United States Army

Fort Monmouth, New Jersey

Underground Storage Tank Closure and Site Investigation Report

Building 282
Main Post

NJDEP UST Registration No. 081533-57
NJDEP Closure Approval No. C-93-3182
Spill Case No. 93-11-29-1738-37

July 1998

UNDERGROUND STORAGE TANK
CLOSURE AND SITE INVESTIGATION REPORT

BUILDING 282

MAIN POST
NJDEP UST REGISTRATION NO. 081533-57
NJDEP CLOSURE APPROVAL NO. C-93-3182
SPILL CASE NO. 93-11-29-1738-37

JULY 1998

PROJECT NO.: 09-5004-12
CONTRACT NO.: DACA51-94-D-0014

PREPARED FOR:

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

PREPARED BY:

BCM ENGINEERS
A DIVISION OF ATC
BROMLEY CORPORATE CENTER
THREE TERRI LANE
BURLINGTON, NEW JERSEY 08016

TABLE OF CONTENTS

TABLE OF CONTENTS (CONTINUED)

EXECUTIVE SUMMARY

On October 27, 1993, a fiberglass underground storage tank (UST) was closed by removal in accordance with the New Jersey Department of Environmental Protection (NJDEP) Closure Approval No. C-93-3182 at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey. The UST, NJDEP Registration No. 081533-57, was located immediately adjacent to Building 282 in the Main Post area of U.S. Army, Fort Monmouth. UST No. 081533-57 was a 2,000-gallon No. 2 fuel oil UST. The UST fill port was located directly above the tank. The tank closure was performed by Cleaning Up The Environment Inc. (CUTE).

The site assessment was performed by U.S. Army personnel in accordance with the NJDEP *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E) and the NJDEP *Field Sampling Procedures Manual*. Soils surrounding the tank were visually observed and screened with air monitoring equipment for evidence of contamination. Following removal, the UST was inspected for holes. No holes were noted in the UST, however, evidence of potentially contaminated soils was observed surrounding the tank. Most probably soil contamination was due to a former steel fuel oil UST, previously replaced by the fiberglass UST.

On October 27, 1993, following removal of the UST, approximately 8 cubic yards of potentially contaminated soil were removed from the excavation. The following day an additional 8 cubic yards of potentially contaminated soil and concrete were removed from the excavation. Groundwater was present in excavation at approximately 4.5 feet below ground surface (bgs). Six soil samples collected were analyzed for total petroleum hydrocarbons (TPHC). Due to slightly elevated TPHC results from one sample location, additional soil was removed from the excavation on November 8, 1993 and three more post-excavation soil samples were collected and were analyzed for TPHC. Due to TPHC concentrations detected along the western sidewall, approximately 8 cubic yards of potentially contaminated soil were removed on November 10, 1993. Four additional soil samples were collected on November 10, 1993, and were analyzed for TPHC. Upon confirmation of TPHC results, one soil sample, with the highest TPHC result was further analyzed for volatile organic compounds plus 10 tentatively identified compounds and for lead.

Based on an inspection of the UST, and field screening of subsurface soils the Directorate of Public Works (DPW) concluded that an historical discharge was associated with the fiberglass UST, or a previously steel UST, replaced by the fiberglass UST. On November 29, 1993, a spill was reported to the NJDEP "Hotline" for UST No. 081533-57 and was assigned Spill Case No. 93-11-29-1738-37.

The post-excavation soil samples collected from the UST excavation and from below piping associated with the former UST at Building 282 contained TPHC concentrations below the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 milligrams per kilogram (mg/kg) (N.J.A.C. 7:26D and revisions dated February 3, 1994).

Soil samples collected on October 28, 1993, November 8, 1993, and November 10, 1993, contained TPHC concentrations ranging from non-detectable to 3,950.0 mg/kg. Volatile organics were not detected above their method detection limit, except acetone detected at a concentration of 0.075 mg/kg. Lead was detected at a concentration of 14.9 mg/kg.

Following receipt of all post-excavation soil sampling results, the excavation was backfilled to grade with a combination of uncontaminated excavated soil and certified clean fill. The excavation site was then restored to its original condition.

In response to the observation of potentially contaminated soil near the shallow water table, one shallow overburden monitoring well (MW-1) was installed at the Building 282 area on September 8, 1994. On November 9, 1994, and December 1, 1994, groundwater samples were collected from MW-1 and analyzed for volatile organic compounds calibrated for xylene plus 10 tentatively identified compounds (VOCs), methyl tertiary butyl ether, tertiary butyl alcohol, and semivolatile organic compounds plus 10 tentatively identified compounds (SVOCs). On March 19, 1997, a confirmatory groundwater sampling event was performed, and MW-1 was sampled for VOCs.

Groundwater analytical results were either below the detection limit or in compliance with the New Jersey Ground Water Quality Criteria (GWQC). No product or sheen was observed in MW-1 on either of the sampling dates.

No further action is proposed in regard to the closure and site assessment of UST No. 081533-57 at Building 282.

1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

1.1 OVERVIEW

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 081533-57, was closed at Building 282 at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey on October 27, 1993. Refer to site location map on Figure 1. This report presents the results of the DPW's implementation of the UST Decommissioning/Closure Plan submitted to the NJDEP on June 6, 1993. The plan was approved on September 2, 1993 and assigned TMS No. C-93-3182. The UST was a fiberglass 2,000-gallon tank containing No. 2 fuel oil.

Decommissioning activities for UST No. 081533-57 complied with all applicable Federal, State and Local laws and ordinances in effect at the date of decommissioning. These laws included but were not limited to: N.J.A.C. 7:14B-1 et seq., N.J.A.C. 5:23-1 et seq., and Occupational Safety and Health Administration (OSHA) 1910.146 & 1910.120. All permits including but not limited to the NJDEP-approved Decommissioning/Closure Plan were posted on site for inspection. CUTE, the contractor that conducted the decommissioning activities, is registered and certified by the NJDEP for performing UST closure activities. Closure of UST No. 081533-57 proceeded under the approval of the NJDEP Bureau of Underground Storage Tanks (NJDEP-BUST). The NJDEP-BUST closure approval and signed certifications for UST No. 081533-57 are included in Appendices A and B, respectively.

Based on an inspection of the UST, and field screening of subsurface soils the Directorate of Public Works (DPW) concluded that an historical discharge was associated with the UST. On November 29, 1993, a spill was reported to the NJDEP "Hotline" for UST No. 081533-57 and was assigned Spill Case No. 93-11-29-1738-37.

This UST Closure and Site Investigation Report has been prepared by Smith Technology Corporation, to assist the United States Army Directorate of Public Works (DPW) in complying with the NJDEP Bureau of Underground Storage Tanks (NJDEP-BUST) regulations. The applicable NJDEP-BUST regulations at the date of closure were the *Interim Closure Requirements for Underground Storage Tank Systems* (N.J.A.C. 7:14B-1 et seq. September 1990 and revisions dated November 1, 1991).

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

N

SCALE
0 2000 FT.

NEW JERSEY

QUADRANGLE LOCATION

Source: Long Branch, New Jersey Quadrangle

Project No. 09-5004-14

Figure 1
Site Location Map

1.2 SITE DESCRIPTION

Building 282 is located in the eastern portion of the Main Post area of Fort Monmouth, as shown on Figure 1. UST No. 081533-57 was located south of Building 282 and appurtenant piping ran approximately 10 feet northwest from the excavation to Building 282. The fill port area was located directly above the tank. A site map is provided on Figure 2.

1.2.1 Geological/Hydrogeological Setting

The following is a description of the geological/hydrogeological setting of the area surrounding Building 282. 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 marine, and continental shelf environments, date from Cretaceous through the Quaternary Periods. The mineralogy ranges from quartz to glauconite.

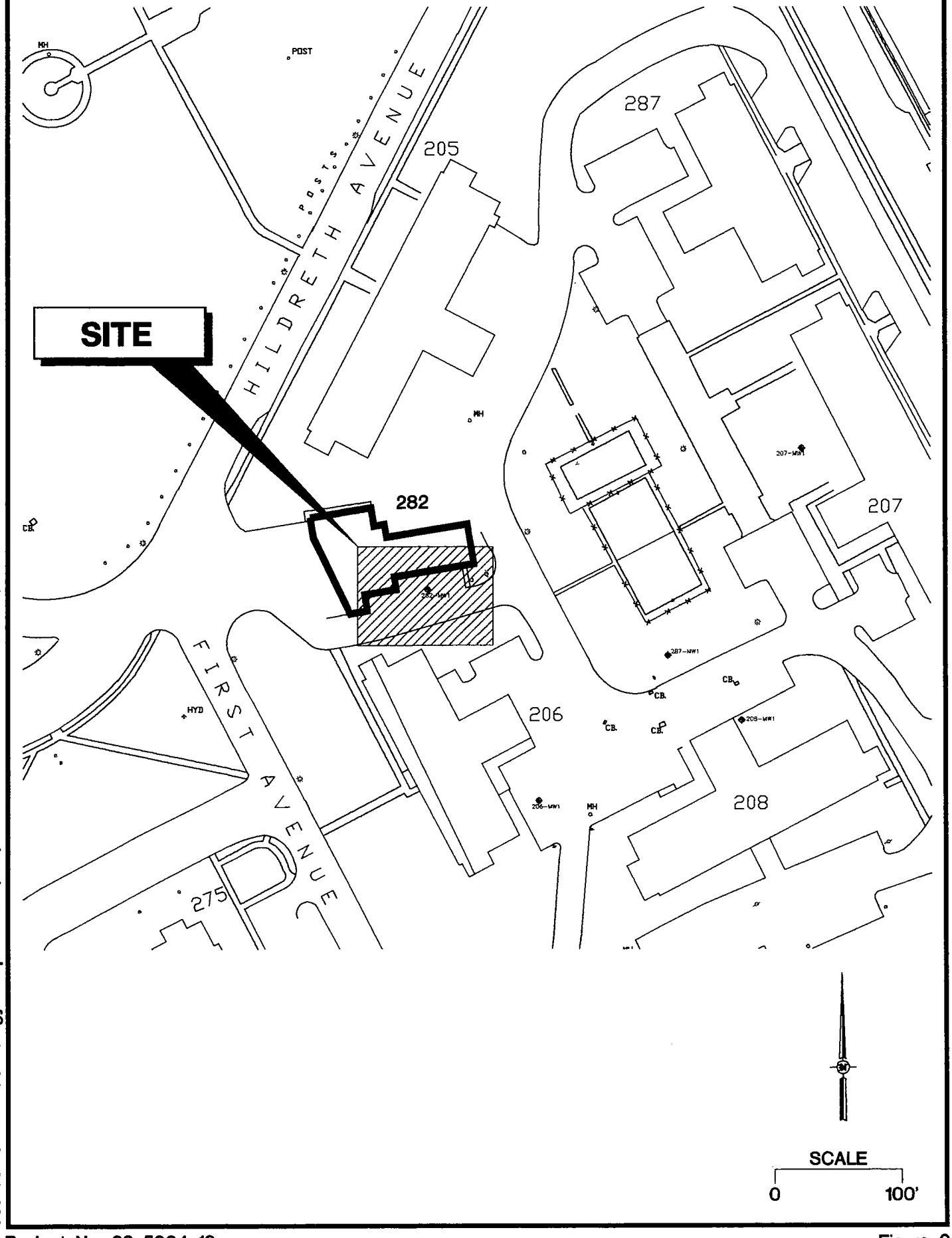
The formations record several major transgressive/regressive cycles and contain units which are generally thicker to the southeast and reflect a deeper water environment. Over 20 regional geologic units are present within the sediments of the Coastal Plain. Regressive, upward coarsening deposits are 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 thicknesses for these units vary greatly (i.e., from several feet to several hundred feet). The Coastal Plain deposits thicken to the southeast from the Fall Line to greater than 6,500 feet in Cape May County (Brown and Zapecza, 1990).

