### **United States Army**

Fort Monmouth, New Jersey

# Chosen and Site Investigation Report

Building 500
Main Post-West Area

NJDEP UST Registration No. 81533-75 DICAR No. 97-07-08-1439-02

June 2000

## UNDERGROUND STORAGE TANK CLOSURE AND SITE INVESTIGATION REPORT

#### **BUILDING 500**

MAIN POST-WEST AREA NJDEP UST REGISTRATION NO. 81533-75 DIÇAR NO. 97-07-08-1439-02

**JUNE 2000** 

#### PREPARED FOR:

UNITED STATES ARMY, FORT MONMOUTH, NEW JERSEY
DIRECTORATE OF PUBLIC WORKS
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PROJECT NO. 4435-018

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#### **EXECUTIVE SUMMARY**

#### **UST Closure**

On July 8, 1997, a steel underground storage tank (UST) was closed by removal in accordance with New Jersey Department of Environmental Protection (NJDEP) closure procedures at the Main Post-West area of the U.S. Army Fort Monmouth, Fort Monmouth, New Jersey. The UST, NJDEP Registration No. 0081533-75 (Fort Monmouth ID No. 500), was located northeast of Building 500. UST No. 0081533-75 was a 5,000 gallon #2 fuel oil UST.

#### Site Assessment

The site assessment was performed by U.S. Army personnel in accordance with the NJDEP Technical Requirements for Site Remediation (N.J.A.C. 7.26E) and the NJDEP Field Sampling Procedures Manual. The sampling and laboratory analysis conducted during the site assessment were performed in accordance with Section 7.26E-2.1 of the Technical Requirements for Site Remediation. Soils surrounding the tank were screened visually and with air monitoring equipment for evidence of contamination. Following removal, the UST was inspected for corrosion holes. No holes were noted in the UST Stained soil was observed at the east end of the tank, adjacent to the fill port. The NJDEP hotline was notified and the case was assigned DICAR. No. 97-07-08-1439-02. Approximately 48 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 975.96 mg/kg. Groundwater was not encountered.

All post excavation soil samples collected from the UST excavation at Building 500 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 and the potential of groundwater contamination, two (2) groundwater samples were collected at Building 500 On March 27, 2000, and April 29, 2000, Building 500 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 81533-75 at Building 500

## 1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

#### 1.1 OVERVIEW

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No 81533-75, was closed at Building 500 at the Main Post-West area of U.S. Army Fort Monmouth, Fort Monmouth, New Jersey on July 8, 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. The UST was a steel 5,000-gallon tank containing No. 2 fuel oil

Decommissioning activities for UST No 81533-75 complied with all applicable Federal, State, and Local laws and ordinances in effect at the date of decommissioning. These laws included but were not limited to N J A C 7 14B-1 et seq, N J A C 5 23-1 et seq, and Occupational Safety and Health Administration (OSHA) 1910 146 & 1910.120. All permits including but not limited to the NJDEP approved Decommissioning/Closure Plan were posted onsite for inspection. The decommissioning activities were conducted by DPW personnel who are registered and certified by the NJDEP for performing UST closure activities. Closure of UST No 81533-75 proceeded under the approval of the NJDEP Bureau of Federal Case Management (NJDEP-BFCM). The Standard Reporting Form and signed Site Assessment Summary form for UST No 81533-75 are included in Appendices A and B, respectively.

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

This UST Closure and Site Investigation Report has been prepared by Versar, to assist the U.S. Army DPW in complying with the NJDEP regulations. The applicable NJDEP regulations at the date of closure were the *Interm 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 500 is located in the Main Post-West area of the Fort Monmouth Army Base UST No 0081533-75 was located northeast of Building 500 and appurtenant copper piping ran approximately eleven (11) feet southeast from the excavation to Building 500. A remote fill ran approximately seventeen (17) feet northwest from the excavation 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 500. 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 (Zapecza, 1989). These sediments, predominantly derived from deltaic, shallow manne, and continental shelf environments, date from Cretaceous through the Quaternary Periods. The mineralogy ranges from quartz to glauconite.

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

#### Local Geology

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

grained sand with abundant clay, mica, and glauconite

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

#### Hydrogeology

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

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

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

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

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

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

Building 500 is located approximately 800 feet north of Husky Brook, the nearest water body. Based on the Main Post topography, the groundwater flow in the area of Building 500 is anticipated to be to the south.

#### 1.3 HEALTH AND SAFETY

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

#### 1.4 REMOVAL OF UNDERGROUND STORAGE TANK

#### 1.4.1 General Procedures

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

#### 1.4.2 Underground Storage Tank Excavation and Cleaning

Prior to UST decommissioning activities, surficial soil was removed to expose the UST and associated piping. All free product present in the piping was drained into the UST, and the UST was purged to remove vapors prior to cutting and removal of the piping. After removal of the associated piping, a manway was made in the UST to allow for proper cleaning. The UST was completely emptied of all liquids prior to removal from the ground. Approximately 340 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 regulations. After the UST was removed from the excavation, it was staged on polyethylene sheeting and examined for holes. No holes or punctures were noted in the UST during the inspection by the Sub-Surface Evaluator. Soils surrounding the UST were screened visually and with an OVA for evidence of contamination. Stained soil was observed at the east end of the tank, adjacent to the fill port. Approximately 48 cubic yards of potentially contaminated soil were removed from the excavated area and transported to the Main. Post petroleum contaminated soil holding area. Soil screening was also performed along the piping associated with the UST. No contamination was noted anywhere along the piping length. Soil samples, which were collected after the removal of the potentially contaminated soil, contained TPHC concentrations ranging from non-detect to 975.96 mg/kg. Groundwater was not encountered. See Figure 3 for a cross-sectional view of the excavated area.

#### 1.5 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The tank was transported in compliance with all applicable regulations and laws. Please refer to Appendix D for the UST Disposal Certificate and Appendix G for photographs of the tank.

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 48 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 not encountered.

#### 2.0 SITE INVESTIGATION ACTIVITIES

#### 2.1 OVERVIEW

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

The following Parties participated in Closure and Site Investigation Activities.

- Project Manager: Eugene Lesinski Employer. U.S. Army, Fort Monmouth Phone Number (732) 532-6224
   NJDEP Certification No. 14537
- 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 Don Taguinot Phone Number (908) 721-0900

#### 2.2 FIELD SCREENING/MONITORING

Field screening was performed by a NJDEP Certified Sub-Surface Evaluator using an OVA and visual observations to identify potentially contaminated material. Approximately 48 cubic yards of potentially petroleum contaminated soil were removed from the excavated area and transported to the Fort Monmouth petroleum contaminated soil holding area. Soils were removed from the excavation until no evidence of contamination remained. Groundwater was not encountered.

#### 2.3 SOIL SAMPLING

On July 9 and 10, 1997, following the removal of the UST and associated piping, post-excavation soil samples A, B, C, D, E, F, G, H, I, J, K, L, and DUP C were collected from a total of twelve (12) locations of the UST excavation. Excavation floor samples A, B, D, E, F, H, and K were collected at a depth of 9 0 feet bgs. Piping samples C, I, L and DUP C were collected at a depth of 2 0 feet bgs. All samples were analyzed for total petroleum hydrocarbons (TPHC) and total solids.

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

#### 2.4 GROUNDWATER SAMPLING

On March 27, 2000, and April 29, 2000, Building 500 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 July 9 and 10, 1997 from a total of twelve (12) 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 July 9 and 10, 1997, from the UST excavation and from below piping associated with the UST contained concentrations of TPHC below the NJDEP soil cleanup criteria. Soil samples, which were collected after the removal of the potentially contaminated soil, contained TPHC concentrations ranging from non-detect to 975 96 mg/kg.

#### 3.2 GROUNDWATER SAMPLING RESULTS

No compounds were detected in the sample collected from Building 500 on March 27, 2000

The sample collected from Building 500 on April 29, 2000, contained chloroform at a concentration of 3 93 ug/l. No other compounds were detected

A summary of the analytical results and comparison to the NJDEP groundwater cleanup criteria is provided in Table 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, Fort Monmouth, New Jersey

Groundwater samples collected on March 27, 2000, and April 29, 2000, 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 500 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 500 on March 27, 2000, and April 29, 2000, groundwater quality at Building 500 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. 81533-75 at Building 500

**TABLES** 

TABLE 1
SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
BUILDING 500, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

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Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	NJDEP Method
A	7/9/97	7/14/97	Soil	Post-Excavation	ТРНС	OQA-QAM-025
В	7/9/97	7/14/97	Soil	Post-Excavation	ТРНС	OQA-QAM-025
С	7/9/97	7/14/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
D	7/9/97	7/14/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
E	7/9/97	7/14/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
F	7/9/97	7/14/97	Soil	Post-excavation	ТРНС	OQA-QAM-025
G	7/9/97	7/14/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
н	7/9/97	7/14/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
1	7/10/97	7/14/97	Soil	Post-Excavation	ТРНС	OQA-QAM-025
j	7/10/97	7/14/97	Soil	Post-excavation	TPHC	OQA-QAM-025
K	7/10/97	7/14/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
L	7/10/97	7/14/97	Soil	Post-excavation	TPHC	OQA-QAM-025
DUPC	7/10/97	7/14/97	Soil	Post-excavation	ТРНС	OQA-QAM-025

Note

\* TPHC Total Petroleum Hydrocarbons

TABLE I

#### **SUMMARY OF SAMPLING ACTIVITIES BUILDING 500, MAIN POST-WEST AREA** FORT MONMOUTH, NEW JERSEY

Page 2 of 2

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Sampling Method**
5285 03	3/27/00	4/4/00	Aqueous	Groundwater	VOCs, SVOCs	PPNDP PPNDP
5384 01	4/29/00	5/3/00	Aqueous	Groundwater	VOCs, SVOCs	

Note

\*VOCs \*SVOCs

Volatile Organic Compounds plus 15 tentatively identified compounds Semivolatile organic compounds plus 15 tentatively identified compounds

\*\*PPNDP Passively Placed Narrow Diameter Point

, 7

TABLE 2

#### POST-EXCAVATION SOIL SAMPLING RESULTS BUILDING 500, MAIN POST-WEST AREA FORT MONMOUTH, NEW JERSEY

Page 1 of 2

Sample ID/ Depth	Sample Laboratory ID	Sample 7. 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
A/9 0'=	2787 01	7/9/97	7/14/97	Total Solid			83 08 %		
				TPHC	187	yes	ND	10,000	No
B/9 0'=	2787 02	7/9/97	7/14/97	Total Solid			87 18 %		**
				TPHC	177	Yes	ND	10,000	No
C/2 0'=	2787 03	7/9/97	7/14/97	Total Solid		••	86 15 %		••
				TPHC	180	Yes	ND	10,000	No
D/9 0'=	2787 04	7/9/97	7/14/97	Total Solid	••		80 11 %		
				TPHC	194	yes	ND	10,000	No
E/9 0'=	2787 05	7/9/97	7/14/97	Total Solid			81 36 %		
				TPHC	186	yes	ND	10,000	No
F/9 0'=	2787 06	7/9/97	7/14/9 <b>7</b>	Total Solid	••	••	81 26 %		
				TPHC	187	yes	ND	10,000	No
G/9 0'=	2787 07	7/9/97	7/14/97	Total Solid			80 07 %	*-	
				TPHC	193	yes	ND	10,000	No
H/9 0'=	2787 08	7/9/97	7/14/97	Total Solid		•	90 01 %		
				TPHC	173	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

TABLE 2

#### POST-EXCAVATION SOIL SAMPLING RESULTS BUILDING 500, 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
1/2 0'=	2787 09	7/10/97	7/14/97	Total Solid			82 51 %		
				TPHC	189	yes	ND	10,000	No
J/2 0'=	2787 10	7/10/97	7/14/97	Total Solid	••		90 47 %		
				TPHC	169	Yes	975 76	10,000	No
K/9 0'=	2787 11	7/10/97	7/14/97	Total Solid	••		78 24 %		
				TPHC	190	Yes	ND	10,000	No
L/2 ()'=	2787 12	7/10/97	7/14/97	Total Solid			84 13 %		
				ТРНС	179	yes	ND	10,000	No
DUPC/2 0'=	2787 13	7/10/97	7/14/97	Total Solid			86 03 %		
	- 1	2. <b>2</b>		TPHC	175	Yes	415 35	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

1PHC Total Petroleum Hydrocarbons

## Table 3 VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name

**FMETL** 

NJDEP#

13461

Matrix (soil/water) WATER

Date Sampled

3/27/00

Location

500

Lab Sample ID 5285 03(500-1)

Date Sample	ed <u>3/27/00</u>	Location	<u>500</u>	Lab Sa	mple ID <u>5285 0</u>	3(500-1)
CAS NO	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
107028	Acrolem	1 85	Not Detected	1	50	no
107131	Acrylonitale ,	2 78	Not Detected		50	nø.
75650	tert Butyl alcohol	B 52	Not Detected	1	nle	100
1634044	Methyl tert Butyl ether	0 16	Not Detected		nie	nø
108203	Di isopropyl ether	0 25	Not Detected		nle	no
	Dichlarodifluoromethane	1 68	Not Detected		nle	no
74-87-3	Chloromethane	l 16	Not Detected		30	80
75-01-4	Vinyl Chloride	1 06	Not Detected		5	nó
74-83-9	Bromomethane	1 10	Not Detected		10	no
75-00-3	Chloroethane	J 01	Not Detected	_	nle	no
75- <del>69-4</del>	Trichlorofluoromethane	0 50	Not Detected		ule	B0
75-35-4	I I-Dichloroethene	0 24	Not Detected		2	пю
67-64-1	Acetone	ı 36	Not Detected		700	DO
75-15-0	Carbon Disulfide	0 46	Not Detected		nle	no
75-09 2	Methylene Chlonde	0 24	Not Detected		2	<b>D</b> O
156-60-5	trans-1 2-Dichloroethene	0 16	Not Detected		100	по
75-35-3	1 1 Dichloroethane	0 12	Not Detected		70	TIC)
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	00
67 <b>66</b> -3	Chloraform	0 30	Not Detected		6	по
75 55-6	I I I-Trichloroethane	0 23	Not Detected		30	по
56-23-5	Carbon Tetrachlonde	0 47	Not Detected		2	no
71-43-2	Benzeze	0 23	Not Detected		ı	no
107-06-2	1 2 Dichloroethane	O I B	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	DO
75-27-4	Bromodichloromethane	0 55	Not Detected		ı	no
110-75-8	2-Chloroethyl vmyl ether	0 65	Not Detected		ale	no
10061-01-5	cis 1 3-Dichloropropene	0 69	Not Detected		nle	no

2 of 8

## Table 3 VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name	<u>FMETL</u>	<b>NJDEP</b> #	13461	Matrix	(soil/water) WAT	ER
Date Sampl	led <u>3/27/00</u>	Location	500	Lab Sa	ample ID <u>5285 0</u>	3(500-1)
CAS NO	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	
103-10-1	4-Methyl-2-Pentanone	0 59	Not Detected		400	RÓ
108-88-3	Totuene	0 37	Not Detected		1000	no
10061-02-6	trans-1,3-Dichloropropene	0 87	Not Detected	_	nle	DIO
79-00-5	1 1 2 Trichlomethane	0 48	Not Detected	_	3	DQ
127 18-4	Tetrachloroethene	0 32	Not Detected	**	i	no
591-78-6	2-Hexanone	0.71	Not Detected	-	nle	TMO
126-48-1	Dibromochloromethane	0 86	Not Detected		10	0.0
108-90-7	Chlorobenzene ,	0 39	Not Detected	-	4	no.
100-41-4	Ethylbenzene	0 65	Not Detected	_	700	DEC)
1330-20-7	m+p-Xylenes	1 14	Not Detected	-	nle	80
1330-20-7	o-Xylene	0 62	Not Detected	-	nie	no
100-42-5	Styrene	0.56	Not Detected	_	100	DO .
75-25-2	Bromoform	0 70	Not Detected	-	4	no
79 34-5	1   2 2 Tetrachloroethane	0 47	Not Detected	-	2	DØ
541-73-1	1 3 Dichlorobenzene	0 55	Not Detected	-	600	DO
106-46-7	I 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

3/27/00

Location

<u>500</u>

Lab Sample ID 5

5285 03(500-1)

