U.S. Army GarrisonFort Monmouth, New Jersey

Underground Storage Tank Closure Report

Main Post – Building 906A Courier Ave.

NJDEP UST Registration No. 81533-146

February 2008

UNDERGROUND STORAGE TANK REPORT

MAIN POST -BUILDING 906A NJDEP UST REGISTRATION NO. 81533-146

FEBRUARY 2008

PREPARED FOR:

U.S. ARMY GARRISON, FORT MONMOUTH, NJ DIRECTORATE OF PUBLIC WORKS BUILDING 167 FORT MONMOUTH, NJ 07703

PROJECT NO. 06-34950

PREPARED BY:

TECOM-VINNELL SERVICES, INC. P.O. BOX 60 FT. MONMOUTH, NJ 07703

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EXECUTIVE SUMMARY

UST Closure

A single wall steel underground storage tank (UST) was closed by removal in accordance with the New Jersey Department of Environmental Protection (NJDEP) guidelines on June 26, 1990. The UST was located on the southwest side of Building 906A in the Main Post area of Fort Monmouth. UST No. 81533-146 was a 1,000-gallon tank containing No. 2 heating oil.

Site Assessment

This site assessment was performed by TECOM-Vinnell Service (TVS) personnel in accordance with the NJDEP *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E) and the NJDEP *Field Sampling Procedures Manual*.

During the time of UST removal, no closure soil samples were collected. Soil sampling was not required at the time. However, in order to confirm that the tank did not leak, this subsurface investigation was conducted. On January 4, 2006, a Geoprobe was utilized to collect soil samples 906AC, 906AE, 906AW and 906AC (groundwater) from a total of three (3) locations along the tank centerline bottom. All soil samples were analyzed for total petroleum hydrocarbons (TPH). Groundwater was encountered at approximately four (4.0) feet below surface grade in the borings. A sample of it was collected and analyzed for volatile organic analysis (VOA) and semi-volatile organic analysis (SVOA).

Findings

The closure soil samples collected from the location associated with UST No. 81533-146, contained TPH concentrations below the NJDEP health based criterion of 10,000 milligrams per kilogram (mg/kg) for total organic contaminants (N.J.A.C. 7:26E and revisions dated February 3, 1994). Soil samples 906AC, 906AE and 906AW contained TPH concentrations of 5634 mg/kg, 6699 mg/kg and 195 mg/kg, respectively. Contingent VOA analysis was conducted on soil samples 906AC and 906AE in which there were no compounds detected above the NJDEP Residential Direct Contact Soil Cleanup Criteria.

Conclusions and Recommendations

Based on the closure soil sampling results, soils with TPH concentrations exceeding the NJDEP health based criterion of 10,000 mg/kg for total organic contaminants are not present in the location of the UST. A groundwater sample, analyzed for volatile organic analysis and semi-volatile organic analysis, did contain several compounds above the analytical method detection limits. However, all detected compounds were below the NJDEP Class II Groundwater Quality Criteria.

No Further Action is proposed in regard to the closure and site assessment of UST No. 81533-146 at Building 906A.

1.0 UNDERGROUND STORAGE TANK CLOSURE SOIL SAMPLING ACTIVITIES

1.1 OVERVIEW

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 81533-146, was closed at Building 906A located on the Main Post at the U.S. Army Garrison, Fort Monmouth, New Jersey. Refer to site location map on Figure 1. This report presents the results of soil and groundwater sampling analysis to confirm that the tank did not leak. The UST was a 1,000-gallon, single-wall steel tank containing No. 2 heating oil. The UST was installed in 1954 and the removal was done on June 26, 1990. Archived documents including Removal Procedures, Site Assessment Compliance Statement, NJDEP Standard Reporting Form along with the NJDEP UST Site Investigation Report Form are included in Appendix A.

This UST Closure Report has been prepared by TVS to assist the U.S. Army Garrison DPW in complying with the NJDEP - Underground Storage Tanks regulations. The applicable NJDEP regulations at the date of closure were the *Closure of Underground Storage Tank Systems* (N.J.A.C. 7:14B-9 et seq. December, 1987 and revisions dated April 20, 2003).

This report was prepared using information required by the *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E) (*Technical Requirements*). Section 1 of this UST Closure Report provides a summary of the UST site. Section 2 of this report describes the site investigation activities. Conclusions and recommendations, including the results of the soil sampling investigation, are presented in Section 3 of this report.

1.2 SITE DESCRIPTION

Building 906A, Courier Ave., is located in the central portion (900 Area) of the Main Post of Fort Monmouth, as shown on Figure 1. A historical map, Figure 2, was used to determine the location of the UST at Building 906A. UST No. 81533-146 was located on the southwest side of Building 906A.

1.2.1 Geological/Hydrogeological Setting

The following is a description of the geological/hydrogeological setting of the 900 Area. 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, sand 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. Over 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 (e.g., streams, lakes)

Due to the fluvial nature of the overburden deposits (e.g., 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 906A is located approximately 400 feet south of Husky Brook, the nearest water body, which flows into Oceanport Creek and then into the Shrewsbury River. Based on the Main Post topography, the groundwater flow in the area of Building 906A is anticipated to be to the north.

1.3 HEALTH AND SAFETY

Work site health and safety hazards were minimized during all site investigation activities. All areas which posed a vapor hazard were monitored by a qualified individual utilizing a calibrated photo-ionizer detector: Thermo Instruments Organic Vapor Monitor (OVM) — Model #580-B. The individual ascertained if the area was properly vented to render the area safe, as defined by OSHA. All work areas were properly vented to insure that there were no contaminants present in the breathing zone above permissible exposure limits (PEL's).

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 Fort Monmouth Environmental Testing Laboratory, a NJDEP-certified testing laboratory. All sampling was performed by a NJDEP Certified Subsurface Evaluator according to the methods described in the NJDEP Field Sampling Procedures Manual (1992). Sampling frequency and parameters analyzed complied with the NJDEP document *Technical Requirements for Site Remediation*, 7:26E-3.9 (December 17, 2002 and revisions dated February 3, 2003) which was the applicable regulation at the date of the investigation. All records of the Site Investigation activities are maintained by the Fort Monmouth DPW Environmental Office.

The following Parties participated in Closure and Site Assessment Activities.

• Ft. Monmouth Directorate of Public Works-Environmental Division

Contact Person: Joseph Fallon Phone Number: (732) 532-6223

Subsurface Evaluator: Frank Accorsi

Employer: TECOM-Vinnell Services, Inc. (TVS)

Phone Number: (732) 532-5241 NJDEP License No.: 0010042

TVS - NJDEP License No.: US252302

Analytical Laboratory: Fort Monmouth Environmental Testing Laboratory

Contact Person: Jacqueline Hamer Phone Number: (732) 532-4359

NJDEP Laboratory Certification No.: 13461

2.2 FIELD SCREENING/MONITORING

Field screening of the soils was performed by a NJDEP certified Subsurface Evaluator using an OVM and visual observations to identify potentially contaminated material of which none were found.

2.3 SOIL SAMPLING

On January 4, 2006, closure soil samples 906AC (shallow), 906AC (deep), 906AE and 906AW were collected from a total of three (3) locations along the tank centerline bottom of the UST. Groundwater was encountered at approximately four (4.0) feet below surface grade in the borings. All soil samples were analyzed for TPH. A soil sample location map is provided on Figure 3.

The site assessment was performed by TVS personnel in accordance with the NJDEP *Technical Requirements for Site Remediation* and the NJDEP *Field Sampling Procedures Manual*. A summary of sampling activities including parameters analyzed is provided on Table 1. The soil samples were collected into laboratory prepared glassware using properly decontaminated stainless steel trowels. After collection, the samples were immediately placed on ice in a cooler and delivered to Fort Monmouth Environmental Testing Laboratory for analysis.

2.4 GROUNDWATER SAMPLING

On January 4, 2006, groundwater sample 906AC-GW was collected from soil borehole 906AC to assess the groundwater quality in the location of the tank. A temporary PVC piezometer was installed in the borehole for sample collection. The sample was collected into laboratory prepared glassware using a disposable teflon bailer. The sample was analyzed for volatile organic analysis (VOA) and semi-volatile organic analysis (SVOA).

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 SOIL SAMPLING RESULTS

Closure soil samples were collected from a total of three locations on January 4, 2006 to evaluate soil conditions in the location of the UST. All samples were analyzed for TPH. The closure soil sample results were compared to the NJDEP health based criterion of 10,000 mg/kg for total organic contaminants (N.J.A.C. 7:26D and revisions dated February 3, 1994). A summary of the analytical results and comparison to the NJDEP soil cleanup criteria is provided on Table 2. The analytical data package, including associated quality control data, is provided in Appendix B.

Closure soil samples collected on January 4, 2006 from UST 81533-146 contained no concentrations of TPH above the NJDEP health based criterion of 10,000 mg/kg total organic contaminants. Soil samples 906AC, 906AE and 906AW contained TPH concentrations of 5634 mg/kg, 6699 mg/kg and 195 mg/kg, respectively. Contingent VOA analysis was conducted on soil samples 906AC and 906AE. The only compounds detected above the method detection limits were in sample 906AE. Detected were ethylbenzene at 0.6 mg/kg and total xylenes at 0.8 mg/kg, which are below the NJDEP Residential Direct Contact Soil Cleanup Criteria of 1,000 mg/kg and 410 mg/kg, respectively.

3.2 GROUNDWATER SAMPLING RESULTS

One groundwater sample was collected via temporary PVC piezometer installed in soil borehole 906AC. There were two compounds detected above the method detection limits for the volatile organic analysis. Detected were ethylbenzene at 4.7 ug/L and total xylenes at 3.2 ug/L which are below the NJDEP Class II Groundwater Quality Criteria of 700 ug/L and No Limit Established, respectively. There were five compounds detected above the method detection limits for the semi-volatile organic analysis. Naphthalene was detected at 95.1 ug/L, which is below the regulatory level of No Limit Established. 2-Methyl-naphthalene was detected at 169.4 ug/L, which is below the regulatory level of No Limit Established. Phenanthrene was detected at 189.2 ug/L, which is below the regulatory level of No Limit Established. Pyrene was detected at 77.9 ug/L, which is below the regulatory level of 200 ug/L. Bis(2-Ethylhexyl)phthalate, a common laboratory contaminant, was detected at 13.8 ug/L which is below the regulatory level of 30 ug/L.

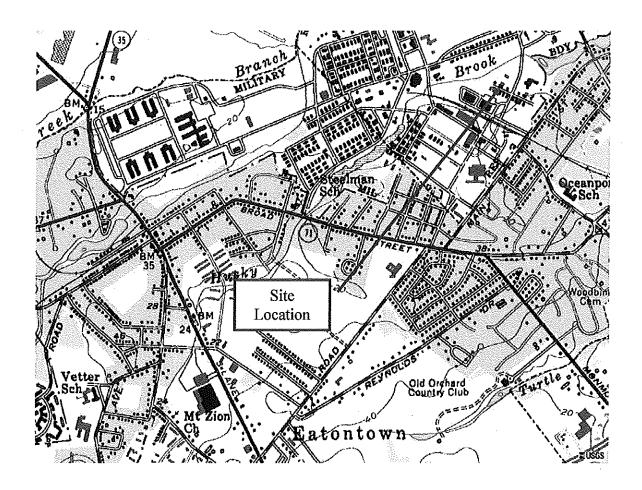
3.3 CONCLUSIONS AND RECOMMENDATIONS

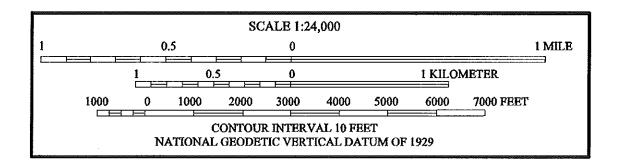
The analytical results for all soil and groundwater samples collected from the UST closure assessment at UST No. 81533-146 were below the regulatory limits.

Based on the closure soil sampling results, soils with TPH concentrations exceeding the NJDEP health based criterion for total organic contaminants of 10,000 mg/kg are not present at the location of UST No. 81533-146.

No Further Action is proposed in regard to the closure and site assessment of UST No. 81533-146 at Building 906A.

FIGURES

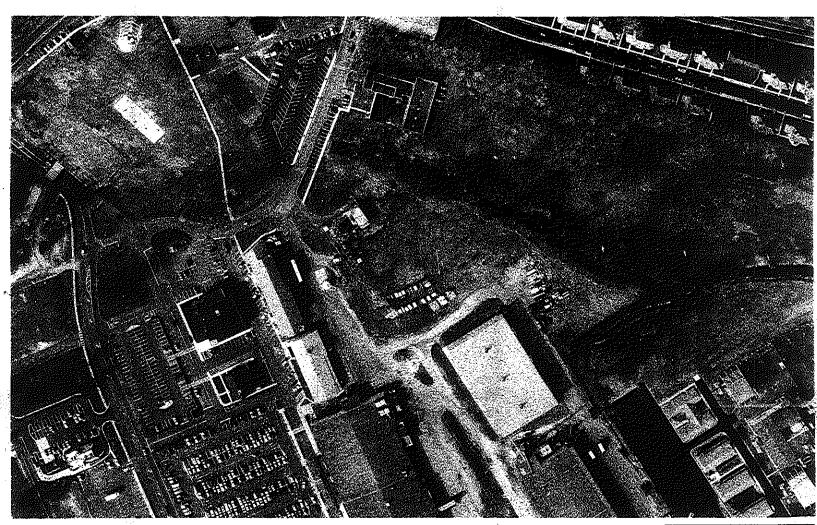




SOURCE: USGS 7½-MINUTE SERIES (TOPOGRAPHIC) LONG BRANCH QUADRANGLE, NEW JERSEY, 1981.

