

United States Army
Fort Monmouth, New Jersey

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

***Building 116B
Main Post-East Area***

**NJDEP UST Registration No. 90010-9
Dicar No. 97-04-10-1409-35**

June 2000

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

BUILDING 116B

**MAIN POST-EAST AREA
NJDEP UST REGISTRATION NO. 90010-9
DICAR NO. 97-04-10-1409-35**

JUNE 2000

PREPARED FOR:

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

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PROJECT NO. 4435-018

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EXECUTIVE SUMMARY

UST Closure

On April 10, 1997, a steel underground storage tank (UST) was closed by removal in accordance with New Jersey Department of Environmental Protection (NJDEP) underground storage tank closure procedures at the Main Post-East area of the U.S. Army Fort Monmouth, Fort Monmouth, New Jersey. The UST, NJDEP Registration No. 90010-9 (Fort Monmouth ID No. 116B), was located west of Building 116B. UST No. 90010-9 was a 1,000-gallon No. 2 fuel oil UST. The fill port was located directly above the tank.

Site Assessment

The site assessment was performed by U.S. Army personnel in accordance with the NJDEP *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E) and the NJDEP *Field Sampling Procedures Manual*. The sampling and laboratory analysis conducted during the site assessment were performed in accordance with Section 7:26E-2.1 of the *Technical Requirements for Site Remediation*. Soils surrounding the tank were screened visually and with air monitoring equipment for evidence of contamination. Following removal, the UST was inspected for corrosion holes. Numerous holes were noted in the UST. Soils at the location of the holes were dark in color and appeared to be contaminated. Based on the inspection of the UST, Directorate of Public Works (DPW) concluded that a discharge was associated with this UST. The NJDEP hotline was notified and the case was assigned DICAR No. 97-04-10-1409-35. Approximately 950 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 399.75 mg/kg, except for samples 13 and 19 that had a TPHC concentration of 2913.14 mg/kg and 2204.80 mg/kg. These sample locations could not be further remediated due to the building location. A VOA analysis (EPA Method 8260) was completed on both samples and all known compounds searched for in the analysis were below the NJDEP residential direct contact soil cleanup criteria. Groundwater was encountered at 6.0 feet below ground surface and no sheen was observed.

All post excavation soil samples collected from the UST excavation at Building 116B contained TPHC concentrations below the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 milligrams per kilogram (mg/kg) (N.J.A.C. 7:26D and revisions dated February 3, 1994). Following receipt of all post-excavation soil sampling results, the excavation was backfilled to grade with a combination of uncontaminated excavated soil and certified clean fill. The excavation site was then restored to its original condition.

In response to the observation of potentially contaminated soil near the water table, two (2) groundwater samples were collected at Building 116B. On October 23, 1999, and December 18, 1999, Building 116B 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. 90010-9 at Building 116B.

1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

1.1 OVERVIEW

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 90010-9, was closed at Building 116B at the Main Post-East area of U.S. Army Fort Monmouth, Fort Monmouth, New Jersey on April 10, 1997. Refer to the site location map on Figure 1. This report presents the results of the Department of Public Works' (DPW) implementation of the UST Decommissioning/Closure Plan approved by the NJDEP on September 25, 1995. The UST was a steel 1,000-gallon tank containing No. 2 fuel oil.

Decommissioning activities for UST No. 90010-9 complied with all applicable Federal, State, and Local laws and ordinances in effect at the date of decommissioning. These laws included but were not limited to N.J.A.C. 7:14B-1 et seq., N.J.A.C. 5:23-1 et seq., and Occupational Safety and Health Administration (OSHA) 1910.146 & 1910.120. All permits including but not limited to the NJDEP approved Decommissioning/Closure Plan were posted onsite for inspection. DPW personnel who are registered and certified by the NJDEP for performing UST closure activities conducted the decommissioning activities.

Closure of UST No. 90010-9 proceeded under the approval of the NJDEP Bureau of Underground Storage Tanks (NJDEP-BUST). The NJDEP Closure Approval Letter and signed Site Assessment Summary form for UST No. 90010-9 are included in Appendices A and B, respectively.

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

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

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

1.2 SITE DESCRIPTION

Building 116B is located in the Main Post-East area of the Fort Monmouth Army Base. UST No. 90010-9 was located west of Building 116B and appurtenant copper piping ran approximately four (4) feet southeast from the UST to Building 116B. 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 116B. Included is a description of the regional geology of the area surrounding Fort Monmouth as well as descriptions of the local geology and hydrogeology of the Main Post area. A geological map is provided on Figure 1A.

Regional Geology

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

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

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

Local Geology

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

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

Hydrogeology

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

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

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

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

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

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

Building 116B is located approximately 1,000 feet northwest of Oceanport Creek, the nearest water body. Based on the Main Post topography, the groundwater flow in the area of Building 116B is anticipated to be to the southeast.

1.3 HEALTH AND SAFETY

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

1.4 REMOVAL OF UNDERGROUND STORAGE TANK

1.4.1 General Procedures

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

1.4.2 Underground Storage Tank Excavation and Cleaning

Prior to UST decommissioning activities, surficial soil was removed to expose the UST and associated piping. All free product present in the piping was drained into the UST, and the UST was purged to remove vapors prior to cutting and removal of the piping. After removal of the associated piping, a manway was made in the UST to allow for proper cleaning. The UST was completely emptied of all liquids prior to removal from the ground. Approximately 25 gallons of liquid from the UST and its associated piping were transported by Lionetti Oil Recovery Company to Lionetti Oil Recovery Company, Inc. facility, a NJDEP-approved petroleum recycling and disposal company located in Old Bridge, New Jersey. Refer to Appendix C for the waste manifest.

The UST was cleaned prior to removal from the excavation in accordance with the NJDEP-BUST regulations. After the UST was removed from the excavation, it was staged on polyethylene sheeting and examined for holes. Numerous holes were observed during the inspection by the Sub-Surface Evaluator. Soils surrounding the UST were screened visually for evidence of contamination. Potentially contaminated soils were observed. Approximately 950 cubic yards of potentially contaminated soil were removed, respectively from the excavated area. Soil screening was also performed along the piping run associated with the UST closure. No contamination was noted anywhere along the piping length. Groundwater was encountered at 6.0 feet below ground surface and no sheen was observed. See Figure 3 for a cross-sectional view of the excavated area.

1.5 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

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

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

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

1.6 MANAGEMENT OF EXCAVATED SOILS

Based on OVA air monitoring and TPHC analysis results from the post-excavation soil samples, approximately 950 cubic yards of potentially contaminated soil were removed from the UST excavation. All potentially contaminated soils were stockpiled separately from other excavated material and were placed on and covered with polyethylene sheets.

Potentially contaminated soils were transported to the soil staging area. Soils that did not exhibit signs of contamination were used as backfill following the removal of the UST. Groundwater was encountered at 6.0 feet below ground surface and no sheen was observed.

2.0 SITE INVESTIGATION ACTIVITIES

2.1 OVERVIEW

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

The following Parties participated in Closure and Site Investigation Activities:

- Subsurface Evaluator: Eugene Lesinski
Employer: U.S. Army, Fort Monmouth
Phone Number: (908) 532-0989
NJDEP Certification No.: 0014537
- Analytical Laboratory: U.S. Army Fort Monmouth Environmental Laboratory
Contact Person: Daniel K. Wright
Phone Number: (908) 532-4359
NJDEP Company Certification No.: 13461
- Hazardous Waste Hauler: Lorco Petroleum Services
Contact Person: Gary LoBello
Phone Number: (732) 721-0900

2.2 FIELD SCREENING/MONITORING

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

2.3 SOIL SAMPLING

On July 22, 1998, following the removal of the UST, associated piping, and approximately 250 cubic yards of potentially contaminated soil from the excavated area, post-excavation soil samples 1, 2 (DUP 1), 3, and 4 were collected from a total of three (3) locations of the UST excavation. Samples 1, 2 (DUP 1), and 3 were collected along the excavation floor at a depth of 9.0 feet bgs. Sidewall sample 4 was collected at a depth of 6.0 feet bgs. All samples were analyzed for TPHC and total solids.

On July 29, 1998, following the removal of approximately 210 cubic yards of potentially contaminated soil from the excavated area, post-excavation soil samples 5, 6 (DUP 5), 7, and C were collected from a total of three (3) locations of the UST excavation. Samples 5, 6 (DUP 5), and C were collected along the sidewall at a depth of 5.0 feet bgs. Excavation floor sample 7 was collected at a depth of 8.0 feet bgs. All samples were analyzed for TPHC and total solids.

On August 4, 1998, following the removal of approximately 300 cubic yards of potentially contaminated soil from the excavated area, post-excavation soil samples 8, 9, 10, 11 (DUP 10), and 12 were collected from a total of four (4) locations of the UST excavation. Samples 8, 9, and 12 were collected along the sidewall at a depth of 6.0 feet bgs. Excavation floor samples 10 and 11 (DUP 10) were collected at a depth of 8.0 feet bgs. All samples were analyzed for TPHC and total solids.

On August 7, 1998, following the removal of approximately 60 cubic yards of potentially contaminated soil from the excavated area, post-excavation soil samples 13, 14, 15, 16, 17, 18, 19, 20, and 21 were collected from a total of nine (9) locations of the UST excavation. Samples 13, 14, 17, 18, 19, and 20 were collected along the sidewall at a depth of 6.0 feet bgs. Excavation floor samples 15, 16, and 21 were collected at a depth of 8.0 feet bgs. All samples were analyzed for TPHC and total solids.

On August 12, 1998, following the removal of approximately 130 cubic yards of potentially contaminated soil from the excavated area, post-excavation soil samples 13, 19, 22, 23, 24, 25, 26 (DUP 25), 27, 28, 29, 30, 31, 32, and 33 were collected from a total of thirteen (13) locations of the UST excavation. Samples 13, 19, 22, 23, 24, 27, 28, 30, 32, and 33 were collected along the sidewall at a depth of 6.0 feet bgs. Excavation floor samples 25, 26 (DUP 25), 29, and 31 were collected at a depth of 8.0 feet bgs. All samples were analyzed for TPHC and total solids. Based on preliminary TPHC results, a VOA analysis (EPA Method 8260) was completed on samples 13 and 19.

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

2.4 GROUNDWATER SAMPLING

On October 23, 1999, and December 18, 1999, Building 116B 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 June 17, 1998 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 VOA analysis for samples 13 and 19 were compared to the NJDEP residential direct contact soil cleanup criteria and are included as Table 3. The analytical data package is provided in Appendix E.

All post-excavation soil samples that were collected after the removal of the potentially contaminated soil, contained TPHC concentrations ranging from non-detect to 399.75 mg/kg, except for samples 13 and 19 that had a TPHC concentration of 2913.14 mg/kg and 2204.80 mg/kg. These sample locations could not be further remediated due to the building location. A VOA analysis (EPA Method 8260) was completed on both samples and all known compounds searched for in the analysis were below the NJDEP residential direct contact soil cleanup criteria.

3.2 GROUNDWATER SAMPLING RESULTS

The sample collected from Building 116B on October 23, 1999, contained chloroform at 1.18 ug/l and butylbenzylphthalate at 1.49 ug/l. No other compounds were detected

No compounds were detected in the sample collected from Building 116B on December 18, 1999.

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

Groundwater samples collected on October 23, 1999, and December 18, 1999, were either below the detection limit or in compliance with the New Jersey Ground Water Quality Criteria (GWQC).

3.3 CONCLUSIONS AND RECOMMENDATIONS

The analytical results for all post-excavation soil samples collected from the UST closure excavation at Building 116B 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 116B on October 23, 1999, and December 18, 1999, groundwater quality at Building 116B 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. 90010-9 at Building 116B.

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TABLES

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
BUILDING 116B, MAIN POST-EAST AREA
FORT MONMOUTH, NEW JERSEY

Page 1 of 6

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	NJDEP Method
1	7/22/98	7/23/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
2(DUP 1)	7/22/98	7/23/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
3	7/22/98	7/23/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
4	7/22/98	7/23/98	Soil	Post-Excavation	TPHC	OQA-QAM-025

Note:

* TPHC Total Petroleum Hydrocarbons

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
BUILDING 116B, MAIN POST-EAST AREA
FORT MONMOUTH, NEW JERSEY

Page 2 of 6

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	NJDEP Method
5	7/29/98	7/30/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
6(DUP 5)	7/29/98	7/30/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
7	7/29/98	7/30/98	Soil	Post-Excavation	TPHC	OQA-QAM-025

Note:

* TPHC Total Petroleum Hydrocarbons

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
BUILDING 116B, MAIN POST-EAST AREA
FORT MONMOUTH, NEW JERSEY

Page 3 of 6

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	NJDEP Method
**8	8/4/98	8/4/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
**9	8/4/98	8/4/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
10	8/4/98	8/4/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
11(DUP 10)	8/4/98	8/4/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
**12	8/4/98	8/4/98	Soil	Post-Excavation	TPHC	OQA-QAM-025

Note:

* TPHC Total Petroleum Hydrocarbons

** Sample location further remediated and resampled

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
BUILDING 116B, MAIN POST-EAST AREA
FORT MONMOUTH, NEW JERSEY

Page 4 of 6

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	NJDEP Method
13	8/7/98	8/10/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
**14	8/7/98	8/10/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
15	8/7/98	8/10/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
16	8/7/98	8/10/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
**17	8/7/98	8/10/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
**18	8/7/98	8/10/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
19	8/7/98	8/10/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
**20	8/7/98	8/10/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
**21	8/7/98	8/10/98	Soil	Post-Excavation	TPHC	OQA-QAM-025

Note:

* TPHC Total Petroleum Hydrocarbons

** Sample location further remediated and resampled

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
BUILDING 116B, MAIN POST-EAST AREA
FORT MONMOUTH, NEW JERSEY

Page 5 of 6

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	NJDEP Method
22	8/12/98	8/12/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
23	8/12/98	8/12/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
24	8/12/98	8/12/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
25	8/12/98	8/12/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
26	8/12/98	8/12/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
27	8/12/98	8/12/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
28	8/12/98	8/12/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
29	8/12/98	8/12/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
30	8/12/98	8/12/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
31	8/12/98	8/12/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
32	8/12/98	8/12/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
33	8/12/98	8/12/98	Soil	Post-Excavation	TPHC	OQA-QAM-025

Note:

* TPHC Total Petroleum Hydrocarbons

TABLE 1

SUMMARY OF SAMPLING ACTIVITIES
BUILDING 116B, MAIN POST-EAST AREA
FORT MONMOUTH, NEW JERSEY

Page 6 of 6

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Sampling Method**
4879.01	10/23/99	10/25/99	Aqueous	Groundwater	VOCs, SVOCs	PPNDP
5029.01	12/18/99	12/21/99	Aqueous	Groundwater	VOCs, SVOCs	PPNDP

Note:

*VOCs: Volatile Organic Compounds plus 15 tentatively identified compounds

*SVOCs: Semivolatile organic compounds plus 15 tentatively identified compounds

**PPNDP: Passively Placed Narrow Diameter Point

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 116B, MAIN POST-EAST AREA
FORT MONMOUTH, NEW JERSEY

Page 1 of 6

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
1/9.0'	3745.01	7/22/98	7/23/98	Total Solid	--	--	79.45 %	--	--
2(DUP 1)/9.0'	3745.02	7/22/98	7/23/98	TPHC	194	yes	ND	10,000	No
				Total Solid	--	--	77.65 %	--	--
3/9.0'	3745.03	7/22/98	7/23/98	TPHC	192	yes	ND	10,000	No
				Total Solid	--	--	79.63 %	--	--
4/6.0'	3745.04	7/22/98	7/23/98	TPHC	197	yes	ND	10,000	No
				Total Solid	--	--	78.75 %	--	--
				TPHC	196	yes	358.93	10,000	No

Note:

