United States Army Foot Monmouth, New Jersey

Site/Remedial Investigation Report

Building 429 Main Post-East Area

May 2000

SITE/REMEDIAL INVESTIGATION REPORT

BUILDING 429

MAIN POST EAST AREA

United States A n

For Monmouth New Jei y

PREPARED FOR

UNITED STATES ARMY, FORT MONMOUTH, NEW JERSEY

DIRECTORATE OF PUBLIC WORKS
BUILDING 167
FORT MONMOUTH NJ 07703

PREPARED BY

SMC ENVIRONMENTAL SERVICES GROUP 1900 FROST ROAD SUITE 110 BRISTOL PA 19007

May 2000

PROJECT NO 2429 308

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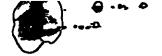


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EXECUTIVE SUMMARY

Site/Remedial Investigation and Post-Excavation Soil Sampling

SMC was retained by the U S Army DPW to implement a site/remedial investigation adjacent to a former No 2 fuel oil UST. The UST was associated with Building 429 at the Main Post-East area of the U S Army Fort Monmouth Base. The objective of the site/remedial investigation activities were to remove from the ground all soil potentially impacted as the result of the past operation of the former UST. The site/remedial investigation was performed by SMC personnel in accordance with the NJDEP Technical Requirements for Site Remediation (N J A C 7 26E) and the NJDEP Field Sampling Procedures Manual

Visibly stained soils and soils exhibiting elevated PID levels (greater than 5 ppm) of VOCs were excavated Excavation activities continued until potentially impacted soil had been removed. To confirm the PID readings and verify the effectiveness of the soil excavation activities, 15 post-excavation soil samples were collected from within the excavation between May 15 and May 19, 1997. All samples were analyzed for TPHC and total solids. One post-excavation soil sample (429-S3) collected from the excavation contained a TPHC concentration above the NJDEP soil cleanup criteria of 10,000 mg/kg. Although the soil in the sidewall beneath the chimney exhibited a TPHC level above the NJDEP soil cleanup criteria, the soil was not removed due to the fact that the excavation activities could have jeopardized the structural integrity of the chimney.

On February 15, 2000, and March 18, 2000, soil sample locations 429-S2 and 429-S3 were resampled A VOA analysis (EPA Method 8260) was completed on sample 429-S3 and all known compounds searched for in the analysis were not detected

Management of Excavated Soils

In all, a total of approximately 340 cubic yards of contaminated soil was excavated from around the former UST location and placed on and covered with tarps. All contaminated soil characterization and disposal was handled directly by the U.S. Army Fort Monmouth DPW

Site Restoration

Upon receiving analytical results and confirming the effectiveness of the excavation activities completed at the site, the excavation was back filled to grade with certified clean crushed stones, sand and clean overburden soil removed from the excavation

Conclusions and Recommendations

In response to the observation of potentially contaminated soil near the water table, two (2) groundwater samples were collected at Building 429 On December 10, 1998, and

(100)

January 12, 1999, Building 429 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 at Building 429

1.0 BACKGROUND INFORMATION

1.1 OVERVIEW

SMC Environmental Services Group (SMC) was retained by the United States Army Directorate of Public Works (DPW) to implement a site/remedial investigation adjacent to a former No 2 fuel oil underground storage tank (UST). The UST, New Jersey Department of Environmental Protection (NJDEP) Registration No 90010-43, was associated with Building 429 at the Main Post-East area of the US Army Fort Monmouth Base, Fort Monmouth, New Jersey Refer to site location map on Figure 1.

This report describes the results of the site/remedial investigation activities completed at the site. The objective of the site/remedial investigation activities were to remove from the ground all soil potentially impacted as the result of the past operation of the former UST.

This report outlines background information, the site/remedial investigation activities, the results of these activities, and conclusions and recommendations drawn from these results

1.2 SITE DESCRIPTION

Building 429 is located in the Main Post-East area of the Fort Monmouth Army Base The former UST was located a few feet north of the northeast corner of Building 429 and approximately 50 feet west of Burns Avenue A site map is provided on Figure 2

1.3 GEOLOGICAL/HYDROGEOLOGICAL SETTING

The following is a description of the geological/hydrogeological setting of the area surrounding Building 429 Included is a description of the regional geology of the area surrounding Fort Monmouth as well as descriptions of the local geology and hydrogeology of the Main Post area

Regional Geology

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

In general, New Jersey Coastal Plain formations consist of a seaward-dipping wedge of unconsolidated deposits of clay, silt, and gravel. These formations typically strike northeast-southwest with a dip ranging from 10 to 60 feet per mile and were deposited on Precambrian and lower Paleozoic rocks (Zapecza, 1989). These sediments, predominantly derived from deltaic, shallow manne, and continental shelf environments.

date from Cretaceous through the Quaternary Penods The mineralogy ranges from quartz to glauconite

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

Local Geology

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

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

<u>Hydroge</u>ology

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 429 is located approximately 600 feet south of Parkers Creek, the nearest water body Based on the Main Post topography, the groundwater flow in the area of Building 429 is anticipated to be to the north

1.4 HEALTH AND SAFETY

During all site/remedial investigation activities, hazards at the work site, which may have posed a threat to the Health and Safety of personnel, were minimized. All areas, which posed, or may have been suspected to pose a vapor hazard were monitored by a qualified individual utilizing an organic vapor analyzer (OVA). The individual ascertained if the area was safe, as defined by OSHA

2.0 SITE/REMEDIAL INVESTIGATION ACTIVITIES

2.1 OVERVIEW

The Site/Remedial Investigation was managed and carned out by SMC personnel. All analyses were performed and reported by U.S. Army Fort Monmouth Environmental Laboratory, an 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. Sampling frequency and parameters analyzed complied with the NJDEP Technical Requirements for Site Remediation (N J A C 7 26E).

The following Parties participated in Site/Remedial Investigation Activities

- Subsurface Evaluator David H Daniels Employer SMC Environmental Services Group Phone Number (215) 788-7844
 NJDEP Certification No 10279
- Project Manager Charles Appleby Employer DPW U S Army, Fort Monmouth Phone Number (732) 532-6224
 NJDEP Certification No 2056
- Analytical Laboratory U S Army Fort Monmouth Environmental Laboratory Contact Person Daniel K Wright Phone Number (732) 532-4359
 NJDEP Company Certification No 13461

2.2 FIELD SCREENING/MONITORING

Field screening and visual observations to identify potentially contaminated material was performed by a NJDEP Certified Sub-Surface Evaluator During the excavation activities, all soil removed was screened with a photoionization detector (PID) to check for the presence of elevated volatile organic concentrations (VOCs)

Soils, which displayed elevated PID readings (i.e., above 5 ppm) were stockpiled, separate of the soils which did not display elevated PID readings (i.e., less than 5 ppm). The ground surface in the areas used to stockpile contaminated soils was covered with tarps. All stockpiled contaminated soil was covered with tarps at the completion of each day of excavation.

2.3 MANAGEMENT OF EXCAVATED SOILS

In all, there was a total of approximately 440 cubic yards of material excavated during the remediation activities. Of this, approximately 100 cubic yards of clean overburden soil (soil displaying PID readings below 5 ppm) was removed and stockpiled separate of the contaminated soil. The clean soil pile was later used as backfill after reviewing the sample results for this stockpile. There was approximately 340 cubic yards of contaminated soil (soil displaying PID readings above 5 ppm) excavated and placed on and covered with tarps.

All contaminated soil characterization and disposal was handled directly by the U.S. Army Fort Monmouth Directorate of Public Works

2.4 POST-EXCAVATION SOIL SAMPLING AND RESULTS

The excavation of the impacted soil proceeded laterally north, east and west until non-detectable field screening readings (i.e., less than 5 ppm) were obtained with the PID Along the southern portion of the excavation, the removal of all potentially impacted soil was not feasible due to the presence of the adjacent building 429 and chimney Further excavation along the southern portion of the excavation could have affected the structure integrity of the building and the chimney. The excavation extended vertically to the ground water which was encountered at a depth of 6 feet bgs.

To confirm the PID readings and verify the effectiveness of the soil excavation activities, 15 post-excavation soil samples were collected from within the excavation between May 15 and May 19, 1997. Of these, 11 soil samples were collected from the excavation sidewalls at a depth of 5.5 feet bgs. The sidewall samples were designated 429-S1 through 429-S12, were as sample 429-S8 was a duplicate. The remaining 4 post-excavation soil samples were collected from the bottom of the excavation at a depth of 6 feet bgs. The bottom samples were designated 429-B1 through 429-B5, were as sample 429-B5 was a duplicate.

On February 15, 2000, and March 18, 2000, soil sample locations 429-S2 and 429-S3 were resampled Sidewall samples S2 and S3 were collected at a depth of 5 5 feet bgs All samples were analyzed for total petroleum hydrocarbons (TPHC) and total solids Based on preliminary TPHC results, a VOA analysis (EPA Method 8260) was completed on sample S3. The locations of the 17 post-excavation soil samples are shown on Figure 3.

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

All samples were analyzed for total petroleum hydrocarbons (TPHC) and total solids. The TPHC 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 TPHC analytical results and comparison to the NJDEP soil cleanup criteria is provided in Table 2. The analytical data packages are provided in Appendix A.

Two of the post-excavation soil samples (429-S2 and 429-S3) contained concentrations of TPHC above 1,000 mg/kg, however, no analyses for volatile organic compounds were completed. One of these samples (429-S3) revealed a TPHC above the NJDEP soil cleanup criteria 10,000 mg/kg

Although the soil in the sidewall beneath the chimney exhibited a TPHC level above the NJDEP soil cleanup criteria, the soil was not removed due to the fact that the excavation activities could have jeopardized the structural integrity of the chimney Therefore, on February 15, 2000, and March 18, 2000, soil sample locations 429-S2 and 429-S3 were resampled for TPHC and VOA analysis

Upon receiving analytical results and confirming the effectiveness of the excavation activities completed at the site, the excavation was back filled to grade with certified clean crushed stones and sand. One sample was collected from the overburden material and analyzed for TPHC. The clean stockpile soil samples (429-SP1) revealed non-detectable TPHC levels, therefore, the soil was used as backfill material. Appendix B provides photographs of the site/remedial investigations.

2.5 GROUNDWATER SAMPLING

On December 10,1998, and January 12, 1999, Building 429 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 B for the field sampling documentation

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 CONCLUSIONS

SMC was retained by the U S Army DPW to implement a site/remedial investigation adjacent to a former No 2 fuel oil UST. The UST was associated with Building 429 at the Main Post-East area of the U S. Army Fort Monmouth Base. The objective of the site/remedial investigation activities were to remove from the ground all soil potentially impacted as the result of the past operation of the former UST.

Visibly stained soils and soils exhibiting elevated PID levels (greater than 5 ppm) of VOCs were excavated Excavation activities continued until potentially impacted soil had been removed. In all, a total of approximately 340 cubic yards of contaminated soil was excavated from around the former UST location. All contaminated soil characterization and disposal was handled directly by the U.S. Army Fort Monmouth DPW.

To confirm the PID readings and verify the effectiveness of the soil excavation activities, 15 post-excavation soil samples were collected from within the excavation between May 15 and May 19, 1997. All samples were analyzed for TPHC and total solids. Two of the post-excavation samples contained concentrations of TPHC above 1,000 mg/kg, however, no analyses for volatile organic compounds were completed. One of these samples revealed a TPHC level above the NJDEP soil cleanup criteria 10,000 mg/kg. Therefore, on February 15, 2000, and March 18, 2000, soil sample locations 429-S2 and 429-S3 were resampled for TPHC and VOA analysis.

Upon receiving analytical results and confirming the effectiveness of the excavation activities completed at the site, the excavation was back filled to grade with certified clean crushed stones, sand and clean overburden material

3.2 GROUNDWATER SAMPLING RESULTS

No compounds were detected in the sample collected from Building 429 on December 10, 1998

The sample collected from Building 429 on January 12, 1999, contained acenaphthene at a concentration of 1 15 ug/L and flourene at 1 84 ug/l No other compounds were detected

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

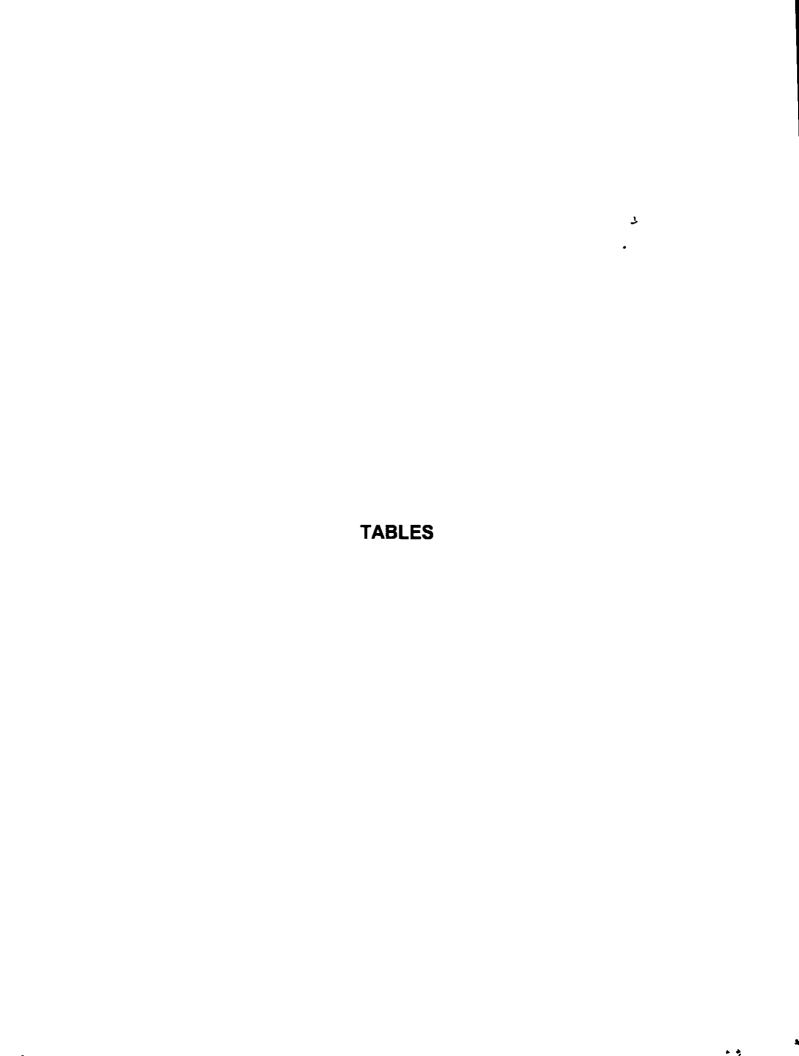
Groundwater samples collected on December 10, 1998, and January 12,1999, were either below the detection limit or in compliance with the New Jersey Ground Water Quality Criteria (GWQC)

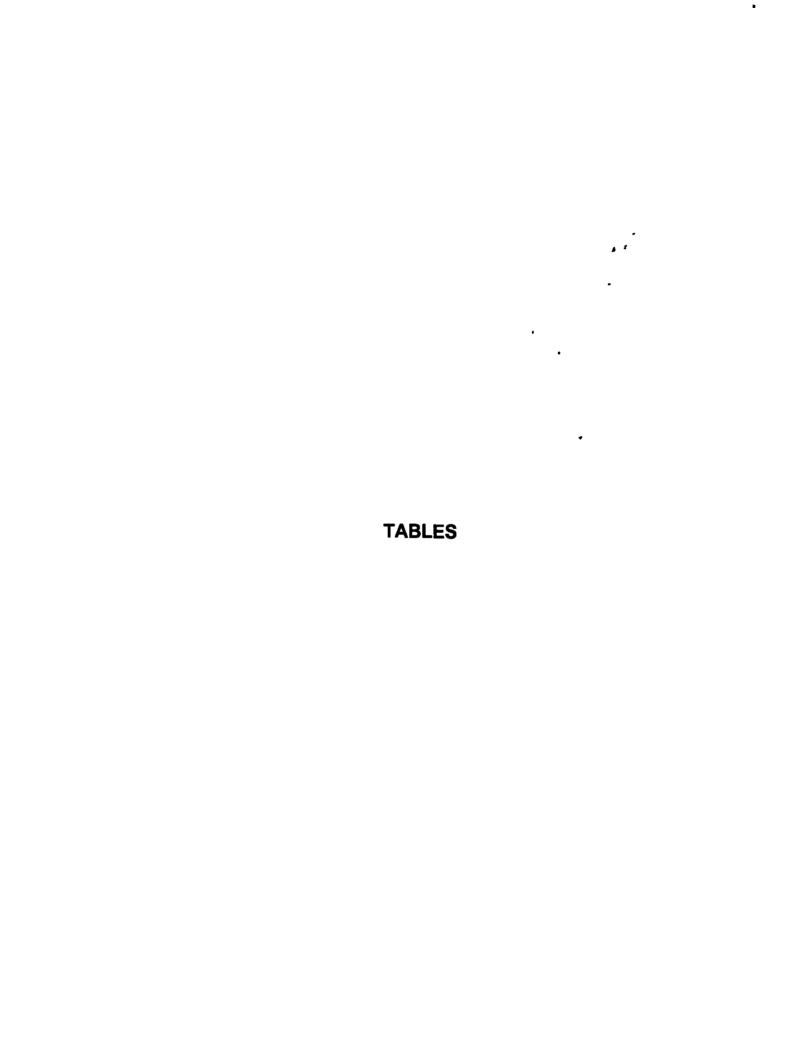
3.3 RECOMMENDATIONS

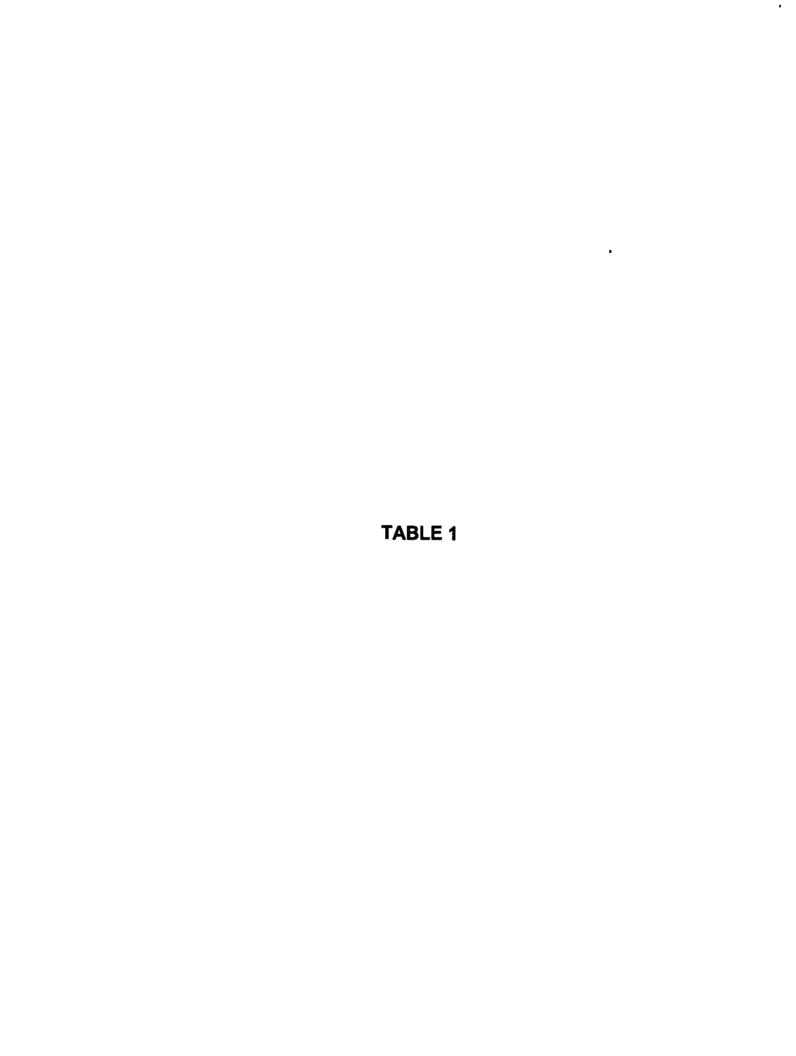
Although the soil in the sidewall beneath the chimney exhibited a TPHC level above the NJDEP soil cleanup criteria, the soil was not removed due to the fact that the excavation activities could have jeopardized the structural integrity of the chimney Therefore, on February 15, 2000, and March 18, 2000, soil sample locations 429-S2 and 429-S3 were resampled for TPHC and VOA analysis. The samples collected contained concentrations of TPHC and volatile organic compounds below the NJDEP residential soil cleanup criteria.

Based on the analytical results of the groundwater samples collected at Building 429 on December 10, 1998, and January 12, 1999, groundwater quality at Building 429 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 at Building 429







SUMMARY OF FOST EXCAVATION SAMELING ACTIVITIES
AREA 429 MAIN FOST FAST AREA
FORT MONMOUTH NLW JERSLY

lage 1 of 3

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample I ype	Analytical Farameters*	Analysis Method
S1	5/15/97	5/19/97	Soil	lost l xcavation	HIC	OQA QAM 025
S2	5/15/97	5/19/97	Soil	Post Lycavation	HHC	OQA QAM 025
*53	5/15/97	5/19/97	Soil	I ost 1 xcavation	TTHC	OQA QAM 025
B1	5/15/97	5/19/97	Soil	I ost 1 xcavation	ГРНС	OQA QAM 025
54	5/15/97	5/19/97	Soil	I ost Lxcavation	THC	OQA QAM 025
S5	5/15/97	5/19/97	Soil	I ost I xcavation	TPHC	OQA QAM 025
B2	5/15/97	5/19/97	Soil	Lost Lxcavation	11 HC	OQA QAM 025
B3	5/16/97	5/19/97	Soil	Lost Excavation	HHC	OQA QAM 025
S6	5/16/97	5/19/97	Soil	Lost Lxcavation	II HC	OQA QAM 025
S7	5/16/97	5/19/97	Soil	I ost I xcavation	1111C	OQA QAM 025
S8	5/16/97	5/19/97	Soil	lost l'xcavation	HIC	OQA QAM 025
SEI	5/16/97	5/19/97	Soil	Lost Excavation	HHC	OQA QAM 025

Note

IIIIC lotal I etroleum Hydrocarbons

** Sample location was resampled

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
AREA 429, MAIN POST-EAST AREA
FORT MONMOUTH, NEW JERSEY

Page 2 of 3

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
S9	5/19/97	5/19/97	Soil	Post-Excavation	ТРИС	OQA-QAM-025
S10	5/19/97	5/19/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
\$11	5/19/97	5/19/97	Soil	Post-Excavation	ТРНС	OQA-QAM-025
S12	5/19/97	5/19/97	Soil	Post-Excavation	ТРНС	OQA-QAM-025
B4	5/19/97	5/19/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
B5	5/19/97	5/19/97	Soil	Post-Excavation	ТРНС	OQA-QAM-025

Note

* TPHC I otal Petroleum Hydrocarbons

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES AREA 429, MAIN POST-EAST AREA FORT MONMOUTH, NEW JERSEY

Page 3 of 3

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
S2	2/15/00	2/15/00	Soil	Post-Excavation Post-Excavation	TPHC	OQA-QAM-025
S3	2/15/00	2/15/00	Soil		TPHC	OQA-QAM-025

Note

* TPHC Total Petroleum Hydrocarbons

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
AREA 429, MAIN POST-EAST AREA
FORT MONMOUTH, NEW JERSEY

Page 1 of 4

Sample ID	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Method Used	Method Detection Limit (mg/kg)	Compound of Concern	Result (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
S1 =	2551 01	5/15/97	5/19/97	Total Solid			87 84		==
				TPHC	172	Yes	983 41	10,000	No
***\$2 =	2551 02	5/15/97	5/19/97	Total Solid		•-	86 61		
				TPHC	172	Yes	1251 15	10,000	No
***S3 =	2551 03	5/15/97	5/19/97	Total Solid			81 36		••
				IPHC	191	Yes	15560 17	10,000	YES
B1 =	2551 04	5/15/97	5/19/97	l'otal Solid			74 77		
				TPHC	194	Yes	ND	10,000	No
S4 =	2551 05	5/15/97	5/19/97	Total Solid			83 78		
				TPHC	175	Yes	ND	10,000	No
S5 =	2551 06	5/15/97	5/19/97	Total Solid			81 87	••	
				TPHC	177	Yes	ND	10,000	No
B2 =	2551 07	5/15/97	5/19/97	Total Solid			82 35	**	
~~ ~	222101	2	2	TPHC	183	Yes	ND	10,000	No

Note

Total Solid results are expressed as a percentage

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

** Sample location was resampled

-- Not detected above stated sample quantitation limit

TPHC Total Petroleum Hydrocarbons

POST-EXCAVATION SOIL SAMPLING RESULTS
AREA 429, MAIN POST-EAST AREA
FORT MONMOUTH, NEW JERSEY

Page 2 of 4

Sample ID	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Method Used	Method Detection Limit (mg/kg)	Compound of Concern	Result (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
B3 =	2551 08	5/16/97	5/19/97	Total Solid	••		85 57		
				ГРНС	175	Yes	ND	10,000	No
S6 =	2551 09	5/16/97	5/19/97	l'otal Solid			85 26	••	
				TPHC	180	Yes	ND	10,000	No
S7 =	2551 10	5/16/97	5/19/97	Total Solid		••	83 15		
				TPHC	185	Yes	476 48	10,000	No
S8 =	2551 11	5/16/97	5/19/97	Total Solid			80 98		••
				TPHC	192	Yes	225 56	10,000	No
SP1 =	2551 12	5/16/97	5/19/97	l'otal Solid			85 05	-	
				TPHC	177	Yes	259 35	10,000	No

