

**United States Army**  
Fort Monmouth, New Jersey

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

***Building 811  
Main Post-West Area***

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**NJDEP UST Registration No. 81533-132  
Dicar No. 97-11-05-1445-58**

**January 2000**

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

**BUILDING 811**

**MAIN POST-WEST AREA  
NJDEP UST REGISTRATION NO. 81533-132  
DICAR NO. 97-11-05-1445-58**

**JANUARY 2000**

**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. 4435-018**

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## EXECUTIVE SUMMARY

### UST Closure

On November 5, 1997, a fiberglass underground storage tank (UST) was closed by removal in accordance with New Jersey Department of Environmental Protection (NJDEP) underground storage tank closure procedures at the Main Post-West area of the U.S. Army Fort Monmouth, Fort Monmouth, New Jersey. The UST, NJDEP Registration No. 81533-132 (Fort Monmouth ID No. 811), was located southeast of Building 811. UST No. 81533-132 was a 2,000-gallon No. 2 fuel oil UST. The fill port was located directly above the tank.

### Site Assessment

The site assessment was performed by U.S. Army personnel in accordance with the NJDEP *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E) and the NJDEP *Field Sampling Procedures Manual*. The sampling and laboratory analysis conducted during the site assessment were performed in accordance with Section 7:26E-2.1 of the *Technical Requirements for Site Remediation*. Soils surrounding the tank were screened visually and with air monitoring equipment for evidence of contamination. Following removal, the UST was inspected for corrosion holes. No holes were noted in the UST. Stained soil was observed and appeared to be contaminated. Based on the inspection of the excavation, Directorate of Public Works (DPW) concluded that a discharge was associated with this UST. The NJDEP hotline was notified and the case was assigned DICAR No. 97-11-05-1445-58. Approximately 233 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 250.80 mg/kg. Groundwater was encountered at 6.0 feet below ground surface and no sheen was observed.

All post excavation soil samples collected from the UST excavation at Building 811 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 water table, two (2) groundwater samples were collected at Building 811. On November 6, 1999, and December 11, 1999, Building 811 was sampled for volatile organic compounds calibrated for xylene plus 15 tentatively identified compounds (VOC's), and semivolatile organic compounds plus 15 tentatively identified compounds (SVOC's). 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. 81533-132 at Building 811.

# 1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

## 1.1 OVERVIEW

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 81533-132, was closed at Building 811 at the Main Post-West area of U.S. Army Fort Monmouth, Fort Monmouth, New Jersey on November 5, 1997. Refer to the site location map on Figure 1. This report presents the results of the Department of Public Works' (DPW) implementation of the UST Decommissioning/Closure Plan approved by the NJDEP on October 30, 1995. The UST was a fiberglass 2,000-gallon tank containing No. 2 fuel oil.

Decommissioning activities for UST No. 81533-132 complied with all applicable Federal, State, and Local laws and ordinances in effect at the date of decommissioning. These laws included but were not limited to N.J.A.C. 7:14B-1 et seq., N.J.A.C. 5:23-1 et seq., and Occupational Safety and Health Administration (OSHA) 1910.146 & 1910.120. All permits including but not limited to the NJDEP approved Decommissioning/Closure Plan were posted onsite for inspection. DPW personnel who are registered and certified by the NJDEP for performing UST closure activities conducted the decommissioning activities. Closure of UST No. 81533-132 proceeded under the approval of the NJDEP Bureau of Underground Storage Tanks (NJDEP-BUST). The NJDEP Closure Approval Letter and signed Site Assessment Summary form for UST No. 81533-132 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-BUST regulations. The applicable NJDEP-BUST regulations at the date of closure were the *Interim Closure Requirements for Underground Storage Tank Systems* (N.J.A.C. 7:14B-1 et seq. October 1990 and revisions dated November 1, 1991).

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

## 1.2 SITE DESCRIPTION

Building 811 is located in the Main Post-West area of the Fort Monmouth Army Base. UST No. 81533-132 was located southeast of Building 811 and appurtenant copper piping ran approximately nine (9) feet northwest from the UST to Building 811. 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 811. 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. A geological map is provided on Figure 1A.

#### 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 811 is located approximately 200 feet east of Husky Brook, the nearest water body. Based on the Main Post topography, the groundwater flow in the area of Building 811 is anticipated to be to the west.

### **1.3 HEALTH AND SAFETY**

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

### **1.4 REMOVAL OF UNDERGROUND STORAGE TANK**

#### **1.4.1 General Procedures**

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

#### **1.4.2 Underground Storage Tank Excavation and Cleaning**

Prior to UST decommissioning activities, surficial soil was removed to expose the UST and associated piping. All free product present in the piping was drained into the UST, and the UST was purged to remove vapors prior to cutting and removal of the piping. After removal of the associated piping, a manway was made in the UST to allow for proper cleaning. The UST was completely emptied of all liquids prior to removal from the ground. Approximately 1,500 gallons of liquid from the UST and its associated piping were transported by Lionetti Oil Recovery Company to Lionetti Oil Recovery Company, Inc. facility, a NJDEP-approved petroleum recycling and disposal company located in Old Bridge, New Jersey. Refer to Appendix C for the waste manifest.

The UST was cleaned prior to removal from the excavation in accordance with the NJDEP-BUST regulations. After the UST was removed from the excavation, it was staged on polyethylene sheeting and examined for holes. No holes were observed during the inspection by the Sub-Surface Evaluator. Soils surrounding the UST were screened visually for evidence of contamination. Stained soil was observed and appeared to be contaminated. Approximately 233 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 250.80 mg/kg. Groundwater was encountered at 6.0 feet below ground surface and no sheen was observed. See Figure 3 for a cross-sectional view of the excavated area.

### **1.5 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL**

The steel tank was transported in compliance with all applicable regulations and laws to Mazza & Sons, Inc., Recycling Division. Refer to Appendix D for the UST disposal certificate.

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 233 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 6.0 feet below ground surface and no sheen was observed.

## 2.0 SITE INVESTIGATION ACTIVITIES

### 2.1 OVERVIEW

The Site Investigation was managed and carried out by U.S. Army DPW personnel. All analyses were performed and reported by U.S. Army Fort Monmouth Environmental Laboratory, 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-BUST document *Interim Closure Requirements for Underground Storage Tank Systems* (October 1990 and revisions dated November 1, 1991) which was the applicable regulation at the date of the closure. The Fort Monmouth DPW Environmental Office maintains all records of the Site Investigation activities.

The following Parties participated in Closure and Site Investigation Activities:

- Subsurface Evaluator: Charles Appleby  
Employer: U.S. Army, Fort Monmouth  
Phone Number: (908) 532-0989  
NJDEP Certification No.: 2056
- Analytical Laboratory: U.S. Army Fort Monmouth Environmental Laboratory  
Contact Person: Daniel K. Wright  
Phone Number: (908) 532-4359  
NJDEP Company Certification No.: 13461
- Hazardous Waste Hauler: Lorco Petroleum Services  
Contact Person: Gary LoBello  
Phone Number: (732) 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 6.0 feet below ground surface and no sheen was observed.

## 2.3 SOIL SAMPLING

On August 27, 1998, following the removal of the UST, associated piping, and potentially contaminated soil from the excavated area, post-excitation soil samples 1, 2, 3, 4 (DUP 3), and 5 were collected from a total of four (4) locations of the UST excavation. Samples 1, 2, and 5 were collected along the sidewall at a depth of 6.0 feet bgs. Excavation floor samples 3 and 4 (DUP 3) were collected at a depth of 7.0 feet bgs. All samples were analyzed for TPHC and total solids.

On August 31, 1998, following the removal of potentially contaminated soil from the excavated area, post-excitation soil samples 6, 7 (DUP 6), 8, 9, 10, 11, 12, 13, 14, and 15 were collected from a total of nine (9) locations of the UST excavation. Sidewall samples 6, 7 (DUP 6), 9, 11, 12, 14, and 15 were collected at a depth of 6.0 feet bgs. Excavation floor samples 8, 10, and 13 were collected at a depth of 7.0 feet bgs. All samples were analyzed for total petroleum hydrocarbons (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-excitation soil samples were collected using NJDEP *Field Sampling Procedures Manual* (1992) standard sampling procedures. Following soil sampling activities, the samples were chilled and delivered to U.S. Army Fort Monmouth Environmental Laboratory located in Fort Monmouth, New Jersey, for analysis.

## 2.4 GROUNDWATER SAMPLING

On November 6, 1999, and December 11, 1999, Building 811 was sampled for volatile organic compounds calibrated for xylene plus 15 tentatively identified compounds (VOC's), and semivolatile organic compounds plus 15 tentatively identified compounds (SVOC's). Sampling and analysis were performed in accordance with the NJDEP *Field Sampling Procedures Manual* and the *Technical Requirements For Site Remediation*. Refer to Appendix F for the field sampling documentation.

## 3.0 CONCLUSIONS AND RECOMMENDATIONS

### 3.1 SOIL SAMPLING RESULTS

To evaluate soil conditions following removal of the UST and associated piping, post-excavation soil samples were collected on August 27 and 31, 1998 from a total of thirteen (13) locations. All samples were analyzed for TPHC and total solids. The post-excavation sampling results were compared to the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 mg/kg (N.J.A.C. 7:26D and revisions dated February 3, 1994). 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 analytical data package is provided in Appendix E.

All post-excavation soil samples collected on August 27 and 31, 1998, from the UST excavation and from below piping associated with the UST contained concentrations of TPHC below the NJDEP soil cleanup criteria. Samples contained TPHC concentrations ranging from non-detect to 250.80 mg/kg.

### 3.2 GROUNDWATER SAMPLING RESULTS

The sample collected from Building 811 on November 6, 1999, contained bis(2-ethylhexyl)phthalate at 119.74 ug/l. No other compounds were detected. The bis(2-ethylhexyl)phthalate concentration exceeds the GWQS on account of laboratory contamination.

No compounds were detected in the sample collected from Building 811 on December 11, 1999.

A summary of the analytical results and comparison to the NJDEP groundwater cleanup criteria is provided in Table 3 and the groundwater sampling locations are shown on Figure 5. The analytical data package is provided in Appendix F. The full data package, including quality control is on file at U.S. Army Fort Monmouth located in Fort Monmouth, New Jersey.