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

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
 BUILDING 116B, MAIN POST-EAST AREA
 FORT MONMOUTH, NEW JERSEY

Page 2 of 6

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
5/5.0'	3769.01	7/29/98	7/30/98	Total Solid	--	--	78.12 %	--	--
6(DUP 5)/5.0'	3769.02	7/29/98	7/30/98	TPHC	200	yes	ND	10,000	No
				Total Solid	--	--	76.06 %	--	--
7/8.0'	3769.03	7/29/98	7/30/98	TPHC	204	yes	ND	10,000	No
				Total Solid	--	--	77.54 %	--	--
				TPHC	200	yes	ND	10,000	No

Note:

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

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 116B, MAIN POST-EAST AREA
FORT MONMOUTH, NEW JERSEY

Page 3 of 6

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
***8/6.0'	3778.01	8/4/98	8/4/98	Total Solid	--	--	83.66 %	--	--
				TPHC	186	yes	1207.98	10,000	No
***9/6.0'	3778.02	8/4/98	8/4/98	Total Solid	--	--	93.81 %	--	--
				TPHC	166	yes	4560.02	10,000	No
10/8.0'	3778.03	8/4/98	8/4/98	Total Solid	--	--	79.27 %	--	--
				TPHC	193	yes	ND	10,000	No
11(DUP 10)/8.0'	3778.04	8/4/98	8/4/98	Total Solid	--	--	78.20 %	--	--
				TPHC	197	yes	ND	10,000	No
***12/6.0'	3778.05	8/4/98	8/4/98	Total Solid	--	--	80.12 %	--	--
				TPHC	192	yes	667.03	10,000	No

Note:

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

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 116B, MAIN POST-EAST AREA
FORT MONMOUTH, NEW JERSEY

Page 4 of 6

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
13/6.0'	3792.01	8/7/98	8/10/98	Total Solid	--	--	91.91 %	--	--
***14/6.0'	3792.02	8/7/98	8/10/98	TPHC	171	yes	2913.14	10,000	No
				Total Solid	--	--	93.80 %	--	--
15/8.0'	3792.03	8/7/98	8/10/98	TPHC	166	yes	10730.29	10,000	YES
				Total Solid	--	--	94.33 %	--	--
16/8.0'	3792.04	8/7/98	8/10/98	TPHC	165	yes	ND	10,000	No
				Total Solid	--	--	87.64 %	--	--
***17/6.0'	3792.05	8/7/98	8/10/98	TPHC	174	yes	ND	10,000	No
				Total Solid	--	--	81.05 %	--	--
***18/6.0'	3792.06	8/7/98	8/10/98	TPHC	193	yes	ND	10,000	No
				Total Solid	--	--	92.53 %	--	--
19/6.0'	3792.07	8/7/98	8/10/98	TPHC	169	yes	9495.48	10,000	No
				Total Solid	--	--	95.06 %	--	--
20/6.0'	3792.08	8/7/98	8/10/98	TPHC	159	yes	2204.80	10,000	No
				Total Solid	--	--	92.07 %	--	--
***21/8.0'	3792.09	8/7/98	8/10/98	TPHC	165	yes	1758.64	10,000	No
				Total Solid	--	--	87.97 %	--	--
				TPHC	175	yes	6161.94	10,000	No

Note:

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

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
 BUILDING 116B, MAIN POST-EAST AREA
 FORT MONMOUTH, NEW JERSEY

Page 5 of 6

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
22/6.0'	3804.03	8/12/98	8/12/98	Total Solid	--	--	96.40 %	--	--
				TPHC	159	yes	ND	10,000	No
23/6.0'	3804.04	8/12/98	8/12/98	Total Solid	--	--	90.97 %	--	--
				TPHC	172	yes	ND	10,000	No
24/6.0'	3804.05	8/12/98	8/12/98	Total Solid	--	--	92.93 %	--	--
				TPHC	165	yes	ND	10,000	No
25/8.0'	3804.06	8/12/98	8/12/98	Total Solid	--	--	91.74 %	--	--
				TPHC	168	yes	ND	10,000	No
26/8.0'	3804.07	8/12/98	8/12/98	Total Solid	--	--	95.69 %	--	--
				TPHC	162	yes	ND	10,000	No
27/6.0'	3804.08	8/12/98	8/12/98	Total Solid	--	--	95.52 %	--	--
				TPHC	157	yes	ND	10,000	No
28/6.0'	3804.09	8/12/98	8/12/98	Total Solid	--	--	94.78 %	--	--
				TPHC	161	yes	ND	10,000	No

Note:

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

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 116B, MAIN POST-EAST AREA
FORT MONMOUTH, NEW JERSEY

Page 6 of 6

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
29/8.0'	3804.10	8/12/98	8/12/98	Total Solid	--	--	87.62 %	--	--
				TPHC	173	yes	ND	10,000	No
30/6.0'	3804.11	8/12/98	8/12/98	Total Solid	--	--	88.11 %	--	--
				TPHC	172	yes	ND	10,000	No
31/8.0'	3804.12	8/12/98	8/12/98	Total Solid	--	--	85.76 %	--	--
				TPHC	178	yes	ND	10,000	No
32/6.0'	3804.13	8/12/98	8/12/98	Total Solid	--	--	91.55 %	--	--
				TPHC	168	yes	327.56	10,000	No
33/6.0'	3804.14	8/12/98	8/12/98	Total Solid	--	--	88.23 %	--	--
				TPHC	171	yes	399.75	10,000	No

Note:

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

Table 3
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETLNJDEP # 13461Matrix: (soil/water) SOILDate Sampled: 8/12/98Location: 116BLab Sample ID: 3804.01(SAMPLE 13)

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

CAS NO.	PARAMETER	MDL	QUALIFIER	RESIDENTIAL	NON-RESIDENTIAL
107028	Acrolein	1900	U	NA	NA
107131	Acrylonitrile	1900	U	1000	5000
75650	tert-Butyl alcohol	3600	U	NA	NA
1634044	Methyl-tert-Butyl ether	830	U	NA	NA
108203	Di-isopropyl ether	550	U	NA	NA
	Dichlorodifluoromethane	1100	U	NA	NA
74-87-3	Chloromethane	280	U	520000	1000000(d)
75-01-4	Vinyl Chloride	830	U	2000	7000
74-83-9	Bromomethane	550	U	79000	1000000(d)
75-00-3	Chloroethane	830	U	NA	NA
75-69-4	Trichlorofluoromethane	550	U	NA	NA
75-35-4	1, 1-Dichloroethene	280	U	8000	150000
67-64-1	Acetone	550	U	1000000(d)	1000000(d)
75-15-0	Carbon Disulfide	280	U	NA	NA
75-09-2	Methylene Chloride	550	U	49000	210000
156-60-5	trans-1,2-Dichloroethene	550	U	1000000(d)	1000000(d)
75-35-3	1,1-Dichloroethane	280	U	570000	1000000(d)
108-05-4	Vinyl Acetate	830	U	NA	NA
78-93-3	2-Butanone	830	U	1000000(d)	1000000(d)
156-59-2	cis-1,2-Dichloroethene	280	U	79000	1000000(d)
67-66-3	Chloroform	460		19000(k)	28000(k)
75-55-6	1,1,1-Trichloroethane	280	U	NA	NA
56-23-5	Carbon Tetrachloride	550	U	2000(k)	4000(k)
71-43-2	Benzene	280	U	3000	13000
107-06-2	1,2-Dichloroethane	550	U	6000	24000

Table 3
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETLNJDEP # 13461Matrix: (soil/water) SOILDate Sampled: 8/12/98Location: 116BLab Sample ID: 3804.01(SAMPLE 13)

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

CAS NO.	PARAMETER	MDL	QUALIFIER	RESIDENTIAL	NON-RESIDENTIAL
79-01-6	Trichloroethene	280	U	23000	54000(k)
78-87-5	1, 2-Dichloropropane	280	U	10000	43000
75-27-4	Bromodichloromethane	280	U	11000(g)	46000(g)
110-75-8	2-Chloroethyl vinyl ether	550	U	NA	NA
10061-01-5	cis-1,3-Dichloropropene	280	U	NA	NA
108-10-1	4-Methyl-2-Pentanone	550	U	1000000(d)	1000000(d)
108-88-3	Toluene	280	U	1000000(d)	1000000(d)
10061-02-6	trans-1,3-Dichloropropene	550	U	NA	NA
79-00-5	1,1,2-Trichloroethane	550	U	22000	420000
127-18-4	Tetrachloroethene	280	U	4000(k)	6000(k)
591-78-6	2-Hexanone	550	U	NA	NA
126-48-1	Dibromochloromethane	550	U	NA	NA
108-90-7	Chlorobenzene	280	U	37000	680000
100-41-4	Ethylbenzene	550	U	1000000(d)	1000000(d)
1330-20-7	m+p-Xylenes	830	U	NA	NA
1330-20-7	o-Xylene	550	U	NA	NA
100-42-5	Styrene	550	U	23000	97000
75-25-2	Bromoform	550	U	86000	370000
79-34-5	1,1,2,2-Tetrachloroethane	550	U	34000	70000(k)
541-73-1	1,3-Dichlorobenzene	1100	U	5100000	10000000(c)
106-46-7	1,4-Dichlorobenzene	1100	U	570000	10000000(c)
95-50-1	1,2-Dichlorobenzene	1100	U	5100000	10000000(c)

Table 3
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETLNJDEP # 13461Matrix: (soil/water) SOILDate Sampled: 8/12/98Location: 116BLab Sample ID: 3804.02(SAMPLE 19)

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

CAS NO.	PARAMETER	MDL	QUALIFIER	RESIDENTIAL	NON-RESIDENTIAL
107028	Acrolein	1800	U	NA	NA
107131	Acrylonitrile	1800	U	1000	5000
75650	tert-Butyl alcohol	3400	U	NA	NA
1634044	Methyl-tert-Butyl ether	770	U	NA	NA
108203	Di-isopropyl ether	520	U	NA	NA
	Dichlorodifluoromethane	1000	U	NA	NA
74-87-3	Chloromethane	260	U	520000	1000000(d)
75-01-4	Vinyl Chloride	770	U	2000	7000
74-83-9	Bromomethane	520	U	79000	1000000(d)
75-00-3	Chloroethane	770	U	NA	NA
75-69-4	Trichlorofluoromethane	520	U	NA	NA
75-35-4	1, 1-Dichloroethene	260	U	8000	150000
67-64-1	Acetone	520	U	1000000(d)	1000000(d)
75-15-0	Carbon Disulfide	260	U	NA	NA
75-09-2	Methylene Chloride	520	U	49000	210000
156-60-5	trans-1,2-Dichloroethene	520	U	1000000(d)	1000000(d)
75-35-3	1,1-Dichloroethane	260	U	570000	1000000(d)
108-05-4	Vinyl Acetate	770	U	NA	NA
78-93-3	2-Butanone	770	U	1000000(d)	1000000(d)
156-59-2	cis-1,2-Dichloroethene	260	U	79000	1000000(d)
67-66-3	Chloroform	400		19000(k)	28000(k)
75-55-6	1,1,1-Trichloroethane	260	U	NA	NA
56-23-5	Carbon Tetrachloride	520	U	2000(k)	4000(k)
71-43-2	Benzene	260	U	3000	13000
107-06-2	1,2-Dichloroethane	520	U	6000	24000

Table 3
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETLNJDEP # 13461Matrix: (soil/water) SOILDate Sampled: 8/12/98Location: 116BLab Sample ID: 3804.02(SAMPLE 19)

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

CAS NO.	PARAMETER	MDL	QUALIFIER	RESIDENTIAL	NON-RESIDENTIAL
79-01-6	Trichloroethene	260	U	23000	54000(k)
78-87-5	1, 2-Dichloropropane	260	U	10000	43000
75-27-4	Bromodichloromethane	260	U	11000(g)	46000(g)
110-75-8	2-Chloroethyl vinyl ether	520	U	NA	NA
10061-01-5	cis-1,3-Dichloropropene	260	U	NA	NA
108-10-1	4-Methyl-2-Pentanone	520	U	1000000(d)	1000000(d)
108-88-3	Toluene	260	U	1000000(d)	1000000(d)
10061-02-6	trans-1,3-Dichloropropene	520	U	NA	NA
79-00-5	1,1,2-Trichloroethane	520	U	22000	420000
127-18-4	Tetrachloroethene	260	U	4000(k)	6000(k)
591-78-6	2-Hexanone	520	U	NA	NA
126-48-1	Dibromochloromethane	520	U	NA	NA
108-90-7	Chlorobenzene	260	U	37000	680000
100-41-4	Ethylbenzene	3800		1000000(d)	1000000(d)
1330-20-7	m+p-Xylenes	4200		NA	NA
1330-20-7	o-Xylene	2800		NA	NA
100-42-5	Styrene	520	U	23000	97000
75-25-2	Bromoform	520	U	86000	370000
79-34-5	1,1,2,2-Tetrachloroethane	520	U	34000	70000(k)
541-73-1	1,3-Dichlorobenzene	1100	U	5100000	10000000(c)
106-46-7	1,4-Dichlorobenzene	1100	U	570000	10000000(c)
95-50-1	1,2-Dichlorobenzene	1100	U	5100000	10000000(c)

Definition of Qualifiers

MDL : Method Detection Limit

J : Compound identified below detection limit

B : Compound in both sample and blank

D : Results from dilution of sample

U : Compound searched for but not detected

SOIL CLEANUP CRITERIA (MG/KG)

(LAST REVISED-7/11/96)

- (A) CRITERIA ARE HEALTH BASED USING AN INCIDENTAL INGESTION EXPOSURE PATHWAY EXCEPT WHERE NOTED BELOW.**
- (B) CRITERIA ARE SUBJECT TO CHANGE BASED ON SITE SPECIFIC FACTORS (E.G., AQUIFER CLASSIFICATION, SOIL TYPE, NATURAL BACKGROUND, ENVIRONMENTAL IMPACTS, ETC.)**
- (C) HEALTH BASED CRITERION EXCEEDS THE 10,000 MG/KG MAXIMUM FOR TOTAL ORGANIC CONTAMINANTS.**
- (D) HEALTH BASED CRITERION EXCEEDS THE 1000 MG/KG MAXIMUM FOR TOTAL VOLATILE ORGANIC CONTAMINANTS**
- (E) CLEANUP STANDARD PROPOSAL WAS BASED ON NATURAL BACKGROUND.**
- (F) HEALTH BASED CRITERION IS LOWER THAN ANALYTICAL LIMITS; CLEANUP CRITERION BASED ON PRACTICAL QUANTITATION LEVEL.**
- (G) CRITERION HAS BEEN RECALCULATED BASED ON NEW TOXICOLOGICAL DATA.**
- (H) THE IMPACT TO GROUND WATER VALUES FOR INORGANIC CONSTITUENTS WILL BE DEVELOPED BASED UPON SITE SPECIFIC CHEMICAL AND PHYSICAL PARAMETERS.**
- (I) ORIGINAL CRITERION WAS INCORRECTLY CALCULATED AND HAS BEEN RECALCULATED.**
- (J) TYPOGRAPHICAL ERROR.**
- (K) CRITERIA BASED ON INHALATION EXPOSURE PATHWAY, WHICH YIELDED A MORE STRINGENT CRITERION THAN THE INCIDENTAL INGESTION EXPOSURE PATHWAY.**
- (L) NEW CRITERION DERIVED USING METHODOLOGY IN THE BASIS AND BACKGROUND DOCUMENT.**
- (M) CRITERION BASED ON ECOLOGICAL (PHYTOTOXICITY) EFFECTS.**
- (N) LEVEL OF THE HUMAN HEALTH BASED CRITERION IS SUCH THAT EVALUATION FOR POTENTIAL ENVIRONMENTAL IMPACTS ON A SITE BY SITE BASIS IS RECOMMENDED.**