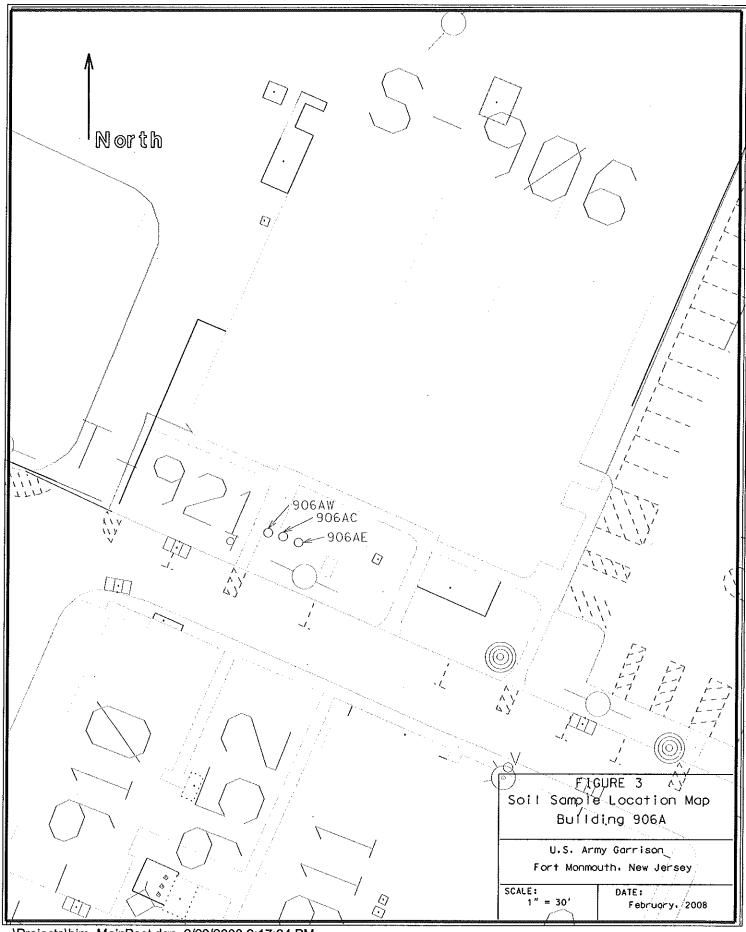
FIGURE 1

BUILDING 906 UST NO. 81533-146 FT. MONMOUTH, NJ



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1" = 50' PHOTO MAP
Fort Monmouth Area
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SUMMARY OF LABORATORY ANALYSIS

FT. MONMOUTH, BUILDING 906A, UST No. 81533-146 4 January 2006

| SAMPLE ID | LABORATORY SAMPLE ID | SAMPLE DATE | SAMPLE MATRIX | ANALYTICAL PARAMETER | ANALYTICAL METHOD |
|-----------------------|-------------------------|----------------|------------------|-------------------------|----------------------|
| | | | | | |
| 906AC | 6000701 | 4-Jan-06 | SOIL | ТРН | OQA-QAM-25 |
| 906AC | 6000702 | 4-Jan-06 | SOIL | TPH | OQA-QAM-25 |
| 906AE | 6000704 | 4-Jan-06 | SOIL | TPH | OQA-QAM-25 |
| 906AW | 6000703 | 4-Jan-06 | SOIL | TPH | OQA-QAM-25 |
| 906AC- Groundwater | 6000705 | 4-Jan-06 | AQUEOUS | VOA, SVOA | SW-846, EPA 625 |
| Trip Blank | 6004806 | 4-Jan-06 | AQUEOUS | VOA | SW-846 |
| Trip Blank | 6004807 | 4-Jan-06 | METHANOL | VOA | SW-846 |

ABBREVIATIONS:

TPH = Total Petroleum Hydrocarbons, Method NJDEP OQA-QAM-25

VOA = Volatile Organic Analysis, EPA SW-846 Method 8260

SVOA = Semi-Volatile Organic Analysis in Water, EPA Method 625

SUMMARY OF LABORATORY ANALYTICAL RESULTS-SOIL

FT. MONMOUTH, BUILDING 906A, UST No. 81533-146 4 January 2006

TOTAL PETROLEUM HYDROCARBONS

| SAMPLE ID | LABORATORY | SAMPLE LOCATION | SAMPLE | MATRIX | ТРН |
|-----------|------------|-----------------|-----------|--------|---------|
| | SAMPLE ID | | DEPTH | | RESULTS |
| | | | (in feet) | | mg/kg |
| 906AC | 6000701 | CENTER UST | 3.5 – 4.0 | Soil | 693 |
| 906AC | 6000702 | CENTER UST | 6.0 – 6.5 | Soil | 5635* |
| 906AE | 6000704 | EAST END UST | 3.5 – 4.0 | Soil | 6699* |
| 906AW | 6000705 | WEST END UST | 6.0 - 6.5 | Soil | 195 |

ABBREVIATIONS:

mg/kg = milligrams per kilogram = parts per million

ND = Compound Not Detected

NA = Compound Not Analyzed

*= Further Analyzed for Volatile Organic Compounds

Notes:

Gray shading indicates exceedance of NJDEP

health based criterion of 10,000 ppm total organic contaminants

SUMMARY OF LABORATORY ANALYTICAL RESULTS-SOIL

FT. MONMOUTH, BUILDING 906A, UST No. 81533-146 4 January 2006

VOLATILE ORGANIC COMPOUNDS

| SAMPLE ID | LAB SAMPLE ID | Benzene | Toluene | Ethylbenzene | Xylenes (total) |
|-------------------|------------------|---------|---------|--------------|--------------------|
| UNITS | | mg/kg | mg/kg | mg/kg | mg/kg |
| 906AC | 6000702 | ND | ND | ND | ND |
| 906AE | 6000703 | ND | ND | 0.6 | 0.8 |
| Trip Blank | | ND | ND | ND | ND |
| NJDEP Criteria | Residential | 1 | 1,000 | 1,000 | 410 |

ABBREVIATIONS:

mg/kg = milligrams per kilogram = parts per million (ppm)

ND = Compound Not Detected

NA = Compound Not Analyzed

Notes

Gray shading indicates exceedance of NJDEP Residential Direct Contact Soil Cleanup Criteria

SUMMARY OF LABORATORY ANALYTICAL RESULTS-GROUNDWATER

FT. MONMOUTH, BUILDING 906A, UST No. 81533-146

4 January 2006

VOLATILE ORGANIC COMPOUNDS

| SAMPLE ID | LAB SAMPLE ID | Benzene | Ethyl- benzene | Toluene | Total Xylenes |
|-----------------------|----------------------------------|---------|-------------------|---------|------------------|
| | UNITS | ug/L | ug/L | ug/L | ug/L |
| 906AC- Groundwater | 6000705 | ND | 4.7 | ND | 3.2 |
| Trip Blank | | ND | ND | ND | ND |
| NJDEP Criteria | Ground Water Quality Crireria | 1 | 700 | 1000 | NLE |

SEMI-VOLATILE ORGANIC COMPOUNDS

| SAMPLE ID | LAB SAMPLE ID | Naphtha- lene | 2-Methyl- naphthalene | Phenan- threne | Pyrene | Bis(2Ethylhexyl) phthalate |
|-----------------------|-------------------------------------|------------------|--------------------------|-------------------|--------|-------------------------------|
| UNITS | | ug/L | ug/L | ug/L | ug/L | ug/L |
| 906AC- Groundwater | 6000705 | 95.1 | 169.4 | 189.2 | 77.9 | 3.2 |
| NJDEP Criteria | Ground Water Quality Crireria | NLE | NLE | NLE | 200 | 30 |

ABBREVIATIONS:

ug/L = Micrograms Per Liter = parts per billion

ND = Compound Not Detected

NA = Compound Not Analyzed

NLE= No Limit Established

Notes:

Gray shading indicates exceedance of NJDEP Class II Ground Water Quality Criteria

APPENDIX A CERTIFICATIONS



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OEH Bldg. # 167 OHn SELFM-EH Fort Monmouth NJ 07703

2. Facility name and location:(if different from above)

U.S. army Fort Monmouth Main Past West

3. Contact person for this activity:

Telephone Number: (908) 532-6223

4. The identification number of the affected tank as it appears in Question Number 12 on the Registration Questionnaire: 1an K No. 58, 88, 95, 104, 110, 113, 146, 148, 158, 4, 163

Bdys. 283A, 614, 622, 676, 692, 701A, 906, 910, 1004, 1103

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| | | | | |
| OTE: All appropria and/or federa the above sta | l agency must be ob | ermits, license tained separate CERTIFICATION | s and certificates from any. ly from this notification as | local; state required by |
| *** This registration forms acility. (7:14B-2.3 (a) 1). ** | shall be signed by the high | • | al at the facility with overall responsib | ility for that |
| here are significant civil at and/or imprisionment." | w that the information production and criminal penalties for so | vided in this docume ubmitting false, inac | nt is true. accurate and complete. I am curate or incomplete information, incl | aware that uding lines |
| Signature: | JAMES OTT | | | - 10 to 10 t |
| itle: | Acting Director Dir, Engineering and | d Housing Date | 22 NOV 1991 | 4 * |

 ${}^{c}C_{C},$



STATE OF NEW JERSEY DEPARTM OF ENVIRONMENTAL PROTECT Bureau of Underground Storage Tanks CN-029, Trenton, NJ 08625

| Date Re | c'd |
|-----------------|------------------|
| Auth Routing | |
| | |
| UST NO. | 20/07 20/04/2005 |

BITE ABBESSHENT COMPLIANCE STATEMENT

Supplement to the New Jersey Standard Reporting Form (Complete for ALL regulated UST abandonments or Zemovals)

Within ninety (90) days of completing the UST closure of any State or Federally-regulated tank, the owner or operator must submit this completed form to the NJDEP Bureau of Underground Storage Tanks. If the facility is located in one of the counties listed on the back, a copy of this form must also be sent to the Health Agency indicated.

The owner or operator of any Federally-regulated tank must also comply with the following:

40 CFR Part 280.72 Assessing the site at closure or change-in-service

"(a) Before permanent closure or a change-in-service is completed, owners and operators must measure for the presence of a release where contamination is most likely to be present at the UST site. In selecting sample types, sample locations, and measurement methods, owners and operators must consider the method of closure, the nature of the stored substance, the type of backfill, the depth to ground water, and other factors appropriate for identifying the presence of a release."

| release | waters serential as as as the | germina houselle |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| PACILIT | v U.S. Ormy Fort Monmonth por 00815 | 33 Tank No |
| | ff the following items as appropriate for the site. | 58, 88, 95, |
| i | The UST facility is only regulated by State law, there | (14/2)148 150 |
| | The UST facility is regulated by Federal law and a site | 163. |
| The res | ults of the site assessment indicate: | the same substitution |
| | There was NO release from the UST system. | |
| Фримскорийштехничногорийного | There was a release from the UST system and it reported to the DEP Environmental Hotline (609-292-71) | |
| the De | The results of the site assessment are not to be sul P or Bealth Agency unless requested to do so. The re available for inspection at the UST facility. | mitted to saults are |

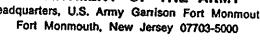
Questions can be directed to the Bureau at (609) 984-3156.

| *** This registration form shall be signed by the highest ranking facility (7:14B-2.3 (a) 1). *** | 20 20. |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| "I certify under penalty of law that the information provided in this document is true, accurate and complete. I am aware that there are significant civil and criminal penalties for submitting false, inaccurate or incomplete information, including times and/or imprisonment. SACS-2,1/89 | IAMES OTT Acting Director Local Date Jir, Engineering and Housing (Title) |



DEPARTMENT OF THE ARMY

Headquarters, U.S. Army Garrison Fort Monmouth Fort Monmouth, New Jersey 07703-5000





REPLY TO ATTENTION OF

Directorate of Engineering and Housing

22 NOV 1991

SUBJECT: Removal Procedure:

U.S. Army Fort Monmouth Main Post West Site Registration #0081533 Tank #58, 88, 95, 104, 110, 113, 146, 148, 158, 163 POC: Joseph M. Fallon (908) 532-6223

The remaining product inside each tank was removed for disposal by Lionetti Oil Recovery Co., Inc. Lionetti is a licensed hazardous waste transporter and treatment, storage, and disposal facility (USEPA ID #NJD084044064).

The top of each tank was excavated and cut open across the entire length of the tank. In addition, the inside of each tank was hand cleaned and thoroughly wiped down. The soil from the top of each excavation was visually inspected and analyzed using a HNU Model PI-101 photoionizer. No contamination was detected.

After each tank was cleaned, a visual inspection was made inside the tanks for signs of leakage. No corrision was found inside the tanks.

Each tank was then removed from the ground and disposed of through a metal recycler. No contamination was discovered at the sites upon removing the tanks.

Each site was then backfilled with the excavated soil to close out the project.

APPENDIX B

SOIL AND GROUNDWATER ANALYTICAL DATA PACKAGE

FORT MONMOUTH ENVIRONMENTAL

TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS

PHONE: (732) 532-4359 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: BLDG. 906A

Bldg. 906A

| Field Sample Location | Laboratory Sample ID# | Matrix | Date and Time of Collection | Date Received |
|-----------------------|--------------------------|---------|-----------------------------|---------------|
| 906A C 3.5-4.0' | 6000701 | Soil | 04-Jan-06 13:44 | 01/04/06 |
| 906A C 6.0-6.5' | 6000702 | Soil | 04-Jan-06 13:54 | 01/04/06 |
| 906A E 3.5-4.0' | 6000703 | Soil | 04-Jan-06 14:18 | 01/04/06 |
| 906A W 6.0-6.5' | 6000704 | Soil | 04-Jan-06 14:35 | 01/04/06 |
| 906A C | 6000705 | Aqueous | 04-Jan-06 15:02 | 01/04/06 |

ANALYSIS:

FORT MONMOUTH ENVIRONMENTAL LAB VOA+15, BN+15, TPHC, % SOLIDS

ENCLOSURE: CHAIN OF CUSTODY RESULTS

Daniel Wright/Date

Laboratory Director

The enclosed report relates only to the items tested. The report may not be reproduced, except in full, without written approval of the U.S. Army Fort Monmouth Directorate of Public Works.

