United States Army
Fort Monmouth, New Jersey

Underground Storage Tank Closure and Site Investigation Report

Building 277
Main Post-East Area

NJDEP UST Registration No. 90010-24

November 2001

UNDERGROUND STORAGE TANK

CLOSURE AND SITE INVESTIGATION REPORT

BUILDING 277

MAIN POST-EAST AREA
NJDEP UST REGISTRATION NO. 90010-24
DICAR NO. 97-03-13-1012-08

NOVEMBER 2001

PREPARED FOR:

UNITED STATES ARMY, FORT MONMOUTH, NEW JERSEY
DIRECTORATE OF PUBLIC WORKS
BUILDING 167
FORT MONMOUTH, NJ 07703

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277.DOC

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UST Closure

On March 13, 1997, a steel, 1,000-gallon, No. 2 fuel oil underground storage tank (UST) was closed by removal in accordance with New Jersey Department of Environmental Protection (NJDEP) underground storage tank closure procedures at the Main Post-East area of the U.S. Army Fort Monmouth, Fort Monmouth, New Jersey. The UST, NJDEP Registration No. 90010-24 (Fort Monmouth ID No. 277) was located north of Building 277. The fill port was located directly above the tank.

Site Assessment

The site assessment was performed by U.S. Army personnel in accordance with the NJDEP *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E) and the NJDEP *Field Sampling Procedures Manual*. The sampling and laboratory analysis conducted during the site assessment were performed in accordance with Section 7:26E-2.1 of the *Technical Requirements for Site Remediation*. Soils surrounding the tank were screened visually and with air monitoring equipment for evidence of contamination. Following removal, numerous holes were noted in the UST. Soils at the location of the holes were dark in color and appeared to be contaminated. Based on the inspection of the UST, Directorate of Public Works (DPW) concluded that a discharge was associated with this UST. The NJDEP hotline was notified and the case was assigned DICAR No. 97-03-13-1012-08. Groundwater was encountered at 6.0 feet below ground surface and no sheen was observed.

Final post excavation soil samples collected from the UST excavation at Building 277 contained TPH concentrations below the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 milligrams per kilogram (mg/kg) (N.J.A.C. 7:26D and revisions dated February 3, 1994). Following receipt of all post-excavation soil sampling results, the excavation was backfilled to grade with a combination of uncontaminated excavated soil and certified clean fill. The excavation site was then restored to its original condition.

In response to the observation of potentially contaminated soil and the potential of groundwater contamination, groundwater was collected at Building 277 on two occasions. On November 6, 1999, groundwater from Building 277 was collected and analyzed for volatile organic compounds calibrated for xylene plus 15 tentatively identified compounds (VOC's), and semivolatile organic compounds plus 15 tentatively identified compounds (SVOC's). On December 18, 1999, a second round of groundwater was collected and analyzed for VOCs and SVOCs. All groundwater analytical results were either below the method detection limit or in compliance with the New Jersey Ground Water Quality Criteria (GWQC).

No further action is proposed in regard to the closure and site assessment of UST No. 90010-24 at Building 277.

1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

1.1 OVERVIEW

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 90010-24, was closed at Building 277 at the Main Post-East area of U.S. Army Fort Monmouth, Fort Monmouth, New Jersey on March 13, 1997. Refer to the site location map on Figure 1. This report presents the results of the Department of Public Works' (DPW) implementation of the UST Decommissioning/Closure Plan. The UST was a steel 1,000-gallon tank containing No. 2 fuel oil.

Decommissioning activities for UST No. 90010-24 complied with all applicable Federal, State, and Local laws and ordinances in effect at the date of decommissioning. These laws included but were not limited to N.J.A.C. 7:14B-1 et seq., N.J.A.C. 5:23-1 et seq., and Occupational Safety and Health Administration (OSHA) 1910.146 & 1910.120. All permits including but not limited to the NJDEP approved Decommissioning/Closure Plan were posted onsite for inspection. DPW personnel who are registered and certified by the NJDEP for performing UST closure activities conducted the decommissioning activities. Closure of UST No. 90010-24 proceeded under the approval of the NJDEP Bureau of Underground Storage Tanks (NJDEP-BUST).

After removal of the potentially contaminated soil, the site was assessed. Inspection of the UST revealed holes, which apparently leaked oil that stained surrounding soils. Initial soil samples revealed elevated levels of TPH in the soils around the former tank. Samples collected after subsequent soil removal complied with NJDEP standards. Groundwater samples collected at the site indicate that the UST did not impact groundwater quality to a level of concern. No further action is proposed at the former UST site at building 277.

This UST Closure and Site Investigation Report has been prepared by Versar, to assist the U.S. Army DPW in complying with the NJDEP-BUST regulations. The applicable NJDEP-BUST regulations at the date of closure were the *Interim Closure Requirements for Underground Storage Tank Systems* (N.J.A.C. 7:14B-1 et seq. October 1990 and revisions dated November 1, 1991).

This report was prepared using information collected at the time of closure. Section 1 of this UST Closure and Site Investigation Report provides a summary of the UST decommissioning activities. Section 2 of this report describes the site investigation activities. Conclusions and recommendations, including the results of the soil sampling and groundwater investigation, are presented in the final section of this report.

1.2 SITE DESCRIPTION

Building 277 is located in the Main Post-East area of the Fort Monmouth Army Base. UST No. 90010-24 was located north of Building 277 and appurtenant copper piping ran approximately ten (10) feet northeast from Building 277 to the UST. A site map is provided on Figure 2.

1.2.1 Geological/Hydrogeological Setting

The following is a description of the geological/hydrogeological setting of the area surrounding Building 277. Included is a description of the regional geology of the area surrounding Fort Monmouth as well as descriptions of the local geology and hydrogeology of the Main Post area.

Regional Geology

Monmouth County lies within the New Jersey Section of the Atlantic Coastal Plain physiographic province. The Main Post, Charles Wood, and the Evans areas are located in what may be referred to as the Outer Coastal Plain subprovince, or the Outer Lowlands.

In general, New Jersey Coastal Plain formations consist of a seaward-dipping wedge of unconsolidated deposits of clay, silt, and gravel. These formations typically strike northeast-southwest with a dip ranging from 10 to 60 feet per mile and were deposited on Precambrian and lower Paleozoic rocks (Zapecza, 1989). These sediments, predominantly derived from deltaic, shallow marine, and continental shelf environments, date from Cretaceous through the Quaternary Periods. The mineralogy ranges from quartz to glauconite.

The formations record several major transgressive/regressive cycles and contain units which are generally thicker to the southeast and reflect a deeper water environment. More than 20 regional geologic units are present within the sediments of the Coastal Plain. Regressive, upward coarsening deposits are usually aquifers (e.g., Englishtown and Kirkwood Formations, and the Cohansey Sand) while the transgressive deposits act as confining units (e.g., the Merchantville, Marshalltown, and Navesink Formations). The individual thicknesses for these units vary greatly (i.e., from several feet to several hundred feet). The Coastal Plain deposits thicken to the southeast from the Fall Line to greater than 6,500 feet in Cape May County (Brown and Zapecza, 1990).

Local Geology

Based on the regional geologic map (Jablonski, 1968), the Cretaceous age Red Bank and Tinton Sands outcrop at the Main Post area. The Red Bank sand conformably overlies the Navesink Formation and dips to the southeast at 35 feet per mile. The upper member (Shrewsbury) of the Red Bank sand is a yellowish-gray to reddish brown clayey, medium-to-coarse-grained sand that contains abundant rock fragments, minor mica and glauconite (Jablonski). The lower member (Sandy Hook) is a dark gray to black; medium-to-fine grained sand with abundant clay, mica, and glauconite.

The Tinton sand conformably overlies the Red Bank Sand and ranges from a clayey medium to very coarse grained feldspathic quartz and glauconite sand to a glauconitic coarse sand. The color varies from dark yellowish orange or light brown to moderate brown and from light olive to grayish olive. Glauconite may constitute 60 to 80 percent of the sand fraction in the upper part of the unit (Minard, 1969). The upper part of the Tinton is often highly oxidized and iron oxide encrusted (Minard).

Hydrogeology

The water table aquifer in the Main Post area is identified as part of the "composite confining units," or minor aquifers. The minor aquifers include the Navesink formation, Red Bank Sand, Tinton Sand, Hornerstown Sand, Vincentown Formation, Manasquan Formation, Shark River Formation, Piney Point Formation, and the basal clay of the Kirkwood Formation.

Based on records of wells drilled in the Main Post area, water is typically encountered at depths of 2 to 9 feet below ground surface (bgs). According to Jablonski, wells drilled in the Red Bank and Tinton Sands may produce 2 to 25 gallons per minute (gpm). Some well owners have reported acidic water that requires treatment to remove iron.

Due to the proximity of the Atlantic Ocean to Fort Monmouth, shallow groundwater may be tidally influenced and may flow toward creeks and brooks as the tide goes out, and away from creeks and brooks as the tide comes in. However, an abundance of clay lenses and sand deposits were noted in borings installed throughout Fort Monmouth. Therefore, the direction of shallow groundwater should be determined on a case-by-case basis.

Shallow groundwater is locally influenced within the Main Post area by the following factors:

- tidal influence (based on proximity to the Atlantic Ocean, rivers, and tributaries)
- topography
- nature of the fill material within the Main Post area
- presence of clay and silt lenses in the natural overburden deposits
- local groundwater recharge areas (i.e., streams, lakes)

Due to the fluvial nature of the overburden deposits (i.e., sand and clay lenses), shallow groundwater flow direction is best determined on a case-by-case basis. This is consistent with lithologies observed in borings installed within the Main Post area, which primarily consisted of fine-to-medium grained sands, with occasional lenses or laminations of gravel silt and/or clay.

Building 277 is located approximately 200 feet south of Parkers Creek, the nearest water body. Based on the Main Post topography, the groundwater flow in the area of Building 277 is anticipated to be to the north.

1.3 HEALTH AND SAFETY

Before, during, and after all decommissioning activities, hazards at the work site which may have posed a threat to the Health and Safety of all personnel who were involved with, or were affected by, the decommissioning of the UST system were minimized.

1.4 REMOVAL OF UNDERGROUND STORAGE TANK

1.4.1 General Procedures

- The contractor performing the closure prior to excavation activities identified all underground obstructions (utilities, etc.).
- All activities were carried out with the greatest regard to safety and health and the safeguarding of the environment.
- All excavated soils were visually examined and screened with an OVA for evidence of contamination. Potentially contaminated soils were identified and logged during closure activities.
- Surface materials (i.e., asphalt, concrete, etc.) were excavated and staged separately from all soil and recycled in accordance with all applicable regulations and laws.
- A Sub-Surface Evaluator from the DPW was present during all site assessment activities.

1.4.2 Underground Storage Tank Excavation and Cleaning

Prior to UST decommissioning activities, surficial soil was removed to expose the UST and associated piping. All free product present in the piping was drained into the UST, and the UST was purged to remove vapors prior to cutting and removal of the piping. After removal of the associated piping, a manway was made in the UST to allow for proper cleaning. The UST was completely emptied of all liquids prior to removal from the ground. Approximately 690 gallons of liquid from the UST and its associated piping were transported by Lorco Petroleum Services, an NJDEP-approved petroleum recycling and disposal company located in Old Bridge, New Jersey.

The UST was cleaned prior to removal from the excavation in accordance with the NJDEP-BUST regulations. After the UST was removed from the excavation, it was staged on polyethylene sheeting and examined for holes. Numerous holes were observed during the inspection by the Sub-Surface Evaluator. Soils surrounding the UST were screened visually for evidence of contamination. Potentially contaminated soils were observed. Potentially contaminated soils were removed from the excavated area. Soil screening was also performed along the piping run associated with the UST closure. No contamination was noted anywhere along the piping length. Groundwater was encountered at 6.0 feet below ground surface and no sheen was observed.

1.5 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The steel tank was transported in compliance with all applicable regulations and laws to a staging area at the base. Used USTs at the base are disposed of in bulk by Mazza & Sons, Inc., Recycling Division.

The UST was labeled prior to transport with the following information:

- Site of origin
- Contact person
- NJDEP UST Facility ID number
- Former contents
- Destination site
- Date

1.6 MANAGEMENT OF EXCAVATED SOILS

Based on visual observations, potentially contaminated soil was removed from the UST excavation. All potentially contaminated soils were stockpiled separately from other excavated material and were placed on and covered with polyethylene sheets. Potentially contaminated soils were transported to the soil staging area. Soils that did not exhibit signs of contamination were used as backfill following the removal of the UST. Groundwater was encountered at 6.0 feet below ground surface and no sheen was observed.

2.0 SITE INVESTIGATION ACTIVITIES

2.1 OVERVIEW

The Site Investigation was managed and carried out by U.S. Army DPW personnel. All analyses were performed and reported by U.S. Army Fort Monmouth Environmental Laboratory, an NJDEP-certified testing laboratory. All sampling was performed under the direct supervision of a NJDEP Certified Sub-Surface Evaluator according to the methods described in the NJDEP *Field Sampling Procedures Manual* (1992). Sampling frequency and parameters analyzed complied with the NJDEP-BUST document *Interim Closure Requirements for Underground Storage Tank Systems* (October 1990 and revisions dated November 1, 1991) which was the applicable regulation at the date of the closure. The Fort Monmouth DPW Environmental Office maintains all records of the Site Investigation activities.

2.2 FIELD SCREENING/MONITORING

Field screening was performed by a NJDEP Certified Sub-Surface Evaluator using visual observations to identify potentially contaminated material. Soil excavated from around the tank-exhibited evidence of potential contamination. Soils were removed from the excavation until no evidence of contamination remained. Groundwater was encountered at 6.0 feet below ground surface and no sheen was observed.

2.3 SOIL SAMPLING

Post excavation soil samples were collected from six (6) locations on July 27, 1998, eight (8) locations on September 28, 1998, eight (8) locations on September 30, 1998, and three (3) locations on June 9, 2001. Two of the soil sample locations from the July 27, 1998 sample event were resampled November 6, 1999. Sidewall samples were collected at 6 feet below ground surface (bgs). Excavation base samples were collected from 7 feet bgs. All samples were analyzed for TPH and total solids.

U.S. Army personnel in accordance with the NJDEP Technical Requirements and the NJDEP Field Sampling Procedures Manual performed the site assessment. A summary of sampling activities including sample depths and parameters analyzed is provided in Table 1. The post-excavation soil samples were collected using NJDEP *Field Sampling Procedures Manual* (1992) standard sampling procedures. Following soil sampling activities, the samples were chilled and delivered to U.S. Army Fort Monmouth Environmental Laboratory located in Fort Monmouth, New Jersey, for analysis.

2.4 GROUNDWATER SAMPLING

On November 6, 1999 and December 18, 1999, groundwater from the location of the former UST was collected and analyzed for volatile organic compounds calibrated for xylene plus 15 tentatively identified compounds (VOC's), and semivolatile organic compounds plus 15 tentatively identified compounds (SVOC's). Sampling and analysis were performed in accordance with the NJDEP *Field Sampling Procedures Manual* and the *Technical Requirements For Site Remediation.*

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 SOIL SAMPLING RESULTS

To evaluate soil conditions following removal of the UST and associated piping, post-excavation soil samples were collected on July 27, 1998 from a total of six (6) locations, 277-1 through 277-6. All samples were analyzed for TPH and total solids. The post-excavation sampling results were compared to the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 mg/kg (N.J.A.C. 7:26D and revisions dated February 3, 1994). Sample 277-Two of the samples, 277-2 and 277-6, exceeded the cleanup criteria with TPH concentrations of 16331.20 mg/kg and 19141.34 mg/kg, respectively. Sample 277-2 was resampled, however, on November 11, 1999 after additional soil was removed. The sample was analyzed for TPH and VOCs. The TPH concentration had significantly decreased to 4,679.64 mg/kg and there were no VOCs detected.

Based on the results of the first soil sampling round, additional soil was removed from the site. In order to evaluate the effectiveness of the additional excavation, 16 additional soil samples, 277-7 through 277-22, were collected between September 28 and October 1, 1998. All samples were analyzed for TPH and total solids. Samples 277-7 through 277-14 were also analyzed for VOCs. Two of the samples, 277-8 and 277-11, exceeded the cleanup criteria, with TPH concentrations of 21497.67 mg/kg and 23138.50 mg/kg, respectively. However, neither 277-8 nor 277-11 contained VOCs above the cleanup criteria. All other samples from the second round contained either undetectable concentrations of TPH or concentrations below the cleanup criteria.

Three samples were collected from the former UST excavation on June 6, 2001 in order assess the current soil quality prior to groundwater sampling. The samples were analyzed for TPH and VOCs. The soil samples B2, B2A, and B2B, contained either no detectable TPH or concentrations below the cleanup criteria. There were no VOCs detected in the soil samples.

A summary of the analytical results is provided in Table 2 and the soil sampling locations are shown on Figure 4. The analytical data package is provided in Appendix D.

3.2 GROUNDWATER SAMPLING RESULTS

Groundwater samples were collected from the location of former the UST at Building 277 on November 6 and December 18, 2001. The samples were analyzed for VOCs calibrated for xylene plus 15 tentatively identified compounds, and SVOCs plus 15 tentatively identified compounds. There were no VOCs detected in either of the groundwater samples.

Groundwater samples collected on November 6 and December 18, 2001, were below the detection limit and therefore, in compliance with the New Jersey Ground Water Quality Criteria (GWQC). The analytical data package is provided in Appendix E. The full data

package, including quality control is on file at U.S. Army Fort Monmouth located in Fort Monmouth, New Jersey.

3.3 CONCLUSIONS AND RECOMMENDATIONS

The analytical results for the final post-excavation soil samples collected from the UST closure excavation at Building 277 were below the NJDEP soil cleanup criteria for total organic contaminants with the exception of samples 277-8 and 277-11. However, these samples were also analyzed for VOCs and contained no compounds that exceeded the NJDEP soil cleanup criteria.

Groundwater samples collected at Building 277 on November 6 and December 18, 2001, groundwater quality at Building 277 was below the detection limit and in compliance with the New Jersey Ground Water Quality Criteria (GWQC).

No further action is proposed in regard to the closure and site assessment of UST No. 90010-24 at Building 277.

TABLES

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
BUILDING 277, MAIN POST-EAST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters	NJDEP/EPA Method
277-1(6')	7/27/98	7/27/98	Soil	Post-Excavation	TPH	OQA-QAM-025, 3051, 8081
277-2(6')	7/27/98	7/27/98	Soil	Post-Excavation	TPH	OQA-QAM-025, 3051, 8081
277-3(6')	7/27/98	7/27/98	Soil	Post-Excavation	TPH	OQA-QAM-025, 3051, 8081
277-4(7')	7/27/98	7/27/98	Soil	Post-Excavation	TPH	OQA-QAM-025, 3051, 8081
277-5(7')	7/27/98	7/27/98	Soil	Post-Excavation	TPH	OQA-QAM-025, 3051, 8081
277-6(6')	7/27/98	7/27/98	Soil	Post-Excavation	TPH	OQA-QAM-025, 3051, 8081
277-7(6')	9/28/98	9/28/98	Soil	Post-Excavation	TPH, VOC	OQA-QAM-025, 624
277-8(6')	9/28/98	9/28/98	Soil	Post-Excavation	TPH, VOC	OQA-QAM-025, 624
277-9(7')	9/29/98	9/29/98	Soil	Post-Excavation	TPH, VOC	OQA-QAM-025, 624
277-10(7')	9/29/98	9/29/98	Soil	Post-Excavation	TPH, VOC	OQA-QAM-025, 624
277-11(6')	9/29/98	9/29/98	Soil	Post-Excavation	TPH, VOC	OQA-QAM-025, 624
277-12(6')	9/29/98	9/29/98	Soil	Post-Excavation	TPH, VOC	OQA-QAM-025, 624
277-13(6')	9/29/98	9/29/98	Soil	Post-Excavation	TPH, VOC	OQA-QAM-025, 624
277-14(6')	9/29/98	9/29/98	Soil	Post-Excavation	TPH, VOC	OQA-QAM-025, 624
482-SP	9/30/98	9/30/98	Soil	Post-Excavation	TPH	OQA-QAM-025
277-SP	9/30/98	9/30/98	Soil	Post-Excavation	TPH	OQA-QAM-025
277-15(6')	9/30/98	9/30/98	Soil	Post-Excavation	TPH	OQA-QAM-025
277-16(7')	9/30/98	9/30/98	Soil	Post-Excavation	TPH	OQA-QAM-025
277-17(7')	9/30/98	9/30/98	Soil	Post-Excavation	TPH	OQA-QAM-025
277-18(6')	9/30/98	9/30/98	Soil	Post-Excavation	TPH	OQA-QAM-025
277-19(6')	9/30/98	9/30/98	Soil	Post-Excavation	TPH	OQA-QAM-025
277-20(6')	10/1/98	10/1/98	Soil	Post-Excavation	TPH	OQA-QAM-025
277-21(6')	10/1/98	10/1/98	Soil	Post-Excavation	TPH	OQA-QAM-025
277-22(6')	10/1/98	10/1/98	Soil	Post-Excavation	TPH	OQA-QAM-025
277-1	11/6/99	11/10/99	Soil	Post-Excavation	TPH, VOC, SVOC	OQA-QAM-025, 624, 8270
277-2	11/6/99	11/10/99	Soil	Post-Excavation	TPH, VOC, SVOC	OQA-QAM-025, 624, 8270
B-2-A	6/9/01	6/11/01	Soil	Post-Excavation	TPH, VOC	OQA-QAM-025, 624
B-2	6/9/01	6/11/01	Soil	Post-Excavation	TPH, VOC	OQA-QAM-025, 624
B-2-B	6/9/01	6/11/01	Soil	Post-Excavation	TPH, VOC	OQA-QAM-025, 624

TABLE 1

SUMMARY OF SAMPLING ACTIVITIES
BUILDING 277, MAIN POST-EAST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Sampling Method**
277-2-GW	11/6/99	11/13/99	Aqueous	Geoprobe	VOC, SVOC	OQA-QAM-025, 624,
Bldg 277	12/18/99	12/29/99	Aqueous	Geoprobe	VOC, SVOC	OQA-QAM-025, 624,

Note:
*VOCs: Volatile Organic Compounds plus 15 tentatively identified compounds
*SVOCs: Semivolatile organic compounds plus 15 tentatively identified compounds
**PPNDP: Passively Placed Narrow Diameter Point

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 277, MAIN POST-EAST AREA
FORT MONMOUTH, NEW JERSEY

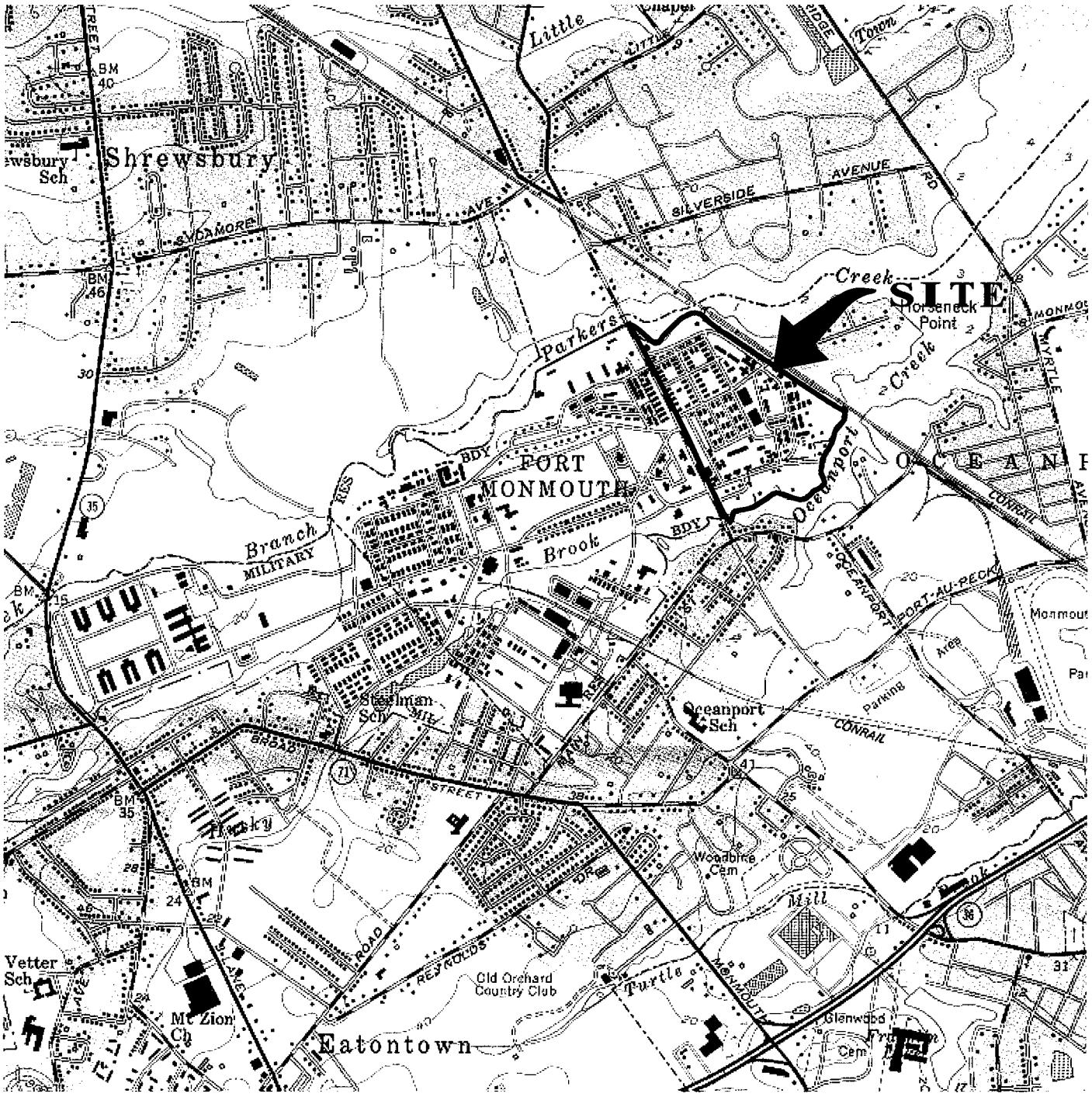
Sample ID/ Depth	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Parameters	Method Detection Limit (mg/kg)	Compound of Concern	Results (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
277-1(6')	3754.01	7/27/98	7/27/98	Total Solid	--	--	79.96	--	--
				TPH	196	yes	3355.93	10,000	No
277-2(6')	3754.02	7/27/98	7/27/98	Total Solid	--	--	84.35	--	--
				TPH	179	yes	16331.20	10,000	No
277-3(6')	3754.03	7/27/98	7/27/98	Total Solid	--	--	78.17	--	--
				TPH	192	yes	6714.80	10,000	No
277-4(7')	3754.04	7/27/98	7/27/98	Total Solid	--	--	87.03	--	--
				TPH	180	yes	1648.45	10,000	No
277-5(7')	3754.05	7/27/98	7/27/98	Total Solid	--	--	86.16	--	--
				TPH	182	yes	2922.40	10,000	No
277-6(6')	3754.06	7/27/98	7/27/98	Total Solid	--	--	87.75	--	--
				TPH	178	yes	19141.34	10,000	No
277-7(6')	3918.01	9/28/98	9/28/98	Total Solid	--	--	85.87	--	--
				TPH	181	yes	1861.61	10,000	No
277-8(6')	3918.02	9/28/98	9/28/98	Total Solid	--	--	85.04	--	--
				TPH	180	yes	21497.67	10,000	No
277-9(7')	3920.01	9/29/98	9/29/98	Total Solid	--	--	84.50	--	--
				TPH	181	yes	ND	10,000	No
277-10(7')	3920.02	9/29/98	9/29/98	Total Solid	--	--	85.35	--	--
				TPH	176	yes	ND	10,000	No
277-11(6')	3920.03	9/29/98	9/29/98	Total Solid	--	--	86.77	--	--
				TPH	174	yes	23138.50	10,000	No
277-12(6')	3920.07	9/29/98	9/29/98	Total Solid	--	--	84.48	--	--
				TPH	185	yes	1039.44	10,000	No
277-13(6')	3920.07	9/29/98	9/29/98	Total Solid	--	--	91.02	--	--
				TPH	169	yes	ND	10,000	No
277-14(6')	3920.07	9/29/98	9/29/98	Total Solid	--	--	83.65	--	--
				TPH	181	yes	243.62	10,000	No
277-15(6')	3927.01	9/30/98	9/30/98	Total Solid	--	--	88.30	--	--

				TPH	175	Yes	403.69	10,000	No
277-16(7')	3927.02	9/30/98	9/30/98	Total Solid	--	--	62.05	--	--
				TPH	251	Yes	ND	10,000	No
277-17(7')	3927.03	9/30/98	9/30/98	Total Solid	--	--	87.62	--	--
				TPH	172	Yes	ND	10,000	No
277-18(6')	3927.04	9/30/98	9/30/98	Total Solid	--	--	79.85	--	--
				TPH	189	Yes	250.96	10,000	No
277-19(6')	3927.05	9/30/98	9/30/98	Total Solid	--	--	78.82	--	--
				TPH	195	Yes	ND	10,000	No
277-20(6')	3931.01	10/01/98	10/01/98	Total Solid	--	--	84.37	--	--
				TPH	183	Yes	ND	10,000	No
277-21(6')	3931.02	10/01/98	10/01/98	Total Solid	--	--	84.47	--	--
				TPH	181	Yes	ND	10,000	No
277-22(6')	3931.03	10/01/98	10/01/98	Total Solid	--	--	89.72	--	--
				TPH	171	Yes	ND	10,000	No
B2	1618001	6/9/01	6/11/01	Total Solid	--	--	85.67	--	--
				TPH	177	Yes	ND	10,000	No
B2A	1618002	6/9/01	6/11/01	Total Solid	--	--	85.03	--	--
				TPH	181	Yes	844.26	10,000	No
B2B	1618003	6/9/01	6/11/01	Total Solid	--	--	80.02	--	--
				TPH	189	Yes	868.94	10,000	No

Note:

*	Total Solid results are expressed as a percentage.
**	NJDEP Residential Direct Contact soil cleanup criteria for total organics
ND	Not detected above stated method detection limit
TPH	Total Petroleum Hydrocarbons
--	Not Applicable

FIGURES



LONG BRANCH, N. J.

40073-C8-TF-024

1954

PHOTOREVISED 1981

DMA 6164 I SE-SERIES V822

NEW JERSEY

QUADRANGLE LOCATION

Mapped, edited and published by the Geological Survey

FIGURE 1

LOCATION MAP
Building 277
Main-Post East
Fort Monmouth Army Base
Monmouth County, NJ

VERSAR
Engineers, Managers, Scientists, & Planners
Bristol, PA

Scale: 1" = 2000'

Date: March 1997

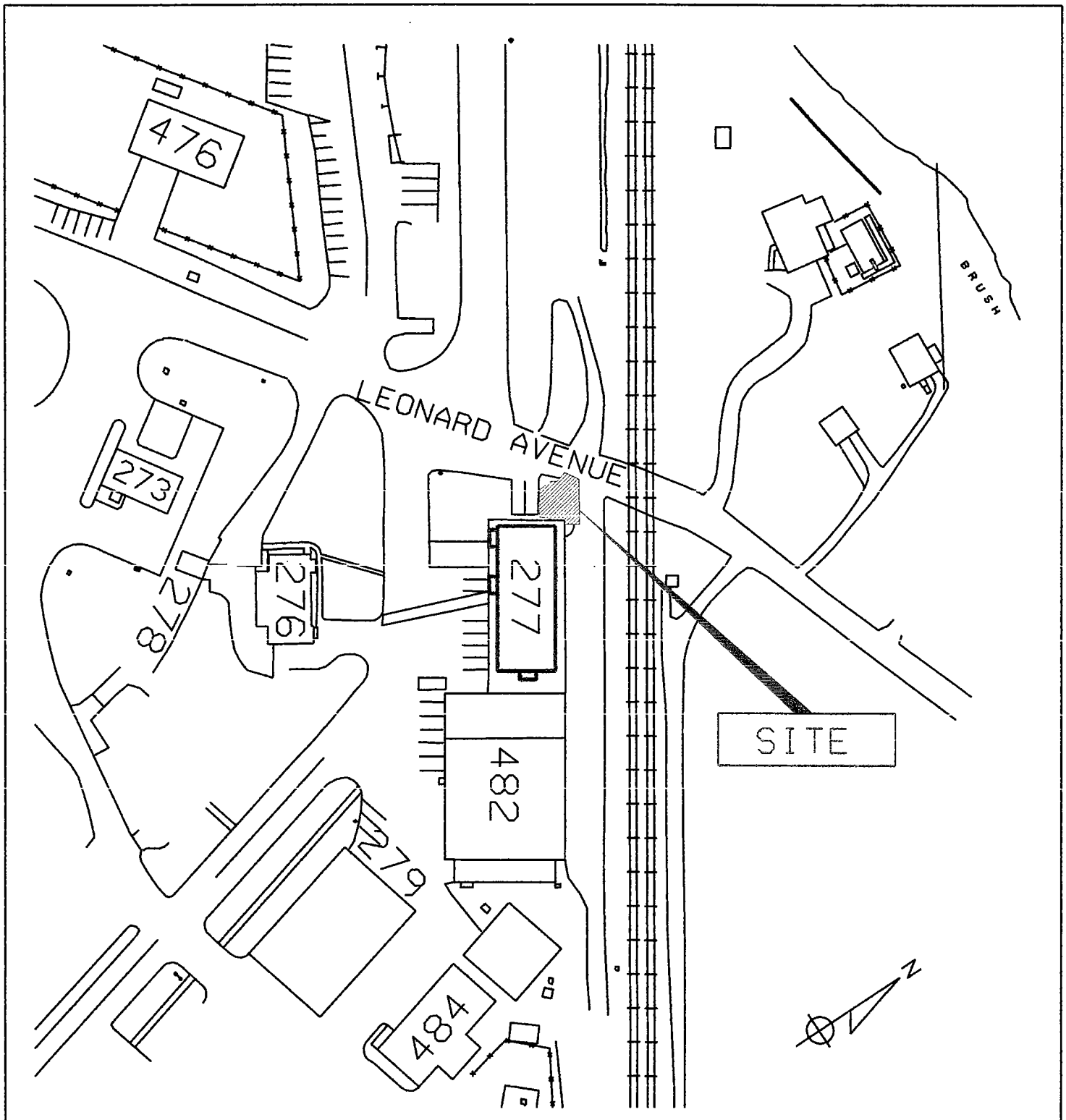
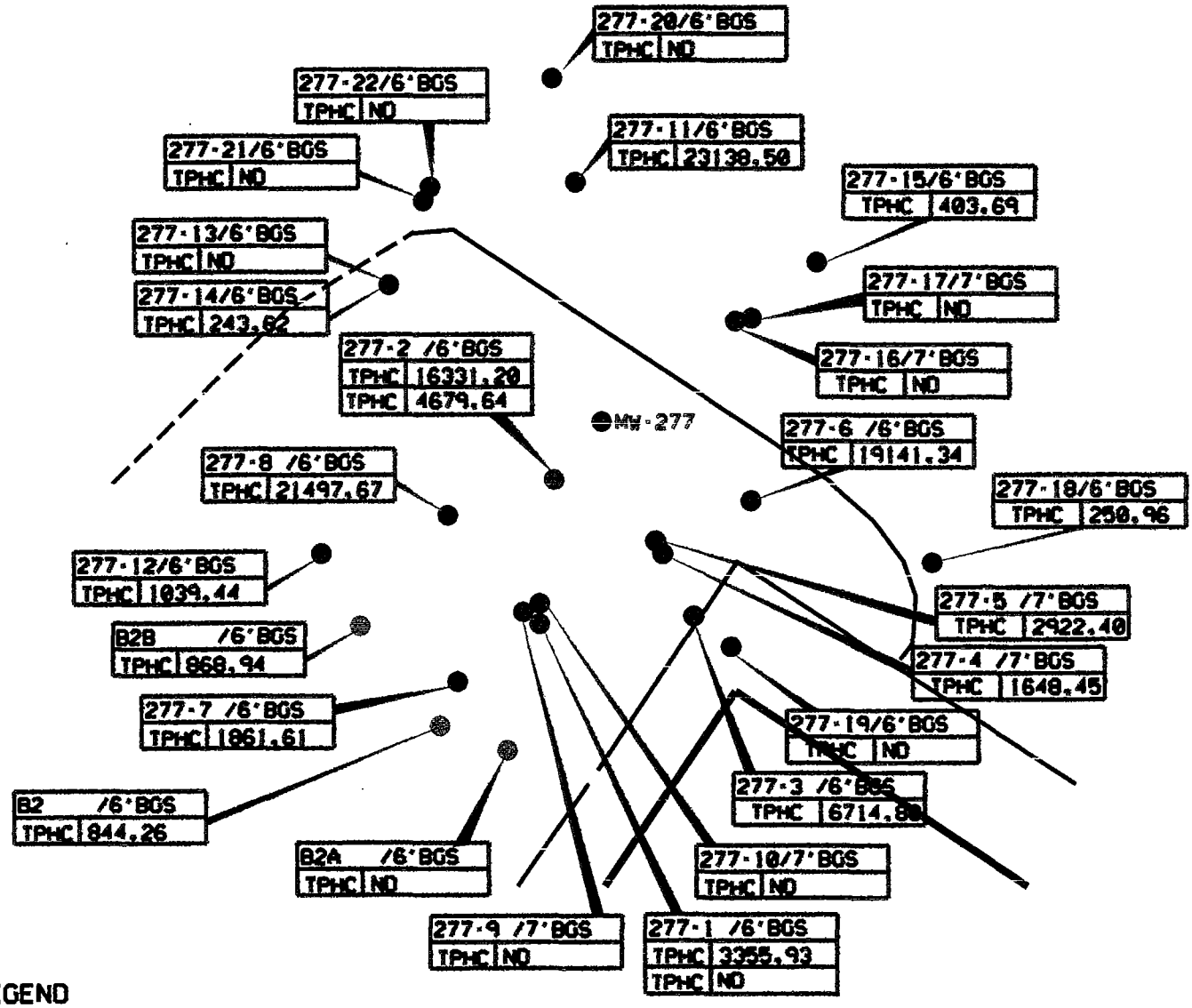


FIGURE 2
SITE MAP
BUILDING 277
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

VERSAR
ENGINEERS, SCIENTISTS & PLANNERS
BRISTOL, PA.

SCALE: 1"=100' | DATE: DEC. 2001

277 FIG2



LEGEND

- SOIL SAMPLE LOCATION (7/27/98)
- SOIL SAMPLE LOCATION (6/9/01)
- SOIL SAMPLE LOCATION (JULY 6, 1994)
- GROUNDWATER SAMPLE LOCATION (11/2/99 AND 12/18/99)
- SOIL SAMPLE LOCATION (7/27/98 AND 11/8/99)

N

NOTES:

1. ALL RESULTS IN MG/KG.
2. SEE TABLE 2 FOR NJDEP SOIL CLEANUP CRITERIA
3. BGS - BELOW GROUND SURFACE

FIGURE 3
SOIL SAMPLING LOCATION MAP
BUILDING 277
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

VERSAR
ENGINEERS, MANAGERS, SCIENTISTS & PLANNERS
BRISTOL, PA.

SCALE: 1" = 10'

DATE: NOVEMBER 2001

2/8 1104

APPENDIX A
NJDEP UST REPORT CERTIFICATION FORM

(12/97) **New Jersey Department of Environmental Protection**

Site Remediation Program

UST Site/Remedial Investigation Report Certification Form

A. Facility Name : U.S. Army Fort Monmouth New Jersey
Facility Street Address : Directorate of Public Works Building 173
Municipality: Oceanport County: Monmouth

Block: _____ Lot(s): _____ Telephone Number : 732-532-6224

B. Owner (RP)'s Name: _____

Street Address: _____ City : _____

State: _____ Zip: _____ Telephone Number : _____

C. (Check as appropriate)

- ☐ Site Investigation Report (SIR) $500 Fee
- ☐ Remedial Investigation Report (RIR) $1000 Fee

D. (Complete all that apply)

- Assigned Case Manager: Ian Curtis, Federal Case Manager
- UST Registration Number : 0090010-24
- Incident Report Number : 97-03-13-1012-08
- Tank Closure Number: _____

E. Certification by the Subsurface Evaluator:

The attached report conforms to the specific reporting requirements of N.J.A.C. 7:26E .....Yes No

Name: Dinker Desai Signature: _____ UST Cert. No.: _____

Firm: U.S. Army Fort Monmouth Firm's UST Cert. Number: N/A – U.S. Army

Firm Address: Directorate of Public Works Buildings 173 City: Fort Monmouth

State:NJ Zip:07703 Telephone Number : 732-532-6224

(NOTE: Certification numbers required only if work was conducted on USTs regulated per N.J.S.A. 58:10A-21 et seq.)

F. Certification by the Responsible Party(ies) of the Facility:

The following certification shall be signed [according to the requirements of N.J.A.C. 7:14B-1.7(b)]as follows:

1. For a Corporation by a person authorized by a resolution of the board of directors to sign the document. A copy of the resolution, certified as a true copy by the secretary of the corporation, shall be submitted along with the certification; or
2. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
3. For a municipality, State, federal or other public agency by either a principal executive officer or ranking elected Official.

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attached documents, and that based on my inquiry of those individuals responsible for obtaining the information, 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."

Name (Print or Type): James Ott Title: Directorate of Public Works

Signature: _____

Company Name: U.S. Army Fort Monmouth Date: _____

APPENDIX B

WASTE MANIFESTS

LORCO PETROLEUM SERVICES
RD1 Box 5A
Old Bridge, N.J. 08857
(908) 721-0900
Fax (908) 721-0231

STANDARD COLLECTION ORDER FORM

155943

OFFICE USE ONLY

GENERATOR/LOCATION

NAME: FT MONMOUTH
INFORMATION/ATTENTION LINE:
ACCOUNT APPROVAL CODE:
DELIVERY ADDRESS: BLDG 277 / OCEANPORT SIDE UST
CITY: EATONTOWN STATE: N.J. ZIP:
PHONE NUMBER:
PURCHASE ORDER NUMBER:
USA EPA ID NO. (IF APPLICABLE): N/A
STATE ID NO.:

BILL TO (IF DIFFERENT FROM LOCATION)

NAME: FORT MONMOUTH
INFORMATION/ATTENTION LINE:
ACCOUNT APPROVAL CODE: C001098
DELIVERY ADDRESS: MAIN HAZ WASTE BLDG (BLDG 173)
CITY: EATONTOWN STATE: NJ ZIP:
PHONE NUMBER:
PURCHASE ORDER NUMBER: 9004247

MANIFEST NUMBER: 05181

SHIPPING INFORMATION

This is to certify that the below named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

NO.	TYPE	QTY.	UNIT	US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	SALES REPRESENTATIVE

SERVICE SECTION

SALES CODE	DESCRIPTION	WASTE CODE	QUANTITY	UNIT PRICE	PRICE	TAX	LINE TOTAL
40500	USED OIL REMOVAL						
40300	ANTI-FREEZE REMOVAL						
40600	USED OIL FILTER REMOVAL						
40501	OILY WATER DISPOSAL	1072	690	GAL			
40502	SLUDGE DISPOSAL						
41001	RCRA WASTE DISPOSAL						
41501	DRUM DISPOSAL						
41504	TANK ENTRY						
40800	PARTS WASHER SERVICE						
41500	TRUCK & OPERATOR	(7:30 AM - 10:30 AM)					
41511	55 GAL DRUM / 17H						
41503	QAQC ANALYTICAL TESTING						
42001	DEXSIL TEST KIT TAX						
41509	TRANSPORTATION						
41506	OTHER CHARGES						

PUMPOUT LK TANK

CHARGE MY ACCOUNT FOR THIS TRANSACTION UNLESS OTHERWISE INDICATED IN THE PAYMENT SECTION.
INVOICES REFLECTING CHARGES TO CUSTOMER ARE SUBJECT TO AN INTEREST RATE OF THE LESSER OF 1½% PER MONTH (18% PER ANNUM) OR THE MAXIMUM RATE ALLOWED BY LAW ON ANY INVOICES THAT ARE NOT PAID WITHIN 30 DAYS. IN THE EVENT OF DEFAULT, LORCO SHALL BE ENTITLED TO RECOVER COSTS OF COLLECTION, INCLUDING REASONABLE ATTORNEY'S FEES.
GENERATOR WARRANTS AND REPRESENTS THAT THE MATERIALS PROVIDED LORCO HEREUNDER HAVE NOT BEEN MIXED, COMBINED, OR OTHERWISE BLENDED IN ANY QUANTITY WITH MATERIALS CONTAINING POLYCHLORINATED BIPHENYLS (PCB) OR ANY OTHER MATERIAL DEFINED AS HAZARDOUS WASTE UNDER APPLICABLE LAWS, INCLUDING BUT NOT LIMITED TO 40 CFR PART 261, GENERATOR AGREES TO INDEMNIFY AND HOLD LORCO HARMLESS FOR ANY DAMAGES, COSTS, ATTORNEY'S FEES, ETC. ARISING OUT OF OR IN ANY WAY RELATED TO A BREACH OF THE ABOVE WARRANTY BY THE GENERATOR.

$

Generator certifies that the waste is 1072.
In accordance the N.J.A.C. 7:26-12.1 et seq, LORCO has the required permits to accept the above described waste.

Print Name: [illegible] Title: Service Rep II
Signature: [illegible] Date: 3-13-97
GENERATOR/CUSTOMER

SMALL QUANTITY GENERATOR CERTIFICATION

I certify that this generator generates less than 100 kilograms of hazardous waste per month, as defined at 40 C.F.R. 261, and does not accumulate more than 1,000 kilograms of such waste during the month.

X

GENERATOR'S SIGNATURE

LARGE QUANTITY GENERATOR CERTIFICATION

DEXSIL CDT TEST RESULTS

N/A PPM

CUSTOMER

TOTAL

PAYMENT RECEIVED SECTION

CASH ☐	TOTAL RECEIVED
CHECK NUMBER	

CUSTOMER SERVICED EVERY 30 DAYS ☐

In accordance with 40 CFR 266 § 43(5) LORCO has notified the US EPA of its location and used oil management activities.

Print Name: Jon Tarquinot
Signature: [illegible] Date: 3-13-97
LORCO REPRESENTATIVE

APPENDIX C

UST DISPOSAL CERTIFICATE

APPENDIX NOT AVAILABLE

AS OF THE DATE OF THIS REPORT

APPENDIX D

UNDER SEPARATE COVER

APPENDIX E

GROUNDWATER ANALYTICAL DATA PACKAGE

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS
PHONE: (732) 532-6224 FAX: (732) 532-6263
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING
CERTIFICATIONS: NJDEP #13461, NYSDOH #11699

ANALYTICAL DATA REPORT
Fort Monmouth Environmental Laboratory
ENVIRONMENTAL DIVISION
Fort Monmouth, New Jersey
PROJECT: UST Program

Bldg. 277

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
Bldg. 277	5031.01	Aqueous	18-Dec-99 11:15	12/20/99
Field Dup.	5031.02	Aqueous	18-Dec-99	12/20/99

ANALYSIS:
FORT MONMOUTH ENVIRONMENTAL LAB
VOA+15, BN+15

ENCLOSURE:
CHAIN OF CUSTODY
RESULTS

5-4-00
Daniel Wright/Date
Laboratory Director

CHAIN OF CUSTODY

Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:appleby@mail1.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: D. DeAsi
Phone #: X2475
( )DERA ( )OMA ( )Other:_____

Project No:
Location: Bldg 277 UST 2nd flnd

Samplers Name / Company: Corey McCormack, TVS

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	VO +15	Xylenes	BN +15						Comments: Remarks / Preservation Method
5031 .01	Bldg 277	12/18/99	1115	AQ	3	✓	✓	✓						HCL / 4°C
" .02	Dupe	—	—	↓	3	✓	✓	✓						

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Corey McCormack	12/18/99 1135				
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: ( )Full, (X)Reduced, ( )Standard, ( )Screen / non-certified
Turnaround time: (X)Standard 3 wks, ( )Rush ____ Days, ( )ASAP Verbal ____ Hrs.

Remarks: Shows dupe w/ 483 + 116B, Shows Trip/FB from 116B
See data, COC

200000

print legibly

Coc.xls12/6/99

METHODOLOGY SUMMARY

Method Summary

EPA Method 624
Gas Chromatographic Determination of Volatiles in Water

Surrogates and internal standards are added to a 5-ml aliquot of sample. The sample is then purged and desorbed into a GC/MS system. The organic compounds are separated by the gas chromatograph and detected using the mass spectrometer. Volatiles are identified and quantitated.

EPA Method 3510/8270
Gas Chromatographic Determination of Semi-volatiles in Water

Surrogates are added to measured volume of sample, usually 1 liter, at a specified pH. The sample is serially extracted with Methylene chloride using a separatory funnel. The extract concentrated and internal standards are added. The sample is injected into a GC/MS system. Semi-volatiles are identified and quantitated.

CONFORMANCE NON-CONFORMANC SUMMARY

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

Indicate Yes, No, N/A

1. Chromatograms labeled/Compounds identified (Field samples and method blanks) — Yes

2. Retention times for chromatograms provided — Yes

3. GC/MS Tune Specifications
   a. BFB Meet Criteria — Yes
   b. DFTPP Meet Criteria — Yes

4. GC/MS Tuning Frequency – Performed every 24 hours for 600 series and 12 hours for 8000 series — yes

5. GC/MS Calibration – Initial Calibration performed before sample analysis and continuing calibration performed within 24 hours of sample analysis for 600 series and 12 hours for 8000 series — Yes

6. GC/MS Calibration requirements
   a. Calibration Check Compounds Meet Criteria — Yes
   b. System Performance Check Compounds Meet Criteria — Yes

7. Blank Contamination – If yes, List compounds and concentrations in each blank: — NO
   a. VOA Fraction_____
   b. B/N Fraction_____
   c. Acid Fraction NA

8. Surrogate Recoveries Meet Criteria — NO

   If not met, list those compounds and their recoveries, which fall outside the acceptable range:
   a. VOA Fraction_____
   b. B/N Fraction Nitrobenzene d5 Low MS+MD
   c. Acid Fraction NA

   If not met, were the calculations checked and the results qualified as "estimated"? _____

9. Matrix Spike/Matrix Spike Duplicate Recoveries Meet Criteria (If not met, list those compounds and their recoveries, which fall outside the acceptable range) — Yes
   a. VOA Fraction_____
   b. B/N Fraction_____
   c. Acid Fraction NA

LABORATORY CHRONICLE

VOLATILE ORGANICS

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

Definition of Qualifiers

MDL	: Method Detection Limit
J	: Compound identified below detection limit
B	: Compound in both sample and blank
D	: Results from dilution of sample
U	: Compound searched for but not detected
E	: Compound exceeds calibration limit

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VC001680.D**	Sample Name	**Vblk45**
Operator	**Skelton**	Field ID	**Vblk45**
Date Acquired	**28 Dec 1999 8:21 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75343	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156594	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-9

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

1/3/00 1:45 PM

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000012

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VC001699.D**	Sample Name	**5031.01**
Operator	**Skelton**	Field ID	**Bldg277**
Date Acquired	**29 Dec 1999 9:14 am**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75343	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156594	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes	27.46	166261	1.79 ug/L	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-9

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

1/3/00 1:51 PM

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000014

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Bldg277**

Lab Name: FMETL NJDEP#: 13461

Project: 100004 Case No.: 5031 Location: Bldg27 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 5031.01

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC001699.D

Level: (low/med) LOW Date Received: 12/20/99

% Moisture: not dec. Date Analyzed: 12/29/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 3

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 000300-57-2	Benzene, 2-propenyl-	33.76	4	JN
2. 000934-80-5	Benzene, 4-ethyl-1,2-dimethyl-	34.44	4	JN
3. 000767-58-8	Indan, 1-methyl-	34.94	4	JN

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VC001700.D**	Sample Name	**5031.02**
Operator	**Skelton**	Field ID	**Dupe**
Date Acquired	**29 Dec 1999 9:54 am**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75343	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156594	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes	27.46	163922	1.79 ug/L	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-9

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

1/3/00 1:51 PM

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000016

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Dupe**

Lab Name: FMETL NJDEP#: 13461

Project: 100004 Case No.: 5031 Location: Bldg27 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 5031.02

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC001700.D

Level: (low/med) LOW Date Received: 12/20/99

% Moisture: not dec. Date Analyzed: 12/29/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 4

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 018321-36-3	Benzene, (1,1-dimethyl-2-propen	29.64	4	JN
2. 000496-11-7	Indane	33.76	4	JN
3. 000874-41-9	Benzene, 1-ethyl-2,4-dimethyl-	34.44	5	JN
4. 027133-93-3	2,3-Dihydro-1-methylindene	34.95	5	JN

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: FMETL NJDEP#: 13461

Project: 100004 Case No.: 5031 Location: Bldg27 SDG No.:

Lab File ID: VC001670.D BFB Injection Date: 12/28/99

Instrument ID: VoaInst#3 BFB Injection Time: 13:24

GC Column: RTX502.2 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	15.3
75	30.0 - 66.0% of mass 95	45.3
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.5
173	Less than 2.0% of mass 174	0.5 (0.9)1
174	50.0 - 120.0% of mass 95	61.4
175	4.0 - 9.0% of mass 174	4.8 (7.8)1
176	93.0 - 101.0% of mass 174	58.5 (95.2)1
177	5.0 - 9.0% of mass 176	4.0 (6.8)2

1-Value is % mass 174 2-Value is % mass 176

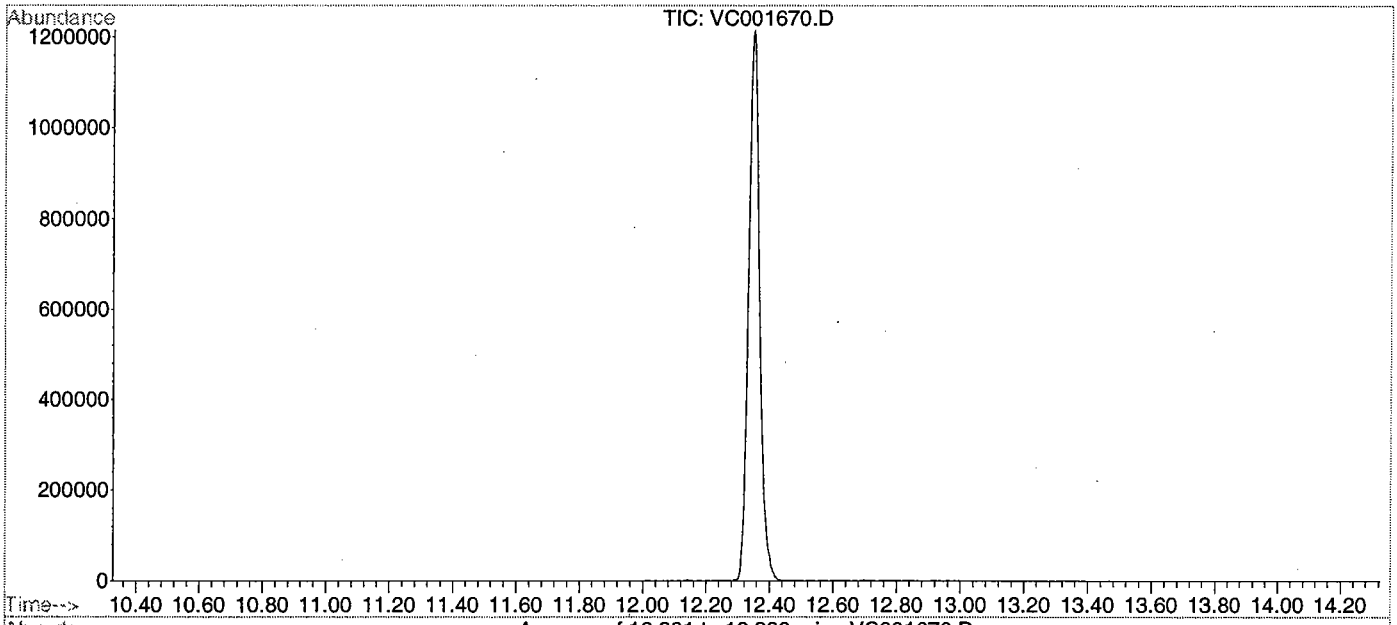
THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

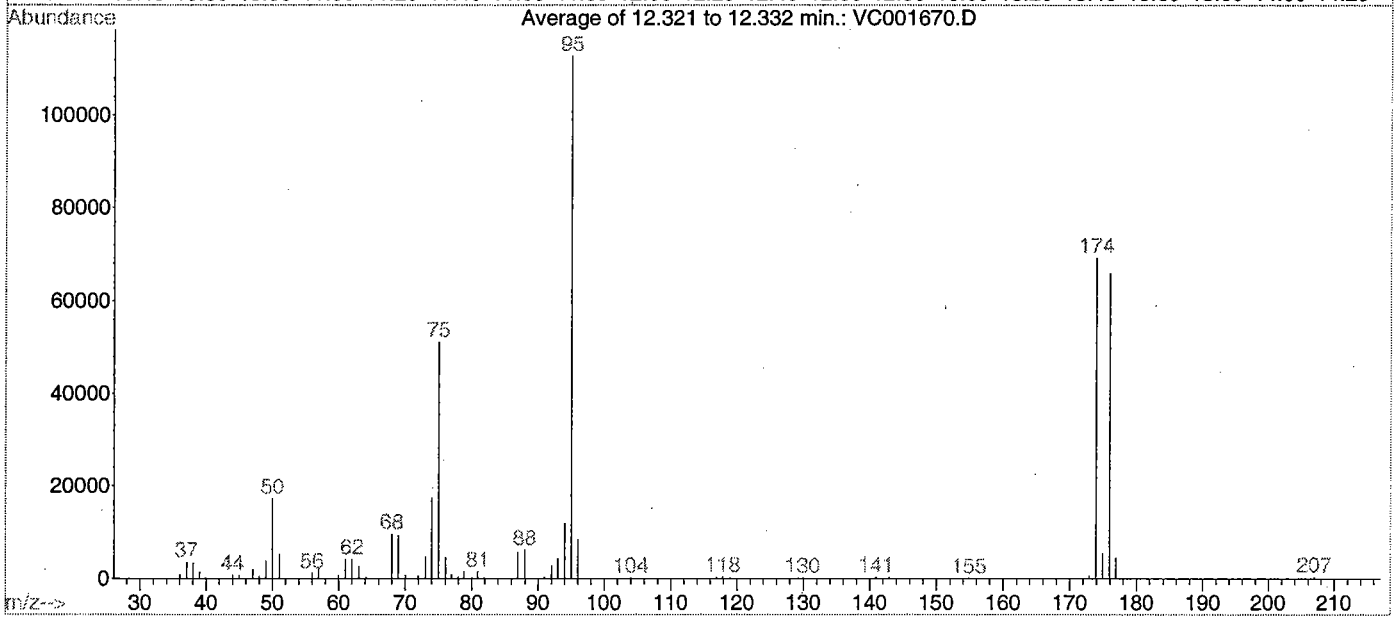
	FIELD ID:	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD100	VSTD100	VC001674.D	12/28/99	16:15
02	VSTD050	VSTD050	VC001675.D	12/28/99	16:56
03	VSTD020	VSTD020	VC001676.D	12/28/99	17:37
04	VSTD010	VSTD010	VC001677.D	12/28/99	18:18
05	VSTD005	VSTD005	VC001678.D	12/28/99	18:59
06	VBLK45	VBLK45	VC001680.D	12/28/99	20:21
07	BLDG277	5031.01	VC001699.D	12/29/99	9:14
08	DUPE	5031.02	VC001700.D	12/29/99	9:54
09	5031.01MS	5031.01MS	VC001701.D	12/29/99	10:33
10	5031.01MSD	5031.01MSD	VC001702.D	12/29/99	11:14

BFB

Data File : C:\HPCHEM\1\DATA\991228\VC001670.D
Acq On : 28 Dec 1999 1:24 pm
Sample : BFB Tune
Misc : BFB Tune
MS Integration Params: gases.p
Method : C:\HPCHEM\1\METHODS\M3BFB.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP

Vial: 1
Operator: Skelton
Inst : GC/MS Ins
Multiplr: 1.00





Spectrum Information: Average of 12.321 to 12.332 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	15.3	17267	PASS
75	95	30	60	45.3	51160	PASS
95	95	100	100	100.0	112842	PASS
96	95	5	9	7.5	8447	PASS
173	174	0.00	2	0.9	610	PASS
174	95	50	100	61.4	69301	PASS
175	174	5	9	7.8	5372	PASS
176	174	95	101	95.2	65960	PASS
177	176	5	9	6.8	4506	PASS

4A

FIELD ID:

VOLATILE METHOD BLANK SUMMARY

Vblk45

Lab Name: FMETL NJDEP#: 13461

Project: 100004 Case No.: 5031 Location: Bldg27 SDG No.:

Lab File ID: VC001680.D Lab Sample ID: Vblk45

Date Analyzed: 12/28/99 Time Analyzed: 20:21

GC Column: RTX502. ID: 0.25 (mm) Heated Purge: (Y/N) N

Instrument ID: VoaInst#3

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	FIELD ID:	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	BLDG277	5031.01	VC001699.D	9:14
02	DUPE	5031.02	VC001700.D	9:54
03	5031.01MS	5031.01MS	VC001701.D	10:33
04	5031.01MSD	5031.01MSD	VC001702.D	11:14

COMMENTS:

Response Factor Report GC/MS Ins

Method : C:\HPCHEM\1\METHODS\M362414.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Wed Dec 29 07:37:23 1999
Response via : Continuing Calibration

Calibration Files
50 =VC001675.D 5 =VC001678.D 10 =VC001677.D
20 =VC001676.D 100 =VC001674.D

		Compound	50	5	10	20	100	Avg	%RSD
1)	I	Bromochloromethane	----------ISTD----------						
2)	t	Acrolein	0.220	0.160	0.179	0.195	0.200	0.191	11.92
3)	t	Acrylonitrile	0.503	0.502	0.501	0.489	0.492	0.497	1.30
4)	t	tert-Butyl alcohol	0.104	0.102	0.101	0.103	0.102	0.102	0.94
5)	t	Methyl-tert-Butyl eth	3.488	3.373	3.355	3.321	3.497	3.407	2.36
6)	t	Di-isopropyl ether	1.283	1.297	1.249	1.226	1.298	1.271	2.52
7)	T	Dichlorodifluorometha	1.388	1.302	1.301	1.314	1.297	1.320	2.89
8)	TP	Chloromethane	1.354	1.385	1.339	1.308	1.328	1.343	2.17
9)	TC	Vinyl Chloride	0.991	1.129	1.052	0.980	0.926	1.016	7.64
10)	T	Bromomethane	0.980	0.997	0.964	0.959	0.919	0.964	3.00
11)	T	Chloroethane	1.159	1.166	1.153	1.124	1.144	1.149	1.42
12)	T	Trichlorofluoromethan	1.949	1.920	1.928	1.897	1.933	1.926	0.99
13)	MC	1,1-Dichloroethene	1.981	1.907	1.928	1.931	1.982	1.946	1.74
14)	T	Acetone	0.297	0.324	0.537	0.376	0.488	0.404	25.72
15)	T	Carbon Disulfide	4.370	4.004	4.056	4.124	4.337	4.178	3.98
16)	T	Methylene Chloride	1.731	2.139	1.849	1.709	1.702	1.826	10.14
17)	T	trans-1,2-Dichloroeth	2.033	1.931	1.974	1.945	2.029	1.982	2.38
18)	TP	1,1-Dichloroethane	2.586	2.608	2.540	2.522	2.584	2.568	1.39
19)	T	Vinyl Acetate	2.582	2.302	2.323	2.430	2.610	2.450	5.83
20)	T	2-Butanone	0.508	0.521	0.728	0.547	0.696	0.600	17.25
21)	T	cis-1,2-Dichloroethen	2.005	1.980	1.980	1.939	1.998	1.981	1.29
22)	TC	Chloroform	2.385	3.036	2.605	2.423	2.352	2.560	11.08
23)	T	1,1,1-Trichloroethane	1.902	1.849	1.812	1.826	1.912	1.860	2.41
24)	T	Carbon Tetrachloride	1.484	1.347	1.383	1.410	1.509	1.427	4.79
25)	S	1,2-Dichloroethane-d4	1.464	1.511	1.485	1.471	1.450	1.477	1.57
26)	I	1,4-Difluorobenzene	----------ISTD----------						
27)	TM	Benzene	0.942	0.947	0.940	0.937	0.908	0.935	1.65
28)	T	1,2-Dichloroethane	0.220	0.217	0.219	0.215	0.218	0.218	0.87
29)	TM	Trichloroethene	0.260	0.249	0.250	0.252	0.265	0.255	2.81
30)	TC	1,2-Dichloropropane	0.237	0.231	0.235	0.233	0.237	0.235	1.13
31)	T	Bromodichloromethane	0.237	0.216	0.222	0.228	0.242	0.229	4.59
32)	T	2-Chloroethyl vinyl e	0.067	0.069	0.066	0.066	0.067	0.067	1.42
33)	T	cis-1,3-Dichloroprope	0.359	0.330	0.342	0.345	0.362	0.348	3.71
34)	T	4-Methyl-2-Pentanone	0.071	0.065	0.070	0.069	0.072	0.069	3.77
35)	S	Toluene-d8	1.020	1.015	1.022	1.023	1.016	1.019	0.35
36)	TCM	Toluene	1.002	1.018	1.022	1.001	0.946	0.998	3.04
37)	I	Chlorobenzene-d5	----------ISTD----------						
38)	T	trans-1,3-Dichloropro	1.180	1.035	1.088	1.109	1.212	1.125	6.35
39)	T	1,1,2-Trichloroethane	0.770	0.766	0.750	0.746	0.786	0.764	2.09
40)	T	Tetrachloroethene	0.879	0.855	0.852	0.850	0.908	0.869	2.86
41)	T	2-Hexanone	0.389	0.325	0.484	0.378	0.486	0.413	17.13
42)	T	Dibromochloromethane	0.590	0.487	0.516	0.536	0.628	0.551	10.33
43)	TMP	Chlorobenzene	2.602	2.607	2.600	2.561	2.554	2.585	0.97
44)	TC	Ethylbenzene	4.160	4.239	4.244	4.189	3.826	4.131	4.22
45)	T	m+p-Xylenes	1.700	1.673	1.707	1.678	1.645	1.681	1.46
46)	T	o-Xylene	3.127	3.116	3.138	3.081	3.014	3.095	1.63
47)	T	Styrene	2.778	2.562	2.622	2.713	2.738	2.682	3.30
48)	TP	Bromoform	0.279	0.210	0.227	0.246	0.306	0.254	15.29
49)	S	Bromofluorobenzene	1.340	1.291	1.302	1.330	1.364	1.326	2.22
50)	TP	1,1,2,2-Tetrachloroet	0.923	0.882	0.904	0.902	0.929	0.908	2.05
51)	T	1,3-Dichlorobenzene	1.799	1.588	1.644	1.675	1.845	1.710	6.31
52)	T	1,4-Dichlorobenzene	1.772	1.551	1.616	1.650	1.840	1.686	6.99
53)	T	1,2-Dichlorobenzene	1.708	1.523	1.578	1.605	1.769	1.637	6.10

(#) = Out of Range

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: FMETL NJDEP#: 13461

Project: 100004 Case No.: 5031 Location: Bldg27 SDG No.: _____

	FIELD ID:	SMC1 DCE #	SMC2 TOL #	SMC3 BFB #	TOT OUT
01	VBLK45	104	99	95	0
02	BLDG277	102	100	99	0
03	DUPE	102	100	99	0
04	5031.01MS	103	100	99	0
05	5031.01MSD	103	101	100	0

QC LIMITS

SMC1	DCE	=	1,2-Dichloroethane-d4	(70-117)
SMC2	TOL	=	Toluene-d8	(88-110)
SMC3	BFB	=	Bromofluorobenzene	(82-115)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

Volatile Matrix Spike Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	VC001701.D	Sample Name	5031.01MS
Date Acquired	29-Dec-99	Field ID	5031.01MS

Compound Name	R.T.	Response	Result	Percent Recovered
Acrolein	8.60	288403	50.50 ug/L	50.50%
Acrylonitrile	11.66	2473370	166.21 ug/L	166.21%
tert-Butyl alcohol	9.69	468234	152.88 ug/L	152.88%
Methyl-tert-Butyl ether	11.83	1945421	19.09 ug/L	95.44%
Di-isopropyl ether	13.52	746131	19.63 ug/L	196.30%
Dichlorodifluoromethane	4.13	404656	10.24 ug/L	51.22%
Chloromethane	4.72	592263	14.74 ug/L	73.71%
Vinyl Chloride	5.00	466541	15.35 ug/L	76.77%
Bromomethane	6.20	479362	16.63 ug/L	83.14%
Chloroethane	6.43	552951	16.09 ug/L	80.43%
Trichlorofluoromethane	7.20	944204	16.39 ug/L	81.95%
1,1-Dichloroethene	9.27	1052666	18.09 ug/L	90.43%
Acetone	8.86	136688	11.30 ug/L	56.48%
Carbon Disulfide	11.10	2213541	17.71 ug/L	88.54%
Methylene Chloride	11.16	968042	17.72 ug/L	88.60%
trans-1,2-Dichloroethene	12.28	1010672	17.04 ug/L	85.21%
1,1-Dichloroethane	13.78	1326500	17.27 ug/L	86.33%
Vinyl Acetate	13.86	1187704	16.21 ug/L	81.04%
2-Butanone	15.22	248155	13.82 ug/L	69.11%
cis-1,2-Dichloroethene	15.74	1052078	17.76 ug/L	88.78%
Chloroform	16.23	1246313	16.27 ug/L	81.36%
1,1,1-Trichloroethane	17.40	957798	17.21 ug/L	86.05%
Carbon Tetrachloride	18.13	656765	15.39 ug/L	76.94%
Benzene	18.60	3477804	17.43 ug/L	87.17%
1,2-Dichloroethane	18.56	788704	16.96 ug/L	84.80%
Trichloroethene	20.29	897301	16.48 ug/L	82.38%
1,2-Dichloropropane	20.75	865479	17.29 ug/L	86.45%
Bromodichloromethane	21.36	720904	14.75 ug/L	73.76%
2-Chloroethyl vinyl ether	18.56	241423	16.86 ug/L	84.29%
cis-1,3-Dichloropropene	22.78	1133179	15.27 ug/L	76.36%
4-Methyl-2-Pentanone	22.27	243881	16.49 ug/L	82.47%
Toluene	23.62	3720112	17.47 ug/L	87.35%
trans-1,3-Dichloropropene	24.06	931648	14.98 ug/L	74.91%
1,1,2-Trichloroethane	24.46	708496	16.78 ug/L	83.92%
Tetrachloroethene	25.28	795194	16.56 ug/L	82.79%
2-Hexanone	24.50	322913	14.16 ug/L	70.79%
Dibromochloromethane	25.77	426881	14.01 ug/L	70.03%
Chlorobenzene	27.34	2473779	17.31 ug/L	86.57%
Ethylbenzene	27.46	4010160	17.56 ug/L	87.80%
m+p-Xylenes	27.65	3449161	37.12 ug/L	92.81%
o-Xylene	28.75	3048292	17.82 ug/L	89.08%
Styrene	28.83	2692044	18.15 ug/L	90.77%
Bromoform	29.68	169864	12.12 ug/L	60.60%
1,1,2,2-Tetrachloroethane	30.03	735626	14.65 ug/L	73.27%
1,3-Dichlorobenzene	32.88	1541598	16.31 ug/L	81.54%
1,4-Dichlorobenzene	33.12	1657533	17.79 ug/L	88.95%
1,2-Dichlorobenzene	33.97	1538921	17.01 ug/L	85.05%

1/3/00 1:44 PM

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000023

Volatile Matrix Spike Duplicate Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VC001702.D**	Sample Name	**5031.01MSD**
Date Acquired	**29-Dec-99**	Field ID	**5031.01MSD**

Compound Name	R.T.	Response	Result	Percent Recovered
Acrolein	8.60	338787	60.15 ug/L	60.15%
Acrylonitrile	11.66	2285003	155.71 ug/L	155.71%
tert-Butyl alcohol	9.70	427713	141.61 ug/L	141.61%
Methyl-tert-Butyl ether	11.83	1767274	17.58 ug/L	87.92%
Di-isopropyl ether	13.52	690537	18.42 ug/L	184.23%
Dichlorodifluoromethane	4.13	375158	9.63 ug/L	48.15%
Chloromethane	4.72	540500	13.64 ug/L	68.22%
Vinyl Chloride	5.01	431580	14.40 ug/L	72.02%
Bromomethane	6.19	466965	16.43 ug/L	82.13%
Chloroethane	6.43	523208	15.43 ug/L	77.17%
Trichlorofluoromethane	7.21	883710	15.56 ug/L	77.78%
1,1-Dichloroethene	9.28	962092	16.76 ug/L	83.81%
Acetone	8.86	55787	4.68 ug/L	23.38%
Carbon Disulfide	11.10	2083674	16.90 ug/L	84.52%
Methylene Chloride	11.17	917207	17.03 ug/L	85.13%
trans-1,2-Dichloroethene	12.28	934166	15.97 ug/L	79.87%
1,1-Dichloroethane	13.77	1238236	16.34 ug/L	81.72%
Vinyl Acetate	13.86	1094396	15.14 ug/L	75.72%
2-Butanone	15.22	232425	13.13 ug/L	65.64%
cis-1,2-Dichloroethene	15.74	973809	16.67 ug/L	83.33%
Chloroform	16.22	1172574	15.52 ug/L	77.62%
1,1,1-Trichloroethane	17.40	906514	16.52 ug/L	82.59%
Carbon Tetrachloride	18.13	627260	14.90 ug/L	74.52%
Benzene	18.60	3220574	16.33 ug/L	81.64%
1,2-Dichloroethane	18.56	723680	15.74 ug/L	78.69%
Trichloroethene	20.29	842663	15.65 ug/L	78.24%
1,2-Dichloropropane	20.75	808823	16.34 ug/L	81.71%
Bromodichloromethane	21.36	678134	14.03 ug/L	70.17%
2-Chloroethyl vinyl ether	18.56	223693	15.80 ug/L	78.99%
cis-1,3-Dichloropropene	22.78	1047365	14.27 ug/L	71.37%
4-Methyl-2-Pentanone	22.26	213497	14.60 ug/L	73.01%
Toluene	23.62	3460694	16.44 ug/L	82.18%
trans-1,3-Dichloropropene	24.06	877377	14.30 ug/L	71.52%
1,1,2-Trichloroethane	24.46	650118	15.61 ug/L	78.06%
Tetrachloroethene	25.28	746603	15.76 ug/L	78.80%
2-Hexanone	24.51	281469	12.51 ug/L	62.56%
Dibromochloromethane	25.77	402791	13.40 ug/L	66.99%
Chlorobenzene	27.34	2288746	16.24 ug/L	81.19%
Ethylbenzene	27.46	3698416	16.42 ug/L	82.09%
m+p-Xylenes	27.66	3209976	35.02 ug/L	87.56%
o-Xylene	28.75	2825817	16.74 ug/L	83.72%
Styrene	28.83	2525783	17.27 ug/L	86.34%
Bromoform	29.69	157721	11.41 ug/L	57.04%
1,1,2,2-Tetrachloroethane	30.04	667004	13.47 ug/L	67.35%
1,3-Dichlorobenzene	32.89	1430801	15.34 ug/L	76.72%
1,4-Dichlorobenzene	33.12	1425113	15.51 ug/L	77.53%
1,2-Dichlorobenzene	33.96	1313508	14.72 ug/L	73.59%

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: FMETL NJDEP#: 13461

Project: 100004 Case No.: 5031 Location: Bldg27 SDG No.:

Lab File ID (Standard): VC001676.D Date Analyzed: 12/28/99

Instrument ID: VoaInst#3 Time Analyzed: 17:37

GC Column: RTX502.2 ID: 0.25 (mm) Heated Purge: (Y/N) N

		IS1BCM AREA #	RT #	IS2DFB AREA #	RT #	IS3CBZ AREA #	RT #
	12 HOUR STD	925370	16.69	6325040	19.41	1663129	27.24
	UPPER LIMIT	1850740	17.19	12650080	19.91	3326258	27.74
	LOWER LIMIT	462685	16.19	3162520	18.91	831565	26.74
	FIELD ID:						
01	VBLK45	811174	16.69	5745707	19.41	1426722	27.24
02	BLDG277	857855	16.69	6376401	19.41	1660411	27.24
03	DUPE	863219	16.69	6329688	19.41	1631941	27.24
04	5031.01MS	897496	16.69	6403220	19.41	1658399	27.24
05	5031.01MSD	885040	16.69	6331437	19.41	1635879	27.24

IS1 BCM = Bromochloromethane
IS2 DFB = 1,4-Difluorobenzene
IS3 CBZ = 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 to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\991228\VC001680.D Vial: 7
Acq On : 28 Dec 1999 8:21 pm Operator: Skelton
Sample : Vblk45 Inst : GC/MS Ins
Misc : Vblk45 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 29 7:38 1999 Quant Results File: M362414.RES

Quant Method : C:\HPCHEM\1\METHODS\M362414.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Wed Dec 29 07:37:23 1999
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\991228\VC001676.D
DataAcq Meth : M362414

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	16.69	128	811174	30.00	ug/L	0.00
26) 1,4-Difluorobenzene	19.41	114	5745707	30.00	ug/L	0.00
37) Chlorobenzene-d5	27.24	119	1426722	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	18.30	65	1243289	31.25	ug/L	0.00
Spiked Amount 30.000	Range 76 - 117		Recovery = 104.17%			
35) Toluene-d8	23.41	98	5820072	29.70	ug/L	0.00
Spiked Amount 30.000	Range 88 - 110		Recovery = 99.00%			
49) Bromofluorobenzene	30.26	95	1809259	28.61	ug/L	0.01
Spiked Amount 30.000	Range 86 - 115		Recovery = 95.37%			

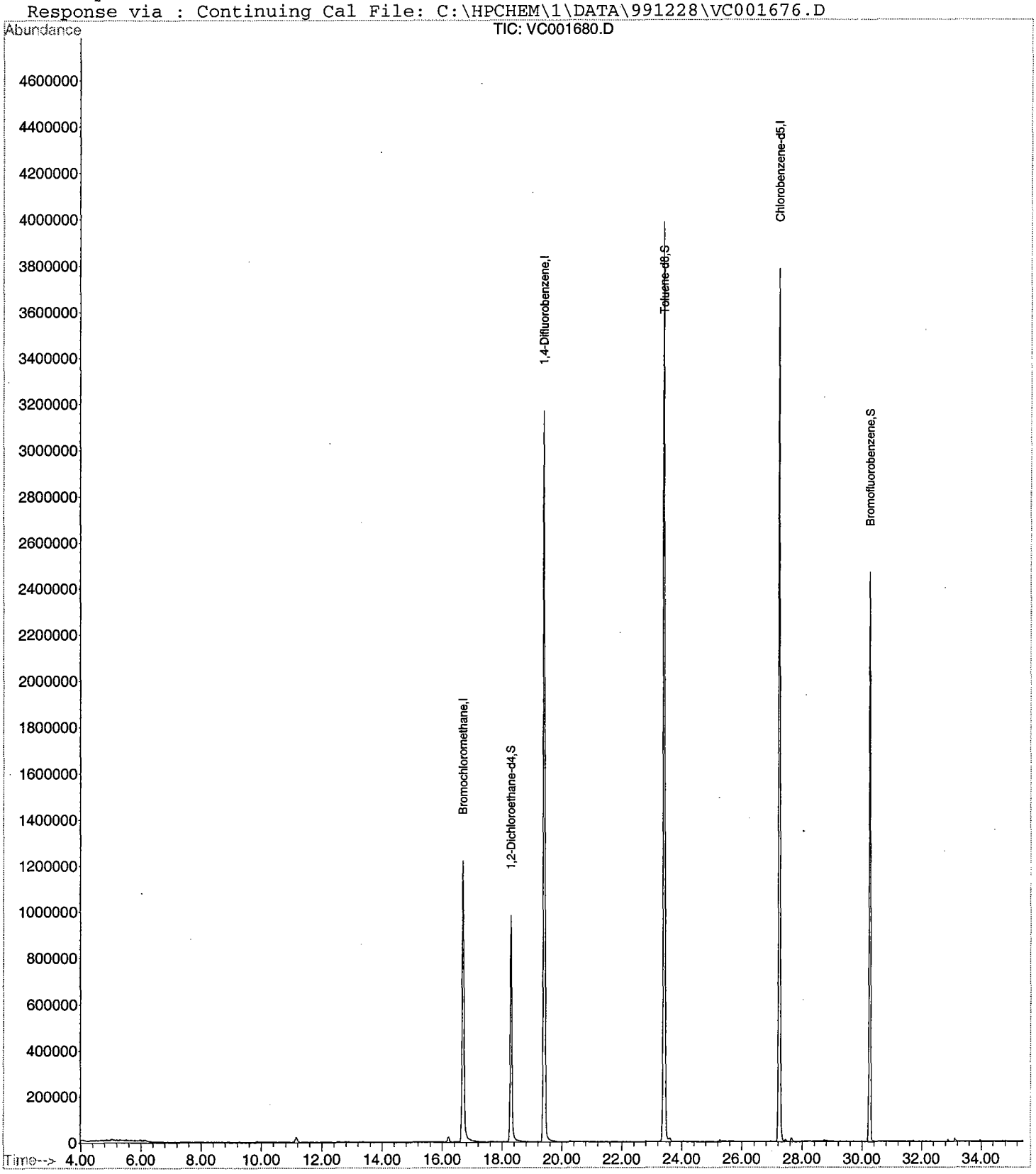
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\991228\VC001680.D Vial: 7
Acq On : 28 Dec 1999 8:21 pm Operator: Skelton
Sample : Vblk45 Inst : GC/MS Ins
Misc : Vblk45 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Dec 29 7:38 1999 Quant Results File: M362414.RES

Method : C:\HPCHEM\1\METHODS\M362414.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Wed Dec 29 07:37:23 1999
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\991228\VC001676.D



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\991228\VC001699.D Vial: 26
Acq On : 29 Dec 1999 9:14 am Operator: Skelton
Sample : 5031.01 Inst : GC/MS Ins
Misc : Bldg277 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 3 13:48 2000 Quant Results File: M362414.RES

Quant Method : C:\HPCHEM\1\METHODS\M362414.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Wed Dec 29 07:37:23 1999
Response via : Initial Calibration
DataAcq Meth : M362414

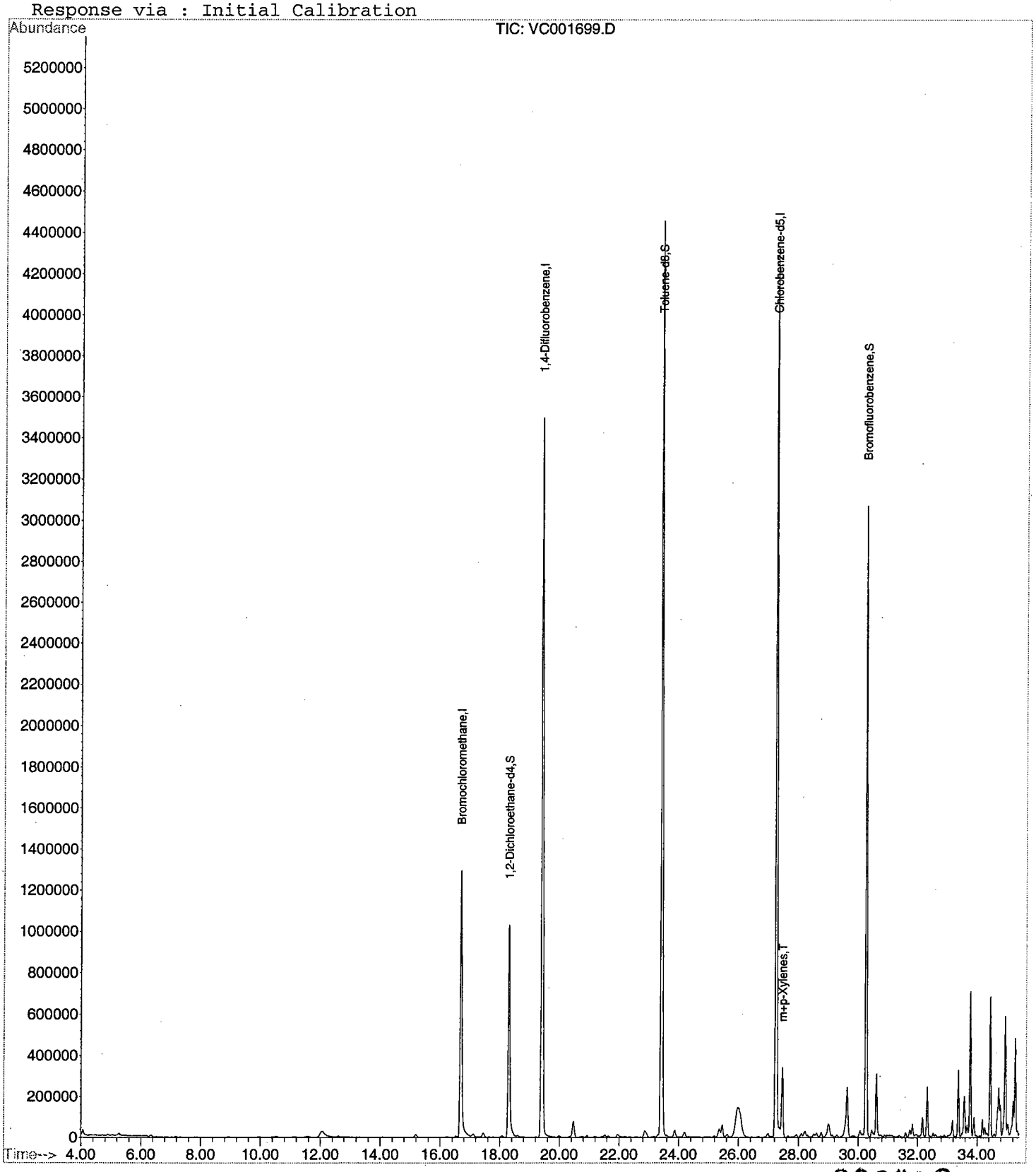
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	16.69	128	857855	30.00	ug/L	0.00
26) 1,4-Difluorobenzene	19.41	114	6376401	30.00	ug/L	0.00
37) Chlorobenzene-d5	27.24	119	1660411	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	18.30	65	1289718	30.55	ug/L	0.00
Spiked Amount 30.000	Range 76 - 117		Recovery = 101.83%			
35) Toluene-d8	23.41	98	6494529	29.98	ug/L	0.00
Spiked Amount 30.000	Range 88 - 110		Recovery = 99.93%			
49) Bromofluorobenzene	30.25	95	2183635	29.76	ug/L	0.00
Spiked Amount 30.000	Range 86 - 115		Recovery = 99.20%			
Target Compounds						Qvalue
45) m+p-Xylenes	27.46	106	166261	1.79	ug/L #	35

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\991228\VC001699.D Vial: 26
Acq On : 29 Dec 1999 9:14 am Operator: Skelton
Sample : 5031.01 Inst : GC/MS Ins
Misc : Bldg277 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 3 13:48 2000 Quant Results File: M362414.RES

Method : C:\HPCHEM\1\METHODS\M362414.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Wed Dec 29 07:37:23 1999
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\991228\VC001700.D Vial: 27
Acq On : 29 Dec 1999 9:54 am Operator: Skelton
Sample : 5031.02 Inst : GC/MS Ins
Misc : Dupe Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 3 13:48 2000 Quant Results File: M362414.RES

Quant Method : C:\HPCHEM\1\METHODS\M362414.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Wed Dec 29 07:37:23 1999
Response via : Initial Calibration
DataAcq Meth : M362414

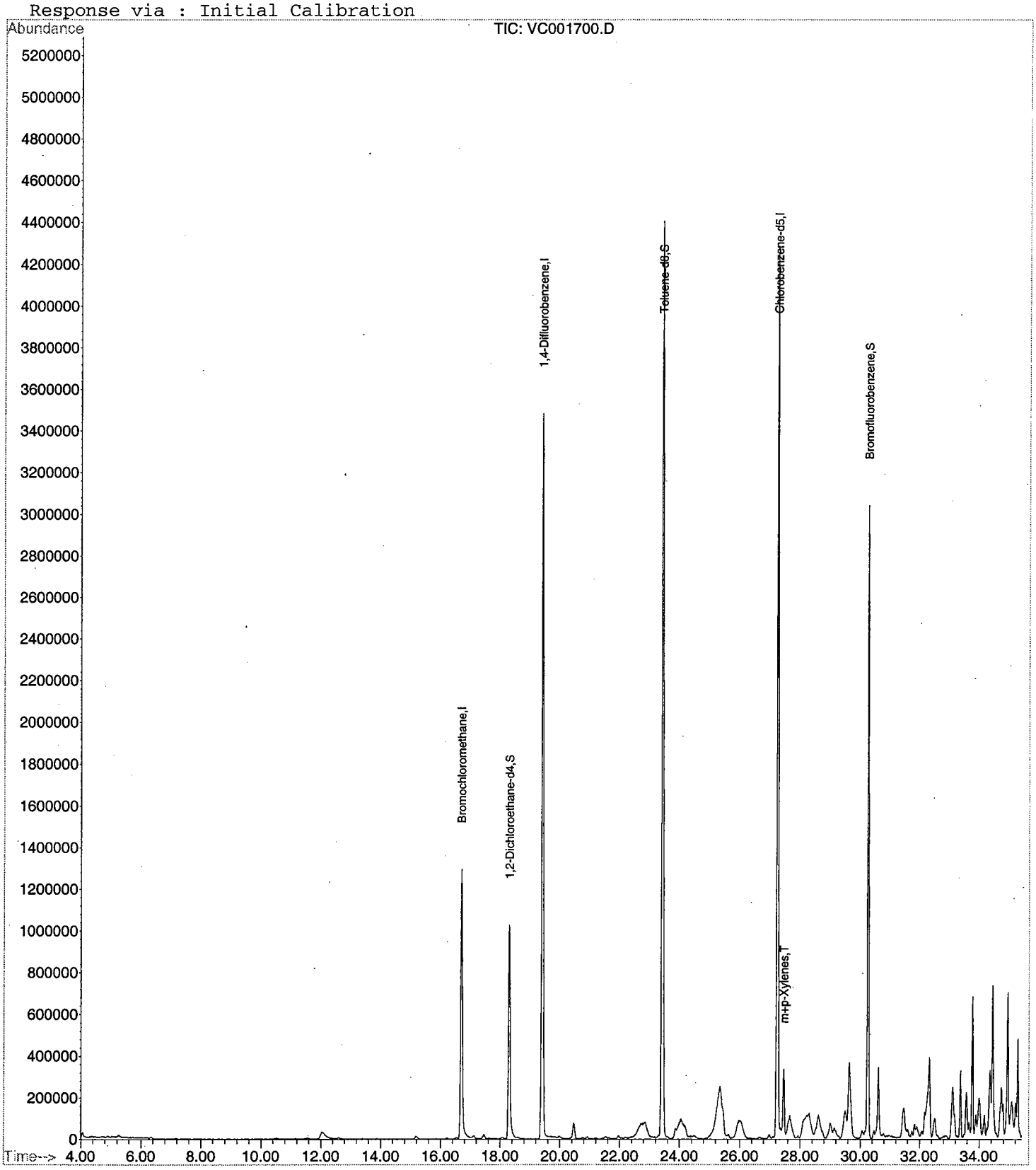
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	16.69	128	863219	30.00	ug/L	0.00
26) 1,4-Difluorobenzene	19.41	114	6329688	30.00	ug/L	0.00
37) Chlorobenzene-d5	27.24	119	1631941	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	18.30	65	1297360	30.54	ug/L	0.00
Spiked Amount 30.000	Range 76 - 117		Recovery = 101.80%			
35) Toluene-d8	23.42	98	6461957	30.05	ug/L	0.00
Spiked Amount 30.000	Range 88 - 110		Recovery = 100.17%			
49) Bromofluorobenzene	30.25	95	2140093	29.68	ug/L	0.00
Spiked Amount 30.000	Range 86 - 115		Recovery = 98.93%			
Target Compounds						Qvalue
45) m+p-Xylenes	27.46	106	163922	1.79	ug/L	# 34

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\991228\VC001700.D Vial: 27
Acq On : 29 Dec 1999 9:54 am Operator: Skelton
Sample : 5031.02 Inst : GC/MS Ins
Misc : Dupe Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jan 3 13:48 2000 Quant Results File: M362414.RES

Method : C:\HPCHEM\1\METHODS\M362414.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Wed Dec 29 07:37:23 1999
Response via : Initial Calibration



BASE NEUTRAL

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA03480.D**	Sample Name	**Sblk330**
Operator	**Bhaskar**	Misc Info	**Sblk330 A 991221**
Date Acquired	**22-Dec-99**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	1.83	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.91	ug/L	
62-53-3	Aniline			not detected	NLE	1.63	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.28	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	1.21	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	1.19	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	1.02	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	1.13	ug/L	
108-60-1	bis(2-chloroisopropyl)ether			not detected	300	1.39	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.80	ug/L	
67-72-1	Hexachloroethane			not detected	10	1.50	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.97	ug/L	
78-59-1	Isophorone			not detected	100	1.01	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	1.21	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	1.22	ug/L	
91-20-3	Naphthalene			not detected	NLE	1.27	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.09	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.71	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	1.08	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	1.32	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	1.01	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.96	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	1.52	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.96	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.81	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.79	ug/L	
83-32-9	Acenaphthene			not detected	400	1.10	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	1.00	ug/L	
121-14-2	2,4-Dinitrotoluene			not detected	10	0.87	ug/L	
84-66-2	Diethylphthalate			not detected	5000	1.62	ug/L	
86-73-7	Fluorene			not detected	300	0.99	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	1.10	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.05	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	1.01	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.67	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.76	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.94	ug/L	
85-01-8	Phenanthrene			not detected	NLE	1.23	ug/L	
120-12-7	Anthracene			not detected	2000	1.12	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	1.70	ug/L	
206-44-0	Fluoranthene			not detected	300	1.64	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA03480.D**	Sample Name	**Sblk330**
Operator	**Bhaskar**	Misc Info	**Sblk330 A 991221**
Date Acquired	**22-Dec-99**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
92-87-5	Benzidine			not detected	50	4.18	ug/L	
129-00-0	Pyrene			not detected	200	1.25	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	1.05	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	1.19	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.75	ug/L	
218-01-9	Chrysene			not detected	20	1.38	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.74	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.44	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	1.25	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.29	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	1.05	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	0.83	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.64	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.84	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
PQL= Practical Quantitation Limit

MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Sblk330**

Lab Name: FMETL Lab Code 13461

Project 100004 Case No.: 5031 Location Bld.277 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: Sblk330

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA03480.D

Level: (low/med) LOW Date Received: 12/20/99

% Moisture: decanted: (Y/N) N Date Extracted: 12/21/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/22/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA03490.D**	Sample Name	**5031.01**
Operator	**Bhaskar**	Misc Info	**Bldg.277**
Date Acquired	**23-Dec-99**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	1.83	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.91	ug/L	
62-53-3	Aniline			not detected	NLE	1.63	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.28	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	1.21	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	1.19	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	1.02	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	1.13	ug/L	
108-60-1	bis(2-chloroisopropyl)ether			not detected	300	1.39	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.80	ug/L	
67-72-1	Hexachloroethane			not detected	10	1.50	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.97	ug/L	
78-59-1	Isophorone			not detected	100	1.01	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	1.21	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	1.22	ug/L	
91-20-3	Naphthalene			not detected	NLE	1.27	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.09	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.71	ug/L	
91-57-6	2-Methylnaphthalene	15.24	171896	14.96 ug/L	NLE	1.08	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	1.32	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	1.01	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.96	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	1.52	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.96	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.81	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.79	ug/L	
83-32-9	Acenaphthene			not detected	400	1.10	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	1.00	ug/L	
121-14-2	2,4-Dinitrotoluene			not detected	10	0.87	ug/L	
84-66-2	Diethylphthalate			not detected	5000	1.62	ug/L	
86-73-7	Fluorene			not detected	300	0.99	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	1.10	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.05	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	1.01	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.67	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.76	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.94	ug/L	
85-01-8	Phenanthrene	21.17	29532	1.54 ug/L	NLE	1.23	ug/L	
120-12-7	Anthracene			not detected	2000	1.12	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	1.70	ug/L	
206-44-0	Fluoranthene			not detected	300	1.64	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA03490.D**	Sample Name	**5031.01**
Operator	**Bhaskar**	Misc Info	**Bldg.277**
Date Acquired	**23-Dec-99**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
92-87-5	Benzidine			not detected	50	4.18	ug/L	
129-00-0	Pyrene			not detected	200	1.25	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	1.05	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	1.19	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.75	ug/L	
218-01-9	Chrysene			not detected	20	1.38	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.74	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.44	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	1.25	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.29	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	1.05	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	0.83	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.64	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.84	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
PQL= Practical Quantitation Limit

MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Bldg.277**

Lab Name: FMETL Lab Code 13461

Project 100004 Case No.: 5031 Location Bld.277 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 5031.01

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA03490.D

Level: (low/med) LOW Date Received: 12/20/99

% Moisture: decanted: (Y/N) N Date Extracted: 12/21/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/23/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

Number TICs found: 7 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000934-80-5	Benzene, 4-ethyl-1,2-dimethyl-	11.84	5	JN
2. 002039-89-6	Benzene, 2-ethenyl-1,4-dimethyl-	12.97	8	JN
3. 000091-57-6	Naphthalene, 2-methyl-	15.52	15	JN
4. 000582-16-1	Naphthalene, 2,7-dimethyl-	16.83	9	JN
5. 000581-40-8	Naphthalene, 2,3-dimethyl-	17.04	12	JN
6. 000575-37-1	Naphthalene, 1,7-dimethyl-	17.09	5	JN
7. 000581-40-8	Naphthalene, 2,3-dimethyl-	17.31	4	JN

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA03491.D**	Sample Name	**5031.02**
Operator	**Bhaskar**	Misc Info	**Dupe**
Date Acquired	**23-Dec-99**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	1.83	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.91	ug/L	
62-53-3	Aniline			not detected	NLE	1.63	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.28	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	1.21	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	1.19	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	1.02	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	1.13	ug/L	
108-60-1	bis(2-chloroisopropyl)ether			not detected	300	1.39	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.80	ug/L	
67-72-1	Hexachloroethane			not detected	10	1.50	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.97	ug/L	
78-59-1	Isophorone			not detected	100	1.01	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	1.21	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	1.22	ug/L	
91-20-3	Naphthalene			not detected	NLE	1.27	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.09	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.71	ug/L	
91-57-6	2-Methylnaphthalene	15.24	145555	12.93 ug/L	NLE	1.08	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	1.32	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	1.01	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.96	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	1.52	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.96	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.81	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.79	ug/L	
83-32-9	Acenaphthene			not detected	400	1.10	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	1.00	ug/L	
121-14-2	2,4-Dinitrotoluene			not detected	10	0.87	ug/L	
84-66-2	Diethylphthalate			not detected	5000	1.62	ug/L	
86-73-7	Fluorene			not detected	300	0.99	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	1.10	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.05	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	1.01	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.67	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.76	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.94	ug/L	
85-01-8	Phenanthrene	21.16	25233	1.32 ug/L	NLE	1.23	ug/L	
120-12-7	Anthracene			not detected	2000	1.12	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	1.70	ug/L	
206-44-0	Fluoranthene			not detected	300	1.64	ug/L	

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Dupe**

Lab Name: FMETL Lab Code 13461

Project 100004 Case No.: 5031 Location Bld.277 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 5031.02

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA03491.D

Level: (low/med) LOW Date Received: 12/20/99

% Moisture: decanted: (Y/N) N Date Extracted: 12/21/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/23/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

Number TICs found: 6 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000934-80-5	Benzene, 4-ethyl-1,2-dimethyl-	11.84	5	JN
2.	unknown	12.97	7	J
3. 000264-09-5	Benzocycloheptatriene	15.52	11	JN
4. 000581-42-0	Naphthalene, 2,6-dimethyl-	16.83	8	JN
5. 000575-37-1	Naphthalene, 1,7-dimethyl-	17.04	10	JN
6. 000571-61-9	Naphthalene, 1,5-dimethyl-	17.09	5	JN

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: FMETL Lab Code 13461

Project 100004 Case No.: 5031 Location Bld.277 SDG No.:

Lab File ID: BNA03470.D DFTPP Injection Date: 12/22/99

Instrument ID: BNA#2 DFTPP Injection Time: 9:53

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 80.0% of mass 198	45.5
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 Relative abundance	43.9
70	Less than 2.0% of mass 69	0.2 (0.5)1
127	25.0 - 75.0% of mass 198	50.1
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.4
275	10.0 - 30.0% of mass 198	22.5
365	Greater than 0.75% of mass 198	2.5
441	Present, but less than mass 443	13.5
442	40.0 - 110.0% of mass 198	89.7
443	15.0 - 24.0% of mass 442	17.5 (19.5)2

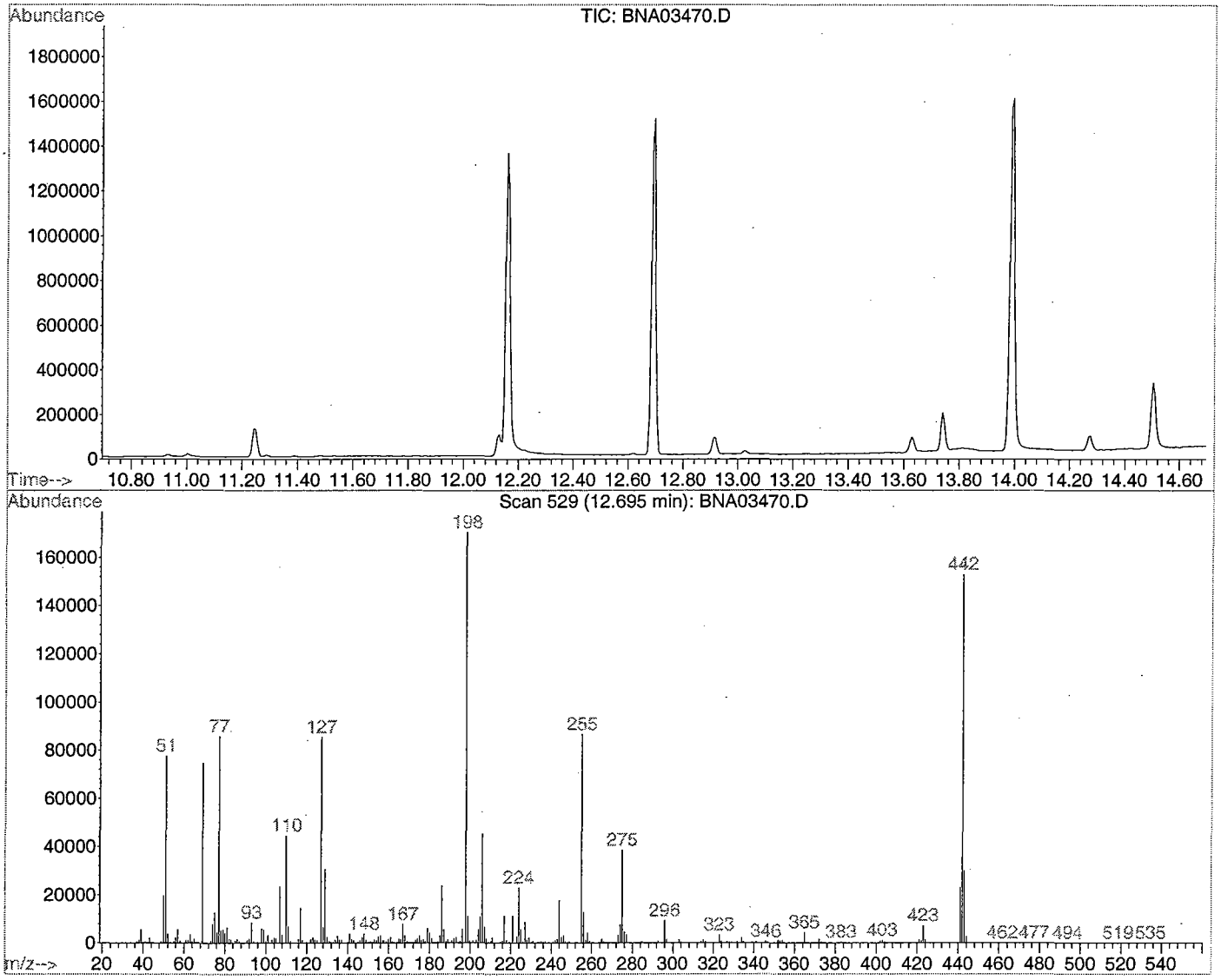
1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	FIELD ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD120	120 PPM CAL	BNA03471.D	12/22/99	10:20
02	SSTD080	80 PPM CAL	BNA03472.D	12/22/99	11:07
03	SSTD050	50 PPM CAL	BNA03473.D	12/22/99	11:55
04	SSTD020	20 PPM CAL	BNA03474.D	12/22/99	12:42
05	SSTD010	10 PPM CAL	BNA03475.D	12/22/99	13:30
06	5024.03MS	5024.03MS	BNA03478.D	12/22/99	15:58
07	5024.03DUP	5024.03DUP	BNA03479.D	12/22/99	16:46
08	SBLK330	SBLK330	BNA03480.D	12/22/99	17:33
09	BLDG.277	5031.01	BNA03490.D	12/23/99	1:11
10	DUPE	5031.02	BNA03491.D	12/23/99	1:57

CLP

Data File : C:\HPCHEM\1\DATA\991222\BNA03470.D Vial: 99
Acq On : 22 Dec 1999 9:53 am Operator: Bhaskar
Sample : DFTPP TUNE Inst : GC BNA 2
Misc : 50 NG/2UL Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : C:\HPCHEM\1\METHODS\M262535.M (RTE Integrator)
Title : BNA Calibration



Spectrum Information: Scan 529

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	45.5	77600	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	43.9	74840	PASS
70	69	0.00	2	0.5	381	PASS
127	198	40	60	50.1	85376	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	170496	PASS
199	198	5	9	6.4	10917	PASS
275	198	10	30	22.5	38408	PASS
365	198	1	100	2.5	4279	PASS
441	443	1	99	77.1	23000	PASS
442	198	40	100	89.7	152896	PASS
443	442	17	23	19.5	29848	PASS

4B

FIELD ID

SEMIVOLATILE METHOD BLANK SUMMARY

Sblk330

Lab Name: FMETL Lab Code 13461

Project 100004 Case No.: 5031 Location Bld.277 SDG No.:

Lab File ID: BNA03480.D Lab Sample ID: Sblk330

Instrument ID: GC BNA 2 Date Extracted: 12/21/99

Matrix: (soil/water) WATER Date Analyzed: 12/22/99

Level: (low/med) LOW Time Analyzed: 17:33

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	FIELD ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	BLDG.277	5031.01	BNA03490.D	12/23/99
02	DUPE	5031.02	BNA03491.D	12/23/99

COMMENTS:

Response Factor Report GC BNA 2

Method : C:\HPCHEM\1\METHODS\M262535.M (RTE Integrator)
Title : BNA Calibration
Last Update : Wed Dec 22 14:14:51 1999
Response via : Initial Calibration

Calibration Files
120 =BNA03471.D 80 =BNA03472.D 50 =BNA03473.D
20 =BNA03474.D 10 =BNA03475.D