Local Geology

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

SMITH

U.S. Army
Department of Public Works
Fort Monmouth, New Jersey



Source: Smith Technology Corporation (163)

Project No. 09-5004-12

Figure 2
Building 282
Site Map

lower member (Sandy Hook) is a dark gray to black, medium-to-fine grained sand with abundant clay, mica, and glauconite.

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

Hydrogeology

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

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

Due to the proximity of the Atlantic Ocean to Fort Monmouth, shallow groundwater may be tidal 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.

1.3 HEALTH AND SAFETY

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

1.4 REMOVAL OF UNDERGROUND STORAGE TANK

1.4.1 General Procedures

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

1.4.2 Underground Storage Tank Excavation and Cleaning

Prior to UST decommissioning activities, surficial soil was removed to expose the UST and associated piping. All free product present in the piping was drained into the UST, and the UST was purged to remove vapors prior to cutting and removal of the piping. The UST was completely emptied of all liquids prior to removal from the ground. Approximately 200 gallons of liquid were transported by Freehold Cartage Inc. to Lionetti Oil Recovery Co. Inc., a NJDEP-approved petroleum recycling and disposal company located in Old Bridge, New Jersey. Refer to Appendix C for the waste manifest (NJA-1706532).

The UST was cleaned prior to removal from the excavation in accordance with the NJDEP-BUST regulations. After the UST was removed from the excavation, it was staged on polyethylene sheeting and examined for holes. No holes or punctures were observed during the inspection by the Sub-Surface Evaluator. Soils surrounding the UST were screened visually and with an OVA for evidence of contamination. Evidence of contamination was observed.

1.5 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The tank was transported by CUTE to the Fort Monmouth County Reclamation Center for disposal in compliance with all applicable regulations and laws. See Appendix D for UST Disposal Certificate.

The removal contractor labeled the UST prior to transport with the following information:

- site of origin
- contact person
- NJDEP UST Facility ID number
- name of transporter/contact person
- destination site/contact person

1.6 MANAGEMENT OF EXCAVATED SOILS

Based on visual observations, approximately 24 cubic yards of potentially contaminated soils were excavated from the UST excavation. Potentially contaminated soils were stockpiled separately from other excavated material and were placed on and covered with polyethylene sheets. Potentially contaminated soils were transported to T-80 on Main Post for storage prior to ultimate disposal at Soil Remediation of Philadelphia. Soils that did not exhibit signs of contamination were used as backfill following removal of the UST.

2.0 SITE INVESTIGATION ACTIVITIES

2.1 OVERVIEW

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

The following Parties participated in Closure and Site Investigation Activities.

- Closure Contractor: Cleaning Up The Environment Inc. (CUTE)
  Closure Supervisor: John Lonergan
  Phone Number: (201)427-2881
  NJDEP Company Certification No.: 0200128
  NJDEP Certification No.: 3248

- Subsurface Evaluator: Charles M. Appleby
  Employer: U.S. Army, Fort Monmouth
  Phone Number: (908) 532-6224
  NJDEP Certification No.: 2056

- Analytical Laboratory: U.S. Army Fort Monmouth Environmental Laboratory
  Contact Person: Brian K. McKee
  Phone Number: (908)532-4359
  NJDEP Certification No.: 13461

- Analytical Laboratory: Twenty First Century Environmental Inc.
  Contact Person: Richard W. Lynch
  Phone Number: (609)467-9521
  NJDEP Certification No.: 08031

- Hazardous Waste Hauler: Freehold Cartage Inc.
  Contact Person: Barry Olsen
  Phone Number: (908)721-0900
  NJDEP Hazardous Waste Hauler No.: 2265

2.2 FIELD SCREENING/MONITORING

Field screening using an OVA and visual observations were performed by a NJDEP Certified Sub-Surface Evaluator to identify potentially contaminated material. Additional soils were removed from the excavation surrounding UST No. 081533-57 until no evidence of contamination remained.

2.3 SOIL SAMPLING

On October 27, 1993, following removal of the UST, approximately 8 cubic yards of potentially contaminated soil were removed from the excavation. The following day an additional 8 cubic yards of potentially contaminated soil and concrete were removed from the excavation. Post-excavation soil samples A, B, DUP B, C, D, E, and G were collected from a total of six (6) locations along the sidewalls of the excavation immediately above groundwater. Samples A, B, DUP B, C, D, and G were collected at a depth of 4.0 feet below ground surface (bgs). Sample E was collected along the eastern sidewall at a depth of 3.0 feet bgs. Groundwater was present at approximately 4.5 feet bgs. The samples were analyzed for total petroleum hydrocarbons (TPHC).

Due to slightly elevated TPHC results from sample location B, additional soil samples were removed from the excavation on November 8, 1993 and post-excavation soil samples H, I, J, and DUP I were collected. The samples were collected at a depth of 3.5 feet bgs and were analyzed for TPHC.

Due to increasing TPHC concentrations along the western sidewall, approximately 8 cubic yards of potentially contaminated soil were removed on November 10, 1993. Soil samples L, M, N, and O were collected at a depth of 3.5 feet bgs and were analyzed for TPHC. Upon confirmation of TPHC results, sample location M was analyzed for volatile organic compounds plus 10 tentatively identified compounds. Additional excavation north of soil sample location M could not be performed due to building 282 obstruction.

Based on an inspection of the UST, and field screening of subsurface soils the Directorate of Public Works (DPW) concluded that an historical discharge was associated with the UST. On November 29, 1993, a spill was reported to the NJDEP "Hotline" for UST No. 081533-57 and was assigned Spill Case No. 93-11-29-1738-37.

The site assessment was performed by U.S. Army personnel in accordance with the NJDEP *Technical Requirements* and the NJDEP *Field Sampling Procedures Manual.* A summary of sampling activities including parameters analyzed is provided in Table 1. The post-excavation soil samples were collected using polystyrene scoops. Actual soil TPHC values may be higher than reported, due to sample utensil absorbency. If absorbency resulted in reducing the actual soil TPHC concentration by 50 %, the highest soil contaminant still existing in the excavation would be 5,680.0 mg/kg, still below the applicable NJDEP soil cleanup standard for total organic

TABLE 1
SUMMARY OF SAMPLING ACTIVITIES
BUILDING 282, MAIN POST
FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Matrix	Sample Type	Analytical Parameters (and USEPA Methods) *	Sampling Method
A	10/28/93	Soil	Post-Excavation	TPHC	Polystyrene
B	10/28/93	Soil	Post-Excavation	TPHC	Polystyrene
C	10/28/93	Soil	Post-Excavation	TPHC	Polystyrene
D	10/28/93	Soil	Post-Excavation	TPHC	Polystyrene
E	10/28/93	Soil	Post-Excavation	TPHC	Polystyrene
DUP B	10/28/93	Soil	Post-Excavation	TPHC	Polystyrene
G	10/28/93	Soil	Post-Excavation	TPHC	Polystyrene
H	11/8/93	Soil	Post-Excavation	TPHC	Polystyrene
I	11/8/93	Soil	Post-Excavation	TPHC	Polystyrene
J	11/8/93	Soil	Post-Excavation	TPHC	Polystyrene
DUP I	11/8/93	Soil	Post-Excavation	TPHC	Polystyrene
L	11/10/93	Soil	Post-Excavation	TPHC	Polystyrene
M	11/10/93	Soil	Post-Excavation	TPHC	Polystyrene
N	11/10/93	Soil	Post-Excavation	TPHC	Polystyrene
DUP M	11/10/93	Soil	Post-Excavation	TPHC	Polystyrene
Site M	11/10/93	Soil	Post-Excavation	VOCs, Pb	Polystyrene
MW-1	11/9/94	Aqueous	Groundwater	VOCs, SVOCs	Teflon Bottom Fill Bailer
MW-1	12/1/94	Aqueous	Groundwater	VOCs, SVOCs	Teflon Bottom Fill Bailer

*Note:
TPHC: Total Petroleum Hydrocarbons (Method 418.1 / soil and aqueous)
VOCs: Volatile Organic Compounds calibrated for xylene plus 10 tentativley identified compounds (Method 624 - soil / 524.2 - aqueous)
SVOCs: Semivolatile Organic Compounds plus 15 tentatively identified compounds (Method 625 / aqueous)
Pb: Lead (Method SW-846 / soil)

Source: Smith Technology Corporation (Smith Project No. 09-5004-12)

282tbl.xls

contaminants of 10,000 mg/kg. Following soil sampling activities, samples being analyzed for TPHC were chilled and delivered to U.S. Army Fort Monmouth Environmental Laboratory located in Fort Monmouth, New Jersey. Samples being analyzed for VOCs and lead were chilled and delivered to Twenty First Century Environmental Laboratory located in Bridgeport, New Jersey.

2.4 GROUNDWATER SAMPLING

2.4.1 Monitoring Well Installation

In response to the observation of potentially contaminated soil near the shallow water table, one shallow monitoring well (MW-1) was installed at the Building 282 area on September 8, 1994. It was installed approximately 12 feet south of the UST excavation in the downgradient direction. It was screened in the 2 to 15 foot interval, across the water table, which is approximately 4 feet below grade surface.

The well was constructed in accordance with the NJDEP's well construction protocols outlined in its May 1992 *Field Sampling Procedures Manual.* The NJDEP well drilling permit and a well construction log is presented in Appendix E.

The well was constructed with 4-inch (ID) PVC riser and 0.020 slotted PVC well screen. A silica sand pack was installed in the annulus between the borehole wall and the screen. The sand pack was extended approximately one foot above the top of the screen. The sand pack above the well screen was graded down to a fine sand to minimize grout intrusion.

The borehole was tremie-grouted with bentonite-cement grout from the top of the sand pack to 0.5 inches bgs. The well was secured with a water-tight, flush-mounted locking road box. The road box was set in place with concrete, which was placed in the remaining open borehole. The elevation of the well riser was surveyed to the nearest 0.01 feet by a New Jersey-licensed surveyor. The well permit number was marked on the well casing as required.

The monitoring well was developed using a peristaltic surface pump. The well was pumped for 1 hour or until the groundwater was visibly free of sediment. All residual soils and liquids generated during monitoring well installation and development program were collected in New Jersey Department of Transportation-approved 55-gallon drums. The drums were placed in a designated secure location for waste characterization and off-site disposal.

2.4.2 Monitoring Well Sampling

On November 9, 1994 and December 1, 1994, MW-1 was sampled for volatile organic compounds calibrated for xylene plus 10 tentatively identified compounds (VOCs), methyl tertiary butyl ether, tertiary butyl alcohol, and semivolatile organic compounds plus 10 tentatively identified compounds (SVOCs). On March 19, 1997 MW-1 was sampled for VOCs.

Sampling and analysis were performed in accordance with the NJDEP *Field Sampling Procedures Manual* and the *Technical Requirements For Site Remediation.*

Prior to sampling, the water level was measured to the nearest 0.01 feet, and the distance to the bottom of the well was to be measured to the nearest 0.1 feet. The well was checked for floating product (light non-aqueous phase liquids). The well was purged of three to five well volumes of standing water. Sample volume was then collected using a dedicated decontaminated Teflon bottom-filled bailer attached to PTFE (Teflon)-coated stainless steel cable.

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 SOIL SAMPLING RESULTS

All samples were analyzed for TPHC. The post-excavation sampling results were compared to the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 mg/kg (N.J.A.C. 7:26D and revisions dated February 3, 1994). A summary of the analytical results and comparison to the NJDEP soil cleanup criteria is provided in Table 2 and Table 3 and the soil sampling results are shown on Figure 3. The analytical data package is provided in Appendix E.