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

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

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

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

Table 4
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETLNJDEP # 13461Matrix: (soil/water) WATERDate Sampled: 10/23/99Location: 116BLab Sample ID: 4879.01(Bldg 116)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
107028	Acrolein	1.85	Not Detected	--	50	no
107131	Acrylonitrile	2.78	Not Detected	--	50	no
75650	tert-Butyl alcohol	8.52	Not Detected	--	nle	no
1634044	Methyl-tert-Butyl ether	0.16	Not Detected	--	nle	no
108203	Di-isopropyl ether	0.25	Not Detected	--	nle	no
	Dichlorodifluoromethane	1.68	Not Detected	--	nle	no
74-87-3	Chloromethane	1.16	Not Detected	--	30	no
75-01-4	Vinyl Chloride	1.06	Not Detected	--	5	no
74-83-9	Bromomethane	1.10	Not Detected	--	10	no
75-00-3	Chloroethane	1.01	Not Detected	--	nle	no
75-69-4	Trichlorofluoromethane	0.50	Not Detected	--	nle	no
75-35-4	1, 1-Dichloroethene	0.24	Not Detected	--	2	no
67-64-1	Acetone	1.36	Not Detected	--	700	no
75-15-0	Carbon Disulfide	0.46	Not Detected	--	nle	no
75-09-2	Methylene Chloride	0.24	Not Detected	--	2	no
156-60-5	trans-1,2-Dichloroethene	0.16	Not Detected	--	100	no
75-35-3	1,1-Dichloroethane	0.12	Not Detected	--	70	no
108-05-4	Vinyl Acetate	0.78	Not Detected	--	nle	no
78-93-3	2-Butanone	0.62	Not Detected	--	300	no
156-59-2	cis-1,2-Dichloroethene	0.17	Not Detected	--	10	no
67-66-3	Chloroform	0.30	1.18 ug/L	--	6	no
75-55-6	1,1,1-Trichloroethane	0.23	Not Detected	--	30	no
56-23-5	Carbon Tetrachloride	0.47	Not Detected	--	2	no
71-43-2	Benzene	0.23	Not Detected	--	1	no
107-06-2	1,2-Dichloroethane	0.18	Not Detected	--	2	no
79-01-6	Trichloroethene	0.23	Not Detected	--	1	no
78-87-5	1, 2-Dichloropropane	0.40	Not Detected	--	1	no
75-27-4	Bromodichloromethane	0.55	Not Detected	--	1	no
110-75-8	2-Chloroethyl vinyl ether	0.65	Not Detected	--	nle	no
10061-01-5	cis-1,3-Dichloropropene	0.69	Not Detected	--	nle	no

Table 4
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Matrix: (soil/water) WATER
 Date Sampled: 10/23/99 Location: 116B Lab Sample ID: 4879.01(Bldg 116)

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

Table 4
SEMI-VOLATILE ANALYSIS DATA SHEET

Lab Name: FMETLNJDEP # 13461Matrix: (soil/water) WATERDate Sampled: 10/23/99Location: 116BLab Sample ID: 4879.01(Bldg 116)

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

Table 4
SEMI-VOLATILE ANALYSIS DATA SHEET

Lab Name: FMETLNJDEP # 13461Matrix: (soil/water) WATERDate Sampled: 10/23/99Location: 116BLab Sample ID: 4879.01(Bldg 116)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
606-20-2	2,6-Dinitrotoluene	0.81	Not Detected	--	nle	no
99-09-2	3-Nitroaniline	0.79	Not Detected	--	nle	no
83-32-9	Acenaphthene	1.10	Not Detected	--	400	no
132-64-9	Dibenzofuran	1.00	Not Detected	--	nle	no
121-14-2	2,4-Dinitrotoluene	0.87	Not Detected	--	10	no
84-66-2	Diethylphthalate	1.62	Not Detected	--	5000	no
86-73-7	Fluorene	0.99	Not Detected	--	300	no
7005-72-3	4-Chlorophenyl-phenylether	1.10	Not Detected	--	nle	no
100-01-6	4-Nitroaniline	1.05	Not Detected	--	nle	no
86-30-6	n-Nitrosodiphenylamine	1.01	Not Detected	--	20	no
103-33-3	Azobenzene	0.67	Not Detected	--	nle	no
101-55-3	4-Bromophenyl-phenylether	0.76	Not Detected	--	nle	no
118-74-1	Hexachlorobenzene	0.94	Not Detected	--	10	no
85-01-8	Phenanthrene	1.23	Not Detected	--	nle	no
120-12-7	Anthracene	1.12	Not Detected	--	2000	no
84-74-2	Di-n-butylphthalate	1.70	Not Detected	--	900	no
206-44-0	Fluoranthene	1.64	Not Detected	--	300	no
92-87-5	Benzidine	4.18	Not Detected	--	50	no
129-00-0	Pyrene	1.25	Not Detected	--	200	no
85-68-7	Butylbenzylphthalate	1.05	1.49 ug/L	--	100	no
56-55-3	Benzo[a]anthracene	1.19	Not Detected	--	10	no
91-94-1	3,3'-Dichlorobenzidine	1.75	Not Detected	--	60	no
218-01-9	Chrysene	1.38	Not Detected	--	20	no
117-81-7	bis(2-Ethylhexyl)phthalate	1.74	Not Detected	--	30	no
117-84-0	Di-n-octylphthalate	1.44	Not Detected	--	100	no
205-99-2	Benzo[b]fluoranthene	1.25	Not Detected	--	10	no
207-08-9	Benzo[k]fluoranthene	1.29	Not Detected	--	2	no
50-32-8	Benzo[a]pyrene	1.05	Not Detected	--	20	no
193-39-5	Indeno[1,2,3-cd]pyrene	0.83	Not Detected	--	20	no
53-70-3	Dibenz[a,h]anthracene	0.64	Not Detected	--	20	no
191-24-2	Benzo[g,h,i]perylene	0.84	Not Detected	--	nle	no

Table 4
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Matrix: (soil/water) WATER
 Date Sampled: 12/18/99 Location: 116B Lab Sample ID: 5029.01(Bldg 116)

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

Table 4
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Matrix: (soil/water) WATER
 Date Sampled: 12/18/99 Location: 116B Lab Sample ID: 5029.01(Bldg 116)

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

Table 4
SEMI-VOLATILE ANALYSIS DATA SHEET

Lab Name: FMETLNJDEP # 13461Matrix: (soil/water) WATERDate Sampled: 12/18/99Location: 116BLab Sample ID: 5029.01(Bldg 116)

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

Table 4 .
SEMI-VOLATILE ANALYSIS DATA SHEET

Lab Name: FMETLNJDEP # 13461Matrix: (soil/water) WATERDate Sampled: 12/18/99Location: 116BLab Sample ID: 5029.01(Bldg 116)

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

Figure 1
Figure 2
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Figure 100

FIGURES



FIGURE 1

LOCATION MAP
 Building 116B
 Main-Post East
 Fort Monmouth Army Base
 Monmouth County, NJ

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

Scale; 1" = 2000'

Date: APRIL 1997

LONG BRANCH, N. J.

40073-C8-TF-024

1954

PHOTOREVISED 1981

DMA 6164 I SE-SERIES V822

NEW
JERSEY

QUADRANGLE LOCATION

Geologic Map of New Jersey

SEDIMENTARY ROCKS

CENOZOIC

Holocene: sand

Tertiary: sand, silt, clay

MESOZOIC

Cretaceous: sand, silt, clay

Jurassic: siltstone, shale, sandstone

Triassic: siltstone, shale,
sandstone

PALEOZOIC

Devonian: conglomerate, sandstone,

Silurian: conglomerate, sandstone,
shale, limestone

Ordovician: shale, limestone

Cambrian: limestone, sandstone

IGNEOUS AND METAMORPHIC ROCKS

MESOZOIC

Jurassic: basalt

Jurassic: diabase

PRECAMBRIAN

marble

gneiss, granite



FIGURE 1A
GEOLOGICAL MAP
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

VERSAR
Engineers, Managers, Scientists & Planners
Bristol, Pennsylvania

LEONARD AVENUE

456

457

SELF RIDGE AVE

EVANS AVENUE

475

SITE

117

116

TILLY AVENUE

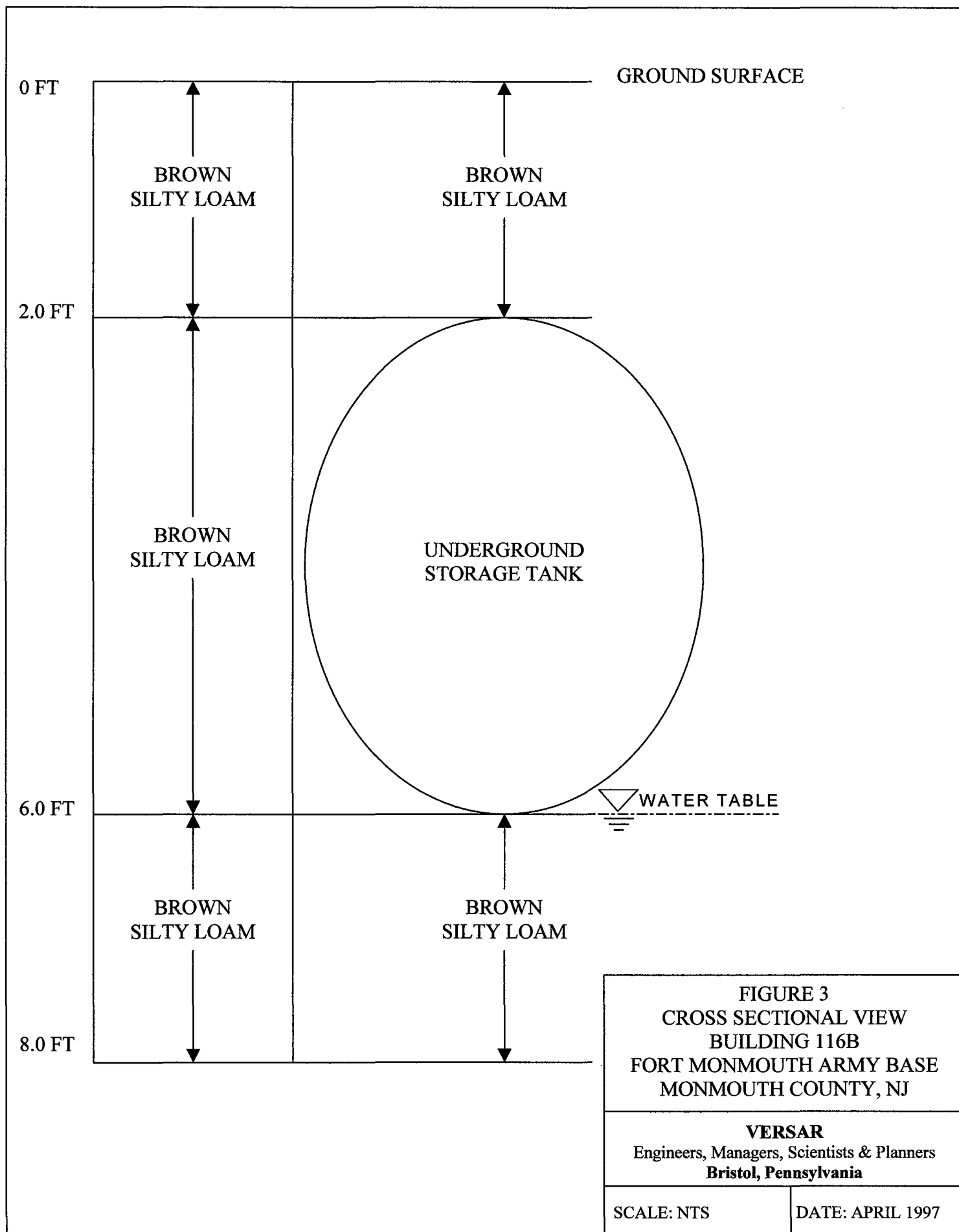


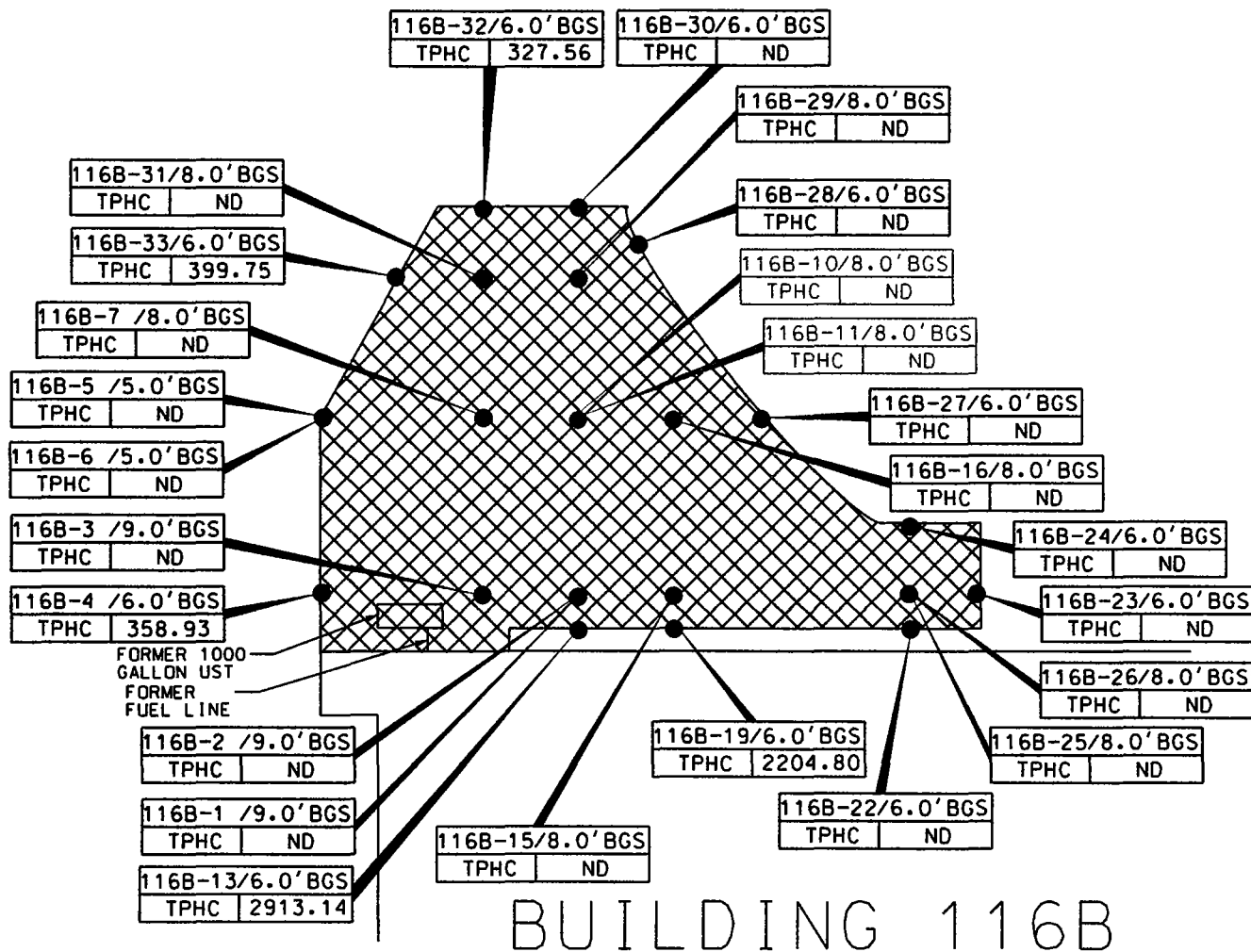
FIGURE 2
SITE MAP
BUILDING 116B
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

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

SCALE: 1"=100'

DATE: APRIL 1997





BUILDING 116B

LEGEND

- SOIL SAMPLE LOCATION (JULY 22, 1998)
- SOIL SAMPLE LOCATION (JULY 29, 1998)
- SOIL SAMPLE LOCATION (AUGUST 4, 1998)
- SOIL SAMPLE LOCATION (AUGUST 7, 1998)
- SOIL SAMPLE LOCATION (AUGUST 12, 1998)
- ▨ LIMIT OF EXCAVATION (AUGUST 12, 1998)

NOTES:

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



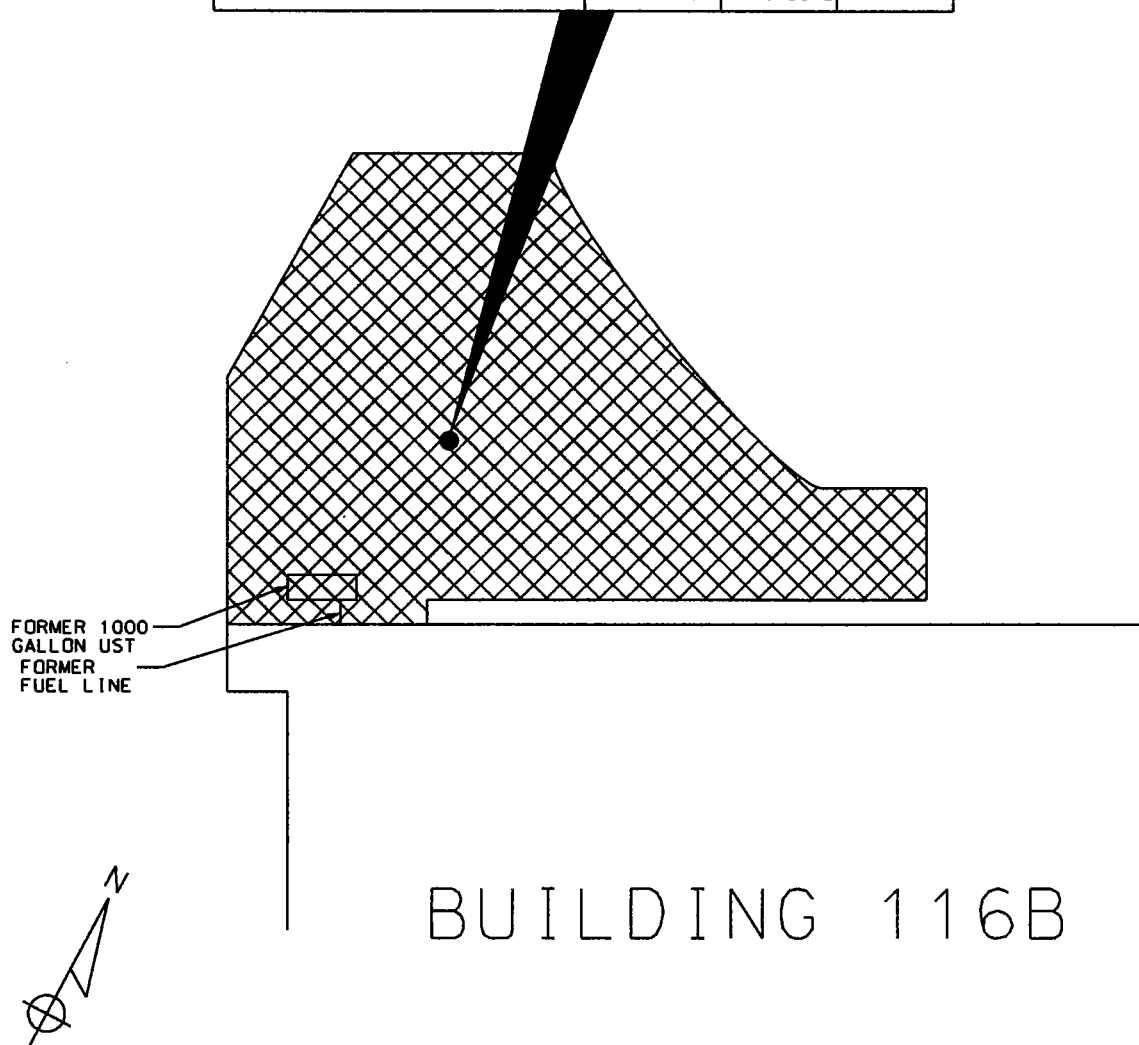
FIGURE 4
SOIL SAMPLING LOCATION MAP
BUILDING 116B
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

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

SCALE: 1"=30'

DATE: APRIL 1997

SAMPLING LOCATION: SAMPLING DEPTH: SAMPLING DATE:	HIGHER OF NJDEP GWOS AND POL	BLDG 116B 7-11' BGS 10/23/99	BLDG 116B 7-11' BGS 12/18/99
VOLATILE ORGANIC COMPOUNDS:			
CHLOROFORM:	6 UG/L	1.18 UG/L	ND
SEMIVOLATILE ORGANIC COMPOUNDS:			
BUTYLBENZYLPHTHALATE:	100 UG/L	1.49 UG/L	ND



LEGEND

- GROUNDWATER SAMPLE LOCATION
(OCTOBER 23, 1999 AND DECEMBER 18, 1999)
- ▨ LIMIT OF EXCAVATION
(AUGUST 12, 1998)

NOTES:

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

FIGURE 5
GROUNDWATER SAMPLING MAP
BUILDING 116B
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

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

SCALE: 1"=30'

DATE: APRIL 1997

APPENDIX A

NJDEP-BUST CLOSURE APPROVAL LETTER



State of New Jersey

Christine Todd Whitman
Governor

Department of Environmental Protection

Robert C. Shinn, Jr.
Commissioner

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

SEP 25 1995

Dear Mr. Ott:

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

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

AREA	REGISTRATION NO. - SIZE	BLDG NO.	UST NO.	TANK SAMP	LINE SAMP	REMOVAL DATE	REPORT DATE
CW - West	0081515 - 1000	2504	15	4/1	1	9/18/95	1/19/96
CW - East	0090010 - 1000	484	56	4/1	0	10/23/95	2/23/96
CW - West	0081533 - 1000	550	79	4/1	0	10/24/95	2/26/96
CW - West	0081533 - 550	826	134	4/1	2	10/25/95	2/27/96
CW - West	0081533 - 1000	902	144	4/1	0	10/27/95	2/29/96
CW - East	0090010 - 1000	116	9	4/1	1	10/2/95	2/5/96
CW - East	0090010 - 2000	116	10	4/1	0	10/3/95	2/5/96
CW - East	0090010 - 1000	173	19	4/1	3	10/4/95	2/6/96
CW - East	0090010 - 1000	276	23	4/1	2	10/10/95	2/12/96
CW - East	0090010 - 1000	277	24	4/1	0	10/11/95	2/13/96
CW - East	0090010 - 1080	420	36	4/1	2	10/12/95	2/13/96
CW - East	0090010 - 1080	428	42	4/1	3	10/16/95	2/20/96
CW - East	0090010 - 1080	429	43	4/1	3	10/17/95	2/20/96
CW - East	0090010 - 1080	439	48	4/1	2	10/18/95	2/20/96

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

Sincerely,



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

cc. Gene Lesinski, FTMMTH

RPCE\BFCM\FTMMTH31.IRC



State of New Jersey
Department of Environmental Protection and Energy
Division of Responsible Party Site Remediation
CN 028
Trenton, NJ 08625-0029

ATTN: UST Program
(609) 984-3156

For State Use Only

Date Rec'd. _____

Auth. _____

Routing _____

UST NO. _____

STANDARD REPORTING FORM
for reporting activities at an UST facility:

- | | |
|--|---|
| ☒ General Facility Information Changes | ☐ Sale or Transfer |
| ☒ Closure (Abandonment or Removal) | ☐ Substantial Modification |
| ☐ Temporary Closure | ☐ Financial Responsibility |
| ☐ Change in Service | ☐ Address Change Only |

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

(More than one tank can be listed per activity)

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

Answer questions 1 through 5 and others as applicable.

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

U.S. ARMY - FORT MONMOUTH
DPW - BUILDING 173
FORT MONMOUTH NJ 07703
ATTN: EUGENE W. LESINSKI

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

3. Contact person for this activity:

GENE LESINSKI
Telephone Number: (908) 532-0989

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

BLDG 116B

5. Registration Number (if known):

UST - 0090010

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

- a. Facility name: _____
b. Facility location: _____
c. Owner's mailing address: _____

NJ _____
d. Block: _____ Lot: _____
e. Contact person (facility operator): _____
f. Contact telephone number: (_____) _____ - _____
g. Other (Specify): _____

(OVER)

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

a. ☐ Abandonment Date: ____/____/____ Case No: ____

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

b. ☒ Removal Date: 4/10/97 Case No. 97-4-10-1409-35

Attach the necessary implementation schedule (3 copies).

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

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

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

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

Tank No. ____ Old ____ New ____

Tank No. ____ Old ____ New ____

Tank No. ____ Old ____ New ____

(Attach additional sheets if more space is needed)

9. For TRANSFER OF OWNERSHIP: Effective Date: ____/____/____

a. New Owner (operator) _____

b. New Facility Name _____

NJ

County

c. Closing Attorney _____ Tele: (____) _____

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

a. Type of Modification _____ Date: ____/____/____

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

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

a. Policy Type: ☐

d. Company/Carrier: ☐

b. Policy Number: ☐

e. Expiration Date: ☐

c. Other: ☐

(Specify)

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

CERTIFICATION

This registration form shall be signed by the highest ranking individual at the facility with overall responsibility for that facility (N.J.A.C. 7:14B-2.3 (a) 1).

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

Signature: James Ott

Name (print or type): JAMES OTT

Title: DIRECTOR - DEPT OF PUBLIC WORKS Date: 5/20/97

APPENDIX B

SITE ASSESSMENT SUMMARY

Site Remediation Program

UST Site/Remedial Investigation Report Certification Form

A. Facility Name : U.S. Army Fort Monmouth New JerseyFacility Street Address : Directorate of Public Works Building 173Municipality: Oceanport County : MonmouthBlock: _____ Lot(s): _____ Telephone Number : 732-532-6224

B. Owner (RP)'s Name: _____

Street Address: _____ City : _____

State: _____ Zip: _____ Telephone Number : _____

C. (Check as appropriate)

☐ Site Investigation

Report (SIR) \$500 Fee

☐ Remedial Investigation

Report (RIR) \$1000 Fee

☒ NA – Federal Agreement

D. (Complete all that apply)

• Assigned Case Manager : Ian Curtis, Federal Case Manager• UST Registration Number : 90010-9 (7 digits)• Incident Report Number 97 - 04 - 10 - 1409 - 35 (10 or 12 digits)• Tank Closure Number : Federal Case Manager

E. Certification by the Subsurface Evaluator:

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

Name: Eugene Lesinski Signature: See signed subsurface removal log UST Cert. No.: 14537Firm: U.S. Army Fort Monmouth Firm's UST Cert. Number: NA-U.S. ArmyFirm Address: Directorate of Public Works Building 173 City: Fort MonmouthState: NJ Zip: 07703 Telephone Number : 732-532-6224

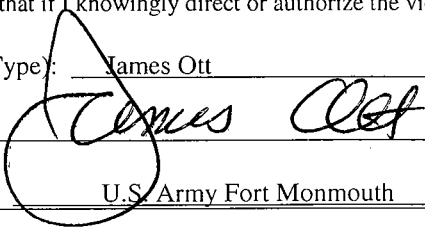
(NOTE: Certification numbers required only if work was conducted on USTs regulated per N.J.S.A. 58:10A-21 et seq.)

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

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

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

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

Name (Print or Type): James Ott Title: Directorate of Public WorksSignature: Company Name: U.S. Army Fort Monmouth Date: 9/4/00

**IS ARMY, SELFM-PW-
DAILY UST SUBSURFACE REMOVAL LOG**

BLDG.#: 116 B REG.#: 0090010 - 9 CLOSURE#: NJDEP LTR 9-25-97
 DATE: 4-10-97 TOA: 1300 TOD: 1400
 GOV. SSE: LESINSKI NJDEP CERT.#: 0014537

REMOVAL CONTRACTOR: SAI Inc. TVS
 CLOSURE SUPERVISOR: DeMartino NJDEP CERT.#: —

WEATHER: Sunny - 40°F - Windy

ACTIVITY	YES / NO
THE SUPERVISOR (CLOSURE CERT.) WAS ON-SITE DURING ALL CLOSURE RELATED ACTIVITIES	Y
THE SSE WAS ON-SITE DURING UST REMOVAL AND SITE SCREENING AND SAMPLING ACTIVITIES	Y
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	N/A
THE UST WAS PLACED ONTO PLASTIC, SCRAPED OFF, INSPECTED FOR HOLES AND PHOTOGRAPHED	Y
A DISCHARGE WAS REPORTED TO THE NJDEP (609-292-7172), CASE# <u>97-4-10-1409-35</u>	Y
PHOTOS HAVE UST#, BLDG. #, DATE, TIME, NAME OF SSE AND DESCR. WRITTEN ON BACK	Y
GROUNDWATER WAS ENCOUNTERED AT <u>6.5</u> FEET BG, A SHEEN (WAS <u>NOT</u>) OBSERVED ON GW	Y
IF OVA/Hnu WAS USED: WAS IT CAL. AND FOUND TO BE OPERATIONAL (cal. data on COC)	N/A
IF SAMPLES WERE TAKEN: COC, SCALED SITE MAP (VERT. SOIL HORIZONS AND PLOT PLAN)	N/A
ALL SAMPLE COLLECTION ACTIVITIES WERE AS DESCRIBED IN THE NJDEP FSPM, 1992	N/A
ALL SAMPLING WAS BIASED TOWARD HIGHEST OVA/FID RECORDED SITES IAW 7:26E-3.6 et seq.	N/A
ALL PETROL. CONT. SOILS WERE SECURED FROM THE WEATHER BY CLOSE OF BUSINESS TODAY	Y
THE SSE AUTHORIZED BACKFILLING THE EXCAVATION (STONE TO 1" ABOVE 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 ³), PHOTOGRAPHS (UST, EXCAVATION, SAMPLING POINTS)	N

CHECK ALL BOXES. LEAVE NO BLANKS

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

SIGNATURE: [Signature] DATE: 4-10-97

APPENDIX C

WASTE MANIFEST

LORCO PETROLEUM SERVICES

RD 1 BOX 5A
OLD BRIDGE, NJ 08857

**NON-HAZARDOUS
WASTE MANIFEST**

1. Generator's US EPA ID No.

NJ321002059701531

Manifest
Document No.

2. Page 1
of 1

NHZ 001531

3. Generator's Name and Mailing Address

U.S. Army Communications Electronics Command
main post c/o Joseph Fallon Bldg. 173

4. Generator's Phone

908-532-6222 Fort Monmouth, N.J. 07703

5. Transporter 1 Company Name

LIONETTI OIL RECOVERY CO INC

6. US EPA ID Number

N.J.D.0.8.4.0.4.4.0.6.4

A. Transporter's Phone

908 721-0900

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address

LIONETTI OIL RECOVERY CO INC DBA LORCO PETROLEUM SVCS
RUNYON&CHEESEQUAKE RDS
OLD BRIDGE, NJ 08857

10. US EPA ID Number

N.J.D.0.8.4.0.4.4.0.6.4

C. Facility's Phone

908 721-0900

11. Waste Shipping Name and Description

a. **PETROLEUM OIL (PETROLEUM OIL)**
COMBUSTIBLE LIQUID UN1270 PGIII

12. Containers
No. Type

0 0 1 T T X3.200 G

13. Total
Quantity

14. Unit
Wt/Vol

b.

c.

d.