		Compound	120	80	50	20	10	Avg	%RSD
1)	I	1,4-Dichlorobenzene-d	----------	ISTD	----------				
2)	T	Pyridine	1.342	1.531	1.793	1.611	1.599	1.575	10.31
3)	T	N-nitroso-dimethylami	0.763	0.785	0.988	0.790	0.801	0.825	11.15
4)	S	2-Fluorophenol	1.077	1.329	1.323	1.354	1.340	1.285	9.07
5)	T	Aniline	1.307	1.347	1.322	1.553	1.817	1.469	14.88
6)	S	Phenol-d5	1.781	1.668	1.614	1.698	1.667	1.686	3.64
7)	TCM	Phenol	1.810	1.768	1.712	1.833	1.839	1.792	2.96
8)	T	bis(2-Chloroethyl)eth	1.307	1.320	1.290	1.553	1.546	1.403	9.58
9)	TM	2-Chlorophenol	1.383	1.367	1.357	1.394	1.386	1.377	1.09
10)	T	1,3-Dichlorobenzene	1.513	1.453	1.446	1.505	1.486	1.481	2.06
11)	TCM	1,4-Dichlorobenzene	1.510	1.477	1.486	1.522	1.540	1.507	1.73
12)	T	Benzyl alcohol	0.662	0.494	0.456	0.448	0.647	0.541	19.29
13)	T	1,2-Dichlorobenzene	1.413	1.361	1.391	1.399	1.416	1.396	1.58
14)	T	2-Methylphenol	1.359	1.279	1.292	1.331	1.296	1.311	2.51
15)	T	bis(2-chloroisopropyl	1.564	1.474	1.431	1.544	1.550	1.513	3.80
16)	T	4-Methylphenol	1.281	1.178	1.153	1.215	1.209	1.207	4.01
17)	TPM	n-Nitroso-di-n-propyl	0.255	0.245	0.248	0.249	0.253	0.250	1.56
18)	T	Hexachloroethane	0.582	0.559	0.542	0.576	0.584	0.569	3.10
19)	I	Naphthalene-d8	----------	ISTD	----------				
20)	S	Nitrobenzene-d5	0.469	0.455	0.422	0.479	0.468	0.459	4.82
21)	T	Nitrobenzene	0.414	0.403	0.371	0.426	0.422	0.407	5.43
22)	T	Isophorone	0.770	0.745	0.715	0.777	0.760	0.754	3.28
23)	TC	2-Nitrophenol	0.198	0.193	0.190	0.194	0.187	0.193	2.14
24)	T	2,4-Dimethylphenol	0.382	0.370	0.348	0.402	0.403	0.381	6.05
25)	T	bis(2-Chloroethoxy)me	0.417	0.404	0.394	0.411	0.411	0.407	2.17
26)	TC	2,4-Dichlorophenol	0.303	0.295	0.295	0.304	0.304	0.300	1.60
27)	T	Benzoic Acid	0.264	0.240	0.216	0.180	0.184	0.217	16.64
28)	TM	1,2,4-Trichlorobenzen	0.318	0.312	0.317	0.331	0.323	0.320	2.22
29)	T	Naphthalene	1.050	1.035	1.039	1.070	1.065	1.052	1.49
30)	T	4-Chloroaniline	0.047	0.047	0.060	0.063	0.085	0.060	25.60
31)	TC	Hexachlorobutadiene	0.176	0.175	0.177	0.191	0.190	0.182	4.41
32)	TCM	4-Chloro-3-methylphen	0.328	0.310	0.303	0.325	0.332	0.320	3.93
33)	T	2-Methylnaphthalene	0.701	0.685	0.673	0.707	0.713	0.696	2.36
34)	I	Acenaphthene-d10	----------	ISTD	----------				
35)	TP	Hexachlorocyclopentad	0.249	0.238	0.218	0.205	0.161	0.214	16.05
36)	TC	2,4,6-Trichlorophenol	0.373	0.367	0.365	0.382	0.367	0.371	1.86
37)	T	2,4,5-Trichlorophenol	0.399	0.384	0.390	0.390	0.341	0.381	5.97
38)	S	2-Fluorobiphenyl	1.336	1.328	1.333	1.372	1.224	1.318	4.21
39)	T	2-Chloronaphthalene	1.059	1.041	1.032	1.075	1.032	1.048	1.79
40)	T	2-Nitroaniline	0.366	0.359	0.360	0.359	0.345	0.358	2.11
41)	T	Dimethylphthalate	1.213	1.195	1.200	1.256	1.210	1.215	1.99
42)	T	Acenaphthylene	1.745	1.740	1.766	1.787	1.723	1.752	1.40
43)	T	2,6-Dinitrotoluene	0.336	0.321	0.313	0.330	0.318	0.324	2.89
44)	T	3-Nitroaniline	0.189	0.196	0.197	0.188	0.177	0.189	4.12
45)	TCM	Acenaphthene	1.106	1.092	1.093	1.120	1.120	1.106	1.24
46)	TP	2,4-Dinitrophenol	0.190	0.184	0.169	0.141	0.104	0.158	22.44
47)	T	Dibenzofuran	1.478	1.473	1.479	1.551	1.538	1.504	2.49
48)	TMP	4-Nitrophenol	0.312	0.296	0.266	0.281	0.273	0.286	6.46
49)	TM	2,4-Dinitrotoluene	0.406	0.398	0.399	0.406	0.387	0.399	1.92
50)	T	Diethylphthalate	1.219	1.220	1.213	1.277	1.298	1.245	3.16
51)	T	Fluorene	1.300	1.304	1.314	1.345	1.349	1.322	1.74
52)	T	4-Chlorophenyl-phenyl	0.549	0.562	0.564	0.590	0.593	0.572	3.37
53)	T	4-Nitroaniline	0.232	0.231	0.244	0.250	0.245	0.241	3.56
54)	I	Phenanthrene-d10	----------	ISTD	----------				

(#) = Out of Range

Method : C:\HPCHEM\1\METHODS\M262535.M (RTE Integrator)
Title : BNA Calibration
Last Update : Wed Dec 22 14:14:51 1999
Response via : Initial Calibration

Calibration Files
120 =BNA03471.D 80 =BNA03472.D 50 =BNA03473.D
20 =BNA03474.D 10 =BNA03475.D

		Compound	120	80	50	20	10	Avg	%RSD
55)	T	4,6-Dinitro-2-methylp	0.158	0.156	0.146	0.143	0.123	0.145	9.66
56)	TC	n-Nitrosodiphenylamin	0.475	0.470	0.453	0.493	0.487	0.476	3.29
57)	T	Azobenzene	0.931	0.854	0.753	0.837	0.838	0.843	7.54
58)	S	2,4,6-Tribromophenol	0.088	0.086	0.081	0.091	0.083	0.086	4.50
59)	T	4-Bromophenyl-phenyle	0.181	0.177	0.174	0.186	0.181	0.180	2.61
60)	T	Hexachlorobenzene	0.187	0.186	0.187	0.201	0.198	0.192	3.70
61)	TCM	Pentachlorophenol	0.128	0.118	0.111	0.123	0.105	0.117	7.84
62)	T	Phenanthrene	1.092	1.103	1.122	1.165	1.161	1.129	2.94
63)	T	Anthracene	1.124	1.126	1.143	1.196	1.185	1.155	2.94
64)	T	Di-n-butylphthalate	1.269	1.237	1.281	1.321	1.315	1.285	2.70
65)	TC	Fluoranthene	1.218	1.198	1.231	1.276	1.270	1.239	2.73
66)	I	Chrysene-d12	----------ISTD----------						
67)	T	Benzidine	0.263	0.232	0.229	0.246	0.262	0.246	6.51
68)	TM	Pyrene	1.307	1.290	1.338	1.384	1.382	1.340	3.18
69)	S	p-Terphenyl-d14	0.918	0.911	0.940	0.955	0.961	0.937	2.37
70)	T	Butylbenzylphthalate	0.622	0.618	0.622	0.639	0.638	0.628	1.60
71)	T	Benzo[a]anthracene	1.253	1.244	1.248	1.314	1.317	1.275	2.91
72)	T	3,3'-Dichlorobenzidin	0.233	0.232	0.239	0.251	0.238	0.239	3.18
73)	T	Chrysene	1.166	1.156	1.177	1.224	1.219	1.188	2.61
74)	T	bis(2-Ethylhexyl)phth	0.876	0.877	0.866	0.886	0.878	0.877	0.79
75)	I	Perylene-d12	----------ISTD----------						
76)	TC	Di-n-octylphthalate	1.426	1.441	1.275	1.499	1.497	1.428	6.41
77)	T	Benzo[b]fluoranthene	1.254	1.304	1.279	1.274	1.280	1.278	1.39
78)	T	Benzo[k]fluoranthene	1.197	1.106	1.180	1.272	1.239	1.199	5.28
79)	TC	Benzo[a]pyrene	1.154	1.126	1.140	1.177	1.164	1.152	1.74
80)	T	Indeno[1,2,3-cd]pyren	1.311	1.285	1.272	1.308	1.265	1.288	1.61
81)	T	Dibenz[a,h]anthracene	1.103	1.080	1.069	1.088	1.061	1.080	1.54
82)	T	Benzo[g,h,i]perylene	1.124	1.073	1.068	1.088	1.067	1.084	2.19

(#) = Out of Range

2C

WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: FMETL Lab Code 13461

Project 100004 Case No.: 5031 Location Bld.277 SDG No.: _____

	FIELD ID	S1 NBZ #	S2 2FP #	S3 TPL #	TOT OUT
01	5024.03MS	7*	84	51	1
02	5024.03DUP	8*	75	35	1
03	SBLK330	81	76	68	0
04	BLDG.277	73	73	51	0
05	DUPE	77	79	58	0

QC LIMITS

S1	NBZ	=	Nitrobenzene-d5	(34-112)
S2	2FP	=	2-Fluorobiphenyl	(30-128)
S3	TPL	=	p-Terphenyl-d14	(29-151)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out

Base Neutral Spike Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name **BNA03481.D** Sample Name **Sblk330BS**

Date Acquired **22-Dec-99**

CAS#	Name		Amount Recovered	Percent Recovered
110-86-1	Pyridine		8.01 ug/L	40.06
62-75-9	N-nitroso-dimethylamine		7.95 ug/L	39.74
62-53-3	Aniline		15.40 ug/L	77.02
111-44-4	bis(2-Chloroethyl)ether		17.61 ug/L	88.03
541-73-1	1,3-Dichlorobenzene		14.28 ug/L	71.41
106-46-7	1,4-Dichlorobenzene		14.38 ug/L	71.91
100-51-6	Benzyl alcohol		16.96 ug/L	84.80
95-50-1	1,2-Dichlorobenzene		14.94 ug/L	74.68
108-60-1	bis(2-chloroisopropyl)ether		25.02 ug/L	125.12
621-64-7	n-Nitroso-di-n-propylamine		18.78 ug/L	93.88
67-72-1	Hexachloroethane		13.74 ug/L	68.68
98-95-3	Nitrobenzene		19.53 ug/L	97.66
78-59-1	Isophorone		20.12 ug/L	100.62
111-91-1	bis(2-Chloroethoxy)methane		19.51 ug/L	97.54
120-82-1	1,2,4-Trichlorobenzene		15.17 ug/L	75.83
91-20-3	Naphthalene		14.67 ug/L	73.34
106-47-8	4-Chloroaniline		100.72 ug/L	503.58
87-68-3	Hexachlorobutadiene		14.50 ug/L	72.50
91-57-6	2-Methylnaphthalene		15.29 ug/L	76.46
77-47-4	Hexachlorocyclopentadiene		7.83 ug/L	39.13
91-58-7	2-Chloronaphthalene		16.16 ug/L	80.80
88-74-4	2-Nitroaniline		17.41 ug/L	87.04
131-11-3	Dimethylphthalate		18.20 ug/L	91.02
208-96-8	Acenaphthylene		15.55 ug/L	77.77
606-20-2	2,6-Dinitrotoluene		18.23 ug/L	91.13
99-09-2	3-Nitroaniline		25.08 ug/L	125.38
83-32-9	Acenaphthene		15.72 ug/L	78.59
132-64-9	Dibenzofuran		16.70 ug/L	83.52
121-14-2	2,4-Dinitrotoluene		18.73 ug/L	93.63
84-66-2	Diethylphthalate		20.14 ug/L	100.69
86-73-7	Fluorene		16.61 ug/L	83.03
7005-72-3	4-Chlorophenyl-phenylether		18.65 ug/L	93.24
100-01-6	4-Nitroaniline		18.13 ug/L	90.67
86-30-6	n-Nitrosodiphenylamine		20.69 ug/L	103.43
103-33-3	Azobenzene		18.26 ug/L	91.28
101-55-3	4-Bromophenyl-phenylether		19.79 ug/L	98.93
118-74-1	Hexachlorobenzene		18.71 ug/L	93.56
85-01-8	Phenanthrene		17.85 ug/L	89.24
120-12-7	Anthracene		17.88 ug/L	89.40
84-74-2	Di-n-butylphthalate		21.25 ug/L	106.24
206-44-0	Fluoranthene		18.32 ug/L	91.62
129-00-0	Pyrene		19.17 ug/L	95.85
85-68-7	Butylbenzylphthalate		21.22 ug/L	106.08
56-55-3	Benzo[a]anthracene		18.59 ug/L	92.96
218-01-9	Chrysene		18.70 ug/L	93.48
117-81-7	bis(2-Ethylhexyl)phthalate		20.73 ug/L	103.67
117-84-0	Di-n-octylphthalate		18.93 ug/L	94.65
205-99-2	Benzo[b]fluoranthene		17.41 ug/L	87.07
207-08-9	Benzo[k]fluoranthene		18.17 ug/L	90.86
50-32-8	Benzo[a]pyrene		17.16 ug/L	85.81
193-39-5	Indeno[1,2,3-cd]pyrene		16.87 ug/L	84.33
53-70-3	Dibenz[a,h]anthracene		16.64 ug/L	83.21
191-24-2	Benzo[g,h,i]perylene		16.53 ug/L	82.66

Base Neutral Spike Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name **BNA03478.D** Sample Name **5024.03MS**

Date Acquired **22-Dec-99**

CAS#	Name		Amount Recovered	Percent Recovered
110-86-1	Pyridine		9.40 ug/L	46.99
62-75-9	N-nitroso-dimethylamine		8.06 ug/L	40.28
62-53-3	Aniline		17.94 ug/L	89.72
111-44-4	bis(2-Chloroethyl)ether		18.26 ug/L	91.31
541-73-1	1,3-Dichlorobenzene		15.67 ug/L	78.36
106-46-7	1,4-Dichlorobenzene		16.56 ug/L	82.78
100-51-6	Benzyl alcohol		16.30 ug/L	81.51
95-50-1	1,2-Dichlorobenzene		16.80 ug/L	84.01
108-60-1	bis(2-chloroisopropyl)ether		25.63 ug/L	128.16
621-64-7	n-Nitroso-di-n-propylamine		19.68 ug/L	98.41
67-72-1	Hexachloroethane		12.38 ug/L	61.91
98-95-3	Nitrobenzene		1.61 ug/L	8.05
78-59-1	Isophorone		17.52 ug/L	87.59
111-91-1	bis(2-Chloroethoxy)methane		20.24 ug/L	101.18
120-82-1	1,2,4-Trichlorobenzene		16.86 ug/L	84.29
91-20-3	Naphthalene		16.53 ug/L	82.65
106-47-8	4-Chloroaniline		102.11 ug/L	510.57
87-68-3	Hexachlorobutadiene		13.15 ug/L	65.76
91-57-6	2-Methylnaphthalene		16.21 ug/L	81.07
77-47-4	Hexachlorocyclopentadiene		5.79 ug/L	28.97
91-58-7	2-Chloronaphthalene		18.02 ug/L	90.11
88-74-4	2-Nitroaniline		2.36 ug/L	11.81
131-11-3	Dimethylphthalate		18.62 ug/L	93.09
208-96-8	Acenaphthylene		16.74 ug/L	83.68
606-20-2	2,6-Dinitrotoluene		9.00 ug/L	44.99
99-09-2	3-Nitroaniline		1.94 ug/L	9.68
83-32-9	Acenaphthene		16.98 ug/L	84.90
132-64-9	Dibenzofuran		14.46 ug/L	72.32
121-14-2	2,4-Dinitrotoluene		0.45 ug/L	2.25
84-66-2	Diethylphthalate		16.37 ug/L	81.86
86-73-7	Fluorene		13.42 ug/L	67.09
7005-72-3	4-Chlorophenyl-phenylether		15.30 ug/L	76.52
100-01-6	4-Nitroaniline		3.02 ug/L	15.11
86-30-6	n-Nitrosodiphenylamine		20.03 ug/L	100.15
103-33-3	Azobenzene		17.03 ug/L	85.16
101-55-3	4-Bromophenyl-phenylether		17.36 ug/L	86.82
118-74-1	Hexachlorobenzene		14.91 ug/L	74.56
85-01-8	Phenanthrene		15.33 ug/L	76.66
120-12-7	Anthracene		14.28 ug/L	71.39
84-74-2	Di-n-butylphthalate		18.02 ug/L	90.08
206-44-0	Fluoranthene		16.55 ug/L	82.76
129-00-0	Pyrene		14.69 ug/L	73.43
85-68-7	Butylbenzylphthalate		17.26 ug/L	86.31
56-55-3	Benzo[a]anthracene		14.01 ug/L	70.07
218-01-9	Chrysene		14.40 ug/L	72.01
117-81-7	bis(2-Ethylhexyl)phthalate		15.74 ug/L	78.69
117-84-0	Di-n-octylphthalate		15.02 ug/L	75.12
205-99-2	Benzo[b]fluoranthene		13.48 ug/L	67.38
207-08-9	Benzo[k]fluoranthene		14.18 ug/L	70.92
50-32-8	Benzo[a]pyrene		13.12 ug/L	65.62
193-39-5	Indeno[1,2,3-cd]pyrene		12.91 ug/L	64.53
53-70-3	Dibenz[a,h]anthracene		12.92 ug/L	64.58
191-24-2	Benzo[g,h,i]perylene		12.93 ug/L	64.64

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA03479.D**	Sample Name	**5024.03Dup**
Operator	**Bhaskar**	Misc Info	**292-1 Dup**
Date Acquired	**22-Dec-99**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	1.83	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.91	ug/L	
62-53-3	Aniline			not detected	NLE	1.63	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.28	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	1.21	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	1.19	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	1.02	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	1.13	ug/L	
108-60-1	bis(2-chloroisopropyl)ether			not detected	300	1.39	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.80	ug/L	
67-72-1	Hexachloroethane			not detected	10	1.50	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.97	ug/L	
78-59-1	Isophorone			not detected	100	1.01	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	1.21	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	1.22	ug/L	
91-20-3	Naphthalene			not detected	NLE	1.27	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.09	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.71	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	1.08	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	1.32	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	1.01	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.96	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	1.52	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.96	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.81	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.79	ug/L	
83-32-9	Acenaphthene			not detected	400	1.10	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	1.00	ug/L	
121-14-2	2,4-Dinitrotoluene			not detected	10	0.87	ug/L	
84-66-2	Diethylphthalate			not detected	5000	1.62	ug/L	
86-73-7	Fluorene			not detected	300	0.99	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	1.10	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.05	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	1.01	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.67	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.76	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.94	ug/L	
85-01-8	Phenanthrene			not detected	NLE	1.23	ug/L	
120-12-7	Anthracene			not detected	2000	1.12	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	1.70	ug/L	
206-44-0	Fluoranthene			not detected	300	1.64	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA03479.D**	Sample Name	**5024.03Dup**
Operator	**Bhaskar**	Misc Info	**292-1 Dup**
Date Acquired	**22-Dec-99**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
92-87-5	Benzidine			not detected	50	4.18	ug/L	
129-00-0	Pyrene			not detected	200	1.25	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	1.05	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	1.19	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.75	ug/L	
218-01-9	Chrysene			not detected	20	1.38	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.74	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.44	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	1.25	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.29	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	1.05	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	0.83	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.64	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.84	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
PQL= Practical Quantitation Limit

MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: FMETL Lab Code 13461

Project 100004 Case No.: 5031 Location Bld.277 SDG No.:

Lab File ID (Standard): BNA03473.D Date Analyzed: 12/22/99

Instrument ID: BNA#2 Time Analyzed: 11:55

		IS1DCB AREA #	RT #	IS2NAP AREA #	RT #	IS3ANE AREA #	RT #
	12 HOUR STD	155062	10.56	611497	13.51	400498	17.87
	UPPER LIMIT	310124	11.06	1222994	14.01	800996	18.37
	LOWER LIMIT	77531	10.06	305749	13.01	200249	17.37
	FIELD ID						
01	5024.03MS	151121	10.56	685092	13.51	399666	17.87
02	5024.03DUP	173481	10.57	662707	13.51	412058	17.87
03	SBLK330	188256	10.57	713913	13.51	458349	17.87
04	BLDG.277	175461	10.56	660599	13.51	414940	17.87
05	DUPE	173104	10.56	647169	13.50	397126	17.86

IS1 DCB = 1,4-Dichlorobenzene-d4
IS2 NAP = Naphthalene-d8
IS3 ANE = Acenaphthene-d10
IS4 PNE = Phenanthrene-d10
IS5 CYS = Chrysene-d12
IS6 PRL = Perylene-d12

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 to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: FMETL Lab Code 13461

Project 100004 Case No.: 5031 Location Bld.277 SDG No.:

Lab File ID (Standard): BNA03473.D Date Analyzed: 12/22/99

Instrument ID: BNA#2 Time Analyzed: 11:55

		IS4PNE AREA #	RT #	IS5CYS AREA #	RT #	IS6PRL AREA #	RT #
	12 HOUR STD	728745	21.13	663944	26.65	758457	29.82
	UPPER LIMIT	1457490	20.63	1327888	26.15	1516914	29.32
	LOWER LIMIT	364373	21.63	331972	27.15	379229	30.32
	EPA SAMPLE NO.						
01	5024.03MS	579479	21.13	623821	26.64	611230	29.81
02	5024.03DUP	683893	21.12	644610	26.64	641226	29.81
03	SBLK330	756493	21.12	730899	26.64	730511	29.81
04	BLDG.277	680598	21.13	649476	26.63	669020	29.80
05	DUPE	676828	21.12	640807	26.63	667217	29.80

IS1 DCB = 1,4-Dichlorobenzene-d4
IS2 NAP = Naphthalene-d8
IS3 ANE = Acenaphthene-d10
IS4 PNE = Phenanthrene-d10
IS5 CYS = Chrysene-d12
IS6 PRL = Perylene-d12

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 to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\991222\BNA03480.D Vial: 10
Acq On : 22 Dec 1999 5:33 pm Operator: Bhaskar
Sample : Sblk330 Inst : GC BNA 2
Misc : Sblk330 A 991221 Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p
Quant Time: Dec 22 18:09 1999 Quant Results File: M262535.RES

Quant Method : C:\HPCHEM\1\METHODS\M262535.M (RTE Integrator)
Title : BNA Calibration
Last Update : Wed Dec 22 14:14:51 1999
Response via : Initial Calibration
DataAcq Meth : M262535

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.57	152	188256	40.00	ug/L	0.00
19) Naphthalene-d8	13.51	136	713913	40.00	ug/L	0.00
34) Acenaphthene-d10	17.87	164	458349	40.00	ug/L	0.00
54) Phenanthrene-d10	21.12	188	756493	40.00	ug/L	0.00
66) Chrysene-d12	26.64	240	730899	40.00	ug/L	-0.02
75) Perylene-d12	29.81	264	730511	40.00	ug/L	-0.02
System Monitoring Compounds						
4) 2-Fluorophenol	0.00	112	0	0.00	ug/L	
Spiked Amount 100.000	Range 21 - 100		Recovery = 0.00%#			
6) Phenol-d5	0.00	99	0	0.00	ug/L	
Spiked Amount 100.000	Range 10 - 94		Recovery = 0.00%#			
20) Nitrobenzene-d5	11.90	82	333413	40.73	ug/L	0.00
Spiked Amount 50.000	Range 35 - 114		Recovery = 81.46%			
38) 2-Fluorobiphenyl	16.26	172	576065	38.13	ug/L	0.00
Spiked Amount 50.000	Range 43 - 116		Recovery = 76.26%			
58) 2,4,6-Tribromophenol	0.00	330	0	0.00	ug/L	
Spiked Amount 100.000	Range 10 - 123		Recovery = 0.00%#			
69) p-Terphenyl-d14	24.50	244	579378	33.84	ug/L	0.00
Spiked Amount 50.000	Range 33 - 141		Recovery = 67.68%			

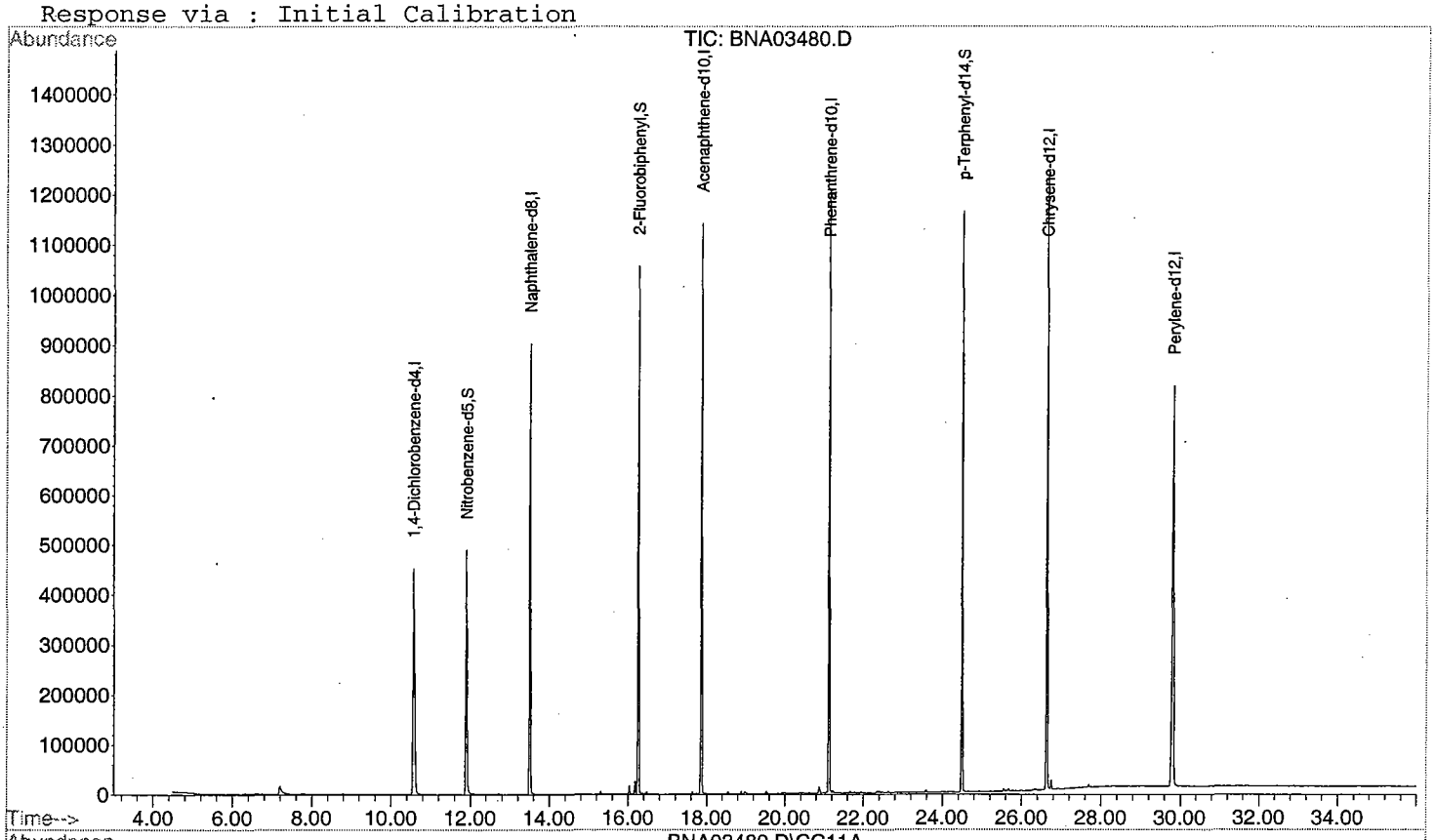
Target Compounds Qvalue

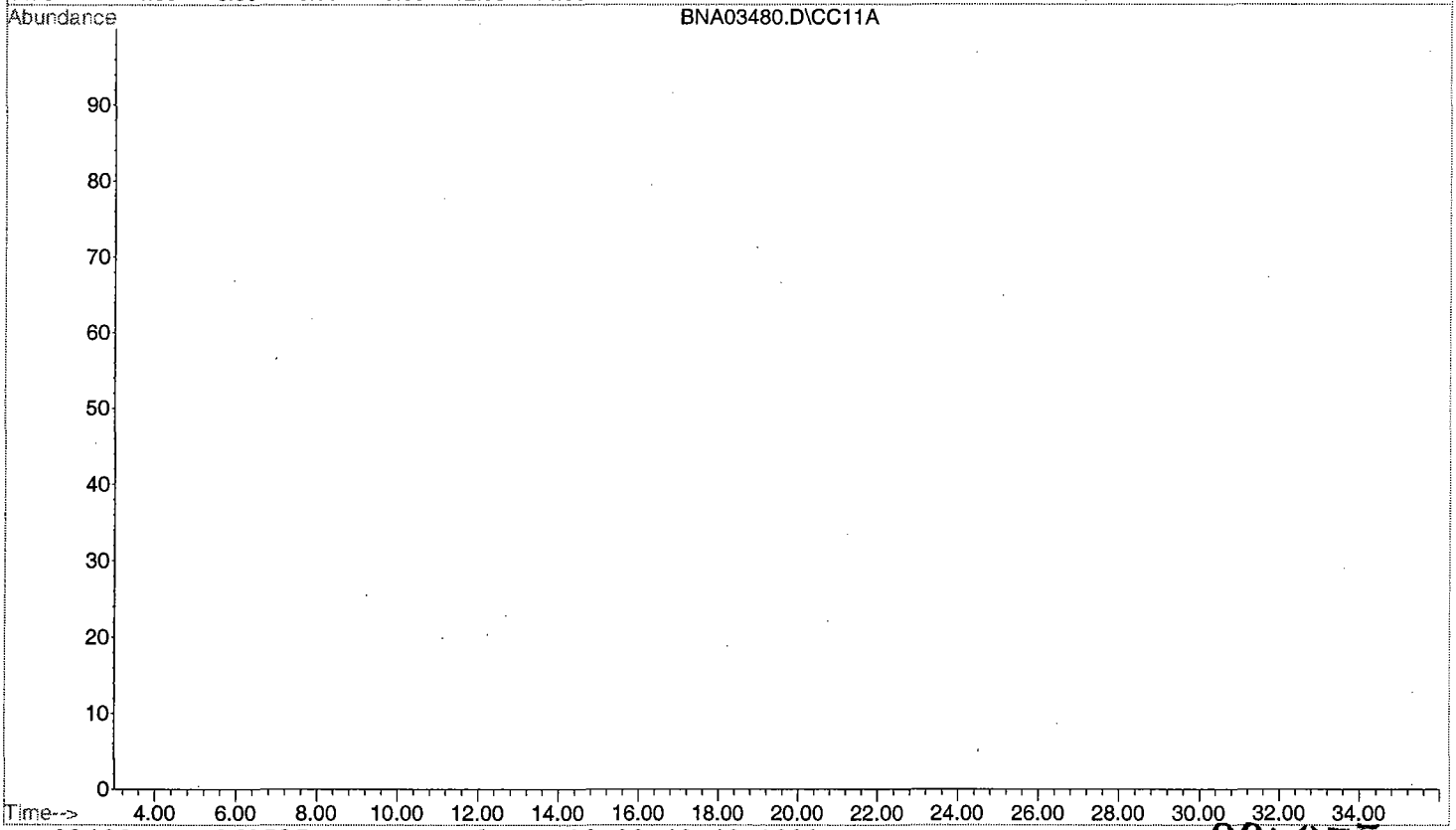
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\991222\BNA03480.D Vial: 10
Acq On : 22 Dec 1999 5:33 pm Operator: Bhaskar
Sample : Sblk330 Inst : GC BNA 2
Misc : Sblk330 A 991221 Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p
Quant Time: Dec 22 18:09 1999 Quant Results File: M262535.RES

Method : C:\HPCHEM\1\METHODS\M262535.M (RTE Integrator)
Title : BNA Calibration
Last Update : Wed Dec 22 14:14:51 1999
Response via : Initial Calibration





Quantitation Report (QT/LSC Reviewed)

Data File : C:\HPCHEM\1\DATA\991222\BNA03490.D Vial: 20
Acq On : 23 Dec 1999 1:11 am Operator: Bhaskar
Sample : 5031.01 Inst : GC BNA 2
Misc : Bldg.277 Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p
Quant Time: Dec 27 14:56 1999 Quant Results File: M262535.RES

Quant Method : C:\HPCHEM\1\METHODS\M262535.M (RTE Integrator)
Title : BNA Calibration
Last Update : Wed Dec 22 14:14:51 1999
Response via : Initial Calibration
DataAcq Meth : M262535

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.56	152	175461	40.00	ug/L	0.00
19) Naphthalene-d8	13.51	136	660599	40.00	ug/L	0.00
34) Acenaphthene-d10	17.87	164	414940	40.00	ug/L	0.00
54) Phenanthrene-d10	21.13	188	680598	40.00	ug/L	0.00
66) Chrysene-d12	26.63	240	649476	40.00	ug/L	-0.02
75) Perylene-d12	29.80	264	669020	40.00	ug/L	-0.02
System Monitoring Compounds						
4) 2-Fluorophenol	0.00	112	0	0.00	ug/L	
Spiked Amount 100.000	Range 21 - 100		Recovery =	0.00%#		
6) Phenol-d5	0.00	99	0	0.00	ug/L	
Spiked Amount 100.000	Range 10 - 94		Recovery =	0.00%#		
20) Nitrobenzene-d5	11.90	82	275225	36.34	ug/L	-0.01
Spiked Amount 50.000	Range 35 - 114		Recovery =	72.68%		
38) 2-Fluorobiphenyl	16.26	172	498545	36.45	ug/L	-0.01
Spiked Amount 50.000	Range 43 - 116		Recovery =	72.90%		
58) 2,4,6-Tribromophenol	0.00	330	0	0.00	ug/L	
Spiked Amount 100.000	Range 10 - 123		Recovery =	0.00%#		
69) p-Terphenyl-d14	24.49	244	385002	25.31	ug/L	-0.01
Spiked Amount 50.000	Range 33 - 141		Recovery =	50.62%		
Target Compounds						Qvalue
33) 2-Methylnaphthalene	15.24	142	171896	14.96	ug/L	98
62) Phenanthrene	21.17	178	29532	1.54	ug/L	96

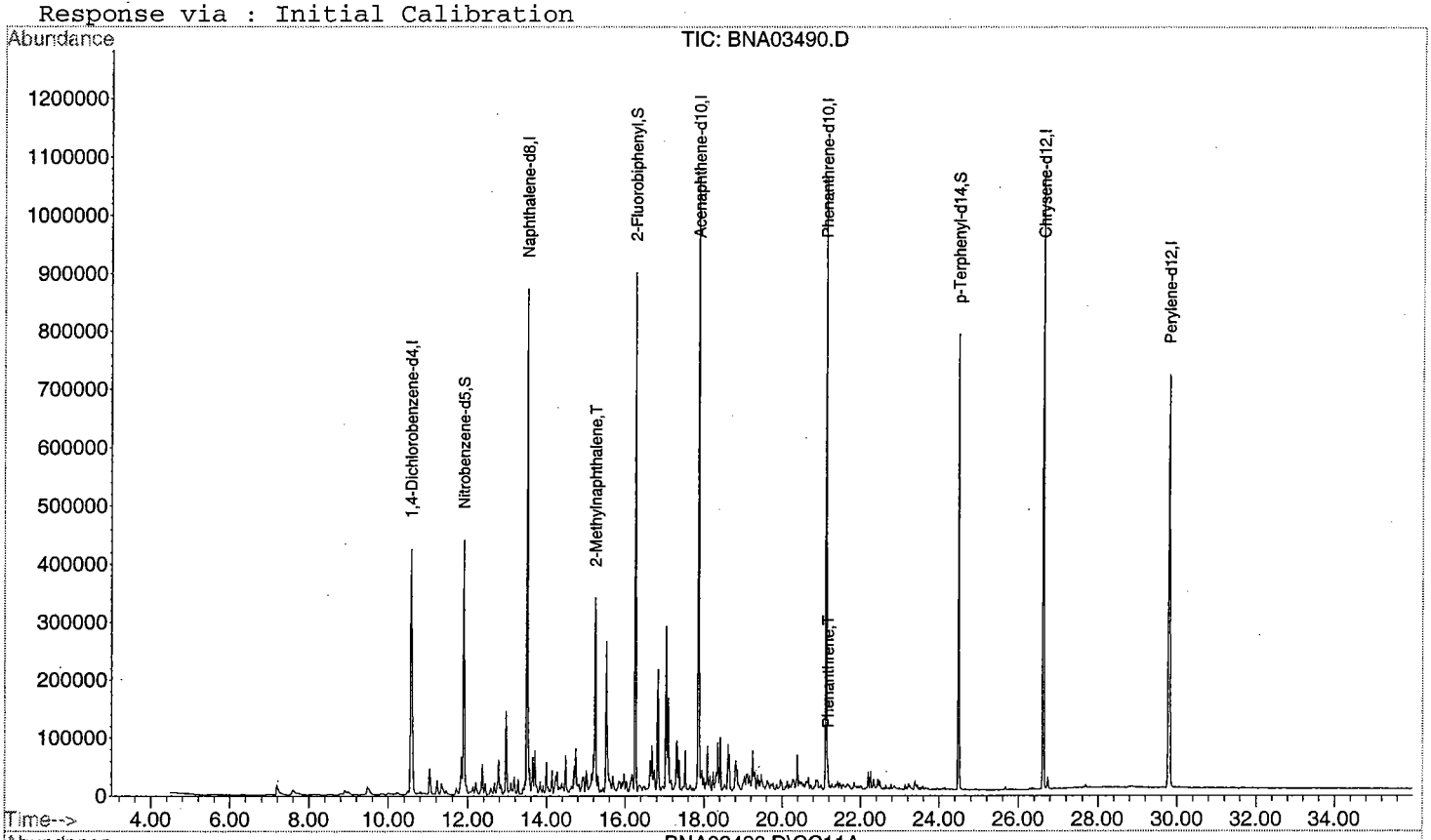
(#) = qualifier out of range (m) = manual integration
BNA03490.D M262535.M Mon Dec 27 15:02:57 1999

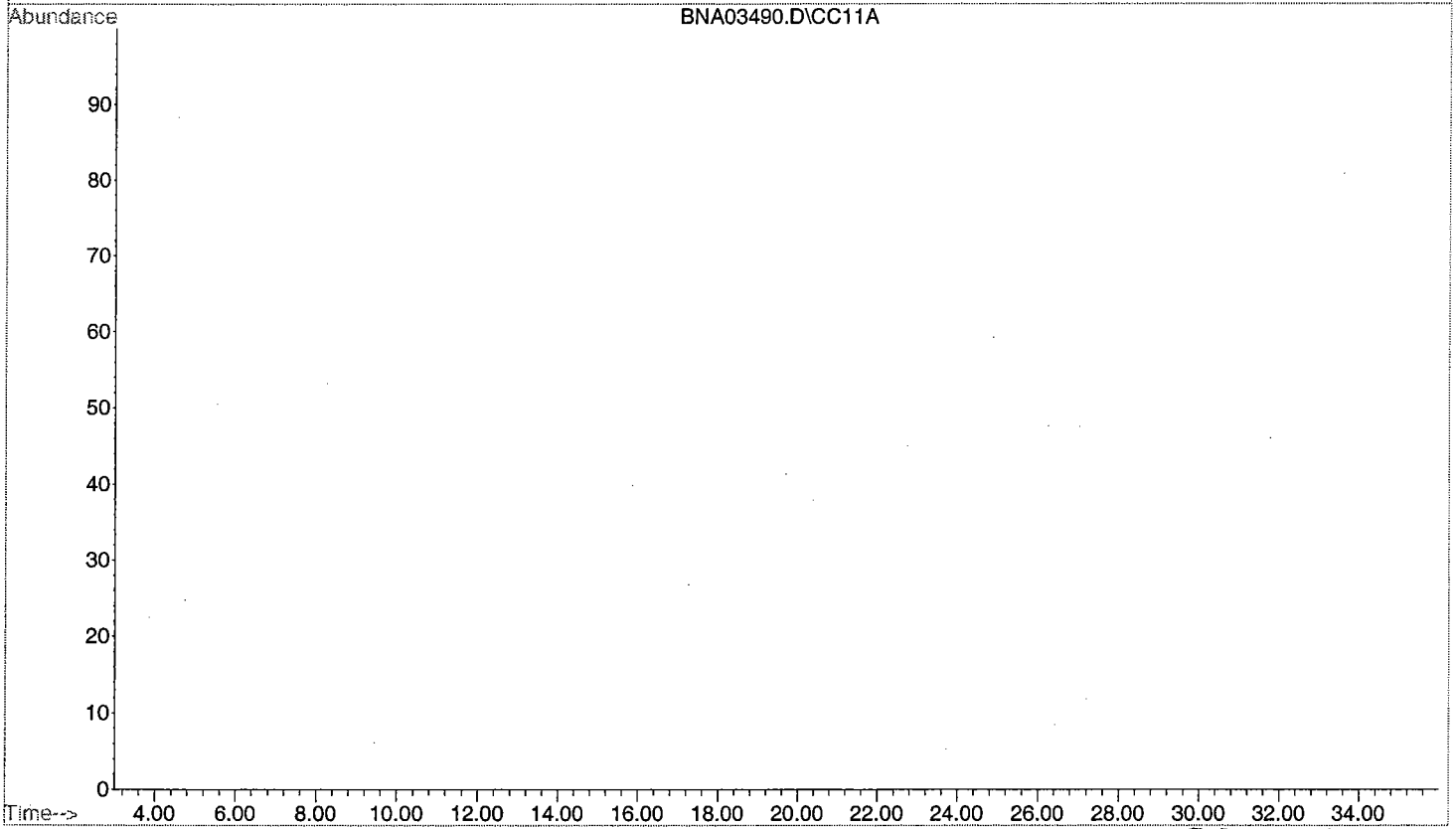
000056

Quantitation Report

Data File : C:\HPCHEM\1\DATA\991222\BNA03490.D Vial: 20
Acq On : 23 Dec 1999 1:11 am Operator: Bhaskar
Sample : 5031.01 Inst : GC BNA 2
Misc : Bldg.277 Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p
Quant Time: Dec 27 14:56 1999 Quant Results File: M262535.RES

Method : C:\HPCHEM\1\METHODS\M262535.M (RTE Integrator)
Title : BNA Calibration
Last Update : Wed Dec 22 14:14:51 1999
Response via : Initial Calibration





Quantitation Report (QT/LSC Reviewed)

Data File : C:\HPCHEM\1\DATA\991222\BNA03491.D Vial: 21
Acq On : 23 Dec 1999 1:57 am Operator: Bhaskar
Sample : 5031.02 Inst : GC BNA 2
Misc : Dupe Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p
Quant Time: Dec 27 14:59 1999 Quant Results File: M262535.RES

Quant Method : C:\HPCHEM\1\METHODS\M262535.M (RTE Integrator)
Title : BNA Calibration
Last Update : Wed Dec 22 14:14:51 1999
Response via : Initial Calibration
DataAcq Meth : M262535

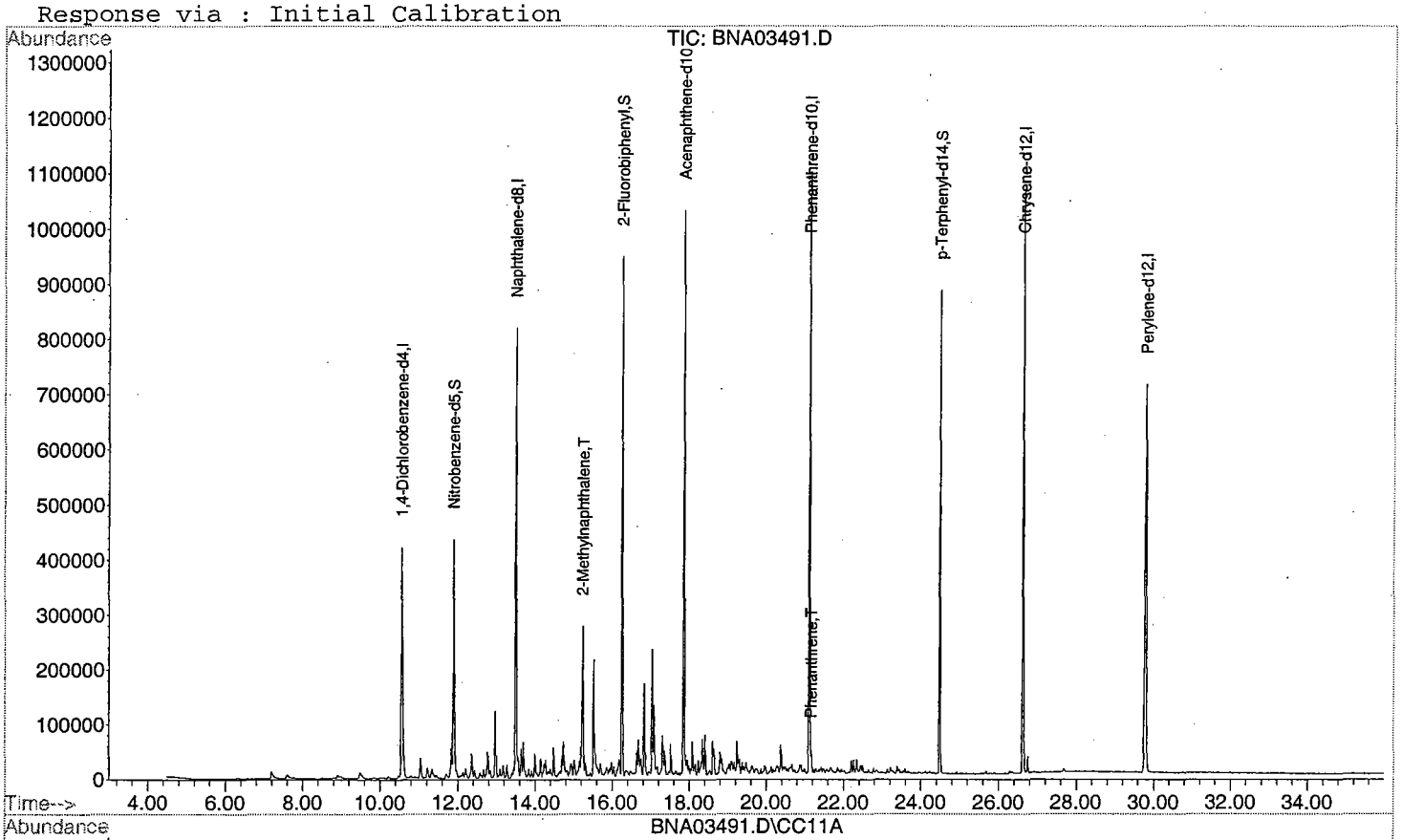
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.56	152	173104	40.00	ug/L	0.00
19) Naphthalene-d8	13.50	136	647169	40.00	ug/L	-0.01
34) Acenaphthene-d10	17.86	164	397126	40.00	ug/L	-0.01
54) Phenanthrene-d10	21.12	188	676828	40.00	ug/L	-0.01
66) Chrysene-d12	26.63	240	640807	40.00	ug/L	-0.02
75) Perylene-d12	29.80	264	667217	40.00	ug/L	-0.02
System Monitoring Compounds						
4) 2-Fluorophenol	0.00	112	0	0.00	ug/L	
Spiked Amount 100.000	Range 21 - 100		Recovery = 0.00%#			
6) Phenol-d5	0.00	99	0	0.00	ug/L	
Spiked Amount 100.000	Range 10 - 94		Recovery = 0.00%#			
20) Nitrobenzene-d5	11.90	82	287025	38.68	ug/L	-0.01
Spiked Amount 50.000	Range 35 - 114		Recovery = 77.36%			
38) 2-Fluorobiphenyl	16.26	172	519995	39.72	ug/L	-0.01
Spiked Amount 50.000	Range 43 - 116		Recovery = 79.44%			
58) 2,4,6-Tribromophenol	0.00	330	0	0.00	ug/L	
Spiked Amount 100.000	Range 10 - 123		Recovery = 0.00%#			
69) p-Terphenyl-d14	24.49	244	438447	29.21	ug/L	-0.01
Spiked Amount 50.000	Range 33 - 141		Recovery = 58.42%			
Target Compounds						Qvalue
33) 2-Methylnaphthalene	15.24	142	145555	12.93	ug/L	98
62) Phenanthrene	21.16	178	25233	1.32	ug/L	94

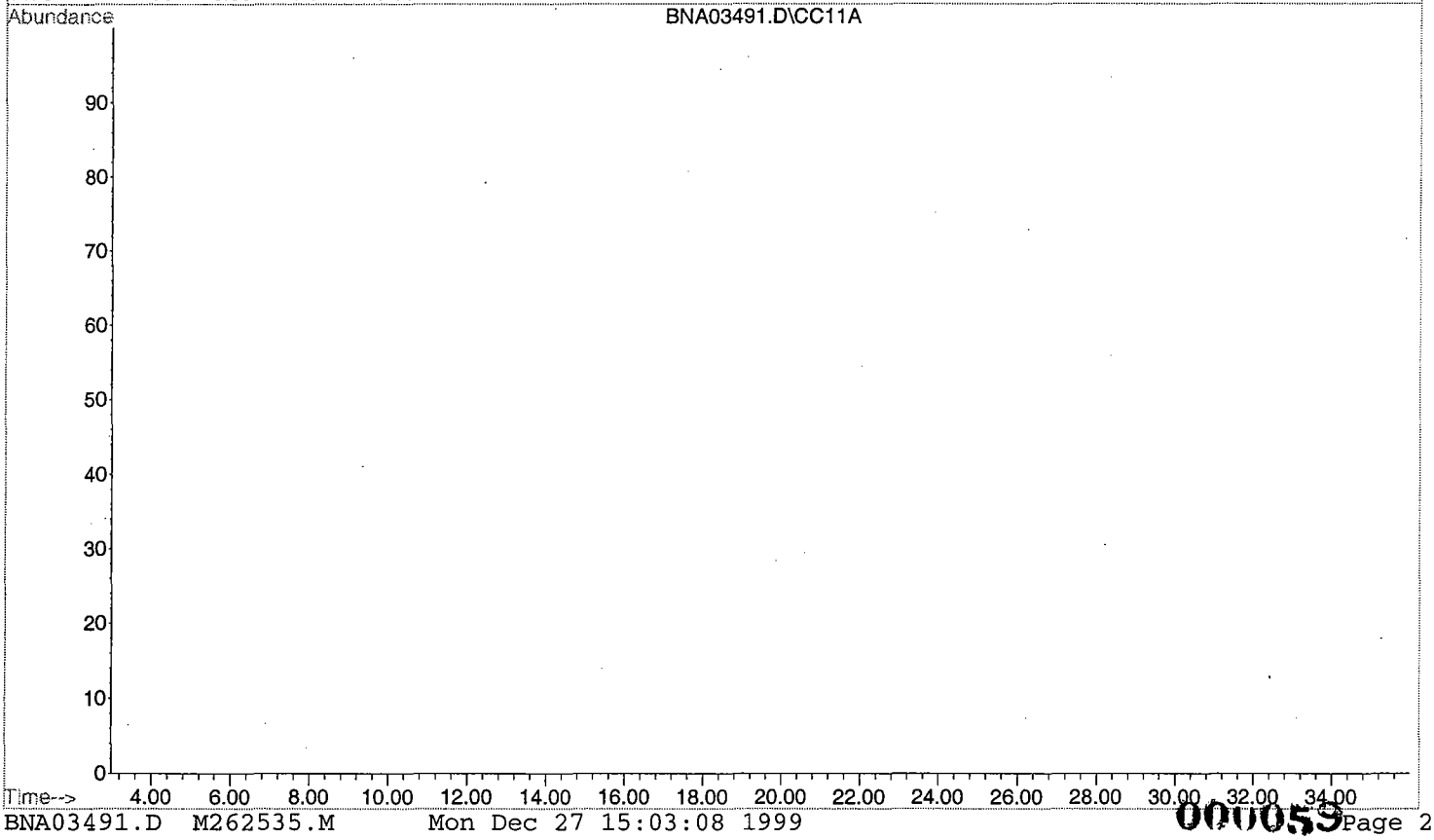
(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\991222\BNA03491.D Vial: 21
Acq On : 23 Dec 1999 1:57 am Operator: Bhaskar
Sample : 5031.02 Inst : GC BNA 2
Misc : Dupe Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p
Quant Time: Dec 27 14:59 1999 Quant Results File: M262535.RES

Method : C:\HPCHEM\1\METHODS\M262535.M (RTE Integrator)
Title : BNA Calibration
Last Update : Wed Dec 22 14:14:51 1999
Response via : Initial Calibration





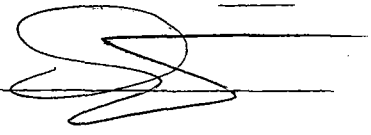
LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

THIS FORM MUST BE COMPLETED BY THE LABORATORY OR ENVIRONMENTAL CONSULTANT AND ACCOMPANY ALL DATA SUBMISSIONS

The following Laboratory Deliverables checklist and Non-Conformance Summary shall be included in the data submission. All deviations from the accepted methodology and procedures, of performance values outside acceptable ranges shall be summarized in the Non-Conformance Summary. The Technical Requirements for Site Remediation, effective June 7, 1993, provides further details. The document shall be bound and paginated, contain a table of contents, and all pages shall be legible. Incomplete packages will be returned or held without review until the data package is completed.

It is recommended that the analytical results summary sheets listing all targeted and non-targeted compounds with the method detection limits, practical quantitation limits, and the laboratory and/or sample numbers be included in one section of the data package and in the main body of the report.

1.	Cover page, Title Page listing Lab Certification #, facility name and address, & date of report submitted	✓
2.	Table of Contents submitted	✓
3.	Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted	✓
4.	Document paginated and legible	✓
5.	Chain of Custody submitted	✓
6.	Samples submitted to lab within 48 hours of sample collection	✓
7.	Methodology Summary submitted	✓
8.	Laboratory Chronicle and Holding Time Check submitted	✓
9.	Results submitted on a dry weight basis	NA ✓
10.	Method Detection Limits submitted	✓
11.	Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP	✓

Laboratory Manager or Environmental Consultant's Signature 

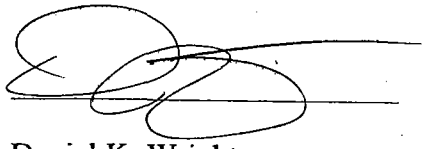
Date 5/9/00

Laboratory Certification #13461

*Refer to NJAC 7:26E - Appendix A, Section IV - Reduced Data Deliverables - Non-USEPA/CLP Methods for further guidance.

Laboratory Authentication Statement

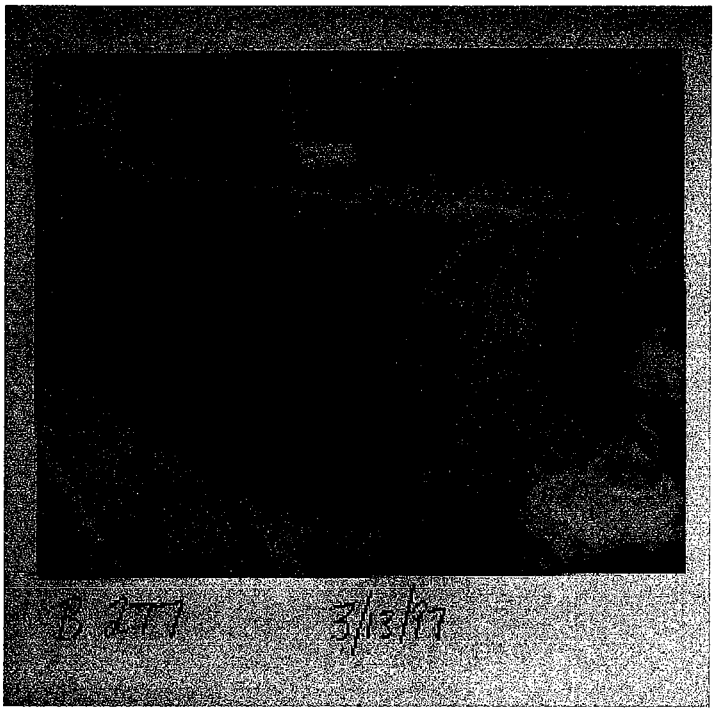
I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N.J.A.C. 7:18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW-846 for Solid Waste Analysis. I have personally examined the information contained in this report and to the best of my knowledge, I believe that the submitted information is true, accurate, complete and meets the above referenced standards where applicable. I am aware that there are significant penalties for purposefully submitting falsified information, including the possibility of a fine and imprisonment.

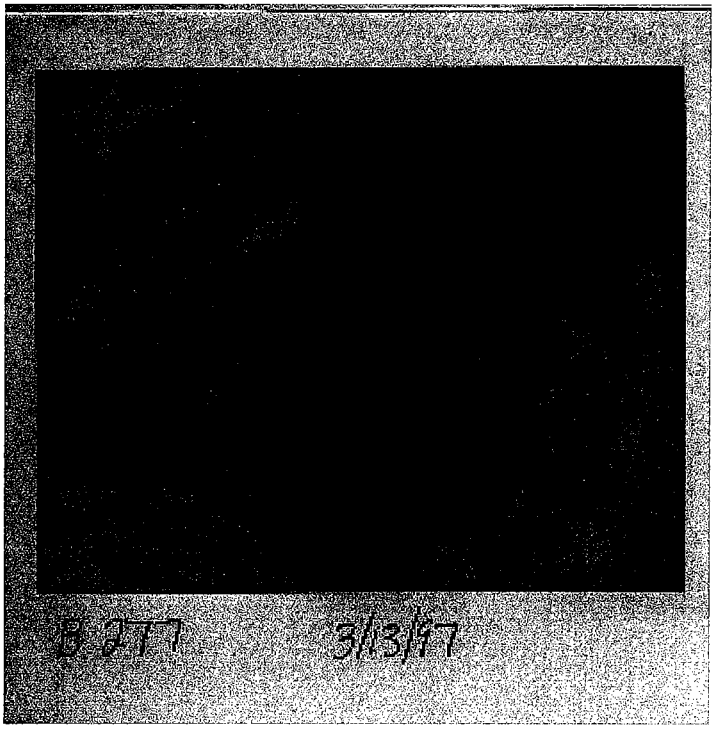


Daniel K. Wright
Laboratory Manager

APPENDIX F

PHOTOGRAPHS





MARCH 13, 1997

PHOTOGRAPHIC LOG

UST NO. 90010-24

Building 277
Main Post-East
Fort Monmouth

VERSAR
Engineers, Managers, Scientists & Planners
Bristol, PA

APPENDIX D

SOIL ANALYTICAL DATA PACKAGE

VOLUME 1

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS
PHONE: (732) 532-6224 FAX: (732) 532-6263
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING
CERTIFICATIONS: NJDEP #13461, NYSDOH #11699

ANALYTICAL DATA REPORT
Fort Monmouth Environmental Laboratory
ENVIRONMENTAL DIVISION
Fort Monmouth, New Jersey
PROJECT: IJO# 01-0001

Bldg. 277

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time Of Collection	Date Received
B-2-A 6'	16180.01	Soil	09-Jun-01 10:20	06/11/01
B-2 6'	16180.02	Soil	09-Jun-01 10:40	06/11/01
B-2-B 6'	16180.03	Soil	09-Jun-01 10:50	06/11/01
F. D. 6'	16180.04	Soil	09-Jun-01	06/11/01

ANALYSIS:
FORT MONMOUTH ENVIRONMENTAL LAB
VOA+15, TPHC, %SOLIDS

ENCLOSURE:
CHAIN OF CUSTODY
RESULTS

7-5-01
Daniel Wright/Date
Laboratory Director

Table of Contents

CHAIN OF CUSTODY

Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:wrightd@mail1.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: D. DESAI - VERSAR
Phone #: X21475
( )DERA ( )OMA ( )Other:_____

Project No: 01-0001
Location: BLDG 277

Samplers Name / Company:

Lims Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	Analysis Parameters: VOA* +15	TPHC	% SOLID					HNU	Comments: Remarks / Preservation Method
1 11e180.**1	B-2-A 6'	6-9-01	1020	SOIL	2	X	X	X					3 ppm	V02484 <4°C
2	B-2 6'	"	1040	"	"	X	X	X					10 PPM	V02485 "
3	B-2-B 6'	"	1050	"	"	X	X	X					80 PPM	V02486 "
4	FID. 6'	"	~	"	"	X	X	X					—	V02487 "

Comments: * * SAMPLE SAT. W/ H20

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Marilyn	6-11-01 0730	J. Ullrich			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: (_)Full, (X)Reduced, (_)Standard, (_)Screen / non-certified, (_)EDD
Turnaround time: (X)Standard 3 wks, (_)Rush ____ Days, (_)ASAP Verbal ____ Hrs.

Remarks: * HOLD VOA'S - RUN VOA HIGHEST TPHC SAMPLE T.B. W/ BLDG. 277

000002

print legibly

Coc.xls2/6/01

METHOD SUMMARY

Method Summary

NJDEP Method 8260

Gas Chromatographic Determination of Volatiles in Soil

A 50uL volume of Methanol Samples soil is added to 5mL aliquot of water. Surrogates and internal standards are added and the sample is placed on a purge and trap concentrator. The sample as purged and desorbed into a GC/MS system.

Volatiles are identified and quantitated. The final concentration is calculated using soil weight, percent solid, methanol volume and concentration.

NJDEP Method OQA-QAM-025-10/97
Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

Fifteen grams (15g)(wet weight) of a soil sample is added to a 125 mL acid cleaned, solvent rinsed, capped Erlenmeyer flask. 15g anhydrous sodium sulfate is added to dry sample. Surrogate standard spiking solution is then added to the flask.
Twenty-five milliliters (25mL) Methylene Chloride is added to the flask and it is secured on a orbital shaker table. The agitation rate is set to 400rpm and the sample is shaken for 30 minutes. The flask is the removed from the table and the particulate matter is allowed to settle. The extract is transferred to a Teflon capped vial. A second 25mL of Methylene Chloride is added to the flask and shaken for an additional 30 minutes. The flask is again removed and allowed to settle. The extracts are combined in the vial then transferred to a 1mL-autosampler vial.
The extract is then injected directly into a GC-FID for analysis. The sample is analyzed for petroleum hydrocarbons covering a range of C8-C42 including Pristane and Phytane. Total Petroleum Hydrocarbon concentration is determined by integrating between 5 minutes and 22 minutes. The baseline is established by starting the integration after the end of the solvent peak and stopping after the last peak.
The final concentration of Total Petroleum Hydrocarbons is calculated using percent solid, sample weight and concentration.

LABORATORY CHRONICLE

Laboratory Chronicle

Lab ID: 16180 Site: Bldg. 277

	Date	Hold Time
Date Sampled	06/09/01	NA
Receipt/Refrigeration	06/11/01*	NA
Extractions		
1. TPHC	06/18/01	14 days
Analyses		
1. Volatile Organics	06/11/01	14 days
2. TPHC	06/18/01	40 days

* Samples received and refrigerated on 06/09/01, received on 6/11/01.

CONFORMANCE/ NON-CONFORMANCE

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

	Indicate Yes, No, N/A
1. Chromatograms labeled/Compounds identified (Field samples and method blanks)	yes
2. Retention times for chromatograms provided	yes
3. GC/MS Tune Specifications	
a. BFB Meet Criteria	yes
b. DFTPP Meet Criteria	NA
4. GC/MS Tuning Frequency – Performed every 24 hours for 600 series and 12 hours for 8000 series	yes
5. GC/MS Calibration – Initial Calibration performed before sample analysis and continuing calibration performed within 24 hours of sample analysis for 600 series and 12 hours for 8000 series	yes
6. GC/MS Calibration requirements	
a. Calibration Check Compounds Meet Criteria	yes
b. System Performance Check Compounds Meet Criteria	yes
7. Blank Contamination – If yes, List compounds and concentrations in each blank:	no
a. VOA Fraction	
b. B/N Fraction NA	
c. Acid Fraction NA	
8. Surrogate Recoveries Meet Criteria	yes
If not met, list those compounds and their recoveries, which fall outside the acceptable range:	
a. VOA Fraction	
b. B/N Fraction NA	
c. Acid Fraction NA	
If not met, were the calculations checked and the results qualified as "estimated"?	
9. Matrix Spike/Matrix Spike Duplicate Recoveries Meet Criteria (If not met, list those compounds and their recoveries, which fall outside the acceptable range)	yes
a. VOA Fraction	
b. B/N Fraction NA	
c. Acid Fraction NA	

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT (cont.)

Indicate
Yes, No, N/A

10. Internal Standard Area/Retention Time Shift Meet Criteria — YES
(If not met, list those compounds, which fall outside the acceptable range)

    a. VOA Fraction _____
    b. B/N Fraction NA
    c. Acid Fraction NA

11. Extraction Holding Time Met — NA

If not met, list the number of days exceeded for each sample: _____

12. Analysis Holding Time Met — YES

If not met, list the number of days exceeded for each sample: _____

Additional Comments:

Laboratory Manager: _____ Date: 7-5-01

TPHC Conformance/Non-conformance Summary Report

		Indicate Yes, No, N/A
1.	Method Detection Limits provided.	yes
2.	Method Blank Contamination – If yes, list the sample and the Corresponding concentrations in each blank.	NO
3.	Matrix Spike Results Summary Meet Criteria (If not met, list the sample and corresponding recovery which falls outside the acceptable range).	yes
4.	Duplicate Results Summary Meet Criteria (If not met, list the sample and corresponding recovery which falls outside the acceptable range). RPD @ 21.93	NO
5.	IR Spectra submitted for standards, blanks and samples.	NA
6.	Chromatograms submitted for standards, blanks and samples if GC fingerprinting was conducted.	yes
7.	Analysis holding time met. (If not met, list number of days exceeded for each sample).	yes

Additional comments: _____

Laboratory Manager

6-26-01
Date

VOLATILE ORGANCIS

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

MB 1915

Lab Name: FMETL NJDEP # 13461

Project: 010001 Case No.: 16180 Location: 277 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: MB

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC006097.D

Level: (low/med) MED Date Received: 6/11/01

% Moisture: not dec. 0 Date Analyzed: 6/11/01

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 125 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	700	U
107131	Acrylonitrile	700	U
75650	tert-Butyl alcohol	1300	U
1634044	Methyl-tert-Butyl ether	300	U
108203	Di-isopropyl ether	200	U
75718	Dichlorodifluoromethane	400	U
74-87-3	Chloromethane	100	U
75-01-4	Vinyl Chloride	300	U
74-83-9	Bromomethane	200	U
75-00-3	Chloroethane	300	U
75-69-4	Trichlorofluoromethane	200	U
75-35-4	1,1-Dichloroethene	100	U
67-64-1	Acetone	200	U
75-15-0	Carbon Disulfide	100	U
75-09-2	Methylene Chloride	200	U
156-60-5	trans-1,2-Dichloroethene	200	U
75-35-3	1,1-Dichloroethane	100	U
108-05-4	Vinyl Acetate	300	U
78-93-3	2-Butanone	300	U
	cis-1,2-Dichloroethene	100	U
67-66-3	Chloroform	100	U
75-55-6	1,1,1-Trichloroethane	100	U
56-23-5	Carbon Tetrachloride	200	U
71-43-2	Benzene	100	U
107-06-2	1,2-Dichloroethane	200	U
79-01-6	Trichloroethene	100	U
78-87-5	1,2-Dichloropropane	100	U
75-27-4	Bromodichloromethane	100	U
110-75-8	2-Chloroethyl vinyl ether	200	U
10061-01-5	cis-1,3-Dichloropropene	100	U
108-10-1	4-Methyl-2-Pentanone	200	U
108-88-3	Toluene	100	U
10061-02-6	trans-1,3-Dichloropropene	200	U
79-00-5	1,1,2-Trichloroethane	200	U
127-18-4	Tetrachloroethene	100	U
591-78-6	2-Hexanone	200	U
126-48-1	Dibromochloromethane	200	U
108-90-7	Chlorobenzene	100	U
100-41-4	Ethylbenzene	200	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

MB 1915

Lab Name: FMETL NJDEP # 13461

Project: 010001 Case No.: 16180 Location: 277 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: MB

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC006097.D

Level: (low/med) MED Date Received: 6/11/01

% Moisture: not dec. 0 Date Analyzed: 6/11/01

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 125 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	300	U
1330-20-7	o-Xylene	200	U
100-42-5	Styrene	200	U
75-25-2	Bromoform	200	U
79-34-5	1,1,2,2-Tetrachloroethane	200	U
541-73-1	1,3-Dichlorobenzene	300	U
106-46-7	1,4-Dichlorobenzene	300	U
95-50-1	1,2-Dichlorobenzene	300	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

MB 1915

Lab Name: FMETL NJDEP # 13461

Project: 010001 Case No.: 16180 Location: 277 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: MB

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VC006097.D

Level: (low/med) MED Date Received: 6/11/01

% Moisture: not dec. 0 Date Analyzed: 6/11/01

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 125 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

B-2-A

Lab Name: FMETL NJDEP # 13461

Project: 010001 Case No.: 16180 Location: 277 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 1618001

Sample wt/vol: 9.7 (g/ml) G Lab File ID: VC006098.D

Level: (low/med) MED Date Received: 6/11/01

% Moisture: not dec. 14.33 Date Analyzed: 6/11/01

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 125 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	840	U
107131	Acrylonitrile	840	U
75650	tert-Butyl alcohol	1600	U
1634044	Methyl-tert-Butyl ether	360	U
108203	Di-isopropyl ether	240	U
75718	Dichlorodifluoromethane	480	U
74-87-3	Chloromethane	120	U
75-01-4	Vinyl Chloride	360	U
74-83-9	Bromomethane	240	U
75-00-3	Chloroethane	360	U
75-69-4	Trichlorofluoromethane	240	U
75-35-4	1,1-Dichloroethene	120	U
67-64-1	Acetone	240	U
75-15-0	Carbon Disulfide	120	U
75-09-2	Methylene Chloride	240	U
156-60-5	trans-1,2-Dichloroethene	240	U
75-35-3	1,1-Dichloroethane	120	U
108-05-4	Vinyl Acetate	360	U
78-93-3	2-Butanone	360	U
	cis-1,2-Dichloroethene	120	U
67-66-3	Chloroform	120	U
75-55-6	1,1,1-Trichloroethane	120	U
56-23-5	Carbon Tetrachloride	240	U
71-43-2	Benzene	120	U
107-06-2	1,2-Dichloroethane	240	U
79-01-6	Trichloroethene	120	U
78-87-5	1,2-Dichloropropane	120	U
75-27-4	Bromodichloromethane	120	U
110-75-8	2-Chloroethyl vinyl ether	240	U
10061-01-5	cis-1,3-Dichloropropene	120	U
108-10-1	4-Methyl-2-Pentanone	240	U
108-88-3	Toluene	120	U
10061-02-6	trans-1,3-Dichloropropene	240	U
79-00-5	1,1,2-Trichloroethane	240	U
127-18-4	Tetrachloroethene	120	U
591-78-6	2-Hexanone	240	U
126-48-1	Dibromochloromethane	240	U
108-90-7	Chlorobenzene	120	U
100-41-4	Ethylbenzene	240	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID. **B-2-A**

Lab Name: FMETL NJDEP # 13461

Project: 010001 Case No.: 16180 Location: 277 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 1618001

Sample wt/vol: 9.7 (g/ml) G Lab File ID: VC006098.D

Level: (low/med) MED Date Received: 6/11/01

% Moisture: not dec. 14.33 Date Analyzed: 6/11/01

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 125 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	360	U
1330-20-7	o-Xylene	240	U
100-42-5	Styrene	240	U
75-25-2	Bromoform	240	U
79-34-5	1,1,2,2-Tetrachloroethane	240	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

B-2-A

Lab Name: FMETL NJDEP # 13461

Project: 010001 Case No.: 16180 Location: 277 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 1618001

Sample wt/vol: 9.7 (g/ml) G Lab File ID: VC006098.D

Level: (low/med) MED Date Received: 6/11/01

% Moisture: not dec. 14.33 Date Analyzed: 6/11/01

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 125 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

B-2

Lab Name: FMETL NJDEP # 13461

Project: 010001 Case No.: 16180 Location: 277 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 1618002

Sample wt/vol: 9.6 (g/ml) G Lab File ID: VC006099.D

Level: (low/med) MED Date Received: 6/11/01

% Moisture: not dec. 14.97 Date Analyzed: 6/11/01

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 125 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	860	U
107131	Acrylonitrile	860	U
75650	tert-Butyl alcohol	1600	U
1634044	Methyl-tert-Butyl ether	370	U
108203	Di-isopropyl ether	250	U
75718	Dichlorodifluoromethane	490	U
74-87-3	Chloromethane	120	U
75-01-4	Vinyl Chloride	370	U
74-83-9	Bromomethane	250	U
75-00-3	Chloroethane	370	U
75-69-4	Trichlorofluoromethane	250	U
75-35-4	1,1-Dichloroethene	120	U
67-64-1	Acetone	250	U
75-15-0	Carbon Disulfide	120	U
75-09-2	Methylene Chloride	250	U
156-60-5	trans-1,2-Dichloroethene	250	U
75-35-3	1,1-Dichloroethane	120	U
108-05-4	Vinyl Acetate	370	U
78-93-3	2-Butanone	370	U
	cis-1,2-Dichloroethene	120	U
67-66-3	Chloroform	120	U
75-55-6	1,1,1-Trichloroethane	120	U
56-23-5	Carbon Tetrachloride	250	U
71-43-2	Benzene	120	U
107-06-2	1,2-Dichloroethane	250	U
79-01-6	Trichloroethene	120	U
78-87-5	1,2-Dichloropropane	120	U
75-27-4	Bromodichloromethane	120	U
110-75-8	2-Chloroethyl vinyl ether	250	U
10061-01-5	cis-1,3-Dichloropropene	120	U
108-10-1	4-Methyl-2-Pentanone	250	U
108-88-3	Toluene	120	U
10061-02-6	trans-1,3-Dichloropropene	250	U
79-00-5	1,1,2-Trichloroethane	250	U
127-18-4	Tetrachloroethene	120	U
591-78-6	2-Hexanone	250	U
126-48-1	Dibromochloromethane	250	U
108-90-7	Chlorobenzene	120	U
100-41-4	Ethylbenzene	250	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

B-2

Lab Name: FMETL NJDEP # 13461

Project: 010001 Case No.: 16180 Location: 277 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 1618002

Sample wt/vol: 9.6 (g/ml) G Lab File ID: VC006099.D

Level: (low/med) MED Date Received: 6/11/01

% Moisture: not dec. 14.97 Date Analyzed: 6/11/01

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 125 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	370	U
1330-20-7	o-Xylene	250	U
100-42-5	Styrene	250	U
75-25-2	Bromoform	250	U
79-34-5	1,1,2,2-Tetrachloroethane	250	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
95-50-1	1,2-Dichlorobenzene	370	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

B-2

Lab Name: FMETL NJDEP # 13461

Project: 010001 Case No.: 16180 Location: 277 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 1618002

Sample wt/vol: 9.6 (g/ml) G Lab File ID: VC006099.D

Level: (low/med) MED Date Received: 6/11/01

% Moisture: not dec. 14.97 Date Analyzed: 6/11/01

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 125 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

B-2-B

Lab Name: FMETL NJDEP # 13461

Project: 010001 Case No.: 16180 Location: 277 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 1618003

Sample wt/vol: 9.5 (g/ml) G Lab File ID: VC006100.D

Level: (low/med) MED Date Received: 6/11/01

% Moisture: not dec. 19.98 Date Analyzed: 6/11/01

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 125 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	920	U
107131	Acrylonitrile	920	U
75650	tert-Butyl alcohol	1700	U
1634044	Methyl-tert-Butyl ether	390	U
108203	Di-isopropyl ether	260	U
75718	Dichlorodifluoromethane	530	U
74-87-3	Chloromethane	130	U
75-01-4	Vinyl Chloride	390	U
74-83-9	Bromomethane	260	U
75-00-3	Chloroethane	390	U
75-69-4	Trichlorofluoromethane	260	U
75-35-4	1,1-Dichloroethene	130	U
67-64-1	Acetone	260	U
75-15-0	Carbon Disulfide	130	U
75-09-2	Methylene Chloride	260	U
156-60-5	trans-1,2-Dichloroethene	260	U
75-35-3	1,1-Dichloroethane	130	U
108-05-4	Vinyl Acetate	390	U
78-93-3	2-Butanone	390	U
	cis-1,2-Dichloroethene	130	U
67-66-3	Chloroform	130	U
75-55-6	1,1,1-Trichloroethane	130	U
56-23-5	Carbon Tetrachloride	260	U
71-43-2	Benzene	130	U
107-06-2	1,2-Dichloroethane	260	U
79-01-6	Trichloroethene	130	U
78-87-5	1,2-Dichloropropane	130	U
75-27-4	Bromodichloromethane	130	U
110-75-8	2-Chloroethyl vinyl ether	260	U
10061-01-5	cis-1,3-Dichloropropene	130	U
108-10-1	4-Methyl-2-Pentanone	260	U
108-88-3	Toluene	130	U
10061-02-6	trans-1,3-Dichloropropene	260	U
79-00-5	1,1,2-Trichloroethane	260	U
127-18-4	Tetrachloroethene	130	U
591-78-6	2-Hexanone	260	U
126-48-1	Dibromochloromethane	260	U
108-90-7	Chlorobenzene	130	U
100-41-4	Ethylbenzene	260	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

B-2-B

Lab Name: FMETL NJDEP # 13461

Project: 010001 Case No.: 16180 Location: 277 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 1618003

Sample wt/vol: 9.5 (g/ml) G Lab File ID: VC006100.D

Level: (low/med) MED Date Received: 6/11/01

% Moisture: not dec. 19.98 Date Analyzed: 6/11/01

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 125 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	390	U
1330-20-7	o-Xylene	260	U
100-42-5	Styrene	260	U
75-25-2	Bromoform	260	U
79-34-5	1,1,2,2-Tetrachloroethane	260	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
95-50-1	1,2-Dichlorobenzene	390	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

B-2-B

Lab Name: FMETL NJDEP # 13461

Project: 010001 Case No.: 16180 Location: 277 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 1618003

Sample wt/vol: 9.5 (g/ml) G Lab File ID: VC006100.D

Level: (low/med) MED Date Received: 6/11/01

% Moisture: not dec. 19.98 Date Analyzed: 6/11/01

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 125 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 15

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 005911-04-6	Nonane, 3-methyl-	28.11	4500	JN
2.	unknown	28.53	3300	J
3.	unknown	30.06	4800	J
4. 004291-79-6	Cyclohexane, 1-methyl-2-propyl-	30.53	2700	JN
5.	unknown	30.65	3200	J
6. 002847-72-5	Decane, 4-methyl-	30.90	4200	JN
7.	unknown	31.93	3900	J
8. 001678-93-9	Cyclohexane, butyl-	32.17	3100	JN
9.	unknown	32.34	2500	J
10.	unknown	32.80	3300	J
11. 025340-17-4	Benzene, diethyl-	33.37	4100	JN
12.	unknown	33.77	2600	J
13.	unknown	34.43	3200	J
14. 004292-92-6	Cyclohexane, pentyl-	34.85	4300	JN
15.	unknown	34.95	4200	J

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

FD

Lab Name: FMETL NJDEP # 13461

Project: 010001 Case No.: 16180 Location: 277 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 1618004

Sample wt/vol: 9.9 (g/ml) G Lab File ID: VC006101.D

Level: (low/med) MED Date Received: 6/11/01

% Moisture: not dec. 11.28 Date Analyzed: 6/11/01

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 125 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	790	U
107131	Acrylonitrile	790	U
75650	tert-Butyl alcohol	1500	U
1634044	Methyl-tert-Butyl ether	340	U
108203	Di-isopropyl ether	230	U
75718	Dichlorodifluoromethane	450	U
74-87-3	Chloromethane	110	U
75-01-4	Vinyl Chloride	340	U
74-83-9	Bromomethane	230	U
75-00-3	Chloroethane	340	U
75-69-4	Trichlorofluoromethane	230	U
75-35-4	1,1-Dichloroethene	110	U
67-64-1	Acetone	230	U
75-15-0	Carbon Disulfide	110	U
75-09-2	Methylene Chloride	230	U
156-60-5	trans-1,2-Dichloroethene	230	U
75-35-3	1,1-Dichloroethane	110	U
108-05-4	Vinyl Acetate	340	U
78-93-3	2-Butanone	340	U
	cis-1,2-Dichloroethene	110	U
67-66-3	Chloroform	110	U
75-55-6	1,1,1-Trichloroethane	110	U
56-23-5	Carbon Tetrachloride	230	U
71-43-2	Benzene	110	U
107-06-2	1,2-Dichloroethane	230	U
79-01-6	Trichloroethene	110	U
78-87-5	1,2-Dichloropropane	110	U
75-27-4	Bromodichloromethane	110	U
110-75-8	2-Chloroethyl vinyl ether	230	U
10061-01-5	cis-1,3-Dichloropropene	110	U
108-10-1	4-Methyl-2-Pentanone	230	U
108-88-3	Toluene	110	U
10061-02-6	trans-1,3-Dichloropropene	230	U
79-00-5	1,1,2-Trichloroethane	230	U
127-18-4	Tetrachloroethene	110	U
591-78-6	2-Hexanone	230	U
126-48-1	Dibromochloromethane	230	U
108-90-7	Chlorobenzene	110	U
100-41-4	Ethylbenzene	230	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

FD

Lab Name: FMETL NJDEP # 13461

Project: 010001 Case No.: 16180 Location: 277 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 1618004

Sample wt/vol: 9.9 (g/ml) G Lab File ID: VC006101.D

Level: (low/med) MED Date Received: 6/11/01

% Moisture: not dec. 11.28 Date Analyzed: 6/11/01

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 125 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	340	U
1330-20-7	o-Xylene	230	U
100-42-5	Styrene	230	U
75-25-2	Bromoform	230	U
79-34-5	1,1,2,2-Tetrachloroethane	230	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

FD

Lab Name: FMETL NJDEP # 13461

Project: 010001 Case No.: 16180 Location: 277 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 1618004

Sample wt/vol: 9.9 (g/ml) G Lab File ID: VC006101.D

Level: (low/med) MED Date Received: 6/11/01

% Moisture: not dec. 11.28 Date Analyzed: 6/11/01

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 125 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 7

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	27.47	1500	J
2.	unknown	29.39	1100	J
3.	unknown	30.53	1200	J
4.	unknown	31.39	1500	J
5.	unknown	32.17	2300	J
6.	unknown	33.05	1200	J
7.	unknown	34.44	1700	J

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: FMETL NJDEP # 13461

Project: 010001 Case No.: 16180 Location: 277 SDG No.:

Lab File ID: VC005963.D BFB Injection Date: 5/30/01

Instrument ID: GCMSVoa BFB Injection Time: 13:52

GC Column: Rtx502.2 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	19.8
75	30.0 - 66.0% of mass 95	52.4
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.9
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 120.0% of mass 95	67.6
175	4.0 - 9.0% of mass 174	5.0 (7.4)1
176	93.0 - 101.0% of mass 174	66.1 (97.9)1
177	5.0 - 9.0% of mass 176	4.4 (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:

	FIELD ID.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD100	VSTD100	VC005964.D	5/30/01	14:21
02	VSTD050	VSTD050	VC005965.D	5/30/01	15:03
03	VSTD020	VSTD020	VC005966.D	5/30/01	15:44
04	VSTD010	VSTD010	VC005967.D	5/30/01	16:25
05	VSTD005	VSTD005	VC005968.D	5/30/01	17:06

Response Factor Report GC/MS Ins

Method : D:\HPCHEM\1\METHODS\M362444.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Wed Jun 20 14:04:20 2001
Response via : Initial Calibration

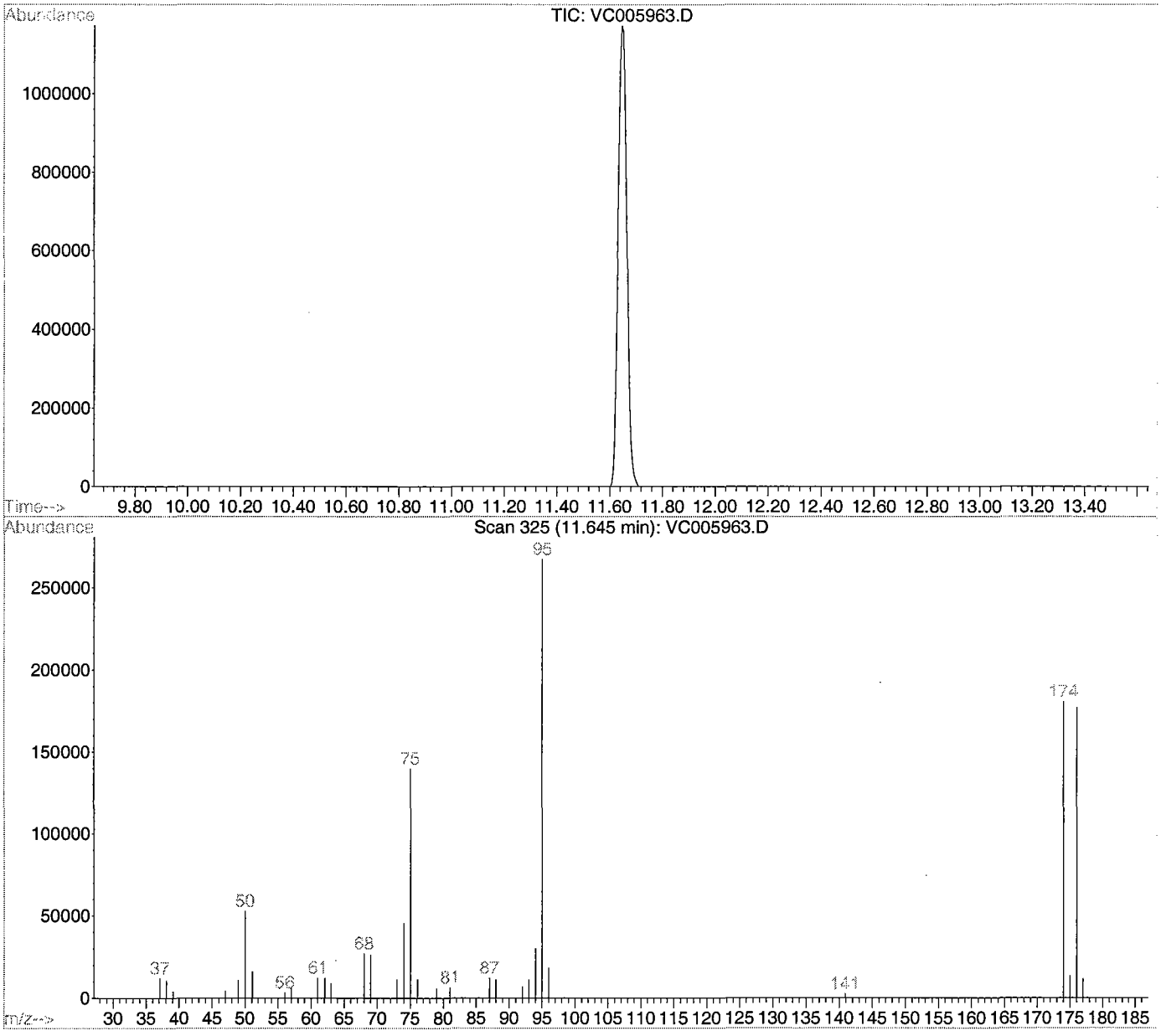
Calibration Files
50 =VC005965.D 5 =VC005968.D 10 =VC005967.D
20 =VC005966.D 100 =VC005964.D

		Compound	50	5	10	20	100	Avg	%RSD
1)	I	Bromochloromethane	----------ISTD----------						
2)	t	Acrolein	0.655	0.600	0.650	0.602	0.627	0.627	4.14
3)	t	Acrylonitrile	1.332	1.316	1.406	1.285	1.236	1.315	4.75
4)	t	tert-Butyl alcohol	0.269	0.190	0.235	0.230	0.285	0.242	15.22
5)	t	Methyl-tert-Butyl eth	7.186	6.328	6.860	6.596	7.107	6.815	5.24
6)	t	Di-isopropyl ether	1.946	1.637	1.831	1.812	1.925	1.830	6.68
7)	T	Dichlorodifluorometha	2.492	2.322	2.337	2.309	2.439	2.380	3.40
8)	TP	Chloromethane	2.152	2.189	2.197	2.036	2.105	2.136	3.11
9)	TC	Vinyl Chloride	1.918	2.114	2.032	1.874	1.810	1.950	6.29
10)	T	Bromomethane	1.479	1.516	1.508	1.421	1.416	1.468	3.23
11)	T	Chloroethane	1.714	1.654	1.680	1.610	1.700	1.672	2.47
12)	T	Trichlorofluoromethan	3.002	2.910	2.946	2.835	2.913	2.921	2.08
13)	MC	1,1-Dichloroethene	3.457	3.282	3.392	3.241	3.395	3.353	2.65
14)	T	Acetone	0.954	1.353	1.152	0.932	1.069	1.092	15.64
15)	T	Carbon Disulfide	6.478	5.906	6.262	6.140	6.406	6.239	3.64
16)	T	Methylene Chloride	2.206	2.134	2.248	2.110	2.175	2.175	2.54
17)	T	trans-1,2-Dichloroeth	3.358	3.243	3.357	3.193	3.283	3.287	2.19
18)	TP	1,1-Dichloroethane	4.191	4.040	4.181	3.965	4.094	4.094	2.33
19)	T	Vinyl Acetate	5.818	4.756	5.355	5.281	5.680	5.378	7.68
20)	T	2-Butanone	1.373	1.129	1.279	1.215	1.480	1.295	10.53
21)	T	cis-1,2-Dichloroethen	3.293	3.124	3.303	3.130	3.203	3.211	2.67
22)	TC	Chloroform	3.802	3.710	3.816	3.627	3.678	3.726	2.18
23)	T	1,1,1-Trichloroethane	3.189	2.877	3.074	2.971	3.116	3.045	4.03
24)	T	Carbon Tetrachloride	2.661	2.394	2.481	2.447	2.651	2.527	4.84
25)	S	1,2-Dichloroethane-d4	2.823	2.824	2.794	2.806	2.806	2.811	0.46
26)	I	1,4-Difluorobenzene	----------ISTD----------						
27)	TM	Benzene	1.341	1.358	1.398	1.312	1.259	1.334	3.90
28)	T	1,2-Dichloroethane	0.482	0.509	0.511	0.471	0.468	0.488	4.21
29)	TM	Trichloroethene	0.331	0.319	0.331	0.317	0.325	0.324	2.03
30)	TC	1,2-Dichloropropane	0.365	0.353	0.367	0.349	0.357	0.358	2.24
31)	T	Bromodichloromethane	0.386	0.337	0.367	0.361	0.388	0.368	5.74
32)	T	2-Chloroethyl vinyl e	0.130	0.129	0.133	0.126	0.128	0.129	2.04
33)	T	cis-1,3-Dichloroprope	0.530	0.438	0.486	0.487	0.529	0.494	7.67
34)	T	4-Methyl-2-Pentanone	0.166	0.130	0.156	0.149	0.171	0.154	10.28
35)	S	Toluene-d8	1.212	1.214	1.207	1.208	1.219	1.212	0.40
36)	TCM	Toluene	1.318	1.368	1.388	1.304	1.227	1.321	4.76
37)	I	Chlorobenzene-d5	----------ISTD----------						
38)	T	trans-1,3-Dichloropro	1.731	1.351	1.568	1.586	1.730	1.593	9.78
39)	T	1,1,2-Trichloroethane	0.985	0.956	1.014	0.958	0.958	0.974	2.60
40)	T	Tetrachloroethene	1.006	0.992	1.028	0.977	0.973	0.995	2.26
41)	T	2-Hexanone	0.872	0.628	0.787	0.779	0.902	0.794	13.43
42)	T	Dibromochloromethane	0.887	0.680	0.789	0.791	0.905	0.810	11.16
43)	TMP	Chlorobenzene	2.876	2.962	3.067	2.866	2.749	2.904	4.08
44)	TC	Ethylbenzene	5.054	5.148	5.347	5.082	4.595	5.045	5.48
45)	T	m+p-Xylenes	1.927	1.979	2.049	1.933	1.805	1.939	4.59
46)	T	o-Xylene	3.958	3.815	4.074	3.912	3.732	3.898	3.38
47)	T	Styrene	3.339	3.010	3.346	3.248	3.212	3.231	4.22
48)	TP	Bromoform	0.571	0.373	0.469	0.486	0.596	0.499	17.81
49)	S	Bromofluorobenzene	1.669	1.658	1.672	1.672	1.694	1.673	0.77
50)	TP	1,1,2,2-Tetrachloroet	1.303	1.248	1.365	1.289	1.273	1.295	3.36
51)	T	1,3-Dichlorobenzene	2.092	1.991	2.132	2.050	2.001	2.053	2.91
52)	T	1,4-Dichlorobenzene	2.078	1.952	2.102	2.033	1.989	2.031	3.05
53)	T	1,2-Dichlorobenzene	1.966	1.847	1.999	1.933	1.881	1.925	3.22

(#) = Out of Range

000028

Data File : D:\HPCHEM\1\DATA\010530\VC005963.D Vial: 2
Acq On : 30 May 2001 1:52 pm Operator: Skelton
Sample : BFB Tune Inst : GC/MS Ins
Misc : BFB Tune Multiplr: 1.00
MS Integration Params: ACETONE.P
Method : D:\HPCHEM\1\METHODS\M362444.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP



Spectrum Information: Scan 325

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.8	52848	PASS
75	95	30	60	52.4	140096	PASS
95	95	100	100	100.0	267520	PASS
96	95	5	9	6.9	18496	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	67.6	180736	PASS
175	174	5	9	7.4	13443	PASS
176	174	95	101	97.9	176896	PASS
177	176	5	9	6.6	11645	PASS

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: FMETL NJDEP # 13461

Project: 010001 Case No.: 16180 Location: 277 SDG No.:

Lab File ID: VC006095.D BFB Injection Date: 6/11/01

Instrument ID: GCMSVoa BFB Injection Time: 13:33

GC Column: Rtx502.2 ID: 0.25 (mm) Heated Purge: (Y/N) N

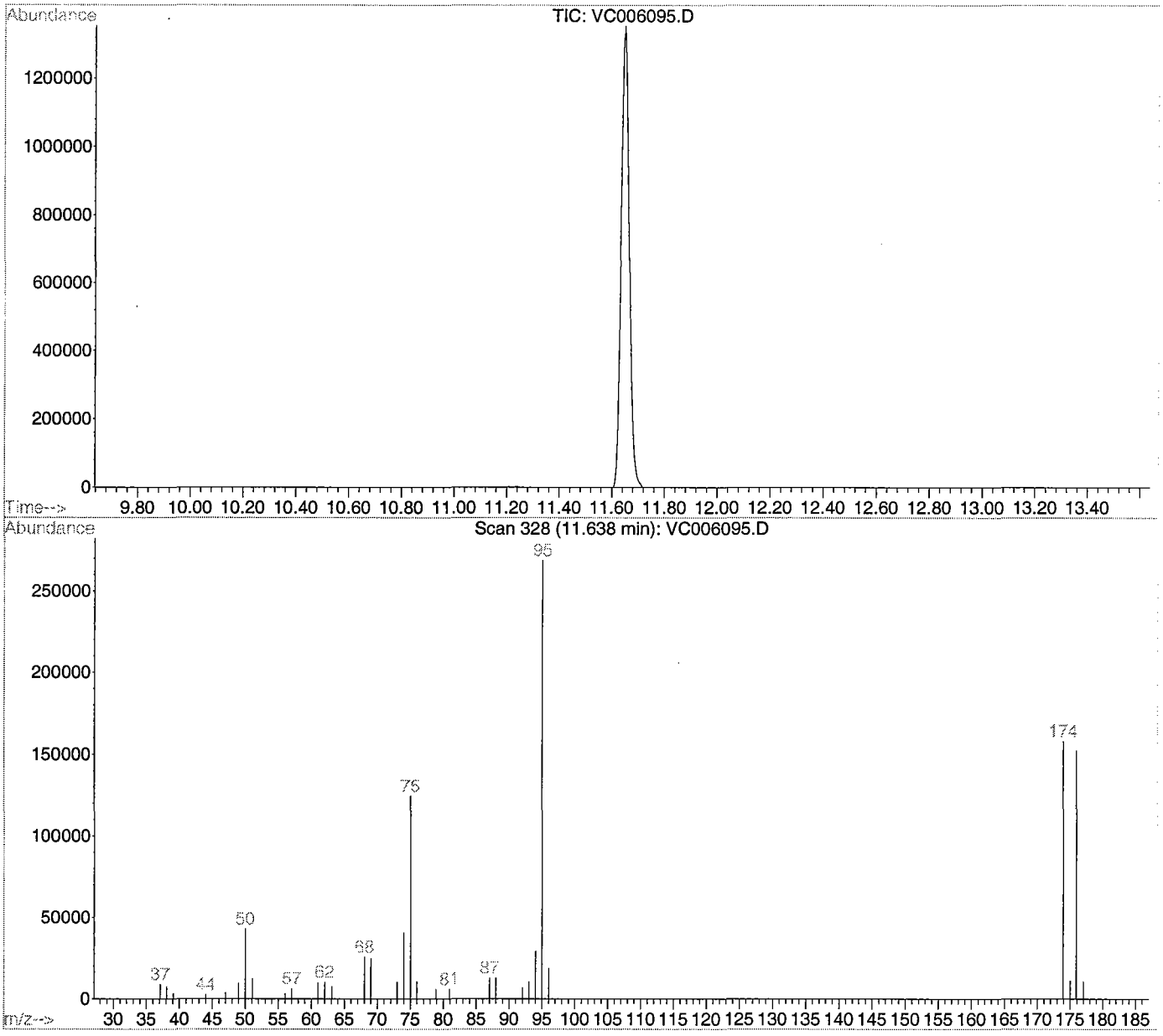
m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	16.0
75	30.0 - 66.0% of mass 95	46.4
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.0
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 120.0% of mass 95	58.8
175	4.0 - 9.0% of mass 174	4.2 (7.2)1
176	93.0 - 101.0% of mass 174	56.7 (96.4)1
177	5.0 - 9.0% of mass 176	4.0 (7.0)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	FIELD ID.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD020	VSTD020	VC006096.D	6/11/01	14:03
02	MB 1915	MB	VC006097.D	6/11/01	14:53
03	B-2-A	1618001	VC006098.D	6/11/01	15:45
04	B-2	1618002	VC006099.D	6/11/01	16:27
05	B-2-B	1618003	VC006100.D	6/11/01	17:09
06	FD	1618004	VC006101.D	6/11/01	17:51
07	1618104 MS	1618104MS	VC006104.D	6/11/01	19:55
08	1618104 MSD	1618104MSD	VC006105.D	6/11/01	20:37

Data File : D:\HPCHEM\1\DATA\010611\VC006095.D Vial: 1
Acq On : 11 Jun 2001 1:33 pm Operator: Skelton
Sample : BFB Tune Inst : GC/MS Ins
Misc : BFB Tune Multiplr: 1.00
MS Integration Params: ACETONE.P
Method : D:\HPCHEM\1\METHODS\M362444.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP



Spectrum Information: Scan 328

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.0	43008	PASS
75	95	30	60	46.4	124624	PASS
95	95	100	100	100.0	268864	PASS
96	95	5	9	7.0	18776	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	58.8	158208	PASS
175	174	5	9	7.2	11341	PASS
176	174	95	101	96.4	152448	PASS
177	176	5	9	7.0	10680	PASS

Evaluate Continuing Calibration Report

Data File : D:\HPCHEM\1\DATA\010611\VC006096.D Vial: 2
Acq On : 11 Jun 2001 2:03 pm Operator: Skelton
Sample : Vstd020 Inst : GC/MS Ins
Misc : Vstd020 Multiplr: 1.00
MS Integration Params: ACETONE.P

Method : D:\HPCHEM\1\METHODS\M362444.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Wed Jun 20 14:04:20 2001
Response via : Multiple Level Calibration

Min. RRF : 0.025 Min. Rel. Area : 25% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane	1.000	1.000	0.0	129	0.00
2	t	Acrolein	0.627	0.576	8.1	124	0.00
3	t	Acrylonitrile	1.315	1.249	5.0	126	0.00
4	t	tert-Butyl alcohol	0.242	0.162	33.1#	91	-0.01
5	t	Methyl-tert-Butyl ether	6.815	5.783	15.1	113	-0.01
6	t	Di-isopropyl ether	1.830	1.741	4.9	124	0.01
7	T	Dichlorodifluoromethane	2.380	2.667	-12.1	149	0.00
8	TP	Chloromethane	2.136	2.140	-0.2	136	0.00
9	TC	Vinyl Chloride	1.950	2.158	-10.7	149	0.00
10	T	Bromomethane	1.468	1.447	1.4	132	0.00
11	T	Chloroethane	1.672	1.621	3.1	130	0.00
12	T	Trichlorofluoromethane	2.921	2.824	3.3	129	-0.01
13	MC	1,1-Dichloroethene	3.353	2.994	10.7	120	0.00
14	T	Acetone	1.092	0.783	28.3#	109	0.00
15	T	Carbon Disulfide	6.239	6.547	-4.9	138	0.00
16	T	Methylene Chloride	2.175	2.346	-7.9	144	0.00
17	T	trans-1,2-Dichloroethene	3.287	3.024	8.0	123	0.00
18	TP	1,1-Dichloroethane	4.094	3.891	5.0	127	0.00
19	T	Vinyl Acetate	5.378	3.951	26.5#	97	0.01
20	T	2-Butanone	1.295	0.908	29.9#	97	0.00
21	T	cis-1,2-Dichloroethene	3.211	2.901	9.7	120	0.00
22	TC	Chloroform	3.726	3.769	-1.2	134	0.00
23	T	1,1,1-Trichloroethane	3.045	2.989	1.8	130	0.01
24	T	Carbon Tetrachloride	2.527	2.614	-3.4	138	0.00
25	S	1,2-Dichloroethane-d4	2.811	2.297	18.3	106	0.00
26	I	1,4-Difluorobenzene	1.000	1.000	0.0	129	0.00
27	TM	Benzene	1.334	1.430	-7.2	141	0.01
28	T	1,2-Dichloroethane	0.488	0.422	13.5	116	0.00
29	TM	Trichloroethene	0.324	0.344	-6.2	140	0.00
30	TC	1,2-Dichloropropane	0.358	0.343	4.2	127	-0.01
31	T	Bromodichloromethane	0.368	0.386	-4.9	138	0.00
32	T	2-Chloroethyl vinyl ether	0.129	0.120	7.0	123	-0.01
33	T	cis-1,3-Dichloropropene	0.494	0.487	1.4	129	0.00
34	T	4-Methyl-2-Pentanone	0.154	0.134	13.0	116	-0.01
35	S	Toluene-d8	1.212	1.195	1.4	128	0.00
36	TCM	Toluene	1.321	1.443	-9.2	143	0.00
37	I	Chlorobenzene-d5	1.000	1.000	0.0	127	0.00
38	T	trans-1,3-Dichloropropene	1.593	1.559	2.1	125	0.00
39	T	1,1,2-Trichloroethane	0.974	1.115	-14.5	148	0.00
40	T	Tetrachloroethene	0.995	1.009	-1.4	131	0.00
41	T	2-Hexanone	0.794	0.611	23.0	99	0.00
42	T	Dibromochloromethane	0.810	0.914	-12.8	146	0.00
43	TMP	Chlorobenzene	2.904	3.252	-12.0	144	0.01
44	TC	Ethylbenzene	5.045	5.591	-10.8	140	0.00
45	T	m+p-Xylenes	1.939	2.093	-7.9	137	0.01
46	T	o-Xylene	3.898	3.960	-1.6	128	0.00
47	T	Styrene	3.231	3.486	-7.9	136	0.00
48	TP	Bromoform	0.499	0.568	-13.8	148	0.00
49	S	Bromofluorobenzene	1.673	1.580	5.6	120	0.00
50	TP	1,1,2,2-Tetrachloroethane	1.295	1.431	-10.5	141	0.00
51	T	1,3-Dichlorobenzene	2.053	2.003	2.4	124	0.00
52	T	1,4-Dichlorobenzene	2.031	1.970	3.0	123	0.00
53	T	1,2-Dichlorobenzene	1.925	1.898	1.4	125	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

4A

VOLATILE METHOD BLANK SUMMARY

FIELD ID.