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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: John | McCarthy | Project No: | 06-34 | 880 | | | | Anal | ysis P | aram | eters | | | Comments: | |
|---------------------------------------|-----------------------------------------------|------------------|----------------|--------|---------|---------|----------------------------------------|---------------------|--------|----------|----------|---------|--------|---------------------|------------------|
| Phone: X2 6 | 224 | Location: | | | -4 | | | λ_{λ} | | | | | | | |
| ()DERA ()OMA | ()Other: | (For | mer US | ST) | | + | 77 | 7 | | | | | | | |
| Samplers Name / C | ompany: George Be | | | Sample | # | d | † Ø | BN+15 | | | | | | | |
| LIMS/Work Order# | Sample Location | Date | Time | Туре | bottles | 7 | > | Q | | | | | | Remarks / Pres | ervation Method |
| (00007 01 | 906AC 35-4.0 | | 1344 | Soil | 2 | X | | | | | | | | 4397 | across anater |
| U O O | 906 AC 6.0-6.5 | | 1354 | | 2_ | X | | | | | | | | 4398 | Stained |
| 1 1/3 | 906AF 35-4.0 | | 1418 | ·) · | 2 | X | | | | | | | | 4399 | Across Water |
| 04 | 906AW 60-6.5 | | 1435 | 1 | 2 | X | | | | | | | | 4400 | |
| -05 | 906AC | 1 | 1502 | AR | 3 | | X | X | | | | | | | |
| · · · · · · · · · · · · · · · · · · · | | | | | | | | | | | | | | | |
| | <u>, , , , , , , , , , , , , , , , , , , </u> | | | | | | | | | | | | | | |
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| Refuguished by (signal) | | Received by | <i>(n / ,</i> | 111 | Relino | quished | by (sig | nature) | : | Date | Time: | Recei | ved by | (signature); | |
| | | AL | | M | | | ************************************** | | | | | | | | |
| Relinquished by (signat | nure): Date/Time: | Received by | (signature): | | Relino | _ | | mature) | | | | | | (signature): | |
| Report Type: ()Full, (| Reduced, ()Standard, ()Scre | en / non-certifi | ed, (_)EDD | | | Rema | rks: V | 10+ | -10 | 0 n S | 5% | >10 | 00 0 | PPM TP 95 ALILEO | Н |
| Turnaround time: USta | ndard 3 wks, ()Rush_ Days, | ()ASAP Ver | balHrs. | | | 5 | hai | red | T; | Rip | ω | ;+L | 62 | 95 Al 1/20 | ar. |
| • | | | | | | | | | | <u> </u> | |) | | / / // | |

SAMPLE RECEIPT FORM

| Date Received: | 1- | 4-00 | . Work Order | I D#: _ | OUNT |
|---------------------------|--------|------------------------|---------------------|----------------|--------------|
| Site/Proj. Name | :Blu | ly/ 906A U | T Cooler Temp | (°C): | 3.0° |
| Received By: (Print name) | VI | LECHIA | Sign: | W | yelled |
| | | Check the app | ropriate box | A. | / |
| 1. Did the sample | es com | e in a cooler? | , | Z yes | s□ no □ n/a |
| • | | n good condition? | | Z yes | s □ no |
| | | tody filled out correc | | Ø yes | s □ no |
| | | tody signed in the ap | | 1 yes | s □ no |
| | | with the chain of cus | | ☑ yes | ; □ no |
| · · | | tainers/preservatives | / · | ₽ yes | ; □ no |
| | | unt of sample supplie | ed? | ☑ yes | :□ no |
| | - | sent in VOA vials? | | | i⊿no □ n/a |
| 9. Were samples | | | . / | • | □ no |
| 10. Were analyze | -imme | diately tests perform | within 15 minutes l | □ yes | □ noj□ n/a |
| | llowi | ing table for eac | ch sample bottl | e | |
| | | | | | 1 mm. 4.7 |
| Lims ID | рН | Preservative | Sample ID | pH | Preservative |
| Lims ID | рН | Preservative | Sample ID | pH_ | Preservative |
| Lims ID | рН | Preservative | Sample ID | pH | Preservative |
| Lims ID | pH | Preservative | Sample ID | pH | Preservative |
| Lims ID | pH | Preservative | Sample ID | pH | Preservative |
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| LIMS ID | pH | Preservative | Sample ID | PH | Preservative |
| Lims ID | pH | Preservative | Sample ID | PH | Preservative |
| Lims ID | pH | Preservative | Sample ID | PH | Preservative |
| LIMS ID | pH | Preservative | Sample ID | PH | Preservative |
| | pH | Preservative | Sample ID | PH | Preservative |
| Comments: | pH | Preservative | Sample ID | PH | Preservative |
| | pH | Preservative | Sample ID | PH | Preservative |
| | pH | Preservative | Sample ID | PH | Preservative |

Change of Chain of Custody

| Was sufficient Are samples | d: | ests indicated? ysis? | 1000(, 1)10/0(, 1) |
|---------------------------------------------------------|-----------------|--------------------------|--------------------|
| Sample ID# | New Analysis | Sample ID# | New Analysis |
| (000702 | 1001 + 15 | 12" | 24141333 |
| | VUP (- 1.5 | | |
| 03 | | | |
| | 100 | | 1 (3 7 |
| AISO T | M Wexpanol L | B 6000 | 0606 |
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Former UST 906A Sample Location GPS Positions

US State Plane 1983 New Jersey (NY East) 2900 NAD 1983 (Conus) Geoid 96 (Conus)

(In US Survey Feet)

| Position | Northing (Y Coord.) | Easting (X Coord.) |
|----------|----------------------|---------------------|
| 906A E | 539090.168 | 621094.799 |
| 906A C | 539088.953 | 621099,520 |
| 906A W | 539087.046 | 621104.447 |

METHOD SUMMARY

Methodology 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 SW-846 Method 8260 Gas Chromatographic Determination of Volatiles in Methanol

A 10-gram volume of soil is combined with 25-ml of Methanol and surrogates in the field. 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 moisture and concentration.

EPA Method 625 Gas Chromatographic Determination of Semi-volatiles in Water

Surrogates are added to a 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 is 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) of soil is added to a 125-ml acid cleaned and solvent rinsed capped Erlenmeyer flask. 15g anhydrous Sodium Sulfate is added to dry the sample. Surrogate standard spiking solution is then added to the flask.

Twenty-five ml of Methylene Chloride is added to the flask and it is secured on an orbital shaker table. The agitation rate is set to 400 rpm and the sample is shaken for 30 minutes. The flask is removed from the table and the particulate matter is allowed to settle. The extract is transferred to a Teflon capped vial. A second 25-ml 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 1-ml auto-sampler 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 moisture, sample weight and concentration.

LABORATORY CHRONICLE

Laboratory Chronicle

Lab ID: 60007

Site: UST

Bldg. 906A

| | | Date | Hold Time |
|----------------|---------------------|-------------------------------------|-------------------------------|
| Date Sampled | | 01/04/06 | NA |
| Re | ceipt/Refrigeration | 01/04/06 | NA |
| Ex | tractions | | |
| 1. 2. | BN TPHC | 01/09/06 01/06/06 | 7 days 14 days |
| An | alyses | | |
| 1. 2. 3. | VOA BN TPHC | 01/11,17/06 01/17/06 01/07/06 | 14 days 40 days 40 days |

CONFORMANCE/ NONCONFORMANCE SUMMARY

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

| | | | Indicate Yes, No, N/A |
|----|-----------------------------------------------|------------------------------------------------------------------------------------------------------------------------|--------------------------|
| 1. | Chromatograms labeled (Field samples and | l/Compounds identified method blanks) | yes |
| 2. | Retention times for chro | omatograms provided | yes |
| 3. | GC/MS Tune Specifica | tions | |
| | | BFB Meet Criteria DFTPP Meet Criteria | yes yes |
| 4. | GC/MS Tuning Frequent series and 12 hours for | ncy – Performed every 24 hours for 600 3000 series | yes |
| 5. | analysis and continuing | itial Calibration performed before sample calibration performed within 24 hours of series and 12 hours for 8000 series | <u>yes</u> |
| 6. | GC/MS Calibration requ | irements | |
| | | alibration Check Compounds Meet Criteria ystem Performance Check Compounds Meet Criteria | <u>yes</u> <u>yes</u> |
| 7. | Blank Contamination - | If yes, List compounds and concentrations in each blank: | No |
| | b. B | OA Fraction /N Fraction cid Fraction | |
| 3. | Surrogate Recoveries M | eet Criteria | <i>NO</i> |
| | If not met, list those outside the acceptal | compounds and their recoveries, which fall le range: | |
| | b. B | OA Fraction OA Fraction OA Fraction OA Fraction OA Fraction | |
| | If not met, were the as "estimated"? | calculations checked and the results qualified | <u>yes</u> |
| €. | | ke Duplicate Recoveries Meet Criteria npounds and their recoveries, which fall nge) | _00_ |
| | C. A | OA Fraction <u>Naphhalene</u> M5+M5D low N Fraction Benziane M5D low RPD high | |
| | ٧ | Nious out on Soil VOA see form | |

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

| | | Indicate Yes, No, N/A |
|------|---------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| 10. | Internal Standard Area/Retention Time Shift Meet Criteria (If not met, list those compounds, which fall outside the acceptable range) | yes |
| | a. VOA Fraction | |
| | b. B/N Fraction | |
| | c. Acid Fraction | - |
| 11. | Extraction Holding Time Met | <u>yes</u> |
| | If not met, list the number of days exceeded for each sample: | • - - |
| 12. | Analysis Holding Time Met | <u> yes</u> |
| | If not met, list the number of days exceeded for each sample: | <u></u> |
| Add | itional Comments: | - |
| | | |
| Labo | oratory Manager: Date: 1-27 -0 | <u> </u> |

TPHC CONFORMANCE/NON-CONFORMANCE SUMMARY REPORT

| | | Indicate Yes, No, N/A |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| 1. | Method Detection Limits Provided | 405 |
| 2. | Method Blank Contamination – If yes, list the sample and the corresponding concentrations in each blank | <u>NO</u> |
| 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_ |
| 5. | 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 |
| | | |
| Addıt | ional comments; | |
| Labor | atory Manager:Date: | _ |

VOLATILE ORGANICS (AQUEOUS)

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY NJDEP CERTIFICATION # 13461

Definition of Qualifiers

- U: The compound was analyzed for but not detected.
- B: Indicates that the compound was found in the associated method blank as well as in the sample.
- J: Indicates an estimated value. This flag is used:
 - (1) When the mass spec and retention time data indicate the presence of a compound however the result is less than the MDL but greater than zero.
 - (2) When estimating the concentration of a tentatively identified compound (TIC), where a 1:1 response is assumed.
- D: This flag is used to identify all compounds (target or TIC) that required a dilution.
- E: Indicates the compound's concentration exceeds the calibration range of the instrument for that specific analysis.
- N: This flag is only used for TICs. It indicates the presumptive evidence of a compound. For a generic characterization of a TIC, such as unknown hydrocarbon, the flag is not used.

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

-Data File Operator Date Acquired VB021318.D

Skelton

11 Jan 2006 8:48 pm

Sample Name Field ID

MB 11Jan2006 MB 11Jan2006

Sample Multiplier

| CAS# | Compound Name | R.T. | Response | Result | Regulatory Level (ug/l)* | MDL | RL | Qualifier |
|-------------|---------------------------|-----------------------------------------|--------------------------------------------------|----------------|-----------------------------|------------|------------------------|--------------------------------------------------|
| 107028 | Acrolein | | | not detected | 5 | 2.01 ug/L | 5.00 ug/L | |
| 107131 | Acrylonitrile | | | not detected | . 5 | 1.23 ug/L | 5.00 ug/L | |
| 75650 | tert-Butyl alcohol | | | not detected | . 100 | 5.70 ug/L | 10.00 ug/L | |
| 1634044 | Methyl-tert-Butyl ether | | | not detected | 70 | 0.21 ug/L | 2.00 ug/L | |
| 108203 | Di-isopropyl ether | | | not detected | 20000 | 0.26 ug/L | 2.00 ug/L | |
| 75718 | Dichlorodifluoromethane | | | not detected | 1000 | 0.20 tig/L | 2.00 ug/L | |
| 74-87-3 | Chloromethane | | | not detected . | nle | 0.24 ug/L | 2.00 ug/L | |
| 75-01-4 | Vinyl Chloride | | | not detected | 1 | 0.23 ug/L | 2.00 ug/L | |
| 74-83-9 | Bromomethane | | | not detected | 10 | 0.26 ug/L | 2.00 ug/L | |
| 75-00-3 | Chloroethane | , | | not detected | nle | 0.29 ug/L | 2.00 ug/L | |
| 75-69-4 | Trichlorofluoromethane | | | not detected | 2000 | 0.23 ug/L | 2.00 ug/L | |
| 75-35-4 | 1,1-Dichloroethene | | | not detected | 1 | 0.19 ug/L | 2.00 ug/L | |
| 67-64-1 | Acetone | | | not detected | 5000 | 0.36 ug/L | 2.00 ug/L | |
| 75-15-0 | Carbon Disulfide | *************************************** | 1 | not detected | 700 | 0.24 ug/L | 2.00 ug/L | |
| 75-09-2 | Methylene Chloride | | | not detected | | 0.24 ug/L | · | |
| 156-60-5 | trans-1.2-Dichloroethene | | | | 3 | | 2.00 ug/L | |
| 75-34-3 | 1,1-Dichloroethane | | | not detected | 100 | 0.24 ug/L | 2.00 ug/L | |
| 108-05-4 | Vinyl Acetate | W.W | | not detected | 50 | 0.24 ug/L | 2.00 ug/L | |
| 78-93-3 | | | <u> </u> | not detected | 7000 | 0.20 ug/L | 2.00 ug/L | |
| | 2-Butanone | | | лоt detected | 300 | 0.26 ug/L | 2.00 ug/L | |
| 156-59-2 | cis-1,2-Dichloroethene | | · | not detected | 70 | 0.20 ug/L | 2.00 ug/L | |
| 67-66-3 | Chloroform | | | not detected | 70 | 0.22 ug/L | 2.00 ug/L | |
| 71-55-6 | 1,1,1-Trichloroethane | | | not detected | 30 | 0.20 ug/L | 2.00 ug/L | |
| 56-23-5 | Carbon Tetrachloride | <u> </u> | | поt detected | 1 | 0.24 ug/L | 2.00 ug/L | |
| 71-43-2 | Benzene | | | not detected | 1 | 0.24 ug/L | 2.00 ug/L | |
| 107-06-2 | 1,2-Dichloroethane | | ļ | not detected | 2 | 0.23 ug/L | 2.00 ug/L | |
| 79-01-6 | Trichloroethene | | - | not detected | 1 | 0.26 ug/L | 2.00 ug/L | |
| 78-87-5 | 1,2-Dichloropropane | | | not detected | 1 | 0.24 ug/L | 2.00 ug/L | |
| 75-27-4 | Bromodichloromethane | | | not detected | 1 | 0.22 ug/L | 2.00 ug/L | |
| 110-75-8 | 2-Chloroethyl vinyl ether | | | not detected | nlé | 0.23 ug/L | 2.00 ug/L | |
| 10061-01-5 | cis-1,3-Dichloropropene | | | not detected | 1 | 0.22 ug/L | 2.00 ug/L | |
| 108-10-1 | 4-Methyl-2-Pentanone | | | not detected | nle | 0.35 ug/L | 2.00 ug/L | |
| 108-88-3 | Toluene | | | not detected | 1000 | 0.26 ug/L | 2.00 ug/L | |
| 10061-02-6 | trans-1,3-Dichloropropene | | | not detected | 1 | 0.25 ug/L | 2.00 ug/L | |
| 79-00-5 | 1,1,2-Trichloroethane | | | not detected | 3 | 0.28 ug/L | 2.00 ug/L | |
| 127-18-4 | Tetrachloroethene | ***** | | not detected | 1 | 0.20 ug/L | 2.00 ug/L | |
| 591-78-6 | 2-Hexanone | | | not detected | nle | 0.43 ug/L | 2.00 ug/L | |
| 124-48-1 | Dibromochloromethane | | | not detected | 1 | 0.22 ug/L | 2.00 ug/L | |
| 108-90-7 | Chlorobenzene | | | not detected | 50 | 0.28 ug/L | 2.00 ug/L | |
| 100-41-4 | Ethylbenzene | | | not detected | 700 | 0.27 ug/L | 2.00 ug/L | |
| 1330-20-7 | m+p-Xylenes | | | not detected | nle | 0.43 ug/L | 4.00 ug/L | |
| 95-47-6 | o-Xylene | | 1 | not detected | nle | 0.43 ug/L | 2.00 ug/L | |
| 100-42-5 | Styrene | | | not detected | 100 | 0.21 ug/L | 2.00 ug/L | |
| 75-25-2 | Bromoform | | | not detected | | 0.27 ug/L | 2.00 ug/L | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | | | not detected | 4 | 0.45 ug/L | 2.00 ug/L 2.00 ug/L | |
| 541-73-1 | 1,3-Dichlorobenzene | | | | 1 1 | | '''' | |
| | | | | not detected | 600 | 0.36 ug/L | 2.00 ug/L | |
| 106-46-7 | 1,4-Dichlorobenzene | | | not detected | 75 | 0.35 ug/L | 2.00 ug/L | |
| 95-50-1 | 1,2-Dichlorobenzene | | L | not detected | 600 | 0.45 ug/L | 2.00 ug/L | |