To evaluate soil conditions following removal of the UST and associated piping, post-excavation soil samples were collected from a total of six (6) locations on October 28, 1993. Samples A, B, C, D, E, and G contained TPHC concentrations ranging from 6.17 mg/kg to 342.0 mg/kg. The duplicate of sample B (DUP B) contained a TPHC concentration of 1,316.0 mg/kg.

Due to the slightly elevated TPHC concentration in sample location B, soil was excavated from the western sidewall and soil samples H, I, DUP I, and J, were collected from three (3) locations on November 8, 1993. Sample J contained a TPHC concentration of 16.7 mg/kg. Samples H, I, and DUP I contained TPHC concentrations of 2,140.0 mg/kg, 3,950.0 mg/kg, and 3,280.0 mg/kg, respectively.

On November 10, 1993, following additional excavation of soil along the western sidewall, samples L, M, and N were collected from three locations and were analyzed for TPHC. No further excavation was possibly due to Building 282 obstruction. Samples L, and M contained TPHC concentrations of 1,250.0 mg/kg and 2,840.0 mg/kg, respectively. Sample N contained a non-detectable concentration of TPHC.

Upon confirmation of the TPHC results from samples collected on November 10, 1993, sample M (which had a TPHC concentration of 2,840.0 mg/kg) was analyzed for VOCs and lead. The results indicated that sample M contained acetone at 0.075 mg/kg and lead at 14.9 mg/kg, both of which are below the GWQC. No other compounds were detected.

3.2 GROUNDWATER SAMPLING RESULTS

The VOC and SVOC results were either below the detection limit or in compliance with the New Jersey Groundwater Quality Criteria (GWQC).

The groundwater sample collected from MW-1 on November 9, 1993 contained only dimethylphthalate at a concentration of 1.0 ug/l. No other volatile and semivolatile organic compounds were detected. Semivolatile organic - TICs were not found, and only three volatile organic-TICs (total 24 ug/l) were detected but below their sample quantitation limits.

TABLE 2
POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 282, MAIN POST
FORT MONMOUTH, NEW JERSEY

Sample ID/Depth	Sample Laboratory ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (mg/kg)	Compound of Concern	Result (mg/kg)	NJDEP Soil Cleanup Criteria * (mg/kg)	Exceeds Cleanup Criteria
A/4.5-5.0'	1301.1	10/28/93	10/28/93	Total % Solid	--	--	79 %	--	--
				TPHC	3.3	yes	200	10,000	--
B/4.5-5.0'	1301.2	10/28/93	10/28/93	Total % Solid	--	--	85 %	--	--
				TPHC	6.6	yes	342	10,000	--
C/4.5-5.0'	1301.3	10/28/93	10/28/93	Total % Solid	--	--	84 %	--	--
				TPHC	3.3	yes	6.17	10,000	--
D/4.5-5.0'	1301.4	10/28/93	10/28/93	Total % Solid	--	--	84 %	--	--
				TPHC	3.3	yes	19.3	10,000	--
E/3.0-3.5'	1301.5	10/28/93	10/28/93	Total % Solid	--	--	90 %	--	--
				TPHC	3.3	yes	48.6	10,000	--
DUP B/4.5-5.0'	1301.6	10/28/93	10/28/93	Total % Solid	--	--	86 %	--	--
				TPHC	46	yes	1,316	10,000	--
G/4.5-5.0'	1301.7	10/28/93	10/28/93	Total % Solid	--	--	85 %	--	--
				TPHC	23	yes	221	10,000	--
H/3.5-4.0'	1317.1	11/8/93	11/9/93	Total % Solid	--	--	82 %	--	--
				TPHC	23	yes	2,140	10,000	--
I/3.5-4.0'	1317.2	11/8/93	11/9/93	Total % Solid	--	--	85 %	--	--
				TPHC	23	yes	3,950	10,000	--
J/3.5-4.0'	1317.3	11/8/93	11/9/93	Total % Solid	--	--	83	--	--
				TPHC	3.3	yes	16.7	10,000	--
DUP I/3.5-4.0'	1317.4	11/8/93	11/9/93	Total % Solid	--	--	84 %	--	--
				TPHC	86	yes	3,280	10,000	--

TABLE 2
POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 282, MAIN POST
FORT MONMOUTH, NEW JERSEY

Sample ID/Depth	Sample Laboratory ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (mg/kg)	Compound of Concern	Result (mg/kg)	NJDEP Soil Cleanup Criteria * (mg/kg)	Exceeds Cleanup Criteria
L/3.5-4.0'	1323.1	10/10/93	11/12/93	Total % Solid	--	--	85 %	--	--
				TPHC	20	yes	1,250	10,000	--
M/3.5-4.0'	1323.2	10/10/93	11/12/93	Total % Solid	--	--	84 %	--	--
				TPHC	20	yes	2,840	10,000	--
N/3.5-4.0'	1323.3	10/10/93	11/12/93	Total % Solid	--	--	86 %	--	--
				TPHC	3.3	yes	ND	10,000	--
DUP M/3.5-4.0'	1323.4	10/10/93	11/12/93	Total % Solid	--	--	83 %	--	--
				TPHC	20	yes	2,140	10,000	--

NOTES:
--: Not applicable / does not exceed criteria
*: Cleanup criteria for total organics
ND: Indicates compound not detected

Actual soil TPHC values may be higher than reported due to absorbancy by polystyrene scoops. If absorbancy resulted in reducing the actual soil TPHC concentration by 50%, the highest soil contaminant would be 5,680 mg/kg.

Source: Smith Technology Corporation (Smith Project No. 09-5004-12)

282tbl.xls

TABLE 3
POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 282, MAIN POST
FORT MONMOUTH, NEW JERSEY

Sample ID/Depth	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (mg/kg	Compound of Concern	Result (mg/kg)	Soil Cleanup Criteria* (mg/kg)	Exceeds Criteria
Site M/3.5-4	11/10/93	11/18/93	Lead	5.0	--	14.9	400	--
			VOLATILE ORGANICS:					
			Chloromethane	0.062	--	ND	520/10	--
			Bromomethane	0.062	--	ND	79/1	--
			Vinyl Chloride	0.062	--	ND	2/10	--
			Chloroethane	0.062	--	ND	--	--
			Acrolein	0.31	--	ND	--	--
			Acetone	0.062	--	0.075	1,000/100	--
			1,1-Dichloroethene	0.031	--	ND	8/10	--
			Carbon Disulfide	0.062	--	ND	--	--
			Acylonitrile	0.31	--	ND	1/1	--
			Methylene Chloride	0.031	--	ND	49/1	--
			1,2-Dichloroethene(trans)	0.031	--	ND	1,000/50	--
			1,1-Dichloroethane	0.031	--	ND	570/10	--
			Vinyl Acetate	0.031	--	ND	--	--
			2-Butanone	0.062	--	ND	1,000/50	--
			Chloroform	0.031	--	ND	19/1	--
			1,1,1-Trichloroethane	0.031	--	ND	210/50	--
			Carbon Tetrachloride	0.031	--	ND	2/1	--
			1,2-Dichloroethane	0.031	--	ND	6/1	--
			Benzene	0.031	--	ND	3/1	--
			Trichloroethene	0.031	--	ND	23/1	--
			1,2-Dichloropropane	0.031	--	ND	10/--	--
			2-Chloroethylvinylether	0.062	--	ND	--	--
			2-Hexanone	0.062	--	ND	--	--
			trans-1,3-Dichloropropene	0.031	--	ND	4/1	--
			Toluene	0.031	--	ND	1,000/500	--

TABLE 3
POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 282, MAIN POST
FORT MONMOUTH, NEW JERSEY

Sample ID/Depth	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (mg/kg	Compound of Concern	Result (mg/kg)	Soil Cleanup Criteria* (mg/kg)	Exceeds Criteria
Site M/3.5-4	11/10/93	11/18/93	VOLATILE ORGANICS CONTINUED:					
			cis-1,3-Dichloropropene	0.031	--	ND	4/1	--
			1,1,2,2-Tetrachloroethane	0.031	--	ND	34/1	--
			1,1,2-Trichloroethane	0.031	--	ND	22/1	--
			4-Methyl-2-Pentanone	0.016	--	ND	1,000/50	--
			Tetrachloroethene	0.031	--	ND	4/1	--
			Dibromochloromethane	0.031	--	ND	110/1	--
			Chlorobenzene	0.031	--	ND	37/1	--
			Ethylbenzene	0.031	--	ND	1,000/100	--
			Total Xylenes	0.031	--	ND	410/10	--
			Styrene	0.031	--	ND	23/100	--
			Bromoform	0.031	--	ND	86/1	--
			m-Dichlorobenzene	0.031	--	ND	--	--
			p-Dichlorobenzene	0.031	--	ND	--	--
			o-Dichlorobenzene	0.031	--	ND	--	--
			Bromodichloromethane	0.031	--	ND	11/1	--

TABLE 3
POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 282, MAIN POST
FORT MONMOUTH, NEW JERSEY

Sample ID/Depth	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (mg/kg	Compound of Concern	Result (mg/kg)	Soil Cleanup Criteria* (mg/kg)	Exceeds Criteria
Site M/3.5-4	11/10/93	11/18/93	VOLATILE TICS:					
			Furan,2,3-dihydro-4-(1-methylp	--	--	0.48 J	--	--
			2-Hexene,3,4,4-trimethyl	--	--	0.48 J	--	--
			Octane,2,6-dimethyl	--	--	0.90 J	--	--
			2-Pentene,2,3-dimethyl	--	--	0.95 J	--	--
			2-Octene,2,6-dimethyl	--	--	0.80 J	--	--
			Cyclohexane,1-methyl-2-propyl	--	--	1.10 J	--	--
			Cyclohexane,(2-methylpropyl)	--	--	0.55 J	--	--
			Dodecane,5-methyl	--	--	0.47 J	--	--
			Decane,4-methyl	--	--	1.70 J	--	--
			Benzene,1-methyl-4-propyl	--	--	0.95 J	--	--
			Cyclohexane,octyl-	--	--	1.20 J	--	--
			Nonane,2,5-dimethyl	--	--	0.80 J	--	--
			Benzene,1,2-diethyl	--	--	0.90 J	--	--
			Naphthalene,decahydro	--	--	1.60 J	--	--
			Hexane,3,3-dimethyl	--	--	1.40 J	--	--
			Cyclohexane,pentyl	--	--	4.40 J	--	--
			Benzene,2-ethenyl-1,4-dimethyl	--	--	2.40 J	--	--
			Undecane,2,5-dimethyl	--	--	4.40 J	--	--
			1H-Indene,2,3-dihydro-1,6-dime	--	--	0.75 J	--	--
			Propanal,2-propenylhydrazone	--	--	2.00 J	--	--
			TOTAL TICS:	--	--	28.23	--	--