MB 1915

Lab Name: FMETL NJDEP # 13461

Project: 010001 Case No.: 16180 Location: 277 SDG No.:

Lab File ID: VC006097.D Lab Sample ID: MB

Date Analyzed: 6/11/01 Time Analyzed: 14:53

GC Column: Rtx502.2 ID: 0.25 (mm) Heated Purge: (Y/N) N

Instrument ID: GCMSVoa

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	FIELD ID.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	B-2	1618002	VC006099.D	16:27
02	B-2-B	1618003	VC006100.D	17:09
03	FD	1618004	VC006101.D	17:51
04	1618104 MS	1618104MS	VC006104.D	19:55
05	1618104 MSD	1618104MSD	VC006105.D	20:37

COMMENTS:

2B

SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: FMETL **Project** 01-0001

NJDEP # 13461 **Location** Bldg277

	EPA SAMPLE NO.	SMC1 1,2-DCE-d4	SMC2 Tol-d8	SMC3 BFB	TOT OUT
01	MB 1915	83.0%	97.6%	88.7%	0
02	B-2-A	101.3%	106.0%	113.8%	0
03	B-2	99.8%	105.8%	112.1%	0
04	B-2-B	100.9%	106.8%	116.0%	0
05	FD	99.1%	105.1%	109.5%	0

SMC1	1,2-DCE-d4	=	1,2-Dichloroethane-d4
SMC2	Tol-d8	=	Toluene-d8
SMC3	BFB	=	Bromofluorobenzene

D System Monitoring Compounds diluted out

Spike Recovery and RPD Summary Report - Soil

Method : D:\HPCHEM\1\METHODS\M362444.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Wed Jun 20 14:04:20 2001
Response via : Initial Calibration

Non-Spiked Sample: VC006103.D

	Spike Sample	Spike Duplicate Sample
File ID :	VC006104.D	VC006105.D
Sample :	1618104MS	1618104MSD
Acq Time:	11 Jun 2001 7:55 pm	11 Jun 2001 8:37 pm

Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC Limits RPD	QC Limits % Rec
1,1-Dichloroethene	0.0	20	18	19	89	94	5	22	59-172
Benzene	0.0	20	21	21	103	106	3	21	66-142
Trichloroethene	0.0	20	26	27	131	136	4	24	62-137
Toluene	0.0	20	21	22	106	109	3	21	59-139
Chlorobenzene	0.0	20	21	22	106	110	4	21	60-133

- Fails Limit Check

M362444.M Thu Jun 21 11:24:44 2001

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: FMETL NJDEP # 13461

Project: 010001 Case No.: 16180 Location: 277 SDG No.: _____

Lab File ID (Standard): VC006096.D Date Analyzed: 6/11/01

Instrument ID: GCMSVoa Time Analyzed: 14:03

GC Column: Rtx502.2 ID: 0.25 (mm) Heated Purge: (Y/N) N

		IS1BCM AREA #	RT #	IS2DFB AREA #	RT #	IS3CBZ AREA #	RT #
	12 HOUR STD	757601	16.70	5102597	19.42	1476091	27.25
	UPPER LIMIT	1515202	17.20	10205194	19.92	2952182	27.75
	LOWER LIMIT	378801	16.20	2551299	18.92	738046	26.75
	FIELD ID.						
01	MB 1915	703030	16.70	4701478	19.42	1338453	27.25
02	B-2-A	743997	16.70	5168706	19.42	1536927	27.24
03	B-2	730138	16.69	5057038	19.41	1541144	27.25
04	B-2-B	739019	16.69	5131012	19.42	1594861	27.25
05	FD	796016	16.69	5547253	19.42	1770122	27.25
06	1618104 MS	833518	16.70	5698287	19.42	1730220	27.25
07	1618104 MSD	818574	16.69	5639779	19.42	1701028	27.25

IS1 BCM = Bromochloromethane
IS2 DFB = 1,4-Difluorobenzene
IS3 CBZ = 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 to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\010611\VC006097.D Vial: 2
Acq On : 11 Jun 2001 2:53 pm Operator: Skelton
Sample : MB Inst : GC/MS Ins
Misc : MB Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: Jun 11 15:29 2001 Quant Results File: M362444.RES

Quant Method : D:\HPCHEM\1\METHODS\M362444.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Mon Jun 11 14:41:14 2001
Response via : Initial Calibration
DataAcq Meth : M362444

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	16.70	128	703030	30.00	ug/L	0.00
26) 1,4-Difluorobenzene	19.42	114	4701478	30.00	ug/L	0.00
37) Chlorobenzene-d5	27.25	119	1338453	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	18.31	65	1639305	24.89	ug/L	0.00
Spiked Amount 30.000	Range 70 - 121		Recovery = 82.97%			
35) Toluene-d8	23.42	98	5563271	29.29	ug/L	0.00
Spiked Amount 30.000	Range 81 - 117		Recovery = 97.63%			
49) Bromofluorobenzene	30.25	95	1985282	26.60	ug/L	0.00
Spiked Amount 30.000	Range 74 - 121		Recovery = 88.67%			

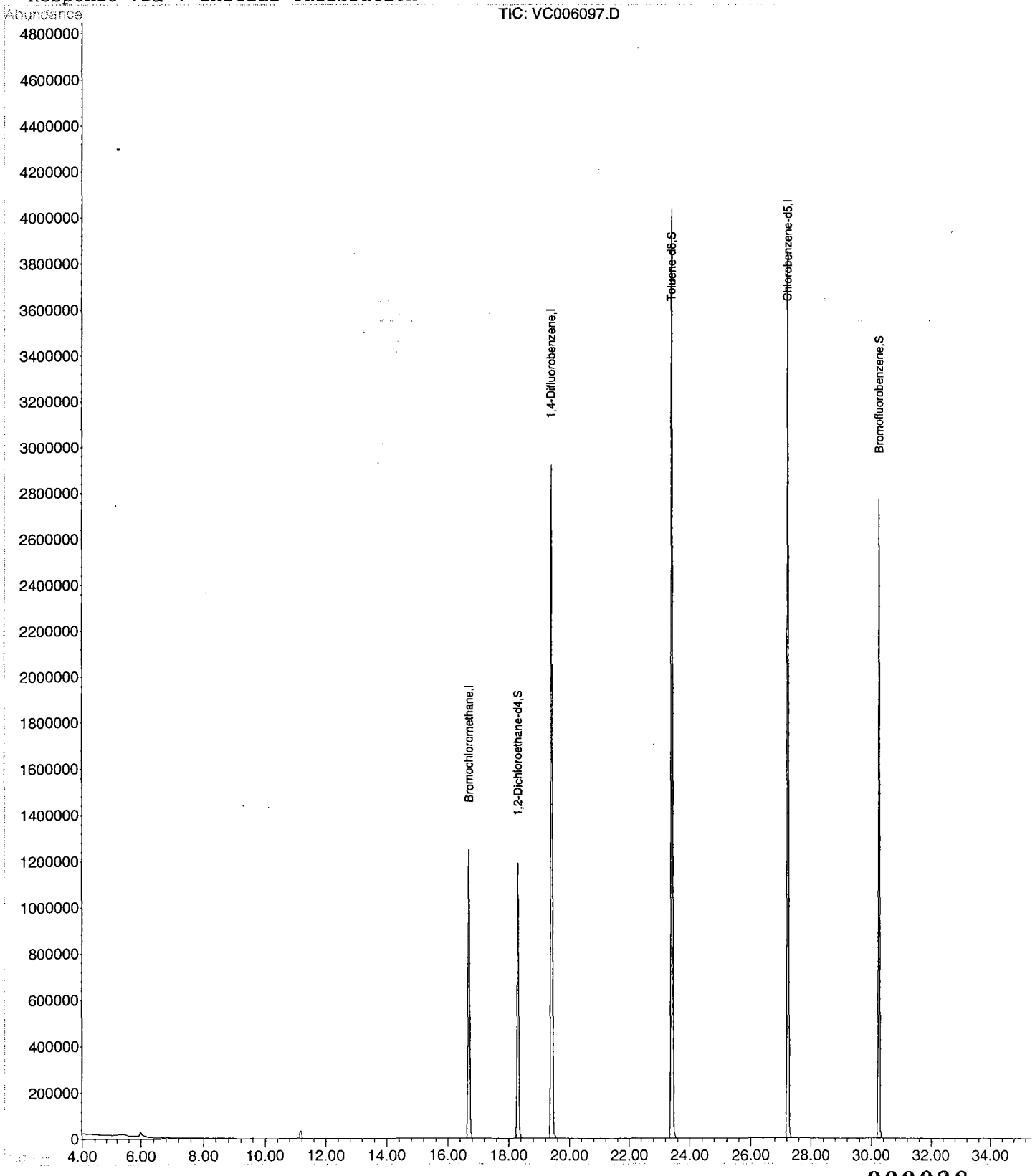
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\010611\VC006097.D Vial: 2
Acq On : 11 Jun 2001 2:53 pm Operator: Skelton
Sample : MB Inst : GC/MS Ins
Misc : MB Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: Jun 11 15:29 2001 Quant Results File: M362444.RES

Method : D:\HPCHEM\1\METHODS\M362444.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Wed Jun 20 14:04:20 2001
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\010611\VC006098.D Vial: 1
Acq On : 11 Jun 2001 3:45 pm Operator: Skelton
Sample : 1618001 Inst : GC/MS Ins
Misc : B-2-A Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: Jun 21 11:03 2001 Quant Results File: M362444.RES

Quant Method : D:\HPCHEM\1\METHODS\M362444.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Mon Jun 11 14:41:14 2001
Response via : Initial Calibration
DataAcq Meth : M362444

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	16.70	128	743997	30.00	ug/L	0.00
26) 1,4-Difluorobenzene	19.42	114	5168706	30.00	ug/L	0.00
37) Chlorobenzene-d5	27.24	119	1536927	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	18.30	65	5647289	81.02	ug/L	0.00
Spiked Amount 30.000	Range 70 - 121		Recovery = 270.07%#			
35) Toluene-d8	23.42	98	17700065	84.78	ug/L	0.00
Spiked Amount 30.000	Range 81 - 117		Recovery = 282.60%#			
49) Bromofluorobenzene	30.25	95	7800972	91.03	ug/L	0.00
Spiked Amount 30.000	Range 74 - 121		Recovery = 303.43%#			

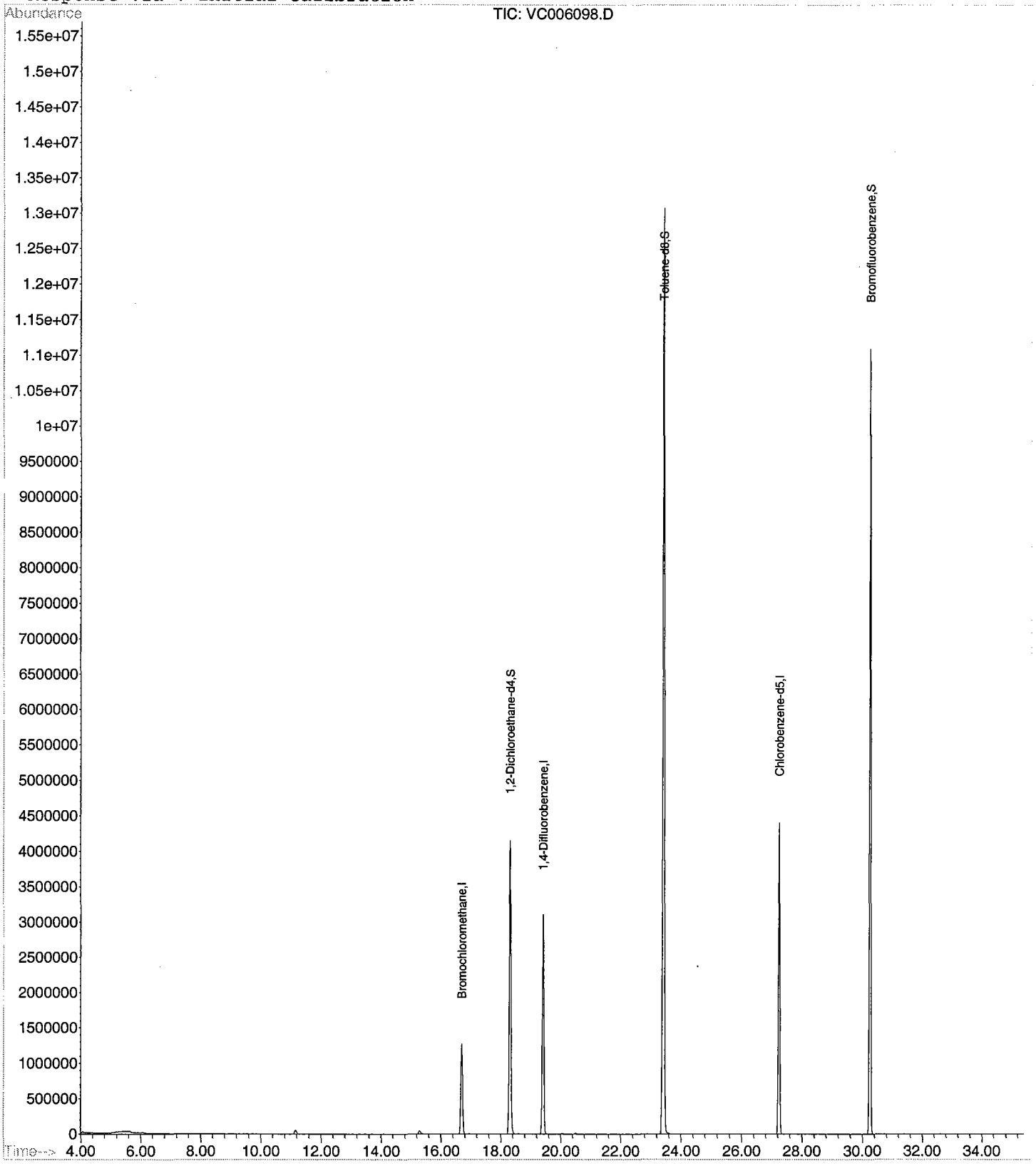
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\010611\VC006098.D Vial: 1
Acq On : 11 Jun 2001 3:45 pm Operator: Skelton
Sample : 1618001 Inst : GC/MS Ins
Misc : B-2-A Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: Jun 21 11:03 2001 Quant Results File: M362444.RES

Method : D:\HPCHEM\1\METHODS\M362444.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Wed Jun 20 14:04:20 2001
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : D:\HPCHEM\1\DATA\010611\VC006099.D Vial: 2
Acq On : 11 Jun 2001 4:27 pm Operator: Skelton
Sample : 1618002 Inst : GC/MS Ins
Misc : B-2 Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: Jun 21 11:04 2001 Quant Results File: M362444.RES

Quant Method : D:\HPCHEM\1\METHODS\M362444.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Mon Jun 11 14:41:14 2001
Response via : Initial Calibration
DataAcq Meth : M362444

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	16.69	128	730138	30.00	ug/L	-0.01
26) 1,4-Difluorobenzene	19.41	114	5057038	30.00	ug/L	-0.01
37) Chlorobenzene-d5	27.25	119	1541144	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	18.30	65	5460879	79.83	ug/L	0.00
Spiked Amount 30.000	Range 70 - 121		Recovery = 266.10%#			
35) Toluene-d8	23.42	98	17293244	84.66	ug/L	0.00
Spiked Amount 30.000	Range 81 - 117		Recovery = 282.20%#			
49) Bromofluorobenzene	30.25	95	7705967	89.67	ug/L	0.00
Spiked Amount 30.000	Range 74 - 121		Recovery = 298.90%#			

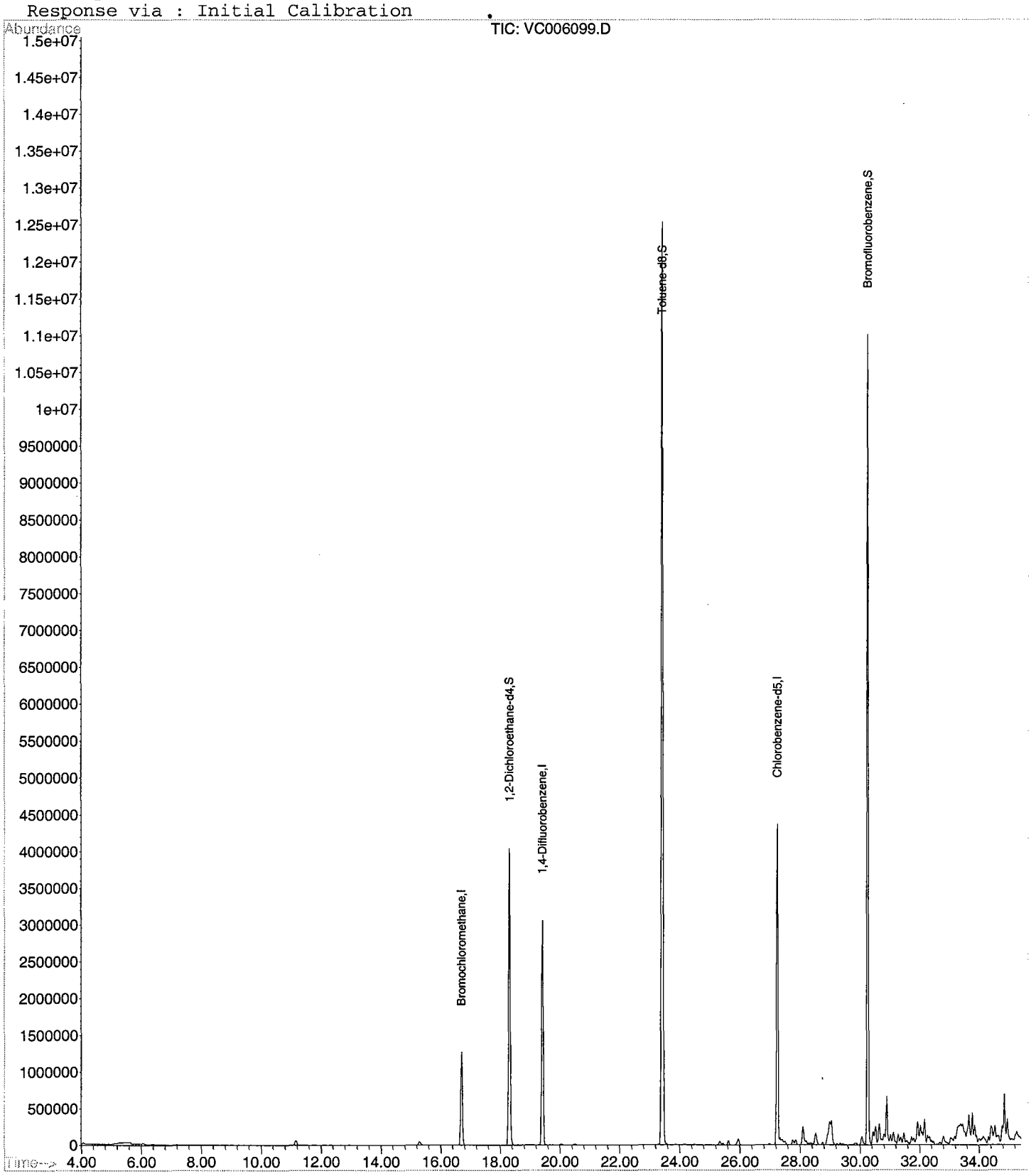
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\010611\VC006099.D Vial: 2
Acq On : 11 Jun 2001 4:27 pm Operator: Skelton
Sample : 1618002 Inst : GC/MS Ins
Misc : B-2 Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: Jun 21 11:04 2001 Quant Results File: M362444.RES

Method : D:\HPCHEM\1\METHODS\M362444.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Wed Jun 20 14:04:20 2001
Response via : Initial Calibration



000042

Quantitation Report (QT/LSC Reviewed)

Data File : D:\HPCHEM\1\DATA\010611\VC006100.D Vial: 3
Acq On : 11 Jun 2001 5:09 pm Operator: Skelton
Sample : 1618003 Inst : GC/MS Ins
Misc : B-2-B Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: Jun 21 11:04 2001 Quant Results File: M362444.RES

Quant Method : D:\HPCHEM\1\METHODS\M362444.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Mon Jun 11 14:41:14 2001
Response via : Initial Calibration
DataAcq Meth : M362444

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	16.69	128	739019	30.00	ug/L	-0.01
26) 1,4-Difluorobenzene	19.42	114	5131012	30.00	ug/L	0.00
37) Chlorobenzene-d5	27.25	119	1594861	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	18.30	65	5588599	80.72	ug/L	0.00
Spiked Amount 30.000	Range 70 - 121		Recovery = 269.07%#			
35) Toluene-d8	23.42	98	17707586	85.43	ug/L	0.00
Spiked Amount 30.000	Range 81 - 117		Recovery = 284.77%#			
49) Bromofluorobenzene	30.25	95	8252208	92.79	ug/L	0.00
Spiked Amount 30.000	Range 74 - 121		Recovery = 309.30%#			

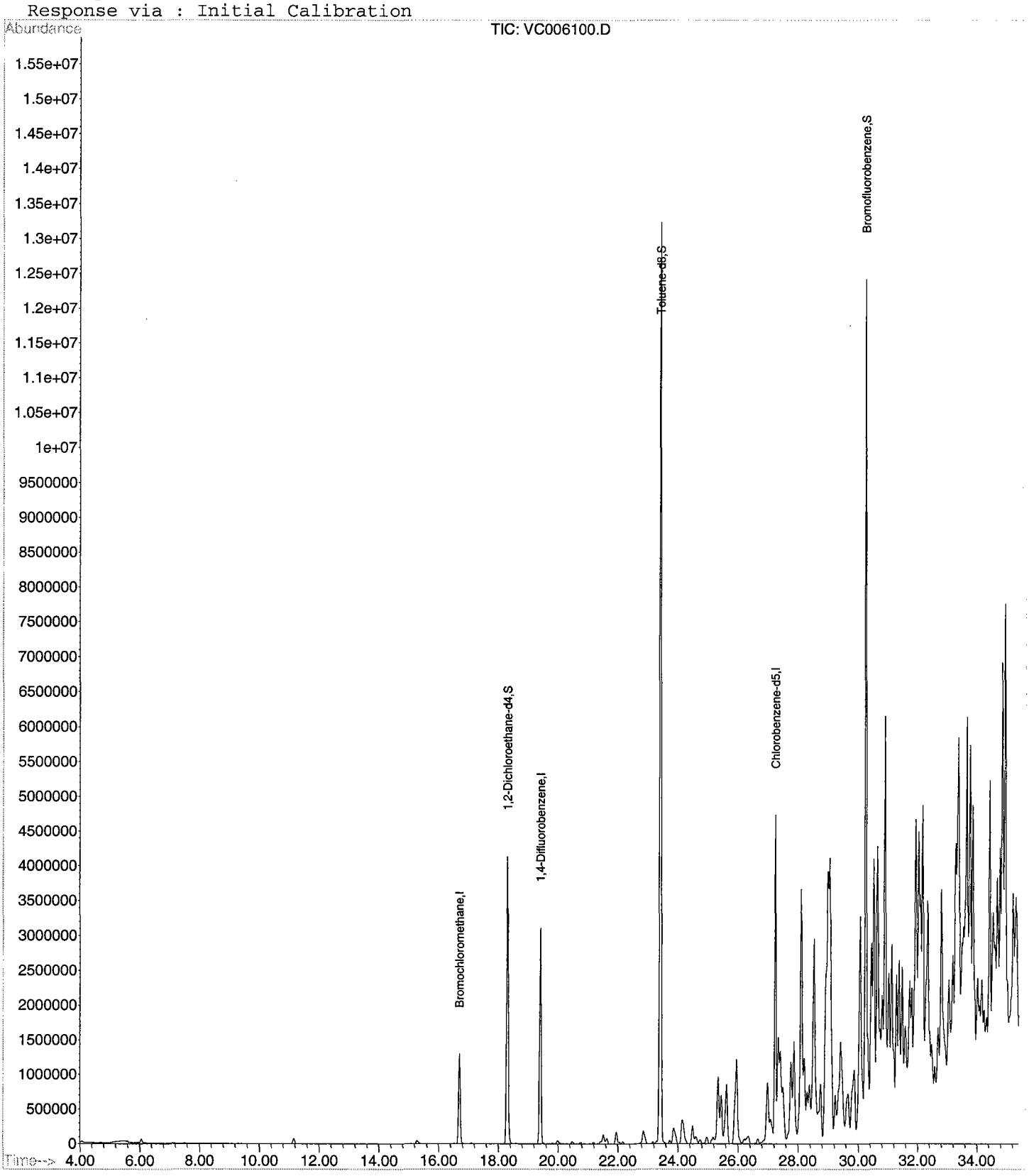
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : D:\HPCHEM\1\DATA\010611\VC006100.D Vial: 3
Acq On : 11 Jun 2001 5:09 pm Operator: Skelton
Sample : 1618003 Inst : GC/MS Ins
Misc : B-2-B Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: Jun 21 11:04 2001 Quant Results File: M362444.RES

Method : D:\HPCHEM\1\METHODS\M362444.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Wed Jun 20 14:04:20 2001
Response via : Initial Calibration



000044

Quantitation Report (QT/LSC Reviewed)

Data File : D:\HPCHEM\1\DATA\010611\VC006101.D Vial: 4
Acq On : 11 Jun 2001 5:51 pm Operator: Skelton
Sample : 1618004 Inst : GC/MS Ins
Misc : FD Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: Jun 21 11:04 2001 Quant Results File: M362444.RES

Quant Method : D:\HPCHEM\1\METHODS\M362444.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Mon Jun 11 14:41:14 2001
Response via : Initial Calibration
DataAcq Meth : M362444

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	16.69	128	796016	30.00	ug/L	-0.01
26) 1,4-Difluorobenzene	19.42	114	5547253	30.00	ug/L	0.00
37) Chlorobenzene-d5	27.25	119	1770122	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	18.30	65	5910650	79.26	ug/L	0.00
Spiked Amount 30.000	Range 70 - 121		Recovery = 264.20%#			
35) Toluene-d8	23.42	98	18840316	84.08	ug/L	0.00
Spiked Amount 30.000	Range 81 - 117		Recovery = 280.27%#			
49) Bromofluorobenzene	30.25	95	8648799	87.62	ug/L	0.00
Spiked Amount 30.000	Range 74 - 121		Recovery = 292.07%#			

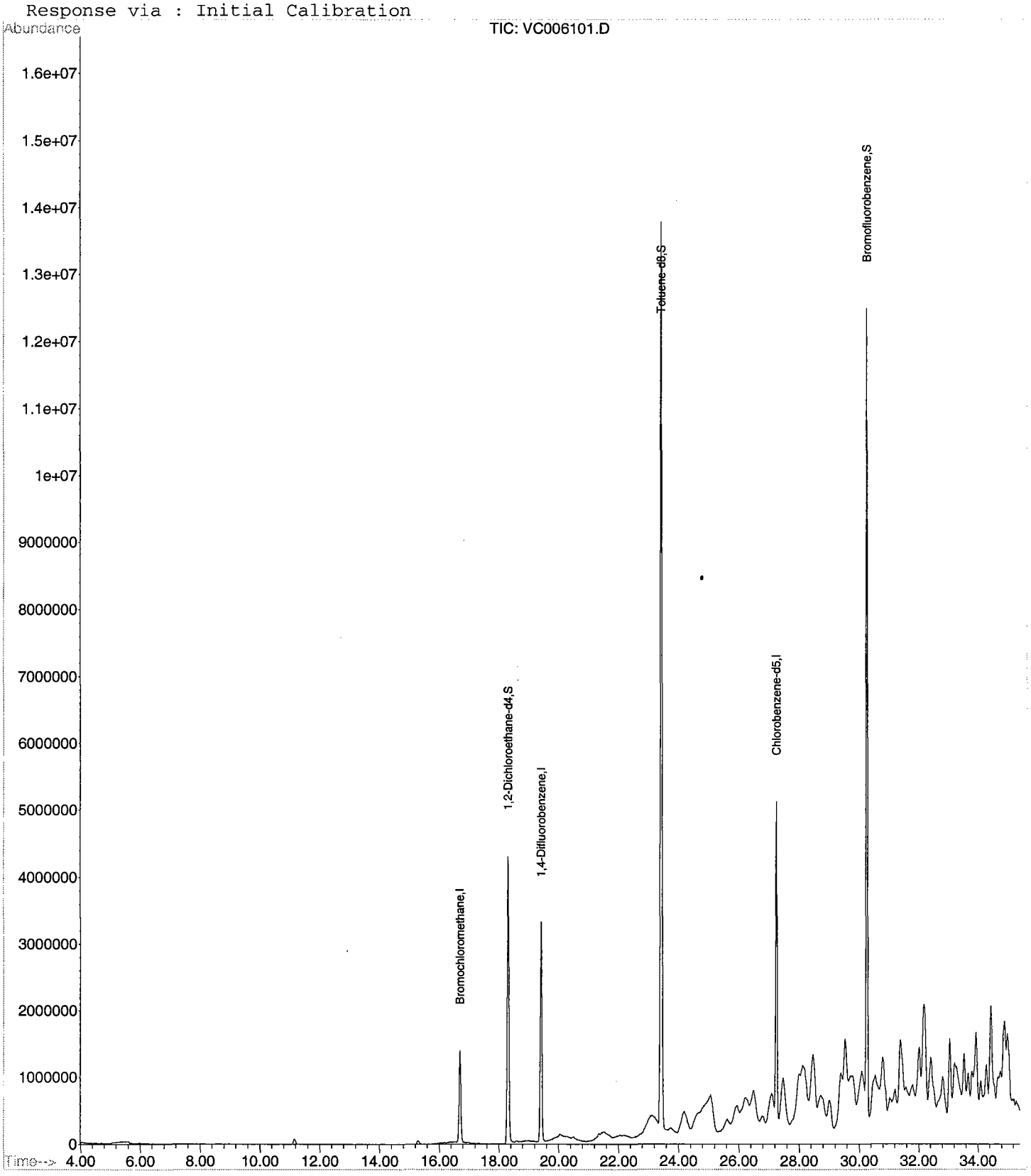
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
VC006101.D M362444.M Thu Jun 21 11:08:07 2001

Quantitation Report

Data File : D:\HPCHEM\1\DATA\010611\VC006101.D Vial: 4
Acq On : 11 Jun 2001 5:51 pm Operator: Skelton
Sample : 1618004 Inst : GC/MS Ins
Misc : FD Multiplr: 1.00
MS Integration Params: ACETONE.P
Quant Time: Jun 21 11:04 2001 Quant Results File: M362444.RES

Method : D:\HPCHEM\1\METHODS\M362444.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Wed Jun 20 14:04:20 2001
Response via : Initial Calibration



000046

TPHC

Report of Analysis
U.S.Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Project # :**	16180
	DPW. SELFM-PW-EV	**Location :**	Bldg277
	Bldg. 173	**UST Reg. # :**	
	Ft. Monmouth, NJ 07703		

Analysis :	OQA-QAM-025	**Date Received :**	11-Jun-01
Matrix :	Soil	**Date Extracted :**	18-Jun-01
Inst. ID. :	GC TPHC INST. #1	**Extraction Method :**	Shake
Column Type :	RTX-5, 0.32mm ID, 30M	**Analysis Complete :**	18-Jun-01
Injection Volume :	1uL	**Analyst :**	Skelton

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
1618001	B-2-A	1.00	15.48	85.67	177	ND
1618002	B-2	1.00	15.27	85.03	181	844.26
1618003	B-2-B	1.00	15.56	80.02	189	868.94
1618004	FD	1.00	15.04	88.72	176	ND
METHOD BLANK	MB-1908	1.00	15.00	100.00	157	ND

ND = Not Detected

MDL = Method Detection Limit

Response Factor Report GC/MS Ins

Method : C:\HPCHEM\1\METHODS\TPH87.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Mon Jun 18 09:16:27 2001

Calibration Files
200 =T013081.D 100 =T013082.D 50 =T013083.D
20 =T013084.D 10 =T013085.D 5 =T013086.D

	Compound	200	100	50	20	10	5	Avg		%RSD
1)	tC C8	1.912	1.920	1.914	1.819	1.721	1.757	1.840	E4	4.77
2)	tC C10	2.206	2.226	2.156	2.028	1.927	1.695	2.040	E4	9.98
3)	TC C12	2.391	2.417	2.394	2.381	2.223	2.409	2.369	E4	3.07
4)	tC C14	2.493	2.539	2.492	2.549	2.413	2.329	2.469	E4	3.40
5)	tC C16	2.548	2.602	2.579	2.636	2.546	2.661	2.595	E4	1.80
6)	tC C18	2.392	2.552	2.432	2.589	2.265	2.006	2.373	E4	9.02
7)	tC C20	2.635	2.690	2.665	2.686	2.541	2.481	2.616	E4	3.29
8)	tC C22	2.732	2.789	2.780	2.854	2.780	2.936	2.812	E4	2.57
9)	tC C24	2.768	2.823	2.815	2.880	2.813	2.937	2.839	E4	2.11
10)	tC C26	2.782	2.839	2.833	2.897	2.847	2.994	2.865	E4	2.55
11)	tC C28	2.794	2.848	2.838	2.893	2.814	2.915	2.851	E4	1.62
12)	tC C30	2.919	2.955	2.943	2.962	2.874	2.936	2.931	E4	1.08
13)	tC C32	2.850	2.890	2.883	2.903	2.817	2.903	2.874	E4	1.19
14)	tC C34	2.789	2.828	2.812	2.813	2.715	2.809	2.794	E4	1.47
15)	tC C36	2.452	2.495	2.473	2.456	2.332	2.367	2.429	E4	2.66
16)	tC C38	1.830	1.876	1.848	1.812	1.674	1.677	1.786	E4	4.96
17)	tC C40	1.131	1.166	1.131	1.087	0.970	0.980	1.077	E4	7.75
18)	tC c42	7.582	7.846	7.431	6.759	5.911	5.538	6.845	E3	13.82
19)	TC Pristane	2.657	2.671	2.668	2.845	2.911	3.125	2.813	E4	6.63
20)	TC Phytane	2.707	2.788	2.793	2.935	2.958	3.170	2.892	E4	5.75
21)	sC o-terphenyl	2.962	3.020	3.012	3.096	3.040	3.165	3.049	E4	2.35
22)	tC TPHC - total	2.746	2.758	2.861	3.048	3.223	3.872	3.085	E4	13.84

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\010618\T013088.D Vial: 100
Acq On : 18 Jun 2001 8:39 am Operator: Skelton
Sample : Tstd050s Inst : GC/MS Ins
Misc : Tstd050s Multiplr: 1.00
IntFile : TPHCINT.E

Method : C:\HPCHEM\1\METHODS\TPH87.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Mon Jun 18 09:16:27 2001
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	tC	C8	18.405	19.704 E3	-7.1	103	0.00
2	tC	C10	20.397	22.886 E3	-12.2	106	0.00
3	TC	C12	23.689	25.256 E3	-6.6	106	0.00
4	tC	C14	24.693	26.603 E3	-7.7	107	0.00
5	tC	C16	25.954	27.551 E3	-6.2	107	0.00
6	tC	C18	23.728	27.995 E3	-18.0	115	0.00
7	tC	C20	26.164	27.957 E3	-6.9	105	0.00
8	tC	C22	28.117	29.801 E3	-6.0	107	0.00
9	tC	C24	28.392	30.106 E3	-6.0	107	0.00
10	tC	C26	28.655	30.295 E3	-5.7	107	0.00
11	tC	C28	28.505	30.328 E3	-6.4	107	0.00
12	tC	C30	29.314	31.378 E3	-7.0	107	0.00
13	tC	C32	28.742	30.632 E3	-6.6	106	0.00
14	tC	C34	27.943	30.101 E3	-7.7	107	0.00
15	tC	C36	24.291	27.115 E3	-11.6	110	0.00
16	tC	C38	17.862	20.730 E3	-16.1	112	0.00
17	tC	C40	10.774	12.641 E3	-17.3	112	0.00
18	tC	c42	6.845	7.942 E3	-16.0	107	0.00
19	TC	Pristane	28.129	29.623 E3	-5.3	111	0.00
20	TC	Phytane	28.918	29.829 E3	-3.2	107	0.00
21	sC	o-terphenyl	30.493	32.073 E3	-5.2	106	0.00
22	tC	TPHC - total	30.846	30.813 E3	0.1	108	-1.22#

Surrogate Recovery Report
U.S.Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Project # :**	16180
	DPW. SELFM-PW-EV	**Location :**	Bldg277
	Bldg. 173	**UST Reg. # :**	
	Ft. Monmouth, NJ 07703		
Analysis:	OQA-QAM-025	**Date Received :**	11-Jun-01
Matrix:	Soil	**Date Extracted :**	18-Jun-01
Inst. ID.	GC TPHC INST. #1	**Extraction Method :**	Shake
Column Type :	RTX-5, 0.32mm ID, 30M	**Analysis Complete :**	18-Jun-01
Injection Volume :	1uL	**Analyst :**	Skelton

Sample			Surrogate Added (ppm)	Amount Recovered (ppm)	Percent Recovery
1618001			10.00	8.27	**82.65**
1618002			10.00	7.62	**76.19**
1618003			10.00	7.88	**78.83**
1618004			10.00	7.60	**75.97**
METHOD BLANK	MB-1908		10.00	7.76	**77.64**

Surrogate Added : **o-Terphenyl**

Matrix Spike/ Duplicate Recovery Report
U.S.Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Project # :**	16180
	DPW. SELFM-PW-EV	**Location :**	Bldg277
	Bldg. 173	**UST Reg. # :**	
	Ft. Monmouth, NJ 07703		
Analysis:	OQA-QAM-025	**Date Received :**	11-Jun-01
Matrix:	Soil	**Date Extracted :**	18-Jun-01
Inst. ID.	GC TPHC INST. #1	**Extraction Method :**	Shake
Column Type :	RTX-5, 0.32mm ID, 30M	**Analysis Complete :**	18-Jun-01
Injection Volume :	1uL	**Analyst :**	Skelton

Sample	Spike Amount Added (ppm)	Sample Amount (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
MS-1910	1000	1212.65	2121.50	90.89	75-125
MSD-1911	1000	1212.65	2345.38	113.27	75-125
			RPD	**21.93**	**20.00**

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\010618\T013089.D Vial: 1
Acq On : 18 Jun 2001 2:25 pm Operator: Skelton
Sample : MB 1908s Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jun 19 15:28 2001 Quant Results File: TPH87.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH87.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Mon Jun 18 09:16:27 2001
Response via : Initial Calibration
DataAcq Meth : TPH87.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.49	236761	7.764 mg/L m
Spiked Amount 10.000	Range 8 - 13	Recovery =	77.64%#
Target Compounds			

000053

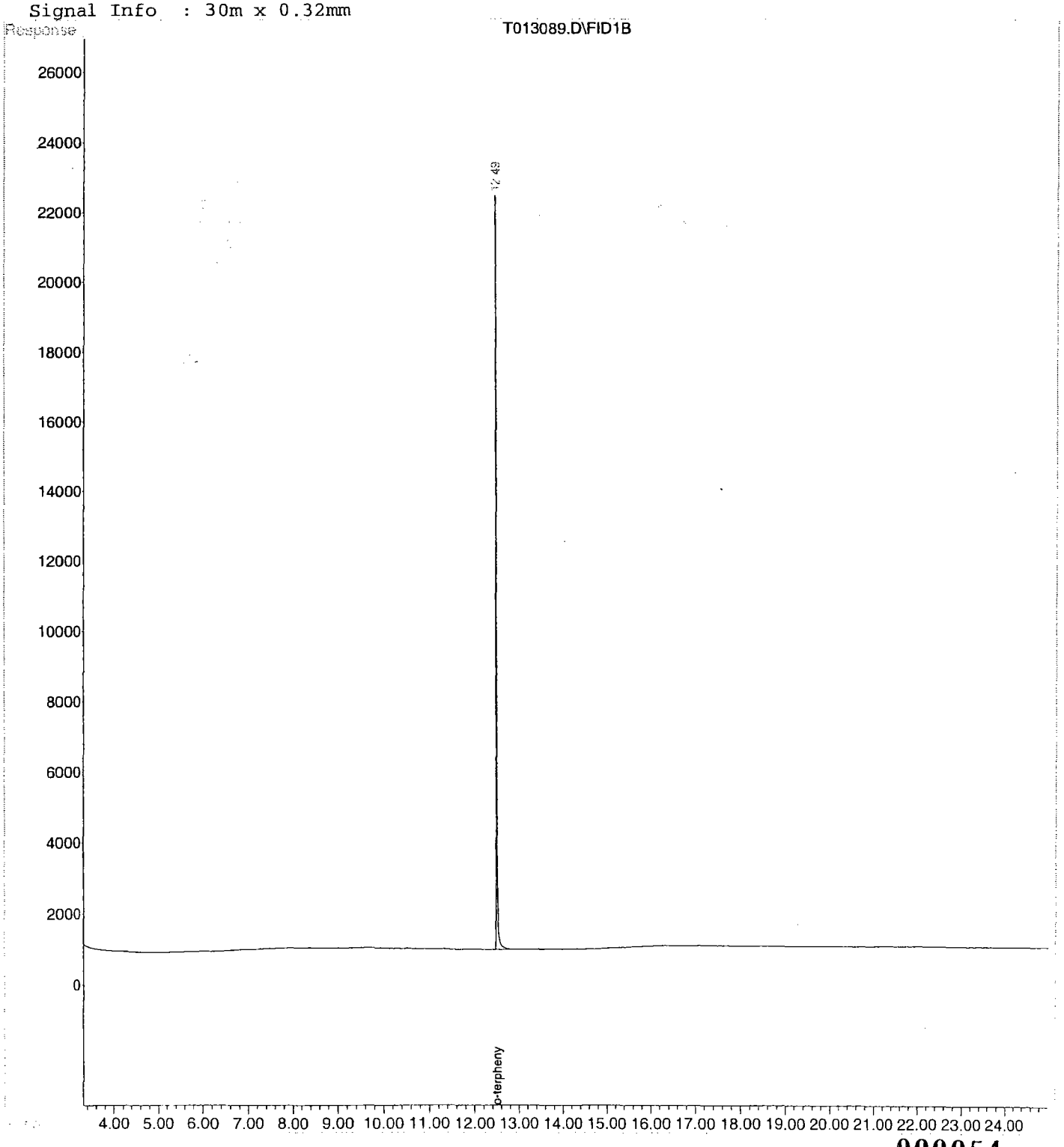
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\010618\T013089.D Vial: 1
Acq On : 18 Jun 2001 2:25 pm Operator: Skelton
Sample : MB 1908s Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jun 19 15:28 2001 Quant Results File: TPH87.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH87.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Mon Jun 18 09:16:27 2001
Response via : Multiple Level Calibration
DataAcq Meth : TPH87.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\010618\T013094.D Vial: 6
Acq On : 18 Jun 2001 5:12 pm Operator: Skelton
Sample : 1618001s Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jun 19 7:51 2001 Quant Results File: TPH87.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH87.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Mon Jun 18 09:16:27 2001
Response via : Initial Calibration
DataAcq Meth : TPH87.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.49	252013	8.265 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery =	82.65%#
Target Compounds			

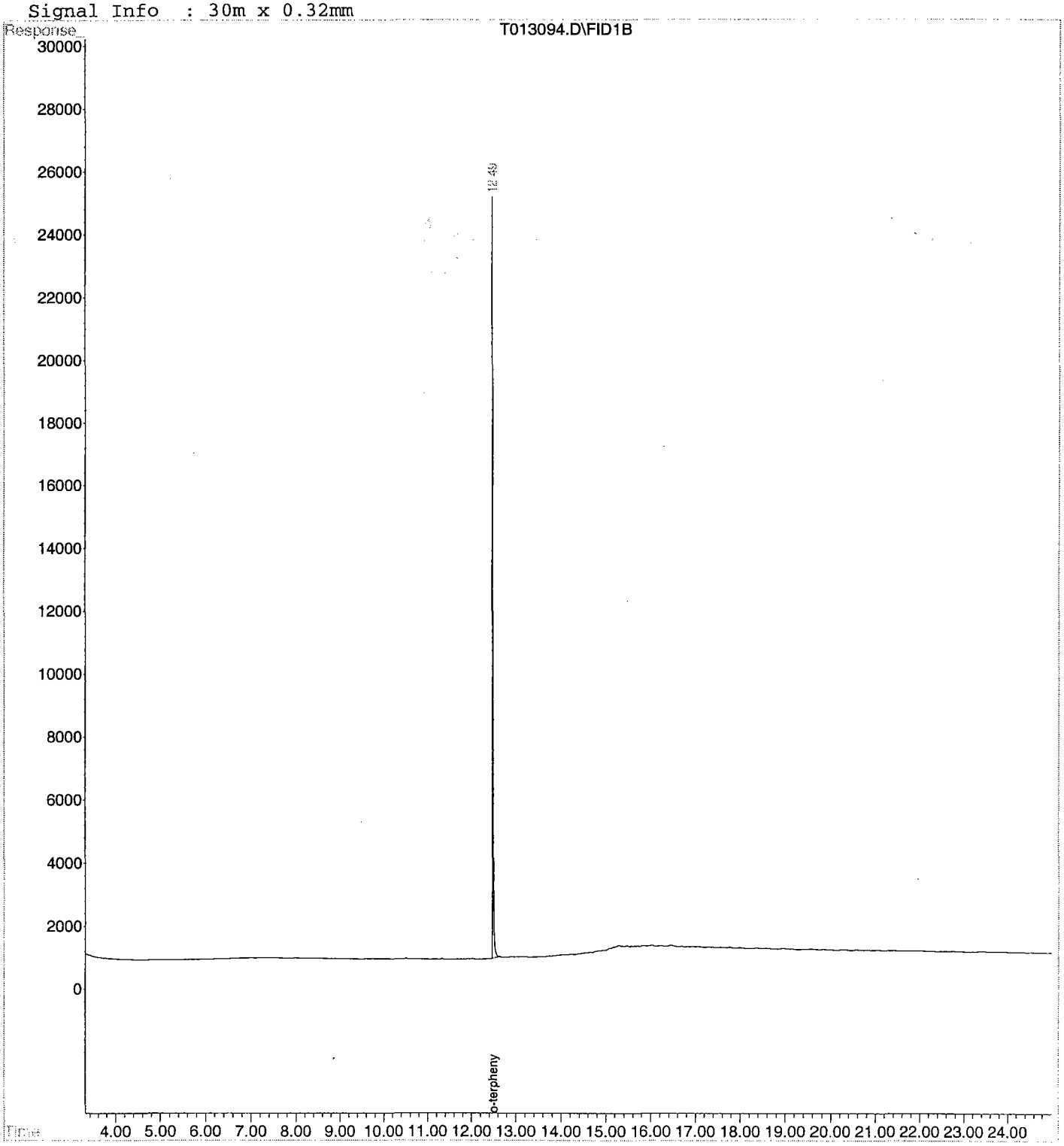
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\010618\T013094.D Vial: 6
Acq On : 18 Jun 2001 5:12 pm Operator: Skelton
Sample : 1618001s Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jun 19 7:51 2001 Quant Results File: TPH87.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH87.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Mon Jun 18 09:16:27 2001
Response via : Multiple Level Calibration
DataAcq Meth : TPH87.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\010618\T013095.D Vial: 7
Acq On : 18 Jun 2001 5:46 pm Operator: Skelton
Sample : 1618002s Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jun 19 15:32 2001 Quant Results File: TPH87.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH87.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Mon Jun 18 09:16:27 2001
Response via : Initial Calibration
DataAcq Meth : TPH87.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.49	232337	7.619 mg/L
Spiked Amount 10.000 Range 8 - 13	Recovery = 76.19%#		
Target Compounds			
6) tC C18	11.54	49941	2.105 mg/L
19) TC Pristane	11.54	49941	1.775 mg/L
22) tC TPHC - total	12.49	6762761	219.239 mg/L m

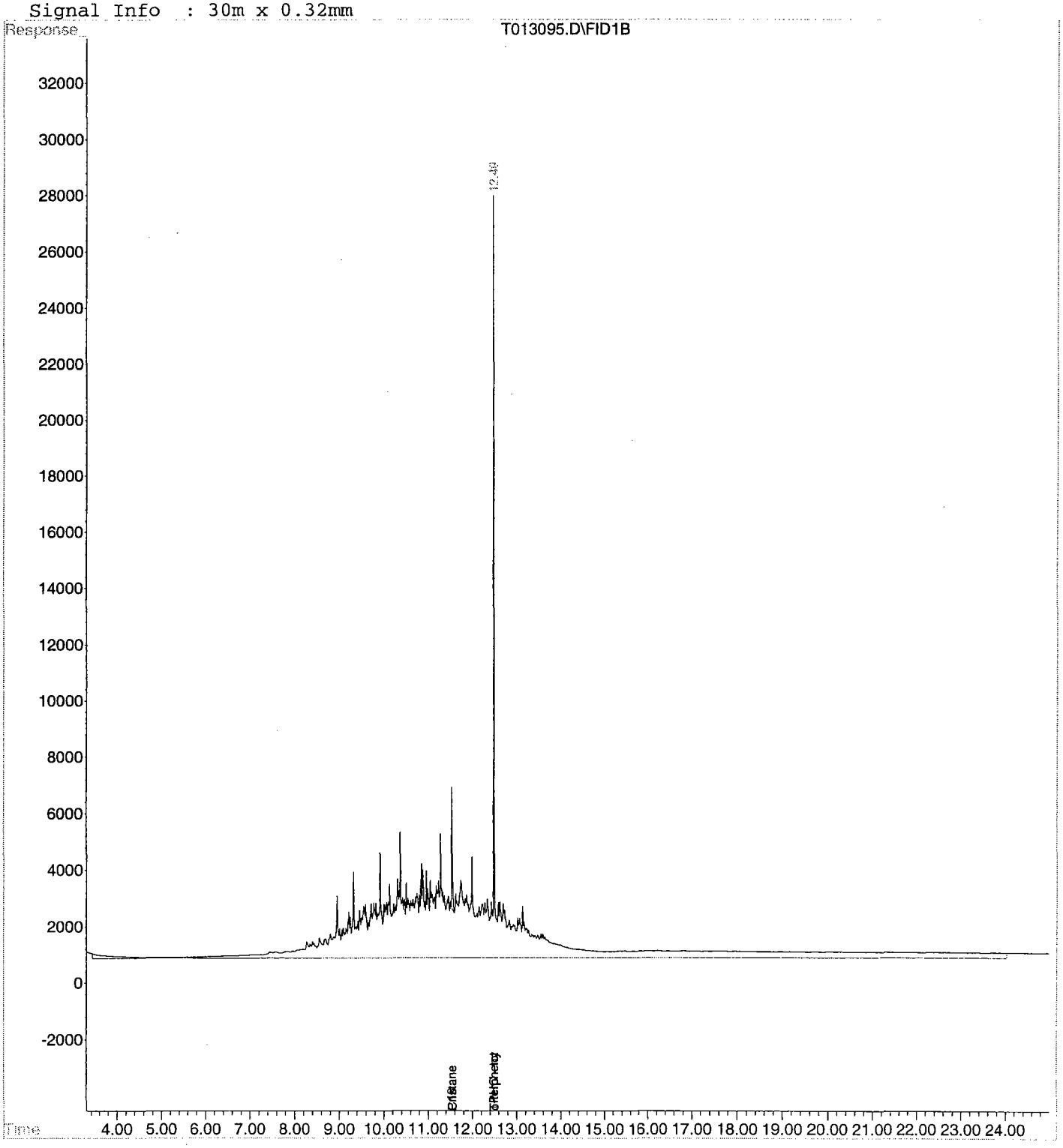
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\010618\T013095.D Vial: 7
Acq On : 18 Jun 2001 5:46 pm Operator: Skelton
Sample : 1618002s Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jun 19 15:32 2001 Quant Results File: TPH87.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH87.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Mon Jun 18 09:16:27 2001
Response via : Multiple Level Calibration
DataAcq Meth : TPH87.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



METHODOLOGY SUMMARY

Method Summary

EPA Method 624
Gas Chromatographic Determination of Volatiles in Water

Surrogates and internal standards are added to a 5-ml aliquot of sample. The sample is then purged and desorbed into a GC/MS system. The organic compounds are separated by the gas chromatograph and detected using the mass spectrometer. Volatiles are identified and quantitated.

EPA Method 3510/8270
Gas Chromatographic Determination of Semi-volatiles in Water

Surrogates are added to measured volume of sample, usually 1 liter, at a specified pH. The sample is serially extracted with Methylene chloride using a separatory funnel. The extract concentrated and internal standards are added. The sample is injected into a GC/MS system. Semi-volatiles are identified and quantitated.

NJDEP Method OQA-QAM-025-10/97
Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

Fifteen grams (15g)(wet weight) of a soil sample is added to a 125 mL acid cleaned, solvent rinsed, capped Erlenmeyer flask. 15g anhydrous sodium sulfate is added to dry sample. Surrogate standard spiking solution is then added to the flask.

Twenty-five milliliters (25mL) Methylene Chloride is added to the flask and it is secured on an orbital shaker table. The agitation rate is set to 400rpm and the sample is shaken for 30 minutes. The flask is the removed from the table and the particulate matter is allowed to settle. The extract is transferred to a Teflon capped vial. A second 25mL of Methylene Chloride is added to the flask and shaken for an additional 30 minutes. The flask is again removed and allowed to settle. The extracts are combined in the vial then transferred to a 1mL-autosampler vial.

The extract is then injected directly into a GC-FID for analysis. The sample is analyzed for petroleum hydrocarbons covering a range of C8-C42 including pristane and phytane. Total Petroleum Hydrocarbon concentration is determined by integrating between 5 minutes and 22 minutes. The baseline is established by starting the integration after the end of the solvent peak and stopping after the last peak.

The final concentration of Total Petroleum Hydrocarbons is calculated using percent solid, sample weight and concentration.

CONFORMANCE/ NON-CONFORMANCE SUMMARY

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT (cont.)

Indicate
Yes, No, N/A

10. Internal Standard Area/Retention Time Shift Meet Criteria — Yes
(If not met, list those compounds, which fall outside the acceptable range)

a. VOA Fraction _____
b. B/N Fraction _____
c. Acid Fraction NA

11. Extraction Holding Time Met — Yes

If not met, list the number of days exceeded for each sample: _____

12. Analysis Holding Time Met — Yes

If not met, list the number of days exceeded for each sample: _____

Additional Comments:

Laboratory Manager: _____ Date: 4-7-00

TPHC CONFORMANCE/NON – CONFORMANCE SUMMARY REPORT

		Indicate Yes, No, N/A
1.	Method Detection Limits Provided	yes
2.	Method Blank Contamination – If yes, list the sample and the corresponding concentrations in each blank	NO
3.	Matrix Spike Results Summary Meet Criteria (If not met, list the sample and corresponding recovery which falls outside the acceptable range)	yes
4.	Duplicate Results Summary Meet Criteria	yes
5.	IR Spectra submitted for standards, blanks and samples	NA
6.	Chromatograms submitted for standards, blanks and samples if GC fingerprinting was conducted	yes
7.	Analysis holding time met (If not met, list number of days exceeded for each sample)	yes

Additional comments:_____

Laboratory Manager:_____ Date: 4-7-00

Laboratory Chronicle

Lab ID: 4926 Site: Bldg. 434

	Date	Hold Time
Date Sampled	11/06/99	NA
Receipt/Refrigeration	11/06/99	NA
Extractions		
1. Base Neutrals	11/09/99	7 Days
2. TPHC/Soil	11/10/99	14 Days
Analyses		
1. Volatile Organics	11/10,11/99	14 Days
2. Base Neutrals	11/12,13/99	40 Days
3. TPHC/Soil	11/10/99	14 Days

* Sampled on 11/06/99 and refrigerated. Samples were received on 11/08/99.

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VC001283.D**	Sample Name	**4926.05**
Operator	**Skelton**	Field ID	**277-2-GW**
Date Acquired	**11 Nov 1999 8:23 am**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-9

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

11/15/99 4:26 PM

C:\HPCHEM\Custrpt\Volatile\624fy99.crt

000019

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **277-2-GW**

Lab Name: FMETL NJDEP#: 13461

Project: 100004 Case No.: 4926 Location: 277 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 4926.05

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC001283.D

Level: (low/med) LOW Date Received: 11/8/99

% Moisture: not dec. Date Analyzed: 11/11/99

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 14

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 000103-65-1	Benzene, propyl-	30.61	5	JN
2. 000526-73-8	Benzene, 1,2,3-trimethyl-	31.92	3	JN
3. 000135-98-8	Benzene, (1-methylpropyl)-	32.32	5	JN
4. 000135-01-3	Benzene, 1,2-diethyl-	33.37	15	JN
5. 000105-05-5	Benzene, 1,4-diethyl-	33.57	9	JN
6. 000496-11-7	Indane	33.76	7	JN
7.	unknown	33.89	7	J
8. 000933-98-2	Benzene, 1-ethyl-2,3-dimethyl-	34.18	7	JN
9. 000099-87-6	Benzene, 1-methyl-4-(1-methylet	34.26	4	JN
10. 000933-98-2	Benzene, 1-ethyl-2,3-dimethyl-	34.44	33	JN
11. 004920-99-4	Benzene, 1-ethyl-3-(1-methylethy	34.68	3	JN
12. 027831-13-6	Benzene, 4-ethenyl-1,2-dimethyl-	34.73	6	JN
13. 000934-80-5	Benzene, 4-ethyl-1,2-dimethyl-	34.78	5	JN
14. 027133-93-3	2,3-Dihydro-1-methylindene	34.94	15	JN

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: FMETL NJDEP#: 13461

Project: 100004 Case No.: 4926 Location: 277 SDG No.:

Lab File ID: VC001251.D BFB Injection Date: 11/10/99

Instrument ID: VoaInst#3 BFB Injection Time: 9:04

GC Column: RTX502.2 ID: 0.25 (mm) Heated Purge: (Y/N) N

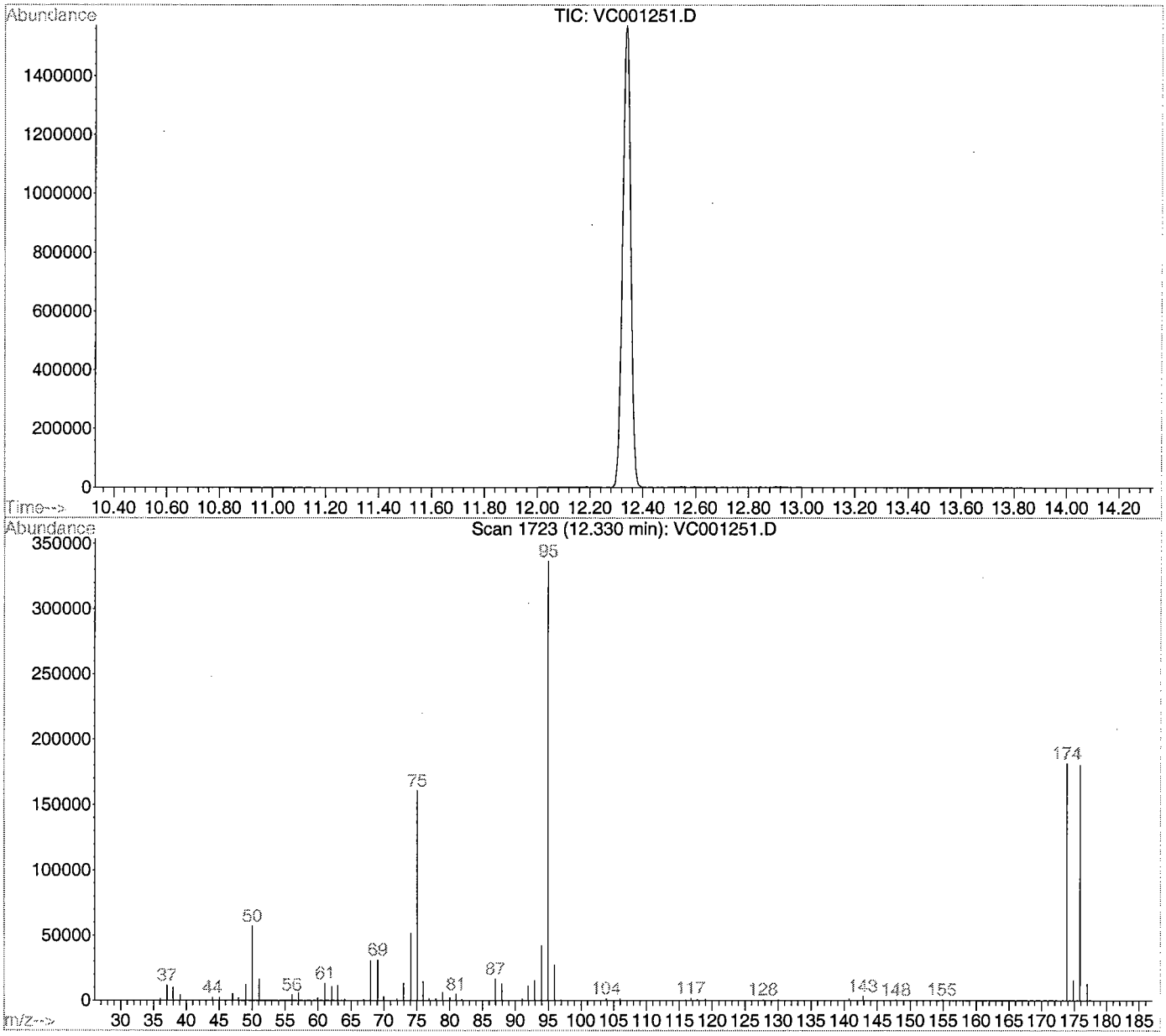
m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	17.0
75	30.0 - 66.0% of mass 95	47.7
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	8.1
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 120.0% of mass 95	54.0
175	4.0 - 9.0% of mass 174	4.6 (8.5)1
176	93.0 - 101.0% of mass 174	53.6 (99.2)1
177	5.0 - 9.0% of mass 176	3.8 (7.1)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	FIELD ID:	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD020	VSTD020	VC001252.D	11/10/99	9:38
02	VSTD100	VSTD100	VC001253.D	11/10/99	11:22
03	VSTD050	VSTD050	VC001254.D	11/10/99	12:02
04	VSTD010	VSTD010	VC001255.D	11/10/99	13:10
05	VSTD005	VSTD005	VC001256.D	11/10/99	13:50
06	VBLK37	VBLK37	VC001257.D	11/10/99	14:43
07	4896.04MS	4896.04MS	VC001269.D	11/10/99	23:07
08	4896.04MSD	4896.04MSD	VC001270.D	11/10/99	23:46
09	TRIP BLANK	4926.01	VC001281.D	11/11/99	7:04
10	FIELD BLANK	4926.02	VC001282.D	11/11/99	7:43
11	277-2-GW	4926.05	VC001283.D	11/11/99	8:23

Data File : C:\HPCHEM\1\DATA\991110\VC001251.D Vial: 1
Acq On : 10 Nov 1999 9:04 am Operator: Skelton
Sample : BFB Tune Inst : GC/MS Ins
Misc : BFB Tune Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : C:\HPCHEM\1\METHODS\M362409.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP



Spectrum Information: Scan 1723

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.0	57328	PASS
75	95	30	60	47.7	160768	PASS
95	95	100	100	100.0	336704	PASS
96	95	5	9	8.1	27432	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	54.0	181824	PASS
175	174	5	9	8.5	15415	PASS
176	174	95	101	99.2	180416	PASS
177	176	5	9	7.1	12849	PASS

4A

VOLATILE METHOD BLANK SUMMARY

FIELD ID: **Vblk37**

Lab Name: FMETL NJDEP#: 13461

Project: 100004 Case No.: 4926 Location: 277 SDG No.:

Lab File ID: VC001257.D Lab Sample ID: Vblk37

Date Analyzed: 11/10/99 Time Analyzed: 14:43

GC Column: RTX502. ID: 0.25 (mm) Heated Purge: (Y/N) N

Instrument ID: VoaInst#3

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	FIELD ID:	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	4896.04MS	4896.04MS	VC001269.D	23:07
02	4896.04MSD	4896.04MSD	VC001270.D	23:46
03	TRIP BLANK	4926.01	VC001281.D	7:04
04	FIELD BLANK	4926.02	VC001282.D	7:43
05	277-2-GW	4926.05	VC001283.D	8:23

COMMENTS:

Response Factor Report GC/MS Ins

Method : C:\HPCHEM\1\METHODS\M362410.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Wed Nov 10 14:58:14 1999
Response via : Continuing Calibration

Calibration Files
50 =VC001254.D 5 =VC001256.D 10 =VC001255.D
20 =VC001252.D 100 =VC001253.D

		Compound	50	5	10	20	100	Avg	%RSD
1)	I	Bromochloromethane	----------ISTD----------						
2)	t	Acrolein	0.124	0.074	0.095	0.120	0.124	0.107	20.62
3)	t	Acrylonitrile	0.406	0.398	0.393	0.428	0.397	0.404	3.47
4)	t	tert-Butyl alcohol	0.061	0.064	0.063	0.059	0.057	0.061	4.66
5)	t	Methyl-tert-Butyl eth	4.084	3.889	3.816	4.295	4.028	4.022	4.63
6)	t	Di-isopropyl ether	1.652	1.553	1.523	1.775	1.661	1.633	6.11
7)	T	Dichlorodifluorometha	1.857	1.732	1.883	2.018	1.864	1.871	5.43
8)	TP	Chloromethane	1.805	1.815	1.861	1.943	1.775	1.840	3.57
9)	TC	Vinyl Chloride	1.709	1.835	1.882	1.923	1.685	1.807	5.82
10)	T	Bromomethane	1.493	1.434	1.520	1.542	1.487	1.495	2.71
11)	T	Chloroethane	1.247	1.263	1.266	1.308	1.267	1.270	1.79
12)	T	Trichlorofluoromethan	3.014	2.964	3.109	3.249	3.077	3.083	3.53
13)	MC	1,1-Dichloroethene	2.831	2.653	2.804	2.980	2.889	2.832	4.25
14)	T	Acetone	0.241	0.347	0.279	0.270	0.229	0.273	16.86
15)	T	Carbon Disulfide	6.275	6.249	6.402	6.560	6.182	6.333	2.36
16)	T	Methylene Chloride	2.090	2.475	2.414	2.324	2.093	2.279	7.88
17)	T	trans-1,2-Dichloroeth	2.562	2.602	2.551	2.724	2.596	2.607	2.63
18)	TP	1,1-Dichloroethane	3.280	3.167	3.265	3.459	3.321	3.298	3.21
19)	T	Vinyl Acetate	1.976	1.372	1.448	1.606	2.051	1.691	18.21
20)	T	2-Butanone	0.365	0.352	0.339	0.374	0.363	0.359	3.80
21)	T	cis-1,2-Dichloroethen	2.630	2.644	2.662	2.811	2.659	2.681	2.75
22)	TC	Chloroform	3.493	3.549	3.525	3.749	3.509	3.565	2.94
23)	T	1,1,1-Trichloroethane	3.111	2.929	3.039	3.280	3.184	3.108	4.32
24)	T	Carbon Tetrachloride	2.405	2.221	2.312	2.490	2.498	2.385	4.97
25)	S	1,2-Dichloroethane-d4	2.140	2.150	2.137	2.149	2.140	2.143	0.27
26)	I	1,4-Difluorobenzene	----------ISTD----------						
27)	TM	Benzene	1.127	1.133	1.141	1.212	1.085	1.140	4.04
28)	T	1,2-Dichloroethane	0.301	0.306	0.301	0.334	0.303	0.309	4.52
29)	TM	Trichloroethene	0.300	0.294	0.300	0.313	0.304	0.302	2.40
30)	TC	1,2-Dichloropropane	0.256	0.258	0.253	0.276	0.257	0.260	3.45
31)	T	Bromodichloromethane	0.341	0.332	0.329	0.367	0.345	0.343	4.30
32)	T	2-Chloroethyl vinyl e	0.084	0.083	0.084	0.091	0.083	0.085	4.15
33)	T	cis-1,3-Dichloroprope	0.429	0.396	0.404	0.450	0.430	0.422	5.13
34)	T	4-Methyl-2-Pentanone	0.050	0.047	0.046	0.053	0.051	0.049#	6.20
35)	S	Toluene-d8	1.201	1.191	1.194	1.205	1.196	1.197	0.45
36)	TCM	Toluene	1.275	1.295	1.297	1.387	1.181	1.287	5.69
37)	I	Chlorobenzene-d5	----------ISTD----------						
38)	T	trans-1,3-Dichloropro	1.382	1.286	1.258	1.471	1.415	1.362	6.53
39)	T	1,1,2-Trichloroethane	0.823	0.857	0.801	0.888	0.823	0.838	4.12
40)	T	Tetrachloroethene	0.987	0.975	0.959	1.029	1.017	0.993	2.91
41)	T	2-Hexanone	0.279	0.256	0.252	0.285	0.272	0.269	5.32
42)	T	Dibromochloromethane	0.829	0.759	0.743	0.860	0.852	0.808	6.70
43)	TMP	Chlorobenzene	3.181	3.313	3.227	3.446	3.089	3.251	4.17
44)	TC	Ethylbenzene	5.338	5.513	5.478	5.904	4.731	5.393	7.89
45)	T	m+p-Xylenes	2.120	2.154	2.103	2.287	2.007	2.134	4.75
46)	T	o-Xylene	3.892	3.862	3.839	4.172	3.704	3.894	4.40
47)	T	Styrene	3.427	3.315	3.325	3.639	3.310	3.403	4.13
48)	TP	Bromoform	0.361	0.303	0.312	0.369	0.379	0.345	10.10
49)	S	Bromofluorobenzene	1.616	1.644	1.595	1.620	1.641	1.623	1.23
50)	TP	1,1,2,2-Tetrachloroet	0.848	0.866	0.818	0.917	0.847	0.859	4.25
51)	T	1,3-Dichlorobenzene	2.287	2.251	2.204	2.399	2.289	2.286	3.15
52)	T	1,4-Dichlorobenzene	2.353	2.340	2.269	2.463	2.334	2.352	2.98
53)	T	1,2-Dichlorobenzene	2.069	2.018	2.001	2.187	2.068	2.069	3.52

(#) = Out of Range

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: FMETL NJDEP#: 13461

Project: 100004 Case No.: 4926 Location: 277 SDG No.: _____

	FIELD ID:	SMC1 DCE #	SMC2 TOL #	SMC3 BFB #	TOT OUT
01	VBLK37	101	98	99	0
02	4896.04MS	76	89	88	0
03	4896.04MSD	74	89	86	0
04	TRIP BLANK	73	89	86	0
05	FIELD BLANK	74	89	88	0
06	277-2-GW	74	89	88	0

QC LIMITS

SMC1	DCE	=	1,2-Dichloroethane-d4	(70-114)
SMC2	TOL	=	Toluene-d8	(88-110)
SMC3	BFB	=	Bromofluorobenzene	(82-115)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

Volatile Matrix Spike Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VC001269.D**	Sample Name	**4896.04MS**
Date Acquired	**10-Nov-99**	Field ID	**4896.04MS**

Compound Name	R.T.	Response	Result	Percent Recovered
Acrolein	8.65	2830	6.31 ug/L	6.31%
Acrylonitrile	11.65	222961	139.95 ug/L	139.95%
tert-Butyl alcohol	9.72	41261	191.79 ug/L	191.79%
Methyl-tert-Butyl ether	11.83	232963	14.60 ug/L	72.99%
Di-isopropyl ether	13.53	105910	16.24 ug/L	162.40%
Dichlorodifluoromethane	4.11	58622	7.80 ug/L	39.01%
Chloromethane	4.71	91222	12.61 ug/L	63.03%
Vinyl Chloride	5.01	98145	13.71 ug/L	68.53%
Bromomethane	6.19	89580	15.60 ug/L	78.02%
Chloroethane	6.44	79457	16.31 ug/L	81.54%
Trichlorofluoromethane	7.22	165760	13.70 ug/L	68.50%
1,1-Dichloroethene	9.29	156585	14.11 ug/L	70.55%
Acetone	8.88	52865	52.66 ug/L	263.32%
Carbon Disulfide	11.09	372012	15.23 ug/L	76.15%
Methylene Chloride	11.15	144381	16.69 ug/L	83.43%
trans-1,2-Dichloroethene	12.28	149961	14.79 ug/L	73.93%
1,1-Dichloroethane	13.77	195883	15.21 ug/L	76.05%
Vinyl Acetate	13.87	87437	14.62 ug/L	73.11%
2-Butanone	15.25	27681	19.86 ug/L	99.30%
cis-1,2-Dichloroethene	15.74	157817	15.08 ug/L	75.39%
Chloroform	16.22	212069	15.19 ug/L	75.96%
1,1,1-Trichloroethane	17.41	168626	13.81 ug/L	69.04%
Carbon Tetrachloride	18.13	119237	12.86 ug/L	64.31%
Benzene	18.61	547483	16.37 ug/L	81.84%
1,2-Dichloroethane	18.56	124240	13.49 ug/L	67.46%
Trichloroethene	20.29	143661	16.62 ug/L	83.11%
1,2-Dichloropropane	20.76	118025	15.52 ug/L	77.62%
Bromodichloromethane	21.36	134615	13.30 ug/L	66.52%
2-Chloroethyl vinyl ether	18.57	39305	15.60 ug/L	77.98%
cis-1,3-Dichloropropene	22.78	167194	13.46 ug/L	67.32%
4-Methyl-2-Pentanone	22.40	38720	26.38 ug/L	131.88%
Toluene	23.62	1534009	40.10 ug/L	200.48%
trans-1,3-Dichloropropene	24.07	129233	12.12 ug/L	60.61%
1,1,2-Trichloroethane	24.46	102526	15.92 ug/L	79.61%
Tetrachloroethene	25.28	128932	17.29 ug/L	86.47%
2-Hexanone	24.29	84911	41.12 ug/L	205.58%
Dibromochloromethane	25.77	87459	14.03 ug/L	70.16%
Chlorobenzene	27.34	422693	16.92 ug/L	84.62%
Ethylbenzene	27.46	1082156	25.29 ug/L	126.44%
m+p-Xylenes	27.66	1009806	60.91 ug/L	152.28%
o-Xylene	28.75	825025	27.29 ug/L	136.43%
Styrene	28.83	441897	16.75 ug/L	83.77%
Bromoform	29.68	33342	12.48 ug/L	62.41%
1,1,2,2-Tetrachloroethane	30.03	103935	15.64 ug/L	78.20%
1,3-Dichlorobenzene	32.88	296417	17.05 ug/L	85.23%
1,4-Dichlorobenzene	33.12	347509	19.47 ug/L	97.34%
1,2-Dichlorobenzene	33.96	271392	17.12 ug/L	85.60%

Volatile Matrix Spike Duplicate Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VC001270.D**	Sample Name	**4896.04MSD**
Date Acquired	**10-Nov-99**	Field ID	**4896.04MSD**

Compound Name	R.T.	Response	Result	Percent Recovered
Acrolein	8.61	3354	7.26 ug/L	7.26%
Acrylonitrile	11.67	295153	179.78 ug/L	179.78%
tert-Butyl alcohol	9.69	46686	210.57 ug/L	210.57%
Methyl-tert-Butyl ether	11.84	299156	18.19 ug/L	90.95%
Di-isopropyl ether	13.53	135581	20.17 ug/L	201.73%
Dichlorodifluoromethane	4.13	78220	10.10 ug/L	50.51%
Chloromethane	4.72	112813	15.13 ug/L	75.64%
Vinyl Chloride	5.01	123991	16.80 ug/L	84.02%
Bromomethane	6.20	119786	20.25 ug/L	101.24%
Chloroethane	6.42	98921	19.70 ug/L	98.51%
Trichlorofluoromethane	7.21	218386	17.52 ug/L	87.58%
1,1-Dichloroethene	9.27	203914	17.83 ug/L	89.15%
Acetone	8.86	59817	57.82 ug/L	289.12%
Carbon Disulfide	11.10	484427	19.24 ug/L	96.22%
Methylene Chloride	11.16	184301	20.67 ug/L	103.34%
trans-1,2-Dichloroethene	12.28	197662	18.91 ug/L	94.56%
1,1-Dichloroethane	13.77	255888	19.28 ug/L	96.40%
Vinyl Acetate	13.87	102747	16.67 ug/L	83.37%
2-Butanone	15.25	36249	25.24 ug/L	126.19%
cis-1,2-Dichloroethene	15.73	194740	18.05 ug/L	90.27%
Chloroform	16.23	268589	18.67 ug/L	93.36%
1,1,1-Trichloroethane	17.41	221239	17.58 ug/L	87.89%
Carbon Tetrachloride	18.12	155118	16.24 ug/L	81.19%
Benzene	18.60	721709	20.97 ug/L	104.83%
1,2-Dichloroethane	18.57	159084	16.79 ug/L	83.94%
Trichloroethene	20.30	186228	20.94 ug/L	104.68%
1,2-Dichloropropane	20.75	153838	19.66 ug/L	98.31%
Bromodichloromethane	21.36	175549	16.86 ug/L	84.29%
2-Chloroethyl vinyl ether	18.58	45926	17.71 ug/L	88.54%
cis-1,3-Dichloropropene	22.78	218179	17.07 ug/L	85.36%
4-Methyl-2-Pentanone	22.39	45168	29.90 ug/L	149.49%
Toluene	23.62	1918377	48.72 ug/L	243.61%
trans-1,3-Dichloropropene	24.06	172754	15.60 ug/L	78.01%
1,1,2-Trichloroethane	24.46	132569	19.83 ug/L	99.13%
Tetrachloroethene	25.29	163007	21.05 ug/L	105.27%
2-Hexanone	24.50	81764	38.12 ug/L	190.62%
Dibromochloromethane	25.77	110005	17.00 ug/L	84.98%
Chlorobenzene	27.34	556375	21.45 ug/L	107.26%
Ethylbenzene	27.46	1373344	30.90 ug/L	154.51%
m+p-Xylenes	27.65	1267001	73.59 ug/L	183.98%
o-Xylene	28.75	1023217	32.59 ug/L	162.93%
Styrene	28.83	560811	20.47 ug/L	102.37%
Bromoform	29.68	40188	14.49 ug/L	72.44%
1,1,2,2-Tetrachloroethane	30.04	134613	19.50 ug/L	97.52%
1,3-Dichlorobenzene	32.88	379250	21.00 ug/L	105.01%
1,4-Dichlorobenzene	33.12	423301	22.84 ug/L	114.18%
1,2-Dichlorobenzene	33.96	353871	21.50 ug/L	107.48%

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: FMETL NJDEP#: 13461

Project: 100004 Case No.: 4926 Location: 277 SDG No.:

Lab File ID (Standard): VC001252.D Date Analyzed: 11/10/99

Instrument ID: VoaInst#3 Time Analyzed: 9:38

GC Column: RTX502.2 ID: 0.25 (mm) Heated Purge: (Y/N) N

		IS1BCM AREA #	RT #	IS2DFB AREA #	RT #	IS3CBZ AREA #	RT #
	12 HOUR STD	747080	16.69	5584160	19.41	1496958	27.24
	UPPER LIMIT	1494160	17.19	11168320	19.91	2993916	27.74
	LOWER LIMIT	373540	16.19	2792080	18.91	748479	26.74
	FIELD ID:						
01	VBLK37	687011	16.70	5041788	19.41	1329917	27.24
02	4896.04MS	1117085	16.70	8276840	19.41	2174331	27.24
03	4896.04MSD	1151201	16.69	8517985	19.41	2258020	27.24
04	TRIP BLANK	1127480	16.69	8266483	19.41	2197386	27.24
05	FIELD BLANK	1112159	16.69	8149417	19.41	2129782	27.24
06	277-2-GW	1097817	16.69	8226005	19.41	2171620	27.24

IS1 BCM = Bromochloromethane
IS2 DFB = 1,4-Difluorobenzene
IS3 CBZ = 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 to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\991110\VC001257.D Vial: 2
Acq On : 10 Nov 1999 2:43 pm Operator: Skelton
Sample : Vblk37 Inst : GC/MS Ins
Misc : Vblk37 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 10 15:18 1999 Quant Results File: M362410.RES

Quant Method : C:\HPCHEM\1\METHODS\M362410.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Wed Nov 10 14:58:14 1999
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\991110\VC001252.D
DataAcq Meth : M362410

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	16.70	128	687011	30.00	ug/L	0.00
26) 1,4-Difluorobenzene	19.41	114	5041788	30.00	ug/L	0.00
37) Chlorobenzene-d5	27.24	119	1329917	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	18.30	65	1495111	30.37	ug/L	0.00
Spiked Amount 30.000	Range 76 - 114		Recovery = 101.23%			
35) Toluene-d8	23.42	98	5973391	29.51	ug/L	0.00
Spiked Amount 30.000	Range 88 - 110		Recovery = 98.37%			
49) Bromofluorobenzene	30.25	95	2128178	29.64	ug/L	0.00
Spiked Amount 30.000	Range 86 - 115		Recovery = 98.80%			

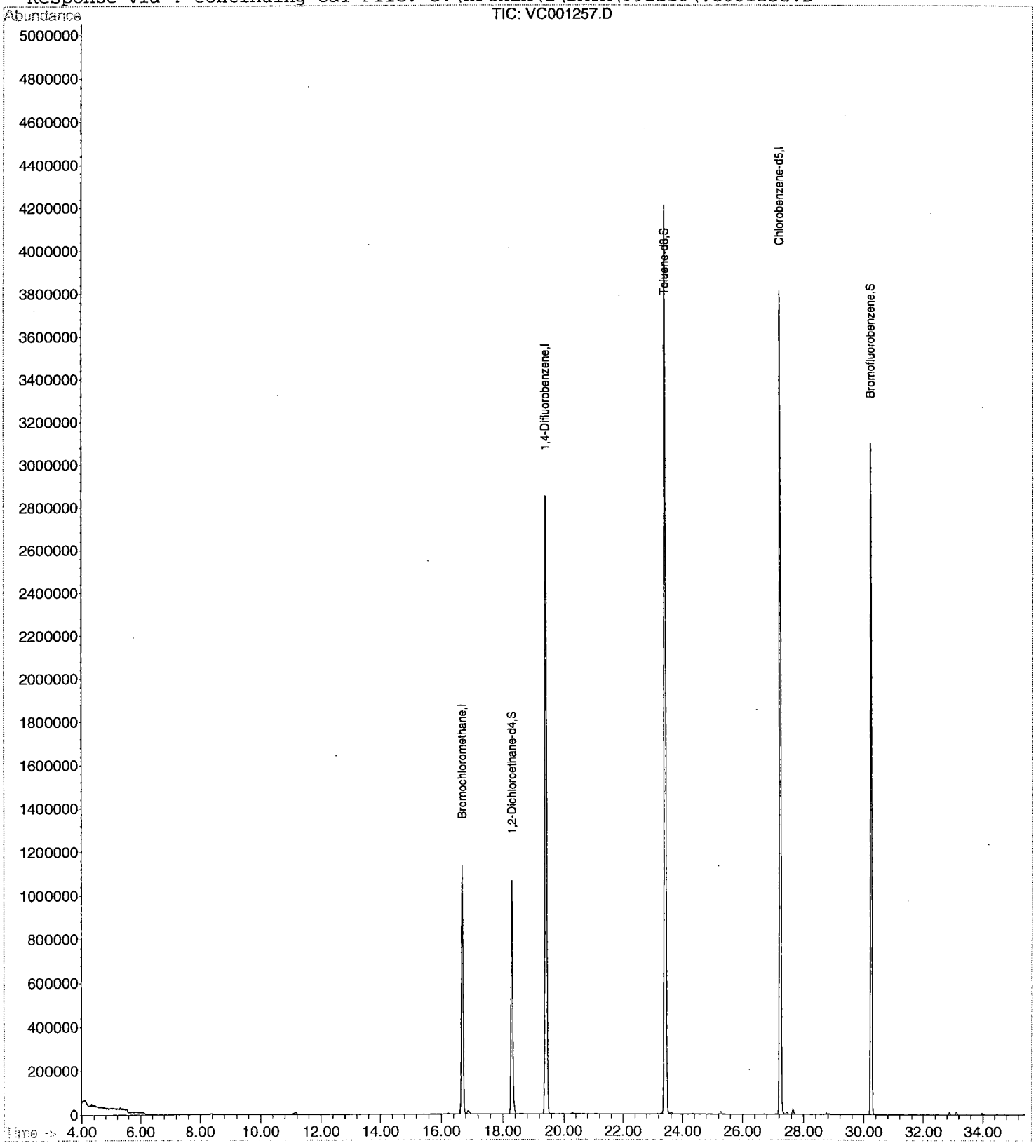
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

000029

Data File : C:\HPCHEM\1\DATA\991110\VC001257.D Vial: 2
Acq On : 10 Nov 1999 2:43 pm Operator: Skelton
Sample : Vblk37 Inst : GC/MS Ins
Misc : Vblk37 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 10 15:18 1999 Quant Results File: M362410.RES

Method : C:\HPCHEM\1\METHODS\M362410.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Wed Nov 10 14:58:14 1999
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\991110\VC001252.D



000030

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\991110\VC001281.D Vial: 24
Acq On : 11 Nov 1999 7:04 am Operator: Skelton
Sample : 4926.01 Inst : GC/MS Ins
Misc : Trip Blank Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 11 7:39 1999 Quant Results File: M362410.RES

Quant Method : C:\HPCHEM\1\METHODS\M362410.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Wed Nov 10 14:58:14 1999
Response via : Continuing Cal File: C:\HPCHEM\1\DATA\991110\VC001252.D
DataAcq Meth : M362410

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	16.69	128	1127480	30.00	ug/L	0.00
26) 1,4-Difluorobenzene	19.41	114	8266483	30.00	ug/L	0.00
37) Chlorobenzene-d5	27.24	119	2197386	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	18.31	65	1765937	21.86	ug/L	0.00
Spiked Amount 30.000	Range 76 - 114		Recovery = 72.87%#			
35) Toluene-d8	23.42	98	8822081	26.58	ug/L	0.00
Spiked Amount 30.000	Range 88 - 110		Recovery = 88.60%			
49) Bromofluorobenzene	30.25	95	3059290	25.79	ug/L	0.00
Spiked Amount 30.000	Range 86 - 115		Recovery = 85.97%#			
Target Compounds						Qvalue
14) Acetone	8.84	43	282263	27.86	ug/L	91
20) 2-Butanone	15.23	43	133734	9.51	ug/L	93

(#) = qualifier out of range (m) = manual integration

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA03370.D**	Sample Name	**4926.02**
Operator	**Bhaskar**	Misc Info	**Field Blank**
Date Acquired	**13-Nov-99**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	1.83	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.91	ug/L	
62-53-3	Aniline			not detected	NLE	1.63	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.28	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	1.21	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	1.19	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	1.02	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	1.13	ug/L	
108-60-1	bis(2-chloroisopropyl)ether			not detected	300	1.39	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.80	ug/L	
67-72-1	Hexachloroethane			not detected	10	1.50	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.97	ug/L	
78-59-1	Isophorone			not detected	100	1.01	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	1.21	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	1.22	ug/L	
91-20-3	Naphthalene			not detected	NLE	1.27	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.09	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.71	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	1.08	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	1.32	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	1.01	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.96	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	1.52	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.96	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.81	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.79	ug/L	
83-32-9	Acenaphthene			not detected	400	1.10	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	1.00	ug/L	
121-14-2	2,4-Dinitrotoluene			not detected	10	0.87	ug/L	
84-66-2	Diethylphthalate			not detected	5000	1.62	ug/L	
86-73-7	Fluorene			not detected	300	0.99	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	1.10	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.05	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	1.01	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.67	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.76	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.94	ug/L	
85-01-8	Phenanthrene			not detected	NLE	1.23	ug/L	
120-12-7	Anthracene			not detected	2000	1.12	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	1.70	ug/L	
206-44-0	Fluoranthene			not detected	300	1.64	ug/L	

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Field Blank**

Lab Name: FMETL Lab Code 13461

Project UST Case No.: 4926 Location 277 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 4926.02

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA03370.D

Level: (low/med) LOW Date Received: 11/8/99

% Moisture: decanted: (Y/N) N Date Extracted: 11/9/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/13/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.24	6	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA03371.D**	Sample Name	**4926.05**
Operator	**Bhaskar**	Misc Info	**277-2-GW**
Date Acquired	**13-Nov-99**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	1.83	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.91	ug/L	
62-53-3	Aniline			not detected	NLE	1.63	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.28	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	1.21	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	1.19	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	1.02	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	1.13	ug/L	
108-60-1	bis(2-chloroisopropyl)ether			not detected	300	1.39	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.80	ug/L	
67-72-1	Hexachloroethane			not detected	10	1.50	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.97	ug/L	
78-59-1	Isophorone			not detected	100	1.01	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	1.21	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	1.22	ug/L	
91-20-3	Naphthalene			not detected	NLE	1.27	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.09	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.71	ug/L	
91-57-6	2-Methylnaphthalene	15.31	41470	2.07 ug/L	NLE	1.08	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	1.32	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	1.01	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.96	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	1.52	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.96	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.81	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.79	ug/L	
83-32-9	Acenaphthene	18.00	90231	4.53 ug/L	400	1.10	ug/L	
132-64-9	Dibenzofuran	18.37	61088	2.24 ug/L	NLE	1.00	ug/L	
121-14-2	2,4-Dinitrotoluene			not detected	10	0.87	ug/L	
84-66-2	Diethylphthalate			not detected	5000	1.62	ug/L	
86-73-7	Fluorene	19.15	141251	6.16 ug/L	300	0.99	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	1.10	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.05	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	1.01	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.67	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.76	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.94	ug/L	
85-01-8	Phenanthrene	21.23	268604	8.26 ug/L	NLE	1.23	ug/L	
120-12-7	Anthracene			not detected	2000	1.12	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	1.70	ug/L	
206-44-0	Fluoranthene			not detected	300	1.64	ug/L	

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **277-2-GW**

Lab Name: FMETL Lab Code 13461

Project UST Case No.: 4926 Location 277 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 4926.05

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA03371.D

Level: (low/med) LOW Date Received: 11/8/99

% Moisture: decanted: (Y/N) N Date Extracted: 11/9/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/13/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7

Number TICs found: 15 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000527-84-4	Benzene, 1-methyl-2-(1-methylet	11.78	12	JN
2. 000934-80-5	Benzene, 4-ethyl-1,2-dimethyl-	11.90	24	JN
3. 000527-53-7	Benzene, 1,2,3,5-tetramethyl-	12.43	13	JN
4. 000527-53-7	Benzene, 1,2,3,5-tetramethyl-	12.50	14	JN
5. 000767-99-7	Benzene, (1-methyl-1-propenyl)-,	13.04	30	JN
6. 006682-71-9	1H-Indene, 2,3-dihydro-4,7-dimet	13.76	11	JN
7. 006682-71-9	1H-Indene, 2,3-dihydro-4,7-dimet	14.55	11	JN
8. 000264-09-5	Benzocycloheptatriene	15.59	38	JN
9. 000575-37-1	Naphthalene, 1,7-dimethyl-	16.90	24	JN
10. 000581-40-8	Naphthalene, 2,3-dimethyl-	17.12	39	JN
11. 000581-42-0	Naphthalene, 2,6-dimethyl-	17.16	18	JN
12. 000581-40-8	Naphthalene, 2,3-dimethyl-	17.39	13	JN
13. 002245-38-7	Naphthalene, 1,6,7-trimethyl-	18.68	12	JN
14. 002489-86-3	Naphthalene, 1-(2-propenyl)-	19.31	16	JN
15.	unknown	20.45	11	J

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: FMETL Lab Code 13461

Project UST Case No.: 4926 Location 277 SDG No.:

Lab File ID: BNA03321.D DFTPP Injection Date: 10/27/99

Instrument ID: BNA#2 DFTPP Injection Time: 9:32

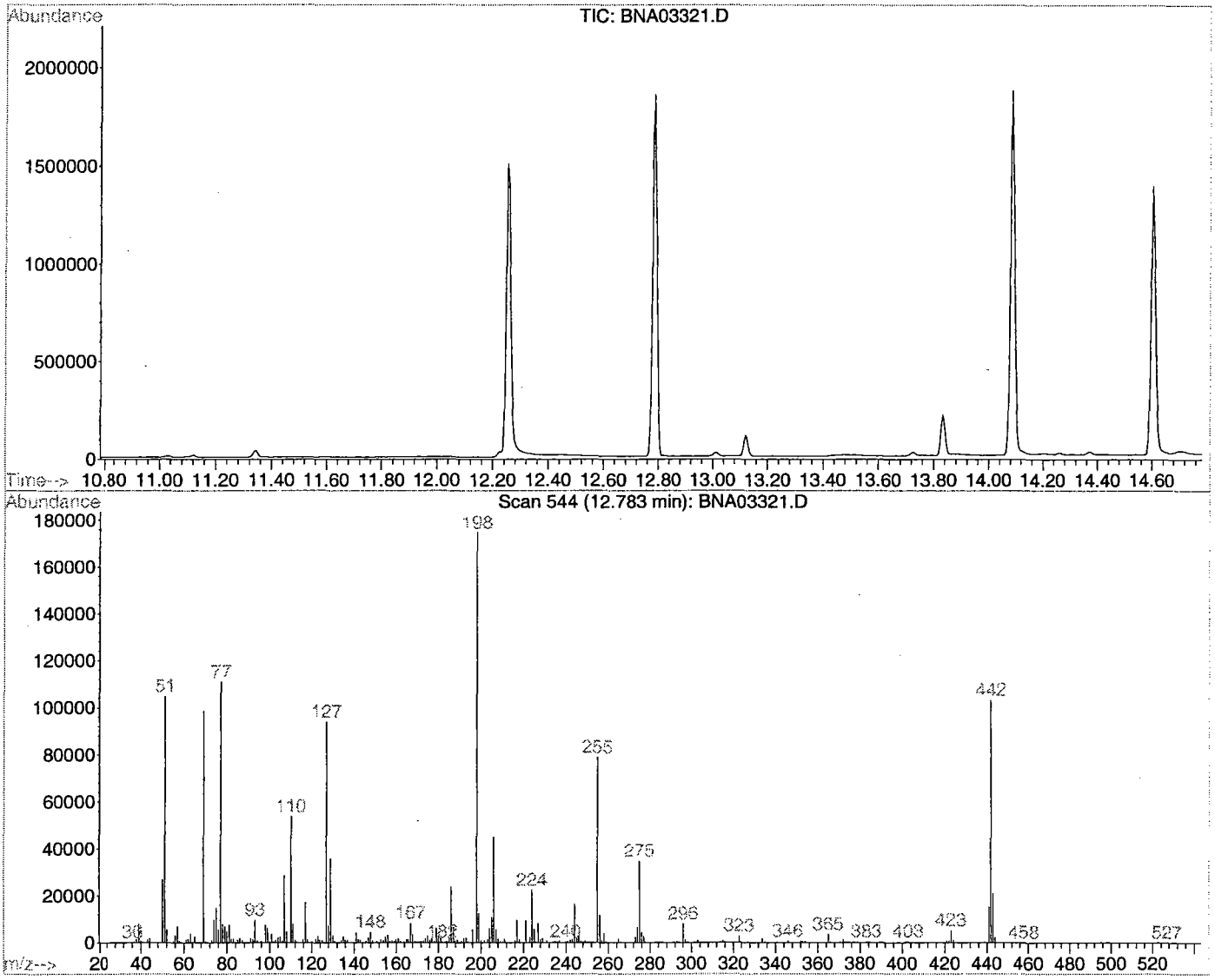
m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 80.0% of mass 198	60.0
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 Relative abundance	56.4
70	Less than 2.0% of mass 69	0.3 (0.6)1
127	25.0 - 75.0% of mass 198	53.8
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.1
275	10.0 - 30.0% of mass 198	19.9
365	Greater than 0.75% of mass 198	2.0
441	Present, but less than mass 443	8.7
442	40.0 - 110.0% of mass 198	59.1
443	15.0 - 24.0% of mass 442	12.0 (20.4)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	FIELD ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD120	120 PPM CAL	BNA03323.D	10/27/99	10:55
02	SSTD080	80 PPM CAL	BNA03324.D	10/27/99	11:50
03	SSTD050	50 PPM CAL	BNA03325.D	10/27/99	12:40
04	SSTD010	10 PPM CAL	BNA03326.D	10/27/99	13:31
05	SSTD020	20 PPM CAL	BNA03327.D	10/27/99	14:20
06	4871.04DUP	4871.04DUP	BNA03332.D	10/27/99	18:28
07	4871.04MS	4871.04MS	BNA03333.D	10/27/99	19:17

Data File : C:\HPCHEM\1\DATA\991027\BNA03321.D Vial: 99
Acq On : 27 Oct 1999 9:32 am Operator: Bhaskar
Sample : DFTPP TUNE Inst : GC BNA 2
Misc : 50NG/2UL Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : C:\HPCHEM\1\METHODS\M262534.M (RTE Integrator)
Title : BNA Calibration



Spectrum Information: Scan 544

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	60.0	104832	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	56.4	98600	PASS
70	69	0.00	2	0.6	593	PASS
127	198	40	60	53.8	94000	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	174720	PASS
199	198	5	9	7.1	12479	PASS
275	198	10	30	19.9	34848	PASS
365	198	1	100	2.0	3527	PASS
441	443	1	99	72.0	15134	PASS
442	198	40	100	59.1	103184	PASS
443	442	17	23	20.4	21008	PASS

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: FMETL Lab Code 13461

Project UST Case No.: 4926 Location 277 SDG No.:

Lab File ID: BNA03353.D DFTPP Injection Date: 11/12/99

Instrument ID: BNA#2 DFTPP Injection Time: 12:04

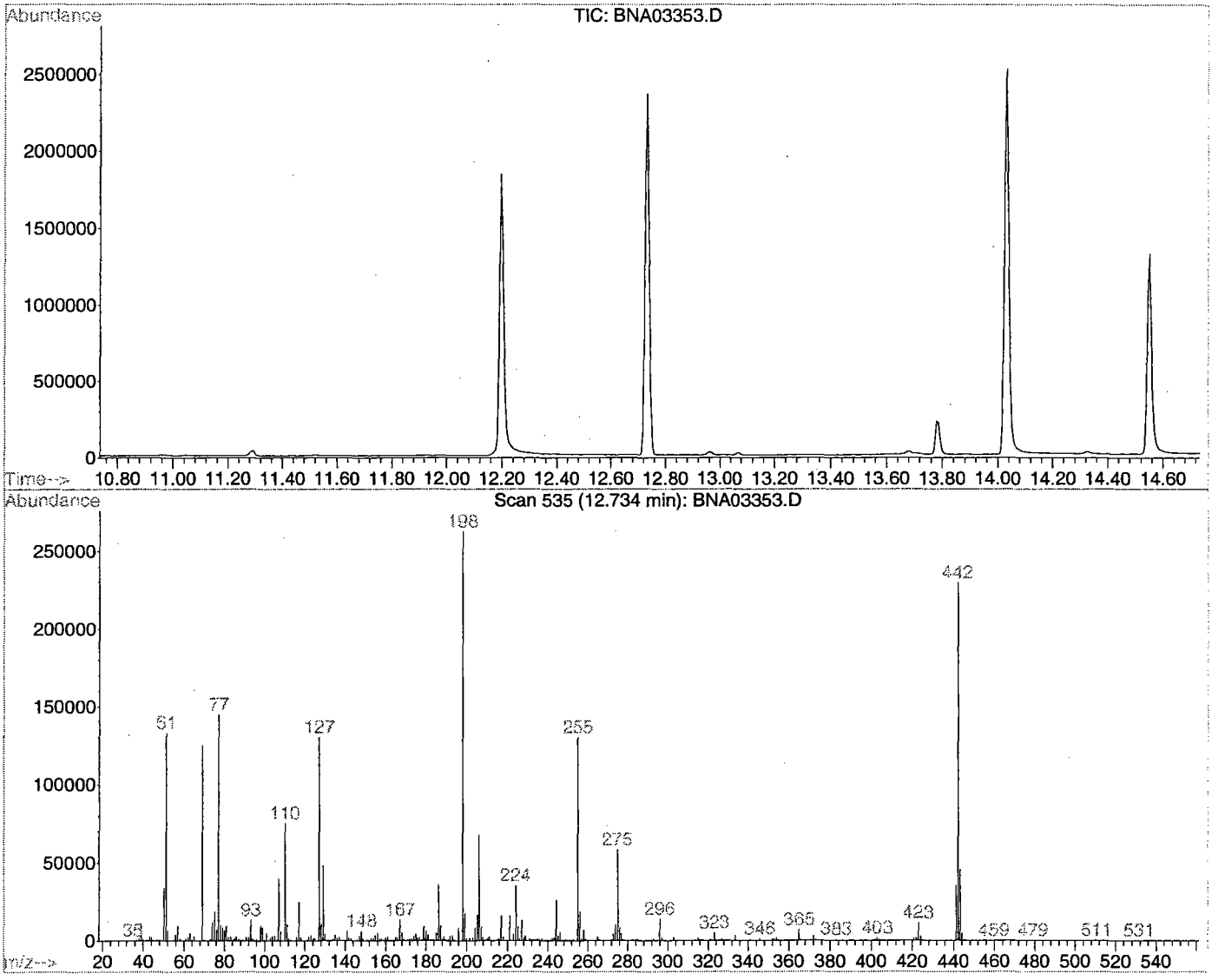
m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 80.0% of mass 198	50.6
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 Relative abundance	47.5
70	Less than 2.0% of mass 69	0.3 (0.6)1
127	25.0 - 75.0% of mass 198	49.5
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.7
275	10.0 - 30.0% of mass 198	22.1
365	Greater than 0.75% of mass 198	2.6
441	Present, but less than mass 443	13.4
442	40.0 - 110.0% of mass 198	87.3
443	15.0 - 24.0% of mass 442	17.2 (19.7)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	FIELD ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD050	50 PPM STD	BNA03354.D	11/12/99	12:32
02	SBLK318	SBLK318	BNA03358.D	11/12/99	15:46
03	FIELD BLANK	4926.02	BNA03370.D	11/13/99	1:07
04	277-2-GW	4926.05	BNA03371.D	11/13/99	1:54

Data File : C:\HPCHEM\1\DATA\991112\BNA03353.D Vial: 99
Acq On : 12 Nov 1999 12:04 pm Operator: Bhaskar
Sample : DFTPP Tune Inst : GC BNA 2
Misc : 50 NG/2UL Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : C:\HPCHEM\1\METHODS\M262534.M (RTE Integrator)
Title : BNA Calibration



Spectrum Information: Scan 535

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	50.6	132928	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	47.5	124808	PASS
70	69	0.00	2	0.6	769	PASS
127	198	40	60	49.5	130160	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	262720	PASS
199	198	5	9	6.7	17552	PASS
275	198	10	30	22.1	57936	PASS
365	198	1	100	2.6	6882	PASS
441	443	1	99	77.9	35280	PASS
442	198	40	100	87.3	229440	PASS
443	442	17	23	19.7	45272	PASS

4B

FIELD ID

SEMIVOLATILE METHOD BLANK SUMMARY

Sblk318

Lab Name: FMETL Lab Code 13461

Project UST Case No.: 4926 Location 277 SDG No.:

Lab File ID: BNA03358.D Lab Sample ID: Sblk318

Instrument ID: GC BNA 2 Date Extracted: 11/9/99

Matrix: (soil/water) WATER Date Analyzed: 11/12/99

Level: (low/med) LOW Time Analyzed: 15:46

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	FIELD ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	FIELD BLANK	4926.02	BNA03370.D	11/13/99
02	277-2-GW	4926.05	BNA03371.D	11/13/99

COMMENTS:

Response Factor Report GC BNA 2

Method : C:\HPCHEM\1\METHODS\M262534.M (RTE Integrator)
Title : BNA Calibration
Last Update : Wed Oct 27 15:00:17 1999
Response via : Initial Calibration

Calibration Files
120 =BNA03323.D 80 =BNA03324.D 50 =BNA03325.D
20 =BNA03327.D 10 =BNA03326.D

		Compound	120	80	50	20	10	Avg	%RSD
1)	I	1,4-Dichlorobenzene-d	----------ISTD----------						
2)	T	Pyridine	1.846	1.773	1.775	1.790	1.796	1.796	1.64
3)	T	N-nitroso-dimethylami	0.843	0.812	0.809	0.831	0.824	0.824	1.70
4)	S	2-Fluorophenol	1.419	1.390	1.385	1.406	1.381	1.396	1.15
5)	T	Aniline	1.362	1.316	1.339	1.414	1.331	1.352	2.84
6)	S	Phenol-d5	1.736	1.717	1.725	1.778	1.776	1.746	1.65
7)	TCM	Phenol	1.901	1.881	1.894	1.961	1.981	1.923	2.31
8)	T	bis(2-Chloroethyl)eth	1.559	1.456	1.402	1.400	1.420	1.447	4.59
9)	TM	2-Chlorophenol	1.375	1.355	1.363	1.388	1.386	1.374	1.04
10)	T	1,3-Dichlorobenzene	1.465	1.455	1.472	1.509	1.534	1.487	2.25
11)	TCM	1,4-Dichlorobenzene	1.462	1.464	1.478	1.534	1.535	1.495	2.48
12)	T	Benzyl alcohol	0.971	0.959	0.957	0.969	0.971	0.965	0.70
13)	T	1,2-Dichlorobenzene	1.365	1.367	1.389	1.437	1.445	1.401	2.72
14)	T	2-Methylphenol	1.336	1.328	1.345	1.392	1.412	1.363	2.75
15)	T	bis(2-chloroisopropyl	1.740	1.724	1.726	1.749	1.784	1.745	1.39
16)	T	4-Methylphenol	1.290	1.289	1.305	1.351	1.319	1.311	1.95
17)	TPM	n-Nitroso-di-n-propyl	0.245	0.243	0.246	0.252	0.256	0.248	2.15
18)	T	Hexachloroethane	0.571	0.570	0.573	0.591	0.592	0.579	1.89
19)	I	Naphthalene-d8	----------ISTD----------						
20)	S	Nitrobenzene-d5	0.461	0.468	0.477	0.476	0.471	0.471	1.44
21)	T	Nitrobenzene	0.422	0.431	0.439	0.450	0.449	0.438	2.68
22)	T	Isophorone	0.805	0.803	0.812	0.844	0.863	0.825	3.27
23)	TC	2-Nitrophenol	0.173	0.179	0.180	0.175	0.166	0.174	3.27
24)	T	2,4-Dimethylphenol	0.388	0.395	0.409	0.432	0.437	0.412	5.32
25)	T	bis(2-Chloroethoxy)me	0.427	0.429	0.435	0.446	0.445	0.437	2.01
26)	TC	2,4-Dichlorophenol	0.272	0.281	0.293	0.302	0.302	0.290	4.59
27)	T	Benzoic Acid	0.219	0.286	0.268	0.226	0.187	0.237	16.79
28)	TM	1,2,4-Trichlorobenzen	0.292	0.298	0.308	0.322	0.332	0.310	5.31
29)	T	Naphthalene	0.954	0.993	1.040	1.098	1.114	1.040	6.52
30)	T	4-Chloroaniline	0.110	0.127	0.164	0.241	0.261	0.181	37.33
31)	TC	Hexachlorobutadiene	0.162	0.167	0.174	0.187	0.191	0.176	7.25
32)	TCM	4-Chloro-3-methylphen	0.348	0.352	0.355	0.364	0.362	0.356	1.96
33)	T	2-Methylnaphthalene	0.601	0.633	0.664	0.701	0.712	0.662	7.00
34)	I	Acenaphthene-d10	----------ISTD----------						
35)	TP	Hexachlorocyclopentad	0.287	0.281	0.276	0.246	0.201	0.258	13.85
36)	TC	2,4,6-Trichlorophenol	0.358	0.360	0.363	0.374	0.370	0.365	1.85
37)	T	2,4,5-Trichlorophenol	0.386	0.385	0.393	0.394	0.386	0.389	1.12
38)	S	2-Fluorobiphenyl	1.239	1.271	1.319	1.402	1.435	1.333	6.28
39)	T	2-Chloronaphthalene	1.010	1.021	1.052	1.103	1.132	1.064	4.95
40)	T	2-Nitroaniline	0.358	0.357	0.360	0.345	0.319	0.348	4.86
41)	T	Dimethylphthalate	1.152	1.169	1.202	1.275	1.313	1.222	5.65
42)	T	Acenaphthylene	1.649	1.680	1.742	1.848	1.904	1.765	6.18
43)	T	2,6-Dinitrotoluene	0.341	0.340	0.344	0.341	0.328	0.339	1.79
44)	T	3-Nitroaniline	0.181	0.183	0.188	0.189	0.185	0.185	1.70
45)	TCM	Acenaphthene	1.034	1.052	1.091	1.149	1.177	1.101	5.58
46)	TP	2,4-Dinitrophenol	0.138	0.132	0.118	0.075		0.116	24.75
47)	T	Dibenzofuran	1.365	1.427	1.494	1.592	1.647	1.505	7.67
48)	TMP	4-Nitrophenol	0.333	0.340	0.342	0.331	0.298	0.329	5.36
49)	TM	2,4-Dinitrotoluene	0.376	0.370	0.373	0.356	0.319	0.359	6.63
50)	T	Diethylphthalate	1.151	1.190	1.243	1.309	1.351	1.249	6.60
51)	T	Fluorene	1.141	1.187	1.258	1.355	1.387	1.266	8.34
52)	T	4-Chlorophenyl-phenyl	0.499	0.521	0.544	0.583	0.601	0.550	7.78
53)	T	4-Nitroaniline	0.223	0.222	0.237	0.240	0.219	0.228	4.13
54)	I	Phenanthrene-d10	----------ISTD----------						

(#) = Out of Range

Method : C:\HPCHEM\1\METHODS\M262534.M (RTE Integrator)
Title : BNA Calibration
Last Update : Wed Oct 27 15:00:17 1999
Response via : Initial Calibration

Calibration Files
120 =BNA03323.D 80 =BNA03324.D 50 =BNA03325.D
20 =BNA03327.D 10 =BNA03326.D