Groundwater samples collected on November 6, 1999, and December 11, 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 811 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 811 on November 6, 1999, and December 11, 1999, groundwater quality at Building 811 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. 81533-132 at Building 811.

# TABLES



TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES  
 BUILDING 811, MAIN POST-WEST AREA  
 FORT MONMOUTH, NEW JERSEY

Page 1 of 3

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	NJDEP Method
**1	8/27/98	8/28/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
2	8/27/98	8/28/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
3	8/27/98	8/28/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
4	8/27/98	8/28/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
5	8/27/98	8/28/98	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 811, MAIN POST-WEST AREA  
FORT MONMOUTH, NEW JERSEY

Page 2 of 3

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Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	NJDEP Method
6	8/31/98	9/1/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
7	8/31/98	9/1/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
8	8/31/98	9/1/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
9	8/31/98	9/1/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
10	8/31/98	9/1/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
11	8/31/98	9/1/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
12	8/31/98	9/1/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
13	8/31/98	9/1/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
14	8/31/98	9/1/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
15	8/31/98	9/1/98	Soil	Post-Excavation	TPHC	OQA-QAM-025

Note:

\* TPHC Total Petroleum Hydrocarbons

TABLE 1

SUMMARY OF SAMPLING ACTIVITIES  
 BUILDING 811, MAIN POST-WEST AREA  
 FORT MONMOUTH, NEW JERSEY

Page 3 of 3

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Sampling Method**
4923.01	11/6/99	11/9/99	Aqueous	Groundwater	VOCs, SVOCs	PPNDP
5008.01	12/11/99	12/13/99	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 811, MAIN POST-WEST AREA  
 FORT MONMOUTH, NEW JERSEY

Page 1 of 2

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
***1/6.0'	3841.01	8/27/98	8/28/98	Total Solid	--	--	85.99 %	--	--
				TPHC	180	yes	1234.18	10,000	No
2/6.0'	3841.02	8/27/98	8/28/98	Total Solid	--	--	75.60 %	--	--
				TPHC	206	yes	ND	10,000	No
3/7.0'	3841.03	8/27/98	8/28/98	Total Solid	--	--	61.30 %	--	--
				TPHC	256	yes	ND	10,000	No
4/7.0'	3841.04	8/27/98	8/28/98	Total Solid	--	--	61.00 %	--	--
				TPHC	251	yes	250.80	10,000	No
5/6.0'	3841.05	8/27/98	8/28/98	Total Solid	--	--	86.27 %	--	--
				TPHC	176	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
- Not Applicable

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS  
BUILDING 811, MAIN POST-WEST AREA  
FORT MONMOUTH, NEW JERSEY

Page 2 of 2

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
6/6.0'	3845.01	8/31/98	9/1/98	Total Solid	--	--	82.45 %	--	--
				TPHC	183	yes	ND	10,000	No
7/6.0'	3845.02	8/31/98	9/1/98	Total Solid	--	--	82.08 %	--	--
				TPHC	183	yes	ND	10,000	No
8/7.0'	3845.03	8/31/98	9/1/98	Total Solid	--	--	82.10 %	--	--
				TPHC	189	yes	ND	10,000	No
9/6.0'	3845.04	8/31/98	9/1/98	Total Solid	--	--	75.91 %	--	--
				TPHC	201	yes	ND	10,000	No
10/7.0'	3845.05	8/31/98	9/1/98	Total Solid	--	--	79.15 %	--	--
				TPHC	188	yes	ND	10,000	No
11/6.0'	3845.06	8/31/98	9/1/98	Total Solid	--	--	81.51 %	--	--
				TPHC	187	yes	ND	10,000	No
12/6.0'	3845.07	8/31/98	9/1/98	Total Solid	--	--	75.87 %	--	--
				TPHC	199	yes	ND	10,000	No
13/7.0'	3845.08	8/31/98	9/1/98	Total Solid	--	--	75.87 %	--	--
				TPHC	194	yes	ND	10,000	No
14/6.0'	3845.09	8/31/98	9/1/98	Total Solid	--	--	77.68 %	--	--
				TPHC	198	yes	ND	10,000	No
15/6.0'	3845.10	8/31/98	9/1/98	Total Solid	--	--	76.27 %	--	--
				TPHC	194	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
- Not Applicable

Table 3  
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Matrix: (soil/water) WATER  
 Date Sampled: 11/6/99 Location: 811 Lab Sample ID: 4923.01(811-1)

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 3  
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Matrix: (soil/water) WATER  
 Date Sampled: 11/6/99 Location: 811 Lab Sample ID: 34923.01(811-1)

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 3  
SEMI-VOLATILE ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Matrix: (soil/water) WATER  
 Date Sampled: 11/6/99 Location: 811 Lab Sample ID: 4923.01(811-1)

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 3  
SEMI-VOLATILE ANALYSIS DATA SHEET

Lab Name: FMETLNJDEP # 13461Matrix: (soil/water) WATERDate Sampled: 11/6/99Location: 811Lab Sample ID: 4923.01(811-1)

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	119.74 ug/L	--	30	yes
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

Note:

\* Compound exceeds criteria due to laboratory contamination

Table 3  
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Matrix: (soil/water) WATER  
 Date Sampled: 12/11/99 Location: 811 Lab Sample ID: 5008.01(811-1)

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 3  
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETLNJDEP # 13461Matrix: (soil/water) WATERDate Sampled: 12/11/99Location: 811Lab Sample ID: 5008.01(811-1)

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 3  
SEMI-VOLATILE ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Matrix: (soil/water) WATER  
 Date Sampled: 12/11/99 Location: 811 Lab Sample ID: 5008.01(811-1)

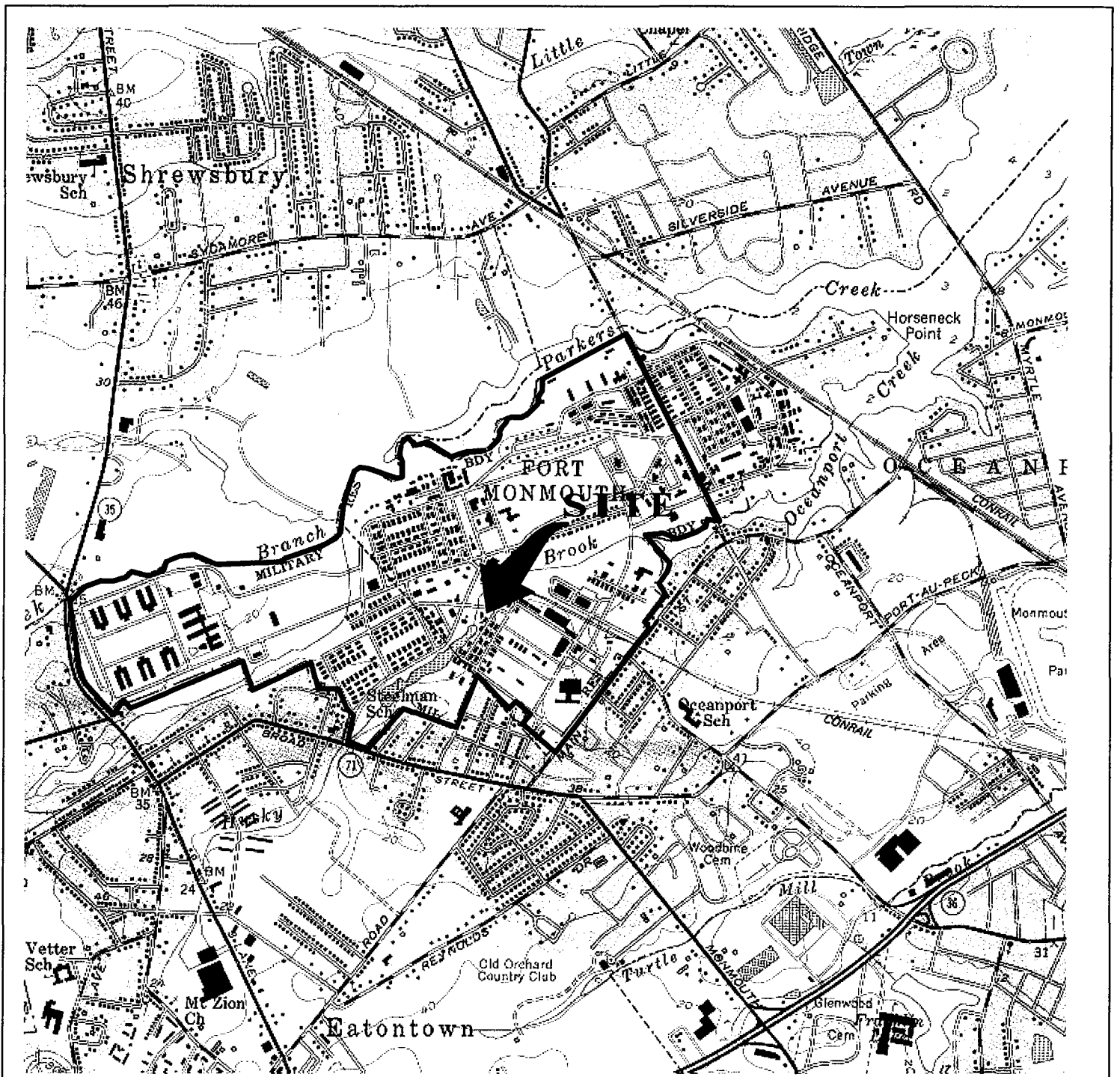
CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
110-86-1	Pyridine	1.83	Not Detected	--	nle	no
62-75-9	N-nitroso-dimethylamine	0.91	Not Detected	--	20	no
62-53-3	Aniline	1.63	Not Detected	--	nle	no
111-44-4	bis(2-Chloroethyl)ether	1.28	Not Detected	--	10	no
541-73-1	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 3  
SEMI-VOLATILE ANALYSIS DATA SHEET

Lab Name: FMETLNJDEP # 13461Matrix: (soil/water) WATERDate Sampled: 12/11/99Location: 811Lab Sample ID: 5008.01(811-1)

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

# FIGURES



**FIGURE 1**

LOCATION MAP  
 Building 811  
 Main-Post West  
 Fort Monmouth Army Base  
 Monmouth County, NJ

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

Scale: 1" = 2000'

Date: NOV 1997

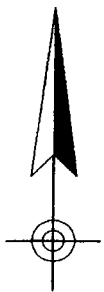
LONG BRANCH, N. J.

