

United States Army
Fort Monmouth, New Jersey

**Underground Storage Tank
Closure and Site Investigation
Report**

***Building 257
Main Post-West Area***

**NJDEP UST Registration No. 81533-200
Dicar No. 98-04-10-1437-39**

APRIL 2001

**UNDERGROUND STORAGE TANK
CLOSURE AND SITE INVESTIGATION REPORT**

BUILDING 257

**MAIN POST-WEST AREA
NJDEP UST REGISTRATION NO. 81533-200**

APRIL 2001

PREPARED FOR:

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

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PROJECT NO. 4436-127

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EXECUTIVE SUMMARY

UST Closure

On April 8, 1998, a steel underground storage tank (UST) was closed by removal in accordance with New Jersey Department of Environmental Protection (NJDEP) closure procedures at the Main Post-West area of the U.S. Army Fort Monmouth, Fort Monmouth, New Jersey. The UST, NJDEP Registration No. 0081533-200 (Fort Monmouth ID No. 257), was located southeast of Building 257. UST No. 0081533-200 was a 275-gallon diesel UST.

Site Assessment

The site assessment was performed by U.S. Army personnel in accordance with the NJDEP *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E) and the NJDEP *Field Sampling Procedures Manual*. The sampling and laboratory analysis conducted during the site assessment were performed in accordance with Section 7:26E-2.1 of the *Technical Requirements for Site Remediation*. Soils surrounding the tank were screened visually and with air monitoring equipment for evidence of contamination. Following removal, the UST was inspected for corrosion holes or punctures. Numerous holes were noted in the UST. Soils at the location of the holes were dark in color and appeared to be contaminated. Based on the inspection of the UST, Directorate of Public Works (DPW) concluded that a discharge was associated with this UST. The NJDEP hotline was notified and the case was assigned DICAR No. 98-04-10-1437-39. Approximately 50 cubic yards of potentially contaminated soil were removed from the excavated area and stored at the Fort Monmouth petroleum contaminated soil staging area.

Soil samples, which were collected after the removal of the potentially contaminated soil, contained TPHC concentrations ranging from non-detect to 986.14 mg/kg, except for samples PX4 and PX6 (DUP PX4) that had a TPHC concentration of 1,431.22 mg/kg and 1,614.91 mg/kg. A VOA analysis (EPA Method 8260) was completed on sample PX4 and all known compounds searched for in the analysis were detected below the NJDEP Residential Direct Contact Soil Cleanup Criteria (RDCSC). Groundwater was encountered at a depth of 3.5 feet bgs and no sheen was observed.

All post excavation soil samples collected from the UST excavation at Building 257 contained TPHC concentrations below the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 milligrams per kilogram (mg/kg) (N.J.A.C. 7:26D and revisions dated February 3, 1994). Following receipt of all post-excavation soil sampling results, the excavation was backfilled to grade with a combination of uncontaminated excavated soil and certified clean fill. The excavation site was then restored to its original condition.

In response to the observation of potentially contaminated soil near the shallow water table, two (2) groundwater samples were collected at Building 257. On October 23, 1999, and December 3, 1999, Building 257 was sampled for volatile organic compounds calibrated for xylene plus 15 tentatively identified compounds (VOCs), and semivolatiles organic compounds plus 15 tentatively identified compounds (SVOCs).

All groundwater analytical results were either below the detection limit or in compliance with the New Jersey Ground Water Quality Criteria (GWQC).

No further action is proposed in regard to the closure and site assessment of UST No. 81533-200 at Building 257.

1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

1.1 OVERVIEW

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 81533-200, was closed at Building 257 at the Main Post-West area of U.S. Army Fort Monmouth, Fort Monmouth, New Jersey on April 8, 1998. Refer to the site location map on Figure 1. This report presents the results of the Department of Public Works' (DPW) implementation of the UST Decommissioning/Closure Plan approved by the NJDEP. The UST was a steel 275-gallon tank-containing diesel.

Decommissioning activities for UST No. 81533-200 complied with all applicable Federal, State, and Local laws and ordinances in effect at the date of decommissioning. These laws included but were not limited to N.J.A.C. 7:14B-1 et seq., N.J.A.C. 5:23-1 et seq., and Occupational Safety and Health Administration (OSHA) 1910.146 & 1910.120. All permits including but not limited to the NJDEP approved Decommissioning/Closure Plan were posted onsite for inspection. The decommissioning activities were conducted by DPW personnel who are registered and certified by the NJDEP for performing UST closure activities. Closure of UST No. 81533-200 proceeded under the approval of the NJDEP Bureau of Federal Case Management (NJDEP-BFCM). The Standard Reporting Form and signed Site Assessment Summary form for UST No. 81533-200 are included in Appendices A and B, respectively.

After removal of the potentially contaminated soil, the site was assessed. Based on inspecting the UST, field screening of remaining subsurface soils, and reviewing analytical results of soil samples and groundwater samples, the DPW has concluded that no significant historical discharges are associated with the UST or associated piping.

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

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

1.2 SITE DESCRIPTION

Building 257 is located in the Main Post-West area of the Fort Monmouth Army Base. UST No. 0081533-200 was located southeast of Building 257 and appurtenant copper piping ran approximately six (6) feet west from the excavation to an emergency generator. A site map is provided on Figure 2.

1.2.1 Geological/Hydrogeological Setting

The following is a description of the geological/hydrogeological setting of the area surrounding Building 257. Included is a description of the regional geology of the area surrounding Fort Monmouth as well as descriptions of the local geology and hydrogeology of the Main Post area.

Regional Geology

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

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

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

Local Geology

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

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

Hydrogeology

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

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

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

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

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

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

Building 257 is located approximately 300 feet north of Oceanport Creek, the nearest water body. Based on the Main Post topography, the groundwater flow in the area of Building 257 is anticipated to be to the south.

1.3 HEALTH AND SAFETY

Before, during, and after all decommissioning activities, hazards at the work site which may have posed a threat to the Health and Safety of all personnel who were involved with, or were affected by, the decommissioning of the UST system were minimized. All areas, which posed, or may have been suspected to pose a vapor hazard were monitored by a qualified individual utilizing an organic vapor analyzer (OVA). The individual ascertained if the area was properly vented to render the area safe, as defined by OSHA.

1.4 REMOVAL OF UNDERGROUND STORAGE TANK

1.4.1 General Procedures

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

1.4.2 Underground Storage Tank Excavation and Cleaning

Prior to UST decommissioning activities, surficial soil was removed to expose the UST and associated piping. All free product present in the piping was drained into the UST, and the UST was purged to remove vapors prior to cutting and removal of the piping. After removal of the associated piping, a manway was made in the UST to allow for proper cleaning. The UST was completely emptied of all liquids prior to removal from the ground. Approximately 130 gallons of liquid from the UST and its associated piping were pumped directly into a Lionetti Oil Recovery truck where it was then transported to Lionetti Oil Recovery Co., Inc. facility, a NJDEP-approved petroleum recycling and disposal company located in Old Bridge, NJ. Refer to Appendix B for a copy of the waste manifest.

The UST was cleaned prior to removal from the excavation in accordance with the NJDEP regulations. After the UST was removed from the excavation, it was staged on polyethylene sheeting and examined for holes. Numerous holes were observed during the inspection by the Sub-Surface Evaluator. Soil samples, which were collected after the removal of the potentially contaminated soil, contained TPHC concentrations ranging from non-detect to 986.14 mg/kg, except for samples PX4 and PX6 (DUP PX4) that had a TPHC concentration of 1,431.22 mg/kg and 1,614.91 mg/kg. A VOA analysis (EPA Method 8260) was completed on sample PX4 and all known compounds searched for in the analysis

were detected below the NJDEP Residential Direct Contact Soil Cleanup Criteria (RDCSC). Groundwater was encountered at a depth of 3.5 feet bgs and no sheen was observed.

1.5 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The tank was transported in compliance with all applicable regulations and laws to Red Bank Recycling Auto Wreckers, Inc. Refer to Appendix C for the UST disposal certificate and Appendix F for photographs of the UST.

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

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

1.6 MANAGEMENT OF EXCAVATED SOILS

Based on OVA air monitoring and TPHC analysis results from the post-excavation soil samples, approximately 50 cubic yards of potentially contaminated soil were removed from the UST excavation. All potentially contaminated soils were stockpiled separately from other excavated material and were placed on and covered with polyethylene sheets. Potentially contaminated soils were transported to the soil staging area. Soils that did not exhibit signs of contamination were used as backfill following the removal of the UST. Groundwater was encountered at 3.5 feet below ground surface and no sheen was observed.

2.0 SITE INVESTIGATION ACTIVITIES

2.1 OVERVIEW

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

The following Parties participated in Closure and Site Investigation Activities:

- Subsurface Evaluator: David H. Daniels
Employer: SMC Environmental Services Group
Phone Number: (215) 788-7844
NJDEP Certification No.: 10279
- Subsurface Evaluator: Dinker Desai
Employer: U.S. Army, Fort Monmouth
Phone Number: (732) 532-1475
NJDEP Certification No.: 10173
- Analytical Laboratory: U.S. Army Fort Monmouth Environmental laboratory
Contact Person: Daniel K. Wright
Phone Number: (732) 532-4359
NJDEP Company Certification No.: 13461
- Hazardous Waste Hauler: Lorco Petroleum Services
Contact Person: Gary LoBello
Phone Number: (908) 721-0900

2.2 FIELD SCREENING/MONITORING

Field screening was performed by a NJDEP Certified Sub-Surface Evaluator using visual observations to identify potentially contaminated material. Soil excavated from around the tank exhibited evidence of potential contamination. Soils were removed from the excavation until no evidence of contamination remained. Groundwater was encountered at 3.5 feet below ground surface and no sheen was observed.

2.3 SOIL SAMPLING

On April 8, 1998, following the removal of the UST and associated piping, post-excavation soil samples PP, V, S1, S2 (DUP S1), E, W, and N were collected from a total of six (6) locations of the UST excavation. Sidewall samples S1, S2 (DUP S1), E, W, and N were collected at a depth of 5.5 feet bgs. Piping sample PP and vent line sample V were collected at a depth of 1.5 feet bgs. All samples were analyzed for total petroleum hydrocarbons (TPHC) and total solids.

On April 13, 1998, following the removal of 35 cubic yards of potentially petroleum contaminated soil from the excavated area, post-excavation soil samples N2, E2, E3 (DUP E2), B, and NW were collected from a total of five (5) locations of the UST excavation. Sample B was collected along the excavation floor at a depth of 7.0 feet bgs. Sidewall samples N2, E2, E3 (DUP E2), and NW were collected at a depth of 6.5 feet bgs. All samples were analyzed for TPHC and total solids.

On October 23, 1999, eight (8) geoprobe soil samples were collected from the excavated area to verify the effectiveness of the soil excavation activities. Samples B5-1, B5-2, B5-3, B5-4, and DUP B5-1 were collected at a depth of 3.0 feet bgs. Samples S1, S2, S3, and S4 were collected at a depth of 7.0 feet bgs. All samples were analyzed for TPHC and total solids.

Based on the TPHC analysis results from the geoprobe soil samples collected on October 23, 1999, 10 cubic yards of potentially petroleum contaminated soil was removed from the excavation. Following the removal of the potentially petroleum contaminated soil from the excavated area, post-excavation soil samples PX1, PX2, PX3, PX4, PX5, and PX6 (DUP PX4) were collected from a total of five (5) locations of the UST excavation. Sidewall samples PX1, PX2, PX3, PX4, and PX6 (DUP PX4) were collected at a depth of 5.5 feet bgs. Sample PX5 was collected along the excavation floor at a depth of 5.5 feet bgs. All samples were analyzed for TPHC and total solids. Based on preliminary TPHC results, a VOA analysis (EPA Method 8260) was completed on sample PX4.

On February 12, 2001, following the removal of 5 cubic yards of potentially petroleum contaminated soil from the excavated area, post-excavation soil samples PX7, PX8, and PX9 (DUP 8) were collected from a total of two (2) locations of the UST excavation. Sidewall samples PX7, PX8, and PX9 (DUP 8) were collected at a depth of 5.5 feet bgs. All samples were analyzed for TPHC and total solids.

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

organic compounds calibrated for xylene plus 15 tentatively identified compounds (VOCs), and semivolatile organic compounds plus 15 tentatively identified compounds (SVOCs). Sampling and analysis were performed in accordance with the NJDEP *Field Sampling Procedures Manual* and the *Technical Requirements For Site Remediation*.

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 SOIL SAMPLING RESULTS

To evaluate soil conditions following removal of the UST and associated piping, post-excavation soil samples were collected between April 8, 1998, and February 12, 2001 from a total of twenty-six (26) locations. All samples were analyzed for TPHC and total solids. In addition, sample PX4 was analyzed for VOCs. The post-excavation sampling results were compared to the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 mg/kg (N.J.A.C. 7:26D and revisions dated February 3, 1994). A summary of the analytical results and comparison to the NJDEP soil cleanup criteria is provided in Table 2 and the soil sampling locations are shown on Figure 4. The VOA analysis for sample PX4 was compared to the NJDEP residential direct contact soil cleanup criteria and is included as Table 3. The analytical data package is provided in Appendix D.

All post-excavation soil samples collected between April 8, 1998, and February 12, 2001, from the UST excavation and from below piping associated with the UST contained concentrations of TPHC below the NJDEP soil cleanup criteria.

3.2 GROUNDWATER SAMPLING RESULTS

No compounds were detected in the sample collected from Building 257 on October 23, 1999.

The sample collected from Building 257 on December 3, 1999, contained acetone at a concentration of 12.35 ug/l and diethylphthalate at a concentration of 4.42 ug/l. No other compounds were detected.

A summary of the analytical results and comparison to the NJDEP groundwater cleanup criteria is provided in Table 4 and the groundwater sampling locations are shown on Figure 5. The analytical data package is provided in Appendix E. The full data package, including quality control, is on file at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey.

Groundwater samples collected on October 23, 1999, and December 3, 1999, were either below the detection limit or in compliance with the New Jersey Ground Water Quality Criteria (GWQC).

3.3 CONCLUSIONS AND RECOMMENDATIONS

The analytical results for all post-excavation soil samples collected from the UST closure excavation at Building 257 were below the NJDEP soil cleanup criteria for total organic contaminants.

Based on the post-excavation sampling results, soil with TPHC concentrations exceeding the NJDEP soil cleanup criteria for total organic contaminants of 10,000 mg/kg, do not exist in the former location of the UST or associated piping.

Based on the analytical results of the groundwater samples collected at Building 257 on October 23, 1999, and December 3, 1999, groundwater quality at Building 257 was either below the detection limit or in compliance with the New Jersey Ground Water Quality Criteria (GWQC).

No further action is proposed in regard to the closure and site assessment of UST No. 81533-200 at Building 257.

TABLES

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
 BUILDING 257, MAIN POST-WEST AREA
 FORT MONMOUTH, NEW JERSEY

Page 1 of 6

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	NJDEP Method
PP	4/8/98	4/9/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
**V	4/8/98	4/9/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
**S1	4/8/98	4/9/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
**S2 (DUP S1)	4/8/98	4/9/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
E	4/8/98	4/9/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
W	4/8/98	4/9/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
N	4/8/98	4/9/98	Soil	Post-Excavation	TPHC	OQA-QAM-025

Note:

* TPHC Total Petroleum Hydrocarbons

** Sample location was further remediated and resampled

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
BUILDING 257, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Page 2 of 6

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	NJDEP Method
N2	4/13/98	4/13/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
E2	4/13/98	4/13/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
E3 (DUP E2)	4/13/98	4/13/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
B	4/13/98	4/13/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
NW	4/13/98	4/13/98	Soil	Post-Excavation	TPHC	OQA-QAM-025

Note:

* TPHC Total Petroleum Hydrocarbons

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
 BUILDING 257, MAIN POST-WEST AREA
 FORT MONMOUTH, NEW JERSEY

Page 3 of 6

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	NJDEP Method
**B5-1	10/23/99	10/25/99	Soil	Post-Excavation	TPHC	OQA-QAM-025
**B5-2	10/23/99	10/25/99	Soil	Post-Excavation	TPHC	OQA-QAM-025
**B5-3	10/23/99	10/25/99	Soil	Post-Excavation	TPHC	OQA-QAM-025
**B5-4	10/23/99	10/25/99	Soil	Post-Excavation	TPHC	OQA-QAM-025
**DUP B5-1	10/23/99	10/25/99	Soil	Post-Excavation	TPHC	OQA-QAM-025
S1-1	10/23/99	10/25/99	Soil	Post-Excavation	TPHC	OQA-QAM-025
S1-2	10/23/99	10/25/99	Soil	Post-Excavation	TPHC	OQA-QAM-025
S1-3	10/23/99	10/25/99	Soil	Post-Excavation	TPHC	OQA-QAM-025
S1-4	10/23/99	10/25/99	Soil	Post-Excavation	TPHC	OQA-QAM-025

Note:

* TPHC Total Petroleum Hydrocarbons

** Sample location was further remediated and resampled

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
 BUILDING 257, MAIN POST-WEST AREA
 FORT MONMOUTH, NEW JERSEY

Page 4 of 6

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	NJDEP Method
PX1	12/7/00	12/8/00	Soil	Post-Excavation	TPHC	OQA-QAM-025
PX2	12/7/00	12/8/00	Soil	Post-Excavation	TPHC	OQA-QAM-025
**PX3	12/7/00	12/8/00	Soil	Post-Excavation	TPHC,VOA	OQA-QAM-025, 8260
PX4	12/7/00	12/8/00	Soil	Post-Excavation	TPHC,VOA	OQA-QAM-025, 8260
PX5	12/7/00	12/8/00	Soil	Post-Excavation	TPHC	OQA-QAM-025
PX6(DUP PX4)	12/7/00	12/8/00	Soil	Post-Excavation	TPHC	OQA-QAM-025

Note:

* TPHC Total Petroleum Hydrocarbons

** Sample location was further remediated and resampled

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
BUILDING 257, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Page 5 of 6

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	NJDEP Method
PX7	2/12/01	11/4/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
PX8	2/12/01	11/4/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
PX9(DUP PX8)	2/12/01	11/4/97	Soil	Post-Excavation	TPHC	OQA-QAM-025

Note:

* TPHC Total Petroleum Hydrocarbons

TABLE 1

SUMMARY OF SAMPLING ACTIVITIES
BUILDING 257, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Page 6 of 6

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Sampling Method**
4878.12	10/23/99	10/25/99	Aqueous	Groundwater	VOCs, SVOCs	PPNDP
4975.01	12/3/99	12/6/99	Aqueous	Groundwater	VOCs, SVOCs	PPNDP

Note:

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

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
 BUILDING 257, MAIN POST-WEST AREA
 FORT MONMOUTH, NEW JERSEY

Page 1 of 5

Sample ID/ Depth	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Parameters	Method Detection Limit (mg/kg)	Compound of Concern	Results (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
PP/1.5'	3467.01	4/8/98	4/9/98	Total Solid	--	--	85.87 %	--	--
				TPHC	177	yes	986.14	10,000	No
***V/1.5'	3467.02	4/8/98	4/9/98	Total Solid	--	--	77.45 %	--	--
				TPHC	197	Yes	1,911.85	10,000	No
***S1/6.5'	3467.03	4/8/98	4/9/98	Total Solid	--	--	76.64 %	--	--
				TPHC	200	Yes	1,613.66	10,000	No
***S2/6.5'	3467.04	4/8/98	4/9/98	Total Solid	--	--	75.78 %	--	--
				TPHC	201	yes	1,706.14	10,000	No
E/6.5'	3467.05	4/8/98	4/9/98	Total Solid	--	--	78.64 %	--	--
				TPHC	188	yes	230.06	10,000	No
W/6.5'	3467.06	4/8/98	4/9/98	Total Solid	--	--	75.56 %	--	--
				TPHC	200	yes	612.31	10,000	No
N/6.5'	3467.07	4/8/98	4/9/98	Total Solid	--	--	75.59 %	--	--
				TPHC	204	yes	ND	10,000	No

Note:

- * Total Solid results are expressed as a percentage.
- ** NJDEP Residential Direct Contact soil cleanup criteria for total organics
- *** Sample location was further remediated and resampled
- ND Not detected above stated method detection limit
- TPHC Total Petroleum Hydrocarbons

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
 BUILDING 257, MAIN POST-WEST AREA
 FORT MONMOUTH, NEW JERSEY

Page 2 of 5

Sample ID/ Depth	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Parameters	Method Detection Limit (mg/kg)	Compound of Concern	Results (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
N2/6.5' =	3476.01	4/13/98	4/13/98	Total Solid	--	--	81.68 %	--	--
				TPHC	190	yes	ND	10,000	No
E2/6.5' =	3476.02	4/13/98	4/13/98	Total Solid	--	--	76.58 %	--	--
				TPHC	198	Yes	ND	10,000	No
E3/6.5' =	3476.03	4/13/98	4/13/98	Total Solid	--	--	78.72 %	--	--
				TPHC	198	Yes	ND	10,000	No
B/7.0' =	3476.04	4/13/98	4/13/98	Total Solid	--	--	85.66 %	--	--
				TPHC	180	yes	261.43	10,000	No
NW/5.0' =	3476.05	4/13/98	4/13/98	Total Solid	--	--	76.04 %	--	--
				TPHC	197	yes	659.76	10,000	No

Note:

* Total Solid results are expressed as a percentage.