		Compound	120	80	50	20	10	Avg	%RSD
55)	T	4,6-Dinitro-2-methylp	0.127	0.127	0.127	0.103	0.079	0.113	18.94
56)	TC	n-Nitrosodiphenylamin	0.431	0.450	0.477	0.501	0.519	0.476	7.63
57)	T	Azobenzene	0.873	0.850	0.898	0.941	0.977	0.908	5.65
58)	S	2,4,6-Tribromophenol	0.082	0.083	0.085	0.085	0.088	0.085	2.51
59)	T	4-Bromophenyl-phenyle	0.166	0.169	0.176	0.186	0.187	0.177	5.54
60)	T	Hexachlorobenzene	0.174	0.177	0.186	0.196	0.204	0.187	6.91
61)	TCM	Pentachlorophenol	0.131	0.131	0.134	0.129	0.120	0.129	4.15
62)	T	Phenanthrene	0.960	1.012	1.076	1.168	1.211	1.085	9.65
63)	T	Anthracene	0.981	1.033	1.113	1.192	1.234	1.111	9.53
64)	T	Di-n-butylphthalate	1.055	1.151	1.227	1.342	1.387	1.233	11.02
65)	TC	Fluoranthene	1.020	1.080	1.148	1.242	1.281	1.154	9.41
66)	I	Chrysene-d12	----------ISTD----------						
67)	T	Benzidine	0.225	0.225	0.221	0.282	0.335	0.258	19.39
68)	TM	Pyrene	1.206	1.273	1.323	1.443	1.508	1.351	9.16
69)	S	p-Terphenyl-d14	0.877	0.896	0.919	0.985	1.016	0.939	6.30
70)	T	Butylbenzylphthalate	0.597	0.625	0.662	0.706	0.735	0.665	8.51
71)	T	Benzo[a]anthracene	1.165	1.196	1.227	1.308	1.338	1.247	5.90
72)	T	3,3'-Dichlorobenzidin	0.212	0.217	0.224	0.213	0.206	0.214	3.12
73)	T	Chrysene	1.066	1.103	1.146	1.228	1.259	1.160	7.04
74)	T	bis(2-Ethylhexyl)phth	0.800	0.880	0.930	1.005	1.043	0.931	10.39
75)	I	Perylene-d12	----------ISTD----------						
76)	TC	Di-n-octylphthalate	1.366	1.477	1.580	1.659	1.717	1.560	9.03
77)	T	Benzo[b]fluoranthene	1.279	1.232	1.248	1.239	1.300	1.260	2.30
78)	T	Benzo[k]fluoranthene	1.053	1.077	1.151	1.232	1.220	1.147	7.07
79)	TC	Benzo[a]pyrene	1.073	1.087	1.116	1.148	1.164	1.118	3.47
80)	T	Indeno[1,2,3-cd]pyren	1.280	1.273	1.286	1.285	1.279	1.280	0.41
81)	T	Dibenz[a,h]anthracene	1.050	1.051	1.068	1.063	1.064	1.059	0.77
82)	T	Benzo[g,h,i]perylene	1.102	1.094	1.101	1.100	1.101	1.100	0.28

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\991112\BNA03354.D Vial: 100
Acq On : 12 Nov 1999 12:32 pm Operator: Bhaskar
Sample : 50 PPM STD Inst : GC BNA 2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p

Method : C:\HPCHEM\1\METHODS\M262534.M (RTE Integrator)
Title : BNA Calibration
Last Update : Wed Oct 27 15:00:17 1999
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	104	-0.09
2	T	Pyridine	1.796	1.804	-0.4	106	-0.07
3	T	N-nitroso-dimethylamine	0.824	0.847	-2.8	109	-0.07
4	S	2-Fluorophenol	1.396	1.412	-1.1	106	-0.08
5	T	Aniline	1.352	1.290	4.6	100	-0.09
6	S	Phenol-d5	1.746	1.744	0.1	105	-0.07
7	TCM	Phenol	1.923	1.906	0.9	105	-0.08
8	T	bis(2-Chloroethyl)ether	1.447	1.441	0.4	107	-0.09
9	TM	2-Chlorophenol	1.374	1.370	0.3	104	-0.09
10	T	1,3-Dichlorobenzene	1.487	1.494	-0.5	106	-0.09
11	TCM	1,4-Dichlorobenzene	1.495	1.487	0.5	105	-0.09
12	T	Benzyl alcohol	0.965	0.966	-0.1	105	-0.09
13	T	1,2-Dichlorobenzene	1.401	1.399	0.1	105	-0.09
14	T	2-Methylphenol	1.363	1.362	0.1	105	-0.08
15	T	bis(2-chloroisopropyl)ether	1.745	1.784	-2.2	107	-0.09
16	T	4-Methylphenol	1.311	1.305	0.5	104	-0.09
17	TPM	n-Nitroso-di-n-propylamine	0.248	0.252	-1.6	107	-0.09
18	T	Hexachloroethane	0.579	0.575	0.7	104	-0.10
19	I	Naphthalene-d8	1.000	1.000	0.0	105	-0.09
20	S	Nitrobenzene-d5	0.471	0.475	-0.8	104	-0.09
21	T	Nitrobenzene	0.438	0.433	1.1	103	-0.09
22	T	Isophorone	0.825	0.807	2.2	104	-0.09
23	TC	2-Nitrophenol	0.174	0.164	5.7	96	-0.09
24	T	2,4-Dimethylphenol	0.412	0.404	1.9	104	-0.09
25	T	bis(2-Chloroethoxy)methane	0.437	0.434	0.7	105	-0.09
26	TC	2,4-Dichlorophenol	0.290	0.290	0.0	104	-0.09
27	T	Benzoic Acid	0.237	0.207	12.7	81	-0.08
28	TM	1,2,4-Trichlorobenzene	0.310	0.307	1.0	105	-0.09
29	T	Naphthalene	1.040	1.033	0.7	104	-0.09
30	T	4-Chloroaniline	0.181	0.152	16.0	97	-0.09
31	TC	Hexachlorobutadiene	0.176	0.172	2.3	104	-0.09
32	TCM	4-Chloro-3-methylphenol	0.356	0.349	2.0	103	-0.10
33	T	2-Methylnaphthalene	0.662	0.662	0.0	105	-0.10
34	I	Acenaphthene-d10	1.000	1.000	0.0	104	-0.09
35	TP	Hexachlorocyclopentadiene	0.258	0.232	10.1	87	-0.10
36	TC	2,4,6-Trichlorophenol	0.365	0.353	3.3	101	-0.09
37	T	2,4,5-Trichlorophenol	0.389	0.383	1.5	102	-0.09
38	S	2-Fluorobiphenyl	1.333	1.336	-0.2	106	-0.10
39	T	2-Chloronaphthalene	1.064	1.068	-0.4	106	-0.10
40	T	2-Nitroaniline	0.348	0.368	-5.7	107	-0.09
41	T	Dimethylphthalate	1.222	1.221	0.1	106	-0.09
42	T	Acenaphthylene	1.765	1.771	-0.3	106	-0.09
43	T	2,6-Dinitrotoluene	0.339	0.340	-0.3	103	-0.09
44	T	3-Nitroaniline	0.185	0.174	5.9	97	-0.09
45	TCM	Acenaphthene	1.101	1.105	-0.4	106	-0.09
46	TP	2,4-Dinitrophenol	0.116	0.092	20.7	81	-0.09
47	T	Dibenzofuran	1.505	1.458	3.1	102	-0.09
48	TMP	4-Nitrophenol	0.329	0.285	13.4	87	-0.07
49	TM	2,4-Dinitrotoluene	0.359	0.383	-6.7	107	-0.09
50	T	Diethylphthalate	1.249	1.241	0.6	104	-0.08
51	T	Fluorene	1.266	1.268	-0.2	105	-0.09
52	T	4-Chlorophenyl-phenylether	0.550	0.544	1.1	104	-0.09
53	T	4-Nitroaniline	0.228	0.260	-14.0	115	-0.09

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\991112\BNA03354.D Vial: 100
Acq On : 12 Nov 1999 12:32 pm Operator: Bhaskar
Sample : 50 PPM STD Inst : GC BNA 2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p

Method : C:\HPCHEM\1\METHODS\M262534.M (RTE Integrator)
Title : BNA Calibration
Last Update : Wed Oct 27 15:00:17 1999
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
54	I	Phenanthrene-d10	1.000	1.000	0.0	103	-0.09
55	T	4,6-Dinitro-2-methylphenol	0.113	0.106	6.2	86	-0.09
56	TC	n-Nitrosodiphenylamine	0.476	0.490	-2.9	106	-0.09
57	T	Azobenzene	0.908	0.885	2.5	101	-0.09
58	S	2,4,6-Tribromophenol	0.085	0.081	4.7	98	-0.09
59	T	4-Bromophenyl-phenylether	0.177	0.178	-0.6	104	-0.09
60	T	Hexachlorobenzene	0.187	0.190	-1.6	105	-0.09
61	TCM	Pentachlorophenol	0.129	0.120	7.0	92	-0.09
62	T	Phenanthrene	1.085	1.096	-1.0	105	-0.09
63	T	Anthracene	1.111	1.123	-1.1	104	-0.09
64	T	Di-n-butylphthalate	1.233	1.245	-1.0	104	-0.08
65	TC	Fluoranthene	1.154	1.171	-1.5	105	-0.09
66	I	Chrysene-d12	1.000	1.000	0.0	104	-0.09
67	T	Benzidine	0.258	0.294	-14.0	138	-0.08
68	TM	Pyrene	1.351	1.347	0.3	106	-0.09
69	S	p-Terphenyl-d14	0.939	0.928	1.2	105	-0.09
70	T	Butylbenzylphthalate	0.665	0.651	2.1	102	-0.08
71	T	Benzo[a]anthracene	1.247	1.255	-0.6	106	-0.09
72	T	3,3'-Dichlorobenzidine	0.214	0.197	7.9	92	-0.08
73	T	Chrysene	1.160	1.179	-1.6	107	-0.09
74	T	bis(2-Ethylhexyl)phthalate	0.931	0.904	2.9	101	-0.07
75	I	Perylene-d12	1.000	1.000	0.0	107	-0.13
76	TC	Di-n-octylphthalate	1.560	1.467	6.0	99	-0.08
77	T	Benzo[b]fluoranthene	1.260	1.225	2.8	105	-0.10
78	T	Benzo[k]fluoranthene	1.147	1.179	-2.8	109	-0.11
79	TC	Benzo[a]pyrene	1.118	1.139	-1.9	109	-0.12
80	T	Indeno[1,2,3-cd]pyrene	1.280	1.318	-3.0	109	-0.20
81	T	Dibenz[a,h]anthracene	1.059	1.101	-4.0	110	-0.20
82	T	Benzo[g,h,i]perylene	1.100	1.121	-1.9	108	-0.21

2C

WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: FMETL Lab Code 13461

Project UST Case No.: 4926 Location 277 SDG No.: _____

	FIELD ID	S1 NBZ #	S2 2FP #	S3 TPL #	TOT OUT
01	4871.04DUP	83	78	68	0
02	4871.04MS	47	47	45	0
03	SBLK318	67	67	73	0
04	FIELD BLANK	65	65	82	0
05	277-2-GW	64	67	48	0

QC LIMITS

S1	NBZ	=	Nitrobenzene-d5	(34-112)
S2	2FP	=	2-Fluorobiphenyl	(30-128)
S3	TPL	=	p-Terphenyl-d14	(29-151)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out

Base Neutral Spike Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name **BNA03359.D** Sample Name **Sblk318BS**

Date Acquired **12-Nov-99**

CAS#	Name		Amount Recovered	Percent Recovered
110-86-1	Pyridine		7.66 ug/L	38.30
62-75-9	N-nitroso-dimethylamine		7.36 ug/L	36.79
62-53-3	Aniline		17.12 ug/L	85.58
111-44-4	bis(2-Chloroethyl)ether		17.54 ug/L	87.71
541-73-1	1,3-Dichlorobenzene		14.07 ug/L	70.35
106-46-7	1,4-Dichlorobenzene		14.40 ug/L	72.00
100-51-6	Benzyl alcohol		8.89 ug/L	44.45
95-50-1	1,2-Dichlorobenzene		14.70 ug/L	73.50
108-60-1	bis(2-chloroisopropyl)ether		17.93 ug/L	89.64
621-64-7	n-Nitroso-di-n-propylamine		19.27 ug/L	96.33
67-72-1	Hexachloroethane		13.07 ug/L	65.37
98-95-3	Nitrobenzene		16.75 ug/L	83.75
78-59-1	Isophorone		16.84 ug/L	84.21
111-91-1	bis(2-Chloroethoxy)methane		18.82 ug/L	94.12
120-82-1	1,2,4-Trichlorobenzene		15.68 ug/L	78.40
91-20-3	Naphthalene		15.72 ug/L	78.58
106-47-8	4-Chloroaniline		30.63 ug/L	153.15
87-68-3	Hexachlorobutadiene		14.71 ug/L	73.56
91-57-6	2-Methylnaphthalene		15.79 ug/L	78.95
77-47-4	Hexachlorocyclopentadiene		5.32 ug/L	26.58
91-58-7	2-Chloronaphthalene		17.21 ug/L	86.07
88-74-4	2-Nitroaniline		15.08 ug/L	75.42
131-11-3	Dimethylphthalate		19.06 ug/L	95.32
208-96-8	Acenaphthylene		16.87 ug/L	84.35
606-20-2	2,6-Dinitrotoluene		16.44 ug/L	82.22
99-09-2	3-Nitroaniline		22.14 ug/L	110.72
83-32-9	Acenaphthene		16.87 ug/L	84.36
132-64-9	Dibenzofuran		17.15 ug/L	85.73
121-14-2	2,4-Dinitrotoluene		15.74 ug/L	78.72
84-66-2	Diethylphthalate		20.91 ug/L	104.55
86-73-7	Fluorene		17.80 ug/L	89.00
7005-72-3	4-Chlorophenyl-phenylether		20.94 ug/L	104.72
100-01-6	4-Nitroaniline		17.67 ug/L	88.37
86-30-6	n-Nitrosodiphenylamine		22.33 ug/L	111.66
103-33-3	Azobenzene		18.11 ug/L	90.57
101-55-3	4-Bromophenyl-phenylether		21.95 ug/L	109.76
118-74-1	Hexachlorobenzene		19.79 ug/L	98.97
85-01-8	Phenanthrene		18.76 ug/L	93.82
120-12-7	Anthracene		18.62 ug/L	93.12
84-74-2	Di-n-butylphthalate		22.91 ug/L	114.55
206-44-0	Fluoranthene		19.15 ug/L	95.74
92-87-5	Benzidine		0.00 ug/L	0.00
129-00-0	Pyrene		18.45 ug/L	92.26
85-68-7	Butylbenzylphthalate		20.76 ug/L	103.82
56-55-3	Benzo[a]anthracene		18.70 ug/L	93.50
91-94-1	3,3'-Dichlorobenzidine		27.62 ug/L	138.12
218-01-9	Chrysene		17.77 ug/L	88.83
117-81-7	bis(2-Ethylhexyl)phthalate		21.38 ug/L	106.89
117-84-0	Di-n-octylphthalate		20.29 ug/L	101.47
205-99-2	Benzo[b]fluoranthene		17.40 ug/L	87.00
207-08-9	Benzo[k]fluoranthene		18.49 ug/L	92.43
50-32-8	Benzo[a]pyrene		17.86 ug/L	89.29
193-39-5	Indeno[1,2,3-cd]pyrene		17.61 ug/L	88.03
53-70-3	Dibenz[a,h]anthracene		17.47 ug/L	87.37
191-24-2	Benzo[g,h,i]perylene		17.42 ug/L	87.08

Base Neutral Spike Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name **BNA03333.D** Sample Name **4871.04MS**

Date Acquired **27-Oct-99**

CAS#	Name		Amount Recovered	Percent Recovered
110-86-1	Pyridine		0.67 ug/L	3.37
62-75-9	N-nitroso-dimethylamine		5.51 ug/L	27.54
62-53-3	Aniline		4.89 ug/L	24.46
111-44-4	bis(2-Chloroethyl)ether		8.06 ug/L	40.28
541-73-1	1,3-Dichlorobenzene		6.42 ug/L	32.10
106-46-7	1,4-Dichlorobenzene		6.67 ug/L	33.33
100-51-6	Benzyl alcohol		5.86 ug/L	29.29
95-50-1	1,2-Dichlorobenzene		6.74 ug/L	33.69
108-60-1	bis(2-chloroisopropyl)ether		8.18 ug/L	40.88
621-64-7	n-Nitroso-di-n-propylamine		8.56 ug/L	42.82
67-72-1	Hexachloroethane		7.00 ug/L	34.99
98-95-3	Nitrobenzene		7.83 ug/L	39.16
78-59-1	Isophorone		7.99 ug/L	39.94
111-91-1	bis(2-Chloroethoxy)methane		8.76 ug/L	43.79
120-82-1	1,2,4-Trichlorobenzene		7.41 ug/L	37.06
91-20-3	Naphthalene		7.76 ug/L	38.80
106-47-8	4-Chloroaniline		12.61 ug/L	63.04
87-68-3	Hexachlorobutadiene		7.22 ug/L	36.08
91-57-6	2-Methylnaphthalene		7.63 ug/L	38.17
77-47-4	Hexachlorocyclopentadiene		4.64 ug/L	23.19
91-58-7	2-Chloronaphthalene		8.08 ug/L	40.41
88-74-4	2-Nitroaniline		7.14 ug/L	35.68
131-11-3	Dimethylphthalate		7.50 ug/L	37.49
208-96-8	Acenaphthylene		7.91 ug/L	39.56
606-20-2	2,6-Dinitrotoluene		7.79 ug/L	38.95
99-09-2	3-Nitroaniline		8.44 ug/L	42.20
83-32-9	Acenaphthene		8.04 ug/L	40.18
132-64-9	Dibenzofuran		8.10 ug/L	40.48
121-14-2	2,4-Dinitrotoluene		7.07 ug/L	35.36
84-66-2	Diethylphthalate		9.27 ug/L	46.37
86-73-7	Fluorene		8.53 ug/L	42.67
7005-72-3	4-Chlorophenyl-phenylether		9.83 ug/L	49.13
100-01-6	4-Nitroaniline		6.49 ug/L	32.47
86-30-6	n-Nitrosodiphenylamine		10.57 ug/L	52.87
103-33-3	Azobenzene		8.54 ug/L	42.72
101-55-3	4-Bromophenyl-phenylether		9.87 ug/L	49.34
118-74-1	Hexachlorobenzene		8.89 ug/L	44.45
85-01-8	Phenanthrene		8.94 ug/L	44.71
120-12-7	Anthracene		8.60 ug/L	43.00
84-74-2	Di-n-butylphthalate		10.59 ug/L	52.96
206-44-0	Fluoranthene		8.62 ug/L	43.09
92-87-5	Benzidine		0.00 ug/L	0.00
129-00-0	Pyrene		8.51 ug/L	42.55
85-68-7	Butylbenzylphthalate		10.27 ug/L	51.36
56-55-3	Benzo[a]anthracene		8.34 ug/L	41.68
91-94-1	3,3'-Dichlorobenzidine		6.48 ug/L	32.42
218-01-9	Chrysene		7.96 ug/L	39.82
117-81-7	bis(2-Ethylhexyl)phthalate		10.66 ug/L	53.31
117-84-0	Di-n-octylphthalate		10.55 ug/L	52.74
205-99-2	Benzo[b]fluoranthene		7.80 ug/L	39.01
207-08-9	Benzo[k]fluoranthene		8.20 ug/L	41.02
50-32-8	Benzo[a]pyrene		7.90 ug/L	39.50
193-39-5	Indeno[1,2,3-cd]pyrene		7.69 ug/L	38.45
53-70-3	Dibenz[a,h]anthracene		7.50 ug/L	37.51
191-24-2	Benzo[g,h,i]perylene		7.87 ug/L	39.35

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA03332.D**	Sample Name	**4871.04Dup**
Operator	**Bhaskar**	Misc Info	**2603MW01Dup**
Date Acquired	**27-Oct-99**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	1.83	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.91	ug/L	
62-53-3	Aniline			not detected	NLE	1.63	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.28	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	1.21	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	1.19	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	1.02	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	1.13	ug/L	
108-60-1	bis(2-chloroisopropyl)ether			not detected	300	1.39	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.80	ug/L	
67-72-1	Hexachloroethane			not detected	10	1.50	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.97	ug/L	
78-59-1	Isophorone			not detected	100	1.01	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	1.21	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	1.22	ug/L	
91-20-3	Naphthalene	13.71	38114	1.28 ug/L	NLE	1.27	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.09	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.71	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	1.08	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	1.32	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	1.01	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.96	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	1.52	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.96	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.81	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.79	ug/L	
83-32-9	Acenaphthene			not detected	400	1.10	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	1.00	ug/L	
121-14-2	2,4-Dinitrotoluene			not detected	10	0.87	ug/L	
84-66-2	Diethylphthalate			not detected	5000	1.62	ug/L	
86-73-7	Fluorene			not detected	300	0.99	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	1.10	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.05	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	1.01	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.67	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.76	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.94	ug/L	
85-01-8	Phenanthrene			not detected	NLE	1.23	ug/L	
120-12-7	Anthracene			not detected	2000	1.12	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	1.70	ug/L	
206-44-0	Fluoranthene			not detected	300	1.64	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA03332.D**	Sample Name	**4871.04Dup**
Operator	**Bhaskar**	Misc Info	**2603MW01Dup**
Date Acquired	**27-Oct-99**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
92-87-5	Benzidine			not detected	50	4.18	ug/L	
129-00-0	Pyrene			not detected	200	1.25	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	1.05	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	1.19	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.75	ug/L	
218-01-9	Chrysene			not detected	20	1.38	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.74	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.44	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	1.25	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.29	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	1.05	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	0.83	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.64	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.84	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
PQL= Practical Quantitation Limit

MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: FMETL Lab Code 13461

Project UST Case No.: 4926 Location 277 SDG No.:

Lab File ID (Standard): BNA03325.D Date Analyzed: 10/27/99

Instrument ID: BNA#2 Time Analyzed: 12:40

		IS1DCB AREA #	RT #	IS2NAP AREA #	RT #	IS3ANE AREA #	RT #
	12 HOUR STD	321479	10.71	1215474	13.67	716261	18.03
	UPPER LIMIT	642958	11.21	2430948	14.17	1432522	18.53
	LOWER LIMIT	160740	10.21	607737	13.17	358131	17.53
	FIELD ID						
01	4871.04DUP	306204	10.71	1141568	13.66	682589	18.02
02	4871.04MS	314353	10.71	1173355	13.66	695080	18.02

IS1 DCB = 1,4-Dichlorobenzene-d4
IS2 NAP = Naphthalene-d8
IS3 ANE = Acenaphthene-d10
IS4 PNE = Phenanthrene-d10
IS5 CYS = Chrysene-d12
IS6 PRL = Perylene-d12

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 to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: FMETL Lab Code 13461

Project UST Case No.: 4926 Location 277 SDG No.:

Lab File ID (Standard): BNA03325.D Date Analyzed: 10/27/99

Instrument ID: BNA#2 Time Analyzed: 12:40

		IS4PNE AREA #	RT #	IS5CYS AREA #	RT #	IS6PRL AREA #	RT #
	12 HOUR STD	1218839	21.28	1065914	26.80	1076748	30.05
	UPPER LIMIT	2437678	20.78	2131828	26.30	2153496	29.55
	LOWER LIMIT	609420	21.78	532957	27.30	538374	30.55
	EPA SAMPLE NO.						
01	4871.04DUP	1106713	21.28	961253	26.79	1007912	30.05
02	4871.04MS	1139491	21.28	995368	26.79	1032755	30.04

IS1 DCB = 1,4-Dichlorobenzene-d4
IS2 NAP = Naphthalene-d8
IS3 ANE = Acenaphthene-d10
IS4 PNE = Phenanthrene-d10
IS5 CYS = Chrysene-d12
IS6 PRL = Perylene-d12

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 to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: FMETL Lab Code 13461

Project UST Case No.: 4926 Location 277 SDG No.:

Lab File ID (Standard): BNA03354.D Date Analyzed: 11/12/99

Instrument ID: BNA#2 Time Analyzed: 12:32

		IS1DCB AREA #	RT #	IS2NAP AREA #	RT #	IS3ANE AREA #	RT #
	12 HOUR STD	334176	10.62	1273991	13.58	746859	17.94
	UPPER LIMIT	668352	11.12	2547982	14.08	1493718	18.44
	LOWER LIMIT	167088	10.12	636996	13.08	373430	17.44
	FIELD ID						
01	SBLK318	311234	10.62	1186339	13.57	709094	17.93
02	FIELD BLANK	313825	10.62	1179199	13.57	706631	17.93
03	277-2-GW	326283	10.62	1208495	13.57	724205	17.93

IS1 DCB = 1,4-Dichlorobenzene-d4
IS2 NAP = Naphthalene-d8
IS3 ANE = Acenaphthene-d10
IS4 PNE = Phenanthrene-d10
IS5 CYS = Chrysene-d12
IS6 PRL = Perylene-d12

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 to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: FMETL Lab Code 13461

Project UST Case No.: 4926 Location 277 SDG No.:

Lab File ID (Standard): BNA03354.D Date Analyzed: 11/12/99

Instrument ID: BNA#2 Time Analyzed: 12:32

		IS4PNE AREA #	RT #	IS5CYS AREA #	RT #	IS6PRL AREA #	RT #
	12 HOUR STD	1254403	21.20	1108132	26.71	1147783	29.93
	UPPER LIMIT	2508806	20.70	2216264	26.21	2295566	29.43
	LOWER LIMIT	627202	21.70	554066	27.21	573892	30.43
	EPA SAMPLE NO.						
01	SBLK318	1146263	21.19	1022328	26.71	1072405	29.92
02	FIELD BLANK	1163417	21.19	1099891	26.71	1076951	29.92
03	277-2-GW	1198777	21.19	1114058	26.71	1100599	29.92

IS1 DCB = 1,4-Dichlorobenzene-d4
IS2 NAP = Naphthalene-d8
IS3 ANE = Acenaphthene-d10
IS4 PNE = Phenanthrene-d10
IS5 CYS = Chrysene-d12
IS6 PRL = Perylene-d12

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 to be used to flag values outside QC limit with an asterisk.
* Values outside of contract required QC limits

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\991112\BNA03358.D Vial: 4
Acq On : 12 Nov 1999 3:46 pm Operator: Bhaskar
Sample : Sblk318 Inst : GC BNA 2
Misc : Sblk318 A 991109 Multiplr: 1.00
MS Integration Params: RTEINT.P GC Integration Params: rteint2.p
Quant Time: Nov 15 14:24 1999 Quant Results File: M262534.RES

Quant Method : C:\HPCHEM\1\METHODS\M262534.M (RTE Integrator)
Title : BNA Calibration
Last Update : Wed Oct 27 15:00:17 1999
Response via : Initial Calibration
DataAcq Meth : M262534

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	10.62	152	311234	40.00	ug/L	-0.09
19) Naphthalene-d8	13.57	136	1186339	40.00	ug/L	-0.10
34) Acenaphthene-d10	17.93	164	709094	40.00	ug/L	-0.09
54) Phenanthrene-d10	21.19	188	1146263	40.00	ug/L	-0.09
66) Chrysene-d12	26.71	240	1022328	40.00	ug/L	-0.09
75) Perylene-d12	29.92	264	1072405	40.00	ug/L	-0.13
System Monitoring Compounds						
4) 2-Fluorophenol	0.00	112	0	0.00	ug/L	
Spiked Amount 100.000	Range 21 - 100		Recovery =	0.00%#		
6) Phenol-d5	0.00	99	0	0.00	ug/L	
Spiked Amount 100.000	Range 10 - 94		Recovery =	0.00%#		
20) Nitrobenzene-d5	11.96	82	469873	33.66	ug/L	-0.09
Spiked Amount 50.000	Range 35 - 114		Recovery =	67.32%		
38) 2-Fluorobiphenyl	16.32	172	787998	33.34	ug/L	-0.11
Spiked Amount 50.000	Range 43 - 116		Recovery =	66.68%		
58) 2,4,6-Tribromophenol	0.00	330	0	0.00	ug/L	
Spiked Amount 100.000	Range 10 - 123		Recovery =	0.00%#		
69) p-Terphenyl-d14	24.56	244	874857	36.47	ug/L	-0.09
Spiked Amount 50.000	Range 33 - 141		Recovery =	72.94%		

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4926
	DPW. SELFM-PW-EV	**Date Rec'd:**	08-Nov-99
	Bldg. 173	**Analysis Start:**	10-Nov-99
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	10-Nov-99
Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	B.Patel	**DICAR #:**	
Inst. ID.	GC TPHC INST. #1	**Injection Volume**	1 ul
Column Type	RTX 5	**Column ID**	0.32 mm
Ext. Meth:	Shake	**Location #:**	Bldg. 277

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
4926.03	277-1	**1.00**	15.10	92.44	168	**ND**
4926.04	277-2	**1.00**	15.10	88.20	176	**4679.64**
4926.06	Field Dup	**1.00**	15.30	90.81	169	**ND**
METHOD BLANK	TBLK281	**1.00**	15.00	100.00	157	**ND**

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright
Laboratory Director

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Response Factor Report GC/MS Ins

Method : C:\HPCHEM\1\METHODS\TPH65.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Mon Sep 27 15:48:46 1999

Calibration Files
100 =T008984.D 50 =T008985.D 20 =T008986.D
10 =T008987.D 5 =T008988.D

	Compound	100	50	20	10	5	Avg		%RSD
1)	tC C8	2.143	2.098	2.345	2.225	1.912	2.145	E4	7.48
2)	tC C10	2.322	2.278	2.544	2.839	2.354	2.467	E4	9.37
3)	TC C12	2.392	2.338	2.614	2.919	2.436	2.540	E4	9.29
4)	tC C14	2.437	2.380	2.669	2.976	2.490	2.590	E4	9.31
5)	tC C16	2.491	2.431	2.729	3.041	2.544	2.647	E4	9.32
6)	tC C18	2.627	2.657	2.798	3.251	2.711	2.809	E4	9.09
7)	tC C20	2.662	2.600	2.913	3.256	2.731	2.833	E4	9.34
8)	tC C22	2.724	2.669	2.995	3.342	2.796	2.905	E4	9.41
9)	tC C24	2.782	2.726	3.053	3.408	2.842	2.962	E4	9.40
10)	tC C26	2.762	2.707	3.025	3.371	2.785	2.930	E4	9.38
11)	tC C28	2.775	2.715	3.028	3.362	2.754	2.927	E4	9.32
12)	tC C30	2.874	2.807	3.135	3.462	2.827	3.021	E4	9.25
13)	tC C32	2.836	2.758	3.053	3.370	2.717	2.947	E4	9.16
14)	tC C34	2.911	2.821	3.128	3.411	2.707	2.996	E4	9.31
15)	tC C36	2.528	2.455	2.688	2.919	2.373	2.593	E4	8.34
16)	tC C38	2.329	2.270	2.489	2.744	2.236	2.414	E4	8.65
17)	tC C40	1.761	1.707	1.840	2.081	1.740	1.826	E4	8.26
18)	tC c42	1.548	1.527	1.651	1.880	1.543	1.630	E4	9.08
19)	TC Pristane	2.741	2.660	2.963	3.309	2.794	2.894	E4	8.90
20)	TC Phytane	2.661	2.613	2.923	3.276	2.765	2.848	E4	9.39
21)	sC o-terphenyl	2.940	2.877	3.227	3.597	3.033	3.135	E4	9.27
22)	tC TPHC - total	2.826	2.839	3.268	3.834	3.722	3.298	E4	14.41

#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\991110\T009101.D Vial: 2
Acq On : 10 Nov 1999 12:01 pm Operator: Skelton
Sample : 50 PPM STD Inst : GC/MS Ins
Misc : 50 PPM STD Multiplr: 1.00
IntFile : TPHCINT.E

Method : C:\HPCHEM\1\METHODS\TPH65.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Mon Sep 27 15:48:46 1999
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	tC	C8	21.448	22.340 E3	-4.2	104	0.06
2	tC	C10	24.674	24.714 E3	-0.2	104	-0.01
3	TC	C12	25.398	25.308 E3	0.4	103	-0.03
4	tC	C14	25.904	25.074 E3	3.2	100	-0.03
5	tC	C16	26.472	26.203 E3	1.0	102	-0.03
6	tC	C18	28.088	27.152 E3	3.3	99	-0.03
7	tC	C20	28.325	28.237 E3	0.3	102	-0.03
8	tC	C22	29.054	28.566 E3	1.7	101	-0.04
9	tC	C24	29.623	29.002 E3	2.1	100	-0.04
10	tC	C26	29.301	28.647 E3	2.2	100	-0.04
11	tC	C28	29.269	28.573 E3	2.4	99	-0.04
12	tC	C30	30.209	29.974 E3	0.8	100	-0.05
13	tC	C32	29.467	28.532 E3	3.2	97	-0.05
14	tC	C34	29.957	30.018 E3	-0.2	99	-0.06
15	tC	C36	25.928	26.292 E3	-1.4	97	-0.07
16	tC	C38	24.136	26.588 E3	-10.2	99	-0.08
17	tC	C40	18.257	21.781 E3	-19.3	96	-0.10
18	tC	c42	16.298	21.735 E3	-33.4#	97	-0.13
19	TC	Pristane	28.935	28.893 E3	0.1	102	-0.03
20	TC	Phytane	28.476	27.581 E3	3.1	100	-0.03
21	sC	o-terphenyl	31.346	31.093 E3	0.8	102	-0.04
22	tC	TPHC - total	32.978	31.693 E3	3.9	104	-0.04

(#) = Out of Range SPCC's out = 0 CCC's out = 1
T009101.D TPH65.M Wed Nov 17 15:59:28 1999

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\991110\T009114.D Vial: 15
Acq On : 10 Nov 1999 8:17 pm Operator: Skelton
Sample : 50 PPM STD Inst : GC/MS Ins
Misc : 50 PPM STD Multiplr: 1.00
IntFile : TPHCINT.E

Method : C:\HPCHEM\1\METHODS\TPH65.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Mon Sep 27 15:48:46 1999
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	tC	C8	21.448	25.205 E3	-17.5	117	0.03
2	tC	C10	24.674	27.413 E3	-11.1	116	-0.01
3	TC	C12	25.398	27.995 E3	-10.2	114	-0.03
4	tC	C14	25.904	28.048 E3	-8.3	112	-0.03
5	tC	C16	26.472	28.760 E3	-8.6	112	-0.03
6	tC	C18	28.088	30.148 E3	-7.3	110	-0.03
7	tC	C20	28.325	30.734 E3	-8.5	111	-0.03
8	tC	C22	29.054	31.302 E3	-7.7	111	-0.03
9	tC	C24	29.623	31.846 E3	-7.5	110	-0.04
10	tC	C26	29.301	31.600 E3	-7.8	110	-0.04
11	tC	C28	29.269	31.431 E3	-7.4	109	-0.04
12	tC	C30	30.209	32.366 E3	-7.1	108	-0.04
13	tC	C32	29.467	31.420 E3	-6.6	107	-0.04
14	tC	C34	29.957	31.920 E3	-6.6	106	-0.05
15	tC	C36	25.928	28.677 E3	-10.6	106	-0.06
16	tC	C38	24.136	28.685 E3	-18.8	106	-0.07
17	tC	C40	18.257	24.093 E3	-32.0#	107	-0.09
18	tC	c42	16.298	23.899 E3	-46.6#	107	-0.11
19	TC	Pristane	28.935	31.014 E3	-7.2	110	-0.03
20	TC	Phytane	28.476	31.083 E3	-9.2	113	-0.03
21	sC	o-terphenyl	31.346	33.963 E3	-8.3	111	-0.03
22	tC	TPHC - total	32.978	33.277 E3	-0.9	110	-0.03

Surrogate Recovery Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4926
	DPW. SELFM-PW-EV	**Date Rec'd:**	08-Nov-99
	Bldg. 173	**Analysis Start:**	10-Nov-99
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	10-Nov-99
		UST Reg. #:	
Analysis:	OQA-QAM-025	**Closure #:**	
Matrix:	Soil	**DICAR #:**	
Analyst:	B.Patel	**Injection Volume**	1 ul
Inst. ID.	GC TPHC INST. #1	**Column ID**	0.32 mm
Column Type	RTX 5	**Location #:**	Bldg. 277
Ext. Meth:	Shake		

Sample			Surrogate Added (ppm)	Amount Recovered (ppm)	Percent Recovery
4926.03			10.00	10.61	**106.09**
4926.04			10.00	10.10	**100.99**
4926.06			10.00	10.29	**102.86**
METHOD BLANK	TBLK281		10.00	10.09	**100.86**

Surrogate Added : **o-Terphenyl**

Quality Control Check Standard Summary
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4926
	DPW. SELFM-PW-EV	**Date Rec'd:**	08-Nov-99
	Bldg. 173	**Analysis Start:**	10-Nov-99
		Client :	U.S. Army
		Client :	U.S. Army
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	10-Nov-99
Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	B.Patel	**DICAR #:**	
Inst. ID.	GC TPHC INST. #1	**Injection Volume**	1 ul
Column Type	RTX 5	**Column ID**	0.32 mm
Ext. Meth:	Shake	**Location #:**	Bldg. 277

Sample	Date Extracted	Spike Amount Added (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
Blank Spike	10-Nov-99	1000	917.37	91.74	75-125

Matrix Spike / Duplicate Recovery Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	4926
	DPW. SELFM-PW-EV	**Date Rec'd:**	08-Nov-99
	Bldg. 173	**Analysis Start:**	10-Nov-99
		Client :	U.S. Army
		Client :	U.S. Army
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	10-Nov-99
Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	B.Patel	**DICAR #:**	
Inst. ID.	GC TPHC INST. #1	**Injection Volume**	1 ul
Column Type	RTX 5	**Column ID**	0.32 mm
Ext. Meth:	Shake	**Location #:**	Bldg. 277

Sample	Spike Amount Added (ppm)	Sample Amount (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
4926.03MS	1000	0.00	961.76	96.18	75-125
4926.03MSD	1000	0.00	958.34	95.83	75-125
			RPD	**0.36**	**20.00**

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\991110\T009107.D Vial: 8
Acq On : 10 Nov 1999 4:09 pm Operator: Skelton
Sample : Tblk281 Inst : GC/MS Ins
Misc : Tblk281 Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Nov 22 14:45 1999 Quant Results File: TPH66.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH66.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Nov 19 10:27:53 1999
Response via : Initial Calibration
DataAcq Meth : TPH65.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.61	323678	10.086 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery = 100.86%#	
Target Compounds			

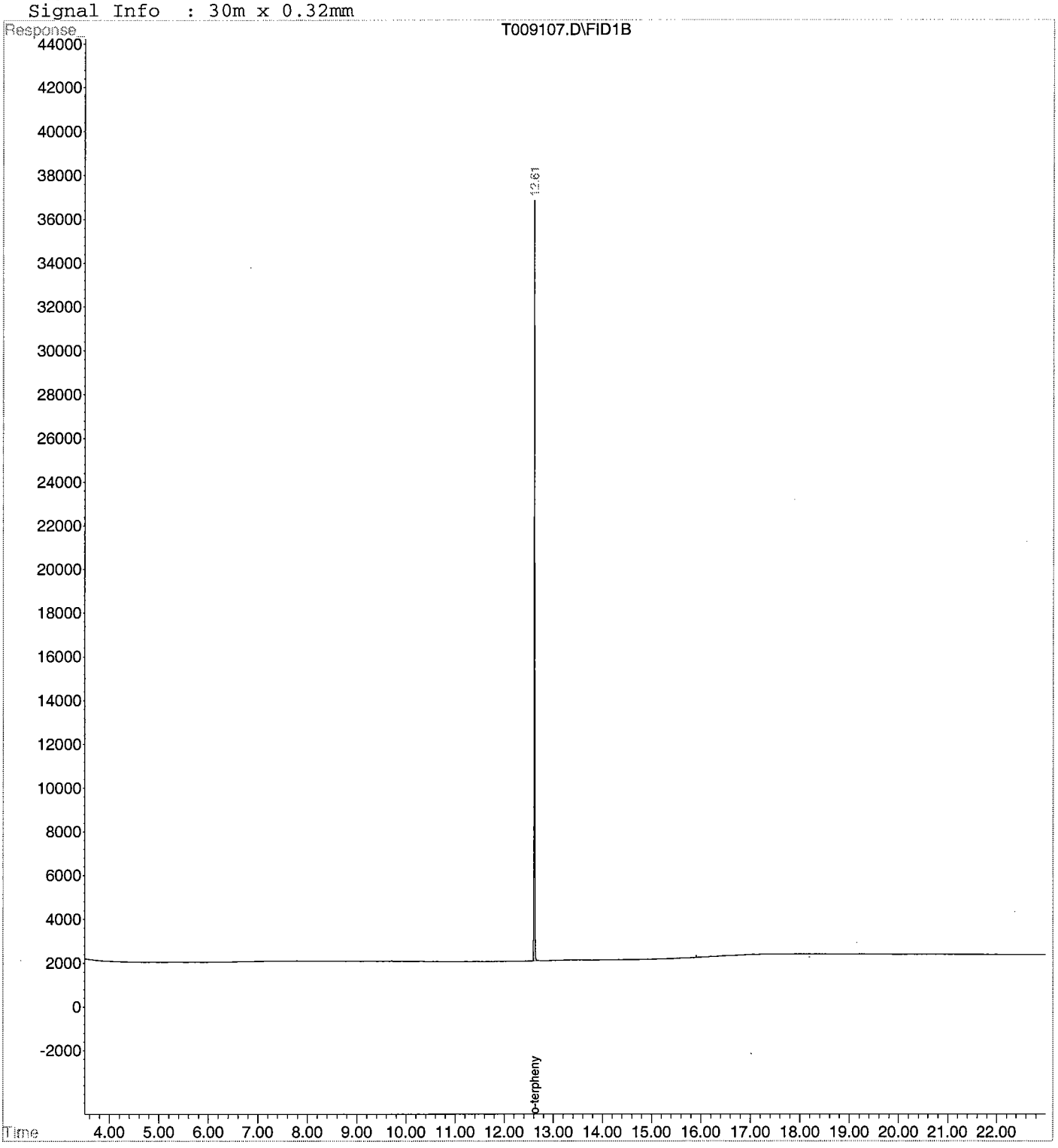
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\991110\T009107.D Vial: 8
Acq On : 10 Nov 1999 4:09 pm Operator: Skelton
Sample : Tblk281 Inst : GC/MS Ins
Misc : Tblk281 Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Nov 22 14:45 1999 Quant Results File: TPH66.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH66.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Nov 19 10:27:53 1999
Response via : Multiple Level Calibration
DataAcq Meth : TPH65.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



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Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\991110\T009109.D Vial: 10
Acq On : 10 Nov 1999 5:20 pm Operator: Skelton
Sample : 4926.03S Inst : GC/MS Ins
Misc : 277-1 Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Nov 17 15:55 1999 Quant Results File: TPH65.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH65.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Mon Sep 27 15:48:46 1999
Response via : Initial Calibration
DataAcq Meth : TPH65.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.61	332548	10.609 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery =	106.09%#
Target Compounds			

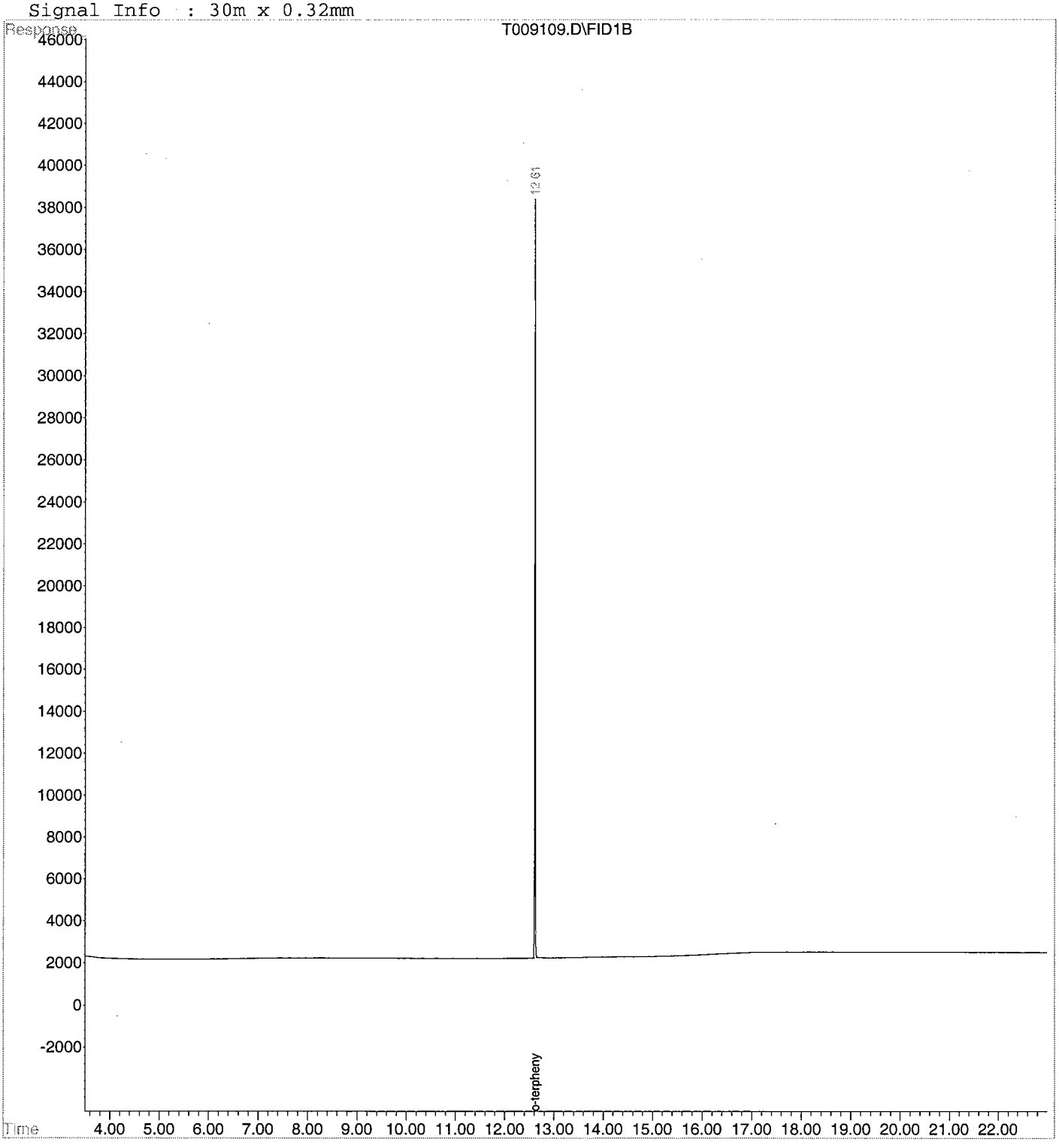
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\991110\T009109.D Vial: 10
Acq On : 10 Nov 1999 5:20 pm Operator: Skelton
Sample : 4926.03S Inst : GC/MS Ins
Misc : 277-1 Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Nov 17 15:55 1999 Quant Results File: TPH65.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH65.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Mon Sep 27 15:48:46 1999
Response via : Multiple Level Calibration
DataAcq Meth : TPH65.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\991110\T009110.D Vial: 11
Acq On : 10 Nov 1999 5:55 pm Operator: Skelton
Sample : 4926.04S Inst : GC/MS Ins
Misc : 277-2 Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Nov 16 13:08 1999 Quant Results File: TPH65.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH65.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Mon Sep 27 15:48:46 1999
Response via : Initial Calibration
DataAcq Meth : TPH65.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.62	316576	10.099 mg/L
Spiked Amount 10.000 Range 8 - 13	Recovery = 100.99%#		
Target Compounds			
2) tC C10	7.20	40012	1.622 mg/L
3) TC C12	9.08	180681	7.114 mg/L
4) tC C14	10.19	61705	2.382 mg/L
5) tC C16	11.08	40713	1.538 mg/L
6) tC C18	11.66	334210	11.899 mg/L
7) tC C20	12.11	145443	5.135 mg/L
8) tC C22	12.72	52505	1.807 mg/L
9) tC C24	13.70	33476	1.130 mg/L
19) TC Pristane	11.66	334210	11.550 mg/L
20) TC Phytane	12.11	145443	5.108 mg/L
22) tC TPHC - total	11.66	41106443	1246.488 mg/L m

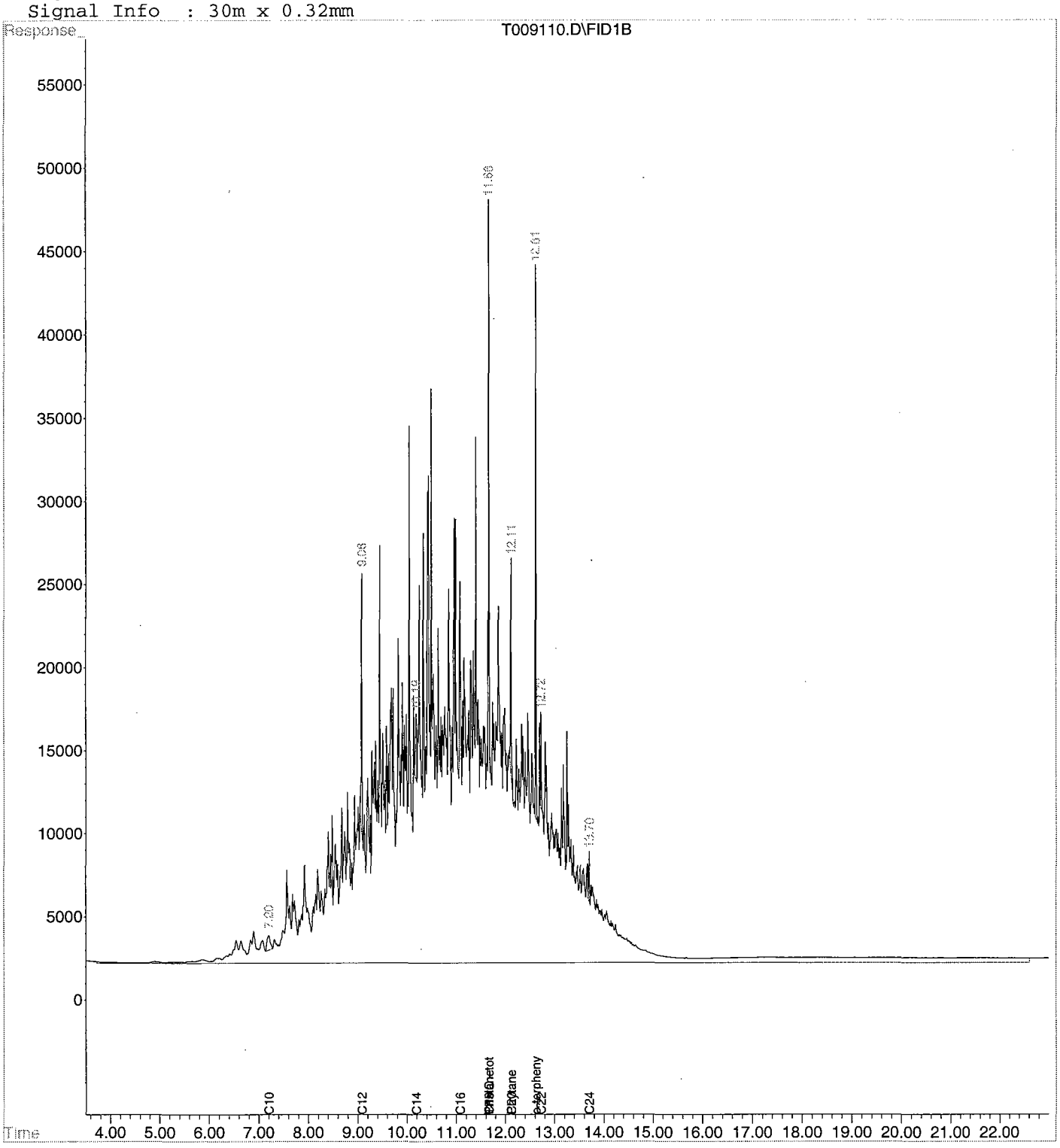
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\991110\T009110.D Vial: 11
Acq On : 10 Nov 1999 5:55 pm Operator: Skelton
Sample : 4926.04S Inst : GC/MS Ins
Misc : 277-2 Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Nov 16 13:08 1999 Quant Results File: TPH65.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH65.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Mon Sep 27 15:48:46 1999
Response via : Multiple Level Calibration
DataAcq Meth : TPH65.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



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Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\991110\T009111.D Vial: 12
Acq On : 10 Nov 1999 6:31 pm Operator: Skelton
Sample : 4926.06S Inst : GC/MS Ins
Misc : Field Dup Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Nov 22 14:46 1999 Quant Results File: TPH65.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH65.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Mon Sep 27 15:48:46 1999
Response via : Initial Calibration
DataAcq Meth : TPH65.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.61	322438	10.286 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery =	102.86%#
Target Compounds			

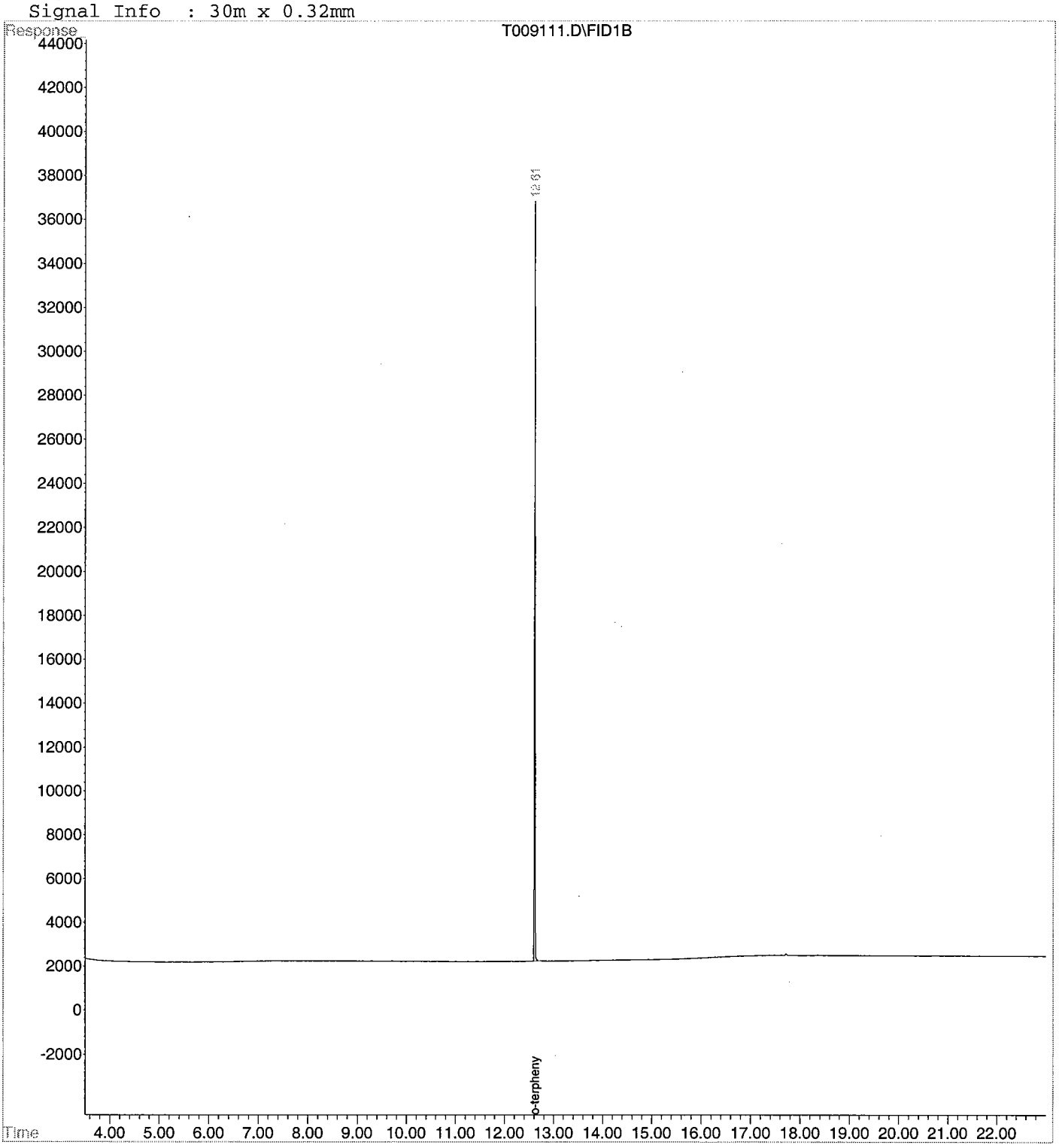
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\991110\T009111.D Vial: 12
Acq On : 10 Nov 1999 6:31 pm Operator: Skelton
Sample : 4926.06S Inst : GC/MS Ins
Misc : Field Dup Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Nov 22 14:46 1999 Quant Results File: TPH65.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH65.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Mon Sep 27 15:48:46 1999
Response via : Multiple Level Calibration
DataAcq Meth : TPH65.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

THIS FORM MUST BE COMPLETED BY THE LABORATORY OR ENVIRONMENTAL CONSULTANT AND ACCOMPANY ALL DATA SUBMISSIONS

The following Laboratory Deliverables checklist and Non-Conformance Summary shall be included in the data submission. All deviations from the accepted methodology and procedures, of performance values outside acceptable ranges shall be summarized in the Non-Conformance Summary. The Technical Requirements for Site Remediation, effective June 7, 1993, provides further details. The document shall be bound and paginated, contain a table of contents, and all pages shall be legible. Incomplete packages will be returned or held without review until the data package is completed.

It is recommended that the analytical results summary sheets listing all targeted and non-targeted compounds with the method detection limits, practical quantitation limits, and the laboratory and/or sample numbers be included in one section of the data package and in the main body of the report.

1. **Cover page, Title Page listing Lab Certification #, facility name and address, & date of report submitted** ✓
2. **Table of Contents submitted** ✓
3. **Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted** ✓
4. **Document paginated and legible** ✓
5. **Chain of Custody submitted** ✓
6. **Samples submitted to lab within 48 hours of sample collection** ✓
7. **Methodology Summary submitted** ✓
8. **Laboratory Chronicle and Holding Time Check submitted** ✓
9. **Results submitted on a dry weight basis** ✓
10. **Method Detection Limits submitted** ✓
11. **Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP** ✓

Laboratory Manager or Environmental Consultant's Signature _____

Date 4/7/00

Laboratory Certification #13461

*Refer to NJAC 7:26E - Appendix A, Section IV - Reduced Data Deliverables - Non-USEPA/CLP Methods for further guidance.

Laboratory Authentication Statement

I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N.J.A.C. 7:18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW-846 for Solid Waste Analysis. I have personally examined the information contained in this report and to the best of my knowledge, I believe that the submitted information is true, accurate, complete and meets the above referenced standards where applicable. I am aware that there are significant penalties for purposefully submitting falsified information, including the possibility of a fine and imprisonment.

Daniel K. Wright
Laboratory Manager

APPENDIX D

SOIL ANALYTICAL DATA PACKAGE

VOLUME 2

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS
PHONE: (732)532-6224 FAX: (732)532-3484
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING
NJDEP LABORATORY CERTIFICATION # 13461

ANALYTICAL DATA REPORT
Fort Monmouth Environmental Laboratory
ENVIROMENTAL DIVISION
Fort Monmouth, New Jersey
PROJECT: #98-0932/SMC

BLDG. 277

Field Location No. & Location	Laboratory Sample ID#	Matrix	Date and Time Of Collection	Date Received
277-7 (6')	3918.01	Soil	28-Sept-98 10:50	09/28/98
277-8 (6')	3918.02	Soil	28-Sept-98 11:00	09/28/98

ANALYSIS:
FORT MONMOUTH ENVIROMENTAL LAB
VOA+15, TPHC, % SOLIDS

11/4/98
Daniel Wright/Date
Laboratory Director

ENCLOSURE:
CHAIN OF CUSTODY
RESULTS

Table of Contents

Method Summary

NJDEP Method 8260

Gas Chromatographic Determination of Volatiles in Soil

A 50uL volume of Methanol Samples soil is added to 5mL aliquot of water. Surrogates and internal standards are added and the sample is placed on a purge and trap concentrator. The sample as purged and desorbed into a GC/MS system.

Volatiles are identified and quantitated. The final concentration is calculated using soil weight, percent solid, methanol volume and concentration.

Method Summary

NJDEP Method OQA-QAM-025-10/97

Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

Fifteen grams (15g)(wet weight) of a soil sample is added to a 125 mL acid cleaned, solvent rinsed, capped Erlenmeyer flask. 15g anhydrous sodium sulfate is added to dry sample. Surrogate standard spiking solution is then added to the flask.

Twenty five milliliters(25mL) Methylene Chloride is added to the flask and it is secured on a gyrotory shaker table. The agitation rate is set to 400rpm and the sample is shaken for 30 minutes. The flask is the removed from the table and the particulate matter is allowed to settle. The extract is transferred to a Teflon capped vial. A second 25mL of Methylene Chloride is added to the flask and shaken for an additional 30 minutes. The flask is again removed and allowed to settle. The extracts are combined in the vial then transferred to a 1mL autosampler vial.

The extract is then injected directly into a GC-FID for analysis. The sample is analyzed for petroleum hydrocarbons covering a range of C8-C42 including pristane and phytane. Total Petroleum Hydrocarbon concentration is determined by integrating between 5 minutes and 22 minutes. The baseline is established by starting the integration after the end of the solvent peak and stopping after the last peak.

The final concentration of Total Petroleum Hydrocarbons is calculated using percent solid, sample weight and concentration.

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

277-8

Lab Name: FMETL NJDEP # 13461

Project: 980932 Case No.: 3918 Location: 277 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3918.02

Sample wt/vol: 9.7 (g/ml) G Lab File ID: V04772.D

Level: (low/med) MED Date Received: 09/28/98

% Moisture: not dec. 14.96 Date Analyzed: 10/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2100	U
107131	Acrylonitrile	2100	U
75650	tert-Butyl alcohol	4000	U
1634044	Methyl-tert-Butyl ether	910	U
108203	Di-isopropyl ether	610	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	300	U
75-01-4	Vinyl Chloride	910	U
74-83-9	Bromomethane	610	U
75-00-3	Chloroethane	910	U
75-69-4	Trichlorofluoromethane	610	U
75-35-4	1,1-Dichloroethene	300	U
67-64-1	Acetone	610	U
75-15-0	Carbon Disulfide	300	U
75-09-2	Methylene Chloride	5800	B
156-60-5	trans-1,2-Dichloroethene	610	U
75-35-3	1,1-Dichloroethane	300	U
108-05-4	Vinyl Acetate	910	U
78-93-3	2-Butanone	910	U
	cis-1,2-Dichloroethene	300	U
67-66-3	Chloroform	300	U
75-55-6	1,1,1-Trichloroethane	300	U
56-23-5	Carbon Tetrachloride	610	U
71-43-2	Benzene	300	U
107-06-2	1,2-Dichloroethane	610	U
79-01-6	Trichloroethene	300	U
78-87-5	1,2-Dichloropropane	300	U
75-27-4	Bromodichloromethane	300	U
110-75-8	2-Chloroethyl vinyl ether	610	U
10061-01-5	cis-1,3-Dichloropropene	300	U
108-10-1	4-Methyl-2-Pentanone	610	U
108-88-3	Toluene	300	U
10061-02-6	trans-1,3-Dichloropropene	610	U
79-00-5	1,1,2-Trichloroethane	610	U
127-18-4	Tetrachloroethene	300	U
591-78-6	2-Hexanone	610	U
126-48-1	Dibromochloromethane	610	U
108-90-7	Chlorobenzene	300	U
100-41-4	Ethylbenzene	11000	

Response Factor Report GC/MS Ins

Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Wed Sep 09 10:59:19 1998
Response via : Initial Calibration

Calibration Files
50 =V04545.D 5 =V04543.D 10 =V04544.D
20 =V04542.D 100 =V04546.D

		Compound	50	5	10	20	100	Avg	%RSD
1)	I	Bromochloromethane	----------ISTD----------						
2)	t	Acrolein	1.267	1.166	1.191	1.159	1.252	1.207	4.11
3)	t	Acrylonitrile	2.779	2.567	2.635	2.586	2.722	2.658	3.41
4)	t	tert-Butyl alcohol	0.569	0.375	0.446	0.441	0.602	0.487	19.59
5)	t	Methyl-tert-Butyl eth	5.943	4.839	5.094	5.287	6.007	5.434	9.56
6)	t	Di-isopropyl ether	3.416	2.800	3.113	3.388	3.303	3.204	7.95
7)	T	Dichlorodifluorometha	2.964	3.407	3.326	3.588	2.802	3.217	10.10
8)	TP	Chloromethane	3.829	3.427	3.618	3.667	3.785	3.665	4.31
9)	TC	Vinyl Chloride	1.180	1.369	1.570	1.322	0.979	1.284	17.17
10)	T	Bromomethane	1.519	1.594	1.532	1.661	1.488	1.559	4.44
11)	T	Chloroethane	1.724	1.607	1.733	1.723	1.685	1.694	3.08
12)	T	Trichlorofluoromethan	2.394	1.726	2.386	2.270	2.318	2.219	12.62
13)	MC	1,1-Dichloroethene	4.401	4.241	4.272	4.413	4.303	4.326	1.79
14)	T	Acetone	1.154	1.436	1.200	1.109	1.123	1.204	11.14
15)	T	Carbon Disulfide	9.152	9.372	8.947	9.195	8.955	9.124	1.96
16)	T	Methylene Chloride	2.827	2.085	3.381	3.080	2.705	2.815	17.18
17)	T	trans-1,2-Dichloroeth	4.242	4.003	4.023	4.168	4.150	4.117	2.47
18)	TP	1,1-Dichloroethane	5.189	5.162	5.073	5.247	5.040	5.142	1.65
19)	T	Vinyl Acetate	8.162	7.099	7.224	7.211	8.100	7.559	6.94
20)	T	2-Butanone	1.783	1.418	1.531	1.505	1.840	1.615	11.43
21)	T	cis-1,2-Dichloroethen	4.146	3.968	4.028	4.088	4.019	4.050	1.69
22)	TC	Chloroform	3.855	3.614	3.710	3.831	3.770	3.756	2.59
23)	T	1,1,1-Trichloroethane	2.526	2.222	2.222	2.456	2.563	2.398	6.87
24)	T	Carbon Tetrachloride	1.830	1.493	1.584	1.767	1.847	1.704	9.24
25)	S	1,2-Dichloroethane-d4	2.739	2.518	2.618	2.613	2.796	2.657	4.15
26)	I	1,4-Difluorobenzene	----------ISTD----------						
27)	TM	Benzene	1.460	1.402	1.355	1.370	1.439	1.405	3.16
28)	T	1,2-Dichloroethane	0.527	0.461	0.465	0.479	0.512	0.489	5.99
29)	TM	Trichloroethene	0.301	0.265	0.266	0.277	0.303	0.282	6.50
30)	TC	1,2-Dichloropropane	0.445	0.392	0.390	0.401	0.442	0.414	6.58
31)	T	Bromodichloromethane	0.429	0.367	0.372	0.393	0.433	0.399	7.71
32)	T	2-Chloroethyl vinyl e	0.259	0.224	0.230	0.229	0.250	0.238	6.26
33)	T	cis-1,3-Dichloroprope	0.609	0.563	0.548	0.569	0.601	0.578	4.49
34)	T	4-Methyl-2-Pentanone	0.192	0.152	0.173	0.172	0.189	0.176	9.04
35)	S	Toluene-d8	1.183	1.197	1.199	1.187	1.190	1.191	0.58

(#) = Out of Range

Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Wed Sep 09 10:59:19 1998
Response via : Initial Calibration

Calibration Files
50 =V04545.D 5 =V04543.D 10 =V04544.D
20 =V04542.D 100 =V04546.D

		Compound	50	5	10	20	100	Avg	%RSD
36)	TCM	Toluene	1.489	1.513	1.450	1.474	1.438	1.473	2.04
37)	I	Chlorobenzene-d5	----------ISTD----------						
38)	T	trans-1,3-Dichloropro	1.966	1.873	1.836	1.928	1.929	1.906	2.71
39)	T	1,1,2-Trichloroethane	1.070	0.977	0.958	1.002	1.040	1.009	4.54
40)	T	Tetrachloroethene	0.993	0.952	0.929	0.989	0.972	0.967	2.75
41)	T	2-Hexanone	1.494	1.346	1.378	1.309	1.464	1.398	5.60
42)	T	Dibromochloromethane	0.984	0.829	0.844	0.934	0.993	0.917	8.39
43)	TMP	Chlorobenzene	3.146	3.198	3.026	3.113	3.070	3.111	2.14
44)	TC	Ethylbenzene	6.071	6.132	5.836	5.978	5.813	5.966	2.35
45)	T	m+p-Xylenes	2.253	2.208	2.130	2.174	2.176	2.188	2.08
46)	T	o-Xylene	4.634	4.608	4.361	4.490	4.457	4.510	2.49
47)	T	Styrene	3.942	3.722	3.530	3.723	3.776	3.739	3.94
48)	TP	Bromoform	0.642	0.454	0.501	0.576	0.664	0.568	15.86
49)	S	Bromofluorobenzene	1.684	1.659	1.647	1.683	1.706	1.676	1.38
50)	TP	1,1,2,2-Tetrachloroet	1.747	1.625	1.577	1.593	1.704	1.649	4.45
51)	T	1,3-Dichlorobenzene	2.244	2.179	2.100	2.141	2.189	2.171	2.47
52)	T	1,4-Dichlorobenzene	2.334	2.353	2.209	2.241	2.267	2.281	2.68
53)	T	1,2-Dichlorobenzene	2.043	2.013	1.934	1.960	1.977	1.985	2.17

(#) = Out of Range

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: FMETL NJDEP # 13461

Project: 980932 Case No.: 3918 Location: 277 SDG No.:

Lab File ID: V04765.D BFB Injection Date: 10/06/98

Instrument ID: GCMSVoa BFB Injection Time: 13:21

GC Column: Rtx502.2 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	20.7
75	30.0 - 66.0% of mass 95	43.2
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.0
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 120.0% of mass 95	67.3
175	4.0 - 9.0% of mass 174	5.1 (7.5)1
176	93.0 - 101.0% of mass 174	66.4 (98.6)1
177	5.0 - 9.0% of mass 176	4.0 (6.1)2

1-Value is % mass 174 2-Value is % mass 176

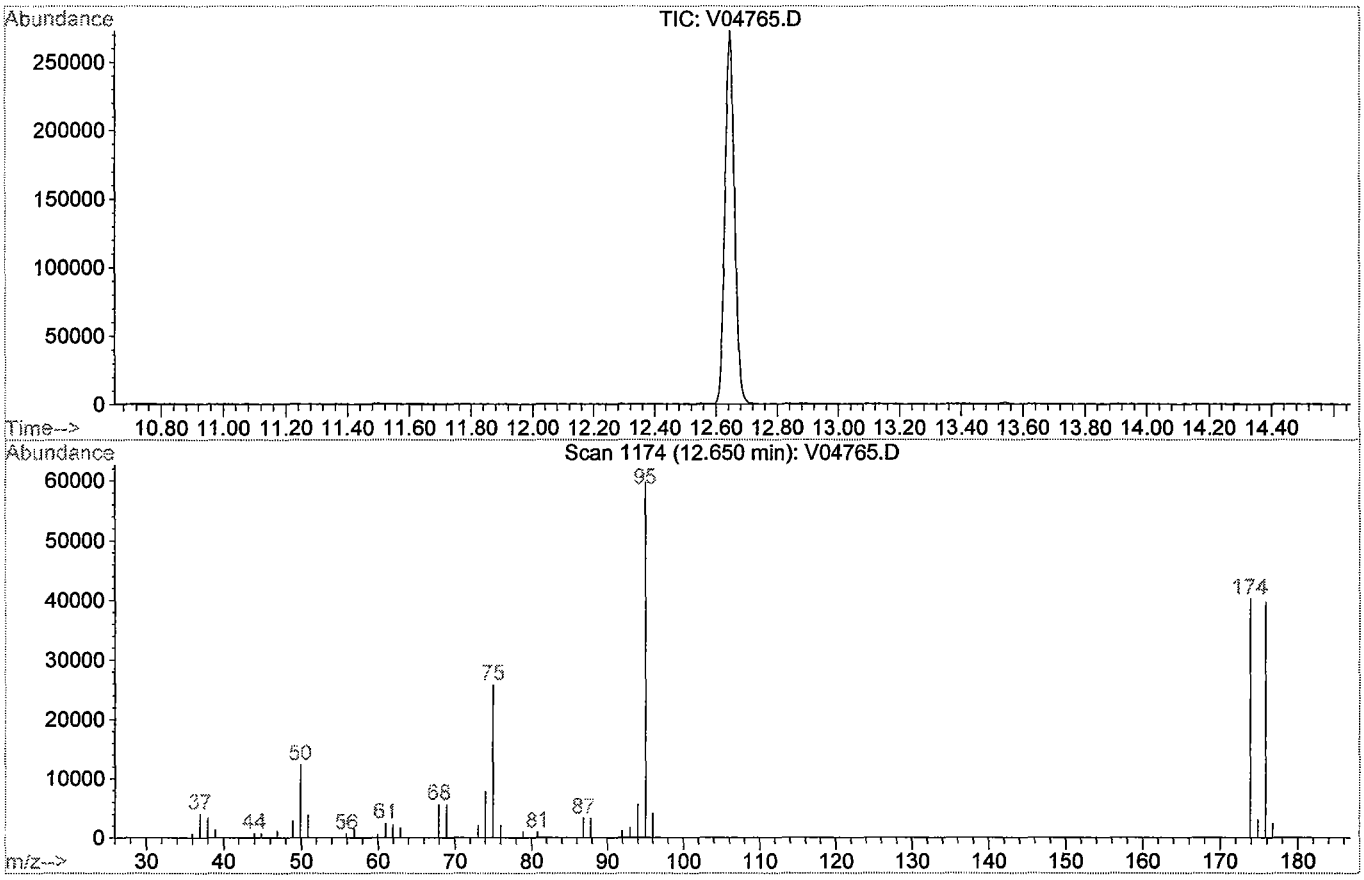
THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD020	DAILY CAL	V04766.D	10/06/98	13:54
02	VBLK107	VBLK107	V04768.D	10/06/98	16:05
03	277-7	3918.01	V04771.D	10/06/98	18:28
04	277-8	3918.02	V04772.D	10/06/98	19:12

BFB

Data File : C:\HPCHEM\1\DATA\981006\V04765.D
Acq On : 6 Oct 1998 13:21
Sample : BFB Tune
Misc : 100-35-31/1721344
MS Integration Params: GASES.P
Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP

Vial: 1
Operator: Skelton
Inst : GC/MS Ins
Multiplr: 1.00



Spectrum Information: Scan 1174

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.7	12338	PASS
75	95	30	60	43.2	25808	PASS
95	95	100	100	100.0	59672	PASS
96	95	5	9	7.0	4153	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	67.3	40184	PASS
175	174	5	9	7.5	3029	PASS
176	174	95	101	98.6	39616	PASS
177	176	5	9	6.1	2405	PASS

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\981006\V04766.D Vial: 2
Acq On : 6 Oct 1998 13:54 Operator: Skelton
Sample : Daily Cal Inst : GC/MS Ins
Misc : 20 ppb std Multiplr: 1.00
MS Integration Params: GASES.P

Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Wed Sep 09 10:59:19 1998
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 25% Max. R.T. Dev 0.50min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane	1.000	1.000	0.0	84	0.00
2	t	Acrolein	1.207	1.023	15.2	74	0.00
3	t	Acrylonitrile	2.658	2.252	15.3	73	0.00
4	t	tert-Butyl alcohol	0.487	0.372	23.6	71	0.00
5	t	Methyl-tert-Butyl ether	5.434	4.844	10.9	77	0.00
6	t	Di-isopropyl ether	3.204	3.021	5.7	75	0.01
7	T	Dichlorodifluoromethane	3.217	3.271	-1.7	76	0.00
8	TP	Chloromethane	3.665	3.688	-0.6	84	0.00
9	TC	Vinyl Chloride	1.284	1.403	-9.3	89	0.00
10	T	Bromomethane	1.559	1.495	4.1	75	0.00
11	T	Chloroethane	1.694	1.603	5.4	78	0.00
12	T	Trichlorofluoromethane	2.219	2.412	-8.7	89	-0.01
13	MC	1,1-Dichloroethene	4.326	3.869	10.6	73	0.00
14	T	Acetone	1.204	1.400	-16.3	106	0.00
15	T	Carbon Disulfide	9.124	8.279	9.3	75	0.00
16	T	Methylene Chloride	2.815	2.857	-1.5	78	0.00
17	T	trans-1,2-Dichloroethene	4.117	3.766	8.5	76	0.00
18	TP	1,1-Dichloroethane	5.142	4.825	6.2	77	0.00
19	T	Vinyl Acetate	7.559	6.103	19.3	71	0.00
20	T	2-Butanone	1.615	1.271	21.3	71	-0.02
21	T	cis-1,2-Dichloroethene	4.050	3.776	6.8	77	0.00
22	TC	Chloroform	3.756	3.659	2.6	80	0.00
23	T	1,1,1-Trichloroethane	2.398	2.201	8.2	75	0.00
24	T	Carbon Tetrachloride	1.704	1.604	5.9	76	0.00
25	S	1,2-Dichloroethane-d4	2.657	2.313	12.9	74	0.00
26	I	1,4-Difluorobenzene	1.000	1.000	0.0	85	0.00
27	TM	Benzene	1.405	1.366	2.8	84	0.00
28	T	1,2-Dichloroethane	0.489	0.421	13.9	74	0.00
29	TM	Trichloroethene	0.282	0.296	-5.0	90	0.00
30	TC	1,2-Dichloropropane	0.414	0.403	2.7	85	0.00
31	T	Bromodichloromethane	0.399	0.366	8.3	79	0.00
32	T	2-Chloroethyl vinyl ether	0.238	0.199	16.4	73	0.00
33	T	cis-1,3-Dichloropropene	0.578	0.547	5.4	81	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\981006\V04766.D Vial: 2
Acq On : 6 Oct 1998 13:54 Operator: Skelton
Sample : Daily Cal Inst : GC/MS Ins
Misc : 20 ppb std Multiplr: 1.00
MS Integration Params: GASES.P

Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Wed Sep 09 10:59:19 1998
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 25% Max. R.T. Dev 0.50min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
34	T	4-Methyl-2-Pentanone	0.176	0.144	18.2	71	0.00
35	S	Toluene-d8	1.191	1.185	0.5	84	0.00
36	TCM	Toluene	1.473	1.453	1.4	83	0.00
37	I	Chlorobenzene-d5	1.000	1.000	0.0	91	0.00
38	T	trans-1,3-Dichloropropene	1.906	1.591	16.5	75	0.00
39	T	1,1,2-Trichloroethane	1.009	0.935	7.3	85	0.00
40	T	Tetrachloroethene	0.967	0.963	0.4	89	0.00
41	T	2-Hexanone	1.398	0.984	29.6	69	0.00
42	T	Dibromochloromethane	0.917	0.861	6.1	84	0.00
43	TMP	Chlorobenzene	3.111	2.988	4.0	88	0.00
44	TC	Ethylbenzene	5.966	5.560	6.8	85	0.00
45	T	m+p-Xylenes	2.188	1.950	10.9	82	0.00
46	T	o-Xylene	4.510	3.943	12.6	80	0.00
47	T	Styrene	3.739	3.394	9.2	83	0.00
48	TP	Bromoform	0.568	0.535	5.8	85	0.00
49	S	Bromofluorobenzene	1.676	1.668	0.5	91	0.00
50	TP	1,1,2,2-Tetrachloroethane	1.649	1.495	9.3	86	0.00
51	T	1,3-Dichlorobenzene	2.171	2.194	-1.1	94	0.00
52	T	1,4-Dichlorobenzene	2.281	2.279	0.1	93	0.00
53	T	1,2-Dichlorobenzene	1.985	2.040	-2.8	95	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2B

SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: FMETL **Project** 98-0932

NJDEP # 13461 **Location** Building 277

Case No.: 3918

	EPA SAMPLE NO.	SMC1 DCE #	SMC2 TOL #	SMC3 BFB #	TOT OUT
01	VBLK107	85.50	102.80	98.33	0
02	3918.01	63.59	68.04	70.11	0
03	3918.02	62.71	64.39	76.31	0

				QC LIMITS
SMC1	DCE	=	1,2-Dichloroethane-d4	(76-114)
SMC2	TOL	=	Toluene-d8	(88-110)
SMC3	BFB	=	Bromofluorobenzene	(86-115)

Column to be used to flag recovery

*Values outside of contract required QC limits

D System Monitoring Compounds diluted out

Spike Recovery and RPD Summary Report - SOIL

Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Wed Sep 09 10:59:19 1998
Response via : Initial Calibration

Non-Spiked Sample: V04688.D

	Spike Sample	Spike Duplicate Sample
File ID :	V04689.D	V04690.D
Sample :	3883.24ms	3883.24msd
Acq Time:	29 Sep 1998 17:25	29 Sep 1998 18:11

Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC Limits RPD	QC Limits % Rec
1,1-Dichloroethene	0.0	20	15	18	76	88	15	22	59-172
Benzene	0.0	20	18	20	89	100	12	21	66-142
Trichloroethene	0.0	20	19	21	94	105	11	24	62-137
Toluene	0.0	20	18	21	92	105	13	21	59-139
Chlorobenzene	0.0	20	18	20	91	100	10	21	60-133

- Fails Limit Check

M62441.M Tue Oct 20 12:55:38 1998

0027

4A

VOLATILE METHOD BLANK SUMMARY

FIELD ID.

VBLK107

Lab Name: FMETL NJDEP # 13461

Project: 980932 Case No.: 3918 Location: 277 SDG No.:

Lab File ID: V04768.D Lab Sample ID: VBLK107

Date Analyzed: 10/06/98 Time Analyzed: 16:05

GC Column: Rtx502.2 ID: 0.25 (mm) Heated Purge: (Y/N) N

Instrument ID: GCMSVoa

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	277-7	3918.01	V04771.D	18:28
02	277-8	3918.02	V04772.D	19:12

COMMENTS:

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: FMETL NJDEP # 13461

Project: 980932 Case No.: 3918 Location: 277 SDG No.:

Lab File ID (Standard): V04766.D Date Analyzed: 10/06/98

Instrument ID: GCMSVoa Time Analyzed: 13:54

GC Column: Rtx502.2 ID: 0.25 (mm) Heated Purge: (Y/N) Y

		IS1BCM		IS2DFB		IS3CBZ	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	40790	18.31	272847	20.92	83090	28.74
	UPPER LIMIT	81580	17.81	545694	20.42	166180	28.24
	LOWER LIMIT	20395	18.81	136424	21.42	41545	29.24
	EPA SAMPLE NO.						
01	VBLK107	35081	18.33	235538	20.92	74694	28.74
02	277-7	37445	18.32	250421	20.92	78151	28.74
03	277-8	37639	18.32	262522	20.93	78568	28.74

IS1 BCM = Bromochloromethane

IS2 DFB = 1,4-Difluorobenzene

IS3 CBZ = 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 to be used to flag values outside QC limit with an asterisk.

* Values outside of contract required QC limits

Quantitation Report (QT/LSC Reviewed)

Data File : C:\HPCHEM\1\DATA\981006\V04768.D Vial: 1
Acq On : 6 Oct 1998 16:05 Operator: Skelton
Sample : VBLK107 Inst : GC/MS Ins
Misc : VBLK107 Multiplr: 1.00
MS Integration Params: GASES.P
Quant Time: Oct 13 16:00 1998 Quant Results File: M62441.RES

Quant Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Wed Sep 09 10:59:19 1998
Response via : Initial Calibration
DataAcq Meth : M62441

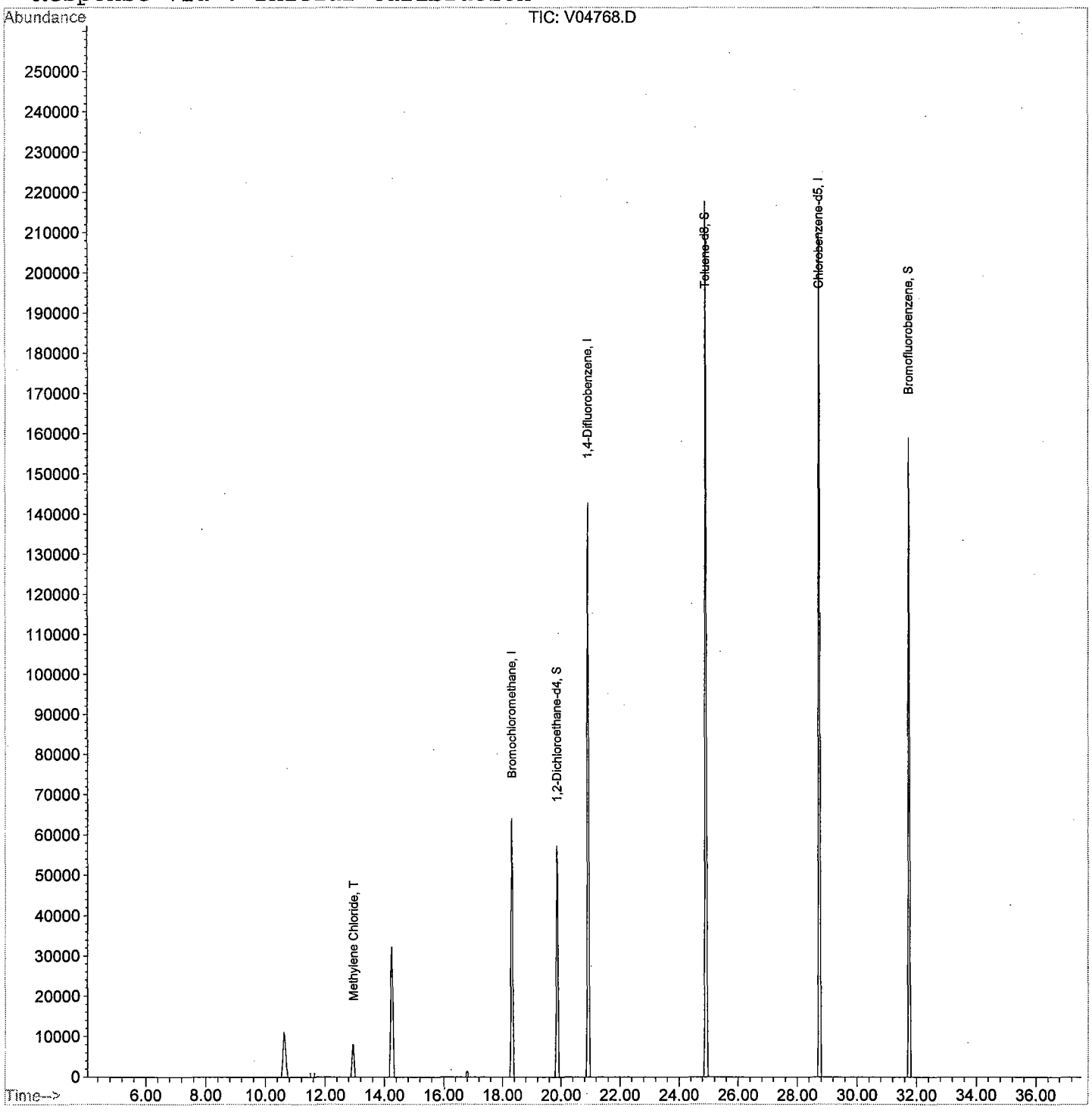
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	18.33	128	35081	30.00	ug/L	0.02
26) 1,4-Difluorobenzene	20.92	114	235538	30.00	ug/L	0.00
37) Chlorobenzene-d5	28.74	119	74694	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	19.87	65	79694	25.65	ug/L	0.00
Spiked Amount 30.000	Range 76 - 114		Recovery = 85.50%			
35) Toluene-d8	24.91	98	288455	30.84	ug/L	0.00
Spiked Amount 30.000	Range 88 - 110		Recovery = 102.80%			
49) Bromofluorobenzene	31.75	95	123065	29.50	ug/L	0.00
Spiked Amount 30.000	Range 86 - 115		Recovery = 98.33%			
Target Compounds						Qvalue
16) Methylene Chloride	12.96	84	10688m	3.25	ug/L	

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\981006\V04768.D Vial: 1
Acq On : 6 Oct 1998 16:05 Operator: Skelton
Sample : VBLK107 Inst : GC/MS Ins
Misc : VBLK107 Multiplr: 1.00
MS Integration Params: GASES.P
Quant Time: Oct 13 16:00 1998 Quant Results File: M62441.RES

Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Wed Sep 09 10:59:19 1998
Response via : Initial Calibration



0031

Quantitation Report (QT/LSC Reviewed)

Data File : C:\HPCHEM\1\DATA\981006\V04771.D Vial: 3
Acq On : 6 Oct 1998 18:28 Operator: Skelton
Sample : 3918.01 Inst : GC/MS Ins
Misc : 277-7(6') Multiplr: 1.00
MS Integration Params: GASES.P
Quant Time: Oct 13 16:07 1998 Quant Results File: M62441.RES

Quant Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Wed Sep 09 10:59:19 1998
Response via : Initial Calibration
DataAcq Meth : M62441

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	18.32	128	37445	30.00	ug/L	0.01
26) 1,4-Difluorobenzene	20.92	114	250421	30.00	ug/L	0.00
37) Chlorobenzene-d5	28.74	119	78151	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	19.88	65	168708	50.87	ug/L	0.00
Spiked Amount 30.000	Range 76 - 114		Recovery = 169.57%#			
35) Toluene-d8	24.91	98	541187	54.43	ug/L	0.00
Spiked Amount 30.000	Range 88 - 110		Recovery = 181.43%#			
49) Bromofluorobenzene	31.75	95	244847	56.09	ug/L	0.00
Spiked Amount 30.000	Range 86 - 115		Recovery = 186.97%#			
Target Compounds						Qvalue
16) Methylene Chloride	12.95	84	70947	20.19	ug/L	88
44) Ethylbenzene	28.93	91	48539	3.12	ug/L	97

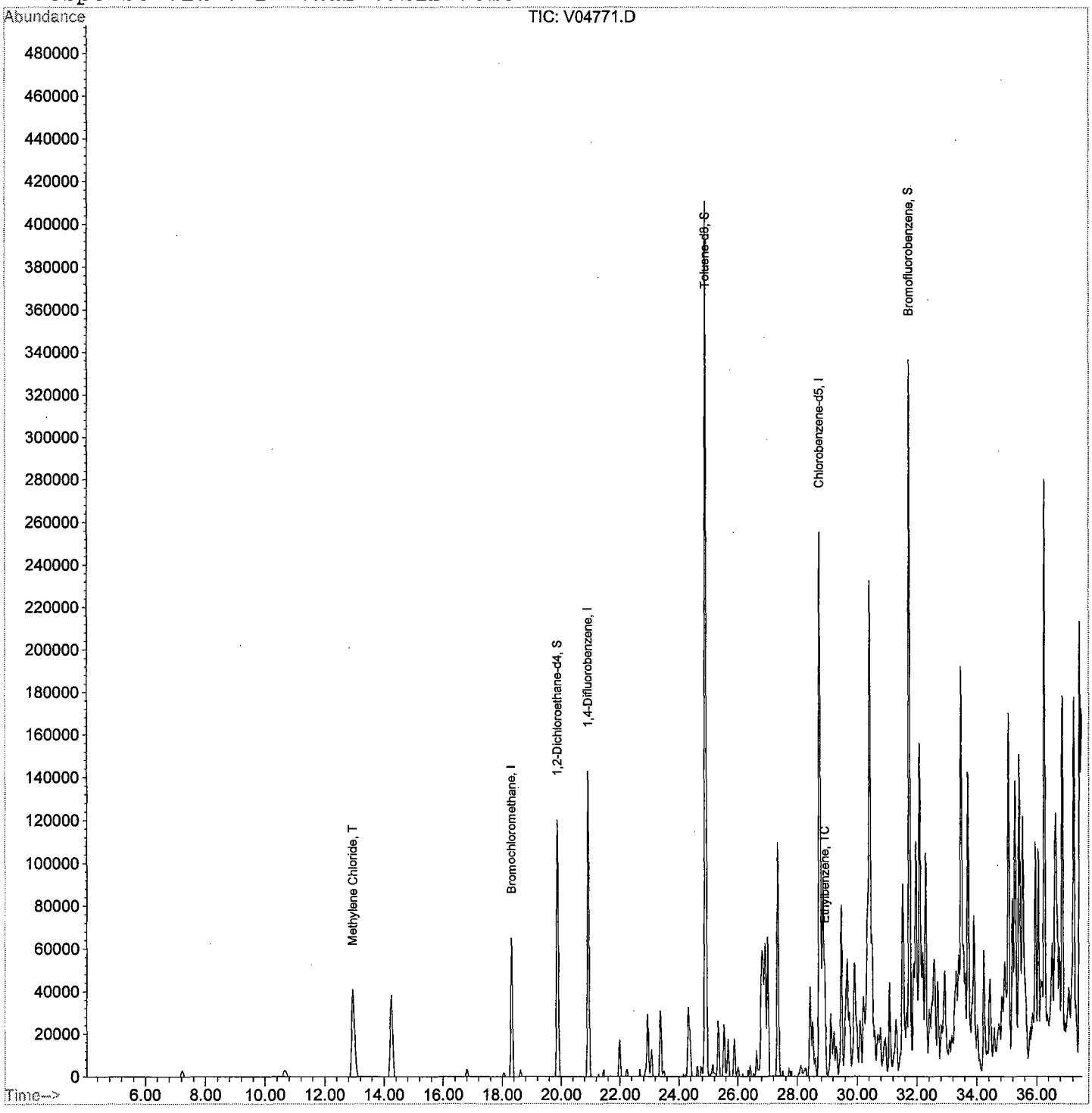
(#) = qualifier out of range (m) = manual integration

0032

Quantitation Report

Data File : C:\HPCHEM\1\DATA\981006\V04771.D Vial: 3
Acq On : 6 Oct 1998 18:28 Operator: Skelton
Sample : 3918.01 Inst : GC/MS Ins
Misc : 277-7(6') Multiplr: 1.00
MS Integration Params: GASES.P
Quant Time: Oct 13 16:07 1998 Quant Results File: M62441.RES

Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Wed Sep 09 10:59:19 1998
Response via : Initial Calibration



V04771.D M62441.M Tue Oct 13 16:15:45 1998 Page 1

Quantitation Report (QT/LSC Reviewed)

Data File : C:\HPCHEM\1\DATA\981006\V04772.D Vial: 4
Acq On : 6 Oct 1998 19:12 Operator: Skelton
Sample : 3918.02 Inst : GC/MS Ins
Misc : 277-8(6') Multiplr: 1.00
MS Integration Params: GASES.P
Quant Time: Oct 13 16:12 1998 Quant Results File: M62441.RES

Quant Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Wed Sep 09 10:59:19 1998
Response via : Initial Calibration
DataAcq Meth : M62441

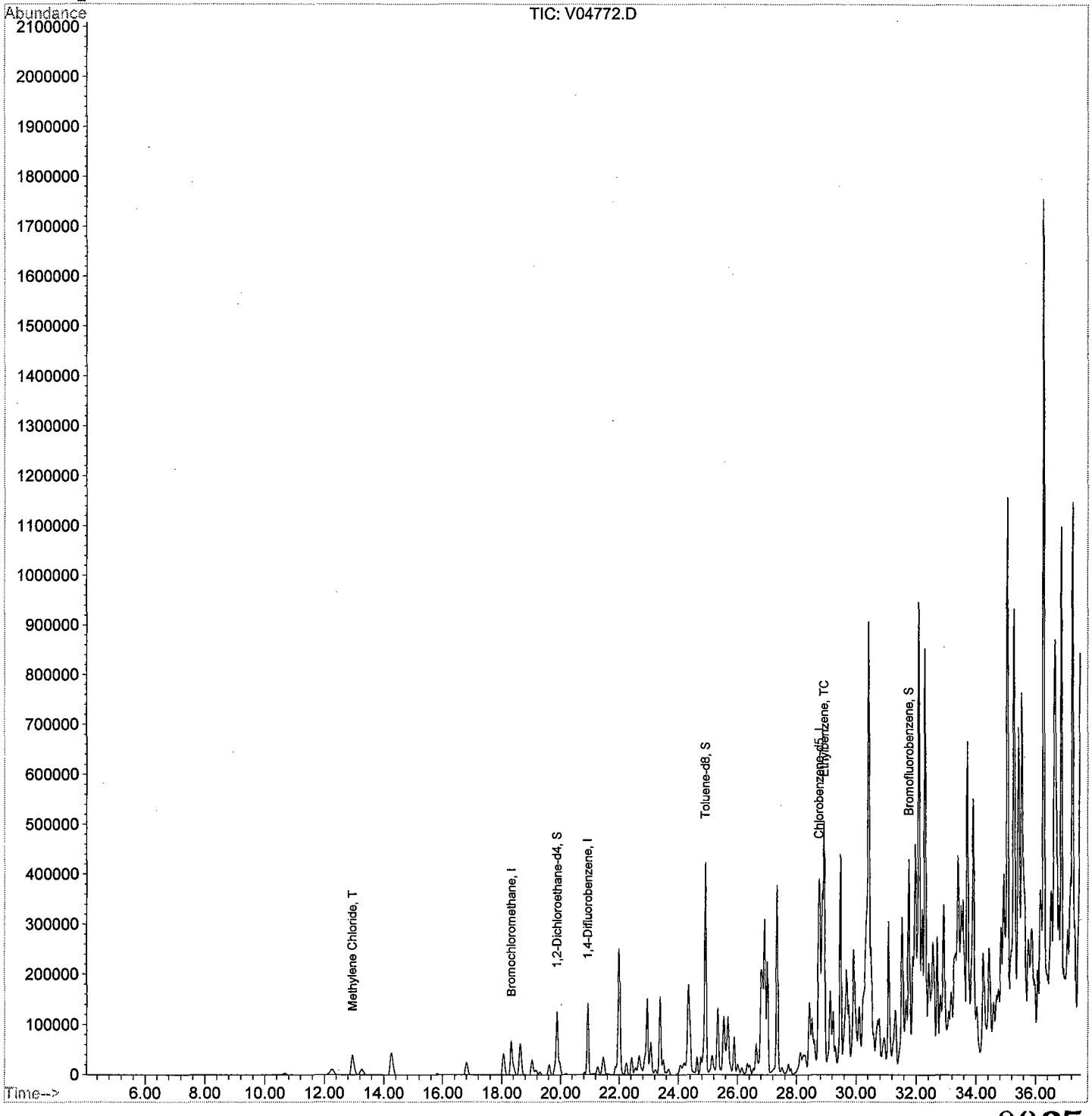
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	18.32	128	37639	30.00	ug/L	0.01
26) 1,4-Difluorobenzene	20.93	114	262522	30.00	ug/L	0.01
37) Chlorobenzene-d5	28.74	119	78568	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	19.88	65	167249	50.17	ug/L	0.01
Spiked Amount 30.000	Range 76 - 114		Recovery = 167.23%#			
35) Toluene-d8	24.92	98	536948	51.51	ug/L	0.00
Spiked Amount 30.000	Range 88 - 110		Recovery = 171.70%#			
49) Bromofluorobenzene	31.75	95	267953	61.05	ug/L	0.00
Spiked Amount 30.000	Range 86 - 115		Recovery = 203.50%#			
Target Compounds						Qvalue
16) Methylene Chloride	12.94	84	67615	19.14	ug/L	91
44) Ethylbenzene	28.93	91	572193	36.62	ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\981006\V04772.D Vial: 4
Acq On : 6 Oct 1998 19:12 Operator: Skelton
Sample : 3918.02 Inst : GC/MS Ins
Misc : 277-8(6') Multiplr: 1.00
MS Integration Params: GASES.P
Quant Time: Oct 13 16:12 1998 Quant Results File: M62441.RES

Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Wed Sep 09 10:59:19 1998
Response via : Initial Calibration



TPHC

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3918
	DPW. SELFM-PW-EV	**Date Rec'd:**	28-Sep-98
	Bldg. 173	**Analysis Start:**	28-Sep-98
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	29-Sep-98
Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	D.DEINHARDT	**DICAR #:**	
Inst. ID.	GC TPHC INST. #1	**Injection Volume**	1 ul
Column Type	RTX 5	**Column ID**	0.32 um
Ext. Meth:	Shake	**Location #:**	BLDG. 277

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3918.01	277-7(6')	**1.00**	15.16	85.87	181	**1861.61**
3918.02	277-8(6')	**5.00**	15.37	85.04	180	**21497.67**
METHOD BLANK	TBLK 170	**1.00**	15.00	100.00	157	**ND**

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright
Laboratory Director

Method : C:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998

Calibration Files
100 =T06865.D 50 =T06866.D 20 =T06867.D
10 =T06868.D 5 =T06869.D

	Compound	100	50	20	10	5	Avg	%RSD
1)	tC C8	2.311	2.599	2.672	2.620	2.686	2.577 E4	5.95
2)	tC C10	2.632	2.942	3.002	2.923	3.126	2.925 E4	6.22
3)	TC C12	2.931	3.295	3.342	3.253	3.453	3.255 E4	6.02
4)	tC C14	3.027	3.417	3.488	3.382	3.600	3.383 E4	6.37
5)	tC C16	3.046	3.450	3.545	3.434	3.674	3.430 E4	6.86
6)	tC C18	3.451	3.853	3.936	3.985	4.116	3.868 E4	6.52
7)	tC C20	3.275	3.707	3.817	3.688	3.975	3.692 E4	7.03
8)	tC C22	3.218	3.646	3.753	3.628	3.887	3.626 E4	6.91
9)	tC C24	3.256	3.685	3.799	3.645	3.934	3.664 E4	6.93
10)	tC C26	3.225	3.643	3.749	3.596	3.871	3.617 E4	6.73
11)	tC C28	3.225	3.634	3.730	3.577	3.857	3.605 E4	6.58
12)	tC C30	3.296	3.706	3.808	3.650	3.923	3.677 E4	6.44
13)	tC C32	3.255	3.653	3.746	3.576	3.851	3.616 E4	6.27
14)	tC C34	3.285	3.678	3.775	3.592	3.872	3.640 E4	6.17
15)	tC C36	3.076	3.434	3.519	3.334	3.594	3.391 E4	5.93
16)	tC C38	2.873	3.199	3.290	3.108	3.357	3.165 E4	5.96
17)	tC C40	2.508	2.784	2.873	2.714	2.932	2.762 E4	5.97
18)	tC c42	2.295	2.537	2.627	2.473	2.614	2.509 E4	5.39
19)	TC Pristane	3.181	3.658	3.694	3.576	3.848	3.591 E4	6.96
20)	TC Phytane	3.286	3.723	3.831	3.710	4.000	3.710 E4	7.11
21)	sC o-terphenyl	3.321	3.756	3.867	3.734	4.018	3.739 E4	6.93
22)	tC TPHC - total	3.501	3.820	4.101	4.006	4.639	4.013 E4	10.41

(#) = Out of Range MEAN RSD = 6.62%

TPH47.M Tue Sep 29 09:14:24 1998

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980925\T06865.D Vial: 2
Acq On : 25 Sep 98 3:06 pm Operator: Deinhardt
Sample : 100 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 29 9:02 1998 Quant Results File: TPH46.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH46.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH46.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.98	3321489	72.198 mg/L
Spiked Amount 10.000 Range 8 - 13		Recovery = 721.98%#	
Target Compounds			
1) tC C8	4.72	2311044	83.537 mg/L
2) tC C10	7.71	2631777	84.144 mg/L
3) TC C12	9.34	2930730	82.785 mg/L
4) tC C14	10.52	3026978	78.410 mg/L
5) tC C16	11.53	3045508	75.084 mg/L
6) tC C18	11.99	3450510	73.906 mg/L m
7) tC C20	12.43	3275410	73.056 mg/L m
8) tC C22	13.25	3218031	72.364 mg/L
9) tC C24	13.99	3256322	72.113 mg/L
10) tC C26	14.68	3224873	71.938 mg/L
11) tC C28	15.32	3225253	71.950 mg/L
12) tC C30	15.91	3295843	72.096 mg/L
13) tC C32	16.47	3254589	72.358 mg/L
14) tC C34	17.07	3285160	74.347 mg/L
15) tC C36	17.78	3076094	78.252 mg/L
16) tC C38	18.67	2873014	81.535 mg/L
17) tC C40	19.83	2507713	82.752 mg/L
18) tC c42	21.39	2294516	81.758 mg/L
19) TC Pristane	12.02	3180800	73.341 mg/L m
20) TC Phytane	12.48	3286047	72.987 mg/L m
22) tC TPHC - total	12.02	70024293	1439.221 mg/L m

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\980925\T06866.D Vial: 3
Acq On : 25 Sep 98 3:45 pm Operator: Deinhardt
Sample : 50 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 29 9:04 1998 Quant Results File: TPH46.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH46.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH46.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.98	1877811	40.817 mg/L
Spiked Amount 10.000 Range 8 - 13 Recovery = 408.17%#			
Target Compounds			
1) tC C8	4.71	1299346	46.967 mg/L m
2) tC C10	7.71	1470818	47.026 mg/L
3) TC C12	9.33	1647252	46.530 mg/L
4) tC C14	10.52	1708440	44.255 mg/L
5) tC C16	11.53	1725045	42.529 mg/L
6) tC C18	11.99	1926717	41.268 mg/L m
7) tC C20	12.43	1853668	41.345 mg/L m
8) tC C22	13.24	1822993	40.993 mg/L
9) tC C24	13.99	1842749	40.809 mg/L
10) tC C26	14.68	1821345	40.629 mg/L
11) tC C28	15.31	1816954	40.533 mg/L
12) tC C30	15.90	1853129	40.537 mg/L
13) tC C32	16.47	1826466	40.607 mg/L
14) tC C34	17.07	1839032	41.619 mg/L
15) tC C36	17.77	1716875	43.675 mg/L
16) tC C38	18.66	1599305	45.388 mg/L
17) tC C40	19.81	1392181	45.941 mg/L
18) tC c42	21.37	1268448	45.197 mg/L
19) TC Pristane	12.02	1829219	42.177 mg/L m
20) TC Phytane	12.47	1861331	41.343 mg/L m
22) tC TPHC - total	12.02	38204486	785.223 mg/L m

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\980925\T06867.D Vial: 4
Acq On : 25 Sep 98 4:24 pm Operator: Deinhardt
Sample : 20 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 29 9:06 1998 Quant Results File: TPH46.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH46.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH46.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.97	773309	16.809 mg/L
Spiked Amount 10.000 Range 8 - 13		Recovery = 168.09%#	
Target Compounds			
1) tC C8	4.72	534332	19.314 mg/L m
2) tC C10	7.71	600427	19.197 mg/L
3) TC C12	9.33	668324	18.878 mg/L
4) tC C14	10.51	697613	18.071 mg/L
5) tC C16	11.52	709094	17.482 mg/L
6) tC C18	11.98	787167	16.860 mg/L m
7) tC C20	12.42	763303	17.025 mg/L m
8) tC C22	13.24	750587	16.878 mg/L
9) tC C24	13.98	759712	16.824 mg/L
10) tC C26	14.67	749847	16.727 mg/L
11) tC C28	15.31	745956	16.641 mg/L
12) tC C30	15.90	761540	16.659 mg/L
13) tC C32	16.46	749291	16.659 mg/L
14) tC C34	17.06	754936	17.085 mg/L
15) tC C36	17.76	703828	17.904 mg/L
16) tC C38	18.64	658032	18.675 mg/L
17) tC C40	19.79	574523	18.959 mg/L
18) tC c42	21.34	525434	18.722 mg/L
19) TC Pristane	12.01	738844	17.036 mg/L m
20) TC Phytane	12.46	766106	17.016 mg/L m
22) tC TPHC - total	11.98	16404755	337.170 mg/L m