CAS NO	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
110-86-1	Pyridine	1 83	Not Detected		nle	DO
62-75-9	N-miroso-dimethylamine	0 91	Not Detected	-	20	no
62 53-3	Antine	1 63	Not Detected		nle	no
111-44-4	bis(2-Chloroethyl)ether	1 28	Not Detected	-	10	ВÓ
541 73 1	1 3-Dichlorobenzene	1 19	Not Detected	-	600	no
106-46-7	1 4-Dichlorobenzene €	1 02	Not Detected	-	75	ю
100-51-6	Benzyl alcohol	1 02	Not Detected	-	nle	DO
95-50-1	1 2 Dichlorobenzene	1 13	Not Detected	-	600	no
108-60-1	bis(2-chloroisopropy1)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	101	Not Detected	-	10	TIQ.
78-59-1	Isophorone	1 21	Not Detected	-	100	по
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	H 27	Not Detected	-	nle	no
106-47 8	4-Chloroandine	1 09	Not Detected	-	nle	no
87-68-3	Hexachlorobutadiene	071	Not Detected	-	1	no
91-57-6	2-Methytraphthalene	1 08	Not Detected	-	nte	no
77-47-4	Hexachtorocyclopeniadiene	1 32	Not Detected	~	50	no
91 58-7	2-Chloronaphthalene	101	Not Detected	-	nle	po
88-74-4	2-Nitroantine	0 79	Not Detected	-	nle	no
131-11-3	Dimethylphthalate	H 52	Not Detected	-	7000	no
208-96-8	Acenaphthylene	0 96	Not Detected	-	nle	no

#### Table 3 SEMI-VOLAȚILE ANALYSIS DATA SHEET

Lab Name **FMETL** NJDEP# <u>13461</u> Matrix (soil/water) WATER

Date Sample	d <u>3/27/00</u>	Location	<u>500</u>	Lab Sa	ample ID 5285 0	3(500-1)
CAS NO	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
606-20-2	2,6-Dinitrotaluene	0 81	Not Detected	<u>-</u>	nle	no
99-09-2	3-Nitroaniline	0 79	Not Detected	-	nie	no
83-32-9	Acenaphthene	I 10	Not Detected		400	no .
132-64 9	Dibenzofuran	I 00	Not Detected	-	nle	no
121 14-2	2 4 Dinitrotoluene	0 87	Not Detected	-	10	no
84-66-2	Diethylphthalate	l 62	Not Detected	-	5000	no
86-73-7	Fluorene	0 99	Not Detected	_	300	300
7005-72-3	4-Chlorophenyl-phenylether	1 10	Not Detected	-	nie	<b>0</b> 20
100-01-6	4-Nuroamline	1 05	Not Detected	-	nie	no
86-30-6	n-Nitrosodiphenylamine	1 01	Not Detected	-	20	DIO
103 33-3	A zobenzene	0 67	Not Detected	-	nle	no
101 55-3	4-Bramophenyl-phenylether	0 76	Not Detected	_	nle	0.0
118-74-1	Hexachlorobenzene	0 94	Not Detected	-	10	DO
85-01-8	Phenanthrene	1 23	Not Detected	-	nle	no
120-12-7	Anthracene	1 12	Not Detected	-	2000	nó
84-74-2	Di n-butylphthalate	1 70	Not Detected		900	no
206-44-0	Fluoranthene	1 64	Not Detected	-	300	no no
92-87-5	Benzidine	4 18	Not Detected	-	50	730
129-00-0	Pyrene	1 25	Not Detected	_	200	шо
85-68-7	Burylbenzylphthalate	1 05	Not Detected		100	200
56-55 3	Benzo[a]anihracene	l 19	Not Detected		10	no
91-94 !	3.3°-Dichlorobenzidine	1 75	Not Detected		60	по
218-01-9	Chrysene	1 38	Not Detected	-	20	no
117 81 7	bis(2 Ethylhexyl)phthalate	1 74	Not Detected		30	100
117-84-0 ´	Di n-octylphthalate	1 44	Not Detected		100	100
<u>3</u> 0€ 00°3	Beuze(p) Neorzethene	1 25	not Descried	-	10	ne
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]ambracene	0 64	Not Detected	-	20	no
191 24-2	Benzolg h ilperylene	0 84	Not Detected	-	nle	no

## Table 3 VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name FMETL NJDEP # 13461 Matrix (soil/water) WATER

Date Sampled 4/29/00 Location 500 Lab Sample ID 5384 01(500-1)

Date Sampled 4/29/00		Location 500		Lab Sample ID 5384 01(500-1)			
CAS NO	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA	
107028	Acrolein	1 85	Not Detected	~	50	780	
107131	Acrylomatile	2 78	Not Detected	_	50	DO	
75650	teri-Butyl alcohol	8 52	Not Detected		nle	CO.	
1634044	Methyl-tert Butyl ether	0 16	Not Detected		n)e	70	
108203	Di-isopropyl ether	0 25	Not Detected	_	nje	<b>DO</b>	
	Dichlorodiffuoromethane	1 68	Not Detected		nie	00	
74-87-3	Chloromethane	1 16	Not Detected	-	30	DEO	
75-01-4	Vmyl Chloride	1 06	Not Detected		5	00	
74-83-9	Bromomethane	I 10	Not Detected	-	10	00	
75-00-3	Chloroethane	1 01	Not Detected	-	nle	8	
75-69-4	Trichlorofluoromethane	0 50	Not Detected	-	nje	80	
75-35-4	1 1-Dichloroethene	0 24	Not Detected		2	20	
67-64-1	Acetone	1 36	Not Detected	-	700	no	
75-15-0	Carbon Distilfide	0 46	Not Detected		nke	no	
75-09 2	Methylene Chloride	0 24	Not Detected	-	2	80	
156-60-5	trans-1,2-Dichloroethene	0 16	Not Detected		100	00	
75-35-3	1 1-Dichloroethane	0 12	Not Detected		70	no	
108-05-4	Vinyl Acetate	0.78	Not Detected		ale	no	
78 93-3	2 Butanone	0 62	Not Detected	<u> </u>	300	00	
156-59-2	cis-1 2-Dichloroethene	0 17	Not Detected	-	10	Do	
67-66-3	Chloroform	0 30	3 93 ug/L		6	no	
75 55-6	1   1-Trichloroethane	0 23	Not Detected	<u>-</u>	30	по	
56-23-5	Carbon Tetrachlonde	0 47	Not Detected		2	no	
71-43-2	Benzeze	0 23	Not Detected		1	DO	
107-06-2	1 2 Dichloroethane	0 18	Not Detected		2	no	
70.01.6	T-chlorocthene	023	Not Detected			νõ	
78-87 5	1 2-Dichloropropane	0 40	Not Detected		1	no	
75-27-4	Bromodichloromethane	0 55	Not Detected		-	no	
110-75 8	2-Chioroethyl vmyl ether	0 65	Not Detected		nle	no	
10061-01-5	cis-1 3-Dichloropropene	0 69	Not Detected		nle	no	

6 of 8

Lab Name

**FMETL** 

## **VOLATILE ORGANICS ANALYSIS DATA SHEET**

13461 Matrix (soil/water) WATER

NJDEP#

Date Sample	4/29/00	Location	<u>500</u>	Lab Sa	imple ID <u>5384 0</u>	<u>)1(500-1)</u>
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	<b></b>	400	200
108-88-3	Toluene	0 37	Not Detected	-	1000	0:0
10061-02-6	trans-1,3-Dichloropropene	0 87	Not Detected	-	nle	DO D
79-00-5	1 1,2-Trichloroethane	0 48	Not Detected		3	00
127-18-4	Tetrachloroethene	0 32	Not Detected		1	πø
591-78-6	2-Hexanone	071	Not Detected	_	nle	no
126-48-1	Dibromochloromethane	0 86	Not Detected	_	10	щ
108-90-7	Chlorobenzene	0 39	Not Detected		4	no
100-41-4	Ethylbenzene	0 65	Not Detected		700	00
1330-20-7	n=+p-Xylenes	1 14	Not Detected	_	nle	по
1330-20-7	o-Xylene	0 62	Not Detected		nle	00
100-42-5	Styrene	0 56	Not Detected		100	ВО
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	l 4-Dichlorobenzene	0 57	Not Detected		75	TIÓ
95-50-1	1 2 Dichlorobenzene	0 64	Not Detected		600	no

7 of 8

## Table 3 SEMI-VOLATILE ANALYSIS DATA SHEET

Lab Name

**FMETL** 

NJDEP#

13461

Matrix (soil/water) WATER

Date Sampled

4/29/00

Location

<u>500</u>

Lab Sample ID 5384 01(500-1)

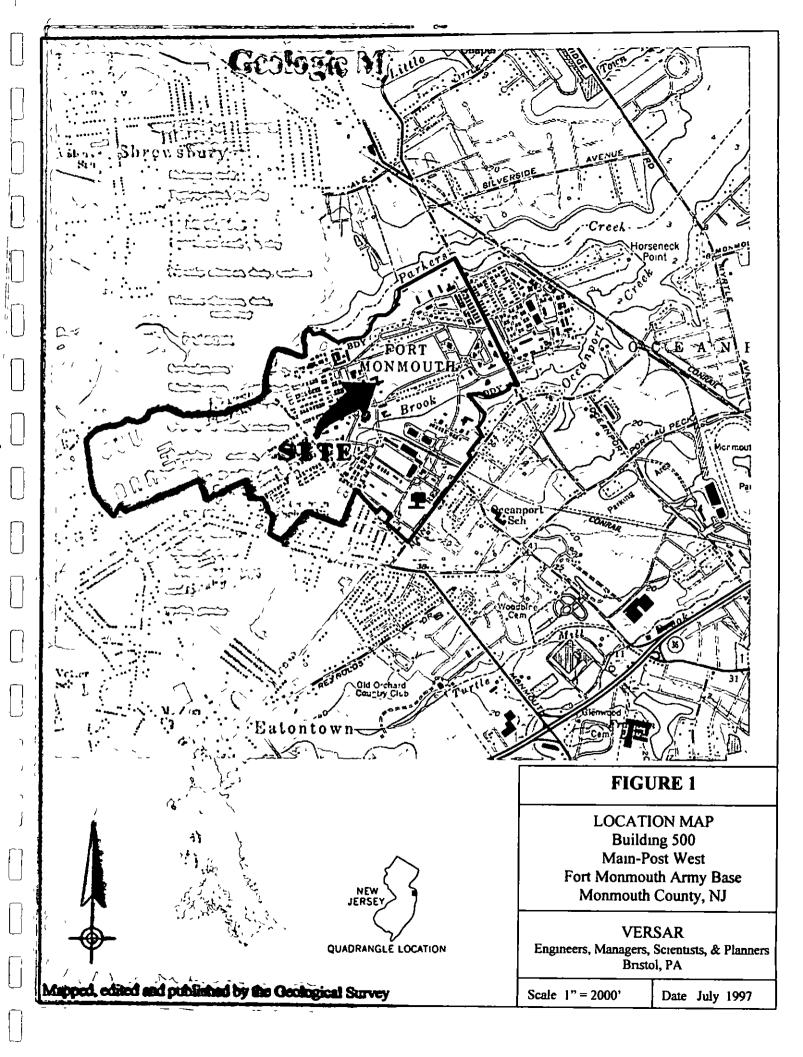
CAS NO	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
110-86-1	Pyridine	1 83	Not Detected	-	nle	no -
62 75-9	N nutroso-dimethylamine	0 91	Not Detected	<b></b>	20	по
62-53-3	Amline	1 63	Not Detected	_	nle	DEC)
111-44-4	bis(2-Chloroethyl)ether	l 28	Not Detected		10	200
541-73 1	1 3 Dichlorobenzene	1 19	Not Detected	-	600	no
106-46-7	I 4-Dichlorobenzene	1 02	Not Detected		75	TIO
100-51-6	Benzył alcohol	1 02	Not Detected	-	nle	190
95-50-1	1 2 Duchlorobenzene	1 13	Not Detected	-	600	200
108-60-1	bis(2-chloroisopropyl)ether	1 39	Not Detected	-	300	190
621-64-7	n-Nitroso-di-n-propylamine	l 50	Not Detected		20	00
67-72-1	Hexachloroethane	0 97	Not Detected	-	10	no
98-95-3	Nitrobenzene	I 01	Not Detected		10	no
78-59-1	Lsopharone	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 Trichlorobenzenc	1 22	Not Detected	-	9	00
91-20-3	Naphthalene 3	1 27	Not Detected	-	nle	no
106-47 8	4 Chloroaniline	1 09	Not Detected	-	nle	во
87-63-3	Hexachlorobutadiene	0.71	Not Detected	-	ı	00
91-57-6	2-Methylnaphthalene	1 08	Not Detected	-	nle	no
77-47-4	Hexachlorocyclopentadiene	1 32	Not Detected		50	по
91 58-7	2-Chioronaphthalene	1 01	Not Detected		nle	по
88-74-4	2 Nitroaniline	0 79	Not Detected	-	nle	190
131 11 3	Dirnethylphthalate	1 52	Not Detected	-	7000	DO
203-96-8	Acenaphthylene	0 96	Not Detected		nle	no

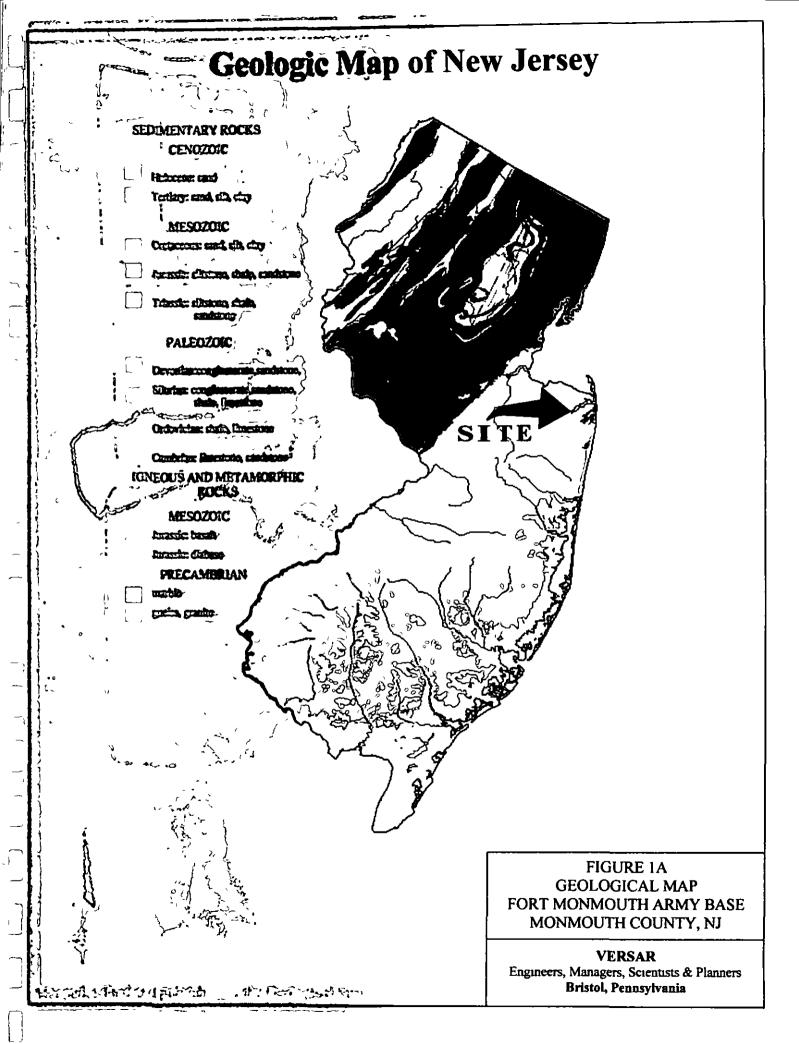
#### Table 3 SEMI-VOLATILE ANALYSIS DATA SHEET

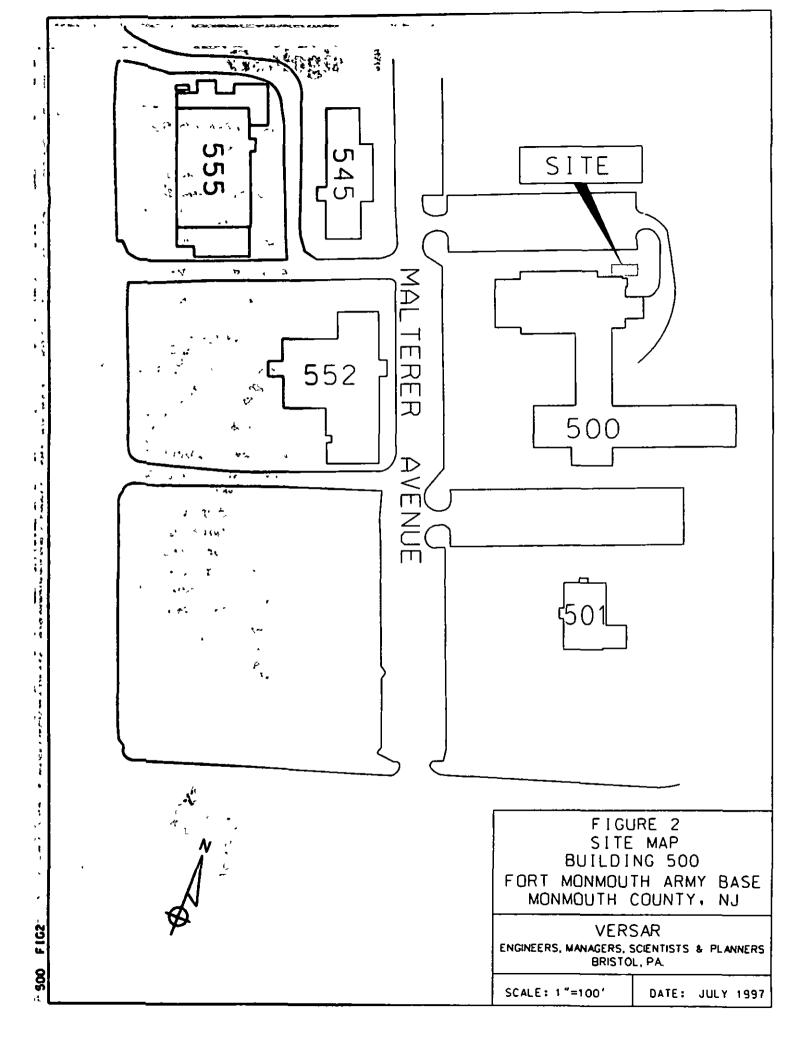
NJDEP # 13461 Matrix (soil/water) WATER Lab Name <u>FMETL</u>