D. Additional Descriptions for Materials Listed Above

T, L PETROLEUM OIL 1 %
WATER 99 %

E. Handling Codes for Wastes Listed Above

T04 FILTRATION

15. Special Handling Instructions and Additional Information

24 HR EMERGENCY RESPONSE#(908) 721-0900
DECAL#73632ERG#128 DEXSIL TEST KIT RESULTS NA PPM
MANIFEST USED FOR TRACKING PURPOSES ONLY

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

Printed/Typed Name

EUGENE W LESINSKI

Signature

Eugene W Lesinski

Month Day Year

10/4/24/97

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

Richard Dirienzo

Signature

Richard Dirienzo

Month Day Year

10/4/24/97

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

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

Printed/Typed Name

Richard Lobello

Signature

Richard Lobello

Month Day Year

10/4/24/97

ORIGINAL - RETURN TO GENERATOR

APPENDIX D

UST DISPOSAL CERTIFICATE

[illegible]

1330

DATE 8-19-97

Tecum Vinell

\$ 105.00

one hundred & five ✓

DOLLARS Security features included. Details on back.
Sovereign Bank

001330 012212723320000 1091099286

#65

Metal Recyclers
3230 Shafto Rd.
Tinton Falls, NJ
(908) 922-9292

DATE. 194/0271

Customer's Name

Tecom VINCE

Address

B. 291, (116-B)

Weight	Price
--------	-------

Steel

Tauk

Lt. Iron

Copper #1

Copper #2

22940 LB

19940 LB

300-

Weight	Price
100 lb.	\$1.79
200 lb.	\$3.49
300 lb.	\$5.19
400 lb.	\$6.89
500 lb.	\$8.59
600 lb.	\$10.29
700 lb.	\$11.99
800 lb.	\$13.69
900 lb.	\$15.39
1000 lb.	\$17.09

Lt. Copper

Brass

Alum Clean

Lead

Stainless

Battery

105. a

TOTAL AMOUNT:

Weigher

Customer

F-1
F-2
F-3
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F-99
F-100

APPENDIX E

SOIL ANALYTICAL DATA PACKAGE

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

REPORT OF ANALYSIS

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

Project: Total Petroleum Hydrocarbons
98-0932
Bldg. 116B
SMC

Project # 3745
Date Rec. 07/22/98
Date Compl. 07/23/98
Released by:

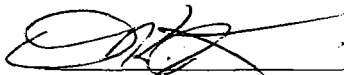

Daniel K. Wright **Date:** 7/27/98
Laboratory Director

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Continuing Calibration Summary	8
Surrogate Results Summary	9
MS/MSD Results Summary	10
Quality Control Spike Summary	11
Raw Sample Data	12-19
Laboratory Deliverable Checklist	20

Method Summary

NJDEP Method OQA-QAM-025-10/97

Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

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

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

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

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

PHC Conformance/Non-conformance Summary Report

No Yes

1. Method Detection Limits provided.

— ☒

2. Method Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank

— ☒

3. Matrix Spike Results Summary Meet Criteria.

(If not met, list the sample and corresponding recovery which falls outside the acceptable range).

— ☒

4. Duplicate Results Summary Meet Criteria.

(If not met, list the sample and corresponding recovery which falls outside the acceptable range).

— ☒

5. IR Spectra submitted for standards, blanks, & samples

— NA —

6. Chromatograms submitted for standards, blanks, and samples if GC fingerprinting was conducted.

— ☒

7. Analysis holding time met.

(If not met, list number of days exceeded for each sample)

— ☒

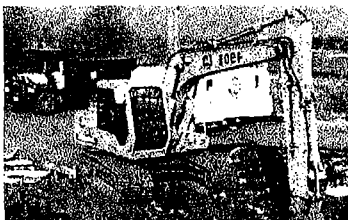
Additional Comments: _____

Laboratory Authentication Statement

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



Daniel K. Wright
Laboratory Manager



Fort Monmouth Environmental Testing Laboratory

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

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

NJDEP Certification #13461

Chain of Custody Record

[illegible]

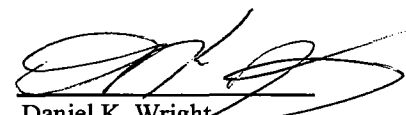
Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client : U.S. Army Lab. ID # : 3745
DPW. SELFM-PW-EV Date Rec'd: 22-Jul-98
Bldg. 173 Analysis Start: 23-Jul-98
Ft. Monmouth, NJ 07703 Analysis Complete: 23-Jul-98

Analysis: OQA-QAM-025 UST Reg. #:
Matrix: Soil Closure #:
Analyst: D.DEINHARDT DICAR #:
Ext. Meth: Shake Location #: BLDG. 116B

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3745.01	116B-1(9')	1.00	15.23	79.45	194	ND
3745.02	116B-2(9')	1.00	15.74	77.65	192	ND
3745.03	116B-3(9')	1.00	14.99	79.63	197	ND
3745.04	116B-4(6')	1.00	15.24	78.75	196	358.93
METHOD BLANK	TBLK 139	1.00	15.00	100.00	157	ND

ND = Not Detected
MDL = Method Detection Limit


Daniel K. Wright
Laboratory Director

LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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

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

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

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

Laboratory Manager or Environmental Consultant's Signature

Date 7/27/94

Laboratory Certification #13461

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

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

REPORT OF ANALYSIS

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

Project: Total Petroleum Hydrocarbons
98-0932
Bldg. 116
SMC

Project # 3769
Date Rec. 07/30/98
Date Compl. 07/30/98
Released by:

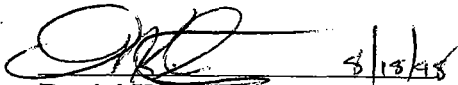

Daniel K. Wright **Date:** 8/13/98
Laboratory Director

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

PHC Conformance/Non-conformance Summary Report

No Yes

1. Method Detection Limits provided.

— ☒

2. Method Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank

☒ —

3. Matrix Spike Results Summary Meet Criteria.

(If not met, list the sample and corresponding recovery which falls outside the acceptable range).

— ☒

4. Duplicate Results Summary Meet Criteria.

(If not met, list the sample and corresponding recovery which falls outside the acceptable range).

— ☒

5. IR Spectra submitted for standards, blanks, & samples

— NA —

6. Chromatograms submitted for standards, blanks, and samples if GC fingerprinting was conducted.

— ☒

7. Analysis holding time met.

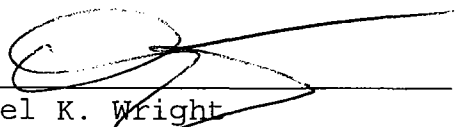
(If not met, list number of days exceeded for each sample)

— ☒

Additional Comments: _____

Laboratory Authentication Statement

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



Daniel K. Wright
Laboratory Manager



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

Chain of Custody Record

[illegible]

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

Client : U.S. Army **Lab. ID # :** 3769
DPW. SELFM-PW-EV **Date Rec'd:** 30-Jul-98
Bldg. 173 **Analysis Start:** 30-Jul-98
Ft. Monmouth, NJ 07703 **Analysis Complete:** 30-Jul-98

Analysis: OQA-QAM-025 **UST Reg. #:**
Matrix: Soil **Closure #:**
Analyst: D.DEINHARDT **DICAR #:**
Ext. Meth: Shake **Location #:** BLDG. 116

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3769.01	116B-5(5')	1.00	15.05	78.12	200	ND
3769.02	116B-6(5')	1.00	15.15	76.06	204	ND
3769.03	116B-7(8')	1.00	15.13	77.54	200	ND
3769.04	116B-C(5')	5.00	15.64	85.91	175	17664.24
METHOD BLANK	TBLK 144	1.00	15.00	100.00	157	ND

ND = Not Detected
MDL = Method Detection Limit


Daniel K. Wright
Laboratory Director

LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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

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

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

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

Laboratory Manager or Environmental Consultant's Signature

Date 8/15/93

Laboratory Certification #13461

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

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

REPORT OF ANALYSIS

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

Project: Total Petroleum Hydrocarbons
98-0932
Bldg. 116
SMC

Project # 3778
Date Rec. 08/04/98
Date Compl. 08/04/98
Released by:


Daniel K. Wright Date: 8/18/98
Laboratory Director

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Surrogate Results Summary	10
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Quality Control Spike Summary	12
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Laboratory Deliverable Checklist	27

Method Summary

NJDEP Method OQA-QAM-025-10/97

Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

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

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

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

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

PHC Conformance/Non-conformance Summary Report

No Yes

1. Method Detection Limits provided.

— ✓

2. Method Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank

✓ —

3. Matrix Spike Results Summary Meet Criteria.

(If not met, list the sample and corresponding recovery which falls outside the acceptable range).

— ✓

4. Duplicate Results Summary Meet Criteria.

(If not met, list the sample and corresponding recovery which falls outside the acceptable range).

— ✓

5. IR Spectra submitted for standards, blanks, & samples

— **NA** —

6. Chromatograms submitted for standards, blanks, and samples if GC fingerprinting was conducted.

— ✓

7. Analysis holding time met.

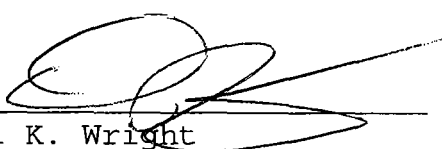
(If not met, list number of days exceeded for each sample)

— ✓

Additional Comments: _____

Laboratory Authentication Statement

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


Daniel K. Wright
Laboratory Manager



Fort Monmouth Environmental Testing Laboratory

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

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

NJDEP Certification #13461

Chain of Custody Record

Customer: Charles Appleby				Project No: 98-0932 UST (REM.)		Analysis Parameters						Comments: <u>RUSH</u>	
Phone #: X26224				Location: <u>Building 116</u>		TPHC	% SOLIDS	BN+15					
() DERA (X) OMA () Other: _____													
Samplers Name / Company : Dave Daniels (SMC)				Sample #									
Lab Sample I.D.	Sample Location	Date	Time	Type	bottles								Remarks / Preservation Method
8778. 01	116B-8(6')	8-4-98	8:30	Soil	1	X	X	X				20	(ce)
02	116B-9(6')	↓	8:35	↓	↓	↓	↓	↓				50	↓
03	116B-10(8')		8:40	↓	↓	↓			0				
04	116B-11(8')		8:45	↓	↓			0					
05	116B-12(6')		8:50	↓	↓			40					
06	116-SP3		9:30	↓	↓			0					
07	116-SP4		9:35	↓	↓			0					
Relinquished by (signature): <u>[Signature]</u>		Date/Time: <u>8-4-98 10:05</u>		Received by (signature): <u>[Signature]</u>		Relinquished by (signature):		Date/Time:		Received by (signature):			
Relinquished by (signature):		Date/Time:		Received by (signature):		Relinquished by (signature):		Date/Time:		Received by (signature):			
Report Type: () Full, (X) Reduced, () Standard, () Screen / non-certified						Remarks: <u>Calibration → zero gas = 0.0ppm</u> <u>Isobutylene → 100ppm at 9.67</u>							
Turnaround time: () Standard 4 wks, (X) Rush <u>1</u> Days, () ASAP Verbal _____ Hrs.													

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

Client :	U.S. Army	Lab. ID # :	3778
	DPW. SELF-M-PW-EV	Date Rec'd:	04-Aug-98
	Bldg. 173	Analysis Start:	04-Aug-98
	Ft. Monmouth, NJ 07703	Analysis Complete:	04-Aug-98

Analysis:	OQA-QAM-025	UST Reg. #:	
Matrix:	Soil	Closure #:	
Analyst:	D.DEINHARDT	DICAR #:	
Ext. Meth:	Shake	Location #:	BLDG. 116

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3778.01	116B-8(6')	1.00	15.10	83.66	186	1207.98
3778.02	116B-9(6')	1.00	15.13	93.81	166	4560.02
3778.03	116B-10(8')	1.00	15.38	79.27	193	ND
3778.04	116B-11(8')	1.00	15.25	78.20	197	ND
3778.05	116B-12(6')	1.00	15.31	80.12	192	667.03
3778.06	116-SP3	1.00	15.69	87.03	172	449.51
3778.07	116-SP4	1.00	15.45	88.60	172	ND
METHOD BLANK	TBLK 145	1.00	15.00	100.00	157	ND

ND = Not Detected

MDL = Method Detection Limit


 Daniel K. Wright
 Laboratory Director

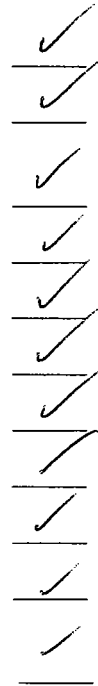
LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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

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

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



Laboratory Manager or Environmental Consultant's Signature

Date 6/16/94

Laboratory Certification #13461

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

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

REPORT OF ANALYSIS

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

Project: Total Petroleum Hydrocarbons
98-0932
Bldg. 116
SMC

Project # 3792
Date Rec. 08/07/98
Date Compl. 08/11/98
Released by:

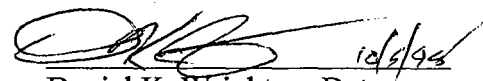

Daniel K. Wright **Date:** 10/6/98
Laboratory Director

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Blank Spike Summary	14
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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.

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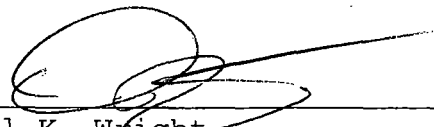
PHC Conformance/Non-conformance Summary Report

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

Additional Comments: _____

Laboratory Authentication Statement

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


Daniel K. Wright
Laboratory Manager



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

Chain of Custody Record

[illegible]

UST Reg. #:
Closure #:
DICAR #:
Location #: BLDG. 116

ND = Not Detected
MDL = Method Detection Limit

05

LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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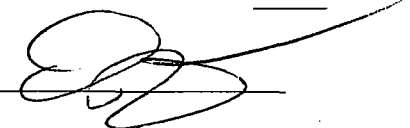
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7. Methodology Summary submitted
8. Laboratory Chronicle and Holding Time Check submitted
9. Results submitted on a dry weight basis
10. Method Detection Limits submitted
11. Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP

✓
✓
✓
✓
✓
✓
✓
✓
✓
✓
✓

Laboratory Manager or Environmental Consultant's Signature

Date 10/5/96



Laboratory Certification #13461

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

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

REPORT OF ANALYSIS

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

Project: Total Petroleum Hydrocarbons
98-0932
Bldg. 116
SMC

Project # 3804
Date Rec. 08/12/98
Date Compl. 08/13/98
Released by:


Daniel K. Wright Date: 9/15/98
Laboratory Director

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Method Summary

NJDEP Method OQA-QAM-025-10/97

Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

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

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

PHC Conformance/Non-conformance Summary Report

No Yes

1. Method Detection Limits provided.

— ☒

2. Method Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank

☒ —

3. Matrix Spike Results Summary Meet Criteria.

(If not met, list the sample and corresponding recovery which falls outside the acceptable range).

— ☒

4. Duplicate Results Summary Meet Criteria.

(If not met, list the sample and corresponding recovery which falls outside the acceptable range).

— ☒

5. IR Spectra submitted for standards, blanks, & samples

— NA —

6. Chromatograms submitted for standards, blanks, and samples if GC fingerprinting was conducted.

— ☒

7. Analysis holding time met.

(If not met, list number of days exceeded for each sample)

— ☒

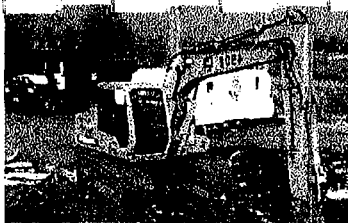
Additional Comments: _____

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Daniel K. Wright
Laboratory Manager



Fort Monmouth Environmental Testing Laboratory

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

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

NJDEP Certification #13461

Chain of Custody Record

Customer: Charles Appleby				Project No: 98-0932 UST (REM.)		Analysis Parameters						Comments: <u>RUSH TPHS</u> <u>Need Tomorrow Morning</u> <u>H-Nu (ppm)</u> Remarks / Preservation Method		
Phone #: X26224				Location: <u>Building 116</u>		TPHC	% SOLIDS	V0+15						
() DERA (X) OMA () Other: _____														
Samplers Name / Company : Dave Daniels (SMC)				Sample #										
Lab Sample I.D.	Sample Location	Date	Time	Type	bottles									
3804 01	116B-13 (6')	8.12.98	9:00	soil	2		X	X					12 ice	
02	116B-19 (6')		9:10		2		X	X					22 ice	
03	116B-22 (6')		9:15		2	X	X	← Run V0+15 IF TPH					Above 1,000 ppm	
04	116B-23 (6')		9:25		1	X	X						0 ice	
05	116B-24 (6')		9:27		1	X	X						0 ice	
06	116B-25 (8')		9:30										0	
07	116B-26 (8')		9:33										0	
08	116B-27 (6')		9:35										0	
09	116B-28 (6')		9:40										0	
10	116B-29 (8')		9:45										0	
11	116B-30 (6')		12:45										0	
12	116B-31 (8')		12:48										0	
13	116B-32 (6')		12:50										0	
14	116B-33 (6')		12:55										0	
Relinquished by (signature): <u>Dave Daniels</u>		Date/Time: <u>8.12.98</u>		Received by (signature):		Relinquished by (signature):		Date/Time:		Received by (signature):				
Relinquished by (signature):		Date/Time:		Received by (signature):		Relinquished by (signature):		Date/Time:		Received by (signature):				
Report Type: () Full, (X) Reduced, () Standard, () Screen / non-certified <u>Need tomorrow morning</u>						Remarks: <u>H-Nu Calibration → zero gas = 0.0 ppm</u> <u>Isobutylene 100 ppm at 9.53</u>								
Turnaround time: () Standard 4 wks, (X) Rush Days, (X) ASAP Verbal Hrs.														