0041

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\980925\T06869.D Vial: 6
Acq On : 25 Sep 98 5:40 pm Operator: Deinhardt
Sample : 5 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 29 9:09 1998 Quant Results File: TPH46.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH46.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH46.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.97	200920	4.367 mg/L
Spiked Amount 10.000 Range 8 - 13		Recovery =	43.67%#
Target Compounds			
1) tC C8	4.72	134320	4.855 mg/L m
2) tC C10	7.70	156282	4.997 mg/L
3) TC C12	9.33	172637	4.877 mg/L
4) tC C14	10.51	179999	4.663 mg/L
5) tC C16	11.52	183723	4.530 mg/L
6) tC C18	11.98	205775	4.407 mg/L m
7) tC C20	12.42	198755	4.433 mg/L m
8) tC C22	13.23	194340	4.370 mg/L
9) tC C24	13.98	196692	4.356 mg/L
10) tC C26	14.67	193570	4.318 mg/L
11) tC C28	15.30	192848	4.302 mg/L
12) tC C30	15.89	196157	4.291 mg/L
13) tC C32	16.45	192541	4.281 mg/L
14) tC C34	17.05	193600	4.381 mg/L
15) tC C36	17.75	179718	4.572 mg/L
16) tC C38	18.63	167856	4.764 mg/L
17) tC C40	19.78	146605	4.838 mg/L
18) tC c42	21.32	130708	4.657 mg/L
19) TC Pristane	12.01	192384	4.436 mg/L m
20) TC Phytane	12.46	200005	4.442 mg/L m
22) tC TPHC - total	11.98	4638777	95.342 mg/L m

(f)=RT Delta > 1/2 Window (m)=manual int.
T06869.D TPH46.M Wed Sep 30 08:48:38 1998 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980928\T06885.D Vial: 2
Acq On : 28 Sep 98 2:22 pm Operator: Deinhardt
Sample : 50 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 29 9:19 1998 Quant Results File: TPH47.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.98	1865420	49.887 mg/L
Spiked Amount 10.000 Range 8 - 13		Recovery = 498.87%#	
Target Compounds			
1) tC C8	4.70	1280963	49.698 mg/L
2) tC C10	7.70	1467384	50.168 mg/L
3) TC C12	9.33	1634212	50.212 mg/L
4) tC C14	10.51	1687127	49.873 mg/L
5) tC C16	11.52	1705083	49.713 mg/L
6) tC C18	11.99	1908324	49.335 mg/L m
7) tC C20	12.42	1838911	49.803 mg/L m
8) tC C22	13.24	1811227	49.947 mg/L
9) tC C24	13.99	1838651	50.184 mg/L
10) tC C26	14.67	1833120	50.683 mg/L
11) tC C28	15.31	1832372	50.834 mg/L
12) tC C30	15.90	1866760	50.775 mg/L
13) tC C32	16.46	1845741	51.041 mg/L
14) tC C34	17.06	1816544	49.899 mg/L
15) tC C36	17.77	1592618	46.960 mg/L
16) tC C38	18.65	1330786	42.043 mg/L
17) tC C40	19.80	1029501	37.273 mg/L
18) tC c42	21.35	849432	33.855 mg/L
19) TC Pristane	12.02	1834546	51.081 mg/L m
20) TC Phytane	12.47	1848741	49.833 mg/L m
22) tC TPHC - total	12.02	36226091	902.608 mg/L m

(f)=RT Delta > 1/2 Window (m)=manual int.
T06885.D TPH47.M Wed Sep 30 10:26:10 1998 Page 1

Quality Control Check Standard Summary
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3918
	DPW. SELFM-PW-EV	**Date Rec'd:**	28-Sep-98
	Bldg. 173	**Analysis Start:**	28-Sep-98
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	29-Sep-98
Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	D.DEINHARDT	**DICAR #:**	
Inst. ID.	GC TPHC INST. #1	**Injection Volume**	1 ul
Column Type	RTX 5	**Column ID**	0.32 um
Ext. Meth:	Shake	**Location #:**	BLDG. 277

Sample	Date Extracted	Spike Amount Added (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
Blank Spike	28-Sep-98	829	933.09	112.56	75-125

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980925\T06878.D Vial: 15
Acq On : 25 Sep 98 11:24 pm Operator: Deinhardt
Sample : BLANK SPIKE 9/25 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 28 8:08 1998 Quant Results File: TPH47.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH46.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.97	377623	10.099 mg/L
Spiked Amount 10.000 Range 8 - 13		Recovery =	100.99%#
Target Compounds			
1) tC C8	4.71	23816	0.924 mg/L
2) tC C10	7.70	280683	9.596 mg/L
3) TC C12	9.33	506910	15.575 mg/L
4) tC C14	10.51	613629	18.139 mg/L
5) tC C16	11.52	473636	13.809 mg/L
6) tC C18	11.98	364625	9.426 mg/L
7) tC C20	12.42	339008	9.184 mg/L
8) tC C22	12.97	377623	10.099 mg/L
9) tC C24	13.98	101343	2.766 mg/L
10) tC C26	14.67	34690	0.959 mg/L
11) tC C28	15.30	8303	0.230 mg/L
12) tC C30	15.89	2022	0.055 mg/L
19) TC Pristane	11.98	364625	10.161 mg/L
20) TC Phytane	12.46	143703	3.870 mg/L
22) tC TPHC - total	11.52	37304826	933.087 mg/L m

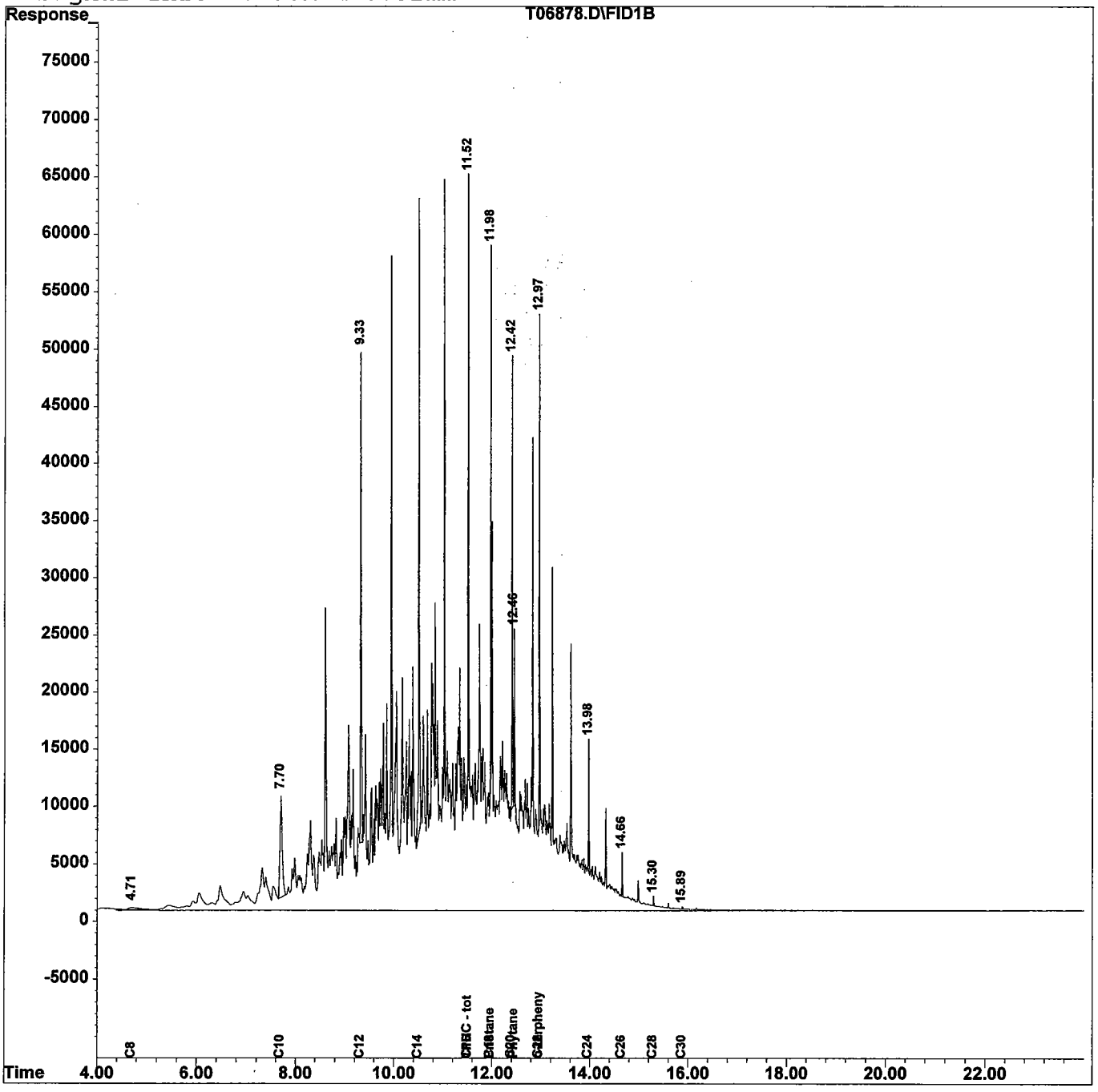
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980925\T06878.D Vial: 15
Acq On : 25 Sep 98 11:24 pm Operator: Deinhardt
Sample : BLANK SPIKE 9/25 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 28 8:08 1998 Quant Results File: TPH47.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH46.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980925\T06879.D Vial: 16
Acq On : 26 Sep 98 12:03 am Operator: Deinhardt
Sample : 3907.01MS Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 28 8:09 1998 Quant Results File: TPH47.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH46.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.97	360473	9.640 mg/L
Spiked Amount 10.000 Range 8 - 13 Recovery = 96.40%#			
Target Compounds			
1) tC C8	4.70	19493	0.756 mg/L
2) tC C10	7.70	268437	9.178 mg/L
3) TC C12	9.33	474923	14.592 mg/L
4) tC C14	10.51	560250	16.561 mg/L
5) tC C16	11.52	458331	13.363 mg/L
6) tC C18	11.98	351430	9.085 mg/L
7) tC C20	12.42	325752	8.825 mg/L
8) tC C22	12.97	360473	9.640 mg/L
9) tC C24	13.98	97859	2.671 mg/L
10) tC C26	14.67	33449	0.925 mg/L
11) tC C28	15.30	9517	0.264 mg/L
12) tC C30	15.89	2159	0.059 mg/L
14) tC C34	17.24	1022	0.028 mg/L
15) tC C36	17.72	1125	0.033 mg/L
19) TC Pristane	11.98	351430	9.793 mg/L
20) TC Phytane	12.46	138054	3.718 mg/L
22) tC TPHC - total	11.03	36105003	903.077 mg/L m

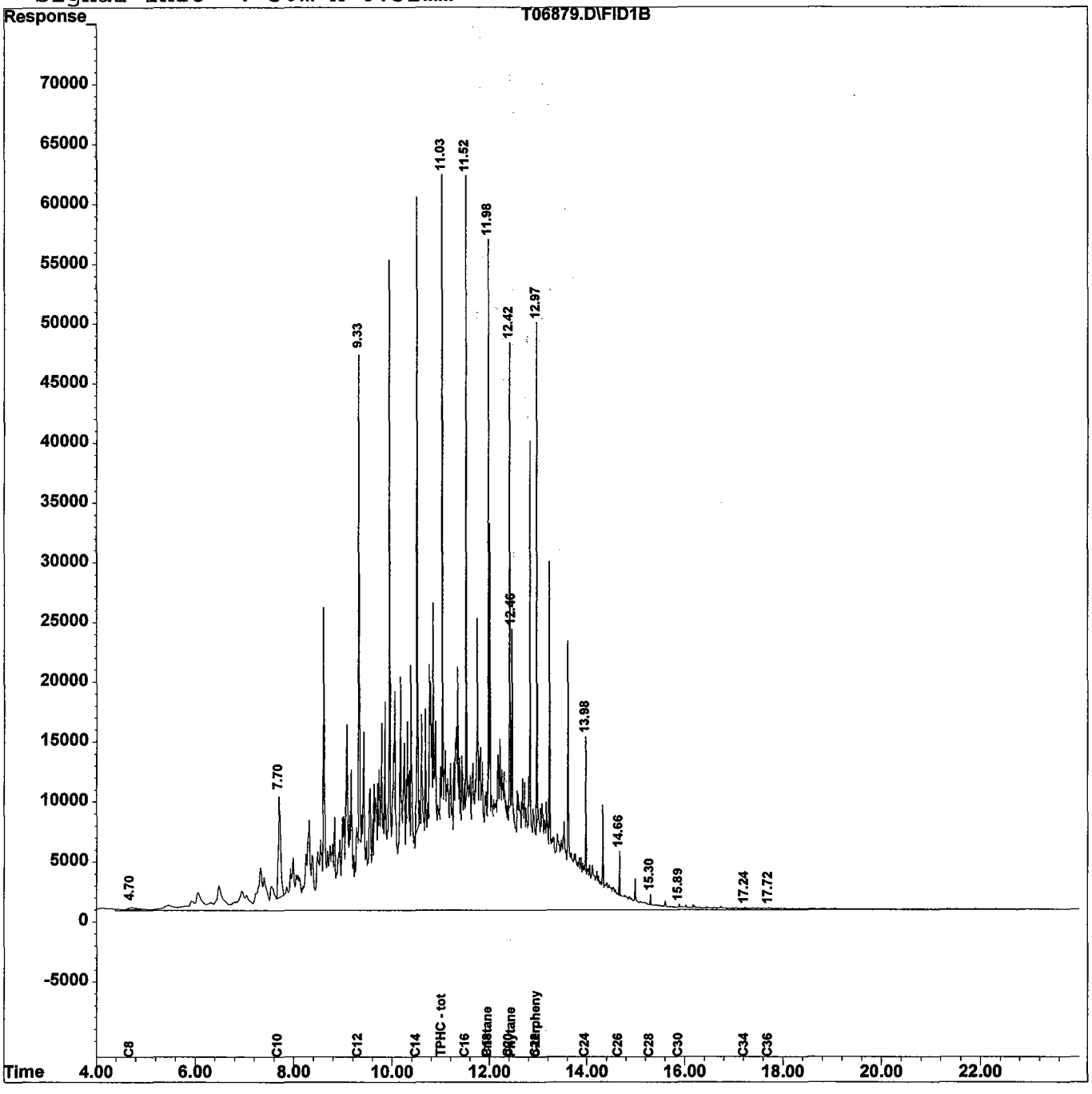
(f)=RT Delta > 1/2 Window (m)=manual int

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980925\T06879.D Vial: 16
Acq On : 26 Sep 98 12:03 am Operator: Deinhardt
Sample : 3907.01MS Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 28 8:09 1998 Quant Results File: TPH47.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH46.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980925\T06881.D Vial: 18
Acq On : 26 Sep 98 1:20 am Operator: Deinhardt
Sample : 3907.01MSD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 28 8:11 1998 Quant Results File: TPH47.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH46.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.97	378264	10.116 mg/L
Spiked Amount 10.000 Range 8 - 13 Recovery = 101.16%#			
Target Compounds			
1) tC C8	4.71	17082	0.663 mg/L
2) tC C10	7.70	268069	9.165 mg/L
3) TC C12	9.33	476380	14.637 mg/L
4) tC C14	10.51	589386	17.423 mg/L
5) tC C16	11.52	457996	13.353 mg/L
6) tC C18	11.98	352600	9.115 mg/L
7) tC C20	12.42	344533	9.334 mg/L
8) tC C22	12.97	378264	10.116 mg/L
9) tC C24	13.98	98329	2.684 mg/L
10) tC C26	14.66	33599	0.929 mg/L
11) tC C28	15.30	8011	0.222 mg/L
12) tC C30	15.89	1683	0.046 mg/L
13) tC C32	16.45	1078	0.030 mg/L
14) tC C34	17.24	1094	0.030 mg/L
19) TC Pristane	12.01	168555	4.697 mg/L
20) TC Phytane	12.46	140323	3.779 mg/L
22) tC TPHC - total	11.03	35747014	894.123 mg/L m

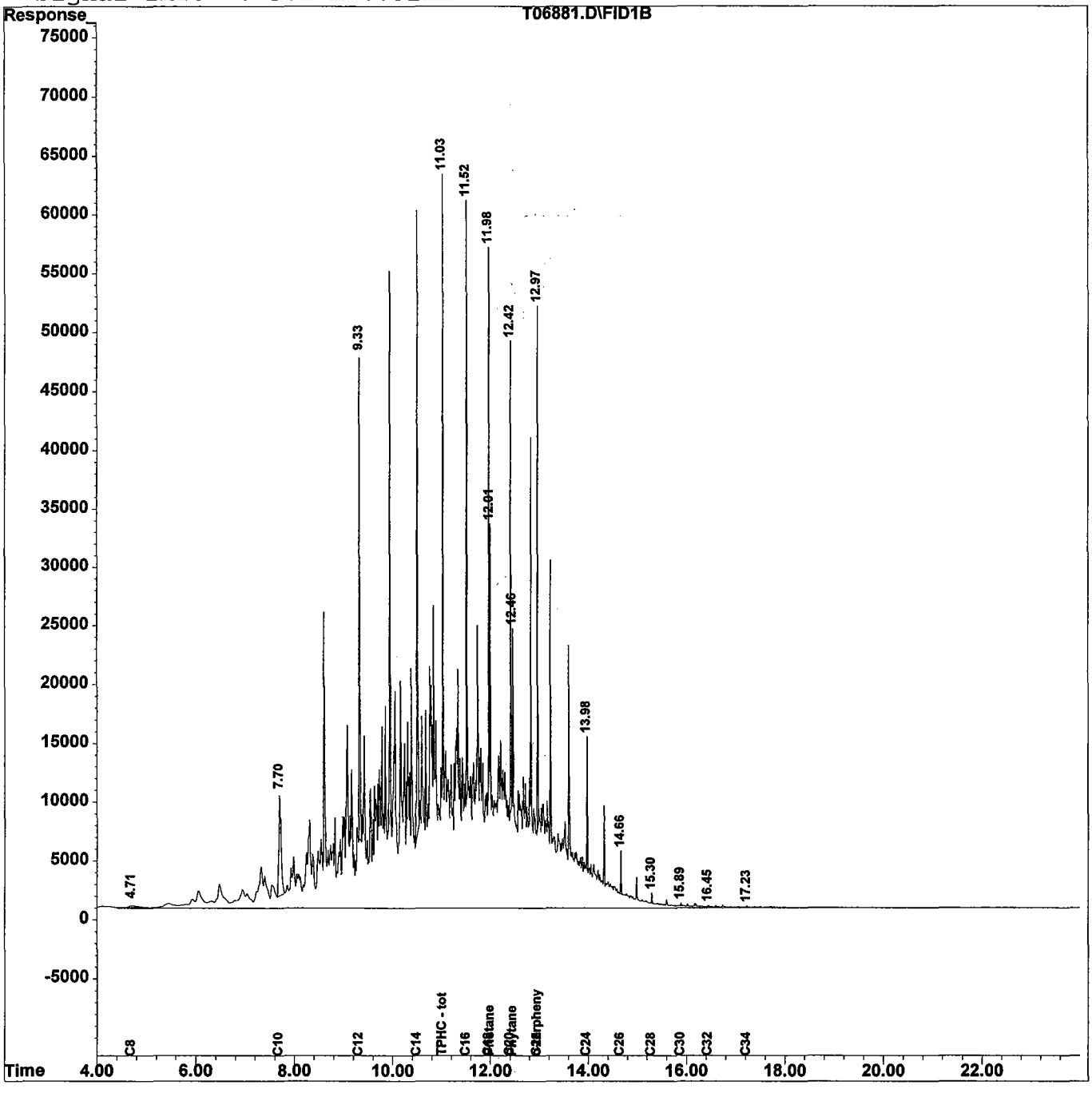
(f)=RT Delta > 1/2 Window (m)=manual int

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980925\T06881.D Vial: 18
Acq On : 26 Sep 98 1:20 am Operator: Deinhardt
Sample : 3907.01MSD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 28 8:11 1998 Quant Results File: TPH47.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH46.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



0054

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980928\T06886.D Vial: 3
Acq On : 28 Sep 98 3:00 pm Operator: Deinhardt
Sample : TBLK 170 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 29 7:38 1998 Quant Results File: TPH47.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.97	422987	12.462 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery = 124.62%#	
Target Compounds			

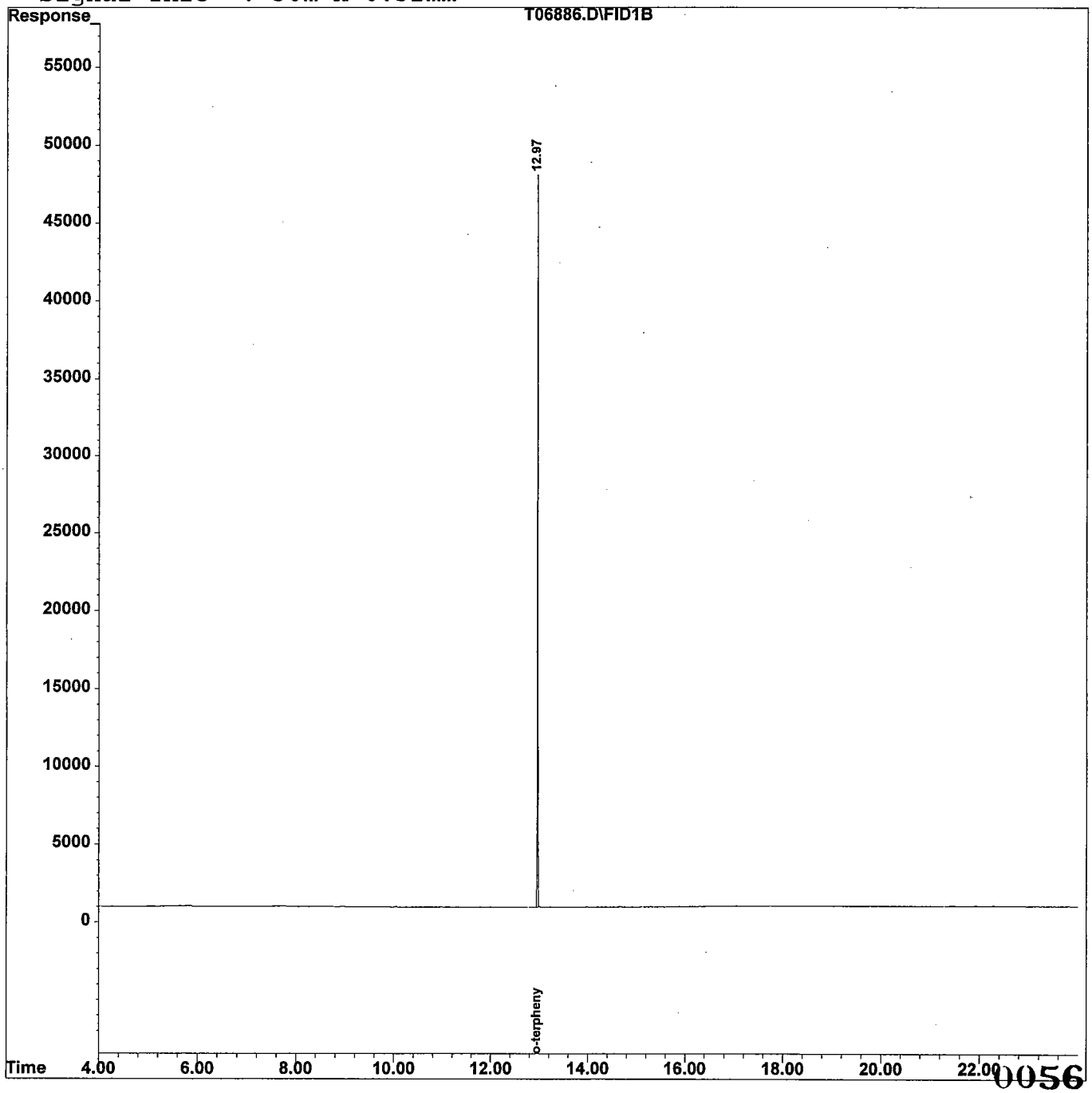
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980928\T06886.D Vial: 3
Acq On : 28 Sep 98 3:00 pm Operator: Deinhardt
Sample : TBLK 170 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 29 7:38 1998 Quant Results File: TPH47.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



0056

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

277-10

Lab Name: FMETL NJDEP # 13461

Project: 980932 Case No.: 3920 Location: 277 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3920.02

Sample wt/vol: 10.5 (g/ml) G Lab File ID: V04774.D

Level: (low/med) MED Date Received: 09/29/98

% Moisture: not dec. 14.65 Date Analyzed: 10/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	840	U
1330-20-7	o-Xylene	560	U
100-42-5	Styrene	560	U
75-25-2	Bromoform	560	U
79-34-5	1,1,2,2-Tetrachloroethane	560	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

277-10

Lab Name: FMETL NJDEP # 13461

Project: 980932 Case No.: 3920 Location: 277 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3920.02

Sample wt/vol: 10.5 (g/ml) G Lab File ID: V04774.D

Level: (low/med) MED Date Received: 09/29/98

% Moisture: not dec. 14.65 Date Analyzed: 10/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 2

CAS NO.	COMPOUND	RT	EST. CONC.	Q
1. 000090-12-0	Naphthalene, 1-methyl-	24.42	2800	JN
2. 000091-57-6	Naphthalene, 2-methyl-	30.43	12000	JN

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

277-11

Lab Name: FMETL NJDEP # 13461

Project: 980932 Case No.: 3920 Location: 277 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3920.03

Sample wt/vol: 11.5 (g/ml) G Lab File ID: V04775.D

Level: (low/med) MED Date Received: 09/29/98

% Moisture: not dec. 13.23 Date Analyzed: 10/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1800	U
107131	Acrylonitrile	1800	U
75650	tert-Butyl alcohol	3300	U
1634044	Methyl-tert-Butyl ether	750	U
108203	Di-isopropyl ether	500	U
	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	750	U
74-83-9	Bromomethane	500	U
75-00-3	Chloroethane	750	U
75-69-4	Trichlorofluoromethane	500	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	500	U
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	4900	B
156-60-5	trans-1,2-Dichloroethene	500	U
75-35-3	1,1-Dichloroethane	250	U
108-05-4	Vinyl Acetate	750	U
78-93-3	2-Butanone	750	U
	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
75-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	500	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	500	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
110-75-8	2-Chloroethyl vinyl ether	500	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	500	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	500	U
79-00-5	1,1,2-Trichloroethane	500	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	500	U
126-48-1	Dibromochloromethane	500	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	7500	

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

277-11

Lab Name: FMETL NJDEP # 13461

Project: 980932 Case No.: 3920 Location: 277 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3920.03

Sample wt/vol: 11.5 (g/ml) G Lab File ID: V04775.D

Level: (low/med) MED Date Received: 09/29/98

% Moisture: not dec. 13.23 Date Analyzed: 10/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	2000	
1330-20-7	o-Xylene	500	U
100-42-5	Styrene	500	U
75-25-2	Bromoform	500	U
79-34-5	1,1,2,2-Tetrachloroethane	500	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID. 277-11

Lab Name: FMETL NJDEP # 13461

Project: 980932 Case No.: 3920 Location: 277 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3920.03

Sample wt/vol: 11.5 (g/ml) G Lab File ID: V04775.D

Level: (low/med) MED Date Received: 09/29/98

% Moisture: not dec. 13.23 Date Analyzed: 10/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 15

CAS NO.	COMPOUND	RT	EST. CONC.	Q
1. 000108-87-2	Cyclohexane, methyl-	21.98	11000	JN
2. 000638-04-0	Cyclohexane, 1,3-dimethyl-, cis-	24.33	13000	JN
3.	unknown	30.42	11000	J
4. 000103-65-1	Benzene, propyl-	32.09	8000	JN
5. 000622-96-8	Benzene, 1-ethyl-4-methyl-	32.32	18000	JN
6. 000095-36-3	1,2,4-Trimethylbenzene	32.47	18000	JN
7. 000095-36-3	1,2,4-Trimethylbenzene	33.48	40000	JN
8. 001074-17-5	Benzene, 1-methyl-2-propyl-	35.05	24000	JN
9. 000934-80-5	Benzene, 4-ethyl-1,2-dimethyl-	35.24	28000	JN
10. 001758-88-9	Benzene, 2-ethyl-1,4-dimethyl-	35.96	11000	JN
11. 000527-84-4	Benzene, 1-methyl-2-(1-methylet	36.06	11000	JN
12. 000934-80-5	Benzene, 4-ethyl-1,2-dimethyl-	36.26	16000	JN
13. 027133-93-3	2,3-Dihydro-1-methylindene	36.86	7600	JN
14. 000099-87-6	Benzene, 1-methyl-4-(1-methylet	37.23	8300	JN
15. 000874-41-9	Benzene, 1-ethyl-2,4-dimethyl-	37.44	17000	JN

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: FMETL NJDEP # 13461

Project: 980932 Case No.: 3920 Location: 277 SDG No.:

Lab File ID: V04541.D BFB Injection Date: 09/08/98

Instrument ID: GCMSVoa BFB Injection Time: 10:24

GC Column: Rtx502.2 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	25.4
75	30.0 - 66.0% of mass 95	48.4
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.4
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 120.0% of mass 95	63.6
175	4.0 - 9.0% of mass 174	4.8 (7.5)1
176	93.0 - 101.0% of mass 174	62.2 (97.8)1
177	5.0 - 9.0% of mass 176	4.2 (6.8)2

1-Value is % mass 174 2-Value is % mass 176

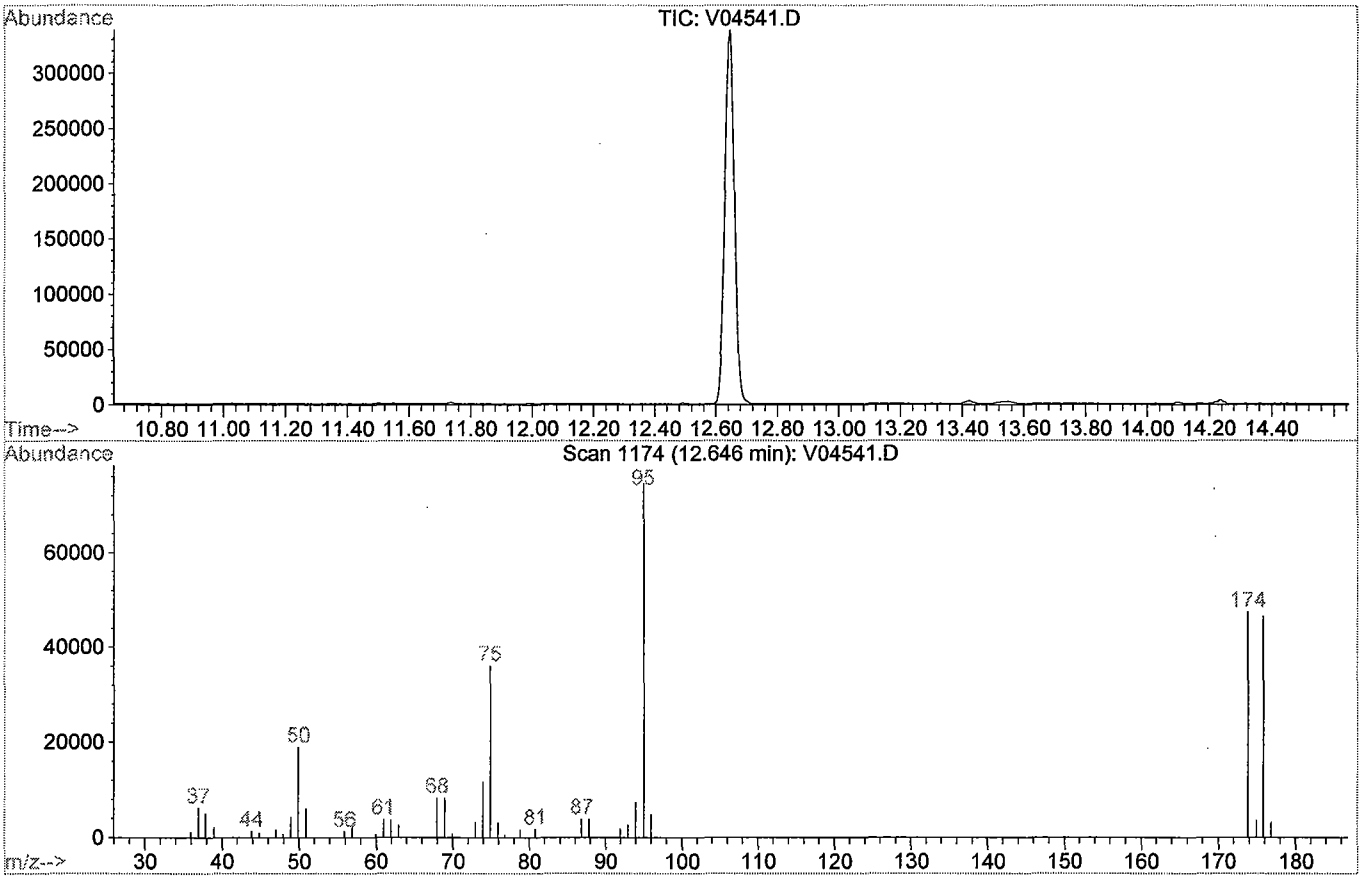
THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD020	20 PPB STD	V04542.D	09/08/98	10:57
02	VSTD005	5 PPB STD	V04543.D	09/08/98	11:52
03	VSTD010	10 PPB STD	V04544.D	09/08/98	12:36
04	VSTD050	50 PPB STD	V04545.D	09/08/98	13:20
05	VSTD100	100 PPB STD	V04546.D	09/08/98	14:04

BFB

Data File : C:\HPCHEM\1\DATA\980908\V04541.D
Acq On : 8 Sep 1998 10:24
Sample : BFB Tune
Misc : 100-37-31/1850368
MS Integration Params: GASES.P
Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP

Vial: 1
Operator: Skelton
Inst : GC/MS Ins
Multiplr: 1.00



Spectrum Information: Scan 1174

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	25.4	18968	PASS
75	95	30	60	48.4	36096	PASS
95	95	100	100	100.0	74584	PASS
96	95	5	9	6.4	4797	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	63.6	47416	PASS
175	174	5	9	7.5	3555	PASS
176	174	95	101	97.8	46392	PASS
177	176	5	9	6.8	3166	PASS

V04541.D M62441.M Tue Oct 20 12:51:41 1998

Response Factor Report GC/MS Ins

Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Wed Sep 09 10:59:19 1998
Response via : Initial Calibration

Calibration Files
50 =V04545.D 5 =V04543.D 10 =V04544.D
20 =V04542.D 100 =V04546.D

		Compound	50	5	10	20	100	Avg	%RSD
1)	I	Bromochloromethane	----------ISTD----------						
2)	t	Acrolein	1.267	1.166	1.191	1.159	1.252	1.207	4.11
3)	t	Acrylonitrile	2.779	2.567	2.635	2.586	2.722	2.658	3.41
4)	t	tert-Butyl alcohol	0.569	0.375	0.446	0.441	0.602	0.487	19.59
5)	t	Methyl-tert-Butyl eth	5.943	4.839	5.094	5.287	6.007	5.434	9.56
6)	t	Di-isopropyl ether	3.416	2.800	3.113	3.388	3.303	3.204	7.95
7)	T	Dichlorodifluorometha	2.964	3.407	3.326	3.588	2.802	3.217	10.10
8)	TP	Chloromethane	3.829	3.427	3.618	3.667	3.785	3.665	4.31
9)	TC	Vinyl Chloride	1.180	1.369	1.570	1.322	0.979	1.284	17.17
10)	T	Bromomethane	1.519	1.594	1.532	1.661	1.488	1.559	4.44
11)	T	Chloroethane	1.724	1.607	1.733	1.723	1.685	1.694	3.08
12)	T	Trichlorofluoromethan	2.394	1.726	2.386	2.270	2.318	2.219	12.62
13)	MC	1,1-Dichloroethene	4.401	4.241	4.272	4.413	4.303	4.326	1.79
14)	T	Acetone	1.154	1.436	1.200	1.109	1.123	1.204	11.14
15)	T	Carbon Disulfide	9.152	9.372	8.947	9.195	8.955	9.124	1.96
16)	T	Methylene Chloride	2.827	2.085	3.381	3.080	2.705	2.815	17.18
17)	T	trans-1,2-Dichloroeth	4.242	4.003	4.023	4.168	4.150	4.117	2.47
18)	TP	1,1-Dichloroethane	5.189	5.162	5.073	5.247	5.040	5.142	1.65
19)	T	Vinyl Acetate	8.162	7.099	7.224	7.211	8.100	7.559	6.94
20)	T	2-Butanone	1.783	1.418	1.531	1.505	1.840	1.615	11.43
21)	T	cis-1,2-Dichloroethen	4.146	3.968	4.028	4.088	4.019	4.050	1.69
22)	TC	Chloroform	3.855	3.614	3.710	3.831	3.770	3.756	2.59
23)	T	1,1,1-Trichloroethane	2.526	2.222	2.222	2.456	2.563	2.398	6.87
24)	T	Carbon Tetrachloride	1.830	1.493	1.584	1.767	1.847	1.704	9.24
25)	S	1,2-Dichloroethane-d4	2.739	2.518	2.618	2.613	2.796	2.657	4.15
26)	I	1,4-Difluorobenzene	----------ISTD----------						
27)	TM	Benzene	1.460	1.402	1.355	1.370	1.439	1.405	3.16
28)	T	1,2-Dichloroethane	0.527	0.461	0.465	0.479	0.512	0.489	5.99
29)	TM	Trichloroethene	0.301	0.265	0.266	0.277	0.303	0.282	6.50
30)	TC	1,2-Dichloropropane	0.445	0.392	0.390	0.401	0.442	0.414	6.58
31)	T	Bromodichloromethane	0.429	0.367	0.372	0.393	0.433	0.399	7.71
32)	T	2-Chloroethyl vinyl e	0.259	0.224	0.230	0.229	0.250	0.238	6.26
33)	T	cis-1,3-Dichloroprope	0.609	0.563	0.548	0.569	0.601	0.578	4.49
34)	T	4-Methyl-2-Pentanone	0.192	0.152	0.173	0.172	0.189	0.176	9.04
35)	S	Toluene-d8	1.183	1.197	1.199	1.187	1.190	1.191	0.58

(#) = Out of Range

Response Factor Report GC/MS Ins

Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Wed Sep 09 10:59:19 1998
Response via : Initial Calibration

Calibration Files
50 =V04545.D 5 =V04543.D 10 =V04544.D
20 =V04542.D 100 =V04546.D

		Compound	50	5	10	20	100	Avg	%RSD
36)	TCM	Toluene	1.489	1.513	1.450	1.474	1.438	1.473	2.04
37)	I	Chlorobenzene-d5	----------ISTD----------						
38)	T	trans-1,3-Dichloropro	1.966	1.873	1.836	1.928	1.929	1.906	2.71
39)	T	1,1,2-Trichloroethane	1.070	0.977	0.958	1.002	1.040	1.009	4.54
40)	T	Tetrachloroethene	0.993	0.952	0.929	0.989	0.972	0.967	2.75
41)	T	2-Hexanone	1.494	1.346	1.378	1.309	1.464	1.398	5.60
42)	T	Dibromochloromethane	0.984	0.829	0.844	0.934	0.993	0.917	8.39
43)	TMP	Chlorobenzene	3.146	3.198	3.026	3.113	3.070	3.111	2.14
44)	TC	Ethylbenzene	6.071	6.132	5.836	5.978	5.813	5.966	2.35
45)	T	m+p-Xylenes	2.253	2.208	2.130	2.174	2.176	2.188	2.08
46)	T	o-Xylene	4.634	4.608	4.361	4.490	4.457	4.510	2.49
47)	T	Styrene	3.942	3.722	3.530	3.723	3.776	3.739	3.94
48)	TP	Bromoform	0.642	0.454	0.501	0.576	0.664	0.568	15.86
49)	S	Bromofluorobenzene	1.684	1.659	1.647	1.683	1.706	1.676	1.38
50)	TP	1,1,2,2-Tetrachloroet	1.747	1.625	1.577	1.593	1.704	1.649	4.45
51)	T	1,3-Dichlorobenzene	2.244	2.179	2.100	2.141	2.189	2.171	2.47
52)	T	1,4-Dichlorobenzene	2.334	2.353	2.209	2.241	2.267	2.281	2.68
53)	T	1,2-Dichlorobenzene	2.043	2.013	1.934	1.960	1.977	1.985	2.17

(#) = Out of Range

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: FMETL NJDEP # 13461

Project: 980932 Case No.: 3920 Location: 277 SDG No.:

Lab File ID: V04765.D BFB Injection Date: 10/06/98

Instrument ID: GCMSVoa BFB Injection Time: 13:21

GC Column: Rtx502.2 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	20.7
75	30.0 - 66.0% of mass 95	43.2
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.0
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 120.0% of mass 95	67.3
175	4.0 - 9.0% of mass 174	5.1 (7.5)1
176	93.0 - 101.0% of mass 174	66.4 (98.6)1
177	5.0 - 9.0% of mass 176	4.0 (6.1)2

1-Value is % mass 174 2-Value is % mass 176

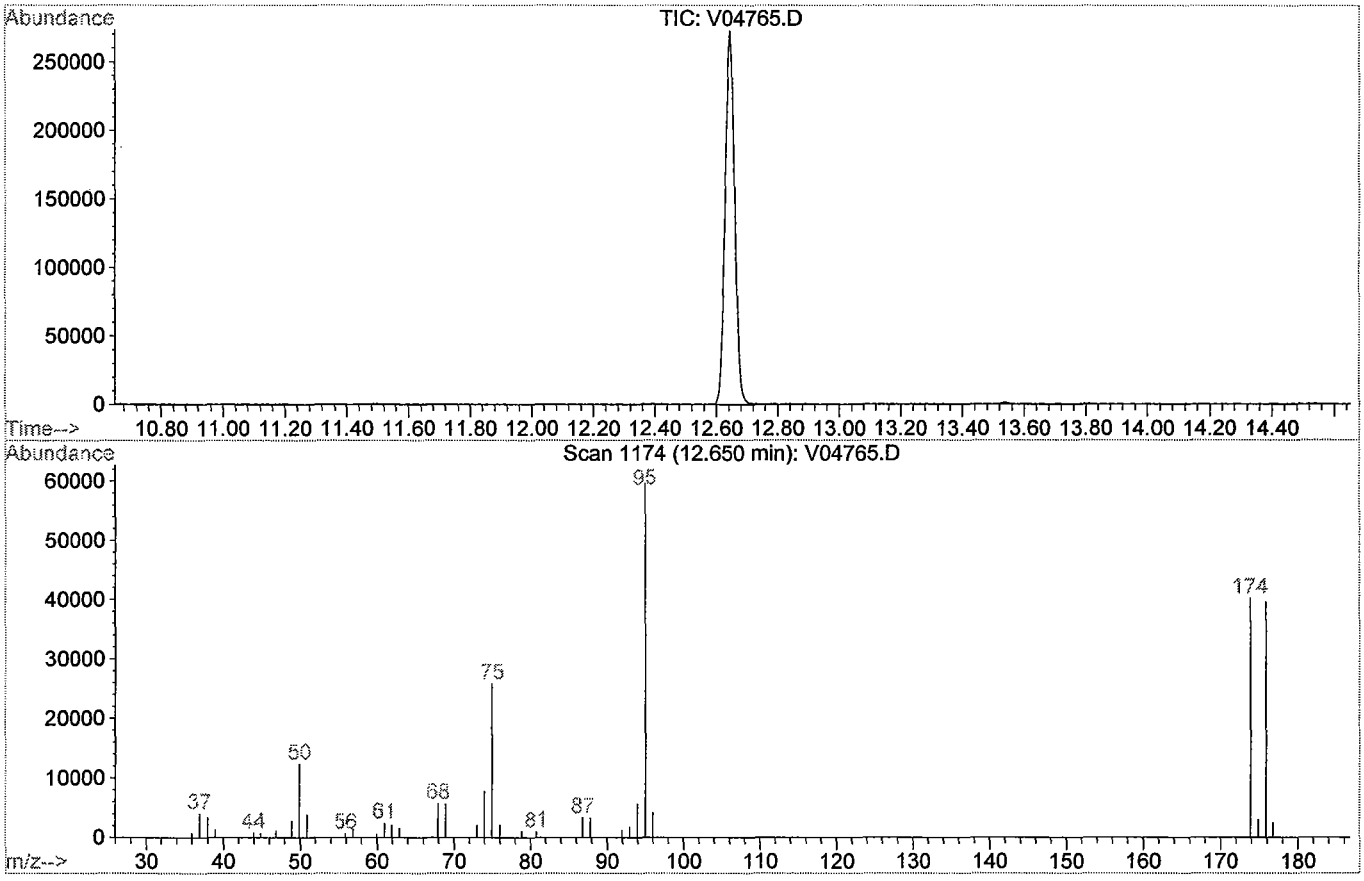
THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD020	DAILY CAL	V04766.D	10/06/98	13:54
02	VBLK107	VBLK107	V04768.D	10/06/98	16:05
03	277-9	3920.01	V04773.D	10/06/98	19:56
04	277-10	3920.02	V04774.D	10/06/98	20:40
05	277-11	3920.03	V04775.D	10/06/98	21:24

BFB

Data File : C:\HPCHEM\1\DATA\981006\V04765.D
Acq On : 6 Oct 1998 13:21
Sample : BFB Tune
Misc : 100-35-31/1721344
MS Integration Params: GASES.P
Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP

Vial: 1
Operator: Skelton
Inst : GC/MS Ins
Multiplr: 1.00



Spectrum Information: Scan 1174

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.7	12338	PASS
75	95	30	60	43.2	25808	PASS
95	95	100	100	100.0	59672	PASS
96	95	5	9	7.0	4153	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	67.3	40184	PASS
175	174	5	9	7.5	3029	PASS
176	174	95	101	98.6	39616	PASS
177	176	5	9	6.1	2405	PASS

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\981006\V04766.D Vial: 2
Acq On : 6 Oct 1998 13:54 Operator: Skelton
Sample : Daily Cal Inst : GC/MS Ins
Misc : 20 ppb std Multiplr: 1.00
MS Integration Params: GASES.P

Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Wed Sep 09 10:59:19 1998
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 25% Max. R.T. Dev 0.50min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane	1.000	1.000	0.0	84	0.00
2	t	Acrolein	1.207	1.023	15.2	74	0.00
3	t	Acrylonitrile	2.658	2.252	15.3	73	0.00
4	t	tert-Butyl alcohol	0.487	0.372	23.6	71	0.00
5	t	Methyl-tert-Butyl ether	5.434	4.844	10.9	77	0.00
6	t	Di-isopropyl ether	3.204	3.021	5.7	75	0.01
7	T	Dichlorodifluoromethane	3.217	3.271	-1.7	76	0.00
8	TP	Chloromethane	3.665	3.688	-0.6	84	0.00
9	TC	Vinyl Chloride	1.284	1.403	-9.3	89	0.00
10	T	Bromomethane	1.559	1.495	4.1	75	0.00
11	T	Chloroethane	1.694	1.603	5.4	78	0.00
12	T	Trichlorofluoromethane	2.219	2.412	-8.7	89	-0.01
13	MC	1,1-Dichloroethene	4.326	3.869	10.6	73	0.00
14	T	Acetone	1.204	1.400	-16.3	106	0.00
15	T	Carbon Disulfide	9.124	8.279	9.3	75	0.00
16	T	Methylene Chloride	2.815	2.857	-1.5	78	0.00
17	T	trans-1,2-Dichloroethene	4.117	3.766	8.5	76	0.00
18	TP	1,1-Dichloroethane	5.142	4.825	6.2	77	0.00
19	T	Vinyl Acetate	7.559	6.103	19.3	71	0.00
20	T	2-Butanone	1.615	1.271	21.3	71	-0.02
21	T	cis-1,2-Dichloroethene	4.050	3.776	6.8	77	0.00
22	TC	Chloroform	3.756	3.659	2.6	80	0.00
23	T	1,1,1-Trichloroethane	2.398	2.201	8.2	75	0.00
24	T	Carbon Tetrachloride	1.704	1.604	5.9	76	0.00
25	S	1,2-Dichloroethane-d4	2.657	2.313	12.9	74	0.00
26	I	1,4-Difluorobenzene	1.000	1.000	0.0	85	0.00
27	TM	Benzene	1.405	1.366	2.8	84	0.00
28	T	1,2-Dichloroethane	0.489	0.421	13.9	74	0.00
29	TM	Trichloroethene	0.282	0.296	-5.0	90	0.00
30	TC	1,2-Dichloropropane	0.414	0.403	2.7	85	0.00
31	T	Bromodichloromethane	0.399	0.366	8.3	79	0.00
32	T	2-Chloroethyl vinyl ether	0.238	0.199	16.4	73	0.00
33	T	cis-1,3-Dichloropropene	0.578	0.547	5.4	81	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\981006\V04766.D Vial: 2
Acq On : 6 Oct 1998 13:54 Operator: Skelton
Sample : Daily Cal Inst : GC/MS Ins
Misc : 20 ppb std Multiplr: 1.00
MS Integration Params: GASES.P

Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Wed Sep 09 10:59:19 1998
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 25% Max. R.T. Dev 0.50min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
34	T	4-Methyl-2-Pentanone	0.176	0.144	18.2	71	0.00
35	S	Toluene-d8	1.191	1.185	0.5	84	0.00
36	TCM	Toluene	1.473	1.453	1.4	83	0.00
37	I	Chlorobenzene-d5	1.000	1.000	0.0	91	0.00
38	T	trans-1,3-Dichloropropene	1.906	1.591	16.5	75	0.00
39	T	1,1,2-Trichloroethane	1.009	0.935	7.3	85	0.00
40	T	Tetrachloroethene	0.967	0.963	0.4	89	0.00
41	T	2-Hexanone	1.398	0.984	29.6	69	0.00
42	T	Dibromochloromethane	0.917	0.861	6.1	84	0.00
43	TMP	Chlorobenzene	3.111	2.988	4.0	88	0.00
44	TC	Ethylbenzene	5.966	5.560	6.8	85	0.00
45	T	m+p-Xylenes	2.188	1.950	10.9	82	0.00
46	T	o-Xylene	4.510	3.943	12.6	80	0.00
47	T	Styrene	3.739	3.394	9.2	83	0.00
48	TP	Bromoform	0.568	0.535	5.8	85	0.00
49	S	Bromofluorobenzene	1.676	1.668	0.5	91	0.00
50	TP	1,1,2,2-Tetrachloroethane	1.649	1.495	9.3	86	0.00
51	T	1,3-Dichlorobenzene	2.171	2.194	-1.1	94	0.00
52	T	1,4-Dichlorobenzene	2.281	2.279	0.1	93	0.00
53	T	1,2-Dichlorobenzene	1.985	2.040	-2.8	95	0.00

2B

SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: FMETL **Project** 98-0932
NJDEP # 13461 **Location** Building 277
Case No.: 3920

	EPA SAMPLE NO.	SMC1 DCE #	SMC2 TOL #	SMC3 BFB #	TOT OUT
01	VBLK107	85.50	102.80	98.33	0
02	3920.01	61.83	71.24	58.61	0
03	3920.02	60.63	67.30	64.76	0
04	3920.03	60.64	70.25	77.71	0

				QC LIMITS
SMC1	DCE	=	1,2-Dichloroethane-d4	(76-114)
SMC2	TOL	=	Toluene-d8	(88-110)
SMC3	BFB	=	Bromofluorobenzene	(86-115)

Column to be used to flag recovery
*Values outside of contract required QC limits
D System Monitoring Compounds diluted out

Spike Recovery and RPD Summary Report - SOIL

Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Wed Sep 09 10:59:19 1998
Response via : Initial Calibration

Non-Spiked Sample: V04688.D

	Spike Sample	Spike Duplicate Sample
File ID :	V04689.D	V04690.D
Sample :	3883.24ms	3883.24msd
Acq Time:	29 Sep 1998 17:25	29 Sep 1998 18:11

Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC Limits RPD	QC Limits % Rec
1,1-Dichloroethene	0.0	20	15	18	76	88	15	22	59-172
Benzene	0.0	20	18	20	89	100	12	21	66-142
Trichloroethene	0.0	20	19	21	94	105	11	24	62-137
Toluene	0.0	20	18	21	92	105	13	21	59-139
Chlorobenzene	0.0	20	18	20	91	100	10	21	60-133

- Fails Limit Check

M62441.M Tue Oct 20 12:55:38 1998

0030

4A

VOLATILE METHOD BLANK SUMMARY

FIELD ID.

VBLK107

Lab Name: FMETL NJDEP # 13461

Project: 980932 Case No.: 3920 Location: 277 SDG No.:

Lab File ID: V04768.D Lab Sample ID: VBLK107

Date Analyzed: 10/06/98 Time Analyzed: 16:05

GC Column: Rtx502.2 ID: 0.25 (mm) Heated Purge: (Y/N) N

Instrument ID: GCMSVoa

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	277-9	3920.01	V04773.D	19:56
02	277-10	3920.02	V04774.D	20:40
03	277-11	3920.03	V04775.D	21:24

COMMENTS:

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: FMETL NJDEP # 13461

Project: 980932 Case No.: 3920 Location: 277 SDG No.:

Lab File ID (Standard): V04766.D Date Analyzed: 10/06/98

Instrument ID: GCMSVoa Time Analyzed: 13:54

GC Column: Rtx502.2 ID: 0.25 (mm) Heated Purge: (Y/N) Y

		IS1BCM		IS2DFB		IS3CBZ	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	40790	18.31	272847	20.92	83090	28.74
	UPPER LIMIT	81580	17.81	545694	20.42	166180	28.24
	LOWER LIMIT	20395	18.81	136424	21.42	41545	29.24
	EPA SAMPLE NO.						
01	VBLK107	35081	18.33	235538	20.92	74694	28.74
02	277-9	36964	18.32	226160	20.92	85186	28.74
03	277-10	37928	18.31	247004	20.92	78238	28.74
04	277-11	37647	18.32	237992	20.92	75720	28.74

IS1 BCM = Bromochloromethane

IS2 DFB = 1,4-Difluorobenzene

IS3 CBZ = 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 to be used to flag values outside QC limit with an asterisk.

* Values outside of contract required QC limits

Quantitation Report (QT/LSC Reviewed)

Data File : C:\HPCHEM\1\DATA\981006\V04768.D Vial: 1
Acq On : 6 Oct 1998 16:05 Operator: Skelton
Sample : VBLK107 Inst : GC/MS Ins
Misc : VBLK107 Multiplr: 1.00
MS Integration Params: GASES.P
Quant Time: Oct 13 16:00 1998 Quant Results File: M62441.RES

Quant Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Wed Sep 09 10:59:19 1998
Response via : Initial Calibration
DataAcq Meth : M62441

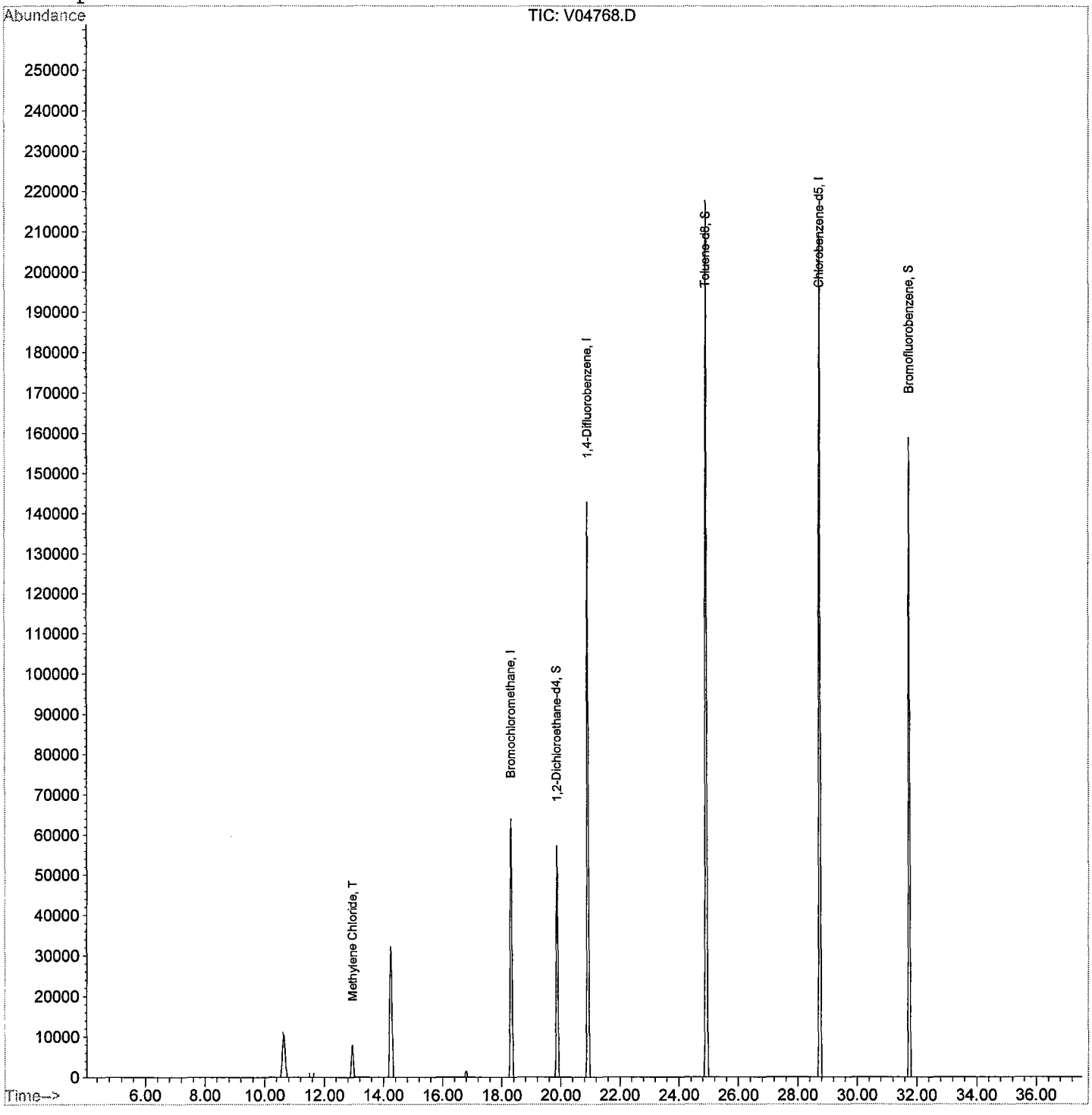
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	18.33	128	35081	30.00	ug/L	0.02
26) 1,4-Difluorobenzene	20.92	114	235538	30.00	ug/L	0.00
37) Chlorobenzene-d5	28.74	119	74694	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	19.87	65	79694	25.65	ug/L	0.00
Spiked Amount 30.000	Range 76 - 114		Recovery = 85.50%			
35) Toluene-d8	24.91	98	288455	30.84	ug/L	0.00
Spiked Amount 30.000	Range 88 - 110		Recovery = 102.80%			
49) Bromofluorobenzene	31.75	95	123065	29.50	ug/L	0.00
Spiked Amount 30.000	Range 86 - 115		Recovery = 98.33%			
Target Compounds						Qvalue
16) Methylene Chloride	12.96	84	10688m	3.25	ug/L	

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\981006\V04768.D Vial: 1
Acq On : 6 Oct 1998 16:05 Operator: Skelton
Sample : VBLK107 Inst : GC/MS Ins
Misc : VBLK107 Multiplr: 1.00
MS Integration Params: GASES.P
Quant Time: Oct 13 16:00 1998 Quant Results File: M62441.RES

Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Wed Sep 09 10:59:19 1998
Response via : Initial Calibration



Quantitation Report (QT/LSC Reviewed)

Data File : C:\HPCHEM\1\DATA\981006\V04773.D Vial: 5
Acq On : 6 Oct 1998 19:56 Operator: Skelton
Sample : 3920.01 Inst : GC/MS Ins
Misc : 277-9(7') Multiplr: 1.00
MS Integration Params: GASES.P
Quant Time: Oct 20 11:37 1998 Quant Results File: M62441.RES

Quant Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Wed Sep 09 10:59:19 1998
Response via : Initial Calibration
DataAcq Meth : M62441

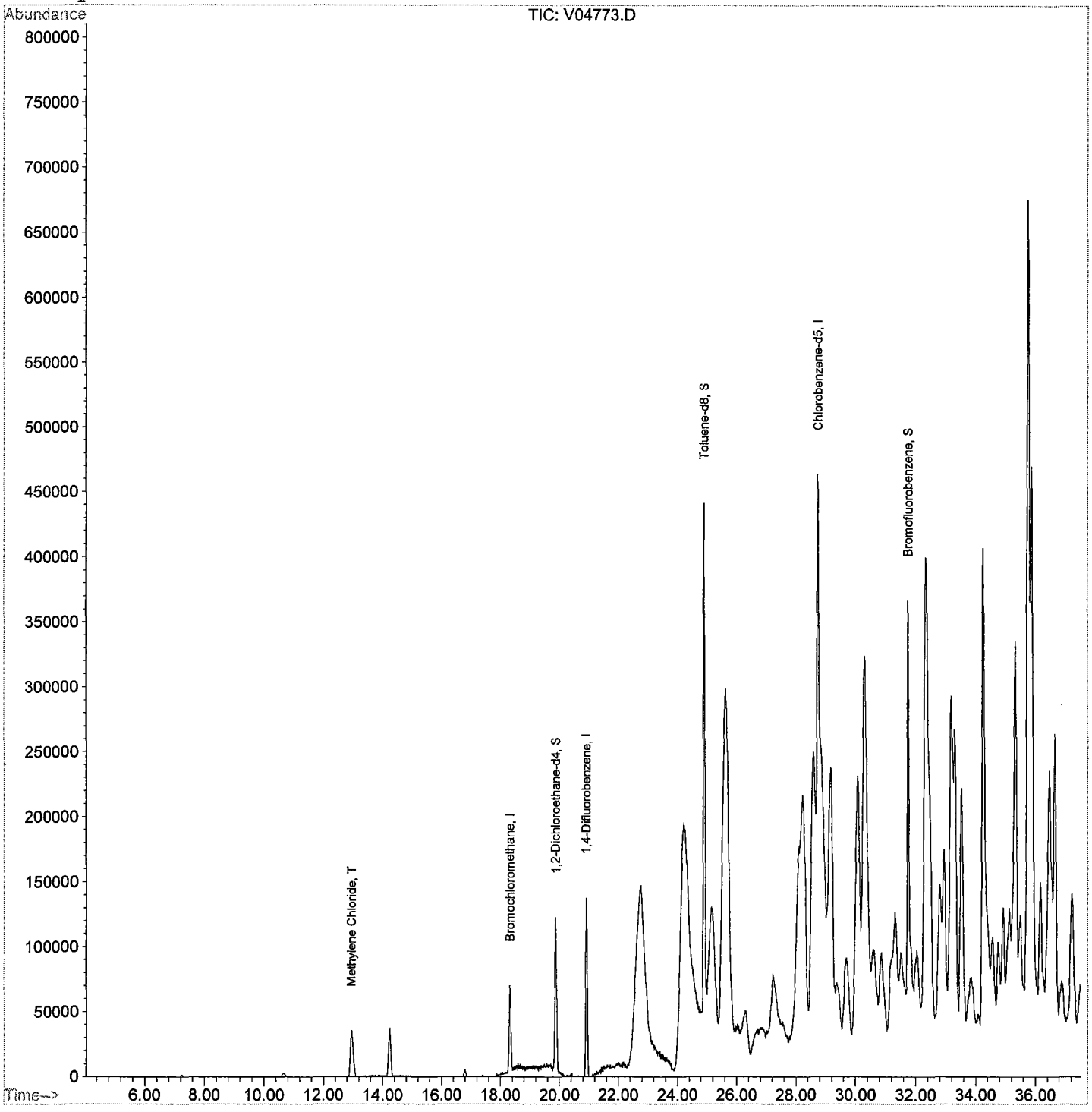
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	18.32	128	36964	30.00	ug/L	0.01
26) 1,4-Difluorobenzene	20.92	114	226160	30.00	ug/L	0.00
37) Chlorobenzene-d5	28.74	119	85186	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	19.88	65	161923	49.46	ug/L	0.00
Spiked Amount 30.000	Range 76 - 114		Recovery = 164.87%#			
35) Toluene-d8	24.91	98	511795	56.99	ug/L	0.00
Spiked Amount 30.000	Range 88 - 110		Recovery = 189.97%#			
49) Bromofluorobenzene	31.75	95	223133	46.89	ug/L	0.00
Spiked Amount 30.000	Range 86 - 115		Recovery = 156.30%#			
Target Compounds						Qvalue
16) Methylene Chloride	12.95	84	63200	18.22	ug/L	87

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\981006\V04773.D Vial: 5
Acq On : 6 Oct 1998 19:56 Operator: Skelton
Sample : 3920.01 Inst : GC/MS Ins
Misc : 277-9(7') Multiplr: 1.00
MS Integration Params: GASES.P
Quant Time: Oct 20 11:37 1998 Quant Results File: M62441.RES

Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Wed Sep 09 10:59:19 1998
Response via : Initial Calibration



0036

Quantitation Report (QT/LSC Reviewed)

Data File : C:\HPCHEM\1\DATA\981006\V04774.D Vial: 6
Acq On : 6 Oct 1998 20:40 Operator: Skelton
Sample : 3920.02 Inst : GC/MS Ins
Misc : 277-10(7') Multiplr: 1.00
MS Integration Params: GASES.P
Quant Time: Oct 6 21:18 1998 Quant Results File: M62441.RES

Quant Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Wed Sep 09 10:59:19 1998
Response via : Initial Calibration
DataAcq Meth : M62441

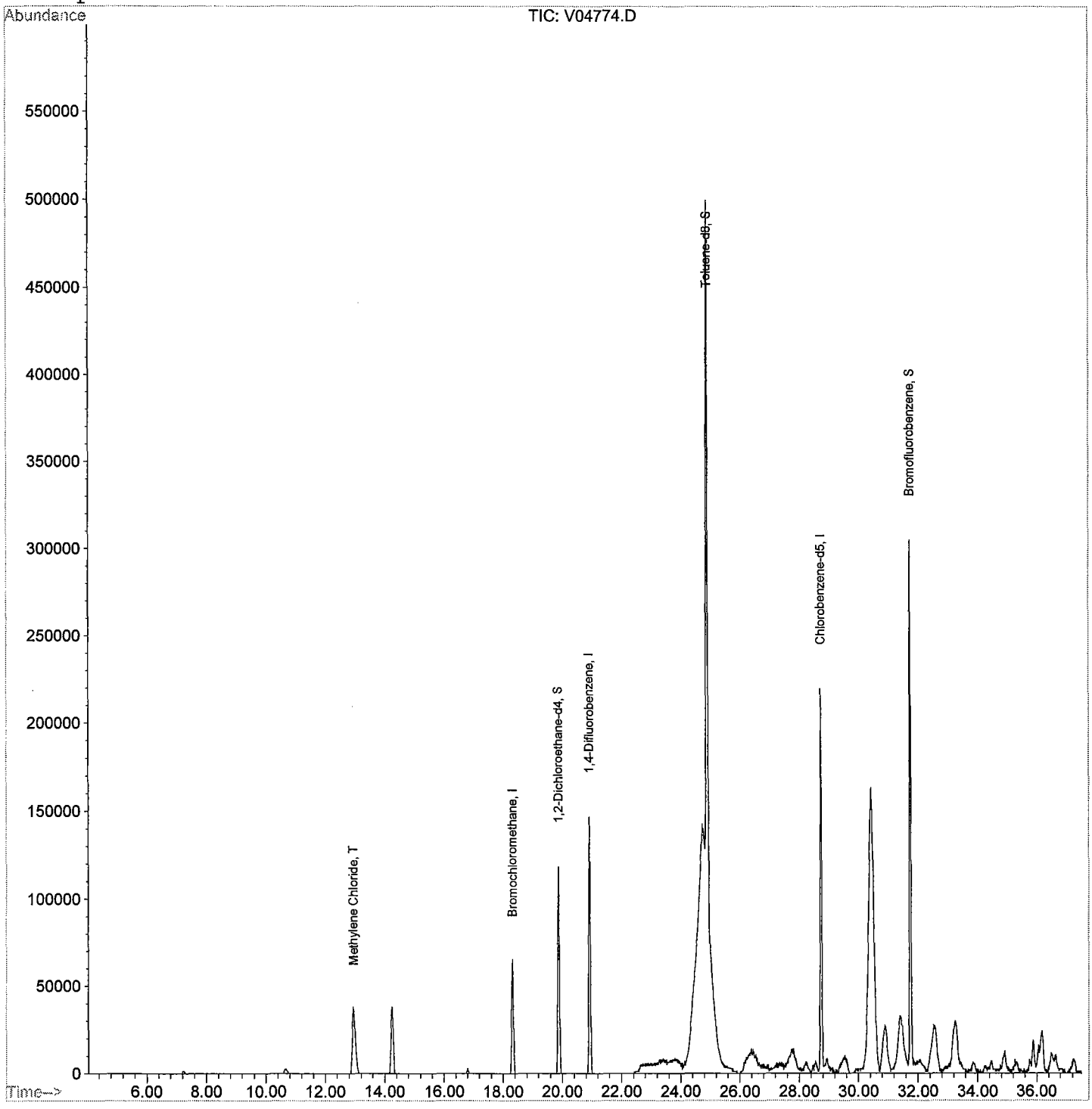
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	18.31	128	37928	30.00	ug/L	0.00
26) 1,4-Difluorobenzene	20.92	114	247004	30.00	ug/L	0.00
37) Chlorobenzene-d5	28.74	119	78238	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	19.88	65	162910	48.50	ug/L	0.00
Spiked Amount 30.000	Range 76 - 114		Recovery = 161.67%#			
35) Toluene-d8	24.91	98	528112	53.84	ug/L	0.00
Spiked Amount 30.000	Range 88 - 110		Recovery = 179.47%#			
49) Bromofluorobenzene	31.75	95	226405	51.81	ug/L	0.00
Spiked Amount 30.000	Range 86 - 115		Recovery = 172.70%#			
Target Compounds						Qvalue
16) Methylene Chloride	12.95	84	65855	18.50	ug/L	89

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\981006\V04774.D Vial: 6
Acq On : 6 Oct 1998 20:40 Operator: Skelton
Sample : 3920.02 Inst : GC/MS Ins
Misc : 277-10(7') Multiplr: 1.00
MS Integration Params: GASES.P
Quant Time: Oct 6 21:18 1998 Quant Results File: M62441.RES

Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Wed Sep 09 10:59:19 1998
Response via : Initial Calibration



Quantitation Report (QT/LSC Reviewed)

Data File : C:\HPCHEM\1\DATA\981006\V04775.D Vial: 7
Acq On : 6 Oct 1998 21:24 Operator: Skelton
Sample : 3920.03 Inst : GC/MS Ins
Misc : 277-11(6') Multiplr: 1.00
MS Integration Params: GASES.P
Quant Time: Oct 20 11:40 1998 Quant Results File: M62441.RES

Quant Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Wed Sep 09 10:59:19 1998
Response via : Initial Calibration
DataAcq Meth : M62441

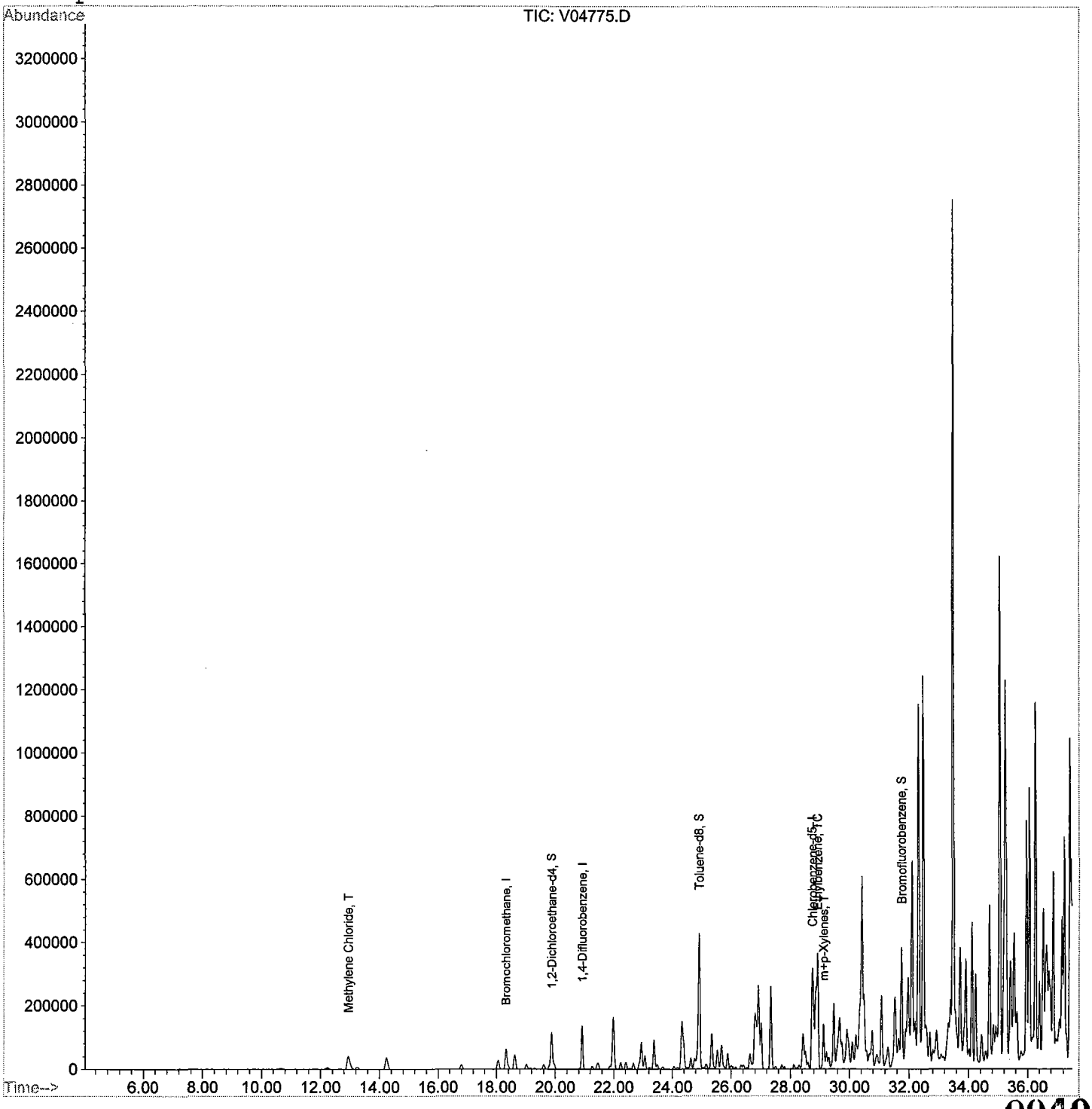
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	18.32	128	37647	30.00	ug/L	0.01
26) 1,4-Difluorobenzene	20.92	114	237992	30.00	ug/L	0.00
37) Chlorobenzene-d5	28.74	119	75720	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	19.87	65	161741	48.51	ug/L	0.00
Spiked Amount 30.000	Range 76 - 114		Recovery = 161.70%#			
35) Toluene-d8	24.91	98	531079	56.20	ug/L	0.00
Spiked Amount 30.000	Range 88 - 110		Recovery = 187.33%#			
49) Bromofluorobenzene	31.75	95	262936	62.17	ug/L	0.00
Spiked Amount 30.000	Range 86 - 115		Recovery = 207.23%#			
Target Compounds						Qvalue
16) Methylene Chloride	12.94	84	69493	19.67	ug/L	87
44) Ethylbenzene	28.92	91	449984	29.88	ug/L	97
45) m+p-Xylenes	29.11	106	43497	7.88	ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\981006\V04775.D Vial: 7
Acq On : 6 Oct 1998 21:24 Operator: Skelton
Sample : 3920.03 Inst : GC/MS Ins
Misc : 277-11(6') Multiplr: 1.00
MS Integration Params: GASES.P
Quant Time: Oct 20 11:40 1998 Quant Results File: M62441.RES

Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Wed Sep 09 10:59:19 1998
Response via : Initial Calibration



TPHC

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3920
	DPW. SELFM-PW-EV	**Date Rec'd:**	29-Sep-98
	Bldg. 173	**Analysis Start:**	29-Sep-98
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	30-Sep-98
Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	D.DEINHARDT	**DICAR #:**	
Inst. ID.	GC TPHC INST. #1	**Injection Volume**	1 ul
Column Type	RTX 5	**Column ID**	0.32 um
Ext. Meth:	Shake	**Location #:**	BLDG. 277

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3920.01	277-9(7')	**1.00**	15.36	84.50	181	**ND**
3920.02	277-10(7')	**1.00**	15.68	85.35	176	**ND**
3920.03	277-11(6')	**5.00**	15.59	86.77	174	**23138.50**
METHOD BLANK	TBLK 171	**1.00**	15.00	100.00	157	**ND**

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright
Laboratory Director

Method : C:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998

Calibration Files
100 =T06865.D 50 =T06866.D 20 =T06867.D
10 =T06868.D 5 =T06869.D

	Compound	100	50	20	10	5	Avg		%RSD
1)	tC C8	2.311	2.599	2.672	2.620	2.686	2.577	E4	5.95
2)	tC C10	2.632	2.942	3.002	2.923	3.126	2.925	E4	6.22
3)	TC C12	2.931	3.295	3.342	3.253	3.453	3.255	E4	6.02
4)	tC C14	3.027	3.417	3.488	3.382	3.600	3.383	E4	6.37
5)	tC C16	3.046	3.450	3.545	3.434	3.674	3.430	E4	6.86
6)	tC C18	3.451	3.853	3.936	3.985	4.116	3.868	E4	6.52
7)	tC C20	3.275	3.707	3.817	3.688	3.975	3.692	E4	7.03
8)	tC C22	3.218	3.646	3.753	3.628	3.887	3.626	E4	6.91
9)	tC C24	3.256	3.685	3.799	3.645	3.934	3.664	E4	6.93
10)	tC C26	3.225	3.643	3.749	3.596	3.871	3.617	E4	6.73
11)	tC C28	3.225	3.634	3.730	3.577	3.857	3.605	E4	6.58
12)	tC C30	3.296	3.706	3.808	3.650	3.923	3.677	E4	6.44
13)	tC C32	3.255	3.653	3.746	3.576	3.851	3.616	E4	6.27
14)	tC C34	3.285	3.678	3.775	3.592	3.872	3.640	E4	6.17
15)	tC C36	3.076	3.434	3.519	3.334	3.594	3.391	E4	5.93
16)	tC C38	2.873	3.199	3.290	3.108	3.357	3.165	E4	5.96
17)	tC C40	2.508	2.784	2.873	2.714	2.932	2.762	E4	5.97
18)	tC c42	2.295	2.537	2.627	2.473	2.614	2.509	E4	5.39
19)	TC Pristane	3.181	3.658	3.694	3.576	3.848	3.591	E4	6.96
20)	TC Phytane	3.286	3.723	3.831	3.710	4.000	3.710	E4	7.11
21)	sC o-terphenyl	3.321	3.756	3.867	3.734	4.018	3.739	E4	6.93
22)	tC TPHC - total	3.501	3.820	4.101	4.006	4.639	4.013	E4	10.41

(#) = Out of Range MEAN RSD = 6.62%

TPH47.M Tue Sep 29 09:14:24 1998

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980925\T06865.D Vial: 2
Acq On : 25 Sep 98 3:06 pm Operator: Deinhardt
Sample : 100 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 29 9:02 1998 Quant Results File: TPH46.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH46.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH46.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.98	3321489	72.198 mg/L
Spiked Amount 10.000 Range 8 - 13		Recovery = 721.98%#	
Target Compounds			
1) tC C8	4.72	2311044	83.537 mg/L
2) tC C10	7.71	2631777	84.144 mg/L
3) TC C12	9.34	2930730	82.785 mg/L
4) tC C14	10.52	3026978	78.410 mg/L
5) tC C16	11.53	3045508	75.084 mg/L
6) tC C18	11.99	3450510	73.906 mg/L m
7) tC C20	12.43	3275410	73.056 mg/L m
8) tC C22	13.25	3218031	72.364 mg/L
9) tC C24	13.99	3256322	72.113 mg/L
10) tC C26	14.68	3224873	71.938 mg/L
11) tC C28	15.32	3225253	71.950 mg/L
12) tC C30	15.91	3295843	72.096 mg/L
13) tC C32	16.47	3254589	72.358 mg/L
14) tC C34	17.07	3285160	74.347 mg/L
15) tC C36	17.78	3076094	78.252 mg/L
16) tC C38	18.67	2873014	81.535 mg/L
17) tC C40	19.83	2507713	82.752 mg/L
18) tC c42	21.39	2294516	81.758 mg/L
19) TC Pristane	12.02	3180800	73.341 mg/L m
20) TC Phytane	12.48	3286047	72.987 mg/L m
22) tC TPHC - total	12.02	70024293	1439.221 mg/L m

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\980925\T06866.D Vial: 3
Acq On : 25 Sep 98 3:45 pm Operator: Deinhardt
Sample : 50 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 29 9:04 1998 Quant Results File: TPH46.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH46.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH46.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.98	1877811	40.817 mg/L
Spiked Amount 10.000 Range 8 - 13		Recovery = 408.17%#	
Target Compounds			
1) tC C8	4.71	1299346	46.967 mg/L m
2) tC C10	7.71	1470818	47.026 mg/L
3) TC C12	9.33	1647252	46.530 mg/L
4) tC C14	10.52	1708440	44.255 mg/L
5) tC C16	11.53	1725045	42.529 mg/L
6) tC C18	11.99	1926717	41.268 mg/L m
7) tC C20	12.43	1853668	41.345 mg/L m
8) tC C22	13.24	1822993	40.993 mg/L
9) tC C24	13.99	1842749	40.809 mg/L
10) tC C26	14.68	1821345	40.629 mg/L
11) tC C28	15.31	1816954	40.533 mg/L
12) tC C30	15.90	1853129	40.537 mg/L
13) tC C32	16.47	1826466	40.607 mg/L
14) tC C34	17.07	1839032	41.619 mg/L
15) tC C36	17.77	1716875	43.675 mg/L
16) tC C38	18.66	1599305	45.388 mg/L
17) tC C40	19.81	1392181	45.941 mg/L
18) tC c42	21.37	1268448	45.197 mg/L
19) TC Pristane	12.02	1829219	42.177 mg/L m
20) TC Phytane	12.47	1861331	41.343 mg/L m
22) tC TPHC - total	12.02	38204486	785.223 mg/L m

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\980925\T06867.D Vial: 4
Acq On : 25 Sep 98 4:24 pm Operator: Deinhardt
Sample : 20 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 29 9:06 1998 Quant Results File: TPH46.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH46.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH46.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.97	773309	16.809 mg/L
Spiked Amount 10.000 Range 8 - 13	Recovery = 168.09%#		
Target Compounds			
1) tC C8	4.72	534332	19.314 mg/L m
2) tC C10	7.71	600427	19.197 mg/L
3) TC C12	9.33	668324	18.878 mg/L
4) tC C14	10.51	697613	18.071 mg/L
5) tC C16	11.52	709094	17.482 mg/L
6) tC C18	11.98	787167	16.860 mg/L m
7) tC C20	12.42	763303	17.025 mg/L m
8) tC C22	13.24	750587	16.878 mg/L
9) tC C24	13.98	759712	16.824 mg/L
10) tC C26	14.67	749847	16.727 mg/L
11) tC C28	15.31	745956	16.641 mg/L
12) tC C30	15.90	761540	16.659 mg/L
13) tC C32	16.46	749291	16.659 mg/L
14) tC C34	17.06	754936	17.085 mg/L
15) tC C36	17.76	703828	17.904 mg/L
16) tC C38	18.64	658032	18.675 mg/L
17) tC C40	19.79	574523	18.959 mg/L
18) tC c42	21.34	525434	18.722 mg/L
19) TC Pristane	12.01	738844	17.036 mg/L m
20) TC Phytane	12.46	766106	17.016 mg/L m
22) tC TPHC - total	11.98	16404755	337.170 mg/L m

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\980925\T06868.D Vial: 5
Acq On : 25 Sep 98 5:02 pm Operator: Deinhardt
Sample : 10 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 29 9:07 1998 Quant Results File: TPH46.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH46.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH46.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.97	373430	8.117 mg/L
Spiked Amount 10.000 Range 8 - 13 Recovery = 81.17%#			
Target Compounds			
1) tC C8	4.69	261969	9.469 mg/L m
2) tC C10	7.70	292338	9.347 mg/L
3) TC C12	9.33	325348	9.190 mg/L
4) tC C14	10.51	338235	8.762 mg/L
5) tC C16	11.52	343385	8.466 mg/L
6) tC C18	11.98	398504	8.535 mg/L m
7) tC C20	12.42	368759	8.225 mg/L m
8) tC C22	13.23	362789	8.158 mg/L
9) tC C24	13.98	364497	8.072 mg/L
10) tC C26	14.67	359612	8.022 mg/L
11) tC C28	15.30	357714	7.980 mg/L
12) tC C30	15.89	364977	7.984 mg/L
13) tC C32	16.45	357603	7.950 mg/L
14) tC C34	17.05	359245	8.130 mg/L
15) tC C36	17.75	333385	8.481 mg/L
16) tC C38	18.63	310763	8.819 mg/L
17) tC C40	19.78	271358	8.955 mg/L
18) tC c42	21.33	247259	8.810 mg/L
19) TC Pristane	12.01	357607	8.245 mg/L m
20) TC Phytane	12.46	370990	8.240 mg/L m
22) tC TPHC - total	11.98	8011671	164.665 mg/L m

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\980925\T06869.D Vial: 6
Acq On : 25 Sep 98 5:40 pm Operator: Deinhardt
Sample : 5 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 29 9:09 1998 Quant Results File: TPH46.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH46.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH46.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.97	200920	4.367 mg/L
Spiked Amount 10.000 Range 8 - 13 Recovery = 43.67%#			
Target Compounds			
1) tC C8	4.72	134320	4.855 mg/L m
2) tC C10	7.70	156282	4.997 mg/L
3) TC C12	9.33	172637	4.877 mg/L
4) tC C14	10.51	179999	4.663 mg/L
5) tC C16	11.52	183723	4.530 mg/L
6) tC C18	11.98	205775	4.407 mg/L m
7) tC C20	12.42	198755	4.433 mg/L m
8) tC C22	13.23	194340	4.370 mg/L
9) tC C24	13.98	196692	4.356 mg/L
10) tC C26	14.67	193570	4.318 mg/L
11) tC C28	15.30	192848	4.302 mg/L
12) tC C30	15.89	196157	4.291 mg/L
13) tC C32	16.45	192541	4.281 mg/L
14) tC C34	17.05	193600	4.381 mg/L
15) tC C36	17.75	179718	4.572 mg/L
16) tC C38	18.63	167856	4.764 mg/L
17) tC C40	19.78	146605	4.838 mg/L
18) tC c42	21.32	130708	4.657 mg/L
19) TC Pristane	12.01	192384	4.436 mg/L m
20) TC Phytane	12.46	200005	4.442 mg/L m
22) tC TPHC - total	11.98	4638777	95.342 mg/L m

0048

(f)=RT Delta > 1/2 Window (m)=manual int.

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\980929\T06911.D Vial: 2
Acq On : 30 Sep 98 8:35 am Operator: Deinhardt
Sample : 50 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E

Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	tC	C8	25.775	23.297 E3	9.6	90	0.00
2	tC	C10	29.249	26.987 E3	7.7	92	0.00
3	TC	C12	32.546	30.156 E3	7.3	92	0.00
4	tC	C14	33.829	31.016 E3	8.3	91	0.00
5	tC	C16	34.299	31.261 E3	8.9	91	0.00
6	tC	C18	38.681	35.464 E3	8.3	92	0.00
7	tC	C20	36.924	33.399 E3	9.5	90	0.00
8	tC	C22	36.263	33.075 E3	8.8	91	0.00
9	tC	C24	36.638	33.503 E3	8.6	91	0.00
10	tC	C26	36.169	33.209 E3	8.2	91	0.00
11	tC	C28	36.046	33.097 E3	8.2	91	0.00
12	tC	C30	36.765	33.823 E3	8.0	91	0.00
13	tC	C32	36.162	33.166 E3	8.3	91	0.00
14	tC	C34	36.405	32.451 E3	10.9	88	0.00
15	tC	C36	33.914	28.076 E3	17.2	82	-0.01
16	tC	C38	31.653	22.983 E3	27.4#	72	-0.02
17	tC	C40	27.621	16.554 E3	40.1#	59	-0.03
18	tC	c42	25.091	12.108 E3	51.7#	48#	-0.04
19	TC	Pristane	35.914	33.506 E3	6.7	92	0.00
20	TC	Phytane	37.098	33.694 E3	9.2	91	0.00
21	sC	o-terphenyl	37.393	34.023 E3	9.0	91	0.00
22	tC	TPHC - total	40.135	34.391 E3	14.3	90	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 3

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980929\T06911.D Vial: 2
Acq On : 30 Sep 98 8:35 am Operator: Deinhardt
Sample : 50 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 30 9:14 1998 Quant Results File: TPH47.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.98	1701174	45.495 mg/L
Spiked Amount 10.000 Range 8 - 13		Recovery = 454.95%#	
Target Compounds			
1) tC C8	4.71	1164850	45.193 mg/L m
2) tC C10	7.70	1349347	46.133 mg/L
3) TC C12	9.33	1507786	46.328 mg/L
4) tC C14	10.51	1550810	45.843 mg/L
5) tC C16	11.52	1563061	45.572 mg/L
6) tC C18	11.98	1773180	45.842 mg/L m
7) tC C20	12.42	1669931	45.226 mg/L
8) tC C22	13.24	1653733	45.604 mg/L
9) tC C24	13.98	1675154	45.721 mg/L
10) tC C26	14.67	1660431	45.908 mg/L
11) tC C28	15.31	1654851	45.909 mg/L
12) tC C30	15.90	1691131	45.998 mg/L
13) tC C32	16.46	1658299	45.858 mg/L
14) tC C34	17.06	1622572	44.570 mg/L
15) tC C36	17.76	1403800	41.392 mg/L
16) tC C38	18.64	1149169	36.305 mg/L
17) tC C40	19.78	827677	29.966 mg/L
18) tC c42	21.33	605414	24.129 mg/L
19) TC Pristane	12.01	1675322	46.648 mg/L m
20) TC Phytane	12.47	1684708	45.412 mg/L m
22) tC TPHC - total	12.01	34391381	856.894 mg/L m

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980929\T06898.D Vial: 2
Acq On : 29 Sep 98 3:19 pm Operator: Deinhardt
Sample : 50 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 29 15:48 1998 Quant Results File: TPH47.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.98	1816688	48.584 mg/L
Spiked Amount 10.000 Range 8 - 13		Recovery = 485.84%#	
Target Compounds			
1) tC C8	4.71	1252868	48.608 mg/L m
2) tC C10	7.70	1430850	48.919 mg/L
3) TC C12	9.33	1592713	48.937 mg/L
4) tC C14	10.51	1641284	48.518 mg/L
5) tC C16	11.52	1658080	48.342 mg/L
6) tC C18	11.98	1853273	47.912 mg/L m
7) tC C20	12.42	1790347	48.487 mg/L m
8) tC C22	13.24	1763837	48.640 mg/L
9) tC C24	13.98	1785211	48.725 mg/L
10) tC C26	14.67	1763837	48.767 mg/L
11) tC C28	15.31	1758382	48.782 mg/L
12) tC C30	15.90	1781506	48.456 mg/L
13) tC C32	16.46	1740976	48.144 mg/L
14) tC C34	17.06	1682642	46.220 mg/L
15) tC C36	17.76	1420246	41.877 mg/L
16) tC C38	18.64	1098226	34.696 mg/L
17) tC C40	19.78	717853	25.990 mg/L
18) tC c42	21.32	440416	17.553 mg/L
19) TC Pristane	12.01	1729855	48.166 mg/L m
20) TC Phytane	12.47	1800025	48.520 mg/L m
22) tC TPHC - total	12.01	34299803	854.612 mg/L m

(f)=RT Delta > 1/2 Window (m)=manual int.

Surrogate Recovery Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3920
	DPW. SELFM-PW-EV	**Date Rec'd:**	29-Sep-98
	Bldg. 173	**Analysis Start:**	29-Sep-98
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	30-Sep-98
		UST Reg. #:	
Analysis:	OQA-QAM-025	**Closure #:**	
Matrix:	Soil	**DICAR #:**	
Analyst:	D.DEINHARDT	**Injection Volume**	1 ul
Inst. ID.	GC TPHC INST. #1	**Column ID**	0.32 um
Column Type	RTX 5	**Location #:**	BLDG. 277
Ext. Meth:	Shake		

Sample			Surrogate Added (ppm)	Amount Recovered (ppm)	Percent Recovery
3920.01			10.00	9.03	**90.28**
3920.02			10.00	8.76	**87.58**
3920.03			10.00	10.93	**109.25**
METHOD BLANK	TBLK 171		10.00	10.42	**104.15**

Surrogate Added : **o-Terphenyl**

Matrix Spike / Duplicate Recovery Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3920
	DPW. SELFM-PW-EV	**Date Rec'd:**	29-Sep-98
	Bldg. 173	**Analysis Start:**	29-Sep-98
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	30-Sep-98

Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	D.DEINHARDT	**DICAR #:**	
Inst. ID.	GC TPHC INST. #1	**Injection Volume**	1 ul
Column Type	RTX 5	**Column ID**	0.32 um
Ext. Meth:	Shake	**Location #:**	BLDG. 277

Sample	Spike Amount Added (ppm)	Sample Amount (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
3920.01MS	728	0.00	780.29	107.18	75-125
3920.01MSD	728	0.00	795.10	109.22	75-125

RPD	**1.88**	**20.00**

Quality Control Check Standard Summary
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3920
	DPW. SELFM-PW-EV	**Date Rec'd:**	29-Sep-98
	Bldg. 173	**Analysis Start:**	29-Sep-98
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	30-Sep-98

Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	D.DEINHARDT	**DICAR #:**	
Inst. ID.	GC TPHC INST. #1	**Injection Volume**	1 ul
Column Type	RTX 5	**Column ID**	0.32 um
Ext. Meth:	Shake	**Location #:**	BLDG. 277

Sample	Date Extracted	Spike Amount Added (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
Blank Spike	29-Sep-98	728	880.27	120.92	75-125

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980929\T06905.D Vial: 9
Acq On : 29 Sep 98 7:38 pm Operator: Deinhardt
Sample : TBLK 171 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 30 7:46 1998 Quant Results File: TPH47.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.97	389431	10.415 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery = 104.15%#	
Target Compounds			

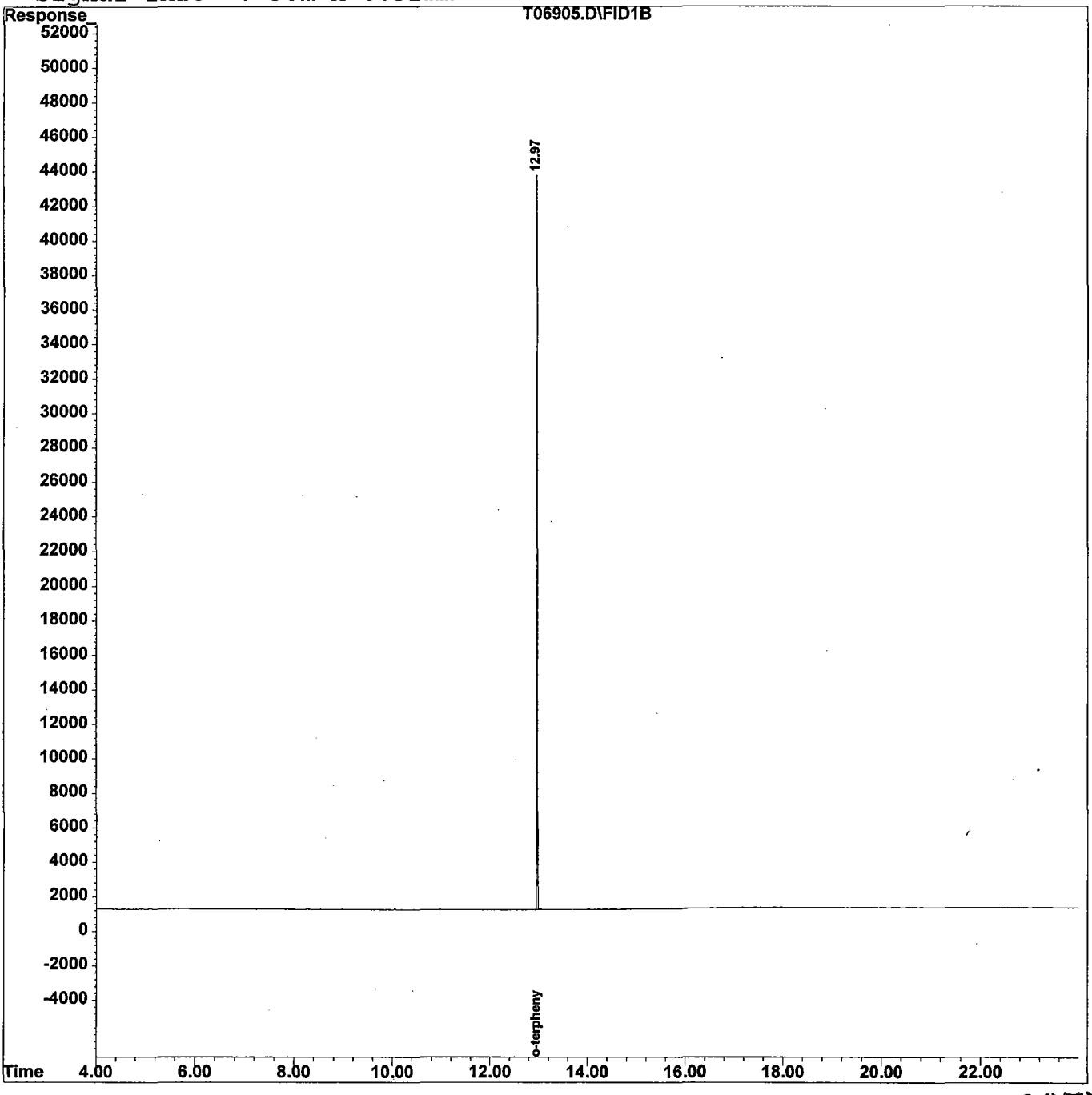
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980929\T06905.D Vial: 9
Acq On : 29 Sep 98 7:38 pm Operator: Deinhardt
Sample : TBLK 171 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 30 7:46 1998 Quant Results File: TPH47.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



0057

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980929\T06899.D Vial: 3
Acq On : 29 Sep 98 3:56 pm Operator: Deinhardt
Sample : 3920.01 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 30 7:42 1998 Quant Results File: TPH47.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.97	337576	9.028 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery =	90.28%#
Target Compounds			

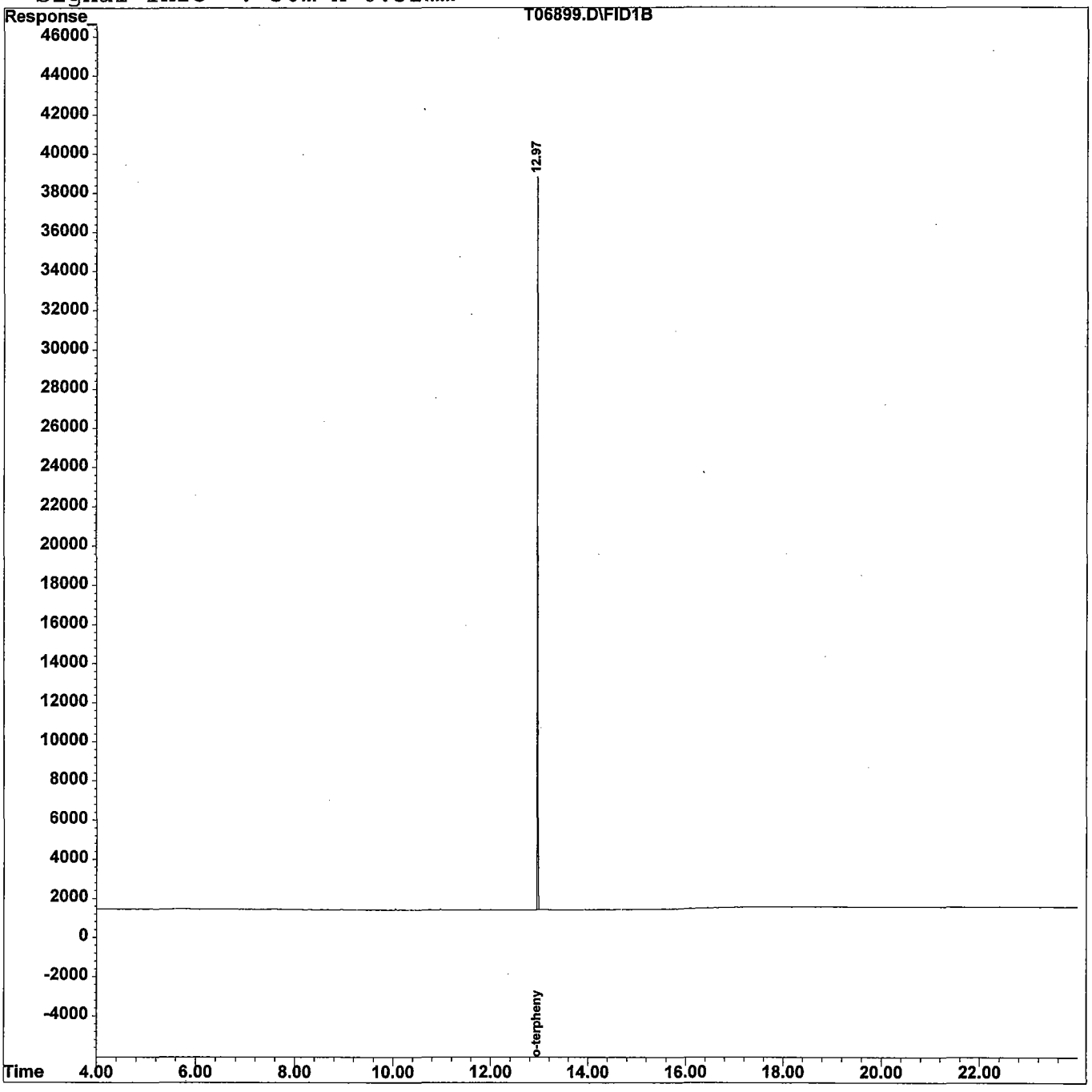
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980929\T06899.D Vial: 3
Acq On : 29 Sep 98 3:56 pm Operator: Deinhardt
Sample : 3920.01 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 30 7:42 1998 Quant Results File: TPH47.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



0059

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980929\T06900.D Vial: 4
Acq On : 29 Sep 98 4:33 pm Operator: Deinhardt
Sample : 3920.02 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 30 7:42 1998 Quant Results File: TPH47.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.97	327473	8.758 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery =	87.58%#
Target Compounds			

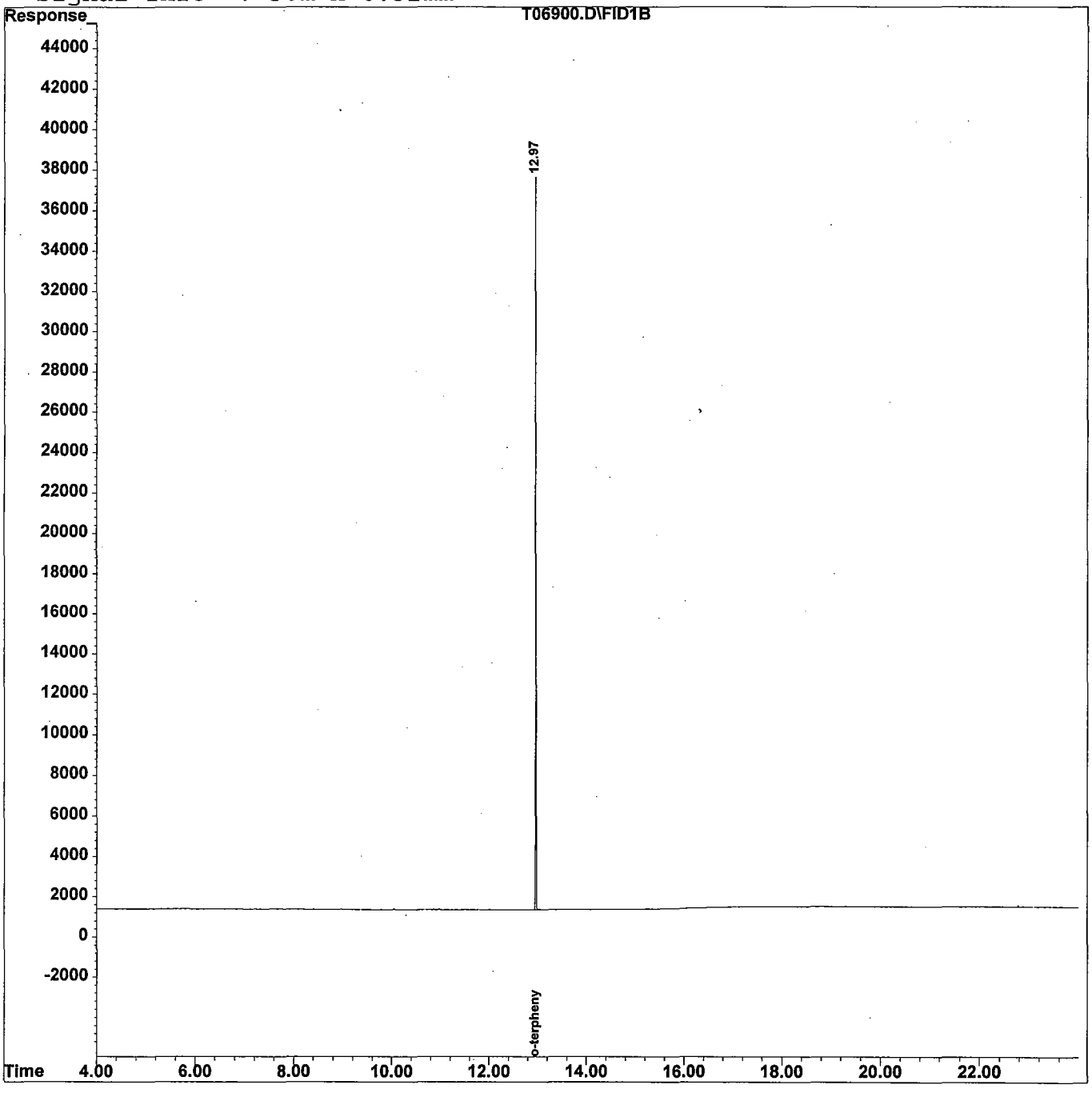
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980929\T06900.D Vial: 4
Acq On : 29 Sep 98 4:33 pm Operator: Deinhardt
Sample : 3920.02 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 30 7:42 1998 Quant Results File: TPH47.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980929\T06912.D Vial: 3
Acq On : 30 Sep 98 9:11 am Operator: Deinhardt
Sample : 3920.03 1:5 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 30 9:40 1998 Quant Results File: TPH47.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.97	81687	2.185 mg/L
Spiked Amount 10.000 Range 8 - 13	Recovery =	21.85%#	
Target Compounds			
2) tC C10	7.68	219672	7.510 mg/L
3) TC C12	9.33	165394	5.082 mg/L
4) tC C14	10.53	81072	2.397 mg/L
5) tC C16	11.51	58434	1.704 mg/L
19) TC Pristane	12.01	332764	9.265 mg/L
20) TC Phytane	12.46	234671	6.326 mg/L
22) tC TPHC - total	10.05	50249683	1252.019 mg/L m

0062

(f)=RT Delta > 1/2 Window (m)=manual int.

