sample ID: 410-60870-2

Date Collected: 10/26/21 15:55

Matrix: Ground Water

Date Received: 10/27/21 17:29

Method: 8260D - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:52	1
Freon 113	0.60	U	10	0.30	ug/L			11/05/21 00:52	1
1,2-Dichloropropane	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
2-Butanone	1.0	U	10	0.50	ug/L			11/05/21 00:52	1
1,1,2-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
Trichloroethene	**6.2**		1.0	0.30	ug/L			11/05/21 00:52	1
Methyl acetate	0.60	U	5.0	0.30	ug/L			11/05/21 00:52	1
1,1,2,2-Tetrachloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:52	1
1,2-Dichlorobenzene	0.50	U	5.0	0.20	ug/L			11/05/21 00:52	1
1,2-Dibromo-3-Chloropropane	1.0	U	5.0	0.30	ug/L			11/05/21 00:52	1
Isopropylbenzene	0.50	U	5.0	0.20	ug/L			11/05/21 00:52	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*11/05/21 00:52*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*81 - 118*		*11/05/21 00:52*	*1*
Dibromofluoromethane (Surr)	*105*		*80 - 119*		*11/05/21 00:52*	*1*
4-Bromofluorobenzene (Surr)	*99*		*85 - 114*		*11/05/21 00:52*	*1*
Toluene-d8 (Surr)	*102*		*89 - 112*		*11/05/21 00:52*	*1*

Method: 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	**3.5**	~~J1~~	0.50	0.15	ug/L		11/04/21 15:51	11/05/21 14:42	1

Client Sample ID: 3MW01-102621D

Lab Sample ID: 410-60870-3

Date Collected: 10/26/21 00:00

Matrix: Ground Water

Date Received: 10/27/21 17:29

Method: 8260D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 03:48	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 03:48	1
Ethylbenzene	0.80	U	1.0	0.40	ug/L			11/05/21 03:48	1
Styrene	0.60	U	5.0	0.30	ug/L			11/05/21 03:48	1
1,4-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 03:48	1
1,2-Dibromoethane (EDB)	0.50	U	1.0	0.20	ug/L			11/05/21 03:48	1
1,2-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
4-Methyl-2-pentanone	1.0	U	10	0.50	ug/L			11/05/21 03:48	1
Methylcyclohexane	1.0	~~UQ~~ UJ	5.0	0.50	ug/L			11/05/21 03:48	1
Toluene	0.50	U	1.0	0.20	ug/L			11/05/21 03:48	1
Chlorobenzene	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
Cyclohexane	2.0	~~UQ~~ UJ	5.0	1.0	ug/L			11/05/21 03:48	1
1,2,4-Trichlorobenzene	1.0	U	5.0	0.30	ug/L			11/05/21 03:48	1
Dibromochloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 03:48	1
Xylenes, Total	0.80	U	1.0	0.40	ug/L			11/05/21 03:48	1
Tetrachloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
cis-1,2-Dichloroethene	**0.33**	**J**	1.0	0.30	ug/L			11/05/21 03:48	1
trans-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
Methyl tert-butyl ether	0.50	U	1.0	0.20	ug/L			11/05/21 03:48	1
1,3-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 03:48	1

Client Sample ID: 3MW01-102621D
Lab Sample ID: 410-60870-3

Date Collected: 10/26/21 00:00
Matrix: Ground Water
Date Received: 10/27/21 17:29

Method: 8260D - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon tetrachloride	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
2-Hexanone	1.0	U	10	0.40	ug/L			11/05/21 03:48	1
Acetone	2.0	U	20	0.70	ug/L			11/05/21 03:48	1
Chloroform	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
Benzene	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
1,1,1-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
Bromomethane	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
Chloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 03:48	1
Chloroethane	0.50	U	1.0	0.20	ug/L			11/05/21 03:48	1
Vinyl chloride	0.50	U	1.0	0.20	ug/L			11/05/21 03:48	1
Methylene Chloride	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
Carbon disulfide	0.60	U	5.0	0.30	ug/L			11/05/21 03:48	1
Bromoform	2.0	U	4.0	1.0	ug/L			11/05/21 03:48	1
Bromodichloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 03:48	1
1,1-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
1,1-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
Trichlorofluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 03:48	1
Dichlorodifluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 03:48	1
Freon 113	0.60	U	10	0.30	ug/L			11/05/21 03:48	1
1,2-Dichloropropane	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
2-Butanone	1.0	U	10	0.50	ug/L			11/05/21 03:48	1
1,1,2-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
Trichloroethene	**5.8**		1.0	0.30	ug/L			11/05/21 03:48	1
Methyl acetate	0.60	U	5.0	0.30	ug/L			11/05/21 03:48	1
1,1,2,2-Tetrachloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 03:48	1
1,2-Dichlorobenzene	0.50	U	5.0	0.20	ug/L			11/05/21 03:48	1
1,2-Dibromo-3-Chloropropane	1.0	U	5.0	0.30	ug/L			11/05/21 03:48	1
Isopropylbenzene	0.50	U	5.0	0.20	ug/L			11/05/21 03:48	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*11/05/21 03:48*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*81 - 118*		*11/05/21 03:48*	*1*
Dibromofluoromethane (Surr)	*107*		*80 - 119*		*11/05/21 03:48*	*1*
4-Bromofluorobenzene (Surr)	*101*		*85 - 114*		*11/05/21 03:48*	*1*
Toluene-d8 (Surr)	*103*		*89 - 112*		*11/05/21 03:48*	*1*

Method: 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	**3.6**		0.50	0.15	ug/L		11/04/21 05:27	11/04/21 14:15	1

Client Sample ID: 3MW08-102721
Lab Sample ID: 410-60870-4

Date Collected: 10/27/21 10:35
Matrix: Ground Water
Date Received: 10/27/21 17:29

Method: 8260D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 04:08	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 04:08	1
Ethylbenzene	0.80	U	1.0	0.40	ug/L			11/05/21 04:08	1

Client: ARCADIS U.S., Inc.
Project/Site: Fort Monmouth NJ

Job ID: 410-60870-1

Client Sample ID: 3MW08-102721
Date Collected: 10/27/21 10:35
Date Received: 10/27/21 17:29