** NJDEP Residential Direct Contact soil cleanup criteria for total organics

ND Not detected above stated method detection limit

TPHC Total Petroleum Hydrocarbons

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
 BUILDING 257, MAIN POST-WEST AREA
 FORT MONMOUTH, NEW JERSEY

Page 3 of 5

Sample ID/ Depth	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Parameters	Method Detection Limit (mg/kg)	Compound of Concern	Results (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
***B5-1/3.0'	4878.03	10/23/99	10/25/99	Total Solid	--	--	83.85 %	--	--
				TPHC	179	yes	3,326.29	10,000	No
***B5-2/3.0'	4878.04	10/23/99	10/25/99	Total Solid	--	--	79.92 %	--	--
				TPHC	186	Yes	3,254.50	10,000	No
***B5-3/3.0'	4878.05	10/23/99	10/25/99	Total Solid	--	--	77.61 %	--	--
				TPHC	200	Yes	3,555.05	10,000	No
***B5-4/3.0'	4878.06	10/23/99	10/25/99	Total Solid	--	--	82.64 %	--	--
				TPHC	186	yes	1,637.44	10,000	No
***DUPB5-1/3.0'	4878.07	10/23/99	10/25/99	Total Solid	--	--	84.90 %	--	--
				TPHC	185	yes	4,515.65	10,000	No
S1-1/5.5'	4878.08	10/23/99	10/25/99	Total Solid	--	--	78.96 %	--	--
				TPHC	195	yes	ND	10,000	No
S1-2/7.0'	4878.09	10/23/99	10/25/99	Total Solid	--	--	80.67 %	--	--
				TPHC	191	yes	802.84	10,000	No
S1-3/7.0'	4878.10	10/23/99	10/25/99	Total Solid	--	--	78.32 %	--	--
				TPHC	194	Yes	ND	10,000	No
S1-4/7.0'	4878.11	10/23/99	10/25/99	Total Solid	--	--	81.68 %	--	--
				TPHC	187	Yes	ND	10,000	No

Note:

- * Total Solid results are expressed as a percentage.
- ** NJDEP Residential Direct Contact soil cleanup criteria for total organics
- *** Sample location was further remediated and resampled
- ND Not detected above stated method detection limit
- TPHC Total Petroleum Hydrocarbons

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
 BUILDING 257, MAIN POST-WEST AREA
 FORT MONMOUTH, NEW JERSEY

Page 4 of 5

Sample ID/ Depth	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Parameters	Method Detection Limit (mg/kg)	Compound of Concern	Results (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
PX1/5.5'	5898.01	12/7/00	12/8/00	Total Solid	--	--	77.73 %	--	--
				TPHC	199	yes	ND	10,000	No
PX2/5.5'	5898.02	12/7/00	12/8/00	Total Solid	--	--	89.06 %	--	--
				TPHC	174	Yes	ND	10,000	No
***PX3/5.5'	5898.03	12/7/00	12/8/00	Total Solid	--	--	75.75 %	--	--
				TPHC	204	Yes	3,383.41	10,000	No
PX4/5.5'	5898.04	12/7/00	12/8/00	Total Solid	--	--	75.60 %	--	--
				TPHC	201	yes	1,431.22	10,000	No
PX5/5.5'	5898.05	12/7/00	12/8/00	Total Solid	--	--	71.35 %	--	--
				TPHC	215	yes	556.69	10,000	No
PX6/5.5'	5898.06	12/7/00	12/8/00	Total Solid	--	--	75.82 %	--	--
				TPHC	205	yes	1,614.91	10,000	No

Note:

- * Total Solid results are expressed as a percentage.
- ** NJDEP Residential Direct Contact soil cleanup criteria for total organics
- *** Sample location was further remediated and resampled
- ND Not detected above stated method detection limit
- TPHC Total Petroleum Hydrocarbons

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
 BUILDING 257, MAIN POST-WEST AREA
 FORT MONMOUTH, NEW JERSEY

Page 5 of 5

Sample ID/ Depth	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Parameters	Method Detection Limit (mg/kg)	Compound of Concern	Results (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
PX7/5.5'=-	760	2/12/01	2/13/01	Total Solid	--	--	78.24 %	--	--
				TPHC	196	yes	ND	10,000	No
PX8/5.5'=-	761	2/12/01	2/13/01	Total Solid	--	--	79.28 %	--	--
				TPHC	193	Yes	ND	10,000	No
PX9/5.5'=-	762	2/12/01	2/13/01	Total Solid	--	--	79.25 %	--	--
				TPHC	190	Yes	ND	10,000	No

Note:

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

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Matrix: (soil/water) SOIL
 Date Sampled: 12/7/00 Location: 257 Lab Sample ID: 5898.04(Sample PX4)

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

CAS NO.	PARAMETER	MDL	QUALIFIER	RESIDENTIAL	NON-RESIDENTIAL
107028	Acrolein	2000	U	NA	NA
107131	Acrylonitrile	2000	U	1000	5000
75650	tert-Butyl alcohol	3700	U	NA	NA
1634044	Methyl-tert-Butyl ether	860	U	NA	NA
108203	Di-isopropyl ether	570	U	NA	NA
	Dichlorodifluoromethane	1100	U	NA	NA
74-87-3	Chloromethane	290	U	520000	1000000(d)
75-01-4	Vinyl Chloride	860	U	2000	7000
74-83-9	Bromomethane	570	U	79000	1000000(d)
75-00-3	Chloroethane	860	U	NA	NA
75-69-4	Trichlorofluoromethane	570	U	NA	NA
75-35-4	1, 1-Dichloroethene	290	U	8000	150000
67-64-1	Acetone	1400		1000000(d)	1000000(d)
75-15-0	Carbon Disulfide	290	U	NA	NA
75-09-2	Methylene Chloride	570	U	49000	210000
156-60-5	trans-1,2-Dichloroethene	570	U	1000000(d)	1000000(d)
75-35-3	1,1-Dichloroethane	290	U	570000	1000000(d)
108-05-4	Vinyl Acetate	860	U	NA	NA
78-93-3	2-Butanone	2400		1000000(d)	1000000(d)
156-59-2	cis-1,2-Dichloroethene	290	U	79000	1000000(d)
67-66-3	Chloroform	290	U	19000(k)	28000(k)
75-55-6	1,1,1-Trichloroethane	290	U	NA	NA
56-23-5	Carbon Tetrachloride	570	U	2000(k)	4000(k)
71-43-2	Benzeze	290	U	3000	13000
107-06-2	1,2-Dichloroethane	570	U	6000	24000

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Matrix: (soil/water) SOIL
 Date Sampled: 12/7/00 Location: 257 Lab Sample ID: 5898.04(Sample PX4)

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

CAS NO.	PARAMETER	MDL	QUALIFIER	RESIDENTIAL	NON-RESIDENTIAL
79-01-6	Trichloroethene	290	U	23000	54000(k)
78-87-5	1, 2-Dichloropropane	290	U	10000	43000
75-27-4	Bromodichloromethane	290	U	11000(g)	46000(g)
110-75-8	2-Chloroethyl vinyl ether	570	U	NA	NA
10061-01-5	cis-1,3-Dichloropropene	290	U	NA	NA
108-10-1	4-Methyl-2-Pentanone	570	U	1000000(d)	1000000(d)
108-88-3	Toluene	290	U	1000000(d)	1000000(d)
10061-02-6	trans-1,3-Dichloropropene	570	U	NA	NA
79-00-5	1,1,2-Trichloroethane	570	U	22000	420000
127-18-4	Tetrachloroethene	290	U	4000(k)	6000(k)
591-78-6	2-Hexanone	570	U	NA	NA
126-48-1	Dibromochloromethane	570	U	NA	NA
108-90-7	Chlorobenzene	290	U	37000	680000
100-41-4	Ethylbenzene	570	U	1000000(d)	1000000(d)
1330-20-7	m+p-Xylenes	860	U	NA	NA
1330-20-7	o-Xylene	570	U	NA	NA
100-42-5	Styrene	570	U	23000	97000
75-25-2	Bromoform	570	U	86000	370000
79-34-5	1,1,2,2-Tetrachloroethane	570	U	34000	70000(k)
541-73-1	1,3-Dichlorobenzene	860	U	5100000	10000000(c)
106-46-7	1,4-Dichlorobenzene	860	U	570000	10000000(c)
95-50-1	1,2-Dichlorobenzene	860	U	5100000	10000000(c)

SOIL CLEANUP CRITERIA (MG/KG)

(LAST REVISED-7/11/96)

(A) CRITERIA ARE HEALTH BASED USING AN INCIDENTAL INGESTION EXPOSURE PATHWAY EXCEPT WHERE NOTED BELOW.

(3) CRITERIA ARE SUBJECT TO CHANGE BASED ON SITE SPECIFIC FACTORS (E.G., AQUIFER CLASSIFICATION, SOIL TYPE, NATURAL BACKGROUND, ENVIRONMENTAL IMPACTS, ETC.)

(C) HEALTH BASED CRITERION EXCEEDS THE 10,000 MG/KG MAXIMUM FOR TOTAL ORGANIC CONTAMINANTS.

(D) HEALTH BASED CRITERION EXCEEDS THE 1000 MG/KG MAXIMUM FOR TOTAL VOLATILE ORGANIC CONTAMINANTS

(E) CLEANUP STANDARD PROPOSAL WAS BASED ON NATURAL BACKGROUND.

(F) HEALTH BASED CRITERION IS LOWER THAN ANALYTICAL LIMITS; CLEANUP CRITERION BASED ON PRACTICAL QUANTITATION LEVEL.

(G) CRITERION HAS BEEN RECALCULATED BASED ON NEW TOXICOLOGICAL DATA.

(H) THE IMPACT TO GROUND WATER VALUES FOR INORGANIC CONSTITUENTS WILL BE DEVELOPED BASED UPON SITE SPECIFIC CHEMICAL AND PHYSICAL PARAMETERS.

(I) ORIGINAL CRITERION WAS INCORRECTLY CALCULATED AND HAS BEEN RECALCULATED.

(J) TYPOGRAPHICAL ERROR.

(K) CRITERIA BASED ON INHALATION EXPOSURE PATHWAY, WHICH YIELDED A MORE STRINGENT CRITERION THAN THE INCIDENTAL INGESTION EXPOSURE PATHWAY.

(L) NEW CRITERION DERIVED USING METHODOLOGY IN THE BASIS AND BACKGROUND DOCUMENT.

(M) CRITERION BASED ON ECOLOGICAL (PHYTOTOXICITY) EFFECTS.

(N) LEVEL OF THE HUMAN HEALTH BASED CRITERION IS SUCH THAT EVALUATION FOR POTENTIAL ENVIRONMENTAL IMPACTS ON A SITE BY SITE BASIS IS RECOMMENDED.

(O) LEVEL OF THE CRITERION IS SUCH THAT EVALUATION FOR POTENTIAL ACUTE EXPOSURE HAZARD IS RECOMMENDED.

(P) CRITERION BASED ON THE USEPA INTEGRATED EXPOSURE UPTAKE BIOKINETIC (IEUBK) MODEL UTILIZING THE DEFAULT PARAMETERS. THE CONCENTRATION IS CONSIDERED TO PROTECT 95% OF TARGET POPULATION (CHILDREN) AT A BLOOD LEVEL OF 10 UG/DL.

(I) CRITERIA WAS DERIVED FROM A MODEL DEVELOPED BY THE SOCIETY FOR ENVIRONMENTAL GEOCHEMISTRY AND HEALTH (SEGH) AND WAS DESIGNED TO BE PROTECTIVE FOR ADULTS IN THE WORKPLACE.

(J) INSUFFICIENT INFORMATION AVAILABLE TO CALCULATE IMPACT TO GROUND WATER CRITERIA.

Table 4
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETLNJDEP # 13461Matrix: (soil/water) WATERDate Sampled: 10/23/99Location: 257Lab Sample ID: 4878.12 (S1)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
107028	Acrolein	1.85	Not Detected	--	50	no
107131	Acrylonitrile	2.78	Not Detected	--	50	no
75650	tert-Butyl alcohol	8.52	Not Detected	--	nle	no
1634044	Methyl-tert-Butyl ether	0.16	Not Detected	--	nle	no
108203	Di-isopropyl ether	0.25	Not Detected	--	nle	no
	Dichlorodifluoromethane	1.68	Not Detected	--	nle	no
74-87-3	Chloromethane	1.16	Not Detected	--	30	no
75-01-4	Vinyl Chloride	1.06	Not Detected	--	5	no
74-83-9	Bromomethane	1.10	Not Detected	--	10	no
75-00-3	Chloroethane	1.01	Not Detected	--	nle	no
75-69-4	Trichlorofluoromethane	0.50	Not Detected	--	nle	no
75-35-4	1, 1-Dichloroethene	0.24	Not Detected	--	2	no
67-64-1	Acetone	1.36	Not Detected	--	700	no
75-15-0	Carbon Disulfide	0.46	Not Detected	--	nle	no
75-09-2	Methylene Chloride	0.24	Not Detected	--	2	no
156-60-5	trans-1,2-Dichloroethene	0.16	Not Detected	--	100	no
75-35-3	1,1-Dichloroethane	0.12	Not Detected	--	70	no
108-05-4	Vinyl Acetate	0.78	Not Detected	--	nle	no
78-93-3	2-Butanone	0.62	Not Detected	--	300	no
156-59-2	cis-1,2-Dichloroethene	0.17	Not Detected	--	10	no
67-66-3	Chloroform	0.30	Not Detected	--	6	no
75-55-6	1,1,1-Trichloroethane	0.23	Not Detected	--	30	no
56-23-5	Carbon Tetrachloride	0.47	Not Detected	--	2	no
71-43-2	Benzeze	0.23	Not Detected	--	1	no
107-06-2	1,2-Dichloroethane	0.18	Not Detected	--	2	no
79-01-6	Trichloroethene	0.23	Not Detected	--	1	no
78-87-5	1, 2-Dichloropropane	0.40	Not Detected	--	1	no
75-27-4	Bromodichloromethane	0.55	Not Detected	--	1	no
110-75-8	2-Chloroethyl vinyl ether	0.65	Not Detected	--	nle	no
10061-01-5	cis-1,3-Dichloropropene	0.69	Not Detected	--	nle	no

Table 4
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Matrix: (soil/water) WATER
 Date Sampled: 10/23/99 Location: 257 Lab Sample ID: 4878.12 (S1)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
108-10-1	4-Methyl-2-Pentanone	0.59	Not Detected	--	400	no
108-88-3	Toluene	0.37	Not Detected	--	1000	no
10061-02-6	trans-1,3-Dichloropropene	0.87	Not Detected	--	nle	no
79-00-5	1,1,2-Trichloroethane	0.48	Not Detected	--	3	no
127-18-4	Tetrachloroethene	0.32	Not Detected	--	1	no
591-78-6	2-Hexanone	0.71	Not Detected	--	nle	no
126-48-1	Dibromochloromethane	0.86	Not Detected	--	10	no
108-90-7	Chlorobenzene	0.39	Not Detected	--	4	no
100-41-4	Ethylbenzene	0.65	Not Detected	--	700	no
1330-20-7	m+p-Xylenes	1.14	Not Detected	--	nle	no
1330-20-7	o-Xylene	0.62	Not Detected	--	nle	no
100-42-5	Styrene	0.56	Not Detected	--	100	no
75-25-2	Bromoform	0.70	Not Detected	--	4	no
79-34-5	1,1,2,2-Tetrachloroethane	0.47	Not Detected	--	2	no
541-73-1	1,3-Dichlorobenzene	0.55	Not Detected	--	600	no
106-46-7	1,4-Dichlorobenzene	0.57	Not Detected	--	75	no
95-50-1	1,2-Dichlorobenzene	0.64	Not Detected	--	600	no

Table 4
SEMI-VOLATILE ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Matrix: (soil/water) WATER
 Date Sampled: 10/23/99 Location: 257 Lab Sample ID: 4872.12 (S1)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
110-86-1	Pyridine	1.83	Not Detected	--	nle	no
62-75-9	N-nitroso-dimethylamine	0.91	Not Detected	--	20	no
62-53-3	Aniline	1.63	Not Detected	--	nle	no
111-44-4	bis(2-Chloroethyl)ether	1.28	Not Detected	--	10	no
541-73-1	1,3-Dichlorobenzene	1.19	Not Detected	--	600	no
106-46-7	1,4-Dichlorobenzene	1.02	Not Detected	--	75	no
100-51-6	Benzyl alcohol	1.02	Not Detected	--	nle	no
95-50-1	1,2-Dichlorobenzene	1.13	Not Detected	--	600	no
108-60-1	bis(2-chloroisopropyl)ether	1.39	Not Detected	--	300	no
621-64-7	n-Nitroso-di-n-propylamine	1.50	Not Detected	--	20	no
67-72-1	Hexachloroethane	0.97	Not Detected	--	10	no
98-95-3	Nitrobenzene	1.01	Not Detected	--	10	no
78-59-1	Isophorone	1.21	Not Detected	--	100	no
111-91-1	bis(2-Chloroethoxy)methane	1.75	Not Detected	--	nle	no
120-82-1	1,2,4-Trichlorobenzene	1.22	Not Detected	--	9	no
91-20-3	Naphthalene	1.27	Not Detected	--	nle	no
106-47-8	4-Chloroaniline	1.09	Not Detected	--	nle	no
87-68-3	Hexachlorobutadiene	0.71	Not Detected	--	1	no
91-57-6	2-Methylnaphthalene	1.08	Not Detected	--	nle	no
77-47-4	Hexachlorocyclopentadiene	1.32	Not Detected	--	50	no
91-58-7	2-Chloronaphthalene	1.01	Not Detected	--	nle	no
88-74-4	2-Nitroaniline	0.79	Not Detected	--	nle	no
131-11-3	Dimethylphthalate	1.52	Not Detected	--	7000	no
208-96-8	Acenaphthylene	0.96	Not Detected	--	nle	no

Table 4
SEMI-VOLATILE ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Matrix: (soil/water) WATER
 Date Sampled: 10/23/99 Location: 257 Lab Sample ID: 4878.12 (S1)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
606-20-2	2,6-Dinitrotoluene	0.81	Not Detected	-	nle	no
99-09-2	3-Nitroaniline	0.79	Not Detected	--	nle	no
83-32-9	Acenaphthene	1.10	Not Detected	--	400	no
132-64-9	Dibenzofuran	1.00	Not Detected	--	nle	no
121-14-2	2,4-Dinitrotoluene	0.87	Not Detected	--	10	no
84-66-2	Diethylphthalate	1.62	Not Detected	-	5000	no
86-73-7	Fluorene	0.99	Not Detected	--	300	no
7005-72-3	4-Chlorophenyl-phenylether	1.10	Not Detected	--	nle	no
100-01-6	4-Nitroaniline	1.05	Not Detected	--	nle	no
86-30-6	n-Nitrosodiphenylamine	1.01	Not Detected	--	20	no
103-33-3	Azobenzene	0.67	Not Detected	--	nle	no
101-55-3	4-Bromophenyl-phenylether	0.76	Not Detected	--	nle	no
118-74-1	Hexachlorobenzene	0.94	Not Detected	-	10	no
85-01-8	Phenanthrene	1.23	Not Detected	--	nle	no
120-12-7	Anthracene	1.12	Not Detected	--	2000	no
84-74-2	Di-n-butylphthalate	1.70	Not Detected	--	900	no
206-44-0	Fluoranthene	1.64	Not Detected	--	300	no
92-87-5	Benzidine	4.18	Not Detected	--	50	no
129-00-0	Pyrene	1.25	Not Detected	--	200	no
85-68-7	Butylbenzylphthalate	1.05	Not Detected	--	100	no
56-55-3	Benzo[a]anthracene	1.19	Not Detected	--	10	no
91-94-1	3,3'-Dichlorobenzidine	1.75	Not Detected	-	60	no
218-01-9	Chrysene	1.38	Not Detected	--	20	no
117-81-7	bis(2-Ethylhexyl)phthalate	1.74	Not Detected	--	30	no
117-84-0	Di-n-octylphthalate	1.44	Not Detected	--	100	no
205-99-2	Benzo[b]fluoranthene	1.25	Not Detected	--	10	no
207-08-9	Benzo[k]fluoranthene	1.29	Not Detected	--	2	no
50-32-8	Benzo[a]pyrene	1.05	Not Detected	--	20	no
193-39-5	Indeno[1,2,3-cd]pyrene	0.83	Not Detected	--	20	no
53-70-3	Dibenz[a,h]anthracene	0.64	Not Detected	--	20	no
191-24-2	Benzo[g,h,i]perylene	0.84	Not Detected	--	nle	no