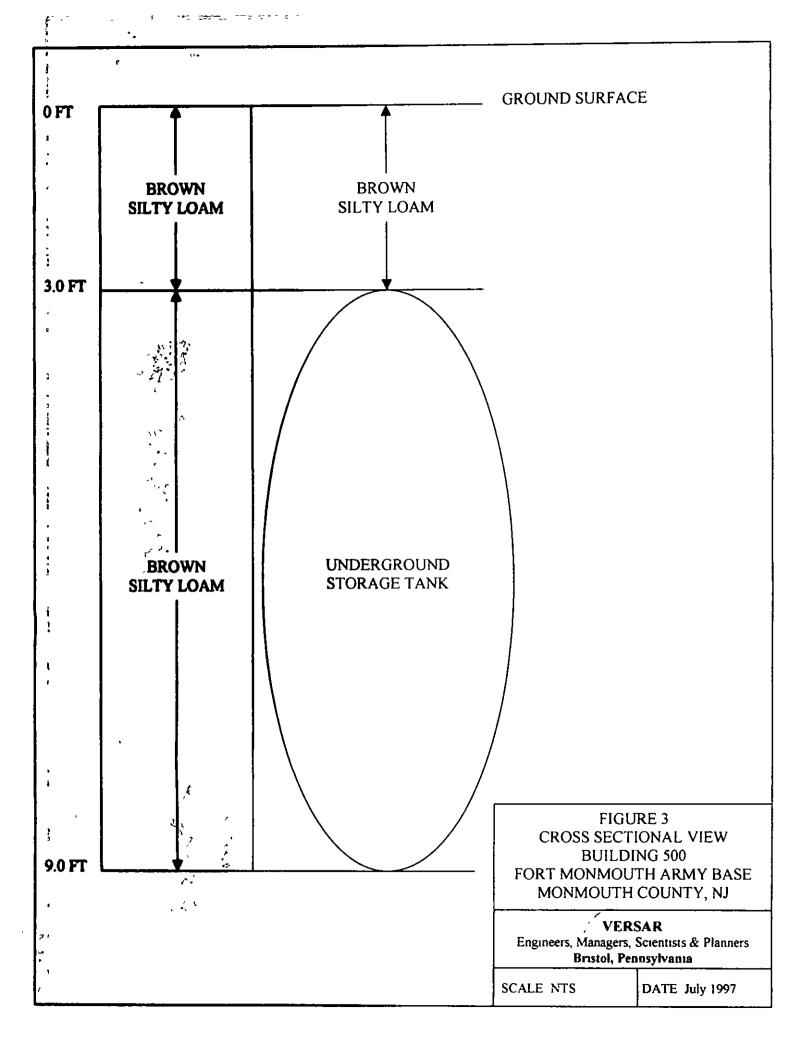
Date Sample	d <u>4/29/00</u>	Location	<u>500</u>	Lab Sa	ample ID 5384 0	1(500-1)
CAS NO	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
606-20-2	2 6-Dinitrotohiene	0 81	Not Detected		nle	110
99-09-2	3 Nitroamline	0 79	Not Detected	-	nie	no
83-32 9	Acenaphthene	1 10	Not Detected	-	400	no
132-64-9	Dibenzofuran	1 00	Not Detected		ale	00
121 14-2	2 4 Dinitrotoluene	0 87	Not Detected	-	10	по
84-66-2	Diethylphthalate	1 62	Not Detected	_	5000	ВО :
86-73-7	Ftuorene	0 99	Not Detected	_	300	060
7005-72-3	4-Chlorophenyl phenylether	1 10	Not Detected	-	nie	no
100-01-6	4-Nitroaniline	1 05	Not Detected	-	nie	800
86-30-6	n-Nitrosodiphenylamine	101	Not Detected	-	20	no
103-33 3	Azobenzene	0 67	Not Detected		nle	по
101-55-3	4-Bromophenyl-phenylether	0 76	Not Detected	**	nie	no 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	по
84-74 2	Di n-butylphthalate	1 70	Not Detected		900	no
206-44-0	Fluoranthene	1 64	Not Detected		300	BO
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	1 38	Not Detected		20	no
117 81 7	bis(2 Ethylhexyl)phthalate	1 74	Not Detected		30	no
117-84-0	Di n-octylphihalate	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	по

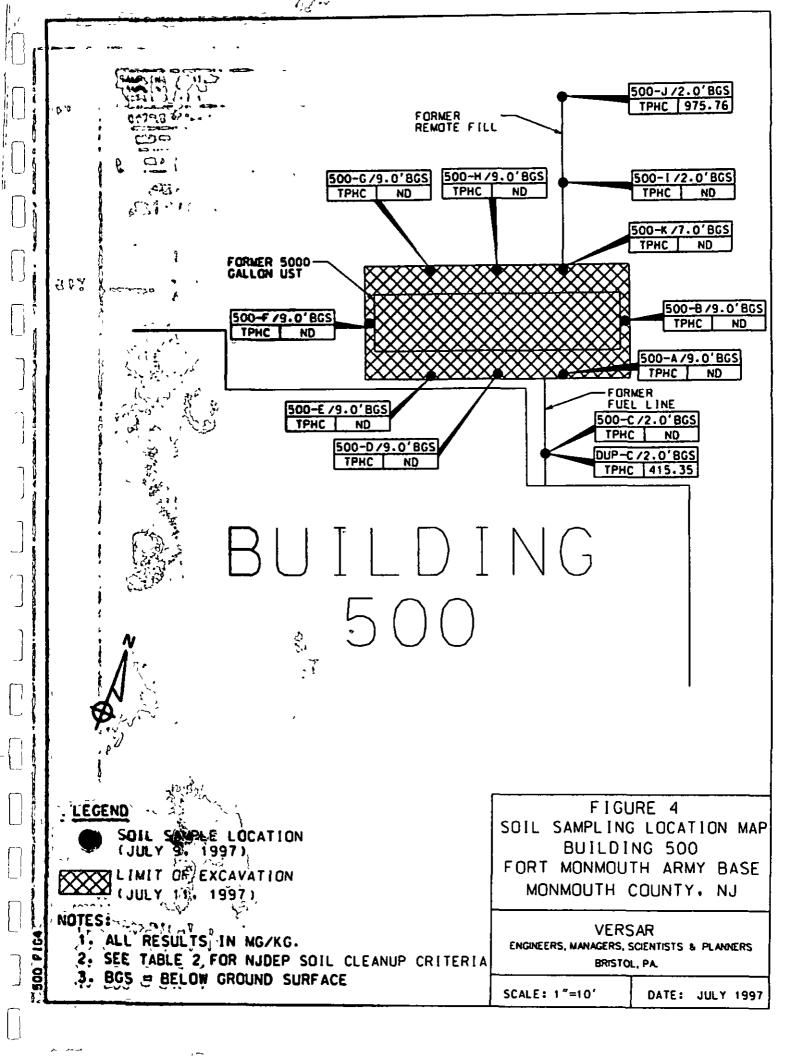
15.1 **FIGURES** 

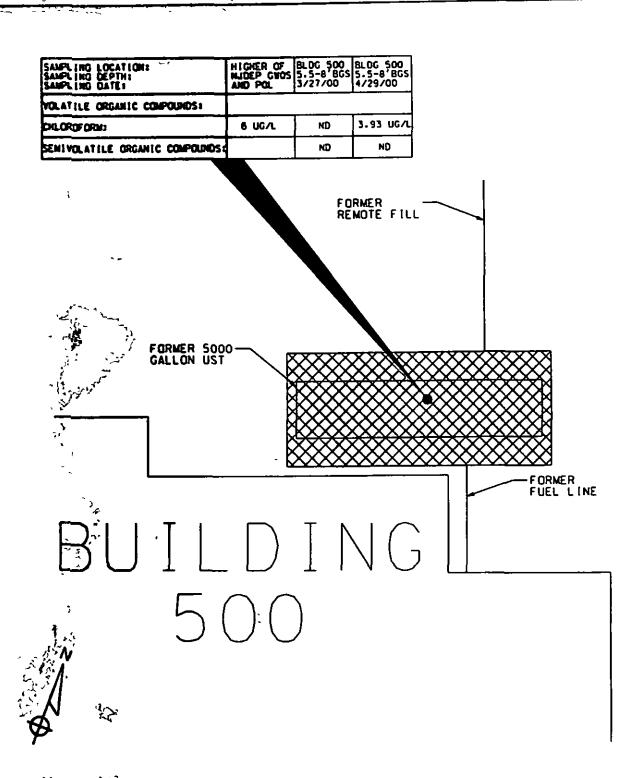














GROUNDWATER SAMPLE LOCATION
(MARCH 27.02000 AND APRIL 29. 2000)

LIMIT OF EXCAVATION

NATES:

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 500
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY NJ

VERSAR
ENGINEERS, MANAGERS, SCIENTISTS & PLANNERS
BRISTOL, PA

SCALE: 1 =10'

DATE: JULY 1997

30 F165.

∫ Appendix A

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# APPENDIX A NJDEP-STANDARD REPORTING FORM



### State of New Jersey Departmen 's environmental Protection and Energ

Division of Responsible Party Site Remediation
CN 028

Trenton NJ 08625-0029

For State	USE OTHY
Date Rec d	
Auth.	
Routing	
UST NO	

ATTN UST Program (609) 984-3156

-	DARD REPORTING FORM
	ng activities at an UST facility:
General Facility Information  Closure (Abandonment or R  Temporary Closure  Change in Service	Changes Sale or Transfer
Check ONLY One Type	of Activity - Complete Form For That Activity
(More than o	ne tank can be listed per activity)
	W tank installations at existing registered egistration Questionnaire for the new tanks.
Answer questions 1 through 5 and others as applic	able
Company hame and address (as it appears on registration questionnaire):	U.S. ARYY - FORT MONMOUTH DPW - BUILDING 173 FORT MONMOUTH NIT 07703 ATTN: EUGENE'W LESINSKY
2. Facility name and location (it different from above):	
3. Contact person for this activity:	GENE LESINSILI Telephone Number: (908) 532-0989
4. The Identification number of the affected tank a BLDG 54.4	as it appears in Question Number 12 on the Registration Questionnaire
5. Registration Number (if known):	ust- 008/533
6. For GENERAL FACILITY INFORMATION charge	s (address, telephone, contact person, etc. – supply NEW information only)
a. Facility name: b. Facility location:	
d. Block: Lot:	
	(OVER)

B	. 🗆 Abandonii	nent Date:		chadule (3 cos	hile book /sou		needed for	
~-	Attach the nec						A0000	y
	abandonment				•			
	. 🕱 Removal	Date: 7	75	107	Case No.			
₽	, -	,	~					•
	Artach the nec	sezsary imple	mentation s	chedule (3 cos	nes;			
a È	or CHANGES IN	HAZARDOU	IS SUBSTA	NCES STORE	D (chécx all t	nat apply)		
	☐ Temporary						Remove all haz	ardous
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	and she nesses							
€.	. 🗆 Changes in	מכון פסוגופש ע	r one regula	sted hazardous	a substance to	o another reg	mated nazaroo	us substance.
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7. Fe	or SUBSTANTIA contoring system	L MODIFICA	מ) פאסודג	include any re		rity — e.g. th	e ಬದಲೆಯಿಂಗ ರ್ವಕ್ರಾ	ill overill protectio
ግ. Fe	contains system	L MODIFICA	ಯ 2001ಗಳ ಸರಚಿವರ್ಮ ಆ	include any re	ntelitied acti			
ግ. Fo መ &	contaring system . Type of Modifix	L MODIFICA is. cathodic p	CTIONS (to	include any re	etrolitied actin			Woveniii protectio
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Appendix B

# APPENDIX B SITE ASSESSMENT SUMMARY

# New Jersey Department of Environmental Protection Site Remediation Program UST Site/Remedial Investigation Report Certification Form

Facility Name U.S. Army Fort Monmouth New Jersey	_
Facility Street Address Directorate of Public Works Building 173	-
Municipality Oceanport County Monmouth	•
BlockLot(s)Telephone Number732-532-6224	-
3. Owner (RP)'s Name	
Street Address City	
State Zıp Telephone Number	
Check as appropriate)  Site Investigation  Report (SIR) \$500 Fee  Remedial Investigation  Complete all that apply)  Assigned Case Manager Ian Curtis, Federal Case Manager  UST Registration Number 81533-75 (7 digits)	
Report (RIR) \$1000 Fee  X NA - Federal greement  Incident Report Number 97 - 07 - 08 - 1439 - 02 (10 or 12 digits)  Tank Closure Number Federal Case Manager	
The attached report conforms to the specific reporting requirements of N J A C 7 26E  The attached report conforms to the specific reporting requirements of N J A C 7 26E  Yes No  Tame Eugene Lesinski Signature See signed subsurface removal log UST Cert No 14537  Irm U S Army Fort Monmouth Firm's UST Cert Number NA-U S Army  Irm Address Directorate of Public Works Building 173 City Fort Monmouth  Tate 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 )	-
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  For a Corporation by a person authorized by a resolution of the board of directors to sign the document. A copy of the resolution, certified as a true copy by the secretary of the corporation, shall be submitted along with the certification, or For a partnership or sole proprietorship by a general partner or the proprietor, respectively, or  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	_
Company Name U.S. Army Fort Monmouth Date 9/4/20	_

### U~ ARMY, SELFM-PW-EV DAILY UST SUBSURFACE REMOVAL LOG

1	BLDG # 500 REG. # 608/533 - 75 CLOSURE #. NA  DATE: 7-8-97 TOA 1400 TOD: 1445  GOV SSE LESINSKI NUDEP CERT, # GO 1453  REMOVAL CONTRACTOR SAT INC TVS  CLOSURE SUPERVISOR DC MAPCINIS NUDEP CERT. #  WEATHER SUNNY - 850 F	7
	ACTIVITY	YES/
	THE SUPERVISOR (CLOSURE CERT ) WAS ON-SITE DURING ALL CLOSURE RELATED ACTIVITIES	7
	THE SSE WAS ON-SITE DURING UST REMOVAL AND SITE SCREENING AND SAMPLING ACTIVITIES	Ý
	ALL ON-SITE PERSONNEL HAD TRAINING IAW ALL SAFETY REQUIREMENTS (E G 29CFR)	Y
	A CONFINED ENTRY PERMIT WAS COMPLETED AND POSTED ON-SITE BY THE CONTRACTOR	NIA
	THE UST WAS PLACED ONTO PLASTIC, SCRAPED OFF, INSPECTED FOR HOLES AND PHOTOGRAPHED	Y
	A DISCHARGE WAS REPORTED TO THE NUMBER (609-292-7172), CASE# $97-7-8-1439-\phi^2$	4
· [	PHOTOS HAVE UST#, BLDG #, DATE, TIME, NAME OF SSE AND DESCR WRITTEN ON BACK	4
	GROUNDWATER WAS ENCOUNTERED AT FEET BG, A SHEEN (WAS/WAS NOT) OBSERVED ON GW	N
	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)	11/4
	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 seg.	NA
	ALL PETROL CONT SOILS WERE SECURED FROM THE WEATHER BY CLOSE OF BUSINESS TODAY	У
	THE SSE AUTHORIZED BACKFILLING THE EXCAVATION (STONE TO 1" ABO/E GROUNDWATER)	N/A
	ADDITIONAL NOTES WERE TAKEN AND ARE RECORDED ON THE BACK OF THIS FORM	N
	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), PHOTOGRAPHS (UST, EXCAVATION, SAMPLING POINTS)	4
I c	check ALL BOXES, LEAV certify under penalty of law that tank decommissioning activities	
perf	formed in compliance with N J A C $$ 7.14B-9 2(b)3 and 7 26 et seq $$ I a	am aware
	t there are significant penalties for submitting false, inaccuration of the submitting false, inaccuration of the submitting false, inaccurate the submitted false	ate, or
	NATURE DATE	
ca/es	\ugt\removai\sitesele doc	