Lab Sample ID: 410-60870-4
Matrix: Ground Water

Method: 8260D - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Styrene	0.60	U	5.0	0.30	ug/L			11/05/21 04:08	1
1,4-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 04:08	1
1,2-Dibromoethane (EDB)	0.50	U	1.0	0.20	ug/L			11/05/21 04:08	1
1,2-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
4-Methyl-2-pentanone	1.0	U	10	0.50	ug/L			11/05/21 04:08	1
Methylcyclohexane	1.0	~~U Q~~ UJ	5.0	0.50	ug/L			11/05/21 04:08	1
Toluene	0.50	U	1.0	0.20	ug/L			11/05/21 04:08	1
Chlorobenzene	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
Cyclohexane	2.0	~~U Q~~ UJ	5.0	1.0	ug/L			11/05/21 04:08	1
1,2,4-Trichlorobenzene	1.0	U	5.0	0.30	ug/L			11/05/21 04:08	1
Dibromochloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:08	1
Xylenes, Total	0.80	U	1.0	0.40	ug/L			11/05/21 04:08	1
Tetrachloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
cis-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
trans-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
Methyl tert-butyl ether	0.50	U	1.0	0.20	ug/L			11/05/21 04:08	1
1,3-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 04:08	1
Carbon tetrachloride	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
2-Hexanone	1.0	U	10	0.40	ug/L			11/05/21 04:08	1
Acetone	2.0	U	20	0.70	ug/L			11/05/21 04:08	1
Chloroform	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
Benzene	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
1,1,1-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
Bromomethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
Chloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:08	1
Chloroethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:08	1
Vinyl chloride	0.50	U	1.0	0.20	ug/L			11/05/21 04:08	1
Methylene Chloride	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
Carbon disulfide	0.60	U	5.0	0.30	ug/L			11/05/21 04:08	1
Bromoform	2.0	U	4.0	1.0	ug/L			11/05/21 04:08	1
Bromodichloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:08	1
1,1-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
1,1-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
Trichlorofluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:08	1
Dichlorodifluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:08	1
Freon 113	0.60	U	10	0.30	ug/L			11/05/21 04:08	1
1,2-Dichloropropane	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
2-Butanone	1.0	U	10	0.50	ug/L			11/05/21 04:08	1
1,1,2-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
Trichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
Methyl acetate	0.60	U	5.0	0.30	ug/L			11/05/21 04:08	1
1,1,2,2-Tetrachloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:08	1
1,2-Dichlorobenzene	0.50	U	5.0	0.20	ug/L			11/05/21 04:08	1
1,2-Dibromo-3-Chloropropane	1.0	U	5.0	0.30	ug/L			11/05/21 04:08	1
Isopropylbenzene	0.50	U	5.0	0.20	ug/L			11/05/21 04:08	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*11/05/21 04:08*	*1*

Client Sample ID: 3MW08-102721

Lab Sample ID: 410-60870-4

Date Collected: 10/27/21 10:35

Matrix: Ground Water

Date Received: 10/27/21 17:29

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*102*		*81 - 118*		*11/05/21 04:08*	*1*
Dibromofluoromethane (Surr)	*106*		*80 - 119*		*11/05/21 04:08*	*1*
4-Bromofluorobenzene (Surr)	*101*		*85 - 114*		*11/05/21 04:08*	*1*
Toluene-d8 (Surr)	*102*		*89 - 112*		*11/05/21 04:08*	*1*

Client Sample ID: 3MW07-102721

Lab Sample ID: 410-60870-5

Date Collected: 10/27/21 11:15

Matrix: Ground Water

Date Received: 10/27/21 17:29

Method: 8260D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 04:28	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 04:28	1
Ethylbenzene	0.80	U	1.0	0.40	ug/L			11/05/21 04:28	1
Styrene	0.60	U	5.0	0.30	ug/L			11/05/21 04:28	1
1,4-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 04:28	1
1,2-Dibromoethane (EDB)	0.50	U	1.0	0.20	ug/L			11/05/21 04:28	1
1,2-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
4-Methyl-2-pentanone	1.0	U	10	0.50	ug/L			11/05/21 04:28	1
Methylcyclohexane	1.0	~~U~~ Q UJ	5.0	0.50	ug/L			11/05/21 04:28	1
Toluene	0.50	U	1.0	0.20	ug/L			11/05/21 04:28	1
Chlorobenzene	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
Cyclohexane	2.0	~~U~~ Q UJ	5.0	1.0	ug/L			11/05/21 04:28	1
1,2,4-Trichlorobenzene	1.0	U	5.0	0.30	ug/L			11/05/21 04:28	1
Dibromochloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:28	1
Xylenes, Total	0.80	U	1.0	0.40	ug/L			11/05/21 04:28	1
Tetrachloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
cis-1,2-Dichloroethene	**0.60**	**J M**	1.0	0.30	ug/L			11/05/21 04:28	1
trans-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
Methyl tert-butyl ether	**1.1**		1.0	0.20	ug/L			11/05/21 04:28	1
1,3-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 04:28	1
Carbon tetrachloride	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
2-Hexanone	1.0	U	10	0.40	ug/L			11/05/21 04:28	1
Acetone	2.0	U	20	0.70	ug/L			11/05/21 04:28	1
Chloroform	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
Benzene	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
1,1,1-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
Bromomethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
Chloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:28	1
Chloroethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:28	1
Vinyl chloride	0.50	U	1.0	0.20	ug/L			11/05/21 04:28	1
Methylene Chloride	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
Carbon disulfide	0.60	U	5.0	0.30	ug/L			11/05/21 04:28	1
Bromoform	2.0	U	4.0	1.0	ug/L			11/05/21 04:28	1
Bromodichloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:28	1
1,1-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
1,1-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
Trichlorofluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:28	1
Dichlorodifluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:28	1
Freon 113	0.60	U	10	0.30	ug/L			11/05/21 04:28	1

Client Sample ID: 3MW07-102721

Lab Sample ID: 410-60870-5

Date Collected: 10/27/21 11:15

Matrix: Ground Water

Date Received: 10/27/21 17:29

Method: 8260D - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloropropane	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
2-Butanone	1.0	U	10	0.50	ug/L			11/05/21 04:28	1
1,1,2-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
Trichloroethene	**26**		1.0	0.30	ug/L			11/05/21 04:28	1
Methyl acetate	0.60	U	5.0	0.30	ug/L			11/05/21 04:28	1
1,1,2,2-Tetrachloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:28	1
1,2-Dichlorobenzene	0.50	U	5.0	0.20	ug/L			11/05/21 04:28	1
1,2-Dibromo-3-Chloropropane	1.0	U	5.0	0.30	ug/L			11/05/21 04:28	1
Isopropylbenzene	0.50	U	5.0	0.20	ug/L			11/05/21 04:28	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*11/05/21 04:28*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*	*M*	*81 - 118*		*11/05/21 04:28*	*1*
Dibromofluoromethane (Surr)	*107*		*80 - 119*		*11/05/21 04:28*	*1*
4-Bromofluorobenzene (Surr)	*102*		*85 - 114*		*11/05/21 04:28*	*1*
Toluene-d8 (Surr)	*103*		*89 - 112*		*11/05/21 04:28*	*1*