Note

* Total Solid results are expressed as a percentage

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

-- Not detected above stated sample quantitation limit

TPHC Total Petroleum Hydrocarbons

POST-EXCAVATION SOIL SAMPLING RESULTS
AREA 429, MAIN POST-EAS I AREA
FORT MONMOUTH, NEW JERSEY

Page 3 of 4

Sample 1D	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Method Used	Method Detection Limit (mg/kg)	Compound of Concern	Result (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
S9 =	2558 01	5/19/97	5/19/97	7 otal Solid			78 54		
				TPHC	196	Yes	ND	10,000	No
S10 =	2558 02	5/19/97	5/19/97	Total Solid			85 92		
				IPHC	179	Yes	ND	10,000	No
S11 =	2558 03	5/19/97	5/19/97	Total Solid			87 98		
				IPHC	167	Yes	ND	10,000	No
S12 =	2558 04	5/19/97	5/19/97	1 otal Solid			81 92		
				TPHC	170	Yes	265 04	10,000	No
B4 =	2558 05	5/19/97	5/19/97	lotal Solid			87 77		
				TPHC	175	Yes	ND	10,000	No
B5 =	2558 06	5/19/97	5/19/97	l otal Solid			89 27		
				TPHC	176	Yes	ND	10,000	No

Note

* Total Solid results are expressed as a percentage

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

-- Not detected above stated sample quantitation limit

TPHC Total Petroleum Hydrocarbons

IABII 2

I OSI I XCAVATION SOII SAMITINC RI SUI IS ARI A 429 MAIN I OSI I ASI ARI A I ORI MONMOUTH NI W JI RSI Y

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Sample ID	Sample Laboratory ID	S imple Date	Analysis Date	Analytical Method Uscd	Method Detection I imit (mg/kg)	Compound of Concern	Result (mg/kg)	NJDI I Soil Cleanup Criteria ** (mg/kg)	l xcecds Cleanup Criteria
S2 =	5170 01	2/15/00	2/15/00	Fotal Solid			79 98 /		
				IPHC	193	Yes	ND	10 000	No
S3 =	5170 02	2/15/00	2/15/00	lotal Solid			82 13/		
				HIIC	188	Yes	1384 08	10 000	No

Note

* I otal Solid results are expressed as a percentage

** NJDI P Residential Direct Contact soil cleanup criteria for total organics
Not detected above stated sample quantitation limit

IIIIC I otal Petrolcum Hydrocarbons

TABLE 3

1 of 2

Table 3 VOLATILE ORGANICS ANALYSIS DATA SHEET

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

Date Sampled 3/18/00 Location 429 Lab Sample ID 5260 01(SAMPLE S3)

CONCENTRATION UNITS (ug/L or ug/Kg)

CAS NO	PARAMETER	MDL 	QUALIFIER	RESIDENTIAL	NON- RESIDENTIAL
107028	Acrolem	2100	ប	NA	NA
107131	Acsylonutrile	2100	U	1000	5000
75650	tert-Butyl alcohol	3900	U	NA	NA
1634044	Methyl-tert-Butyl ether	900	U	NA	NA
108203	Dı-ısopropyl ether	600	U	NA	NA NA
	Dichlorodifluoromethane	1200	U	NA	NA
74-87-3	Chloromethane	300	U	520000	1000000(q)
75-01-4	Vinyl Chlonde	900	υ	2000	7000
74-83-9	Bromomethane	600	u	79000	1000000(d)
75-00-3	Chloroethane	900	υ	NA	NA
75 -69 -4	Trichlorofluoromethane	600	ΰ	NA	NA
75-35-4	l 1-Dichloroethene	300	υ	8000	150000
67-64-1	Acetone	600	U	1000000(d)	1000000(4)
75-15-0	Carbon Disulfide	300	U	NA	NA NA
75-09-2	Methylene Chlonde	600	U	49000	210000
156-60-5	trans-1 2-Dichloroethene	600	Ü	1000000(d)	1000000(d)
75-35-3	1 1-Dichloroethane	300	υ	570000	1000000(d)
108-05-4	Vinyl Acetate	900	U	NA	NA
78-93-3	2-Butanone	900	ľ	1000000(d)	1000000(q)
156-59 2	cts-1,2-Dichloroethene	300	υ	79000	1000000(d)
67-66-3	Chloroform	300	U	19000(k)	28000(L)
75-55-6	1,1 1-Trichlomethane	300	U	NA NA	NA
56-23-5	Carbon Tetrachloride	500	u	2000(k)	4000(k)
71-43-2	Benzeze	300	U	3000	13000
107-06-2	I 2-Dichloroethane	600	U	6000	24000

2 of 2

Table 3 VOLATILE ORGANICS ANALYSIS DATA SHEET

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

Date Sampled 3/18/00 Location 429 Lab Sample ID 5260 01(SAMPLE S3)

CONCENTRATION UNITS

(ug/L or ug/Kg)

CAS NO	PARAMETER	MDL	QUALIFIER	RESIDENTIAL	NON- RESIDENTIAL
79-01-6	Trichloroethene	300	U	23000	54000(k)
78-87-5	1 2-Dichloropropane	300	U	10000	43000
75-27-4	Bromodichloromethane	300	υ	11000(g)	46000(g)
<u>1</u> 10-75-8	2-Chlaroethyl vanyl ether	600	u	NA	NA
10061-01-5	cıs-1,3-Dichloropropene	300	U	NA	NA
108-10-1	4-Methyl-2-Pentanone	600	υ	£000000(d)	1000000(d)
įΩ8-88-3	Toluene	300	U	1000000(4)	1000000(4)
10061-02-6	trans-1 3-Dichloropropene	600	U	NA	NA NA
79-00-5	1 1 2-Trichloroethane	600	U	22000	420000
127-18-4	Tetrachloroethene	300	U	4000(L)	6000(L)
591-78-6	2-Hexanone	600	U	NA	NA NA
126-48-1	Dibromochloromethane	600	υ	NA	NA .
108-90-7	Chlorobenzene	300	U	37000	680000
100-41-4	Ethylbenzene	600	υ	1000000(4)	1000000(4)
1330-20-7	m+p-Xylenes	900	υ	NA	NA NA
1330-20-7	o-Xylene	600	υ	NA	NA
100-42-5	Styrene	600	U	23000	97000
75-25-2	Bromoform	600	U	86000	370000
79-34-5	1 i 2 2-Tetrachloroethane	600	U	34000	70000(k)

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.
- 1) 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.

- (0) 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.

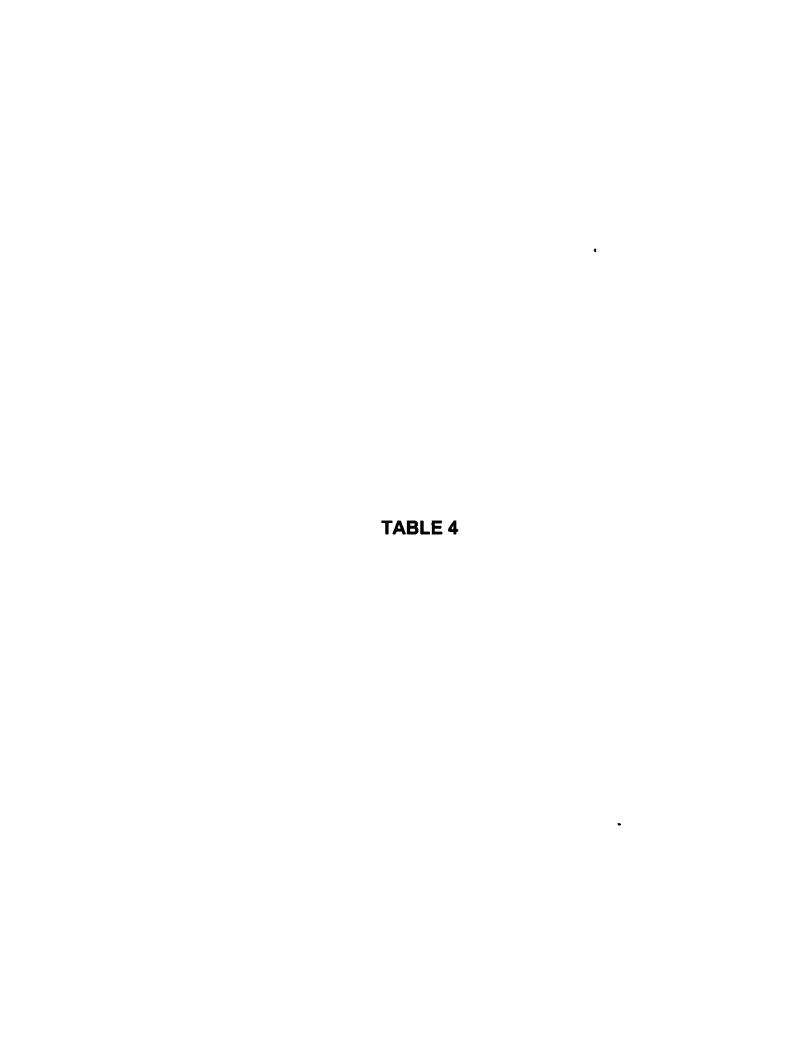


Table 4 VOLATILE ORGANICS ANALYSIS DATA SHEET

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

Date Sampled 12/10/98 Location 429 Lab Sample ID 4135 01(Bldg 429)

Date Sampled <u>12/10/98</u>		Location 429		Lab Sample ID 4135 01(Bldg 429)			
CAS NO	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA	
107028	Acrolem	t 85	Not Detected		50	20	
107131	Acrykonstrile	2 78	Not Detected	-	50	no	
75650	tert-Butyl zleohol	8 52	Not Detected	-	nie	no	
1634044	Methyl-tert-Butyl ether	0 16	Not Detected		nle	700	
108203	Di-isopropyl ether	0 25	Not Detected	-	nle	no	
	Dichlorodifluoromethane	1 68	Not Detected		ule	TIÓ	
74-87 3	Chloromethane	1 16	Not Detected	-	30	200	
75-01-4	Vmyi Chlonde	1 06	Not Detected		5	110	
74-83-9	Bromomethane	1 10	Not Detected		10	100	
75-00-3	Chloroethane	1 01	Not Detected		nle	no	
75- 69 -4	Trichlorofluoromethane	0.50	Not Detected	_	nle	щ	
75-35-4	1, 1-Dichloroethene	0 24	Not Detected	-	2	no	
67-64-1	Acetone	1 36	Not Detected	_	700	200	
75-15-0	Carbon Disnifide	0 46	Not Detected		nle	no	
75-09-2	Methviene Chlande	0 24	Not Detected	_	2	100	
156-60-5	trans-1 2-Dichloroethene	0 16	Not Detected	_	100	100	
75-35-3	1 1-Dichloroethane	0 12	Not Detected	_	70	mo	
108-05-4	Vmvl Acetzte	0 78	Not Detected	_	nle	no	
78-93-3	2-Butznone	0 62	Not Detected	-	300	190	
156-59 2	cis-1 2-Dichloroethene	0 17	Not Detected		10	0.0	
67-66-3	Chloroform	0 30	Not Detected	_	6	200	
75-55-6	1 1 1-Trichloroethane	0 23	Not Detected	-	30	100	
56-23-5	Carbon Tetrachlonde	0 47	Not Detected	-	2	TIO .	
71-43-2	Benzeze	0 23	Not Detected	-	1	по	
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	-		no	
110-75-8	2-Chloroethyl vanyl ether	0 65	Not Detected	-	nie	po	
10061-01-5	cts-1 3-Dichloropropene	0 69	Not Detected	_	nle	DO	

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Table 4 VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name **FMETL** NJDEP# 13461 Matrix (soil/water) WATER **Date Sampled** 12/10/98 Location 429 Lab Sample ID 4135 01(Bldg 429) **COMPOUND NAME** CAS NO MDL RESULTS QUALIFIER REGULATORY **EXCEEDS** LEVEL(ug/L) **CRITERIA** (ug/L) 108-10-1 4-Methyl-2-Pentanone 0 59 Not Detected 400 0 37 Not Detected 108-88-3 Toluene 1000 0 87 Not Detected DO 10061-02-6 trans-1 3-Dichloropropene ule 79-00-5 1 1 2-Trichloroethane 0 48 Not Detected 110 3 _ 80 127-18-4 Tetrachloroethene 0 32 Not Detected ł DO 591-78-6 2-Hexanone 071 Not Detected nie 20 Dibromochloromethane 0 86 Not Detected 126-48-1 10 Not Detected ПО 0 39 108-90-7 Chlorobenzene 4 _ no 100-41-4 Ethylbenzene 0 65 Not Detected 700 DO m+p-Xylenes 1 14 Not Detected 1330-20-7 nle Not Detected 100 1330-20-7 o-Xvlene 0 62 nle 100-42-5 Styrene 0 56 Not Detected 00 100 _ no 75-25-2 Bromoform 0 70 Not Detected 4 DO 79-34-5 1 1 2 2-Tetrachloroethane 0 47 Not Detected 2 541 73-1 1 3-Dichlorobenzene 0 55 Not Detected 00 600 106-46-7 1 4-Dichlorobenzene 0 57 Not Detected DO _ 75 95-50-1 1 2-Dichlorobenzene 0 64 Not Detected 600 щ

Table 4 SEMI-VOLATILE ANALYSIS DATA SHEET

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

Date Sampled 12/10/98 Location 429 Lab Sample ID 4135 02(Bldg 429)

CAS NO COMPOUND NAME MDL RESULTS QUALIFIER REGULATORY **EXCEEDS** LEVEL(ug/L) **CRITERIA** (ug/L) 5 00 110-86-1 Pyridine nie Not Detected 0 94 Not Detected 62-75-9 N-natroso-dimethy lamine 20 0 15 Not Detected 80 nle 62-53-3 Andine 0.48 Not Detected 80 10 bis(2-Chloroethy!)ether 111-44-4 Not Detected 600 541 73-1 1,3-Dichlorobenzene 0 23 Not Detected 75 100 106-46-7 l 4-Dichlorobenzene 0 18 Not Detected πle 100-51-6 Benzyl alcohol 0 16 Not Detected BO 95-50-1 1,2-Dichlorobenzene 600 061 Not Detected 300 DO 108-60-1 bis(2-chloroisopropy1)ether 0 33 Not Detected 80 20 621-64-7 n-Natroso-da-n-propy lamine 0 46 67-72-1 Hexachloroethane Not Detected 10 ВО 0 35 Not Detected 98-95-3 Nurobenzene 10 0 46 Not Detected 78-59-1 Isophorone 100 80 0 26 Not Detected 111-91-1 bis(2-Chloroethoxy)methane ale 0 25 Not Detected 1 2 4-Trichlorobenzene 120-82-1 9 20 0 25 91-20-3 Naphthalene Not Detected 300 nle 0 19 Not Detected 106-47-8 4-Chloroanime 00 ale 0 38 Not Detected 87-68-3 Hexachlorobutadiene 1 110 0 16 91-57-6 2-Methy Inaphthalene Not Detected ale 1 50 77-47-4 Hexachlorocy clopentadiene Not Detected 50 50 0 32 91-58-7 2-Chloronaphthalene Not Detected аle 110 0 21 88-74-4 2-Nitroamline Not Detected nle no 0 18 Not Detected 131-11-3 Dimethylphthalate 7000 0 19 208-96-8 Acenaphthylene Not Detected ВО пle

Table 4 SEMI-VOLATILE ANALYSIS DATA SHEET

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

Date Sampled 12/10/98 Location 429 Lab Sample ID 4135 02(Bldg 429)

CAS NO C	OLEDOLAND MANE					Lab Sample ID 4135 02(Bldg 429)	
	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA	
606-20-2	2 6-Dimitrotojuene	0 31	Not Detected	-	nle	по	
99-09-2	3-Nitroamine	0 26	Not Detected	-	nle	110	
83-32-9	Acenaphthene	0 26	Not Detected	-	400	100	
132-64-9 I	Dibenzofuran	0 32	Not Detected		nle	200	
121-14-2	2 4-Dinutrotoluene	0 36	Not Detected	-	10	no	
84-66-2	Diethylphihaliste	0 82	Not Detected	-	5000	no	
86-73-7 i	Fluorene	0 29	Not Detected	_	300	20	
7005-72-3	4-Chloropheny I-pheny lether	031	Not Detected	-	nle	1160	
100-01-6	4-Nuroamine	0 90	Not Detected	-	nle	110	
86-30-6	n-Nitrosodipheny lamine	0 23	Not Detected	-	20	no	
103-33-3	Azobenzene	0 80	Not Detected	_	nie	100	
101-55-3	4-Bramaphenyl-phenylether	0 55	Not Detected	_	nie	no	
118-74-1	Hexachlorobenzene	0 82	Not Detected		10	100	
85-01-8	Phenanthrene	0 18	Not Detected	_	nle	no)	
120-12-7	Amhracene	0 19	Not Detected]	2000	тю	
84-74-2	Di-n-buty lphthalate	0 23	Not Detected	-	900	no	
206-44-0	Fluoranthene	041	Not Detected	_	300	no	
92-87-5	Benzidine	1 45	Not Detected	_	50	EIO	
129-00-0	Pyrene	0 32	Not Detected	_	200	no	
85-68-7	Buty ibenzy lphthalate	0 47	Not Detected	-	100	RÓ.	
56-55-3	Benzo[a]anthracene	0 22	Not Detected		10	no	
91 94-1	3,3 -Dichloropenzidine	0 46	Not Detected		60	DQ	
218-01-9	Chrysene	0 20	Not Detected	••	20	n¢	
117-81-7	bis(2-Ethylhexyl)phthalate	0 51	Not Detected		30	no .	
117-84-0	Di n-octylphilialate	0 82	Not Detected	-	100_	no	
205-99-2	Benzo(b)fluoranthene	0 37	Not Detected	_	10	no	
207-08-9	Benzo[k]fluoranthene	0 32	Not Detected		2	710	
50-32-8	Benzo[a]py rei≠	031	Not Detected	-	20	100	
193-39-5	Indeno[1 2,3-cd]pyrene	0 79	Not Detected		20	no	
53-70-3	Dibenz[a h]anthracene	0 28	Not Detected		20	no	
191-24-2	Benzo[g h i]përylene	0 40	Not Detected	-	nle	no	

10061-01 5

cis-1,3 D: hi ropropene

Table 4 **VOLATILE ORGANICS ANALYSIS DATA SHEET**

Lab Name NJDEP# **FMETL** 13461 Matrix (soil/water) WATER Date Sampled 1/12/99 Location 429 Lab Sample ID 4182 01(Bldg 429) **CAS NO** COMPOUND NAME MDL RESULTS QUALIFIER REGULATORY **EXCEEDS CRITERIA** LEVEL(ug/L) (ug/L) _ 50 107028 Acrolem 1 85 N t Detected a€.2 50 107131 A sylon tril 2 78 N t Detected n 75650 tert Butyl alcohol 8 52 Not Detected ᇜ, 1634044 M thyl tert B tyl ther 0 16 N t Detected 20 108203 Di-isopropyl ether 0 25 N t Detected ᆈ 100 Dr hlorodiffuoromethane 1 68 N t Detected 1 DO: 74-87 3 Chloromethane 1 16 N t Detected 30 ВО N t Detected 75-01-4 Vinyl Chloride 1 06 5 100 74-83 9 Bromomethane 1 10 N t Detected 10 Ψ. * T nie 75-00-3 Chloroethane 1 01 Not Detected 75-69-4 Tr: hlorofluoromethane 0 50 Not Detected nl 80 75 35-4 1 1 Di bloroethene 0.24 N t Detected 00 67-64-1 N t Detected Aceton 1 36 700 75 15-0 00 Carbon Disulf de 0 46 N t Detected nì 20 75-09 2 Methylene Chlonde 0 24 N t Detected 2 156-60-5 trans-1,2 Dr bloroethene 0 16 Not Detected 100 75 35 3 1 1 Dr Moroethane 0 12 N t Detected 70 108-05-4 0.78 N t Detected Vinyl Acetate nl 20 78-93 3 0 62 2 Butanone N t Detected 300 156-59-2 cus-1 2 Dichloroethene 017 N t Detected 10 500 67-66-3 Chl reform 0 30 Not Detected 6 100 75 55-6 111T bloroethane 0 23 Not Detected 30 100 56-23 5 Carbon Tetrachloride 047 N t Detected 2 ΠÓ 71-43-2 Benzeze 0 23 N t Detected 1 107-06-2 1,2 Di M roethane 0 18 N t Detected 2 mò 79-01-6 0 23 T hloroethene N t Detected 78 87 5 1 2 Di Moropropane 80 0 40 N t Detected 1 00 75 27-4 Bromodi hloromethane 0 55 N t Detected 1 00 110-75 8 2-Chloroethyl vnnyl ther 0 65 Not Detected пl 100

0 69

Not Detected

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541-73-1

106-46-7

95 50-1

i 3-Dichlorobenzene

1 4-Dichlorobenzene

1 2-Dichlorobenzene

Table 4 VOLATILE ORGANICS ANALYSIS DATA SHEET

Matrix (soil/water) WATER Lab Name **FMETL** NJDEP# 13461 Date Sampled 1/12/99 429 Lab Sample ID 4182 01(Bldg 429) Location COMPOUND NAME CAS NO MDL RESULTS **QUALIFIER REGULATORY EXCEEDS** (ug/L) LEVEL(ug/L) **CRITERIA** 108-10-1 4-Methyj-2-Pentanone 0 59 Not Detected 400 no 108-88-3 0 37 Not Detected 1000 Toluene 10061-02-6 0 87 Not Detected no trans-1 3-Dichloropropene nle 79-00-5 1 i 2-Trichloroethane 0 48 Not Detected 3 ПО __ 200 127-18-4 Tetrachloroethene 0.32 Not Detected ì ш 591-78-6 0.71 Not Detected 2-Hexanou€ nle 126-48-1 Dibromochloromethane Not Detected ш 086 ŧO Not Detected DO 108-90-7 Chlorobenzene 0 39 4 no Not Detected 100-41-4 Ethylbenzene 0 65 700 00 1 14 Not Detected 1330-20-7 m+p-Xylenes nle 00 1330-20-7 0 62 Not Detected o-Xvlene nle DO 100-42-5 Styrene 0.56 Not Detected 100 no 75-25-2 Bromoform 0 70 Not Detected 70 79-34-5 1 1 2 2-Tetrachloroethane 0 47 Not Detected 2

Not Detected

Not Detected

Not Detected

0.55

0 57

0 64

no

ВО

DO

600

75

Table 4 SEMI-VOLATILE ANALYSIS DATA SHEET

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

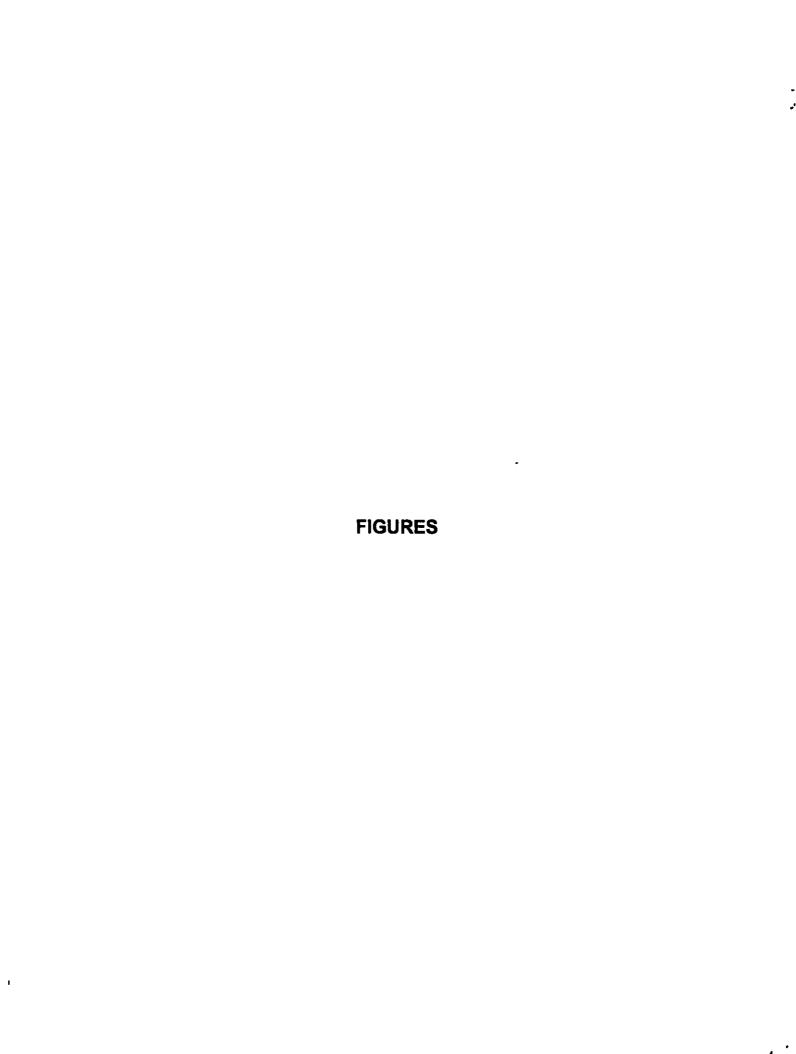
Date Sampled 1/12/99 Location 429 Lab Sample ID 4182 02(Bidg 429)