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# APPENDIX C WASTE MANIFEST

₹	)	(	<b><b>♦</b> LORCO PETROLEUM SERVICES</b>			_		<del></del>	
٢	NON-HAZARDOUS WASTE MANIFEST	J Generator's US E	1020597	Manufest Document No	2 Page		NHZ	0058	79
A	3 Generators Name and Maring Address MARIN PORT COMMUNICATION MARIN PORT SON TO SEP PORT SON	ONS ELECTRATION ATTIN	SELTHAN	YAND EV					
	5 L'IONETT COUTLY RECOVERY CO	INC 6	N J D 0 8 4 (	umber ) 4 4 0 6 4	A Trans	sporter's Pt 908 7	none 21-09	900	
	7 Transporter 2 Company Name	8	US EPA ID N	umber •	9 Tran	sporter's P	hone	-	
	Paggrated Facility Name and Sie Address CO RUNYON&CHEESEQUAKE RDS OLD BRIDGE, NJ 08857		O PETROLEUM S	SVCS		1ty's Phone	-0900	)	
	11 Waste Shipping Name and Description					12 Cont	. !	13 Total	14 Unit
	a PETROLEUM OIL (PETROLEUM O		<del></del>			No	Туре	Quantity 9 4 3	WV/oi
	COMBUSTIBLEL LIQUID UN127					0 0	Т	XX	G G
GENER	b				į				
ATOR	C						į	_	
	d				-				
	D Additional Descriptions for Materials Using About T, E PETROLEUM OTL 95 % WATER 5 %	ove				Sling Codes		stes Listed Above	•
	15 Special Handling Instructions and Additional In 24 HR EMERGENCY RESPONSE! DECAL! <b>3708 F</b> ERG! 128 DEXSI MANIFEST USED FOR TRACKIN	(908) 721-09 L TEST KIT R G PURPOSES O	00 ESULTS A P NLY	PM	•				
				7/	1	<i>?</i>			
11	16 GENERATOR'S CERTIFICATION   certify the Printed/Typed Name	materials described above	on this munities and not su Signature	ibject/fo federal regul	styrns for r	eporting brop	e fistor	al of Hazardous Wa	
1	EUGENE W LESM  17 Transporter 1 Acknowledgement of Receipt of	<del></del>	agen	ely	40	NI	u	0807	197
RANSPOR		<i>T</i>	Segretation .	195	2	/		Month Day	797
41 T	Printed/Typed Name	Matenals	Signature					Month Day	Year
7 F	19 Discrepancy Indication Space								
	20 Facility Owner or Operator Certification of reco	ept of waste materials c	overed by this manifest (	except as noted in It				<del>-</del>	
Ţ	Prim of Typed Name	W.	Signature	1.200			·	MAN TO THE REAL PROPERTY.	 기 <u></u>
44. A.	A THE TOTAL STREET	ORIGINAL -	RETURN TO GEN	IERATOR		207	<b>3</b> , 5		,1 <u>6.</u> ,-4

Appendix D

# APPENDIX D UST DISPOSAL CERTIFICATE

THE CHECK IS DELIVERED FOR ON THE POLLOWING ACCO	H PAYMENT		
DATE	AMOUNT	MAZZA & SONS, INC.	1254
1 1	<b>,</b>	RECYCLING DIVISION	
		3230 SHAFPO RD	,
	<del></del>	TINTON FALLS, NJ 07753	55-7231/2212
			1/9/97
<u> </u>		DATE.	
TOTAL OF INVOICES			, ,
LESS % DISCOUNT		PAY TO THE ORDEROF LECON VINNELL	\$22/90]
·	<del></del>	ORDEROF 190011 VIIII	99, DOLLARS 0
LEBS PREIGHT		Two Hundred Twenty Du +	79. J
LESS		100 HUNGTER TOTAL GOT	DOLLARS TE
TOTAL DEDUCTIONS			
AMOUNT OF CHECK		Sovereign Bank	
	001254		lk Klode -
	· -		
		MATTA O CONIC INC	
		MAZZA & SONS, INC.	NO :
		•	NO
115		Metal Recyclers	
OZNO		3230 Shafto Rd	A A-
B.500 B.484			DATE. 9 July 97
D. $D$ .		Tinton Falls, NJ	DATE.
1199		(908) 922-9292	
$\Omega = \Omega $		(306) 322-3232	
$10^{-10}$			
	Customer's Address	Name Team VIIVE	
Weight	Price	_	Weight Price
Cast Iron			Li Copper
Steel			Brass
Tunk 2	21.90		mark .
Li Iron	<del></del>	<del>-</del>	Alum Clean
10H		24580 LB	Alum Cicali
		2.000 60	
Copper #1			Lead e
		- 63.40	
7		, 62.70	Statisland
Copper #2		MIK + SOTT	Stainless
		- 12 rl	
<del></del>		- 1 111:	Ващету
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			22190
		- "	221.90
			221.90 TOTAL AMOUNT:
			TOTAL AMOUNT:
Weighe			

# APPENDIX E SOIL ANALYTICAL DATA PACKAGE

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

#### **REPORT OF ANALYSIS**

Client US Army

DPW, SELFM-PW-EV

Bldg 173

Ft Monmouth, NJ 07703

Project Total Petroleum Hydrocarbons

96-1262 Bldg 500

Project # 2787

Date Rec 07/10/97

Date Compl 07/22/97

Released by

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

	NO ies
1 Method Detection Limits provided	
2 Method Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank	<u> </u>
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 (908)532-4359 Fax (908)532-3484 EMail appleby@doim6 monmouth army mil NJDEP Certification #13461

**Chain of Custody Record** 

Customer: GENE LES	INSKI - DPW Project	1 No 96-1262				Ana	alysis Pai	ameters		Comments:
Phone #: 20989	on B 500			0	3 7				KEPT BELOW 4°C.	
()DERA (XIOMA ()Other	r				S) 3	useu				KEPT BELDWY L.
Samplers Name / Company .(	GARY DIMARTINI	5 - 7V5 SE	ample	# ]	20				1	
Lab Sample I D Sa	imple Location Da	te Time T	lype be	ottles	11/2	1			0	Remarks / Preservation Method
2787 01 500	)-A 7/9/9	7 1139 3	SOIL	10	$\times\!$	$\infty$			ND	EXCAU FLUDROROX
02 500	)-B	1255	_l_ l_	1 L			<u>]                                     </u>		ND	EXC FLOOR@9.0'
03 500	-C	1307							NO	Piping RUNG20' EXE FLOUR @90'
04 500		1322							10	EXE FLOUR @90'
05 500.	-E	1325		1 [					ND	
06 500	-F	1341		1. [					ND	
07 500-	G	1349	_  -	7-1		$\sqcap$			ND	
08 500	-H	1411	1-1.						NO	<b>√</b> 1
09 500	-I 7/10/	97 0901							NO	Piping Rus 2.0'
10 500		0905		17					NO	
11 500	-K   - -	1112	-  -					7	5	EXC FLOOR@9.0'
12 500	-L	1/22						1-1	N	FIRELD DUPLICATE
	-DUP	- / / ,							<u> </u>	FIELD DUDLICATE
NOTE OVA (#ASZIN)C	ALIBRATED WY95 PAM	CHY ZERO(0) 81	RAT	1/07	HAS.	02/	1976	6 D	MARTINA	15 *
Religious shed by (structure)	i	by (signature)			shed by (	signature)		atc/Time	Received by (	signature)
Chry Dingar	7/10/97/524	Dape								
Relinguished by (signature)	Date/Time Received	Received by (signature)		Relingui	clinquished by (signature)  Date/Time  Received by (signature)			signature)		
Report Type ( )Full, MReduced	eport Type ()Full, MReduced ()Standard ()Screen/non-certified Remarks DEDICATED SAMPLING TOOLS LISED.									
Turnaround time Standard 4 wks	<del>-</del>									1845 on 7/10/97.

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

Client

US Army

Lab ID#

2787

DPW SELFM PW-EV

Date Rec'd

10-Jul-97

Bldg 173

Analysis Start

14-Jul-97

Ft. Monmouth, NJ 07703

Analysis Complete

22-Jul 97

Analysis

OQA-QAM 025

UST Reg #

Matrix

Soil

Closure#

Analyst

P Skelton

DICAR#

Ext. Meth

Shake

Location #

В	500
---	-----

Ext. Meth	Meth Shake Location #					В 500
Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
2787.01	500-A	1 00	15 10	83 08	187	ND
2787.02	500-B	1 00	15 27	87 18	177	ND
2787 03	500-C	1 00	15 13	86 15	180	ND
2787.04	500 D	1 00	15 11	80 11	194	ND
2787.05	500-E	1 00	15 55	81 36	186	ND
2787.06	500-F	1 00	15 43	81 26	187	ND
2787.07	500-G	1 00	15 18	80 07	193	ND
2787.08	500 H	1 00	15 12	90 01	173	ND
2787.09	500 I	1 00	15 10	82 51	189	ND
2787.10	500~J	1 00	15 38	90 47	169	975.76
2787.11	500 K	1 00	15 79	78 24	190	ND
2787.12	500 L	1 00	15 60	84 13	179	ND
2787 13	500-DUP	1 00	15 63	86 03	175	415.35
METHOD BLANK	14-Jul-97	1 00	15 00	100 00	157	ND

ND = Not Detected

MDL = Method Detection Limit

Daniel K Wright

Laboratory Director

#### LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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

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

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

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

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

Appendix F

# 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. 500** 

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received		
Trip Blank	5285 01	Aqueous	27-Mar-00	03/25/00		
Field Blank	5285 02	Aqueous	27-Mar-00	03/25/00		
500-1 5 5-8'	5285 03	Aqueous	27-Mar-00	03/25/00		

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

ENCLOSURE-CHAIN OF CUSTODY RESULTS

Daniel Wright/Date
Laboratory Director

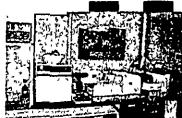
5-8-00

### **Table of Contents**

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Conformance/Non-Conformance Summary	5-7
Laboratory Chronicle	8-9
Volatile Organics  Analytical Results Summary Tune Results Summary Method Blank Results Summary Calibration Summary Surrogate Recovery Summary MS/MSD Results Summary Internal Standard Area & RT Summary Chromatograms	10-11 12-19 20-21 22 23 24 25-26 27 28-35
Base Neutrals Analytical Results Summary Tune Results Summary Method Blank Results Summary Calibration Summary Surrogate Recovery Summary MS/MSD Results Summary Internal Standard Area & RT Summary Chromatograms	36 37-45 46-51 52 53-56 57 58-61 62-65 66-71
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# CHAIN OF CUSTODY





### Fort Monmouth Environmental Testing Laboratory

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

Tel (732)532-4359 Fax (732)532-6263 EMail wrightd@mail1 monmouth army mil

NJDEP Certification #13461

**Chain of Custody Record** 

Customer: D DESA! Proj				Project No: 00 -000 f				Analysis Parameters Comments:						Comments:						
Phone #: X2 /475  ( )DERA ( )OMA ( )Other:				Location BLOG. 500:				D04	٦ڂٛؠ		, , , , , , , , , , , , , , , , , , ,	4,7		, ,	• •					
Samplers Name / Company: Nurse Laura				URA.	- WS- PWS07			Sample	#	+	J#≯E	+	. `		'	<b>,</b>				
Lab Sample I D		Sample Location				Date	Time	Туре	l I	12	ε	15	15	,	,		٠. <sub>′</sub>	Remarks / Preservation Method		
5285	· · · ·	_/	7.6	3.			3-2	5.00	·	AQ	2	×								HCL
		Z	F.Z	<u> 3.</u>				"	0855	11	3	X	X	×						24°C/HCL
*		3	500 -	<u> </u>	55-	8'		//	0920	11	3	X	×	×					<u> </u>	e4°c/HCL
		XX		, 	-					 									<u> </u>	
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Relinquished by (signature)  3 27-00 07:30  Date/Time				Referved by (signature). Relinc			nquished by (signature)			Date/	Tune_	Received by (signature)								
Persont T	eport Type ()Full, (AReduced, ()Standard, ()Screen / non-certified, ()EDD Remarks # CEMENT PAD @ 8' & W. ON 70 P																			
urnaround time (AStandard 3 wks, ()Rush Days, ()ASAP Verbal Hrs OF PAO 15 (0 5.5)																				

# METHODOLOGY SUMMARY

### Methodology Summary

### EPA Method 624 Gas Chromatographic Determination of Volatiles in Water

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

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

1 ...

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.

# LABORATORY CHRONICLE

### **Laboratory Chronicle**

Lab ID 5285

Site Bldg 500

	Date	Hold Time
Date Sampled	03/25/00	NA
Receipt/Refingeration	03/25,27/00*	NA
Extractions . 1 Base Neutral	03/31/00	14 days
Analyses		
<ul><li>1 Volatile Organics</li><li>2 Base Neutral</li></ul>	04/05/00 04/04/00	14 days 40 days

• Samples collected and refrigerated on 03/25/00, Laboratory received the sample on Monday 03/27/00

## CONFORMANCE NON-CONFORMANCE SUMMARY

### GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

		Indicate Yes, No, N/A
1	Chromatograms Labeled/Compounds Identified (Field Samples and Method Blanks)	yes yes
2	Retention times for chromatograms provided	Yes
3	GC/MS Tune Specifications	•
,	a BFB Meet Criteria 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	
	<ul> <li>a. Calibration Check Compounds Meet Criteria</li> <li>b System Performance Check Compounds Meet Criteria</li> </ul>	yes Yes
7	Blank Contamination - If yes, List compounds and concentrations in each blank.	<u> 200</u>
	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 PA	
	If not met, were the calculations checked and the results qualified as "estimated"?	
9	Matrix Spike/Matrix Spike Duplicate Recoveries Meet Criteria (If not met, list those compounds and their recoveries, which fall outside the acceptable range)	yes
	a VOA Fraction	
	b B/N Fraction_	
	c Acid Fraction NA	

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

	Indicate Yes. No. N/A
Internal Standard Area/Retention Time Shift Meet Criteria (If not met, list those compounds, which fall outside the acceptable range)  a VOA Fraction b B/N Fraction c Acid Fraction	yes
11 Extraction Holding Time Met	<u> te</u>
If not met, list number of days exceeded for each sample	
12 Analysis Holding Time Met	40
If not met, list number of days exceeded for each sample	
Additional Comments	
Laboratory Manager Date 5-6-00	

# VOLATILES ORGANICS

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

#### **Definition of Qualifiers**

**MDL**: Method Detection Limit

J : Compound Identified Below Detection Limit
B : Compound is in Both Sample and Blank
D : Results are from a Dilution of the 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 Number #13461

Data File

VC002807.D

Sample Name

Vblk66 Vblk66

Operator Date Aquired Skelton 36621 05694 Field ID Multiplier

1

CAS#	Compound Name	R.T	Response	Result	Regulatory Level (vg/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	_	T-"	not detected	nle _	0 16 ug/L	
108203	D1-1sopropyl ether			not detected	nle_	025 ug/L	
75718	Dichlorodifluoromethane		T T	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	101 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0 50 ug/L	
75-35-4	1,1-Dichloroethene		<del>                                     </del>	not detected	2	0 24 ug/L	
67-64-1	Acetone	_	<del> </del>	not detected	700	1 36 ug/L	
75-15-0	Carbon Disulfide		<del>                                     </del>	not detected	nle	0 46 ug/L	
75-09-2	Methylene Chloride		1	not detected	2	0 24 ug/L	
156-60-5	trans-1 2-Dichloroethene	-	1-	not detected	100	0 16 ug/L	
75-34-3	1,1-Dichloroethane	_	1	not detected	70	0 12 ug/L	<del>                                     </del>
108-05-4	Vinyl Acetate		† <del></del>	not detected	nle	0 78 ug/L	1
78-93-3	2-Butanone			not detected	300	0 62 ug/L	
156594	cis-1,2-Dichloroethene		<del> </del>	not detected	10	0 17 ug/L	
67-66-3	Chloroform	_	1	not detected	6	0 30 ug/L	
75-55-6	1.1.1-Trichloroethane		<del> </del>	not detected	30	0 23 ug/L	<u> </u>
56-23-5	Carbon Tetrachloride		<del>                                     </del>	not detected	2	0 47 ug/L	<del> </del>
71-43-2	Benzene		<del> </del>	not detected		0 23 ug/L	<del>1</del>
107-06-2	1,2-Dichloroethane		<del>   </del>	not detected	2	0 18 ug/L	1
79-01-6	Trichloroethene		1	not detected	1 i 1	0 23 ug/L	1 -
78-87-5	1,2-Dichloropropane		<del>                                     </del>	not detected	1 1	0 40 ug/L	1
75-27-4	Bromodichloromethane		<del>1 1</del>	not detected	1 1	0.55 ug/L	†
110-75-8	2-Chloroethyl vinyl ether		<del>                                     </del>	not detected	nle	0 65 ug/L	1
10061-01-5	cis-1,3-Dichloropropene		1	not detected	nle	0 69 ug/L	
108-10-1	4-Methyl-2-Pentanone		<del>                                     </del>	not detected	400	0.59 ug/L	†
108-88-3	Toluene	-	<del> </del>	not detected	1000	0 37 ug/L	†
10061-02-6	trans-1,3-Dichloropropene		<del>                                     </del>	not detected	nle	0 87 ug/L	-
79-00-5	1 1,2-Trichloroethane		<del> </del>	not detected	3	0 48 ug/L	1
127-18-4	Tetrachloroethene	-	<del>                                     </del>	not detected	1 1	0 32 ug/L	1
591-78-6	2-Hexanone			not detected	nle	071 ug/L	ſ
126-48-1	Dibromochloromethane		<del>                                     </del>	not detected	10	0 86 ug/L	
108-90-7	Chlorobenzene		<del>                                     </del>	not detected	4	0 39 ug/L	+
100-41-4	Ethylbenzene		<del>                                     </del>	not detected	700	0 65 ug/L	+
1330-20-7	m+p-Xylenes		<del>                                     </del>	not detected	nle	1 14 ug/L	<del> </del>
1330-20-7	o-Xylene		<del>  </del>	not detected	nle	0 62 ug/L	┿
100-42-5	Styrene	_	<del>                                     </del>	not detected	100	0 56 ug/L	+
75-25-2	Bromoform		<del></del>	not detected	4	0 70 ug/L	+
79-34-5	1,1,2,2-Tetrachloroethane		<del></del>	not detected	2	0 /0 ug/L 0 47 ug/L	+
541-73-1	1,3-Dichlorobenzene		<del> </del>	not detected	600		<del>\</del>
106-46-7	1,4-Dichlorobenzene		-  <del></del>	not detected		0 55 ug/L	<del></del>
95-5 <u>0-</u> 1	1,2-Dichlorobenzene		+		75	0 57 ug/L	<del> </del> -
1-70-1				not detected	600	0 64 ug/L	.1