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

277-12

Lab Name: FMETL NJDEP # 13461

Project: 980932 Case No.: 3921 Location: 277 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3921.01

Sample wt/vol: 10.3 (g/ml) G Lab File ID: V04776.D

Level: (low/med) MED Date Received: 09/29/98

% Moisture: not dec. 15.54 Date Analyzed: 10/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2000	U
107131	Acrylonitrile	2000	U
75650	tert-Butyl alcohol	3800	U
1634044	Methyl-tert-Butyl ether	870	U
108203	Di-isopropyl ether	580	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	290	U
75-01-4	Vinyl Chloride	870	U
74-83-9	Bromomethane	580	U
75-00-3	Chloroethane	870	U
75-69-4	Trichlorofluoromethane	580	U
75-35-4	1,1-Dichloroethene	290	U
67-64-1	Acetone	580	U
75-15-0	Carbon Disulfide	290	U
75-09-2	Methylene Chloride	5400	B
156-60-5	trans-1,2-Dichloroethene	580	U
75-35-3	1,1-Dichloroethane	290	U
108-05-4	Vinyl Acetate	870	U
78-93-3	2-Butanone	870	U
	cis-1,2-Dichloroethene	290	U
67-66-3	Chloroform	290	U
75-55-6	1,1,1-Trichloroethane	290	U
56-23-5	Carbon Tetrachloride	580	U
71-43-2	Benzene	290	U
107-06-2	1,2-Dichloroethane	580	U
79-01-6	Trichloroethene	290	U
78-87-5	1,2-Dichloropropane	290	U
75-27-4	Bromodichloromethane	290	U
110-75-8	2-Chloroethyl vinyl ether	580	U
10061-01-5	cis-1,3-Dichloropropene	290	U
108-10-1	4-Methyl-2-Pentanone	580	U
108-88-3	Toluene	290	U
10061-02-6	trans-1,3-Dichloropropene	580	U
79-00-5	1,1,2-Trichloroethane	580	U
127-18-4	Tetrachloroethene	290	U
591-78-6	2-Hexanone	580	U
126-48-1	Dibromochloromethane	580	U
108-90-7	Chlorobenzene	290	U
100-41-4	Ethylbenzene	580	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

277-12

Lab Name: FMETL NJDEP # 13461

Project: 980932 Case No.: 3921 Location: 277 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3921.01

Sample wt/vol: 10.3 (g/ml) G Lab File ID: V04776.D

Level: (low/med) MED Date Received: 09/29/98

% Moisture: not dec. 15.54 Date Analyzed: 10/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	870	U
1330-20-7	o-Xylene	580	U
100-42-5	Styrene	580	U
75-25-2	Bromoform	580	U
79-34-5	1,1,2,2-Tetrachloroethane	580	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

277-12

Lab Name: FMETL NJDEP # 13461

Project: 980932 Case No.: 3921 Location: 277 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3921.01

Sample wt/vol: 10.3 (g/ml) G Lab File ID: V04776.D

Level: (low/med) MED Date Received: 09/29/98

% Moisture: not dec. 15.54 Date Analyzed: 10/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 14

CAS NO.	COMPOUND	RT	EST. CONC.	Q
1. 000108-87-2	Cyclohexane, methyl-	21.99	3300	JN
2.	unknown	22.66	4900	J
3. 000933-98-2	Benzene, 1-ethyl-2,3-dimethyl-	24.24	16000	JN
4. 027133-93-3	2,3-Dihydro-1-methylindene	25.55	3500	JN
5. 000119-64-2	Naphthalene, 1,2,3,4-tetrahydro-	28.24	12000	JN
6.	unknown	31.53	3700	J
7. 003877-19-8	Naphthalene, 1,2,3,4-tetrahydro-2	32.30	5200	JN
8. 000108-67-8	Benzene, 1,3,5-trimethyl-	33.48	20000	JN
9. 006682-71-9	1H-Indene, 2,3-dihydro-4,7-dimet	34.24	12000	JN
10. 001680-51-9	Naphthalene, 1,2,3,4-tetrahydro-6	35.76	14000	JN
11. 000934-80-5	Benzene, 4-ethyl-1,2-dimethyl-	36.26	5500	JN
12. 004175-53-5	1H-Indene, 2,3-dihydro-1,3-dimet	36.65	6900	JN
13. 000095-93-2	Benzene, 1,2,4,5-tetramethyl-	37.23	5900	JN
14. 000488-23-3	Benzene, 1,2,3,4-tetramethyl-	37.43	5600	JN

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

277-13

Lab Name: FMETL NJDEP # 13461

Project: 980932 Case No.: 3921 Location: 277 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3921.02

Sample wt/vol: 12.1 (g/ml) G Lab File ID: V04777.D

Level: (low/med) MED Date Received: 09/29/98

% Moisture: not dec. 8.98 Date Analyzed: 10/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1600	U
107131	Acrylonitrile	1600	U
75650	tert-Butyl alcohol	2900	U
1634044	Methyl-tert-Butyl ether	680	U
108203	Di-isopropyl ether	450	U
	Dichlorodifluoromethane	900	U
74-87-3	Chloromethane	230	U
75-01-4	Vinyl Chloride	680	U
74-83-9	Bromomethane	450	U
75-00-3	Chloroethane	680	U
75-69-4	Trichlorofluoromethane	450	U
75-35-4	1,1-Dichloroethene	230	U
67-64-1	Acetone	450	U
75-15-0	Carbon Disulfide	230	U
75-09-2	Methylene Chloride	4600	B
156-60-5	trans-1,2-Dichloroethene	450	U
75-35-3	1,1-Dichloroethane	230	U
108-05-4	Vinyl Acetate	680	U
78-93-3	2-Butanone	680	U
	cis-1,2-Dichloroethene	230	U
67-66-3	Chloroform	230	U
75-55-6	1,1,1-Trichloroethane	230	U
56-23-5	Carbon Tetrachloride	450	U
71-43-2	Benzene	230	U
107-06-2	1,2-Dichloroethane	450	U
79-01-6	Trichloroethene	230	U
78-87-5	1,2-Dichloropropane	230	U
75-27-4	Bromodichloromethane	230	U
110-75-8	2-Chloroethyl vinyl ether	450	U
10061-01-5	cis-1,3-Dichloropropene	230	U
108-10-1	4-Methyl-2-Pentanone	450	U
108-88-3	Toluene	230	U
10061-02-6	trans-1,3-Dichloropropene	450	U
79-00-5	1,1,2-Trichloroethane	450	U
127-18-4	Tetrachloroethene	230	U
591-78-6	2-Hexanone	450	U
126-48-1	Dibromochloromethane	450	U
108-90-7	Chlorobenzene	230	U
100-41-4	Ethylbenzene	450	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

277-13

Lab Name: FMETL NJDEP # 13461

Project: 980932 Case No.: 3921 Location: 277 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3921.02

Sample wt/vol: 12.1 (g/ml) G Lab File ID: V04777.D

Level: (low/med) MED Date Received: 09/29/98

% Moisture: not dec. 8.98 Date Analyzed: 10/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	680	U
1330-20-7	o-Xylene	450	U
100-42-5	Styrene	450	U
75-25-2	Bromoform	450	U
79-34-5	1,1,2,2-Tetrachloroethane	450	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

277-13

Lab Name: FMETL NJDEP # 13461

Project: 980932 Case No.: 3921 Location: 277 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3921.02

Sample wt/vol: 12.1 (g/ml) G Lab File ID: V04777.D

Level: (low/med) MED Date Received: 09/29/98

% Moisture: not dec. 8.98 Date Analyzed: 10/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 2

CAS NO.	COMPOUND	RT	EST. CONC.	Q
1.	unknown	30.07	1800	J
2. 000090-12-0	Naphthalene, 1-methyl-	30.35	4000	JN

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

277-14

Lab Name: FMETL NJDEP # 13461

Project: 980932 Case No.: 3921 Location: 277 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3921.03

Sample wt/vol: 11.2 (g/ml) G Lab File ID: V04778.D

Level: (low/med) MED Date Received: 09/29/98

% Moisture: not dec. 16.35 Date Analyzed: 10/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1900	U
107131	Acrylonitrile	1900	U
75650	tert-Butyl alcohol	3500	U
1634044	Methyl-tert-Butyl ether	800	U
108203	Di-isopropyl ether	540	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	270	U
75-01-4	Vinyl Chloride	800	U
74-83-9	Bromomethane	540	U
75-00-3	Chloroethane	800	U
75-69-4	Trichlorofluoromethane	540	U
75-35-4	1,1-Dichloroethene	270	U
67-64-1	Acetone	540	U
75-15-0	Carbon Disulfide	270	U
75-09-2	Methylene Chloride	4900	B
156-60-5	trans-1,2-Dichloroethene	540	U
75-35-3	1,1-Dichloroethane	270	U
108-05-4	Vinyl Acetate	800	U
78-93-3	2-Butanone	800	U
	cis-1,2-Dichloroethene	270	U
67-66-3	Chloroform	270	U
75-55-6	1,1,1-Trichloroethane	270	U
56-23-5	Carbon Tetrachloride	540	U
71-43-2	Benzene	270	U
107-06-2	1,2-Dichloroethane	540	U
79-01-6	Trichloroethene	270	U
78-87-5	1,2-Dichloropropane	270	U
75-27-4	Bromodichloromethane	270	U
110-75-8	2-Chloroethyl vinyl ether	540	U
10061-01-5	cis-1,3-Dichloropropene	270	U
108-10-1	4-Methyl-2-Pentanone	540	U
108-88-3	Toluene	270	U
10061-02-6	trans-1,3-Dichloropropene	540	U
79-00-5	1,1,2-Trichloroethane	540	U
127-18-4	Tetrachloroethene	270	U
591-78-6	2-Hexanone	540	U
126-48-1	Dibromochloromethane	540	U
108-90-7	Chlorobenzene	270	U
100-41-4	Ethylbenzene	540	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

277-14

Lab Name: FMETL NJDEP # 13461

Project: 980932 Case No.: 3921 Location: 277 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3921.03

Sample wt/vol: 11.2 (g/ml) G Lab File ID: V04778.D

Level: (low/med) MED Date Received: 09/29/98

% Moisture: not dec. 16.35 Date Analyzed: 10/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	800	U
1330-20-7	o-Xylene	540	U
100-42-5	Styrene	540	U
75-25-2	Bromoform	540	U
79-34-5	1,1,2,2-Tetrachloroethane	540	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

277-14

Lab Name: FMETL NJDEP # 13461

Project: 980932 Case No.: 3921 Location: 277 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3921.03

Sample wt/vol: 11.2 (g/ml) G Lab File ID: V04778.D

Level: (low/med) MED Date Received: 09/29/98

% Moisture: not dec. 16.35 Date Analyzed: 10/06/98

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 1

CAS NO.	COMPOUND	RT	EST. CONC.	Q
1. 000091-57-6	Naphthalene, 2-methyl-	30.39	2200	JN

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: FMETL NJDEP # 13461

Project: 980932 Case No.: 3921 Location: 277 SDG No.:

Lab File ID: V04541.D BFB Injection Date: 09/08/98

Instrument ID: GCMSVoa BFB Injection Time: 10:24

GC Column: Rtx502.2 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	25.4
75	30.0 - 66.0% of mass 95	48.4
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.4
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 120.0% of mass 95	63.6
175	4.0 - 9.0% of mass 174	4.8 (7.5)1
176	93.0 - 101.0% of mass 174	62.2 (97.8)1
177	5.0 - 9.0% of mass 176	4.2 (6.8)2

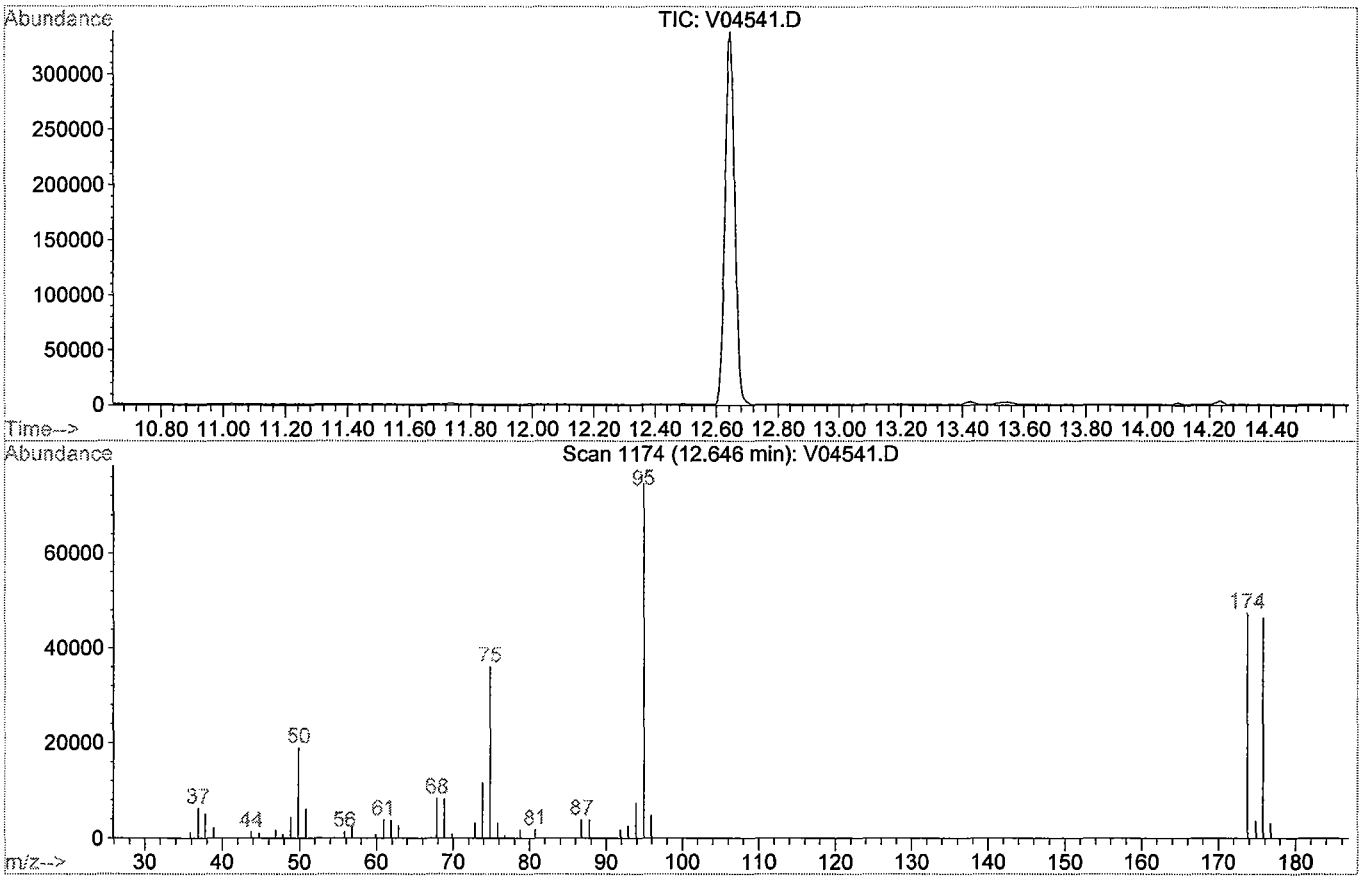
1-Value is % mass 174 2-Value is % mass 176

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
01	VSTD020	20 PPB STD	V04542.D	09/08/98	10:57
02	VSTD005	5 PPB STD	V04543.D	09/08/98	11:52
03	VSTD010	10 PPB STD	V04544.D	09/08/98	12:36
04	VSTD050	50 PPB STD	V04545.D	09/08/98	13:20
05	VSTD100	100 PPB STD	V04546.D	09/08/98	14:04

BFB

Data File : C:\HPCHEM\1\DATA\980908\V04541.D Vial: 1
Acq On : 8 Sep 1998 10:24 Operator: Skelton
Sample : BFB Tune Inst : GC/MS Ins
Misc : 100-37-31/1850368 Multiplr: 1.00
MS Integration Params: GASES.P
Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP



Spectrum Information: Scan 1174

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	25.4	18968	PASS
75	95	30	60	48.4	36096	PASS
95	95	100	100	100.0	74584	PASS
96	95	5	9	6.4	4797	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	63.6	47416	PASS
175	174	5	9	7.5	3555	PASS
176	174	95	101	97.8	46392	PASS
177	176	5	9	6.8	3166	PASS

Response Factor Report GC/MS Ins

Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Wed Sep 09 10:59:19 1998
Response via : Initial Calibration

Calibration Files
50 =V04545.D 5 =V04543.D 10 =V04544.D
20 =V04542.D 100 =V04546.D

		Compound	50	5	10	20	100	Avg	%RSD
1)	I	Bromochloromethane	----------ISTD----------						
2)	t	Acrolein	1.267	1.166	1.191	1.159	1.252	1.207	4.11
3)	t	Acrylonitrile	2.779	2.567	2.635	2.586	2.722	2.658	3.41
4)	t	tert-Butyl alcohol	0.569	0.375	0.446	0.441	0.602	0.487	19.59
5)	t	Methyl-tert-Butyl eth	5.943	4.839	5.094	5.287	6.007	5.434	9.56
6)	t	Di-isopropyl ether	3.416	2.800	3.113	3.388	3.303	3.204	7.95
7)	T	Dichlorodifluorometha	2.964	3.407	3.326	3.588	2.802	3.217	10.10
8)	TP	Chloromethane	3.829	3.427	3.618	3.667	3.785	3.665	4.31
9)	TC	Vinyl Chloride	1.180	1.369	1.570	1.322	0.979	1.284	17.17
10)	T	Bromomethane	1.519	1.594	1.532	1.661	1.488	1.559	4.44
11)	T	Chloroethane	1.724	1.607	1.733	1.723	1.685	1.694	3.08
12)	T	Trichlorofluoromethan	2.394	1.726	2.386	2.270	2.318	2.219	12.62
13)	MC	1,1-Dichloroethene	4.401	4.241	4.272	4.413	4.303	4.326	1.79
14)	T	Acetone	1.154	1.436	1.200	1.109	1.123	1.204	11.14
15)	T	Carbon Disulfide	9.152	9.372	8.947	9.195	8.955	9.124	1.96
16)	T	Methylene Chloride	2.827	2.085	3.381	3.080	2.705	2.815	17.18
17)	T	trans-1,2-Dichloroeth	4.242	4.003	4.023	4.168	4.150	4.117	2.47
18)	TP	1,1-Dichloroethane	5.189	5.162	5.073	5.247	5.040	5.142	1.65
19)	T	Vinyl Acetate	8.162	7.099	7.224	7.211	8.100	7.559	6.94
20)	T	2-Butanone	1.783	1.418	1.531	1.505	1.840	1.615	11.43
21)	T	cis-1,2-Dichloroethen	4.146	3.968	4.028	4.088	4.019	4.050	1.69
22)	TC	Chloroform	3.855	3.614	3.710	3.831	3.770	3.756	2.59
23)	T	1,1,1-Trichloroethane	2.526	2.222	2.222	2.456	2.563	2.398	6.87
24)	T	Carbon Tetrachloride	1.830	1.493	1.584	1.767	1.847	1.704	9.24
25)	S	1,2-Dichloroethane-d4	2.739	2.518	2.618	2.613	2.796	2.657	4.15
26)	I	1,4-Difluorobenzene	----------ISTD----------						
27)	TM	Benzene	1.460	1.402	1.355	1.370	1.439	1.405	3.16
28)	T	1,2-Dichloroethane	0.527	0.461	0.465	0.479	0.512	0.489	5.99
29)	TM	Trichloroethene	0.301	0.265	0.266	0.277	0.303	0.282	6.50
30)	TC	1,2-Dichloropropane	0.445	0.392	0.390	0.401	0.442	0.414	6.58
31)	T	Bromodichloromethane	0.429	0.367	0.372	0.393	0.433	0.399	7.71
32)	T	2-Chloroethyl vinyl e	0.259	0.224	0.230	0.229	0.250	0.238	6.26
33)	T	cis-1,3-Dichloroprope	0.609	0.563	0.548	0.569	0.601	0.578	4.49
34)	T	4-Methyl-2-Pentanone	0.192	0.152	0.173	0.172	0.189	0.176	9.04
35)	S	Toluene-d8	1.183	1.197	1.199	1.187	1.190	1.191	0.58

(#) = Out of Range

Response Factor Report GC/MS Ins

Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Wed Sep 09 10:59:19 1998
Response via : Initial Calibration

Calibration Files
50 =V04545.D 5 =V04543.D 10 =V04544.D
20 =V04542.D 100 =V04546.D

		Compound	50	5	10	20	100	Avg	%RSD
36)	TCM	Toluene	1.489	1.513	1.450	1.474	1.438	1.473	2.04
37)	I	Chlorobenzene-d5	----------ISTD----------						
38)	T	trans-1,3-Dichloropro	1.966	1.873	1.836	1.928	1.929	1.906	2.71
39)	T	1,1,2-Trichloroethane	1.070	0.977	0.958	1.002	1.040	1.009	4.54
40)	T	Tetrachloroethene	0.993	0.952	0.929	0.989	0.972	0.967	2.75
41)	T	2-Hexanone	1.494	1.346	1.378	1.309	1.464	1.398	5.60
42)	T	Dibromochloromethane	0.984	0.829	0.844	0.934	0.993	0.917	8.39
43)	TMP	Chlorobenzene	3.146	3.198	3.026	3.113	3.070	3.111	2.14
44)	TC	Ethylbenzene	6.071	6.132	5.836	5.978	5.813	5.966	2.35
45)	T	m+p-Xylenes	2.253	2.208	2.130	2.174	2.176	2.188	2.08
46)	T	o-Xylene	4.634	4.608	4.361	4.490	4.457	4.510	2.49
47)	T	Styrene	3.942	3.722	3.530	3.723	3.776	3.739	3.94
48)	TP	Bromoform	0.642	0.454	0.501	0.576	0.664	0.568	15.86
49)	S	Bromofluorobenzene	1.684	1.659	1.647	1.683	1.706	1.676	1.38
50)	TP	1,1,2,2-Tetrachloroet	1.747	1.625	1.577	1.593	1.704	1.649	4.45
51)	T	1,3-Dichlorobenzene	2.244	2.179	2.100	2.141	2.189	2.171	2.47
52)	T	1,4-Dichlorobenzene	2.334	2.353	2.209	2.241	2.267	2.281	2.68
53)	T	1,2-Dichlorobenzene	2.043	2.013	1.934	1.960	1.977	1.985	2.17

(#) = Out of Range

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: FMETL NJDEP # 13461

Project: 980932 Case No.: 3921 Location: 277 SDG No.:

Lab File ID: V04765.D BFB Injection Date: 10/06/98

Instrument ID: GCMSVoa BFB Injection Time: 13:21

GC Column: Rtx502.2 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	20.7
75	30.0 - 66.0% of mass 95	43.2
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.0
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 120.0% of mass 95	67.3
175	4.0 - 9.0% of mass 174	5.1 (7.5)1
176	93.0 - 101.0% of mass 174	66.4 (98.6)1
177	5.0 - 9.0% of mass 176	4.0 (6.1)2

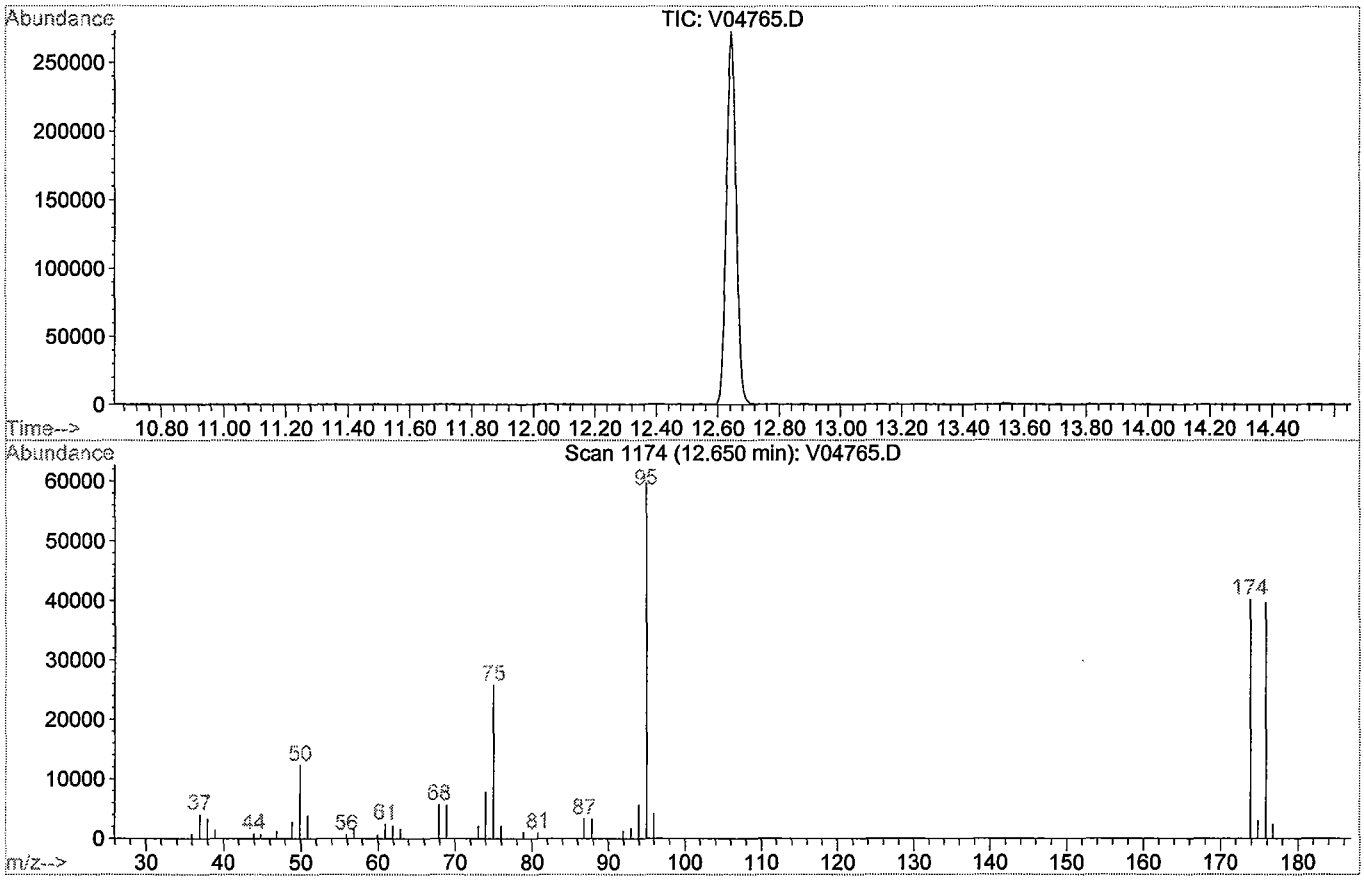
1-Value is % mass 174 2-Value is % mass 176

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
01	VSTD020	DAILY CAL	V04766.D	10/06/98	13:54
02	VBLK107	VBLK107	V04768.D	10/06/98	16:05
03	277-12	3921.01	V04776.D	10/06/98	22:07
04	277-13	3921.02	V04777.D	10/06/98	22:51
05	277-14	3921.03	V04778.D	10/06/98	23:35

BFB

Data File : C:\HPCHEM\1\DATA\981006\V04765.D Vial: 1
Acq On : 6 Oct 1998 13:21 Operator: Skelton
Sample : BFB Tune Inst : GC/MS Ins
Misc : 100-35-31/1721344 Multiplr: 1.00
MS Integration Params: GASES.P
Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP



Spectrum Information: Scan 1174

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.7	12338	PASS
75	95	30	60	43.2	25808	PASS
95	95	100	100	100.0	59672	PASS
96	95	5	9	7.0	4153	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	67.3	40184	PASS
175	174	5	9	7.5	3029	PASS
176	174	95	101	98.6	39616	PASS
177	176	5	9	6.1	2405	PASS

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\981006\V04766.D Vial: 2
Acq On : 6 Oct 1998 13:54 Operator: Skelton
Sample : Daily Cal Inst : GC/MS Ins
Misc : 20 ppb std Multiplr: 1.00
MS Integration Params: GASES.P

Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Wed Sep 09 10:59:19 1998
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 25% Max. R.T. Dev 0.50min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane	1.000	1.000	0.0	84	0.00
2	t	Acrolein	1.207	1.023	15.2	74	0.00
3	t	Acrylonitrile	2.658	2.252	15.3	73	0.00
4	t	tert-Butyl alcohol	0.487	0.372	23.6	71	0.00
5	t	Methyl-tert-Butyl ether	5.434	4.844	10.9	77	0.00
6	t	Di-isopropyl ether	3.204	3.021	5.7	75	0.01
7	T	Dichlorodifluoromethane	3.217	3.271	-1.7	76	0.00
8	TP	Chloromethane	3.665	3.688	-0.6	84	0.00
9	TC	Vinyl Chloride	1.284	1.403	-9.3	89	0.00
10	T	Bromomethane	1.559	1.495	4.1	75	0.00
11	T	Chloroethane	1.694	1.603	5.4	78	0.00
12	T	Trichlorofluoromethane	2.219	2.412	-8.7	89	-0.01
13	MC	1,1-Dichloroethene	4.326	3.869	10.6	73	0.00
14	T	Acetone	1.204	1.400	-16.3	106	0.00
15	T	Carbon Disulfide	9.124	8.279	9.3	75	0.00
16	T	Methylene Chloride	2.815	2.857	-1.5	78	0.00
17	T	trans-1,2-Dichloroethene	4.117	3.766	8.5	76	0.00
18	TP	1,1-Dichloroethane	5.142	4.825	6.2	77	0.00
19	T	Vinyl Acetate	7.559	6.103	19.3	71	0.00
20	T	2-Butanone	1.615	1.271	21.3	71	-0.02
21	T	cis-1,2-Dichloroethene	4.050	3.776	6.8	77	0.00
22	TC	Chloroform	3.756	3.659	2.6	80	0.00
23	T	1,1,1-Trichloroethane	2.398	2.201	8.2	75	0.00
24	T	Carbon Tetrachloride	1.704	1.604	5.9	76	0.00
25	S	1,2-Dichloroethane-d4	2.657	2.313	12.9	74	0.00
26	I	1,4-Difluorobenzene	1.000	1.000	0.0	85	0.00
27	TM	Benzene	1.405	1.366	2.8	84	0.00
28	T	1,2-Dichloroethane	0.489	0.421	13.9	74	0.00
29	TM	Trichloroethene	0.282	0.296	-5.0	90	0.00
30	TC	1,2-Dichloropropane	0.414	0.403	2.7	85	0.00
31	T	Bromodichloromethane	0.399	0.366	8.3	79	0.00
32	T	2-Chloroethyl vinyl ether	0.238	0.199	16.4	73	0.00
33	T	cis-1,3-Dichloropropene	0.578	0.547	5.4	81	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\981006\V04766.D Vial: 2
Acq On : 6 Oct 1998 13:54 Operator: Skelton
Sample : Daily Cal Inst : GC/MS Ins
Misc : 20 ppb std Multiplr: 1.00
MS Integration Params: GASES.P

Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Wed Sep 09 10:59:19 1998
Response via : Multiple Level Calibration

Min. RRF : 0.050 Min. Rel. Area : 25% Max. R.T. Dev 0.50min
Max. RRF Dev : 35% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
34	T	4-Methyl-2-Pentanone	0.176	0.144	18.2	71	0.00
35	S	Toluene-d8	1.191	1.185	0.5	84	0.00
36	TCM	Toluene	1.473	1.453	1.4	83	0.00
37	I	Chlorobenzene-d5	1.000	1.000	0.0	91	0.00
38	T	trans-1,3-Dichloropropene	1.906	1.591	16.5	75	0.00
39	T	1,1,2-Trichloroethane	1.009	0.935	7.3	85	0.00
40	T	Tetrachloroethene	0.967	0.963	0.4	89	0.00
41	T	2-Hexanone	1.398	0.984	29.6	69	0.00
42	T	Dibromochloromethane	0.917	0.861	6.1	84	0.00
43	TMP	Chlorobenzene	3.111	2.988	4.0	88	0.00
44	TC	Ethylbenzene	5.966	5.560	6.8	85	0.00
45	T	m+p-Xylenes	2.188	1.950	10.9	82	0.00
46	T	o-Xylene	4.510	3.943	12.6	80	0.00
47	T	Styrene	3.739	3.394	9.2	83	0.00
48	TP	Bromoform	0.568	0.535	5.8	85	0.00
49	S	Bromofluorobenzene	1.676	1.668	0.5	91	0.00
50	TP	1,1,2,2-Tetrachloroethane	1.649	1.495	9.3	86	0.00
51	T	1,3-Dichlorobenzene	2.171	2.194	-1.1	94	0.00
52	T	1,4-Dichlorobenzene	2.281	2.279	0.1	93	0.00
53	T	1,2-Dichlorobenzene	1.985	2.040	-2.8	95	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2B

SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: FMETL **Project** 98-0932

NJDEP # 13461 **Location** Building 277

Case No.: 3921

	EPA SAMPLE NO.	SMC1 DCE #	SMC2 TOL #	SMC3 BFB #	TOT OUT
01	VBLK107	85.50	102.80	98.33	0
02	3921.01	60.95	65.60	64.40	0
03	3921.02	63.25	66.68	62.53	0
04	3921.03	62.75	67.51	62.63	0

				QC LIMITS
SMC1	DCE	=	1,2-Dichloroethane-d4	(76-114)
SMC2	TOL	=	Toluene-d8	(88-110)
SMC3	BFB	=	Bromofluorobenzene	(86-115)

Column to be used to flag recovery

*Values outside of contract required QC limits

D System Monitoring Compounds diluted out

Spike Recovery and RPD Summary Report - SOIL

Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Wed Sep 09 10:59:19 1998
Response via : Initial Calibration

Non-Spiked Sample: V04688.D

	Spike Sample	Spike Duplicate Sample
File ID :	V04689.D	V04690.D
Sample :	3883.24ms	3883.24msd
Acq Time:	29 Sep 1998 17:25	29 Sep 1998 18:11

Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC Limits RPD	QC Limits % Rec
1,1-Dichloroethene	0.0	20	15	18	76	88	15	22	59-172
Benzene	0.0	20	18	20	89	100	12	21	66-142
Trichloroethene	0.0	20	19	21	94	105	11	24	62-137
Toluene	0.0	20	18	21	92	105	13	21	59-139
Chlorobenzene	0.0	20	18	20	91	100	10	21	60-133

- Fails Limit Check

M62441.M Tue Oct 20 12:55:38 1998

0030

4A

VOLATILE METHOD BLANK SUMMARY

FIELD ID.

VBLK107

Lab Name: FMETL NJDEP # 13461

Project: 980932 Case No.: 3921 Location: 277 SDG No.:

Lab File ID: V04768.D Lab Sample ID: VBLK107

Date Analyzed: 10/06/98 Time Analyzed: 16:05

GC Column: Rtx502.2 ID: 0.25 (mm) Heated Purge: (Y/N) N

Instrument ID: GCMSVoa

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	277-12	3921.01	V04776.D	22:07
02	277-13	3921.02	V04777.D	22:51
03	277-14	3921.03	V04778.D	23:35

COMMENTS:

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: FMETL NJDEP # 13461

Project: 980932 Case No.: 3921 Location: 277 SDG No.:

Lab File ID (Standard): V04766.D Date Analyzed: 10/06/98

Instrument ID: GCMSVoa Time Analyzed: 13:54

GC Column: Rtx502.2 ID: 0.25 (mm) Heated Purge: (Y/N) Y

		IS1BCM		IS2DFB		IS3CBZ	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	40790	18.31	272847	20.92	83090	28.74
	UPPER LIMIT	81580	17.81	545694	20.42	166180	28.24
	LOWER LIMIT	20395	18.81	136424	21.42	41545	29.24
	EPA SAMPLE NO.						
01	VBLK107	35081	18.33	235538	20.92	74694	28.74
02	277-12	38342	18.32	258029	20.92	83014	28.74
03	277-13	36077	18.32	253395	20.92	81303	28.74
04	277-14	35651	18.31	243524	20.92	74992	28.74

IS1 BCM = Bromochloromethane

IS2 DFB = 1,4-Difluorobenzene

IS3 CBZ = 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 to be used to flag values outside QC limit with an asterisk.

* Values outside of contract required QC limits

Quantitation Report (QT/LSC Reviewed)

Data File : C:\HPCHEM\1\DATA\981006\V04768.D Vial: 1
Acq On : 6 Oct 1998 16:05 Operator: Skelton
Sample : VBLK107 Inst : GC/MS Ins
Misc : VBLK107 Multiplr: 1.00
MS Integration Params: GASES.P
Quant Time: Oct 13 16:00 1998 Quant Results File: M62441.RES

Quant Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Wed Sep 09 10:59:19 1998
Response via : Initial Calibration
DataAcq Meth : M62441

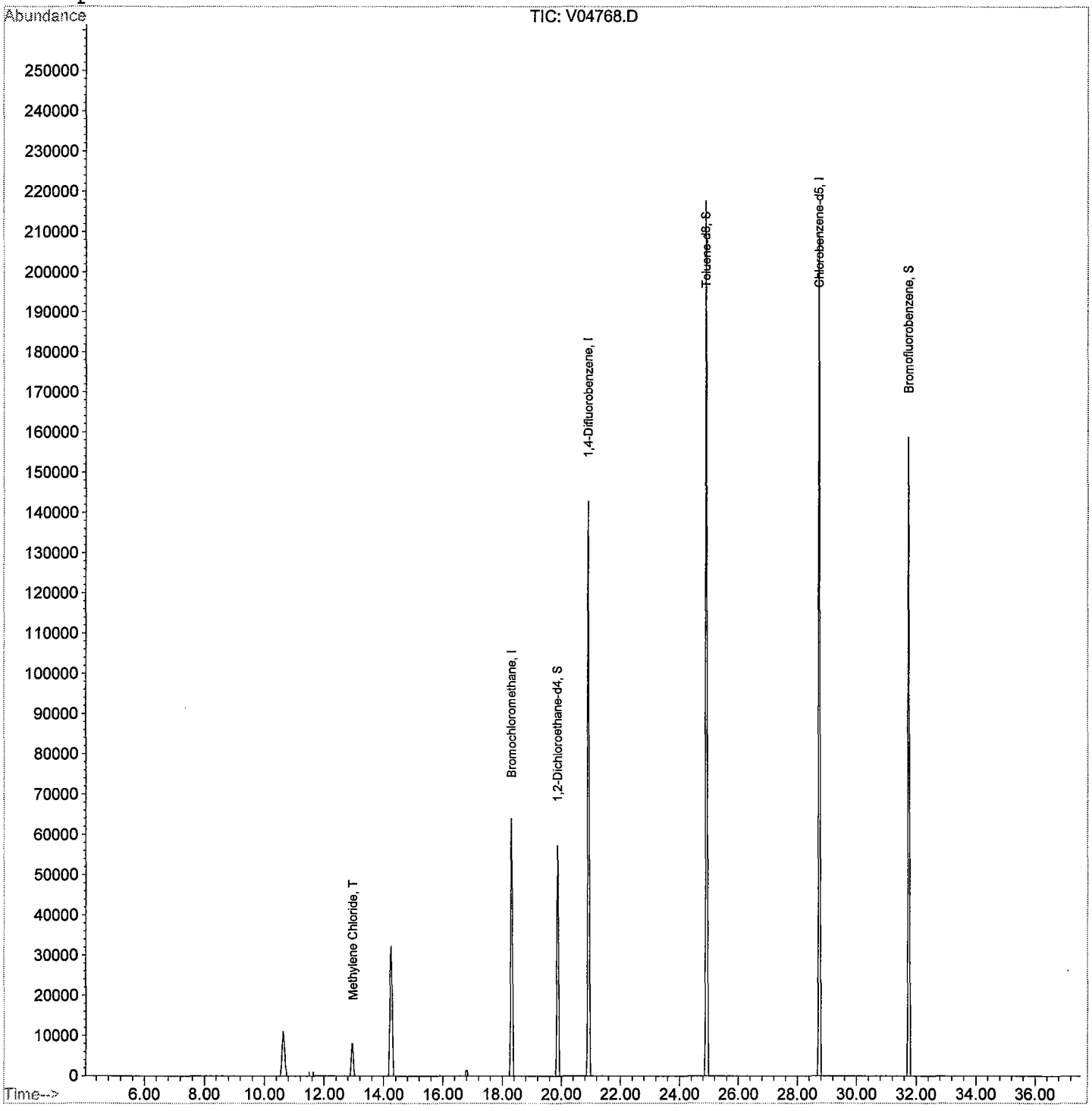
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	18.33	128	35081	30.00	ug/L	0.02
26) 1,4-Difluorobenzene	20.92	114	235538	30.00	ug/L	0.00
37) Chlorobenzene-d5	28.74	119	74694	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	19.87	65	79694	25.65	ug/L	0.00
Spiked Amount 30.000	Range 76 - 114		Recovery = 85.50%			
35) Toluene-d8	24.91	98	288455	30.84	ug/L	0.00
Spiked Amount 30.000	Range 88 - 110		Recovery = 102.80%			
49) Bromofluorobenzene	31.75	95	123065	29.50	ug/L	0.00
Spiked Amount 30.000	Range 86 - 115		Recovery = 98.33%			
Target Compounds						Qvalue
16) Methylene Chloride	12.96	84	10688m	3.25	ug/L	

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\981006\V04768.D Vial: 1
Acq On : 6 Oct 1998 16:05 Operator: Skelton
Sample : VBLK107 Inst : GC/MS Ins
Misc : VBLK107 Multiplr: 1.00
MS Integration Params: GASES.P
Quant Time: Oct 13 16:00 1998 Quant Results File: M62441.RES

Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Wed Sep 09 10:59:19 1998
Response via : Initial Calibration



Quantitation Report (QT/LSC Reviewed)

Data File : C:\HPCHEM\1\DATA\981006\V04776.D Vial: 8
Acq On : 6 Oct 1998 22:07 Operator: Skelton
Sample : 3921.01 Inst : GC/MS Ins
Misc : 277-12(6') Multiplr: 1.00
MS Integration Params: GASES.P
Quant Time: Oct 20 11:42 1998 Quant Results File: M62441.RES

Quant Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Wed Sep 09 10:59:19 1998
Response via : Initial Calibration
DataAcq Meth : M62441

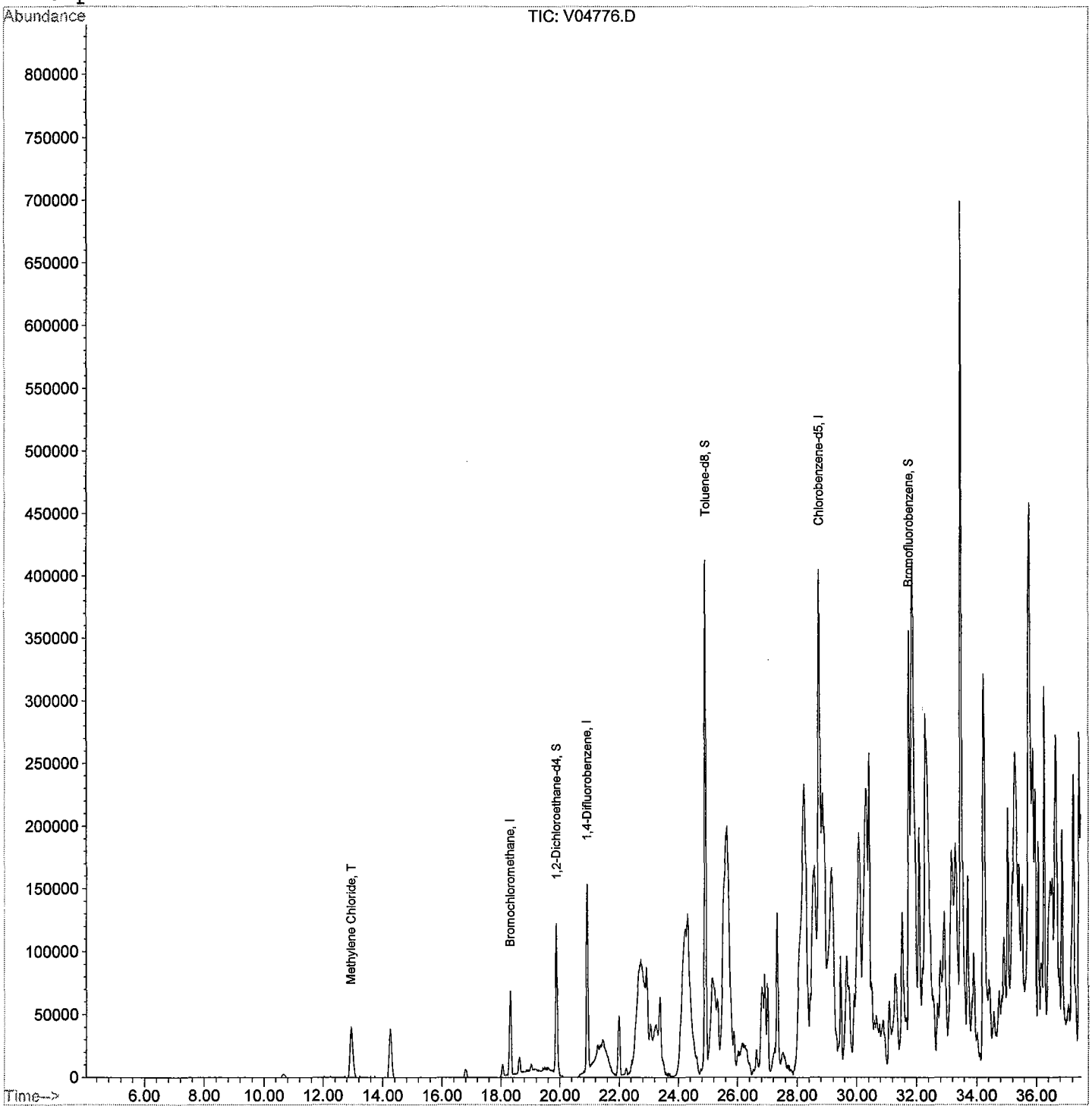
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	18.32	128	38342	30.00	ug/L	0.01
26) 1,4-Difluorobenzene	20.92	114	258029	30.00	ug/L	0.00
37) Chlorobenzene-d5	28.74	119	83014	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	19.88	65	165573	48.76	ug/L	0.00
Spiked Amount 30.000	Range 76 - 114		Recovery = 162.53%#			
35) Toluene-d8	24.91	98	537651	52.48	ug/L	0.00
Spiked Amount 30.000	Range 88 - 110		Recovery = 174.93%#			
49) Bromofluorobenzene	31.75	95	238909	51.52	ug/L	0.00
Spiked Amount 30.000	Range 86 - 115		Recovery = 171.73%#			
Target Compounds						Qvalue
16) Methylene Chloride	12.94	84	67213	18.68	ug/L	89

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\981006\V04776.D Vial: 8
Acq On : 6 Oct 1998 22:07 Operator: Skelton
Sample : 3921.01 Inst : GC/MS Ins
Misc : 277-12(6') Multiplr: 1.00
MS Integration Params: GASES.P
Quant Time: Oct 20 11:42 1998 Quant Results File: M62441.RES

Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Wed Sep 09 10:59:19 1998
Response via : Initial Calibration



Quantitation Report (QT/LSC Reviewed)

Data File : C:\HPCHEM\1\DATA\981006\V04777.D Vial: 9
Acq On : 6 Oct 1998 22:51 Operator: Skelton
Sample : 3921.02 Inst : GC/MS Ins
Misc : 277-13(6') Multiplr: 1.00
MS Integration Params: GASES.P
Quant Time: Oct 20 11:47 1998 Quant Results File: M62441.RES

Quant Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Wed Sep 09 10:59:19 1998
Response via : Initial Calibration
DataAcq Meth : M62441

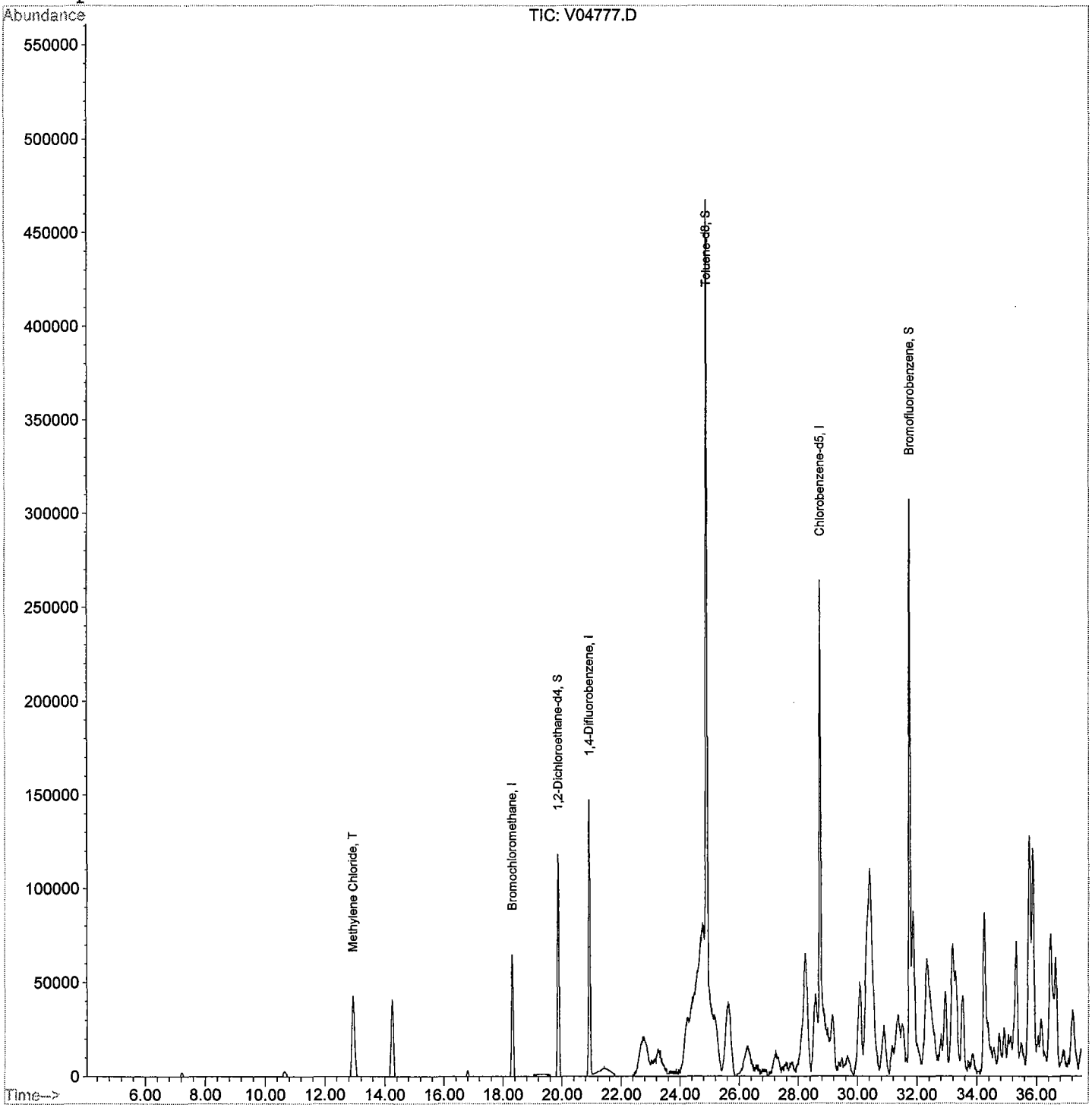
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	18.32	128	36077	30.00	ug/L	0.00
26) 1,4-Difluorobenzene	20.92	114	253395	30.00	ug/L	0.00
37) Chlorobenzene-d5	28.74	119	81303	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	19.87	65	161671	50.60	ug/L	0.00
Spiked Amount 30.000	Range 76 - 114		Recovery = 168.67%#			
35) Toluene-d8	24.91	98	536718	53.34	ug/L	0.00
Spiked Amount 30.000	Range 88 - 110		Recovery = 177.80%#			
49) Bromofluorobenzene	31.74	95	227150	50.02	ug/L	0.00
Spiked Amount 30.000	Range 86 - 115		Recovery = 166.73%#			
Target Compounds						Qvalue
16) Methylene Chloride	12.94	84	68973	20.37	ug/L	90

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\981006\V04777.D Vial: 9
Acq On : 6 Oct 1998 22:51 Operator: Skelton
Sample : 3921.02 Inst : GC/MS Ins
Misc : 277-13(6') Multiplr: 1.00
MS Integration Params: GASES.P
Quant Time: Oct 20 11:47 1998 Quant Results File: M62441.RES

Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Wed Sep 09 10:59:19 1998
Response via : Initial Calibration



Quantitation Report (QT/LSC Reviewed)

Data File : C:\HPCHEM\1\DATA\981006\V04778.D Vial: 10
Acq On : 6 Oct 1998 23:35 Operator: Skelton
Sample : 3921.03 Inst : GC/MS Ins
Misc : 277-14(6') Multiplr: 1.00
MS Integration Params: GASES.P
Quant Time: Oct 7 0:12 1998 Quant Results File: M62441.RES

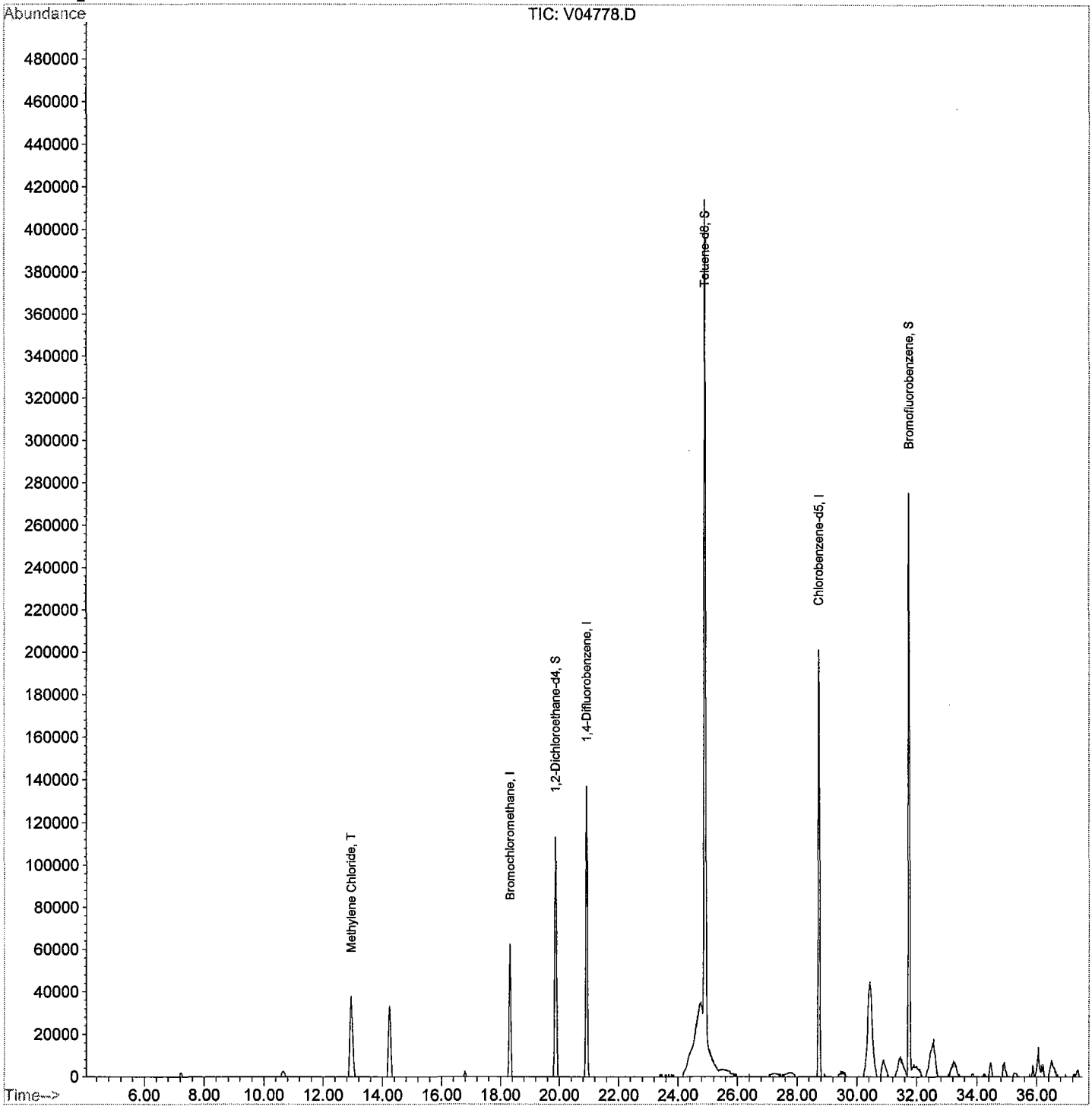
Quant Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Wed Sep 09 10:59:19 1998
Response via : Initial Calibration
DataAcq Meth : M62441

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	18.31	128	35651	30.00	ug/L	0.00
26) 1,4-Difluorobenzene	20.92	114	243524	30.00	ug/L	0.00
37) Chlorobenzene-d5	28.74	119	74992	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	19.87	65	158509	50.20	ug/L	0.00
Spiked Amount 30.000	Range 76 - 114		Recovery = 167.33%#			
35) Toluene-d8	24.91	98	522306	54.01	ug/L	0.00
Spiked Amount 30.000	Range 88 - 110		Recovery = 180.03%#			
49) Bromofluorobenzene	31.75	95	209878	50.10	ug/L	0.00
Spiked Amount 30.000	Range 86 - 115		Recovery = 167.00%#			
Target Compounds						Qvalue
16) Methylene Chloride	12.95	84	61127	18.27	ug/L	94

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\981006\V04778.D Vial: 10
Acq On : 6 Oct 1998 23:35 Operator: Skelton
Sample : 3921.03 Inst : GC/MS Ins
Misc : 277-14(6') Multiplr: 1.00
MS Integration Params: GASES.P
Quant Time: Oct 7 0:12 1998 Quant Results File: M62441.RES

Method : C:\HPCHEM\1\METHODS\M62441.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8240/TCLP
Last Update : Wed Sep 09 10:59:19 1998
Response via : Initial Calibration



TPHC

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3920
	DPW. SELFM-PW-EV	**Date Rec'd:**	29-Sep-98
	Bldg. 173	**Analysis Start:**	29-Sep-98
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	30-Sep-98
Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	D.DEINHARDT	**DICAR #:**	
Inst. ID.	GC TPHC INST. #1	**Injection Volume**	1 ul
Column Type	RTX 5	**Column ID**	0.32 um
Ext. Meth:	Shake	**Location #:**	BLDG. 277

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3921.01	277-12(6')	**1.00**	15.01	84.46	185	**1039.44**
3921.02	277-13(6')	**1.00**	15.27	91.02	169	**ND**
3921.03	277-14(6')	**1.00**	15.55	83.65	181	**243.62**
METHOD BLANK	TBLK 171	**1.00**	15.00	100.00	157	**ND**

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright
Laboratory Director

Method : C:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998

Calibration Files
100 =T06865.D 50 =T06866.D 20 =T06867.D
10 =T06868.D 5 =T06869.D

		Compound	100	50	20	10	5	Avg		%RSD
1)	tC	C8	2.311	2.599	2.672	2.620	2.686	2.577	E4	5.95
2)	tC	C10	2.632	2.942	3.002	2.923	3.126	2.925	E4	6.22
3)	TC	C12	2.931	3.295	3.342	3.253	3.453	3.255	E4	6.02
4)	tC	C14	3.027	3.417	3.488	3.382	3.600	3.383	E4	6.37
5)	tC	C16	3.046	3.450	3.545	3.434	3.674	3.430	E4	6.86
6)	tC	C18	3.451	3.853	3.936	3.985	4.116	3.868	E4	6.52
7)	tC	C20	3.275	3.707	3.817	3.688	3.975	3.692	E4	7.03
8)	tC	C22	3.218	3.646	3.753	3.628	3.887	3.626	E4	6.91
9)	tC	C24	3.256	3.685	3.799	3.645	3.934	3.664	E4	6.93
10)	tC	C26	3.225	3.643	3.749	3.596	3.871	3.617	E4	6.73
11)	tC	C28	3.225	3.634	3.730	3.577	3.857	3.605	E4	6.58
12)	tC	C30	3.296	3.706	3.808	3.650	3.923	3.677	E4	6.44
13)	tC	C32	3.255	3.653	3.746	3.576	3.851	3.616	E4	6.27
14)	tC	C34	3.285	3.678	3.775	3.592	3.872	3.640	E4	6.17
15)	tC	C36	3.076	3.434	3.519	3.334	3.594	3.391	E4	5.93
16)	tC	C38	2.873	3.199	3.290	3.108	3.357	3.165	E4	5.96
17)	tC	C40	2.508	2.784	2.873	2.714	2.932	2.762	E4	5.97
18)	tC	c42	2.295	2.537	2.627	2.473	2.614	2.509	E4	5.39
19)	TC	Pristane	3.181	3.658	3.694	3.576	3.848	3.591	E4	6.96
20)	TC	Phytane	3.286	3.723	3.831	3.710	4.000	3.710	E4	7.11
21)	sC	o-terphenyl	3.321	3.756	3.867	3.734	4.018	3.739	E4	6.93
22)	tC	TPHC - total	3.501	3.820	4.101	4.006	4.639	4.013	E4	10.41

(#) = Out of Range MEAN RSD = 6.62%

TPH47.M Tue Sep 29 09:14:24 1998

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980925\T06865.D Vial: 2
Acq On : 25 Sep 98 3:06 pm Operator: Deinhardt
Sample : 100 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 29 9:02 1998 Quant Results File: TPH46.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH46.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH46.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

	Compound	R.T.	Response	Conc Units
	System Monitoring Compounds			
21)	sC o-terphenyl	12.98	3321489	72.198 mg/L
Spiked Amount	10.000 Range	8 - 13	Recovery =	721.98%#
	Target Compounds			
1)	tC C8	4.72	2311044	83.537 mg/L
2)	tC C10	7.71	2631777	84.144 mg/L
3)	TC C12	9.34	2930730	82.785 mg/L
4)	tC C14	10.52	3026978	78.410 mg/L
5)	tC C16	11.53	3045508	75.084 mg/L
6)	tC C18	11.99	3450510	73.906 mg/L m
7)	tC C20	12.43	3275410	73.056 mg/L m
8)	tC C22	13.25	3218031	72.364 mg/L
9)	tC C24	13.99	3256322	72.113 mg/L
10)	tC C26	14.68	3224873	71.938 mg/L
11)	tC C28	15.32	3225253	71.950 mg/L
12)	tC C30	15.91	3295843	72.096 mg/L
13)	tC C32	16.47	3254589	72.358 mg/L
14)	tC C34	17.07	3285160	74.347 mg/L
15)	tC C36	17.78	3076094	78.252 mg/L
16)	tC C38	18.67	2873014	81.535 mg/L
17)	tC C40	19.83	2507713	82.752 mg/L
18)	tC c42	21.39	2294516	81.758 mg/L
19)	TC Pristane	12.02	3180800	73.341 mg/L m
20)	TC Phytane	12.48	3286047	72.987 mg/L m
22)	tC TPHC - total	12.02	70024293	1439.221 mg/L m

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\980925\T06866.D Vial: 3
Acq On : 25 Sep 98 3:45 pm Operator: Deinhardt
Sample : 50 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 29 9:04 1998 Quant Results File: TPH46.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH46.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH46.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.98	1877811	40.817 mg/L
Spiked Amount 10.000 Range 8 - 13		Recovery = 408.17%#	
Target Compounds			
1) tC C8	4.71	1299346	46.967 mg/L m
2) tC C10	7.71	1470818	47.026 mg/L
3) TC C12	9.33	1647252	46.530 mg/L
4) tC C14	10.52	1708440	44.255 mg/L
5) tC C16	11.53	1725045	42.529 mg/L
6) tC C18	11.99	1926717	41.268 mg/L m
7) tC C20	12.43	1853668	41.345 mg/L m
8) tC C22	13.24	1822993	40.993 mg/L
9) tC C24	13.99	1842749	40.809 mg/L
10) tC C26	14.68	1821345	40.629 mg/L
11) tC C28	15.31	1816954	40.533 mg/L
12) tC C30	15.90	1853129	40.537 mg/L
13) tC C32	16.47	1826466	40.607 mg/L
14) tC C34	17.07	1839032	41.619 mg/L
15) tC C36	17.77	1716875	43.675 mg/L
16) tC C38	18.66	1599305	45.388 mg/L
17) tC C40	19.81	1392181	45.941 mg/L
18) tC c42	21.37	1268448	45.197 mg/L
19) TC Pristane	12.02	1829219	42.177 mg/L m
20) TC Phytane	12.47	1861331	41.343 mg/L m
22) tC TPHC - total	12.02	38204486	785.223 mg/L m

0045

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\980925\T06867.D Vial: 4
Acq On : 25 Sep 98 4:24 pm Operator: Deinhardt
Sample : 20 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 29 9:06 1998 Quant Results File: TPH46.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH46.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH46.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.97	773309	16.809 mg/L
Spiked Amount 10.000 Range 8 - 13 Recovery = 168.09%#			
Target Compounds			
1) tC C8	4.72	534332	19.314 mg/L m
2) tC C10	7.71	600427	19.197 mg/L
3) TC C12	9.33	668324	18.878 mg/L
4) tC C14	10.51	697613	18.071 mg/L
5) tC C16	11.52	709094	17.482 mg/L
6) tC C18	11.98	787167	16.860 mg/L m
7) tC C20	12.42	763303	17.025 mg/L m
8) tC C22	13.24	750587	16.878 mg/L
9) tC C24	13.98	759712	16.824 mg/L
10) tC C26	14.67	749847	16.727 mg/L
11) tC C28	15.31	745956	16.641 mg/L
12) tC C30	15.90	761540	16.659 mg/L
13) tC C32	16.46	749291	16.659 mg/L
14) tC C34	17.06	754936	17.085 mg/L
15) tC C36	17.76	703828	17.904 mg/L
16) tC C38	18.64	658032	18.675 mg/L
17) tC C40	19.79	574523	18.959 mg/L
18) tC c42	21.34	525434	18.722 mg/L
19) TC Pristane	12.01	738844	17.036 mg/L m
20) TC Phytane	12.46	766106	17.016 mg/L m
22) tC TPHC - total	11.98	16404755	337.170 mg/L m

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\980925\T06868.D Vial: 5
Acq On : 25 Sep 98 5:02 pm Operator: Deinhardt
Sample : 10 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 29 9:07 1998 Quant Results File: TPH46.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH46.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH46.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.97	373430	8.117 mg/L
Spiked Amount 10.000 Range 8 - 13 Recovery = 81.17%#			
Target Compounds			
1) tC C8	4.69	261969	9.469 mg/L m
2) tC C10	7.70	292338	9.347 mg/L
3) TC C12	9.33	325348	9.190 mg/L
4) tC C14	10.51	338235	8.762 mg/L
5) tC C16	11.52	343385	8.466 mg/L
6) tC C18	11.98	398504	8.535 mg/L m
7) tC C20	12.42	368759	8.225 mg/L m
8) tC C22	13.23	362789	8.158 mg/L
9) tC C24	13.98	364497	8.072 mg/L
10) tC C26	14.67	359612	8.022 mg/L
11) tC C28	15.30	357714	7.980 mg/L
12) tC C30	15.89	364977	7.984 mg/L
13) tC C32	16.45	357603	7.950 mg/L
14) tC C34	17.05	359245	8.130 mg/L
15) tC C36	17.75	333385	8.481 mg/L
16) tC C38	18.63	310763	8.819 mg/L
17) tC C40	19.78	271358	8.955 mg/L
18) tC c42	21.33	247259	8.810 mg/L
19) TC Pristane	12.01	357607	8.245 mg/L m
20) TC Phytane	12.46	370990	8.240 mg/L m
22) tC TPHC - total	11.98	8011671	164.665 mg/L m

0047

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\980925\T06869.D Vial: 6
Acq On : 25 Sep 98 5:40 pm Operator: Deinhardt
Sample : 5 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 29 9:09 1998 Quant Results File: TPH46.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH46.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH46.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.97	200920	4.367 mg/L
Spiked Amount 10.000 Range 8 - 13		Recovery =	43.67%#
Target Compounds			
1) tC C8	4.72	134320	4.855 mg/L m
2) tC C10	7.70	156282	4.997 mg/L
3) TC C12	9.33	172637	4.877 mg/L
4) tC C14	10.51	179999	4.663 mg/L
5) tC C16	11.52	183723	4.530 mg/L
6) tC C18	11.98	205775	4.407 mg/L m
7) tC C20	12.42	198755	4.433 mg/L m
8) tC C22	13.23	194340	4.370 mg/L
9) tC C24	13.98	196692	4.356 mg/L
10) tC C26	14.67	193570	4.318 mg/L
11) tC C28	15.30	192848	4.302 mg/L
12) tC C30	15.89	196157	4.291 mg/L
13) tC C32	16.45	192541	4.281 mg/L
14) tC C34	17.05	193600	4.381 mg/L
15) tC C36	17.75	179718	4.572 mg/L
16) tC C38	18.63	167856	4.764 mg/L
17) tC C40	19.78	146605	4.838 mg/L
18) tC c42	21.32	130708	4.657 mg/L
19) TC Pristane	12.01	192384	4.436 mg/L m
20) TC Phytane	12.46	200005	4.442 mg/L m
22) tC TPHC - total	11.98	4638777	95.342 mg/L m

(f)=RT Delta > 1/2 Window (m)=manual int.

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\980929\T06898.D Vial: 2
Acq On : 29 Sep 98 3:19 pm Operator: Deinhardt
Sample : 50 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E

Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	tC	C8	25.775	25.057 E3	2.8	96	0.00
2	tC	C10	29.249	28.617 E3	2.2	97	0.00
3	TC	C12	32.546	31.854 E3	2.1	97	0.00
4	tC	C14	33.829	32.826 E3	3.0	96	0.00
5	tC	C16	34.299	33.162 E3	3.3	96	0.00
6	tC	C18	38.681	37.065 E3	4.2	96	0.00
7	tC	C20	36.924	35.807 E3	3.0	97	0.00
8	tC	C22	36.263	35.277 E3	2.7	97	0.00
9	tC	C24	36.638	35.704 E3	2.5	97	0.00
10	tC	C26	36.169	35.277 E3	2.5	97	0.00
11	tC	C28	36.046	35.168 E3	2.4	97	0.00
12	tC	C30	36.765	35.630 E3	3.1	96	0.00
13	tC	C32	36.162	34.820 E3	3.7	95	0.00
14	tC	C34	36.405	33.653 E3	7.6	91	0.00
15	tC	C36	33.914	28.405 E3	16.2	83	-0.01
16	tC	C38	31.653	21.965 E3	30.6#	69	-0.02
17	tC	C40	27.621	14.357 E3	48.0#	52	-0.03
18	tC	c42	25.091	8.808 E3	64.9#	35#	-0.05
19	TC	Pristane	35.914	34.597 E3	3.7	95	0.00
20	TC	Phytane	37.098	36.001 E3	3.0	97	0.00
21	sC	o-terphenyl	37.393	36.334 E3	2.8	97	0.00
22	tC	TPHC - total	40.135	34.300 E3	14.5	90	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 3
T06898.D TPH47.M Wed Sep 30 10:36:32 1998 0049 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980929\T06898.D Vial: 2
Acq On : 29 Sep 98 3:19 pm Operator: Deinhardt
Sample : 50 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 29 15:48 1998 Quant Results File: TPH47.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.98	1816688	48.584 mg/L
Spiked Amount 10.000 Range 8 - 13		Recovery =	485.84%#
Target Compounds			
1) tC C8	4.71	1252868	48.608 mg/L m
2) tC C10	7.70	1430850	48.919 mg/L
3) TC C12	9.33	1592713	48.937 mg/L
4) tC C14	10.51	1641284	48.518 mg/L
5) tC C16	11.52	1658080	48.342 mg/L
6) tC C18	11.98	1853273	47.912 mg/L m
7) tC C20	12.42	1790347	48.487 mg/L m
8) tC C22	13.24	1763837	48.640 mg/L
9) tC C24	13.98	1785211	48.725 mg/L
10) tC C26	14.67	1763837	48.767 mg/L
11) tC C28	15.31	1758382	48.782 mg/L
12) tC C30	15.90	1781506	48.456 mg/L
13) tC C32	16.46	1740976	48.144 mg/L
14) tC C34	17.06	1682642	46.220 mg/L
15) tC C36	17.76	1420246	41.877 mg/L
16) tC C38	18.64	1098226	34.696 mg/L
17) tC C40	19.78	717853	25.990 mg/L
18) tC c42	21.32	440416	17.553 mg/L
19) TC Pristane	12.01	1729855	48.166 mg/L m
20) TC Phytane	12.47	1800025	48.520 mg/L m
22) tC TPHC - total	12.01	34299803	854.612 mg/L m

(f)=RT Delta > 1/2 Window (m)=manual int.

Surrogate Recovery Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3921
	DPW. SELFM-PW-EV	**Date Rec'd:**	29-Sep-98
	Bldg. 173	**Analysis Start:**	29-Sep-98
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	30-Sep-98
		UST Reg. #:	
Analysis:	OQA-QAM-025	**Closure #:**	
Matrix:	Soil	**DICAR #:**	
Analyst:	D.DEINHARDT	**Injection Volume**	1 ul
Inst. ID.	GC TPHC INST. #1	**Column ID**	0.32 um
Column Type	RTX 5	**Location #:**	BLDG. 277
Ext. Meth:	Shake		

Sample			Surrogate Added (ppm)	Amount Recovered (ppm)	Percent Recovery
3921.01			10.00	9.11	**91.14**
3921.02			10.00	8.25	**82.49**
3921.03			10.00	9.03	**90.34**
METHOD BLANK	TBLK 171		10.00	10.42	**104.15**

Surrogate Added : **o-Terphenyl**

Quality Control Check Standard Summary
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3921
	DPW. SELFM-PW-EV	**Date Rec'd:**	29-Sep-98
	Bldg. 173	**Analysis Start:**	29-Sep-98
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	30-Sep-98
Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	D.DEINHARDT	**DICAR #:**	
Inst. ID.	GC TPHC INST. #1	**Injection Volume**	1 ul
Column Type	RTX 5	**Column ID**	0.32 um
Ext. Meth:	Shake	**Location #:**	BLDG. 277

Sample	Date Extracted	Spike Amount Added (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
Blank Spike	29-Sep-98	728	880.27	120.92	75-125

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980929\T06905.D Vial: 9
Acq On : 29 Sep 98 7:38 pm Operator: Deinhardt
Sample : TBLK 171 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 30 7:46 1998 Quant Results File: TPH47.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.97	389431	10.415 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery = 104.15%#	
Target Compounds			

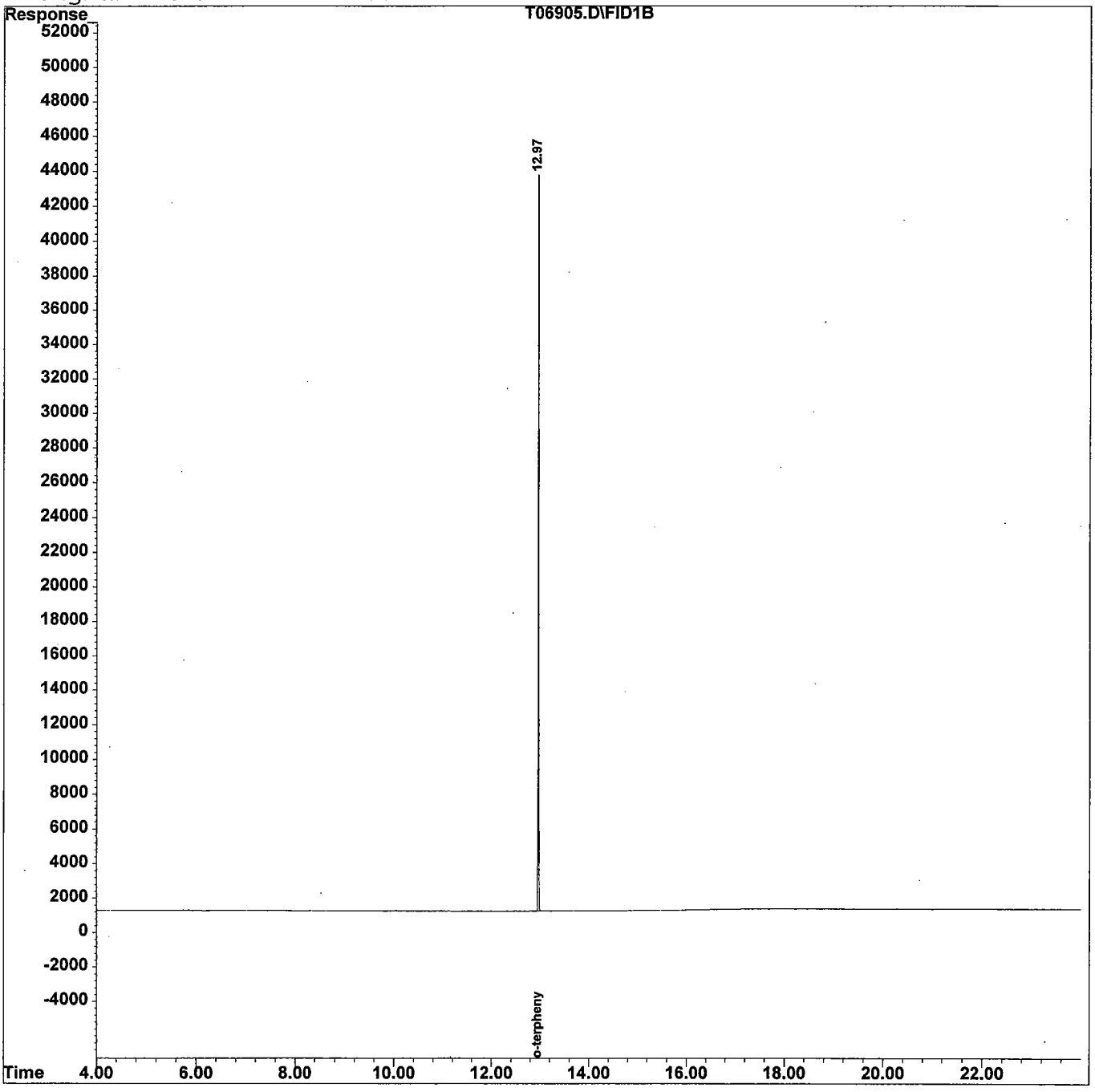
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980929\T06905.D Vial: 9
Acq On : 29 Sep 98 7:38 pm Operator: Deinhardt
Sample : TBLK 171 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 30 7:46 1998 Quant Results File: TPH47.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



0055

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980929\T06902.D Vial: 6
Acq On : 29 Sep 98 5:47 pm Operator: Deinhardt
Sample : 3921.01 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Oct 2 11:27 1998 Quant Results File: TPH47.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.97	340804	9.114 mg/L
Spiked Amount 10.000 Range 8 - 13 Recovery = 91.14%#			
Target Compounds			
19) TC Pristane	12.00	67887	1.890 mg/L
20) TC Phytane	12.46	38331	1.033 mg/L
22) tC TPHC - total	12.97	10577467	263.548 mg/L m

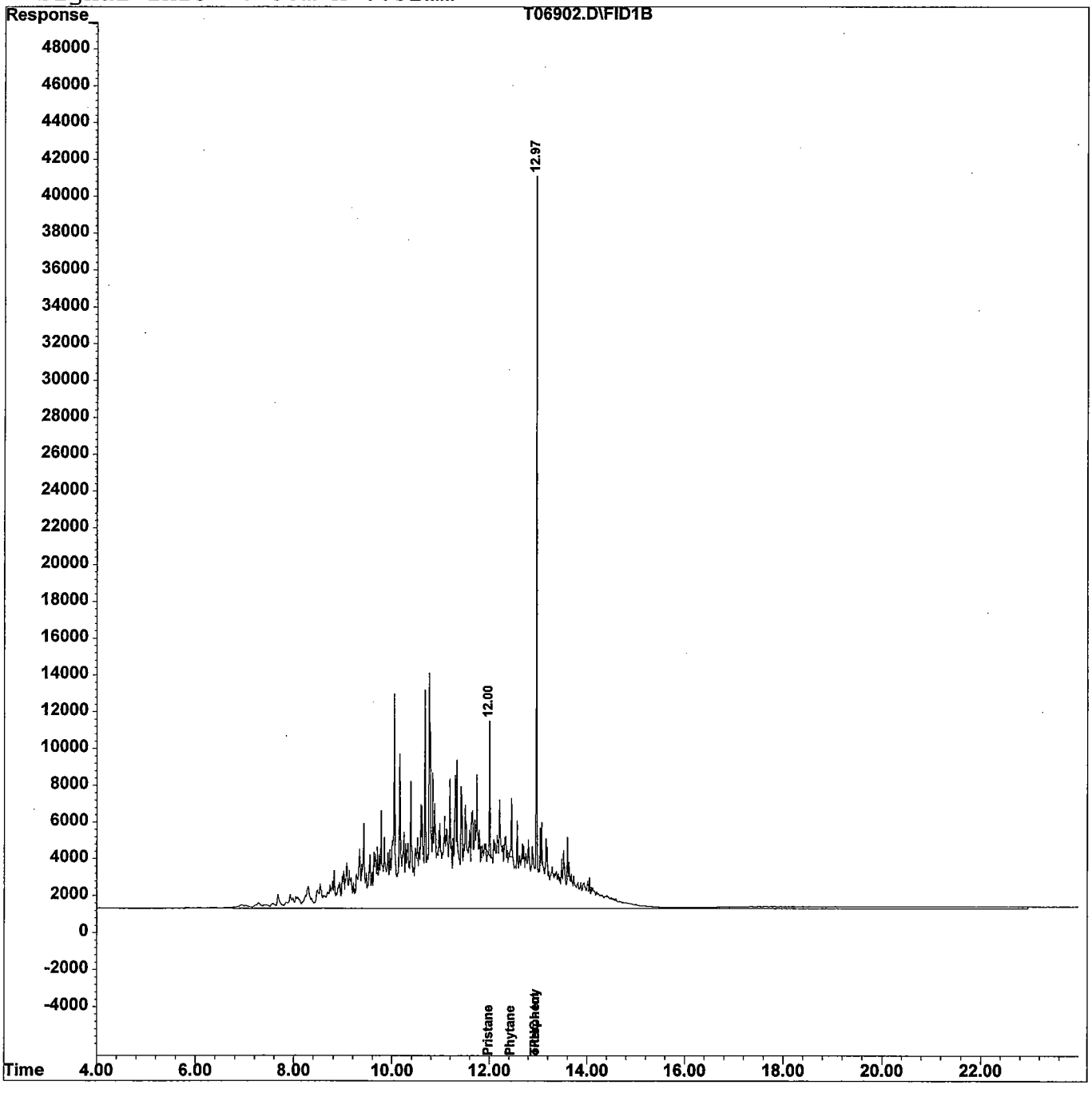
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980929\T06902.D Vial: 6
Acq On : 29 Sep 98 5:47 pm Operator: Deinhardt
Sample : 3921.01 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Oct 2 11:27 1998 Quant Results File: TPH47.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



0037

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980929\T06903.D Vial: 7
Acq On : 29 Sep 98 6:24 pm Operator: Deinhardt
Sample : 3921.02 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 30 7:45 1998 Quant Results File: TPH47.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.97	308439	8.249 mg/L
Spiked Amount 10.000 Range 8 - 13 Recovery = 82.49%#			
Target Compounds			
22) tC TPHC - total	12.97	1706607	42.522 mg/L m

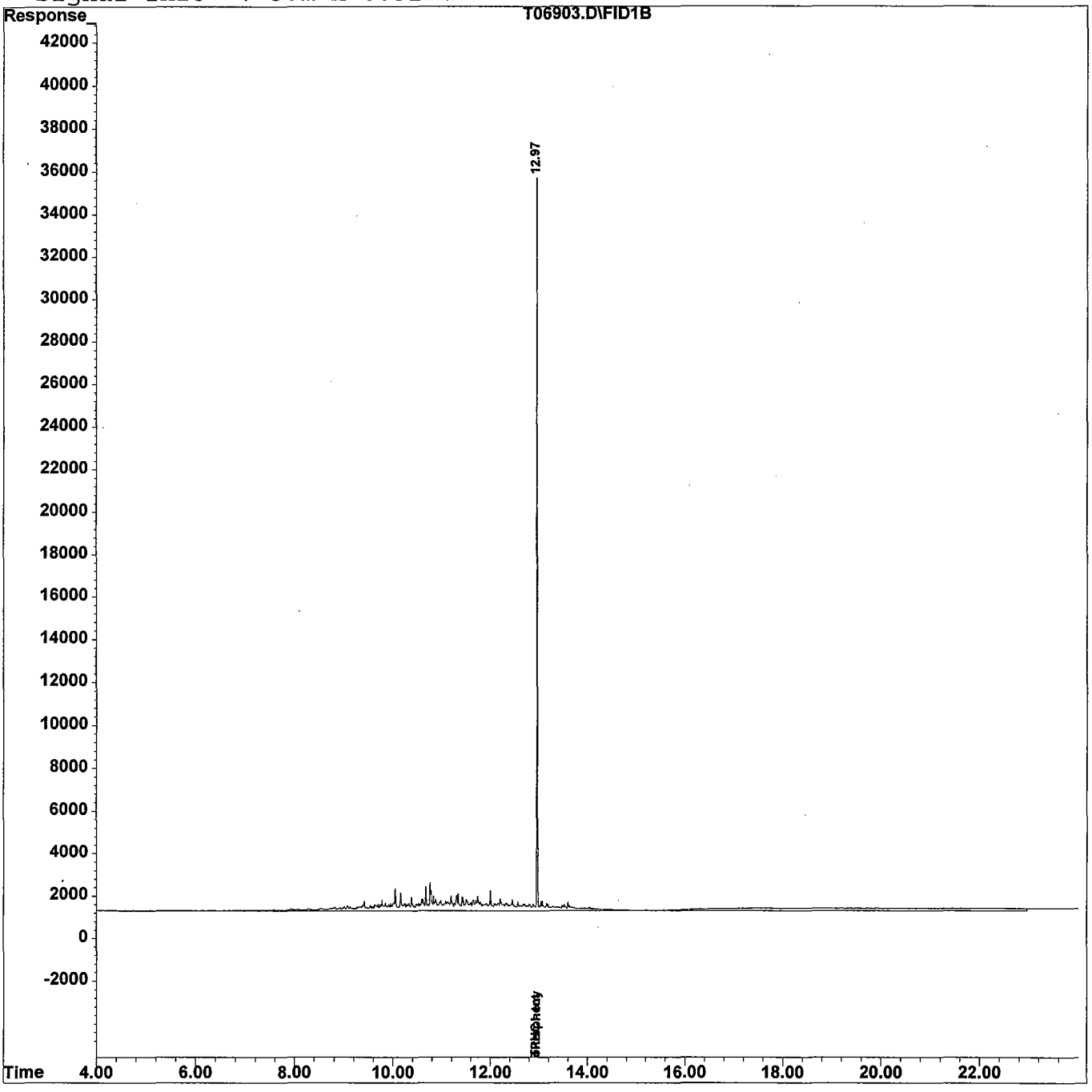
(f)=RT Delta > 1/2 Window (m)=manual int

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980929\T06903.D Vial: 7
Acq On : 29 Sep 98 6:24 pm Operator: Deinhardt
Sample : 3921.02 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 30 7:45 1998 Quant Results File: TPH47.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980929\T06904.D Vial: 8
Acq On : 29 Sep 98 7:01 pm Operator: Deinhardt
Sample : 3921.03 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 30 7:46 1998 Quant Results File: TPH47.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.97	337801	9.034 mg/L
Spiked Amount 10.000 Range 8 - 13 Recovery = 90.34%#			
Target Compounds			
22) tC TPHC - total	12.97	2543707	63.379 mg/L m

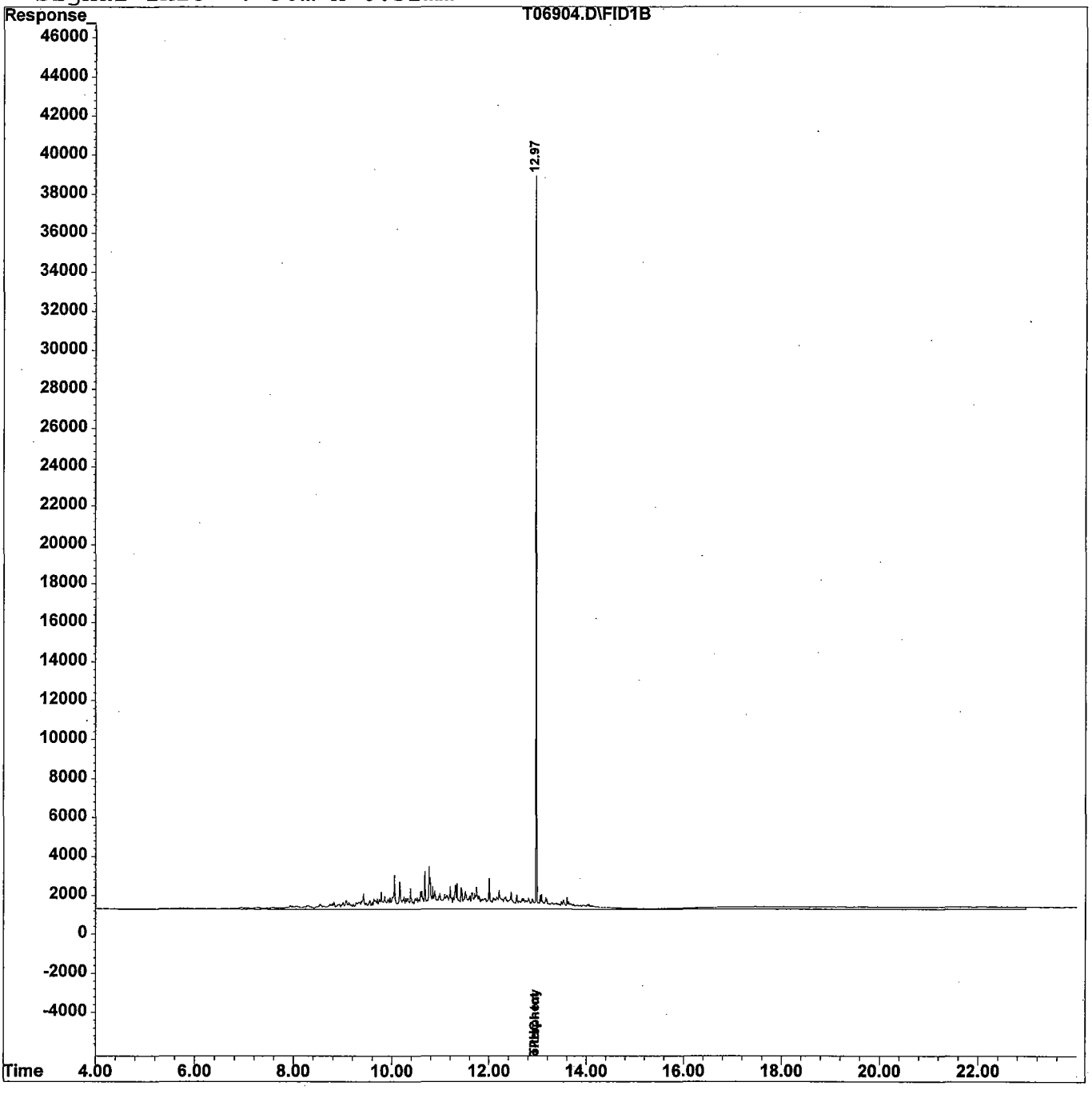
(f)=RT Delta > 1/2 Window (m)=manual int

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980929\T06904.D Vial: 8
Acq On : 29 Sep 98 7:01 pm Operator: Deinhardt
Sample : 3921.03 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 30 7:46 1998 Quant Results File: TPH47.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



0061

LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

THIS FORM MUST BE COMPLETED BY THE LABORATORY OR ENVIRONMENTAL CONSULTANT AND ACCOMPANY ALL DATA SUBMISSIONS

The following Laboratory Deliverables checklist and Non-Conformance Summary shall be included in the data submission. All deviations from the accepted methodology and procedures, of performance values outside acceptable ranges shall be summarized in the Non-Conformance Summary. The Technical Requirements for Site Remediation, effective June 7, 1993, provides further details. The document shall be bound and paginated, contain a table of contents, and all pages shall be legible. Incomplete packages will be returned or held without review until the data package is completed.

It is recommended that the analytical results summary sheets listing all targeted and non-targeted compounds with the method detection limits, practical quantitation limits, and the laboratory and/or sample numbers be included in one section of the data package and in the main body of the report.

1. Cover page, Title Page listing Lab Certification #, facility name and address, & date of report submitted ✓
2. Table of Contents submitted ✓
3. Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted ✓
4. Document paginated and legible ✓
5. Chain of Custody submitted ✓
6. Samples submitted to lab within 48 hours of sample collection ✓
7. Methodology Summary submitted ✓
8. Laboratory Chronicle and Holding Time Check submitted ✓
9. Results submitted on a dry weight basis ✓
10. Method Detection Limits submitted ✓
11. Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP ✓

Laboratory Manager or Environmental Consultant's Signature _____

Date 10/26/98

Laboratory Certification #13461

*Refer to NJAC 7:26E - Appendix A, Section IV - Reduced Data Deliverables - Non-USEPA/CLP Methods for further guidance.

Laboratory Authentication Statement

I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N.J.A.C. 7:18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW-846 for Solid Waste Analysis. I have personally examined the information contained in this report and to the best of my knowledge, I believe that the submitted information is true, accurate, complete and meets the above referenced standards where applicable. I am aware that there are significant penalties for purposefully submitting falsified information, including the possibility of a fine and imprisonment.

Daniel K. Wright
Laboratory Manager

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS
PHONE: (732)532-6224 FAX: (732)532-3484
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING
NJDEP LABORATORY CERTIFICATION # 13461

ANALYTICAL DATA REPORT
Fort Monmouth Environmental Laboratory
ENVIROMENTAL DIVISION
Fort Monmouth, New Jersey
PROJECT: #98-0932/UST REM.

BLDG. 277

Field Location No. & Location	Laboratory Sample ID#	Matrix	Date and Time Of Collection	Date Received
277-15 (6')	3927.01	Soil	30-Sept-98 11:10	09/30/98
277-16 (7')	3927.02	Soil	30-Sept-98 11:20	09/30/98
277-17 (7')	3927.03	Soil	30-Sept-98 11:25	09/30/98
277-18 (6')	3927.04	Soil	30-Sept-98 11:30	09/30/98
277-19 (6')	3927.05	Soil	30-Sept-98 13:25	09/30/98

ANALYSIS:
FORT MONMOUTH ENVIROMENTAL LAB
TPHC, %SOLIDS

10/5/98
Daniel ~~Wright~~/ Date
Laboratory Director

ENCLOSURE:
CHAIN OF CUSTODY
RESULTS

Table of Contents

Method Summary

NJDEP Method OQA-QAM-025-10/97

Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

Fifteen grams (15g)(wet weight) of a soil sample is added to a 125 mL acid cleaned, solvent rinsed, capped Erlenmeyer flask. 15g anhydrous sodium sulfate is added to dry sample. Surrogate standard spiking solution is then added to the flask.

Twenty five milliliters(25mL) Methylene Chloride is added to the flask and it is secured on a gyrotory shaker table. The agitation rate is set to 400rpm and the sample is shaken for 30 minutes. The flask is the removed from the table and the particulate matter is allowed to settle. The extract is transferred to a Teflon capped vial. A second 25mL of Methylene Chloride is added to the flask and shaken for an additional 30 minutes. The flask is again removed and allowed to settle. The extracts are combined in the vial then transferred to a 1mL autosampler vial.

The extract is then injected directly into a GC-FID for analysis. The sample is analyzed for petroleum hydrocarbons covering a range of C8-C42 including pristane and phytane. Total Petroleum Hydrocarbon concentration is determined by integrating between 5 minutes and 22 minutes. The baseline is established by starting the integration after the end of the solvent peak and stopping after the last peak.

The final concentration of Total Petroleum Hydrocarbons is calculated using percent solid, sample weight and concentration.

PHC Conformance/Non-conformance Summary Report

		Indicate Yes, No, N/A
1.	Method Detection Limits provided.	yes
2.	Method Blank Contamination – If yes, list the sample and the corresponding concentrations in each blank.	NO
3.	Matrix Spike Results Summary Meet Criteria (If not met, list the sample and corresponding recovery which falls outside the acceptable range).	yes
4.	Duplicate Results Summary Meet Criteria (If not met, list the sample and corresponding recovery which falls outside the acceptable range).	yes
5.	IR Spectra submitted for standards, blanks and samples.	NA
6.	Chromatograms submitted for standards, blanks and samples if GC fingerprinting was conducted.	yes
7.	Analysis holding time met. (If not met, list number of days exceeded for each sample).	yes

Additional comments: _____

Laboratory Manager

10/15/14
Date

Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-3484 EMail:appleby@doim6.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Charles Appleby
Phone #: X26224
( )DERA (X)OMA ( )Other:

Project No: 98-0932 UST (REM.)
Location: Building 277

Samplers Name / Company : Dave Daniels (SMC)

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	TPHC	% SOLIDS		VO+10		VOC #	↔	H-μg Readings	Comments: RUSH TPHs / RUN VO+10 on TPHs above 1,000 ppm / Remarks / Preservation Method
3927. 01	277-15(6')	9-30-98	11:10	Soil	3	X	X				10		131	ICE
02	277-16(7')		11:20			X	X				0		132	
03	277-17(7')		11:25			X	X				0		133	
04	277-18(6')		11:30			X	X				5		134	
05	277-19(6')		13:25			X	X				0		135	
											Reverse Columns			

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
David L. Daniels	9-30-98 1400	J. Vellucci			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: (_)Full, (X)Reduced, (_)Standard, (_)Screen / non-certified
Turnaround time: (_)Standard 4 wks, (X)Rush ___ Days, (X)ASAP Verbal ___ Hrs.

Remarks: Calibration of H-μg → zero gas = 0.0 ppm
150 butylene 100 ppm at 9.36

print legibly

SMCcoc.xls9/29/98

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3927
	DPW. SELFM-PW-EV	**Date Rec'd:**	30-Sep-98
	Bldg. 173	**Analysis Start:**	30-Sep-98
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	01-Oct-98
Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	D.DEINHARDT	**DICAR #:**	
Inst. ID.	GC TPHC INST. #1	**Injection Volume**	1 ul
Column Type	RTX 5	**Column ID**	0.32 um
Ext. Meth:	Shake	**Location #:**	BLDG. 277

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3927.01	277-15(6')	**1.00**	15.24	88.30	175	**403.69**
3927.02	277-16(7')	**1.00**	15.09	62.05	251	**ND**
3927.03	277-17(7')	**1.00**	15.60	87.63	172	**ND**
3927.04	277-18(6')	**1.00**	15.55	79.85	189	**250.96**
3927.05	277-19(6')	**1.00**	15.26	78.82	195	**ND**
METHOD BLANK	TBLK 172	**1.00**	15.00	100.00	157	**ND**

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright
Laboratory Director

Method : C:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998

Calibration Files
100 =T06865.D 50 =T06866.D 20 =T06867.D
10 =T06868.D 5 =T06869.D

	Compound	100	50	20	10	5	Avg		%RSD
1)	tC C8	2.311	2.599	2.672	2.620	2.686	2.577	E4	5.95
2)	tC C10	2.632	2.942	3.002	2.923	3.126	2.925	E4	6.22
3)	TC C12	2.931	3.295	3.342	3.253	3.453	3.255	E4	6.02
4)	tC C14	3.027	3.417	3.488	3.382	3.600	3.383	E4	6.37
5)	tC C16	3.046	3.450	3.545	3.434	3.674	3.430	E4	6.86
6)	tC C18	3.451	3.853	3.936	3.985	4.116	3.868	E4	6.52
7)	tC C20	3.275	3.707	3.817	3.688	3.975	3.692	E4	7.03
8)	tC C22	3.218	3.646	3.753	3.628	3.887	3.626	E4	6.91
9)	tC C24	3.256	3.685	3.799	3.645	3.934	3.664	E4	6.93
10)	tC C26	3.225	3.643	3.749	3.596	3.871	3.617	E4	6.73
11)	tC C28	3.225	3.634	3.730	3.577	3.857	3.605	E4	6.58
12)	tC C30	3.296	3.706	3.808	3.650	3.923	3.677	E4	6.44
13)	tC C32	3.255	3.653	3.746	3.576	3.851	3.616	E4	6.27
14)	tC C34	3.285	3.678	3.775	3.592	3.872	3.640	E4	6.17
15)	tC C36	3.076	3.434	3.519	3.334	3.594	3.391	E4	5.93
16)	tC C38	2.873	3.199	3.290	3.108	3.357	3.165	E4	5.96
17)	tC C40	2.508	2.784	2.873	2.714	2.932	2.762	E4	5.97
18)	tC c42	2.295	2.537	2.627	2.473	2.614	2.509	E4	5.39
19)	TC Pristane	3.181	3.658	3.694	3.576	3.848	3.591	E4	6.96
20)	TC Phytane	3.286	3.723	3.831	3.710	4.000	3.710	E4	7.11
21)	sC o-terphenyl	3.321	3.756	3.867	3.734	4.018	3.739	E4	6.93
22)	tC TPHC - total	3.501	3.820	4.101	4.006	4.639	4.013	E4	10.41

(#) = Out of Range MEAN RSD = 6.62%

TPH47.M Tue Sep 29 09:14:24 1998

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980925\T06865.D Vial: 2
Acq On : 25 Sep 98 3:06 pm Operator: Deinhardt
Sample : 100 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 29 9:02 1998 Quant Results File: TPH46.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH46.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH46.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.98	3321489	72.198 mg/L
Spiked Amount 10.000 Range 8 - 13		Recovery =	721.98%#
Target Compounds			
1) tC C8	4.72	2311044	83.537 mg/L
2) tC C10	7.71	2631777	84.144 mg/L
3) TC C12	9.34	2930730	82.785 mg/L
4) tC C14	10.52	3026978	78.410 mg/L
5) tC C16	11.53	3045508	75.084 mg/L
6) tC C18	11.99	3450510	73.906 mg/L m
7) tC C20	12.43	3275410	73.056 mg/L m
8) tC C22	13.25	3218031	72.364 mg/L
9) tC C24	13.99	3256322	72.113 mg/L
10) tC C26	14.68	3224873	71.938 mg/L
11) tC C28	15.32	3225253	71.950 mg/L
12) tC C30	15.91	3295843	72.096 mg/L
13) tC C32	16.47	3254589	72.358 mg/L
14) tC C34	17.07	3285160	74.347 mg/L
15) tC C36	17.78	3076094	78.252 mg/L
16) tC C38	18.67	2873014	81.535 mg/L
17) tC C40	19.83	2507713	82.752 mg/L
18) tC c42	21.39	2294516	81.758 mg/L
19) TC Pristane	12.02	3180800	73.341 mg/L m
20) TC Phytane	12.48	3286047	72.987 mg/L m
22) tC TPHC - total	12.02	70024293	1439.221 mg/L m

(f)=RT Delta > 1/2 Window (m)=manual int. 07

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\980925\T06867.D Vial: 4
Acq On : 25 Sep 98 4:24 pm Operator: Deinhardt
Sample : 20 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 29 9:06 1998 Quant Results File: TPH46.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH46.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH46.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.97	773309	16.809 mg/L
Spiked Amount 10.000 Range 8 - 13		Recovery =	168.09%#
Target Compounds			
1) tC C8	4.72	534332	19.314 mg/L m
2) tC C10	7.71	600427	19.197 mg/L
3) TC C12	9.33	668324	18.878 mg/L
4) tC C14	10.51	697613	18.071 mg/L
5) tC C16	11.52	709094	17.482 mg/L
6) tC C18	11.98	787167	16.860 mg/L m
7) tC C20	12.42	763303	17.025 mg/L m
8) tC C22	13.24	750587	16.878 mg/L
9) tC C24	13.98	759712	16.824 mg/L
10) tC C26	14.67	749847	16.727 mg/L
11) tC C28	15.31	745956	16.641 mg/L
12) tC C30	15.90	761540	16.659 mg/L
13) tC C32	16.46	749291	16.659 mg/L
14) tC C34	17.06	754936	17.085 mg/L
15) tC C36	17.76	703828	17.904 mg/L
16) tC C38	18.64	658032	18.675 mg/L
17) tC C40	19.79	574523	18.959 mg/L
18) tC c42	21.34	525434	18.722 mg/L
19) TC Pristane	12.01	738844	17.036 mg/L m
20) TC Phytane	12.46	766106	17.016 mg/L m
22) tC TPHC - total	11.98	16404755	337.170 mg/L m

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\980925\T06868.D Vial: 5
Acq On : 25 Sep 98 5:02 pm Operator: Deinhardt
Sample : 10 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 29 9:07 1998 Quant Results File: TPH46.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH46.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH46.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.97	373430	8.117 mg/L
Spiked Amount 10.000 Range 8 - 13 Recovery = 81.17%#			
Target Compounds			
1) tC C8	4.69	261969	9.469 mg/L m
2) tC C10	7.70	292338	9.347 mg/L
3) TC C12	9.33	325348	9.190 mg/L
4) tC C14	10.51	338235	8.762 mg/L
5) tC C16	11.52	343385	8.466 mg/L
6) tC C18	11.98	398504	8.535 mg/L m
7) tC C20	12.42	368759	8.225 mg/L m
8) tC C22	13.23	362789	8.158 mg/L
9) tC C24	13.98	364497	8.072 mg/L
10) tC C26	14.67	359612	8.022 mg/L
11) tC C28	15.30	357714	7.980 mg/L
12) tC C30	15.89	364977	7.984 mg/L
13) tC C32	16.45	357603	7.950 mg/L
14) tC C34	17.05	359245	8.130 mg/L
15) tC C36	17.75	333385	8.481 mg/L
16) tC C38	18.63	310763	8.819 mg/L
17) tC C40	19.78	271358	8.955 mg/L
18) tC c42	21.33	247259	8.810 mg/L
19) TC Pristane	12.01	357607	8.245 mg/L m
20) TC Phytane	12.46	370990	8.240 mg/L m
22) tC TPHC - total	11.98	8011671	164.665 mg/L m

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\980925\T06869.D Vial: 6
Acq On : 25 Sep 98 5:40 pm Operator: Deinhardt
Sample : 5 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 29 9:09 1998 Quant Results File: TPH46.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH46.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH46.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.97	200920	4.367 mg/L
Spiked Amount 10.000 Range 8 - 13		Recovery =	43.67%#
Target Compounds			
1) tC C8	4.72	134320	4.855 mg/L m
2) tC C10	7.70	156282	4.997 mg/L
3) TC C12	9.33	172637	4.877 mg/L
4) tC C14	10.51	179999	4.663 mg/L
5) tC C16	11.52	183723	4.530 mg/L
6) tC C18	11.98	205775	4.407 mg/L m
7) tC C20	12.42	198755	4.433 mg/L m
8) tC C22	13.23	194340	4.370 mg/L
9) tC C24	13.98	196692	4.356 mg/L
10) tC C26	14.67	193570	4.318 mg/L
11) tC C28	15.30	192848	4.302 mg/L
12) tC C30	15.89	196157	4.291 mg/L
13) tC C32	16.45	192541	4.281 mg/L
14) tC C34	17.05	193600	4.381 mg/L
15) tC C36	17.75	179718	4.572 mg/L
16) tC C38	18.63	167856	4.764 mg/L
17) tC C40	19.78	146605	4.838 mg/L
18) tC c42	21.32	130708	4.657 mg/L
19) TC Pristane	12.01	192384	4.436 mg/L m
20) TC Phytane	12.46	200005	4.442 mg/L m
22) tC TPHC - total	11.98	4638777	95.342 mg/L m

(f)=RT Delta > 1/2 Window (m)=manual int.