Table 4
SEMI-VOLATILE ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Matrix: (soil/water) WATER
 Date Sampled: 10/23/99 Location: 257 Lab Sample ID: 4878.12 (S1)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
606-20-2	2,6-Dinitrotoluene	0.81	Not Detected	--	nle	no
99-09-2	3-Nitroaniline	0.79	Not Detected	--	nle	no
83-32-9	Acenaphthene	1.10	Not Detected	--	400	no
132-64-9	Dibenzofuran	1.00	Not Detected	--	nle	no
121-14-2	2,4-Dinitrotoluene	0.87	Not Detected	--	10	no
84-66-2	Diethylphthalate	1.62	Not Detected	--	5000	no
86-73-7	Fluorene	0.99	Not Detected	--	300	no
7005-72-3	4-Chlorophenyl-phenylether	1.10	Not Detected	--	nle	no
100-01-6	4-Nitroaniline	1.05	Not Detected	--	nle	no
86-30-6	n-Nitrosodiphenylamine	1.01	Not Detected	--	20	no
103-33-3	Azobenzene	0.67	Not Detected	--	nle	no
101-55-3	4-Bromophenyl-phenylether	0.76	Not Detected	--	nle	no
118-74-1	Hexachlorobenzene	0.94	Not Detected	--	10	no
85-01-8	Phenanthrene	1.23	Not Detected	--	nle	no
120-12-7	Anthracene	1.12	Not Detected	--	2000	no
84-74-2	Di-n-butylphthalate	1.70	Not Detected	--	900	no
206-44-0	Fluoranthene	1.64	Not Detected	--	300	no
92-87-5	Benzidine	4.18	Not Detected	--	50	no
129-00-0	Pyrene	1.25	Not Detected	--	200	no
85-68-7	Butylbenzylphthalate	1.05	Not Detected	--	100	no
56-55-3	Benzo[a]anthracene	1.19	Not Detected	--	10	no
91-94-1	3,3'-Dichlorobenzidine	1.75	Not Detected	--	60	no
218-01-9	Chrysene	1.38	Not Detected	--	20	no
117-81-7	bis(2-Ethylhexyl)phthalate	1.74	Not Detected	--	30	no
117-84-0	Di-n-octylphthalate	1.44	Not Detected	--	100	no
205-99-2	Benzo[b]fluoranthene	1.25	Not Detected	--	10	no
207-08-9	Benzo[k]fluoranthene	1.29	Not Detected	--	2	no
50-32-8	Benzo[a]pyrene	1.05	Not Detected	--	20	no
193-39-5	Indeno[1,2,3-cd]pyrene	0.83	Not Detected	--	20	no
53-70-3	Dibenz[a,h]anthracene	0.64	Not Detected	--	20	no
191-24-2	Benzo[g,h,i]perylene	0.84	Not Detected	--	nle	no

Table 4
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Matrix: (soil/water) WATER
 Date Sampled: 12/3/99 Location: 257 Lab Sample ID: 4975.01(Bldg 257)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
107028	Acrolein	1.85	Not Detected	--	50	no
107131	Acrylonitrile	2.78	Not Detected	--	50	no
75650	tert-Butyl alcohol	8.52	Not Detected	--	nle	no
1634044	Methyl-tert-Butyl ether	0.16	Not Detected	--	nle	no
108203	Di-isopropyl ether	0.25	Not Detected	--	nle	no
	Dichlorodifluoromethane	1.68	Not Detected	--	nle	no
74-87-3	Chloromethane	1.16	Not Detected	--	30	no
75-01-4	Vinyl Chloride	1.06	Not Detected	--	5	no
74-83-9	Bromomethane	1.10	Not Detected	--	10	no
75-00-3	Chloroethane	1.01	Not Detected	--	nle	no
75-69-4	Trichlorofluoromethane	0.50	Not Detected	--	nle	no
75-35-4	1, 1-Dichloroethene	0.24	Not Detected	--	2	no
67-64-1	Acetone	1.36	12.35 ug/L	--	700	no
75-15-0	Carbon Disulfide	0.46	Not Detected	--	nle	no
75-09-2	Methylene Chloride	0.24	Not Detected	--	2	no
156-60-5	trans-1,2-Dichloroethene	0.16	Not Detected	--	100	no
75-35-3	1,1-Dichloroethane	0.12	Not Detected	--	70	no
108-05-4	Vinyl Acetate	0.78	Not Detected	--	nle	no
78-93-3	2-Butanone	0.62	Not Detected	--	300	no
156-59-2	cis-1,2-Dichloroethene	0.17	Not Detected	--	10	no
67-66-3	Chloroform	0.30	Not Detected	--	6	no
75-55-6	1,1,1-Trichloroethane	0.23	Not Detected	--	30	no
56-23-5	Carbon Tetrachloride	0.47	Not Detected	--	2	no
71-43-2	Benzeze	0.23	Not Detected	--	1	no
107-06-2	1,2-Dichloroethane	0.18	Not Detected	--	2	no
79-01-6	Trichloroethene	0.23	Not Detected	--	1	no
78-87-5	1, 2-Dichloropropane	0.40	Not Detected	--	1	no
75-27-4	Bromodichloromethane	0.55	Not Detected	--	1	no
110-75-8	2-Chloroethyl vinyl ether	0.65	Not Detected	--	nle	no
10061-01-5	cis-1,3-Dichloropropene	0.69	Not Detected	--	nle	no

Table 4
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETLNJDEP # 13461Matrix: (soil/water) WATERDate Sampled: 12/3/99Location: 257Lab Sample ID: 4975.01 (Bldg 257)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
108-10-1	4-Methyl-2-Pentanone	0.59	Not Detected	--	400	no
108-88-3	Toluene	0.37	Not Detected	--	1000	no
10061-02-6	trans-1,3-Dichloropropene	0.87	Not Detected	--	nle	no
79-00-5	1,1,2-Trichloroethane	0.48	Not Detected	--	3	no
127-18-4	Tetrachloroethene	0.32	Not Detected	--	1	no
591-78-6	2-Hexanone	0.71	Not Detected	--	nle	no
126-48-1	Dibromochloromethane	0.86	Not Detected	--	10	no
108-90-7	Chlorobenzene	0.39	Not Detected	--	4	no
100-41-4	Ethylbenzene	0.65	Not Detected	--	700	no
1330-20-7	m+p-Xylenes	1.14	Not Detected	--	nle	no
1330-20-7	o-Xylene	0.62	Not Detected	--	nle	no
100-42-5	Styrene	0.56	Not Detected	--	100	no
75-25-2	Bromoform	0.70	Not Detected	--	4	no
79-34-5	1,1,2,2-Tetrachloroethane	0.47	Not Detected	--	2	no
541-73-1	1,3-Dichlorobenzene	0.55	Not Detected	--	600	no
106-46-7	1,4-Dichlorobenzene	0.57	Not Detected	--	75	no
95-50-1	1,2-Dichlorobenzene	0.64	Not Detected	--	600	no

Table 4
SEMI-VOLATILE ANALYSIS DATA SHEET

Lab Name: FMETLNJDEP # 13461Matrix: (soil/water) WATERDate Sampled: 12/3/99Location: 257Lab Sample ID: 4975.01(Bldg 257)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
110-86-1	Pyridine	2.29	Not Detected	--	nle	no
62-75-9	N-nitroso-dimethylamine	1.14	Not Detected	--	20	no
62-53-3	Aniline	2.04	Not Detected	--	nle	no
111-44-4	bis(2-Chloroethyl)ether	1.60	Not Detected	--	10	no
541-73-1	1,3-Dichlorobenzene	1.51	Not Detected	--	600	no
106-46-7	1,4-Dichlorobenzene	1.49	Not Detected	--	75	no
100-51-6	Benzyl alcohol	1.28	Not Detected	--	nle	no
95-50-1	1,2-Dichlorobenzene	1.41	Not Detected	--	600	no
108-60-1	bis(2-chloroisopropyl)ether	1.74	Not Detected	--	300	no
621-64-7	n-Nitroso-di-n-propylamine	1.00	Not Detected	--	20	no
67-72-1	Hexachloroethane	1.88	Not Detected	--	10	no
98-95-3	Nitrobenzene	1.21	Not Detected	--	10	no
78-59-1	Isophorone	1.26	Not Detected	--	100	no
111-91-1	bis(2-Chloroethoxy)methane	1.51	Not Detected	--	nle	no
120-82-1	1,2,4-Trichlorobenzene	1.53	Not Detected	--	9	no
91-20-3	Naphthalene	1.59	Not Detected	--	nle	no
106-47-8	4-Chloroaniline	1.36	Not Detected	--	nle	no
87-68-3	Hexachlorobutadiene	0.89	Not Detected	--	1	no
91-57-6	2-Methylnaphthalene	1.35	Not Detected	--	nle	no
77-47-4	Hexachlorocyclopentadiene	1.65	Not Detected	--	50	no
91-58-7	2-Chloronaphthalene	1.26	Not Detected	--	nle	no
88-74-4	2-Nitroaniline	0.99	Not Detected	--	nle	no
131-11-3	Dimethylphthalate	1.90	Not Detected	--	7000	no
208-96-8	Acenaphthylene	1.20	Not Detected	--	nle	no

Table 4
SEMI-VOLATILE ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Matrix: (soil/water) WATER
 Date Sampled: 12/3/99 Location: 257 Lab Sample ID: 4975.01(Bldg 257)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
606-20-2	2,6-Dinitrotoluene	1.01	Not Detected	--	nle	no
99-09-2	3-Nitroaniline	0.99	Not Detected	--	nle	no
83-32-9	Acenaphthene	1.38	Not Detected	--	400	no
132-64-9	Dibenzofuran	1.25	Not Detected	--	nle	no
121-14-2	2,4-Dinitrotoluene	1.09	Not Detected	--	10	no
84-66-2	Diethylphthalate	2.03	4.42 ug/L	--	5000	no
86-73-7	Fluorene	1.24	Not Detected	--	300	no
7005-72-3	4-Chlorophenyl-phenylether	1.38	Not Detected	--	nle	no
100-01-6	4-Nitroaniline	1.31	Not Detected	--	nle	no
86-30-6	n-Nitrosodiphenylamine	1.26	Not Detected	--	20	no
103-33-3	Azobenzene	0.84	Not Detected	--	nle	no
101-55-3	4-Bromophenyl-phenylether	0.95	Not Detected	--	nle	no
118-74-1	Hexachlorobenzene	1.18	Not Detected	--	10	no
85-01-8	Phenanthrene	1.54	Not Detected	--	nle	no
120-12-7	Anthracene	1.40	Not Detected	--	2000	no
84-74-2	Di-n-butylphthalate	2.13	Not Detected	--	900	no
206-44-0	Fluoranthene	2.05	Not Detected	--	300	no
92-87-5	Benzidine	5.23	Not Detected	--	50	no
129-00-0	Pyrene	1.56	Not Detected	--	200	no
85-68-7	Butylbenzylphthalate	1.31	Not Detected	--	100	no
56-55-3	Benzo[a]anthracene	1.49	Not Detected	--	10	no
91-94-1	3,3'-Dichlorobenzidine	2.19	Not Detected	--	60	no
218-01-9	Chrysene	1.73	Not Detected	--	20	no
117-81-7	bis(2-Ethylhexyl)phthalate	2.18	Not Detected	--	30	no
117-84-0	Di-n-octylphthalate	1.80	Not Detected	--	100	no
205-99-2	Benzo[b]fluoranthene	1.56	Not Detected	--	10	no
207-08-9	Benzo[k]fluoranthene	1.61	Not Detected	--	2	no
50-32-8	Benzo[a]pyrene	1.31	Not Detected	--	20	no
193-39-5	Indeno[1,2,3-cd]pyrene	1.04	Not Detected	--	20	no
53-70-3	Dibenz[a,h]anthracene	0.80	Not Detected	--	20	no
191-24-2	Benzo[g,h,i]perylene	1.05	Not Detected	--	nle	no

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FIGURES

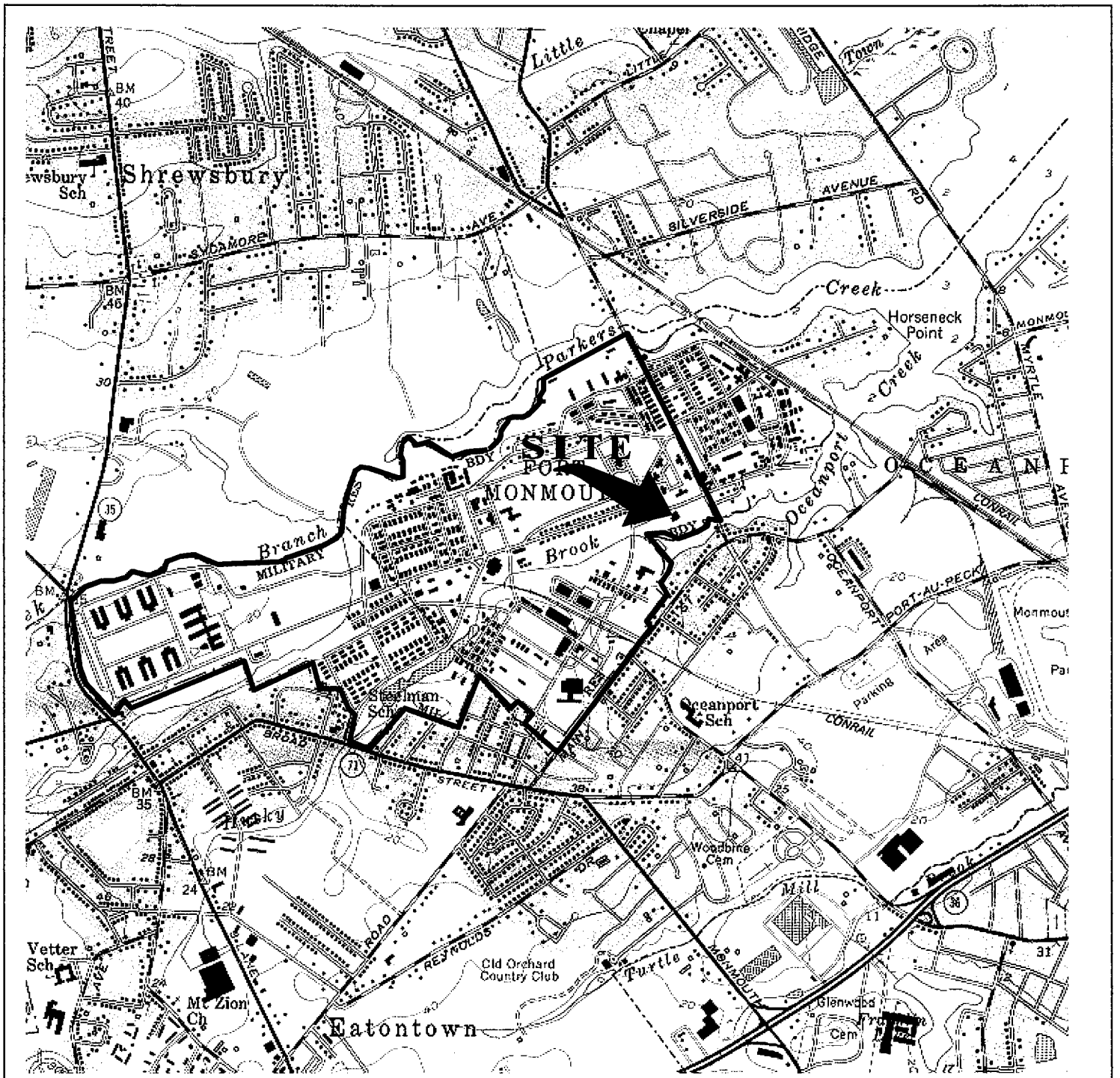


FIGURE 1

LOCATION MAP
 Building 257
 Main-Post West
 Fort Monmouth Army Base
 Monmouth County, NJ

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

Scale: 1" = 2000'

Date: APRIL 1998

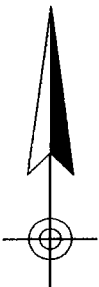
LONG BRANCH, N. J.

40073-C8-TF-024

1954

PHOTOREVISED 1981

DMA 6164 I SE-SERIES V822



NEW JERSEY
 QUADRANGLE LOCATION

Mapped, edited and published by the Geological Survey

257 FIG 2

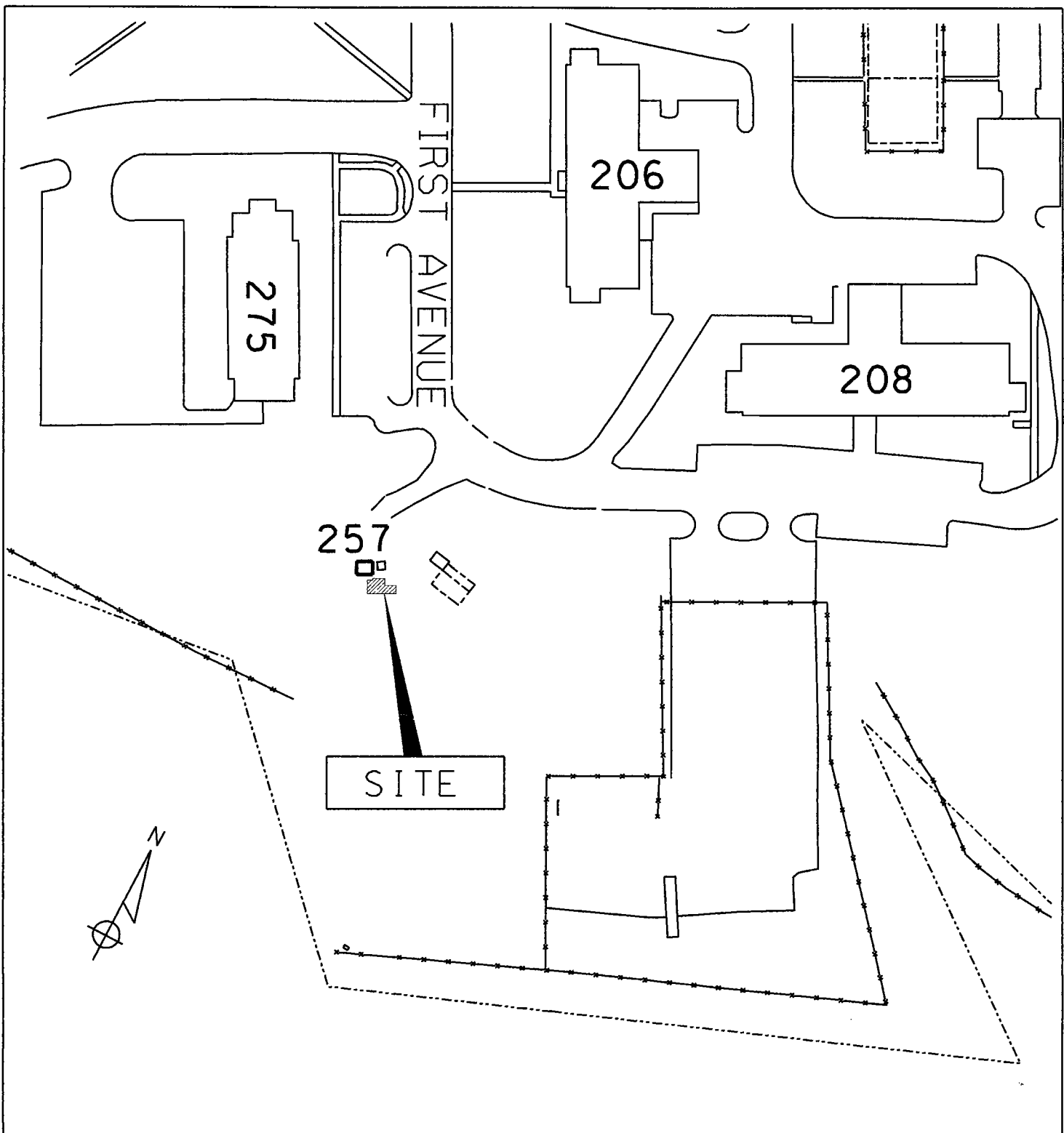


FIGURE 2
SITE MAP
BUILDING 257
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

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

SCALE: 1"=100'