TABLE 3
POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 282, MAIN POST
FORT MONMOUTH, NEW JERSEY

Sample ID/Depth	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQS (ug/l)	Exceeds Criteria
FIELD BLANK	11/10/93	11/18/93	VOLATILE ORGANICS:					
			Chloromethane	10	--	ND	30	--
			Bromomethane	10	--	ND	10	--
			Vinyl Chloride	10	--	ND	5	--
			Chloroethane	10	--	ND	--	--
			Acrolein	50	--	ND	10	--
			Acetone	10	--	ND	700	--
			1,1-Dichloroethene	5	--	ND	2	--
			Carbon Disulfide	10	--	ND	800	--
			Acylonitrile	50	--	ND	50	--
			Methylene Chloride	5	--	ND	2	--
			1,2-Dichloroethene(trans)	5	--	ND	2	--
			1,1-Dichloroethane	5	--	ND	70	--
			Vinyl Acetate	5	--	ND	7,000	--
			2-Butanone	10	--	ND	--	--
			Chloroform	5	--	ND	6	--
			1,1,1-Trichloroethane	5	--	ND	30	--
			Carbon Tetrachloride	5	--	ND	2	--
			1,2-Dichloroethane	5	--	ND	2	--
			Benzene	5	--	ND	1	--
			Trichloroethene	5	--	ND	1	--
			1,2-Dichloropropane	5	--	ND	1	--
			Bromodichloromethane	5	--	ND	1	--
			2-Chloroethylvinylether	10	--	ND	--	--
			2-Hexanone	10	--	ND	--	--
			trans-1,3-Dichloropropene	5	--	ND	NA	--
			Toluene	5	--	ND	1,000	--

TABLE 3
POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 282, MAIN POST
FORT MONMOUTH, NEW JERSEY

Sample ID/Depth	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQS (ug/l)	Exceeds Criteria
FIELD BLANK	11/10/93	11/18/93	VOLATILE ORGANICS CONTINUED:					
			cis-1,3-Dichloropropene	5	--	ND	NA	--
			1,1,2,2-Tetrachloroethane	5	--	ND	2	--
			1,1,2-Trichloroethane	5	--	ND	3	--
			4-Methyl-2-Pentanone	10	--	ND	400	--
			Tetrachloroethene	5	--	ND	1	--
			Dibromochloromethane	5	--	ND	10	--
			Chlorobenzene	5	--	ND	4	--
			Ethylbenzene	5	--	ND	700	--
			Total Xylenes	5	--	ND	40	--
			Styrene	5	--	ND	100	--
			Bromoform	5	--	ND	4	--
			m-Dichlorobenzene	5	--	ND	--	--
			p-Dichlorobenzene	5	--	ND	--	--
			o-Dichlorobenzene	5	--	ND	--	--
			Methyl Tertiary Butyl Ether	10	--	ND	70	--
			Tertiary Butyl Alcohol	50	--	ND	500	--
			VOLATILE TICS:					
			NONE FOUND	--	--	--	--	--

TABLE 3

DATA ANALYSIS QUALIFIER DEFINITIONS
POST-EXCAVATION SOIL SAMPLING
FORT MONMOUTH, NEW JERSEY

--:	Not applicable / does not exceed criteria
*:	Residential Direct Contact (RDC) / Impact to Groundwater (IGW)
(J):	Indicates detected below sample quantitation limit
(B):	Indicates also present in blank
(ND):	Indicates compound not detected
(NA):	Not available for this constituent
(GWQS):	Groundwater Quality Standards

The groundwater sample collected from MW-1 on December 1, 1993 contained 1,1,1-trichloroethane at a concentration of 14.0 ug/l which is below the criteria of 30.0 ug/l. No other volatile organic compounds were detected. Six unknown volatile organic-TICs were detected at a total concentration of 50 ug/l. Semivolatile organics and SVOC-TICs were not detected.

The VOC results were below the method detection limit in groundwater sample collected from MW-1 on March 19,1997

No product or sheen was observed in MW-1 on either of the sampling dates. The depth to the water table was 4.61 feet below grade surface on November 9, 1994, 4.76 feet below grade surface on December 1, 1994, and 4.19 feet below grade surface on March 19, 1997.

All groundwater analytical results are presented in Table 4 and shown on Figure 4. The groundwater analytical data package is provided in Appendix F. The full data package, including quality control, is on file at U.S. Army Fort Monmouth, DPW.

3.3 CONCLUSIONS AND RECOMMENDATIONS

The analytical results for all post-excavation soil samples collected from the UST closure excavation at Building 282 were below the NJDEP soil cleanup criteria for total organic contaminants.

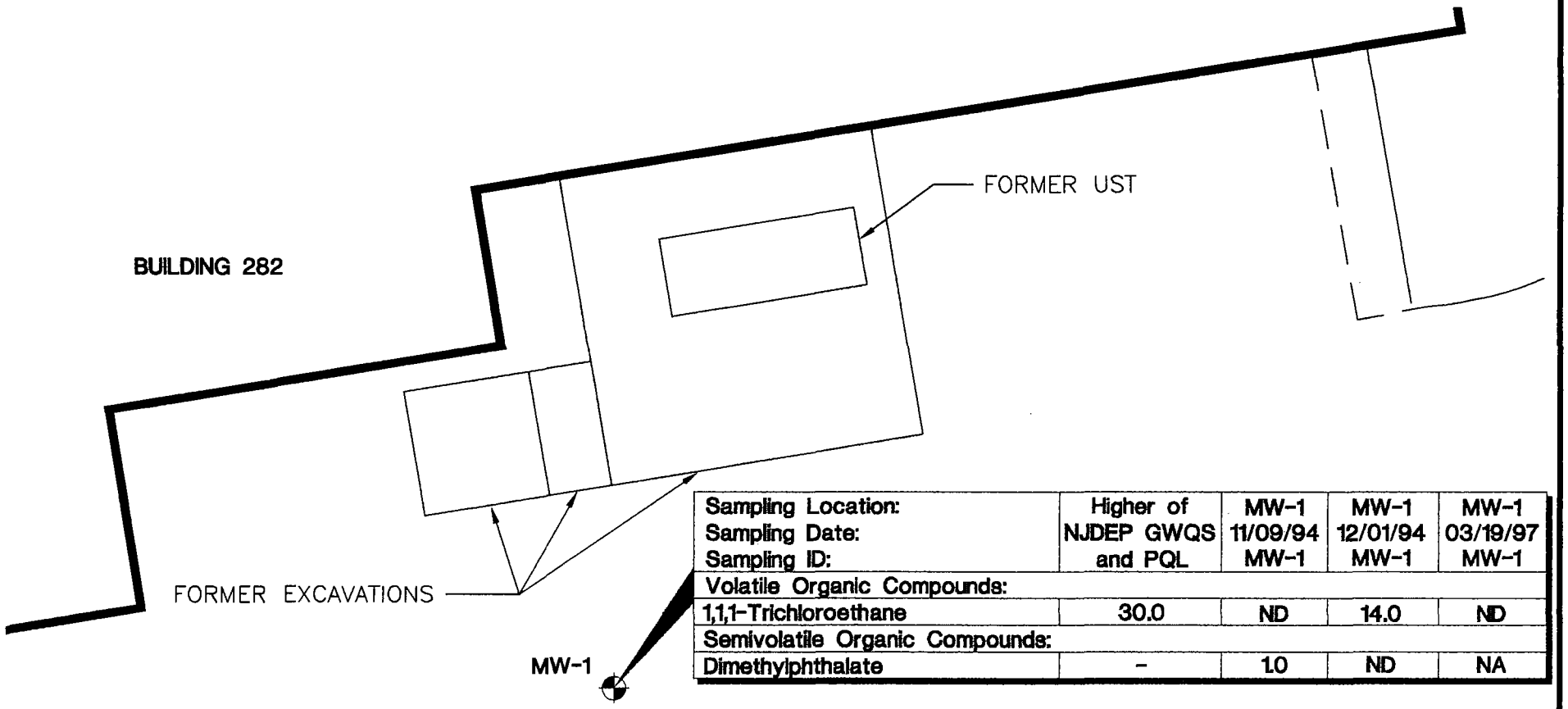
Based on the post-excavation sampling results, soils with TPHC concentrations exceeding the NJDEP soil cleanup criteria for total organic contaminants of 10,000 mg/kg, do not exist in the former location of the UST or associated piping.

Based on the analytical results of the groundwater samples collected on November 9, 1993, December 1, 1994, and March 19, 1997, groundwater quality at the Building 282 UST closure site complies with the New Jersey Groundwater Quality Criteria for VOCs and SVOCs.

No further action is proposed in regard to the closure and site assessment of UST No. 081533-57 at Building 282.

SMITH

U.S. Army
Department of Public Works
Fort Monmouth, New Jersey



Sampling Location: Sampling Date: Sampling ID:	Higher of NJDEP GWQS and PQL	MW-1 11/09/94 MW-1	MW-1 12/01/94 MW-1	MW-1 03/19/97 MW-1
Volatile Organic Compounds:				
1,1,1-Trichloroethane	30.0	ND	14.0	ND
Semivolatile Organic Compounds:				
Dimethylphthalate	-	1.0	ND	NA

LEGEND

MW-1 ⊕	MONITORING WELL LOCATION
ND	INDICATES COMPOUND NOT DETECTED
-	INDICATES CRITERIA NOT AVAILABLE
NA	NOT ANALYZED

NOTE:

1. ALL RESULTS IN MICROGRAMS PER LITER

SCALE
0 10'

Source: Smith Technology Corporation (165)

Project No. 09-5004-12

Figure 4
Building 282
Goundwater Sampling Results

TABLE 4
GROUNDWATER SAMPLING RESULTS
BUILDING 282, MAIN POST, MW-1
FORT MONMOUTH, NEW JERSEY

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQS (ug/l)	Exceeds Criteria
MW-1	11/9/94	12/3/94	SEMIVOLATILE ORGANICS:					
			bis(2-Chloroethyl)Ether	1	--	ND	10	--
			1,3-Dichlorobenzene	1	--	ND	600	--
			1,4-Dichlorobenzene	1	--	ND	75	--
			1,2-Dichlorobenzene	1	--	ND	600	--
			2,2'-oxybis(1-Chloropropane)	1	--	ND	--	--
			N-Nitroso-Di-N-propylamine	1	--	ND	20	--
			Hexachloroethane	1	--	ND	10	--
			Nitrobenzene	1	--	ND	10	--
			Isophorone	1	--	ND	100	--
			1,2,4-Trichlorobenzene	1	--	ND	9	--
			Naphthalene	1	--	ND	300	--
			Hexachlorobutadiene	1	--	ND	1	--
			bis(2-Chloroethoxy)methane	1	--	ND	--	--
			Hexachlorocyclopentadiene	1	--	ND	50	--
			2-Chloronaphthalate	1	--	ND	--	--
			Dimethylphthalate	1	--	1	--	--
			Acenaphthylene	1	--	ND	NA	--
			2,6-Dinitrotoluene	1	--	ND	NA	--
			Acenaphthene	1	--	ND	400	--
			2,4-Dinitrotoluene	1	--	ND	10	--
			Diethylphthalate	1	--	ND	5,000	--
			4-Chlorophenyl-phenylether	1	--	ND	--	--
			Fluorene	1	--	ND	300	--
			n-Nitrosodiphenylamine	1	--	ND	20	--
			4-Bromophenyl-phenylether	1	--	ND	--	--
			Hexachlorobenzene	1	--	ND	10	--

TABLE 4
GROUNDWATER SAMPLING RESULTS
BUILDING 282, MAIN POST, MW-1
FORT MONMOUTH, NEW JERSEY

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQS (ug/l)	Exceeds Criteria
MW-1	11/9/94	12/3/94	SEMIVOLATILE ORGANICS CONTINUED:					
			Phenanthrene	1	--	ND	NA	--
			Anthracene	1	--	ND	2,000	--
			Di-n-butylphthalate	1	--	ND	900	--
			Fluoranthene	1	--	ND	300	--
			Pyrene	1	--	ND	200	--
			Butylbenzylphthalate	1	--	ND	100	--
			3,3'-Dichlorobenzidine	1	--	ND	60	--
			Benzo(a)anthracene	1	--	ND	0.05	--
			Chrysene	1	--	ND	5	--
			bis(2-Ethylhexyl)phthalate	1	--	ND	30	--
			Di-n-octylphthalate	1	--	ND	100	--
			Benzo(b)fluoranthene	1	--	ND	0.05	--
			Benzo(k)fluoranthene	1	--	ND	0.5	--
			Benzo(a)pyrene	1	--	ND	0.005	--
			Indeno(1,2,3-cd)pyrene	1	--	ND	0.05	--
			Dibenz(a,h)anthracene	1	--	ND	0.005	--
			Benzo(g,h,i)perylene	1	--	ND	NA	--
			N-nitrosodimethylamine	1	--	ND	20	--
			Benzidine	1	--	ND	50	--
			VOLATILE TICS:					
			NONE FOUND	--	--	--	--	--