RESULTS QUALIFIER REGULATORY **EXCEEDS** CAS NO COMPOUND NAME **MDL** LEVEL(ug/L) **CRITERIA** (ug/L) 5 00 110-86-1 Pyridine nie Not Detected 0 94 Not Detected 20 00 N-natroso-dimethy lamine 62-75-9 0 15 Not Detected Andine 62-53-3 nle 0.48 Not Detected 30 111-44-4 bis(2-Chloroethyl)ether 10 0 23 Not Detected 600 1 3-Dichlorobenzene 541-73-1 Not Detected 106-46-7 1 4-Dichlorobenzene 75 0 18 100-51-6 Benzyl alcohol Not Detected nle 200 0 16 Not Detected 600 95-50-1 1 2-Dichlorobenzene 061 108-60-1 bis(2-chloroisopropy!)ether Not Detected 300 100 0 33 Not Detected n-Nitroso-di-n-propy lamine 20 621-64-7 0 46 100 Hexachloroethane Not Detected 67 72-1 10 0 35 98-95-3 Nurobenzene Not Detected ВО 10 0 46 Not Detected 100 78-59-1 Isophorone 0.26 Not Detected 111-91-1 bis(2-Chloroethoxy)methane nle 20 0.25 120-82-1 1 2 4-Trichlorobenzene Not Detected 9 0 25 Not Detected 91-20-3 Naphthalene 200 пlе 0 19 106-47-8 4-Chloroantine Not Detected nle 00 0.38 Not Detected 87-68-3 Hexachlorobutadiene 1 00 0 16 Not Detected 91-57-6 2-Methylnaphthalene 200 l 50 77-47-4 Hexachlorocyclopentadiene Not Detected 50 0 32 2-Chloronaphthalene Not Detected 91-58-7 nle DO 0 21 88-74-4 2-Nitroamline Not Detected nle Dimethy iphthalate 0 18 Not Detected 131-11-3 7000 00 0 19 208-96-8 Not Detected Acenaphthylene nle

Table 4 SEMI-VOLATILE ANALYSIS DATA SHEET

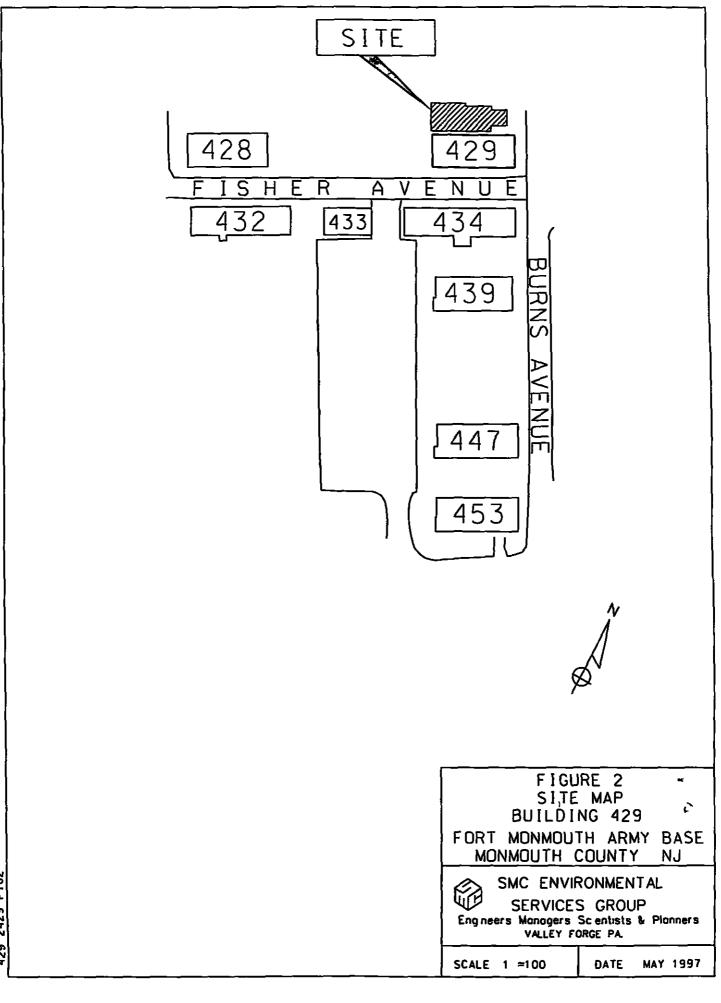
NJDEP# 13461 Matrix (soil/water) WATER Lab Name **FMETL**

CAS NO COMPOUND NAME MDL (ugfL) CUMPOUND NAME (ugfL) CUMPOUND NAME (ugfL) CUMPOUND NAME CU	Date Sampled <u>1/12/99</u>		Location	<u>429</u>	Lab S	ample ID <u>4182 0</u>	2(Bldg 429)
99-09-2 3-Nitronantime	CAS NO	COMPOUND NAME		RESULTS	QUALIFIER		
25-70-12 25-70-12-12-12-12-12-12-12-12-12-12-12-12-12-	606-20-2	2 6-Dinitrotohiene	031	Not Detected	-	nie	200
132-64-9 Debrusofurum	99-09-2	3-Nuroamine	0 26	Not Detected		nie	100
121-14-2 2 + Duntrotobree	83-32-9	Acenaphthene	0 26	1 15 ug/L	-	400	700
2-14-12 2-1-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2	132-64-9	Dibenzofuran	0 32	Not Detected	_	nle	тю
Section Private Section Sect	121-14-2	2 4-Dinstrotoluene	0 36	Not Detected	_	10	no
Total age	84-66-2	Diethylphthalate	0 82	Not Detected		5000	200
100-01-6 4-Nitroanthine	86-73-7	Fluorene	0 29	1 84 ug/L	_	300	по
Not Detected	7005-72-3	4-Chloropheny I-pheny lether	0 31	Not Detected	-	nle	100
103-33-3	100-01-6	4-Nitroamline	0 90	Not Detected	-	nle	DO
101-55-3	86-30-6	n-Nitrosodiphenylamine	0 23	Not Detected	-	20	no
118-74-1 Hexachlorobenzene	103-33-3	Azobenzene	0 80	Not Detected	-	nle	no
18-7-1	101-55-3	4-Bromopheny 1-pheny lether	0 55	Not Detected	-	nle	τω
120-12-7 Andriacene	118-74-1	Hexachlorobenzene	0 82	Not Detected		10	teo
Ref.	85-01-8	Phenanthrene	0 18	Not Detected	-	nle	110
206-44-0 Fluoramhene	120-12-7	Anthracene	0 19	Not Detected	-	2000	190
92-87-5	84-74-2	Di n-buty lphthalate	0 23	Not Detected		900	150
129-00-0 Pyrene	206-44-0	Fluoranthene	041	Not Detected	-	300	no
S5-68-7 Buryibenzy lphthalate	92-87-5	Benzidine	1 45	Not Detected	-	50	по
Section Suppose Supp	129-00-0	Pyrene	0 32	Not Detected		200	no
91-94-1 3 3 - Dichlorobenzidine 0 46 Not Detected - 60 no 218-01-9 Chrysene 0 20 Not Detected - 20 no 117-81-7 bis(2 Ethylhexyl)phthalate 0 51 Not Detected - 30 no 117-84-0 Di-n-octylphthalate 0 82 Not Detected - 100 no 205-99-2 Benzo(b)fluoranthene 0 37 Not Detected - 10 no 207-08-9 Benzo(k)fluoranthene 0 32 Not Detected - 2 no 50-32-8 Benzo(a)pyrene 0 31 Not Detected - 20 no 193-39-5 Indeno(1 2 3-cd)pyrene 0 79 Not Detected - 20 no 53-70-3 Dibenz(a h)anthracene 0 28 Not Detected - 20 no	85-68-7	Burylbenzy iphthalate	0 47	Not Detected	_	100	80
218-01-9 Chrysene	56-55-3	Benzo[a]anthracene	0 22	Not Detected	-	10	no
117-81-7 bis(2 Ethylhexyl)phthalate	91-94-1	3 3 -Dichlorobenzidine	0 46	Not Detected	-	60	щ
117-84-0 Di-n-octylphthalate 0.82 Not Detected - 100 no	218-01-9	Chrysene	0 20	Not Detected	-	20	190
205-99-2 Benzo[b]fluoranthene 0 37 Not Detected 10 no	117-81-7	bis(2 Ethy Thexy I)phthalate	0.51	Not Detected	-	30	no
207-08-9 Benzo[k]fluorambere 0.32 Not Detected - 2 no	117-84-0	D1-n-octy lphthalate	0 82	Not Detected	-	100	по
50-32-8 Benzojajpyrene 0.31 Not Detected - 20 no	205-99-2	Benzo[b]fluoranthene	0 37	Not Detected	~	10	DO.
193-39-5 Indeno[1 2 3-ed]pyrene 0 79 Not Detected — 20 no 53-70-3 Dibenz[a h]anthracene 0 28 Not Detected — 20 no	207-08-9	Benzo[k]fluoranthene	0 32	Not Detected	-	2	по
53-70-3 Dibenzía hjanthracene 0 28 Not Detected 20 no	50-32-8	Benzo[a]py rene	031	Not Detected	-	20	no
100 Description - 20	193-39-5	Indeno(1 2 3-ed]pyrene	0 79	Not Detected	-	20	по
	53-70-3	Dibenz[a h]amhracene	0 28	Not Detected	_	20	no
191-24-2 Benzo(g h i]perviene 0 40 Not Detected – nle no	191-24-2	Benzo[g h i]perviene	0 40	Not Detected		nle	по

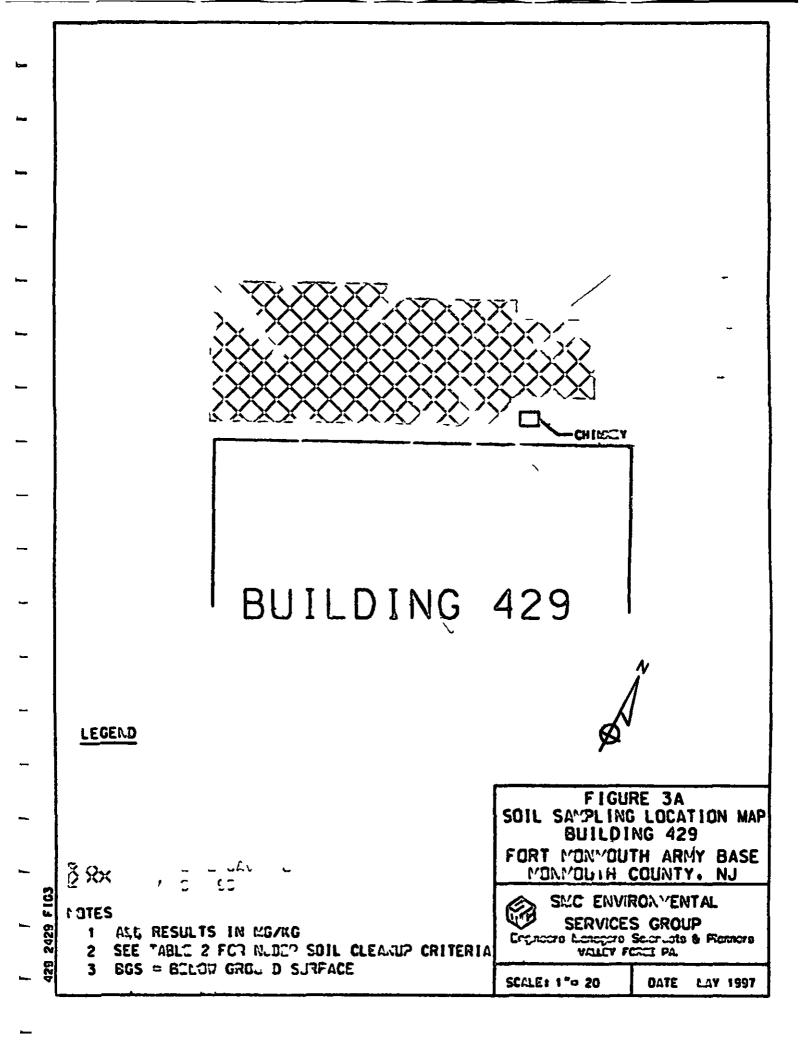


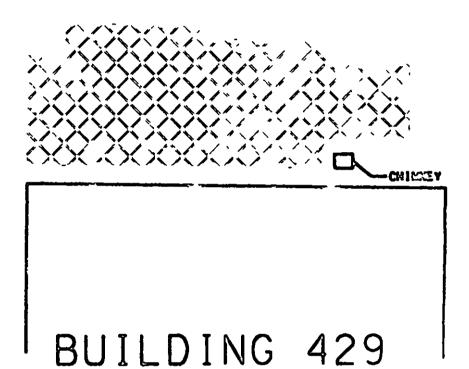


i



2012 0000 0







LEGEND

NOTES:

- 1. ALL RESULTS IN MORIG.
- 2. SEE TACLE 2 FOR MUDEP SOIL CLEANUP CRITERIA
- 3. BGS = BILOW GROUND SURFACE

FIGURE 3B SOIL SAMPLING LOCATION MAP BUILDING 429

FORT MONMOUTH ARMY BASE MONMOUTH COUNTY. NJ



SMC ENVIRONMENTAL

SERVICES GROUP

Engineero, L'amegero, Selentiato & Flornero

SCALE: 1 "- 20"

DATE: MAY 1997

*

APPENDIX A SOIL ANALYTICAL DATA PACKAGE

US ARMY FT MONMOUTH ENVIRONMENTAL LABORATORY 'NJDEPE #_13461

REPORT OF ANALYSIS

Client US Army

DPW SELFM PW EV

Bldg 173

Ft Monmouth NJ 07703

Project Total Petroleum Hydrocarbons

96 1226 AREA 429

Project # 2551
Date Rec 05/16/97
Date Comp 05/21/97
Released by

Daniel K Wright Laboratory Director

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Method Summary

NJDEP Method OQA-QAM-025-10/97

Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

Fifteen grains (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

MT

Voc

1 Method Detection Limits provided 2 Method Blank Contamination If yes list the sample and the corresponding concentrations in each blank	
	V _
Matrix Spike Results Summary Meet Criteria (If not met list the sample and corresponding recovery which falls outside the acceptable range) 755(12 1)66	
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)	

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

Bidg 173 SEI FM PW EV Fort Monmouth NJ 07703

Tel (908)532 4359 Fax (908)532 3484 EMail appleby@doim6 monmouth army mil
NJDEP Certification #13461

Chain of Custody Record

Customer 3/	96-1	 るる	10		Analysis Parameters Comments						
1 hone # ((015) 2	Location	rea 4	~ ~			_5		_		00 VOTIS on	
()DERA XOMA (<u> </u>	rea 4	29		#	12				any samples
Samplers Name / Cor	npany OxcidH. Oar	uels /	SMC	Sample	#	1/2	1/3		1		any samples that have a TAHC above 1,000 ppm.
Lาb Sample I D	Sample Location	Date	Time	Туре	bottles		∞		2		Remarks / Preservation Method
2551 01	429-51	5 15 91	10.50	Soil	<u> 2</u>	X	X				
101	429-52		1055		2	X	X				
	429-53		1100		3	X	X				
04	429-B1		11-05				$ \mathcal{L} $				
05	429-54		12 50			区	X				
06	429-55		12 55			X	X				
07	<u>429~82</u>	L V	13 00			义	X				
<u> </u>	429 B3	516.97	11 35	_ _		X	X				
09	429-56		11 40			X	X				
/0	429 57		11 45	_ _		X	X				
11	429 58	<u> </u>	1150			X	X				
V 14	429-591		11 55	V	1	X	X				
	· · · · · · · · · · · · · · · · · · ·										
 	Relynquished by (signature) Date/Time Received by (signature) Relinquished by (signature) Date/Time Received by (signature)										
Reinquished by (signature		Recuived by (sign iturc)		Reling	uished	by (sign	ature)	Date/Time	Received by	(signaturc)
Report Type ()Full K	teport Type () Full () Reduced () Standard () Screen / non certified um wound time () Standard 4 wks () Rush 2 Days () ASAP Verbal () Hirs) Remarks 500 Lomments 500 to ments 500 to ment										

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

 Client
 U S Army
 Lab ID#
 2551

 DPW SELFM-PW-EV
 Date Rec'd
 16-May-97

 Bldg 173
 Analysis Start
 19-May-97

Ft Monmouth, NJ 07703 Analysis Complete 21 May-97

Analysis OQA-QAM-025 UST Reg #
Matrix. Soil Closure #
Analyst. P Skelton DICAR #

Ext Meth Shake Location # AREA 429

Ext Meth	Shake			AREA 429		
Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
2551.01	429-S1	1 00	15 59	87 84	172	983.41
2551 02	429-S2	1 00	15 77	86 61	172	1251.15
2551 03	429-S3	1 00	15 09	81 36	191	15560.17
2551.04	429-B1	1 00	16 23	74 77	194	ND
2551.05	429-S4	1 00	16 03	83 78	175	ND
2551 06	429-S5	1 00	16 19	81 87	177	ND
2551.07	429-B2	1 00	15 56	82 35	183	ND
2551.08	429 B3	1 00	15 72	85 57	175	ND
2551.09	429-S6	1 00	15 33	85 26	180	ND
2551 10	429-S7	1 00	15 25	83 15	185	476.48
2551.11	429-S8	1 00	15 11	80 98	192	225 56
2551.12	429-SP1	1 00	15 62	85 05	177	259.35
METHOD BLANK	19-May-97	1 00	15 00	100 00	157	ND_

ND = Not Detected

MDL = Method Detection Limit

Daniel K Wright
Laboratory Director

1

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	<u>~</u>
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	<u> </u>
	poratory Manager or Environmental Consultant's Signature	2

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

Laboratory Certification #13461

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY NJDEPE # 13461

REPORT OF ANALYSIS

Client

US Army

DPW, SELFM-PW-EV

Bldg 173

Ft Monmouth, NJ 07703

Project

Total Petroleum Hydrocarbons

96-1226 AREA-429

Project # 2558
Date Rec 05/19/97
Date Comp 05/21/97
Released by

Daniel K Wright
Laboratory Director

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Method Summary

NJDEP Method OQA-QAM-025-10/97

Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

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

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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

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

Laboratory Authentication Statement

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

Daniel K Wright Laboratory Manager



Fort Monmouth Environmental Testing Laboratory

Bldg 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (908)532-4359 Fax (908)532-3484 EMail appleby@doim6 monmouth army mil
NJDEP Certification #13461

Chain of Custody Record

Customer: SMC/Chuck-Appleby		Project No 96-1226			Analysis Parameters				Comments:
Phone#: 400 5		Location Area 4			Stids 0#0		15		Ove vot15 on any samples that have a
Samplers Name / Cor	mpany. David H Od	aniels /suc	Sample	#	15 75		12 + 67		TPHC above ppm
Lab Sample I D	Sample Location	Date Fime	Туре в	ottles	9 F		7	<u> </u>	Remarks / Preservation Method
7558.01	429-59	5.19.9713.10	Soi \	12	< X				
6.7	429-510	13:15	_ 1.	1 >	< X		<u> </u>		
03	429-511_	13 20	_	1 2				<u> </u>	. ,
. 04	429-512	13.52	و ا	2 x	X		X _	<u> </u>	VERWATED OVA'S
<i>0</i> 5	429-B.4. 429-B5			<u> </u>	, ,		<u> </u>	<u> </u>	
Q0	429-B5	13.35	 	1 7	: X		<u> </u>	<u> </u>	_
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	-						 	 	
			<u> </u>					<u> </u>	
Refiniturished by (signature) Date/Time Received by (signature) 5 19.97 1345 Received by (signature) 47 Relinquished by (signature) Date/Time Received by (signature)									
Relinquished by (signature	Relinquished by (signature) Date/Time Received by (signature) Relinquished by (signature) Date/Time Received by (signature)								
Report Type (_)Full \(\sum_R\) Turnaround time (_)Stand	Reduced, (_)Standard, (_)Streen	/ non-certified NASAP Verbal Hrs	 	Re	marks				
Commence - wast Changes - policy Victoria Annual T 1112									

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

 Client
 U S Army
 Lab ID#
 2558

 DPW SELFM-PW-EV
 Date Rec'd
 19-May-97

 Bldg 173
 Analysis Start
 19-May-97

 Ft Monmouth, NJ 07703
 Analysis Complete
 21-May-97

Analysis OQA-QAM-025 UST Reg #
Matrix Soil Closure #

Analyst P Skelton DICAR #

Ext. Meth	Shake			AREA 429		
Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
2558.01	429-S9	1 00	15 26	78 54	196	ND
2558.02	429-S10	1 00	15 27	85 92	179	ND
2558 03	429-S11	1 00	15 97	87 98	167	ND
2558 04	429-S12	1 00	16 86	81 92	170	265.04
2558.05	429-B4	1 00	15 27	87 77	175	ND
2558.06	429-B5	1 00	14 98	89 27	176	ND
	 		<u> </u>	<u> </u>		<u> </u>
	 		<u> </u>			-
				 		<u></u>
				<u> </u>		
			<u> </u>	 		<u> </u>
			 		[<u> </u>
			_	 	 	<u> </u>
		<u> </u>		 	 -	
METHOD BLANK	19 May-97	1 00	15 00	100 00	157	ND

ND = Not Detected

MDL = Method Detection Limit

Daniel Wright
Laboratory Director

LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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1	and address, & date of report submitted	
2	Table of Contents submitted	
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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	
	oratory Manager or Environmental Consultant's Signature	

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

Laboratory Certification #13461

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS

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

WET-CHEM - METALS - ORGANICS - FIELD SAMPLING CERTIFICATIONS: NJDEP #13461, NYSDOH #11699



ANALYTICAL DATA REPORT
Fort Monmouth Environmental Laboratory
ENVIRONMENTAL DIVISION
Fort Monmouth, New Jersey
PROJECT: IJO# 100004

Bldg. 429

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
429-S2 5 5'	5170 01	Soil	15-Feb-00 10 50	02/15/00
429-S3 5 5°	5170 02	Soil	15-Feb-00 11 00	02/15/00

ANALYSIS FORT MONMOUTH ENVIRONMENTAL LAB TPHC, %SOLIDS

ENCLOSURE CHAIN OF CUSTODY RESULTS

Daniel Wright/Date

2-79-00

Laboratory Director

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Method Summary

NJDEP Method OQA-QAM-025-10/97 Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

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TPHC Conformance/Non-conformance Summary Report

1	Method Detection Limits provided.		Indicate Yes, No, N/
2	Method Blank Contamination – If yes, is corresponding concentrations in each bla		<u> 170 </u>
3	Matrix Spike Results Summary Meet Cr (If not met, list the sample and correspondable outside the acceptable range).		yes
4	Duplicate Results Summary Meet Criter (If not met, list the sample and correspondials outside the acceptable range)		103
3	IR Spectra submitted for standards, blan	ks and samples	<u>AU</u>
6	Chromatograms submitted for standards if GC fingerprinting was conducted.	, blanks and samples	<u>Yes</u>
7	Analysis holding time met (If not met, list number of days exceede	d for each sample)	yes
Add	itional comments		
		2-27-60	
Labo	oratory Manager	Date	



Fort Monmouth Environmental Testing Laboratory

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

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

NJDEP Certification #13461

Chain of Custody Record

Customer: D. DESA:			Project No 10-0004			Analysis Parameters							Comments:			
Phone # XX 14	5			Location 306. 429		+	%.	N /	1 1/4	rights.	,	h ,	1 , 41.2			
()DERA (v)OMA ()Other:		/ / / / / /			P	5			,	``		July (
Samplers Name / Company: MANK LA		K LA	WA IT	V5	Sample	#	TAHO	OHLON	,			X, 1	1.			
Lab Sample I D	s	ample Lo	cation	Date	Time	Туре	bottles	٠, د	Ď.	y.	, XX	- 4	•		, ,	Remarks / Preservation Method
5070,1	429-	SZ	5.5'	2-15-00	1930	SOIL	1	X	×							£4°C
2	429.	- 53	5.5'	1.	1100	• • •	1	X	X							11
			-													
		•														
			_													
		•														
		•	- 									•				
			_													
														-		
Refunquished by (signature) Date/Time Received by (signature) Refunquished by (signature) Date/Time Received by (signature) Date/Time Received by (signature)						signature)										
Relinquished by (signature) Date/Time			77			quished by (signature) Date/Tu					Time	Received by (signature)				
\ \ \ \	eport Type () Full, () Reduced, () Standard, () Screen / non-certified, () EDD Remarks 5 HARES T.B. + F.B W/ BLSG. 2043 urnaround time () Standard 3 wks, () Rush Days, () ASAP Verbal Hrs															

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

Chent

US Army

Project # .