DATE: APRIL 1998

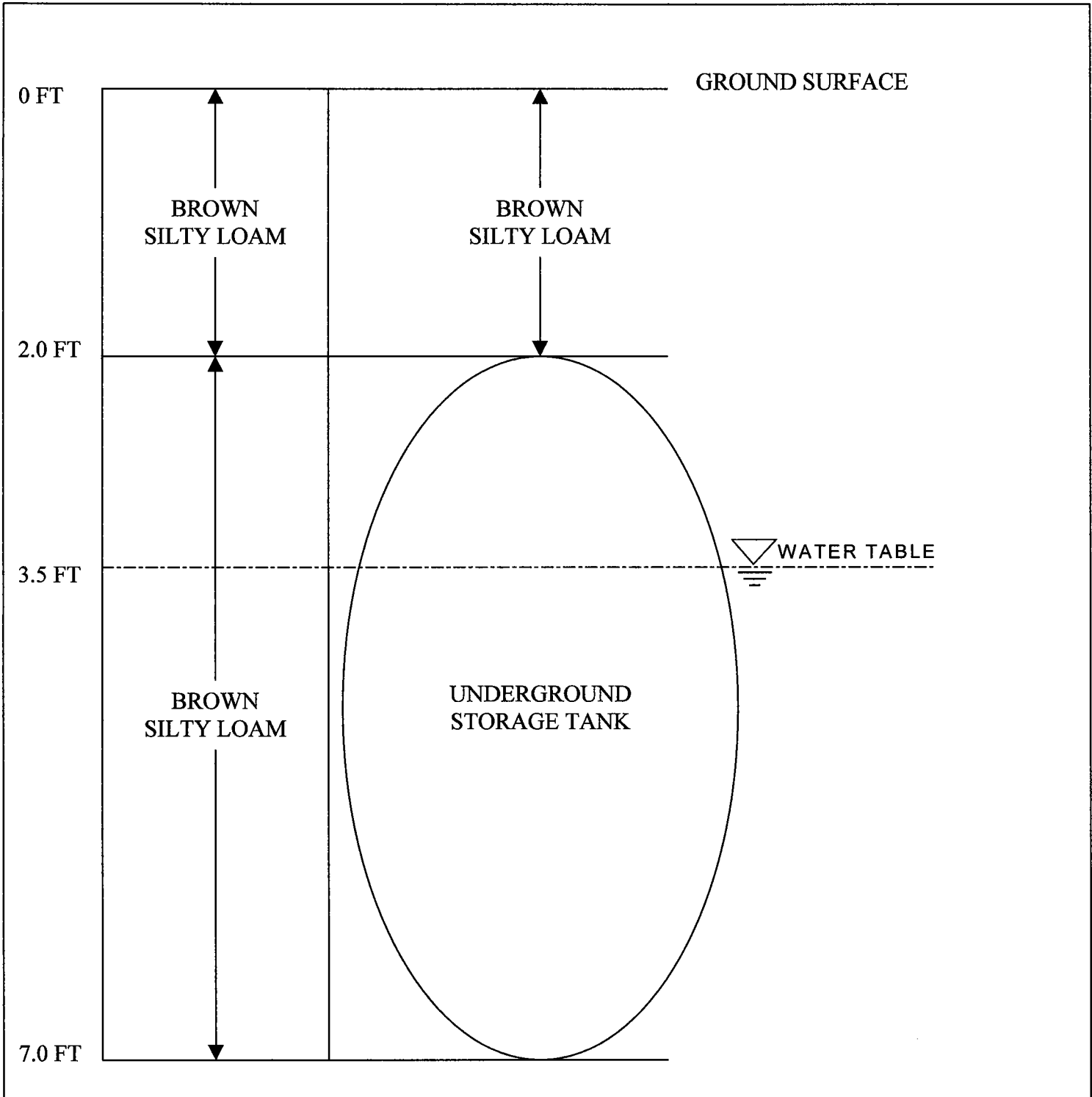


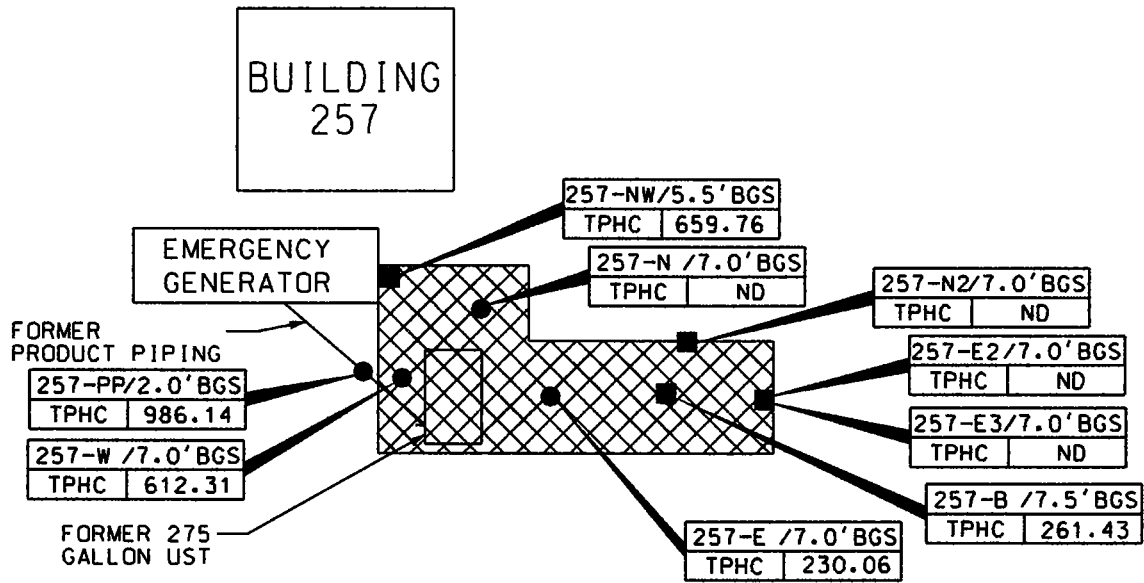
FIGURE 3
CROSS SECTIONAL VIEW
BUILDING 257
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

VERSAR
 Engineers, Managers, Scientists & Planners
Bristol, Pennsylvania

SCALE: NTS

DATE: APRIL 1998

257 FIG 4



LEGEND

- SOIL SAMPLE LOCATION (APRIL 9, 1998)
- SOIL SAMPLE LOCATION (APRIL 13, 1998)
- ▨ LIMIT OF EXCAVATION (APRIL 13, 1998)

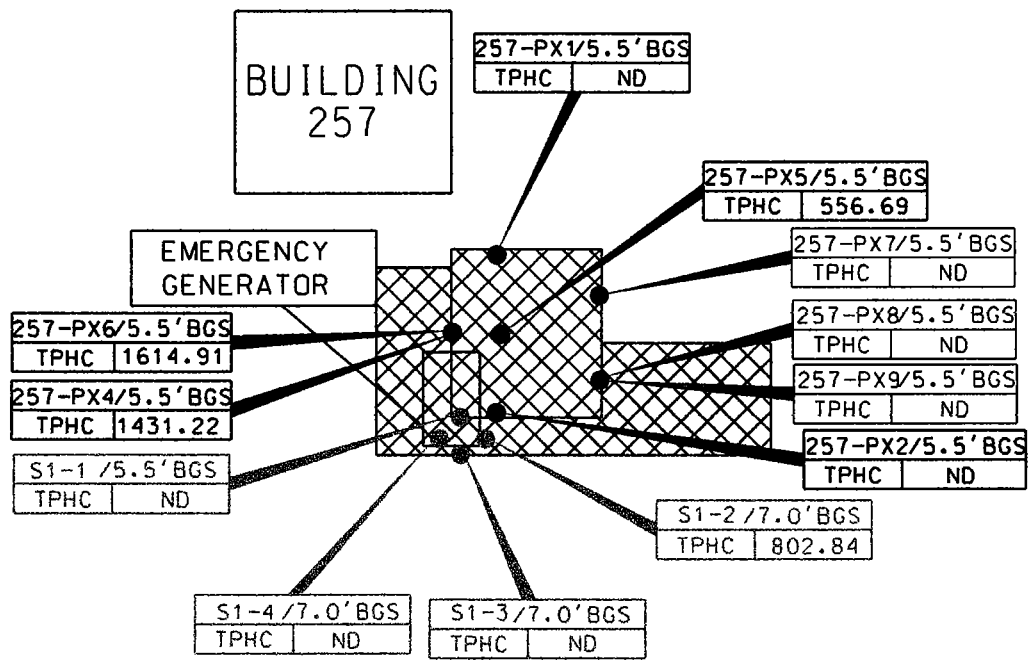
NOTES:

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

FIGURE 4A
SOIL SAMPLING LOCATION MAP
BUILDING 257
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

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

SCALE: 1"=10' DATE: APRIL 1998



LEGEND

- SOIL SAMPLE LOCATION (OCTOBER 23, 1999)
- SOIL SAMPLE LOCATION (DECEMBER 7, 2000)
- SOIL SAMPLE LOCATION (FEBRUARY 12, 2001)

- ▨ LIMIT OF EXCAVATION (APRIL 13, 1998)
- ▨ LIMIT OF EXCAVATION (FEBRUARY 12, 2001)

NOTES:

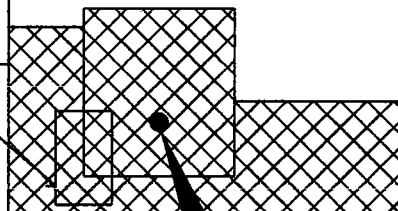
1. ALL RESULTS IN MG/KG.
2. SEE TABLE 2 FOR NJDEP SOIL CLEANUP CRITERIA
3. SEE TABLE 3 FOR VOC RESULTS
4. BGS = BELOW GROUND SURFACE



<p>FIGURE 4B SOIL SAMPLING LOCATION MAP BUILDING 257 FORT MONMOUTH ARMY BASE MONMOUTH COUNTY, NJ</p>	
<p>VERSAR ENGINEERS, MANAGERS, SCIENTISTS & PLANNERS BRISTOL, PA.</p>	
SCALE: 1"=10'	DATE: APRIL 1998

BUILDING
257



EMERGENCY
GENERATOR



SAMPLING LOCATION: SAMPLING DEPTH: SAMPLING DATE:	HIGHER OF NJDEP GWOS AND POL	BLDG, 257 6-10' BGS 10/23/99	BLDG 257 6-10' BGS 12/03/99
VOLATILE ORGANIC COMPOUNDS:			
ACETONE:	700	ND	12.35
SEMIVOLATILE ORGANIC COMPOUNDS:			
DIETHYLPHTHALATE:	5000	ND	4.42



LEGEND

- GROUNDWATER SAMPLE LOCATION
(OCTOBER 23, 1999 AND DECEMBER 3, 1999)
-  LIMIT OF EXCAVATION
(APRIL 13, 1998)
-  LIMIT OF EXCAVATION
(FEBRUARY 12, 2001)

NOTES:

1. ND=INDICATES COMPOUND NOT DETECTED
2. ALL RESULTS IN UG/L
3. SEE TABLE 4 FOR GROUNDWATER RESULTS
4. BGS = BELOW GROUND SURFACE

FIGURE 5
GROUNDWATER SAMPLING MAP
BUILDING 257
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

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

SCALE: 1"=10'

DATE: APRIL 1998

APPENDIX A

NJDEP UST Report Certification Form

Site Remediation Program

UST Site/Remedial Investigation Report Certification Form

A. Facility Name : U.S. Army Fort Monmouth New Jersey

Facility Street Address : Directorate of Public Works Building 173

Municipality: Oceanport County : Monmouth

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

B. Owner (RP)'s Name:

Street Address: City :

State: Zip: Telephone Number :

C. (Check as appropriate)

- Site Investigation Report (SIR) \$500 Fee
Remedial Investigation Report (RIR) \$1000 Fee
[X] NA ? Federal Agreement

D. (Complete all that apply)

- Assigned Case Manager : Ian Curtis, Federal Case Manager
UST Registration Number : 81533-200 (7 digits)
Incident Report Number 98 - 04 - 10 - 1437 - 39 (10 or 12 digits)
Tank Closure Number : Federal Case Manager

E. Certification by the Subsurface Evaluator:

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

Name: Dinker Desai Signature: UST Cert. No.: 10173

Firm: U.S. Army Fort Monmouth Firm's UST Cert. Number: NA-U.S. Army

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

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

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

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

- The following certification shall be signed [according to the requirements of N.J.A.C. 7:14B-1.7(b)]as follows:
1. For a Corporation by a person authorized by a resolution of the board of directors to sign the document. A copy of the resolution, certified as a true copy by the secretary of the corporation, shall be submitted along with the certification; or
2. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
3. For a municipality, State, federal or other public agency by either a principal executive officer or ranking elected Official.

„I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attached documents, and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate, or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties.?

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

Signature:

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

APPENDIX B

Waste Manifest



RD1 Box 5A
Old Bridge, N.J. 08857
(732) 721-0900
Fax (732) 721-0231

Building	# Drums	Volume (gallons)	
257	3	130	STANDARD COLLECTION ORDER FORM 192205
752	2	70	
1213	1	30	
2043	2	70	
2603	1	30	

GENERATOR/LOCATION

SALES ORDER #

BILL TO (IF DIFFERENT FROM LOCATION)

NAME: U.S. Army Communications Electronics Group
INFORMATION/ATTENTION LINE: MAIN Post
DELIVERY ADDRESS: c/o J. Fallon Bldg 173 ATTN: SELFMA
CITY: Ft. Monmouth STATE: NJ ZIP: 07703
PHONE NUMBER: 732-530-6000
USA EPA ID NO. (IF APPLICABLE): NJ 3210020324

NAME: SMC Environmental
INFORMATION/ATTENTION LINE: SMC Environmental
DELIVERY ADDRESS: [Blank]
CITY: [Blank] STATE: [Blank] ZIP: [Blank]
PHONE NUMBER: [Blank] PURCHASE ORDER NUMBER: [Blank]
MANIFEST NUMBER: 009956

SHIPPING INFORMATION

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

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

SERVICE SECTION

SALES CODE	DESCRIPTION	WASTE CODE	QUANTITY	UNIT PRICE	PRICE	TAX	LINE TOTAL
40500	USED OIL REMOVAL						
40300	ANTI-FREEZE REMOVAL						
40600	USED OIL FILTER REMOVAL						
40501	OILY WATER DISPOSAL						
40502	SLUDGE DISPOSAL	ED72	330	GALS			
41001	GASOLINE/WATER						
41501	DRUM DISPOSAL						
41504	TANK ENTRY						
40800	PARTS WASHER SERVICE						
41500	TRUCK & OPERATOR						
41511	NEW 55 GAL DRUM /17H						
41503	QAQC ANALYTICAL TESTING						
42001	DEXSIL TEST KIT	TAX					
41509	TRANSPORTATION						

CHARGE MY ACCOUNT FOR THIS TRANSACTION UNLESS OTHERWISE INDICATED IN THE PAYMENT SECTION.
INVOICES REFLECTING CHARGES TO CUSTOMER \$
ARE SUBJECT TO AN INTEREST RATE OF THE LESSER OF 1/2% PER MONTH (18% PER ANNUM) OR THE MAXIMUM RATE ALLOWED BY LAW ON ANY INVOICES THAT ARE NOT PAID WITHIN 30 DAYS. IN THE EVENT OF DEFAULT, LORCO SHALL BE ENTITLED TO RECOVER COSTS OF COLLECTION, INCLUDING REASONABLE ATTORNEY'S FEES.
GENERATOR WARRANTS AND REPRESENTS THAT THE MATERIALS PROVIDED LORCO HEREUNDER HAVE NOT BEEN MIXED, COMBINED, OR OTHERWISE BLENDED IN ANY QUANTITY WITH MATERIALS CONTAINING POLYCHLORINATED BIPHENYLS (PCB) OR ANY OTHER MATERIAL DEFINED AS HAZARDOUS WASTE UNDER APPLICABLE LAWS, INCLUDING BUT NOT LIMITED TO 40 CFR PART 261. GENERATOR AGREES TO INDEMNIFY AND HOLD LORCO HARMLESS FOR ANY DAMAGES, COSTS, ATTORNEY'S FEES, ETC. ARISING OUT OF OR IN ANY WAY RELATED TO A BREACH OF THE ABOVE WARRANTY BY THE GENERATOR.

Generator certifies that the waste is ED72
In accordance the N.J.A.C. 7:26-12.1 et seq, LORCO has the required permits to accept the above described waste.

Print Name: Joe Fallon Title: _____
Signature: [Signature] Date: 4-22-98
GENERATOR/CUSTOMER

SMALL QUANTITY TOTAL GENERATOR CERTIFICATION

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

N/A
GENERATOR'S SIGNATURE

LARGE QUANTITY GENERATOR CERTIFICATION

DEXSIL CDT TEST RESULTS
PPM

PAYMENT RECEIVED SECTION

CASH <input type="checkbox"/>	TOTAL RECEIVED
CHECK NUMBER	

CUSTOMER SERVICED EVERY 30 DAYS

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

Print Name: Carol Bell
Signature: [Signature] Date: 4-22
LORCO REPRESENTATIVE

CUSTOMER

JK

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. **NJ3210030331**

Manifest Document No. **147**

2. Page 1 of 1

NHZ 009956

3. Generator's Name and Mailing Address
U.S. ARMY COMMUNICATIONS ELECTRONICS COMMAND
310 JOSEPH FALLON BLDG 173 AITN SELFM - PW - EV
FT MONMOUTH NJ 07703

4. Generator's Phone **(732) 532-6223**

5. Transporter 1 Company Name

6. US EPA ID Number

A. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address
ENVIRONMENTAL SERVICES INC
OLD BRIDGE, NJ 08857

10. US EPA ID Number

C. Facility's Phone

11. Waste Shipping Name and Description

12. Containers	13. Total Quantity	14. Unit W/Vol

a. **USED OIL (PETROLEUM OIL)**

		XY 330
--	--	---------------

b.

--	--	--

c.

--	--	--

d.

--	--	--

D. Additional Descriptions for Materials Listed Above
WATER 40

E. Handling Codes for Wastes Listed Above
FOR FILTRATION

15. Special Handling Instructions and Additional Information
8703 800 400 1000 1000 1000 N/A

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name
Joseph M. Fallon

Signature
Joseph M. Fallon Month Day Year
14/22/98

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name
GARY LABELL

Signature
Gary Labelle Month Day Year
14/22/98

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name

Signature Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator. Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name

Signature Month Day Year

GENERATOR

TRANSPORTER

FACILITY

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APPENDIX C
UST Disposal Certificate



Order From:
The Drawing Board
P.O. Box 2844 • Hartford, CT 06104-2844
Call Toll Free: 1-800-527-8330

REORDER ITEM # BLN74

STRAIGHT BILL OF LADING
ORIGINAL - NOT NEGOTIABLE

Shipper No. 003

Carrier No. _____

SMC ENVIRONMENTAL SERVICES GROUP

(Name of Carrier)

Date _____

To: <u>Red Bank Recycling</u>	From: <u>Fort Monmouth (U.S. Army)</u>
Street: <u>64 Central Ave</u>	Street: <u>Building 257</u>
Destination: <u>Red Bank NJ</u> Zip Code: <u>07701</u>	Origin: <u>Oceanport, N.J.</u>
Route _____	

No. Shipping Units	HTS	Kind of Packaging, Description of Articles, Brand Marks and Certificates	Weight (Subject to Tare)	RATE	CHARGES
①		<u>FOR SEPAR ONLY</u> <u>1 - 275 Gallon U.S.T Skel</u> <u>CLAIM #</u> <u>TANK # 81533-200</u> <u>Building # 257</u>			

NEWT C.O.D. TO: ADDRESS:	COD Amt: \$	C.O.D. FEE: PREPAID <input type="checkbox"/> \$ COLLECT <input type="checkbox"/>
NOTE - Where the rate of operation or rates, charges or required to state specifically in writing the agreed or desired rates of this property. The agreed or desired value of the property is hereby voluntarily stated by the shipper to be not exceeding	This is to certify that the above named articles are properly classified, described, packed and loaded, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.	TOTAL CHARGES: \$
\$ _____	Signature _____	Signature of Consignee: _____

RECEIVED, subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of contents of packaged unknown), received, consigned, and destined as indicated above which said carrier (the more carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery of said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. If it is mutually agreed as to each carrier of all or any of said property over all or any portion of said route to destination and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the bill of lading terms and conditions in the governing classification on the date of shipment.
Shipper hereby certifies that he is familiar with all the bill of lading terms and conditions in the governing classification and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

SHIPPER <u>Fort Monmouth (U.S. Army)</u>	CARRIER <u>SMC ENVIRONMENTAL SERVICES GROUP</u>
PER _____	PER <u>Mark C. Lyndler</u>
DATE _____	DATE <u>5/1/98</u>

*Mark with "K" to designate Hazardous Material as defined in Title 49 of the Code of Federal Regulations.
Reorder Item #BLN74 The Drawing Board, P.O. Box 2844, Hartford, CT 06104-2844
©EGE, 1992, Printed in U.S.A.