\*Higher of PQL's and Ground Water Quality Criteria as per N J A C , 7 9-6 2-Sept 97

#### 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 COMPOLINDS

Lab	D
	_

		ICIVIA	CEIVELI	DENTIL	LD COMI C	/UND3			1.66
Lab Name	FMETL				Project	00000	14		k66
NJDEP#	13461	(	Case No	5285	Locatio	on <u>500</u>	s	DG No	
Matrix (soil/v	vater)	WATER	<del></del>		Ļ	ab Samp	le ID	Vblk66	
Sample wt/vo	ol	50	(g/ml	) <u>ML</u>	L	ab File II	)	VC002807	D
Level (low/n	ned)	LOW			D	ate Rece	eived	3/27/00	
% Moisture i	not dec				D	ate Anal	yzed	4/5/00	
GC Column	RTX50	02 ID	0 25 (	നന)	a	ilution Fa	actor	10	
Soil Extract V	/olume		(uL)		, S	oil Alique	ot Volu	ıme	(uL)
Number TICs	s found	0		_	ONCENTRA ıg/L or ug/Kç		NITS G/L		
CAS NO		СОМРО	OUND NA	AME		RT	E	ST CONC	Q

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

Data File

VC002808.D

Sample Name

5285.01 Trip Blank

Operator Date Aquired Skelton 36621 09444 Field ID Multiplier

נחו

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	_MDL	Qualifier
107028	Acrolein			not detected	50	1 85 ug/L	
107131	Acrylonitrile		1	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	nle	0 16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0 25 ug/L	1
75718	Dichlorodifluoromethane		T T	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		T - T	not detected	10	1 10 ug/L	
75-00-3	Chloroethane			not detected	nle	101 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		<del>                                     </del>	not detected	700	1 36 ug/L	
75-15-0	Carbon Disulfide		1	not detected	nle	0 46 ug/L.	
75-09-2	Methylene Chloride		<del>                                     </del>	not detected	2	0 24 ug/L	
156-60-5	trans-1,2-Dichloroethene		<del>   </del>	not detected	100	0 16 ug/L	
75-34-3	I 1-Dichloroethane		<del>   </del>	not detected	70	0 12 ug/L	<del>                                     </del>
108-05-4	Vinyl Acetate		† · †	not detected	nle	0.78 ug/L	<del>                                     </del>
78-93-3	2-Butanone		<del> </del>	not detected	300	0 62 ug/L	
156594	cis-1,2-Dichloroethene		<del>                                     </del>	not detected	10	0 17 ug/L	<del>                                     </del>
67-66-3	Chloroform		<del>  -  </del>	not detected	6	0 30 ug/L	<del>  -</del> -
75-55-6	1 1 1 Trichloroethane		<del> </del>	not detected	30	0 23 ug/L	<del>                                     </del>
56-23-5	Carbon Tetrachloride		1	not detected	2	0 47 ug/L	<del>                                     </del>
71-43-2	Веплепе		<del>                                     </del>	not detected	ī	0 23 ug/L	<del>                                     </del>
107-06-2	1 2-Dichloroethane		<del>                                     </del>	not detected	2	0 18 ug/L	<del>                                     </del>
79-01-6	Trichloroethene	_	1	not detected	1	0 23 ug/L	<del>                                     </del>
78-87-5	1,2-Dichloropropane		<del>                                     </del>	not detected	1 1	0 40 ug/L	<del> </del>
75-27-4	Bromodichloromethane		† <del> †</del>	not detected	1	0 55 ug/L	
110-75-8	2-Chloroethyl vinyl ether		<del>                                     </del>	not detected	nle	0 65 ug/L	<del>                                     </del>
10061-01 5	cis 1.3-Dichloropropene	<del></del>	<del> </del>	not detected	nle	0 69 ug/L	-
108-10-1	4 Methyl-2-Pentanone		<del> </del>	not detected	400	0 59 ug/L	<del>                                     </del>
108-88-3	Toluene		<del>                                     </del>	not detected	1000	0 37 ug/L	<del> </del>
10061-02-6	trans-1,3 Dichloropropene		<del> </del> +	not detected	nle	0 87 ug/L	<del>                                     </del>
79-00-5	1,1 2-Trichloroethane		<del>                                     </del>	not detected	3	0 48 ug/L	<del>                                     </del>
127-18-4	Tetrachloroethene		<del>                                     </del>	not detected	1 1	0 32 ug/L	<del> </del>
591-78-6	2-Hexanone		<del>                                     </del>	not detected	nle	0 71 ug/L	<del>                                     </del>
126-48-1	Dibromochloromethane		<del>                                     </del>	not detected	10	0 86 ug/L	<del>                                     </del>
108-90-7	Chlorobenzene		<del>                                     </del>	not detected	4	0 39 ug/L	<del></del>
100-41-4	Ethylbenzene		<del>                                     </del>	not detected	700	0 65 ug/L	<del>                                     </del>
1330-20-7	m+p-Xylenes		<del> </del> -	not detected	nle	1 14 ug/L	-
1330-20-7	o-Xylene		<del> </del>	not detected	nle	0 62 ug/L	+-
100-42-5	Styrene		<del>                                     </del>	not detected	100	0 56 ug/L	<del>                                     </del>
75-25-2	Bromoform		<del> </del>	not detected	4	0 36 ug/L 0 70 ug/L	<del> </del>
79-34-5	1,1,2,2-Tetrachloroethane		<del>{                                    </del>	not detected			<del></del>
			<del>  </del> -		2	0 47 ug/L	<del> </del>
541-73-1	1,3-Dichlorobenzene		<del> </del>	not_detected	600	0 55 ug/L	<del> </del> -
106-46-7	1,4-Dichlorobenzene		<del>  </del>	not detected	75	0 57 ug/L	<del></del>
95-50-1	1 2-Dichlorobenzene		<del></del>	not detected	600	0 64 ug/L	l

<sup>\*</sup>Higher of PQL's and Ground Water Quality Criteria as per NJAC, 79-62-Sept 97

#### 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**

Lab ID

EST CONC

RT

TENTATIVELY IDENTIFIED COMPOUNDS								
Lab Name	FMETL	IENIAII	VECT IDEIV	Project	000004	ТВ		
NJDEP#	13461	Cas	e No 528	5 Location	on 500	SDG No		
Matrix (soil/	water)	WATER		Ļ	ab Sample ID	5285 01		
Sample wt/vo	ol	50	(g/ml) ML	L	ab File ID	VC002808 D	_	
Level (low/r	ned)	LOW		D	ate Received	3/27/00	_	
% Moisture	not dec		<del></del>	D	ate Analyzed	4/5/00	<del>.</del>	
GC Column	RTX50	<u>)2</u> ID <u>0 2</u>	5 (mm)	D	Dilution Factor 1 0			
Soil Extract V	/olume		_ (uL)	S	oil Aliquot Vo	lume	_ (uL)	
•				CONCENTRA				
Number TICs	s found	0		(ug/L or ug/Kg	g) <u>UG/L</u>			

**COMPOUND NAME** 

CAS NO

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

Data File

VC002809.D

Sample Name

5285.02 Field Blank

Operator Date Aquired Skelton 36621.12431 Field ID Multiplier

1

CAS#	Compound Name	R,T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	50	1 85 ug/L	1
107131	Acrylonitrile			not detected	50	2 78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8 52 ug/L	I
1634044	Methyl-tert-Butyl ether			not detected	nle	0 16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0 25 ug/L	I
75718	Dichlorodifluoromethane		T	not detected	nle	1 68 ug/L	
74-87-3	Chloromethane		1	not detected	30	1 16 ug/L	
75-01-4	Vinyl Chlonde		<u> </u>	not detected	5	1 06 ug/L	
74-83-9	Bromomethane		1 1	not detected	10	1 10 ug/L	
75-00-3	Chloroethane			not detected	nle	101 ug/L	
75-69-4	Trichlorofluoromethane		<del>                                     </del>	not detected	nle	0 50 ug/L	
75-35-4	1 1-Dichloroethene		1	not detected	2	0 24 ug/L	
67-64-1	Acetone		<del>    -</del>	not detected	700	1 36 ug/L	1
75-15-0	Carbon Disulfide			not detected	nle	0 46 ug/L	1
75-09-2	Methylene Chlonde	_	<del>                                     </del>	not detected	2	0 24 ug/L	<del>                                     </del>
156-60-5	trans-1,2-Dichloroethene		<del>   </del>	not detected	100	0 16 ug/L	<u> </u>
75-34-3	1 1-Dichloroethane		<del>                                     </del>	not detected	70	0 12 ug/L	<del> </del>
108-05-4	Vinyl Acetate		<del>                                     </del>	not detected	nle	0 78 ug/L	<del>                                     </del>
78-93-3	2-Butanone		<del>                                     </del>	not detected	300	0 62 ug/L	1
1\$6594	cis-1 2-Dichloroethene		<del>                                     </del>	not detected	10	0 17 ug/L	
67-66-3	Chloroform	· <del>-</del>	<del>                                     </del>	not detected	6	0 30 ug/L	<b>†</b>
7\$-55-6	1.1.1-Trichloroethane		<del>  -                                   </del>	not detected	30	0 23 ug/L	<del>†</del>
56-23-5	Carbon Tetrachlonde		<del>                                     </del>	not detected	2	0 47 ug/L	
71-43-2	Benzene		<del> </del>	not detected	1 1	0 23 ug/L	<del>                                     </del>
107-06-2	1 2-Dichloroethane		<del>                                     </del>	not detected		0 18 ug/L	<del>                                     </del>
79-01-6	Trichloroethene	·	<del>    -</del>	not detected	1 1	0 23 ug/L	<del> </del>
78-87-5	1,2-Dichloropropane		<del>   </del>	not detected	<del>                                     </del>	0 40 ug/L	<del> </del>
75-27-4	Bromodichloromethane		<del> </del>	not detected	<del>t i</del>	0 55 ug/L	<del> </del>
110-75-8	2-Chloroethyl vinyl ether		<del>   </del>	not detected	nle	0 65 ug/L	
10061-01-5	cis-1 3-Dichloropropene		<del>                                     </del>	not detected	nle	0 69 ug/L	
108-10-1	4-Methyl-2-Pentanone		<del>                                     </del>	not detected	400	0 59 ug/L	
108-88-3	Toluene		<del>                                     </del>	not detected	1000	0 37 ug/L	-
10061-02-6	trans-1,3-Dichloropropene		<del>                                     </del>	not detected	ale	0 37 ug/L 0 87 ug/L	<del> </del>
79-00-5	1 1 2-Trichloroethane		<del>    -   -   -   -   -   -   -   -  </del>	not detected	3	0 48 ug/L	<del>                                     </del>
127-18-4	Tetrachloroethene		<del>                                     </del>	not detected	<del>                                     </del>	0 32 ug/L	+
591-78-6	2-Hexanone		<del>                                     </del>	not detected	nle	0 71 ug/L	<del> </del>
126-48-1	Dibromochloromethane		<del>                                     </del>	not detected	10	0 86 ug/L	<del> </del>
108-90-7	Chlorobenzene		+	not detected	10 4	0 39 ug/L	+
100-41-4	Ethylbenzene	<del></del> _	<del>  </del>	not detected	+		1
1330-20-7	m+p-Xylenes		<del>   </del>	not detected	700	0 65 ug/L	+
			<del>                                     </del>		<u>nle</u>	1 14 ug/L	<del></del>
1330-20-7	o-Xylene		<del> </del>	not detected	nle	0 62 ug/L	+
100-42-5	Styrene		┿	not detected	100	0 56 ug/L	<del> </del>
75-25-2	Bromoform		<del> </del>	not detected	4	0 70 ug/L	+
79-34-5	1 1,2,2-Tetrachloroethane		<del>                                     </del>	not detected	2	0 47 ug/L	<b></b>
541-73-1	1,3-Dichlorobenzene		<del>-</del>	not detected	600	0 55 ug/L	<del> </del>
106-46-7	1,4-Dichlorobenzene		<del>  -    </del>	not detected	75	0 57 ug/L	<u> </u>
95-50-1	1,2-Dichlorobenzene		<u> </u>	not detected	600	0 64 ug/L	1

<sup>\*</sup>Higher of PQL's and Ground Water Quality Criteria as per N J A C, 7 9-6 2-Sept 97

#### 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**

Lab ID

		TENTA	TIVELY	DENTIFIE	D COMPO	UNDS				
Lab Name	FMETL	<u> </u>			Project	000004		_	FB 	
NJDEP#	13461_	(	Case No	5285	Locatio	n <u>5</u> 00	_ s	DG No		
Matrix (soil/	water)	WATER			La	b Sample	ID	<u>5285 02</u>		
Sample wt/v	ol	50	(g/ml)	ML	_ La	b File ID		VC00280	9 D	<b></b> .
Level (low/	med)	LOW			Đa	ate Receiv	red	3/27/00		
% Moisture	not dec				Da	ate Analyz	ed	4/5/00		
GC Column	RTX5	02_ ID	<u>0 25</u> (r	nm)	Di	lution Fac	tor	10		
Soil Extract 1	Volume		(uL)		Sc	ol Aliquot	Volu	me		_ (uL)
, Number TIC	e found	0			NCENTRA /L or ug/Kg					
	3 100110		<del>_</del>			<del></del>	I			
CAS NO	}	СОМР	OUND NA	ME	]	RT	ES	ST CONC		Q

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

Data File

VC002810.D

Sample Name

5285.03

Operator
Date Aquired

Skelton 36621,15278 Field ID

500-1 1

Mulupher	
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CAS#	Compound Name	R.T	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein		T	not detected	50	1 85 ug/L	
107131	Acrylonitrile		1	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	nle	0 16 ug/L	
108203	D1-150propyl ether			not detected	nle	0 25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1 68 ug/L	
74-87-3	Chloromethane		<del>                                     </del>	not detected	30	1 16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1 06 ug/L	
74-83-9	Bromométhane		1	not detected	10	1 10 ug/L	1
75-00-3	Chloroethane			not detected	nle	101 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	
75-34-3	1,1-Dichloroethane		1	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	
156594	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-Dtchloroethane			not detected	2	0 18 ug/L	
79-01-6	Trichloroethene			not detected	1	0 23 ug/L	ĺ
78-87-5	1,2-Dichloropropane			not detected	1	0 40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0 55 ug/L	1
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- <u>78-6</u>	2-Hexanone			not detected	nle	071 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	I
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	

<sup>\*</sup>Higher of PQL's and Ground Water Quality Criteria as per N J A C, 7 9-6 2-Sept 97

#### 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

Lab Name

**FMETL** 

#### **VOLATILE ORGANICS ANALYSIS DATA SHEET** TENTATIVELY IDENTIFIED COMPOUNDS

**Project** 

SHEET	Labib	
NDS		
000004		
500 S	DG No	
Sample ID	5285 03	
File ID	VC002810 D	_
e Received	3/27/00	_
e Analyzed	4/5/00	_
ition Factor	10	_
Aliquot Volu	ıme	(uL)
ION UNITS		
UCA		