40073-C8-TF-024

1954

PHOTOREVISED 1981

DMA 6164 I SE - SERIES V822



NEW JERSEY  
 QUADRANGLE LOCATION





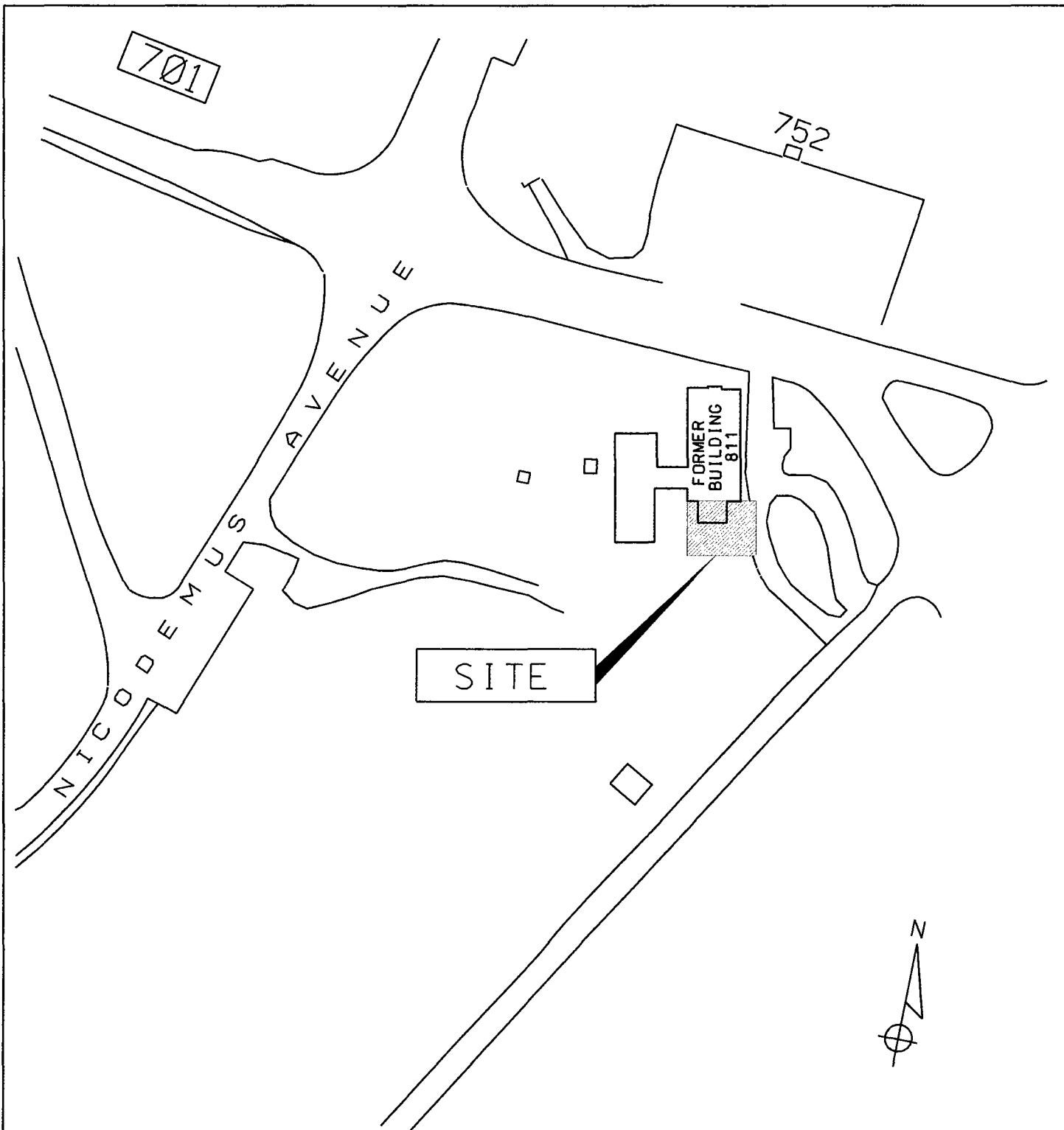


FIGURE 2  
 SITE MAP  
 BUILDING 811  
 FORT MONMOUTH ARMY BASE  
 MONMOUTH COUNTY, NJ

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

SCALE: 1"=100'