5170

DPW SELFM-PW-EV

Location

Bldg 429

Bldg 173

UST Reg # ·

Ft Monmouth, NJ 07703

Analysis ·

OQA-QAM-025

Date Received

15-Feb-00

Matrix

Sod

Date Extracted .

15-Feb-00

Inst. ID:

GC TPHC INST #1

Extraction Method:

Shake

Column Type :

RTX-5, 0 32mm ID, 30M

Analysis Complete:

22-Feb-00

Injection Volume ·

iuL

Analyst:

D Costagliola

Sample	Freld ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)		
5170.01	429-52	1.00	15 20	79 98	193	ND		
5170.02	429-53	1 00	15 20	82 13	188	1384.08		
METHOD BLANK	TBLK328	1 00	15 00	100 00	157	ND		

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright

Laboratory Director

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1	Cover page Title Page listing Lab Certification # facility name and address & date of report submitted	
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7	Methodology Summary submitted	<u> </u>
8	Laboratory Chronicle and Holding Time Check submitted	
9	Results submitted on a dry weight basis	
10 11	Method Detection Limits submitted 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	7

Laboratory Certification #13461

Date 2 /24/00

*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 Winght Laboratory Manager

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS

PHONE: (732) 532-6224 FAX: (732) 532-6263
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING
CERTIFICATIONS. NJDEP #13461. NYSDOH #11699



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

Bldg. 429

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
429-\$3 5 5'	5260 01	Soil	18-Mar-00 10 20	03/20/00

ANALYSIS FORT MONMOUTH ENVIRONMENTAL LAB VOA+15, %SOLIDS

ENCLOSURE CHAIN OF CUSTODY RESULTS

> Daniel Wright/Date Laboratory Director

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CHAIN OF CUSTODY



Fort Monmouth Environmental Testing Laboratory

Bldg 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail wrightd@mail1 monmouth army mil

Chain of Custody Record

NJDEP Certification #13461

Customer:		Project No						Ana	lysıs l	Comments:				
Phone #. 12/475			Location 7320G, 429 *				>	%	7					
()DERA (YOMA							04+							
Samplers Name / Co	mpany: MANU	LAMORA	1-TVS-PWS 07 Sample			#		OHLOW.						
Lab Sample I D	Sample Lo		Date	Time	Туре		15	٥						Remarks / Preservation Method
53(00. 1	429-53	5.51	3-18-00	1020	Soic	2	×	X			ļ			V10102 <4°C
	 				,	<u> </u>								
						<u> </u>								
											 			
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Reimquished by (signatur	o/Time				nquished by (signature) Date/Time Received by					l by (signature)				
Report Type ()Full,	Reduced, ()Standa	ard, (_)Screen	/ non-certified,	()EDD			Rema	rks ¥	SAM	RED	ON Z	-15-0	10 File	TPHC - RESAURING
ternaround time (Standard 3 wks, ()Rush Days, ()ASAP Verbal Hrs									A	N M	100	1 50	iL	<u> </u>

METHODOLOGY SUMMARY

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.

LABORATORY CHRONICLE

Laboratory Chronicle

Lab ID 5260

Site Bldg 429

Date Hold Time

Date Sampled 03/18/00 NA

Receipt/Refrigeration 03/18/00* NA

Analyses

1 Volatile Organics 03/23/00 14 days

• Samples collected and refrigerated on 03/18/00, Laboratory received the sample on Monday 03/20/00

CONFORMANCE NON-CONFORMANCE SUMMARY

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

		Indicate Yes, No, N/A
1	Chromatograms Labeled/Compounds Identified (Field Samples and Method Blanks)	<u>4</u>
2		Ч
_	Reteamon times for Cirolinatograms provided	
3	GC/MS Tune Specifications	
	a BFB Meet Criteria b DFTPP Meet Criteria	<u>4</u>
4	GC/MS Tuning Frequency - Performed every 24 hours for 600 series and 12 hours for 8000 series	1
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	4
6	GC/MS Calibration Requirements	
	a Calibration Check Compounds Meet Criteria b System Performance Check Compounds Meet Criteria	h blank
7	Blank Contamination - If yes, List compounds and concentrations in each	blank 🖊
	a. VOA Fraction	
	b B/N Fraction	
	c Acid Fraction	
8	Surrogate Recovenes Meet Criteria	4
	If not met, list those compounds and their recoveries, which fall outside the acceptable range	
	a VOA Fraction	
	b B/N Fraction	
	c Acid Fraction	
	If not met, were the calculations checked and the results qualified as "estimated"?	
9	Matrix Spike/Matrix Spike Duplicate Recoveries Meet Criteria (If not met, list those compounds and their recoveries, which fall outside the acceptable range)	\
	a VOA Fraction	
	b B/N Fraction	
	c Acid Fraction	

ł

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) a VOA Fraction b B/N Fraction c Acid Fraction	<u>4</u>
11 Extraction Holding Time Met	4
If not met, list number of days exceeded for each sample	
12 Analysis Holding Time Met	<u>Y</u>
If not met, list number of days exceeded for each sample	
Additional Comments	
Laboratory Manager Date 4-25-00	

VOLATILES ORGANICS

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY NJDEP CERTIFICATION # 13461

Definition of Qualifiers

MDL: Method Detection Limit

J : Compound Identified Below Detection Limit
 B : Compound is in Both Sample and Blank
 D : Results are from a Dilution of the Sample
 U : Compound Searched for but not Detected
 E : Compound Exceeds Calibration Limit

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name	FMETL				NJDEP#	13461		
Project	UST		Case No	5260	Locatioi	429	SDG No	
Matrix (soil/	vater)	SOIL			Lai	b Sample ID	Vblk238	
Sample wt/vo	ol	100	(g/ml) <u>G</u>	Lai	b File ID	VA007565 D	_
Level (low/r	ned)	MED			Da	te Received	3/20/00	_
% Moisture	not dec	0			Da	te Analyzed	3/23/00	_
GC Column	RTX5	02 ID	0 25 (mm)	Dil	ution Factor	10	_
Soil Extract \	Volume	25000	(uL)		So	ıl Aliquot Vo	olume 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	C
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	ט
74-83-9	Bromomethane	500	U
75-00-3	Chloroethane	_750	U
75-69-4	Trichlorofluoromethane	500	U
75-3 <u>5</u> -4	1,1-Dichloroethene	250	J
67-64-1	Acetone	500	U
75-1 <u>5</u> -0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	500	C
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	υ
110-75-8	2-Chloroethyl vinyl ether	500	U
10061-01-5	cis-1,3-Dichloropropene	250	Ü
108-10-1	4-Methyl-2-Pentanone	500	lυ
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	Ū
126-48-1	Dibromochloromethane	500	U
108-90-7	Chlorobenzene	250	Ū
100-41-4	Ethylbenzene	500	Ü

1A

COMPOUND

CAS NO

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD II	
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Vblk238

Q

Lab Name	<u>FM</u> ETL				_ NJDEP#	13461		
Project	UST		Case No	5260	Location	429	SDG No	_
Matrix (soil/	water)	SOIL			Lab	Sample ID	Vblk238	
Sample wt/v	oi	100	(g/ml)	G	Lab	File ID	VA007565 D	
Level (low/i	med)	MED			Date	e Received	3/20/00	
% Moisture	not dec	0			Date	e Analyzed	3/23/00	
GC Column	RTX5	02 ID	<u>0 25</u> (n	nm)	Ditu	tion Factor	10	
Soil Extract 1	Volume	25000	(uL)		Soil	Aliquot Vo	lume <u>50</u>	(uL)

CONCENTRATION UNITS

UG/KG

(ug/L or ug/Kg)

1330-20-7	m+p-Xylenes	750	Ū
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	- 11

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID

		TENT	ATIVELY	IDENT	IFIED COMPO	UNDS			\Box
Lab Name	FMETL				NJDEP#	13461		Vblk238	<u>'</u>
Project <u>l</u>	<u>US</u> T		Case No	5260	Locatro	n 429	_ SE	OG No	
Matrix (soil/wa	ater)	SOIL			La	ıb Sample	ID	Vblk238	
Sample wt/vol		100	(g/m) <u>G</u>	La	b File iD		VA007565 D	_
Level (low/me	ed)	MED			Da	ate Receiv	ed	3/20/00	_
/ Moisture no	ot dec	0			Da	ate Analyz	ed	3/23/00	_
GC Column	RTX50)2 ID	0 25	(mm)	Di	lution Fac	tor	10	
Soil Extract Vo	olume	25000	(uL))	Se	oil Aliquot	Volu	me <u>50</u>	_ (uL
Number TICs f	found	0			CONCENTRA (ug/L or ug/Kg		_		
CAS NO		COM	POUND N	AME		RT	ES	T CONC	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID

429 S3

Lab Name	FMETL			<u> </u>	NJDEP#	13461	429 53	
Project	UST	C	ase No	5260	Location	429 S	IDG No	
Matrix (soil/v	vater)	SOIL_			Lat	Sample ID	5260 01	
Sample wt/vo	ol	100	_ (g/ml) <u>G</u>	Lat	File ID	VA007573 D	
Level (low/n	ned)	MED_	_		Da	te Received	3/20/00	
/ Moisture i	not dec	173			Da	te Analyzed	3/23/00	
GC Column	RTX5	02 ID 0	25 (mm)	Dili	ution Factor	10	
Soil Extract V	/olume	25000	(uL)		So	ıl Alıquot Volu	ume <u>50</u>	(uL)

CONCENTRATION UNITS

CAS NO	COMPOUND (ug/L or ug/Kg)	UG/KG	Q
107028	Acrolein	2100	U
107131	Acrylonitrile	2100	U
75650	tert Butyl alcohol	3900	U
1634044	Methyl tert Butyl ether	900	U
108203	Di isopropyl ether	600	U
	Dichlorodifluoromethane	1200	U
74 87 3	Chloromethane	300	<u>U</u>
75 01 4	Vinyl Chloride	900	U
74 83 9	Bromomethane	600	Ų
75 00 3	Chloroethane	900	U
75 69 4	Trichlorofluoromethane	600	U
75 35 4	1,1 Dichloroethene	300	U
67 64 1	Acetone	600	U
75 15-0	Carbon Disulfide	300	U
75 09 2	Methylene Chloride	600	Ü
156 60 5	trans 1,2 Dichloroethene	600	U
75 35 3	1,1 Dichloroethane	300	U
108-05 4_	Vinyl Acetate	900	U
78 93 3	2 Butanone	900	U
	cis 1,2 Dichloroethene	300	U
67 66 3	Chloroform	300	Ū
75 55 6	1,1,1 Trichloroethane	300	U
56 23-5	Carbon Tetrachionde	600	U
71 43-2	Benzene	300	U
107 06 2	1,2 Dichloroethane	600	U
79 01 6	Trichloroethene	300	U
78 87 5	1,2 Dichloropropane	300	U
75 27 4	Bromodichloromethane	300	U
110 75 8	2 Chloroethyl vinyl ether	600	U
10061 01 5	cis 1,3 Dichloropropene	300	Ū
108 10 1	4 Methyl 2 Pentanone	600	Ū
108 88 3	Toluene	300	Ū
10061 02 6	trans 1,3 Dichloropropene	600	Ū
79 00 5	1,1,2 Trichloroethane	600	Ü
127 18 4	Tetrachloroethene	300	Ü
591 78 6	2 Hexanone	600	Ŭ
126 48 1	Dibromochloromethane	600	Ü
108 90 7	Chlorobenzene	300	Ŭ
100 41 4	Ethylbenzene	600	Ü

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID

Lab Name	FMETL			_	NJDEP#	13461	429-53	
Project	UST		Case No	5260	_ Locatio	1 <u>429</u> 5	SDG No	
Matrix (soil/v	vater)	SOIL			Lai	b Sample ID	5260 01	
Sample wt/vo	ol	100	(g/ml) <u>G</u>	_ Lai	b File ID	VA007573 D	
Level (low/n	ned)	MED			Da	te Received	3/20/00	
% Moisture in	not dec	173			Da	te Analyzed	3/23/00	
GC Column	RTX50	2 ID	0 25 (നന)	Dil	ution Factor	10	
Soil Extract V	/olume	25000	(uL)		So	ıl Alıquot Vol	ume <u>50</u>	(uL)

CONCENTRATION UNITS

CAS NO	COMPOUND	(ug/L or ug/Kg)	UG/KG	Q
1330-20-7	m+p-Xylenes		90	0 U
1330-20-7	o-Xylene		60	0 U
100-42-5	Styrene		60	0 U
75-25-2	Bromoform	<u> </u>	60	
79-34-5	1,1,2,2-Tetrachloro	ethane	60	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID

	TENTATIVELY IDENT	IFIED COMPOUNDS	
Lab Name FMETL		NJDEP# <u>13461</u>	429-\$3
Project 'UST	Case No 5260	Location 429	SDG No
Matrix (soil/water)	SOIL	Lab Sample ID	5260 01
Sample wt/vol	10 0 (g/ml) G	Lab File ID	VA007573 D
Level (low/med)	MED	Date Received	3/20/00
% Moisture not dec	173	Date Analyzed	3/23/00
GC Column RTX5	02 ID 025 (mm)	Dilution Factor	10
Soil Extract Volume	<u>25000</u> (uL)	Soil Aliquot Vol	ume <u>50</u> (uL
Number TICs found	0	CONCENTRATION UNITS (ug/L or ug/Kg) UG/KG	<u> </u>
CAS NO	COMPOUND NAME	RT E	ST CONC Q

LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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

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

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

1	Cover page, Title Page listing Lab Certification #, facility name and address, & date of report submitted	
2	Table of Contents submitted	
3	Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted	<u> </u>
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 11	Method Detection Limits submitted Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP	
Date	Laboratory Manager or Environmental Consultant's Signature	

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

Laboratory Certification #13461

Laboratory Authentication Statement

•

I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N J A.C. 7.18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW-846 for Solid Waste Analysis. I have personally examined the information contained in this report and to the best of my knowledge, I believe that the submitted information is true, accurate, complete and meets the above referenced standards where applicable. I am aware that there are significant penalties for purposefully submitting falsified information, including the possibility of a fine and imprisonment.

Daniel K Wright Laboratory Manager ^

APPENDIX B GROUNDWATER ANALYTICAL DATA PACKAGE

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
ENVIRONMENTAL DIVISION
Fort Monmouth, New Jersey
PROJECT UST Program

Bldg 429

Field Location No & Location	Laboratory Sample ID#	Matrix	Date and Time Of Collection	Date Received
Trip Blank	4136 01	Aqueous	10 Dec 98	12/10/98
Field Blank	4136 02	Aqueous	10 Dec 98 10 20	12/10/98
Bldg 429 6-10	4135 01	Aqueous	10 Dec 98 13 20	12/10/98
Bldg 429 6 10	4135 02	Aqueous	10 Dec 98 13 43	12/10/98
Field Dup	4135 03	Aqueous	10 Dec 98	12/10/98

ANALYSIS FORT MONMOUTH ENVIRONMENTAL LAB VOA+15 BN+15

Daniel Wright/Date

Laboratory Director

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CHAIN OF CUSTODY



Fort Monmouth Environmental Testing Laboratory

Bldg 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-3484 EMail appleby@dom6 monmouth army mil
NJDEP Certification #13461

Chain of Custody Record

Customer: Custo, A	PREBY/V	elsap.	Project No						Analy	ysıs P	arame	eters			Comments:
Phone #:	224		Location 810G, 429			V	13								
()DERA ()OMA (<u> </u>		Y24	N		- 1	1				
Samplers Name / Co	mpany: /	MARK LAMPA	TV.5 /	9WS 07	Sample	#	4	+]	
Lab Sample I D	I	ple Location	Date	Time	Туре	bottles	15	15							Remarks / Preservation Method
4135.01	BLOCK, 4	129 - 6- 10'	12-10 98	1320	AQ	2	X				•				Hec
2		· ,	\$1	1343	11	1		×							4406
3	FICUS .	Dup	11	×	11	3	×	×							HCL/240C
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Relinquished by (signatu			Received by (signature)		Reling	uished	by (sig	mature)		Date/	Time	Receiv	ed by	(signature)
Mark from	<u>دا ب</u>	-10-98 1540	h.M	'MM											·
Relinquished by (signatu	re)	Date/Time	Received by (signature)		Reling	luished	by (sig	mature)		Date/	Time	Receiv	ed by	(signature)
Report Type ()Full, (Seduced, ()Standard, ()Screen			en / non-certific	ed			Rema	rks							
Turnaround time Stan			, (_)ASAP Ve		S										



Fort Monmouth Environmental Testing Laboratory

Bidg. 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

Phone #: Scillaged Constant Company : Mone Lough This: Bus of Sample H	Customer: CHAS A	PPLEBY / VERSALA	Project No						Anal	ysıs P	arame	eters			Comments:
Sampler Name / Company: Moss. Louis Titles Pages Titles Pages Pages	Phone #:	64'	Location 72	106, 49	17	·	V	按			,				
Lab Sample I D Sample Location Date Time Type better 15 15 Remarks / Preservation Method (180 1 T210 St.AM)K 12-10-9 C - AQ. 2 ×	()DERA (YOMA ()Other:	<u></u>	- , , , , , , , , , , , , , , , , , , ,	, 		Ò	7							
Lab Sample I D Sample Location Date Time Type bottless 5 5 Remarks / Preservation Method	Samplers Name / Cor	mpany: Mann Laura	T.V.S. P	15 07	Sample	#	4	. '	{				{		
2 File o Rianik 102c 3 × x Mai/240c 3 Bloc 447 - 6.5 to 5 1050 2 × 4 11 -		Sample Location	Date	Time	Турс	bottles		15							Remarks / Preservation Method
Relinquished by (agnature) Date/Time Received by (agnature) Relinquished by (agnature) Date/Time Received by (agnature) Relinquished by (agnature) Received by (agnature)	4186. 1	TRIP BLANK	12-10-48		AQ.	2	×								HOL
Relinquished by (signature) Date/Time Received by (signature) Relinquished by (signature) Date/Time Received by (signature) Relinquished by (signature) Date/Time Received by (signature) Date/Time Received by (signature) Relinquished by (signature) Date/Time Received by (signature) Relinquished by (signature) Date/Time Received by (signature) Relinquished by (signature) Received by (signature) Relinquished by (signature) Received by (signature) Remarks	2	FICEO BLANK	,,	1020		3	×	×							HOL/240C
Relinquished by (signature) Date/Time 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) Relinquished by (signature) Date/Time Received by (signature) Relinquished by (signature) Received by (signature) Report Type ()Full, ()Reduced, ()Standard, ()Screen / non-certified Remarks	3	BLOG 447 -6,5 105	1.	1050	"	2	×								
Relinquished by (signature) Date/Time Received by (signature) Report Type ()Full, (Reduced, ()Standard, ()Screen / non-certified Remarks	4	(1 - h	11	1122	10	4		X							
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FIELD DOCUMENTATION

Post Remedial Groundwater Sampling at Former Underground Storage Tank Site [# 2 fuel oil]

FOR BLDG # 429

Ground Water Sampling with the use of a Passively Placed Narrow Diameter Point (PPNDP)

Objective

To collect a representative groundwater sample utilizing a narrow diameter point [PPNDP] This is a small diameter [1 inch OD] screened casing passively placed in a borehole. The casing is of p v c. construction

1 Methods

A solid push rod (bull point) is used to create a narrow diameter hole to a depth below the water table. A piece of schedule 40 PVC screen with 0 010 inch slots and an end cap is placed to the bottom of the hole. Glues or adhesives are not used for joining the casing. Threaded PVC casing is used. No filter or gravel pack is used.

2 Installation

- A Using a Geoprobe a borehole was advanced with a pre-probe with a diameter slightly larger than the casing. The hole was made to a depth of 12 feet. The water table was at 6 feet below ground surface.
- B The screened section of PVC was placed into the borehole so the screened section was across the ground water table from 5 10 feet Riser casing from 5 0 feet

3 Purging

A Three volumes of the standing water in the point were purged. The amount of water extracted was app. 0.123 gal. Three to five volumes are purged due to the potential for cross contamination of the screen from upper soil horizons. This was accomplished utilizing a peristaltic pump, and utilizing food grade tubing.

4 Şampling

A Sampling methods sample preservation requirements sample handling times decontamination procedure for field equipment and frequency for field blanks field duplicates and trip blanks conform to applicable industry methods such as those specified in the NJDEP Field Sampling Procedures Manual in effect as of the date on which sampling is performed. Any deviations from the methods in the Field Sampling Procedures Manual pursuant to N J A C 7 26E 16(c) has been approved by the person responsible for conducting the remediation.

All samples were preserved in the field immediately after collection and submitted to the laboratory as soon as possible and no later than 48 hours after sample collection

The acquisition of samples and water level measurements were performed as recommended and described in the May 1992 edition of NJDEP Field Sampling Procedures Manual

5. Quality Assurance/Quality Control

A Decontamination

The associated equipment (bull point, riser pipe, etc.) was decontaminated between borings using the following procedure

- 1 Remove all adherent soil material
- 2 Wash with a laboratory grade glassware detergent
- 3 Rinsed with potable water
- 4 Rinse with distilled and deionized ASTM Type II water
- B Field Blanks
 - 1 Field blank was shared with bldg 447, taken same day
- C Sample bottles Supplied by Environmental Sampling Supply, Oakland, Calif The sample bottles are certified clean and are sealed upon delivery
- D PVC Screens Supplied by Bedrock Enterprises, Forked River NJ

Geoprobe Operator Mark Laura Employer U S Army, Fort Monmouth Phone Number [732] 532-8990 NJDEP License # J-1486

> Malle faur 12-10 - 18 Mark Laura / Date

METHODOLOGY SUMMARY

Methodology Summary

EPA Method 624
Gas Chromatographic Determination of Volatiles in Water

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

EPA Method 3510/8270

Gas Chromatographic Determination of Semi-volatiles in Water

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.