NJDEP# 13	461	Case No 5	285 Locat	ion <u>500</u>	_ SDG No	- <u></u>
Matrix (soil/wate	er) WATE	ER	ι	_ab Sample	ID 5285 03	
Sample wt/vol	50	(g/ml) <u>l</u>	<u>и</u>	_ab File ID	VC002810 D	I <del></del>
Level (low/med	) LOW		E	Date Receiv	red <u>3/27/00</u>	
% Moisture not	dec		Į.	Date Analyz	ed 4/5/00	
GC Column F	RTX502 ID	<u>0 25</u> (mm	n) [	Dilution Fac	tor 10	
Soil Extract Volu	ime	(uL)	•	Soil Aliquot	Volume	(uL)
Number TICs for	und (	1	CONCENTR (ug/L or ug/K		_	
Number 1705 for		<u></u>		<del></del>	<del></del>	<del></del>
CAS NO	СОМ	POUND NAM	E	RT	EST CONC	Q

# BASE NEUTRAL

#### Semi-Volatile Analysis Report

#### U.S. Army, Fort Monmouth Environmental Laboratory NIDEP Certification #13461

Data File Name BNA03820 D Operator Bhaskar

Sample Name Shlk360 Misc Info Sblk360

Date Acquired 4-Арг-00 Sample Multiplier

Regulatory Level (ug/L)\* MDL CAS# Name R.T Response Result Qualifiers 110-86-1 Pyridine not detected NLE 1 83 ug/L 0 91 ug/L 20 62-75-9 not detected N hitroso-dimethylamine NLE 1 63 ug/L 62-53-3 not detected Aniline 1 28 ug/L 111-44-4 not detected 10 bis(2 Chloroethyl)ether i 21 600 ug/L 541-73 1 not detected 1,3-Dichlorobenzene not detected 75 1 19 ug/L 106-46-7 1 4-Dichlorobenzene 100-51-6 not detected NLE 1 02 սջ/L Benzył alcohol not detected 600 1 13 ug/L 95-50-I l 2-Dichlorobenzene 1 39 300 ue/L 108-60-1 not detected bis(2-chloroisopropyl)ether 621-64-7 n-Nitroso-di-p-propylamine not detected 20 0 80 ug/L 10 1 50 67-72-1 not\_detected ug/L Hexachloroethane 10 0 97 ue/L 98-95-3 Nitrobenzene not detected 100 t 01 ug/L 78-59-1 Isophorone not detected 111-91-1 NLE 1 21 ue/L bis(2-Chloroethoxy)methane not detected 120-82-1 not detected 9 l 22 ug/L l 24 Trichlorobenzene NLE 1 27 ue/L 91-20-3 Naphthalene not detected NLE 106-47-8 4-Chloroaniline not detected 1 09 ug/L 87-68 3 1 071 ug/L not detected Hexachlorobutadiene 91-57-6 NLE 1 08 ue/L 2-Methylnaphthalene not detected 77-47-4 not detected 50 I 32 ue/L Hexachlorocy clopentadiene 91-58-7 NLE 1 01 2-Chloronaphthalene not detected ug/L 88-74-4 NLE 0 96 ug/L 2-Netroansline not detected 131 11 3 7000 I 52 Dimethylphthalate not detected ug/L 208-96-8 Acenaphthylene not detected NLE 0 % ug/L NLE 606-20-2 081 ug/L 26-Dinitrotoluene not detected 99-09-2 NLE 0 79 ug/L 3 Nitroambne not detected 83-32-9 not detected 400 1 10 ug/L Acenaphthene 132-64-9 Dibenzofuran not detected NLE 1 00 ue/L 121-14-2 2 4-Dinitrotoluene not detected 10 0 87 ug/L 84-66-2 Diethylphthalate 5000 1 62 ug/L not detected 86-73-7 Fluorene 300 0 99 ug/L not detected 7005-72-3 4-Chlorophenyl-phenylether not detected NLE I 10 ug/L 100-01-6 4-Nitroaniline not detected NLE 1 05 ug/L 86-30-6 20 n-Natrosodiphenylamine not detected 101 ue/L 103-33-3 NLE 0 67 Azobenzena not detected ug/L 101-55-3 not detected NLE 4-Bromophenyl-phenylether 0 76 ue/L 118-74-1 Hexachlorobenzene not detected 10 0 94 ug/L 85-01-8 Phenanthrene NLE not detected 1 23 ug/L 120-12 7 Anthracene 2000 not detected 1 12 ug/L 84 74 2 Di n-butylphthalate 900 not detected 1 70 ug/L 206-44-0 Fluoranthene 300 not detected 1 64 ug/L

#### Semi-Volatile Analysis Report Page 2

Data File Name

BNA03820 D

Sample Name

Sblk360

Operator

Bhaskar

Misc Info

Sblk360

Date Acquired 4-Apr-00

Sample Multiplier

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Regulatory Level

CAS#	Name	R.T	Response	Result	(ug/L)*	MDL		Qualifiers
92-87-5	Benzidine			not detected	50	4 18	ug/L	
129-00-0	Pyrene			not detected	200	l 25	ug/L	
85 <u>-68-</u> 7	Butylbenzylphthalate			not detected	100	1 05	ug/L	ļ
56-55-3	Benzo[a]anthracene			not detected	10	1 19	ug/L	<u> </u>
91-94-1	3.3 -Dichlorobenzidine			not detected	60	1.75	ug/L	
218 <u>01</u> -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	D1-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	
<u>53-70-3</u>	Dibenz[a,h]anthracene			not detected	20	0 64	ug/L	<u> </u>
191-24-2	Benzoig h ilperylene			not detected	NLE	0 84	ug/L	

<sup>\*</sup> 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

#### 1F

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

=1	E	LC	) (	D	
	_	_	_	_	

		TENTATIVEET	DCM I	20 00	00.100		مريداه أ	co
Lab Name	FMETL		<del></del>	_ Lab Cod	de <u>13461</u>		Sbik3	
Project	100004	Case No	5285	Locat	ion <u>Bl 500</u>	)_ SI	DG No	
Matrix (soil/	water)	WATER		l	ab Sample	DI e	Sblk360	
Sample wt/ve	ol	1000 (g/m	il) ML	।	ab File ID		BNA03820 E	<u> </u>
Level (low/r	med)	LOW		I	Date Recei	bev	3/27/00	
% Moisture		decanted	(Y/N) _	N 1	Date Extrac	ted	3/31/00	
Concentrate	d Extract	Volume 1000	_ (uL)	1	Date Analyz	zed	4/4/00	
Injection Volu	ume <u>1</u>	0 (uL)		1	Dilution Fac	ctor	10	
GPC Cleanu	p (Y/N)	N pH	7					
Number TICs	s found	1		CONCE	NTRATION ug/Kg)	UNI UG/		
CAS NUME	BER	COMPOUND N	AME		RT	ES	ST CONC	Q

7 01

unknown

#### Semi-Volatile Analysis Report

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

Data File Name BNA03822 D

Date Acquired

Sample Name

5285 02

Operator

Bhaskar 4-Арг-00 Misc Info

Field Blank

Sample Multiplier

Regulatory
Level

CAS#	Name	R.T	Response	Result	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	սջ/Լ	
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	1		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	Hexachlorobuladiene			not detected	_ 1	071		
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	T		not detected	NLE	I 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	l
132 64-9	Dibenzofuran	I		not detected	NLE_	1 00	ug/L	<u> </u>
121-14-2	2,4-Dinitrotoluene			not detected	10	0 87	ug/L	
84-66-2	Drethylphthalate			not detected	5000	1 62	ug/L	
86-73 7	Fluorene			not detected	300	0 99	սջ/Լ	
7005 72-3	4-Chlorophenyl-phenylether			not detected	NLE	1 10		
100-01-6	4-Nitroaniline			not detected	NLE	1 05	ug/L	
86-30-6	n Nitrosodiphenylamine			not detected	20	1 0 1		
103-33-3	Azabenzene			not detected	NLE	967		
101-55-3	4-Bromophenyl phenylether			not detected	NLE	0 76		
118-74-I	Hexachlorobenzene			not detected	10	0 94		
85-01-8	Phenanthrene			not detected	NLE	1 23		
120-12-7	Anthracene			not detected	2000	I 12		
84-74-2	Di-n-buty/phtha/ate			not detected	900	1 70		
206-44-0	Fluoranthene			not detected	300	1 64		

#### Semi-Volatile Analysis Report Page 2

Data File Name

BNA03822.D

Sample Name

5285 02

Operator

Bhaskar

Misc Info

Field Blank

Date Acquired

4-Apr-00

Sample Multiplier

1

					Regulatory Level			
CAS#	Name	R. <u>T</u>	Response	Result	(ug/L)*	MDL		Qualifiers
92-87-5	Benzidine			not detected	50	4 18	ug/L	<u> </u>
129-00-0	Pyrene			not detected	200	1 25	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	1 05	ug/L	
56 5 <u>5</u> -3	Benzo[a]anthracene			not detected	10	_1 19	ug/L	
91-94-1	3 3 -Dichlorobenzidine			not detected	60	1 75	սջ/Լ	
218-01-9	Chrysene			not detected	20	1 38	ue/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	սջ/Լ,	
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	นย/ไ	
191-24-2	Benzo[g h 1]pervlene			not detected	NLE	0 84	ug/L.	

<sup>\*</sup> 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

1F

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID

	E1 1531			lab Oas	4- 10461		Field BI	ank
Lab Name	FMETL	··· <u> </u>		_ Lab Cod	de <u>13461</u>			
Project	100004	Case No	5285	Locat	ion <u>Bl 500</u>	)_ SC	G No	
Matrix (soil/	water)	WATER		l	_ab Sample	BID E	5285 02	
Sample wt/ve	ol	1000 (g/ml	) <u>ML</u>	l	ab File ID	_	BNA03822 D	
Level (low/r	ned)	LOW		(	Date Recei	ved	3/27/00	_
% Moisture		decanted	(Y/N)	<u>N</u> [	Date Extrac	ted	3/31/00	
Concentrate	d Extract	Volume 1000	(uL)	l	Date Analya	zed	4/4/00	
Injection Vol	ume <u>1 (</u>	<u>0</u> (uL)		I	Dilution Fac	tor	1 0	
GPC Cleanu	p (Y/N)	N pH <u>7</u>	<u>,                                      </u>					
				CONCE	NTRATION	UNIT	S	
Number TIC:	s found	0		(ug/L or	ug/Kg)	UG/L	·	
CAS NUME	BER	COMPOUND NA	ME		RŤ	ES	T CONC	Q

#### Semi-Volatile Analysis Report

# U.S. Army, Fort Monmouth Environmental Laboratory NIDEP Certification #13461

Data File Name BNA03823 D
Operator Bhaskar

Date Acquired 4-Apr-00

206-44-0

Fluoranthene

Sample Name 5285 03
Misc Info 500-1

Sample Multiplier 1

Regulatory Level (02/L)\* MDL Result Qualifiers CAS# R.T Response Name 1 83 ug/L NLE 110-86-1 Pyridine not detected 62-75-9 0 91 uz/L N-nitroso-dimethylamine not detected 20 1 63 ug/L NLE not detected 62-53-3 Aniline 1 28 ug/L 10 111-44-4 bis(2-Chloroethyl)ether not detected 1 21 ug/L 600 541-73-1 1,3-Dichlorobenzene not detected 1 19 ug/L 75 106-46-7 1,4-Dichlorobenzene not detected NLE 1 02 ue/L not detected 100-51-6 Benzyl alcohol 600 1 13 ug/L 95-50-L 1,2-Dichlorobenzene not detected 300 1 39 ug/L 108-60-1 bis(2-chloroisopropyl)ether not detected 0 80 ug/L 621-64-7 n-Nitroso-di-n-propylamine not detected 20 1 50 ug/L 67-72-1 10 Hexachloroethane not detected 10 0 97 \ue/L 98-95-3 Nitrobenzene not detected 78-59-1 not detected 100 1 01 ug/L Isophorone bis(2 Chloroethoxy)methane NLE 1 21 111-91-1 ug/L not detected 9 I 22 ug/L 120-82-1 1.2.4-Trichlorobenzene not detected NLE 1 27 ue/L 91-20-3 Naphthalene not detected NLE 1 09 ug/L 106-47-8 4-Chloroantline not detected 87-68 3 1 071 ug/L Hexachlorobutadiene not detected NLE 1 08 ug/L 91-57-6 2-Methylnaphthalene not detected 77-47-4 Hexachlorocyclopentadiene not detected 50 1 32 ug/L I 01 91 58-7 2-Chloronaphthalene NLE นย/L not detected 0 96 uz/L 88-74-4 2-Nitroaniline not detected NLE 131-11-3 Dimethylphthalate not detected 7000 1 52 ug/L 0 96 ug/L 208-96-8 Acenaphthylene NLE not detected 606-20-2 2.6-Dinitrotoluene NLE 0.81 ug/L, not detected 99-09-2 0 79 ug/L 3-Nitroaniline NLE not detected 1 10 ug/L 83-32-9 Acenaphthene not detected 400 132-64 9 Dibenzofuran NLE i 00 ug/L not detected 121-14-2 0 87 ug/L 2,4-Dinitrotoluene not detected 10 84-66-2 Diethylphthalate 1 62 not detected 5000 ug/L 86-73-7 Fluorene 300 0 99 uz/L not detected 7005-72-3 4-Chlorophenyl-phenylether 1 10 ug/L NLE not detected 100-01-6 4-Nitroaniline 1 05 uz/L not detected NLE 86-30-6 n Nitrosodiphenylamine 20 101 ug/L not detected :03-33-3 NLE Azobenzeae <u>0</u> 67 | ug/L not detected 0 76 ug/L 101-55-3 4-Bromophenyl-phenylether not detected NLE 118-74-1 0 94 ug/L Hexachlorobenzene not detected 10 85-01-8 Phenanthrene NLE 1 23 ug/L not detected 120-12-7 Anthracene 2000 1 12 ug/L not detected 84-74-2 Di-n-butylphthalate not detected 900 1 70 ue/L

Page 1 of 2

300

not detected

1 64 ug/L

#### Semi-Volatile Analysis Report Page 2

Data File Name BNA03823.D

Sample Name

5285 03

Operator

Bhaskar

Misc Info

500-1

Date Acquired 4-Apr-00

Sample Multiplier

Regulatory	
Level	

CAS#	Name	R.T	Response	Result	(ug/L)*	MDL		Qualifiers
92 87-5	Benzidine			not detected	50	4 18	ug/L	
129 00-0	Pyrene			not detected	200	1 25	og/L	
85-68-7	Butylbenzylphthalate			not detected	100	1 05	eg/L	
56-55 3	Benzo[a]anthracene			not detected	10	1 19	ag/L	<u> </u>
91-94-1	3,3'-Dichlorobenzidine			not detected	60	i 75	ug/L	
218-019	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	<u> </u>
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	Вепло[а]рутепе			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 1]perylene			not detected	NLE	0 84	ug/L	

<sup>•</sup> Higher of PQL's and Ground Water Criteria as per NIAC 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

1 1F

# SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID

						500-	1
Lab Name	<b>FMETL</b>		La	ab Code 134	161	_	
Project	100004	Case No 52	285	Location B	1500 S	DG No	
Matrix (soil/	water)	WATER		Lab Sa	mple ID	5285 03	
Sample wt/v	/ol	1000 (g/ml) N	<u>1L</u>	Lab File	e ID	BNA03823 D	)
Level (low/	med)	LOW		Date R	eceived	3/27/00	
% Moisture		decanted (Y/N	N) <u>N</u>	_ Date E	xtracted	3/31/00	
Concentrate	d Extract	Volume 1000 (u	L)	Date A	nalyzed	4/4/00	
Injection Vol	lume <u>1</u>	0 (uL)		Dilution	Factor	10	
GPC Cleanu	φ (Y/N)	NpH <u>7</u>					
			CC	NCENTRAT	ION UN	ITS	
Number TIC	s found	1	(u	g/L or ug/Kg)	<u>UG</u>	<u>/L</u>	
CAS NUM	BER	COMPOUND NAME	Ī	R1	r E	ST CONC	Q
1 00009	5-16-9	Benzothiazole		14	02	4	JN

#### 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.

ì	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	a)A
10 11	Method Detection Limits submitted Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP	
Oat	Laboratory Manager or Environmental Consultant's Signature	

\*Refer to NJAC 7 25E - Appendix A, Section IV Reduced Data Deliverables - Non-USEPA/CLP Methods for further guidance

Laboratory Certification #13461

#### **Laboratory Authentication Statement**

á.