FROM JMT ENVIRON. TECH. 610 769 6149
1998 8:52PM

908-747-7784
908-747-7779

Red Bank Recycling Auto Wreckers, Inc.

64 Central Avenue, Red Bank, New Jersey 07701

Date 5/1 19 78

M

Yellow Dump Truck

	AMOUNT	CWT	TOTAL
<input checked="" type="checkbox"/> LIGHT IRON	<u>5.60</u>		<u>5.60</u>
NO. 1 STEEL			
NO. 2 STEEL			
D. M. B.			
CAST IRON			
COPPER			
BRASS			
ALUMINUM			
RADIATORS			
BATTERIES			
<u>3</u> <u>500</u> <u>TRUCKS</u> <u>SCRAP</u>			
CARS			

I am the owner of said vehicle(s) and I release to Red Bank Recycling Auto Wreckers, Inc.

Signature of Owner

Mark C. [Signature]

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APPENDIX D
Soil Analytical Data Package

**US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461**

REPORT OF ANALYSIS

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Project: Total Petroleum Hydrocarbons
98-0779
Bldg. 257
Tetra Tech - BRAC

Project # 3467
Date Rec. 04/09/98
Date Compl. 04/10/98
Released by:



**Daniel K. Wright
Laboratory Director**

Table of Contents

<u>Section</u>	<u>Pages</u>
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Method Summary

NJDEP Method OQA-QAM-025-10/97

Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

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

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

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


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

PHC Conformance/Non-conformance Summary Report

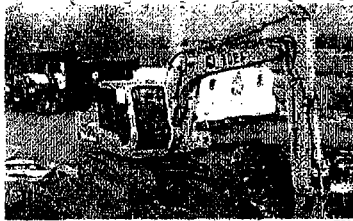
	<u>No</u>	<u>Yes</u>
1. Method Detection Limits provided.	—	✓
2. Method Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank. _____ _____	✓	—
3. Matrix Spike Results Summary Meet Criteria. (If not met, list the sample and corresponding recovery which falls outside the acceptable range). _____ _____	—	✓
4. Duplicate Results Summary Meet Criteria. (If not met, list the sample and corresponding recovery which falls outside the acceptable range). _____ _____	—	✓
5. IR Spectra submitted for standards, blanks, & samples	—	NA
6. Chromatograms submitted for standards, blanks, and samples if GC fingerprinting was conducted.	—	✓
7. Analysis holding time met. (If not met, list number of days exceeded for each sample) _____ _____	—	✓
Additional Comments: _____ _____ _____		

Laboratory Authentication Statement

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



Daniel K. Wright
Laboratory Manager



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703

Tel (732)532-4359 Fax (732)532-3484 EMail:appleby@doim6.monmouth.army.mil

NJDEP Certification #13461

Chain of Custody Record

Customer: Charles Appleby/Tetra Tech		Project No: 98-0779		Analysis Parameters				Comments:	
Phone #: X26224		Location: Bldg. 257		TPHC	H.N.U. Road- lines (in ground)		H.N.U. Col- location		
() DERA (X) OMA () Other: _____		(Tetra Tech)							
Samplers Name / Company : Dave Daniels (SMC) Kevin J. Phelan		Sample #		Type	bottles			Remarks / Preservation Method	
Lab Sample I.D.	Sample Location	Date	Time						
3467. 01	257-PP(1.5'-2.0')	4/8/98	15:15	Soil	1	X	2.2	ICE	
02	257-V(1.5'-2.0')		15:21			X	3.2		
03	257-S1(6.5'-7.0')		15:27			X	20.0		
04	257-S2(6.5'-7.0')		15:28			X	20.0		
05	257-E(6.5'-7.0')		15:37			X	62.0		
06	257-W(6.5'-7.0')		15:45			X	4.4		
07	257-N(6.5'-7.0')	↓	15:58	↓	↓	X	0.4	↓	
Relinquished by (signature): <i>Dave Daniels</i>		Date/Time: 4.9.98/1625	Received by (signature): <i>J. Phelan</i>		Relinquished by (signature):		Date/Time:	Received by (signature):	
Relinquished by (signature):		Date/Time:	Received by (signature):		Relinquished by (signature):		Date/Time:	Received by (signature):	
Report Type: () Full, (X) Reduced, () Standard, (X) Screen / non-certified					Remarks: Need results by Friday 3:00 AM				
Turnaround time: () Standard 4 wks, (X) Rush 3-5 Days, (X) ASAP Verbal 24 Hrs.									

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

Client : U.S. Army Lab. ID # : 3467
 DPW: SELFM-PW-EV Date Rec'd: 09-Apr-98
 Bldg. 173 Analysis Start: 09-Apr-98
 Ft. Monmouth, NJ 07703 Analysis Complete: 10-Apr-98

Analysis: OQA-QAM-025 UST Reg. #:
 Matrix: Soil Closure #:
 Analyst: D.DEINHARDT DICAR #:
 Ext. Meth: Shake Location #: B. 257

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3467.01	257-PP	1.00	15.47	85.87	177	986.14
3467.02	257-V	1.00	15.38	77.45	197	1911.85
3467.03	257-S1	1.00	15.33	76.64	200	1613.66
3467.04	257-S2	1.00	15.41	75.78	201	1706.14
3467.05	257-E	1.00	15.93	78.64	188	230.06
3467.06	257-W	1.00	15.58	75.56	200	612.31
3467.07	257-N	1.00	15.23	75.59	204	ND
METHOD BLANK	9-Apr-98	1.00	15.00	100.00	157	ND

ND = Not Detected
 MDL = Method Detection Limit

Daniel K. Wright
 Laboratory Director

LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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

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

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

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

Laboratory Manager or Environmental Consultant's Signature

Date 5/17/98



Laboratory Certification #13461

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



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703

Tel (732)532-4359 Fax (732)532-3484 EMail:appleby@doim6.monmouth.army.mil

NJDEP Certification #13461

Chain of Custody Record

Customer: Charles Appleby			Project No: 98-0779			Analysis Parameters						Comments:	
Phone #: X26224			Location: Bldg. 257			TPHC	H-Nu Readings (ppm)						
() DERA (X) OMA () Other: _____													
Samplers Name / Company : Dave Daniels (SMC)				Sample #									
Lab Sample I.D.	Sample Location	Date	Time	Type	bottles	TPHC	H-Nu Readings (ppm)					Remarks / Preservation Method	
3476.01	257-N2 (6.5'-7.0')	4.13.98	10:20	Soil	1	X	2.0					Ice	
.02	257-E2 (6.5'-7.0')		10:25				5.0						
.03	257-E3 (6.5'-7.0')		10:30				5.0						
.04	257-B (7.0'-7.5')		10:35				1.5						
.05	257-NW (5.0'-5.5')		10:40				12.0						
Relinquished by (signature): <i>Dave Daniels</i>		Date/Time: 4.13.98 1510		Received by (signature): <i>[Signature]</i>		Relinquished by (signature):		Date/Time:		Received by (signature):			
Relinquished by (signature):		Date/Time:		Received by (signature):		Relinquished by (signature):		Date/Time:		Received by (signature):			
Report Type: () Full, (X) Reduced, () Standard, () Screen / non-certified						Remarks: N-Nu Calibration: Zero - 0.0 ppm Span - 100 ppm at 3.82 setting							
Turnaround time: () Standard 4 wks, (X) Rush 1 Days, () ASAP Verbal Hrs.													

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS

PHONE: (732) 532-6224 FAX: (732) 532-6263

WET-CHEM - METALS - ORGANICS - FIELD SAMPLING

CERTIFICATIONS: NJDEP #13461, NYSDOH #11699



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

Bldg. 257

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
Trip Blank	4878.01	Aqueous	23-Oct-99	10/23/99
Field Blank	4878.02	Aqueous	23-Oct-99 08:55	10/23/99
B5 1-3'	4878.03	Soil	23-Oct-99 09:30	10/23/99
B5 2-3'	4878.04	Soil	23-Oct-99 09:43	10/23/99
B5 3-3'	4878.05	Soil	23-Oct-99 09:57	10/23/99
B5 4-3'	4878.06	Soil	23-Oct-99 10:04	10/23/99
Field Dup. 3'	4878.07	Soil	23-Oct-99	10/23/99
S1 1-5.5'	4878.08	Soil	23-Oct-99 10:40	10/23/99
S1 1-2-7'	4878.09	Soil	23-Oct-99 11:00	10/23/99
S1 1-3-7'	4878.10	Soil	23-Oct-99 11:20	10/23/99
S1 4-7'	4878.11	Soil	23-Oct-99 11:30	10/23/99
S1-GW-6-10"	4878.12	Aqueous	23-Oct-99 11:35	10/23/99

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

ENCLOSURE:
CHAIN OF CUSTODY
RESULTS

 4-7-00
Daniel Wright/Date
Laboratory Director

CHAIN OF CUSTODY

000001



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703

Tel (732)532-4359 Fax (732)532-6263 EMail:appleby@mail1.monmouth.army.mil

NJDEP Certification #13461

Chain of Custody Record

Customer: <u>C. APPLEBY</u>				Project No:		Analysis Parameters							Comments:		
Phone #: <u>20224</u>				Location: <u>BLDG. 257</u>		U G A + 15	T P H C	% S O I L O	B N + 15				H N C	Cul # 2 HAND O.K. (M)	
() DERA () OMA () Other: _____				Samplers Name / Company: <u>MARK LAURA - TVS - PWS 07</u>											
Lab Sample I.D.	Sample Location	Date	Time	Type	bottles								Remarks / Preservation Method		
<u>488</u>	<u>1 TRIP BLANK</u>	<u>10-23-99</u>	<u>-</u>	<u>AQ.</u>	<u>2</u>	<u>X</u>									<u>HCL</u>
	<u>2 FIELD BLANK</u>	<u>"</u>	<u>0855</u>	<u>"</u>	<u>"</u>	<u>X</u>			<u>X</u>						<u>"</u>
<u>*-1</u>	<u>3 B5-1 - 3'</u>	<u>"</u>	<u>0930</u>	<u>SOIL</u>	<u>1</u>		<u>X</u>	<u>X</u>				<u>200 PPM</u>	<u>FUEL OIL ODOR</u>	<u>240c</u>	
<u>*</u>	<u>4 " - 2 - "</u>	<u>"</u>	<u>0943</u>	<u>"</u>	<u>"</u>		<u>X</u>	<u>X</u>				<u>100 PPM</u>	<u>" " "</u>	<u>"</u>	
<u>*</u>	<u>5 " - 3 - "</u>	<u>"</u>	<u>0957</u>	<u>"</u>	<u>"</u>		<u>X</u>	<u>X</u>				<u>80 PPM</u>	<u>" " "</u>	<u>"</u>	
<u>*</u>	<u>6 " - 4 - "</u>	<u>"</u>	<u>1004</u>	<u>"</u>	<u>"</u>		<u>X</u>	<u>X</u>				<u>50 PPM</u>	<u>" " "</u>	<u>"</u>	
<u>*</u>	<u>7 FIELD DUP. - "</u>	<u>"</u>	<u>-</u>	<u>"</u>	<u>"</u>		<u>X</u>	<u>X</u>				<u>-</u>	<u>" " "</u>	<u>"</u>	
	<u>8 S1-1 - 5.5'</u>	<u>"</u>	<u>1040</u>	<u>"</u>	<u>"</u>		<u>X</u>	<u>X</u>				<u>5 PPM</u>		<u>"</u>	
	<u>9 " - 2 - 7'</u>	<u>"</u>	<u>1100</u>	<u>"</u>	<u>"</u>		<u>X</u>	<u>X</u>				<u>80 PPM</u>	<u>FUEL OIL ODOR</u>	<u>"</u>	
	<u>10 " - 3 - 7'</u>	<u>"</u>	<u>1120</u>	<u>"</u>	<u>"</u>		<u>X</u>	<u>X</u>				<u>0 PPM</u>			
	<u>11 " - 4 - 7'</u>	<u>"</u>	<u>1130</u>	<u>"</u>	<u>"</u>		<u>X</u>	<u>X</u>				<u>"</u>			
<u>V</u>	<u>12 S1-GW- 6-10'</u>	<u>"</u>	<u>1135</u>	<u>AQ.</u>	<u>3</u>	<u>X</u>			<u>X</u>			<u>"</u>			

Relinquished by (signature): <u>[Signature]</u>	Date/Time: <u>10-25-99 7:50</u>	Received by (signature): <u>[Signature]</u>	Relinquished by (signature):	Date/Time:	Received by (signature):
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: Full, Reduced, Standard, Screen / non-certified

Turnaround time: Standard 3 wks, Rush Days, ASAP Verbal Hrs.

Remarks: * HAND AUGURED LOCATIONS

000002

TPHC

000074

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

Client : U.S. Army
 DPW. SELFM-PW-EV
 Bldg. 173
 Ft. Monmouth, NJ 07703

Lab. ID # : 4878
Date Rec'd: 25-Oct-99
Analysis Start: 25-Oct-99
Analysis Complete: 26-Oct-99

Analysis: OQA-QAM-025
Matrix: Soil
Analyst: D.DEINHARDT
Inst. ID. GC TPHC INST. #1
Column Type RTX 5
Ext. Meth: Shake

UST Reg. #:
Closure #:
DICAR #:
Injection Volume 1 ul
Column ID 0.32 mm
Location #: Bldg. 257

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
4878.03	B5-1-3'	1.00	15.68	83.85	179	3326.29
4878.04	B5-2-3'	1.00	15.78	79.92	186	3254.50
4878.05	B5-3-3'	1.00	15.15	77.61	200	3555.05
4878.06	B5-4-3'	1.00	15.31	82.64	186	1637.44
4878.07	Field Dup.-3'	1.00	15.00	84.90	185	4515.65
4878.08	S1-1-5.5'	1.00	15.23	78.96	195	ND
4878.09	S1-2-7'	1.00	15.27	80.67	191	802.84
4878.10	S1-3-7'	1.00	15.50	78.32	194	ND
4878.11	S1-4-7'	1.00	15.37	81.68	187	ND
METHOD BLANK	TBLK275	1.00	15.00	100.00	157	ND

ND = Not Detected
 MDL = Method Detection Limit

Daniel K. Wright
 Laboratory Director

000075

LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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

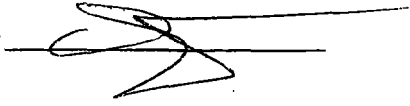
The following Laboratory Deliverables checklist and Non-Conformance Summary shall be included in the data submission. All deviations from the accepted methodology and procedures, of performance values outside acceptable ranges shall be summarized in the Non-Conformance Summary. The Technical Requirements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

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

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

Laboratory Manager or Environmental Consultant's Signature

Date 4/7/00



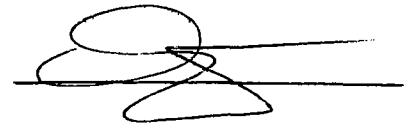
Laboratory Certification #13461

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

000114

Laboratory Authentication Statement

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



**Daniel K. Wright
Laboratory Manager**

000115

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS

PHONE: (732) 532-6224 FAX: (732) 532-6263

WET-CHEM - METALS - ORGANICS - FIELD SAMPLING

CERTIFICATIONS: NJDEP #13461, NYSDOH #11699



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

Bldg. 257/Pump Station

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time Of Collection	Date Received
257-PX1 North Wall 5-5.5'	5898.01	Soil	07-Dec-00 11:30	12/07/00
257-PX2 South Wall 5-5.5'	5898.02	Soil	07-Dec-00 12:15	12/07/00
257-PX3 East Wall 5-5.5'	5898.03	Soil	07-Dec-00 11:50	12/07/00
257-PX4 West Wall 5-5.5'	5898.04	Soil	07-Dec-00 12:00	12/07/00
257-PX5 Bottom 5.5-6'	5898.05	Soil	07-Dec-00 11:20	12/07/00
257-PX6 Duplicate 5-5.5'	5898.06	Soil	07-Dec-00 12:00	12/07/00
Trip Blank	5898.07	Methanol	07-Dec-00	12/07/00

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

ENCLOSURE:
CHAIN OF CUSTODY
RESULTS


01-02-01
Daniel Wright/Date
Laboratory Director

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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 #13481 / NYDOH Certification #11699

Chain of Custody Record

Customer: Dinker Desai					Project No: 400004 01-0001			Analysis Parameters					* = Samples Kept <4°C
Phone #: X21475					Location: BLDG. 257 (PUMP STATION)			TPHC	% SOLIDS	VOA+10*	VOA ID #	PID Reading	
() DERA (X) OMA UST Assessment					UST# 81533-200								Remarks / Preservation Method
Samplers Name / Company : Frank Accorsi/TVS					Sample #								
Lab Sample I.D.	Sample Location	Depth(ft)	Date	Time	Type	Bottles	TPHC	% SOLIDS	VOA+10*	VOA ID #	PID Reading	Remarks / Preservation Method	
5898. 01	257-PX1, NORTH WALL	5-5.5	12-7-00	1130	SOL	2	X	X	X	2202	2.0	ICE	
02	257-PX2, SOUTH WALL	5-5.5		1215		2	X	X	X	2203	0.2		
03	257-PX3, EAST WALL	5-5.5		1150		2	X	X	X	2204	22.0		
04	257-PX4, WEST WALL	5-5.5		1200		2	X	X	X	2205	16.0		
05	257-PX5, BOTTOM	5.5-6.0		1120		2	X	X	X	2206	7.0		
06	257-PX6, DUPLICATE	5-5.5		1200		2	X	X	X	2207	13.0		
07	TRIP BLANK	-		-	AQ.	1			X	2208	-		
OVM sn#580U-64455.343 was calibrated with zero air & w/ 245 ppm Isobutylene read 245 ppm. 0930 12-7-00 FA (time/date & initial)													
Relinquished by (signature): <i>Frank Accorsi</i>		Date/Time: 12-7-00 1405		Received by (signature): <i>J. Wright</i>		Comments: VOA+10 ON 25% > 1,000 PPM TPH, OR HIGHEST, MIN. ONE							
Relinquished by (signature):		Date/Time:		Received by (signature):									
Report Type: () Full, (X) Reduced, () Standard, () Screen / non-certified, () EDD							Remarks: Dedicated Sampling Tools Used						
Turnaround time: () Standard 2 wks, (X) Rush 1 Wk, () ASAP Verbal Hrs.							All sample points have been GPS? (X) YES () NO () NA						

000002

print legibly

Change of Chain of Custody

Lab Project ID#: 5898 Site/Project Name: Bldg 257

Date Received: 12/17/02 Date of Change: 12/11/02

Requested by: prim Horman Sign: Horman

Turnaround Time: Standard

1. Were the correct containers and/or preservatives used for the tests indicated? Yes No
2. Was a sufficient amount of sample sent for the tests indicated? Yes No
3. Are samples Within Holding time for new analysis? Yes No
4. Was the change documented in the sample receipt log book? Yes No

Received by: prim Sign: _____

Sample ID#	New Analysis		Sample ID#	New Analysis
5898.03	VOA+15			
.07	VOA+15			
	Reduced			

Comments: _____

METHOD SUMMARY

000004

Method Summary

NJDEP Method 8260

Gas Chromatographic Determination of Volatiles in Soil

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

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

NJDEP Method OQA-QAM-025-10/97

Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

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

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

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

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

000005

LABORATORY CHRONICLE

000006

Laboratory Chronicle

Lab ID: 5898

Site: Bldg. 257

	Date	Hold Time
Date Sampled	12/07/00	NA
Receipt/Refrigeration	12/07/00	NA
Extractions		
1. TPHC	12/08/00	14 days
Analyses		
1. Volatile Organics	12/14,15/00	14 days
2. TPHC	12/11/00	40 days

000007

**CONFORMANCE/
NON-
CONFORMANCE
SUMMARY**

000008

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

Indicate
Yes, No, N/A

1. Chromatograms labeled/Compounds identified
(Field samples and method blanks) yes
2. Retention times for chromatograms provided yes
3. GC/MS Tune Specifications
 - a. BFB Meet Criteria yes
 - b. DFTPP Meet Criteria NA
4. GC/MS Tuning Frequency – Performed every 24 hours for 600 series and 12 hours for 8000 series yes
5. GC/MS Calibration – Initial Calibration performed before sample analysis and continuing calibration performed within 24 hours of sample analysis for 600 series and 12 hours for 8000 series yes
6. GC/MS Calibration requirements
 - a. Calibration Check Compounds Meet Criteria yes
 - b. System Performance Check Compounds Meet Criteria yes
7. Blank Contamination – If yes, List compounds and concentrations in each blank: NO
 - a. VOA Fraction _____
 - b. B/N Fraction NA
 - c. Acid Fraction NA
8. Surrogate Recoveries Meet Criteria yes

If not met, list those compounds and their recoveries, which fall outside the acceptable range:

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

If not met, were the calculations checked and the results qualified as “estimated”?