DATE: NOV 1997

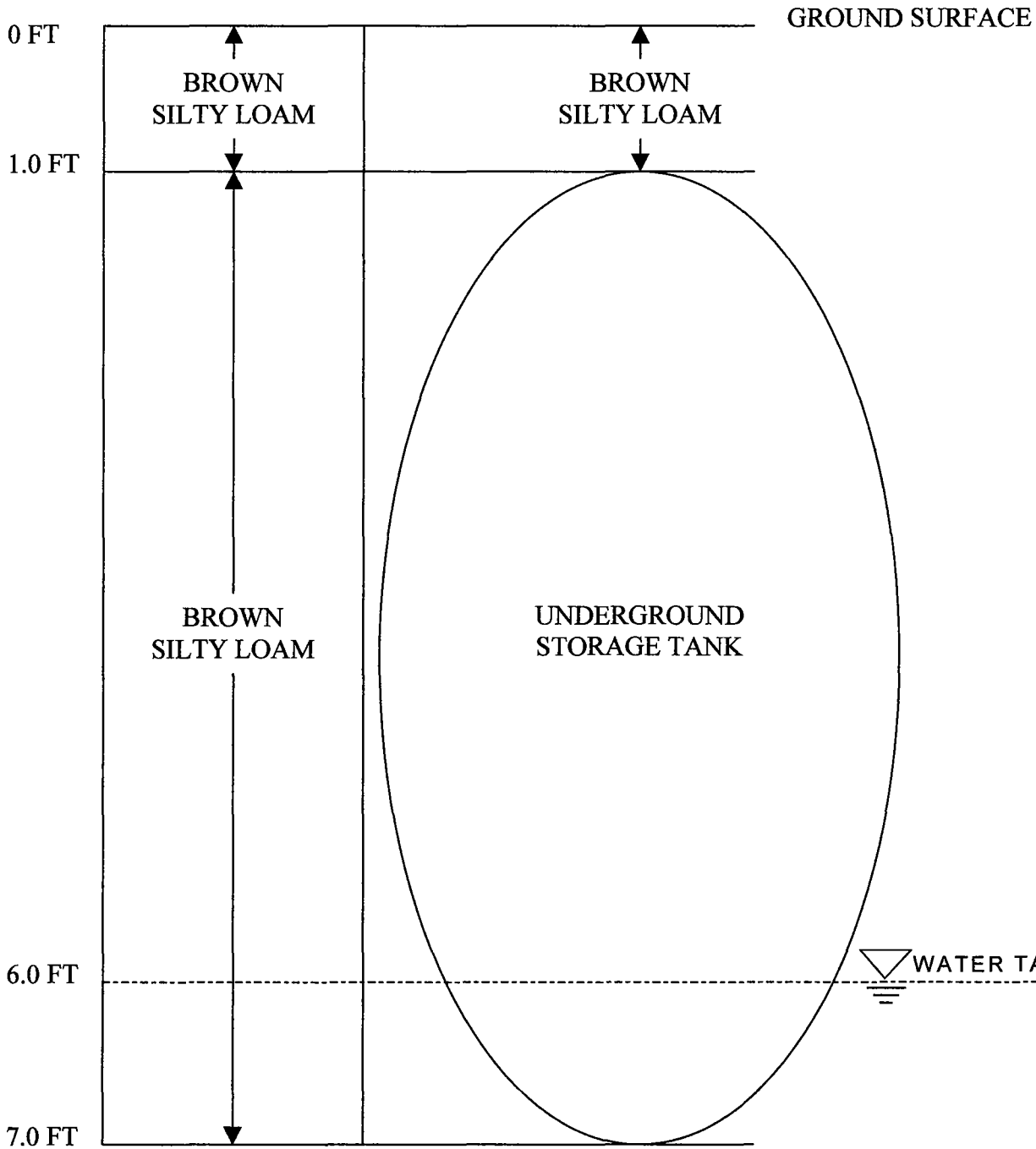


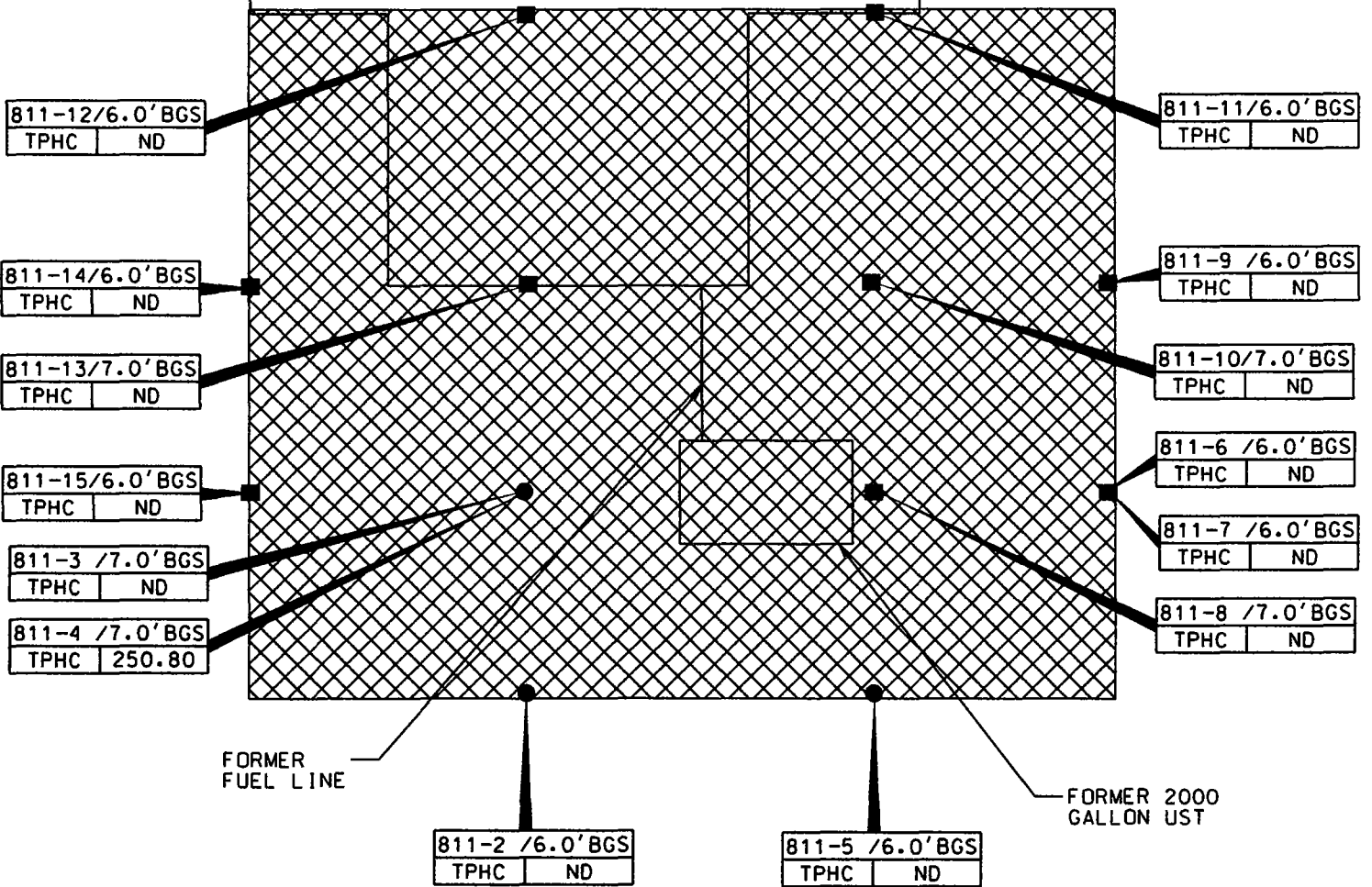
FIGURE 3  
 CROSS SECTIONAL VIEW  
 BUILDING 811  
 FORT MONMOUTH ARMY BASE  
 MONMOUTH COUNTY, NJ

**VERSAR**  
 Engineers, Managers, Scientists & Planners  
 Bristol, Pennsylvania

SCALE: NTS

DATE: NOV 1997

# FORMER BUILDING 811



**LEGEND**

- SOIL SAMPLE LOCATION (AUGUST 27, 1998)
- SOIL SAMPLE LOCATION (AUGUST 31, 1998)
- ▨ LIMIT OF EXCAVATION (AUGUST 31, 1998)

**NOTES:**

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

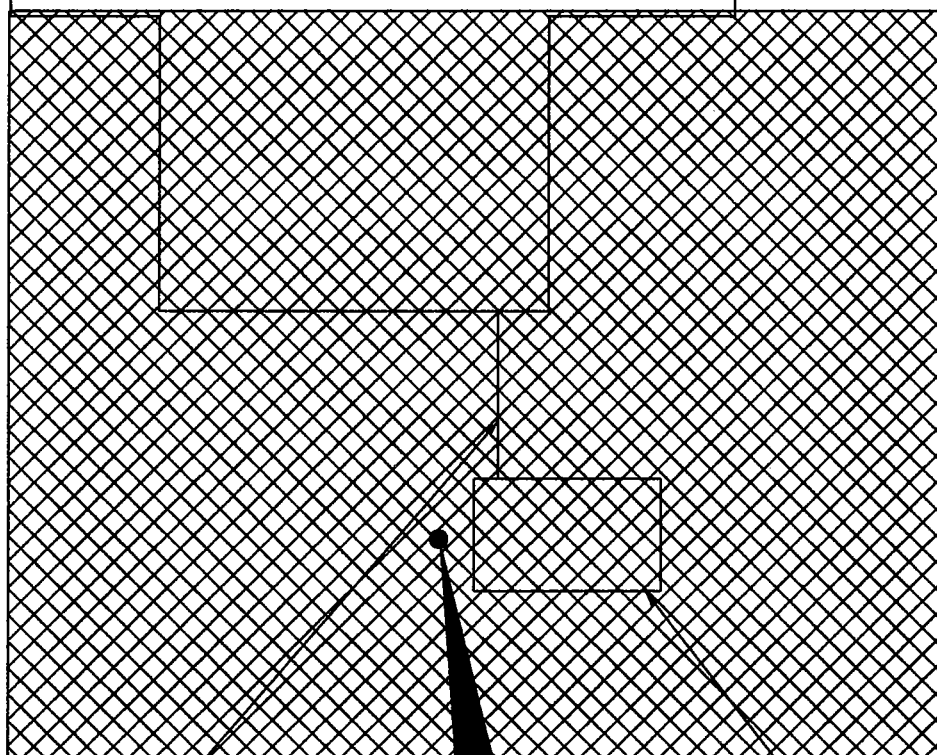
**FIGURE 4**  
SOIL SAMPLING LOCATION MAP  
BUILDING 811  
FORT MONMOUTH ARMY BASE  
MONMOUTH COUNTY, NJ

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

SCALE: 1"=10'

DATE: NOV 1997

# FORMER BUILDING 811



FORMER FUEL LINE

FORMER 2000 GALLON UST

SAMPLING LOCATION: SAMPLING DEPTH: SAMPLING DATE:	HIGHER OF NJDEP GWOS AND POL	BLDG 811 6-11' BGS 11/6/99	BLDG 811 6-11' BGS 12/11/99
VOLATILE ORGANIC COMPOUNDS:		ND	ND
SEMIVOLATILE ORGANIC COMPOUNDS:			
BIS(2-ETHYLHEXYL)PHTHALATE:	30 UG/L	119.74 UG/L	ND



## LEGEND

- GROUNDWATER SAMPLE LOCATION (NOVEMBER 6, 1999 AND DECEMBER 11, 1999)
- ▨ LIMIT OF EXCAVATION (AUGUST 31, 1998)

## NOTES:

1. ND=INDICATES COMPOUND NOT DETECTED
2. NLE= NO LIMIT ESTABLISHED
3. ALL RESULTS IN UG/L
4. BGS = BELOW GROUND SURFACE

FIGURE 5  
GROUNDWATER SAMPLING MAP  
BUILDING 811  
FORT MONMOUTH ARMY BASE  
MONMOUTH COUNTY, NJ

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

SCALE: 1"=10'

DATE: Nov. 1997

**APPENDIX A**  
**NJDEP-BUST CLOSURE APPROVAL LETTER**



State of New Jersey

Department of Environmental Protection

Christine Todd Whitman  
Governor

Robert C. Shinn, Jr.  
Commissioner

Mr. James Ott  
SELFM-EH-EV  
Department of the Army  
Headquarters CECOM Fort Monmouth  
Fort Monmouth, NJ 077703-5000

OCT 30 1995

Dear Mr. Ott:

Re: UST Closure Approval Applications  
Fort Monmouth Army Base  
Tinton Falls, Monmouth County

The NJDEP has reviewed the Underground Storage Tank Closure Applications listed below and we have determined that the Closure Plans for these Number 2 fuel oil tanks are consistent with NJDEP requirements. This letter shall serve as the closure approval for the following USTs:

AREA	REGISTRATION NO. - SIZE	BLDG NO.	UST NO.	TANK SAMP	LINE SAMP	REMOVAL DATE	REPORT DATE
CW - East	0090010 - 1000	64A	3	4/1	0	11/7/95	3/8/96
CW - East	0090010 - 1000	485	57	4/1	0	11/9/95	3/8/96
CW - West	0081533 - 1000	288	62	4/1	0	11/9/95	3/11/96
CW - West	0081533 - 1000	811	132	4/1	1	11/14/95	3/15/96
CW - West	0081533 - 1000	900A	141	4/1	0	11/15/95	3/15/96
CW - East	0090010 - 1000	900B	142	4/1	0	11/16/95	3/15/96

If you should have any questions or require additional information, please do not hesitate to contact me at (609) 633-1455.

Sincerely,

Ian R. Curtis, Case Manager  
Bureau of Federal Case Management

cc. Gene Lesinski, FTMMTH

RPCEBFCMIFTMMTH32.JRC



State of New Jersey  
Department of Environmental Protection and Energy  
Division of Responsible Party Site Remediation  
CN 028  
Trenton, NJ 08625-0029  
ATTN: UST Program  
(609) 984-3156

For State Use Only

Date Rec'd. \_\_\_\_\_  
Auth. \_\_\_\_\_  
Routing \_\_\_\_\_  
UST NO. \_\_\_\_\_

**STANDARD REPORTING FORM**  
for reporting activities at an UST facility:

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> General Facility Information Changes | <input type="checkbox"/> Sale or Transfer         |
| <input checked="" type="checkbox"/> Closure (Abandonment or Removal)     | <input type="checkbox"/> Substantial Modification |
| <input type="checkbox"/> Temporary Closure                               | <input type="checkbox"/> Financial Responsibility |
| <input type="checkbox"/> Change in Service                               | <input type="checkbox"/> Address Change Only      |

Check ONLY One Type of Activity - Complete Form For That Activity

(More than one tank can be listed per activity)

\*\*\* NOTE \*\*\* ALL NEW tank installations at existing registered facilities must submit a Registration Questionnaire for the new tanks.

Answer questions 1 through 5 and others as applicable.