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

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

Lab. ID # : 3804
Date Rec'd: 12-Aug-98
Analysis Start: 12-Aug-98
Analysis Complete: 13-Aug-98

Analysis: OQA-QAM-025
Matrix: Soil
Analyst: D.DEINHARDT
Ext. Meth: Shake

UST Reg. #:
Closure #:
DICAR #:
Location #: BLDG. 116

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3804.03	116B-22(6')	1.00	15.33	96.40	159	ND
3804.04	116B-23(6')	1.00	15.01	90.97	172	ND
3804.05	116B-24(6')	1.00	15.35	92.93	165	ND
3804.06	116B-25(8')	1.00	15.21	91.74	168	ND
3804.07	116B-26(8')	1.00	15.16	95.69	162	ND
3804.08	116B-27(6')	1.00	15.70	95.52	157	ND
3804.09	116B-28(6')	1.00	15.39	94.78	161	ND
3804.10	116B-29(8')	1.00	15.47	87.62	173	ND
3804.11	116B-30(6')	1.00	15.55	88.11	172	ND
3804.12	116B-31(8')	1.00	15.37	85.76	178	ND
3804.13	116B-32(6')	1.00	15.25	91.55	168	327.56
3804.14	116B-33(6')	1.00	15.62	88.23	171	399.75
METHOD BLANK	TBLK 148	1.00	15.00	100.00	157	ND

ND = Not Detected

MDL = Method Detection Limit


Daniel K. Wright
Laboratory Director

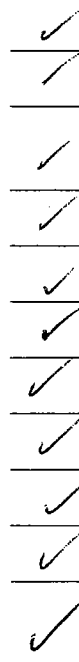
LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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

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

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

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



Laboratory Manager or Environmental Consultant's Signature

Date 9/13/94

A handwritten signature in dark ink, written over a horizontal line.

Laboratory Certification #13461

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

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS

PHONE: (732)532-6224 FAX: (732)532-3484

WET-CHEM - METALS - ORGANICS - FIELD SAMPLING

NJDEP LABORATORY CERTIFICATION # 13461



ANALYTICAL DATA REPORT
Fort Monmouth Environmental Laboratory
ENVIROMENTAL DIVISION
Fort Monmouth, New Jersey
PROJECT: #98-0932/SMC

Bldg. 116

Field Location No. & Location	Laboratory Sample ID#	Matrix	Date and Time Of Collection	Date Received
116B-13 (6')	3804.01	Soil	12-Aug-98 09:00	08/12/98
116B-19 (6')	3804.02	Soil	12-Aug-98 09:10	08/12/98
116B-22 (6')	3804.03	Soil	12-Aug-98 09:15	08/12/98
116B-23 (6')	3804.04	Soil	12-Aug-98 09:25	08/12/98
116B-24 (6')	3804.05	Soil	12-Aug-98 09:27	08/12/98
116B-25 (8')	3804.06	Soil	12-Aug-98 09:30	08/12/98
116B-26 (8')	3804.07	Soil	12-Aug-98 09:33	08/12/98
116B-27 (6')	3804.08	Soil	12-Aug-98 09:35	08/12/98
116B-28 (6')	3804.09	Soil	12-Aug-98 09:40	08/12/98
116B-29 (8')	3804.10	Soil	12-Aug-98 09:45	08/12/98
116B-30 (6')	3804.11	Soil	12-Aug-98 12:45	08/12/98
116B-31 (8')	3804.12	Soil	12-Aug-98 12:48	08/12/98
116B-32 (6')	3804.13	Soil	12-Aug-98 12:50	08/12/98
116B-33 (6')	3804.14	Soil	12-Aug-98 12:55	08/12/98

ANALYSIS:
FORT MONMOUTH ENVIROMENTAL LAB
VOA+10

 12/15/98
Daniel Wright/Date
Laboratory Director

ENCLOSURE:
CHAIN OF CUSTODY
RESULTS

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Method Summary

NJDEP Method 8260

Gas Chromatographic Determination of Volatiles in Soil

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

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

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

Indicate
Yes, No, N/A

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

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

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

If not met, were the calculations checked and the results qualified as "estimated"? _____
9. Matrix Spike/Matrix Spike Duplicate Recoveries Meet Criteria yes

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

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

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

Indicate
Yes,
No, N/A

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

yes

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

11. Extraction Holding Time Met

NA

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

12. Analysis Holding Time Met

yes

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

Additional Comments:

Laboratory Manager



Date:

12/13/14



Fort Monmouth Environmental Testing Laboratory

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

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

NJDEP Certification #13461

Chain of Custody Record

Customer: Charles Appleby				Project No: 98-0932 UST (REM.)		Analysis Parameters						Comments: <u>RUSH TPHs</u> <u>Need Tomorrow Morning</u>			
Phone #: X26224				Location: Building 116		TPHC	% SOLIDS	V ₀ +15					H-Nu (ppm)	Remarks / Preservation Method	
() DERA (X) OMA () Other:															
Samplers Name / Company : Dave Daniels (SMC)						Sample #									
Lab Sample I.D.	Sample Location	Date	Time	Type	bottles										
3804 01	116B-13 (6')	8-12-98	9:00	soil	2		X	X					12	ice	
02	116B-19 (6')		9:10		2		X	X					22	ice	
03	116B-22 (6')		9:15		2	X	X		← Run V ₀ +15	IF TPH			Above 1,000 ppm		
04	116B-23 (6')		9:25		1	X	X						0	ice	
05	116B-24 (6')		9:27		1	X	X						0	ice	
06	116B-25 (8')		9:30										0		
07	116B-26 (8')		9:33										0		
08	116B-27 (6')		9:35										0		
09	116B-28 (6')		9:40										0		
10	116B-29 (8')		9:45										0		
11	116B-30 (6')		12:45										0		
12	116B-31 (8')		12:48										0		
13	116B-32 (6')		12:50										0		
14	116B-33 (6')		12:55										0		
Relinquished by (signature):		Date/Time:		Received by (signature):		Relinquished by (signature):		Date/Time:		Received by (signature):					
Dave Daniels		8-12-98 1315		J. Appleby											
Relinquished by (signature):		Date/Time:		Received by (signature):		Relinquished by (signature):		Date/Time:		Received by (signature):					
Report Type: () Full, (X) Reduced, () Standard, () Screen / non-certified						Remarks: H-Nu Calibration → Zerogas = 0.0 ppm Isobutylene 100 ppm at 9.53									
Turnaround time: () Standard 4 wks, (X) Rush Days, (X) ASAP Verbal Hrs.															

04

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

Definition of Qualifiers

MDL : Method Detection Limit

J : Compound identified below detection limit

B : Compound in both sample and blank

D : Results from dilution of sample

U : Compound searched for but not detected

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

VBLK37

Lab Name: FMETL NJDEP # 13561

Project: 980932 Case No.: 3804 SDG No: Location: 116

Matrix (soil/water) SOIL Lab Sample ID: VBLK37

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB01275.D

Level: (low/med) MED Date Received: 08/12/98

% Moisture: not dec. 0 Date Analyzed: 08/21/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

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

CONCENTRATION UNITS:

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

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

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

VBK37

Lab Name: FMETL NJDEP # 13561

Project: 980932 Case No.: 3804 SDG No: Location: 116

Matrix (soil/water) SOIL Lab Sample ID: VBK37

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB01275.D

Level: (low/med) MED Date Received: 08/12/98

% Moisture: not dec. 0 Date Analyzed: 08/21/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

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

CONCENTRATION UNITS:

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

1330-20-7	m+p-Xylenes	750	U
1330-20-7	o-Xylene	500	U
100-42-5	Styrene	500	U
75-25-2	Bromoform	500	U
79-34-5	1,1,2,2-Tetrachloroethane	500	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

116B-13

Lab Name: FMETL NJDEP # 13561

Project: 980932 Case No.: 3804 SDG No: Location: 116

Matrix (soil/water) SOIL Lab Sample ID: 3804.01

Sample wt/vol: 10.2 (g/ml) G Lab File ID: VB01287.D

Level: (low/med) MED Date Received: 08/12/98

% Moisture: not dec. 11.73 Date Analyzed: 08/21/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

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

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/KG	Q
107028	Acrolein	1900	U	
107131	Acrylonitrile	1900	U	
75650	tert-Butyl alcohol	3600	U	
1634044	Methyl-tert-Butyl ether	830	U	
108203	Di-isopropyl ether	550	U	
	Dichlorodifluoromethane	1100	U	
74-87-3	Chloromethane	280	U	
75-01-4	Vinyl Chloride	830	U	
74-83-9	Bromomethane	550	U	
75-00-3	Chloroethane	830	U	
75-69-4	Trichlorofluoromethane	550	U	
75-35-4	1,1-Dichloroethene	280	U	
67-64-1	Acetone	550	U	
75-15-0	Carbon Disulfide	280	U	
75-09-2	Methylene Chloride	550	U	
156-60-5	trans-1,2-Dichloroethene	550	U	
75-35-3	1,1-Dichloroethane	280	U	
108-05-4	Vinyl Acetate	830	U	
78-93-3	2-Butanone	830	U	
	cis-1,2-Dichloroethene	280	U	
67-66-3	Chloroform	460		
75-55-6	1,1,1-Trichloroethane	280	U	
56-23-5	Carbon Tetrachloride	550	U	
71-43-2	Benzene	280	U	
107-06-2	1,2-Dichloroethane	550	U	
79-01-6	Trichloroethene	280	U	
78-87-5	1,2-Dichloropropane	280	U	
75-27-4	Bromodichloromethane	280	U	
110-75-8	2-Chloroethyl vinyl ether	550	U	
10061-01-5	cis-1,3-Dichloropropene	280	U	
108-10-1	4-Methyl-2-Pentanone	550	U	
108-88-3	Toluene	280	U	
10061-02-6	trans-1,3-Dichloropropene	550	U	
79-00-5	1,1,2-Trichloroethane	550	U	
127-18-4	Tetrachloroethene	280	U	
591-78-6	2-Hexanone	550	U	
126-48-1	Dibromochloromethane	550	U	
108-90-7	Chlorobenzene	280	U	
100-41-4	Ethylbenzene	550	U	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

116B-13

Lab Name: FMETL NJDEP # 13561

Project: 980932 Case No.: 3804 SDG No: Location: 116

Matrix (soil/water) SOIL Lab Sample ID: 3804.01

Sample wt/vol: 10.2 (g/ml) G Lab File ID: VB01287.D

Level: (low/med) MED Date Received: 08/12/98

% Moisture: not dec. 11.73 Date Analyzed: 08/21/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

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

CONCENTRATION UNITS:

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

1330-20-7	m+p-Xylenes	830	U
1330-20-7	o-Xylene	550	U
100-42-5	Styrene	550	U
75-25-2	Bromoform	550	U
79-34-5	1,1,2,2-Tetrachloroethane	550	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

116B-19

Lab Name: FMETL NJDEP # 13561

Project: 980932 Case No.: 3804 SDG No: Location: 116

Matrix (soil/water) SOIL Lab Sample ID: 3804.02

Sample wt/vol: 10.1 (g/ml) G Lab File ID: VB01288.D

Level: (low/med) MED Date Received: 08/12/98

% Moisture: not dec. 3.6 Date Analyzed: 08/21/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

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

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/KG	Q
107028	Acrolein	1800	U	
107131	Acrylonitrile	1800	U	
75650	tert-Butyl alcohol	3400	U	
1634044	Methyl-tert-Butyl ether	770	U	
108203	Di-isopropyl ether	520	U	
	Dichlorodifluoromethane	1000	U	
74-87-3	Chloromethane	260	U	
75-01-4	Vinyl Chloride	770	U	
74-83-9	Bromomethane	520	U	
75-00-3	Chloroethane	770	U	
75-69-4	Trichlorofluoromethane	520	U	
75-35-4	1,1-Dichloroethene	260	U	
67-64-1	Acetone	520	U	
75-15-0	Carbon Disulfide	260	U	
75-09-2	Methylene Chloride	520	U	
156-60-5	trans-1,2-Dichloroethene	520	U	
75-35-3	1,1-Dichloroethane	260	U	
108-05-4	Vinyl Acetate	770	U	
78-93-3	2-Butanone	770	U	
	cis-1,2-Dichloroethene	260	U	
67-66-3	Chloroform	400		
75-55-6	1,1,1-Trichloroethane	260	U	
56-23-5	Carbon Tetrachloride	520	U	
71-43-2	Benzene	260	U	
107-06-2	1,2-Dichloroethane	520	U	
79-01-6	Trichloroethene	260	U	
78-87-5	1,2-Dichloropropane	260	U	
75-27-4	Bromodichloromethane	260	U	
110-75-8	2-Chloroethyl vinyl ether	520	U	
10061-01-5	cis-1,3-Dichloropropene	260	U	
108-10-1	4-Methyl-2-Pentanone	520	U	
108-88-3	Toluene	260	U	
10061-02-6	trans-1,3-Dichloropropene	520	U	
79-00-5	1,1,2-Trichloroethane	520	U	
127-18-4	Tetrachloroethene	260	U	
591-78-6	2-Hexanone	520	U	
126-48-1	Dibromochloromethane	520	U	
108-90-7	Chlorobenzene	260	U	
100-41-4	Ethylbenzene	3800		

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

116B-19

Lab Name: FMETL NJDEP # 13561

Project: 980932 Case No.: 3804 SDG No: Location: 116

Matrix: (soil/water) SOIL Lab Sample ID: 3804.02

Sample wt/vol: 10.1 (g/ml) G Lab File ID: VB01288.D

Level: (low/med) MED Date Received: 08/12/98

% Moisture: not dec. 3.6 Date Analyzed: 08/21/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

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

CONCENTRATION UNITS:

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

1330-20-7	m+p-Xylenes	4200	
1330-20-7	o-Xylene	2800	
100-42-5	Styrene	520	U
75-25-2	Bromoform	520	U
79-34-5	1,1,2,2-Tetrachloroethane	520	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

VBK37

Lab Name: FMETL NJDEP # 13561
Project: 980932 Case No.: 3804 SDG No: Location: 116
Matrix (soil/water) SOIL Lab Sample ID: VBK37
Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB01275.D
Level: (low/med) MED Date Received: 08/12/98
% Moisture: not dec. 0 Date Analyzed: 08/21/98
GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0
Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

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

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
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1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

116B-13

Lab Name: FMETL NJDEP # 13561
 Project: 980932 Case No.: 3804 SDG No: Location: 116
 Matrix (soil/water) SOIL Lab Sample ID: 3804.01
 Sample wt/vol: 10.2 (g/ml) G Lab File ID: VB01287.D
 Level: (low/med) MED Date Received: 08/12/98
 % Moisture: not dec. 11.73 Date Analyzed: 08/21/98
 GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0
 Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 50 (uL)

CONCENTRATION UNITS:

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

Number TICs found: 0

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

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

116B-19

Lab Name: FMETL NJDEP # 13561

Project: 980932 Case No.: 3804 SDG No: Location: 116

Matrix: (soil/water) SOIL Lab Sample ID: 3804.02

Sample wt/vol: 10.1 (g/ml) G Lab File ID: VB01288.D

Level: (low/med) MED Date Received: 08/12/98

% Moisture: not dec. 3.6 Date Analyzed: 08/21/98

GC Column: RTX-502 ID: 0.25 (mm) Dilution Factor: 1.0

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

CONCENTRATION UNITS:

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

Number TICs found: 15

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 000111-84-2	Nonane	28.25	16000	JN
2.	unknown	30.34	18000	J
3. 000620-14-4	Benzene, 1-ethyl-3-methyl-	32.22	21000	JN
4. 000095-63-6	Benzene, 1,2,4-trimethyl-	33.38	34000	JN
5. 001678-93-9	Cyclohexane, butyl-	33.64	11000	JN
6. 000526-73-8	Benzene, 1,2,3-trimethyl-	34.61	16000	JN
7. 001074-43-7	Benzene, 1-methyl-3-propyl-	34.96	28000	JN
8. 000934-80-5	Benzene, 4-ethyl-1,2-dimethyl-	35.15	33000	JN
9. 001758-88-9	Benzene, 2-ethyl-1,4-dimethyl-	35.87	10000	JN
10. 000874-41-9	Benzene, 1-ethyl-2,4-dimethyl-	35.97	12000	JN
11. 000934-80-5	Benzene, 4-ethyl-1,2-dimethyl-	36.17	15000	JN
12.	unknown	36.78	19000	J
13. 000488-23-3	Benzene, 1,2,3,4-tetramethyl-	37.35	16000	JN
14.	unknown	37.42	15000	J
15.	unknown	37.53	10000	J

LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

	Indicate* Yes, No, N/A
1. Cover Page, Title Page listing Lab Certification #, facility name & address, & data of report submitted	Y
2. Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted	Y
3. Summary Table cross-referencing field ID #'s vs. Lab ID #'s Lab ID's submitted	Y
4. Document bound, paginated and legible	Y
5. Chain of Custody submitted	Y
6. Samples submitted to lab within 48 hours of sample collection	Y
7. Methodology Summary submitted	Y
8. Results submitted on a dry weight basis	Y
9. Method Detection Limits	Y
10. Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP	Y

Laboratory Manager or Environmental Consultant's Signature
Date 12/14/14



Laboratory Certification # 13461

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

Laboratory Authentication Statement

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

Daniel K. Wright
Laboratory Manager

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. 116

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
116-GW-7-11'	4879.01	Aqueous	23-Oct-99 13:30	10/23/99

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

ENCLOSURE:
CHAIN OF CUSTODY
RESULTS

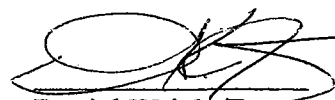
 4-7-00
Daniel Wright/Date
Laboratory Director

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CHAIN OF CUSTODY

000001

METHODOLOGY SUMMARY

000003

Methodology Summary

EPA Method 624

Gas Chromatographic Determination of Volatiles in Water

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

EPA Method 3510/8270

Gas Chromatographic Determination of Semi-volatiles in Water

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

006004

CONFORMANCE/ NON-CONFORMANCE SUMMARY

000005

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

Indicate
Yes, No, N/A

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

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

 - a. VOA Fraction _____
 - b. B/N Fraction All low in initial + reanalysis
 - c. Acid Fraction NA

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

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

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

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

000006

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

Indicate
Yes, No, N/A

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

Yes

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

11. Extraction Holding Time Met

Yes

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

12. Analysis Holding Time Met

Yes

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

Additional Comments:

Laboratory Manager: 

Date: 4-7-00

000007

LABORATORY CHRONICLE

000008

Laboratory Chronicle

Lab ID: 4879 Site: Bldg. 116

	Date	Hold Time
Date Sampled	10/23/99	NA
Receipt/Refrigeration	10/23,25/99	NA
Extractions		
1. Base Neutrals	10/25/99	7 Days
Analyses		
1. Volatile Organics	10/25,26/99	14 Days
2. Base Neutrals	10/27/99	40 Days

* Samples collected and refrigerated on 10/23/99, Laboratory received the samples on Monday 10/25/99.

000009

VOLATILE ORGANICS

000010

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

Definition of Qualifiers

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

000011

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

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

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

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

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

Qualifiers

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

Vblk35

Lab Name: FMETL NJDEP#: 13461
Project: 100004 Case No.: 4879 Location: 116 SDG No.:
Matrix: (soil/water) WATER Lab Sample ID: Vblk35
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC001059.D
Level: (low/med) LOW Date Received: 10/25/99
% Moisture: not dec. Date Analyzed: 10/25/99
GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0
Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

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

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

Data File **VC001081.D**
 Operator **Skelton**
 Date Acquired **26 Oct 1999 3:19 am**

Sample Name **4879.01**
 Field ID **116-GW**
 Sample Multiplier **1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform	16.23	85190	1.18 ug/L	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

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

Qualifiers

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

116-GW

Lab Name: FMETL NJDEP#: 13461

Project: 100004 Case No.: 4879 Location: 116 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 4879.01

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC001081.D

Level: (low/med) LOW Date Received: 10/25/99

% Moisture: not dec. Date Analyzed: 10/26/99

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

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

CONCENTRATION UNITS:

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

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
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5A

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

Lab Name: FMETL NJDEP#: 13461
 Project: 100004 Case No.: 4879 Location: 116 SDG No.:
 Lab File ID: VC000774.D BFB Injection Date: 9/14/99
 Instrument ID: Voalnst#3 BFB Injection Time: 13:07
 GC Column: RTX502.2 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	17.4
75	30.0 - 66.0% of mass 95	45.6
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.9
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 120.0% of mass 95	50.4
175	4.0 - 9.0% of mass 174	3.5 (7.0)1
176	93.0 - 101.0% of mass 174	49.0 (97.3)1
177	5.0 - 9.0% of mass 176	3.0 (6.0)2

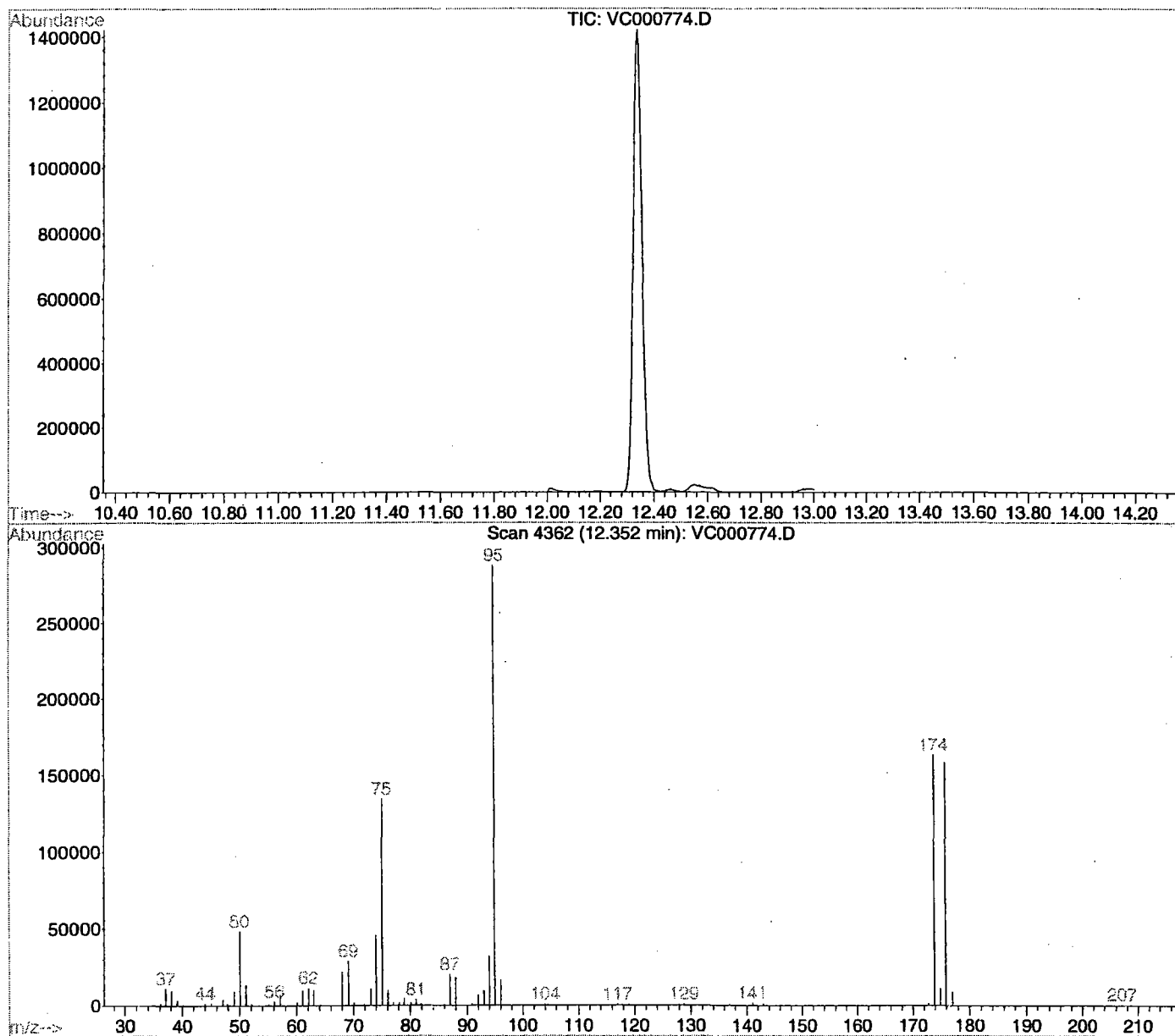
1-Value is % mass 174

2-Value is % mass 176

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

	FIELD ID:	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD100	VSTD100	VC000775.D	9/14/99	13:38
02	VSTD050	VSTD050	VC000776.D	9/14/99	14:19
03	VSTD020	VSTD020	VC000777.D	9/14/99	15:01
04	VSTD010	VSTD010	VC000778.D	9/14/99	15:42
05	VSTD010	VSTD005	VC000779.D	9/14/99	16:23

Data File : C:\HPCHEM\1\DATA\SEPT99\990914\VC000774.D Vial: 1
 Acq On : 14 Sep 1999 1:07 pm Operator: Skelton
 Sample : BFB Tune Inst : GC/MS Ins
 Misc : BFB Tune Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Method : C:\HPCHEM\1\METHODS\M362409.M (RTE Integrator)
 Title : Volatile Organics by GC/MS Method 624/8260/TCLP



Spectrum Information: Scan 4362

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.7	48248	PASS
75	95	30	60	46.7	134400	PASS
95	95	100	100	100.0	288064	PASS
96	95	5	9	5.7	16488	PASS
173	174	0.00	2	0.8	1370	PASS
174	95	50	100	56.7	163264	PASS
175	174	5	9	6.7	10933	PASS
176	174	95	101	96.9	158144	PASS
177	176	5	9	5.7	9070	PASS

BASE NEUTRAL

000031

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

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

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

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

Semi-Volatile Analysis Report

Page 2

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

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

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

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

Qualifiers

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

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

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID

TENTATIVELY IDENTIFIED COMPOUNDS

Sblk313

Lab Name: FMETL Lab Code 13461

Project Bldg.116 Case No.: 4879 Location 116 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: Sblk313

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA03328.D

Level: (low/med) LOW Date Received: 10/25/99

% Moisture: decanted: (Y/N) N Date Extracted: 10/25/99

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/27/99

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

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

CONCENTRATION UNITS:

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

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

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name BNA03336.D

Operator Bhaskar

Date Acquired 27-Oct-99

Sample Name 4879.01

Misc Info 116-GW

Sample Multiplier 1

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

Semi-Volatile Analysis Report

Page 2

Data File Name **BNA03336.D**
 Operator **Bhaskar**
 Date Acquired **27-Oct-99**

Sample Name **4879.01**
 Misc Info **116-GW**
 Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifiers
92-87-5	Benzidine			not detected	50	4.18 ug/L	
129-00-0	Pyrene			not detected	200	1.25 ug/L	
85-68-7	Butylbenzylphthalate	25.70	23757	1.49 ug/L	100	1.05 ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	1.19 ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.75 ug/L	
218-01-9	Chrysene			not detected	20	1.38 ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.74 ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.44 ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	1.25 ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.29 ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	1.05 ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	0.83 ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.64 ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.84 ug/L	

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

Qualifiers

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

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

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID

116-GW

Lab Name: FMETL Lab Code 13461
Project Bldg.116 Case No.: 4879 Location 116 SDG No.:
Matrix: (soil/water) WATER Lab Sample ID: 4879.01
Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA03336.D
Level: (low/med) LOW Date Received: 10/25/99
% Moisture: decanted: (Y/N) N Date Extracted: 10/25/99
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/27/99
Injection Volume: 1.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) N pH: 7

CONCENTRATION UNITS:

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

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

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

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

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

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

✓
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✓
✓

Laboratory Manager or Environmental Consultant's Signature

Date 4/21/00



Laboratory Certification #13461

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

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Laboratory Authentication Statement

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



Daniel K. Wright
Laboratory Manager

000059

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. 116B

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
Bldg. 116B	5029.01	Aqueous	18-Dec-99 09:15	12/20/99
Trip Blank	5029.02	Aqueous	18-Dec-99	12/20/99
Field Blank	5029.03	Aqueous	18-Dec-99 09:00	12/20/99

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

ENCLOSURE:
CHAIN OF CUSTODY
RESULTS

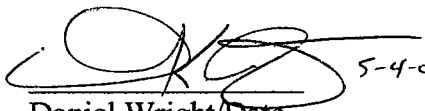
 5-4-00
Daniel Wright/Date
Laboratory Director

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CHAIN OF CUSTODY

000001

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

Chain of Custody Record

200010

METHODOLOGY SUMMARY

000003

Method Summary

EPA Method 624

Gas Chromatographic Determination of Volatiles in Water

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

EPA Method 3510/8270

Gas Chromatographic Determination of Semi-volatiles in Water

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

CONFORMANCE NON-CONFORMANC SUMMARY

000005

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

Indicate
Yes, No, N/A

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

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

 - a. VOA Fraction _____
 - b. B/N Fraction Nitrobenzene 5 Low MS+MD
 - c. Acid Fraction NA

If not met, were the calculations checked and the results qualified as "estimated"? _____
9. Matrix Spike/Matrix Spike Duplicate Recoveries Meet Criteria yes

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

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

000006

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

Indicate
Yes, No, N/A

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

yes

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

11. Extraction Holding Time Met

yes

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

12. Analysis Holding Time Met

yes

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

Additional Comments:

Laboratory Manager: _____

Date: 5-4-00

000007

LABORATORY CHRONICLE

000008

Laboratory Chronicle

Lab ID: 5029

Site: Bldg. 116B

	Date	Hold Time
Date Sampled	12/18/99	NA
Receipt/Refrigeration	12/18/99	NA

Extractions

1. Base Neutral	12/21/99	14 days
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Analyses

1. Volatile Organics	12/28,29/99	14 days
2. Base Neutral	12/22/99	40 days

- Samples collected and refrigerated on 12/18/99, Laboratory received the sample on Monday 12/20/99.