Client Sample ID: 3MW09-102721

Lab Sample ID: 410-60870-6

Date Collected: 10/27/21 11:55

Matrix: Ground Water

Date Received: 10/27/21 17:29

Method: 8260D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 04:47	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 04:47	1
Ethylbenzene	0.80	U	1.0	0.40	ug/L			11/05/21 04:47	1
Styrene	0.60	U	5.0	0.30	ug/L			11/05/21 04:47	1
1,4-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 04:47	1
1,2-Dibromoethane (EDB)	0.50	U	1.0	0.20	ug/L			11/05/21 04:47	1
1,2-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
4-Methyl-2-pentanone	1.0	U	10	0.50	ug/L			11/05/21 04:47	1
Methylcyclohexane	1.0	~~U Q~~ UJ	5.0	0.50	ug/L			11/05/21 04:47	1
Toluene	0.50	U	1.0	0.20	ug/L			11/05/21 04:47	1
Chlorobenzene	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
Cyclohexane	2.0	~~U Q~~ UJ	5.0	1.0	ug/L			11/05/21 04:47	1
1,2,4-Trichlorobenzene	1.0	U	5.0	0.30	ug/L			11/05/21 04:47	1
Dibromochloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:47	1
Xylenes, Total	0.80	U	1.0	0.40	ug/L			11/05/21 04:47	1
Tetrachloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
cis-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
trans-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
Methyl tert-butyl ether	0.50	U	1.0	0.20	ug/L			11/05/21 04:47	1
1,3-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 04:47	1
Carbon tetrachloride	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
2-Hexanone	1.0	U	10	0.40	ug/L			11/05/21 04:47	1
Acetone	2.0	U	20	0.70	ug/L			11/05/21 04:47	1
Chloroform	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
Benzene	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1

Client Sample ID: 3MW09-102721

Lab Sample ID: 410-60870-6

Date Collected: 10/27/21 11:55

Matrix: Ground Water

Date Received: 10/27/21 17:29

Method: 8260D - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
Bromomethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
Chloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:47	1
Chloroethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:47	1
Vinyl chloride	0.50	U	1.0	0.20	ug/L			11/05/21 04:47	1
Methylene Chloride	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
Carbon disulfide	0.60	U	5.0	0.30	ug/L			11/05/21 04:47	1
Bromoform	2.0	U	4.0	1.0	ug/L			11/05/21 04:47	1
Bromodichloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:47	1
1,1-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
1,1-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
Trichlorofluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:47	1
Dichlorodifluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 04:47	1
Freon 113	0.60	U	10	0.30	ug/L			11/05/21 04:47	1
1,2-Dichloropropane	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
2-Butanone	1.0	U	10	0.50	ug/L			11/05/21 04:47	1
1,1,2-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
Trichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
Methyl acetate	0.60	U	5.0	0.30	ug/L			11/05/21 04:47	1
1,1,2,2-Tetrachloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 04:47	1
1,2-Dichlorobenzene	0.50	U	5.0	0.20	ug/L			11/05/21 04:47	1
1,2-Dibromo-3-Chloropropane	1.0	U	5.0	0.30	ug/L			11/05/21 04:47	1
Isopropylbenzene	0.50	U	5.0	0.20	ug/L			11/05/21 04:47	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*11/05/21 04:47*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*81 - 118*		*11/05/21 04:47*	*1*
Dibromofluoromethane (Surr)	*106*		*80 - 119*		*11/05/21 04:47*	*1*
4-Bromofluorobenzene (Surr)	*101*		*85 - 114*		*11/05/21 04:47*	*1*
Toluene-d8 (Surr)	*103*		*89 - 112*		*11/05/21 04:47*	*1*

Client Sample ID: FB-102621

Lab Sample ID: 410-60870-7

Date Collected: 10/26/21 16:00

Matrix: Water

Date Received: 10/27/21 17:29

Method: 8260D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/04/21 23:53	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/04/21 23:53	1
Ethylbenzene	0.80	U	1.0	0.40	ug/L			11/04/21 23:53	1
Styrene	0.60	U	5.0	0.30	ug/L			11/04/21 23:53	1
1,4-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/04/21 23:53	1
1,2-Dibromoethane (EDB)	0.50	U	1.0	0.20	ug/L			11/04/21 23:53	1
1,2-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
4-Methyl-2-pentanone	1.0	U	10	0.50	ug/L			11/04/21 23:53	1
Methylcyclohexane	1.0	~~U~~ ~~Q~~ UJ	5.0	0.50	ug/L			11/04/21 23:53	1
Toluene	0.50	U	1.0	0.20	ug/L			11/04/21 23:53	1
Chlorobenzene	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1

Client Sample ID: FB-102621
Date Collected: 10/26/21 16:00
Date Received: 10/27/21 17:29

Lab Sample ID: 410-60870-7
Matrix: Water

Method: 8260D - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cyclohexane	2.0	~~U~~ Q UJ	5.0	1.0	ug/L			11/04/21 23:53	1
1,2,4-Trichlorobenzene	1.0	U	5.0	0.30	ug/L			11/04/21 23:53	1
Dibromochloromethane	0.50	U	1.0	0.20	ug/L			11/04/21 23:53	1
Xylenes, Total	0.80	U	1.0	0.40	ug/L			11/04/21 23:53	1
Tetrachloroethene	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
cis-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
trans-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
Methyl tert-butyl ether	0.50	U	1.0	0.20	ug/L			11/04/21 23:53	1
1,3-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/04/21 23:53	1
Carbon tetrachloride	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
2-Hexanone	1.0	U	10	0.40	ug/L			11/04/21 23:53	1
Acetone	2.0	U	20	0.70	ug/L			11/04/21 23:53	1
Chloroform	**2.5**		1.0	0.30	ug/L			11/04/21 23:53	1
Benzene	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
1,1,1-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
Bromomethane	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
Chloromethane	0.50	U	1.0	0.20	ug/L			11/04/21 23:53	1
Chloroethane	0.50	U	1.0	0.20	ug/L			11/04/21 23:53	1
Vinyl chloride	0.50	U	1.0	0.20	ug/L			11/04/21 23:53	1
Methylene Chloride	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
Carbon disulfide	0.60	U	5.0	0.30	ug/L			11/04/21 23:53	1
Bromoform	2.0	U	4.0	1.0	ug/L			11/04/21 23:53	1
Bromodichloromethane	0.50	U	1.0	0.20	ug/L			11/04/21 23:53	1
1,1-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
1,1-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
Trichlorofluoromethane	0.50	U	1.0	0.20	ug/L			11/04/21 23:53	1
Dichlorodifluoromethane	0.50	U	1.0	0.20	ug/L			11/04/21 23:53	1
Freon 113	0.60	U	10	0.30	ug/L			11/04/21 23:53	1
1,2-Dichloropropane	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
2-Butanone	1.0	U	10	0.50	ug/L			11/04/21 23:53	1
1,1,2-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
Trichloroethene	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
Methyl acetate	0.60	U	5.0	0.30	ug/L			11/04/21 23:53	1
1,1,2,2-Tetrachloroethane	0.60	U	1.0	0.30	ug/L			11/04/21 23:53	1
1,2-Dichlorobenzene	0.50	U	5.0	0.20	ug/L			11/04/21 23:53	1
1,2-Dibromo-3-Chloropropane	1.0	U	5.0	0.30	ug/L			11/04/21 23:53	1
Isopropylbenzene	0.50	U	5.0	0.20	ug/L			11/04/21 23:53	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*11/04/21 23:53*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*81 - 118*		*11/04/21 23:53*	*1*
Dibromofluoromethane (Surr)	*105*		*80 - 119*		*11/04/21 23:53*	*1*
4-Bromofluorobenzene (Surr)	*101*		*85 - 114*		*11/04/21 23:53*	*1*
Toluene-d8 (Surr)	*103*		*89 - 112*		*11/04/21 23:53*	*1*