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

Daniel K Wright
Laboratory Manager

# FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS

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

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. 500** 

Field Sample Location	Laboratory	Matrix	Date and Time	Date Received
	Sample ID#	1	of Collection	
500-1 5 5-8'	5384 01	Aqueous	29-Apr-00 09 25	05/01/00

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

ENCLOSURE CHAIN OF CUSTODY RESULTS

Daniel Wright/Date

Laboratory Director

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# CHAIN OF CUSTODY



## Fort Monmouth Environmental Testing Laboratory

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

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

NJDEP Certification #13461

**Chain of Custody Record** 

Customer: b. DCSA/		Project No			Analysis I			Parameters				Comments:			
Phone #: 12/475			Location BLOG 500			VX		BN		17.	•	17		`	
()DERA ()OMA ()Other:						V84+	<i>)</i>	<i>Ņ</i>	; [,}	ş		,			
Samplers Name / Company: Masu Laury			TVS-PWS 07		Sample	Sample #		MEARA		. : ::,	, ,	,	,	+ ,	
Lab Sample I D	Sam	ple Location	Date	Time	Туре	bottles	15	5 É	15		``		4 3 54	,	Remarks / Preservation Method
538401	500-	5,5-8'	4-29-00	0925	AQ.	3	X	X	×						HCL, eyoc
				<u>.                                    </u>											
					ļ										
										<u> </u>					
Relinquished by (signature)  Matth 5-1-90 736			Received by (	signature)	a	Relino	Relinquished by (signature)			Date/	Time	Received by (signature)		(signature)	
Raunquished by (sign sture) Date/Time		Received by (	signature)	<del></del>		elinquished by (signature)				Date/Time Received by		ved by	(signature)		
Fort Type (Full, )		/ non-certified (_)ASAP Vert			Remarks										

# METHODOLOGY SUMMARY

17

#### **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 senally 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-CONFORMANCE SUMMARY

11%

# GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

	<i>₹</i>		Indicate Yes, No, N/A
1		eled/Compounds identified and method blanks)	<u> 425</u>
2 '	Retention times for c	hromatograms provided	<u> 465</u>
3	GC/MS Tune Specif	ications	
į	a b	BFB Meet Criteria DFTPP Meet Criteria	yes yes
4	GC/MS Tuning Frequency and 12 hours f	uency – Performed every 24 hours for 600 or 8000 series	<u>yes</u>
5	analysis and continu	- Initial Calibration performed before sample ing calibration performed within 24 hours of 500 series and 12 hours for 8000 series	<u>yes</u>
6	GC/MS Calibration	requirements	
7	a b	Calibration Check Compounds Meet Criteria System Performance Check Compounds Meet Criteria	yes yes
7	- Blank Contamination	n – If yes, List compounds and concentrations in each blank	_0.0_
,	a b c	VOA Fraction B/N Fraction Acid Fraction	
8	Surrogate Recoverie	s Meet Criteria	<u>yes</u>
,	If not met, list the outside the acce	nose compounds and their recoveries which fall ptable range	•
	a	VOA Fraction	
	b c	Acid Fraction	
•	If not met were as estimated'?	the calculations checked and the results qualified	
9		Spike Duplicate Recoveries Meet Criteria compounds and their recoveries, which fall le range)	yes
r	a	VOA Fraction	
	ხ <i>c</i>	B/N Fraction	
	C	ACIO I Idenon	

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

			Indicate Yes, No, N/A
10		Area/Retention Time Shift Meet Criteria ose compounds, which fall outside the acceptable range)	40
P	í a	VOA Fraction	
	b	B/N Fraction	
	c	Acid Fraction NA	
ñ.	Extraction Holding	g Time Met	yes
, ,	<u> </u>	number of days exceeded for each sample	
12	Analysis Holding	Fime Met	yes
•	If not met, list the r	number of days exceeded for each sample	
Add 	itional Comments		
L'abo	oratory Manager	Date	D

# LABORATORY CHRONICLE

# Laboratory Chronicle

Lab ID: 5384 Site: Bldg 500

· · · · · · · · · · · · · · · · · · ·		
ķ ;	Date	Hold Time
Date Sampled	04/29/00	NA
Receipt/Refrigeration	05/01/00	NA
Extractions		
1 Base Neutral	05/03/00	14 days
Analyses		
1 Volatile Organics 2 Base Neutral	05/03/00 05/04/00	14 days 40 days

Samples collected and refrigerated on 04/29/00 Laboratory received the samples on Monday 01/05/00

# **VOLATILES**

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

#### **Definition of Qualifiers**

**MDL**: Method Detection Limit

J : Compound Identified Below Detection Limit
 B : Compound is in Both Sample and Blank
 D : Results are from a Dilution of the 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

VB006720 D

Sample Name

Vblk205

Operator

Skelton

Field 1D

Vblk205

Date Acquired

3 May 2000 12 23 pm

Sample Multiplier 1

CAS# .	Compound Name	R.T	Response	Result	Regulatory Level (ug/l)*	MDL	Qualifiers
107028-	Acrolem 5 <sup>4</sup>			not detected	50	1 85 ug/L	Γ
107131	Acrylonitrile			not detected	50	2 78 ug/L	7
75650	tert Butyl alcohol			not detected	ule	8 52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0 16 ug/L	
108203	D1-isopropyl ether			not detected	nle	0 25 ug/L	
75718	Dichlorodifluoromethane		-	not detected	nle	1 68 ug/L	7
74-87-3	Chloromethane		•	not detected	30	1 16 ug/L	
75-01-4	Vmyl 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	ale	1 01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	пle	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	
75-34-3	1,1-Dichloroethane			not detected	70	0 12 ug/L	
108-05-4	Vmyl Acetate			not detected	alc	0 78 ug/L	
78-93-3	2-Butanone			not detected	300	0 62 ug/L	
156-59-4	cis-1,2-Dichloroethene		_	not detected	10	0 17 ug/L	
67-66-3	Chloroform			not detected	6	0 30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0 23 ug/L	
56-23-5	Carbon Tetrachlonde			not detected	2	0 47 ug/L	
71-43-2	Benzene			not detected	l l	0 23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0 18 ug/L	
79-01-6	Trichloroethene			not detected	ı	0 23 ug/L	
78-87-5	1,2-Dichloropropane			not detected		0 40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0 55 ug/L	
10-75-8	2-Chloroethyl vinyl ether			not detected	nle	0 65 ug/L	
10061-01-5	cus-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	<u> </u>
79-00-5	1,1,2-Trichloroethane		<u> </u>	not detected	3	0 48 ug/L	
127-18-4	Tetrachloroethene			not detected		0 32 ug/L	
591-78-6	2-Hexanone	<u> </u>	<u> </u>	not detected	nle	071 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0 86 ug/L	
<u>1</u> 08-90-7	Chlorobenzene	ļ		not detected	4	0 39 ug/L	
100-41-4	Ethylbenzene	L	<b> </b>	not detected	700	0 65 ug/L	
1330-20-7	m+p-Xylenes	ļ		not detected	ale	1 14 ug/L	
1330-20-7	o-Xylene	ļ	ļ	not detected	nle	0 62 ug/L	
100-42-5	Styrene	ļ	ļ	not detected	100	0 56 ug/L	
75-25-2	Bromoform	ļ	ļ	not detected	4	0 70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane	<b></b>		not detected	2	0 47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	ΰ55 ug/L	
106,46-7	1,4-Dichlorobenzene			not detected	75	0 57 ug/L	
95-30-1	1,2-Dichlorobenzene		1	not detected	600	0 64 ug/L	

<sup>\*</sup>Higher of PQL s and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2 Sept-97

#### 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 RT = Retention Time 1E

## VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

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	•		D					
Lab Name	FMETL .	r\ 		Project	UST		Vblk2	.05
NJDEP#	13461	Case No	5384	Location	n <u>500</u>	_ sc	OG No	
Matrix (soil/	water) , <u>W</u>	ATER		La	b Sample	ID	Vblk205	
Sample wt/vo	oì · <u>5 (</u>	<u>) (g/ml</u>	) <u>ML</u>	La	b File ID		VB006720 D	)
Level (low/r	ned) <u>j LC</u>	DW		Da	ite Receiv	ed	5/1/00	
% Moisture	not dec 🚡			Da	ite Analyz	ed	5/3/00	
GC Column	RTX502	ID <u>0 25</u> (	mm)	Dil	ution Fac	tor	10	
Soil Extract V	/olume	(uL)		Sc	ol Aliquot	Volui	me	(uL
1. 14	<del>.</del>		CO	NCENTRA	TION UNI	TS		
Number TICs	**	0	(ug/	L or ug/Kg	UG/	L		
CAS NO	、 C	OMPOUND NA	ME		RT	ES	T CONC	Q

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

Data File

VB006736 D

Sample Name

5384.01

Operator

Skelton

Field ID

500-1

Date Acquired 3 May 2000 11 08 pm

Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/I)*	MDL	Qualifier
107028	Acrolem P :			not detected	50	1 85 ug/L	
107131	Acrylonitrile 👫			not detected	50	2 78 ug/L	
75650	tert-Butyl alcohoi			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	nke	0 25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	I 68 ug/L	
74-87-3	Chloromethane			not detected	30	1 16 ug/L	
75-01-4 -	Vmyl Chlonde			not detected	5	1 06 ug/L	
74-83-9	Bromomethane			not detected	10	1 10 ug/L	
75-00-3 *	Chlòroethane			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		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	
75-34-3	1.1-Dichloroethane			not detected	70	0 12 ug/L	<u> </u>
108-05-4	Vinyl Acetate		-	not detected	ale	0 78 ug/L	<u> </u>
78-93-3	2-Butanone			not detected	300	0 62 ug/L	<del>                                     </del>
156-59-4	cis-1.2-Dichloroethene			not detected	10	0 17 ug/L	1
67-66-3	Chloroform	16 47	155234	3 93 ug/L	6	0 30 ug/L	1
75-55-6	1.1.1-Trichloroethane			not detected	30	0 23 ug/L	
56-23-5	Carbon Tetrachlonde			not detected	2	0 47 ug/L	†
71-43-2	Benzene			not detected	1	0 23 ug/L	<u> </u>
107-06-2	1.2-Dichloroethane			not detected	2	0 18 ug/L	
79-01-6	Trichloroethene			not detected	<del></del>	0 23 ug/L	<del>                                     </del>
78-87-5	1.2-Dichloropropane			not detected	1 1	0 40 ug/L	<del>                                     </del>
75-27-4	Bromodichloromethane		-	not detected	<del>                                     </del>	0 55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0 65 ug/L	<del>                                       </del>
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0 69 ug/L	<del> </del>
108-10-1	4-Methyl-2-Pentanone			not detected	400	0 59 ug/L	
108-88-3	Toluene	<del></del>		not detected	1000	0 37 ug/L	<del> </del>
10061-02-6	trans-1,3-Dichloropropene	<del></del>		not detected	nle	0 87 ug/L	<del>                                     </del>
79-00-5	1.1.2-Trichloroethane		·	not detected	3	0 48 ug/L	
127-18-4	Tetrachloroethene	$\vdash \vdash$	-	not detected	<del>1 ;    </del>	0 32 ug/L	<del>                                     </del>
591-78-6	2-Hexanone	<del></del>	<del> </del>	not detected	nle	0.71 ug/L	1
126-48-1	Dibromochloromethane	<del> </del>	1	not detected	10	0 86 ug/L	<del>                                       </del>
108-90-7	Chlorobenzene	$\vdash$	<b> </b>	not detected	4	0 39 ug/L	<del> </del>
100-41-4	Ethylbenzene	<del>                                     </del>	<del>                                     </del>	not detected	700	0 65 ug/L	
1330-20-7		<del>                                     </del>	<del>                                     </del>	not detected	$\overline{}$	1 14 ug/L	
1330-20-7	o-Xylene	<del> </del>	<del>                                     </del>	not detected	nie	0 62 ug/L	
100-42-5	Styrene	<del> </del>	<del> </del>	not detected	nle 100	0 56 ug/L	$\overline{}$
75-25-2	Bromoform	<del>                                     </del>	<del>                                     </del>	not detected	100	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane	<del>                                     </del>	<del> </del>	not detected	4		<del></del>
541-73-1	1,1,2,2-1 etrachtoroethane	<del> </del> -	<del>!</del>	not detected	2	0 47 ug/L 0 55 ug/L	
	<del></del>	-	<del> </del>	not detected	600	<del></del>	+
106-46-7	1 4-Dichlorobenzene	<del> </del>	<del> </del>	<del></del>	75	0 57 ug/L	
95-50-1	1,2-Dichlorobenzene	<del></del>	1	Notes Outlier Colors on an N. J. A. C. 7	600	0 64 ug/L	<u>.l</u>

<sup>\*</sup>Higher of PQL's and Ground Water Quality Criteria as per NJ A C 7 9-6 2-Sept-97

#### 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

**COMPOUND NAME** 

CAS NO

### **VOLATILE ORGANICS ANALYSIS DATA SHEET**

Lab ID TENTATIVELY IDENTIFIED COMPOUNDS 500-1 **Project** UST Lab Name **FMETL** ु.Case No SDG No NJDEP# 13461 Location 500 WATER Lab Sample ID 5384 01 Matrix (soil/water) 5 Õ\* (g/ml) ML Sample wt/vol ' Lab File ID VB006736 D LOW Level (low/med) 5/1/00 **Date Received** % Moisture not dec 5/3/00 Date Analyzed RŤX502 ID GC Column 0 25 (mm) **Dilution Factor** 10 Soil Extract Volume (uL) Soil Aliquot Volume (uL) **CONCENTRATION UNITS** (ug/L or ug/Kg) UG/L Number TICs found

RT

**EST CONC** 

Q

## VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK BROMOFLUOROBENZENE (BFB)

Lab Name	FMETL	·		Project	UST		
NJDEP#	13461	Ĉase No	5384	Location	on <u>500</u>	SDG	No
Lab File ID	VB006620 I	<u> </u>		Ві	FB Injection	Date	4/6/00
Instrument I	D GCMS#2	· 		ВІ	FB Injection	Time	15 18
GC Column	RTX502.2	D 0 25	(mm)	H	eated Purg	e (Y/N)	N

		% RELATIVE
m/e	, 'IÒN ABUNDANCE CRITERIA	ABUNDANCE
50	8 0 - 40 0% of mass 95	20 9
75	30 0 - 66 0% of mass 95	53 0
95	Base peak, 100% relative abundance	100 0
96	5 0 - 9 0% of mass 95	6 4
173 🕋	"-Less than 2 0% of mass 174	00 ( 00)1
174	50 0 - 120 0% of mass 95	70 6
175	4 0 - 9 0% of mass 174	53 ( 75)1
176	93 0 - 101 0% of mass 174	69 6 ( 98 6)1
177	5 0 - 9 0% of mass 176	47 ( 68)2

1-Value is % mass 174

2-Value is % mass 176

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

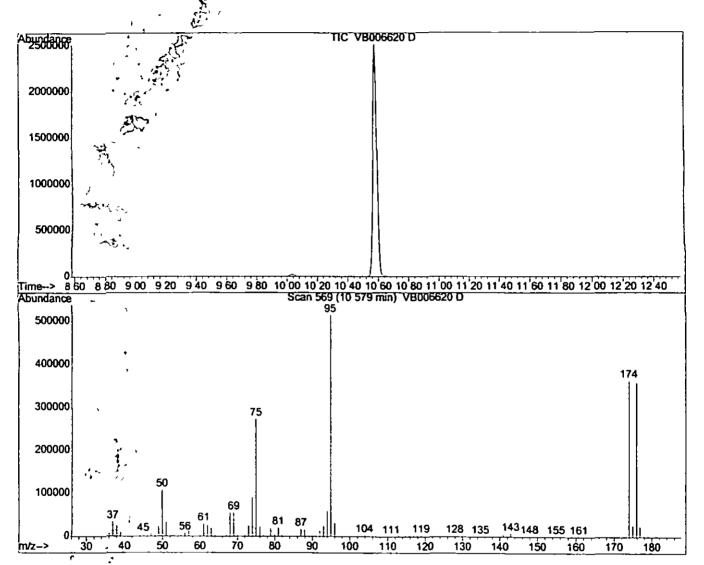
[		LAB	LAB	DATE	TIME
Ì	Lab ID	SAMPLE ID	FILE ID	ANALYZED	ANALYZED
01	VSTD100	VSTD100	VB006621 D	4/6/00	15 47
02	VSTD050 `	VSTD050	VB006622 D	4/6/00	16 26
03	VSTD020♥	VSTD020	VB006623 D	4/6/00	17 06
04	VSTD010	VSTD010	VB006624 D	4/6/00	17 45
05	VSTD005	VSTD005	VB006625 D	4/6/00	18 25
	A.			<u> </u>	

Data File : C:\HPCHEM\1\DATA\APRIL2000\000406\VB006620.D Vial: 1

Acq On : ..6 Apr 2000 3:18 pm Operator: Skelton Sample . BFB Tune Inst : GC VOA 2 Misc : BFB Tune Multiplr: 1.00

MS Integration Params: RTEINT.P

Method : C:\HPCHEM\1\METHODS\M262453.M (RTE Integrator)
Title : Volatile Organics by GC/MS Method 624/8260/TCLP