^{*}Results between MDL and RL are estimated values

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

R.L. = Reporting Limit

^{*}Higher of PQL's and Interim Criteria as per N.J.A.C. 7:9C 07Nov2005

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

| FIELD ID: |
|-----------|
|-----------|

| Lab Name: | FMETL | | | NJDEP | #: 13461 | | MB 11Jan | 2006 |
|-----------------|----------|-------------|--------------|---------------|----------------|----------|-------------|-------------|
| Project: | 0634880 | 0 Cas | e No.: 60007 | Loca | tion: 906A | SD | G No.: UST | |
| Matrix: (soil/v | water) | WATER | - | | Lab Sample | _ ID: | MB 11Jan200 |)6 |
| Sample wt/vo | ol: | 5.0 | (g/ml) ML | | Lab File ID: | , | VB021318.D | |
| Level: (low/n | ned) | LOW | | | Date Receiv | ed: | 1/4/2006 | |
| % Moisture: | not dec. | | · | | Date Analyz | ed: 1 | 1/11/2006 | |
| GC Column: | RTX50 | 02. ID: 0.2 | 5 (mm) | | Dilution Fact | or: | 1.0 | |
| Soil Extract V | /olume: | | _ (uL) | | Soil Aliquot \ | /olum | ne: | (uL) |
| | | | (| CONCENTR | RATION UNI | TS: | | |
| Number TICs | s found: | 1 | - | (ug/L or ug/k | (g) <u>UG/</u> | | · | |
| CAS NO. | | COMPOU | ND NAME | | RT | EST | CONC. | Q |
| 1. 000079 | 9-20-9 | Acetic acid | methyl ester | | 12.47 | | 1 | 1NI |

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

Data File Operator Date Acquired VB021320.D

Skelton

11 Jan 2006 10:10 pm

Sample Name Field ID

6000606 Trip Blank

Sample Multiplier

| CAS# | Compound Name | R.T. | Response | Result | Regulatory Level (ug/l)* | MDL | RL | Qualific |
|------------|---------------------------|---------|---------------------------------------|----------------|-----------------------------|-----------|-------------|--------------------------------------------------|
| 107028 | Acrolein | | | not detected | 5 | 2.01 ug/L | 5.00 ug/L | |
| 107131 | Acrylonitrile | | , | not detected | 5 | 1.23 ug/L | 5.00 ug/L | |
| 75650 | tert-Butyl alcohol | • | | not detected | 100 | 5.70 ug/L | 10.00 ug/L | |
| 1634044 | Methyl-tert-Butyl ether | | | not detected | 70 | 0.21 ug/L | 2.00 ug/L | |
| 108203 | Di-isopropyl ether | | | not detected | 20000 | 0.26 ug/L | 2.00 ug/L | |
| 75718 | Dichlorodifluoromethane | | | not detected | 0001 | 0.20 ug/L | 2.00 ug/L | |
| 74-87-3 | Chloromethane | | | not detected | nla | 0.24 ug/L | 2.00 ug/L | |
| 75-01-4 | Vinyl Chloride | | | not detected | I | 0.23 ug/L | 2.00 ug/L | |
| 74-83-9 | Bromomethane | | | not detected | 10 | 0.26 ug/L | 2.00 ug/L | 1 |
| 75-00-3 | Chloroethane | | | not detected | nle | 0.29 ug/L | 2.00 ug/L | |
| 75-69-4 | Trichlorofluoromethane | <u></u> | | · not detected | 2000 | 0.23 ug/L | 2.00 ug/L | |
| 75-35-4 | 1,1-Dichloroethene | | | not detected | 1 | 0.19 ug/L | 2.00 ug/L | |
| 67-64-1 | Acetone | | | not detected | 6000 | 0.36 ug/L | 2.00 ug/L | |
| 75-15-0 | Carbon Disulfide | | | not detected | 700 | 0.24 ug/L | 2.00 ug/L | · · · · · · · · · · · · · · · · · · · |
| 75-09-2 | Methylene Chloride | | | not detected | 3 | 0.21 ug/L | 2.00 ug/L | |
| 156-60-5 | trans-1,2-Dichloroethene | | | not detected | 100 | 0.24 ug/L | 2.00 ug/L | |
| 75-34-3 | 1.1-Dichloroethane | | | not detected | 50 | 0.24 ug/L | 2.00 ug/L | |
| 108-05-4 | Vinyl Acetate | | | not detected | 7000 | 0.20 ug/L | 2.00 ug/L | |
| 78-93-3 | 2-Butanone | | | not detected | 300 | 0.26 ug/L | 2.00 ug/L | |
| 1.56-59-2 | cis-1,2-Dichloroethene | | | not detected | 70 | 0.20 ug/L | 2.00 ug/L | |
| 67-66-3 | Chloroform | | | not detected | 70 | 0.20 ug/L | 2.00 ug/L | |
| 71-55-6 | I, I, I-Trichloroethane | - | | not detected | 30 | 0.20 ug/L | 2.00 ug/L | — — |
| 56-23-5 | Carbon Tetrachloride | 4 | | not detected | 1 | 0.24 ug/L | 2.00 ug/L | |
| 71-43-2 | Benzene | | | not detected | 1 | 0.24 ug/L | 2.00 ug/L | |
| 107-06-2 | 1,2-Dichloroethane | | | not detected | 2 | 0.23 ug/L | | |
| 79-01-6 | Trichloroethene | , | | | | | 2.00 ug/L | |
| 78-87-5 | 1,2-Dichloropropane | | | not detected | 1 1 | 0.26 ug/L | 2.00 ug/L | |
| 75-27-4 | Bromodichloromethane | | | not detected | 1 1 | 0.24 ug/L | 2.00 ug/L | |
| 1 10-75-8 | | | | not detected | 1 | 0.22 ug/L | 2.00 ug/L | |
| 10061-01-5 | 2-Chloroethyl vinyl ether | | + | not detected | nle | 0.23 ug/L | 2.00 ug/L | |
| | cis-1,3-Dichloropropene | | | not detected | 1 1 | 0.22 ug/L | 2.00 ug/L | |
| 108-10-1 | 4-Methyl-2-Pentanone | | | лоt detected | nle | 0.35 ug/L | 2.00 ug/L | |
| 108-88-3 | Toluene | | | not detected | 1000 | 0.26 цу/L | 2.00 ug/L | |
| 10061-02-6 | trans-1,3-Dichloropropene | | | not detected | 1 | 0.25 ug/L | 2.00 ug/L | |
| 79-00-5 | 1,1,2-Trichloroethane | | | not detected | 3 | 0.28 ug/L | 2.00 ug/L | |
| 127-18-4 | Tetrachloroethene | | | not detected | 1 1 | 0.20 ug/L | 2.00 ug/L | |
| 591-78-6 | 2-Hexanone | | | not detected | nle | 0.43 ug/L | 2.00 ug/L | |
| 124-48-1 | Dibromochloromethane | | | not detected | 11 | 0.22 ug/L | 2.00 ug/L | |
| 108-90-7 | Chlorobenzene | | | not detected | 50 | 0.28 ug/L | 2.00 ug/L | |
| 100-41-4 | Ethylbenzene | | | not detected | 700 | 0.27 ug/L | 2.00 ug/L | |
| 1330-20-7 | m+p-Xylenes | | | not detected | nie | 0.43 ug/L | 4.00 ug/L | |
| 95-47-6 | o-Xylene | | | not detected | nle | 0.21 ug/L | 2.00 ug/L | |
| 100-42-5 | Styrene | | | not detected | 100 | 0.21 ug/L | 2.00 ug/L | |
| 75-25-2 | Bromoform | | | not detected | 4 | 0.27 ug/L | 2.00 ug/L | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | | | not detected | 1 1 | 0.45 ug/L | 2.00 ug/L | |
| 541-73-1 | 1,3-Dichlorobenzene | | | not detected | 600 | 0.36 ug/L | 2.00 ug/L . | |
| 106-46-7 | 1,4-Dichlorobenzene | | ' | not detected | . 75 | 0.35 ug/L | 2.00 ug/L | |
| 95-50-1 | 1,2-Dichlorobenzene | | · · · · · · · · · · · · · · · · · · · | not detected | 600 | 0.45 ug/L | 2.00 ug/L | - |

*Results between MDL and RL are estimated values

*Higher of PQL's and Interim Criteria as per N.J.A.C. 7:9C 07Nov2005

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

R.L. = Reporting Limit

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

| Lab Name; | FMETL | | NJDEP#: 13461 | Trip B | lank |
|----------------|-------------------|--------------------|----------------------------------------|-------------|------|
| Project: | 0634880 | Case No.: 60006 | Location: 637 | SDG No.: US | Γ |
| Matrix: (soil/ | water) <u>WAT</u> | ER | Lab Sample ID | : 6000606 | |
| Sample wt/vo | ol: <u>5.0</u> | (g/ml) ML | Lab File ID: | VB021320.D | |
| Level: (low/n | ned) <u>LOW</u> | | Date Received: | 1/4/2006 | |
| % Moisture: i | not dec. | | Date Analyzed: | 1/11/2006 | |
| GC Column: | RTX502. ID | 0.25 (mm) | Dilution Factor: | 1.0 | |
| Soil Extract V | /olume: | (uL) | Soil Aliquot Vol | ume: | (uL) |
| Number TICs | s found: | | ONCENTRATION UNITS: g/L or ug/Kg) UG/L | <u> </u> | |
| CAS NO. | сом | POUND NAME | RT E | ST. CONC. | Q |
| 1. 000079 | 9-20-9 Acetic | acid, methyl ester | 12.47 | 4 | JN |