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

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

Indicate
Yes, No, N/A

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

yes

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

11. Extraction Holding Time Met

NA

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

12. Analysis Holding Time Met

yes

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

Additional Comments:

Laboratory Manager: _____ Date: _____

TPHC CONFORMANCE/NON – CONFORMANCE SUMMARY REPORT

Indicate
Yes, No, N/A

- 1. Method Detection Limits Provided yes
- 2. Method Blank Contamination – If yes, list the sample and the corresponding concentrations in each blank

_____ NO
- 3. Matrix Spike Results Summary Meet Criteria
(If not met, list the sample and corresponding recovery which falls outside the acceptable range)

_____ yes
- 4. Duplicate Results Summary Meet Criteria
_____ yes
- 5. IR Spectra submitted for standards, blanks and samples NA
- 6. Chromatograms submitted for standards, blanks and samples if GC fingerprinting was conducted yes
- 7. Analysis holding time met
(If not met, list number of days exceeded for each sample)

_____ yes

Additional comments: _____

Laboratory Manager:  Date: 01-02-01

VOLATILE ORGANICS

000012

**US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEP CERTIFICATION # 13461**

Definition of Qualifiers

MDL : Method Detection Limit
J : Compound identified below detection limit
B : Compound found in blank
D : Results are from a dilution of the sample
U : Compound searched for but not detected
E : Compound exceeds calibration limit
PQL : Practical Quantitation Limit
NLE : No limit established
RT : Retention time

000013

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID

Vblk200

Lab Name: FMETL NJDEP# 13461

Project 01-0001 Case No.: 5898 SAS No.: _____ Location Bldg257

Matrix: (soil/water) SOIL Lab Sample ID: Vblk200

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VA008757.D

Level: (low/med) MED Date Received: 12/7/00

% Moisture: not dec. 0 Date Analyzed: 12/14/00

GC Column: RTX502 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG Q

107028	Acrolein	1800	U
107131	Acrylonitrile	1800	U
75650	tert-Butyl alcohol	3200	U
1634044	Methyl-tert-Butyl ether	750	U
108203	Di-isopropyl ether	500	U
	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	750	U
74-83-9	Bromomethane	500	U
75-00-3	Chloroethane	750	U
75-69-4	Trichlorofluoromethane	500	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	500	U
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	500	U
156-60-5	trans-1,2-Dichloroethene	500	U
75-35-3	1,1-Dichloroethane	250	U
108-05-4	Vinyl Acetate	750	U
78-93-3	2-Butanone	750	U
	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
75-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	500	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	500	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
110-75-8	2-Chloroethyl vinyl ether	500	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	500	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	500	U
79-00-5	1,1,2-Trichloroethane	500	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	500	U
126-48-1	Dibromochloromethane	500	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	500	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID

Vblk200

Lab Name: FMETL NJDEP# 13461
 Project 01-0001 Case No.: 5898 SAS No.: _____ Location Bldg257
 Matrix: (soil/water) SOIL Lab Sample ID: Vblk200
 Sample wt/vol: 10.0 (g/ml) G Lab File ID: VA008757.D
 Level: (low/med) MED Date Received: 12/7/00
 % Moisture: not dec. 0 Date Analyzed: 12/14/00
 GC Column: RTX502 ID: 0.32 (mm) Dilution Factor: 1.0
 Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG Q

1330-20-7	m+p-Xylenes	750	U
1330-20-7	o-Xylene	500	U
100-42-5	Styrene	500	U
75-25-2	Bromoform	500	U
79-34-5	1,1,2,2-Tetrachloroethane	500	U
541-73-1	1,3-Dichlorobenzene	750	U
106-46-7	1,4-Dichlorobenzene	750	U
95-50-1	1,2-Dichlorobenzene	750	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID

Vblk200

Lab Name: FMETL NJDEP# 13461
Project 01-0001 Case No.: 5898 SAS No.: _____ Location Bldg257
Matrix: (soil/water) SOIL Lab Sample ID: Vblk200
Sample wt/vol: 10.0 (g/ml) G Lab File ID: VA008757.D
Level: (low/med) MED Date Received: 12/7/00
% Moisture: not dec. 0 Date Analyzed: 12/14/00
GC Column: RTX502 ID: 0.32 (mm) Dilution Factor: 1.0
Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

Number TICs found: 0

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

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
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VOLATILE ORGANICS ANALYSIS DATA SHEET

Trip Blank

Lab Name: FMETL NJDEP# 13461

Project 01-0001 Case No.: 5898 SAS No.: _____ Location Bldg257

Matrix: (soil/water) SOIL Lab Sample ID: 5898.07

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VA008763.D

Level: (low/med) MED Date Received: 12/7/00

% Moisture: not dec. 0 Date Analyzed: 12/15/00

GC Column: RTX502 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/KG	Q
107028	Acrolein		1800	U
107131	Acrylonitrile		1800	U
75650	tert-Butyl alcohol		3200	U
1634044	Methyl-tert-Butyl ether		750	U
108203	Di-isopropyl ether		500	U
	Dichlorodifluoromethane		1000	U
74-87-3	Chloromethane		250	U
75-01-4	Vinyl Chloride		750	U
74-83-9	Bromomethane		500	U
75-00-3	Chloroethane		750	U
75-69-4	Trichlorofluoromethane		500	U
75-35-4	1,1-Dichloroethene		250	U
67-64-1	Acetone		1300	
75-15-0	Carbon Disulfide		250	U
75-09-2	Methylene Chloride		500	U
156-60-5	trans-1,2-Dichloroethene		500	U
75-35-3	1,1-Dichloroethane		250	U
108-05-4	Vinyl Acetate		750	U
78-93-3	2-Butanone		2800	
	cis-1,2-Dichloroethene		250	U
67-66-3	Chloroform		250	U
75-55-6	1,1,1-Trichloroethane		250	U
56-23-5	Carbon Tetrachloride		500	U
71-43-2	Benzene		250	U
107-06-2	1,2-Dichloroethane		500	U
79-01-6	Trichloroethene		250	U
78-87-5	1,2-Dichloropropane		250	U
75-27-4	Bromodichloromethane		250	U
110-75-8	2-Chloroethyl vinyl ether		500	U
10061-01-5	cis-1,3-Dichloropropene		250	U
108-10-1	4-Methyl-2-Pentanone		500	U
108-88-3	Toluene		250	U
10061-02-6	trans-1,3-Dichloropropene		500	U
79-00-5	1,1,2-Trichloroethane		500	U
127-18-4	Tetrachloroethene		250	U
591-78-6	2-Hexanone		500	U
126-48-1	Dibromochloromethane		500	U
108-90-7	Chlorobenzene		250	U
100-41-4	Ethylbenzene		500	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID

Trip Blank

Lab Name: FMETL NJDEP# 13461
 Project 01-0001 Case No.: 5898 SAS No.: _____ Location Bldg257
 Matrix: (soil/water) SOIL Lab Sample ID: 5898.07
 Sample wt/vol: 10.0 (g/ml) G Lab File ID: VA008763.D
 Level: (low/med) MED Date Received: 12/7/00
 % Moisture: not dec. 0 Date Analyzed: 12/15/00
 GC Column: RTX502 ID: 0.32 (mm) Dilution Factor: 1.0
 Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND	(ug/L or ug/Kg)	<u>UG/KG</u>	Q
1330-20-7	m+p-Xylenes		750	U
1330-20-7	o-Xylene		500	U
100-42-5	Styrene		500	U
75-25-2	Bromoform		500	U
79-34-5	1,1,2,2-Tetrachloroethane		500	U
541-73-1	1,3-Dichlorobenzene		750	U
106-46-7	1,4-Dichlorobenzene		750	U
95-50-1	1,2-Dichlorobenzene		750	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID

Trip Blank

Lab Name: FMETL NJDEP# 13461
Project 01-0001 Case No.: 5898 SAS No.: _____ Location Bldg257
Matrix: (soil/water) SOIL Lab Sample ID: 5898.07
Sample wt/vol: 10.0 (g/ml) G Lab File ID: VA008763.D
Level: (low/med) MED Date Received: 12/7/00
% Moisture: not dec. 0 Date Analyzed: 12/15/00
GC Column: RTX502 ID: 0.32 (mm) Dilution Factor: 1.0
Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

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

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID

257-PX3

Lab Name: FMETL NJDEP# 13461
 Project 01-0001 Case No.: 5898 SAS No.: _____ Location Bldg257
 Matrix: (soil/water) SOIL Lab Sample ID: 5898.03
 Sample wt/vol: 10.8 (g/ml) G Lab File ID: VA008761.D
 Level: (low/med) MED Date Received: 12/7/00
 % Moisture: not dec. 24.25 Date Analyzed: 12/14/00
 GC Column: RTX502 ID: 0.32 (mm) Dilution Factor: 1.0
 Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG Q

107028	Acrolein	2100	U
107131	Acrylonitrile	2100	U
75650	tert-Butyl alcohol	4000	U
1634044	Methyl-tert-Butyl ether	910	U
108203	Di-isopropyl ether	610	U
	Dichlorodifluoromethane	1200	U
74-87-3	Chloromethane	300	U
75-01-4	Vinyl Chloride	910	U
74-83-9	Bromomethane	610	U
75-00-3	Chloroethane	910	U
75-69-4	Trichlorofluoromethane	610	U
75-35-4	1,1-Dichloroethene	300	U
67-64-1	Acetone	1500	
75-15-0	Carbon Disulfide	300	U
75-09-2	Methylene Chloride	610	U
156-60-5	trans-1,2-Dichloroethene	610	U
75-35-3	1,1-Dichloroethane	300	U
108-05-4	Vinyl Acetate	910	U
78-93-3	2-Butanone	2300	
	cis-1,2-Dichloroethene	300	U
67-66-3	Chloroform	300	U
75-55-6	1,1,1-Trichloroethane	300	U
56-23-5	Carbon Tetrachloride	610	U
71-43-2	Benzene	300	U
107-06-2	1,2-Dichloroethane	610	U
79-01-6	Trichloroethene	300	U
78-87-5	1,2-Dichloropropane	300	U
75-27-4	Bromodichloromethane	300	U
110-75-8	2-Chloroethyl vinyl ether	610	U
10061-01-5	cis-1,3-Dichloropropene	300	U
108-10-1	4-Methyl-2-Pentanone	610	U
108-88-3	Toluene	300	U
10061-02-6	trans-1,3-Dichloropropene	610	U
79-00-5	1,1,2-Trichloroethane	610	U
127-18-4	Tetrachloroethene	300	U
591-78-6	2-Hexanone	610	U
126-48-1	Dibromochloromethane	610	U
108-90-7	Chlorobenzene	300	U
100-41-4	Ethylbenzene	610	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID

257-PX3

Lab Name: FMETL NJDEP# 13461

Project 01-0001 Case No.: 5898 SAS No.: _____ Location Bldg257

Matrix: (soil/water) SOIL Lab Sample ID: 5898.03

Sample wt/vol: 10.8 (g/ml) G Lab File ID: VA008761.D

Level: (low/med) MED Date Received: 12/7/00

% Moisture: not dec. 24.25 Date Analyzed: 12/14/00

GC Column: RTX502 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	<u>UG/KG</u>	Q
1330-20-7	m+p-Xylenes		910	U
1330-20-7	o-Xylene		610	U
100-42-5	Styrene		610	U
75-25-2	Bromoform		610	U
79-34-5	1,1,2,2-Tetrachloroethane		610	U
541-73-1	1,3-Dichlorobenzene		910	U
106-46-7	1,4-Dichlorobenzene		910	U
95-50-1	1,2-Dichlorobenzene		910	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID

257-PX3

Lab Name: FMETL NJDEP# 13461
Project 01-0001 Case No.: 5898 SAS No.: _____ Location Bldg257
Matrix: (soil/water) SOIL Lab Sample ID: 5898.03
Sample wt/vol: 10.8 (g/ml) G Lab File ID: VA008761.D
Level: (low/med) MED Date Received: 12/7/00
% Moisture: not dec. 24.25 Date Analyzed: 12/14/00
GC Column: RTX502 ID: 0.32 (mm) Dilution Factor: 1.0
Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

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

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
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VOLATILE ORGANICS ANALYSIS DATA SHEET

257-PX4

Lab Name: FMETL NJDEP# 13461

Project 01-0001 Case No.: 5898 SAS No.: _____ Location Bldg257

Matrix: (soil/water) SOIL Lab Sample ID: 5898.04

Sample wt/vol: 11.5 (g/ml) G Lab File ID: VA008762.D

Level: (low/med) MED Date Received: 12/7/00

% Moisture: not dec. 24.4 Date Analyzed: 12/15/00

GC Column: RTX502 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/KG	Q
107028	Acrolein		2000	U
107131	Acrylonitrile		2000	U
75650	tert-Butyl alcohol		3700	U
1634044	Methyl-tert-Butyl ether		860	U
108203	Di-isopropyl ether		570	U
	Dichlorodifluoromethane		1100	U
74-87-3	Chloromethane		290	U
75-01-4	Vinyl Chloride		860	U
74-83-9	Bromomethane		570	U
75-00-3	Chloroethane		860	U
75-69-4	Trichlorofluoromethane		570	U
75-35-4	1,1-Dichloroethene		290	U
67-64-1	Acetone		1400	
75-15-0	Carbon Disulfide		290	U
75-09-2	Methylene Chloride		570	U
156-60-5	trans-1,2-Dichloroethene		570	U
75-35-3	1,1-Dichloroethane		290	U
108-05-4	Vinyl Acetate		860	U
78-93-3	2-Butanone		2400	
	cis-1,2-Dichloroethene		290	U
67-66-3	Chloroform		290	U
75-55-6	1,1,1-Trichloroethane		290	U
56-23-5	Carbon Tetrachloride		570	U
71-43-2	Benzene		290	U
107-06-2	1,2-Dichloroethane		570	U
79-01-6	Trichloroethene		290	U
78-87-5	1,2-Dichloropropane		290	U
75-27-4	Bromodichloromethane		290	U
110-75-8	2-Chloroethyl vinyl ether		570	U
10061-01-5	cis-1,3-Dichloropropene		290	U
108-10-1	4-Methyl-2-Pentanone		570	U
108-88-3	Toluene		290	U
10061-02-6	trans-1,3-Dichloropropene		570	U
79-00-5	1,1,2-Trichloroethane		570	U
127-18-4	Tetrachloroethene		290	U
591-78-6	2-Hexanone		570	U
126-48-1	Dibromochloromethane		570	U
108-90-7	Chlorobenzene		290	U
100-41-4	Ethylbenzene		570	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID

257-PX4

Lab Name: FMETL NJDEP# 13461

Project 01-0001 Case No.: 5898 SAS No.: _____ Location Bldg257

Matrix: (soil/water) SOIL Lab Sample ID: 5898.04

Sample wt/vol: 11.5 (g/ml) G Lab File ID: VA008762.D

Level: (low/med) MED Date Received: 12/7/00

% Moisture: not dec. 24.4 Date Analyzed: 12/15/00

GC Column: RTX502 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/KG Q

1330-20-7	m+p-Xylenes	860	U
1330-20-7	o-Xylene	570	U
100-42-5	Styrene	570	U
75-25-2	Bromoform	570	U
79-34-5	1,1,2,2-Tetrachloroethane	570	U
541-73-1	1,3-Dichlorobenzene	860	U
106-46-7	1,4-Dichlorobenzene	860	U
95-50-1	1,2-Dichlorobenzene	860	U

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID

257-PX4

Lab Name: FMETL NJDEP# 13461

Project 01-0001 Case No.: 5898 SAS No.: _____ Location Bldg257

Matrix: (soil/water) SOIL Lab Sample ID: 5898.04

Sample wt/vol: 11.5 (g/ml) G Lab File ID: VA008762.D

Level: (low/med) MED Date Received: 12/7/00

% Moisture: not dec. 24.4 Date Analyzed: 12/15/00

GC Column: RTX502 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

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

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
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TPHC

000041

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

Client : US. Army
 DPW. SELFM-PW-EV
 Bldg. 173
 Ft. Monmouth, NJ 07703

Project # : 5898
Location : Bldg. 257 (Pump Station)
UST Reg. # : 81533 - 200

Analysis : OQA-QAM-025
Matrix : Soil
Inst. ID. : GC TPHC INST. #1
Column Type : RTX-5, 0.32mm ID, 30M
Injection Volume : 1uL

Date Received : 07-Dec-00
Date Extracted : 08-Dec-00
Extraction Method : Shake
Analysis Complete : 11-Dec-00
Analyst : B.Patel

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
5898.01	257-PX1, N. Wall	1.00	15.17	77.73	199	ND
5898.02	257-PX2, S. Wall	1.00	15.19	89.06	174	ND
5898.03	257-PX3, E. Wall	1.00	15.20	75.75	204	3383.41
5898.04	257-PX4, W. Wall	1.00	15.44	75.60	201	1431.22
5898.05	257-PX5, Bottom	1.00	15.34	71.35	215	556.69
5898.06	257-PX6, Duplicate	1.00	15.14	75.82	205	1614.91
METHOD BLANK	TBLK442	1.00	15.00	100.00	157	ND

ND = Not Detected
 MDL = Method Detection Limit

Laboratory Authentication Statement

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



Daniel K. Wright
Laboratory Manager

000053

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS

PHONE: (732) 532-6224 FAX: (732) 532-6263

WET-CHEM - METALS - ORGANICS - FIELD SAMPLING

CERTIFICATIONS: NJDEP #13461, NYSDOH #11699



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

Bldg. 257

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time Of Collection	Date Received
257-PX-7 East Wall 5-5.5'	760	Soil	12-Feb-01 15:00	02/12/01
257-PX-8 East Wall 5-5.5'	761	Soil	12-Feb-01 15:20	02/12/01
257-PX-9 Duplicate	762	Soil	12-Feb-01 15:20	02/12/01

ANALYSIS:
FORT MONMOUTH ENVIRONMENTAL LAB
TPHC, %SOLIDS

ENCLOSURE:
CHAIN OF CUSTODY
RESULTS


Daniel Wright Date
Laboratory Director

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Method Summary

NJDEP Method OQA-QAM-025-10/97

Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

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

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

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

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

006001

TPHC Conformance/Non-conformance Summary Report

- | | Indicate
Yes, No, N/A |
|---|--------------------------|
| 1. Method Detection Limits provided. | <u>YES</u> |
| 2. Method Blank Contamination – If yes, list the sample and the Corresponding concentrations in each blank.

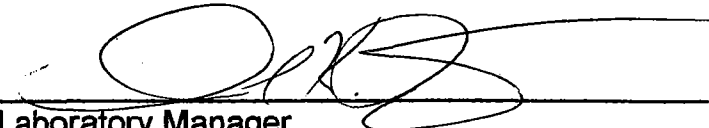
_____ | <u>NO</u> |
| 3. Matrix Spike Results Summary Meet Criteria
(If not met, list the sample and corresponding recovery which falls outside the acceptable range).

_____ | <u>YES</u> |
| 4. Duplicate Results Summary Meet Criteria
(If not met, list the sample and corresponding recovery which falls outside the acceptable range).

_____ | <u>YES</u> |
| 5. IR Spectra submitted for standards, blanks and samples. | <u>NA</u> |
| 6. Chromatograms submitted for standards, blanks and samples if GC fingerprinting was conducted. | <u>YES</u> |
| 7. Analysis holding time met.
(If not met, list number of days exceeded for each sample).