TABLE 4
GROUNDWATER SAMPLING RESULTS
BUILDING 282, MAIN POST, MW-1
FORT MONMOUTH, NEW JERSEY

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQS (ug/l)	Exceeds Criteria
MW-1	11/9/94	12/3/94	VOLATILE ORGANICS:					
			Chloromethane	2	--	ND	30	--
			Bromomethane	1	--	ND	10	--
			Vinyl Chloride	1	--	ND	5	--
			Chloroethane	1	--	ND	--	--
			Methylene Chloride	3	--	ND	2	--
			1,1-Dichloroethene	2	--	ND	2	--
			1,1-Dichloroethane	1	--	ND	70	--
			Chloroform	1	--	ND	6	--
			1,2-Dichloroethane	1	--	ND	2	--
			1,1,1-Trichloroethane	1	--	ND	30	--
			Carbon Tetrachloride	2	--	ND	2	--
			Bromodichloromethane	1	--	ND	1	--
			1,2-Dichloropropane	1	--	ND	1	--
			cis-1,3-Dichloropropene	1	--	ND	NA	--
			Trichloroethene	2	--	ND	1	--
			Dibromochloromethane	1	--	ND	10	--
			1,1,2-Trichloroethane	1	--	ND	3	--
			Benzene	1	--	ND	1	--
			trans-1,3-Dichloropropene	1	--	ND	NA	--
			Bromoform	1	--	ND	4	--
			Tetrachloroethene	3	--	ND	1	--
			1,1,2,2-Tetrachloroethane	2	--	ND	2	--
			Toluene	2	--	ND	1,000	--
			Chlorobenzene	2	--	ND	4	--
			Ethylbenzene	2	--	ND	700	--
			Xylene (total)	6	--	ND	40	--

TABLE 4
GROUNDWATER SAMPLING RESULTS
BUILDING 282, MAIN POST, MW-1
FORT MONMOUTH, NEW JERSEY

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQS (ug/l)	Exceeds Criteria
MW-1	11/9/94	12/3/94	VOLATILE ORGANICS CONTINUED:					
			Trichlorofluoromethane	2	--	ND	--	--
			Acrolein	20	--	ND	10	--
			Acrylonitrile	2	--	ND	50	--
			Tertiary Butyl Alcohol	100	--	ND	500	--
			Methyl Tertiary Butyl Ether	1	--	ND	70	--
			1,3-Dichlorobenzene	2	--	ND	600	--
			1,4-Dichlorobenzene	2	--	ND	75	--
			1,2-Dichlorobenzene	2	--	ND	600	--
			2-Chloroethylvinylether	4	--	ND	--	--
			trans,1,2-Dichloroethene	1	--	ND	100	--
			VOLATILE TICS:					
			Unknown Aromatic	--	--	8 J	--	--
			Unknown Aromatic	--	--	12 J	--	--
			Unknown Aromatic	--	--	4 J	--	--
			TOTAL TICS:	--	--	24	--	--

TABLE 4
GROUNDWATER SAMPLING RESULTS
BUILDING 282, MAIN POST, FIELD BLANK
FORT MONMOUTH, NEW JERSEY

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQS (ug/l)	Exceeds Criteria
FIELD BLANK	11/9/94	12/3/94	SEMIVOLATILE ORGANICS:					
			bis(2-Chloroethyl)Ether	1	--	ND	10	--
			1,3-Dichlorobenzene	1	--	ND	600	--
			1,4-Dichlorobenzene	1	--	ND	75	--
			1,2-Dichlorobenzene	1	--	ND	600	--
			2,2'-oxybis(1-Chloropropane)	1	--	ND	--	--
			N-Nitroso-Di-N-propylamine	1	--	ND	20	--
			Hexachloroethane	1	--	ND	10	--
			Nitrobenzene	1	--	ND	10	--
			Isophorone	1	--	ND	100	--
			1,2,4-Trichlorobenzene	1	--	ND	9	--
			Naphthalene	1	--	ND	300	--
			Hexachlorobutadiene	1	--	ND	1	--
			bis(2-Chloroethoxy)methane	1	--	ND	--	--
			Hexachlorocyclopentadiene	1	--	ND	50	--
			2-Chloronaphthalate	1	--	ND	--	--
			Dimethylphthalate	2	--	2	--	--
			Acenaphthylene	1	--	ND	NA	--
			2,6-Dinitrotoluene	1	--	ND	NA	--
			Acenaphthene	1	--	ND	400	--
			2,4-Dinitrotoluene	1	--	ND	10	--
			Diethylphthalate	1	--	ND	5,000	--
			4-Chlorophenyl-phenylether	1	--	ND	--	--
			Fluorene	1	--	ND	300	--
			n-Nitrosodiphenylamine	1	--	ND	20	--
			4-Bromophenyl-phenylether	1	--	ND	--	--
			Hexachlorobenzene	1	--	ND	10	--

TABLE 4
GROUNDWATER SAMPLING RESULTS
BUILDING 282, MAIN POST, FIELD BLANK
FORT MONMOUTH, NEW JERSEY

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQS (ug/l)	Exceeds Criteria
FIELD BLANK	11/9/94	12/3/94	SEMIVOLATILE ORGANICS CONTINUED:					
			Phenanthrene	1	--	ND	NA	--
			Anthracene	1	--	ND	2,000	--
			Di-n-butylphthalate	1	--	ND	900	--
			Fluoranthene	1	--	ND	300	--
			Pyrene	1	--	ND	200	--
			Butylbenzylphthalate	1	--	ND	100	--
			3,3'-Dichlorobenzidine	1	--	ND	60	--
			Benzo(a)anthracene	1	--	ND	0.05	--
			Chrysene	1	--	ND	5	--
			bis(2-Ethylhexyl)phthalate	1	--	ND	30	--
			Di-n-octylphthalate	1	--	ND	100	--
			Benzo(b)fluoranthene	1	--	ND	0.05	--
			Benzo(k)fluoranthene	1	--	ND	0.5	--
			Benzo(a)pyrene	1	--	ND	0.005	--
			Indeno(1,2,3-cd)pyrene	1	--	ND	0.05	--
			Dibenz(a,h)anthracene	1	--	ND	0.005	--
			Benzo(g,h,i)perylene	1	--	ND	NA	--
			N-nitrosodimethylamine	1	--	ND	20	--
			Benzidine	1	--	ND	50	--
			VOLATILE TICS:					
			NONE FOUND	--	--	--	--	--

TABLE 4
GROUNDWATER SAMPLING RESULTS
BUILDING 282, MAIN POST, FIELD BLANK
FORT MONMOUTH, NEW JERSEY

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQS (ug/l)	Exceeds Criteria
FIELD BLANK	11/9/94	12/3/94	VOLATILE ORGANICS:					
			Chloromethane	2	--	ND	30	--
			Bromomethane	1	--	ND	10	--
			Vinyl Chloride	1	--	ND	5	--
			Chloroethane	1	--	ND	--	--
			Methylene Chloride	6	--	6	2	yes
			1,1-Dichloroethene	2	--	ND	2	--
			1,1-Dichloroethane	1	--	ND	70	--
			Chloroform	1	--	ND	6	--
			1,2-Dichloroethane	1	--	ND	2	--
			1,1,1-Trichloroethane	1	--	ND	30	--
			Carbon Tetrachloride	2	--	ND	2	--
			Bromodichloromethane	1	--	ND	1	--
			1,2-Dichloropropane	1	--	ND	1	--
			cis-1,3-Dichloropropene	1	--	ND	NA	--
			Trichloroethene	2	--	ND	1	--
			Dibromochloromethane	1	--	ND	10	--
			1,1,2-Trichloroethane	1	--	ND	3	--
			Benzene	1	--	ND	1	--
			trans-1,3-Dichloropropene	1	--	ND	NA	--
			Bromoform	1	--	ND	4	--
			Tetrachloroethene	3	--	ND	1	--
			1,1,2,2-Tetrachloroethane	2	--	ND	2	--
			Toluene	2	--	ND	1,000	--
			Chlorobenzene	2	--	ND	4	--
			Ethylbenzene	2	--	ND	700	--
			Xylene (total)	6	--	ND	40	--

TABLE 4
GROUNDWATER SAMPLING RESULTS
BUILDING 282, MAIN POST, FIELD BLANK
FORT MONMOUTH, NEW JERSEY

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQS (ug/l)	Exceeds Criteria
FIELD BLANK	11/9/94	12/3/94	VOLATILE ORGANICS CONTINUED:					
			Trichlorofluoromethane	2	--	ND	--	--
			Acrolein	20	--	ND	10	--
			Acrylonitrile	2	--	ND	50	--
			Tertiary Butyl Alcohol	100	--	ND	500	--
			Methyl Tertiary Butyl Ether	1	--	ND	70	--
			1,3-Dichlorobenzene	2	--	ND	600	--
			1,4-Dichlorobenzene	2	--	ND	75	--
			1,2-Dichlorobenzene	2	--	ND	600	--
			2-Chloroethylvinylether	4	--	ND	--	--
			trans,1,2-Dichloroethene	1	--	ND	100	--
			VOLATILE TICS:					
			NONE FOUND	--	--	--	--	--

TABLE 4
GROUNDWATER SAMPLING RESULTS
BUILDING 282, MAIN POST, TRIP BLANK
FORT MONMOUTH, NEW JERSEY

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQS (ug/l)	Exceeds Criteria
TRIP BLANK	11/9/94	12/3/94	VOLATILE ORGANICS:					
			Chloromethane	2	--	ND	30	--
			Bromomethane	1	--	ND	10	--
			Vinyl Chloride	1	--	ND	5	--
			Chloroethane	1	--	ND	--	--
			Methylene Chloride	3	--	3	2	yes
			1,1-Dichloroethene	2	--	ND	2	--
			1,1-Dichloroethane	1	--	ND	70	--
			Chloroform	1	--	ND	6	--
			1,2-Dichloroethane	1	--	ND	2	--
			1,1,1-Trichloroethane	1	--	ND	30	--
			Carbon Tetrachloride	2	--	ND	2	--
			Bromodichloromethane	1	--	ND	1	--
			1,2-Dichloropropane	1	--	ND	1	--
			cis-1,3-Dichloropropene	1	--	ND	NA	--
			Trichloroethene	2	--	ND	1	--
			Dibromochloromethane	1	--	ND	10	--
			1,1,2-Trichloroethane	1	--	ND	3	--
			Benzene	1	--	ND	1	--
			trans-1,3-Dichloropropene	1	--	ND	NA	--
			Bromoform	1	--	ND	4	--
			Tetrachloroethene	3	--	ND	1	--
			1,1,2,2-Tetrachloroethane	2	--	ND	2	--
			Toluene	2	--	ND	1,000	--
			Chlorobenzene	2	--	ND	4	--
			Ethylbenzene	2	--	ND	700	--
			Xylene (total)	6	--	ND	40	--