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

Data File Operator Date Acquired VB021321.D

Skelton

11 Jan 2006 10:51 pm

Sample Name Field ID 6000705 906AC

Regulatory

Sample Multiplier

fultiplier 1

| CAS# | Compound Name | R.T. | Response | Result | Regulatory Level (ug/l)* | MDL | RL | Qualifiers |
|------------|---------------------------|-------|--------------------------------------------------|--------------|-----------------------------|-----------------------------------------|------------|--------------------------------------------------|
| 107028 | Acrolein | | I | not detected | 5 | 2.01 ug/L | 5.00 ug/L | Quantiers |
| 107131 | Acrylonitrile | | | not detected | 5 | 1.23 ug/L | 5.00 ug/L | |
| 75650 | tert-Butyl alcohol | | | not detected | 100 | 5.70 ug/L | 10.00 ug/L | |
| 1634044 | Methyl-tert-Butyl ether | | | not detected | 70 | 0.21 ug/L | 2.00 ug/L | |
| 108203 | Di-isopropyl ether | | | not detected | 20000 | 0.26 ug/L | 2.00 ug/L | <u> </u> |
| 75718 | Dichlorodifluoromethane | | | not detected | 1000 | 0.20 ug/L | | |
| 74-87-3 | Chloromethane | | | not detected | | | 2.00 ug/L | |
| 75-01-4 | Vinyl Chloride | | | | nle | 0.24 ug/L | 2.00 ug/L | |
| 74-83-9 | Bromomethane | | | not detected | 1 | 0.23 ug/L | 2.00 ug/L | |
| 75-00-3 | Chloroethane . | | | not detected | 10 | 0.26 ug/L | 2.00 ug/L | |
| 75-69-4 | Trichlorofluoromethane | | | not detected | nle | 0.29 ug/L | 2.00 ug/L | |
| 75-35-4 | | | | not detected | 2000 | 0.23 ug/L | 2.00 ug/L | |
| | 1,1-Dichloroethene | | | not detected | 1 | 0.19 ug/L | 2.00 ug/L | |
| 67-64-1 | Acetone | | 4 | not detected | 6000 | 0.36 ug/L | 2.00 ug/L | <u> </u> |
| 75-15-0 | Carbon Disulfide | | | not detected | 700 | 0.24 ug/L | 2.00 ug/L | |
| 75-09-2 | Methylene Chloride | | | not detected | 3 | 0.21 ug/L | 2.00 ug/L | <u> </u> |
| 156-60-5 | trans-1,2-Dichloroethene | | | not detected | 100 | 0.24 ug/L | 2.00 ug/L | |
| 75-34-3 | 1,1-Dichloroethane | | | not detected | 50 | 0.24 ug/L | 2.00 ug/L | |
| 108-05-4 | Vinyl Acetate | | | not detected | 7000 | 0.20 ug/L | 2.00 ug/L | |
| 78-93-3 | 2-Butanone | | | not detected | 300 | 0.26 ug/L | 2.00 ug/L | |
| 156-59-2 | cis-1,2-Dichloroethene | | | not detected | 70 | 0.20 ug/L | 2.00 ug/L | |
| 67-66-3 | Chloroform | | | not detected | 70 | 0.22 ug/L | 2.00 ug/L | |
| 71-55-6 | 1,1,1-Trichloroethane | | | not detected | 30 | 0.20 ug/L | 2.00 ug/L | |
| 56-23-5 | Carbon Tetrachloride | - | | not detected | 1 | 0.24 ug/L | 2.00 ug/L | |
| 71-43-2 | Benzene | | | not detected | 1 | 0.24 ug/L | 2.00 ug/L | |
| 107-06-2 | 1,2-Dichloroethane | | | not detected | 2 | 0.23 ug/L | 2.00 ug/L | |
| 79-01-6 | Trichloroethene | | | not detected | 1 | 0.26 ug/L | 2.00 ug/L | 1 |
| 78-87-5 | 1,2-Dichloropropane | | | not detected | 1 | 0.24 ug/L | 2.00 ug/L | |
| 75-27-4 | Bromodichioromethane | | | not detected | i | 0.22 ug/L | 2.00 ug/L | |
| 110-75-8 | 2-Chloroethyl vinyl ether | | | not detected | nle | 0.23 ug/L | 2.00 ug/L | |
| 10061-01-5 | cis-1,3-Dichloropropene | | | not detected | 1 | 0.22 ug/L | 2.00 ug/L | |
| 108-10-1 | 4-Methyl-2-Pentanone | | · · · · · · · · · · · · · · · · · · · | not detected | nle | 0.35 ug/L | 2.00 ug/L | |
| 108-88-3 | Toluene | | | not detected | 1000 | 0.26 ug/L | 2.00 ug/L | |
| 10061-02-6 | trans-1,3-Dichloropropene | | | not detected | | *************************************** | | |
| 79-00-5 | 1,1,2-Trichloroethane | | | not detected | 1 | 0.25 ug/L | 2.00 ug/L | |
| 127-18-4 | Tetrachloroethene | | | | 3 | 0.28 ug/L | 2.00 ug/L | |
| 591-78-6 | 2-Hexanone | | | not detected | 1 | 0.20 ug/L | 2.00 ug/L | |
| 124-48-1 | Dibromochloromethane | | 1 | not detected | nle | 0.43 ug/L | 2.00 ug/L | |
| 108-90-7 | | | | not detected | 1 | 0.22 ug/L | 2.00 ug/L | |
| 108-90-7 | Chlorobenzene | 05.70 | 0.55.55 | not detected | 50 | 0.28 ug/L | 2.00 ug/L | |
| 1330-20-7 | Ethylbenzene | 25.72 | 865653 | 4.71 ug/L | 700 | 0.27 ug/L | 2.00 ug/L | |
| 95-47-6 | m+p-Xylenes | 26.01 | 70702 | 1.05 ug/L | nle | 0.43 ug/L | 4.00 ug/L | |
| 4. | o-Xylene | 26.84 | 299933 | 2.16 ug/L | nle | 0.21 ug/L | 2.00 ug/L | |
| 100-42-5 | Styrene | | | not detected | 100 | 0.21 ug/L | 2.00 ug/L | |
| 75-25-2 | Bromoform | | | not detected | 4 | 0.27 ug/L | 2.00 ug/L | ļ |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | | | not detected | 1 | 0.45 ug/L | 2.00 ug/L | |
| 541-73-1 | 1,3-Dichlorobenzene | | | not detected | 600 | 0.36 ug/L | 2.00 ug/L | |
| 106-46-7 | 1,4-Dichlorobenzene | | | not detected | 75 | 0.35 ug/L | 2.00 ug/L | |
| 95-50-1 | 1,2-Dichlorobenzene | | 1 | not detected | 600 | 0.45 ug/L | 2.00 ug/L | |

^{*}Results between MDL and RL are estimated values

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

R.L. = Reporting Limit

^{*}Higher of PQL's and Interim Criteria as per N.J.A.C. 7:9C 07Nov2005

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

| FI | EL | D I | D |
|----|----|-----|---|
|----|----|-----|---|

| Lab Name: | FMETL | · | <u>, </u> | NJDEP#: 13461 | 906AC | |
|----------------|----------|---------|-----------------------------------------------|--------------------|-------------|------------|
| Project: | 063488 | 0 | Case No.: 60006 | Location: 637 S | DG No.: UST | |
| Matrix: (soil/ | water) | WATE | R | Lab Sample ID: | 6000705 | |
| Sample wt/vo | ol: | 5.0 | (g/ml) ML | Lab File ID: | VB021321.D | |
| Level: (low/r | ned) | LOW | ···· | Date Received: | 1/4/2006 | _ |
| % Moisture: | not dec. | | | Date Analyzed: | 1/11/2006 | _ |
| GC Column: | RTX5 | 02. ID: | <u>0.25</u> (mm) | Dilution Factor: | 1.0 | _ |
| Soil Extract \ | Volume: | | (uL) | Soil Aliquot Volu | me: | _ _ (uL |
| | | | CC | NCENTRATION UNITS: | | |

(ug/L or ug/Kg) UG/L

| CAS NO. | COMPOUND NAME | RT | EST. CONC. | Q |
|-------------------------|----------------------------------|-------|------------|----|
| 1. 000526-73-8 | Benzene, 1,2,3-trimethyl- | 29.36 | 39 | JN |
| 2. 000496-11-7 | Indane | 30.51 | 77 | JN |
| 3. 000933-98-2 | Benzene, 1-ethyl-2,3-dimethyl- | 31.14 | 15 | JN |
| 4. 000527-84-4 | Benzene, 1-methyl-2-(1-methylet | 31.32 | 25 | JN |
| 5. 000767-58-8 | Indan, 1-methyl- | 31.59 | 29 | JN |
| 6. 000095-93 - 2 | Benzene, 1,2,4,5-tetramethyl- | 32.12 | 13 | JN |
| 7. 000095-93-2 | Benzene, 1,2,4,5-tetramethyl- | 32,23 | 23 | JN |
| 8. 000824-22-6 | 1H-Indene, 2,3-dihydro-4-methyl- | 32.69 | 20 | JN |
| 9. 002039-89-6 | Benzene, 2-ethenyl-1,4-dimethyl- | 33.09 | 67 | JN |
| 10. 000119-64-2 | Naphthalene, 1,2,3,4-tetrahydro- | 33,42 | 19 | JN |

Number TICs found:

10

(mm)

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK **BROMOFLUOROBENZENE (BFB)**

Lab Name: **FMETL** NJDEP#: 13461 Project: 0634880 Case No.: 60006 Location: 637 SDG No.: UST Lab File ID: VB021310.D BFB Injection Date: 1/11/2006 Instrument ID: GCMS#2 BFB Injection Time: 15:23 GC Column: RTX502.2 ID: 0.25

| | | % RELATIVE | | |
|-----|------------------------------------|---------------|--|--|
| m/e | ION ABUNDANCE CRITERIA | ABUNDANCE | | |
| 50 | 8.0 - 40.0% of mass 95 | 22.0 | | |
| 75 | 30.0 - 66.0% of mass 95 | 56.5 | | |
| 95 | Base peak, 100% relative abundance | . 100.0 | | |
| 96 | 5.0 - 9.0% of mass 95 | 6.6 | | |
| 173 | Less than 2.0% of mass 174 | 0.0 (0.0)1 | | |
| 174 | 50.0 - 120.0% of mass 95 | 73.1 | | |
| 175 | 4.0 - 9.0% of mass 174 | 5.4 (7.4)1 | | |
| 176 | 93.0 - 101.0% of mass 174 | 71.0 (97.2)1 | | |
| 177 | 5.0 - 9.0% of mass 176 | 4.7 (6.7)2 | | |

¹⁻Value is % mass 174

2-Value is % mass 176

Heated Purge: (Y/N)

Ν

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

| | | LAB | LAB | DATE | TIME |
|-----|--------------|--------------|------------|-----------|----------|
| | FIELD ID: | SAMPLE ID | FILE ID | ANALYZED | ANALYZED |
| 01[| VSTD010 | VSTD010 | VB021311.D | 1/11/2006 | 16:01 |
| 02 | VSTD005 | VSTD005 | VB021312.D | 1/11/2006 | 16:42 |
| 03 | VSTD002 | VSTD002 | VB021313.D | 1/11/2006 | 17:23 |
| 04 | VSTD050 | VSTD050 | VB021314.D | 1/11/2006 | 18:04 |
| 05 | VSTD020 | VSTD020 | VB021315.D | 1/11/2006 | 18:45 |
| 06 | MB 11JAN2006 | MB 11JAN2006 | VB021318.D | 1/11/2006 | 20:48 |
| 07 | 637C | 6000605 | VB021319.D | 1/11/2006 | 21:29 |
| 08[| TRIP BLANK | 6000606 | VB021320.D | 1/11/2006 | 22:10 |

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK BROMOFLUOROBENZENE (BFB)

Lab Name: **FMETL** NJDEP#: 13461 Project: 0634880 Case No.: 60007 Location: 906A SDG No.: UST Lab File ID: VB021310.D BFB Injection Date: 1/11/2006 Instrument ID: GCMS#2 BFB Injection Time: 15:23 GC Column: RTX502.2 ID: 0.25 Heated Purge: (Y/N) (mm) Ν

| | | % RELATIVE |
|-----|------------------------------------|---------------|
| m/e | ION ABUNDANCE CRITERIA | ABUNDANCE |
| 50 | 8.0 - 40.0% of mass 95 | 22.0 |
| 75 | 30.0 - 66.0% of mass 95 | 56.5 |
| 95 | Base peak, 100% relative abundance | 100.0 |
| 96 | 5.0 - 9.0% of mass 95 | 6.6 |
| 173 | Less than 2.0% of mass 174 | 0.0 (0.0)1 |
| 174 | 50.0 - 120.0% of mass 95 | 73.1 |
| 175 | 4.0 - 9.0% of mass 174 | 5.4 (7.4)1 |
| 176 | 93.0 - 101.0% of mass 174 | 71.0 (97.2)1 |
| 177 | 5.0 - 9.0% of mass 176 | 4.7 (6.7)2 |

¹⁻Value is % mass 174

2-Value is % mass 176

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

| | | LAB | LAB | DATE | TIME |
|----|--------------|--------------|------------|-----------|----------|
| | FIELD ID: | SAMPLE ID | FILE ID | ANALYZED | ANALYZED |
| 01 | VSTD010 | VSTD010 | VB021311.D | 1/11/2006 | 16:01 |
| 02 | VSTD005 | VSTD005 | VB021312.D | 1/11/2006 | 16:42 |
| 03 | VSTD002 | VSTD002 | VB021313.D | 1/11/2006 | 17:23 |
| 04 | VSTD050 | VSTD050 | VB021314.D | 1/11/2006 | 18:04 |
| 05 | VSTD020 | VSTD020 | VB021315.D | 1/11/2006 | 18:45 |
| 06 | MB 11JAN2006 | MB 11JAN2006 | VB021318.D | 1/11/2006 | 20:48 |
| 07 | 906AC | 6000705 | VB021321.D | 1/11/2006 | 22:51 |

Data File : C:\HPCHEM\1\DATA\060111\VB021310.D

Acq On : 11 Jan 2006 3:23 pm

: 11 Jan 2006 3:23 pm : BFB Tune Operator: Skelton Inst : GC/MS Ins

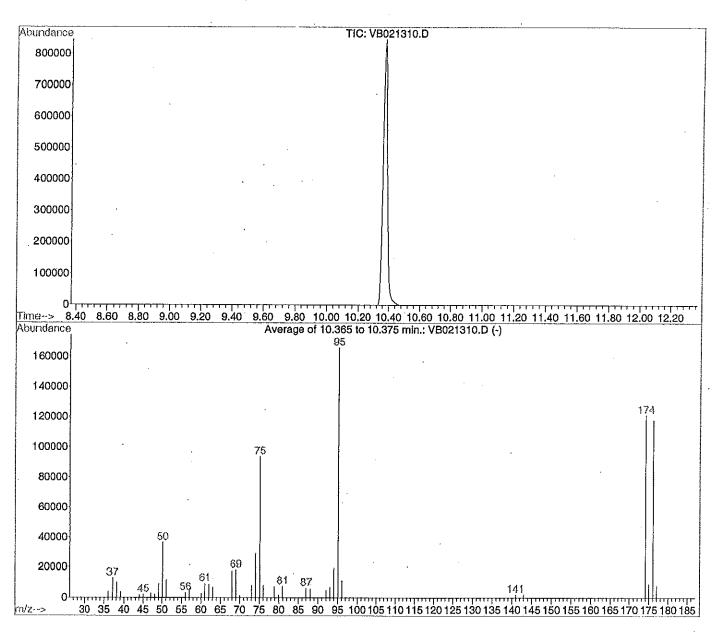
Vial: 1

Misc : BFB Tune Multiplr: 1.00

MS Integration Params: TBA.P

Sample

Method : C:\HPCHEM\1\METHODS\M2VO222.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP



AutoFind: Scans 148, 149, 150; Background Corrected with Scan 139

| Target | Rel. to | Lower | Upper | Rel. | Raw | Result | |
|--------------------------------------------------|-------------------------------------------------|-------------------------------------------|----------------------------------------------|-------------------------------------------------------------------|----------------------------------------------------------------------------|-----------------------------------------|--|
| Mass | Mass | Limit% | Limit% | Abn% | Abn | Pass/Fail | |
| 50 75 95 96 173 174 175 176 | 95 95 95 95 174 95 174 174 | 15 30 100 5 0.00 50 595 | 40 60 100 9 2 100 9 101 | 22.0 56.5 100.0 6.6 0.0 73.1 7.4 97.2 6.7 | 36501 93693 165909 10963 0 121272 8945 117840 7849 | PASS PASS PASS PASS PASS PASS PASS PASS | |

Method : C:\HPCHEM\1\METHODS\M2VO222.M (RTE Integrator) Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Thu Jan 12 07:46:23 2006
Response via : Initial Calibration