Method: 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.40	U	0.50	0.15	ug/L		11/04/21 05:27	11/04/21 14:09	1

Client: ARCADIS U.S., Inc.
Project/Site: Fort Monmouth NJ

Job ID: 410-60870-1

Client Sample ID: FB-102721
Date Collected: 10/27/21 09:00
Date Received: 10/27/21 17:29

Lab Sample ID: 410-60870-8
Matrix: Water

Method: 8260D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 00:13	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 00:13	1
Ethylbenzene	0.80	U	1.0	0.40	ug/L			11/05/21 00:13	1
Styrene	0.60	U	5.0	0.30	ug/L			11/05/21 00:13	1
1,4-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 00:13	1
1,2-Dibromoethane (EDB)	0.50	U	1.0	0.20	ug/L			11/05/21 00:13	1
1,2-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
4-Methyl-2-pentanone	1.0	U	10	0.50	ug/L			11/05/21 00:13	1
Methylcyclohexane	1.0	~~U Q~~ UJ	5.0	0.50	ug/L			11/05/21 00:13	1
Toluene	0.50	U	1.0	0.20	ug/L			11/05/21 00:13	1
Chlorobenzene	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
Cyclohexane	2.0	~~U Q~~ UJ	5.0	1.0	ug/L			11/05/21 00:13	1
1,2,4-Trichlorobenzene	1.0	U	5.0	0.30	ug/L			11/05/21 00:13	1
Dibromochloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:13	1
Xylenes, Total	0.80	U	1.0	0.40	ug/L			11/05/21 00:13	1
Tetrachloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
cis-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
trans-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
Methyl tert-butyl ether	0.50	U	1.0	0.20	ug/L			11/05/21 00:13	1
1,3-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 00:13	1
Carbon tetrachloride	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
2-Hexanone	1.0	U	10	0.40	ug/L			11/05/21 00:13	1
Acetone	2.0	U	20	0.70	ug/L			11/05/21 00:13	1
Chloroform	**2.7**		1.0	0.30	ug/L			11/05/21 00:13	1
Benzene	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
1,1,1-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
Bromomethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
Chloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:13	1
Chloroethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:13	1
Vinyl chloride	0.50	U	1.0	0.20	ug/L			11/05/21 00:13	1
Methylene Chloride	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
Carbon disulfide	0.60	U	5.0	0.30	ug/L			11/05/21 00:13	1
Bromoform	2.0	U	4.0	1.0	ug/L			11/05/21 00:13	1
Bromodichloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:13	1
1,1-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
1,1-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
Trichlorofluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:13	1
Dichlorodifluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:13	1
Freon 113	0.60	U	10	0.30	ug/L			11/05/21 00:13	1
1,2-Dichloropropane	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
2-Butanone	1.0	U	10	0.50	ug/L			11/05/21 00:13	1
1,1,2-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
Trichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
Methyl acetate	0.60	U	5.0	0.30	ug/L			11/05/21 00:13	1
1,1,2,2-Tetrachloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:13	1
1,2-Dichlorobenzene	0.50	U	5.0	0.20	ug/L			11/05/21 00:13	1
1,2-Dibromo-3-Chloropropane	1.0	U	5.0	0.30	ug/L			11/05/21 00:13	1
Isopropylbenzene	0.50	U	5.0	0.20	ug/L			11/05/21 00:13	1

Client Sample ID: FB-102721

Lab Sample ID: 410-60870-8

Date Collected: 10/27/21 09:00

Matrix: Water

Date Received: 10/27/21 17:29

Tentatively Identified Compound	Est. Result	Qualifier	Unit	D	RT	CAS No.	Prepared	Analyzed	Dil Fac
Tentatively Identified Compound	None		ug/L					11/05/21 00:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		81 - 118		11/05/21 00:13	1
Dibromofluoromethane (Surr)	107		80 - 119		11/05/21 00:13	1
4-Bromofluorobenzene (Surr)	99		85 - 114		11/05/21 00:13	1
Toluene-d8 (Surr)	102		89 - 112		11/05/21 00:13	1

Method: 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.40	U	0.50	0.15	ug/L		11/04/21 13:13	11/05/21 13:51	1

Client Sample ID: Trip Blank

Lab Sample ID: 410-60870-9

Date Collected: 10/26/21 00:00

Matrix: Water

Date Received: 10/27/21 17:29

Method: 8260D - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 00:32	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.20	ug/L			11/05/21 00:32	1
Ethylbenzene	0.80	U	1.0	0.40	ug/L			11/05/21 00:32	1
Styrene	0.60	U	5.0	0.30	ug/L			11/05/21 00:32	1
1,4-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 00:32	1
1,2-Dibromoethane (EDB)	0.50	U	1.0	0.20	ug/L			11/05/21 00:32	1
1,2-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
4-Methyl-2-pentanone	1.0	U	10	0.50	ug/L			11/05/21 00:32	1
Methylcyclohexane	1.0	~~U~~ Q UJ	5.0	0.50	ug/L			11/05/21 00:32	1
Toluene	0.50	U	1.0	0.20	ug/L			11/05/21 00:32	1
Chlorobenzene	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
Cyclohexane	2.0	~~U~~ Q UJ	5.0	1.0	ug/L			11/05/21 00:32	1
1,2,4-Trichlorobenzene	1.0	U	5.0	0.30	ug/L			11/05/21 00:32	1
Dibromochloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:32	1
Xylenes, Total	0.80	U	1.0	0.40	ug/L			11/05/21 00:32	1
Tetrachloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
cis-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
trans-1,2-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
Methyl tert-butyl ether	0.50	U	1.0	0.20	ug/L			11/05/21 00:32	1
1,3-Dichlorobenzene	0.60	U	5.0	0.30	ug/L			11/05/21 00:32	1
Carbon tetrachloride	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
2-Hexanone	1.0	U	10	0.40	ug/L			11/05/21 00:32	1
Acetone	2.0	U	20	0.70	ug/L			11/05/21 00:32	1
Chloroform	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
Benzene	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
1,1,1-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
Bromomethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
Chloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:32	1
Chloroethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:32	1
Vinyl chloride	0.50	U	1.0	0.20	ug/L			11/05/21 00:32	1
Methylene Chloride	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
Carbon disulfide	0.60	U	5.0	0.30	ug/L			11/05/21 00:32	1
Bromoform	2.0	U	4.0	1.0	ug/L			11/05/21 00:32	1