TABLE 4
GROUNDWATER SAMPLING RESULTS
BUILDING 282, MAIN POST, TRIP BLANK
FORT MONMOUTH, NEW JERSEY

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQS (ug/l)	Exceeds Criteria
TRIP BLANK	11/9/94	12/3/94	VOLATILE ORGANICS CONTINUED:					
			Trichlorofluoromethane	2	--	ND	--	--
			Acrolein	20	--	ND	10	--
			Acrylonitrile	2	--	ND	50	--
			Tertiary Butyl Alcohol	100	--	ND	500	--
			Methyl Tertiary Butyl Ether	1	--	ND	70	--
			1,3-Dichlorobenzene	2	--	ND	600	--
			1,4-Dichlorobenzene	2	--	ND	75	--
			1,2-Dichlorobenzene	2	--	ND	600	--
			2-Chloroethylvinylether	4	--	ND	--	--
			trans,1,2-Dichloroethene	1	--	ND	100	--
			VOLATILE TICS:					
			NONE FOUND	--	--	--	--	--

TABLE 4
GROUNDWATER SAMPLING RESULTS
BUILDING 282, MAIN POST, MW-1
FORT MONMOUTH, NEW JERSEY

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQS (ug/l)	Exceeds Criteria
MW-1	12/1/94	12/30/94	SEMIVOLATILE ORGANICS:					
			bis(2-Chloroethyl)Ether	1	--	ND	10	--
			1,3-Dichlorobenzene	1	--	ND	600	--
			1,4-Dichlorobenzene	1	--	ND	75	--
			1,2-Dichlorobenzene	1	--	ND	600	--
			2,2'-oxybis(1-Chloropropane)	1	--	ND	--	--
			N-Nitroso-Di-N-propylamine	1	--	ND	20	--
			Hexachloroethane	1	--	ND	10	--
			Nitrobenzene	1	--	ND	10	--
			Isophorone	1	--	ND	100	--
			1,2,4-Trichlorobenzene	1	--	ND	9	--
			Naphthalene	1	--	ND	300	--
			Hexachlorobutadiene	1	--	ND	1	--
			bis(2-Chloroethoxy)methane	1	--	ND	--	--
			Hexachlorocyclopentadiene	1	--	ND	50	--
			2-Chloronaphthalate	1	--	ND	--	--
			Dimethylphthalate	1	--	ND	--	--
			Acenaphthylene	1	--	ND	NA	--
			2,6-Dinitrotoluene	1	--	ND	NA	--
			Acenaphthene	1	--	ND	400	--
			2,4-Dinitrotoluene	1	--	ND	10	--
			Diethylphthalate	1	--	ND	5,000	--
			4-Chlorophenyl-phenylether	1	--	ND	--	--
			Fluorene	1	--	ND	300	--
			n-Nitrosodiphenylamine	1	--	ND	20	--
			4-Bromophenyl-phenylether	1	--	ND	--	--
			Hexachlorobenzene	1	--	ND	10	--

TABLE 4
GROUNDWATER SAMPLING RESULTS
BUILDING 282, MAIN POST, MW-1
FORT MONMOUTH, NEW JERSEY

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQS (ug/l)	Exceeds Criteria
MW-1	12/1/94	12/30/94	SEMIVOLATILE ORGANICS CONTINUED:					
			Phenanthrene	1	--	ND	NA	--
			Anthracene	1	--	ND	2,000	--
			Di-n-butylphthalate	1	--	ND	900	--
			Fluoranthene	1	--	ND	300	--
			Pyrene	1	--	ND	200	--
			Butylbenzylphthalate	1	--	ND	100	--
			3,3'-Dichlorobenzidine	1	--	ND	60	--
			Benzo(a)anthracene	1	--	ND	0.05	--
			Chrysene	1	--	ND	5	--
			bis(2-Ethylhexyl)phthalate	1	--	ND	30	--
			Di-n-octylphthalate	1	--	ND	100	--
			Benzo(b)fluoranthene	1	--	ND	0.05	--
			Benzo(k)fluoranthene	1	--	ND	0.5	--
			Benzo(a)pyrene	1	--	ND	0.005	--
			Indeno(1,2,3-cd)pyrene	1	--	ND	0.05	--
			Dibenz(a,h)anthracene	1	--	ND	0.005	--
			Benzo(g,h,i)perylene	1	--	ND	NA	--
			N-nitrosodimethylamine	1	--	ND	20	--
			Benzidine	1	--	ND	50	--
			VOLATILE TICS:					
			NONE FOUND	--	--	--	--	--

TABLE 4
GROUNDWATER SAMPLING RESULTS
BUILDING 282, MAIN POST, MW-1
FORT MONMOUTH, NEW JERSEY

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQS (ug/l)	Exceeds Criteria
MW-1	12/1/94	12/6/94	VOLATILE ORGANICS:					
			Chloromethane	2	--	ND	30	--
			Bromomethane	1	--	ND	10	--
			Vinyl Chloride	1	--	ND	5	--
			Chloroethane	1	--	ND	--	--
			Methylene Chloride	3	--	ND	2	--
			1,1-Dichloroethene	2	--	ND	2	--
			1,1-Dichloroethane	1	--	ND	70	--
			Chloroform	1	--	ND	6	--
			1,2-Dichloroethane	1	--	ND	2	--
			1,1,1-Trichloroethane	14	--	14	30	--
			Carbon Tetrachloride	2	--	ND	2	--
			Bromodichloromethane	1	--	ND	1	--
			1,2-Dichloropropane	1	--	ND	1	--
			cis-1,3-Dichloropropene	1	--	ND	NA	--
			Trichloroethene	2	--	ND	1	--
			Dibromochloromethane	1	--	ND	10	--
			1,1,2-Trichloroethane	1	--	ND	3	--
			Benzene	1	--	ND	1	--
			trans-1,3-Dichloropropene	1	--	ND	NA	--
			Bromoform	1	--	ND	4	--
			Tetrachloroethene	3	--	ND	1	--
			1,1,2,2-Tetrachloroethane	2	--	ND	2	--
			Toluene	2	--	ND	1,000	--
			Chlorobenzene	2	--	ND	4	--
			Ethylbenzene	2	--	ND	700	--
			Xylene (total)	6	--	ND	40	--

TABLE 4
GROUNDWATER SAMPLING RESULTS
BUILDING 282, MAIN POST, MW-1
FORT MONMOUTH, NEW JERSEY

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQS (ug/l)	Exceeds Criteria
MW-1	12/1/94	12/6/94	VOLATILE ORGANICS CONTINUED:					
			Trichlorofluoromethane	2	--	ND	--	--
			Acrolein	20	--	ND	10	--
			Acrylonitrile	2	--	ND	50	--
			Tertiary Butyl Alcohol	100	--	ND	500	--
			Methyl Tertiary Butyl Ether	1	--	ND	70	--
			1,3-Dichlorobenzene	2	--	ND	600	--
			1,4-Dichlorobenzene	2	--	ND	75	--
			1,2-Dichlorobenzene	2	--	ND	600	--
			2-Chloroethylvinylether	4	--	ND	--	--
			trans,1,2-Dichloroethene	1	--	ND	100	--
			VOLATILE TICS:					
			Unknown Freon Isomer	--	--	19 J	--	--
			Unknown Aromatic	--	--	7 J	--	--
			Unknown Aromatic	--	--	11 J	--	--
			Unknown Aromatic	--	--	4 J	--	--
			Unknown Aromatic	--	--	6 J	--	--
			Unknown Aromatic	--	--	3 J	--	--
			TOTAL TICS:	--	--	50	--	--

TABLE 4
GROUNDWATER SAMPLING RESULTS
BUILDING 282, MAIN POST, FIELD BLANK
FORT MONMOUTH, NEW JERSEY

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQS (ug/l)	Exceeds Criteria
FIELD BLANK	12/1/94	12/30/94	SEMIVOLATILE ORGANICS:					
(RE)			bis(2-Chloroethyl)Ether	1	--	ND	10	--
			1,3-Dichlorobenzene	1	--	ND	600	--
			1,4-Dichlorobenzene	1	--	ND	75	--
			1,2-Dichlorobenzene	1	--	ND	600	--
			2,2'-oxybis(1-Chloropropane)	1	--	ND	--	--
			N-Nitroso-Di-N-propylamine	1	--	ND	20	--
			Hexachloroethane	1	--	ND	10	--
			Nitrobenzene	1	--	ND	10	--
			Isophorone	1	--	ND	100	--
			1,2,4-Trichlorobenzene	1	--	ND	9	--
			Naphthalene	1	--	ND	300	--
			Hexachlorobutadiene	1	--	ND	1	--
			bis(2-Chloroethoxy)methane	1	--	ND	--	--
			Hexachlorocyclopentadiene	1	--	ND	50	--
			2-Chloronaphthalate	1	--	ND	--	--
			Dimethylphthalate	1	--	ND	--	--
			Acenaphthylene	1	--	ND	NA	--
			2,6-Dinitrotoluene	1	--	ND	NA	--
			Acenaphthene	1	--	ND	400	--
			2,4-Dinitrotoluene	1	--	ND	10	--
			Diethylphthalate	1	--	ND	5,000	--
			4-Chlorophenyl-phenylether	1	--	ND	--	--
			Fluorene	1	--	ND	300	--
			n-Nitrosodiphenylamine	1	--	ND	20	--
			4-Bromophenyl-phenylether	1	--	ND	--	--
			Hexachlorobenzene	1	--	ND	10	--

TABLE 4
GROUNDWATER SAMPLING RESULTS
BUILDING 282, MAIN POST, FIELD BLANK
FORT MONMOUTH, NEW JERSEY

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQS (ug/l)	Exceeds Criteria
FIELD BLANK (RE)	12/1/94	12/30/94	SEMIVOLATILE ORGANICS CONTINUED:					
			Phenanthrene	1	--	ND	NA	--
			Anthracene	1	--	ND	2,000	--
			Di-n-butylphthalate	1	--	ND	900	--
			Fluoranthene	1	--	ND	300	--
			Pyrene	1	--	ND	200	--
			Butylbenzylphthalate	1	--	ND	100	--
			3,3'-Dichlorobenzidine	1	--	ND	60	--
			Benzo(a)anthracene	1	--	ND	0.05	--
			Chrysene	1	--	ND	5	--
			bis(2-Ethylhexyl)phthalate	1	--	ND	30	--
			Di-n-octylphthalate	1	--	ND	100	--
			Benzo(b)fluoranthene	1	--	ND	0.05	--
			Benzo(k)fluoranthene	1	--	ND	0.5	--
			Benzo(a)pyrene	1	--	ND	0.005	--
			Indeno(1,2,3-cd)pyrene	1	--	ND	0.05	--
			Dibenz(a,h)anthracene	1	--	ND	0.005	--
			Benzo(g,h,i)perylene	1	--	ND	NA	--
			N-nitrosodimethylamine	1	--	ND	20	--
			Benzidine	1	--	ND	50	--
			VOLATILE TICS:					
			Unknown	--	--	2 J	--	--