000009

VOLATILE ORGANICS

000010

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

Definition of Qualifiers

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

000011

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

Data File **VC001680.D**
 Operator **Skelton**
 Date Acquired **28 Dec 1999 8:21 pm**

Sample Name **Vblk45**
 Field ID **Vblk45**
 Sample Multiplier **1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75343	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156594	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	500	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

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

Qualifiers

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

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

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

Vblk45

Lab Name: FMETL NJDEP#: 13461
Project: 100004 Case No.: 5029 Location: Bldg11 SDG No.: _____
Matrix: (soil/water) WATER Lab Sample ID: Vblk45
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC001680.D
Level: (low/med) LOW Date Received: 12/20/99
% Moisture: not dec. _____ Date Analyzed: 12/28/99
GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

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

Number TICs found: 0

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

Data File **VC001695.D**
 Operator **Skelton**
 Date Acquired **29 Dec 1999 6:32 am**

Sample Name **5029.01**
 Field ID **Bldg116B**
 Sample Multiplier **1**

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

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

Qualifiers

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

Bldg116B

Lab Name: FMETL NJDEP#: 13461
Project: 100004 Case No.: 5029 Location: Bldg11 SDG No.: _____
Matrix: (soil/water) WATER Lab Sample ID: 5029.01
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC001695.D
Level: (low/med) LOW Date Received: 12/20/99
% Moisture: not dec. _____ Date Analyzed: 12/29/99
GC Column: RTX502 ID: 0.25 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

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

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 001680-51-9	Naphthalene, 1,2,3,4-tetrahydro-6	34.34	3	JN

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

Data File **VC001696.D**
 Operator **Skelton**
 Date Acquired **29 Dec 1999 7:12 am**

Sample Name **5029.02**
 Field ID **Trip Blank**
 Sample Multiplier **1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75343	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156594	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform	16.23	73937	1.04 ug/L	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

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

Qualifiers

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

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

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

Trip Blank

Lab Name: FMETL NJDEP#: 13461
Project: 100004 Case No.: 5029 Location: Bldg11 SDG No.: _____
Matrix: (soil/water) WATER Lab Sample ID: 5029.02
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC001696.D
Level: (low/med) LOW Date Received: 12/20/99
% Moisture: not dec. _____ Date Analyzed: 12/29/99
GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

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

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

Data File **VC001697.D**
 Operator **Skelton**
 Date Acquired **29 Dec 1999 7:53 am**

Sample Name **5029.03**
 Field ID **Field Blank**
 Sample Multiplier **1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75343	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156594	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform	16.22	74224	1.03 ug/L	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

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

Qualifiers

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

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

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

Field Blank

Lab Name: FMETL NJDEP#: 13461
Project: 100004 Case No.: 5029 Location: Bldg11 SDG No.: _____
Matrix: (soil/water) WATER Lab Sample ID: 5029.03
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC001697.D
Level: (low/med) LOW Date Received: 12/20/99
% Moisture: not dec. _____ Date Analyzed: 12/29/99
GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:

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

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

000036

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

Data File Name **BNA03480.D**
 Operator **Bhaskar**
 Date Acquired **22-Dec-99**

Sample Name **Sblk330**
 Misc Info **Sblk330 A 991221**
 Sample Multiplier **1**

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

Semi-Volatile Analysis Report

Page 2

Data File Name **BNA03480.D**
 Operator **Bhaskar**
 Date Acquired **22-Dec-99**

Sample Name **Sblk330**
 Misc Info **Sblk330 A 991221**
 Sample Multiplier **1**

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

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

Qualifiers

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

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

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID

Sblk330

Lab Name: FMETL Lab Code 13461
Project 100004 Case No.: 5029 Location BL116 SDG No.: _____
Matrix: (soil/water) WATER Lab Sample ID: Sblk330
Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA03480.D
Level: (low/med) LOW Date Received: 12/20/99
% Moisture: _____ decanted: (Y/N) N Date Extracted: 12/21/99
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/22/99
Injection Volume: 1.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) N pH: 7

CONCENTRATION UNITS:

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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Semi-Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File Name **BNA03487.D**
 Operator **Bhaskar**
 Date Acquired **22-Dec-99**

Sample Name **5029.01**
 Misc Info **Bldg.116B**
 Sample Multiplier **1**

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

Semi-Volatile Analysis Report

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Data File Name **BNA03487.D**
 Operator **Bhaskar**
 Date Acquired **22-Dec-99**

Sample Name **5029.01**
 Misc Info **Bldg.116B**
 Sample Multiplier **1**

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

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

Qualifiers

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

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

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID

TENTATIVELY IDENTIFIED COMPOUNDS

Bldg.116B

Lab Name: FMETL Lab Code 13461
Project 100004 Case No.: 5029 Location Bl.116 SDG No.: _____
Matrix: (soil/water) WATER Lab Sample ID: 5029.01
Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA03487.D
Level: (low/med) LOW Date Received: 12/20/99
% Moisture: _____ decanted: (Y/N) N Date Extracted: 12/21/99
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/22/99
Injection Volume: 1.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) N pH: 7

CONCENTRATION UNITS:

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name BNA03488.D
Operator Bhaskar
Date Acquired 22-Dec-99

Sample Name 5029.03
Misc Info Field Blank
Sample Multiplier 1

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

Semi-Volatile Analysis Report

Page 2

Data File Name **BNA03488.D**
 Operator **Bhaskar**
 Date Acquired **22-Dec-99**

Sample Name **5029.03**
 Misc Info **Field Blank**
 Sample Multiplier **1**

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

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

Qualifiers

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

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

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID

Field Blank

Lab Name: FMETL Lab Code 13461
Project 100004 Case No.: 5029 Location BL116 SDG No.:
Matrix: (soil/water) WATER Lab Sample ID: 5029.03
Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA03488.D
Level: (low/med) LOW Date Received: 12/20/99
% Moisture: decanted: (Y/N) N Date Extracted: 12/21/99
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/22/99
Injection Volume: 1.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) N pH: 7

CONCENTRATION UNITS:

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

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

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

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

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

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

✓

✓

✓

✓

✓

✓

✓

✓

NA ✓

✓

✓

Laboratory Manager or Environmental Consultant's Signature

Date 5/4/00

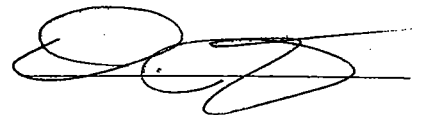
Laboratory Certification #13461

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

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Laboratory Authentication Statement

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

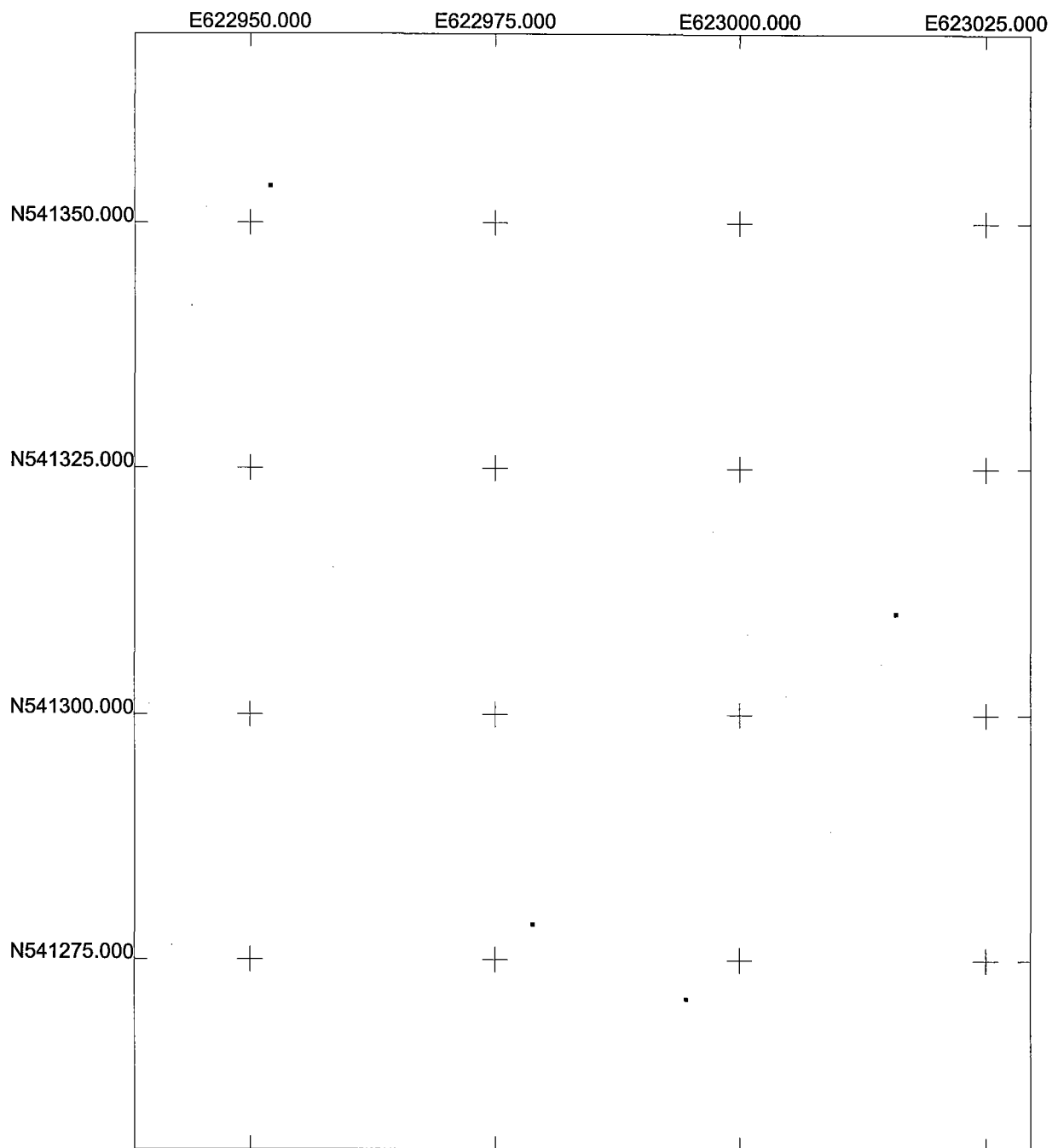


Daniel K. Wright
Laboratory Manager

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APPENDIX G

ELECTRONIC DATA DELIVERABLES



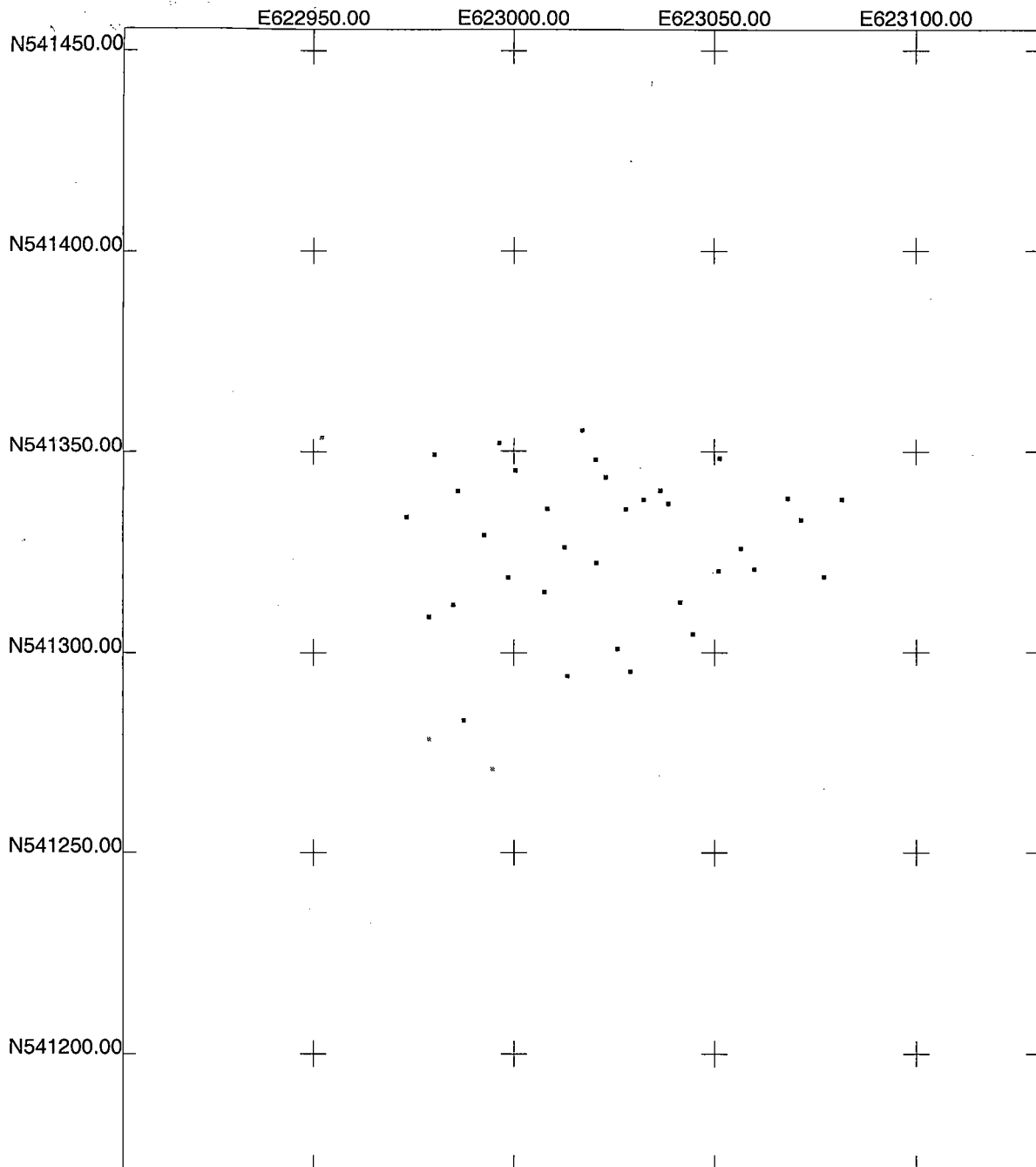
Bldg. 116 UST Ground Water Sample GPS Map

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



Scale 1:200
0 25.00
US Survey Feet

116 gw r100118a.ssf
5/12/2000
Pathfinder Office
 **Trimble**



Bldg. 116 UST Sample GPS Location Map

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



Scale 1:500
0 60.00

US Survey Feet

r100118a.ssf
2/24/2000
Pathfinder Office
 Trimble

BLDG. 116 UST SITE SAMPLE LOCATION GPS POSITION & COORDINATES

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

(IN US SURVEY FEET)

SAMPLE POINTS

<u>POSITION / DESC.</u>	<u>Y COORD. (NORTHING)</u>	<u>X COORD. (EASTING)</u>
1 and 2 (7/22/98)	541301.039	623025.722
3 (7/22/98)	541294.349	623013.208
4 (7/22/98)	541283.197	622987.308
5 and 6 (7/29/98)	541308.956	622978.642
7 (7/29/98)	541318.689	622998.415
8 (8/4/98)	541329.508	622992.391
9 (8/4/98)	541336.314	623008.193
10 and 11 (8/4/98)	541326.413	623012.541
12 (8/4/98)	541343.903	623022.75
13 (8/7/98)	541295.436	623028.95
14 (8/7/98)	541320.279	623050.847
15 (8/7/98)	541312.596	623041.323
16 (8/7/98)	541336.158	623027.725
17 (8/7/98)	541338.453	623032.159
18 (8/7/98)	541348.084	623020.272
19 (8/7/98)	541304.737	623044.46
20 (8/7/98)	541326.101	623056.366
21 (8/7/98)	541320.799	623059.72
22 (8/12/98)	541318.847	623077.002
23 (8/12/98)	541338.376	623081.443
24 (8/12/98)	541338.67	623067.942
25 and 26 (8/12/98)	541333.288	623071.254
27 (8/12/98)	541348.425	623051.236
28 (8/12/98)	541355.374	623016.878
29 (8/12/98)	541345.539	623000.201
30 (8/12/98)	541352.168	622996.225
31 (8/12/98)	541340.544	622985.852
32 (8/12/98)	541349.251	622980.004
33 (8/12/98)	541334.1	622973.057
A (7/28/98)	541315.044	623007.451
B (7/28/98)	541322.368	623020.419
C (8/4/98)	541340.651	623036.378
C (7/29/98)	541312.001	622984.654
D (8/4/98)	541337.476	623038.391

REFERENCE POINTS

<u>POSITION / DESC.</u>	<u>Y COORD. (NORTHING)</u>	<u>X COORD. (EASTING)</u>
TELEPHONE POLE	541278.673	622978.734
116 BLDG. CORN	541271.105	622994.453
117 BLDG. CORN	541353.83	622951.978