Calibration Files

50 =VB021314.D 20 =VB021315.D 10 =VB021311.D

5 =VB021312.D 2 =VB021313.D

| _ | | | Compound | 50 | 20 | 10 | 5 | 2 | Avg | %RSD |
|---|------------|------------|-------------------------------------|-------|-------|-------|----------------|-------|-------|--------------|
| | 11 | ~ - | Decora - h l common de la com- | | | | ~~~ | | | |
| | 1) 2) | I tm | Bromochloromethane Acrolein | | 0 097 | | | | 0.095 | 12.03 |
| | 3) | tm | Acrylonitrile | | | | | | 0.880 | 7.71 |
| | 4) | tm | tert-Butyl alcohol | 0.126 | 0.120 | 0.102 | 0.107 | 0.111 | 0.113 | 8.63 |
| | 5) | tm | Methyl-tert-Butyl eth | 6.128 | 5.255 | 4.809 | 4.574 | 4.318 | 5.017 | 14.16 |
| | 6) | tm | Di-isopropyl ether | 2.175 | 1.916 | 1.796 | 1.595 | 1.313 | 1.759 | 18.53 |
| _ | 7) | Tm | Dichlorodifluorometha | 2.855 | 2.629 | 2.942 | 3.022 | 3.056 | 2.901 | 5.89 |
| | _ 8) | | Chloromethane | 3.281 | 3.128 | 3.291 | 3.300 | 3.259 | 3.252 | 2.18 |
| | 9) | | Vinyl Chloride | 3.329 | 3.177 | 3.278 | 3.343 | 3.254 | 3,276 | 2.03 |
| | 10) | Tm | Bromomethane | 1.744 | 1.757 | 1.801 | 1.855 | 1.892 | 1.810 | 3.47 |
| | 11) | Tm | Chloroethane | 2.065 | 2.150 | 2.155 | 2.199 | 2.158 | 2.146 | 2.28 |
| | 12) | Tm | Trichlorofluoromethan | 5.535 | 5.256 | 5.309 | 5.478 | 5.291 | 5.374 | 2.31 |
| | 13) 14) | MC Tm | 1,1-Dichloroethene Acetone | 3,946 | 3.648 | 3.380 | 3.403 | 3.180 | 3.512 | 8.38 |
| | 15) | Tm | Carbon Disulfide | 0.013 | 0.581 | 0.819 | 0.81/ | 1.106 | 0.787 | 26.67 |
| | 16) | Tm | Methylene Chloride | 2 601 | 7.593 | 7.332 | 7.205 | 0.851 | 7.434 | 6.72 |
| | 17) | | trans-1,2-Dichloroeth | 3 730 | 3 500 | 3 206 | 2.0/3 | 2,750 | 2.000 | 2.42 7.63 |
| | 18) | | 1.1-Dichloroethane | 4 846 | 4 570 | 4 379 | 1 380 | 1 112 | 1 157 | 6.09 |
| _ | 19) | Tm | 1,1-Dichloroethane Vinyl Acetate | 1.945 | 1.596 | 1.424 | 1 353 | 1 275 | 1 519 | 17.53 |
| | 20) | Tm | 2-Butanone | | 0.759 | | | | | 9.85 |
| | 21) | Tm | cis-1,2-Dichloroethen | 3.912 | 3.634 | 3.404 | 3.265 | 3.055 | 3.454 | 9,59 |
| | 22) | TCm | Chloroform | 4.781 | 4.572 | 4.509 | 4.530 | 4.395 | | 3.10 |
| | 23) | Tm | 1,1,1-Trichloroethane | 4.196 | 3.871 | 3.547 | 3.461 | 3.165 | 3.648 | 10.87 |
| | 24) | | Carbon Tetrachloride | 3.574 | 3.235 | 2.986 | 3.002 | 2.826 | 3.125 | 9.30 |
| | 25) | S | 1,2-Dichloroethane-d4 | 3.472 | 3.308 | 3.333 | 3.287 | 3.217 | 3.324 | 2.82 |
| | 26) | I | 1,4-Difluorobenzene | | | т | | | | |
| | 27) | TM | Benzene | | 1.387 | | | | | 5.61 |
| | 28) | Tm | 1,2-Dichloroethane | | 0.485 | | | | | 2.03 |
| | 29) | TM | Trichloroethene | | 0.334 | | | | | 7.06 |
| | 30) | TCm | 1,2-Dichloropropane | | 0.341 | | | 0.311 | 0.335 | 5.68 |
| | 31) | Tm | Bromodichloromethane | | 0.432 | | | | 0.423 | 7.42 |
| | 32) | Tm | 2-Chloroethyl vinyl e | | | | | | | 18.59 |
| | 33) | Tm | cis-1,3-Dichloroprope | | | | | | | 15.81 |
| _ | 34) | Tm | 4-Methyl-2-Pentanone | 0.092 | 0.079 | 0.068 | 0.070 | 0.069 | 0.076 | 13.65 |
| | 35) 36) | S TICM | Toluene-d8 Toluene | | 1.249 | | | | | 9.25 |
| | | I CEI | Totale | 1.020 | 1.523 | 1.494 | 1.450 | 1.302 | 1.4/9 | 8.03 |
| | 37) | I | Chlorobenzene-d5 | | | | | | | |
| | 38) | .Tm | trans-1,3-Dichloropro | | | | | | | 18.33 |
| | 39) | Tm | 1,1,2-Trichloroethane | | | | | | | 3.80 |
| | (10) | Tm | Tetrachloroethene | | 1.344 | | | | | 4.73 |
| _ | 41) | Tm | 2-Hexanone | | 0.476 | | | | | 9.91 |
| | 42) | Tm | Dibromochloromethane | | 1.036 | | | | 1.015 | 10.35 |
| | 43) | | Chlorobenzene | | 3.513 | | | | | 2.74 |
| | 44) | | Ethylbenzene | | 6.199 | | | | | 6.58 |
| | 45) | Tm | m+p-Xylenes | | 2.314 | | | | | 11.25 |
| | 46) | Tm | o-Xylene | 5.473 | 4.968 | 4.703 | 4.262 | 3.652 | 4.012 | 15.02 |
| | 47) 48) | Tm TDm | Styrene Bromoform | | 3.483 | | | | | 17.69 |
| | 48) | TPM S | Bromoform Bromofluorobenzene | | 0.672 | | | | | 10.59 |
| | 50) | | 1,1,2,2-Tetrachloroet | 1.924 | 1 199 | 1.700 | 1 150 1 150 | 1 1/F | 1 162 | 9.55 |
| | 51) | Tm | 1,3-Dichlorobenzene | | 2.286 | | | | | 3.31 7.04 |
| | 52) | Tm | 1,4-Dichlorobenzene | 2.550 | | 2.286 | | | | 8.40 |
| | 53) | Tm | 1,2-Dichlorobenzene | 2.150 | | 1.937 | | | | 6.12 |
| | 54) | Tm | Naphthalene | | 0.920 | | | | | 26.60 |
| | : | •• | • | | | | | • - | -, | |

4A

VOLATILE METHOD BLANK SUMMARY

| FIE | | ID |
|-----|--|----|
|-----|--|----|

| Lab Name: | FMETL | | _ NJDEP#: <u>1</u> 3461 | MB 11Jan2006 |
|--------------|---------|-----------------|-------------------------|--------------------|
| Project: | 0634880 | Case No.: 60006 | Location: 637 | SDG No.: UST |
| Lab File ID: | VB02131 | 8.D | Lab Sampi | e ID: MB 11Jan2006 |

Date Analyzed: 1/11/2006 Time Analyzed: 20:48

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

Instrument ID: GCMS#2

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

| | FIELD ID: | LAB SAMPLE ID | LAB FILE ID | TIME ANALYZED |
|----|------------|------------------|----------------|------------------|
| 01 | 637C | 6000605 | VB021319.D | 21:29 |
| 02 | TRIP BLANK | 6000606 | VB021320.D | 22:10 |

| COMMENTS: | • | | |
|-----------|---|---|--|
| | | • | |
| | | | |

VOLATILE METHOD BLANK SUMMARY

FIELD ID:

MB 11Jan2006

Lab Name:

FMETL

NJDEP#: 13461

Project:

0634880

Case No.: 60007

Location: 906A

SDG No.: UST

Lab File ID:

VB021318.D

Lab Sample ID: MB 11Jan2006

Date Analyzed: 1/11/2006

Time Analyzed: 20:48

GC Column:

RTX502. ID: 0.25

Heated Purge: (Y/N)

Ν

Instrument ID: GCMS#2

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

| | | LAB | LAB | TIME |
|----|-----------|-----------|------------|----------|
| | FIELD ID: | SAMPLE ID | FILE ID | ANALYZED |
| 01 | 906AC | 6000705 | VB021321.D | 22:51 |

2A WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

 Lab Name:
 FMETL
 NJDEP#:
 13461

 Project:
 0634880
 Case No.:
 60006
 Location:
 637
 SDG No.:
 UST

| | FIELD ID: | SMC1 DCE # | SMC2 TOL # | SMC3 BFB # | TOT |
|----|--------------|---------------|---------------|---------------|-----|
| 01 | MB 11JAN2006 | 82 | 90 | 86 | 0 |
| 02 | 637C | 83 | 91 | 87 | 0 |
| 03 | TRIP BLANK | 83 | 91 | 87 | 0 |

QC LIMITS

 SMC1
 DCE
 =
 1,2-Dichloroethane-d4
 (70-120)

 SMC2
 TOL
 =
 Toluene-d8
 (70-120)

 SMC3
 BFB·
 =
 Bromofluorobenzene
 (70-120)

Column to be used to flag recovery values

- * Values outside of contract required QC limits
- D System Monitoring Compound diluted out

page 1 of 1

FORM II VOA-1

2A WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: **FMETL** NJDEP#: 13461 Project: 0634880 Case No.: 60007 SDG No.: UST Location: 906A

| | SMC1 | SMC2 | SMC3 | ТОТ |
|--------------|--------|-------|-------|-----|
| FIELD ID | DCE # | TOL # | BFB # | OUT |
| 01 MB 11JAN2 | 006 82 | 90 | 86 | 0 |
| 02 906AC | 83 | 90 | 91 | 0 |

QC LIMITS

SMC1 DCE

1,2-Dichloroethane-d4

(70-120)

SMC2 TOL SMC3

Toluene-d8

(70-120)

BFB Bromofluorobenzene

(70-120)

Column to be used to flag recovery values

- * Values outside of contract required QC limits
- D System Monitoring Compound diluted out

page 1 of 1

FORM II VOA-1

6/99

Method : C:\HPCHEM\1\METHODS\M2VO222.M (RTE Integrator) Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Thu Jan 12 07:46:23 2006
Response via : Initial Calibration

Non-Spiked Sample: VB021335.D

Spike Spike

Sample Duplicate Sample

File ID: VB021336.D Sample: 6002305 MS Acq Time: 12 Jan 2006 9:06 am VB021337.D 6002305 MSD

12 Jan 2006 9:47 am

| Acrolein 0.0 50 46 46 93 92 1 20 Acrylonitrile 0.0 50 49 49 97 98 1 20 tert-Butyl alcohol 0.0 100 84 87 84 87 3 20 | 59-137 68-127 17-167 74-116 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| | 17-167 74-116 |
| tert-Butyl alcohol [0.0 100 84 87 84 87 3 20 | 74-116 |
| Methyl-tert-Butyl et 0.0 10 9 9 88 90 2 20 | • |
| Di-isopropyl ether 0.0 10 9 9 91 94 3 20 | 77-117 |
| - Dichlorodifluorometh 0.0 10 7 8 72 76 6 20 | 50-131 |
| Chloromethane 0.0 10 8 9 80 86 7 20 | 65-123 |
| Vinyl Chloride 0.0 10 8 8 78 82 5 20 | 63-125 |
| Bromomethane 0.0 10 8 9 80 86 8 20 | 72-118 |
| - Chloroethane 0.0 10 9 9 86 90 6 20 | 64-127 |
| Trichlorofluorometha 0.0 10 8 8 79 84 5 20 | 60-122 |
| 1,1-Dichloroethene 0.0 10 8 8 77 83 8 20 | 68-116 |
| Acetone 0.0 10 8 8 76 77 1 20 | 2-148 |
| Carbon Disulfide 0.0 10 8 8 79 84 7 20 | 69-117 |
| Methylene Chloride 0.0 10 9 10 90 95 6 20 | 79-110 |
| trans-1,2-Dichloroet 0.0 10 8 9 80 86 7 20 1,1-Dichloroethane 0.0 10 9 9 88 93 5 20 | 73-113 |
| | 77-112 |
| | 52-127 |
| 2-Butanone 0.0 10 9 9 86 85 1 20 cis-1,2-Dichloroethe 0.0 10 9 9 87 92 5 20 | 12-162 74-114 |
| Chloroform 0.0 10 9 9 89 94 6 20 | 79-110 |
| 1,1,1-Trichloroethan 0.0 10 8 8 79 84 7 20 | 73-114 |
| Carbon Tetrachloride 0.0 10 8 8 78 84 7 20 | 69-115 |
| Benzene 0.0 10 9 9 86 91 5 20 | 78-112 |
| 1,2-Dichloroethane 0.0 10 9 10 93 95 2 20 | 78-115 |
| Trichloroethene 0.0 10 8 9 82 86 5 20 | 74-114 |
| 1,2-Dichloropropane 0.0 10 9 9 88 93 5 20 | 77-113 |
| Bromodichloromethane 0.0 10 9 9 88 92 5 20 | 77-113 |
| 2-Chloroethyl vinyl 0.0 10 8 9 84 86 2 20 | 67-117 |
| cis-1,3-Dichloroprop 0.0 10 8 9 82 87 5 20 | 75-116 |
| 4-Methyl-2-Pentanone 0.0 10 9 9 87 88 1 20 | 33-146 |
| Toluene 0.0 10 9 9 89 93 5 20 | 80~113 |
| trans-1,3-Dichloropr 0.0 10 8 9 83 86 3 20 1,1,2-Trichloroethan 0.0 10 9 10 94 95 2 20 | 75-117 |
| 1,1,2-Trichloroethan 0.0 10 9 10 94 95 2 20 Tetrachloroethene 0.0 10 8 8 80 83 4 20 | 78-116 73-115 |
| 2-Hexanone 0.0 10 8 8 80 83 3 20 | 30-147 |
| Dibromochloromethane 0.0 10 9 9 91 93 3 20 | 77-115 |
| Chlorobenzene 0.0 10 9 9 88 92 4 20 | 78-112 |
| Ethylbenzene 0.0 10 8 9 85 90 5 20 | 77-113 |
| m+p-Xylenes 0.0 20 17 18 85 89 4 20 | 76-115 |
| o-Xylene 0.0 10 9 9 86 91 5 20 | 74-118 |
| Styrene 0.0 10 9 9 89 92 3 20 | 77-116 |
| Bromoform 0.0 10 9 9 90 91 1 20 | 72-116 |
| 1,1,2,2-Tetrachloroe 0.0 10 9 9 92 94 2 20 | 73-120 |
| 1,3-Dichlorobenzene 0.0 10 8 9 84 89 5 20 | 75-114 |
| 1,4-Dichlorobenzene 0.0 10 9 9 87 92 6 20 | 75-116 |
| | 76-115 |
| Naphthalene 0.0 10 5 6 52# 63# 19 20 | 70-120 |