Client Sample ID: Trip Blank
Date Collected: 10/26/21 00:00
Date Received: 10/27/21 17:29

Lab Sample ID: 410-60870-9
Matrix: Water

Method: 8260D - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Bromodichloromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:32	1
1,1-Dichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
1,1-Dichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
Trichlorofluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:32	1
Dichlorodifluoromethane	0.50	U	1.0	0.20	ug/L			11/05/21 00:32	1
Freon 113	0.60	U	10	0.30	ug/L			11/05/21 00:32	1
1,2-Dichloropropane	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
2-Butanone	1.0	U	10	0.50	ug/L			11/05/21 00:32	1
1,1,2-Trichloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
Trichloroethene	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
Methyl acetate	0.60	U	5.0	0.30	ug/L			11/05/21 00:32	1
1,1,2,2-Tetrachloroethane	0.60	U	1.0	0.30	ug/L			11/05/21 00:32	1
1,2-Dichlorobenzene	0.50	U	5.0	0.20	ug/L			11/05/21 00:32	1
1,2-Dibromo-3-Chloropropane	1.0	U	5.0	0.30	ug/L			11/05/21 00:32	1
Isopropylbenzene	0.50	U	5.0	0.20	ug/L			11/05/21 00:32	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*11/05/21 00:32*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*81 - 118*		*11/05/21 00:32*	*1*
Dibromofluoromethane (Surr)	*106*		*80 - 119*		*11/05/21 00:32*	*1*
4-Bromofluorobenzene (Surr)	*102*		*85 - 114*		*11/05/21 00:32*	*1*
Toluene-d8 (Surr)	*103*		*89 - 112*		*11/05/21 00:32*	*1*

APPENDIX F
WASTE DISPOSAL DOCUMENTATION

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	Not Required	1	732-613-1660	16416-1

5. Generator's Name and Mailing Address

US Army -c/o Joseph Pearson - CALIBRE System
1119 Canterbury Drive
Landsdale, PA 19446
Generator's Phone: 215-699-4490

Generator's Site Address (if different than mailing address)

Intersection of Marconi Rd & Monmouth Blvd.
Wall, NJ 07719

6. Transporter 1 Company Name: Maumee express inc — U.S. EPA ID Number: NJD 986607380

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address

MXI Environmental, Inc
26319 Old Trail Road
Abingdon, VA 24210
Facility's Phone: 276-628-6636

U.S. EPA ID Number: VAR000503920

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	Non RCRA Non DOT Liquids	XX1	DM	X55	G	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information

1. Purge Water 100%, L

AWT P.O. # 16416-JLH

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: Joseph Pearson — Signature: Joseph D Pearson — Month: 7 Day: 9 Year: 19

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Terrence Nobles — Signature: Terrence Nobles — Month: 7 Day: 9 Year: 19

Transporter 2 Printed/Typed Name — Signature — Month — Day — Year

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month — Day — Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: Craig Pottel — Signature: Craig Pottel — Month: 7 Day: 9 Year: 19

69-BLC-O 5 11977 (Rev. 9/09)

DESIGNATED FACILITY TO GENERATOR

GENERATOR | TRANSPORTER | DESIGNATED FACILITY

APPENDIX G
PHOTOGRAPHS

Appendix G - 2021 Monitoring Well Inspection Photographs

Evans Area, Fort Monmouth
New Jersey

Photograph: 1

Date: 10/26/2021

Description:
Damage to 3MW02

Photograph: 2

Date: 10/26/2021

Description:
Damage to 3MW02

Appendix G - 2021 Monitoring Well Inspection Photographs

Evans Area, Fort Monmouth
New Jersey

Photograph: 3

Date: 10/26/2021

Description:
9004-MW-01R

Photograph: 4

Date: 10/26/2021

Description:
9004-MW-01R

Appendix G - 2021 Monitoring Well Inspection Photographs

Evans Area, Fort Monmouth
New Jersey

Photograph: 5

Date: 10/26/2021

Description:
Access to 3MW05R from road

Photograph: 6

Date: 10/26/2021

Description:
Path cleared to access 3MW05R

Appendix G - 2021 Monitoring Well Inspection Photographs

Evans Area, Fort Monmouth
New Jersey

Photograph: 7

Date: 10/26/2021

Description:
Path cleared to access 3MW05R

Photograph: 8

Date: 10/26/2021

Description:
Path cleared to access 3MW05R

Appendix G - 2021 Monitoring Well Inspection Photographs

Evans Area, Fort Monmouth
New Jersey

Photograph: 9

Date: 10/26/2021

Description:
Fencing surrounding FEMW03

Appendix G - 2021 Monitoring Well Inspection Photographs

Evans Area, Fort Monmouth
New Jersey

Photograph: 10

Date: 10/26/2021

Description:
Fencing around FEMW03

Photograph: 11

Date: 10/26/2021

Description:
Fencing around FEMW03

Appendix G - 2021 Monitoring Well Inspection Photographs

Evans Area, Fort Monmouth
New Jersey

Photograph: 12

Date: 10/26/2021

Description:
Fencing around FEMW03

Photograph: 13

Date: 10/26/2021

Description:
Fencing around FEMW03

Appendix G - 2021 Monitoring Well Inspection Photographs

Evans Area, Fort Monmouth
New Jersey

Photograph: 14

Date: 10/26/2021

Description:
Shrubbery around 9004-MW-01R

Photograph: 15

Date: 10/31/2021

Description:
IDW Drum Staging Area – IDW Drum

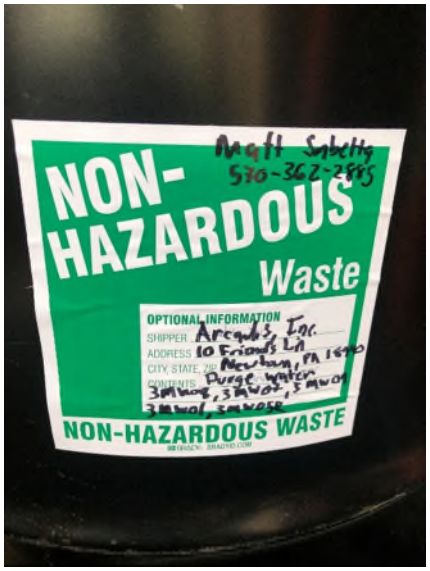
Appendix G - 2021 Monitoring Well Inspection Photographs