1. Company name and address (as it appears on registration questionnaire):

U.S. ARMY - FORT MONMOUTH  
DPW - BUILDING 173  
FORT MONMOUTH NJ 07703

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

3. Contact person for this activity:

Charles Appleby  
Telephone Number: (732) 532-6224

4. The identification number of the affected tank as it appears in Question Number 12 on the Registration Questionnaire:

Bldg 811 0081533

5. Registration Number (if known):

UST - 132

6. For GENERAL FACILITY INFORMATION changes (address, telephone, contact person, etc. - supply NEW information only):

- a. Facility name: \_\_\_\_\_  
b. Facility location: \_\_\_\_\_  
c. Owner's mailing address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
NJ \_\_\_\_\_  
d. Block: \_\_\_\_\_ Lot: \_\_\_\_\_  
e. Contact person (facility operator): \_\_\_\_\_  
f. Contact telephone number: (\_\_\_\_\_) \_\_\_\_\_ - \_\_\_\_\_  
g. Other (Specify): \_\_\_\_\_

(OVER)

7. For CLOSURE (abandonment or removal - check all that apply):

a.  Abandonment Date: \_\_\_/\_\_\_/\_\_\_ Case No: \_\_\_\_\_

Attach the necessary implementation schedule (3 copies) and all documentation needed for abandonment per N.J.A.C. 7:14B-9.1 (d).

b.  Removal Date: 11/5/97 Case No. 97-1105-1445-58

Attach the necessary implementation schedule (3 copies).

8. For CHANGES IN HAZARDOUS SUBSTANCES STORED (check all that apply):

a.  Temporary Closure (12 month maximum time - see N.J.A.C. 7:14B-9.1(b)). Remove all hazardous substances; leave tank in place.

b.  Change in service from a regulated substance to a non-regulated substance. Tank must be cleaned and site assessment performed per N.J.A.C. 7:14B-9.1(e).

c.  Changes in service from one regulated hazardous substance to another regulated hazardous substance.

Tank No. \_\_\_\_\_ Old \_\_\_\_\_ New \_\_\_\_\_

Tank No. \_\_\_\_\_ Old \_\_\_\_\_ New \_\_\_\_\_

Tank No. \_\_\_\_\_ Old \_\_\_\_\_ New \_\_\_\_\_

(Attach additional sheets if more space is needed)

9. For TRANSFER OF OWNERSHIP: Effective Date: \_\_\_/\_\_\_/\_\_\_

a. New Owner (operator) \_\_\_\_\_

b. New Facility Name \_\_\_\_\_

\_\_\_\_\_ NJ \_\_\_\_\_

\_\_\_\_\_ County \_\_\_\_\_

c. Closing Attorney \_\_\_\_\_ Tele: (\_\_\_\_) \_\_\_\_\_

10. For SUBSTANTIAL MODIFICATIONS (to include any retrofitted activity - e.g. the addition of spill/overflow protection, monitoring systems, cathodic protection, etc.):

a. Type of Modification \_\_\_\_\_ Date: \_\_\_/\_\_\_/\_\_\_

b. \* NOTE \* Substantial modifications require a permit under N.J.A.C. 7:14B-10.

11. For changes in FINANCIAL RESPONSIBILITY to (check appropriate changes and attach copies of new information):

a. Policy Type:

d. Company/Carrier:

b. Policy Number:

e. Expiration Date:

c. Other:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

(Specify)

NOTE: ALL appropriate and applicable permits, licenses and certificates required by the above activity(ies) from any local, state and/or federal agencies must be obtained separately from this notification.

CERTIFICATION

\*\*\*This registration form shall be signed by the highest ranking individual at the facility with overall responsibility for the facility (N.J.A.C. 7:14B-23 (a) 1).\*\*\*

I certify under penalty of law that the information provided in this document is true, accurate and complete. I am aware that there are significant civil and criminal penalties for submitting false, inaccurate or incomplete information, including fines and/or imprisonment.\*

Signature: [Signature]

Name (print or type): JAMES OTT

Title: DIRECTOR - DEPT OF PUBLIC WORKS Date: 11/5/97



**APPENDIX B**

**SITE ASSESSMENT SUMMARY**

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 : 81533-132 (7 digits)
Incident Report Number 97 - 11 - 05 - 1445 - 58 (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: Charles Appleby Signature: See signed subsurface removal log UST Cert. No.: 2056

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.
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: [Handwritten Signature]

Company Name: U.S. Army Fort Monmouth Date: 7/31/00

**US ARMY, SELFM-PW-EV**  
**DAILY UST SUBSURFACE REMOVAL LOG**

BLDG.#: 811 REG.#: 81533-130 CLOSURE#: Fed. Care Mgt.  
 DATE: 11/5/97 TOA: 1000 TOD: 1045  
 GOV. SSE: C. Appleby NJDEP CERT.#: 2056  
 REMOVAL CONTRACTOR: \_\_\_\_\_  
 CLOSURE SUPERVISOR: Gary Formello NJDEP CERT.#: \_\_\_\_\_  
 WEATHER: Sunny ~ 70°F

ACTIVITY	YES / NO
THE SUPERVISOR (CLOSURE CERT.) WAS ON-SITE DURING ALL CLOSURE RELATED ACTIVITIES	YES
THE SSE WAS ON-SITE DURING UST REMOVAL AND <del>SITE SCREENING AND SAMPLING ACTIVITIES</del>	YES
ALL ON-SITE PERSONNEL HAD TRAINING IAW ALL SAFETY REQUIREMENTS (E.G. 29CFR)	YES
A CONFINED ENTRY PERMIT WAS COMPLETED AND POSTED ON-SITE BY THE CONTRACTOR	NA
THE UST WAS PLACED ONTO PLASTIC, SCRAPED OFF, INSPECTED FOR HOLES AND PHOTOGRAPHED	YES
A DISCHARGE WAS REPORTED TO THE NJDEP (609-292-7172), CASE# <u>97-11051445-53</u>	YES
PHOTOS HAVE UST#, BLDG. #, DATE, TIME, NAME OF SSE AND DESCR. WRITTEN ON BACK	NA
<del>GROUNDWATER</del> <sup>Standing</sup> WAS ENCOUNTERED AT <u>2</u> FEET BG, A SHEEN (WAS/WAS NOT) OBSERVED ON GW	
IF OVA/Hnu WAS USED: WAS IT CAL. AND FOUND TO BE OPERATIONAL (cal. data on COC)	NA
IF SAMPLES WERE TAKEN: COC, SCALED SITE MAP (VERT. SOIL HORIZONS AND PLOT PLAN)	NA
ALL SAMPLE COLLECTION ACTIVITIES WERE AS DESCRIBED IN THE NJDEP FSPM, 1992	NA
ALL SAMPLING WAS BIASED TOWARD HIGHEST OVA/FID RECORDED SITES IAW 7:26E-3.6 et seq.	NA
ALL PETROL. CONT. SOILS WERE SECURED FROM THE WEATHER BY CLOSE OF BUSINESS TODAY	YES
THE SSE AUTHORIZED BACKFILLING THE EXCAVATION (STONE TO 1" ABOVE GROUNDWATER)	NO
ADDITIONAL NOTES WERE TAKEN AND ARE RECORDED ON THE BACK OF THIS FORM	NO
THE FOLLOWING DOCUMENTS WERE ADDED TO THE PROJECT FOLDER TODAY: (CIRCLE EACH) SCRAP TICKET, CSE PERMIT, ACCIDENT REPORT, HAZ. WASTE MANIFEST, DAILY UST CLOSURE LOG, SCALED SITE MAP (SAMPLING), SRF-CLOSURE, CHAIN OF CUSTODY, SOIL ANALYTICAL RESULTS, CLEAN FILL TICKETS (IN YDS <sup>3</sup> ), PHOTOGRAPHS (UST, EXCAVATION, SAMPLING POINTS)	

CHECK ALL BOXES, LEAVE NO BLANKS

I certify under penalty of law that tank decommissioning activities were performed in compliance with N.J.A.C. 7:14B-9.2(b)3 and 7:26 et seq.. I am aware that there are significant penalties for submitting false, inaccurate, or incomplete information, including fines and/or imprisonment.

SIGNATURE: \_\_\_\_\_

DATE: 11/5/97

ca\ms\ust\removal\sitessls.doc

FRP - 2K good Condition.

Leak Report to NJDEP - #2 Fuel oil,

Remediation.

**APPENDIX C**  
**WASTE MANIFEST**



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

B 811

STANDARD  
COLLECTION  
ORDER FORM

181971

GENERATOR/LOCATION SALES ORDER #

BILL TO (IF DIFFERENT FROM LOCATION)

15906

NAME: U.S. ARMY COMMUNICATIONS ELECTRONICS COMMAND  
INFORMATION/ATTENTION LINE: MAIN POST  
DELIVERY ADDRESS: 40 J. FALLON BLVD 173 ATTN: SELEM-DW-EV  
CITY: FORT MONMOUTH STATE: NJ ZIP: 07703  
PHONE NUMBER: (732) 532-6223  
USA EPA ID NO. (IF APPLICABLE): NJ3210020597

NAME: TECOM VINNELL SERVICE  
INFORMATION/ATTENTION LINE: ATTN: GAIL SUTTON  
DELIVERY ADDRESS: PO Box 60  
CITY: FORT MONMOUTH STATE: NJ ZIP: 07703  
PHONE NUMBER: PURCHASE ORDER NUMBER: 298-00130  
MANIFEST NUMBER: NHZ008113

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		1125				
40300	ANTI-FREEZE REMOVAL						
40600	USED OIL FILTER REMOVAL						
40501	OILY WATER DISPOSAL		1325				
40502	SLUDGE DISPOSAL						
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 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 \_\_\_\_\_  
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: DINKER, M. DESAI Title: \_\_\_\_\_  
Signature: \_\_\_\_\_ Date: 11-5-97  
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.