Spectrum Information: Scan 569

	Target Mass	Rel. to	Lower Limit%	Upper	Rel. Abn%	Raw Abn	Result Pass/Fail
ı	50 - Î	95	15	40	20.9	107680	PASS
i	<b>7</b> 5	95	30	60	53.0	272768	PASS
	95	` 95	100	100	100 0	514176	PASS
	96	95	5	9	6.4	33136	PASS
	173	ነ <sup>*</sup> \ 174	0.00	2	0.0	0	PASS
- {	174	·` 95	50	100	70 6	362944	PASS
	175	174	5	9	7 5	27240	PASS
	176	174 176	95	101	98.6	357952	PASS
	177	176	5	9	6.8	24360	PASS

# BASE NEUTRAL

#### Semi-Volatile Analysis Report

### U.S. Army, Fort Monmouth Environmental Laboratory

#### NJDEP Certification #13461

Data File Name

BNA03866 D

Sample Name

Sblk366

Operator

Date Acquired

Bhaskar 4-May-00 Misc Info

Sblk366 A 000503

Sample Multiplier

					Regulatory Level		
CAS#	Name	R.T	Response	Result	(ug/L)*	MDL	Qualifiers
110-86-1	Pyridine 1			not_detected	NLE	1 83 ug/L	
62-75-9	N-nitroso-dimethylamine		_	not detected	20	0 91 ug/L	
62-53-3	Anihoe vi"			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		<del>-</del>	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	071 ug/L	
91-57-6	2-Methylnaphthalene			not_detected	NLE	1 08 սջ/Լ	
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	11		not detected	NLE	0 96 ug/L	
131-11-3	Dimethylphthalate			not detected	7000	1 52 ug/L	
208-96-8	Acchaphthylene			not detected	NLE	0 96 ug/L	
606-20-2	2 6-Dinitrotoluene			not detected	NLE	081 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	ļ		not detected	5000	1 62 ug/L	
86-73-7	Fluorene			not_detected	300	0 99 ug/L	
7005-72-3	4-Chlorophenyl-phenylether	ļ		not detected	NLE	1 10 ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1 05 ug/L	
مر 86-30-6	n-Nitrosodiphenylamine			not detected	20	[ 01 ug/L	
103-33-3	Azonenzene			nor described	NLE	0 67 ug/L	
101-55-3	4-Bromophenyl-phenylether	$\sqcup \sqcup$	··	not detected	NLE	0 76 ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0 94 ug/L	
85-01-8	Phenanthrene	<u> </u>		not detected	NLE	1 23 ug/L	
120-12-7	Anthracene			not detected	2000	l 12 ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	1 70 ug/L	
206-44-0	Fluoranthene	<u> </u>		not detected	300	1 64 ug/L	

### Semi-Volatile Analysis Report

Page 2

Data File Name

BNA03866 D

Operator Date Acquired Bhaskar 4-May-00 Sample Name

Sblk366

Misc Info

Sblk366 A 000503

Sample Multiplier

			Regulatory Level				
CAS#	Name \$	R.T	Response	Result	(ug/L)*	MDL	Qualifiers
92-87-5	Benzichne			not detected	_50	4 18	ue/L
129-00-0	Pyrene			not detected	200	1 25	ug/L
85-68-7	Butylbenzylphihalate			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	սջ/Լ
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	սջ/Լ
205- <del>9</del> 9-2 ′′	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 1]pery lene			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



1F

### SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID

	TENTATIVELY IDENTIFIED COMPOUNDS							Shira	166
Lab Name	FMETL			_ Lab Co	ode	13461		Sblk3	
Project 1	100004	, Case No	5384	_ Loca	ation	BI 500	_ St	OG No	
Matrix (soil/wa	ater) WAT	ER			Lab	Sample	ID .	Sblk366	
Sample wt/vol	1000	) <u>.</u> (g/ml	) <u>ML</u>	_	Lab	File ID		BNA03866	)
Level (low/me	ed)» (LÓW	<u></u>			Date	e Receiv	red .	5/1/00	
% Moisture	4	decanted (	(Y/N)	N	Date	e Extrac	ted	5/3/00	
Concentrated	Extract Volun	ne <u>1000</u>	(uL)		Date	e Analyz	:ed	5/4/00	
Injection Volum	ne <u>(10</u> (	(uL)			Dılut	tion Fac	tor	10	
GPC Cleanup	(Y/N)	N pH 7	<u></u>						
*	•			CONCE	ENTR	RATION	רואט	rs	
Number TICs f	found	0		(ug/L or	r ug/k	(g)	UG/L	<u> </u>	
CAS NUMBE	R COI	MPOUND NA	·ME			RT	ES	T CONC	a

#### Semi-Volatile Analysis Report

## U.S. Army, Fort Monmouth Environmental Laboratory...

NJDEP Certification #13461

Data File Name BNA03868 D Operator Bhaskar

4-May-00

Date Acquired

84-74-2<sup>7</sup>

206-44-0

Di-n-butylphthalate

Fluoranthene

Sample Name

5384 01

Misc Info

500-1

Sample Multipher

1

					Regulatory Level		
CAS#	Name 🥕	R.T	Response	Result	(ug/L)*	MDL	Qualifiers
110-86-1	Pyridine //			not detected	NLE	1 83 u	ig/L
62-75-9	N-nitroso-dimethylamine	<u> </u>		not detected	20	091 u	ıg/L
62-53-3	Aniline			not detected	NLE	1 63 u	ng/L
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1 <u>28</u> u	19/L
541-73-1	1 3-Dichlorobenzene	<b>↓</b>		not detected	600	1 21 1	ng/L
106-46-7	1,4-Dichlorobenzene			not detected	75	1 19 0	g/L
100-51-6	Benzyl alcohol			not detected	NLE	1 02 0	g/L
95-50-1	1 2-Dichtorobenzene			not detected	600	1 13 u	g/L
108-60-1	bis(2-chloroisopropyl)ether			not detected	300	1 <u>39</u> u	g/L
621 64-7	n-Nitroso-di-n-propylamine	<b>_</b>		not detected	20	0 80 t	ıg/L
67-72-1	Hexachloroethane			not detected	10	1 50 t	ig/L
98-95-3	Nitrobenzene			not detected	10	0 97 u	ig/L
78 5 <u>9-1</u>	IsopHorone			not detected	100	1 01 0	ıg/L
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	1 21 1	1 <u>2</u> /L
120-82-I	1 2,4-Trichlorobenzene	<u> </u>		not detected	9	1 22 1	16/L
91-20-3	Naphthalene			not detected	NLE	1 27 t	ıg/L
106-47-8	4-Chloroaniline			not_detected	NLE	1 09	ıg/L
87-68-3	Hexachlorobutadiene			not_detected	1	071	ig/L
91 57-6	2-Methylnaphthalene			not detected	NLE _	1 08 t	1 <u>5/</u> [
77-47-4	Hexachlorocyclopentadiene			not detected	50	1 32 1	1g/L
91-58-7	2-Chloronaphthalene			not detected	NLE	1 01	ıg/L
88-74-4	2-Nitroaniline			not detected	NLE	096	1 <u>2</u> /L
131-11-3	<u>Dimethylphthalate</u>		<u> </u>	not detected	7000	1 52 1	je/L
208-96-8	Acenaphthylene	_		not detected	NLE	0 <u>96</u> ı	ig/L
606-20-2	2 6-Dimitrotoluene	<del> </del>	ļ	not detected	NLE	_0.81_1	1g/L
99-09 2	3-Nitroaniline		ļ 	not detected	NLE	0 79 נ	ıg/L
83-32-9	Acenaphthene	<u>.</u>		not detected	400	1 10	19/L
132-64-9	Dibenzofuran			not detected	NLE	1 00	1 <u>2</u> /L,
121-14-2	24-Dinitrotoluene			not detected	10	0.87	1g/L
84-66-2 -	Diethylphthalate			not detected	5000	1 62 t	ıg/L
86-73-7	Fluorene	_		not detected	300	099 ւ	1g/L
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	1 10 u	1/21
100-01-6	4-Nitroambne			not detected	NLE	1 05	
<u> 86-30-6</u>	n-Nitrosodiphenylamine			not detected	20	1 01 t	
103-33-3	Azobenzene			กูง จะเนเจ	MLC	0 67 1	ig/L
101-55_3	4-Bromophenvi-phenylether			not_detected	NLE	0 76 L	
118-74-1	Hexachlorobenzene			not_detected	10	094 ι	
85-01-8_	Phenanthrene			not detected	NLE	1 23 4	
120-12-7	Anthracene			not detected	2000	1 12 u	
y			r				

1 70 ug/L

1 64 ue/L

900

300

not detected

not detected

#### Semi-Volatile Analysis Report Page 2

Data File Name

BNA03868 D

Sample Name

5384 01

Operator

Bhaskar

Misc Info

500-1

Date Acquired

4-May-00

Sample Multiplier

1

				Regulatory Level (ug/L)*					
CAS#	Name - A	R.T	Response	Result	(ug)L)	<u>MDL</u>	·	Qualifiers	
92_87-5	Benzidine			not detected	50	4 18	ug/L	<u> </u>	
129-00-0	Pyrene			not detected	200	1 25	ug/L		
85 <u>-6</u> 8-7	Butylbenzylphihalate			not detected	100	1 05	ng/L		
56-55-3	Benzo[a]anthracene			not detected	10	1 19	ug/L	l	
91-94-1	3,3'-Dichlorobenzidine			not detected	_60	1 75	ag/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_	<u> </u>	
117 84-0	Di-n-octylphthalate			not detected	100	1 44	ug/L		
<u>205-99-2</u>	Benzo[b]fluoranthene			not detected	10	1 25	ag/L	<u> </u>	
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	<u></u>	
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	Bewrolg h alperviene			not detected	NLE		110/1.		

<sup>\*</sup> 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



1F

## SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID

Lab Name	FMETL		,:-=-		Lab C	Code	13461		50	00-1
Project	100004	C	ase No	5384		cation			DG No	
Matrix (soil/	water)	WATER			-	Lab	Sample	D ID	5384 01	
Sample wt/v	rol .	1000	(g/ml	<u>ML</u>		Lab	File ID		BNA03868	3 D
Level (low/	med)	LOW A				Date	Recei	ved	5/1/00	
% Moisture	<u>.</u> √-	' de	canted	(Y/N) _	N	Date	e Extrac	ted	5/3/00	
Concentrate	d Extract	Volume	1000	(uL)		Date	Analyz	zed	5/4/00	
Injection Vol	lume 1	(uL)				Dilu	tion Fac	tor	10	
GPC Cleanu	ip (Y/Ń)	N	_ pH <u>_ 7</u>		CONC	ENTF	RATION	UNI	TS	
Number TIC	s found	0	<del>_</del>		(ug/L			UG/	=	
CAS NUMI	BER	COMPC	OUND NA	ME			RT	ES	ST CONC	Q

7/97

#### 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.

I	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	<del>-</del>
7	Methodology Summary submitted بالمراجع المراجع المراع	
8	aboratory Chronicle and Holding Time Check submitted	+
9	Results submitted on a dry weight basis	ALA_
10 11	Method Detection Limits submitted Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP	<u>/</u>
	Laboratory Manager or Environmental Consultant's Signature	
Lab	oratory Certification #13461	
	Refer to NJAC 7 26E - Appendix A, Section IV - Reduced Data Deliverables - Non-USEI Methods for further guidance	PA/CLP
- تر		

#### **Laboratory Authentication Statement**

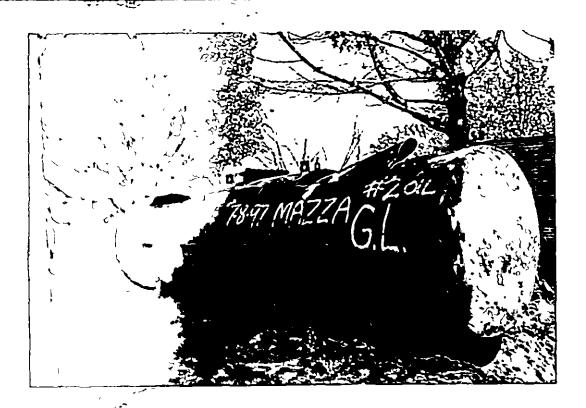
I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N.J.A.C. 7.18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW-846 for Solid Waste Analysis. I have personally examined the information 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.

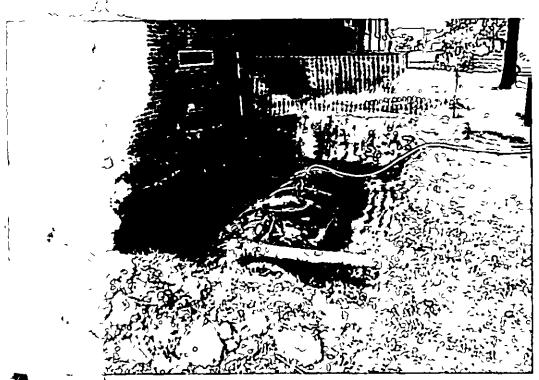
٧,

Daniel & Wright
Laboratory Manager

# APPENDIX G PHOTOGRAPHS

i 54.





**JULY 8, 1997** 

## PHOTOGRAPHIC LOG

**UST NO. 81533-75** 

Building 500 Main Post-West Fort Monmouth

**VERSAR** 

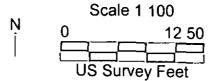
Engineers, Managers, Scientists & Planners Bristol, PA

# APPENDIX H ELECTRONIC DATA DELIVERABLES

E619740 000	E619750 000	E619760 000	E619770 000	E619780 000
N540110 000 _ +	-1-	+	+	+ -
N540100 000     	+	+	+	+ -
N540090 000	<del>- </del> -	- -	+	+ -
N540080 000	+	<del>- -</del>	+	+ -
N540070 000 +	+	+	· - <del> -</del>	+ -
N540060 000 +	+	+	+	+ -

# Bldg. 500 UST Ground Water Sample GPS Map

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



r030415a cor 5/19/2000 Pathfinder Office **图 Trimble**  0

#### BLDG 500 UST GROUND WATER SAMPLE GPS POSITION & COORDINATES

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

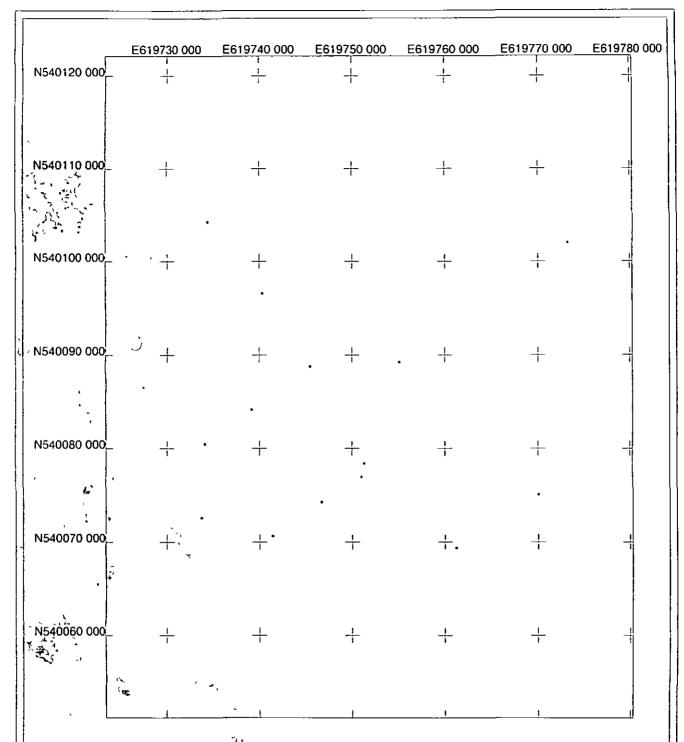
(IN US SURVEY FEET)

#### **SAMPLE POINTS**

POSTION / DESC	Y COORD ( NORTHING )	X COORD. ( EASTING )
500 GW	540079 082	619742 891
( GW denotes $\underline{G}$ round $\underline{W}$ ater )		

#### REFERENCE POINTS

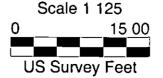
Y COORD ( NORTHING )	X COORD (EASTING)
540077 012	619750 985
540075 12	619769 995
540102 035	619773 161
	540075 12



# Bldg. 500 UST Sample Locations GPS Map

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

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r030415a cor 3/13/2000 Pathfinder Office Trimble ◎ 。○

#### **BLDG 500 UST LOCATIONS GPS POSITION & COORDINATES**

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

(IN US SURVEY FEET)

#### SAMPLE POINTS

POSITION / DESC	Y COORD ( NORTHING )	X COORD (EASTING)
Α	540078 428	619751 271
В	540089 279	619755 064
С	540069 397	619761 162
D	540074 293	619746 62
E	540070 664	619741 368
F	540072 634	619733 697
G	540080 505	619734 076
н	540084 185	619739 129
l	540096 605	619740 277
J	540104 287	619734 374
K	540088 815	619745 426

#### **REFERENCE POINTS**

Y COORD ( NORTHING )	X COORD (EASTING)
540077 012	619750 985
540075 12	619769 995
540102 035	619773 161
	540077 012 540075 12