Evans Area, Fort Monmouth
New Jersey

Photograph: 16

Date: 10/31/2021

Description:
IDW Drum Staging Area – IDW Drum



Photograph: 17

Date: 10/31/2021

Description:
IDW Drum Staging Area – IDW Drum Label

APPENDIX H
2022 INTERVIEW LOGS

Five-Year Review Interview Form
Groundwater Remedy FTMM-34
Former Fort Monmouth Evans Area

Name:	Ashish Joshi		
Title:	NJDEP Project Manager		
Organization:	NJDEP – Bureau of Case Management		
Telephone Number:	(609) 433-8735		
Email Address:	Ashish.Joshi@dep.nj.gov		
Address (Street, City, State, Zip Code)	Bureau of Case Management 401 East State Street Mail Code: 401-05K PO Box 420 Trenton, New Jersey 08625		
Date:	8/18/2022	**Time:**	2:00pm

Type of Interview:

Telephone: ***X***	*Visit (location):*	*Other (describe):*

Relationship to Site:

Political Official	*Gov't Representative* ***X***	*Community Member*	*Community Group*
Site Neighbor	*Landowner*	*Tenant*	*Stakeholder*
Other (describe):			

1. What is your overall impression of the project? (general sentiment)

Favorable ***X***	*Neutral*	*Unfavorable*	*Unfamiliar*

Why?

The fact that we are turning the area into beneficial reuse.

2. What effects have site operations had on the surrounding community?

Favorable ***X***	*Neutral*	*Unfavorable*	*Unfamiliar*

List specific examples of effects on the surrounding community.
The construction of new college New Jersey City University on the property.
Transformed unused military residences into year-round family/residential dwellings.

3. Are you aware of any community concerns regarding the site or its operation and administration? Yes _____ No **_X____** **If "Yes", please give details.**

4. Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency response from local authorities? Yes _____ No **__X___**
If "Yes," please give details

Five-Year Review Interview Form
Groundwater Remedy FTMM-34
Former Fort Monmouth Evans Area

5. **Do you feel well informed about the site's activities and progress?**
   Yes __**X**___ No _____ **If "No," describe why not.**

6. **Do you have any comments, suggestions, or recommendations regarding the site's management or operation?** Yes _____ No ___**X**__ **If "Yes," please list below.**

7. **<u>State and Local Government Interviewees Only:</u> Have there been routine communications or activities (site visits, inspections, reporting activities, etc.) conducted by your office regarding the site?** Yes __**X**___ No _____
   If "Yes,"please give purpose and results.

They are routine meetings and inspections on an as-needed basis.

8. **<u>State and Local Government Interviewees Only:</u> Have there been any complaints, violations, or other incidents related to the site requiring a response by your office?**
   Yes _____ No __**X**___
   If "Yes," please give details of the events and results of the responses.

9. **<u>Tennant, Owner, or Site Neighbor Interviewees Only:</u> Is there any construction planned or ongoing that may be, or is currently, impacted by the site?** Yes _____ No _____
   If "Yes," please describe the status of construction (budget and schedule) below.

Not Applicable

10. **<u>Tennant, Owner, or Site Neighbor Interviewees Only:</u> If the answer to question 9 was yes, have any problems been encountered which required or will require changes to the remedial design or Record of Decision?** Yes _____ No _____ **If "Yes," please describe.**

Not Applicable

11. **<u>Tennant, Owner, or Site Neighbor Interviewees Only:</u> If the answer to question 9 was yes, have any problems or difficulties been encountered which have impacted construction progress or implementability?** Yes _____ No _____ **If "Yes," please describe.**

Not Applicable

Interviewer:			Date:
Name	Title	Organization	
Kimberly Panhorst	FTMM Phase Manager	Arcadis	8/18/2022

Five-Year Review Interview Form
Groundwater Remedy FTMM-34
Former Fort Monmouth Evans Area

Name:	Pat Flanagan		
Title:	Site Manager		
Organization:	InfoAge Science/History Learning Center and Museums		
Telephone Number:	Redacted - Privacy Act		
Email Address:	Redacted - Privacy Act		
Address (Street, City, State, Zip Code)	2201 Marconi Rd., Wall, NJ 07719		
Date:	1/12/2022	**Time:**	12:21pm

Type of Interview:		
Telephone: ***X***	*Visit (location):*	*Other (describe):*

Relationship to Site:			
Political Official	*Gov't Representative*	*Community Member*	*Community Group*
Site Neighbor	*Landowner*	*Tenant* ***X***	*Stakeholder*
Other (describe):			

1. What is your overall impression of the project? (general sentiment)

Favorable ***X***	*Neutral*	*Unfavorable*	*Unfamiliar*

Why?
All of the environmental remediation was completed before we inhabited the site. The ongoing groundwater monitoring does not impact us.

2. What effects have site operations had on the surrounding community?

Favorable ***X***	*Neutral*	*Unfavorable*	*Unfamiliar*

List specific examples of effects on the surrounding community.

In terms of what we provide to the community, it is favorable. We improve upon what is here.

3. Are you aware of any community concerns regarding the site or its operation and administration? Yes _____ No __X___ **If "Yes", please give details.**

4. Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency response from local authorities? Yes _____ No __**X**___
If "Yes," please give details

Five-Year Review Interview Form
Groundwater Remedy FTMM-34
Former Fort Monmouth Evans Area

5. **Do you feel well informed about the site's activities and progress?**
   Yes __**X**___ No _____ **If "No," describe why not.**

6. **Do you have any comments, suggestions, or recommendations regarding the site's management or operation?** Yes _____ No __**X**___ **If "Yes," please list below.**

7. **<u>State and Local Government Interviewees Only:</u> Have there been routine communications or activities (site visits, inspections, reporting activities, etc.) conducted by your office regarding the site?** Yes _____ No _____
   If "Yes,"please give purpose and results.

Not Applicable

8. **<u>State and Local Government Interviewees Only:</u> Have there been any complaints, violations, or other incidents related to the site requiring a response by your office?**
   Yes _____ No _____
   If "Yes," please give details of the events and results of the responses.

Not Applicable

9. **<u>Tennant, Owner, or Site Neighbor Interviewees Only:</u> Is there any construction planned or ongoing that may be, or is currently, impacted by the site?** Yes _____ No ___**X**__
   If "Yes," please describe the status of construction (budget and schedule) below.

Only thing we are doing is we will be pouring some concrete pads, but environmental concerns are not an issue for this construction.