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: Dan Mackay Signature: \_\_\_\_\_ Date: 11-5-97  
LORCO REPRESENTATIVE

CUSTOMER

**APPENDIX D**  
**UST DISPOSAL CERTIFICATE**

**APPENDIX E**

**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  
98-0932  
Bldg. 811  
SMC

Project # 3841  
Date Rec. 08/28/98  
Date Compl. 08/31/98  
Released by:

  
Date: 10/5/98  
Daniel K. Wright  
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 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

<b>Customer: Charles Appleby</b>				Project No: 98-0932 UST (REM.)		Analysis Parameters						Comments:  it is reaching 5 Remarks / Preservation Method	
Phone #: X26224				Location: Former Building 811		TPHC	% SOLIDS						
( ) DERA (X) OMA ( ) Other: _____													
<b>Samplers Name / Company : Dave Daniels (SMC)</b>				Sample #									
Lab Sample I.D.	Sample Location	Date	Time	Type	bottles								
3841.01	811-1 (6')	8-27-98	11:00	soil	1	X	X					20 ice	
02	811-2 (6')	↓	11:05	↓	↓	↓	↓					0 ↓	
03	811-3 (7')	↓	11:10	↓	↓	↓	↓					0 ↓	
04	811-4 (7')	↓	11:15	↓	↓	↓	↓					0 ↓	
05	811-5 (6')	↓	11:20	↓	↓	↓	↓					5 ↓	
Relinquished by (signature): <i>Dave Daniels</i>		Date/Time: 8-28-98	Received by (signature): <i>Jackie Home</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: Calibration → zero gas = 0.0 ppm isobutylene → 100ppm at 9.37							
Turnaround time: ( ) Standard 4 wks, (X) Rush _____ Days, (X) ASAP Verbal _____ Hrs.													


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

<b>Client :</b>	<b>U.S. Army</b>	<b>Lab. ID # :</b>	<b>3841</b>
	<b>DPW. SELFM-PW-EV</b>	<b>Date Rec'd:</b>	<b>28-Aug-98</b>
	<b>Bldg. 173</b>	<b>Analysis Start:</b>	<b>28-Aug-98</b>
	<b>Ft. Monmouth, NJ 07703</b>	<b>Analysis Complete:</b>	<b>31-Aug-98</b>

<b>Analysis:</b>	<b>OQA-QAM-025</b>	<b>UST Reg. #:</b>	
<b>Matrix:</b>	<b>Soil</b>	<b>Closure #:</b>	
<b>Analyst:</b>	<b>D.DEINHARDT</b>	<b>DICAR #:</b>	
<b>Inst. ID.</b>	<b>GC TPHC INST. #1</b>	<b>Injection Volume</b>	<b>1 ul</b>
<b>Column Type</b>	<b>RTX 5</b>	<b>Column ID</b>	<b>0.32 um</b>
<b>Ext. Meth:</b>	<b>Shake</b>	<b>Location #:</b>	<b>BLDG. 811</b>

<b>Sample</b>	<b>Field ID</b>	<b>Dilution Factor</b>	<b>Weight (g)</b>	<b>% Solid</b>	<b>MDL (mg/kg)</b>	<b>TPHC Result (mg/kg)</b>
<b>3841.01</b>	811-1(6')	<b>1.00</b>	15.17	85.99	<b>180</b>	<b>1234.18</b>
<b>3841.02</b>	811-2(6')	<b>1.00</b>	15.12	75.60	<b>206</b>	<b>ND</b>
<b>3841.03</b>	811-3(7')	<b>1.00</b>	14.99	61.30	<b>256</b>	<b>ND</b>
<b>3841.04</b>	811-4(7')	<b>1.00</b>	15.37	61.00	<b>251</b>	<b>250.80</b>
<b>3841.05</b>	811-5(6')	<b>1.00</b>	15.44	86.27	<b>176</b>	<b>ND</b>
<b>METHOD BLANK</b>	TBLK 154	<b>1.00</b>	15.00	100.00	<b>157</b>	<b>ND</b>

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 12/5/93

Laboratory Certification #13461

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

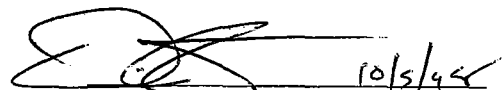
**US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY  
NJDEPE # 13461**

**REPORT OF ANALYSIS**

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

**Project:** Total Petroleum Hydrocarbons  
98-0932  
Bldg. 811  
SMC

**Project #** 3845  
**Date Rec.** 08/31/98  
**Date Compl.** 09/02/98  
**Released by:**

  
**Daniel K. Wright** Date: 10/5/98  
**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 gyrotory shaker table. The agitation rate is set to 400rpm and the sample is shaken for 30 minutes. The flask is the removed from the table and the particulate matter is allowed to settle. The extract is transferred to a Teflon capped vial. A second 25mL of Methylene Chloride is added to the flask and shaken for an additional 30 minutes. The flask is again removed and allowed to settle. The extracts are combined in the vial then transferred to a 1mL autosampler vial.

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

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

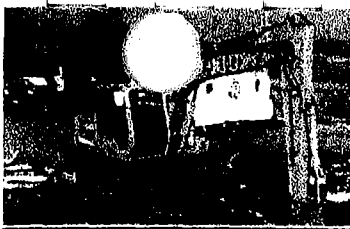
## PHC Conformance/Non-conformance Summary Report

- |   | Indicate<br>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.<br>_____<br>_____   | <u>NO</u>                |
| 3. Matrix Spike Results Summary Meet Criteria<br>(If not met, list the sample and corresponding recovery which falls outside the acceptable range).<br>_____<br>_____ | <u>yes</u>               |
| 4. Duplicate Results Summary Meet Criteria<br>(If not met, list the sample and corresponding recovery which falls outside the acceptable range).<br>_____<br>_____    | <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.<br>(If not met, list number of days exceeded for each sample).<br>_____<br>_____  | <u>yes</u>               |

Additional comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

  
\_\_\_\_\_  
Laboratory Manager

10/5/96  
\_\_\_\_\_  
Date



# Fort Monmouth Environmental Testing Laboratory

Bldg. 173. SELFM-PW-EV. Fort Monmouth, NJ 07703  
 Tel (732)532-4359 Fax (732)532-3484 EMail:appleby@doim6.monmouth.army.mil  
 NJDEP Certification #13461

## Chain of Custody Record

<b>Customer: Charles Appleby</b>				Project No: 98-0932 UST (REM.)		Analysis Parameters					Comments:			
Phone #: X26224				Location: Former Building 811		TPHC	% SOLIDS							
( ) DERA (X) OMA ( ) Other: _____														
<b>Samplers Name / Company : Dave Daniels (SMC)</b>				Sample #		H-Vu Readings Remarks / Preservation Method								
Lab Sample I.D.	Sample Location	Date	Time	Type	bottles									
3845 01	811-6 (6')	8-31-98	11:30	Soil	1	X	X						0	Ice
02	811-7 (6')	↓	11:35	↓	↓	↓	↓	↓	↓	↓	↓	↓	0	
03	811-8 (7')		11:40										0	
04	811-9 (6')		11:45										0	
05	811-10 (7')		11:50										0	
06	811-11 (6')		11:55										0	
07	811-12 (6')		12:00										0	
08	811-13 (7')		12:05										0	
09	811-14 (6')		12:10										0	
10	811-15 (6')		12:15										0	

Relinquished by (signature): <i>Dave Daniels</i>	Date/Time: 8-31-98 1535	Received by (signature): <i>J. Appleby</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  
 Turnaround time: ( ) Standard 4 wks. (X) Rush \_\_\_\_\_ Days, (X) ASAP Verbal \_\_\_\_\_ Hrs.  
 Remarks: H-Vu Calibration → zero gas - 0 ppm  
 isobutylene 100 ppm at 9.32

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 # : 3845  
Date Rec'd: 31-Aug-98  
Analysis Start: 01-Sep-98  
Analysis Complete: 02-Sep-98


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 um  
Location #: BLDG. 811

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3845.01	811-6(6')	1.00	15.57	82.45	183	ND
3845.02	811-7(6')	1.00	15.67	82.08	183	ND
3845.03	811-8(7')	1.00	15.12	82.10	189	ND
3845.04	811-9(6')	1.00	15.37	75.91	201	ND
3845.05	811-10(7')	1.00	15.83	79.15	188	ND
3845.06	811-11(6')	1.00	15.38	81.51	187	ND
3845.07	811-12(6')	1.00	15.58	75.87	199	ND
3845.08	811-13(7')	1.00	15.98	75.87	194	ND
3845.09	811-14(6')	1.00	15.31	77.68	198	ND
3845.10	811-15(6')	1.00	15.88	76.27	194	ND
METHOD BLANK	TBLK 155	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

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Laboratory Manager or Environmental Consultant's Signature \_\_\_\_\_  
Date 10/5/98

Laboratory Certification #13461

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

# Laboratory Authentication Statement

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



Daniel K. Wright  
Laboratory Manager

**APPENDIX F**

**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. 811

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
811-1	4923.01	Aqueous	06-Nov-99 12:30	11/08/99

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>DIMKE DESAI</u>		Project No:				Analysis Parameters						Comments:  <u>HCL / 64°C</u>		
Phone #: <u>X21475</u>		Location: <u>UST 811</u>				VOTIS	BNTIS	xylene						
( ) DERA ( ) OMA ( ) Other: _____		<u>1st Rnd</u>												
Samplers Name / Company: <u>Carey McCormack, TWS</u>				Sample #										
Lab Sample I.D.	Sample Location	Date	Time	Type	bottles								Remarks / Preservation Method	
<u>4923.01</u>	<u>811 -1</u>	<u>11/6/99</u>	<u>1230</u>	<u>AQ</u>	<u>3</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
Relinquished by (signature): <u>Carey McCormack</u>		Date/Time: <u>11/6/99 730</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, (X) Reduced, ( ) Standard, ( ) Screen / non-certified					Remarks: <u>Shoes Trip / FB / Dye from 549 (548A)</u>									
Turnaround time: (X) Standard 3 wks, ( ) Rush _____ Days, ( ) ASAP Verbal _____ Hrs.														