^{# -} Fails Limit Check

8A VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

NJDEP#: 13461 Lab Name: **FMETL** Project: 0634880 Case No.: 60006 Location: 637 SDG No.: UST Lab File ID (Standard): VB021311.D Date Analyzed: 1/11/2006 Instrument ID: GCMS#2 Time Analyzed: 16:01 GC Column: RTX502.2 ID: 0.25 Heated Purge: (Y/N) (mm) Ν

| | | IS1BCM AREA # | RT # | IS2DFB AREA # | RT # | IS3CBZ AREA # | RT # |
|----|--------------|------------------|-------|------------------|-------|------------------|-------|
| | 12 HOUR STD | 477172 | 16.43 | 3603875 | 19.62 | 939180 | 25.65 |
| | UPPER LIMIT | 954344 | 16.93 | 7207750 | 20.12 | 1878360 | 26.15 |
| | LOWER LIMIT | 238586 | 15.93 | 1801938 | 19.12 | 469590 | 25.15 |
| | | | 3833 | | | | |
| | FIELD ID: | | | | | | |
| 01 | MB 11JAN2006 | 457185 | 16.43 | 3387692 | 19.63 | 892840 | 25.65 |
| 02 | 637C | 451875 | 16.43 | 3328281 | 19.63 | 881634 | 25.66 |
| 03 | TRIP BLANK | 450293 | 16.43 | 3314080 | 19.63 | 878455 | 25.66 |

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

8A VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: FMETL NJDEP#: 13461

Project: 0634880 Case No.: 60007 Location: 906A SDG No.: UST

Lab File ID (Standard): VB021311.D Date Analyzed: 1/11/2006

Instrument ID: GCMS#2 Time Analyzed: 16:01

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 | 477172 | 16.43 | 3603875 | 19.62 | 939180 | 25.65 |
| UPPER LIMIT | 954344 | 16.93 | 7207750 | 20.12 | 1878360 | 26.15 |
| LOWERLIMIT | 238586 | 15.93 | 1801938 | 19.12 | 469590 | 25.15 |
| FIELD ID: | | | | | - | |
| MB 11JAN2006 | 457185 | 16.43 | 3387692 | 19.63 | 892840 | 25.65 |
| 906AC | 447930 | 16.44 | 3400184 | 19.63 | 902392 | 25.65 |

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

Data File : C:\HPCHEM\1\DATA\060111\VB021318.D

Acq On : 11 Jan 2006 8:48 pm

Operator: Skelton : MB 11Jan2006 Inst : GC/MS Ins Multiplr: 1.00

Vial: 8

Misc : MB 11Jan2006 MS Integration Params: TBA.P

Quant Time: Jan 12 7:49 2006 Quant Results File: M2VO222.RES

Quant Method : C:\HPCHEM\1\METHODS\M2VO222.M (RTE Integrator) Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Thu Jan 12 07:46:23 2006
Response via : Initial Calibration

DataAcq Meth : M2VO222

Sample

| | Internal Standards | R.T. | QIon | Response | Conc U | nits Dev | (Min) |
|---|--------------------------------------------------------------------------|-------------------------|-------------------|-----------------------------|-------------------------|----------|-------|
| _ | 1) Bromochloromethane 26) 1,4-Difluorobenzene 37) Chlorobenzene-d5 | 16.43 19.63 25.65 | 128 114 119 | 457185 3387692 892840 | 30.00 30.00 30.00 | ug/L | 0.00 |
| - | System Monitoring Compounds 25) 1,2-Dichloroethane-d4 | 18.47 | 65 | 1247698 | 24.63 | na/L | 0.00 |
| | Spiked Amount 30.000 | Range 70 | | Recover | | | 0.00 |
| | 35) Toluene-d8 | 22.58 | 98 | 3672657 | _ | | 0.00 |
| | Spiked Amount 30.000 | Range 70 | - 120 | Recover | :y = | 89.80% | |
| | 49) Bromofluorobenzene | 28.00 | 95 | 1312101 | 25.94 | ug/L | 0.00 |
| | Spiked Amount 30.000 | Range 70 | - 120 | Recover | | | |
| | Target Compounds | | | • | | Ova | lue |

^{(#) =} qualifier out of range (m) = manual integration VB021318.D M2V0222.M Thu Jan 19 13:51:43 2006

Data File : C:\HPCHEM\1\DATA\060111\VB021318.D

Acq On Sample

: 11 Jan 2006 : MB 11Jan2006 : MB 11Jan2006 8:48 pm Operator: Skelton Inst : GC/MS Ins Multiplr: 1.00

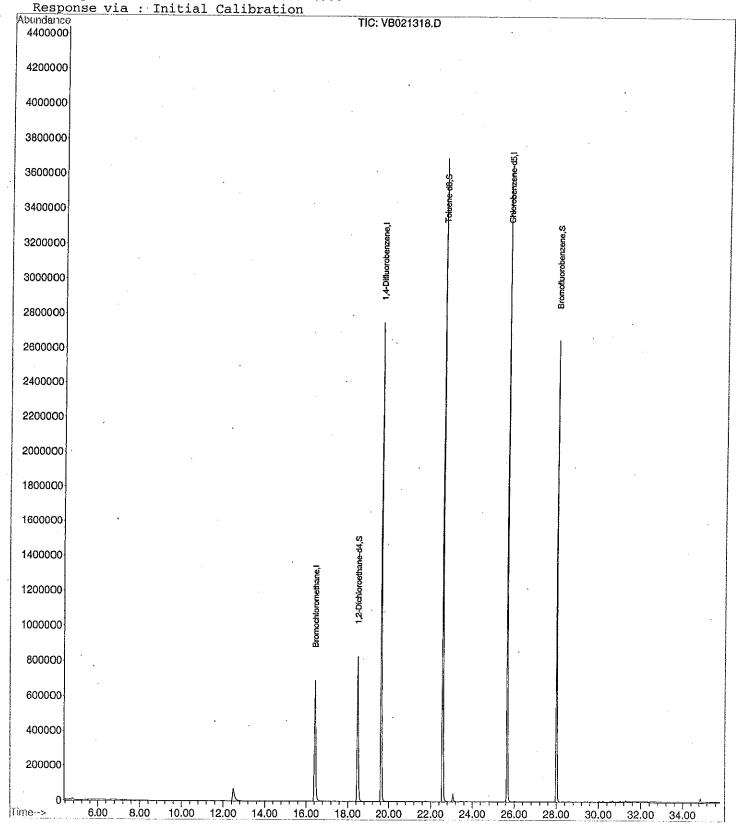
MS Integration Params: TBA.P Quant Time: Jan 12 7:49 2006

Misc

Quant Results File: M2VO222.RES

Vial: 8

Method : C:\HPCHEM\1\METHODS\M2VO222.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Thu Jan 12 07:46:23 2006



Data File : C:\HPCHEM\1\DATA\060111\VB021320.D

: 11 Jan 2006 10:10 pm : 6000606

Vial: 10 Operator: Skelton : GC/MS Ins

Multiplr: 1.00

: Trip Blank Misc MS Integration Params: TBA.P

Quant Time: Jan 12 7:46 2006 Quant Results File: M2VO222.RES

Quant Method : C:\HPCHEM\1\METHODS\M2VO222.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Thu Jan 12 07:46:23 2006
Response via : Initial Calibration
DataAcq Meth : M2VO222

Sample

| | Internal Standards | R.T. | QIon | Response | Conc U | nits Dev | (Min) |
|---|--------------------------------------------------------------------------|-------------------------|-------------------|-----------------------------|-------------------------|----------|-------|
| | 1) Bromochloromethane 26) 1,4-Difluorobenzene 37) Chlorobenzene-d5 | 16.43 19.63 25.66 | 128 114 119 | 450293 3314080 878455 | 30.00 30.00 30.00 | ug/L | 0.00 |
| _ | System Monitoring Compounds 25) 1,2-Dichloroethane-d4 | 18.47 | 65 | 1246352 | 24.98 | ua/L | 0.00 |
| | Smileod Amount 30 000 | Range 70 | | Recove | | | |
| | 35) Toluene-d8 | 2,2.57 | 98 | 3626845 | 27.20 | ug/L | 0.00 |
| _ | a spiked Amount 50.000 | Range 70 | - 120 | Recove | ry = | 90.67% | |
| | 49) Bromofluorobenzene | 28.00 | 95 | 1293796 | 26.00 | ug/L | 0.00 |
| | Spiked Amount 30.000 | Range 70 | - 120 | Recove | ry = | 86.67% | |
| _ | Target Compounds | | | | - | Qv | alue |

Data File : C:\HPCHEM\1\DATA\060111\VB021320.D

: 11 Jan 2006 10:10 pm Sample

: 6000606 : Trip Blank

MS Integration Params: TBA.P Quant Time: Jan 12 7:46 2006

Misc

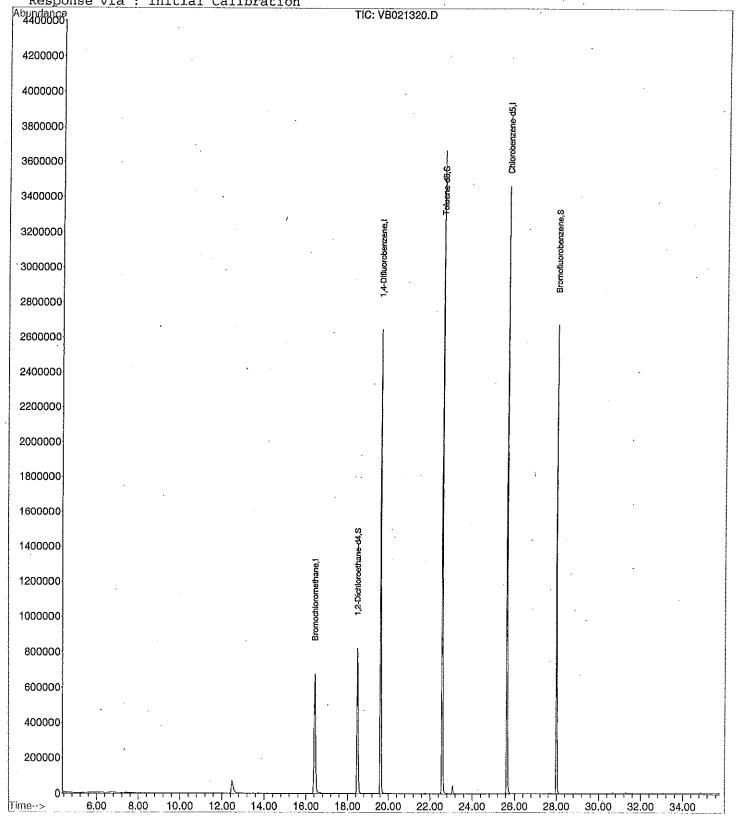
Vial: 10 Operator: Skelton Inst : GC/MS Ins

Multiplr: 1.00

Quant Results File: M2VO222.RES

Method : C:\HPCHEM\1\METHODS\M2VO222.M (RTE Integrator) Title : Volatile Organics by GC/MS Method 624/8260/TCLP

Last Update : Thu Jan 12 07:46:23 2006 Response via : Initial Calibration



Data File : C:\HPCHEM\1\DATA\060111\VB021321.D

Acq On : 11 Jan 2006 10:51 pm

Sample : 6000705

Inst : GC/MS Ins Multiplr: 1.00

: 906AC Misc

MS Integration Params: TBA.P Quant Time: Jan 12 7:47 2006

Quant Results File: M2VO222.RES

Vial: 11 Operator: Skelton

Quant Method : C:\HPCHEM\1\METHODS\M2VO222.M (RTE Integrator) Title : Volatile Organics by GC/MS Method 624/8260/TCLP
Last Update : Thu Jan 12 07:46:23 2006
Response via : Initial Calibration

DataAcq Meth : M2V0222

| | Internal Standards | R.T. | QIon | Response | Conc U | nits Dev | (Min) |
|---|------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|----------------------------|-----------------------------|----------------------------|----------------------------------|-------------------------|
| _ | 1) Bromochloromethane 26) 1,4-Difluorobenzene 37) Chlorobenzene-d5 | 16.44 19.63 25.65 | | 447930 3400184 902392 | 30.00 30.00 30.00 | ug/L | 0.00 |
| _ | System Monitoring Compounds 25) 1,2-Dichloroethane-d4 Spiked Amount 30.000 35) Toluene-d8 Spiked Amount 30.000 49) Bromofluorobenzene Spiked Amount 30.000 | 18.47 Range 70 22.57 Range 70 28.00 Range 70 | - 120 98 - 120 95 | 3683698 | ery = 26.93 ery = 27.18 | 83.40% ug/L 89.77% ug/L | 0.00 |
| | Target Compounds 44) Ethylbenzene 45) m+p-Xylenes 46) o-Xylene | 25.72 26.01 26.84 | 91 106 91 | 865653 70702 299933 | 1.05 | Qv ug/L ug/L ug/L | ralue 99 99 99 |