CONFORMANCE/ NON-CONFORMANCE SUMMARY

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

		Indicate Yes, No, N/A
1	Chromatograms Labeled/Compounds Identified (Field Samples and Method Blanks)	<u>4es</u>
2	Retention times for chromatograms provided	<u>YES</u>
3	GC/MS Tune \$pecifications	
	a BFB Meet Criteria b DFTPP Meet Criteria	<u>yes</u> yes 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
5	GC/MS Calibration Requirements	
	a Calibration Check Compounds Meet Criteria b System Performance Check Compounds Meet Criteria	nes nes
7	Blank Contamination - If yes, List compounds and concentrations in each blank	<u>100</u>
	a VOA Fraction	
	b B/N Fraction	
	c Acid Fraction NF.	
8	Surrogate Recovenes Meet Criteria	<u>100</u>
	If not met, list those compounds and their recoveries which fall outside the acceptable range	
	a VOA Fraction 12 Dichoece Trans - 4 122 % 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 Dupitcate Recoveries Meet Criteria (If not met list those compounds and their recoveries which fall outside the acceptable range)	لهثك
	a VOA Fraction	
	b B/N Fraction	
	c Acid Fraction ND	

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

			Indicate Yes No N/A
10		Area/Retention Time Shift Meet Criteria lose compounds which fall outside the acceptable range)	yes
	a.	VOA Fraction	
	ь	B/N Fraction	
	c	Acid Fraction	
11	Extraction Holdu	ng Time Met	yes
	If not met, list the	e number of days exceeded for each sample	
12	Analysis Holding	Time Met	<u> 465</u>
	If not met, list the	number of days exceeded for each sample	1
Add	itional Comments		
Lab	oratory Manager _	Date 2799	

LABORATORY CHRONICLE

Laboratory Chronicle

Lab ID: 4136 Site: Bldg 429

		Date	Hold Time
Da	te Sampled	12/10/98	NA
Re	ceipt/Refrigeration	12/10/98	NA
Ex	tractions		
1	Base Neutrals	12/14/98	14 days
Ar	nalyses		
1 2	Volatile Organics Base Neutrals	12/15/98 12/21,22/98	14 days 40 days

VOLATILE ORGANICS

US ARMY FT MONMOUTH ENVIRONMENTAL LABORATORY NJDEPE # 13461

Definition of Qualifiers

MDL	Method Detection Limit
J	Compound identified below detection limit
В	Compound in both sample and blank
D	Results from dilution of sample
¥7	Compound searched for but not detected

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

Data File Namvb02376 dSample NameVblk74OperatorSkeltonField IDVblk74Date Acquired15 Dec 98 11 53 amSample Multipher1

CAS#	Compound Name	RT	Response	Result	Regulatory Level (ug/l)*	MDL	Oualifler
107028	Acrolein			not detected	50	1 85 ug/L	
107131	Acrylonitale			not detected	50	2 78 ug/L	
75650	tert-Butyl alcohol		-	not detected	nle	8 52 ug/L	
1634044	Methyl-tert-Butyl ether	_		not detected	nle	0 16 ug/L	
108203	D1-1sopropyl ether			not detected	nle	0 25 ug/L	
100203	Dichlorodifluoromethan			not detected	nle	i 68 ug/L	
74-87-3	Chloromethane			not detected	30	116 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1 06 ug/L	
74-83-9	Bromomethane			not detected	10	1 10 ug/L	
75-00-3	Chloroethane	_		not detected	nle	101 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0 50 ug/L	
75-35-4	1,1-Dichloroethene		_	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	046 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	
- 10-75-5	cis-1,2-Dichloroethene			not detected	10	0 17 ug/L	
67-66-3	Chloroform		_	not detected	6	0 30 ug/1.	
75-55-6	1,1,1-Trichloroethane			not detected	30	0 23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	047 ug/L	
71-43-2	Benzene			not detected	1-	0 23 ug/L	
107-06-2	1,2-Dichloroethane		-	not detected	1 2	0 18 ug/L	
79-01-6	Trichloroethene	_		not detected	1 1	0 23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	†- 	0 40 ug/L	
75-27-4	Bromodichloromethane			not detected	† ; 	0 55 ug/L	
	2-Chloroethyl vinyl ethe			not detected	nle	0 65 ug/L	
	cis-1,3-Dichloropropene			not detected	nte	0 69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0 59 ug/L	
108-88-3	Toluene	\neg		not detected	1000	0 37 ug/L	
	trans-1,3-Dichloroprope			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 7	0 32 ug/L	
	2-Hevanone			not detected	nle	071 ug/L	
126-48-1	Dibromochloromethane	1		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	
	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-Tetrachloroethan	┰		not detected	2	0 47 ug/L	
541-73-1	1 3-Dichlorobenzene			not detected	600	0 55 ug/L	$\overline{}$
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	
1-70-1	1-2-Dictroroperserie		CDOI	not detected		V VV UEV	

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

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

18 VOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID TENTATRIEI VIDENTIEIED COMPOLINDS

		IENIA	HIVELY	IDENII	LIED COM	שמטטי	3		W. H. 7	.
Lab Name	FMETL				Project	980	0211	_	Vblk74	<u>'</u>
NJDEP#	13461	с	ase No	<u>4</u> 135	SDG	No _	l	ocation	UST	
Matroc (soil/w	rater)	WATER	_			Lab Sa	mple ID	Vblk74		
Sample wt/vo	ol	50	_ (g/ml) <u>ML</u>		Lab File	e ID	VB0237	76 D	_
Level (low/m	ned)	LOW	_			Date R	ecerved	12/10/9	8	_
% Moisture in	ot dec					Date A	nalyzed	12/15/9	8	
GC Column	HP5MS	<u>s</u> ID <u>0</u>	25 (mm)		Dilution	Factor	10		
Soil Extract V	olume		(uL)			Soil Ali	quot Volu	ıme		(uL)
		_			CONCENTR		UNITS UG/L			
Number TICs	found	0								
CAS NO		СОМРО	UND NA	ME		R	ΓΕ	ST CON	С	Q

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

Data File Nam vb02381 d
Operator Skelton

Operator Skelton
Date Acquired 15 Dec 98 4 07 pm

Sample Name Field ID

4136 01 Trip Blank

Sample Multiplier 1

CAS#	Compound Name	<u>R</u> T	Response	Result		Regulatory Level (ug/l)*	MDL	Qualifier
107028	Acrolein			not	detected	50	1 85 ug/L	
107131	Acrylonitale			not	detected	50	2 78 ug/L	
75650	tert-Butyl alcohol			not	detected	nle	8 52 ug/L	
1634044	Methyl-tert-Butyl ether			not	detected	nle	0 16 ug/L	
108203	Di-isopropyl ether			not	detected	ale	0 25 ug/L	
	Dichlorodifluoromethan			not	detected	nle	I 68 ug/L	
74-87-3	Chloromethane			not	detected	30	1 16 ug/L	
75-01-4	Vinyl Chloride			not	detected	5	106 ug/L	
74-83-9	Bromomethane			not	detected	10	i 10 ug/L	
75-00-3	Chloroethane			not	detected	nle	101 ug/L	
75-69-4	Trichlorofluoromethane			not	detected	nle	0.50 ug/L	
75-35-4	1.1-Dichloroethene			not	detected	2	0 24 ug/L	
67-64-1	Acetone			not	detected	700	1 36 ug/L	-
75-15-0	Carbon Disulfide				detected	nle	0 46 ug/L	
75-09-2	Methylene Chlonde				detected	2	0 24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not	detected	100	016 ug/L	
75-35-3	1,1-Dichloroethane			not	detected	70	012 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				detected	6	030 ug/L	
75-55-6	i, i, i-Trichloroethane			not	detected	30	0 23 ug/L	
56-23-5	Carbon Tetrachlonde				detected	2	0 47 ug/L	
71-43-2	Benzene				detected		0 23 ug/L	
107-06-2	1,2-Dichloroethane			not	detected	2	0 18 ug/L	
79-01-6	Trichloroethene		- T	not	detected		0 23 ug/L	
78-87-5	1,2-Dichloropropane			not	detected		0 40 ug/L	
75-27-4	Bromodichloromethane				detected	1	0 55 ug/L	
110-75-8	2-Chloroethyl vinyl ethe				detected	nle	0 65 ug/L	
10061-01-5					detected	nle	0 69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not	detected	400	0 59 ug/L	
108-88-3	Toluene				detected	1000	0 37 ug/L	
	trans-1,3-Dichloroprope				detected	nle	0 87 ug/L	
79-00-5	1,1,2-Trichloroethane				detected	3	0 48 ug/L	
127-18-4	Tetrachloroethene				detected		0 32 up/L	
591-78-6	2-Heyanone				detected	nle	071 ug/L	
	Dibromochloromethane				detected	10	0 86 ug/L	_
108-90-7	Chlorobenzene	$\neg \neg$			detected	4	0 39 ug/L	
100-41-4	Ethylbenzene				detected	700	0 65 ug/L	
	m+p-Xylenes				detected	nle	1 14 ug/L	
1330-20-7	o-Xylene	-			detected	nle	0 62 ug/L	
100-42-5	Styrene	-			detected	100	0 56 ug/L	
75-25-2	Bromoform				detected	4	0 70 ug/L	
79-34-S	1,1,2,2-Tetrachlorocthan		- 1		detected	2	0 /0 up/L	
541-73-1	1,3-Dichlorobenzene				detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene				detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene				detected	600	0 64 ug/L	
7.5-30-1	L' PINITOIONEIRE TE			1101		<u> </u>	v <u>v</u> i uwll	

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

<u>Qualifiers</u>

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

Lab Name	FMETL				Project	980211		Tr	ip Blan ———	k
NJDEP#	13461	(Case No	4136	SDG I	No	Loc	ation	UST	<u> </u>
Matroc (soil/w	rater)	WATER	<u>!</u>		Ł	ab Sample	ID 4	136 01		
Sample wt/vo	i	50	(g/ml)	ML_	L	ab File ID	<u>v</u>	B0238	1 D	_
Level (low/m	ned)	LOW				ate Recen	red <u>1</u>	2/10/98	B	_
% Moisture n	ot dec				0	ate Analyz	ed <u>1</u>	2/15/98	В	
GC Column	HP5MS	S_ID	<u>0 25</u> (ı	nm)	0	dution Fac	tor <u>1</u>	0		_
Soil Extract V	olume		(uL)		S	ioii Aliquot	Volum	B		_ (uL)
Number TICs	found	0		_	ONCENTRA ug/L or ug/K		-			
Г					 ,		}			
CAS NO		COMP	AN DNUC	ME		RT	EST	CON	c	Q

Volatile Analysis Report US Army Fort Monmouth Environmental Laboratory NJDEP Certification #13461

Data File Nam vb02382 d
Operator Skelton

Sampl Name Field ID 4136 02 Field Blank

Date Acquired 15 Dec 98 4 52 pm

Sample Multiplier

1

					Reg lat ry Level		
CAS#	Compound Name	RT	Respons	Result	(ng/l)	MDL	Qualifier
107028	Acrolein			not detected	50	185 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	al	016 g/L	
108203	Di isopropyl ether			not detected	nle	0 25 ug/L	
	Dichlorodifluoromethan			not detected	nle	168 ug/L	
74-87 3	Chloromethane			not detected	30	1 16 ug/L	
75-01-4	Vinyl Chlonde			not detected	5	106 ug/L	
74 83 9	Bromomethane			not detected	10	l lO ug/L	
75-00-3	Chloroethane			not detected	nie	101 ug/L	
75-69-4	Trichlorofluoromethane	_		not detected	nle	0 50 ug/L	
75 35-4	1,1 Dichloroethene			not detected	2	0 24 ug/L	
67-64 1	Acetone	_		not detected	700	1 36 ug/L	
75 15-0	Carbon Disulfide		i i	not detected	nle	0 46 ug/L	
75-09 2	Methylene Chlonde			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		1	not detected	10	017 g/L	_
67-66-3	Chloroform	-	1	not detected	6	0 30 ug/L	
75 55-6	1,1,1 Trachloroethane		 	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	1 2	0 18 ug/L	
79-01-6	Trichloroethene		1	not detected	1 1	0 23 ug/L	_
78 87 5	1,2 Dichloropropane		 	not detected	† <u>i</u>	0 40 ug/L	
75 27-4	Bromodichloromethane		 	not detected	1 1	0 45 ug/L	
110-7>-8	2-Chloroethyl vnyl ethe			not detected	nle	0 65 ug/L	-
	cis-1,3 Dichloropropene		 	not detected	nle	0 69 ug/L	
108-10-1	4 Methyl 2 Pentanone		1	not detected	400	0 59 ug/L	
108-88-3	Toluene		 	not detected	1000		
	+		 	not detected	Ť	0 37 ug/L	
79-00-5	trans 1,3 Dichloroprope 1,1,2 Trichloroethane		 		nle	0 87 ug/L	
	Tetrachloroethene		 	not detected	3	0 48 ug/L	
127 18-4				not detected	1 !	0 32 g/L	<u> </u>
591 78-6	2 Hexanone	-	 	not detected	nle	0 71 ug/L	
	Dibromochloromethane	~		not detected	01	0 86 ug/L	
108 90 7	Chlorobenzene		 	not detected	4	0 39 ug/L	
100-41-4	Ethylbenzene		<u> </u>	not detected	700	0 <u>65 ug/L</u>	
1330 20 7	m+p-Xylenes		 	not_detected	nie	1 14 ug/L	 -
1330 20 7	o-Xylene		 	not detected	nle	0 62 up/L	
100-42 5	Styrene		 	not detected	100	0 56 ug/L	
<u>75 25 2</u>	Bromoform			not detected	4	0 70 ug/L	
70 34 5	1,1,2,2 T t hlometh n		ļ	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		1 T	not detected	600	0 64 ug/L	

Higher of PQLs and Ground Water Quality Criteria as per N J A C 79-6

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

Lab Name	FMETL				Project	980211	<u> </u>	Field	Blank
NJDEP#	13461	Cas	e No	4136	_ SDG N	10	Lo	cation US	ST
Matroc (soil/v	vater)	WATER_			L	ab Sample	e ID	4136 02	
Sample wt/v	ol	50	(g/ml) <u>ML</u>	_ L	ab File ID	,	VB02382 D)
Level (low/r	ned)	LOW			D	ate Recer	ved j	12/10/98	
% Moisture	not dec				D	ate Analy	zed _	12/15/98	
GC Column	HP5M	S ID 02	5_ (നന)	D	ilution Fac	ctor _	10	
Soil Extract V	/olume		(uL)		s	oil Aliquot	Volun	ne	(uL)
				CC	NCENTRA	TION UN	ITS		
Number TIC:	s found	0	-	(ug	J/L or ug/Kg) <u>UG</u>	i/L		
CAS NO		COMPOUN	ND NA	ME		RT	EST	CONC	Q

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

Data File Nam vb02379 d

Sample Name

4135 01

Operator Skelton

Date Acquired 15 Dec 98 2 38 pm

Field ID Sample Multiplier

Bldg429

CAS#	Compound Name	RТ	Response	Result	Regulatory Level (ug/l)*	MDL	Qualifier
107028	Acrolem			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	nle	0 16 ug/L	
108203	D1-1sopropyl ether			not detected	nle	0 25 ug/L	t
100000	Dichlorodifluoromethan			not detected	лІе	1 68 ug/L	
74-87-3	Chloromethane			not detected	30	1 16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1 06 ug/L	
74-83-9	Bromomethane			not detected	10	1 10 ug/L	
75-00-3	Chloroethane	_		not detected	nle	101 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0 50 ug/L	
75-35-4	1,1-Dichloroethene		-	not detected	2	0 30 ug/L 0 24 ug/L	
67-64-1	Acetone			not detected	700	1 36 ug/L	
75-15-0	Carbon Disulfide			not detected	nie		
75-09-2	Methylene Chloride		-	not detected	2	0 46 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected		0 24 ug/L	
75-35-3					100	0 16 ug/L	
	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	
45.44.5	cis-1,2-Dichloroethene			not detected	10	0 17 ug/L	
67-66-3	Chloroform			not detected	6	0 30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0 23 ug/L	
56-23-5	Carbon Tetrachlonde			not detected	2	0 47 ug/L	
71-43-2	Benzene	I		not detected		0 23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	018 ug/L	
79- <u>0</u> 1-6	Trichloroethene			not detected		0 23 ug/L	
78-87-5	1,2-Dichloropropane			not detected		0 40 ug/L	
75-27-4	Bromodichloromethane			not detected		0 55 ug/L	
110-75-8	2-Chloroethyl vinyl ethe			not detected	nle	0 65 ug/L	
	cis-1,3-Dichloropropene			not detected	nle	0 69 կջ/Լ	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0 59 պջ/Լ	
108-88-3	Toluene			not detected	1000	0 37 ug/L	
	trans-1,3-Dichloroprope			not detected	nle	087 ug/L	
79 <u>-0</u> 0-5	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-He\anone			not detected	nle	071 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0 86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0 39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0 65 ug/L	
	m+p-Xylenes			not detected	nle	1 14 ug/L	
	o-Xylene			not detected	nle	0 62 ug/L	
100-42-5	Styrene			not detected	100	0 56 up/L	
75-25-2	Bromoform	<u> </u>		not detected	4	0 70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethan			not detected	2	0 47 ug/L	
	1,3-Dichlorobenzene			not detected	600	0 55 ug/L	─ ──ſ
	1,4-Dichlorobenzene			not detected	75	0 57 ug/L	
	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

Qualifiers

B = Compound found in related blank

E = Value above linear range

D = Value from dilution

PQL = Practical Quantitation Limit

MDL = Method Detection Limit NLE = No Limit Established

RT = Retention Time

1E VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID

		IENIKI	IVELT IDI		D COMPO	DINDS				1
Lab Name	FMETL			·	Project	980211		в	ldg 42	29
NJDEP#	13461	Cas	se No <u>4</u>	135	_ SDG N	o	_ Lo	cation	UST	
Matroc (soil/w	vater)	WATER			La	b Sample	ID	4135 01		
Sample wt/vo	ol	50	(g/ml)	ML	La	ib File ID		VB0237	9 D	
Level (low/n	ned)	LOW	-		D	ate Receiv	red	12/10/9	8	_
% Moisture i	not dec				D	ate Analyz	ed:	12/15/9	8	
GC Column	HP5M	IS ID 02	25 (mr	n)	D	lution Fac	tor	10		_
Soil Extract V	/olume		_ (uL)		S	oil Aliquot	Volu	me		_ (uL)
Number TIC:	s found	0			NCENTRA L or ug/Kg		_			
CAS NO		COMPOU	ND NAM	E		RT	ES	T CON	С	Q

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

Data File Nam vb02380 d Operator Skelton Sample Name Field ID 4135 03 Field Dup

Date Acquired 15 Dec 98 3 23 pm

Sample Multiplier

CAS#	Compound Name	RT	Response	Result	Regulatory Level (ug/l)*	MDL	Qualifier
107028	Acrolem			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	nle	0 i6 ug/L	
108203	Di-isopropyl ether			not detected	nie	025 ug/L	
	Dichlorodifluoromethan			not detected	nle	1 68 ug/L	
74-87-3	Chloromethane			not detected	30	l 16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1 06 ug/L	
74-83-9	Bromomethane			not detected	10	1 10 ug/L	
75-00-3	Chloroethane			not detected	nle	101 ug/L	
75-69-4	Trichlorofluoromethane			not detected	gle	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	046 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	
10-73-3	cis-1 2-Dichloroethene			not detected	10	0 17 ug/L	
67-66-3	Chloroform			not detected	6	030 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0 23 ug/L	
56-23-5	Carbon Tetrachlonde			not detected	2	0 47 ug/L	
71-43-2	Benzene			not detected	1 7	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 1	0 55 ug/L	
110-75-8	2-Chloroethyl vinyl ethe			not detected	nle	0 65 ug/L	_
	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	<u> </u>
108-88-3	Toluene			not detected	1000	0 37 ug/L	
10061-02-6				not detected			
79-00-5	1,1,2-Trichloroethane			not detected	nle 3	0 87 ug/L	
127-18-4	Tetrachloroethene			not detected	1 1	0 48 ug/L	
591-78-6	2-Hevanone			not detected	nle	0 32 ug/L	
126-48-1						071 ug/L	
	Dibromochloromethane Chloroberger			not detected	10	0 86 ug/L	
108-90-7	Chlorobenzene			not detected not detected	700	0 39 ug/L	
100-41-4	Ethylbenzene	_	 -	not detected not detected	700	0 65 ug/L	
1330-20-7	m+p-Xylenes				nie	1 14 ug/i.	
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 1 1 2,2-Tetrachloroethan			not detected	4-	0 70 ug/L	∤
79-34-5				not detected	600	0 47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected not detected	600	0 55 ug/L	
106-46-7	1,4-Dichlorobenzene				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

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

		ICHIAIIV	CLI IDLIN		CONDS	*	E.,	eld Du	_
Lab Name	FMETL			Project	98021	1	(F)	eiu Du	<u> </u>
NJDEP#	13461	Case	No <u>4135</u>	SDG	No	Loc	ation	UST	
Matrix (soil/w	rater)	WATER			Lab Samp	le ID <u>4</u>	135 03		
Sample wt/vo	ol	50	(g/mi) ML		Lab File ID	<u>v</u>	B0238	0 D	_
Level (low/n	ned)	LOW			Date Rece	rved 1	2/10/98	3	
% Moisture r	not dec				Date Analy	/zed <u>1</u>	2/15/98	3	
GC Column	HP5M	S ID <u>0 25</u>	(mm)		Dilution Fa	ctor 1	0		
Soil Extract V	olume		(uL)		Sod Aliquo	t Volum	e		_ (uL)
				CONCENTE	NU NOITAS	NITS			
Number TICs	found	0		(ug/L or ug/l	(g) <u>U(</u>	3/L			
CAS NO		COMPOUN	D NAME		RT	EST	CONC	;	Q

BASE NEUTRAL

Semi-Volatile Analysis Report

US Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

 Data File Name
 BN 072453 D
 Sample Name
 Sblk180

 Operator
 Sketten
 Misc info
 Sblk180 A 981214

Date Acquired 21-Dec-98 Sample Multiplier 1

CASI	Name	_R.T	Response	Result	Regulatory Level (ug/L)*	MDL	0-25
110-86-1	Pyridme	T		not detected	NLE	5 00 mg/L	0-16,
62 75-9	N-miroso-dimethylenime	\vdash		not detected	20	094 pg/L	
62 53 3	Andine			not detected	NLE	0 15 ug/L	†
111-44-4	bts(2-Chloroethyl)ether	Ì	_	not detected	10	0 48 cm/L	†
106-46-7	(.4-Dichlorobenzene			not detected	75	0 23 tre/L	
100-51-6	Benzyl alcohol			not detected	NLE	018 mm/L	•
95-50-1	1.2 Dichlorobenzene			not detected	600	0 16 mg/L	-
108-60-I	bus(2-chiorossopropyl)ether			not detected	300	061 cs/L	
67-72-1	Hexschloroethane			not detected	10	033 us/L	
98 95-3	Nitrobenzene			not detected	10	0 46 ug/L	
78-59-1	Isophorone			not detected	100	0.35 vs/L	
111-91 1	bes(2-Chloroethoxy)methene			not detected	NLE	0 46 ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0 26 ug/L	
120-82 1	1 2,4 Trichlorobenzene			not detected	9	0 25 ug/L	
91 20-3	Naphthalene			not detected	NLE	0 25 ug/L	
106-47 8	4-Chloroansime			not detected	NLE	0 19 up/L	
87-68-3	Hexachlorobutadiene			not detected	1	0 38 ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0 16 uz/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	1 50 um/L	
91-58-7	2-Chloronaphthalene	<u>L</u>		not detected	NLE	032 ug/L	
88-74-4	2 Narozniline	L		not detected	NLE	021 us/L	
131 11 3	Dimethylphthalate			not detected	7000	0 18 ug/L	
208-96-8	Acensphthylene			not detected	VILE	0 19 ug/L	
606-20-2	2,6-Dinstrotoluene			not detected	NLE	031 vg/L	ļ
99-09-2	3-Naroenilme	<u> </u>		not detected	NLE	0 26 ug/L	
B3-32 9	Acenaphthene	ļ		not detected	400	0 26 pg/L	
132-64 9	Diberzofuran	\vdash		not detected	NLE	0 32 ug/L	
121-14-2	2,4-Duntrotoluene	<u> </u>		not detected	_10	036 119/1.	
B4-66-2	Diethylphthalate	<u> </u>		not detected	5000	0 82 ug/L	
86-73 7	Fluorene			not detected	300	0 29 up/L	 -
7005-72 3	4-Chiorophenyl-phenylether	_		not detected	NLE	031 us/L	├
100-01-6	4-Naroamime	\vdash		not detected	NLE	0 90 uz/L	
<u>86-30-6</u>	n Nigrosodiphenylamine			not detected	20	0 23 væ/L	
103 33 3	Azobenzene			not detected	NLE	0 80 uz/L	
101-55-3	4 Bromophenyl-phenylether	\vdash		not detected	NLE	0.55 ue/L	
11B-74-I	Hexachlorobenzene			not detected	IO	0 82 122 /L	$\vdash \vdash \vdash$
<u>\$5-01-8</u>	Phenothrene	H		not detected	NLE	0 18 us/L	├
120-12 7	Anthracene	\vdash		not detected	2000	0 19 mg/L	\vdash
84 74-2	D1-n-butylphthalate			not detected	900	0 23 ue/L	┝──┤
<u>206-44-0</u>	Fluoranthene			not detected	300	0 41 ag/L	
92 87-5	Benzidine			not detected	50	1 45 ug/L	
129-00-0	Butvibenzylphthalate			not detected	200 100	0 32 ug/L 0 47 ug/L	
85-68-7		\vdash		not detected	100	0 22 mg/L	
56-55-3	Benzofalanthracene 3_3'-[7rchlorobenzatione			not detected	60	0 45 uz/L	
91-94-1		\vdash		not detected	20	0 20 un/L	
<u>218-01 9</u>	Chrysene bus(2 Ethylhexyl)phthalate	-		not detected	30	0 20 un/L	
117- <u>81-7</u>		\vdash		not detected	Inn	0.51 cm/1	(
117-84-0	Dy-n-petylphthalate	 		not detected	10	037 us/L	
205-99-2 207-09-0	Benzolbithoranthene Benzolkithoranthene	\vdash		not detected	2	032 ug/L	
207-08-9	Benzolalpyrene			not detected	20	031 ug/L	
50-32 8 193 39 5	Indeno[1 2,3-cd]pyrene			not detected	20	0 79 ug/L	
193 39 3 53-70-3	Dibergia hlanthracene			not detected	20	0 28 ug/L	
33-70-3 191-24 2	Benzo(a h.i)perviene			not_detected	NLE	0 40 pg/L	
71-67 6	Transfer and the angular						

* Higher of PQL's and Ground Water Criteria as per \JAC 7 9-6

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

		- - · · · · · · · · · · · · · · · · · · ·						Sbik1	gn I
Lab Name	FMETL			_ Lab Cod	'	13461			
Project	98-0932	Case No	4135	Locati	on	Bldg 4	<u> </u>	DG No	
Matrix (soil/	water)	WATER		L	ab	Sample	ID	Sblk180	
Sample wt/vo	ol .	1000 (g/ml)	ML	_	ab	File ID		BN02453 D	
Level (low/n	ned)	LOW			ate	Receiv	red	12/10/98	
% Moisture		decanted (Y/N)	N C)ate	Extrac	ted	12/14/98	
Concentrated	d Extract V	Volume <u>1000</u>	(uL))ate	Analyz	ed	12/21/98	
Injection Volu	ume <u>10</u>) (uL)		Ε	Dilut	ion Fac	tor	10	
GPC Cleanu	p (Y/N)	NpH							
Number TICs	s found	0		CONCEN			UNI UG/I	_	
CAS NUME	BER	COMPOUND NA	ME			RT	ES	T CONC	Q