TABLE 4
GROUNDWATER SAMPLING RESULTS
BUILDING 282, MAIN POST, FIELD BLANK
FORT MONMOUTH, NEW JERSEY

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQS (ug/l)	Exceeds Criteria
FIELD BLANK	12/1/94	12/6/94	VOLATILE ORGANICS:					
			Chloromethane	2	--	ND	30	--
			Bromomethane	1	--	ND	10	--
			Vinyl Chloride	1	--	ND	5	--
			Chloroethane	1	--	ND	--	--
			Methylene Chloride	3	--	ND	2	--
			1,1-Dichloroethene	2	--	ND	2	--
			1,1-Dichloroethane	1	--	ND	70	--
			Chloroform	1	--	ND	6	--
			1,2-Dichloroethane	1	--	ND	2	--
			1,1,1-Trichloroethane	1	--	ND	30	--
			Carbon Tetrachloride	2	--	ND	2	--
			Bromodichloromethane	1	--	ND	1	--
			1,2-Dichloropropane	1	--	ND	1	--
			cis-1,3-Dichloropropene	1	--	ND	NA	--
			Trichloroethene	2	--	ND	1	--
			Dibromochloromethane	1	--	ND	10	--
			1,1,2-Trichloroethane	1	--	ND	3	--
			Benzene	1	--	ND	1	--
			trans-1,3-Dichloropropene	1	--	ND	NA	--
			Bromoform	1	--	ND	4	--
			Tetrachloroethene	3	--	ND	1	--
			1,1,2,2-Tetrachloroethane	2	--	ND	2	--
			Toluene	2	--	ND	1,000	--
			Chlorobenzene	2	--	ND	4	--
			Ethylbenzene	2	--	ND	700	--
			Xylene (total)	6	--	ND	40	--

TABLE 4
GROUNDWATER SAMPLING RESULTS
BUILDING 282, MAIN POST, FIELD BLANK
FORT MONMOUTH, NEW JERSEY

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQS (ug/l)	Exceeds Criteria
FIELD BLANK	12/1/94	12/6/94	VOLATILE ORGANICS CONTINUED:					
			Trichlorofluoromethane	2	--	ND	--	--
			Acrolein	20	--	ND	10	--
			Acrylonitrile	2	--	ND	50	--
			Tertiary Butyl Alcohol	100	--	ND	500	--
			Methyl Tertiary Butyl Ether	1	--	ND	70	--
			1,3-Dichlorobenzene	2	--	ND	600	--
			1,4-Dichlorobenzene	2	--	ND	75	--
			1,2-Dichlorobenzene	2	--	ND	600	--
			2-Chloroethylvinylether	4	--	ND	--	--
			trans,1,2-Dichloroethene	1	--	ND	100	--
			VOLATILE TICS:					
			NONE FOUND	--	--	--	--	--

TABLE 4
GROUNDWATER SAMPLING RESULTS
BUILDING 282, MAIN POST, TRIP BLANK
FORT MONMOUTH, NEW JERSEY

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQS (ug/l)	Exceeds Criteria
TRIP BLANK	12/1/94	12/6/94	VOLATILE ORGANICS:					
			Chloromethane	2	--	ND	30	--
			Bromomethane	1	--	ND	10	--
			Vinyl Chloride	1	--	ND	5	--
			Chloroethane	1	--	ND	--	--
			Methylene Chloride	3	--	ND	2	--
			1,1-Dichloroethene	2	--	ND	2	--
			1,1-Dichloroethane	1	--	ND	70	--
			Chloroform	1	--	ND	6	--
			1,2-Dichloroethane	1	--	ND	2	--
			1,1,1-Trichloroethane	1	--	ND	30	--
			Carbon Tetrachloride	2	--	ND	2	--
			Bromodichloromethane	1	--	ND	1	--
			1,2-Dichloropropane	1	--	ND	1	--
			cis-1,3-Dichloropropene	1	--	ND	NA	--
			Trichloroethene	2	--	ND	1	--
			Dibromochloromethane	1	--	ND	10	--
			1,1,2-Trichloroethane	1	--	ND	3	--
			Benzene	1	--	ND	1	--
			trans-1,3-Dichloropropene	1	--	ND	NA	--
			Bromoform	1	--	ND	4	--
			Tetrachloroethene	3	--	ND	1	--
			1,1,2,2-Tetrachloroethane	2	--	ND	2	--
			Toluene	2	--	ND	1,000	--
			Chlorobenzene	2	--	ND	4	--
			Ethylbenzene	2	--	ND	700	--
			Xylene (total)	6	--	ND	40	--

TABLE 4
GROUNDWATER SAMPLING RESULTS
BUILDING 282, MAIN POST, TRIP BLANK
FORT MONMOUTH, NEW JERSEY

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQS (ug/l)	Exceeds Criteria
TRIP BLANK	12/1/94	12/6/94	VOLATILE ORGANICS CONTINUED:					
			Trichlorofluoromethane	2	--	ND	--	--
			Acrolein	20	--	ND	10	--
			Acrylonitrile	2	--	ND	50	--
			Tertiary Butyl Alcohol	100	--	ND	500	--
			Methyl Tertiary Butyl Ether	1	--	ND	70	--
			1,3-Dichlorobenzene	2	--	ND	600	--
			1,4-Dichlorobenzene	2	--	ND	75	--
			1,2-Dichlorobenzene	2	--	ND	600	--
			2-Chloroethylvinylether	4	--	ND	--	--
			trans,1,2-Dichloroethene	1	--	ND	100	--
			VOLATILE TICS:					
			NONE FOUND	--	--	--	--	--

TABLE 4
GROUNDWATER SAMPLING RESULTS
BUILDING 282, MAIN POST, MW-1
FORT MONMOUTH, NEW JERSEY

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQS (ug/l)	Exceeds Criteria
MW-1	3/19/97	3/26/97	VOLATILE ORGANICS:					
			Dichlorodifluoromethane	3.63	--	ND	--	--
			Chloromethane	0.79	--	ND	30	--
			Bromomethane	1.45	--	ND	10	--
			Vinyl Chloride	2.61	--	ND	5	--
			Chloroethane	2.2	--	ND	--	--
			Methylene Chloride	1.66	--	ND	2	--
			1,1-Dichloroethene	0.74	--	ND	2	--
			1,1-Dichloroethane	0.83	--	ND	70	--
			Acetone	1.57	--	ND	--	--
			Carbon Disulfide	0.54	--	ND	--	--
			Vinyl Acetate	2.07	--	ND	--	--
			2-Butanone	2.06	--	ND	--	--
			cis-1,2-Dichloroethene	0.65	--	ND	--	--
			Chloroform	0.43	--	ND	6	--
			1,2-Dichloroethane	1.27	--	ND	2	--
			1,1,1-Trichloroethane	0.81	--	ND	30	--
			Carbon Tetrachloride	1.2	--	ND	2	--
			Bromodichloromethane	0.77	--	ND	1	--
			1,2-Dichloropropane	0.78	--	ND	1	--
			cis-1,3-Dichloropropene	0.6	--	ND	NA	--
			Trichloroethene	0.94	--	ND	1	--
			4-Methyl-2-Pentanone	1.33	--	ND	1	--
			Dibromochloromethane	1.36	--	ND	10	--
			1,1,2-Trichloroethane	1.49	--	ND	3	--
			Benzene	0.51	--	ND	1	--
			trans-1,3-Dichloropropene	1.43	--	ND	NA	--
			Bromoform	1.68	--	ND	4	--

TABLE 4
GROUNDWATER SAMPLING RESULTS
BUILDING 282, MAIN POST, MW-1
FORT MONMOUTH, NEW JERSEY

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQS (ug/l)	Exceeds Criteria
MW-1	12/1/94	12/6/94	VOLATILE ORGANICS CONTINUED:					
			Tetrachloroethene	0.92	--	ND	1	--
			2-Hexanone	1.12	--	ND	1	--
			1,1,2,2-Tetrachloroethane	1.71	--	ND	2	--
			Toluene	0.73	--	ND	1,000	--
			Chlorobenzene	0.66	--	ND	4	--
			Ethylbenzene	1.14	--	ND	700	--
			m+p-Xylenes	2.53	--	ND	40	--
			o-Xylene	1.92	--	ND	40	--
			Trichlorofluoromethane	1.31	--	ND	--	--
			Styrene	1.71	--	ND	10	--
			Acrylonitrile	2	--	ND	50	--
			Tertiary Butyl Alcohol	100	--	ND	500	--
			Methyl Tertiary Butyl Ether	1	--	ND	70	--
			1,3-Dichlorobenzene	2.51	--	ND	600	--
			1,4-Dichlorobenzene	3.08	--	ND	75	--
			1,2-Dichlorobenzene	2.75	--	ND	600	--
			2-Chloroethylvinylether	1.05	--	ND	--	--
			trans,1,2-Dichloroethene	0.5	--	ND	100	--

TABLE 4
GROUNDWATER SAMPLING RESULTS
BUILDING 282, MAIN POST, MW-1
FORT MONMOUTH, NEW JERSEY

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQS (ug/l)
Field Blank	3/19/97	3/26/97	VOLATILE ORGANICS:				
			Dichlorodifluoromethane	3.63	--	ND	--
			Chloromethane	0.79	--	ND	30
			Bromomethane	1.45	--	ND	10
			Vinyl Chloride	2.61	--	ND	5
			Chloroethane	2.2	--	ND	--
			Methylene Chloride	1.66	--	ND	2
			1,1-Dichloroethene	0.74	--	ND	2
			1,1-Dichloroethane	0.83	--	ND	70
			Acetone	1.57	--	ND	--
			Carbon Disulfide	0.54	--	ND	--
			Vinyl Acetate	2.07	--	ND	--
			2-Butanone	2.06	--	ND	--
			cis-1,2-Dichloroethene	0.65	--	ND	--
			Chloroform	0.43	--	ND	6
			1,2-Dichloroethane	1.27	--	ND	2
			1,1,1-Trichloroethane	0.81	--	ND	30
			Carbon Tetrachloride	1.2	--	ND	2
			Bromodichloromethane	0.77	--	ND	1
			1,2-Dichloropropane	0.78	--	ND	1
			cis-1,3-Dichloropropene	0.6	--	ND	NA
			Trichloroethene	0.94	--	ND	1
			4-Methyl-2-Pentanone	1.33	--	ND	1
			Dibromochloromethane	1.36	--	ND	10
			1,1,2-Trichloroethane	1.49	--	ND	3
			Benzene	0.51	--	ND	1
			trans-1,3-Dichloropropene	1.43	--	ND	NA

TABLE 4
GROUNDWATER SAMPLING RESULTS
BUILDING 282, MAIN POST, MW-1
FORT MONMOUTH, NEW JERSEY

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQS (ug/l)
Field Blank	3/19/97	3/26/97	VOLATILE ORGANICS CONTINUED:				
			Bromoform	1.68	--	ND	4
			Tetrachloroethene	0.92	--	ND	1
			2-Hexanone	1.12	--	ND	1
			1,1,2,2-Tetrachloroethane	1.71	--	ND	2
			Toluene	0.73	--	ND	1,000
			Chlorobenzene	0.66	--	ND	4
			Ethylbenzene	1.14	--	ND	700
			m+p-Xylenes	2.53	--	ND	40
			o-Xylene	1.92	--	ND	40
			Trichlorofluoromethane	1.31	--	ND	--
			Styrene	1.71	--	ND	10
			1,3-Dichlorobenzene	2.51	--	ND	600
			1,4-Dichlorobenzene	3.08	--	ND	75
			1,2-Dichlorobenzene	2.75	--	ND	600
			2-Chloroethylvinylether	1.05	--	ND	--
			trans,1,2-Dichloroethene	0.5	--	ND	100