000002

# METHOD SUMMARY

000003

## 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.

000004

# CONFORMANCE/NON- CONFORMANCE 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
  - 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 \_\_\_\_\_
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  
(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 \_\_\_\_\_

**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

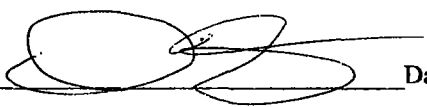
yes

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

Additional Comments:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Laboratory Manager:



Date:

4-8-00



# LABORATORY CHRONICLE

0000

0000

# 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 **VC001257.D**  
 Operator **Skelton**  
 Date Acquired **10 Nov 1999 2:43 pm**

Sample Name **Vblk37**  
 Field ID **Vblk37**  
 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:

Vblk37

Lab Name: FMETL NJDEP#: 13461  
Project: 100004 Case No.: 4923 Location: 811 SDG No.: \_\_\_\_\_  
Matrix: (soil/water) WATER Lab Sample ID: Vblk37  
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC001257.D  
Level: (low/med) LOW Date Received: 11/8/99  
% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 11/10/99  
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
---------	---------------	----	------------	---

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

Data File **VC001278.D**  
 Operator **Skelton**  
 Date Acquired **11 Nov 1999 5:05 am**

Sample Name **4923.01**  
 Field ID **811-1**  
 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:

811-1

Lab Name: FMETL NJDEP#: 13461  
Project: 100004 Case No.: 4923 Location: 811 SDG No.: \_\_\_\_\_  
Matrix: (soil/water) WATER Lab Sample ID: 4923.01  
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC001278.D  
Level: (low/med) LOW Date Received: 11/8/99  
% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 11/11/99  
GC Column: RTX502 ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

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

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
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# BASE NEUTRALS

000028



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

Data File Name **BNA03358.D**  
 Operator **Bhaskar**  
 Date Acquired **12-Nov-99**

Sample Name **Sblk318**  
 Misc Info **Sblk318 A 991109**  
 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 **BNA03358.D**  
 Operator **Bhaskar**  
 Date Acquired **12-Nov-99**

Sample Name **Sblk318**  
 Misc Info **Sblk318 A 991109**  
 Sample Multiplier **1**

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

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

**Qualifiers**

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

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

1F  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID

Sblk318

Lab Name: FMETL Lab Code 13461  
 Project UST Case No.: 4923 Location 811 SDG No.: \_\_\_\_\_  
 Matrix: (soil/water) WATER Lab Sample ID: Sblk318  
 Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA03358.D  
 Level: (low/med) LOW Date Received: 11/8/99  
 % Moisture: \_\_\_\_\_ decanted: (Y/N) N Date Extracted: 11/9/99  
 Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/12/99  
 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

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

Data File Name **BNA03365.D**  
 Operator **Bhaskar**  
 Date Acquired **12-Nov-99**

Sample Name **4923.01**  
 Misc Info **811-1**  
 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 **BNA03365.D**  
 Operator **Bhaskar**  
 Date Acquired **12-Nov-99**

Sample Name **4923.01**  
 Misc Info **811-1**  
 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	26.83	2859965	119.74 ug/L	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

Page 2 of 2

**000033**

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

811-1

Lab Name: FMETL Lab Code 13461  
 Project UST Case No.: 4923 Location 811 SDG No.: \_\_\_\_\_  
 Matrix: (soil/water) WATER Lab Sample ID: 4923.01  
 Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA03365.D  
 Level: (low/med) LOW Date Received: 11/8/99  
 % Moisture: \_\_\_\_\_ decanted: (Y/N) N Date Extracted: 11/9/99  
 Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/12/99  
 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

# LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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

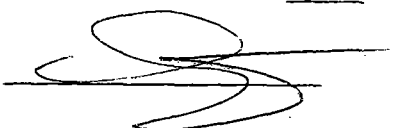
The following Laboratory Deliverables checklist and Non-Conformance Summary shall be included in the data submission. All deviations from the accepted methodology and procedures, of performance values outside acceptable ranges shall be summarized in the Non-Conformance Summary. The Technical Requirements 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 4/8/00



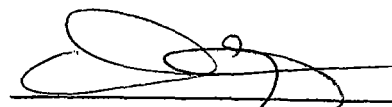
Laboratory Certification #13461

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

000057

## 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

000058



# 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. 811

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
811-1 6-11'	5008.01	Aqueous	11-Dec-99 10:10	12/13/99

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

ENCLOSURE:  
CHAIN OF CUSTODY  
RESULTS

  
Daniel Wright/Date  
Laboratory Director

5-4-00

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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>D. DESAI</i>		Project No:				Analysis Parameters						Comments:			
Phone #: <i>82 1475</i>		Location: <i>BLDG. 811 (FORMER)</i>				V A T 15	X Y L E N E	B N T 15							Remarks / Preservation Method
( ) DERA ( <input checked="" type="checkbox"/> ) OMA ( ) Other: _____															
Samplers Name / Company: <i>MARK LAUER - TNS - PWS 07</i>					Sample #										
Lab Sample I.D.	Sample Location	Date	Time	Type	bottles										
<i>5008. 1</i>	<i>811-1</i>	<i>6-11</i>	<i>0811-99</i>	<i>1010</i>	<i>AQ.</i>	<i>3</i>	<i>X</i>	<i>X</i>	<i>X</i>						<i>HCL, &lt;40c</i>
Relinquished by (signature): <i>[Signature]</i>		Date/Time: <i>12-13-99 7:30</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, ( <input checked="" type="checkbox"/> ) Reduced, ( ) Standard, ( ) Screen / non-certified					Remarks: <i>SHARED T.B. + F.B W/ BLDG 800</i>										
Turnaround time: ( <input checked="" type="checkbox"/> ) Standard 3 wks, ( ) Rush Days, ( ) ASAP Verbal Hrs.															

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: no
  - a. VOA Fraction \_\_\_\_\_
  - b. B/N Fraction \_\_\_\_\_
  - 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 \_\_\_\_\_
  - 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 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 NA



GC/MS Analysis Conformance/Non-Conformance Summary (cont.)

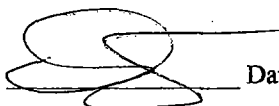
Indicate  
Yes,  
No,  
N/A

10. Internal Standard Area/Retention Time Shift Meet Criteria yes  
(If not met, list those compounds, which fall outside the acceptable range)  
a. VOA Fraction \_\_\_\_\_  
b. B/N Fraction \_\_\_\_\_  
c. Acid Fraction NA \_\_\_\_\_

11. Extraction Holding Time Met yes  
If not met, list 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: 5-4-00

# LABORATORY CHRONICLE

000008

# Laboratory Chronicle

Lab ID: 5008

Site: Bldg. 811

	Date	Hold Time
Date Sampled	12/11/99	NA
Receipt/Refrigeration	12/11/99	NA
<b>Extractions</b>		
1. Base Neutral	12/13/99	14 days
<b>Analyses</b>		
1. Volatile Organics	12/13,14/99	14 days
2. Base Neutral	12/14/99	40 days

\* Samples collected and refrigerated 12/11/99, Laboratory received the samples on Monday 12/13/99.

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

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

Data File **VC001540.D**  
 Operator **Skelton**  
 Date Acquired **13 Dec 1999 5:42 pm**

Sample Name **Vblk41**  
 Field ID **Vblk41**  
 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:

Vblk41

Lab Name: FMETL NJDEP#: 13461  
Project: 100004 Case No.: 5008 Location: Bldg81 SDG No.: \_\_\_\_\_  
Matrix: (soil/water) WATER Lab Sample ID: Vblk41  
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC001540.D  
Level: (low/med) LOW Date Received: 12/13/99  
% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 12/13/99  
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 **VC001563.D**  
 Operator **Skelton**  
 Date Acquired **14 Dec 1999 8:59 am**

Sample Name **5008.01**  
 Field ID **811-1**  
 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:

811-1

Lab Name: FMETL NJDEP#: 13461  
Project: 100004 Case No.: 5008 Location: Bldg81 SDG No.: \_\_\_\_\_  
Matrix: (soil/water) WATER Lab Sample ID: 5008.01  
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC001563.D  
Level: (low/med) LOW Date Received: 12/13/99  
% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 12/14/99  
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 **BNA03456.D**  
 Operator **Bhaskar**  
 Date Acquired **14-Dec-99**

Sample Name **Sblk327**  
 Misc Info **Sblk327 A 991213**  
 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 **BNA03456.D**  
 Operator **Bhaskar**  
 Date Acquired **14-Dec-99**

Sample Name **Sblk327**  
 Misc Info **Sblk327 A 991213**  
 Sample Multiplier **1**

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

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

#### Qualifiers

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

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

1F  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID

Sblk327

Lab Name: FMETL Lab Code 13461  
 Project 100004 Case No.: 5008 Location Bld.811 SDG No.: \_\_\_\_\_  
 Matrix: (soil/water) WATER Lab Sample ID: Sblk327  
 Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA03456.D  
 Level: (low/med) LOW Date Received: 12/13/99  
 % Moisture: \_\_\_\_\_ decanted: (Y/N) N Date Extracted: 12/13/99  
 Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/14/99  
 Injection Volume: 1.0 (uL) Dilution Factor: 1.0  
 GPC Cleanup: (Y/N) N pH: 7

CONCENTRATION UNITS:

Number TICs found: 2 (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.18	5	J
2.	unknown	10.16	51	J

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

Data File Name **BNA03464.D**  
 Operator **Bhaskar**  
 Date Acquired **14-Dec-99**

Sample Name **5008.01**  
 Misc Info **811-1**  
 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 **BNA03464.D**  
Operator **Bhaskar**  
Date Acquired **14-Dec-99**

Sample Name **5008.01**  
Misc Info **811-1**  
Sample Multiplier **1**

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

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

**Qualifiers**

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

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

1F  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID

<b>811-1</b>
--------------

Lab Name: FMETL Lab Code 13461

Project 100004 Case No.: 5008 Location Bld.811 SDG No.: \_\_\_\_\_

Matrix: (soil/water) WATER Lab Sample ID: 5008.01

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA03464.D

Level: (low/med) LOW Date Received: 12/13/99

% Moisture: \_\_\_\_\_ decanted: (Y/N) N Date Extracted: 12/13/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/14/99

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



# 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   | NA <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 5/4/00