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

 Data File Name
 BN02467 D
 Sample Name
 4136,02

 Operator
 Skeltas
 Misc Info
 Field Blank

 Date Acquired
 22-Dec-98
 Sample Multiplier
 1

CAS#	Name	R.T	Response	Result	Regulatory Level (ng/L)*	MDL	Oyulifers
110-86-1	Pyridine	\mathbf{I}^{-}		not detected	NLE	5 00 ug/	
62 75-9	N-ratroso-dimethylerane] .		not detected	20	0 94 127/	
62 53-3	Aniline	T		not detected	NLE	0 15 up/	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0 48 up/	
106-46-7	1,4-Dichlorobenzene			not detected	75	0 23 cm/	
100-51-6	Benzyl alcohol			not detected	NLE	0 18 02/	
95-50-1	1,2-Dichlorobenzene			not detected	600	0 16 up/	
108-60-1	bus(2-chlorousopropyl)ether			not detected	300	06l up/	
67-72-1	Hexachloroethane			not detected	10	0.33 ug/	
98-95-3	Nitrobenzene			not detected	10	0 46 up/	
78-59-1	Isophorone			not detected	100	0 35 up/	
111 91 1	bu(2-Chloroethoxy)methane			not_detected	NLE	0 46 09/	
65-85-0	Benzoic Acid			not detected	NLE	0 26 ug/	.
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0 25 ug/	
91 20-3	Naphthalene			not detected	NLE	0 25 02/	
106-47-8	4-Chkgomalme			not detected	NLE	0 19 cg/	1
27-68-3	Hexachiorobutadiene			not detected	1	0 38 159/	, [
91-57-6	2 Methylnaphthalene			not detected	NLE	0 16 05/	L .
77-47-4	Herachlorocyclopentadiene			not detected	50	1 50 ug/	
91-58-7	2-Chloronaphthalene			not detected	NLE	0 32 us/	
22-74-4	2 Naroanshne			not detected	NLE	0 21 up/	
131-11-3	Dunethylphthalate	4—		not detected	7000	0 18 up/	
208 96-8	Acenzobibylene	1		not detected	NLE	0 19 up/	
606-20-2	2,6-Dantrotoluene	\perp		not detected	NLE	031 ws/	
99-09-2	3-Naroandme			not detected	NLE	<u>0 26 vg/</u>	
83-32-9	Acensoluthens	lacksquare		not detected	400	0 26 ug/	<u></u>
132-64-9	Dibenzofurun	1		not detected	NLE	6 32 vap/	
121-14-2	2,4-Destrotokarne	+		not detected	10	0.36 ug/	
84-66-2	Diethylphthalata	+		not detected	5000	0 82 us/	
86-73-7	Fluorens	+		sot detected	300	0 29 vg/	<u>- </u>
7005-72-3	4-Chlorophenyl-phenylether	1		not detected	NLE	031 05/	1
100-01-6	4-Nitroensime	-	_	not_detected	NLE	0 90 🖙	
<u>86-30-6</u>	a-Narosodiphenylamine	1		not detected	20	0 23 ug/	
103-33-3	Azobenzene	+		not detected	NLE	0 80 00/	
101 55-3	4-Bromophenyl-phenylether	1		sot detected	NLE	0 55 mg/	
118-74-1	Hexachiorobenzene	+ -		not detected	10	0 82 mg/	1
85-01-8	Phenanthrene	+ 1		not detected	NLE	011 02/	
120-12-7	Anthracene	1 1		not detected	2000	0 19 ug/	_
24 74-2	Dr n-butyiphthalate	+ - 1		not detected	900	0 23 ug/	
206-44-0	Fluorenthene	1 -		not detected	300	041 up/	
92-17-5	Benzidine	╅		not detected	50	1 45 ug/ 0 32 ug/	
129-00-0	ryrene	╫			200		-
85-68-7	Butylbenzylphthalate	1		not detected	100	0 47 mg/	
56-55-3	Benzola lanthracene	╂─┤	_	not detected	10	022 027	
91-94-1	3,3'-Dichlorobenzidine	╂╌╼╌┤		not detected	60	0.46 ug/	
218-01 9	Chrystone	╫		not detected	. 20	0 20 02/	_
11781-7	bis(2 Ethylhexyl)phthalate	╂─┤		not detected	30	0.51 122/	- i
11784-0	Dr-n-octylphthalate	┼─┤		not detected	100	0 82 us/	
205-99-2	Benzo[b]fluoranthene	 		not detected	10	0 37 ug/	
207-03-9	Benzolk fluoranthene	+		not detected	2	0 32 ug/	
50-32-8	Benzola pyrene	 		not detected	20	031 02/	_
193-39-5	Indeno(1,2 3-cd)pyrene	╁		not detected	20	0 79 ug/	1
<u>53-70-3</u>	Dibenzia, hlanthracene	╁		not detected	20	0 28 92/	
19 24-2	Benzo[g_h_i]perviene	<u></u>		not detected	NLE	0.40 us/	<u>. </u>

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

Qualifiers

E= Value Exceeds Linear Range D= Value from dilution B= Compound in Related Blank PQL= Practical Quantitation Limit MDL= Method Detection Limit NLE= No Limit Established R.T =Retention Time 1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Field ID TENTATIVELY IDENTIFIED COMPOUNDS

RT

EST CONC

Q

Lab Name	FMETL				_ Lab Cod	13461		rieid Biank
Project.	98-0932	<u>!</u>	Case No	4136	Locatio	n <u>UST</u>	SI	DG No
Matrix (soil/	water)	WATER	₹		La	b Sample	dl s	4136 02
Sample wt/v	ol	1000	(g/m!) <u>ML</u>	La	b File ID		BN02467 D
Level (low/	med)	LOW	.		Da	ite Recer	ved	12/10/98
% Moisture		0	decanted	(Y/N) _	N Da	ite Extrac	ted	12/14/98
Concentrate	d Extract	Volume	1000	_ (uL)	Da	ite Analyz	ed	12/22/98
Injection Vol	ume <u>1 (</u>) (uL	.)		Dil	ution Fac	tor	10
GPC Cleanu	p (Y/N)	N	pH _					
					CONCENT	RATION	UNI1	rs
Number TIC	s found	0			(ug/L or ug	/Kg)	UG/I	L

COMPOUND NAME

CAS NUMBER

Semi Volatile Analysis Report

US A my Fo t Monmouth En iro mental Laboratory

NJDEP Certification #13461

Data FI Nam BN02465 D Operator Skel

Sampl Nam Misc Inf

4135 02 Bidg429

Date Acquired 2 Dec 98

Sampl Multipler

Name						Regula ry Level			
19.85c Principus	CAS#	_ ` m	R.T	Respo so	Res 1		MDL		Ourificers
23 25 3 Namerous check lamum De deste ed 20 0.94 gr. 11444 Bart Chieronichiether De deste ed N.E. 0.15 gr. 11444 Bart Chieronichiether De deste ed N.E. 0.15 gr. 11444 Bart Chieronichiether De deste ed 10 0.48 gr. 11444 Bart Chieronichiether De deste ed 10 0.48 gr. 125 26-1 1.4 Destabusheraten De deste ed 10 0.48 gr. 125 26-1 1.2 Destabusheraten De deste ed 0.00 0.16 gr. 125 26-1 1.2 Destabusheraten De deste ed 0.00 0.16 gr. 127 1 Breachbrowchan De deste ed 10 0.33 gr. 127 1 Breachbrowchan De deste ed 10 0.33 gr. 128 27 1 Breachbrowchan De deste ed 10 0.33 gr. 128 27 1 Breachbrowchan De deste ed 10 0.35 gr. 128 27 1 Breachbrowchan De deste ed 10 0.35 gr. 128 27 1 Breachbrowchan De deste ed 10 0.35 gr. 128 27 1 Breachbrowchan De deste ed 10 0.35 gr. 129 21 1.2 4 T Broodbrowch symethoms De deste ed 10 0.05 gr. 120 21 1.2 4 T Broodbrowch De deste ed 0.00 0.05 gr. 120 21 1.2 4 T Broodbrowch De deste ed 0.00 0.05 gr. 120 21 1.2 4 T Broodbrowch De deste ed 0.00 0.05 gr. 120 21 1.2 4 T Broodbrowch De deste ed 0.00 0.05 gr. 120 21 2.2 4 Broodbrowchan De deste ed 0.00 0.05 gr. 120 22 4 Broodbrowchan De deste ed 0.00 0.05 gr. 120 23 24 4 Broodbrowchan De deste ed 0.00 0.00 gr. 120 24 25 4 Broodbrowchan De deste ed 0.00 0.00 gr. 120 24 25 4 Broodbrowchan De deste ed 0.00 0.00 gr. 120 25 4 Broodbrowchan De deste ed 0.00 gr. 120 26 2 Mr. Destabusher De deste ed 0.00 gr. 120 27 27 28 27 28 28 28 28 28 28 28 28 28 28 28 28 28	10-86-1	Pyndme	T			NLE		9/1.	<u> </u>
13 3 Andres	52 75 9	N natroso-d meth lamin							
11.1444 bast Chloroschvichers	_	Andre							
16-648-7 1.4 Debhordenzen	11-44-4	bus/ Chloroethyl)ether							
1995 -16 Benned at b	106-46-7	1 4 Dichlorobenzea							
15 SP-1 12 Dreibrochestern	100-51-6	Benzyl at h i				VILE		_	
	95 <u>50-1</u>	1 2 Dichlorobenzen			no detec ed	600			
28 95 3 Noberstein Do defere ed 10 0 046 g/L 28-29 1 Inspheren Do detected 100 0.35 g/L 15 91 10 10 10 10 10 10 10	108-60-1	bis(2-ch! roisopropyl)ether			not detec ed	300	061	us/L	
	67 <u> </u>	Hexachloroethan			no detected	10	0.33	ug/L	
131 9 1	98 95 3	N trobenzene			no detec ed	10	0 46	g/L	
15-85-0 Benzone A d	78 <u>-59 1</u>	Isophoron			not detec ed	100	0 35		
12-42 1.2.4 T. Nerobenssen no detected 9 0.25 mg/L	111 91 1	bis(2-Chloroeth xy)methane			no detected	NLE	0.46	wg/L	
10 - 3	55-85-0	Benzoic A d			not d ected	NLE	0 26	g/L	
106-47 8	120-82 1	1,24 T hlorobenzen			no detected	9	0 25	υg/L	
10.26 1.0 1.	0-3	Naphthalene			no detected	NLE	0 25	9/ L	
20 27-6 2 Methylmaphthalen detected NILE 0.16 150 157 17-47-4 literatelloreyce/depended en not detected 50 1.50 15	106-47 8	4-Chloroen Im	1		ot detec ed	NLE	0 19	ug/L	
17-47-4 Hexachlerocyclopenind en not detected S0 150 usrl.	87-68-3	Hexachlorobutad en	4		not detec ed	1	0 38	g/L	
2-Chlorogaphthalen	91 57-6	2 Methylnaphthalen	 _		detected	NLE	0 16	g/L	
131 11 3 Dimorphylichtal te	77 <u>-47-4</u>	Hexachlorocyclopentad en			not detected	SO	1 50	ug/L	
131 11 3	91 58-7	2-Chloronsphthalen			not detected	NLE	03	g/L	
208 96-8 Acenaphthylen no detected NLE 0.19 st.	R8 74-4	2 Nitroanduie	-		detected	NLE	021	g/L	
26-0-2 26-Dentr tohs	131 11 3	Dunethylphihal te	.—		no detec ed	7000	0 18	g/L	L
29.09-2 3 N treamlin	208 96-8		-		no detected	NLE	019	p/L	
132 45 Acensphthen	606- 0-2	2.6-Dante tolu	╀		ot_detected	\LE	031	g/L	
132-64-9 Dibenzafuran nat detected NLE 0.32 g/L 121 14-2 2.4 Dra stol en ot detected 10 0.36 g/L 24-66-2 Dietr/ebithala ot detec ed 5000 0.82 g/L 26-67.3 7 Fluoren nat detec ed 300 0.23 g/L 26-73.7 Fluoren nat detec ed 300 0.23 g/L 100-01-6 4-Varraminn po detec ed V.LE 0.90 g/L 100-01-6 4-Varraminn po detec ed V.LE 0.90 g/L 100-01-6 4-Varraminn po detec ed V.LE 0.90 g/L 100-01-6 4-Varraminn nat detec ed V.LE 0.90 g/L 101-03-3 Azobeauze nat detec ed NLE 0.80 g/L 101-33 Azobeauze nat detec ed NLE 0.80 g/L 101-35 4-Brumopheo i phenyl th ot detec ed NLE 0.55 ug/L 101-55 4-Brumopheo i phenyl th detec ed 10 0.8 ug/L 101-55 4-Brumopheo i phenyl th nat detec ed 10 0.8 ug/L 103-01-3 Phenagabren nat d et ed NLE 0.18 g/L 104-01-4 Discounting nat detec ed 0.00 0.19 g/L 105-01-4 Discounting nat detec ed 0.00 0.19 g/L 107-01-4 nat detec ed 0.00 0.19 g/L 107-01-4 nat detec ed 0.00 0.21 g/L 108-01-4 nat detec ed 0.00 0.22 ug/L 108-01-4 nat detec ed 0.00 0.23 ug/L 108-01-4 nat detec ed 0.00 0.24 g/L 108-01-4 nat detec ed 0.00 0.25 ug/L 108-01-4 nat detec ed 0.00 0.25 ug/L	99-09-2	3 N troundin			no detected	NLE	<u>0 2</u> 6	g/L	<u> </u>
121 14-2	83 32 9	Acensphthen			detected	400	0 26	g/L	
Section Description Section	<u>132-64-9</u>	Dibenzofuran	—			NLE	032	g/L	<u> </u>
Se-73 7 Fluoren	121 14-2		┼		ot detected	10	0 36	g/L	<u> </u>
100-01-6	84- <u>66-2</u>		- 			5000	0.82	g/L	
100-01-6	86-73 7	Fluoren			not detec ed	300	0 29	1	
10 3 3 3 3 3 3 3 3 3	7005 7 3		+		no detec ed	_NLE	0.1	g/L	
10 3 3 Amberaze	100-01-6		 			\LE		/L	
101 55 3 4-Brussophess 1 phenyl th									
			-						
20-12 7 Anthrue			-						
120-12 7 Anthrue			-						
24 74 Di-n-but/phthal te Di-n-but/phthal te Ot detected 900 0 23 g/L 206-44-0 Fluoranthen Ot diet ed 300 0 41 ug/L 22 87 5 B mzrdm Ot det ed 300 0 41 ug/L 22 87 5 B mzrdm Ot det ed 50 1 45 ug/L 23 9-00-0 Pyrem t detected 200 0 32 ug/L 25 68 7 B tylbenzylphthalate Ot diet ed 100 0 47 g/L 25 65 3 Benzol Ismitricen mot detected 100 0 47 g/L 26 55 3 Benzol Ismitricen mot detected 100 0 2 ug/L 27 94 1 3 Duchl robenzudus Ot diet ed 60 0 46 ug/L 28 91 9 Chry en Ot detected 20 0 20 ug/L 29 17 81 7 Dist Eth th xyl)phthalat mot detected 30 0 51 g/L 20 17 84-0 Di-n-octylphthal Ot diet ed 100 0 82 g/L 20 29 2 Benzol Ismitren Ot diet et ed 20 0 37 ug/L 20 17 89 Benzol Ismitren Ot diet et ed 20 0 31 ug/L 20 18 9 39 5 Ismitren Ot diet et ed 20 0 79 ug/L 20 18 9 50 32 8 Binzol Ipyren Ot diet et ed 20 0 79 ug/L 20 18 9 18 9 18 9 18 9 18 9 18 9 18 9 18			-	<u> </u>					
206-44-0 Fluoranthen			+						
22 87 5 B nzidia			 -		l'''				
1 detected 200 0 32 us/L			+						
35-68 7 B 5 Denzylphthalate	_		+						
10 10 10 10 10 10 10 10									
3 Dircht robertzeiten Ot die et die 60 0.46 up/L 18-01 9 Chry en Ot derected 20 0.20 up/L 17 81 7 Dircht fix vi)phthalat Dircht fix et et die 20 0.51 up/L 17 84-0 Dircht fix et et die 20 0.51 up/L 17 84-0 Dircht fix et et die 20 0.51 up/L 17 84-0 Dircht fix et et die 20 0.37 up/L 05-99 2 Benzo(b)fits santhen Ot die et ed 20 0.31 up/L 07-08 9 Benzo(b)fit ranthen Ot die et ed 20 0.31 up/L 193 39 5 Dideno(1 3-cd)pyren Ot die et ed 20 0.79 up/L 193 39 5 Dideno(1 3-cd)pyren Ot die et ed 20 0.79 up/L 193 30 0 Dienz(s,h)tanthr detected 0 0.28 fL 18-01 up/L 18-01 up/L 18-01 up/L 18-01 up/L 193 39 5 Dideno(1 3-cd)pyren Ot die et ed 20 0.79 up/L 18-01 up/L 18-01 up/L 19									-
18-01 9 Chr. en ot derected 20 0.20 ug/L 17 81 7 b sf Eth th xvl)phthalat no detected 30 0.51 g/L 17 84-0 D n-octvlphthal ot d ec ed 100 0.82 g/L 05-99 2 Benzo(b)fluo amben ot d 10 0.37 ug/L 07-08 9 Benzo(b)fli ranthen ot d tected 2 0 g/L 50-32 8 B nzo(pyren d ec ed 20 0.31 ug/L 193 39 5 bideno(1 3-cd)pyren ot de ec ed 20 0.79 ug/L 193 39 5 bideno(1 3-cd)pyren ot de ec ed 20 0.79 ug/L 193 30 0 D benz(s.hlunthr detected 0 0.28 fL			+						
			1						
17 84-0 D n-octv phthal ot d ec ed 100 0 82 g/L 05-99 2 Benzo[b]fluo zetthen ot d d 10 0 37 ug/L 07-08 9 Benzo[b]fl ranthen ot d tected 2 0 g/L 50-32 8 B nzo[pyren d ec ed 20 0 31 ug/L 193 39 5 Indeno[1 3-cd]pyren ot de ec ed 20 0 79 ug/L 53 0 D benzo[a,h]anthr detected 0 0 28 7.	_		+						
O3-99 2 Benzo[b]fhuo amben Ot d d 10 0 37 us/L			+						
07-08 9 Benzo[k]fit ranthen ot d tected 2 0 g/L 50-32 8 B nzol [pyren d ec ed 20 0 31 ug/L 193 39 5 Indeno[1] 3-cd[pyren ot de ec ed 20 0 79 ug/L 53 0 D benz[a,h]anthr detected 0 0 28 7.			+						
50-32 8 B razel pyren d ec ed 20 0.31 ug/L			+						
193 39 5 Indeno[1 3-cd]pyren Ot de ec ed 20 0 79 ug/L			+						
53 0. D benz(s.h)tanthr detected 0 0.28 /L			+						
			+						
91.24 Benzolgh, pervien ot dieced NLE 0.40 (us/L	_		+			NLE			

Higher FPQL and Ground Water C ter as pe NJAC 7 9-6

O alf

E Val E. eed L ar Rang D-Vai frmdlt B C mpo d Ritd Blank PQL Pratal Quanttat Lmt

MDL M thod D tect L m t NLE N LmtEtbl hd RT Rtt Tm

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

Freld ID

			••••						. علاو ا	420
Lab Name	FMETL				Lab Co	od į	13461		Bldg.	429
Project	98-0932	(Case No	4135	Loca	ation	Bldg	<u>4</u> S	DG No	
Matrix (soil/	water)	WATER	<u>. </u>			Lab	Sample	: ID	4135 02	
Sample wt/v	rol	1000	(g/ml) <u>ML</u>		Lab	File ID		BN02465 D	
Level (low/	med)	LOW				Date	e Recen	ved	12/10/98	
% Moisture		d	ecanted	(Y/N) _	N	Date	e Extrac	ted	12/14/98	
Concentrate	d Extract '	Volume	1000	(uL)		Date	e Analyz	ed	12/22/98	
Injection Vol	ume <u>10</u>) (uL)	l			Dilu	tion Fac	tor	10	
GPC Cleanu	ıp (Y/N)	N	_ pH _							
					CONCE	NTF	RATION	UNI	TS	
Number TIC	s found	0	<u> </u>		(ug/L or	ug/k	(g)	UG/	<u>L</u>	
CAS NUMI	BER	COMP	AN DNUC	ME			RT	ES	ST CONC	C

Semi-Volatile Analysis Report

US Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name BN02466 D

Sample Name

4135 03 Field Dup

Operator Date Acquired

Skelton 22-Dec-98 Misc Info Sample Multipher

					Regulatory Level		
CAS#	Лаше	R.T	Response	Result	(ug/L)*	MDL	Ousbfiers
110-86-1	Pyridine		<u> </u>	not detected	NLE	5 00 ng/L	<u> </u>
62 75-9	N-natroso-dimethylamine		ļ. —	not detected	20	0 94 129/L	<u> </u>
62-53- <u>3</u>	Antline		ļ	not detected	NLE	0 15 uz/L	<u> </u>
111-44-4	bus(2-Chloroethvi)ether		ļ. ——.	not detected	.10	0 48 ug/L	<u> </u>
106-46-7	1 4-Dichlorobenzene	 		not_detected	75	0 23 us/L	
100-51-6	Benzyl alcohol	ļ		not detected	NLE	O 18 12g/L	
95-50-1	1 2-Dichlorobenzene	_		pot_detected	600	0 16 ug/L	ļ
108-60-}	bis(2-chloroisopropyl)ether	1	<u> </u>	not detected	300	0 61 mg/L	<u> </u>
67 72-1	Hexachloroethane			not detected	10	0 33 ug/L	<u> </u>
98-95-3	Nutrobenzene			not detected	10	0 46 trz/L	
78-59-1	Isophorone			not detected	100	0 35 mg/L	
111 91 1	bus(2-Chiloroethoxy)methane			not detected	NLE	0 46 us/L	ļ
65-85-0	Benzoie Acid	1		not detected	NLE	0 26 ug/L	<u> </u>
120-82 1	1,2,4-Trichlombenzene			not detected	9	0 25 up/L	
<u>91 20-3</u>	Naphthalene	1		not detected	NLE	0 25 us/L	<u> </u>
106-47 8	4-Chloroundine			not detected	NLE	0 19 uz/L	<u> </u>
87-68-3	Hexachlorobutadiene	-		not detected		0 38 ug/L	┞—
91 57-6	2 Methylnaphthalene	1		not detected	NLE	0 16 ug/L	<u> </u>
77-47-4	Hexachlorocyclopentadiene	-		not detected	50	1 50 ug/L	ļ
91-58-7	2-Chloronaphthalene	-		not detected	MLE	0.32 ug/L	<u> </u>
88-74-4	2 Nitroandine	 		not detected	NLE	0 21 ug/L	
131-11_3	Dunethylphthalate	}		not detected	7000	0 18 ug/L	<u> </u>
208-96-8	Acenaphthylene			not detected	NLE	0 19 ug/L	
606-20-2	2.6-Dunstrotoluene			mot detected	NLE	031 us/L	
99-09-2	3-Nitroandine			not detected	NLE	0 26 teg/L	
83 32-9	Acensphthene	+		not detected	400	0 26 us/L	
132-64 9	Dibenzofuran	+ -		not detected	NLE	0 32 us/L	
121 14 2	2,4-Dirutrotoluene	╂		not detected	10	0 36 ug/L	_
84-66-2	Diethylphthalate			not detected	5000	0 82 ug/L	
<u>86-73-7</u>	Fluorene	+		not detected	300	0 29 uz/L	<u> </u>
7005-72 3	4-Chlorophenyl phenylether	1		not detected	NLE	031 ug/L	
100-01-6	4-Nitroandine		_	not detected	NLE	0 90 ug/L	<u> </u>
86-30-6	n-Nitrosodiphenvizinine	+		not detected	20	0 23 ug/L	
<u> 103-33-3</u>	Azobenzene	+		not detected	NLE	0 80 ug/L	
<u>101 55 3</u>	4 Bromophenvi-phenviether	+		not detected	NLE	0 55 trz/L	
118-74 1	Hexachlorobenzene	1-		not detected	10	0.82 cg/L	
RS-01-8	Phenanthrene			not detected	NLE	O IB ug/L	
20-12 7	Anthracene	+-		not detected	2000	0 19 ug/L	
14-74-2	Di-ti-butylphthalate	 		not detected	900	023 mg/L	
206-44-0	Fhuoranthene	-		not detected	300	0 41 ug/L	├──
92-87 S	Benzidine		-	not detected	50	1 45 ug/L	
29-00-0	Pyrene	 		not detected	200	0 32 ug/L	
85-68-7	Butylbenzylphthalate	1		not detected	300	0 47 ug/L	
56-55-3	Benzo(a)anthracene	1		not detected	10	0 22 vg/L	
91 94-1	3,3 Dichlorobenzidine	+		not detected	60	0 46 ug/L	
218-01-9	Chrysene	+		not detected	20	0 20 us/L	 -
17-81-7	hus(2-Ethylhexyl)phthalate	╂╌╾┪		not detected	30	051 ug/L	
17-84-0	Dt-n-octylohthalate	╀┈┩		not detected	100	0 82 ug/L	
205-99 2	Benzofbliluoranthene	 		not detected	10	0 37 trz/L	
207-08 9	Benzo[k]fluoranthene	1		not detected		0 32 vg/L	├──
50-32 B	Benzo(a)pvrene	 		not detected	20	031 us/L	
93 39-5	Indeno[1 2 3-cd]pyrene	4	_	not detected	20	0 79 us/L	
3 70-3	Dibenzja hjanthracene	 		not detected	20	0 23 cs/L	<u> </u>
91 24 2	Bezzolg halperylene	<u>11</u>		not detected	NLE	0 40 mg/L	L