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\980929\T06911.D Vial: 2
Acq On : 30 Sep 98 8:35 am Operator: Deinhardt
Sample : 50 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E

Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	tC	C8	25.775	23.297 E3	9.6	90	0.00
2	tC	C10	29.249	26.987 E3	7.7	92	0.00
3	TC	C12	32.546	30.156 E3	7.3	92	0.00
4	tC	C14	33.829	31.016 E3	8.3	91	0.00
5	tC	C16	34.299	31.261 E3	8.9	91	0.00
6	tC	C18	38.681	35.464 E3	8.3	92	0.00
7	tC	C20	36.924	33.399 E3	9.5	90	0.00
8	tC	C22	36.263	33.075 E3	8.8	91	0.00
9	tC	C24	36.638	33.503 E3	8.6	91	0.00
10	tC	C26	36.169	33.209 E3	8.2	91	0.00
11	tC	C28	36.046	33.097 E3	8.2	91	0.00
12	tC	C30	36.765	33.823 E3	8.0	91	0.00
13	tC	C32	36.162	33.166 E3	8.3	91	0.00
14	tC	C34	36.405	32.451 E3	10.9	88	0.00
15	tC	C36	33.914	28.076 E3	17.2	82	-0.01
16	tC	C38	31.653	22.983 E3	27.4#	72	-0.02
17	tC	C40	27.621	16.554 E3	40.1#	59	-0.03
18	tC	c42	25.091	12.108 E3	51.7#	48#	-0.04
19	TC	Pristane	35.914	33.506 E3	6.7	92	0.00
20	TC	Phytane	37.098	33.694 E3	9.2	91	0.00
21	sC	o-terphenyl	37.393	34.023 E3	9.0	91	0.00
22	tC	TPHC - total	40.135	34.391 E3	14.3	90	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 3

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\980929\T06922.D Vial: 13
Acq On : 30 Sep 98 9:46 pm Operator: Deinhardt
Sample : 50 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E

Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	tC	C8	25.775	25.214 E3	2.2	97	0.00
2	tC	C10	29.249	29.238 E3	0.0	99	0.00
3	TC	C12	32.546	32.788 E3	-0.7	100	0.00
4	tC	C14	33.829	33.856 E3	-0.1	99	0.00
5	tC	C16	34.299	34.158 E3	0.4	99	0.00
6	tC	C18	38.681	39.135 E3	-1.2	102	0.00
7	tC	C20	36.924	36.780 E3	0.4	99	0.00
8	tC	C22	36.263	36.235 E3	0.1	99	0.00
9	tC	C24	36.638	36.696 E3	-0.2	100	0.00
10	tC	C26	36.169	36.468 E3	-0.8	100	0.00
11	tC	C28	36.046	36.307 E3	-0.7	100	0.00
12	tC	C30	36.765	37.022 E3	-0.7	100	0.00
13	tC	C32	36.162	36.372 E3	-0.6	100	0.00
14	tC	C34	36.405	35.625 E3	2.1	97	0.00
15	tC	C36	33.914	30.827 E3	9.1	90	-0.01
16	tC	C38	31.653	24.946 E3	21.2	78	-0.02
17	tC	C40	27.621	17.789 E3	35.6#	64	-0.03
18	tC	c42	25.091	12.737 E3	49.2#	50	-0.04
19	TC	Pristane	35.914	35.836 E3	0.2	98	0.00
20	TC	Phytane	37.098	36.945 E3	0.4	99	0.00
21	sC	o-terphenyl	37.393	37.224 E3	0.5	99	0.00
22	tC	TPHC - total	40.135	37.248 E3	7.2	97	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 2

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980929\T06922.D Vial: 13
Acq On : 30 Sep 98 9:46 pm Operator: Deinhardt
Sample : 50 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Oct 1 8:25 1998 Quant Results File: TPH47.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.98	1861184	49.774 mg/L
Spiked Amount 10.000 Range 8 - 13	Recovery = 497.74%#		
Target Compounds			
1) tC C8	4.70	1260680	48.911 mg/L
2) tC C10	7.70	1461919	49.982 mg/L
3) TC C12	9.33	1639409	50.372 mg/L
4) tC C14	10.51	1692811	50.041 mg/L
5) tC C16	11.52	1707884	49.794 mg/L
6) tC C18	11.98	1956753	50.587 mg/L m
7) tC C20	12.42	1839013	49.805 mg/L m
8) tC C22	13.24	1811726	49.960 mg/L
9) tC C24	13.98	1834806	50.079 mg/L
10) tC C26	14.67	1823395	50.414 mg/L
11) tC C28	15.31	1815366	50.362 mg/L
12) tC C30	15.90	1851110	50.349 mg/L
13) tC C32	16.46	1818575	50.290 mg/L
14) tC C34	17.06	1781256	48.929 mg/L
15) tC C36	17.76	1541326	45.448 mg/L
16) tC C38	18.64	1247276	39.405 mg/L
17) tC C40	19.78	889451	32.202 mg/L
18) tC c42	21.33	636835	25.381 mg/L
19) TC Pristane	12.01	1791786	49.890 mg/L m
20) TC Phytane	12.47	1847242	49.793 mg/L m
22) tC TPHC - total	12.01	37247915	928.067 mg/L m

(f)=RT Delta > 1/2 Window (m)=manual int.

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\980929\T06933.D Vial: 24
Acq On : 1 Oct 98 4:30 am Operator: Deinhardt
Sample : 50 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E

Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	tC	C8	25.775	24.607 E3	4.5	95	0.00
2	tC	C10	29.249	28.061 E3	4.1	95	0.00
3	TC	C12	32.546	31.177 E3	4.2	95	0.00
4	tC	C14	33.829	32.202 E3	4.8	94	0.00
5	tC	C16	34.299	32.515 E3	5.2	94	0.00
6	tC	C18	38.681	37.447 E3	3.2	97	0.00
7	tC	C20	36.924	35.043 E3	5.1	95	0.00
8	tC	C22	36.263	34.487 E3	4.9	95	0.00
9	tC	C24	36.638	34.924 E3	4.7	95	0.00
10	tC	C26	36.169	34.596 E3	4.3	95	0.00
11	tC	C28	36.046	34.534 E3	4.2	95	0.00
12	tC	C30	36.765	35.282 E3	4.0	95	0.00
13	tC	C32	36.162	34.559 E3	4.4	95	0.00
14	tC	C34	36.405	33.911 E3	6.9	92	0.00
15	tC	C36	33.914	29.677 E3	12.5	86	-0.01
16	tC	C38	31.653	24.763 E3	21.8	77	-0.02
17	tC	C40	27.621	18.871 E3	31.7#	68	-0.02
18	tC	c42	25.091	14.956 E3	40.4#	59	-0.03
19	TC	Pristane	35.914	33.525 E3	6.7	92	0.00
20	TC	Phytane	37.098	35.112 E3	5.4	94	0.00
21	sC	o-terphenyl	37.393	35.446 E3	5.2	94	0.00
22	tC	TPHC - total	40.135	34.916 E3	13.0	91	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 2

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980929\T06933.D Vial: 24
Acq On : 1 Oct 98 4:30 am Operator: Deinhardt
Sample : 50 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Oct 1 8:33 1998 Quant Results File: TPH47.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.98	1772291	47.397 mg/L
Spiked Amount 10.000 Range 8 - 13		Recovery = 473.97%#	
Target Compounds			
1) tC C8	4.71	1230329	47.733 mg/L
2) tC C10	7.70	1403066	47.970 mg/L
3) TC C12	9.33	1558856	47.897 mg/L
4) tC C14	10.51	1610092	47.596 mg/L
5) tC C16	11.52	1625738	47.399 mg/L
6) tC C18	11.98	1872363	48.406 mg/L m
7) tC C20	12.42	1752134	47.453 mg/L m
8) tC C22	13.24	1724373	47.552 mg/L
9) tC C24	13.98	1746204	47.661 mg/L
10) tC C26	14.67	1729789	47.826 mg/L
11) tC C28	15.31	1726680	47.902 mg/L
12) tC C30	15.90	1764099	47.983 mg/L
13) tC C32	16.46	1727961	47.784 mg/L
14) tC C34	17.06	1695570	46.576 mg/L
15) tC C36	17.76	1483858	43.753 mg/L
16) tC C38	18.64	1238139	39.116 mg/L
17) tC C40	19.79	943566	34.162 mg/L
18) tC c42	21.33	747783	29.803 mg/L
19) TC Pristane	12.01	1676227	46.673 mg/L m
20) TC Phytane	12.47	1755582	47.322 mg/L m
22) tC TPHC - total	12.01	34916469	869.977 mg/L m

(f)=RT Delta > 1/2 Window (m)=manual int.

Surrogate Recovery Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3927
	DPW. SELFM-PW-EV	**Date Rec'd:**	30-Sep-98
	Bldg. 173	**Analysis Start:**	30-Sep-98
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	01-Oct-98
		UST Reg. #:	
Analysis:	OQA-QAM-025	**Closure #:**	
Matrix:	Soil	**DICAR #:**	
Analyst:	D.DEINHARDT	**Injection Volume**	1 ul
Inst. ID.	GC TPHC INST. #1	**Column ID**	0.32 um
Column Type	RTX 5	**Location #:**	BLDG. 277
Ext. Meth:	Shake		

Sample			Surrogate Added (ppm)	Amount Recovered (ppm)	Percent Recovery
3927.01			10.00	11.24	**112.38**
3927.02			10.00	9.66	**96.61**
3927.03			10.00	8.87	**88.65**
3927.04			10.00	10.04	**100.44**
3927.05			10.00	9.80	**97.98**
METHOD BLANK	TBLK 172		10.00	10.85	**108.48**

Surrogate Added : **o-Terphenyl**

Matrix Spike / Duplicate Recovery Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3927
	DPW. SELFM-PW-EV	**Date Rec'd:**	30-Sep-98
	Bldg. 173	**Analysis Start:**	30-Sep-98
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	01-Oct-98

Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	D.DEINHARDT	**DICAR #:**	
Inst. ID.	GC TPHC INST. #1	**Injection Volume**	1 ul
Column Type	RTX 5	**Column ID**	0.32 um
Ext. Meth:	Shake	**Location #:**	BLDG. 277

Sample	Spike Amount Added (ppm)	Sample Amount (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
3925.01MS	728	0.00	869.08	119.38	75-125
3925.01MSD	728	0.00	856.41	117.64	75-125
			RPD	1.47	20.00

Quality Control Check Standard Summary
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3927
	DPW. SELFM-PW-EV	**Date Rec'd:**	30-Sep-98
	Bldg. 173	**Analysis Start:**	30-Sep-98
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	01-Oct-98
Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	D.DEINHARDT	**DICAR #:**	
Inst. ID.	GC TPHC INST. #1	**Injection Volume**	1 ul
Column Type	RTX 5	**Column ID**	0.32 um
Ext. Meth:	Shake	**Location #:**	BLDG. 277

Sample	Date Extracted	Spike Amount Added (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
Blank Spike	30-Sep-98	728	898.07	123.36	75-125

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980929\T06931.D Vial: 22
Acq On : 1 Oct 98 3:16 am Operator: Deinhardt
Sample : TBLK 172 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Oct 1 8:31 1998 Quant Results File: TPH47.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.97	405631	10.848 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery = 108.48%#	
Target Compounds			

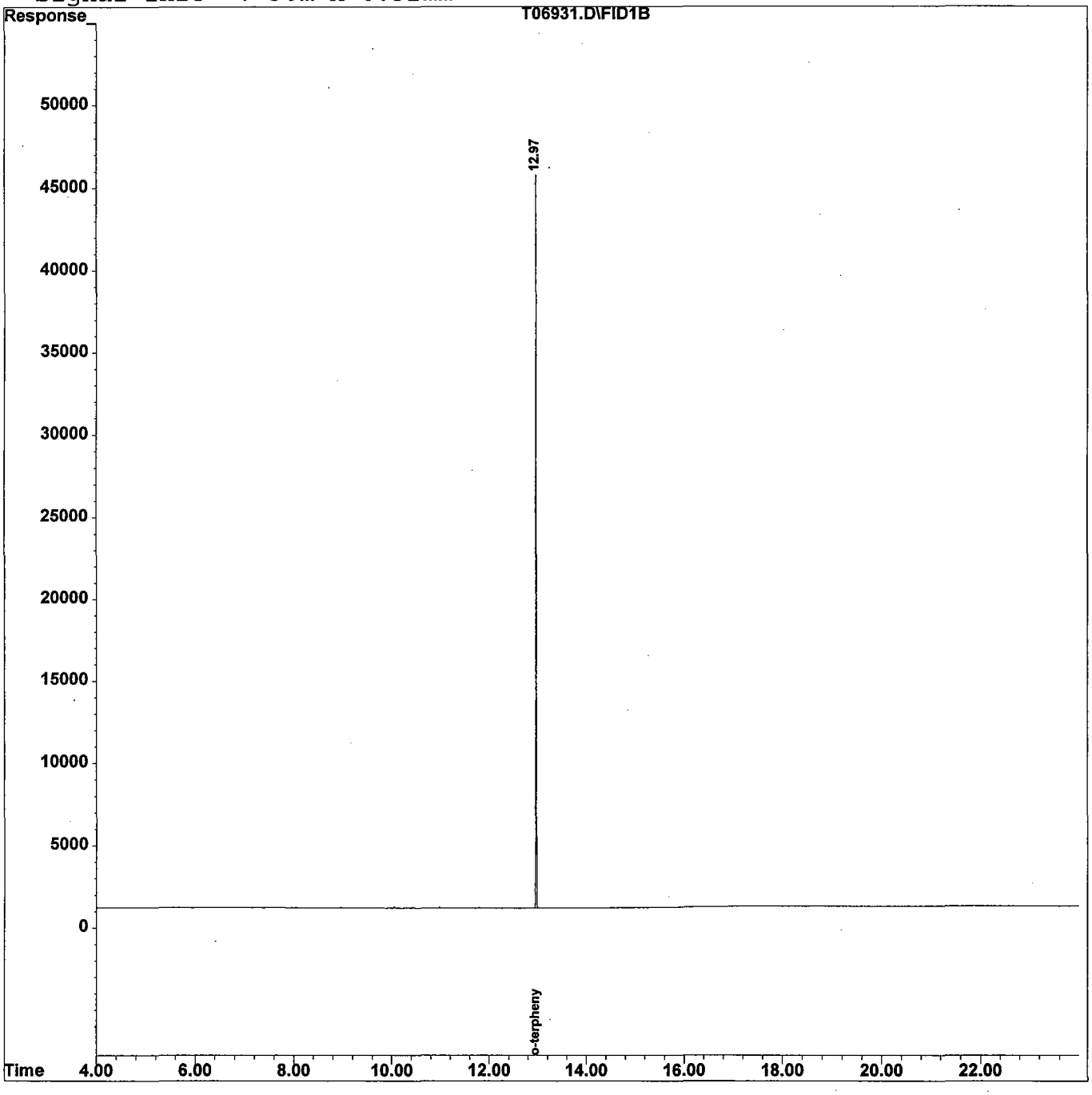
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980929\T06931.D Vial: 22
Acq On : 1 Oct 98 3:16 am Operator: Deinhardt
Sample : TBLK 172 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Oct 1 8:31 1998 Quant Results File: TPH47.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\981005\T06969.D Vial: 14
Acq On : 5 Oct 98 10:17 pm Operator: Deinhardt
Sample : 3927.01 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Oct 6 10:45 1998 Quant Results File: TPH48.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH48.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH48.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.97	237141	11.238 mg/L
Spiked Amount 10.000 Range 8 - 13	Recovery = 112.38%#		
Target Compounds			
22) tC TPHC - total	12.97	2356131	108.648 mg/L m

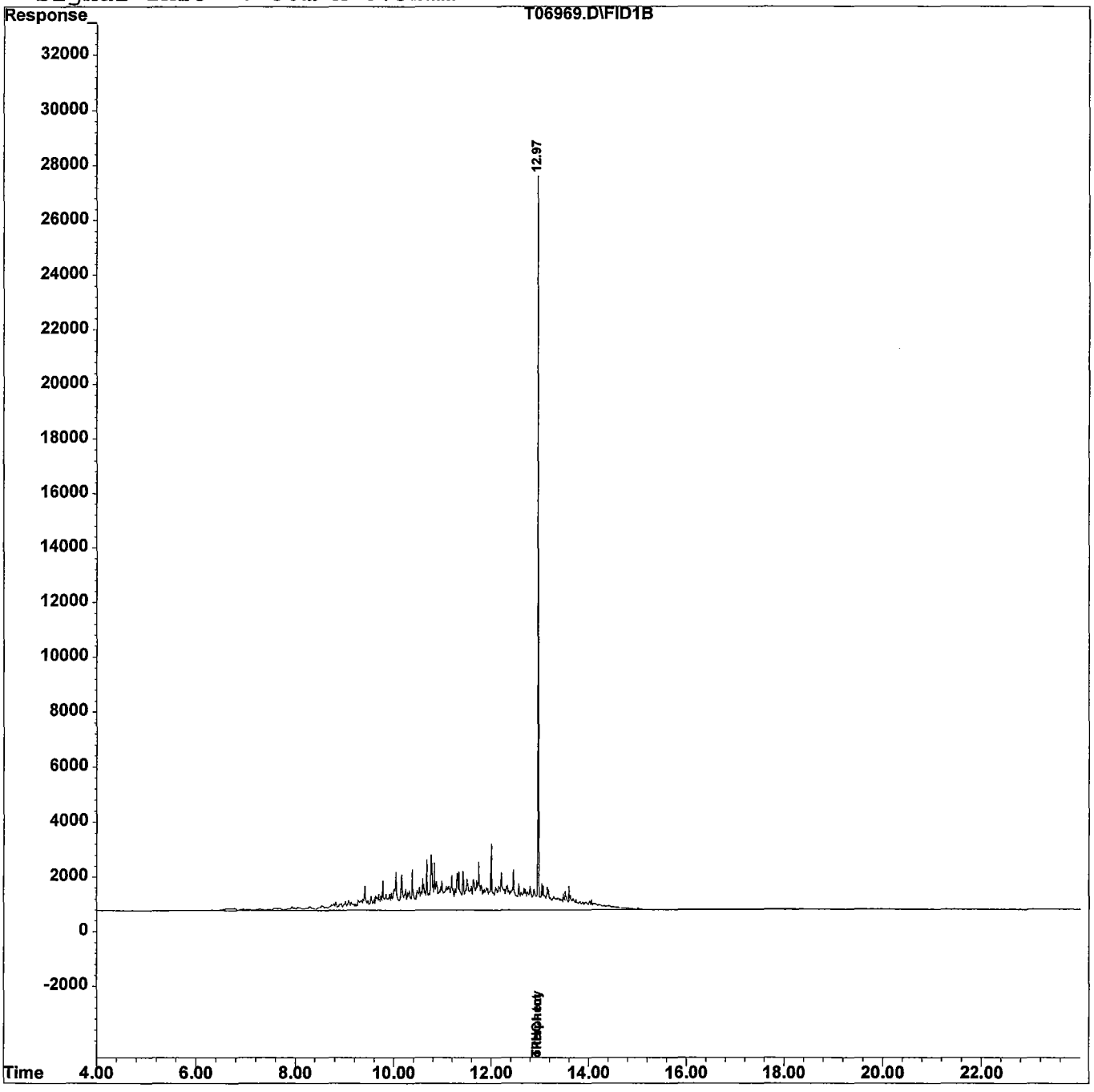
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\981005\T06969.D Vial: 14
Acq On : 5 Oct 98 10:17 pm Operator: Deinhardt
Sample : 3927.01 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Oct 6 10:45 1998 Quant Results File: TPH48.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH48.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH48.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980929\T06914.D Vial: 5
Acq On : 30 Sep 98 4:52 pm Operator: Deinhardt
Sample : 3927.02 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Oct 1 8:21 1998 Quant Results File: TPH47.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.97	361233	9.661 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery =	96.61%#
Target Compounds			

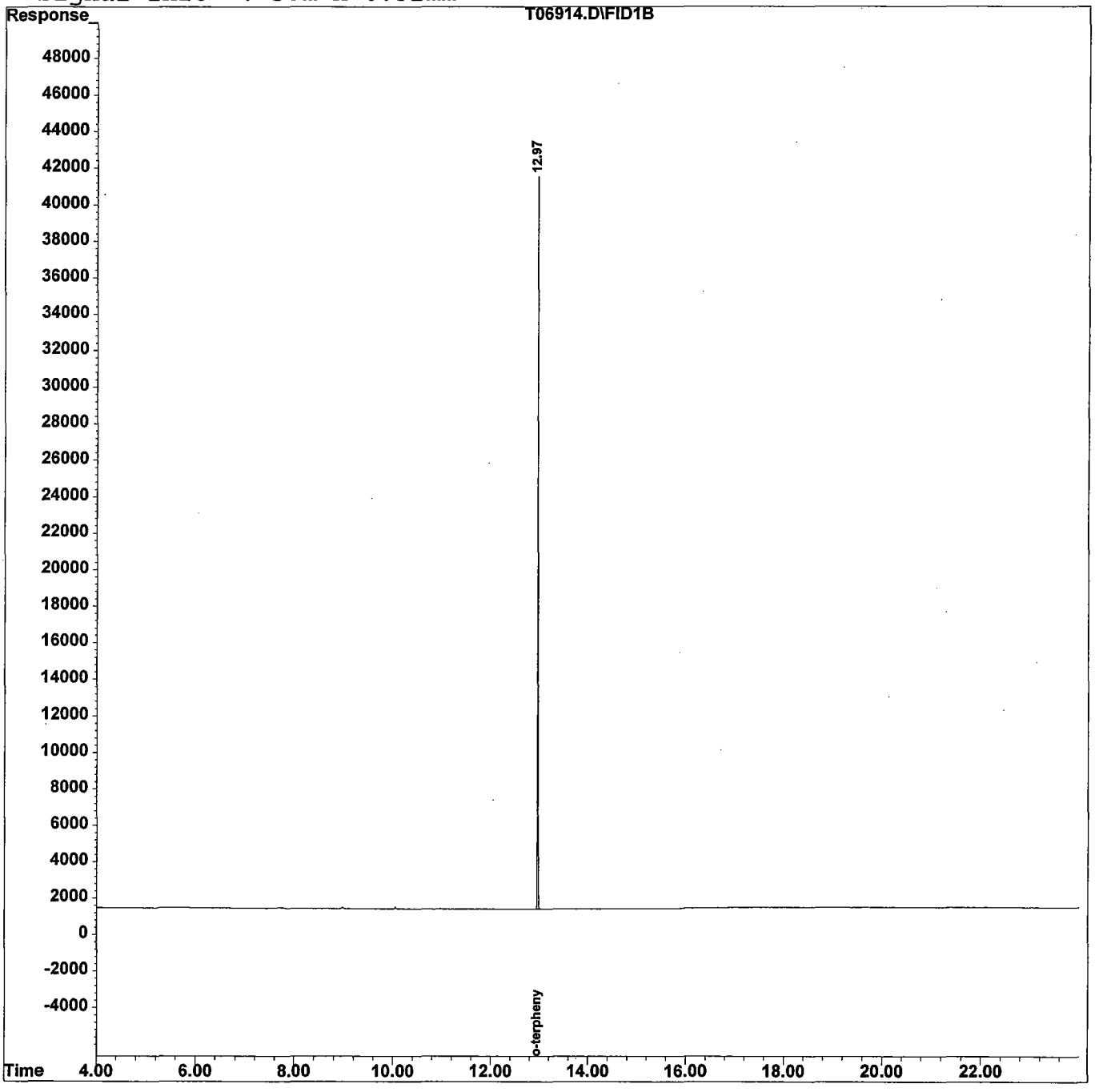
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980929\T06914.D Vial: 5
Acq On : 30 Sep 98 4:52 pm Operator: Deinhardt
Sample : 3927.02 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Oct 1 8:21 1998 Quant Results File: TPH47.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\981001\T06948.D Vial: 10
Acq On : 1 Oct 98 9:38 pm Operator: Deinhardt
Sample : 3927.03 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Oct 2 9:35 1998 Quant Results File: TPH47.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.97	331502	8.865 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery =	88.65%#
Target Compounds			

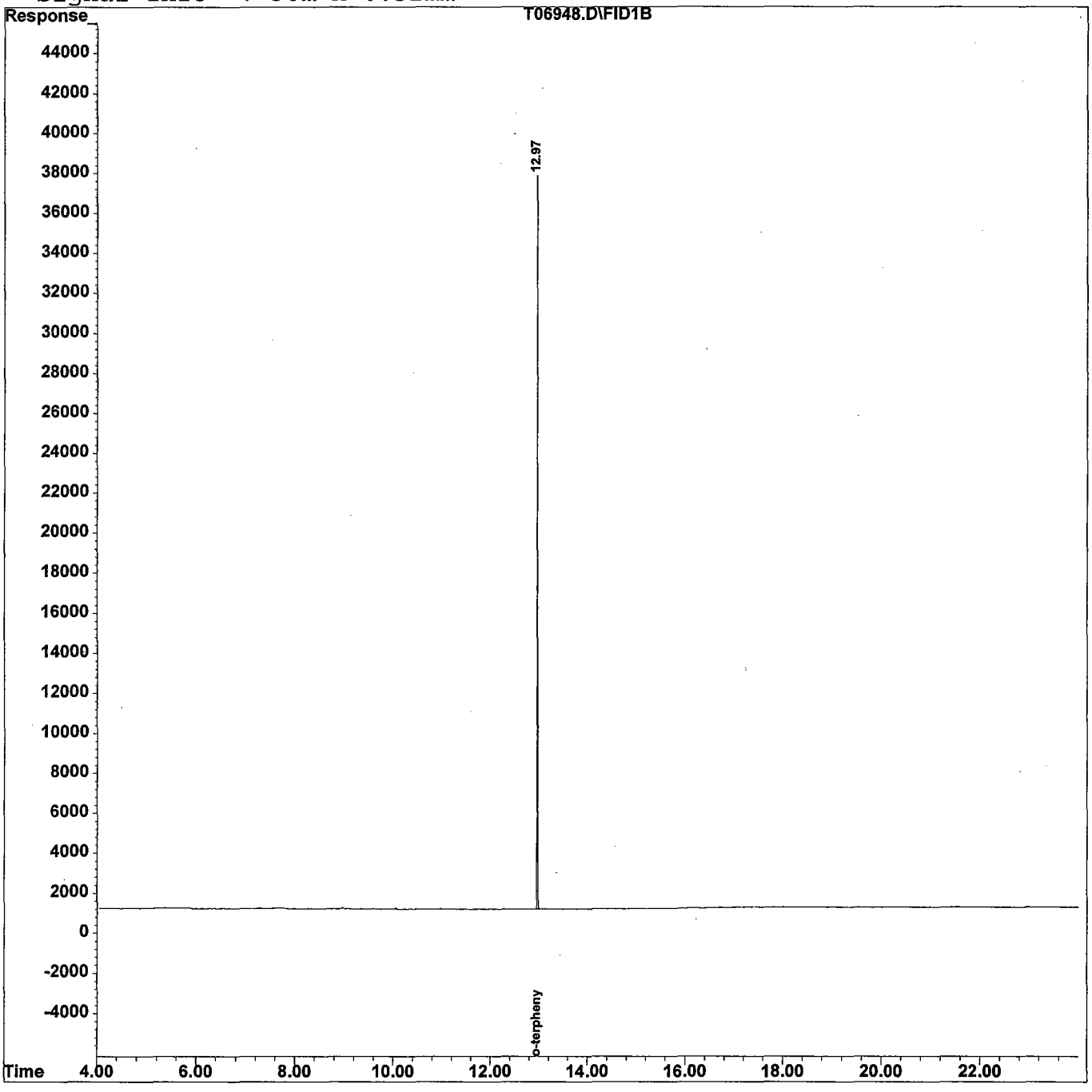
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\981001\T06948.D Vial: 10
Acq On : 1 Oct 98 9:38 pm Operator: Deinhardt
Sample : 3927.03 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Oct 2 9:35 1998 Quant Results File: TPH47.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980929\T06916.D Vial: 7
Acq On : 30 Sep 98 6:05 pm Operator: Deinhardt
Sample : 3927.04 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Oct 1 8:22 1998 Quant Results File: TPH47.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.97	375579	10.044 mg/L
Spiked Amount 10.000 Range 8 - 13 Recovery = 100.44%#			
Target Compounds			
22) tC TPHC - total	12.97	2501301	62.322 mg/L m

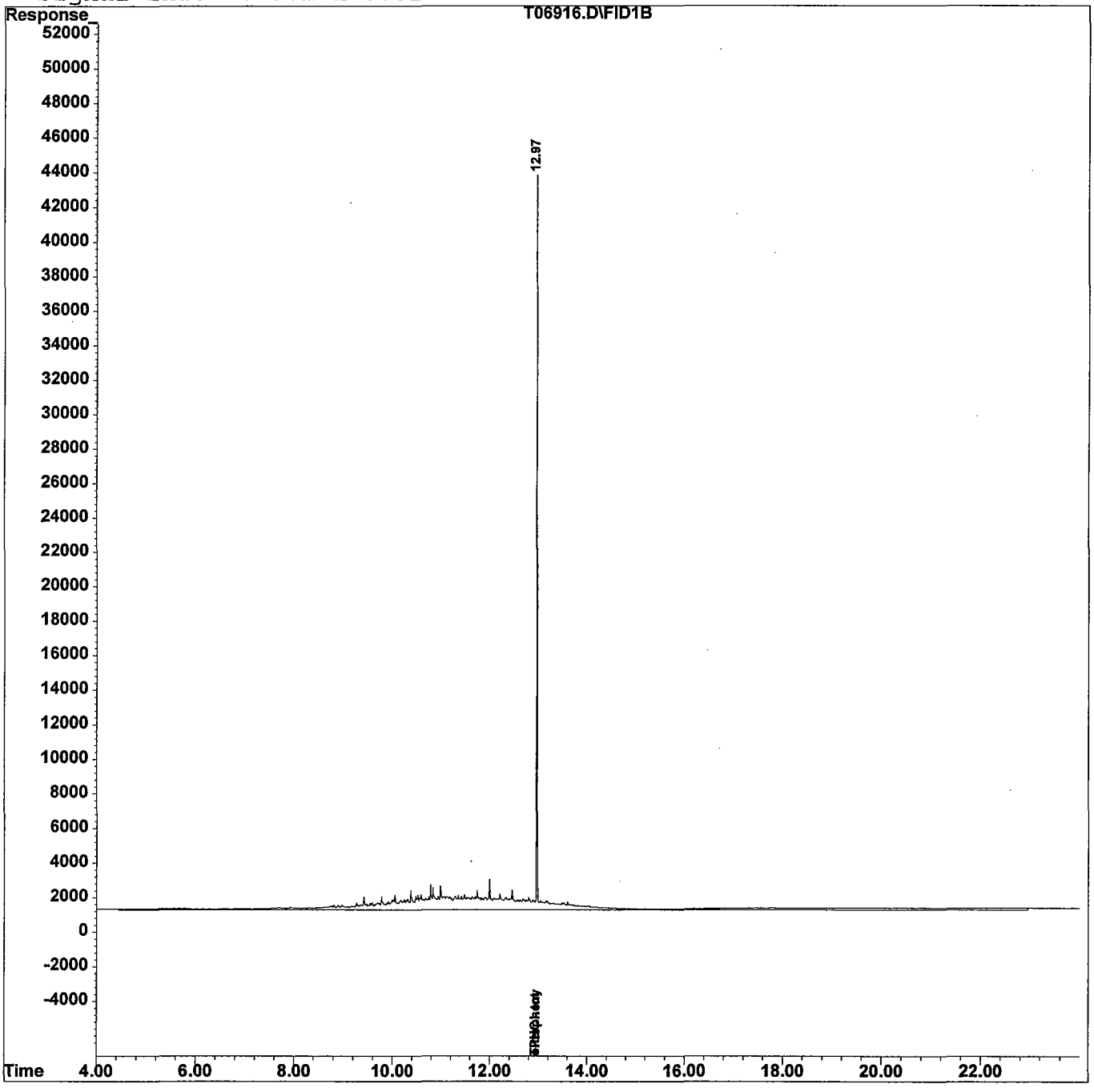
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980929\T06916.D Vial: 7
Acq On : 30 Sep 98 6:05 pm Operator: Deinhardt
Sample : 3927.04 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Oct 1 8:22 1998 Quant Results File: TPH47.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980929\T06917.D Vial: 8
Acq On : 30 Sep 98 6:42 pm Operator: Deinhardt
Sample : 3927.05 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Oct 1 8:22 1998 Quant Results File: TPH47.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.97	366388	9.798 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery =	97.98%#
Target Compounds			

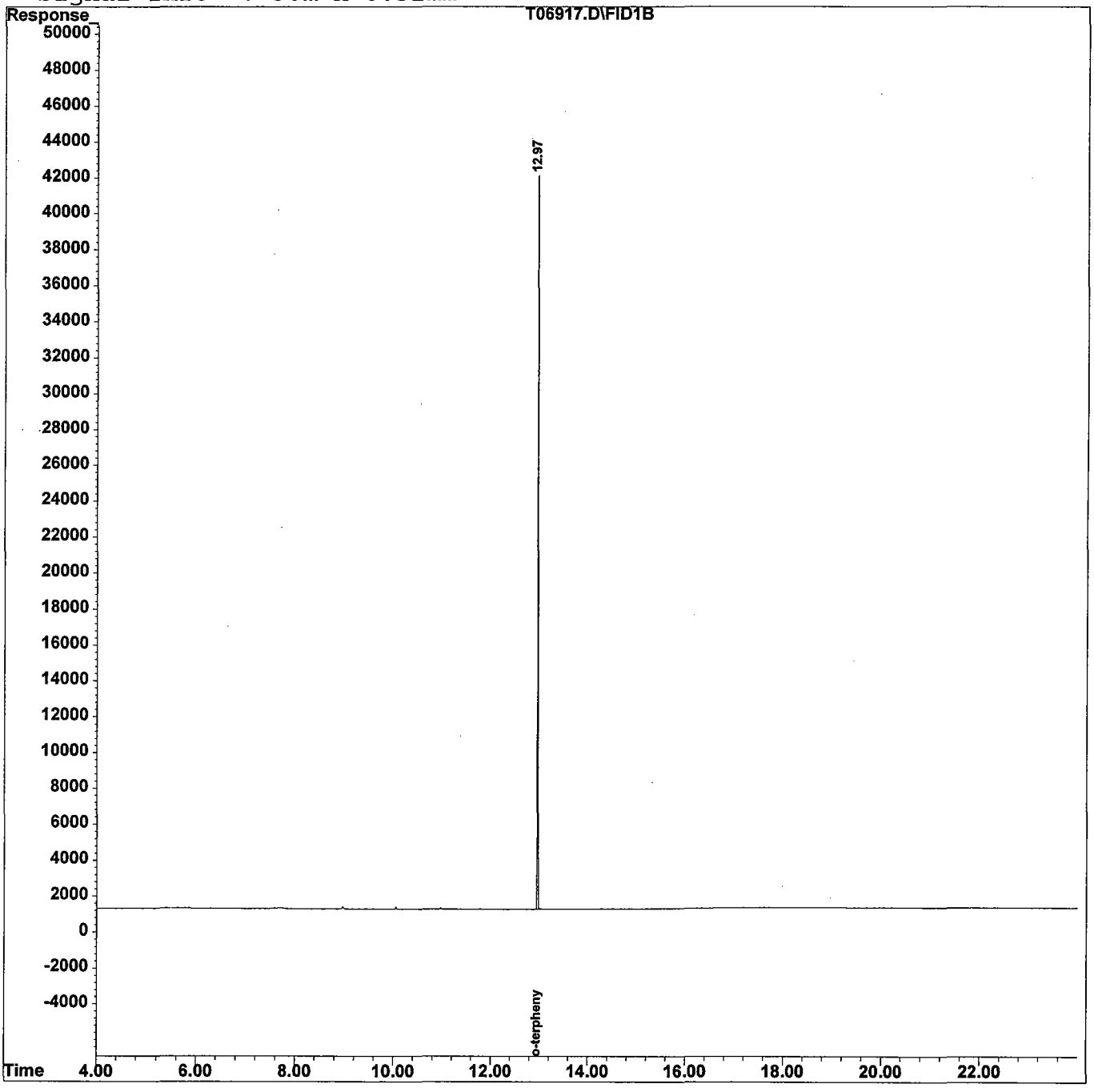
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980929\T06917.D Vial: 8
Acq On : 30 Sep 98 6:42 pm Operator: Deinhardt
Sample : 3927.05 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Oct 1 8:22 1998 Quant Results File: TPH47.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



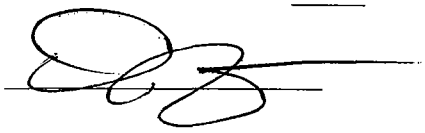
LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

THIS FORM MUST BE COMPLETED BY THE LABORATORY OR ENVIRONMENTAL CONSULTANT AND ACCOMPANY ALL DATA SUBMISSIONS

The following Laboratory Deliverables checklist and Non-Conformance Summary shall be included in the data submission. All deviations from the accepted methodology and procedures, of performance values outside acceptable ranges shall be summarized in the Non-Conformance Summary. The Technical Requirements for Site Remediation, effective June 7, 1993, provides further details. The document shall be bound and paginated, contain a table of contents, and all pages shall be legible. Incomplete packages will be returned or held without review until the data package is completed.

It is recommended that the analytical results summary sheets listing all targeted and non-targeted compounds with the method detection limits, practical quantitation limits, and the laboratory and/or sample numbers be included in one section of the data package and in the main body of the report.

1. Cover page, Title Page listing Lab Certification #, facility name and address, & date of report submitted ✓
2. Table of Contents submitted ✓
3. Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted ✓
4. Document paginated and legible ✓
5. Chain of Custody submitted ✓
6. Samples submitted to lab within 48 hours of sample collection ✓
7. Methodology Summary submitted ✓
8. Laboratory Chronicle and Holding Time Check submitted ✓
9. Results submitted on a dry weight basis ✓
10. Method Detection Limits submitted ✓
11. Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP ✓

Laboratory Manager or Environmental Consultant's Signature 

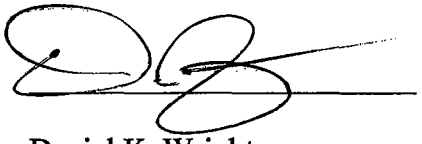
Date 12/15/98

Laboratory Certification #13461

*Refer to NJAC 7:26E - Appendix A, Section IV - Reduced Data Deliverables - Non-USEPA/CLP Methods for further guidance.

Laboratory Authentication Statement

I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N.J.A.C. 7:18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW-846 for Solid Waste Analysis. I have personally examined the information contained in this report and to the best of my knowledge, I believe that the submitted information is true, accurate, complete and meets the above referenced standards where applicable. I am aware that there are significant penalties for purposefully submitting falsified information, including the possibility of a fine and imprisonment.



Daniel K. Wright
Laboratory Manager

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS
PHONE: (732)532-6224 FAX: (732)532-3484
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING
NJDEP LABORATORY CERTIFICATION # 13461

ANALYTICAL DATA REPORT
Fort Monmouth Environmental Laboratory
ENVIROMENTAL DIVISION
Fort Monmouth, New Jersey
PROJECT: #98-0932/UST REM.

BLDG. 277

Field Location No. & Location	Laboratory Sample ID#	Matrix	Date and Time Of Collection	Date Received
277-20 (6')	3931.01	Soil	01-Oct-98 12:25	10/01/98
277-21 (6')	3931.02	Soil	01-Oct-98 12:30	10/01/98
277-22 (6')	3931.03	Soil	01-Oct-98 12:35	10/01/98

ANALYSIS:
FORT MONMOUTH ENVIROMENTAL LAB
TPHC, %SOLIDS

10/15/98
Daniel Wright/ Date
Laboratory Director

ENCLOSURE:
CHAIN OF CUSTODY
RESULTS

Table of Contents

Method Summary

NJDEP Method OQA-QAM-025-10/97

Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

Fifteen grams (15g)(wet weight) of a soil sample is added to a 125 mL acid cleaned, solvent rinsed, capped Erlenmeyer flask. 15g anhydrous sodium sulfate is added to dry sample. Surrogate standard spiking solution is then added to the flask.

Twenty five milliliters(25mL) Methylene Chloride is added to the flask and it is secured on a gyrotory shaker table. The agitation rate is set to 400rpm and the sample is shaken for 30 minutes. The flask is the removed from the table and the particulate matter is allowed to settle. The extract is transferred to a Teflon capped vial. A second 25mL of Methylene Chloride is added to the flask and shaken for an additional 30 minutes. The flask is again removed and allowed to settle. The extracts are combined in the vial then transferred to a 1mL autosampler vial.

The extract is then injected directly into a GC-FID for analysis. The sample is analyzed for petroleum hydrocarbons covering a range of C8-C42 including pristane and phytane. Total Petroleum Hydrocarbon concentration is determined by integrating between 5 minutes and 22 minutes. The baseline is established by starting the integration after the end of the solvent peak and stopping after the last peak.

The final concentration of Total Petroleum Hydrocarbons is calculated using percent solid, sample weight and concentration.

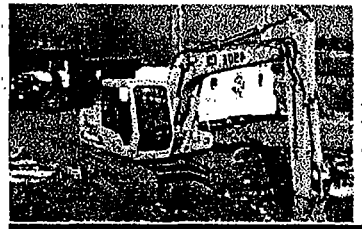
PHC Conformance/Non-conformance Summary Report

		Indicate Yes, No, N/A
1.	Method Detection Limits provided.	yes
2.	Method Blank Contamination – If yes, list the sample and the corresponding concentrations in each blank.	NA
3.	Matrix Spike Results Summary Meet Criteria (If not met, list the sample and corresponding recovery which falls outside the acceptable range).	Yes
4.	Duplicate Results Summary Meet Criteria (If not met, list the sample and corresponding recovery which falls outside the acceptable range).	Yes
5.	IR Spectra submitted for standards, blanks and samples.	NA
6.	Chromatograms submitted for standards, blanks and samples if GC fingerprinting was conducted.	Yes
7.	Analysis holding time met. (If not met, list number of days exceeded for each sample).	Yes

Additional comments: _____

Laboratory Manager

10/15/98
Date



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-3484 EMail:appleby@doim6.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Charles Appleby
Phone #: X26224
( )DERA (X)OMA ( )Other:_____

Project No: 98-0932 UST (REM.)
Location: Building 277

Samplers Name / Company : Dave Daniels (SMC)

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	TPHC	% SOLIDS	VO+10	VOC Jar #		H-Nu Reading			Remarks / Preservation Method
3493 1. 01	277-20 (6')	10.1.98	12:25	Soil	2	X	X		136		0			ICE
02	277-21 (6')	↓	12:30	↓	↓	X	X		137		0			ICE
03	277-22 (6')	↓	12:35	↓	↓	X	X		138		0			ICE

Comments: RUSH TPHs
Run VO+10 for any TPH results above 1,000

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
David Daniels	10.1.98 1400	J. Verguine			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: (_)Full, (X)Reduced, (_)Standard, (_)Screen / non-certified
Turnaround time: (_)Standard 4 wks, (X)Rush ___ Days, (X)ASAP Verbal ___Hrs.

Remarks: H-Nu Calibration → zero gas = 0.0 ppm
Isobutylene 100 ppm at 9.67

print legibly

SMCcoc.xls9/29/98

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3931
	DPW. SELFM-PW-EV	**Date Rec'd:**	01-Oct-98
	Bldg. 173	**Analysis Start:**	01-Oct-98
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	02-Oct-98
Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	D.DEINHARDT	**DICAR #:**	
Inst. ID.	GC TPHC INST. #1	**Injection Volume**	1 ul
Column Type	RTX 5	**Column ID**	0.32 um
Ext. Meth:	Shake	**Location #:**	BLDG. 277

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3931.01	277-20(6')	**1.00**	15.20	84.37	183	**ND**
3931.02	277-21(6')	**1.00**	15.34	84.47	181	**ND**
3931.03	277-22(6')	**1.00**	15.32	89.72	171	**ND**
METHOD BLANK	TBLK 173	**1.00**	15.00	100.00	157	**ND**

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright
Laboratory Director

Method : C:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998

Calibration Files
100 =T06865.D 50 =T06866.D 20 =T06867.D
10 =T06868.D 5 =T06869.D

	Compound	100	50	20	10	5	Avg		%RSD
1) tC	C8	2.311	2.599	2.672	2.620	2.686	2.577	E4	5.95
2) tC	C10	2.632	2.942	3.002	2.923	3.126	2.925	E4	6.22
3) TC	C12	2.931	3.295	3.342	3.253	3.453	3.255	E4	6.02
4) tC	C14	3.027	3.417	3.488	3.382	3.600	3.383	E4	6.37
5) tC	C16	3.046	3.450	3.545	3.434	3.674	3.430	E4	6.86
6) tC	C18	3.451	3.853	3.936	3.985	4.116	3.868	E4	6.52
7) tC	C20	3.275	3.707	3.817	3.688	3.975	3.692	E4	7.03
8) tC	C22	3.218	3.646	3.753	3.628	3.887	3.626	E4	6.91
9) tC	C24	3.256	3.685	3.799	3.645	3.934	3.664	E4	6.93
10) tC	C26	3.225	3.643	3.749	3.596	3.871	3.617	E4	6.73
11) tC	C28	3.225	3.634	3.730	3.577	3.857	3.605	E4	6.58
12) tC	C30	3.296	3.706	3.808	3.650	3.923	3.677	E4	6.44
13) tC	C32	3.255	3.653	3.746	3.576	3.851	3.616	E4	6.27
14) tC	C34	3.285	3.678	3.775	3.592	3.872	3.640	E4	6.17
15) tC	C36	3.076	3.434	3.519	3.334	3.594	3.391	E4	5.93
16) tC	C38	2.873	3.199	3.290	3.108	3.357	3.165	E4	5.96
17) tC	C40	2.508	2.784	2.873	2.714	2.932	2.762	E4	5.97
18) tC	c42	2.295	2.537	2.627	2.473	2.614	2.509	E4	5.39
19) TC	Pristane	3.181	3.658	3.694	3.576	3.848	3.591	E4	6.96
20) TC	Phytane	3.286	3.723	3.831	3.710	4.000	3.710	E4	7.11
21) sC	o-terphenyl	3.321	3.756	3.867	3.734	4.018	3.739	E4	6.93
22) tC	TPHC - total	3.501	3.820	4.101	4.006	4.639	4.013	E4	10.41

(#) = Out of Range MEAN RSD = 6.62%

TPH47.M Tue Sep 29 09:14:24 1998

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980925\T06865.D Vial: 2
Acq On : 25 Sep 98 3:06 pm Operator: Deinhardt
Sample : 100 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 29 9:02 1998 Quant Results File: TPH46.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH46.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH46.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

	Compound	R.T.	Response	Conc Units
	System Monitoring Compounds			
21)	sC o-terphenyl	12.98	3321489	72.198 mg/L
Spiked Amount	10.000 Range	8 - 13	Recovery =	721.98%#
	Target Compounds			
1)	tC C8	4.72	2311044	83.537 mg/L
2)	tC C10	7.71	2631777	84.144 mg/L
3)	TC C12	9.34	2930730	82.785 mg/L
4)	tC C14	10.52	3026978	78.410 mg/L
5)	tC C16	11.53	3045508	75.084 mg/L
6)	tC C18	11.99	3450510	73.906 mg/L m
7)	tC C20	12.43	3275410	73.056 mg/L m
8)	tC C22	13.25	3218031	72.364 mg/L
9)	tC C24	13.99	3256322	72.113 mg/L
10)	tC C26	14.68	3224873	71.938 mg/L
11)	tC C28	15.32	3225253	71.950 mg/L
12)	tC C30	15.91	3295843	72.096 mg/L
13)	tC C32	16.47	3254589	72.358 mg/L
14)	tC C34	17.07	3285160	74.347 mg/L
15)	tC C36	17.78	3076094	78.252 mg/L
16)	tC C38	18.67	2873014	81.535 mg/L
17)	tC C40	19.83	2507713	82.752 mg/L
18)	tC c42	21.39	2294516	81.758 mg/L
19)	TC Pristane	12.02	3180800	73.341 mg/L m
20)	TC Phytane	12.48	3286047	72.987 mg/L m
22)	tC TPHC - total	12.02	70024293	1439.221 mg/L m

07

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\980925\T06868.D Vial: 5
Acq On : 25 Sep 98 5:02 pm Operator: Deinhardt
Sample : 10 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 29 9:07 1998 Quant Results File: TPH46.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH46.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH46.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.97	373430	8.117 mg/L
Spiked Amount 10.000 Range 8 - 13 Recovery = 81.17%#			
Target Compounds			
1) tC C8	4.69	261969	9.469 mg/L m
2) tC C10	7.70	292338	9.347 mg/L
3) TC C12	9.33	325348	9.190 mg/L
4) tC C14	10.51	338235	8.762 mg/L
5) tC C16	11.52	343385	8.466 mg/L
6) tC C18	11.98	398504	8.535 mg/L m
7) tC C20	12.42	368759	8.225 mg/L m
8) tC C22	13.23	362789	8.158 mg/L
9) tC C24	13.98	364497	8.072 mg/L
10) tC C26	14.67	359612	8.022 mg/L
11) tC C28	15.30	357714	7.980 mg/L
12) tC C30	15.89	364977	7.984 mg/L
13) tC C32	16.45	357603	7.950 mg/L
14) tC C34	17.05	359245	8.130 mg/L
15) tC C36	17.75	333385	8.481 mg/L
16) tC C38	18.63	310763	8.819 mg/L
17) tC C40	19.78	271358	8.955 mg/L
18) tC c42	21.33	247259	8.810 mg/L
19) TC Pristane	12.01	357607	8.245 mg/L m
20) TC Phytane	12.46	370990	8.240 mg/L m
22) tC TPHC - total	11.98	8011671	164.665 mg/L m

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\980925\T06869.D Vial: 6
Acq On : 25 Sep 98 5:40 pm Operator: Deinhardt
Sample : 5 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Sep 29 9:09 1998 Quant Results File: TPH46.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH46.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH46.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.97	200920	4.367 mg/L
Spiked Amount 10.000 Range 8 - 13 Recovery = 43.67%#			
Target Compounds			
1) tC C8	4.72	134320	4.855 mg/L m
2) tC C10	7.70	156282	4.997 mg/L
3) TC C12	9.33	172637	4.877 mg/L
4) tC C14	10.51	179999	4.663 mg/L
5) tC C16	11.52	183723	4.530 mg/L
6) tC C18	11.98	205775	4.407 mg/L m
7) tC C20	12.42	198755	4.433 mg/L m
8) tC C22	13.23	194340	4.370 mg/L
9) tC C24	13.98	196692	4.356 mg/L
10) tC C26	14.67	193570	4.318 mg/L
11) tC C28	15.30	192848	4.302 mg/L
12) tC C30	15.89	196157	4.291 mg/L
13) tC C32	16.45	192541	4.281 mg/L
14) tC C34	17.05	193600	4.381 mg/L
15) tC C36	17.75	179718	4.572 mg/L
16) tC C38	18.63	167856	4.764 mg/L
17) tC C40	19.78	146605	4.838 mg/L
18) tC c42	21.32	130708	4.657 mg/L
19) TC Pristane	12.01	192384	4.436 mg/L m
20) TC Phytane	12.46	200005	4.442 mg/L m
22) tC TPHC - total	11.98	4638777	95.342 mg/L m

11

(f)=RT Delta > 1/2 Window (m)=manual int.

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\981001\T06940.D Vial: 2
Acq On : 1 Oct 98 4:42 pm Operator: Deinhardt
Sample : 50 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E

Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	tC	C8	25.775	24.716 E3	4.1	95	-0.01
2	tC	C10	29.249	27.750 E3	5.1	94	0.00
3	TC	C12	32.546	30.926 E3	5.0	94	0.00
4	tC	C14	33.829	31.962 E3	5.5	94	0.00
5	tC	C16	34.299	32.235 E3	6.0	93	0.00
6	tC	C18	38.681	36.247 E3	6.3	94	0.00
7	tC	C20	36.924	34.890 E3	5.5	94	0.00
8	tC	C22	36.263	34.325 E3	5.3	94	0.00
9	tC	C24	36.638	34.825 E3	4.9	94	0.00
10	tC	C26	36.169	34.418 E3	4.8	94	0.00
11	tC	C28	36.046	34.594 E3	4.0	95	0.00
12	tC	C30	36.765	35.264 E3	4.1	95	0.00
13	tC	C32	36.162	34.898 E3	3.5	96	0.00
14	tC	C34	36.405	34.999 E3	3.9	95	0.00
15	tC	C36	33.914	31.896 E3	6.0	93	0.00
16	tC	C38	31.653	28.118 E3	11.2	88	0.00
17	tC	C40	27.621	22.319 E3	19.2	80	-0.01
18	tC	c42	25.091	17.961 E3	28.4#	71	-0.02
19	TC	Pristane	35.914	33.827 E3	5.8	92	0.00
20	TC	Phytane	37.098	34.995 E3	5.7	94	0.00
21	sC	o-terphenyl	37.393	35.266 E3	5.7	94	0.00
22	tC	TPHC - total	40.135	35.422 E3	11.7	93	0.00

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\981001\T06940.D Vial: 2
Acq On : 1 Oct 98 4:42 pm Operator: Deinhardt
Sample : 50 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Oct 2 9:32 1998 Quant Results File: TPH47.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.98	1763324	47.157 mg/L
Spiked Amount 10.000 Range 8 - 13		Recovery =	471.57%#
Target Compounds			
1) tC C8	4.70	1235787	47.945 mg/L m
2) tC C10	7.70	1387506	47.438 mg/L
3) TC C12	9.33	1546290	47.511 mg/L
4) tC C14	10.51	1598118	47.242 mg/L
5) tC C16	11.52	1611759	46.992 mg/L
6) tC C18	11.98	1812349	46.854 mg/L m
7) tC C20	12.42	1744518	47.246 mg/L m
8) tC C22	13.24	1716236	47.327 mg/L
9) tC C24	13.99	1741248	47.525 mg/L
10) tC C26	14.67	1720895	47.580 mg/L
11) tC C28	15.31	1729716	47.986 mg/L
12) tC C30	15.90	1763204	47.958 mg/L
13) tC C32	16.46	1744898	48.253 mg/L
14) tC C34	17.06	1749929	48.069 mg/L
15) tC C36	17.77	1594811	47.025 mg/L
16) tC C38	18.65	1405895	44.416 mg/L
17) tC C40	19.80	1115949	40.403 mg/L
18) tC c42	21.35	898029	35.791 mg/L
19) TC Pristane	12.01	1691367	47.094 mg/L m
20) TC Phytane	12.47	1749751	47.165 mg/L m
22) tC TPHC - total	12.01	35422159	882.577 mg/L m

(f)=RT Delta > 1/2 Window (m)=manual int.

Surrogate Recovery Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3931
	DPW. SELFM-PW-EV	**Date Rec'd:**	01-Oct-98
	Bldg. 173	**Analysis Start:**	01-Oct-98
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	02-Oct-98
		UST Reg. #:	
Analysis:	OQA-QAM-025	**Closure #:**	
Matrix:	Soil	**DICAR #:**	
Analyst:	D.DEINHARDT	**Injection Volume**	1 ul
Inst. ID.	GC TPHC INST. #1	**Column ID**	0.32 um
Column Type	RTX 5	**Location #:**	Sea Girt
Ext. Meth:	Shake		BLDG. 277

Sample			Surrogate Added (ppm)	Amount Recovered (ppm)	Percent Recovery
3931.01			10.00	10.63	**106.34**
3931.02			10.00	10.38	**103.81**
3931.03			10.00	10.24	**102.40**
METHOD BLANK	TBLK 173		10.00	10.60	**105.98**

Surrogate Added : **o-Terphenyl**

Matrix Spike / Duplicate Recovery Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3931
	DPW. SELFM-PW-EV	**Date Rec'd:**	01-Oct-98
	Bldg. 173	**Analysis Start:**	01-Oct-98
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	02-Oct-98

Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	D.DEINHARDT	**DICAR #:**	
Inst. ID.	GC TPHC INST. #1	**Injection Volume**	1 ul
Column Type	RTX 5	**Column ID**	0.32 um
Ext. Meth:	Shake	**Location #:**	BLDG. 277

Sample	Spike Amount Added (ppm)	Sample Amount (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
3931.03MS	728	0.00	830.50	114.08	75-125
3931.03MSD	728	0.00	880.21	120.91	75-125

RPD	**5.81**	**20.00**

Quality Control Check Standard Summary
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3931
	DPW. SELFM-PW-EV	**Date Rec'd:**	01-Oct-98
	Bldg. 173	**Analysis Start:**	01-Oct-98
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	02-Oct-98

Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	D.DEINHARDT	**DICAR #:**	
Inst. ID.	GC TPHC INST. #1	**Injection Volume**	1 ul
Column Type	RTX 5	**Column ID**	0.32 um
Ext. Meth:	Shake	**Location #:**	BLDG. 277

Sample	Date Extracted	Spike Amount Added (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
Blank Spike	1-Oct-98	728	868.19	119.26	75-125

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\981001\T06941.D Vial: 3
Acq On : 1 Oct 98 5:20 pm Operator: Deinhardt
Sample : TBLK 173 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Oct 2 9:33 1998 Quant Results File: TPH47.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.97	396274	10.598 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery = 105.98%#	
Target Compounds			

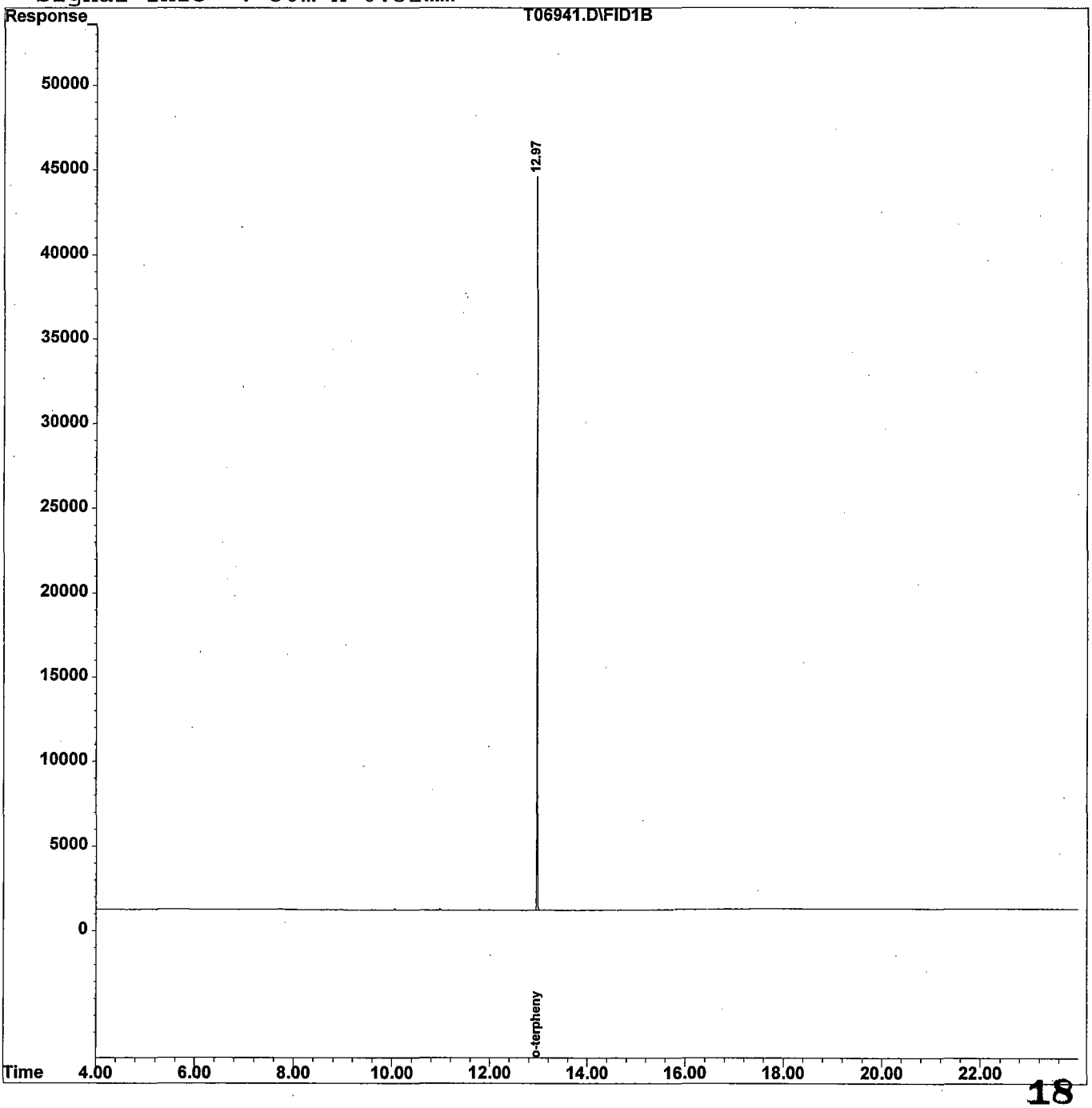
(f)=RT Delta > 1/2 Window (m)=manual int.
T06941.D TPH47.M Fri Oct 02 14:40:51 1998 Page 1

Quantitation Report

Data File : C:\HPCHEM\1\DATA\981001\T06941.D Vial: 3
Acq On : 1 Oct 98 5:20 pm Operator: Deinhardt
Sample : TBLK 173 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Oct 2 9:33 1998 Quant Results File: TPH47.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\981001\T06943.D Vial: 5
Acq On : 1 Oct 98 6:33 pm Operator: Deinhardt
Sample : 3931.01 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Oct 2 9:34 1998 Quant Results File: TPH47.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

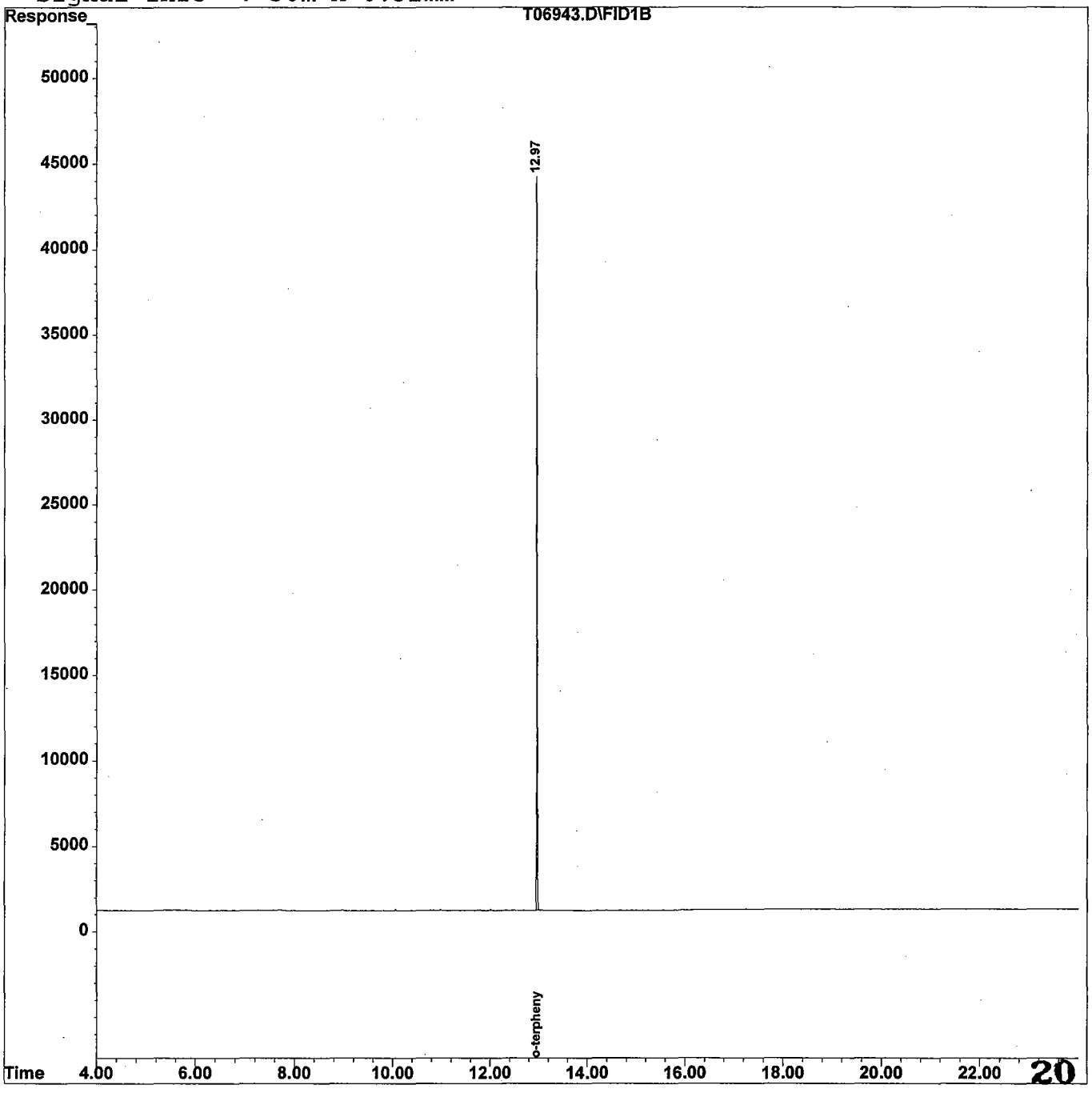
Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.97	397628	10.634 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery = 106.34%#	
Target Compounds			

Quantitation Report

Data File : C:\HPCHEM\1\DATA\981001\T06943.D Vial: 5
Acq On : 1 Oct 98 6:33 pm Operator: Deinhardt
Sample : 3931.01 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Oct 2 9:34 1998 Quant Results File: TPH47.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\981001\T06944.D Vial: 6
Acq On : 1 Oct 98 7:10 pm Operator: Deinhardt
Sample : 3931.02 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Oct 2 9:34 1998 Quant Results File: TPH47.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.97	388181	10.381 mg/L
Spiked Amount 10.000 Range 8 - 13 Recovery = 103.81%#			
Target Compounds			
22) tC TPHC - total	12.97	1104738	27.526 mg/L m

21

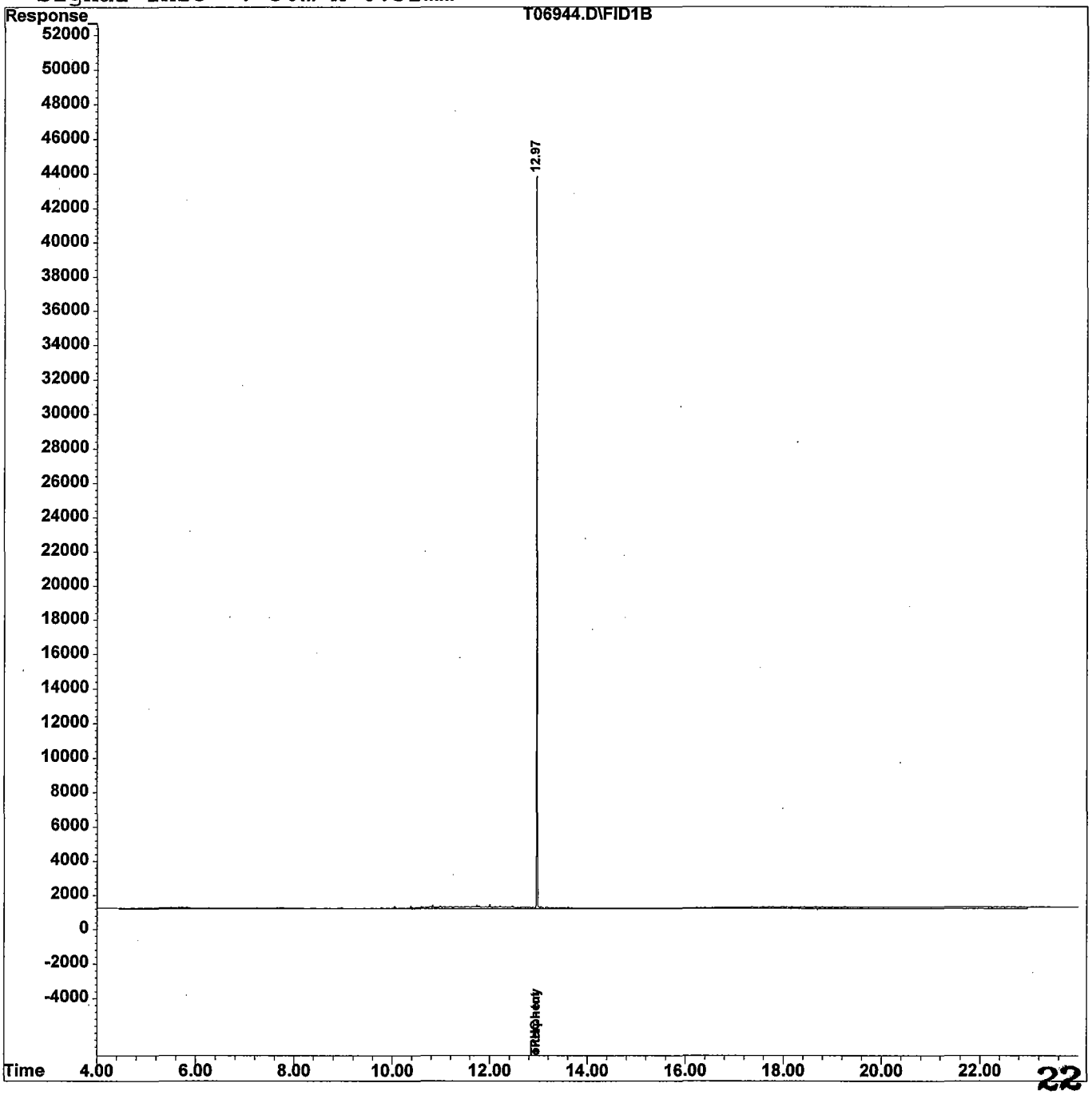
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\981001\T06944.D Vial: 6
Acq On : 1 Oct 98 7:10 pm Operator: Deinhardt
Sample : 3931.02 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Oct 2 9:34 1998 Quant Results File: TPH47.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\981001\T06945.D Vial: 7
Acq On : 1 Oct 98 7:47 pm Operator: Deinhardt
Sample : 3931.03 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Oct 2 9:34 1998 Quant Results File: TPH47.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Initial Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	12.97	382912	10.240 mg/L
Spiked Amount 10.000	Range 8 - 13	Recovery = 102.40%#	
Target Compounds			

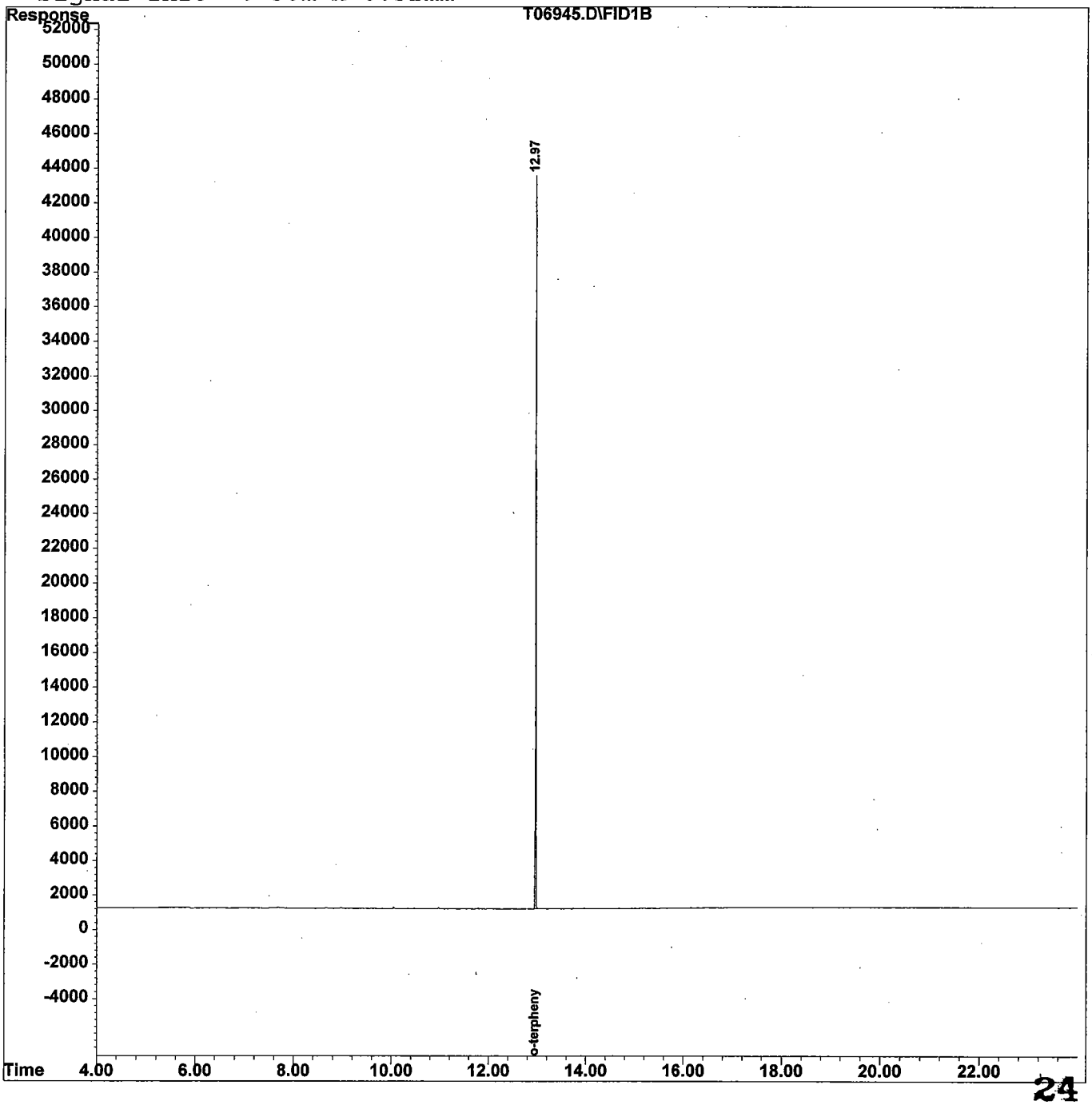
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\981001\T06945.D Vial: 7
Acq On : 1 Oct 98 7:47 pm Operator: Deinhardt
Sample : 3931.03 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Oct 2 9:34 1998 Quant Results File: TPH47.RES

Quant Method : D:\HPCHEM\1\METHODS\TPH47.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Fri Aug 14 11:29:53 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH47.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

THIS FORM MUST BE COMPLETED BY THE LABORATORY OR ENVIRONMENTAL CONSULTANT AND ACCOMPANY ALL DATA SUBMISSIONS

The following Laboratory Deliverables checklist and Non-Conformance Summary shall be included in the data submission. All deviations from the accepted methodology and procedures, of performance values outside acceptable ranges shall be summarized in the Non-Conformance Summary. The Technical Requirements for Site Remediation, effective June 7, 1993, provides further details. The document shall be bound and paginated, contain a table of contents, and all pages shall be legible. Incomplete packages will be returned or held without review until the data package is completed.

It is recommended that the analytical results summary sheets listing all targeted and non-targeted compounds with the method detection limits, practical quantitation limits, and the laboratory and/or sample numbers be included in one section of the data package <u>and</u> in the main body of the report.

1. Cover page, Title Page listing Lab Certification #, facility name and address, & date of report submitted ✓
2. Table of Contents submitted ✓
3. Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted ✓
4. Document paginated and legible ✓
5. Chain of Custody submitted ✓
6. Samples submitted to lab within 48 hours of sample collection ✓
7. Methodology Summary submitted ✓
8. Laboratory Chronicle and Holding Time Check submitted ✓
9. Results submitted on a dry weight basis ✓
10. Method Detection Limits submitted ✓
11. Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP ✓

Laboratory Manager or Environmental Consultant's Signature _____

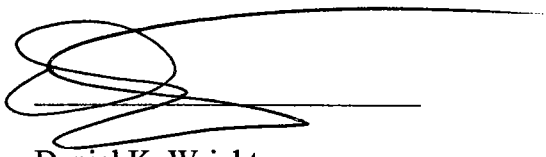
Date 10/15/96

Laboratory Certification #13461

*Refer to NJAC 7:26E - Appendix A, Section IV - Reduced Data Deliverables - Non-USEPA/CLP Methods for further guidance.

Laboratory Authentication Statement

I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N.J.A.C. 7:18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW-846 for Solid Waste Analysis. I have personally examined the information contained in this report and to the best of my knowledge, I believe that the submitted information is true, accurate, complete and meets the above referenced standards where applicable. I am aware that there are significant penalties for purposefully submitting falsified information, including the possibility of a fine and imprisonment.



Daniel K. Wright
Laboratory Manager

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

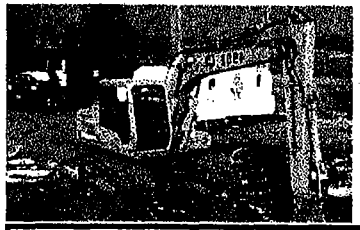
REPORT OF ANALYSIS

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Project: Tal Metals: SW846 Methods 3051/6010A/7470A
Pest/PCBs: SW846 Methods 8081/8082
98-0932
Bldg. 277
SMC

Project # 3754
Date Rec. 07/27/98
Date Compl. 08/22/98
Released by:

Daniel K. Wright
Laboratory Director



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-3484 EMail:appleby@doim6.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Charles Appleby
Phone #: X26224
( )DERA (X)OMA ( )Other:_____

Project No: 98-0932 UST REM.
Location: Building 277

Samplers Name / Company : Dave Daniels (SMC)

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	TPHC	% SOLIDS	VOA+15	TAL Metals	P/PCB			H-Nu Readings (ppm)	Comments: Run TAL metals and P/PCB on the Highest TPH result. Remarks / Preservation Method
37547 01	277-1 (6')	7.27.98	10:00	soil	2	X	X	X	See Comments	See Comments			35	766 ICE
02	277-2 (6')	↓	10:02	↓	↓	↓	↓	↓	↓	↓			25	767 ↓
03	277-3 (6')		10:05										40	768
04	277-4 (7')		10:08										20	769
05	277-5 (7')		10:10										20	770
06	277-6 (6')	↓	10:12	↓	↓	↓	↓	↓	↓	↓			45	771 ↓

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
David A. Daniels	7.27.98 1140	J. Verghese			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: (_)Full, (X)Reduced, (_)Standard, (_)Screen / non-certified
Turnaround time: (_)Standard 4 wks, (X)Rush 5-7 Days, (_)ASAP Verbal ___ Hrs.

Remarks: H-Nu Calibration – zero gas = 0.0ppm
Isobutylene 100ppm at 9.34

print legibly

SMCcoc.xls6/17/98

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	BLK159
	DPW. SELFM-PW-EV	**Date Rec'd:**	
	Bldg. 173	**Extraction Date:**	7/30/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	8/22/98
Analysis:	SW-846 Method 8081/8082	**Location :**	
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	100.00	0.0003	ND	NLE
beta-BHC	1	100.00	0.0003	ND	NLE
gamma-BHC	1	100.00	0.0004	ND	0.52
delta-BHC	1	100.00	0.0004	ND	NLE
Heptachlor	1	100.00	0.0003	ND	0.15
Aldrin	1	100.00	0.0004	ND	0.04
Heptachlor Epoxide	1	100.00	0.0006	ND	NLE
Endosulfan I	1	100.00	0.0005	ND	NLE
4,4'-DDE	1	100.00	0.0004	ND	2
Dieldrin	1	100.00	0.0005	ND	0.042
Endrin	1	100.00	0.0005	ND	17
Endosulfan II	1	100.00	0.0004	ND	NLE
4,4'-DDD	1	100.00	0.0006	ND	3
Endrin Aldehyde	1	100.00	0.0005	ND	NLE
4,4'-DDT	1	100.00	0.0011	ND	2
Endosulfan-Sulfate	1	100.00	0.0004	ND	NLE
gamma -Chlordane	1	100.00	0.0005	ND	NLE
alpha-Chlordane	1	100.00	0.0005	ND	NLE
Toxaphene	1	100.00	0.0003	ND	0.1
Arochlor 1016	1	100.00	0.0112	ND	0.49
Arochlor 1221	1	100.00	0.0206	ND	0.49
Arochlor 1232	1	100.00	0.0140	ND	0.49
Arochlor 1242	1	100.00	0.0160	ND	0.49
Arochlor 1248	1	100.00	0.0064	ND	0.49
Arochlor 1254	1	100.00	0.0040	ND	0.49
Arochlor 1260	1	100.00	0.0036	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25u

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	BLK157
	DPW. SELFM-PW-EV	**Date Rec'd:**	
	Bldg. 173	**Extraction Date:**	7/28/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	8/4/98
Analysis:	SW-846 Method 8081/8082	**Location :**	
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	100.00	0.0003	ND	NLE
beta-BHC	1	100.00	0.0003	ND	NLE
gamma-BHC	1	100.00	0.0004	ND	0.52
delta-BHC	1	100.00	0.0004	ND	NLE
Heptachlor	1	100.00	0.0003	ND	0.15
Aldrin	1	100.00	0.0004	ND	0.04
Heptachlor Epoxide	1	100.00	0.0006	ND	NLE
Endosulfan I	1	100.00	0.0005	ND	NLE
4,4'-DDE	1	100.00	0.0004	ND	2
Dieldrin	1	100.00	0.0005	ND	0.042
Endrin	1	100.00	0.0005	ND	17
Endosulfan II	1	100.00	0.0004	ND	NLE
4,4'-DDD	1	100.00	0.0006	ND	3
Endrin Aldehyde	1	100.00	0.0005	ND	NLE
4,4'-DDT	1	100.00	0.0011	ND	2
Endosulfan-Sulfate	1	100.00	0.0004	ND	NLE
gamma -Chlordane	1	100.00	0.0005	ND	NLE
alpha-Chlordane	1	100.00	0.0005	ND	NLE
Toxaphene	1	100.00	0.0003	ND	0.1
Arochlor 1016	1	100.00	0.0112	ND	0.49
Arochlor 1221	1	100.00	0.0206	ND	0.49
Arochlor 1232	1	100.00	0.0140	ND	0.49
Arochlor 1242	1	100.00	0.0160	ND	0.49
Arochlor 1248	1	100.00	0.0064	ND	0.49
Arochlor 1254	1	100.00	0.0040	ND	0.49
Arochlor 1260	1	100.00	0.0036	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3754.02
	DPW. SELFM-PW-EV	**Date Rec'd:**	7/27/98
	Bldg. 173	**Extraction Date:**	7/30/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	8/22/98
Analysis:	SW-846 Method 8081/8082	**Location :**	Building 277
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	2 (6')

	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	84.35	0.0003	ND	NLE
beta-BHC	1	84.35	0.0003	ND	NLE
gamma-BHC	1	84.35	0.0005	ND	0.52
delta-BHC	1	84.35	0.0005	ND	NLE
Heptachlor	1	84.35	0.0003	ND	0.15
Aldrin	1	84.35	0.0005	ND	0.04
Heptachlor Epoxide	1	84.35	0.0007	ND	NLE
Endosulfan I	1	84.35	0.0006	ND	NLE
4,4'-DDE	1	84.35	0.0005	ND	2
Dieldrin	1	84.35	0.0006	ND	0.042
Endrin	1	84.35	0.0006	ND	17
Endosulfan II	1	84.35	0.0005	ND	NLE
4,4'-DDD	1	84.35	0.0007	ND	3
Endrin Aldehyde	1	84.35	0.0006	ND	NLE
4,4'-DDT	1	84.35	0.0012	ND	2
Endosulfan-Sulfate	1	84.35	0.0005	ND	NLE
gamma -Chlordane	1	84.35	0.0006	ND	NLE
alpha-Chlordane	1	84.35	0.0006	ND	NLE
Toxaphene	1	84.35	0.0003	ND	0.1
Arochlor 1016	1	84.35	0.0126	ND	0.49
Arochlor 1221	1	84.35	0.0232	ND	0.49
Arochlor 1232	1	84.35	0.0158	ND	0.49
Arochlor 1242	1	84.35	0.0180	ND	0.49
Arochlor 1248	1	84.35	0.0072	ND	0.49
Arochlor 1254	1	84.35	0.0045	ND	0.49
Arochlor 1260	1	84.35	0.0041	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3754.06
	DPW. SELFM-PW-EV	**Date Rec'd:**	7/27/98
	Bldg. 173	**Extraction Date:**	7/28/98
	Ft. Monmouth, NJ 07703	**Analysis Date:**	8/22/98
Analysis:	SW-846 Method 8081/8082	**Location :**	Building 277
Matrix:	Soil		
Analyst:	D. Wright	**Field ID:**	6 (6')

Pesticide/PCB	Dilution Factor	% Solid	MDL (mg/kg)	Result (mg/kg)	Cleanup Criteria (mg/kg)
alpha-BHC	1	87.75	0.0003	ND	NLE
beta-BHC	1	87.75	0.0003	ND	NLE
gamma-BHC	1	87.75	0.0004	ND	0.52
delta-BHC	1	87.75	0.0004	ND	NLE
Heptachlor	1	87.75	0.0003	ND	0.15
Aldrin	1	87.75	0.0004	ND	0.04
Heptachlor Epoxide	1	87.75	0.0007	ND	NLE
Endosulfan I	1	87.75	0.0006	ND	NLE
4,4'-DDE	1	87.75	0.0004	ND	2
Dieldrin	1	87.75	0.0006	ND	0.042
Endrin	1	87.75	0.0006	ND	17
Endosulfan II	1	87.75	0.0004	ND	NLE
4,4'-DDD	1	87.75	0.0007	ND	3
Endrin Aldehyde	1	87.75	0.0006	ND	NLE
4,4'-DDT	1	87.75	0.0012	ND	2
Endosulfan-Sulfate	1	87.75	0.0004	ND	NLE
gamma -Chlordane	1	87.75	0.0006	ND	NLE
alpha-Chlordane	1	87.75	0.0006	ND	NLE
Toxaphene	1	87.75	0.0003	ND	0.1
Arochlor 1016	1	87.75	0.0124	ND	0.49
Arochlor 1221	1	87.75	0.0228	ND	0.49
Arochlor 1232	1	87.75	0.0155	ND	0.49
Arochlor 1242	1	87.75	0.0177	ND	0.49
Arochlor 1248	1	87.75	0.0071	ND	0.49
Arochlor 1254	1	87.75	0.0044	ND	0.49
Arochlor 1260	1	87.75	0.0040	ND	0.49

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: RTX-CLPestcide 30m/.32mmID/.25u
Column-Confirmation: RTX-CLPestcide2 30m/.32mmID/.25

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3754
Sample Preparation: 08/11/98

Site: Bldg. 277
Ft. Monmouth, New Jersey

METHOD BLANK SUMMARY (mg/L)

Element	Date Analyzed	Result	MDL
Aluminum	08/12/98	0.265	0.01
Antimony	08/12/98	0.009	0.002
Arsenic	08/12/98	ND	0.002
Barium	08/12/98	0.0040	0.0005
Beryllium	08/12/98	ND	0.0005
Cadmium	08/12/98	0.0013	0.0005
Calcium	08/12/98	0.487	0.02
Chromium	08/12/98	ND	0.0005
Cobalt	08/12/98	ND	0.0005
Copper	08/12/98	0.005	0.003
Iron	08/12/98	0.089	0.01
Lead	08/12/98	ND	0.002
Magnesium	08/12/98	0.201	0.02
Manganese	08/12/98	0.0067	0.0005
Mercury	07/29/98	ND	0.0002
Nickel	08/12/98	0.0008	0.0005
Potassium	08/12/98	0.049	0.02
Selenium	08/12/98	ND	0.002
Silver	08/12/98	ND	0.003
Sodium	08/12/98	0.174	0.02
Thallium	08/12/98	ND	0.003
Vanadium	08/12/98	ND	0.001
Zinc	08/12/98	0.022	0.001

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3754.02
Sample Received:07/27/98
Sample Matrix: Soil

Site: Bldg. 277
Ft. Monmouth, New Jersey

Field ID#: 277-1(6')

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date Analyzed	Result	Soil Cleanup Criteria	MDL
Aluminum	08/12/98	3330	NLE	1.191
Antimony	08/12/98	ND	14	0.238
Arsenic	08/12/98	2.02	20	0.238
Barium	08/12/98	11.8	700	0.060
Beryllium	08/12/98	0.255	1	0.060
Cadmium	08/12/98	390	1	0.060
Calcium	08/12/98	0.413	NLE	2.382
Chromium	08/12/98	25.0	NLE	0.060
Cobalt	08/12/98	0.600	NLE	0.060
Copper	08/12/98	2.16	600	0.357
Iron	08/12/98	7590	NLE	1.191
Lead	08/12/98	2.85	100	0.238
Magnesium	08/12/98	585	NLE	2.382
Manganese	08/12/98	8.13	NLE	0.060
Mercury	08/20/98	0.009	14	0.009
Nickel	08/12/98	1.69	250	0.060
Potassium	08/12/98	1430	NLE	2.382
Selenium	08/12/98	ND	63	0.357
Silver	08/12/98	ND	110	0.357
Sodium	08/12/98	126	NLE	2.382
Thallium	08/12/98	ND	2	0.357
Vanadium	08/12/98	17.3	370	0.119
Zinc	08/12/98	11.7	1500	0.119

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3754.06
Sample Received: 07/27/98
Sample Matrix: Soil

Site: Bldg. 277
Ft. Monmouth, New Jersey

Field ID#: 277-6(6')

TAL-METALS RESULTS SUMMARY (mg/kg)

Element	Date Analyzed	Result	Soil Cleanup Criteria	MDL
Aluminum	08/12/98	1480	NLE	1.140
Antimony	08/12/98	0.255	14	0.228
Arsenic	08/12/98	0.667	20	0.228
Barium	08/12/98	4.26	700	0.057
Beryllium	08/12/98	0.0881	1	0.057
Cadmium	08/12/98	0.244	1	0.057
Calcium	08/12/98	158	NLE	2.279
Chromium	08/12/98	8.57	NLE	0.057
Cobalt	08/12/98	0.336	NLE	0.057
Copper	08/12/98	0.641	600	0.342
Iron	08/12/98	2830	NLE	1.140
Lead	08/12/98	1.75	100	0.228
Magnesium	08/12/98	278	NLE	2.279
Manganese	08/12/98	5.41	NLE	0.057
Mercury	07/29/98	ND	14	0.022
Nickel	08/12/98	0.847	250	0.057
Potassium	08/12/98	542	NLE	2.279
Selenium	08/12/98	ND	63	0.342
Silver	08/12/98	ND	110	0.342
Sodium	08/12/98	53.2	NLE	2.279
Thallium	08/12/98	ND	2	0.342
Vanadium	08/12/98	8.05	370	0.114
Zinc	08/12/98	6.71	1500	0.114

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

REPORT OF ANALYSIS

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Project: Volatiles - EPA Method 8260B
Bldg 277
98-0932 UST REM

Project # 3754
Date Rec. 07/27/98
Date Compl. 08/03/98
Released by:

8/18/98
Daniel K. Wright / Date
Laboratory Director

Table of Contents

Method Summary

EPA SW-846 Method 8260

Gas Chromatographic Determination of Volatiles in Soil

A 50uL volume of methanol soil sample is added to 5mL aliquot of water. Surrogates and internal standards are added and the sample is placed on a purge and trap concentrator. The sample as purged and desorbed into a GC/MS system.

Volatiles are identified and quantitated. The final concentration is calculated using soil weight, percent solid, methanol volume and concentration.

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

Indicate
Yes, No, N/A

1. Chromatograms Labeled/Compounds Identified (Field Samples and Method Blanks) — Y

2. Retention times for chromatograms provided — Y

3. GC/MS Tune Specifications

   a. BFB Meet Criteria — Y
   b. DFTPP Meet Criteria —

4. GC/MS Tuning Frequency - Performed every 24 hours for 600 series and 12 hours for 8000 series — Y

5. GC/MS Calibration - Initial Calibration performed before sample analysis and continuing calibration performed within 24 hours of sample analysis for 600 series and 12 hours for 8000 series — Y

6. GC/MS Calibration Requirements

   a. Calibration Check Compounds Meet Criteria — Y
   b. System Performance Check Compounds Meet Criteria — Y

7. Blank Contamination - If yes, List compounds and concentrations in each blank: — N

   a. VOA Fraction _____
   b. B/N Fraction _____
   c. Acid Fraction _____

8. Surrogate Recoveries Meet Criteria — Y

   If not met, list those compounds and their recoveries which fall outside the acceptable range:

   a. VOA Fraction_____
   b. B/N Fraction_____
   c. Acid Fraction_____

   If not met, were the calculations checked and the results qualified as "estimated"? —

9. Matrix Spike/Matrix Spike Duplicate Recoveries Meet Criteria — Y
   (If not met, list those compounds and their recoveries which fall outside the acceptable range)

   a. VOA Fraction_____
   b. B/N Fraction_____
   c. Acid Fraction_____

4

GC/MS Analysis Conformance/Non-Conformance Summary (cont.)

Indicate
Yes, No, N/A

10. Internal Standard Area/Retention Time Shift Meet Criteria Y
(If not met, list those compounds which fall outside the acceptable range)
    a. VOA Fraction_____
    b. B/N Fraction_____
    c. Acid Fraction_____

11. Extraction Holding Time Met Y

If not met, list number of days exceeded for each sample: ___
_____
_____

12. Analysis Holding Time Met Y

If not met, list number of days exceeded for each sample: ___
_____
_____

Additional Comments:
_____
_____
_____

Laboratory Manager _____ Date: 26/16/04

6

Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-3484 EMail:appleby@doim6.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Charles Appleby
Phone #: X26224
( )DERA (X)OMA ( )Other:_____

Project No: 98-0932 UST REM.
Location: Building 277

Samplers Name / Company : Dave Daniels (SMC)

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	TPHC	% SOLIDS	VO+15	TAL Metals	P/PCB			H-Nu Readings(ppm)	Remarks / Preservation Method
3754. 01	277-1 (6')	7.27.98	10:00	soil	2	X	X	X	See Comments	See Comments			35	766 ice
02	277-2(6')		10:02										25	767
03	277-3(6')		10:05										40	768
04	277-4(7')		10:08										20	769
05	277-5(7')		10:10										20	770
06	277-6(6')		10:12										45	771

Comments: Run TAL metals and P/PCB on the Highest TPH result

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
David H. Daniels	7.27.98 1140	J. Verguese			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: (_)Full, (X)Reduced, (_)Standard, (_)Screen / non-certified
Turnaround time: (_)Standard 4 wks, (X)Rush 5-7 Days, (_)ASAP Verbal ___ Hrs.

Remarks: H-Nu Calibration – zero gas = 0.0ppm
Isobutylene 100ppm at 9.34

print legibly

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US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

Definition of Qualifiers

MDL : Method Detection Limit
J : Compound identified below detection limit
B : Compound in both sample and blank
D : Results from dilution of sample
U : Compound searched for but not detected

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

VBLK32

Lab Name: FMETL NJDEP # 13561

Project: 980932 Case No.: 3754 SDG No: _____ Location: B.277

Matrix: (soil/water) SOIL Lab Sample ID: VBLK32

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB01096.D

Level: (low/med) MED Date Received: 07/27/98

% Moisture: not dec. 0 Date Analyzed: 08/03/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1800	U
107131	Acrylonitrile	1800	U
75650	tert-Butyl alcohol	3200	U
1634044	Methyl-tert-Butyl ether	750	U
108203	Di-isopropyl ether	500	U
	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	750	U
74-83-9	Bromomethane	500	U
75-00-3	Chloroethane	750	U
75-69-4	Trichlorofluoromethane	500	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	500	U
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	500	U
156-60-5	trans-1,2-Dichloroethene	500	U
75-35-3	1,1-Dichloroethane	250	U
108-05-4	Vinyl Acetate	750	U
78-93-3	2-Butanone	750	U
	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
75-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	500	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	500	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
110-75-8	2-Chloroethyl vinyl ether	500	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	500	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	500	U
79-00-5	1,1,2-Trichloroethane	500	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	500	U
126-48-1	Dibromochloromethane	500	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	500	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

VBLK32

Lab Name: FMETL NJDEP # 13561

Project: 980932 Case No.: 3754 SDG No: _____ Location: B.277

Matrix: (soil/water) SOIL Lab Sample ID: VBLK32

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB01096.D

Level: (low/med) MED Date Received: 07/27/98

% Moisture: not dec. 0 Date Analyzed: 08/03/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	750	U
1330-20-7	o-Xylene	500	U
100-42-5	Styrene	500	U
75-25-2	Bromoform	500	U
79-34-5	1,1,2,2-Tetrachloroethane	500	U
541-73-1	1,3-Dichlorobenzene	750	U
106-46-7	1,4-Dichlorobenzene	750	U
95-50-1	1,2-Dichlorobenzene	750	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

277-1

Lab Name: FMETL NJDEP # 13561

Project: 980932 Case No.: 3754 SDG No: Location: B.277

Matrix: (soil/water) SOIL Lab Sample ID: 3754.01

Sample wt/vol: 10.4 (g/ml) G Lab File ID: VB01105.D

Level: (low/med) MED Date Received: 07/27/98

% Moisture: not dec. 20.04 Date Analyzed: 08/03/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2100	U
107131	Acrylonitrile	2100	U
75650	tert-Butyl alcohol	3900	U
1634044	Methyl-tert-Butyl ether	900	U
108203	Di-isopropyl ether	600	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	300	U
75-01-4	Vinyl Chloride	900	U
74-83-9	Bromomethane	600	U
75-00-3	Chloroethane	900	U
75-69-4	Trichlorofluoromethane	600	U
75-35-4	1,1-Dichloroethene	300	U
67-64-1	Acetone	1700	
75-15-0	Carbon Disulfide	300	U
75-09-2	Methylene Chloride	600	J
156-60-5	trans-1,2-Dichloroethene	600	U
75-35-3	1,1-Dichloroethane	300	U
108-05-4	Vinyl Acetate	900	U
78-93-3	2-Butanone	2800	
	cis-1,2-Dichloroethene	300	U
67-66-3	Chloroform	300	U
75-55-6	1,1,1-Trichloroethane	300	U
56-23-5	Carbon Tetrachloride	600	U
71-43-2	Benzene	300	U
107-06-2	1,2-Dichloroethane	600	U
79-01-6	Trichloroethene	300	U
78-87-5	1,2-Dichloropropane	300	U
75-27-4	Bromodichloromethane	300	U
110-75-8	2-Chloroethyl vinyl ether	600	U
10061-01-5	cis-1,3-Dichloropropene	300	U
108-10-1	4-Methyl-2-Pentanone	600	U
108-88-3	Toluene	300	U
10061-02-6	trans-1,3-Dichloropropene	600	U
79-00-5	1,1,2-Trichloroethane	600	U
127-18-4	Tetrachloroethene	300	U
591-78-6	2-Hexanone	600	U
126-48-1	Dibromochloromethane	600	U
108-90-7	Chlorobenzene	300	U
100-41-4	Ethylbenzene	690	

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

277-1

Lab Name: FMETL NJDEP # 13561

Project: 980932 Case No.: 3754 SDG No: Location: B.277

Matrix: (soil/water) SOIL Lab Sample ID: 3754.01

Sample wt/vol: 10.4 (g/ml) G Lab File ID: VB01105.D

Level: (low/med) MED Date Received: 07/27/98

% Moisture: not dec. 20.04 Date Analyzed: 08/03/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	900	U
1330-20-7	o-Xylene	600	U
100-42-5	Styrene	600	U
75-25-2	Bromoform	600	U
79-34-5	1,1,2,2-Tetrachloroethane	600	U
541-73-1	1,3-Dichlorobenzene	900	U
106-46-7	1,4-Dichlorobenzene	900	U
95-50-1	1,2-Dichlorobenzene	900	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

277-2

Lab Name: FMETL NJDEP # 13561

Project: 980932 Case No.: 3754 SDG No: Location: B.277

Matrix: (soil/water) SOIL Lab Sample ID: 3754.02

Sample wt/vol: 9.3 (g/ml) G Lab File ID: VB01106.D

Level: (low/med) MED Date Received: 07/27/98

% Moisture: not dec. 15.65 Date Analyzed: 08/03/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2200	U
107131	Acrylonitrile	2200	U
75650	tert-Butyl alcohol	4100	U
1634044	Methyl-tert-Butyl ether	960	U
108203	Di-isopropyl ether	640	U
	Dichlorodifluoromethane	1300	U
74-87-3	Chloromethane	320	U
75-01-4	Vinyl Chloride	960	U
74-83-9	Bromomethane	640	U
75-00-3	Chloroethane	960	U
75-69-4	Trichlorofluoromethane	640	U
75-35-4	1,1-Dichloroethene	320	U
67-64-1	Acetone	1700	
75-15-0	Carbon Disulfide	320	U
75-09-2	Methylene Chloride	810	
156-60-5	trans-1,2-Dichloroethene	640	U
75-35-3	1,1-Dichloroethane	320	U
108-05-4	Vinyl Acetate	960	U
78-93-3	2-Butanone	960	U
	cis-1,2-Dichloroethene	320	U
67-66-3	Chloroform	320	U
75-55-6	1,1,1-Trichloroethane	320	U
56-23-5	Carbon Tetrachloride	640	U
71-43-2	Benzene	320	U
107-06-2	1,2-Dichloroethane	640	U
79-01-6	Trichloroethene	320	U
78-87-5	1,2-Dichloropropane	320	U
75-27-4	Bromodichloromethane	320	U
110-75-8	2-Chloroethyl vinyl ether	640	U
10061-01-5	cis-1,3-Dichloropropene	320	U
108-10-1	4-Methyl-2-Pentanone	640	U
108-88-3	Toluene	320	U
10061-02-6	trans-1,3-Dichloropropene	640	U
79-00-5	1,1,2-Trichloroethane	640	U
127-18-4	Tetrachloroethene	320	U
591-78-6	2-Hexanone	640	U
126-48-1	Dibromochloromethane	640	U
108-90-7	Chlorobenzene	320	U
100-41-4	Ethylbenzene	7300	

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID. 277-2

Lab Name: FMETL NJDEP # 13561

Project: 980932 Case No.: 3754 SDG No: _____ Location: B.277

Matrix: (soil/water) SOIL Lab Sample ID: 3754.02

Sample wt/vol: 9.3 (g/ml) G Lab File ID: VB01106.D

Level: (low/med) MED Date Received: 07/27/98

% Moisture: not dec. 15.65 Date Analyzed: 08/03/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	960	U
1330-20-7	o-Xylene	640	U
100-42-5	Styrene	640	U
75-25-2	Bromoform	640	U
79-34-5	1,1,2,2-Tetrachloroethane	640	U
541-73-1	1,3-Dichlorobenzene	960	U
106-46-7	1,4-Dichlorobenzene	960	U
95-50-1	1,2-Dichlorobenzene	960	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

277-3

Lab Name: FMETL NJDEP # 13561

Project: 980932 Case No.: 3754 SDG No: Location: B.277

Matrix: (soil/water) SOIL Lab Sample ID: 3754.03

Sample wt/vol: 9.9 (g/ml) G Lab File ID: VB01107.D

Level: (low/med) MED Date Received: 07/27/98

% Moisture: not dec. 21.83 Date Analyzed: 08/03/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2300	U
107131	Acrylonitrile	2300	U
75650	tert-Butyl alcohol	4200	U
1634044	Methyl-tert-Butyl ether	970	U
108203	Di-isopropyl ether	640	U
	Dichlorodifluoromethane	1300	U
74-87-3	Chloromethane	320	U
75-01-4	Vinyl Chloride	970	U
74-83-9	Bromomethane	640	U
75-00-3	Chloroethane	970	U
75-69-4	Trichlorofluoromethane	640	U
75-35-4	1,1-Dichloroethene	320	U
67-64-1	Acetone	640	U
75-15-0	Carbon Disulfide	320	U
75-09-2	Methylene Chloride	860	
156-60-5	trans-1,2-Dichloroethene	640	U
75-35-3	1,1-Dichloroethane	320	U
108-05-4	Vinyl Acetate	970	U
78-93-3	2-Butanone	970	U
	cis-1,2-Dichloroethene	320	U
67-66-3	Chloroform	320	U
75-55-6	1,1,1-Trichloroethane	320	U
56-23-5	Carbon Tetrachloride	640	U
71-43-2	Benzene	320	U
107-06-2	1,2-Dichloroethane	640	U
79-01-6	Trichloroethene	320	U
78-87-5	1,2-Dichloropropane	320	U
75-27-4	Bromodichloromethane	320	U
110-75-8	2-Chloroethyl vinyl ether	640	U
10061-01-5	cis-1,3-Dichloropropene	320	U
108-10-1	4-Methyl-2-Pentanone	640	U
108-88-3	Toluene	320	U
10061-02-6	trans-1,3-Dichloropropene	640	U
79-00-5	1,1,2-Trichloroethane	640	U
127-18-4	Tetrachloroethene	320	U
591-78-6	2-Hexanone	640	U
126-48-1	Dibromochloromethane	640	U
108-90-7	Chlorobenzene	320	U
100-41-4	Ethylbenzene	910	

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

277-3

Lab Name: FMETL NJDEP # 13561

Project: 980932 Case No.: 3754 SDG No: Location: B.277

Matrix: (soil/water) SOIL Lab Sample ID: 3754.03

Sample wt/vol: 9.9 (g/ml) G Lab File ID: VB01107.D

Level: (low/med) MED Date Received: 07/27/98

% Moisture: not dec. 21.83 Date Analyzed: 08/03/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	970	U
1330-20-7	o-Xylene	640	U
100-42-5	Styrene	640	U
75-25-2	Bromoform	640	U
79-34-5	1,1,2,2-Tetrachloroethane	640	U
541-73-1	1,3-Dichlorobenzene	970	U
106-46-7	1,4-Dichlorobenzene	970	U
95-50-1	1,2-Dichlorobenzene	970	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID. 277-4

Lab Name: FMETL NJDEP # 13561

Project: 980932 Case No.: 3754 SDG No: Location: B.277

Matrix: (soil/water) SOIL Lab Sample ID: 3754.04

Sample wt/vol: 10.7 (g/ml) G Lab File ID: VB01108.D

Level: (low/med) MED Date Received: 07/27/98

% Moisture: not dec. 12.97 Date Analyzed: 08/03/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1900	U
107131	Acrylonitrile	1900	U
75650	tert-Butyl alcohol	3500	U
1634044	Methyl-tert-Butyl ether	800	U
108203	Di-isopropyl ether	540	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	270	U
75-01-4	Vinyl Chloride	800	U
74-83-9	Bromomethane	540	U
75-00-3	Chloroethane	800	U
75-69-4	Trichlorofluoromethane	540	U
75-35-4	1,1-Dichloroethene	270	U
67-64-1	Acetone	540	U
75-15-0	Carbon Disulfide	270	U
75-09-2	Methylene Chloride	540	U
156-60-5	trans-1,2-Dichloroethene	540	U
75-35-3	1,1-Dichloroethane	270	U
108-05-4	Vinyl Acetate	800	U
78-93-3	2-Butanone	800	U
	cis-1,2-Dichloroethene	270	U
67-66-3	Chloroform	270	U
75-55-6	1,1,1-Trichloroethane	270	U
56-23-5	Carbon Tetrachloride	540	U
71-43-2	Benzene	270	U
107-06-2	1,2-Dichloroethane	540	U
79-01-6	Trichloroethene	270	U
78-87-5	1,2-Dichloropropane	270	U
75-27-4	Bromodichloromethane	270	U
110-75-8	2-Chloroethyl vinyl ether	540	U
10061-01-5	cis-1,3-Dichloropropene	270	U
108-10-1	4-Methyl-2-Pentanone	540	U
108-88-3	Toluene	270	U
10061-02-6	trans-1,3-Dichloropropene	540	U
79-00-5	1,1,2-Trichloroethane	540	U
127-18-4	Tetrachloroethene	270	U
591-78-6	2-Hexanone	540	U
126-48-1	Dibromochloromethane	540	U
108-90-7	Chlorobenzene	270	U
100-41-4	Ethylbenzene	540	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

277-4

Lab Name: FMETL NJDEP # 13561

Project: 980932 Case No.: 3754 SDG No: Location: B.277

Matrix: (soil/water) SOIL Lab Sample ID: 3754.04

Sample wt/vol: 10.7 (g/ml) G Lab File ID: VB01108.D

Level: (low/med) MED Date Received: 07/27/98

% Moisture: not dec. 12.97 Date Analyzed: 08/03/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	800	U
1330-20-7	o-Xylene	540	U
100-42-5	Styrene	540	U
75-25-2	Bromoform	540	U
79-34-5	1,1,2,2-Tetrachloroethane	540	U
541-73-1	1,3-Dichlorobenzene	800	U
106-46-7	1,4-Dichlorobenzene	800	U
95-50-1	1,2-Dichlorobenzene	800	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

277-5

Lab Name: FMETL NJDEP # 13561

Project: 980932 Case No.: 3754 SDG No: Location: B.277

Matrix: (soil/water) SOIL Lab Sample ID: 3754.05

Sample wt/vol: 10.6 (g/ml) G Lab File ID: VB01109.D

Level: (low/med) MED Date Received: 07/27/98

% Moisture: not dec. 13.84 Date Analyzed: 08/03/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1900	U
107131	Acrylonitrile	1900	U
75650	tert-Butyl alcohol	3600	U
1634044	Methyl-tert-Butyl ether	820	U
108203	Di-isopropyl ether	550	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	270	U
75-01-4	Vinyl Chloride	820	U
74-83-9	Bromomethane	550	U
75-00-3	Chloroethane	820	U
75-69-4	Trichlorofluoromethane	550	U
75-35-4	1,1-Dichloroethene	270	U
67-64-1	Acetone	1300	
75-15-0	Carbon Disulfide	270	U
75-09-2	Methylene Chloride	650	
156-60-5	trans-1,2-Dichloroethene	550	U
75-35-3	1,1-Dichloroethane	270	U
108-05-4	Vinyl Acetate	820	U
78-93-3	2-Butanone	2500	
	cis-1,2-Dichloroethene	270	U
67-66-3	Chloroform	270	U
75-55-6	1,1,1-Trichloroethane	270	U
56-23-5	Carbon Tetrachloride	550	U
71-43-2	Benzene	270	U
107-06-2	1,2-Dichloroethane	550	U
79-01-6	Trichloroethene	270	U
78-87-5	1,2-Dichloropropane	270	U
75-27-4	Bromodichloromethane	270	U
110-75-8	2-Chloroethyl vinyl ether	550	U
10061-01-5	cis-1,3-Dichloropropene	270	U
108-10-1	4-Methyl-2-Pentanone	550	U
108-88-3	Toluene	270	U
10061-02-6	trans-1,3-Dichloropropene	550	U
79-00-5	1,1,2-Trichloroethane	550	U
127-18-4	Tetrachloroethene	270	U
591-78-6	2-Hexanone	550	U
126-48-1	Dibromochloromethane	550	U
108-90-7	Chlorobenzene	270	U
100-41-4	Ethylbenzene	550	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

277-5

Lab Name: FMETL NJDEP # 13561

Project: 980932 Case No.: 3754 SDG No: _____ Location: B.277

Matrix: (soil/water) SOIL Lab Sample ID: 3754.05

Sample wt/vol: 10.6 (g/ml) G Lab File ID: VB01109.D

Level: (low/med) MED Date Received: 07/27/98

% Moisture: not dec. 13.84 Date Analyzed: 08/03/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	820	U
1330-20-7	o-Xylene	550	U
100-42-5	Styrene	550	U
75-25-2	Bromoform	550	U
79-34-5	1,1,2,2-Tetrachloroethane	550	U
541-73-1	1,3-Dichlorobenzene	820	U
106-46-7	1,4-Dichlorobenzene	820	U
95-50-1	1,2-Dichlorobenzene	820	U

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

277-6

Lab Name: FMETL NJDEP # 13561

Project: 980932 Case No.: 3754 SDG No: Location: B.277

Matrix: (soil/water) SOIL Lab Sample ID: 3754.06

Sample wt/vol: 10.2 (g/ml) G Lab File ID: VB01110.D

Level: (low/med) MED Date Received: 07/27/98

% Moisture: not dec. 12.25 Date Analyzed: 08/03/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2000	U
107131	Acrylonitrile	2000	U
75650	tert-Butyl alcohol	3600	U
1634044	Methyl-tert-Butyl ether	840	U
108203	Di-isopropyl ether	560	U
	Dichlorodifluoromethane	1100	U
74-87-3	Chloromethane	280	U
75-01-4	Vinyl Chloride	840	U
74-83-9	Bromomethane	560	U
75-00-3	Chloroethane	840	U
75-69-4	Trichlorofluoromethane	560	U
75-35-4	1,1-Dichloroethene	280	U
67-64-1	Acetone	1500	
75-15-0	Carbon Disulfide	280	U
75-09-2	Methylene Chloride	720	
156-60-5	trans-1,2-Dichloroethene	560	U
75-35-3	1,1-Dichloroethane	280	U
108-05-4	Vinyl Acetate	840	U
78-93-3	2-Butanone	3300	
	cis-1,2-Dichloroethene	280	U
67-66-3	Chloroform	280	U
75-55-6	1,1,1-Trichloroethane	280	U
56-23-5	Carbon Tetrachloride	560	U
71-43-2	Benzene	410	
107-06-2	1,2-Dichloroethane	560	U
79-01-6	Trichloroethene	280	U
78-87-5	1,2-Dichloropropane	280	U
75-27-4	Bromodichloromethane	280	U
110-75-8	2-Chloroethyl vinyl ether	560	U
10061-01-5	cis-1,3-Dichloropropene	280	U
108-10-1	4-Methyl-2-Pentanone	560	U
108-88-3	Toluene	280	U
10061-02-6	trans-1,3-Dichloropropene	560	U
79-00-5	1,1,2-Trichloroethane	560	U
127-18-4	Tetrachloroethene	280	U
591-78-6	2-Hexanone	560	U
126-48-1	Dibromochloromethane	560	U
108-90-7	Chlorobenzene	280	U
100-41-4	Ethylbenzene	8500	

1A

FIELD ID.