Data File : C:\HPCHEM\1\DATA\060111\VB021321.D

Acq On : 11 Jan 2006 10:51 pm

Sample : 6000705 Misc : 906AC

MS Integration Params: TBA.P Quant Time: Jan 12 7:47 2006

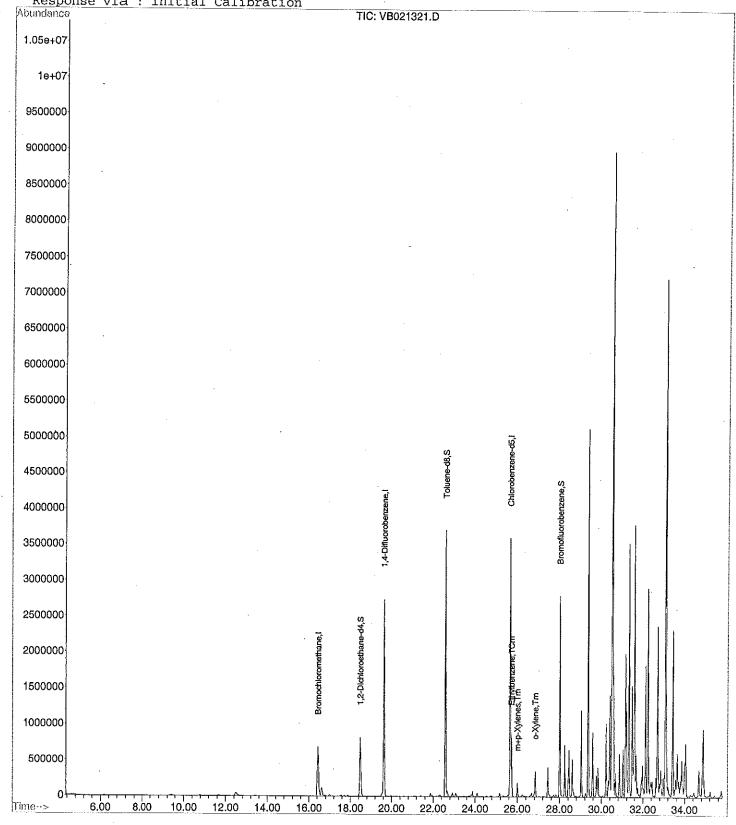
Vial: 11 Operator: Skelton Inst : GC/MS Ins Multiplr: 1.00

Quant Results File: M2VO222.RES

Method : C:\HPCHEM\1\METHODS\M2VO222.M (RTE Integrator) Title : Volatile Organics by GC/MS Method 624/8260/TCLP

Last Update : Thu Jan 12 07:46:23 2006

Response via : Initial Calibration



VOLATILE ORGANICS (SOIL)

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID:

MB 17Jan2006

Lab Name: **FMETL** NJDEP#: 13461 Project: 0634880 Case No.: 60007 SDG No.: UST Location: 906A Matrix: (soil/water) SOIL Lab Sample ID: MB 17Jan2006 Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB021392.D Level: (low/med) MED Date Received: 1/4/2006 % Moisture: not dec. Date Analyzed: 1/17/2006 GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0 Soil Extract Volume: 25000 Soil Aliquot Volume: 125 (uL) (uL)

CONCENTRATION UNITS:

| CAS NO. | COMPOUND (ug/L or ug/Kg) | UG/KG | Q |
|---------------------|---------------------------|-------|-----|
| 107028 | Acrolein | 1000 | U |
| 107131 | Acrylonitrile | 1000 | Ü |
| 75650 | tert-Butyl alcohol | 1000 | Ū |
| 1634044 | Methyl-tert-Butyl ether | 100 | Ū |
| 108203 | Di-isopropyl ether | 100 | Ū |
| 75718 | Dichlorodifluoromethane | 100 | Ū |
| <u>74-</u> 87-3 | Chloromethane | 100 | Ū |
| 75-01-4 | Vinyl Chloride | 100 | U |
| 74-83-9 | Bromomethane | 100 | U |
| 75-00 - 3 | Chloroethane | 100 | U |
| _75-69-4 | Trichlorofluoromethane | 100 | U |
| <u>75-35-4</u> | 1,1-Dichloroethene | 100 | U |
| 67-64-1 | Acetone | 100 | U |
| 75-15-0 | Carbon Disulfide | 100 | U |
| 75-09-2 | Methylene Chloride | 100 | U |
| 156-60-5 | trans-1,2-Dichloroethene | 100 | U |
| 75-34-3 | 1,1-Dichloroethane | 100 | U |
| 108-05-4 | Vinyl Acetate | 100 | U |
| 78-93-3 | 2-Butanone | 100 | U |
| <u> 156-59-2</u> | cis-1,2-Dichloroethene | 100 | U |
| 67-66-3 | Chloroform | 100 | U |
| 71-55-6 | 1,1,1-Trichloroethane | 100 | U |
| 56-23-5 | Carbon Tetrachloride | 100 | U |
| 71-43-2 | Benzene | 100 | U |
| 107-06-2 | 1,2-Dichloroethane | 100 | 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 | 100 | U |
| 10061-01-5 | cis-1,3-Dichloropropene | 100 | · U |
| 108-10-1 | 4-Methyl-2-Pentanone | 100 | U |
| 108-88-3 | Toluene | 100 | U |
| 10061 - 02-6 | trans-1,3-Dichloropropene | 100 | U |
| 79-00-5 | 1,1,2-Trichloroethane | 100 | U |
| 127-18-4 | Tetrachloroethene | 100 | U |
| 591-78-6 | 2-Hexanone | 100 | U |
| 124-48-1 | Dibromochloromethane | 100 | U |
| 108-90-7 | Chlorobenzene | 100 | U |
| 100-41-4 | Ethylbenzene | 100 | U |

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID:

MB 17Jan2006

Lab Name: **FMETL** NJDEP#: 13461 Project: 0634880 Case No.: 60007 Location: 906A SDG No.: UST Matrix: (soil/water) SOIL Lab Sample ID: MB 17Jan2006 Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB021392.D Level: (low/med) MED Date Received: 1/4/2006 % Moisture: not dec. 0 Date Analyzed: 1/17/2006 GC Column: RTX502. 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 | 200 | l II |
| 95-47-6 | o-Xylene | 100 | Ü |
| 100-42-5 | Styrene | 100 | Ü |
| 75-25-2 | Bromoform | 100 | li i |
| 79-34-5 | 1,1,2,2-Tetrachioroethane | 100 | 1) |
| 541-73-1 | 1,3-Dichlorobenzene | 100 | 11 . |
| 106-46-7 | 1,4-Dichlorobenzene | 100 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 100 | Ü |
| 91-20-3 | Naphthalene | 100 | - i i |

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

| Lab Name: | FMETL | · | | NJDEP | #: | 13461 | | MB 17Jan | 2006 |
|-----------------|----------|---------|-----------------|---------------------------|--------|---------------|-------|--------------|----------|
| Project: | 063488 | 0 | Case No.: 6000 | D7 Loca | tion: | 906A | SI | DG No.: UST | |
| Matrix: (soil/v | water) | SOIL | | - | Lab (| Sample | ID: | MB 17Jan2006 | 3 |
| Sample wt/vo | ol: | 10.0 | (g/ml) <u>G</u> | · | Lab I | File ID: | | VB021392.D | |
| Level: (low/n | ned) | MED | | | Date | Receiv | ed: | 1/4/2006 | <u>-</u> |
| % Moisture: r | not dec. | 0 | · . | J | Date | Analyz | ed: | 1/17/2006 | |
| GC Column: | RTX5 | 02. ID: | 0.25 (mm) | l | Diluti | on Fac | tor: | 1.0 | |
| Soil Extract V | /olume: | 25000 | (uL) | | Soil A | Aliquot ' | Volun | ne: 125 | (uL) |
| Number TICs | s found: | 0 | | CONCENTR (ug/L or ug/k | | ON UNI UG/ | | | |
| CAS NO. | | СОМЕ | OUND NAME | | | RT | EST | T. CONC. | Q |

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID:

| Lab Name: | FMETI | <u> </u> | | NJDEP#: 13461 | Trip Blank |
|----------------|--------|----------|-----------------|-------------------|------------|
| Project: | 06348 | 80 | Case No.: 60007 | Location: 906A SD | G No.: UST |
| Matrix: (soil/ | water) | SOIL | | Lab Sample ID: 6 | 000606 |
| Sample wt/v | ol: | 10.0 | (g/ml) <u>G</u> | Lab File ID: V | B021393.D |

Level: (low/med) MED Date Received: 1/4/2006
% Moisture: not dec. 0 Date Analyzed: 1/17/2006

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

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

CONCENTRATION UNITS:

| CONCENTRATION UNITS: | | | | | | |
|----------------------|-------------------|-----------------|-------|--------------------------------------------------|--|--|
| CAS NO. | COMPOUND | (ug/L or ug/Kg) | UG/KG | Q | | |
| 107028 | Acrolein | | 1000 | U | | |
| 107131 | Acrylonitrile | | 1000 | U | | |
| 75650 | tert-Butyl alcoho | ol | 1000 | T U | | |
| 1634044 | Methyl-tert-Buty | | 100 | Ü | | |
| 108203 | Di-isopropyl eth | | 100 | U | | |
| 75718 | Dichlorodifluoro | | 100 | U | | |
| 74-87-3 | Chloromethane | | 100 | υ | | |
| 75-01-4 | Vinyl Chloride | | 100 | U | | |
| 74-83-9 | Bromomethane | | 100 | Ü | | |
| 75-00-3 | Chloroethane | • | 100 | Ü | | |
| 75-69-4 | Trichlorofluorom | nethane | 100 | Ü | | |
| 75-35-4 | 1,1-Dichloroethe | | 100 | U | | |
| 67-64-1 | Acetone | | 440 | | | |
| 75-15-0 | Carbon Disulfide | 9 | 100 | U | | |
| 75-09-2 | Methylene Chlor | | 100 | Ü | | |
| 156-60-5 | trans-1,2-Dichlo | | 100 | Ü | | |
| 75-34-3 | 1,1-Dichloroetha | | 100 | Ŭ | | |
| 108-05-4 | Vinyl Acetate | | 100 | Ü | | |
| 78-93-3 | 2-Butanone | | 100 | Ŭ | | |
| 156-59-2 | cis-1,2-Dichloro | ethene | 100 | Ü | | |
| 67-66-3 | Chloroform | | 100 | Ŭ | | |
| 71-55-6 | 1,1,1-Trichloroet | thane | 100 | Ü | | |
| 56-23-5 | Carbon Tetrachl | oride | 100 | Ü | | |
| 71-43-2 | Benzene | | 100 | Ū | | |
| 107-06-2 | 1,2-Dichloroetha | ine | 100 | Ŭ | | |
| 79-01-6 | Trichloroethene | | 100 | Ü | | |
| 78-87-5 | 1,2-Dichloroprop | pane | 100 | Ü | | |
| 75-27-4 | Bromodichlorom | | 100 | Ü | | |
| 110-75-8 | 2-Chloroethyl vir | nvl ether | 100 | Ű. | | |
| 10061-01-5 | cis-1,3-Dichlorop | | 100 | Ū | | |
| 108-10-1 | 4-Methyl-2-Penta | | 100 | Ü | | |
| 108-88-3 | Toluene | | 100 | Ü | | |
| 10061-02-6 | trans-1,3-Dichlor | ropropene | 100 | Ü | | |
| 79-00-5 | 1,1,2-Trichloroet | | 100 | Ü | | |
| 127-18-4 | Tetrachloroether | | 100 | Ü | | |
| 591-78-6 | 2-Hexanone | | 100 | Ü | | |
| 124-48-1 | Dibromochlorom | ethane | 100 | Ü | | |
| 108-90-7 | Chlorobenzene | | 100 | Ü | | |
| 100-41-4 | Ethylbenzene | | 100 | U | | |

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID:

| Lab Name: | FMETL | | | NJDEP#: 13461 | Trip Blank |
|-----------------|----------|----------------|-----------------|-------------------|--------------|
| Project: | 063488 | 0 | Case No.: 60007 | Location: 906A | SDG No.: UST |
| Matrix: (soil/w | vater) | SOIL | | Lab Sample ID: | 6000606 |
| Sample wt/vo | ol: | 10.0 | (g/ml) <u>G</u> | _ Lab File ID: | VB021393.D |
| Level: (low/m | ned) | MED | | Date Received: | 1/4/2006 |
| % Moisture: r | not dec. | 0 | | Date Analyzed: | 1/17/2006 |
| GC Column: | RTX50 | <u>)2.</u> ID: | 0.25 (mm) | Dilution Factor: | 1.0 |
| Soil Extract V | olume: | 25000 | (uL) | Soil Aliquot Volu | ıme: 125 (u |

CONCENTRATION UNITS:

| CAS NO. | COMPOUND | (ug/L or ug/Kg) | UG/KG | | Q |
|-----------|-------------------|-----------------|-------|-----|------------------|
| 1330-20-7 | m+p-Xylenes | | | 200 | 11 |
| 95-47-6 | o-Xylene | | | 100 | - i i |
| 100-42-5 | Styrene | | | 100 | II. |
| 75-25-2 | Bromoform | | | 100 | 11 |
| 79-34-5 | 1,1,2,2-Tetrachlo | roethane | | 100 | II |
| 541-73-1 | 1,3-Dichlorobenz | | | 100 | |
| 106-46-7 | 1,4-Dichlorobenz | | | 100 | |
| 95-50-1 | 1,2-Dichlorobenz | | | 100 | <u>U</u> |
| 91-20-3 | Naphthalene | | | 100 | <u>U</u> |

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

| Lab Name: FMETL | | NJDEP#: 13461 | Trip Blank |
|----------------------------|-----------------|---------------------------------------|---------------------|
| Project: <u>0634880</u> | Case No.: 60007 | Location: 906A SE | DG No.: UST |
| Matrix: (soil/water) SOIL | | Lab Sample ID: | 6000606 |
| Sample wt/vol: 10.0 | (g/ml) <u>G</u> | Lab File ID: | VB021393.D |
| Level: (low/med) MED | | Date Received: | 1/4/2006 |
| % Moisture: not dec. 0 | | Date Analyzed: | 1/17/2006 |
| GC Column: RTX502. ID: | 0.25 (mm) | Dilution Factor: | 1.0 |
| Soil Extract Volume: 25000 | (uL) | Soil Aliquot Volun | ne: <u>125</u> (uL) |
| | (| CONCENTRATION UNITS: | |
| Number TICs found: 2 | (| ug/L or ug/Kg) UG/KG | |
| | | · · · · · · · · · · · · · · · · · · · | |

| CAS NO. | COMPOUND NAME | RT | EST. CONC. | Q |
|----------------|----------------------------|-------|------------|----|
| 1. 000079-20-9 | Acetic acid, methyl ester | 12.50 | 330 | JN |
| 2. 001112-39-6 | Silane, dimethoxydimethyl- | 17.39 | 460 | JN |