* Higher of PQL s and Ground Water Criteria as per NJAC 7 9 6

<u>Qualifiers</u>

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

						O O.	100		E.ala 5	·
Lab Name	FMETL			<u></u>	_ Lab Cod	d _	13461		Field D	up
Project	98-0932		Case No	4135	Locat	tion	Bldg 4	4_ SI	DG No	
Matrix (soil/	water)	WATE	R		1	Lab	Sample	ID	4135 03	
Sample wt/vo	ol	1000	(g/ml	ML	'	Lab	File ID		BN02466 D	
Level (low/r	ned)	LOW			I	Date	Receiv	ed /	12/10/98	
% Moisture		_ (decanted (Y/N) _	N	Date	Extrac	ted	12/14/98	
Concentrated	d Extract \	Volume	1000	(uL)	1	Date	Analyz	ed	12/22/98	
Injection Volt	ıme <u>10</u>) (uL	.)		I	Dilut	ion Fac	tor	10	
GPC Cleanu	p (Y/N)	<u>N</u> _	pH _							
Number TICs	s found	0			CONCE			UNI UG/I		
CAS NUME	BER	COMF	OUND NA	ME			RT	ES	T CONC	Q

LABORATORY DELIVERABLES CHECKLIST AND NON CONFORMANCE SUMMARY

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

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

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

1	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	<u> </u>
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	
	oratory Manager or Environmental Consultant s Signature	2

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

Laboratory Certification #13461

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

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS

PHONE. (732)632-6224 FAX (732)632-6263
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING
NJDEP LABORATORY CERTIFICATION # 13461



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

Bldg. 429

Field Location No &	Laboratory	Matrix	Date and Time	Date Received
Location	Sample ID#		Of Collection	
Trip Blank	4181 01	Aqueous	12-Jan-99	01/12/99
Field Blank	4181 02	Aqueous	12-Jan-99 11 50	01/12/99
Bldg 429	4182 01	Aqueous	12-Jan-99 10 40	01/12/99
Bldg 429	4182 02	Aqueous	12-Jan-99 10 45	01/12/99

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

Daniel Wright/Date
Laboratory Director

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CHAIN OF CUSTODY



Fort Monmouth Environmental Testing Laboratory

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

Tel (732)532-4359 Fax (732)532-6263 EMail appleby@doim6 monmouth army mil

NJDEP Certification #13481

Chain of Custody Record

Customer: Chal.	s Appleby	Project No	_			Analysis Parameters						Comments:		
Phone #:	11/1	Location 4	29 UST				٦							
()DERA (JOMA (L				'n	+						ے	
Samplers Name / Con	npany: Core McC	ormack;	TUS	Sample	#	VOTIS	B/10 +15						ht n	HCL/ZY°C
Lab Sample I D Sample Location		Date	Time	Туре	bottles	7	8						٠ ــــــــــــــــــــــــــــــــــــ	Remarks / Prescrvation Method
4182 .01	B/d, 429	1/12/99	1640	AO	2								/	00 ggm
.02	J.,	п	1045	11)		/							
														Doth of whi; 2.56 ft
														2.56 A
Relinquished by (signature) Date/Time Received by (signature) Relinquished by (signature) V/12/99/1445					luished	by (sig	mature))	Date/	Time	Recei	ved by	(signature)	
				Relino	lushed	by (sig	mature))	Date/	Time	Recei	ved by	(signature)	
Support Type ()Full, ()Reduced, ()Standard, ()Screen / non-certified Remarks Shirts Tr; p/Bluk/Uyu w/280 Iumaround time ()Standard 4 wks, ()Rush Days, ()ASAP Verbal Hrs														

0000003

Fort Monmouth Environmental Testing Laboratory

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

Tel (732)532-4359 Fax (732)532-6263 EMail appleby@doim6 monmouth army mil

NJDEP Certification #13461

Chain of Custody Record

	8.9									
Customer: 🕕 , 🎉	400 P-bU	Project No				χ	Analysis	Parameters		Comments:
Phone #:	6274 I	Location Bldg)	to ust		١٥	**				
()DERA ()OMA (715	† 7.5				
Samplers Name / Cor	mpany: Corey McCo	ormack, TVS Sau		#	8	VO 475			Hno	HC1/242
Lab Sample I D	Sample Location	Date Tume	Туре	bottles	8	~3			1	Remarks / Preservation Method
418/ .01	Trip	1/12/49 08/5	Aa	2	`	_			/	augem
02	Field Blak	1 115		3 (/				
.03	* B/4 280	135		2						utr depth: 6.21 ft
,04	ĺi	135	9 +	1						6.21 f+
.05	D-pe			2	1					
	11	<u> </u>	1							
<u></u>										
									<u> </u>	
				L						
Religioushed by (signature)	Date/I ime //12/99 /14/5	Received by (signature		Relinqui	shed by	y (sigi	nature)	Date/I une	Received by	(signaturė)
Relinquished by (signatu	·	Received by (signifure		Relinqui	shed by	y (sigi	nature)	Date/Time	Received by	(signature)
	Report Type (_)Full, (_JReduced, (_)Standard, (_)Screen / non-certified Remarks Shue, Day, Blub Toig w/ 429, 447 Furnaround time (_)Standard 4 wks, (_)Rush Days, (_)ASAP Verbal Hrs									
		· •	a							

FIELD DOCUMENTATION

Post Remedial Groundwater Sampling at Former Underground Storage Tank Site [# 2 fuel oil]

FOR BLDG # 429

Ground Water Sampling with the use of a Passively Placed Narrow Diameter Point (PPNDP)

Objective

To collect a representative groundwater sample utilizing a narrow diameter point [PPNDP] This is a small diameter [1 inch OD] screened casing passively placed in a borehole. The casing is of pivic construction.

1 Methods

A. A solid push rod (bull point) is used to create a narrow diameter hole to a depth below the water table. A piece of schedule 40 PVC screen with 0 010-inch slots and an end cap is placed to the bottom of the hole. Glues or adhesives are not used for joining the casing. Threaded PVC casing is used. No filter or gravel pack is used.

2. installation

- A Using a Geoprobe a borehole was advanced with a pre-probe with a diameter slightly larger than the casing. The hole was made to a depth of 12 feet. The water table was at 6 feet below ground surface.
- B The screened section of PVC was placed into the borehole so the screened section was across the ground water table from 5 10 feet Riser casing from 5 0 feet

3 Purging

A Three volumes of the standing water in the point were purged. The amount of water extracted was app. 0.123 gal. Three to five volumes are purged due to the potential for cross contamination of the screen from upper soil horizons. This was accomplished utilizing a peristaltic pump, and utilizing food grade tubing.

4 Sampling

A Sampling methods sample preservation requirements sample handling times decontamination procedure for field equipment and frequency for field blanks field duplicates and trip blanks conform to applicable industry methods such as those specified in the NJDEP Field Sampling Procedures Manual in effect as of the date on which sampling is performed. Any deviations from the methods in the Field Sampling Procedures Manual pursuant to NJAC 7 26E 16(c) has been approved by the person responsible for conducting the remediation.

All samples were preserved in the field immediately after collection and submitted to the laboratory as soon as possible and no later than 48 hours after sample collection.

The acquisition of samples and water level measurements were performed as recommended and described in the May 1992 edition of NJDEP Field Sampling Procedures Manual

5. Quality Assurance/Quality Control

A Decontamination

The associated equipment (bull point, riser pipe, etc.) was decontaminated between bonngs using the following procedure

- 1. Remove all adherent soil material
- 2 Wash with a laboratory grade glassware detergent
- 3. Rinsed with potable water
- 4 Rinse with distilled and deionized ASTM Type II water
- B Field Blanks
 - 1 Field blank was shared with bldg 447, taken same day
- C Sample bottles. Supplied by Environmental Sampling Supply, Oakland, Calif The sample bottles are certified clean and are sealed upon delivery
- D PVC Screens Supplied by Bedrock Enterprises, Forked River N J

Geoprobe Operator: Mark Laura Employer U S Army, Fort Monmouth Phone Number [732] 532-8990 NJDEP License #: J-1486

Mark Laura / Date

METHODOLOGY SUMMARY

Methodology Summary

EPA Method 624
Gas Chromatographic Determination of Volatiles in Water

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

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

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.

CONFORMANCE/ NON-CONFORMANCE SUMMARY

GC/MS ANALYSIS CONFORMANCE/NON CONFORMANCE SUMMARY FORMAT

			Indicate Yes No N/A
1	Chromatograms lab	eled/Compounds identified	
-		and method blanks)	yes
2	Retention times for	chromatograms provided	yes_ yes_
3	GC/MS Tune Specia	fications	·
	a	BFB Meet Criteria	<u>ves</u>
	b	DFTPP Meet Criteria	yes
4		quency – Performed every 24 hours for 600	
	series and 12 hours	for 8000 series	<u>yes</u>
5	GC/MS Calibration	Initial Calibration performed before sample	
		ing calibration performed within 24 hours of	
	sample analysis for	600 series and 12 hours for 8000 series	<u> 465 </u>
6	GC/MS Calibration	requirements	
	a	Calibration Check Compounds Meet Criteria	Ves
	b	System Performance Check Compounds Meet Criteria	yes
7	Blank Contamination	n – If yes List compounds and concentrations in each blank	<u>NO</u>
	a	VOA Fraction	
	b	B/N Fraction	
	c	Acid Fraction	
8	Surrogate Recoverie	es Meet Criteria	NO
	If not met list t	hose compounds and their recoveries which fall	
	outside the acce	•	
	a	VOA Fraction	and the same
	Ъ	B/N Fraction 4/8202 Niteo benzere 05 \$ Tel	rphenyl-ally cow we wo
	С	Acid Fraction NA	ine ₀
	If not met were	the calculations checked and the results qualified	
	as estimated?	·	yes
9	Matrix Spike/Matrix	Spike Duplicate Recoveries Meet Criteria	<u>ues</u>
	(If not met list those	e compounds and their recoveries which fall	1 -
	outside the acceptab	le range)	
	a	VOA Fraction	
	b	B/N Fraction	
	c	Acid Fraction_ NA	

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

				Indicate Yes, No, N/A
10		Area/Retention Time Shift Mose compounds, which fall o	leet Criteria utside the acceptable range)	<u>yes</u>
	a.	VOA Fraction		
	b	B/N Fraction		
	C.	Acid Fraction NA		-
11	Extraction Holdin	g Turne Met		405
	If not met, list the	number of days exceeded fo	or each sample	_ _
12	Analysis Holding	Γιme Met		- <u>yes</u>
	If not met, list the	number of days exceeded for	r each sample:	<u>-</u>
Add	ntional Comments.			
				- -
Labo	oratory Manager	E GO	Date 2-15-44	_

LABORATORY CHRONICLE

Laboratory Chronicle

Lab ID: 4182

Site: Bldg 429

		Date	Hold Time
Date Sampled Receipt/Refrigeration		01/12/99	NA NA
		01/12/99	
Ex	ctractions Base Neutrals	01/14/99	7 Days
Aı	nalyses		
1. 2	Volatile Organics Base Neutrals	01/22/99 01/26/99	14 Days 40 Days

VOLATILE ORGANICS

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

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

Data File Name v05520 d Operator Skelton Sample Name Field ID Vblk146 Vblk146

Date Acquired 22 Jan 1999 9 08

Sample Multiplier

CAS#	Compound Name	RT	Response	Result	Regulatory Level (ug/l)*	MDL	Qualifiers
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	nle	0 16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0 25 ug/L	1
	Dichlorodifluoromethane			not detected	nle	1 68 ug/L	
74-87-3	Chloromethane			not detected	30	1 16 ug/L	
75-01-4	Vmyl Chlonde			not detected	5	i 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	T
75-35-4	1,1-Dichloroethene			not detected	2	0 24 ug/L	
67-64-1	Acetone	Ì		not detected	700	1 36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0 46 ug/L	
75-09-2	Methylene Chlonde			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	1
78-93-3	2-Butanone			not detected	300	0 62 ug/L	1
	cis-1,2-Dichloroethene			not detected	10	0 17 ug/L	T
67-66-3	Chloroform			not detected	6	0 30 ug/L	_
75-55-6	1,1,i-Trichloroethane			not detected	30	0 23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0 47 ug/L	
71-43-2	Benzene	1		not detected	1	0 23 ug/L	
107-06-2	1,2-Dichloroethane		1	not detected	2	0 18 ug/L	
79-01-6	Trichloroethene		ł	not detected	1	0 23 ug/L	
78-87-5	1,2-Dichloropropane			not detected		0 40 ug/L	
75-27-4	Bromodichloromethane		1	not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether		1	not detected	nie	0 65 vg/L	
10061-01-5	cis-1,3-Dichloropropene	ı		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	J		not detected	1000	0 37 ug/L	
10061-02-6	trans-1,3-Dichloropropene	I -		not detected	nle	0 87 ug/L	1
79-00-5	1,1,2-Trichlorgethane			not detected	3	0 48 ug/L	1
127-18-4	Tetrachloroethene			not detected	1	0 32 ug/L	
591-78-6	2-Hexanone			not detected	nie	071 ug/L	_
126-48-1	Dibromochloromethane			not detected	10	0 86 ug/L	
108-90-7	Chlorobenzene	1		not detected	4	0 39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0 65 ug/L	_
1330-20-7	m+p-Xylenes	1		not detected	nle	1 14 ug/L	_
1330-20-7	o-Xylene	1		not detected	nle	0 62 ug/L	
100-42-5	Styrene	T		not detected	100	0.56 ug/L	1
75-25-2	Bromoform	1		not detected	4	0 70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane		1	not_detected	2	0 47 ug/L	
541-73-1	1,3-Dichlorobenzene	İ		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	1		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

Qualifiers

B = Compound found in related blank

E = Value above linear range

D = Value from dilution

PQL = Practical Quantitation Limit

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

1E VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name	FMETL		Project	9809	32	Vblk	146
NJDEP#	13461	Case No 418	2 Locati	on US	т_ s	DG No	
Matrix (soil/w	ater)	WATER_	L	ab Sam	ple ID	Vblk146	
Sample wt/vol		50 (g/ml) ML	L	ab File I	ID	V05520 D	
Level (low/m	ed)	LOW	D	ate Red	erved	01/12/99	
% Moisture n	ot dec		D	ate Ana	01/22/99		
GC Column	RTX-50	02 ID 025 (mm)	. 0	· Dilution Factor			
Soil Extract Vo	olume _	(uL)	s	oil Aliqu	ot Volu	ıme	(uL)
			CONCENTRA				
Number TICs	found	0	(ug/L or ug/K	g) <u>l</u>	JG/L_		
CAS NO		COMPOUND NAME		RT	E	ST CONC	Q

Volatile Analysis Report U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name v05532.d Operator Skelton

Sample Name Field ID

4181.01 Trip Blank

Date Acquired 22 Jan 1999 18 01

Sample Multipher

CAS	Compound Name	R_T	Response	Result	Regulatory Level (ug/l)*	MDL	Oualifiers
107028	Acrolein			not detected	50	185 ug/L	
107131	Acrylomtrile	1		not detected	50	2 78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8 52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	ale	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	Vmyl Chlonde		· · · · · · · · · · · · · · · · · · ·	not detected	5	1 06 ug/L	·
74-83-9	Bromomethane			not detected	10	1 10 ug/L	
75-00-3	Chloroethane			not detected	nie	1 01 ug/L	
75-69-4	Trichlorofluoromethane	1		not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0 24 ug/L	
67-64-1	Acetone	1		not detected	700	1 36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0 46 ug/L	
75-09-2	Methylene Chlonde			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		i -	not detected	300	0 62 up/L	
1	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	1		not detected	ī	0 23 ug/L	-
107-06-2	1.2-Dichloroethane	1		not detected	2	0 18 ug/L	-
79-01-6	Trichloroethene	 	·	not detected		0 23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0 40 ug/L	
75-27-4	Bromodichloromethane		i i	not detected	-	0 55 ug/L	
110-75-8	2-Chloroethyl vinyl ether	1		not detected	nle	0 65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	ale	0 69 ug/L	
108-10-1	4-Methyl-2-Pentanone	1		not detected	400	0.59 ug/L	
108-88-3	Toluene	1	•	not detected	1000	0 37 ug/L	
10061-02-6	trans-1.3-Dichloropropene	1	<u> </u>	not detected	nle	0 87 ug/L	
79-00-5	1,1,2-Trichloroethane	1	r —	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	1		not detected	10	0 86 ug/L	
108-90-7	Chlorobenzene	1		not detected	4	0 39 ug/L	
100-41-4	Ethylbenzene	1	·	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	f		not detected	nle	0 62 ug/L	
100-42-5	Styrene	 		not detected	100		
75-25-2	Bromoform	1		not detected	_	0 56 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane	 	 	not detected	2	0 70 ug/L	
541-73-1	1.3-Dichlorobenzene	1		not detected	T	0 47 ug/L	├
106-45-7	1,4-Dichlorobenzene	 	-	not detected	75	0 55 ug/L	
		 	 			0 57 ug/L	
95-50-1	1,2-Dichlorobenzene	1		not detected	600	0 64 ug/L	Ц

^{*} Higher of PQL's and Ground Water Quality Criteria as per N J A C 79-6

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

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID

Lab Name	FMETL				Project	98	0932	Trip Bla	nk
NJDEP#	13461		ase No	4181	Locate	on <u>l</u>	JST S	DG No	
Matrix (soil/w	rater)	WATER			L	ab Sa	ample ID	4181 01	
Sample wt/vo	H	50	(g/ml) <u>ML</u>	L	ab Fi	le ID	V05532 D	
Level (low/m	ned)	LOW			0	ate F	Received	01/12/99	_
% Moisture not dec					C	Date Analyzed			
GC Column	RTX-5	502 ID 0 25 (mm)			Dilution Factor			10	
Soil Extract V	olume		(uL)	i	s	ioi Al	liquot Vol	ume	(uL)
		С	CONCENTRATION UNITS						
Number TICs	found	0		(L	ıg/L or ug/Kı	g) 	UG/L		
CAS NO.		COMP	DUND N	AME	-	F	₹ Т	ST CONC.	Q

Volatile Analysis Report

R Ţ

US Army Fort Monmouth Environmental Laboratory NJDEP Certification #13461

Resp se

Data File Name v05533 d Operator

CASI

107028

107131

Skelton

Compo ad Name

Acrolem

Acrylonitrile

Sample N me Field ID

4181 02

F eld Blank

Res It

22 Jan 1999 18 45 Date Acquired

Sample Multipher

Reg latery Level (g/l) MDL Q LLFins not detected 50 1 85 ug/L not detected 50 278 ug/L nat detected 8 52 ug/L

10/131	Actylonium		HOL DETECTED 1	<u> </u>	4 / & UE/L
75650	tert Butyl alcohol		not detected	<u>nle</u>	8 52 ug/L
1634044	Methyl tert Butyl ether		not detected	nle	0 16 ug/L
108203	Di isopropyl ether		not detected	nle	0 25 ug/L
	Dichlorodifluoromethane		not detected	nie	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	i Ol 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	016 g/L
75 35 3	1,1 Dichloroethane		not detected	70	0 12 ug/L
108-05-4	Vinyl Acetate		not detected	ale	0 78 ug/L
78 93 3	2 Butanone		not detected	300	0 62 ug/L
10 77.5	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		0.23 g/L
78 87 5	1,2 Dichloropropane		not detected	1	0 40 ug/L
75 27-4	Bromodichloromethane		not detected	1	0 55 g/L
110-75 8	2-Chloroethyl vinyl ether		not detected	nie	0 65 ug/L
10061-01 5	cis-1,3 Dichloropropene		not detected	nie	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 g/L
10061-02-6	trans 1,3 Dichloropropene		not detected	nl	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	l 14 ug/L
1330-20-7	o-Xylene		not detected	nle	0 62 g/L
100-42 5	Styrene		not detected	100	0 56 g/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 Dichlorohenzene		not detected	600	0 55 ug/L
106-46-7	1.4-Dichlorobenze e	 	not detected	75	033 Up/L
1110-40-7	11-Tributani Arieman	 	in incidity	 '	 "''-/ -

* Higher of PQL s and Ground Water Quality Criteria as per N J A C 796

not detected

Qualifiers

B = Compound found in related blank

E = Value above linear range

D = Value from dilution

1,2 Dichlorobenzene

95 50-1

PQL = Practical Quantitation Limit

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

600

0 64 ug/L

1E VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID

Lab Name	FMETL		Project 9	80932	Field Blank		
NJDEP#	13461	Case No 4181	Location	UST	SDG No		
Matrix (soil/	water)	WATER	Lab S	Sample ID	4181 02		
Sample wt/v	ol	50 (g/ml) ML	Lab F	ile ID	V05533 D	_	
Level (low/	med)	LOW	Date	Received	01/12/99	_	
% Moisture	not dec		Date	Analyzed	01/22/99	_	
GC Column	RTX 5	02 ID 025 (mm)	Ditutio	on Factor	10		
Soil Extract	Volume	(uL)	Soil A	Viquot Vo	lume	_ (uL	
Number TIC	s found	_	ONCENTRATION	ON UNITS	.		
CAS NO		COMPOUND NAME		RT I	EST CONC	Q	

Volatile Analysis Report US Army Fort Monmouth Environmental Laboratory NJDEP Certification #13461

D ta F 1 N me 05536 d Operator Skelton

6 d Sample Nam u Field ID 4182 01 Bldg429

Date Acq ired 22 Ja 1999 0 54

Sample M It pl e

1

CAS#	C mpound \ m	RT	Resp	R It	Rghary Ll(g/l)	MDL Q IC
107028	Acrolem			not detected	50	1 85 ug/L
107131	Acrylonitrile	<u> </u>		not detected	50	2 78 ug/L
75650	tert Butyi alcohol	[not detected	nle	8 52 ug/L
1634044	Methyl tert Butyl ether			not detected	le	016 g/L
108203	Di isopropyl ether	Ţ.,		not detected	nle	0 25 ug/L
	<u>Dichlorodifluoromethane</u>			not detected	nle	1 68 ug/L
74 87 3	Chloromethane			not detected	30	116 g/L
75 01-4	Vinyl Chloride			not detected	5	1 06 ug/L
74 83 9	Bromomethane	<u> </u>		not detected	10	1 10 g/L
75 00 3	Chloroethane			not detected	nle	101 ug/L
75 69-4	Trichlorofluoromethane			not detected	le	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	nie	046 g/L
75 09 2	Methylene Chloride			not detected	2	0 24 ug/L
156 60 5	trans 1 2 Dichloroethene			not detected	100	016 g/L
75 35 3	1 l Dichloroethane			not detected	70	012 g/L
108 05-4	Vinyl Acetate			not detected	nle	0 78 ug/L
78 93 3	2 Butanone	Ī	1	not detected	300	0 62 ug/L
	cis 1 2 Dichloroethene		Ì	not detected	10	0 17 ug/L
67 66 3	Chloroform		1	not detected	6	0 30 ug/L
75 55 6	1,1,1 Trichloroethane	1		not detected	30	0 23 ug/L
56 23 5	Carbon Tetrachlonde		1	not detected	2	0 47 ug/L
71 43 2	Benzene	1	<u> </u>	not detected	i	0 23 ug/L
107 06 2	1,2 Dichloroethane			not detected	2	0 18 g/L
79 01 6	Trichloroethene			not detected	1	0 23 ug/L
78 87 5	1,2 Dichloropropane	Ī		not detected	1	0 40 g/L
75 27-4	Bromodichloromethane	1		not detected	1	0.55 g/L
110 75 8	2 Chloroethyl vinyl ether	1		not detected	nle	0 65 g/L
10061 01 5	cis 1 3 Dichloropropene			not detected	nie	0 69 g/L
108 10 1	4 Methyl 2 Pentanone	T		not detected	400	0 59 ug/L
108 88 3	Toluene			not detected	1000	0 37 g/L
10061 02 6	trans 1,3 Dichloropropene			not detected	nle	0 87 ug/L
79 00 5	1,1 2 Trichloroethane	T		not detected	3	0 48 ug/L
127 18 4	Tetrachloroethene			not detected		0 32 ug/L
591 78 6	2 Hexanone			not detected	nle	0 71 ug/L
126 48 1	Dibromochloromethane	$I_{}$		not detected	10	086 g/L
108 90 7	Chlorobenzene			not detected	4	0 39 ug/L
100-41-4	Ethylbenzene	T		not detected	700	0 65 ug/L
1330 20 7	m+p-Xylenes	T	Ī	not detected	nle	1 14 g/L
1330 20 7	o_Xylene	<u> </u>		not detected	le	0 62 ug/L
100-42 5	Styrene	1		not detected	100	0 56 g/L
75 25 2	Bromoform	1 		not detected	4	0 70 g/L
79 34 5	1,1 2 2 Tetrachloroethane	1	 	not detected	2	
541 73 1	1 3 Dichlorobenzene	†	 	not detected	6.0	0 47 ug/L
106-46 7	1 4 Dichlorobenzene	i	†	not detected	+	
100-00 /	1 2 Dichlorobenzene	+	+	HOT DETECTED	75	0 57 g/L