_____ | <u>YES</u> |

Additional comments: _____



Laboratory Manager

2-21-01
Date

000002

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 / NYDOH Certification #11699

Chain of Custody Record

Customer: Dinker Desai					Project No: 00-0537 01-0001		Analysis Parameters					* = Samples Kept <4°C
Phone #: X21475					Location: McGuire AFB BLDG. 257		TPHC	% SOLIDS	VOA+10	VOA ID #	PID Reading	
() DERA (X) OMA UST Assessment					UST#							
Samplers Name / Company : Frank Accorsi/TVS					Sample #							
Lab Sample I.D.	Sample Location	Depth	Date	Time	Type	Bottles	TPHC	% SOLIDS	VOA+10	VOA ID #	PID Reading	Remarks / Preservation Method
760	257-PX7, EAST WALL	5-5.5	2-12-01	1500	SOIL	2	X	X	X	2250	0	ICE
761	257-PX8, EAST WALL	5-5.5	2-12-01	1520	↓	2	X	X	X	2251	0.5	↓
762	257-PX9, DUPLICATE	5-5.5	↓	1520	↓	2	X	X	X	2252	0.5	↓
	TRIP BLANK	-	↓	-	-	1			X	2253	-	↓
OVM sn#580U-64455.343 was calibrated with zero air & w/ 245 ppm Isobutylene read 245 ppm. 1400 2-12-01 FA (time/date & initial)												
Relinquished by (signature): <i>Frank Accorsi</i>		Date/Time: 2-12-01 1535		Received by (signature): <i>[Signature]</i>		Comments: VOA+10 ON 25% > 1,000 PPM TPH, OR HIGHEST.						
Relinquished by (signature):		Date/Time:		Received by (signature):								
Report Type: () Full, () Reduced, (X) Standard, () Screen / non-certified, () EDD							Remarks: Dedicated Sampling Tools Used					
Turnaround time: (X) Standard 2 wks, () Rush Days, () ASAP Verbal Hrs.							All sample points have been GPS? (X) YES () NO () NA					

DS 2/13/01 Extracted

000000

LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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

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

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

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

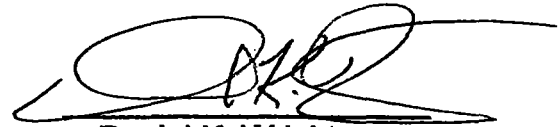
Laboratory Manager or Environmental Consultant's Signature _____
Date 2/21/01

Laboratory Certification #13461

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

Laboratory Authentication Statement

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



Daniel K. Wright
Laboratory Manager

APPENDIX E
Groundwater Analytical Data Package

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS

PHONE: (732) 532-6224 FAX: (732) 532-6263

WET-CHEM - METALS - ORGANICS - FIELD SAMPLING

CERTIFICATIONS: NJDEP #13461, NYSDOH #11699



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

Bldg. 257

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
Trip Blank	4878.01	Aqueous	23-Oct-99	10/23/99
Field Blank	4878.02	Aqueous	23-Oct-99 08:55	10/23/99
B5 1-3'	4878.03	Soil	23-Oct-99 09:30	10/23/99
B5 2-3'	4878.04	Soil	23-Oct-99 09:43	10/23/99
B5 3-3'	4878.05	Soil	23-Oct-99 09:57	10/23/99
B5 4-3'	4878.06	Soil	23-Oct-99 10:04	10/23/99
Field Dup. 3'	4878.07	Soil	23-Oct-99	10/23/99
S1 1-5.5'	4878.08	Soil	23-Oct-99 10:40	10/23/99
S1 1-2-7'	4878.09	Soil	23-Oct-99 11:00	10/23/99
S1 1-3-7'	4878.10	Soil	23-Oct-99 11:20	10/23/99
S1 4-7'	4878.11	Soil	23-Oct-99 11:30	10/23/99
S1-GW-6-10"	4878.12	Aqueous	23-Oct-99 11:35	10/23/99

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

ENCLOSURE:
CHAIN OF CUSTODY
RESULTS

 4-7-00
Daniel Wright/Date
Laboratory Director

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CHAIN OF CUSTODY

000001



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703

Tel (732)532-4359 Fax (732)532-6263 EMail:appleby@mail1.monmouth.army.mil

NJDEP Certification #13461

Chain of Custody Record

Customer: <i>C. APPEBY</i>		Project No:		Analysis Parameters								Comments:	
Phone #: <i>20224</i>		Location: <i>BLOG. 257</i>		U O A + 15	T P H C	% S O L I D	B N + 15				H N U	<i>Cul # 2 HALL O.K. (MO)</i> <i>(SUN/COOL)</i> Remarks / Preservation Method	
() DERA () OMA () Other: _____		Samplers Name / Company: <i>MARK LAURA - TVS - PWS 07</i>											
Lab Sample I.D.	Sample Location	Date	Time	Type	bottles								
<i>4878</i>	<i>1 TRIP BLANK</i>	<i>10-23-99</i>	<i>-</i>	<i>AQ.</i>	<i>2</i>	<i>X</i>						<i>-</i>	<i>HCL</i>
	<i>2 FIELD BLANK</i>	<i>"</i>	<i>0855</i>	<i>"</i>	<i>"</i>	<i>X</i>		<i>X</i>				<i>-</i>	<i>"</i>
<i>*-1</i>	<i>3 B5-1 - 3'</i>	<i>"</i>	<i>0930</i>	<i>SOIL</i>	<i>1</i>		<i>X</i>	<i>X</i>				<i>200 PPM</i>	<i>FUEL OIL ODOR 2402</i>
<i>*</i>	<i>4 " - 2 - "</i>	<i>"</i>	<i>0943</i>	<i>"</i>	<i>"</i>		<i>X</i>	<i>X</i>				<i>100 PPM</i>	<i>" " "</i>
<i>*</i>	<i>5 " - 3 - "</i>	<i>"</i>	<i>0957</i>	<i>"</i>	<i>"</i>		<i>X</i>	<i>X</i>				<i>80 PPM</i>	<i>" " "</i>
<i>*</i>	<i>6 " - 4 - "</i>	<i>"</i>	<i>1004</i>	<i>"</i>	<i>"</i>		<i>X</i>	<i>X</i>				<i>50 PPM</i>	<i>" " "</i>
<i>*</i>	<i>7 FIELD DUP. - "</i>	<i>"</i>	<i>-</i>	<i>"</i>	<i>"</i>		<i>X</i>	<i>X</i>				<i>-</i>	<i>" " "</i>
	<i>8 S1-1 - 5.5'</i>	<i>"</i>	<i>1040</i>	<i>"</i>	<i>"</i>		<i>X</i>	<i>X</i>				<i>0 PPM</i>	<i>"</i>
	<i>9 " - 2 - 7'</i>	<i>"</i>	<i>1100</i>	<i>"</i>	<i>"</i>		<i>X</i>	<i>X</i>				<i>80 PPM</i>	<i>FUEL OIL ODOR "</i>
	<i>10 " - 3 - 7'</i>	<i>"</i>	<i>1120</i>	<i>"</i>	<i>"</i>		<i>X</i>	<i>X</i>				<i>0 PPM</i>	
	<i>11 " - 4 - 7'</i>	<i>"</i>	<i>1130</i>	<i>"</i>	<i>"</i>		<i>X</i>	<i>X</i>				<i>"</i>	
	<i>12 S1-GW - 6-10'</i>	<i>"</i>	<i>1135</i>	<i>AQ.</i>	<i>3</i>	<i>X</i>			<i>X</i>			<i>"</i>	

Relinquished by (signature): <i>[Signature]</i>	Date/Time: <i>10-23-99 7:00</i>	Received by (signature): <i>[Signature]</i>	Relinquished by (signature):	Date/Time:	Received by (signature):
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: Full, Reduced, Standard, Screen / non-certified

Turnaround time: Standard 3 wks, Rush Days, ASAP Verbal Hrs.

Remarks: ** HAND AUGERED LOCATIONS*

000002

CASE NARRATIVE

Site: UST Bldg. 257
Lab ID: 4878

The Field Duplicate was performed on B5-1 3' (Lab ID 4878.03).

000003

METHODOLOGY SUMMARY

000004

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 Method 3510/8270

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 concentrated and internal standards are added. The sample is injected into a GC/MS system. Semi-volatiles are identified and quantitated.

000005

Method Summary

NJDEP Method OOA-QAM-025-10/97

Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

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

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

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

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

000006

**CONFORMANCE/
NON-CONFORMANCE
SUMMARY**

000007

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

Indicate
Yes, No, NA

1. Chromatograms labeled/Compounds identified
(Field samples and method blanks) yes
2. Retention times for chromatograms provided yes
3. GC/MS Tune Specifications
 - a. BFB Meet Criteria yes
 - b. DFTPP Meet Criteria yes
4. GC/MS Tuning Frequency – Performed every 24 hours for 600 series and 12 hours for 8000 series yes
5. GC/MS Calibration – Initial Calibration performed before sample analysis and continuing calibration performed within 24 hours of sample analysis for 600 series and 12 hours for 8000 series yes
6. GC/MS Calibration requirements
 - a. Calibration Check Compounds Meet Criteria yes
 - b. System Performance Check Compounds Meet Criteria yes
7. Blank Contamination – If yes, List compounds and concentrations in each blank: NO
 - a. VOA Fraction _____
 - b. B/N Fraction _____
 - c. Acid Fraction NA
8. Surrogate Recoveries Meet Criteria NO

If not met, list those compounds and their recoveries, which fall outside the acceptable range:

 - a. VOA Fraction _____
 - b. B/N Fraction All low in initial and reanalysis of SI-GW
 - c. Acid Fraction NA

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

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

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

yes

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

12. Analysis Holding Time Met

yes

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

Additional Comments:

Laboratory Manager: _____



Date: 4-7-00

PHC Conformance/Non-conformance Summary Report

- | | Indicate
Yes, No, N/A |
|---|--------------------------|
| 1. Method Detection Limits provided. | <u>yes</u> |
| 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).

_____ | <u>yes</u> |
| 4. Duplicate Results Summary Meet Criteria
(If not met, list the sample and corresponding recovery which falls outside the acceptable range).

_____ | <u>yes</u> |
| 5. IR Spectra submitted for standards, blanks and samples. | <u>NA</u> |
| 6. Chromatograms submitted for standards, blanks and samples if GC fingerprinting was conducted. | <u>yes</u> |
| 7. Analysis holding time met.
(If not met, list number of days exceeded for each sample).

_____ | <u>yes</u> |

Additional comments: _____



Laboratory Manager

4-7-00

Date

LABORATORY CHRONICLE

000011

Laboratory Chronicle

Lab ID: 4878

Site: Bldg. 257

	Date	Hold Time
Date Sampled	10/23/99	NA
Receipt/Refrigeration	10/23,25/99*	NA
Extractions		
1. Base Neutrals	10/25/99	7 Days
2. TPHC	10/25/99	
Analyses		
1. Volatile Organics	10/25/99	14 Days
2. Base Neutrals	10/22,23/99	40 Days
3. TPHC	10/26/99	14 Days

* Samples taken on Saturday 10/23/99, and refrigerated.
Received by laboratory on Monday 10/25/99.

000012

VOLATILE ORGANICS

000013

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

Definition of Qualifiers

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

000014

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

Data File **VC001059.D**
 Operator **Skelton**
 Date Acquired **25 Oct 1999 12:01 pm**

Sample Name **Vblk35**
 Field ID **Vblk35**
 Sample Multiplier **1**

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

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6.2-Sept-9

Qualifiers

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

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

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

Vblk35

Lab Name: FMETL NJDEP#: 13461
Project: 100004 Case No.: 4878 Location: 257 SDG No.: _____
Matrix: (soil/water) WATER Lab Sample ID: Vblk35
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC001059.D
Level: (low/med) LOW Date Received: 10/25/99
% Moisture: not dec. _____ Date Analyzed: 10/25/99
GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

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

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
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Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File **VC001078.D**
 Operator **Skelton**
 Date Acquired **26 Oct 1999 1:19 am**

Sample Name **4878.01**
 Field ID **Trip Blank**
 Sample Multiplier **1**

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

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

Qualifiers

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

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

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

Trip Blank

Lab Name: FMETL NJDEP#: 13461
Project: 100004 Case No.: 4878 Location: 257 SDG No.: _____
Matrix: (soil/water) WATER Lab Sample ID: 4878.01
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC001078.D
Level: (low/med) LOW Date Received: 10/25/99
% Moisture: not dec. _____ Date Analyzed: 10/26/99
GC Column: RTX502 ID: 0.25 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

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

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
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Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File **VC001079.D**
 Operator **Skelton**
 Date Acquired **26 Oct 1999 1:59 am**

Sample Name **4878.02**
 Field ID **Field Blank**
 Sample Multiplier **1**

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

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

Qualifiers

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

Field Blank

Lab Name: FMETL NJDEP#: 13461
 Project: 100004 Case No.: 4878 Location: 257 SDG No.: _____
 Matrix: (soil/water) WATER Lab Sample ID: 4878.02
 Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC001079.D
 Level: (low/med) LOW Date Received: 10/25/99
 % Moisture: not dec. _____ Date Analyzed: 10/26/99
 GC Column: RTX502 ID: 0.25 (mm) Dilution Factor: 1.0
 Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

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

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
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Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File **VC001080.D**
 Operator **Skelton**
 Date Acquired **26 Oct 1999 2:39 am**

Sample Name **4878.12**
 Field ID **S1-GW**
 Sample Multiplier **1**

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

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

Qualifiers

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

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

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

S1-GW

Lab Name: FMETL NJDEP#: 13461
Project: 100004 Case No.: 4878 Location: 257 SDG No.: _____
Matrix: (soil/water) WATER Lab Sample ID: 4878.12
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC001080.D
Level: (low/med) LOW Date Received: 10/25/99
% Moisture: not dec. _____ Date Analyzed: 10/26/99
GC Column: RTX502 ID: 0.25 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

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

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
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BASE NEUTRAL

000042

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name **BNA03328.D**
 Operator **Bhaskar**
 Date Acquired **27-Oct-99**

Sample Name **Sblk313**
 Misc Info **Sblk313 A 991025**
 Sample Multiplier **1**

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

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Semi-Volatile Analysis Report

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Data File Name **BNA03328.D**
 Operator **Bhaskar**
 Date Acquired **27-Oct-99**

Sample Name **Sblk313**
 Misc Info **Sblk313 A 991025**
 Sample Multiplier **1**

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

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

Qualifiers

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

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

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1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID

Sblk313

Lab Name: FMETL Lab Code 13461
Project Bldg.257 Case No.: 4878 Location 257 SDG No.: _____
Matrix: (soil/water) WATER Lab Sample ID: Sblk313
Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA03328.D
Level: (low/med) LOW Date Received: 10/25/99
% Moisture: _____ decanted: (Y/N) N Date Extracted: 10/25/99
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/27/99
Injection Volume: 1.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) N pH: 7

CONCENTRATION UNITS:

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000123-42-2	2-Pentanone, 4-hydroxy-4-methyl	7.32	5	JN

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name **BNA03334.D**
 Operator **Bhaskar**
 Date Acquired **27-Oct-99**

Sample Name **4878.02**
 Misc Info **Field Blank**
 Sample Multiplier **1**

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

000046

Semi-Volatile Analysis Report

Page 2

Data File Name **BNA03334.D**
 Operator **Bhaskar**
 Date Acquired **27-Oct-99**

Sample Name **4878.02**
 Misc Info **Field Blank**
 Sample Multiplier **1**

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

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

Qualifiers

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

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

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID
TENTATIVELY IDENTIFIED COMPOUNDS

Field Blank

Lab Name: FMETL Lab Code 13461
Project Bldg.257 Case No.: 4878 Location 257 SDG.No.: _____
Matrix: (soil/water) WATER Lab Sample ID: 4878.02
Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA03334.D
Level: (low/med) LOW Date Received: 10/25/99
% Moisture: _____ decanted: (Y/N) N Date Extracted: 10/25/99
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/27/99
Injection Volume: 1.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) N pH: 7

CONCENTRATION UNITS:

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
<u>1.</u>	<u>unknown</u>	<u>7.31</u>	<u>8</u>	<u>J</u>

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

Data File Name **BNA03335.D**
 Operator **Bhaskar**
 Date Acquired **27-Oct-99**

Sample Name **4878.12**
 Misc Info **S1-GW**
 Sample Multiplier **1**

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

Semi-Volatile Analysis Report

Page 2

Data File Name **BNA03335.D**
 Operator **Bhaskar**
 Date Acquired **27-Oct-99**

Sample Name **4878.12**
 Misc Info **S1-GW**
 Sample Multiplier **1**

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

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

Qualifiers

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

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

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID

S1-GW

Lab Name: FMETL Lab Code 13461
 Project Bldg.257 Case No.: 4878 Location 257 SDG No.: _____
 Matrix: (soil/water) WATER Lab Sample ID: 4878.12
 Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA03335.D
 Level: (low/med) LOW Date Received: 10/25/99
 % Moisture: _____ decanted: (Y/N) N Date Extracted: 10/25/99
 Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/27/99
 Injection Volume: 1.0 (uL) Dilution Factor: 1.0
 GPC Cleanup: (Y/N) N pH: 7

CONCENTRATION UNITS:

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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

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

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

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

Laboratory Manager or Environmental Consultant's Signature

Date 4/7/00

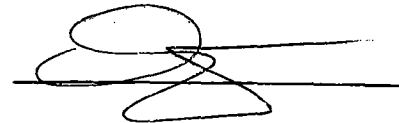
Laboratory Certification #13461

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

000114

Laboratory Authentication Statement

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



**Daniel K. Wright
Laboratory Manager**

000115

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS

PHONE: (732) 532-6224 FAX: (732) 532-6263

WET-CHEM - METALS - ORGANICS - FIELD SAMPLING

CERTIFICATIONS: NJDEP #13461, NYSDOH #11699



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

Bldg. 257

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
Bldg. 257	4975.01	Aqueous	03-Dec-99 13:30	12/03/99

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

ENCLOSURE:
CHAIN OF CUSTODY
RESULTS



4-8-00
Daniel Wright/Date
Laboratory Director

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**CHAIN
OF
CUSTODY**

000001



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703

Tel (732)532-4359 Fax (732)532-6263 EMail:appleby@mail1.monmouth.army.mil

NJDEP Certification #13461

Chain of Custody Record

Customer: <u>D. DeABT</u>		Project No:		Analysis Parameters						Comments:		
Phone #: <u>X21475</u>		Location: <u>Bldg 257 UST</u>		NO ₂ S	Xylene	BN ₂ S					HCL / 4°C	
() DERA (X) OMA () Other: _____		2nd level										
Samplers Name / Company: <u>Corey McLoimach, TUS</u>				Sample #								
Lab Sample I.D.	Sample Location	Date	Time	Type	bottles							Remarks / Preservation Method
<u>4975-01</u>	<u>Bldg 257</u>	<u>12/3/99</u>	<u>1330</u>	<u>AQ</u>	<u>3</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
Relinquished by (signature): <u>Corey McLoimach</u>	Date/Time: <u>12/3/99 1500</u>	Received by (signature): <u>J. Appleby</u>	Relinquished by (signature):	Date/Time:	Received by (signature):							
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):							
Report Type: () Full, () Reduced, (X) Standard, () Screen / non-certified			Remarks:									
Turnaround time: (X) Standard 3 wks, () Rush _____ Days, () ASAP Verbal _____ Hrs.			<u>Shows Trip/FP from 289; Dye from 977 Site date.</u>									

000002

METHODOLOGY SUMMARY

000003

Method Summary

EPA Method 624

Gas Chromatographic Determination of Volatiles in Water

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

EPA Method 3510/8270

Gas Chromatographic Determination of Semi-volatiles in Water

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

**CONFORMANCE
NON-CONFORMANC
SUMMARY**

000005

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

Indicate
Yes, No, N/A

1. Chromatograms Labeled/Compounds Identified (Field Samples and Method Blanks) yes

2. Retention times for chromatograms provided yes

3. GC/MS Tune Specifications yes
 - a. BFB Meet Criteria yes
 - b. DFTPP Meet Criteria yes

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

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

6. GC/MS Calibration Requirements yes
 - a. Calibration Check Compounds Meet Criteria yes
 - b. System Performance Check Compounds Meet Criteria yes

7. Blank Contamination - If yes, List compounds and concentrations in each blank: yes
 - a. VOA Fraction Methylene Chloride @ 2.83 ppb
 - b. B/N Fraction _____
 - c. Acid Fraction _____

8. Surrogate Recoveries Meet Criteria yes

If not met, list those compounds and their recoveries, which fall outside the acceptable range:

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

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

9. Matrix Spike/Matrix Spike Duplicate Recoveries Meet Criteria yes

(If not met, list those compounds and their recoveries, which fall outside the acceptable range)

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

GC/MS Analysis Conformance/Non-Conformance Summary (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

yes

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


12. Analysis Holding Time Met

yes

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

Additional Comments:

Laboratory Manager :



Date:

4-8-00

000007

LABORATORY CHRONICLE

000008

Laboratory Chronicle

Lab ID: 4975

Site: Bldg. 257

	Date	Hold Time
Date Sampled	12/03/99	NA
Receipt/Refrigeration	12/03/99	NA
Extractions		
1. Base Neutral	12/06/99	14 days
Analyses		
1. Volatile Organics	12/06,07/99	14 days
2. Base Neutral	12/07/99	40 days

000009

VOLATILE ORGANICS

000010

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

Definition of Qualifiers

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

000011

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

Data File **VB004963.D**
 Operator **Skelton**
 Date Acquired **6 Dec 1999 10:02 am**

Sample Name **Vblk151**
 Field ID **Vblk151**
 Sample Multiplier **1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride	11.44	65495	2.83 ug/L	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
156-59-4	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

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

Qualifiers

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

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

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID.