10. **<u>Tennant, Owner, or Site Neighbor Interviewees Only:</u> If the answer to question 9 was yes, have any problems been encountered which required or will require changes to the remedial design or Record of Decision?** Yes _____ No _____ **If "Yes," please describe.**

Not Applicable

11. **<u>Tennant, Owner, or Site Neighbor Interviewees Only:</u> If the answer to question 9 was yes, have any problems or difficulties been encountered which have impacted construction progress or implementability?** Yes _____ No _____ **If "Yes," please describe.**

Not Applicable

Interviewer:			Date:
Name	Title	Organization	
Kimberly Panhorst	FTMM Phase Manager	Arcadis	1/12/2022

Five-Year Review Interview Form
Groundwater Remedy FTMM-34
Former Fort Monmouth Evans Area

Name:	Jeff Bertrand / Nora Coyne		
Title:	Township Administrator / Township Planner		
Organization:	Wall Township		
Telephone Number:	732-449-8444, ext 2216 (Jeff) / 2209 (Nora)		
Email Address:	administration@townshipofwall.com		
Address (Street, City, State, Zip Code)	2700 Allaire Rd., Wall, New Jersey 07719		
Date:	1/24/2022	**Time:**	10:00 am
Type of Interview:			
Telephone: ***X***	*Visit (location):*	*Other (describe):*	
Relationship to Site:			
Political Official	*Gov't Representative* ***X***	*Community Member*	*Community Group*
Site Neighbor	*Landowner*	*Tenant*	*Stakeholder*
Other (describe):			

1. What is your overall impression of the project? (general sentiment)

Favorable ***X***	*Neutral*	*Unfavorable*	*Unfamiliar*

Why?
Provides recreational space (for little league, for example). Having Brookdale College and their expansion is favorable to the community. The Township is a major supporter of InfoAge and involved in their board.

2. What effects have site operations had on the surrounding community?

Favorable ***X***	*Neutral*	*Unfavorable*	*Unfamiliar*

List specific examples of effects on the surrounding community.

The community did not want the property redeveloped for housing developments. They enjoy having recreational area to walk dogs, play with kids, and meet with other community members. The only negative feedback the Township has received is that there is increased traffic in the area, but those complaints are nominal.

3. Are you aware of any community concerns regarding the site or its operation and administration? Yes _____ No ___X__ **If "Yes", please give details.**

4. Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency response from local authorities? Yes __X___ No _____
If "Yes," please give details

Some vandalism incidents have occurred. The Township has installed security cameras to deter future vandalism, and they are identifying strategic areas to install fencing.

5. **Do you feel well informed about the site's activities and progress?**
Yes __X___ No _____ **If "No," describe why not.**

The Township indicated they do not really know what is going on in regards to current environmental monitoring/activities, but the Township is ok with that as long as they are informed about anything that would impact how they are managing the property.

6. **Do you have any comments, suggestions, or recommendations regarding the site's management or operation?** Yes ___X__ No _____ **If "Yes," please list below.**

The Township indicated it would be helpful to have an available liaison with the National Park Service to help make land-use transitions easier/less bureaucratic for them to address site-use changes from one recreational use to another, for example.

7. **State and Local Government Interviewees Only: Have there been routine communications or activities (site visits, inspections, reporting activities, etc.) conducted by your office regarding the site?** Yes __X___ No _____
If "Yes,"please give purpose and results.

The Township is out at the site addressing maintenance issues, such as roofing issues, paving roads, etc. The board of InfoAge also includes a member of the governing body and they have monthly meetings. Public works in/out at property weekly.

8. **State and Local Government Interviewees Only: Have there been any complaints, violations, or other incidents related to the site requiring a response by your office?**
Yes __X___ No _____
If "Yes," please give details of the events and results of the responses.

The Township recently had to address an open space that some community members turned into a remote gasoline car club created. They made a track and stands and had announcing equipment. The Township is in process of removing the track and reseeding. There were many complaints about the noise, and the use of the open space for that purpose was not authorized by the Township.

9. **Tennant, Owner, or Site Neighbor Interviewees Only: Is there any construction planned or ongoing that may be, or is currently, impacted by the site?** Yes ___X__ No _____
If "Yes," please describe the status of construction (budget and schedule) below.

The Township plans to construct three pickle ball courts on Monmouth Blvd, across from the college. The Township has informal approval for the construction (waiting on formal approval) and are in the design phase. The construction is planned to commence in the next six months and is estimated to cost $260,000.

Five-Year Review Interview Form
Groundwater Remedy FTMM-34
Former Fort Monmouth Evans Area

10. <u>Tennant, Owner, or Site Neighbor Interviewees Only:</u> If the answer to question 9 was yes, have any problems been encountered which required or will require changes to the remedial design or Record of Decision? Yes _____ No ___X__ **If "Yes," please describe.**
11. <u>Tennant, Owner, or Site Neighbor Interviewees Only:</u> If the answer to question 9 was yes, have any problems or difficulties been encountered which have impacted construction progress or implementability? Yes _____ No __X___ **If "Yes," please describe.**

Interviewer:			Date:
Name	Title	Organization	
Kimberly Panhorst	FTMM Phase Manager	Arcadis	1/24/2022

APPENDIX I
PUBLIC NOTICE

A GANNETT COMPANY

ASBURY PARK PRESS | APP.com

Agency:
ARCADIS U.S., INC.
10 FRIENDS LN
NEWTOWN, PA 18940
ATTN: Kimberly Panhorst
Acct:2676851844ARCA

Client: ARCADIS U.S., INC.
10 FRIENDS LN,SUITE 100
NEWTOWN, PA 18940

Acct No: 2676851844ARCA

This is not an invoice

Order #	Advertisement/Description	# Col x # Lines	Rate Per Line	Cost
0005110496	FTMM_Evans 5 yr review public notice_pub_010622 PUBLICNOTICEFIVEYEARREVIEWGROUNDWATERREMEDYA RTMONMOUTHEVANSAREATHEUSARMYISCONDUCTINGAFI\ YEARREVIEWOFTHEENVIRONMENTALCLEANUPOF	2 col x 41 lines	$0.45	$36.08
		Affidavit of Publication Charge	2	$35.00
		Tearsheet Charge	0	$0.00
		Net Total Due:		**$71.08**

Run Dates: 02/01/2022

Check #: _____

Date: _____

CERTIFICATION BY RECEIVING AGENCY
I, HAVING KNOWLEDGE OF THE FACTS, CERTIFY AND DECLARE THAT THE GOODS HAVE BEEN RECEIVED OR THE SERVICES RENDERED AND ARE IN COMPLIANCE WITH THE SPECIFICATIONS OR OTHER REQUIREMENTS, AND SAID CERTIFICATION IS BASED ON SIGNED DELIVERY SLIPS OR OTHER REASONABLE PROCEDURES OR VERIFIABLE INFORMATION.