Higher of PQLs and Ground Water Quality Criteria as per N J A C 796

Qualifiers

B = Compound found in related blank

E = \ alue above linear range

D = Value from dilution

PQL = Practical Quantitation Limit

MDL = Method Detection Limit NLE = No Limit Established

R T = Retention Time

T... E 0004N

COMPOUND NAME

CAS NO

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID **TENTATIVELY IDENTIFIED COMPOUNDS** Bldg429 Lab Name **FMETL** Project 980932 NJDEP# 13461 Case No 4182 Location UST **SDG No** Matrix (soil/water) WATER Lab Sample ID 4182 01 Sample wt/vol 50 (g/ml) ML Lab File ID V05536 D Level (low/med) LOW Date Received 01/12/99 % Moisture not dec Date Analyzed 01/22/99 GC Column RTX 502 ID 0 25 (mm) Dilution Factor 10 Soil Extract Volume (uL) Soil Aliquot Volume (uL) **CONCENTRATION UNITS** (ug/L or ug/Kg) UG/L Number TICs found

RT

EST CONC

Q

BASE NEUTRAL

Semi Volatile Analysis Report

US Army Fort Monmouth En tronmental Laboratory

NJDEP Certification #13461

Data F1 Name BN02687 D
Operator Bh ka

Sampl Name Muse Inf Sbik192 Sbik192 A 990114

Date Acquired 26-J a-99

Sampl Multipler

					Regula ory			
	• _	D.T.	D	D., 1	Level (ug/L)	arbi		0-75-
	<u> </u>	R.T	Response	Res !		MDL	-6	Qualifiers
110-86-1	Pvndm			not detected	NLE 20	5 00 0 94		
62 75-9	\ troso-dimethylamin			not detec d	20 NLE	0 15		
62 53 3	Anibne			de ec ed detected	10	0 48		
111-44-4 106-46-7	bes(2-Chloroethyl)ether 1.4 Dichlorobenzene			ot detected	75	0 23	υ _{αν} ε Γι	
100-51-6	Benzyl al hol			ot detected	NLE	0 18		
95 50-i	1 2 D chlorobenzene			not detected	600	0 16		
108-60-1	bis(2-ch) ro sonropyl)ether			not detected	300	061	g/L	
67 72 l	Hexachloroethan		_	or detect d	10		ug/L	
98-95 3	N trobenze			ot detec ed	10		us/L	
78 59-1	Isophoron			detected	100		ug/L	
111 91 1	bis(2-Chloroeth xy)methan			ot detec ed	NLE	0 46	_	
65 85-0	Benzo A di			ot detected	NLE	0 26	_	
120-8 1	1,2,4 T hkorobenzen			ot detected	9	0 25	g/L	
91 20-3	Nanhthalene			ot detected	NLE	0.25	ug/L	
106-47 8	4-Chloroundme			ot detected	NLE	0 19	ug/L	
87-68-3	H xachlorobutad en			not detected	1	038	ug/L	
91 57-6	2 Methylnaphthalene			ot detected	NLE	0 16	g/L	
77-47-4	H xachi ocycl pentachen			no detec ed	. S O	1 50	g/L	
91 58-7	-Chloronaphthalene			ot detected	NLE	0 32	g/L	
88 7 -4	2 N trosniline		<u> </u>	not de ected	NLE	0 21	ue/L	
131 11 3	Dunethylphthalat			not detected	7000	0 18	ug/L	
208-96-8	Acenaphthylene			ot detected	NLE	0 19	up/L	
606-20-2	2 6-Duutrotoluen			ot detected	NLE	031	ug/L	
99-09-2	3 Vitroen line			ot detec ed	NLE	0 26	up/L	
83 3 9	Acensphthene			ot detec ed	400	0 26	g/L	
13 -64-9	Dibenzofuran			t detected	NLE	0 32	g/L	ļ
121 14 2	2,4-Dinitrotoluene			ot detected	10	0 36	g/L	
84-66-2	Di thylphthalat		ļ	ot detected	5000	0 82	ug/L	<u> </u>
86-7 7	Fluorene			ot detec ed	300	0 29	<u></u>	
7005-72 3	4-Chlorophenyl-phenylether		ļ	ot de ec ed	NLE		ug/L	
100-01-6	4 Nutroamilin			ot detec ed	NLE		ug/L	
86-30-6	Netrosod phenylanun	<u> </u>		ot detec ed	20	023	g/L	
103 33 3	Azobenzene			ot detected	NLE	0 80	g/L	
101 55-3	4 Bromophenyl phenylether	-	 	detect d	NLE		ug/L	
118-74-1	Hexa blorobenzen			ot detected	10		ue/L	
85-01 8	Phenanthren		 	ot deced	NLE		ug/L	<u> </u>
120-12 7	Anthracen			detected	2000	0 19		
84 7 2	Dr n-butylobthalat			ot detected	900	0 23	g/L	
206-44-0	Flucranthen			detected	300		ue/L	
97 87 5	Benzidin	_		ot detected	50	1 45	_	
129-00-0	Pyrene			ot detec ed	200		ug/L	
85-68 7	B tylbenzylphthal	 -		detec d	100		ug/L ug/L	
56-55 3	Benzoi sathracen			ot detec ed ot detec ed	60		ug/L	
91 94-1	3,3 Dichl robenzidin Chryse			or detec ed	20		g/L	
218-01 9	bis(2 Ethylh xyl)phthalat	-		detected	30	0 20		
117 81 7	Di-n-octvl huhalat			ot detec d	100	0 82		
705-90 2	Benzo(b)fluo anthen			de ec d	10	0 37		
205-99 2 207-08 9	Benzo[k]fluo unthen			ot d ected	2	0 32		
50-32 8	Benzof Ipyren			detec d	20	032		
				detected	20		ue/L	
1103 30 5								
193 39 5 53 70-	Indeno[1_3-cd]pv en Dibenz[a,h]ambra en			d ec d	20	0 28		

Higher f PQL and Ground Water C en as pe NJAC 796

O If rs

E Val E ceed L ar Range
D=Val from dul t
B C mpo d R I t d Blank
PQL P treal Q antitat L m t

MDL M thod Det t L m t

**NLE N L m t Establ hed

R T - R t t T m

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1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

Field ID

		12.11.11.11.221.10		J.II.	1100		OLU ₄	
Lab Name	FMETL		Lat	Cod	13461		Sbik1	32
Project	UST	Case No	1182 l	ocation	429	_ s	OG No	
Matnx (soil/	vater)	WATER		Lab	Sample	ID	Sblk192	
Sample wt/vo	ol	1000 (g/ml)	ML	Lab	File ID		BN02687 D	
Level (low/n	ned)	LOW		Dat	e Receiv	ed	1/12/99	
% Moisture	<u> </u>	decanted (Y	/N) <u>N</u>	Dat	e Extrac	ted	1/14/99	
Concentrated	Extract	Volume <u>1000</u> (uL)	Dat	e Analyz	ed	1/26/99	
Injection Volu	ıme <u>10</u>) (uL)		Dilu	tion Fac	tor	10	
GPC Cleanup	(Y/N)	NpH						
Number TICs	s found	0		NCENTI L or ug/	RATION Kg)	UNIT UG/L	_	
CAS NUMB	ER	COMPOUND NAM	IE		RT	ES	T CONC	Q

Semi-Volatile Analysis Report

US Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

 Data File Name
 BN02688.D
 Sample Name
 4181 02

 Operator
 Bhaskar
 Muse Info
 Field Bhask

 Date Acquired
 26-Jan-99
 Sample Multipher
 1

C45#	W	R.T.	Response	Repult	Regulatory Level (ug/L)*	MDL		Qualifica
110-86-1	Name			not detected	NLE		ueft.	
	Pyridine	 		not detected	20		us/L	
62-75-9	N-mtroso-dun-shylamme			not detected	NLE		os/L	
62-53-1	bis(2-Chloroethyl)ether	+		pot detected	10			
113-44-4	J.4-Dahlorobenzene	1		not detected	75		ug/L	
106-46-7	Berryl alcohol	+ -		not detected	NLR		ag/L	
95-50-1	1_2-Dichterobenzene	1-		not detected	600		m/L	
108-60-1	bs(2-chlorossopropyf)ether	 		pot detected	300		ug/L	
	Hexachioractions	+		not detected	10		ug/L	
<u>67-72-1</u> 98-95-3	Nemberzene	+		not detected	10		m/L	
78-59-1	boshorone	1	.	not detected	100		us/L	
111-91-1	hu(2-Chloroethoxy)methene	1	 	not detected	NLE		oo∕L	
65-85-Q	Benzone Acad	1-		not detected	NLE	_	w/L	
120-82-1	1,2,4-Trichlorybenzene	1		not detected	9		us/L	
91-20-3	Naphthelene	1		pot_detected	NLE	_	œ∕L	
106-47-8	4-Chlorospiline			not detected	NLE		wp/L	
87-68-3	Heuschlerobutadiene	1		not detected	ı			
91-57- 6	2-Methylosphthalene	1		not detected	NLE	016	-/L	
77-47-4	Hexachlorocyclopentadome	1	-	not detected	50	1.50	we/L	
91-58-7	2-Chlomosobbhalene	1		not detected	NLE		way's.	
51-74-4	2-Nitrounduse	<u> </u>	-	got distacted	NLE		uw/L	
131-11-3	Denethylphthalate	 		not detected	7000		29/L	
208-96-8	Acensphiliplene	1		not detected	NLE	_	w/L	
606-20-2	2,6-Dinitrytologie			not detected	NLE	0 31	we/L	
99-09-2	3-Naroenilme	1		not detected	NLE		es/L	1
83-32-9	Acentobibene	1		not detected	400	_	us/L	T
(32-64-9	Diberzofere			not detected	NLE	0 32	og/L	
121-14-2	2.4-Distrotolpene			not detected	10	0.36	ug/L	
84-66-2	Diethykolathalete			not detected	5000	0	ve/L	
16-73-7	Fluorene	1		not detected	300	0 29	we/L	
7005-72-3	4-Chlorophazyl-pharylether	T		not detected	NLE	031	og/L	
100-01-6	4-Netroemboe	<u> </u>		not detected	NLE	0 90	us/L	
16-30-6	n-Natrosodiphenylamma			not detected	20	0 23	ug/L	
103-33-3	Azobenzzas			not detected	NLE	9 80	we/L	
101-55-3	4-Bromophenyl-phenylether	T		not detected	NLE	0.55	we/L	
118-74-1	Hexachlorobenzene		•	not detected	10	0 82	ug/L	
R5-01-8	Phenanthrene			not_detected	NLE	0 12	υg/L	
120-12-7	Anthracene			not detected	2000	0 19	ug/L	
14-74-2	Dy-m-butylphthalate		_	not detected	900	9 21	ug/L	
206-44-0	Finoranthene			not detected	300	04	ug/L	ļ
92-87-3	Benzolase	\perp		not detected	50	1 43	wg/L	
129-00-0	Pyrene			not detacted	200		ug/L	
15-61-7	Butylbenzylphthalate			not detected	100		ug/L	
56-55-3	Benzo(a)anthracens			not detected	10		ug/L	
91-94-1	3_3'-Dichlorobenzidine			not detected	60		us/L	1
218-01-9	Chrysene			not detected	20		ug/L	1
117-81-7	bus(2-Ethylhenyi)phthalata	1	<u> </u>	not detected	30		ug/L	
117-84-0	Di-n-octy/phthalata	1		not detected	100		up/L	T
205-99-2	Benzo(b)fluoranthene			not detected	10		ug/L	T
207-08-9	Benzo(k)thuorenthens	1		not detected	2		ug/L	
50-32-4	Besto(a)pyrens	1		not detected	20	_	ug/L	
193-39-5	Indeno[i,2,3-ed]pyrene	1	_	not detected	20		ug/L	1
53-7 <u>0-</u>)	Dibenela h landwacene	 		not_detected	20	$\overline{}$	110/L	1
	c and the fact smills shills		S					

* Higher of PQL's and Ground Water Criteria as per NIAC 79-6

<u>Qualifiers</u>

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

E= Value Exceeds Linear Range D= Value from dilution

B= Compound in Related Blank
PQL= Practical Quantitation Limit

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

Field ID

Lab Name	FMETL		_ Lab Cod	ا .	13461		Field 81	ank
Project.	UST	Case No	Locab	on	280	SI	DG No	
Matrix: (soil/w	vater)	WATER	L	.ab	Sample	1D	4181 02	
Sample wt/vo	l	1000 (g/ml) ML	_	.ab	File ID		BN02688 D	
Level (low/m	ned)	LOW	C)ate	Receiv	ed	1/12/99	
% Moisture		decanted (Y/N)	N C)ate	Extract	ted	1/14/99	
Concentrated	Extract	Valume <u>1000</u> (uL)	C)ate	Analyz	ed	1/26/99	
Injection Volu	me <u>10</u>	<u>) (uL) </u>		Dilu	tion Fac	tor	10	<u>-</u> -
GPC Cleanup	(Y/N)	<u>N</u> pH						
			CONCEN	NTF	RATION	ואט	rs	
Number TICs	found	<u> </u>	(ug/L or u	1g/h	(g)	UG/	<u> </u>	
CAS NUMB	ER	COMPOUND NAME			RT	ES	T CONC	ď

Semi-Volatile Analysis Report

US Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name 8N02691 D Sample Name 4182 02 Operator Bhaskar Muse Info Bidg429 Sample Multipher Date Acquired 26-Jan-99

	_		_		Regulatory Level (up/L)*		
CAS#	Name	R.T	Response	Result	 _	MDL	Qualifiers
110-86-1	Pyridine	+		not detected	NLE	5 00 0	
62 75-9	N-natroso-damethylamine	+		not detected	20	0 94 us	
62 53 3	Andre			not detected	NLE	0 15 u	
111-44-4	bes(2-Chloroethyl)ether	+		not detected	10	0 48 u	
106-46-7	1,4 Dichlorobenzene	+		not detected	75	0 23 U	
100-51-6	Benzyl alcohol	1		not detected	NLE	0 18 0	
95-50-1	1 2 Dichlorobenzene			not detected	600	0 16 u	
108-60-1 67 72 1	bis(2-chlorosopropyl)ether Hexachloroethane			not detected	300	061 u	
-	Ntrobenzene	1		not detected	10	0 33 12	\neg
98-95-3		+		not detected	100	0 46 u	
78 59-1	Isophorone	1		not detected	1	035 u	
111-91 1	bis(2-Chloroethoxy)methane	-	-	not detected	NLE	046 0	1
65 85-0 120-82-1	Benzoic Acid	 	<u>. </u>		NLE 9	0 26 U	
		-		not detected	NLE	0 25 u	
91-20-3 106-47 8	Naphthalene 4-Chlorographie	1		not detected	NLE	0 25 u	
87-68-3	Hexachlorobutadiene			not detected	I NLE	0 38 0	
87 -08-3 91 57-6	2 Methylnaphthalene			not detected	NLE		
77-47-4	Hexachlorocyclopentadiene	1		not detected	SO SO	0 16 lu	
91-58-7	2-Chloronaphthalene	 		not detected	NLE	0 32 u	$\overline{}$
88 74-4	2-Nitroeniline	1		not detected	NLE	0 21 u	
131-11 3	Dimethylphthalate	1		not detected	7000	0 18 u	
208-96-8	Acenaphthylene	1	-	not detected	NLE	0 19 u	
506-20-2	2,6-Disstrotoluene	1		not detected	NLE	0 31 u	
99-09-2	3 Nuroambre			not detected	NLE	0 26 u	
83-32-9	Acensolythene	14 46	38248	1 15 ug/L	400	0 26 u	
132-64 9	Dibenzofuran	1		not detected	NLE	0 32 u	
121 14 2	2.4 Dinitrotoluene			not detected	10	0 36 tr	
84-66-2	Diethylphthalate			not detected	5000	0 82 u	
86-73 7	Fluorene	15 63	65680	1_84_ug/L	300	0 29 u	
7005-72 3	4-Chlorophenyl-phenylether			not detected	NLE	031 0	
100-01 6	4-Nitrografine			not detected	NLE	0 90 u	*
B6-30-6	n-Nitrosodiphenylamine	Ì		not detected	20	0 23 u	
103 33 3	Azobenzene			not detected	NLE	0 80 12	
101 55-3	4 Bromophenyl-phenylether			not detected	NLE	0 55 u	
118-74 1	Hexachlorobenzene			not detected	10	0 82 u	
B5-01 B	Phenanthrene			not detected	NLE	0 18 u	
120-12 7	Anthracene	1		not detected	2000	0 19 u	
B4 74 2	Di-n-butylphthalate	T T		not detected	900	0 23 u	
206-44-0	Fluoranthene			not detected	300	041 14	2
92 87 5	Benzidine			not detected	50	1 45 u	
129-00-0	Pyrene			not detected	200	0 32 u	v.
85-68-7	Butylberzylphthalate			not detected	100	0 47 u	
56-55-3	Benzola lambracene			not detected	10	0 22 u	
91-94-1	3,3' Dichlorobenzadine			not detected	60	0 46 u	
218-01 9	Chrysene			not detected	20	0 20 u	
117817	bss(2 Ethylhexyl)phthalate			not detected	30	0 51 u	
117-84-0	Di n-octylphthalate			not detected	100	0 82 u	
205-99 2	Benzo[b]fluoranthene			not detected	10	0 37 u	
207-08-9	Benzo[k](fluorumbene			not detected	2	0 32 u	
50-32-8	Benzo(a)pyrene			not detected	20	031 u	_
93 39 5	Indeno[1,2,3-ed]pyrene			not detected	20	0 79 u	
53-70-3	Dibenzia klambracene			not detected	20	0 28 u	
							

* Higher of PQL s and Ground Water Criteria as per NJAC 7 9-6

Quabliers

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

Lab Name	FMETL			Lab Cod	13461	Bldg.429
Project	υST	Case	No 4182	Location	1 <u>429</u> S	DG No
Matrix (soil/	water)	WATER		Lai	b Sample ID	4182 02
Sample wt/vo	ol	1000 ((g/ml) ML	Lai	b File ID	BN02691 D
Level (low/r	med)	LOW		Da	te Received	1/12/99
% Moisture		decan	ited (Y/N)	N Da	te Extracted	1/14/99
Concentrate	d Extract	Volume 100	00 (uL)	Da	te Analyzed	1/26/99
Injection Vol	ume <u>1</u>	0 (uL)		Dit	ution Factor	10
GPC Cleanu	p (Y/N)	N ph				

CONCENTRATION UNITS

UG/L

(ug/L or ug/Kg)

CAS NUMBER	COMPOUND NAME	RT	EST CONC	Q
1	unknown	26 25	53	J
2	unknown	27 61	16	J
3 006971-40-0	17-Pentatriacontene	28 87	11	JN
4	unknown	30 21	10	J

Number TICs found

LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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

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

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

1	Cover page, Title Page listing Lab Certification #, facility name and address & date of report submitted	
2	Table of Contents submitted	
3	Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted	_
4	Document pagmated 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	
	oratory Manager or Environmental Consultant's Signature	-

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

Laboratory Certification #13461

Laboratory Authentication Statement

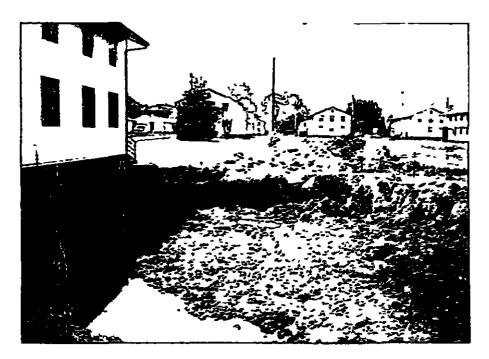
I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N J A C 7 18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW-846 for Solid Waste Analysis I have personally examined the information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

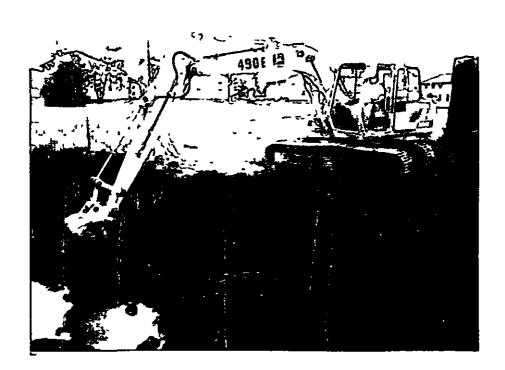
2 15 44

Appendix C

APPENDIX C PHOTOGRAPHS



REMEDIATION ALONG BUILDING 429



REMEDIATION AWAY FROM BUILDING 429

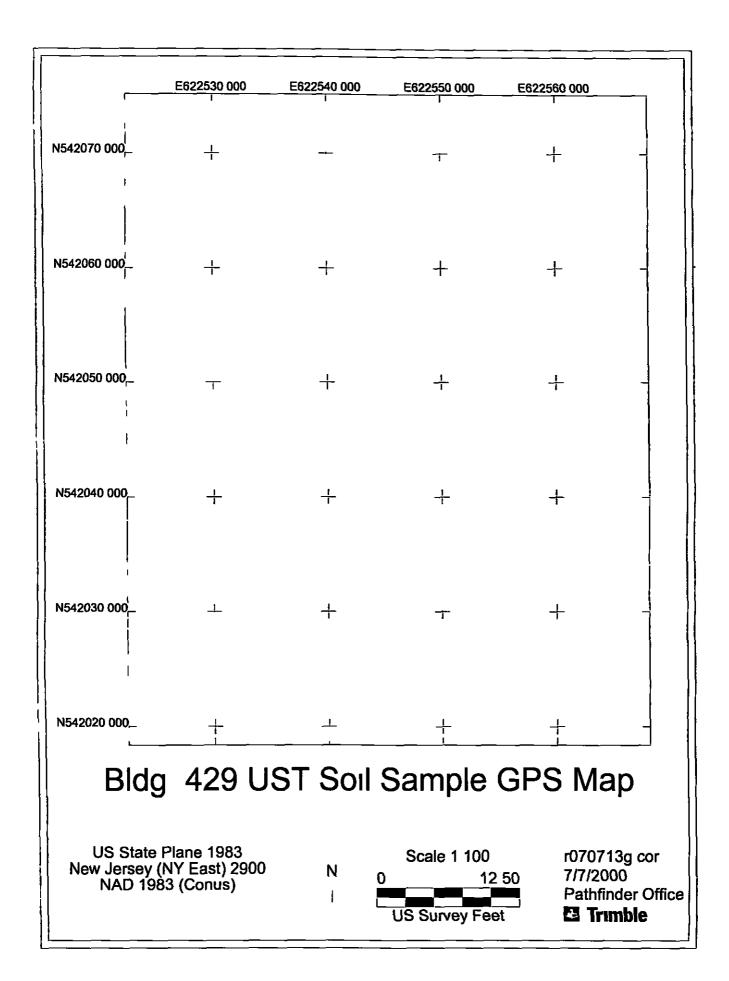


Appendix D

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APPENDIX D ELECTRONIC DATA DELIVERABLES



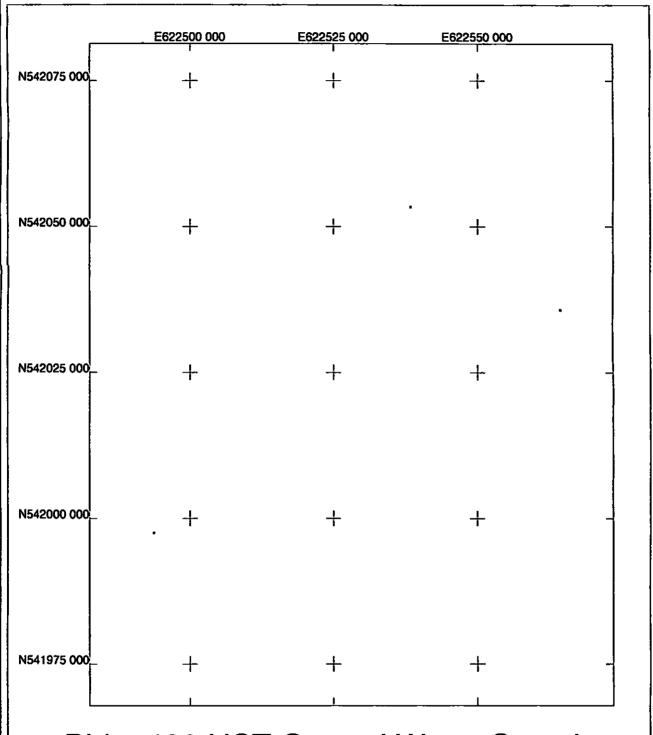
BLDG 429 UST SOIL SAMPLE GPS POSITIONS & COORDINATES

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

(IN US SURVEY FEET)

SAMPLE POINTS

POSITION / DESC	Y COORD (NORTHING)	X COORD (EASTING)	
429 Soil s2	542037 712	622542 513	
429 Soil s3	542031 091	622530 145	
	REFERENCE POINTS		
POSITION / DESC	Y COORD (NORTHING)	X COORD (EASTING)	
TELE POLE	542062 742	622560 645	



Bldg. 429 UST Ground Water Sample **GPS Location Map**

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

Scale 1 200 **US Survey Feet**

25 00

r011319agw429 ¢or 2/10/2000 Pathfinder Office **☑** Trimble

BLDG 429 UST GROUND WATER SAMPLE GPS POSITION & COORDINATES

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

(IN US SURVEY FEET)

SAMPLE POINTS

POSITION / DESC	Y COORD (NORTHING)	X COORD (EASTING)
429 GW	542053 453	622538 314

REFERENCE POINTS

Y COORD (NORTHING)	X COORD (EASTING)
541997 593	622493 685
542035 755	622564 281
	541997 593