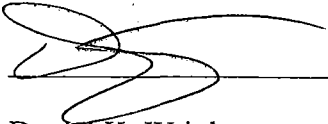
Laboratory Certification #13461

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

000060

## Laboratory Authentication Statement

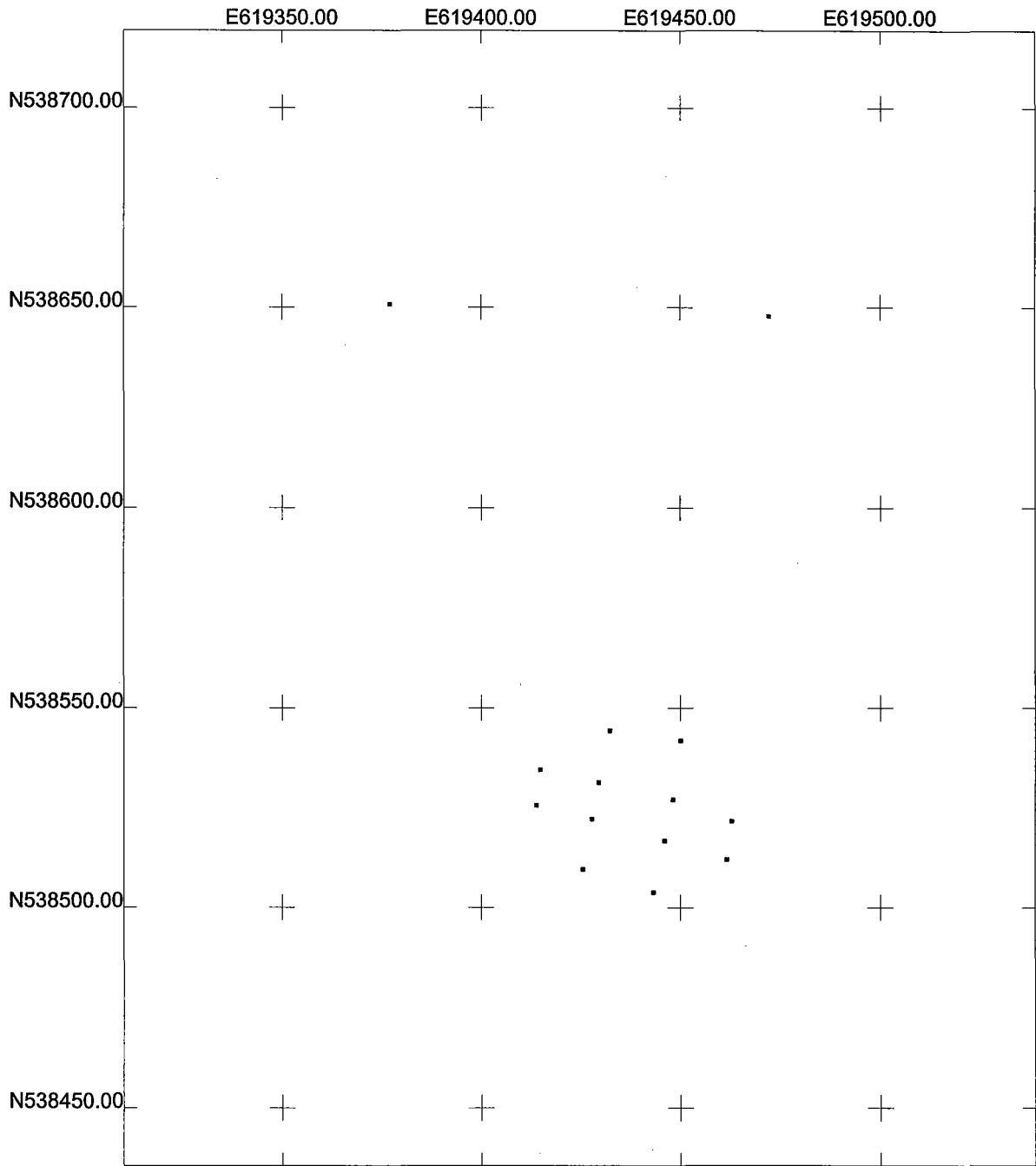
I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N.J.A.C. 7:18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW-846 for Solid Waste Analysis. I have personally examined the information 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

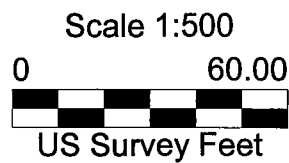
000061

**APPENDIX G**  
**ELECTRONIC DATA DELIVERABLES**

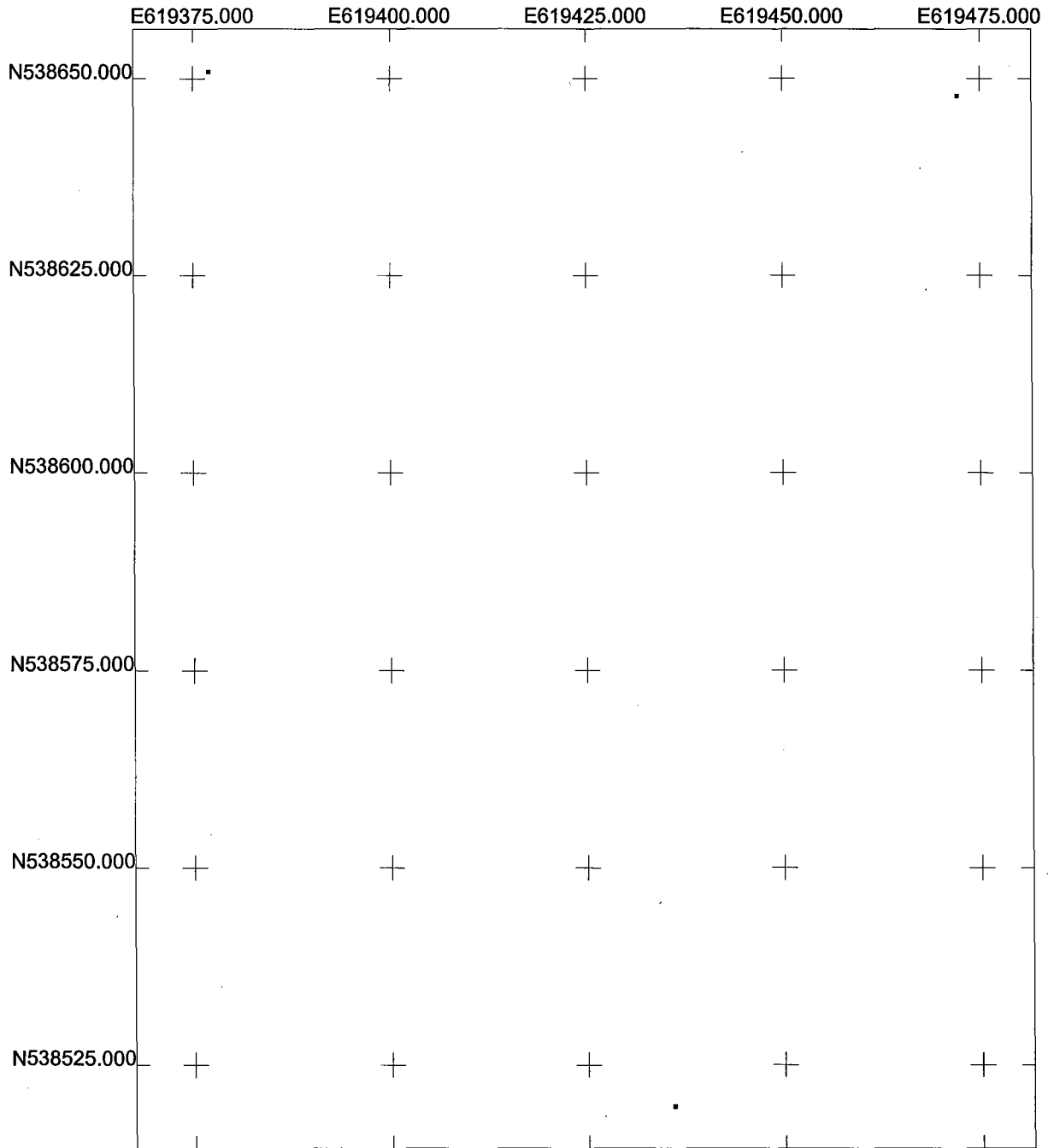


## Bldg. 811 UST Samples GPS Map

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

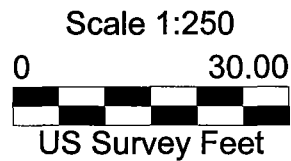


r100119b.ssf  
 5/18/2000  
 Pathfinder Office  
**Trimble**



# Bldg. 811 UST Ground Water Sample GPS Map

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



r100119b.ssf  
5/19/2000  
Pathfinder Office  
 **Trimble**

81533-132

Done

BLDG. 811 UST SAMPLES GPS POSITIONS & COORINATES

US STATE PLANE 1983 NJ ( NY EAST ) 2900 NAD 1983 ( CONUS )

( INUS SURVEY FEET )

SAMPLE POINTS

<u>POSITION / DESC.</u>	<u>Y COORD. ( NORTHING )</u>	<u>X COORD. ( EASTING )</u>
1, 2	538509.724	619425.275
3, 4	538522.391	619427.583
5	538503.966	619443.097
6, 7	538512.188	619461.44
8	538516.869	619445.892
9	538521.839	619462.635
10	538527.32	619447.919
11	538542	619449.914
12	538544.505	619432.095
13	538531.512	619429.369
14	538534.731	619414.611
15	538525.878	619413.664

REFERENCE POINTS

<u>POSITION / DESC.</u>	<u>Y COORD. ( NORTHING )</u>	<u>X COORD. ( EASTING )</u>
TELEPHONE POLE	538647.931	619472.063
TELEPHONE POLE	538650.948	619376.92

**BLDG. 811 UST GROUND WATER SAMPLE GPS POSITION & COORDINATES**

US STATE PLANE 1983 NJ ( NY EAST ) 2900 NAD 1983 ( CONUS )

( IN US SURVEY FEET )

**SAMPLE POINTS**

<b><u>POSITION / DESC.</u></b>	<b><u>Y COORD. ( NORTHING )</u></b>	<b><u>X COORD. ( EASTING )</u></b>
811 GW	538519.802	619435.874

( GW denotes Ground Water )

**REFERENCE POINTS**

<b><u>POSITION / DESC.</u></b>	<b><u>Y COORD. ( NORTHING )</u></b>	<b><u>X COORD. ( EASTING )</u></b>
TELEPHONE POLE	538647.931	619472.063
TELEPHONE POLE	538650.948	619376.92