VOLATILE ORGANICS ANALYSIS DATA SHEET

277-6

Lab Name: FMETL NJDEP # 13561

Project: 980932 Case No.: 3754 SDG No: Location: B.277

Matrix: (soil/water) SOIL Lab Sample ID: 3754.06

Sample wt/vol: 10.2 (g/ml) G Lab File ID: VB01110.D

Level: (low/med) MED Date Received: 07/27/98

% Moisture: not dec. 12.25 Date Analyzed: 08/03/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	7500	
1330-20-7	o-Xylene	560	U
100-42-5	Styrene	560	U
75-25-2	Bromoform	560	U
79-34-5	1,1,2,2-Tetrachloroethane	560	U
541-73-1	1,3-Dichlorobenzene	840	U
106-46-7	1,4-Dichlorobenzene	840	U
95-50-1	1,2-Dichlorobenzene	840	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

277-1

Lab Name: FMETL NJDEP # 13561

Project: 980932 Case No.: 3754 SDG No: Location: B.277

Matrix: (soil/water) SOIL Lab Sample ID: 3754.01

Sample wt/vol: 10.4 (g/ml) G Lab File ID: VB01105.D

Level: (low/med) MED Date Received: 07/27/98

% Moisture: not dec. 20.04 Date Analyzed: 08/03/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 15

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown hydrocarbon	27.25	1700	J
2. 015869-94-0	Octane, 3,6-dimethyl-	29.39	2100	JN
3. 014676-29-0	Heptane, 3-ethyl-2-methyl-	29.83	1800	JN
4. 013395-76-1	Cyclohexanone, 2,3-dimethyl-	30.34	5900	JN
5.	unknown hydrocarbon	31.44	2200	J
6.	unknown hydrocarbon	31.88	1800	J
7.	unknown	32.00	1900	J
8. 002847-72-5	Decane, 4-methyl-	32.23	3500	JN
9. 001678-93-9	Cyclohexane, butyl-	33.63	2400	JN
10. 000135-98-8	Benzene, (1-methylpropyl)-	33.79	2000	JN
11. 000105-05-5	Benzene, 1,4-diethyl-	34.96	4500	JN
12. 000493-02-7	Naphthalene, decahydro-, trans-	35.33	2500	JN
13. 000933-98-2	Benzene, 1-ethyl-2,3-dimethyl-	36.17	4100	JN
14.	unknown	36.77	6100	J
15.	unknown	37.41	8000	J

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

277-2

Lab Name: FMETL NJDEP # 13561

Project: 980932 Case No.: 3754 SDG No: _____ Location: B.277

Matrix: (soil/water) SOIL Lab Sample ID: 3754.02

Sample wt/vol: 9.3 (g/ml) G Lab File ID: VB01106.D

Level: (low/med) MED Date Received: 07/27/98

% Moisture: not dec. 15.65 Date Analyzed: 08/03/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 15

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 000108-87-2	Cyclohexane, methyl-	21.85	14000	JN
2. 000591-21-9	Cyclohexane, 1,3-dimethyl-	24.21	19000	JN
3.	unknown hydrocarbon	27.24	19000	J
4. 015869-94-0	Octane, 3,6-dimethyl-	29.39	18000	JN
5.	unknown hydrocarbon	30.34	54000	J
6.	unknown	31.99	21000	J
7. 002847-72-5	Decane, 4-methyl-	32.23	28000	JN
8. 001678-93-9	Cyclohexane, butyl-	33.63	20000	JN
9. 000105-05-5	Benzene, 1,4-diethyl-	34.97	39000	JN
10.	unknown	35.19	21000	J
11. 000493-02-7	Naphthalene, decahydro-, trans-	35.33	15000	JN
12. 002870-04-4	Benzene, 2-ethyl-1,3-dimethyl-	36.18	36000	JN
13.	unknown hydrocarbon	36.59	62000	J
14.	unknown	36.78	39000	J
15.	unknown	37.41	47000	J

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

277-3

Lab Name: FMETL NJDEP # 13561

Project: 980932 Case No.: 3754 SDG No: _____ Location: B.277

Matrix: (soil/water) SOIL Lab Sample ID: 3754.03

Sample wt/vol: 9.9 (g/ml) G Lab File ID: VB01107.D

Level: (low/med) MED Date Received: 07/27/98

% Moisture: not dec. 21.83 Date Analyzed: 08/03/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 1

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown hydrocarbon	26.91	7300	J

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

277-4

Lab Name: FMETL NJDEP # 13561

Project: 980932 Case No.: 3754 SDG No: Location: B.277

Matrix: (soil/water) SOIL Lab Sample ID: 3754.04

Sample wt/vol: 10.7 (g/ml) G Lab File ID: VB01108.D

Level: (low/med) MED Date Received: 07/27/98

% Moisture: not dec. 12.97 Date Analyzed: 08/03/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

277-5

Lab Name: FMETL NJDEP # 13561

Project: 980932 Case No.: 3754 SDG No: Location: B.277

Matrix: (soil/water) SOIL Lab Sample ID: 3754.05

Sample wt/vol: 10.6 (g/ml) G Lab File ID: VB01109.D

Level: (low/med) MED Date Received: 07/27/98

% Moisture: not dec. 13.84 Date Analyzed: 08/03/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

277-6

Lab Name: FMETL NJDEP # 13561

Project: 980932 Case No.: 3754 SDG No: Location: B.277

Matrix: (soil/water) SOIL Lab Sample ID: 3754.06

Sample wt/vol: 10.2 (g/ml) G Lab File ID: VB01110.D

Level: (low/med) MED Date Received: 07/27/98

% Moisture: not dec. 12.25 Date Analyzed: 08/03/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

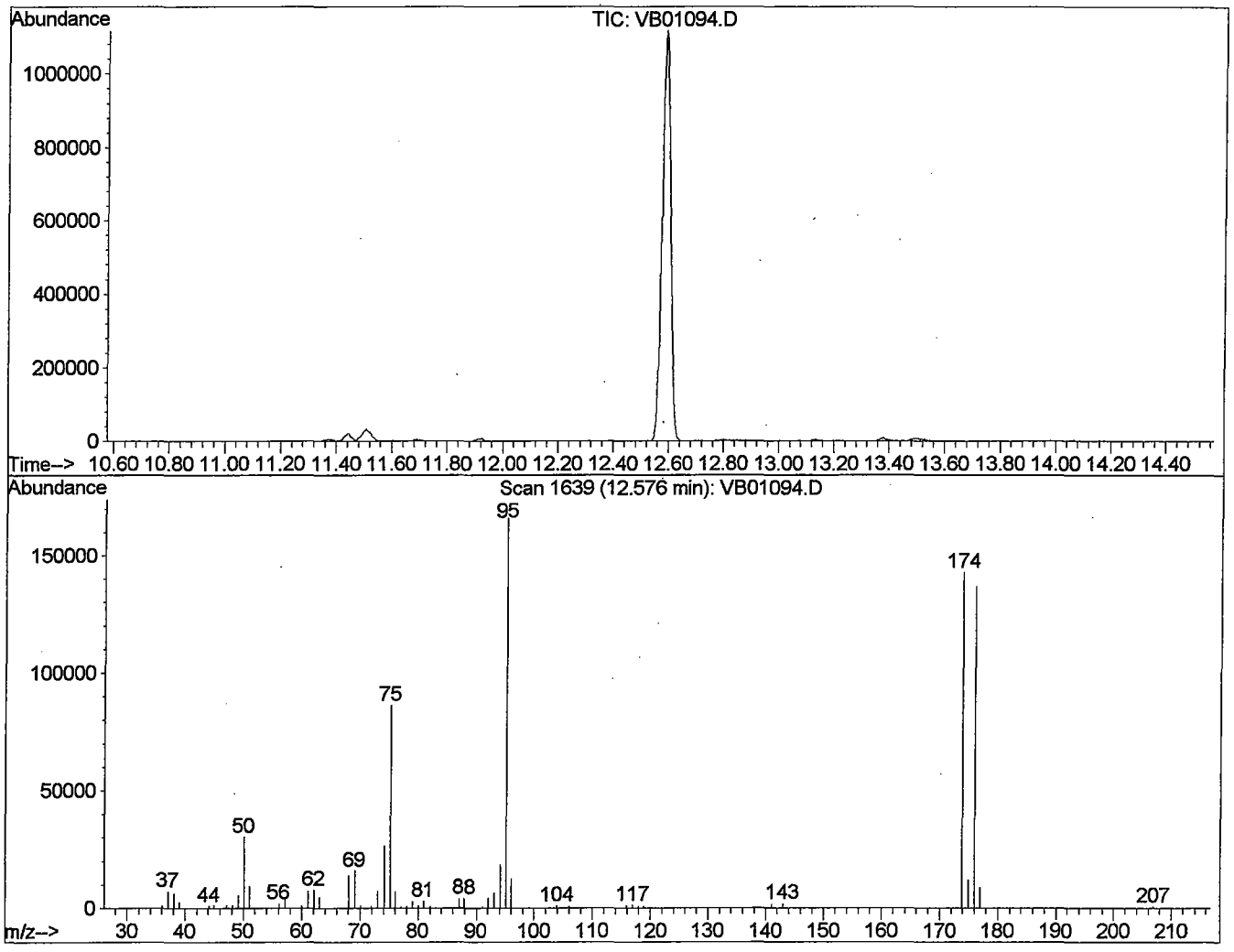
Number TICs found: 15

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 002216-34-4	Octane, 4-methyl-	26.91	16000	JN
2.	unknown hydrocarbon	27.24	17000	J
3.	unknown hydrocarbon	30.33	37000	J
4. 000611-14-3	Benzene, 1-ethyl-2-methyl-	32.22	21000	JN
5. 000526-73-8	Benzene, 1,2,3-trimethyl-	33.39	53000	JN
6. 000526-73-8	Benzene, 1,2,3-trimethyl-	34.60	25000	JN
7.	unknown	34.96	39000	J
8. 000934-74-7	Benzene, 1-ethyl-3,5-dimethyl-	35.15	47000	JN
9. 000493-02-7	Naphthalene, decahydro-, trans-	35.33	17000	JN
10. 000933-98-2	Benzene, 1-ethyl-2,3-dimethyl-	35.87	18000	JN
11. 000874-41-9	Benzene, 1-ethyl-2,4-dimethyl-	35.97	20000	JN
12. 000933-98-2	Benzene, 1-ethyl-2,3-dimethyl-	36.17	23000	JN
13.	unknown hydrocarbon	36.78	25000	J
14. 000095-93-2	Benzene, 1,2,4,5-tetramethyl-	37.35	26000	JN
15.	unknown	37.53	16000	J

BFB

Data File : C:\HPCHEM\1\DATA\980803\VB01094.D
Acq On : 3 Aug 1998 8:34 am
Sample : BFB Tune
Misc :
MS Integration Params: RTEINT.P
Method : C:\HPCHEM\1\METHODS\M62411.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP

Vial: 1
Operator: Skelton
Inst : GC/MS Ins
Multiplr: 1.00



Spectrum Information: Scan 1639

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.3	30288	PASS
75	95	30	60	52.0	86264	PASS
95	95	100	100	100.0	165824	PASS
96	95	5	9	7.5	12446	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	86.1	142848	PASS
175	174	5	9	8.4	12062	PASS
176	174	95	101	95.7	136768	PASS
177	176	5	9	6.5	8825	PASS

VB01094.D M62411.M Mon Aug 03 23:41:06 1998

4A

VOLATILE METHOD BLANK SUMMARY

FIELD ID.

VBLK32

Lab Name: FMETL NJDEP # 13561

Project: 980932 Case No.: 3754 SDG No: _____ Location: B.277

Lab File ID: VB01096.D Lab Sample ID: VBLK32

Date Analyzed: 08/03/98 Time Analyzed: 10:32

GC Column: RTX-502 ID: 0.25 (mm) Heated Purge: (Y/N) N

Instrument ID: VoaGCMS2

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	FIELD ID.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	277-1	3754.01	VB01105.D	18:17
02	277-2	3754.02	VB01106.D	19:03
03	277-3	3754.03	VB01107.D	19:49
04	277-4	3754.04	VB01108.D	20:35
05	277-5	3754.05	VB01109.D	21:21
06	277-6	3754.06	VB01110.D	22:06

COMMENTS

Spike Recovery and RPD Summary Report - Soil

Method : C:\HPCHEM\1\METHODS\M62411.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Mon Aug 03 11:07:20 1998
Response via : Initial Calibration

Non-Spiked Sample: VB01110.D

	Spike Sample	Spike Duplicate Sample
File ID :	VB01111.D	VB01112.D
Sample :	3754.06ms	3754.06msd
Acq Time:	3 Aug 1998 10:52 pm	3 Aug 1998 11:42 pm

Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC Limits RPD	QC Limits % Rec
1,1-Dichloroethene	0.0	20	17	15	84	74	12	22	59-172
Benzene	1.5	20	22	20	101	94	7	24	62-137
Trichloroethene	0.0	20	19	18	96	88	8	21	66-142
Toluene	0.0	20	24	20	118	99	18	21	59-139
Chlorobenzene	0.0	20	17	17	86	87	2	21	60-133

- Fails Limit Check

M62411.M Tue Aug 04 09:40:45 1998

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: FMETL **Project** 98-0932

NJDEP # 13461 **Location** B.277

Case No.: 3754

	EPA SAMPLE NO.	SMC1 DCE #	SMC2 TOL #	SMC3 BFB #	TOT OUT
01	VBLK32	112.53	96.40	100.37	0
02	3754.01	91.04	67.94	66.89	0
03	3754.02	86.33	70.51	64.10	0
04	3754.03	76.50	65.71	55.33	0
05	3754.04	69.76	60.26	57.00	0
06	3754.05	65.55	59.90	57.48	0
07	3754.06	67.29	67.26	62.36	0

				QC LIMITS
SMC1	DCE	=	1,2-Dichloroethane-d4	(76-114)
SMC2	TOL	=	Toluene-d8	(88-110)
SMC3	BFB	=	Bromofluorobenzene	(86-115)

Column to be used to flag recovery

*Values outside of contract required QC limits

D System Monitoring Compounds diluted out

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980803\VB01096.D Vial: 1
Acq On : 3 Aug 1998 10:32 am Operator: Skelton
Sample : VBLK32 Inst : GC/MS Ins
Misc : VBLK32 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 3 11:13 1998 Quant Results File: M62411.RES

Quant Method : C:\HPCHEM\1\METHODS\M62411.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Fri Jul 31 08:48:39 1998
Response via : Initial Calibration
DataAcq Meth : M62411

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	18.15	128	303421	30.00	ug/L	0.00
26) 1,4-Difluorobenzene	20.78	114	2095911	30.00	ug/L	0.00
37) Chlorobenzene-d5	28.61	119	592094	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	19.71	65	809701	33.76	ug/L	0.00
Spiked Amount 30.000	Range 76 - 114		Recovery = 112.53%			
35) Toluene-d8	24.78	98	2179426	28.92	ug/L	0.00
Spiked Amount 30.000	Range 88 - 110		Recovery = 96.40%			
49) Bromofluorobenzene	31.63	95	912354	30.11	ug/L	0.00
Spiked Amount 30.000	Range 86 - 115		Recovery = 100.37%			

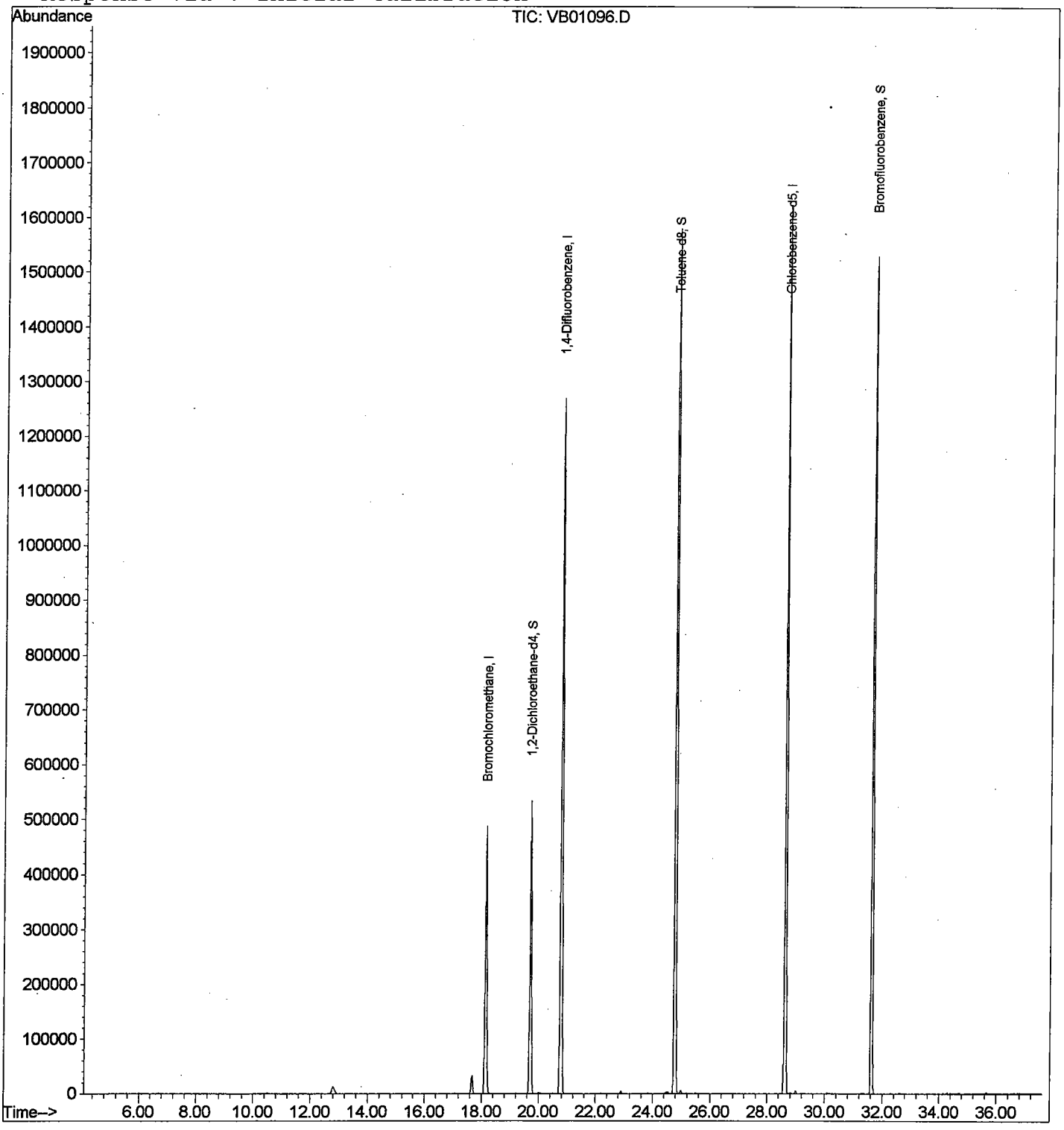
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980803\VB01096.D Vial: 1
Acq On : 3 Aug 1998 10:32 am Operator: Skelton
Sample : VBLK32 Inst : GC/MS Ins
Misc : VBLK32 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 3 11:13 1998 Quant Results File: M62411.RES

Method : C:\HPCHEM\1\METHODS\M62411.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Mon Aug 03 11:07:20 1998
Response via : Initial Calibration



2

Quantitation Report (QT/LSC Reviewed)

Data File : C:\HPCHEM\1\DATA\980803\VB01105.D Vial: 9
Acq On : 3 Aug 1998 6:17 pm Operator: Skelton
Sample : 3754.01 Inst : GC/MS Ins
Misc : 277-1 (6') Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 4 8:19 1998 Quant Results File: M62411.RES

Quant Method : C:\HPCHEM\1\METHODS\M62411.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Mon Aug 03 11:07:20 1998
Response via : Initial Calibration
DataAcq Meth : M62411

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	18.17	128	314632	30.00	ug/L	0.02
26) 1,4-Difluorobenzene	20.78	114	2442040	30.00	ug/L	0.00
37) Chlorobenzene-d5	28.62	119	698197	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	19.72	65	1811290	72.83	ug/L	0.00
Spiked Amount 30.000	Range 76 - 114		Recovery = 242.77%#			
35) Toluene-d8	24.78	98	4772353	54.35	ug/L	0.00
Spiked Amount 30.000	Range 88 - 110		Recovery = 181.17%#			
49) Bromofluorobenzene	31.64	95	1911747	53.51	ug/L	0.00
Spiked Amount 30.000	Range 86 - 115		Recovery = 178.37%#			
Target Compounds						Qvalue
14) Acetone	10.56	43	35387	5.71	ug/L #	65
16) Methylene Chloride	12.84	84	40351	1.99	ug/L	89
20) 2-Butanone	16.70	43	69935	9.22	ug/L	84
44) Ethylbenzene	28.81	91	252641	2.29	ug/L	92

(#) = qualifier out of range (m) = manual integration

4

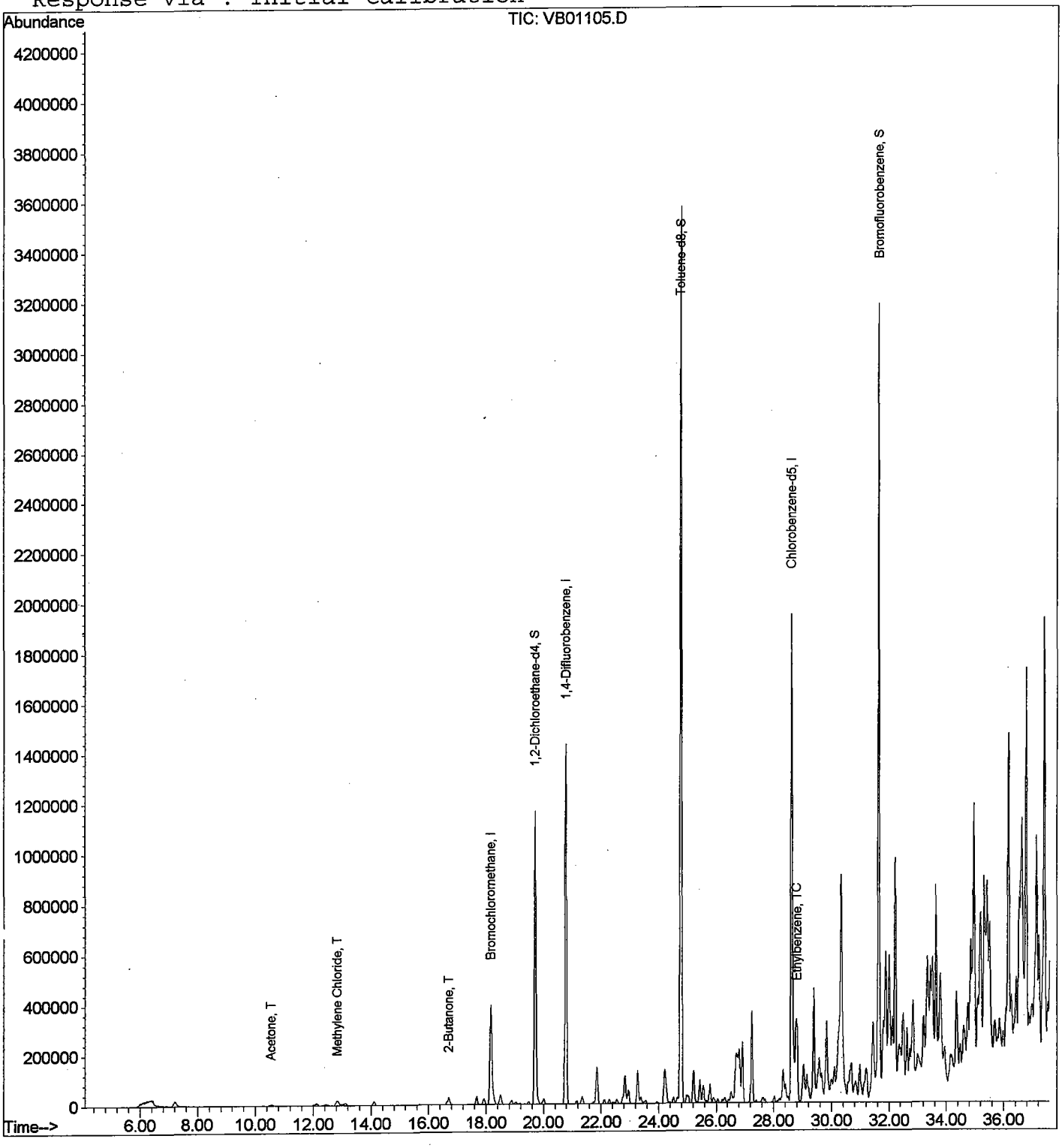
Quantitation Report

Data File : C:\HPCHEM\1\DATA\980803\VB01105.D
Acq On : 3 Aug 1998 6:17 pm
Sample : 3754.01
Misc : 277-1 (6')
MS Integration Params: RTEINT.P
Quant Time: Aug 4 8:19 1998

Vial: 9
Operator: Skelton
Inst : GC/MS Ins
Multiplr: 1.00

Quant Results File: M62411.RES

Method : C:\HPCHEM\1\METHODS\M62411.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Mon Aug 03 11:07:20 1998
Response via : Initial Calibration



Quantitation Report (QT/LSC Reviewed)

Data File : C:\HPCHEM\1\DATA\980803\VB01106.D Vial: 10
Acq On : 3 Aug 1998 7:03 pm Operator: Skelton
Sample : 3754.02 Inst : GC/MS Ins
Misc : 277-2 (6') Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 3 23:28 1998 Quant Results File: M62411.RES

Quant Method : C:\HPCHEM\1\METHODS\M62411.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Mon Aug 03 11:07:20 1998
Response via : Initial Calibration
DataAcq Meth : M62411

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	18.16	128	353044	30.00	ug/L	0.01
26) 1,4-Difluorobenzene	20.77	114	2657126	30.00	ug/L	0.00
37) Chlorobenzene-d5	28.62	119	954172	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	19.72	65	1927096	69.06	ug/L	0.00
Spiked Amount 30.000	Range 76 - 114		Recovery = 230.20%#			
35) Toluene-d8	24.78	98	5388844	56.41	ug/L	0.00
Spiked Amount 30.000	Range 88 - 110		Recovery = 188.03%#			
49) Bromofluorobenzene	31.64	95	2504060	51.28	ug/L	0.00
Spiked Amount 30.000	Range 86 - 115		Recovery = 170.93%#			
Target Compounds						Qvalue
14) Acetone	10.57	43	38117m	5.48	ug/L	
16) Methylene Chloride	12.85	84	57788	2.53	ug/L	92
44) Ethylbenzene	28.81	91	3434407	22.83	ug/L	100

(#) = qualifier out of range (m) = manual integration

45

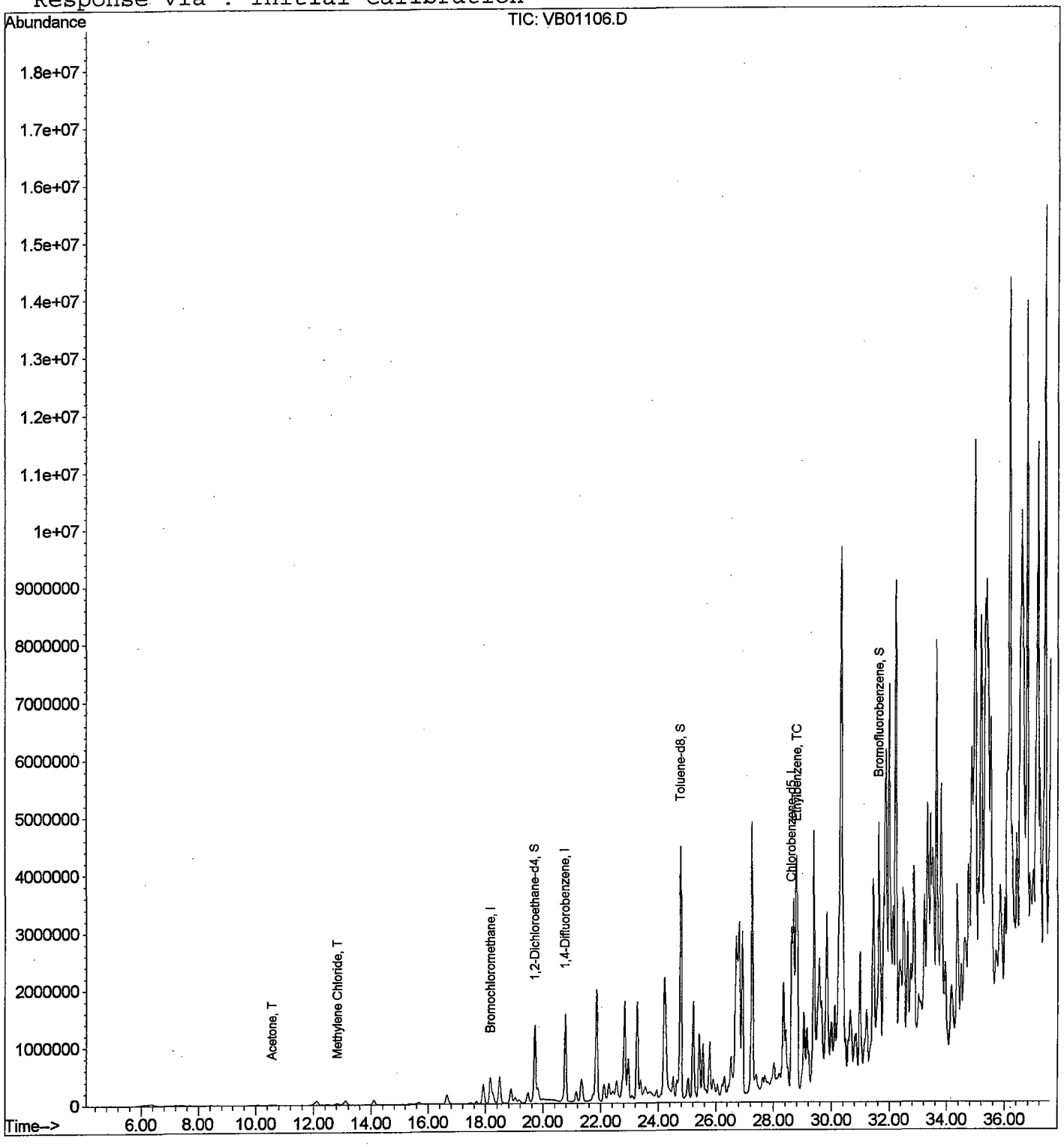
Quantitation Report

Data File : C:\HPCHEM\1\DATA\980803\VB01106.D
Acq On : 3 Aug 1998 7:03 pm
Sample : 3754.02
Misc : 277-2 (6')
MS Integration Params: RTEINT.P
Quant Time: Aug 3 23:28 1998

Vial: 10
Operator: Skelton
Inst : GC/MS Ins
Multiplr: 1.00

Quant Results File: M62411.RES

Method : C:\HPCHEM\1\METHODS\M62411.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Mon Aug 03 11:07:20 1998
Response via : Initial Calibration



Quantitation Report (QT/LSC Reviewed)

Data File : C:\HPCHEM\1\DATA\980803\VB01107.D Vial: 11
Acq On : 3 Aug 1998 7:49 pm Operator: Skelton
Sample : 3754.03 Inst : GC/MS Ins
Misc : 277-3 (6') Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 3 23:32 1998 Quant Results File: M62411.RES

Quant Method : C:\HPCHEM\1\METHODS\M62411.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Mon Aug 03 11:07:20 1998
Response via : Initial Calibration
DataAcq Meth : M62411

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	18.18	128	435190	30.00	ug/L	0.03
26) 1,4-Difluorobenzene	20.78	114	3244021	30.00	ug/L	0.00
37) Chlorobenzene-d5	28.61	119	1097796m	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	19.72	65	2105234	61.20	ug/L	0.00
Spiked Amount 30.000	Range 76 - 114		Recovery = 204.00%#			
35) Toluene-d8	24.78	98	6131574	52.57	ug/L	0.00
Spiked Amount 30.000	Range 88 - 110		Recovery = 175.23%#			
49) Bromofluorobenzene	31.64	95	2486295	44.26	ug/L	0.00
Spiked Amount 30.000	Range 86 - 115		Recovery = 147.53%#			
Target Compounds						Qvalue
16) Methylene Chloride	12.84	84	74637	2.66	ug/L	95
44) Ethylbenzene	28.81	91	487748	2.82	ug/L	

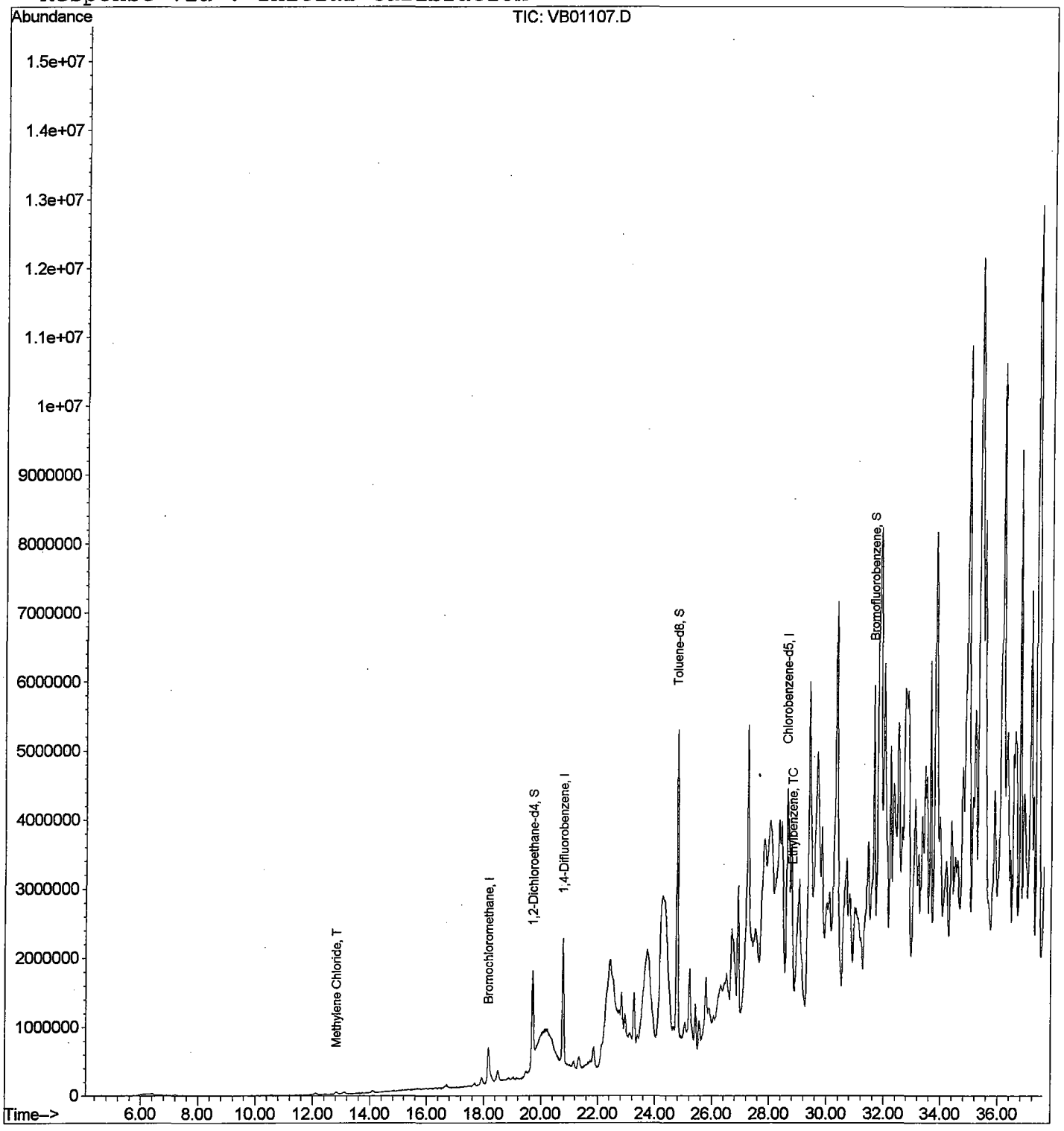
(#) = qualifier out of range (m) = manual integration

4

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980803\VB01107.D Vial: 11
Acq On : 3 Aug 1998 7:49 pm Operator: Skelton
Sample : 3754.03 Inst : GC/MS Ins
Misc : 277-3 (6') Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 3 23:32 1998 Quant Results File: M62411.RES

Method : C:\HPCHEM\1\METHODS\M62411.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Mon Aug 03 11:07:20 1998
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980803\VB01108.D Vial: 12
Acq On : 3 Aug 1998 8:35 pm Operator: Skelton
Sample : 3754.04 Inst : GC/MS Ins
Misc : 277-4 (7') Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 3 23:34 1998 Quant Results File: M62411.RES

Quant Method : C:\HPCHEM\1\METHODS\M62411.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Mon Aug 03 11:07:20 1998
Response via : Initial Calibration
DataAcq Meth : M62411

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	18.17	128	444583	30.00	ug/L	0.02
26) 1,4-Difluorobenzene	20.78	114	3511233	30.00	ug/L	0.00
37) Chlorobenzene-d5	28.61	119	988799m	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	19.72	65	1961186	55.81	ug/L	0.00
Spiked Amount 30.000	Range 76 - 114		Recovery = 186.03%#			
35) Toluene-d8	24.78	98	6086816	48.21	ug/L	0.00
Spiked Amount 30.000	Range 88 - 110		Recovery = 160.70%#			
49) Bromofluorobenzene	31.64	95	2307293	45.60	ug/L	0.00
Spiked Amount 30.000	Range 86 - 115		Recovery = 152.00%#			

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration

4

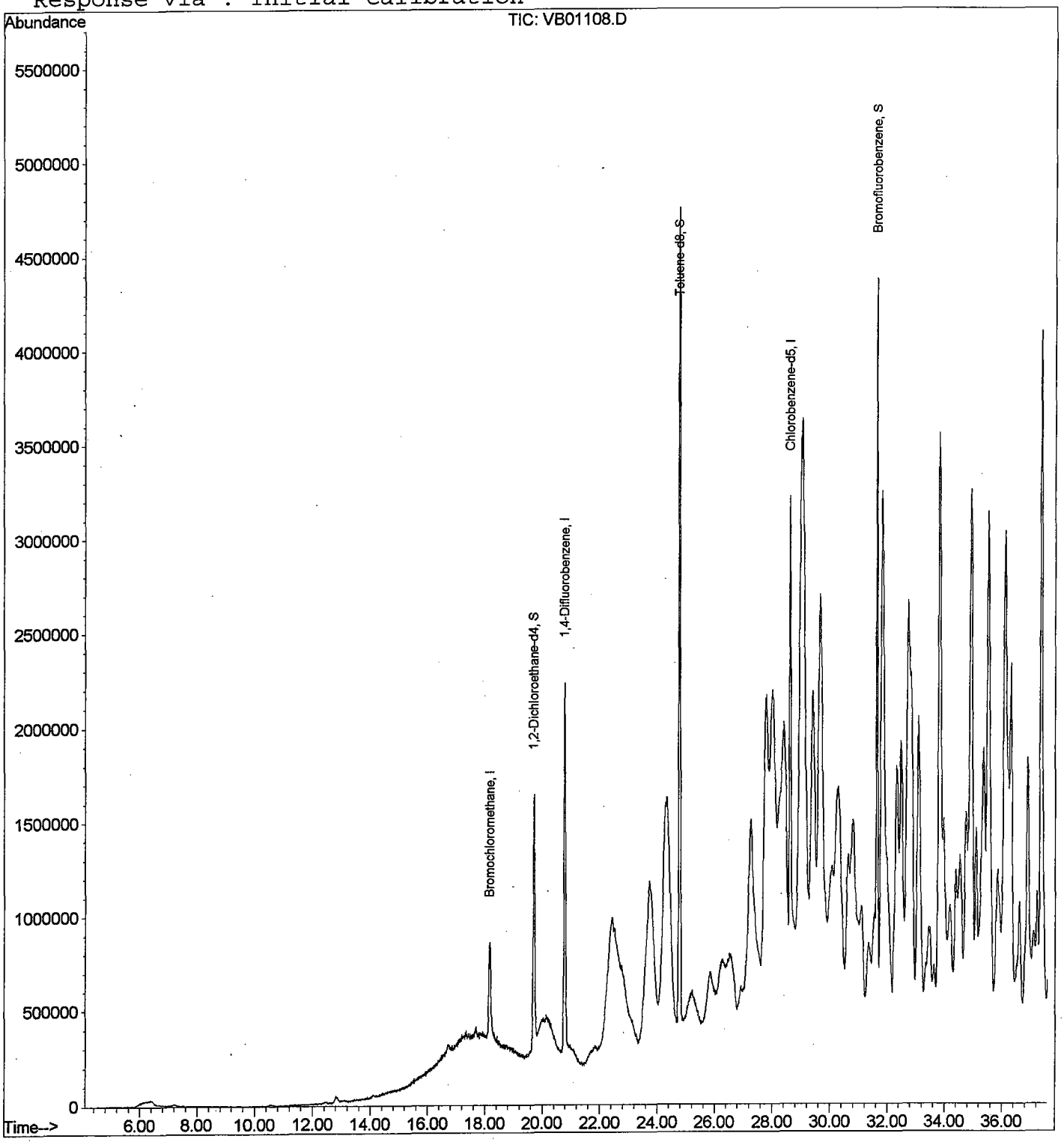
Quantitation Report

Data File : C:\HPCHEM\1\DATA\980803\VB01108.D
Acq On : 3 Aug 1998 8:35 pm
Sample : 3754.04
Misc : 277-4 (7')
MS Integration Params: RTEINT.P
Quant Time: Aug 3 23:34 1998

Vial: 12
Operator: Skelton
Inst : GC/MS Ins
Multiplr: 1.00

Quant Results File: M62411.RES

Method : C:\HPCHEM\1\METHODS\M62411.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Mon Aug 03 11:07:20 1998
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980803\VB01109.D Vial: 13
Acq On : 3 Aug 1998 9:21 pm Operator: Skelton
Sample : 3754.05 Inst : GC/MS Ins
Misc : 277-5 (7') Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 3 23:36 1998 Quant Results File: M62411.RES

Quant Method : C:\HPCHEM\1\METHODS\M62411.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Mon Aug 03 11:07:20 1998
Response via : Initial Calibration
DataAcq Meth : M62411

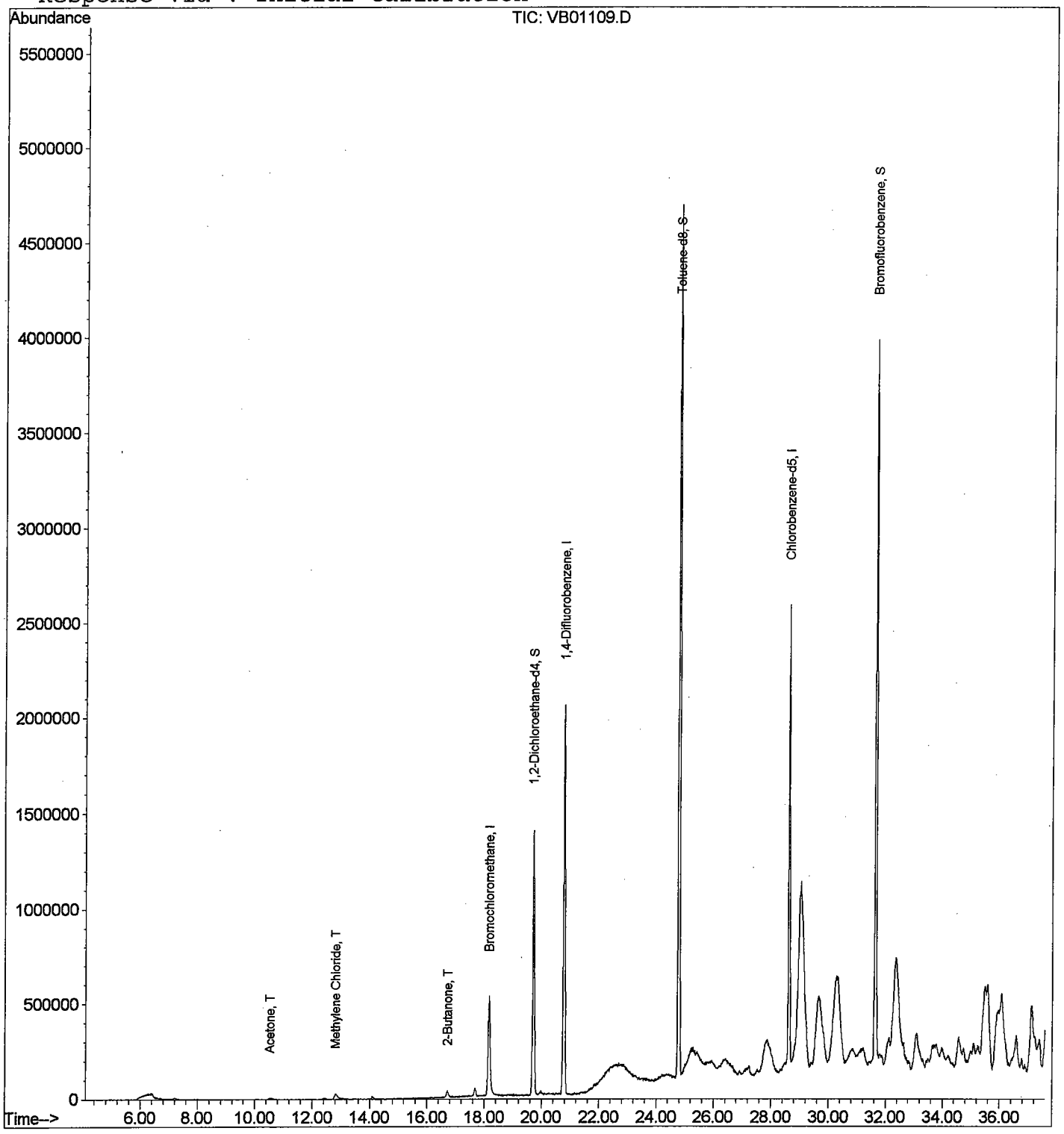
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	18.17	128	480890	30.00	ug/L	0.03
26) 1,4-Difluorobenzene	20.78	114	3729793	30.00	ug/L	0.00
37) Chlorobenzene-d5	28.61	119	1000784	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	19.72	65	1993104	52.44	ug/L	0.00
Spiked Amount 30.000	Range 76 - 114		Recovery = 174.80%#			
35) Toluene-d8	24.78	98	6425800	47.92	ug/L	0.00
Spiked Amount 30.000	Range 88 - 110		Recovery = 159.73%#			
49) Bromofluorobenzene	31.64	95	2354777	45.98	ug/L	0.00
Spiked Amount 30.000	Range 86 - 115		Recovery = 153.27%#			
Target Compounds						Qvalue
14) Acetone	10.54	43	45355	4.79	ug/L	76
16) Methylene Chloride	12.83	84	73715	2.37	ug/L	95
20) 2-Butanone	16.71	43	104390	9.01	ug/L	88

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980803\VB01109.D Vial: 13
Acq On : 3 Aug 1998 9:21 pm Operator: Skelton
Sample : 3754.05 Inst : GC/MS Ins
Misc : 277-5 (7') Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 3 23:36 1998 Quant Results File: M62411.RES

Method : C:\HPCHEM\1\METHODS\M62411.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Mon Aug 03 11:07:20 1998
Response via : Initial Calibration



Quantitation Report (QT/LSC Reviewed)

Data File : C:\HPCHEM\1\DATA\980803\VB01110.D Vial: 14
Acq On : 3 Aug 1998 10:06 pm Operator: Skelton
Sample : 3754.06 Inst : GC/MS Ins
Misc : 277-6 (6') Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 3 23:38 1998 Quant Results File: M62411.RES

Quant Method : C:\HPCHEM\1\METHODS\M62411.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Mon Aug 03 11:07:20 1998
Response via : Initial Calibration
DataAcq Meth : M62411

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane	18.16	128	481299	30.00	ug/L	0.02
26) 1,4-Difluorobenzene	20.77	114	3621467	30.00	ug/L	0.00
37) Chlorobenzene-d5	28.61	119	1089948	30.00	ug/L	0.00
System Monitoring Compounds						
25) 1,2-Dichloroethane-d4	19.72	65	2047820	53.83	ug/L	0.00
Spiked Amount 30.000	Range 76 - 114		Recovery = 179.43%#			
35) Toluene-d8	24.77	98	7007159	53.81	ug/L	0.00
Spiked Amount 30.000	Range 88 - 110		Recovery = 179.37%#			
49) Bromofluorobenzene	31.64	95	2782478	49.89	ug/L	0.00
Spiked Amount 30.000	Range 86 - 115		Recovery = 166.30%#			
Target Compounds						Qvalue
14) Acetone	10.55	43	51444	5.43	ug/L	83
16) Methylene Chloride	12.84	84	80165	2.58	ug/L	93
20) 2-Butanone	16.69	43	135072	11.65	ug/L	77
27) Benzene	20.02	78	191777	1.48	ug/L	97
44) Ethylbenzene	28.80	91	5223921	30.40	ug/L	94
45) m+p-Xylenes	29.00	106	1893189	26.74	ug/L	95

(#) = qualifier out of range (m) = manual integration

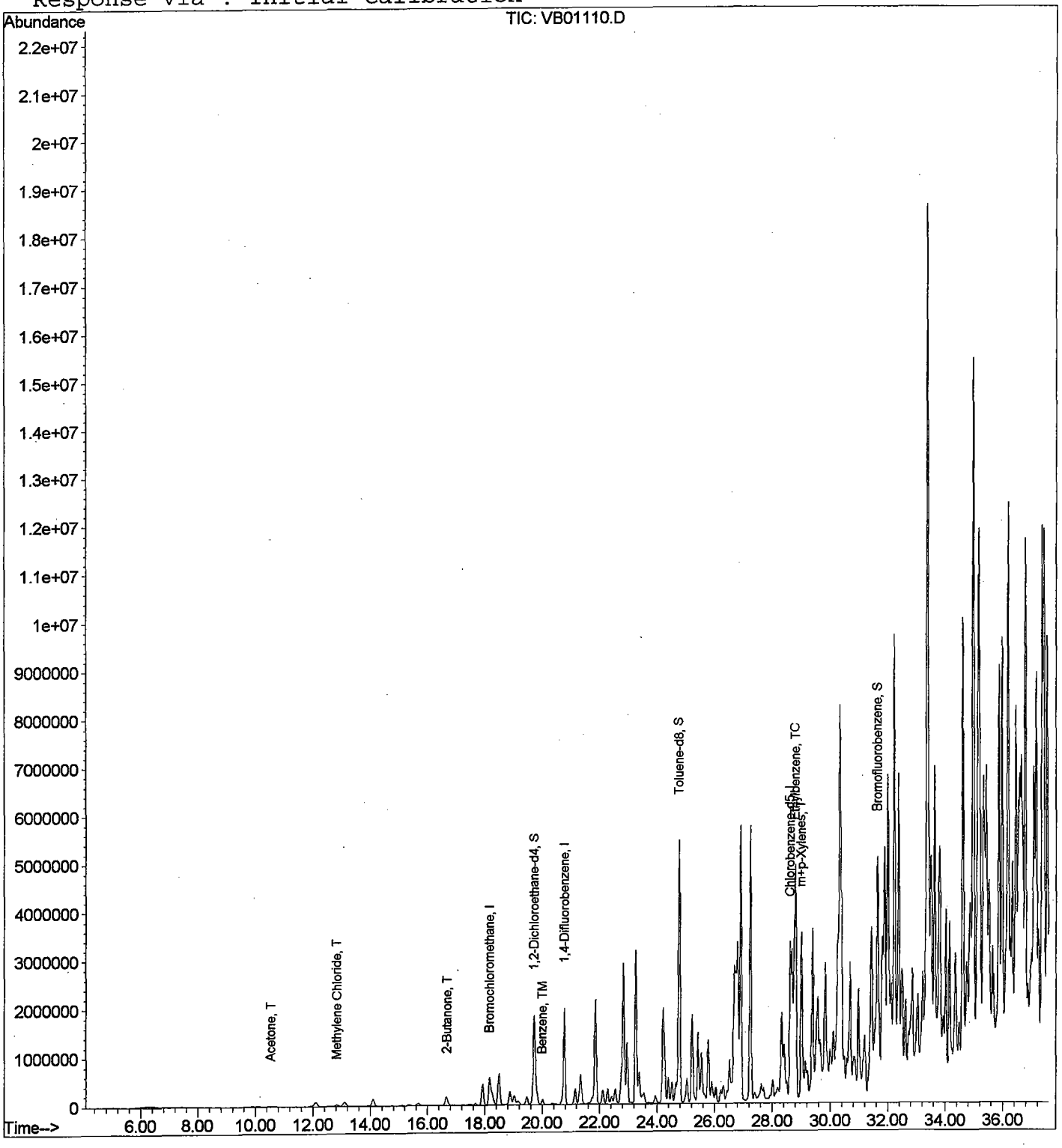
Quantitation Report

Data File : C:\HPCHEM\1\DATA\980803\VB01110.D
Acq On : 3 Aug 1998 10:06 pm
Sample : 3754.06
Misc : 277-6 (6')
MS Integration Params: RTEINT.P
Quant Time: Aug 3 23:38 1998

Vial: 14
Operator: Skelton
Inst : GC/MS Ins
Multiplr: 1.00

Quant Results File: M62411.RES

Method : C:\HPCHEM\1\METHODS\M62411.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Mon Aug 03 11:07:20 1998
Response via : Initial Calibration



5

LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

		Indicate* Yes, No, N/A
1.	Cover Page, Title Page listing Lab Certification #, facility name & address, & data of report submitted	Y
2.	Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted	Y
3.	Summary Table cross-referencing field ID #'s vs. Lab ID #'s Lab ID's submitted	Y
4.	Document bound, paginated and legible	Y
5.	Chain of Custody submitted	Y
6.	Samples submitted to lab within 48 hours of sample collection	Y
7.	Methodology Summary submitted	Y
8.	Results submitted on a dry weight basis	Y
9.	Method Detection Limits	Y
10.	Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP	Y

Laboratory Manager or Environmental Consultant's Signature _____

Date 6/16/09

Laboratory Certification # 13461

- *Refer to NJAC 7:26E - Appendix A, Section IV - Reduced Data Deliverables - Non-USEPA/CLP Methods for further guidance

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

REPORT OF ANALYSIS

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Project: Total Petroleum Hydrocarbons
98-0932
Bldg. 277
SMC

Project # 3754
Date Rec. 07/27/98
Date Compl. 07/28/98
Released by:

Daniel K. Wright Date: 8/6/98
Laboratory Director

Table of Contents

Method Summary

NJDEP Method OQA-QAM-025-10/97

Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

Fifteen grams (15g)(wet weight) of a soil sample is added to a 125 mL acid cleaned, solvent rinsed, capped Erlenmeyer flask. 15g anhydrous sodium sulfate is added to dry sample. Surrogate standard spiking solution is then added to the flask.

Twenty five milliliters(25mL) Methylene Chloride is added to the flask and it is secured on a gyrotory shaker table. The agitation rate is set to 400rpm and the sample is shaken for 30 minutes. The flask is the removed from the table and the particulate matter is allowed to settle. The extract is transferred to a Teflon capped vial. A second 25mL of Methylene Chloride is added to the flask and shaken for an additional 30 minutes. The flask is again removed and allowed to settle. The extracts are combined in the vial then transferred to a 1mL autosampler vial.

The extract is then injected directly into a GC-FID for analysis. The sample is analyzed for petroleum hydrocarbons covering a range of C8-C42 including pristane and phytane. Total Petroleum Hydrocarbon concentration is determined by integrating between 5 minutes and 22 minutes. The baseline is established by starting the integration after the end of the solvent peak and stopping after the last peak.

The final concentration of Total Petroleum Hydrocarbons is calculated using percent solid, sample weight and concentration.

PHC Conformance/Non-conformance Summary Report

	No	Yes
1.Method Detection Limits provided.		✓
2. Method Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank	✓	
3. Matrix Spike Results Summary Meet Criteria. (If not met, list the sample and corresponding recovery which falls outside the acceptable range).		✓
4. Duplicate Results Summary Meet Criteria. (If not met, list the sample and corresponding recovery which falls outside the acceptable range).		✓
5. IR Spectra submitted for standards, blanks, & samples	NA	
6. Chromatograms submitted for standards, blanks, and samples if GC fingerprinting was conducted.		✓
7. Analysis holding time met. (If not met, list number of days exceeded for each sample)		✓

Additional Comments: _____

Laboratory Authentication Statement

I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N.J.A.C. 7:18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW 846 for Solid Waste Analysis. I have personally examined the information contained in this report, and to the best of my knowledge, I believe that the submitted information is true, accurate, complete, and meets the above referenced standards where applicable. I am aware that there are significant penalties for purposefully submitting falsified information, including the possibility of a fine and imprisonment.

Daniel K. Wright
Laboratory Manager

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	3754
	DPW. SELFM-PW-EV	**Date Rec'd:**	27-Jul-98
	Bldg. 173	**Analysis Start:**	27-Jul-98
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	28-Jul-98
Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	D.DEINHARDT	**DICAR #:**	
Ext. Meth:	Shake	**Location #:**	BLDG. 277

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3754.01	277-1(6')	**1.00**	15.02	79.96	196	**3355.93**
3754.02	277-2(6')	**5.00**	15.57	84.35	179	**16331.20**
3754.03	277-3(6')	**1.00**	15.64	78.17	192	**6714.80**
3754.04	277-4(7')	**1.00**	15.01	87.03	180	**1648.45**
3754.05	277-5(7')	**1.00**	15.02	86.16	182	**2922.40**
3754.06	277-6(6')	**5.00**	15.03	87.75	178	**19141.34**
METHOD BLANK	TBLK 141	**1.00**	15.00	100.00	157	**ND**

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright
Laboratory Director

Response Factor Report GC/MS Ins

Method : C:\HPCHEM\1\METHODS\TPH44.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Thu Jul 23 07:39:45 1998

Calibration Files
100 =T06269.D 50 =T06270.D 20 =T06271.D
10 =T06272.D 5 =T06273.D

	Compound	100	50	20	10	5	Avg		%RSD
1)	tC C8	2.584	2.663	2.492	2.657	2.541	2.587	E4	2.85
2)	tC C10	2.920	2.983	2.750	2.915	2.996	2.913	E4	3.36
3)	TC C12	3.330	3.397	3.101	3.278	3.334	3.288	E4	3.43
4)	tC C14	3.529	3.623	3.333	3.589	3.646	3.544	E4	3.56
5)	tC C16	3.639	3.756	3.472	3.804	3.883	3.711	E4	4.32
6)	tC C18	4.164	4.262	3.983	4.364	4.528	4.260	E4	4.82
7)	tC C20	3.973	4.170	3.857	4.251	4.350	4.120	E4	4.91
8)	tC C22	3.960	4.110	3.804	4.190	4.292	4.071	E4	4.73
9)	tC C24	4.029	4.190	3.876	4.250	4.350	4.139	E4	4.53
10)	tC C26	4.023	4.193	3.876	4.219	4.305	4.123	E4	4.17
11)	tC C28	4.070	4.249	3.916	4.221	4.316	4.154	E4	3.87
12)	tC C30	4.195	4.413	4.061	4.352	4.444	4.293	E4	3.76
13)	tC C32	4.242	4.459	4.091	4.352	4.441	4.317	E4	3.54
14)	tC C34	4.444	4.798	4.316	4.542	4.643	4.549	E4	4.05
15)	tC C36	4.411	5.309	4.362	4.496	4.748	4.665	E4	8.34
16)	tC C38	4.227	5.901	4.238	4.351	4.970	4.737	E4	15.18
17)	tC C40	3.916	6.048	3.961	4.009	4.824	4.552	E4	20.14
18)	tC c42	3.723	6.024	3.656	3.458	4.021	4.176	E4	25.20
19)	TC Pristane	3.834	3.959	3.656	4.082	4.126	3.932	E4	4.87
20)	TC Phytane	3.953	4.181	3.881	4.280	4.385	4.136	E4	5.18
21)	sC o-terphenyl	4.889	5.065	4.692	5.175	5.300	5.024	E4	4.76
22)	tC TPHC - total	4.367	4.945	4.420	4.887	5.519	4.827	E4	9.68

(#) = Out of Range MEAN RSD % = 6.78

TPH44.M Thu Jul 23 08:06:24 1998

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\980727\T06302.D Vial: 2
Acq On : 28 Jul 98 3:14 am Operator: Deinhardt
Sample : 50 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E

Method : C:\HPCHEM\1\METHODS\TPH44.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Wed Jul 22 16:02:30 1998
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	tC	C8	24.186	25.495 E3	-5.4	111	-0.03
2	tC	C10	26.836	29.200 E3	-8.8	112	0.00
3	TC	C12	29.584	32.939 E3	-11.3	114	0.00
4	tC	C14	31.125	34.665 E3	-11.4	115	0.00
5	tC	C16	32.180	35.773 E3	-11.2	116	0.00
6	tC	C18	36.591	40.333 E3	-10.2	115	0.00
7	tC	C20	35.352	39.160 E3	-10.8	116	0.00
8	tC	C22	34.694	38.899 E3	-12.1	117	0.00
9	tC	C24	35.318	39.512 E3	-11.9	117	0.00
10	tC	C26	35.130	39.195 E3	-11.6	117	0.00
11	tC	C28	35.380	39.350 E3	-11.2	116	0.00
12	tC	C30	36.331	40.213 E3	-10.7	115	0.00
13	tC	C32	36.742	39.981 E3	-8.8	113	0.00
14	tC	C34	38.289	40.831 E3	-6.6	111	0.00
15	tC	C36	38.627	38.610 E3	0.0	107	0.00
16	tC	C38	39.462	37.304 E3	5.5	109	0.00
17	tC	C40	38.666	33.046 E3	14.5	106	0.01
18	tC	c42	38.058	28.349 E3	25.5#	97	0.02
19	TC	Pristane	34.283	37.722 E3	-10.0	114	0.00
20	TC	Phytane	35.586	39.506 E3	-11.0	116	0.00
21	sC	o-terphenyl	42.449	40.034 E3	5.7	99	0.00
22	tC	TPHC - total	40.611	41.192 E3	-1.4	112	-0.96#

(#) = Out of Range SPCC's out = 0 CCC's out = 1

Evaluate Continuing Calibration Report

Data File : C:\HPCHEM\1\DATA\980727\T06291.D Vial: 2
Acq On : 27 Jul 98 2:28 pm Operator: Deinhardt
Sample : 50 PPM STANDARD Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E

Method : C:\HPCHEM\1\METHODS\TPH44.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Wed Jul 22 16:02:30 1998
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	tC	C8	24.186	24.255 E3	-0.3	106	-0.02
2	tC	C10	26.836	27.923 E3	-4.1	107	0.00
3	TC	C12	29.584	31.338 E3	-5.9	108	0.00
4	tC	C14	31.125	33.338 E3	-7.1	111	0.00
5	tC	C16	32.180	34.662 E3	-7.7	113	0.00
6	tC	C18	36.591	37.688 E3	-3.0	107	0.00
7	tC	C20	35.352	37.886 E3	-7.2	112	0.00
8	tC	C22	34.694	37.595 E3	-8.4	113	0.00
9	tC	C24	35.318	38.217 E3	-8.2	113	0.00
10	tC	C26	35.130	37.908 E3	-7.9	113	0.00
11	tC	C28	35.380	38.081 E3	-7.6	112	0.00
12	tC	C30	36.331	38.658 E3	-6.4	111	0.00
13	tC	C32	36.742	38.444 E3	-4.6	109	0.00
14	tC	C34	38.289	39.219 E3	-2.4	107	0.00
15	tC	C36	38.627	36.835 E3	4.6	102	0.00
16	tC	C38	39.462	34.924 E3	11.5	102	0.00
17	tC	C40	38.666	29.585 E3	23.5	94	0.01
18	tC	c42	38.058	24.794 E3	34.9#	85	0.02
19	TC	Pristane	34.283	36.742 E3	-7.2	111	0.00
20	TC	Phytane	35.586	38.240 E3	-7.5	113	0.00
21	sC	o-terphenyl	42.449	38.696 E3	8.8	95	0.00
22	tC	TPHC - total	40.611	39.974 E3	1.6	108	-0.96#

(#) = Out of Range SPCC's out = 0 CCC's out = 1

a

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Matrix Spike Recovery Report

Lab. ID # : 3754

Location #: BLDG. 277

Sample	Spike Amount Added (ppm)	Sample Amount (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
3754.01MS	1000	806.09	1719.25	91.32	75-125
3754.01MSD	1000	806.09	1916.95	111.09	75-125

RPD	**19.54**	**20.00**

7/28/98

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Blank Spike Recovery Report

Lab. ID # : 3754

Location #: BLDG. 277

Sample	Date Extracted	Spike Amount Added (ppm)	Matrix Spike Amount (ppm)	Percent Recovery	QC Limits %
Blank Spike	27-Jul-98	1000	889.09	88.91	75-125

7/28/98

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980727\T06295.D Vial: 6
Acq On : 27 Jul 98 8:15 pm Operator: Deinhardt
Sample : 3754.01 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 28 8:07 1998 Quant Results File: TPH44.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH44.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Wed Jul 22 16:02:30 1998
Response via : Initial Calibration
DataAcq Meth : TPH44.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	13.91	458939	10.812 mg/L
Spiked Amount 10.000 Range 8 - 13		Recovery =	108.12%#
Target Compounds			
2) tC C10	8.76	6684	0.249 mg/L
3) TC C12	10.32	42160	1.425 mg/L
4) tC C14	11.48	40138	1.290 mg/L
5) tC C16	12.45	33134	1.030 mg/L
6) tC C18	12.92	12881	0.352 mg/L
7) tC C20	13.35	21515	0.609 mg/L
8) tC C22	14.16	17655	0.509 mg/L
9) tC C24	14.91	10940	0.310 mg/L
10) tC C26	15.60	4136	0.118 mg/L
11) tC C28	16.13	4540	0.128 mg/L
12) tC C30	16.63	1677	0.046 mg/L
13) tC C32	17.39	1055	0.029 mg/L
14) tC C34	17.93	1262	0.033 mg/L
19) TC Pristane	12.94	380588	11.101 mg/L
20) TC Phytane	13.40	142943	4.017 mg/L
22) tC TPHC - total	13.91	32736562	806.093 mg/L m

(f)=RT Delta > 1/2 Window (m)=manual int.

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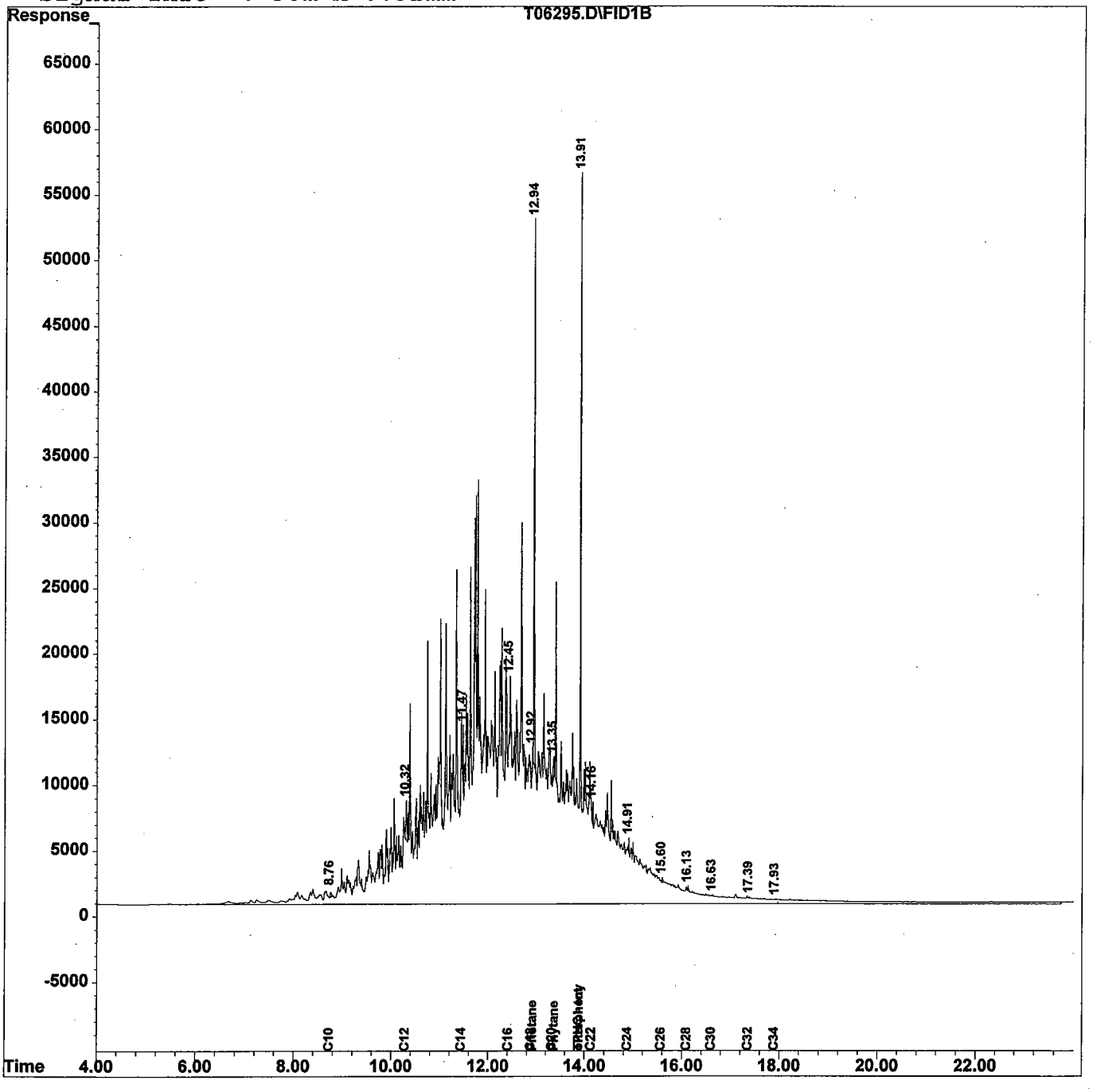
Quantitation Report

Data File : C:\HPCHEM\1\DATA\980727\T06295.D Vial: 6
Acq On : 27 Jul 98 8:15 pm Operator: Deinhardt
Sample : 3754.01 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 28 8:07 1998 Quant Results File: TPH44.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH44.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Wed Jul 22 16:02:30 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH44.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980727\T06309.D Vial: 18
Acq On : 28 Jul 98 9:35 am Operator: Deinhardt
Sample : 3754.02 1:5 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 28 11:24 1998 Quant Results File: TPH44.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH44.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Wed Jul 22 16:02:30 1998
Response via : Initial Calibration
DataAcq Meth : TPH44.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

	Compound	R.T.	Response	Conc Units
	System Monitoring Compounds			
21)	sC o-terphenyl	13.91	94261	2.221 mg/L
	Spiked Amount 10.000 Range 8 - 13		Recovery =	22.21%#
	Target Compounds			
2)	tC C10	8.81	2121	0.079 mg/L
3)	TC C12	10.32	23493	0.794 mg/L
4)	tC C14	11.47	49927	1.604 mg/L
5)	tC C16	12.45	42049	1.307 mg/L
6)	tC C18	12.94	357144	9.760 mg/L
7)	tC C20	13.34	8313	0.235 mg/L
8)	tC C22	14.16	10314	0.297 mg/L
9)	tC C24	14.95	9743	0.276 mg/L
10)	tC C26	15.52	1794	0.051 mg/L
11)	tC C28	16.12	2414	0.068 mg/L
19)	TC Pristane	12.94	357144	10.417 mg/L
20)	TC Phytane	13.40	172634	4.851 mg/L
22)	tC TPHC - total	12.94	34841729	857.930 mg/L m

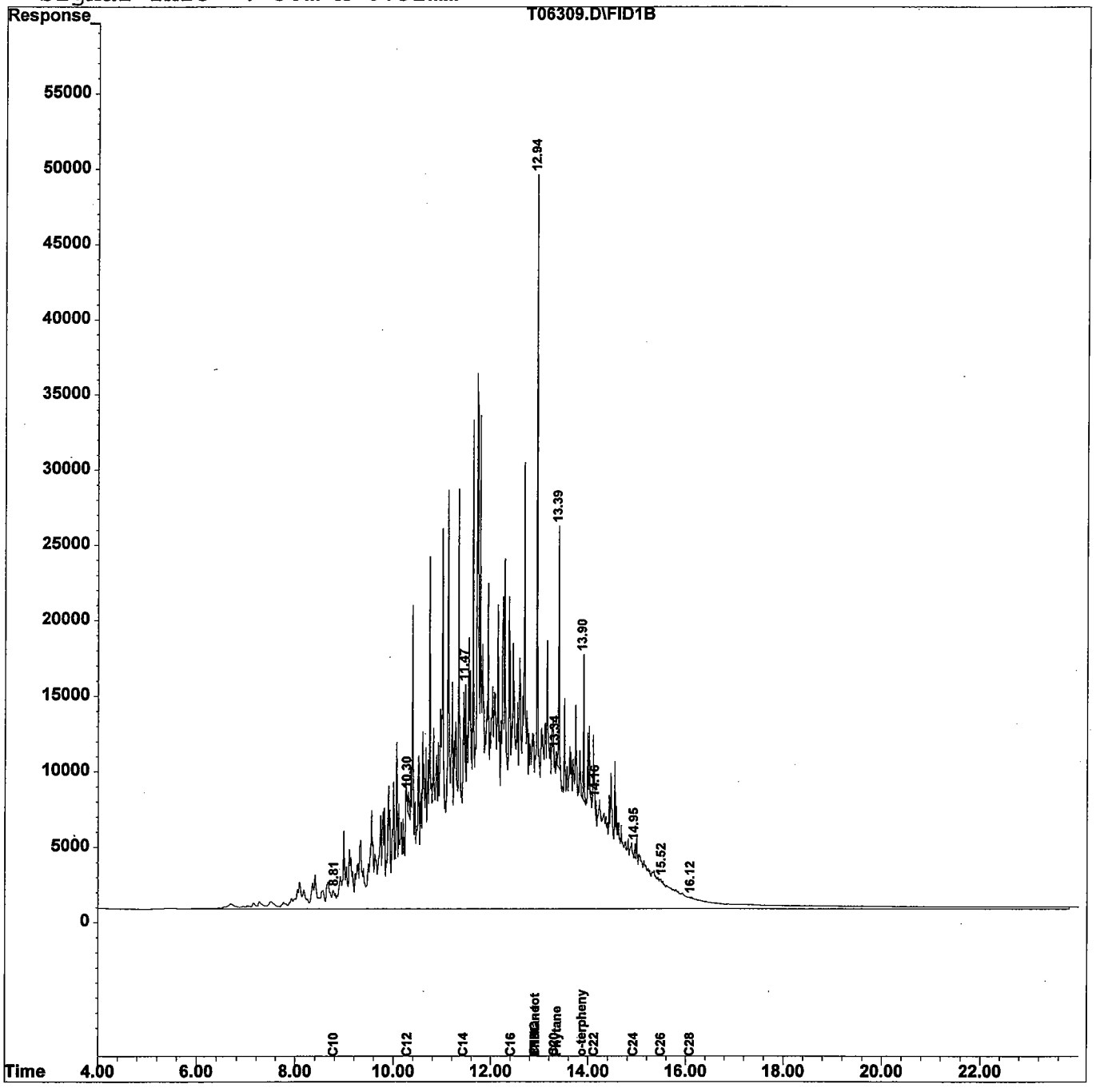
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980727\T06309.D Vial: 18
Acq On : 28 Jul 98 9:35 am Operator: Deinhardt
Sample : 3754.02 1:5 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 28 11:24 1998 Quant Results File: TPH44.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH44.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Wed Jul 22 16:02:30 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH44.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980727\T06299.D Vial: 10
Acq On : 28 Jul 98 12:19 am Operator: Deinhardt
Sample : 3754.03 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 28 8:10 1998 Quant Results File: TPH44.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH44.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Wed Jul 22 16:02:30 1998
Response via : Initial Calibration
DataAcq Meth : TPH44.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
21) sC o-terphenyl	13.91	414686	9.769 mg/L
Spiked Amount 10.000 Range 8 - 13	Recovery = 97.69%#		
Target Compounds			
2) tC C10	8.81	3886	0.145 mg/L
3) TC C12	10.30	14198	0.480 mg/L
4) tC C14	11.44	101314	3.255 mg/L
5) tC C16	12.45	74128	2.304 mg/L
6) tC C18	12.95	585071	15.990 mg/L
7) tC C20	13.34	16690	0.472 mg/L
8) tC C22	14.16	20539	0.592 mg/L
9) tC C24	14.96	19930	0.564 mg/L
10) tC C26	15.53	3372	0.096 mg/L
11) tC C28	16.42	1111	0.031 mg/L
19) TC Pristane	12.95	585071	17.066 mg/L
20) TC Phytane	13.40	323898	9.102 mg/L
22) tC TPHC - total	12.94	66678847	1641.875 mg/L m

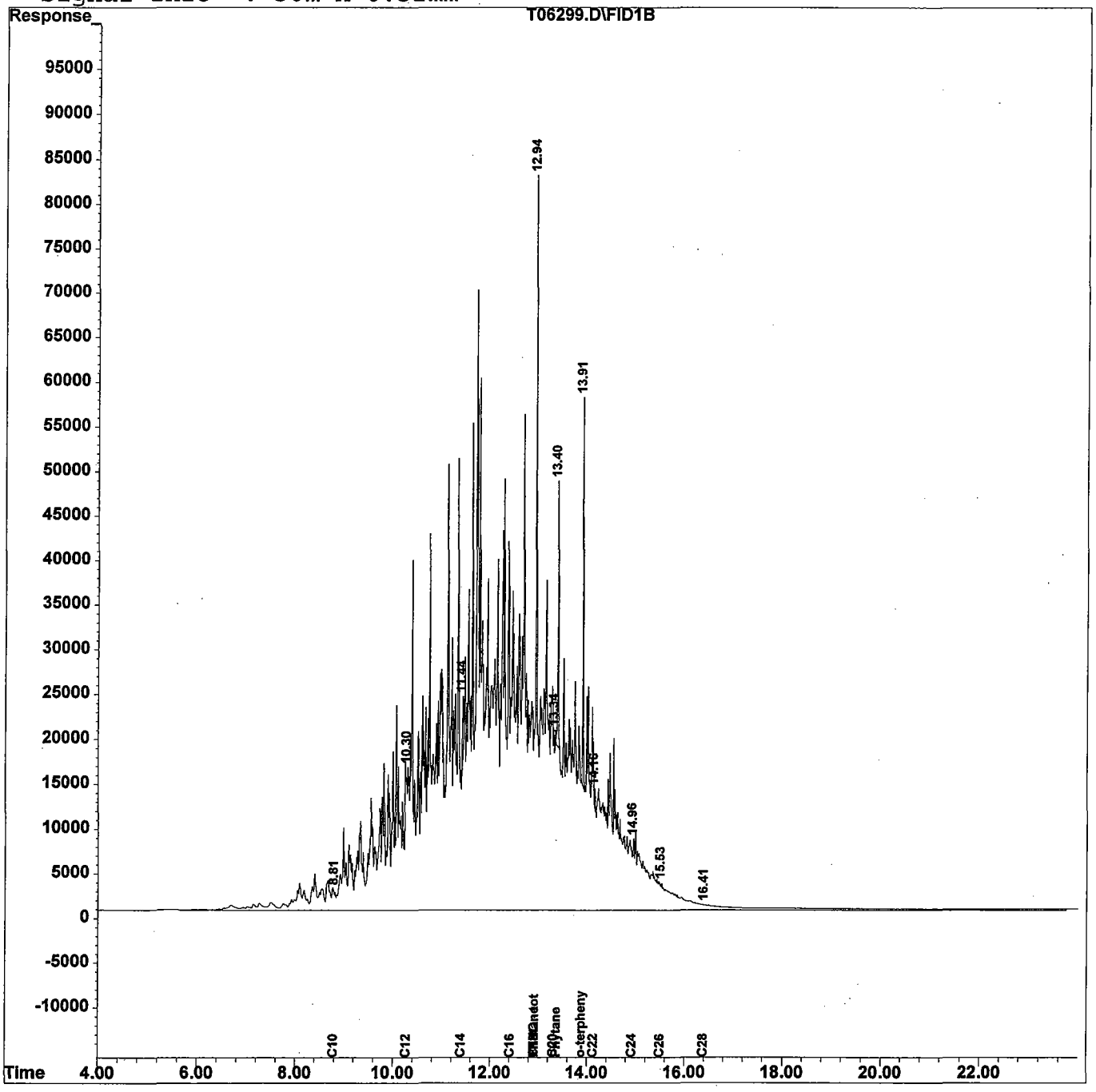
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980727\T06299.D Vial: 10
Acq On : 28 Jul 98 12:19 am Operator: Deinhardt
Sample : 3754.03 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 28 8:10 1998 Quant Results File: TPH44.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH44.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Wed Jul 22 16:02:30 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH44.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980727\T06300.D Vial: 11
Acq On : 28 Jul 98 1:18 am Operator: Deinhardt
Sample : 3754.04 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 28 8:10 1998 Quant Results File: TPH44.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH44.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Wed Jul 22 16:02:30 1998
Response via : Initial Calibration
DataAcq Meth : TPH44.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

	Compound	R.T.	Response	Conc Units
	System Monitoring Compounds			
21)	sC o-terphenyl	13.91	435266	10.254 mg/L
Spiked Amount	10.000 Range	8 - 13	Recovery =	102.54%#
	Target Compounds			
2)	tC C10	8.67	12901	0.481 mg/L
3)	TC C12	10.30	1193	0.040 mg/L
4)	tC C14	11.47	21382	0.687 mg/L
5)	tC C16	12.45	18661	0.580 mg/L
6)	tC C18	12.94	159983	4.372 mg/L
7)	tC C20	13.37	1466	0.041 mg/L
8)	tC C22	14.16	5426	0.156 mg/L
9)	tC C24	14.96	7487	0.212 mg/L
10)	tC C26	15.53	1313	0.037 mg/L
19)	TC Pristane	12.94	159983	4.667 mg/L
20)	TC Phytane	13.40	77192	2.169 mg/L
22)	tC TPHC - total	13.91	17490593	430.682 mg/L m

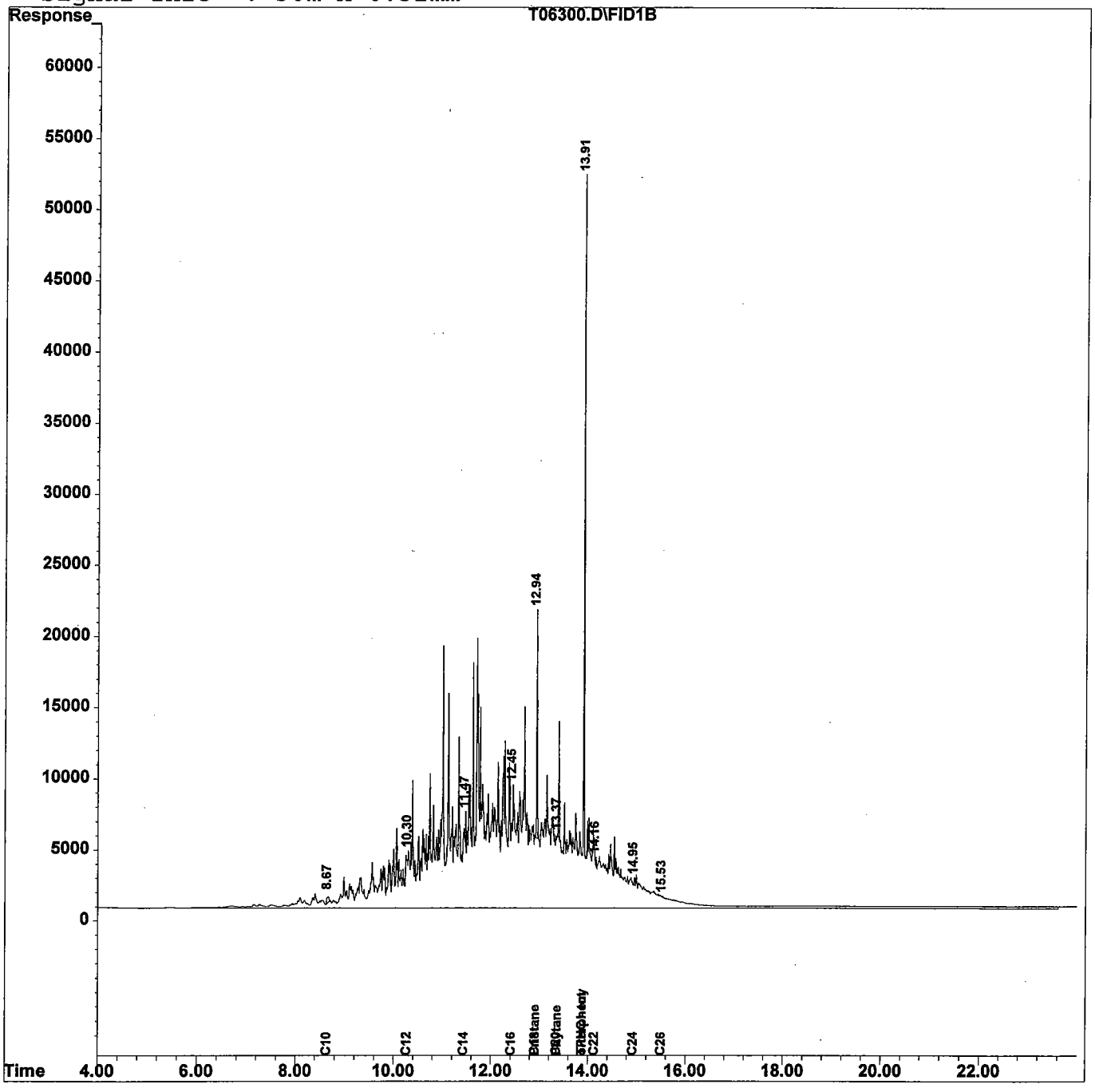
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980727\T06300.D Vial: 11
Acq On : 28 Jul 98 1:18 am Operator: Deinhardt
Sample : 3754.04 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 28 8:10 1998 Quant Results File: TPH44.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH44.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Wed Jul 22 16:02:30 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH44.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980727\T06301.D Vial: 12
Acq On : 28 Jul 98 2:16 am Operator: Deinhardt
Sample : 3754.05 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 28 8:11 1998 Quant Results File: TPH44.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH44.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Wed Jul 22 16:02:30 1998
Response via : Initial Calibration
DataAcq Meth : TPH44.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

	Compound	R.T.	Response	Conc Units
	System Monitoring Compounds			
21)	sC o-terphenyl	13.91	427534	10.072 mg/L
Spiked Amount	10.000 Range	8 - 13	Recovery =	100.72%#
	Target Compounds			
2)	tC C10	8.77	5646	0.210 mg/L
3)	TC C12	10.30	26944	0.911 mg/L
4)	tC C14	11.47	39131	1.257 mg/L
5)	tC C16	12.45	36284	1.128 mg/L
6)	tC C18	12.94	248069	6.780 mg/L
7)	tC C20	13.34	6977	0.197 mg/L
8)	tC C22	14.23	33552	0.967 mg/L
9)	tC C24	14.96	10605	0.300 mg/L
10)	tC C26	15.53	1884	0.054 mg/L
11)	tC C28	16.12	1148	0.032 mg/L
19)	TC Pristane	12.94	248069	7.236 mg/L
20)	TC Phytane	13.40	138118	3.881 mg/L
22)	tC TPHC - total	13.91	30718079	756.390 mg/L m

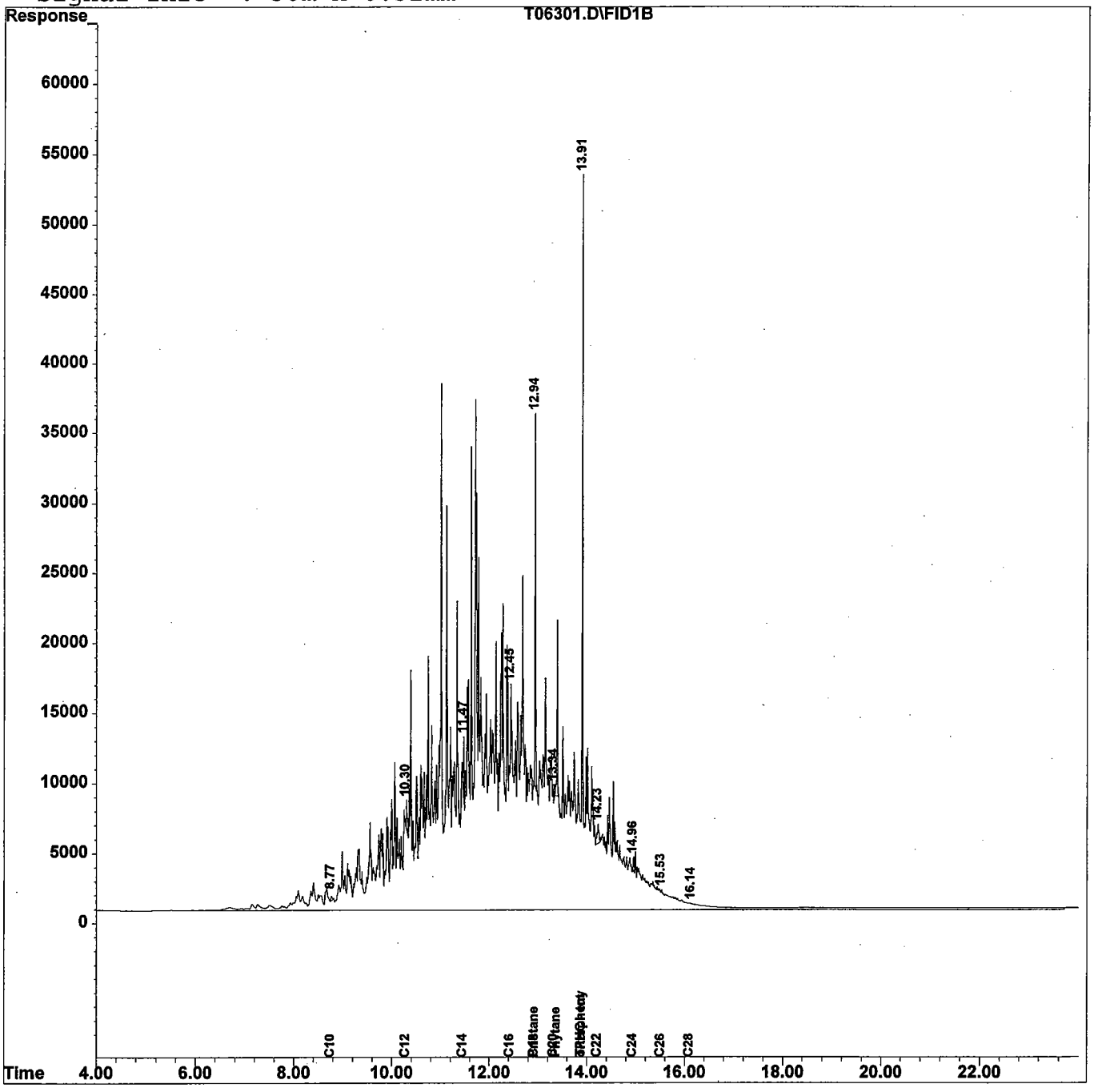
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980727\T06301.D Vial: 12
Acq On : 28 Jul 98 2:16 am Operator: Deinhardt
Sample : 3754.05 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 28 8:11 1998 Quant Results File: TPH44.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH44.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Wed Jul 22 16:02:30 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH44.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\980727\T06310.D Vial: 19
Acq On : 28 Jul 98 10:35 am Operator: Deinhardt
Sample : 3754.06 1:5 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 28 11:25 1998 Quant Results File: TPH44.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH44.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Wed Jul 22 16:02:30 1998
Response via : Initial Calibration
DataAcq Meth : TPH44.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm

	Compound	R.T.	Response	Conc Units
	System Monitoring Compounds			
21)	sC o-terphenyl	13.91	78389	1.847 mg/L
Spiked Amount	10.000 Range	8 - 13	Recovery =	18.47%#
	Target Compounds			
1)	tC C8	5.98	1588	0.066 mg/L
2)	tC C10	8.76	103565	3.859 mg/L
3)	TC C12	10.30	177467	5.999 mg/L
4)	tC C14	11.45	46936	1.508 mg/L
5)	tC C16	12.45	42233	1.312 mg/L
6)	tC C18	12.90	5509	0.151 mg/L
7)	tC C20	13.34	8354	0.236 mg/L
8)	tC C22	14.23	15489	0.446 mg/L
9)	tC C24	14.96	9545	0.270 mg/L
10)	tC C26	15.52	2820	0.080 mg/L
19)	TC Pristane	12.94	383022	11.172 mg/L
20)	TC Phytane	13.40	225098	6.326 mg/L
22)	tC TPHC - total	12.94	41009701	1009.807 mg/L m

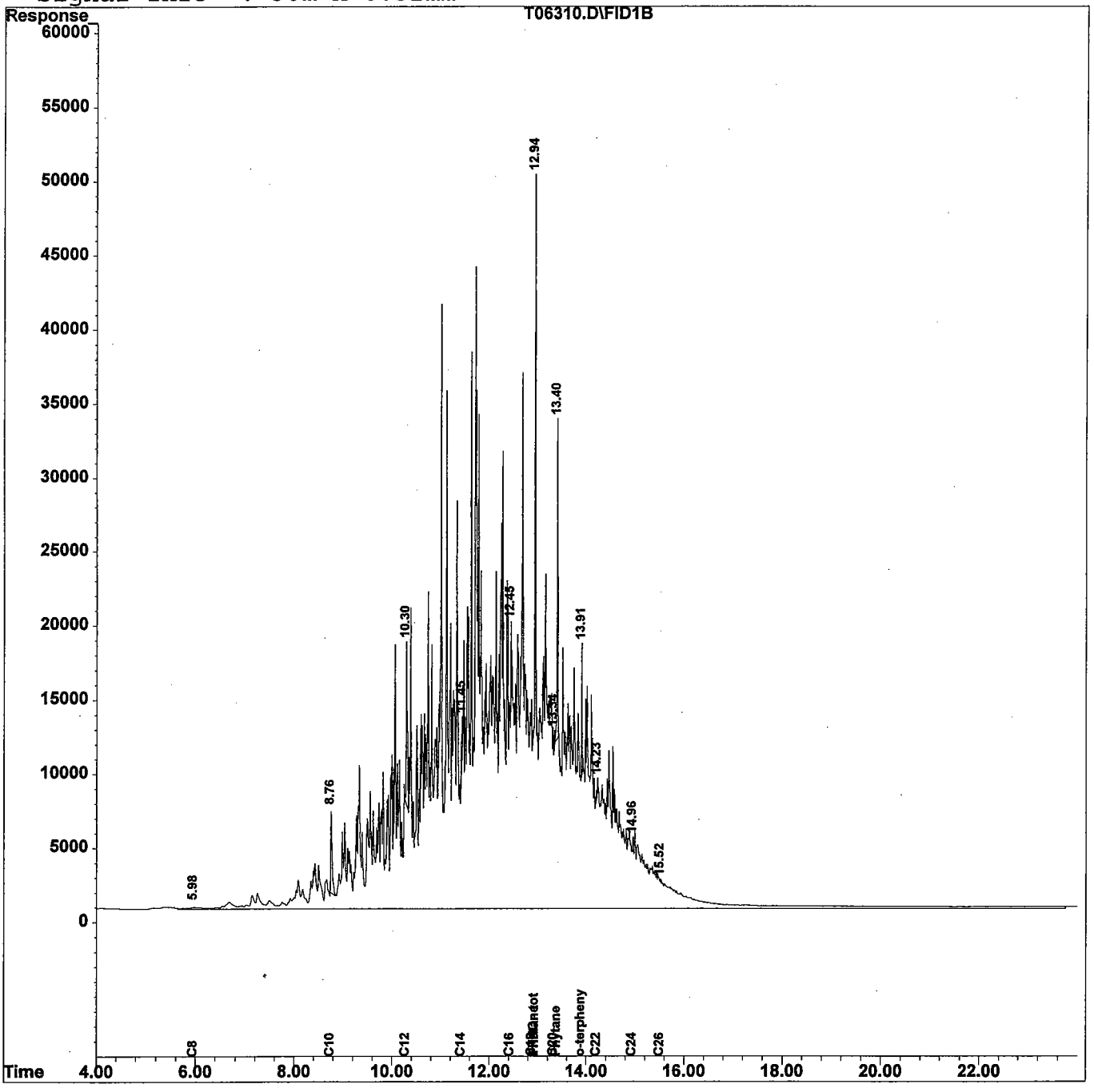
(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report

Data File : C:\HPCHEM\1\DATA\980727\T06310.D Vial: 19
Acq On : 28 Jul 98 10:35 am Operator: Deinhardt
Sample : 3754.06 1:5 Inst : GC/MS Ins
Misc : Multiplr: 1.00
IntFile : TPHCINT.E
Quant Time: Jul 28 11:25 1998 Quant Results File: TPH44.RES

Quant Method : C:\HPCHEM\1\METHODS\TPH44.M (Chemstation Integrator)
Title : TPHC Calibration 06/05/97 21 peaks
Last Update : Wed Jul 22 16:02:30 1998
Response via : Multiple Level Calibration
DataAcq Meth : TPH44.M

Volume Inj. : 1 ul
Signal Phase : HP-5
Signal Info : 30m x 0.32mm



LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

THIS FORM MUST BE COMPLETED BY THE LABORATORY OR ENVIRONMENTAL CONSULTANT AND ACCOMPANY ALL DATA SUBMISSIONS

The following Laboratory Deliverables checklist and Non-Conformance Summary shall be included in the data submission. All deviations from the accepted methodology and procedures, of performance values outside acceptable ranges shall be summarized in the Non-Conformance Summary. The Technical Requirements for Site Remediation, effective June 7, 1993, provides further details. The document shall be bound and paginated, contain a table of contents, and all pages shall be legible. Incomplete packages will be returned or held without review until the data package is completed.

It is recommended that the analytical results summary sheets listing all targeted and non-targeted compounds with the method detection limits, practical quantitation limits, and the laboratory and/or sample numbers be included in one section of the data package and in the main body of the report.

1.	Cover page, Title Page listing Lab Certification #, facility name and address, & date of report submitted	✓
2.	Table of Contents submitted	✓
3.	Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted	✓
4.	Document paginated and legible	✓
5.	Chain of Custody submitted	✓
6.	Samples submitted to lab within 48 hours of sample collection	✓
7.	Methodology Summary submitted	✓
8.	Laboratory Chronicle and Holding Time Check submitted	✓
9.	Results submitted on a dry weight basis	✓
10.	Method Detection Limits submitted	✓
11.	Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP	✓

Laboratory Manager or Environmental Consultant's Signature 

Date 6/16/98

Laboratory Certification #13461

*Refer to NJAC 7:26E - Appendix A, Section IV - Reduced Data Deliverables - Non-USEPA/CLP Methods for further guidance.