Vblk151

Lab Name: FMETL Project: 100004
NJDEP#: 13461 Case No.: 4975 Location: 257 SDG No.: _____
Matrix: (soil/water) WATER Lab Sample ID: Vblk151
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB004963.D
Level: (low/med). LOW Date Received: 12/3/99
% Moisture: not dec. _____ Date Analyzed: 12/6/99
GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

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

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
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Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File **VB004986.D**
 Operator **Skelton**
 Date Acquired **7 Dec 1999 1:39 am**

Sample Name **4975.01**
 Field ID **Bldg257**
 Sample Multiplier **1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone	9.24	91783	12.35 ug/L	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
156-59-4	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

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

Qualifiers

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID.

Bldg257

Lab Name: FMETL Project: 100004
NJDEP#: 13461 Case No.: 4975 Location: 257 SDG No.: _____
Matrix: (soil/water) WATER Lab Sample ID: 4975.01
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB004986.D
Level: (low/med) LOW Date Received: 12/3/99
% Moisture: not dec. _____ Date Analyzed: 12/7/99
GC Column: RTX502 ID: 0.25 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

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

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
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**BASE
NEUTRAL**

000031

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

Data File Name **BN04072.D**
 Operator **Bhaskar**
 Date Acquired **7-Dec-99**

Sample Name **Sblk325**
 Misc Info **Sblk325 A 991206**
 Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifiers
110-86-1	Pyridine			not detected	NLE	1.83 ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.91 ug/L	
62-53-3	Aniline			not detected	NLE	1.63 ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.28 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	1.21 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	1.19 ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	1.02 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	1.13 ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	1.39 ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.80 ug/L	
67-72-1	Hexachloroethane			not detected	10	1.50 ug/L	
98-95-3	Nitrobenzene			not detected	10	0.97 ug/L	
78-59-1	Isophorone			not detected	100	1.01 ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	1.21 ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	1.22 ug/L	
91-20-3	Naphthalene			not detected	NLE	1.27 ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.09 ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.71 ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	1.08 ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	1.32 ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	1.01 ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.79 ug/L	
131-11-3	Dimethylphthalate			not detected	7000	1.52 ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.96 ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.81 ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.79 ug/L	
83-32-9	Acenaphthene			not detected	400	1.10 ug/L	
132-64-9	Dibenzofuran			not detected	NLE	1.00 ug/L	
121-14-2	2,4-Dinitrotoluene			not detected	10	0.87 ug/L	
84-66-2	Diethylphthalate			not detected	5000	1.62 ug/L	
86-73-7	Fluorene			not detected	300	0.99 ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	1.10 ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.05 ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	1.01 ug/L	
103-33-3	Azobenzene			not detected	NLE	0.67 ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.76 ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.94 ug/L	
85-01-8	Phenanthrene			not detected	NLE	1.23 ug/L	
120-12-7	Anthracene			not detected	2000	1.12 ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	1.70 ug/L	
206-44-0	Fluoranthene			not detected	300	1.64 ug/L	

Semi-Volatile Analysis Report Page 2

Data File Name **BN04072.D**
 Operator **Bhaskar**
 Date Acquired **7-Dec-99**

Sample Name **Sblk325**
 Misc Info **Sblk325 A 991206**
 Sample Multiplier **1**

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

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

Qualifiers

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

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

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Field ID:

TENTATIVELY IDENTIFIED COMPOUNDS

Sblk325

Lab Name: FMETL Lab Code 13461

Project: UST Case No.: 4975 Location: Bld.257 SDG No: _____

Matrix: (soil/water) WATER Lab Sample ID: Sblk325

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN04072.D

Level: (low/med) LOW Date Received: 12/3/99

% Moisture: _____ decanted: (Y/N) N Date Extracted: 12/6/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/7/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

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

CONCENTRATION UNITS:

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name **BN04075.D**
 Operator **Bhaskar**
 Date Acquired **7-Dec-99**

Sample Name **4975.01**
 Misc Info **Bldg.257**
 Sample Multiplier **1.25**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifiers
110-86-1	Pyridine			not detected	NLE	2.29 ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	1.14 ug/L	
62-53-3	Aniline			not detected	NLE	2.04 ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.60 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	1.51 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	1.49 ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	1.28 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	1.41 ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	1.74 ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	1.00 ug/L	
67-72-1	Hexachloroethane			not detected	10	1.88 ug/L	
98-95-3	Nitrobenzene			not detected	10	1.21 ug/L	
78-59-1	Isophorone			not detected	100	1.26 ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	1.51 ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	1.53 ug/L	
91-20-3	Naphthalene			not detected	NLE	1.59 ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.36 ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.89 ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	1.35 ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	1.65 ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	1.26 ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.99 ug/L	
131-11-3	Dimethylphthalate			not detected	7000	1.90 ug/L	
208-96-8	Acenaphthylene			not detected	NLE	1.20 ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	1.01 ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.99 ug/L	
83-32-9	Acenaphthene			not detected	400	1.38 ug/L	
132-64-9	Dibenzofuran			not detected	NLE	1.25 ug/L	
121-14-2	2,4-Dinitrotoluene			not detected	10	1.09 ug/L	
84-66-2	Diethylphthalate	16.03	85934	4.42 ug/L	5000	2.03 ug/L	D
86-73-7	Fluorene			not detected	300	1.24 ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	1.38 ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.31 ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	1.26 ug/L	
103-33-3	Azobenzene			not detected	NLE	0.84 ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.95 ug/L	
118-74-1	Hexachlorobenzene			not detected	10	1.18 ug/L	
85-01-8	Phenanthrene			not detected	NLE	1.54 ug/L	
120-12-7	Anthracene			not detected	2000	1.40 ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	2.13 ug/L	
206-44-0	Fluoranthene			not detected	300	2.05 ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name **BN04075.D**
Operator **Bhaskar**
Date Acquired **7-Dec-99**

Sample Name **4975.01**
Misc Info **Bldg.257**
Sample Multiplier **1.25**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifiers
92-87-5	Benzidine			not detected	50	5.23 ug/L	
129-00-0	Pyrene			not detected	200	1.56 ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	1.31 ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	1.49 ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	2.19 ug/L	
218-01-9	Chrysene			not detected	20	1.73 ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	2.18 ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.80 ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	1.56 ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.61 ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	1.31 ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	1.04 ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.80 ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	1.05 ug/L	

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

Qualifiers

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

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

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field ID:

Bldg.257

Lab Name: FMETL Lab Code 13461
Project: UST Case No.: 4975 Location: Bld.257 SDG No: _____
Matrix: (soil/water) WATER Lab Sample ID: 4975.01
Sample wt/vol: 800 (g/ml) ML Lab File ID: BN04075.D
Level: (low/med) LOW Date Received: 12/3/99
% Moisture: _____ decanted: (Y/N) N Date Extracted: 12/6/99
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/7/99
Injection Volume: 1.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: FMETL Lab Code 13461
 Project 100004 Case No.: 4975 Location Bld.257 SDG No.: _____
 Lab File ID: BNA03321.D DFTPP Injection Date: 10/27/99
 Instrument ID: BNA#2 DFTPP Injection Time: 9:32

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

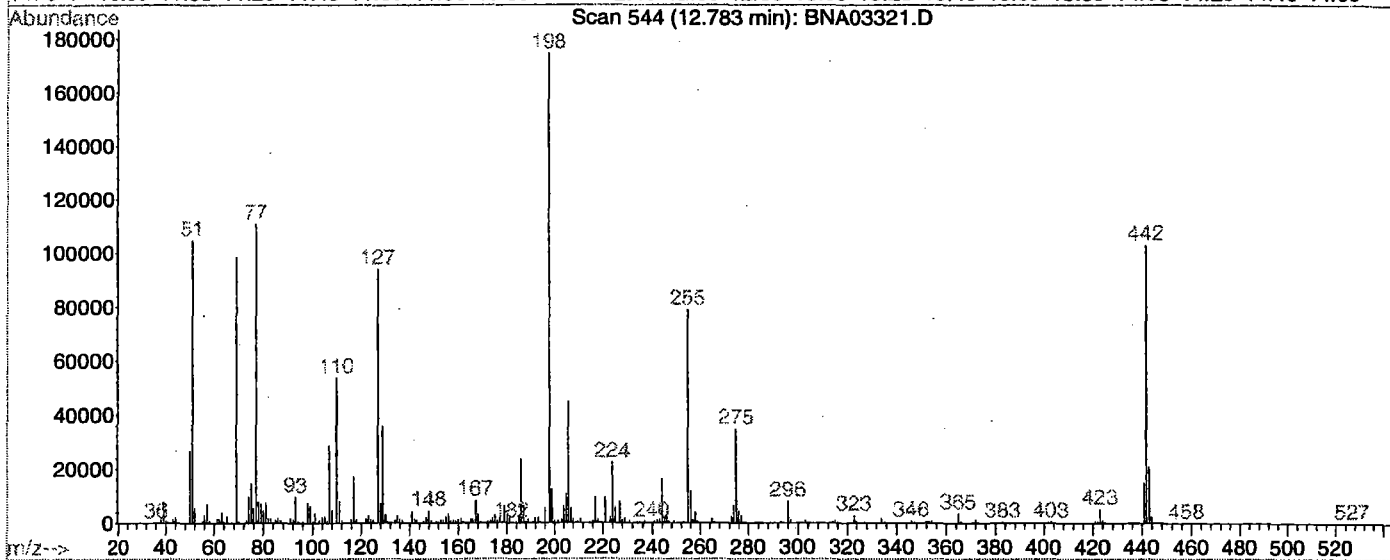
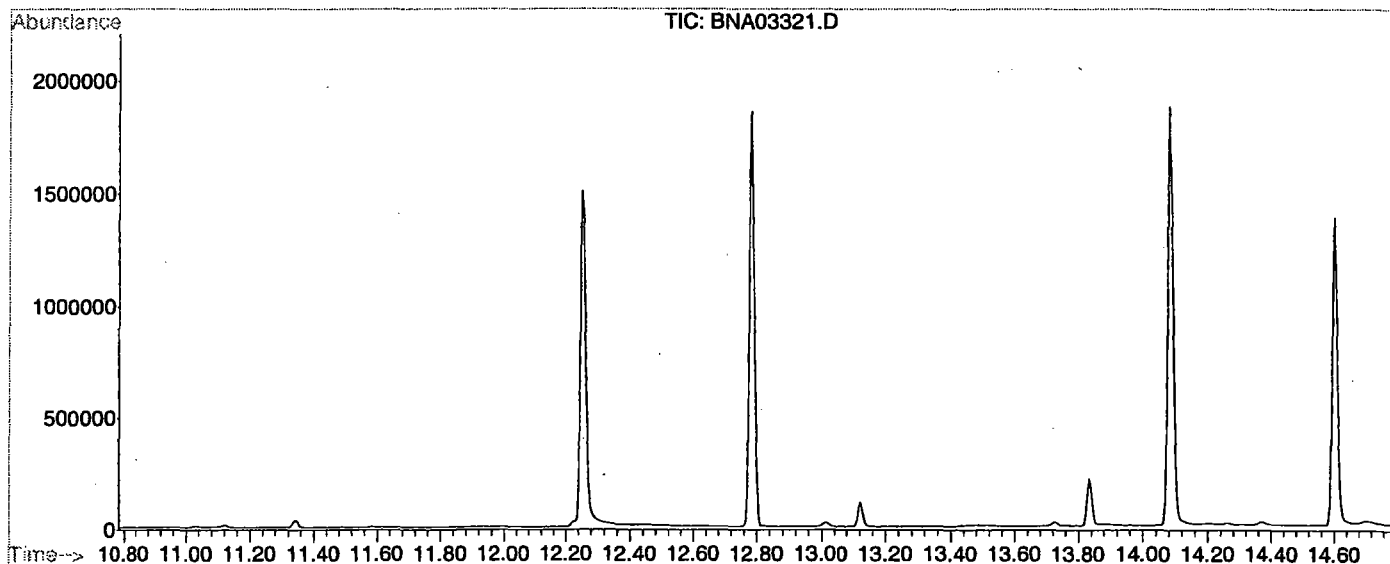
1-Value is % mass 69

2-Value is % mass 442

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

	FIELD ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD050	50 PPM CAL	BNA03325.D	10/27/99	12:40
02	4871.04DUP	4871.04DUP	BNA03332.D	10/27/99	18:28
03	4871.04MS	4871.04MS	BNA03333.D	10/27/99	19:17

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



Spectrum Information: Scan 544

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

5B

**SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)**

Lab Name: FMETL Lab Code 13461
 Project: UST Case No.: 4975 Location: Bld.257 SDG No: _____
 Lab File ID: BN04064.D DFTPP Injection Date: 11/29/99
 Instrument ID: SVoa#1 DFTPP Injection Time: 13:16

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 80.0% of mass 198	48.2
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 Relative abundance	59.4
70	Less than 2.0% of mass 69	0.3 (0.5)1
127	25.0 - 75.0% of mass 198	44.0
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.8
275	10.0 - 30.0% of mass 198	15.3
365	Greater than 0.75% of mass 198	1.4
441	Present, but less than mass 443	6.7
442	40.0 - 110.0% of mass 198	41.9
443	15.0 - 24.0% of mass 442	8.2 (19.6)2

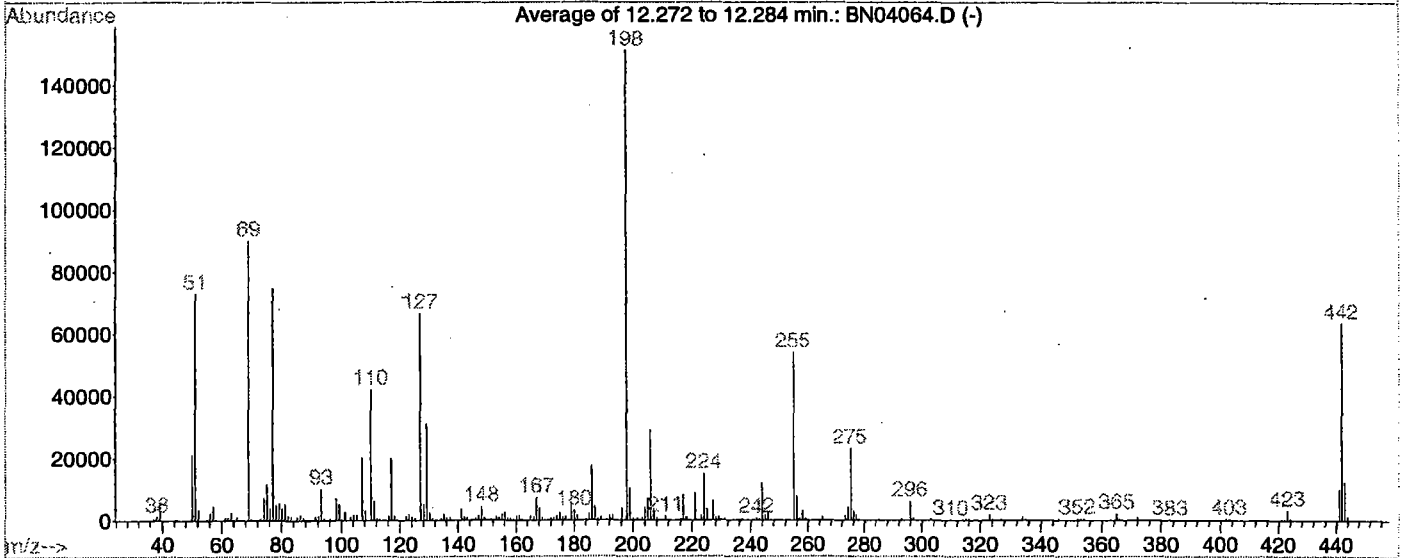
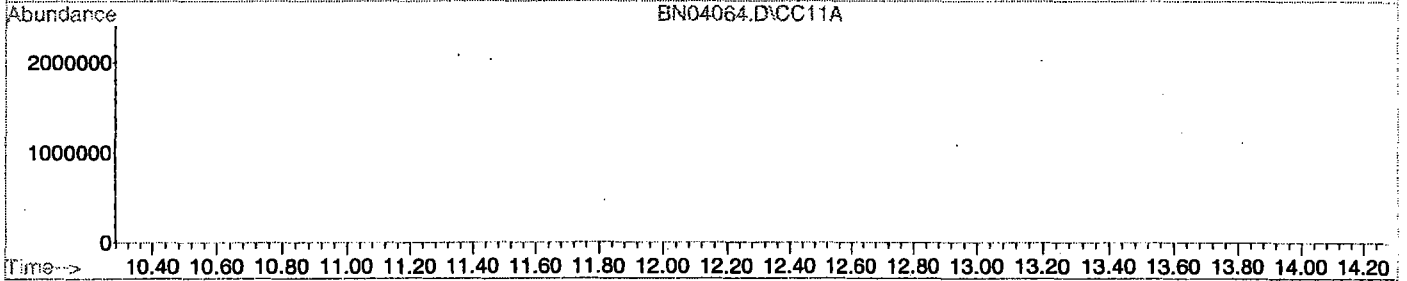
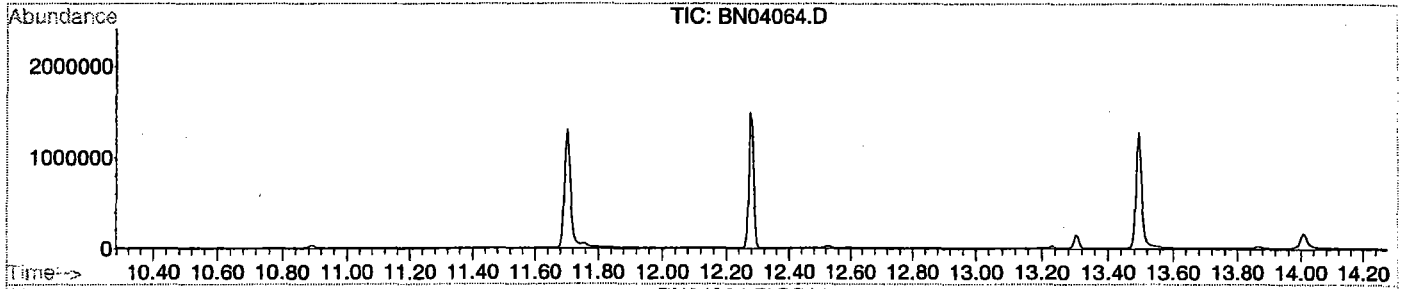
1-Value is % mass 69

2-Value is % mass 442

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

	Field ID:	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD120	120 PPM CAL	BN04065.D	11/29/99	13:47
02	SSTD080	80 PPM CAL	BN04066.D	11/29/99	14:37
03	SSTD050	50 PPM CAL	BN04067.D	11/29/99	15:21
04	SSTD020	20 PPM CAL	BN04068.D	11/29/99	16:06
05	SSTD010	10 PPM CAL	BN04069.D	11/29/99	16:52

Data File : C:\HPCHEM\1\DATA\991129\BN04064.D Vial: 99
 Acq On : 29 Nov 1999 1:16 pm Operator: Bhaskar
 Sample : DFTPP TUNE Inst : GC/MS Ins
 Misc : 50 NG/2UL Multiplr: 1.00
 MS Integration Params: RTEINT.P GC Integration Params: rteint2.p
 Method : C:\HPCHEM\1\METHODS\M62538.M (RTE Integrator)
 Title : BNA Calibration



Spectrum Information: Average of 12.272 to 12.284 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	48.2	73005	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	59.4	90010	PASS
70	69	0.00	2	0.5	426	PASS
127	198	40	60	44.0	66547	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	151413	PASS
199	198	5	9	6.8	10318	PASS
275	198	10	30	15.3	23106	PASS
365	198	1	100	1.4	2185	PASS
441	443	1	99	81.1	10084	PASS
442	198	40	100	41.9	63450	PASS
443	442	17	23	19.6	12433	PASS

LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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

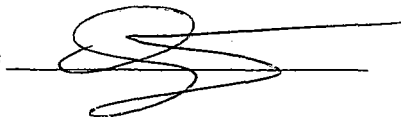
The following Laboratory Deliverables checklist and Non-Conformance Summary shall be included in the data submission. All deviations from the accepted methodology and procedures, of performance values outside acceptable ranges shall be summarized in the Non-Conformance Summary. The Technical Requirements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

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

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

Laboratory Manager or Environmental Consultant's Signature

Date 4/18/00



Laboratory Certification #13461

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

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Laboratory Authentication Statement

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



Daniel K. Wright
Laboratory Manager

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APPENDIX F

Photographs



APRIL 8, 1998

PHOTOGRAPHIC LOG

UST NO. 81533-200

**Building 257
Main Post-West
Fort Monmouth**

VERSAR
Engineers, Managers, Scientists & Planners
Bristol, PA