SIGNATURE: _____

TITLE: _____ DATE: _____

CERTIFICATION BY APPROVAL OFFICIAL
I CERTIFY AND DECLARE THAT THIS BILL OR INVOICE IS CORRECT, AND THAT SUFFICIENT FUNDS ARE AVAILABLE TO SATISFY THIS CLAIM. THE PAYMENT SHALL BE CHARGEABLE TO:

APPROPRIATION ACCOUNT(S) AND AMOUNTS CHARGED: P.O. #

_____

SIGNATURE: _____

TITLE: _____ DATE: _____

CLAIMANT'S CERTIFICATION AND DECLARATION:

I DO SOLEMNLY DECLARE AND CERTIFY UNDER THE PENALTIES OF THE LAW THAT THIS BILL OR INVOICE IS CORRECT IN ALL ITS PARTICULARS; THAT THE GOODS HAVE BEEN FURNISHED OR SERVICES HAVE BEEN RENDERED AS STATED HEREIN; THAT NO BONUS HAS BEEN GIVEN OR RECEIVED BY ANY PERSON OR PERSONS WITHIN THE KNOWLEDGE OF THIS CLAIMANT IN CONNECTION WITH THE ABOVE CLAIM; THAT THE AMOUNT HEREIN STATED IS JUSTLY DUE AND OWING; AND THAT THE AMOUNT CHARGED IS A REASONABLE ONE.

Date: 02/01/2022

Federal ID #: 061032273

Signature: Nicole Jacobs

Official Position: Clerk

Kindly return a copy of this bill with your payment so that we can assure you proper credit.

Asbury Park Press
New Jersey Press Media Solutions
P.O. Box 677599

AFFIDAVIT OF PUBLICATION

Publisher's Fee $36.08 Affidavit $35.00

STATE OF WISCONSIN
Brown County

Personally appeared Nicole Jacobs at County of Brown, State of Wisconsin.

Of the **Asbury Park Press,** newspaper printed in Freehold, New Jersey and published in Neptune, in State of New Jersey and Monmouth/Ocean Counties, and of general circulation in Monmouth/Ocean Counties, who being duly sworn, deposeth and saith that the advertisement of which the annexed is a true copy, has been published in the said newspaper 1 times, once in each issue dated as follows:

02/01/2022 **A.D 2022**

Notary Public State of Wisconsin County of Brown

9.19.25

My commission expires

VICKY FELTY
Notary Public
State of Wisconsin

Public Notice – Five-Year Review – Groundwater Remedy at Fort Monmouth Evans Area

The U.S. Army is conducting a five-year review of the environmental cleanup of groundwater at Fort Monmouth, Evans Area located in Wall Township, New Jersey as required under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980. This review seeks to confirm that the remedy selected continues to protect human health and the environment. Cleanup activities included the removal of contaminated soils from various sites throughout Evans Area and the use of monitored natural attenuation with long term groundwater monitoring. A summary of cleanup activities and an evaluation of the protectiveness of the implemented groundwater remedy will be included in the five-year review report.

The purpose of five-year reviews is to ensure that the implemented remedy functions as intended and continues to be protective of human health and the environment. These regular reviews are performed by the Army when contaminants remain at a site, and include:

- Inspection of the site and cleanup technologies;
- Review of monitoring data; and
- Determination if any new relevant regulatory requirements have been established since the original cleanup decision was finalized.

It is anticipated that the five-year review report will be available by September 2022.

The Administrative Record, which includes the decision documents used for selecting the cleanup remedy and information on the site, is available for public review at the Monmouth County Public Library Wall Township Branch located at 2700 Allaire Road, Wall, New Jersey 07719.

If you have any questions or concerns about the site, please contact: Mr. Joseph Pearson, U.S. Army BRAC Environmental Coordinator Phone: 267-251-7214 Email: joseph.pearson@calibresys.com.
($36.08)

APPENDIX J
NJDEP Concurrence

Evans Area - Five Year Review

Joshi, Ashish [DEP] <Ashish.Joshi@dep.nj.gov>

Thu 12/1/2022 2:58 PM

To: Pearson, Joe <Joseph.pearson.ctr@calibresys.com>

Cc: Gallo, Christopher T CIV USARMY CENAN (USA) <Christopher.T.Gallo@usace.army.mil>

External Email : This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Joe,

I have completed my review of the Draft Final Five-Year Review for the Evans Area. Based upon the review, the Department approves and concurs with the submitted report. Please note that as the next (fifth five-year) review is scheduled for 2026, the Department recommends including investigation of contaminants of emergent concern (PFAS) to the next five-year review.

Thank you and please feel free to contact me if you have any questions.

A.J. Joshi

NJ Department of Environmental Protection

401 E. State St., 5th Floor

Trenton, NJ 08625-0420

(609) 433-8735

NOTE: Nothing in this correspondence affects your potential liability and obligations to the State Trustee, the Department, or its Commissioner regarding natural resource injuries, restoration, or damages.

NOTE: This E-mail is protected by the Electronic Communications Privacy Act, 18 U.S.C. Sections 2510-2521. This E-Mail and its contents, may be Privileged & Confidential due to the Attorney-Client Privilege, Attorney Work Product, and Deliberative Process or under the New Jersey Open Public Records Act. If you are not the intended recipient of this e-mail, please notify the sender, delete it and do not read, act upon, print, disclose, copy, retain or redistribute it.

New Jersey Department of Environmental Protection
Site Remediation Program
Report Certifications for RCRA GPRA 2020, CERCLA, and Federal Facility Sites

These certifications are to be used for reports submitted for RCRA GPRA 2020, CERCLA, and Federal Facility Sites. The Department has developed guidance for report certifications for RCRA GPRA 2020, CERCLA, and Federal Facility Sites under traditional oversight. The "Person Responsible for Conducting the Remediation Information and Certification" is required to be submitted with each report.

Document: **Final Evans Area Five Year Review Report**

Fort Monmouth, New Jersey
Preferred ID: G000000032

PERSON RESPONSIBLE FOR CONDUCTING THE REMEDIATION INFORMATION AND CERTIFICATION

Full Legal Name of the Person Responsible for Conducting the Remediation: Thomas Lineer
Representative First Name: Thomas Representative Last Name: Lineer
Title: BRAC Program Manager
Phone Number: (703) 371-6785 Ext: Fax:
Mailing Address: NC3/Taylor Bldg/RM1416, 2530 Crystal Drive
City/Town: Arlington State: VA Zip Code: 22202
Email Address: thomas.a.lineer.civ@army.mil

This certification shall be signed by the person responsible for conducting the remediation who is submitting this notification in accordance with Administrative Requirements for the Remediation of Contaminated Sites rule at N.J.A.C. 7:26C-1.5(a).

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein, including all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, to the best of my knowledge, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate, or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties.

Signature: LINEER.THOMAS.ALDEN.1172258375 Digitally signed by LINEER.THOMAS.ALDEN.1172258375 Date: 2022.12.14 13:44:33 -05'00' 13 December 2022

Name/Title: Thomas Lineer, BRAC Program Manager Date

Two hard copies of this document have been submitted to:

Mr. Ashish Joshi
New Jersey Department of Environmental Protection
Office of Brownfield & Community Revitalization
401 East State St
Mail Code: 401-05K
P.O. Box 420
Trenton, NJ 08625