TABLE 4
GROUNDWATER SAMPLING RESULTS
BUILDING 282, MAIN POST, MW-1
FORT MONMOUTH, NEW JERSEY

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQS (ug/l)
Trip Blank	3/19/97	3/26/97	VOLATILE ORGANICS:				
			Dichlorodifluoromethane	3.63	--	ND	--
			Chloromethane	0.79	--	ND	30
			Bromomethane	1.45	--	ND	10
			Vinyl Chloride	2.61	--	ND	5
			Chloroethane	2.2	--	ND	--
			Methylene Chloride	1.66	--	ND	2
			1,1-Dichloroethene	0.74	--	ND	2
			1,1-Dichloroethane	0.83	--	ND	70
			Acetone	1.57	--	ND	--
			Carbon Disulfide	0.54	--	ND	--
			Vinyl Acetate	2.07	--	ND	--
			2-Butanone	2.06	--	ND	--
			cis-1,2-Dichloroethene	0.65	--	ND	--
			Chloroform	0.43	--	ND	6
			1,2-Dichloroethane	1.27	--	ND	2
			1,1,1-Trichloroethane	0.81	--	ND	30
			Carbon Tetrachloride	1.2	--	ND	2
			Bromodichloromethane	0.77	--	ND	1
			1,2-Dichloropropane	0.78	--	ND	1
			cis-1,3-Dichloropropene	0.6	--	ND	NA
			Trichloroethene	0.94	--	ND	1
			4-Methyl-2-Pentanone	1.33	--	ND	1
			Dibromochloromethane	1.36	--	ND	10
			1,1,2-Trichloroethane	1.49	--	ND	3
			Benzene	0.51	--	ND	1
			trans-1,3-Dichloropropene	1.43	--	ND	NA
			Bromoform	1.68	--	ND	4
			Tetrachloroethene	0.92	--	ND	1
			2-Hexanone	1.12	--	ND	1

TABLE 4
GROUNDWATER SAMPLING RESULTS
BUILDING 282, MAIN POST, MW-1
FORT MONMOUTH, NEW JERSEY

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQS (ug/l)
Trip Blank	3/19/97	3/26/97	VOLATILE ORGANICS CONTINUED:				
			1,1,2,2-Tetrachloroethane	1.71	--	ND	2
			Toluene	0.73	--	ND	1,000
			Chlorobenzene	0.66	--	ND	4
			Ethylbenzene	1.14	--	ND	700
			m+p-Xylenes	2.53	--	ND	40
			o-Xylene	1.92	--	ND	40
			Trichlorofluoromethane	1.31	--	ND	--
			Styrene	1.71	--	ND	10
			1,3-Dichlorobenzene	2.51	--	ND	600
			1,4-Dichlorobenzene	3.08	--	ND	75
			1,2-Dichlorobenzene	2.75	--	ND	600
			2-Chloroethylvinylether	1.05	--	ND	--
			trans,1,2-Dichloroethene	0.5	--	ND	100

TABLE 4

DATA ANALYSIS QUALIFIER DEFINITIONS
GROUNDWATER SAMPLING
FORT MONMOUTH, NEW JERSEY

--:	Not applicable / does not exceed criteria
(J):	Indicates detected below sample quantitation limit
(B):	Indicates also present in blank
(ND):	Indicates compound not detected
(NA):	Not available for this constituent
GWQS:	Groundwater Quality Standards

APPENDIX A

NJDEP BUST CLOSURE APPROVAL

UNDERGROUND STORAGE TANK SYSTEM
CLOSURE APPROVAL

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY
DIVISION OF RESPONSIBLE PARTY SITE REMEDIATION
BUREAU OF UNDERGROUND STORAGE TANKS
CN-029, TRENTON, NJ 08625-0029

TMS # C-93-3182 **UST #** 0081533

US Army
BLDG. 282
Ft. Monmouth, NJ

Monmouth

THE ABOVE LISTED FACILITY IS HEREBY GRANTED APPROVAL TO PERFORM THE FOLLOWING ACTIVITY IN ACCORDANCE WITH N.J.A.C. 7:14B-1 et. seq.:

Removal of: one 2,000 gallon #2 diesel UST(s) and appurtenant piping.
SITE ASSESSMENT: Soil samples will be taken every five (5) feet along the center line of each tank and one (1) soil sample for every 15 feet along all associated piping. Two (2) additional samples will be taken from around the tank and biased to the areas of highest field screened readings. Samples will be analyzed for TPHC. If sample results are greater than 1,000ppm than 25% of the samples will be analyzed for VO+10.

ON-SITE MANAGER: C. Appleby **TELEPHONE:** 908-532-1475

OWNER: **TELEPHONE:**

EFFECTIVE DATE:

THIS FORM MUST BE DISPLAYED AT THE SITE DURING THE APPROVED ACTIVITY AND MUST BE MADE AVAILABLE FOR INSPECTION AT ALL TIMES.

KEVIN F. KRATINA, BUREAU CHIEF
BUREAU OF UNDERGROUND STORAGE TANKS

APPENDIX B

CERTIFICATIONS

UNDERGROUND STORAGE TANK (UST) CLOSURE CERTIFICATION

BUILDING NO. 282

NJDEP UST REGISTRATION NO. 81533-57

DATE TANK REMOVED Oct. 27, 1993

IJO / CONTRACT NUMBER 93-1016

I CERTIFY UNDER PENALTY OF LAW THAT TANK DECOMMISSIONING ACTIVITIES WERE PERFORMED IN COMPLIANCE WITH NJAC 7:14B-9.2(b)3. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE, INACCURATE, OR INCOMPLETE INFORMATION, INCLUDING FINES AND/OR IMPRISONMENT.

NAME (Print or Type) John Lonergan

SIGNATURE

NJDEP UST CLOSURE CERTIFICATE NO. 0003248

COMPANY PERFORMING TANK DECOMMISSIONING CUTE Inc.

NJDEP UST CLOSURE CORPORATE CERTIFICATE NO. 0200128

DATE OF SUBMITTAL 2/20/95

APPENDIX C

WASTE MANIFEST

State of New Jersey
Department of Environmental Protection and Energy
Hazardous Waste Regulation Program
Manifest Section
CN 028, Trenton, NJ 08625-0028

Please type or print in block letters. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039. Expires 9-30-94

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. N J 3 2 1 0 0 2 0 3 3 4 | Manifest Document No. 0 0 0 0 1

2. Page 1 of 1 | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: US Army Communications Electronics Command
c/o [redacted] James Shirghio, Bldg 2504
ATTN: SELFM-DL-EM-MS
Fort Monmouth, NJ 07703

A. State Manifest Document Number: NJA 1706532

B. State Generator's ID: MAIN POST (NJ) ~~Camp Evans Area (NJ)~~

4. Generator's Phone (908) 532-6024

5. Transporter 1 Company Name: Freehold Cartage Inc.

6. US EPA ID Number: N J D 0 5 4 1 2 6 1 6 4

C. State Trans. ID: NJDEPES-22615

7. Transporter 2 Company Name

8. US EPA ID Number

D. Transporter's Phone (908) 462-1001

E. State Trans. ID

9. Designated Facility Name and Site Address:
Lionetti Oil Recovery Co., Inc.
Runyon & Cheesequake Rds.
Old Bridge, NJ 08857

10. US EPA ID Number: N J D 0 8 4 0 4 4 0 6 4

F. Transporter's Phone ( )

G. State Facility's ID

H. Facility's Phone (908) 721-0900

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. X Petroleum Oil, N.O.S. Classx 3 (Petroleum Oil) Combustible Liquid uN 1270 PG III	0 0 1	T T	XX2006.	X	7 2 2
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
a. T,L Petroleum Oil % 90
Water % 10
b.
c.
d.

K. Handling Codes for Wastes Listed Above
a. T04-Filtration
b.
c.
d.

15. Special Handling Instructions and Additional Information
NOT EPA [redacted] REGULATED, REGULATED AS HAZARDOUS WASTE IN NJ
24 HOUR EMERGENCY# 201-427-2881
NJ DECAL# 48595 ERG# 27
Bldg. 282
Ust- 81533-57
C-93-3182

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month	Day	Year
Charles M, Appleby SELFM-PW-EV		1	1	93

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
ALFONSO TROCCHIO		1	10	93

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space

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

Printed/Typed Name	Signature	Month	Day	Year

NJA 1706532

EPA Form 8700-22 Rev. 3 (9-91) Previous editions are obsolete.

SIGNATURE AND INFORMATION MUST BE LEGIBLE ON ALL COPIES

GENERATOR CERTIFICATION

I hereby certify that the waste described on Hazardous Waste Manifest No. NJA 1706538 dated _____, is generated by one or more of the following processes and does not contain more than 2 ppm polychlorinated biphenyls (P.C.B.'s) and does not display any characteristic or contain any hazardous constituents other than for which waste oils are listed in New Jersey.

X721: Waste automotive crankcase and lubricating oils from automotive service and gasoline stations, truck terminals, and garages.

X722: Waste oil and bottom sludge generated from tank cleanouts from residential/commercial fuel oil tanks.

X723: Waste oil and bottom sludge generated by gasoline stations when gasoline and oil tanks are tested, cleaned or replaced.

X724: Waste petroleum oil generated when tank trucks or other vehicles or mobile vessels are cleaned, including, but not limited to, oil ballast water from product transport units of boats, barges, ships or other vessels.

X725: Oil spill cleanup residue which: A. is contaminated beyond saturation; or B. the generator fails to demonstrate that the spill material was not one of the listed hazardous waste oils.

X726: The following used and unused waste oils: metal working oils; turbine lubricating oils; diesel lubricating oils; and quenching oils.

X728: Bottom sludge generated from the processing, blending, and treatment of waste oil in waste oil processing facilities.

I am duly authorized to sign said certification.

Generator U.S. Army Communications Electronics Command, Fort Monmouth NJ

Generator's EPA ID No. NJ3210020597 - ~~000~~

Address C/o Jim's Shirghio, Bldg. 2504 ATTN: SELFM-DL-EM-WS Fort Monmouth NJ 07703-

Print Name Chris Appleby Signature _____

Title Environmental Protection Specialist

Date 11/1/93

Form 003 5/91

APPENDIX D

UST DISPOSAL CERTIFICATE

MONMOUTH COUNTY
RECLAMATION CENTER
TINTON FALLS, NJ
MAILING ADDRESS: 3000 ASBURY AVE. NEPTUNE, NJ 07753

G-32709

FACILITY ID NO. 1336F13P01

RECEIPT DOCUMENT NUMBER 01337919

FREE508152
FREEHOLD CARTAGE INC
P O BOX 5010
FREEHOLD NJ 07728

TARE WEIGHT 18.6800 37360
GROSS WEIGHT 22.5900 45180

DATE	OPER	ENTRY TIME	DEP NO	PLATE NO		
11/10/93	MED	14106	15939AX	XP51XA	14:35	Norma

QUANTITY	CLASS	DESCRIPTION/ORIGIN	UNITS	UNIT PRICE	AMOUNT
3.9100	13	Bulky Waste MONMOUTH COUNTY EATONTOWN BOROUGH	Tons		

*** Prepayment Balance Remaining: 25328.57 ***

TRANSPORTER'S SIGNATURE

DOCUMENT TOTAL

CUSTOMER COPY

3.91 TONS Bulky Waste
Fiberglass tank disposal Bldg 208A, 282, 205, 207A, 287, 206

APPENDIX E

MONITORING WELL PERMIT AND CONSTRUCTION LOG

282 SERIAL # 37065
DWR-133M (7/92)

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY
TRENTON, NJ

Permit No. 2930962

Mail to
Water Allocation
CN 029
Trenton, N.J. 08625

MONITORING WELL PERMIT

282 MW-1

VALID ONLY AFTER APPROVAL BY THE D.E.P.E.

COORD #: 29.14.944

Owner US ARMY FORT MONMOUTH
Address
FORT MONMOUTH, NJ 07703

Driller TYREE ORGANIZATION, LTD
Address 150 RT 1305
BURLINGTON, NJ 08016

Name of Facility GENERAL SITE (MAIN WEST)
Address BUILDING 282
FT MONMOUTH, NJ 07703

Diameter of Well(s)	4 Inches	Proposed Depth of Well(s)	15 Feet
# of Wells Applied for (max. 10)	1	Will pumping equipment be installed? YES ☐ NO ☒	
Type of Well (see reverse)	MONITOR/OBSERV	If Yes, give pump capacity	GPM

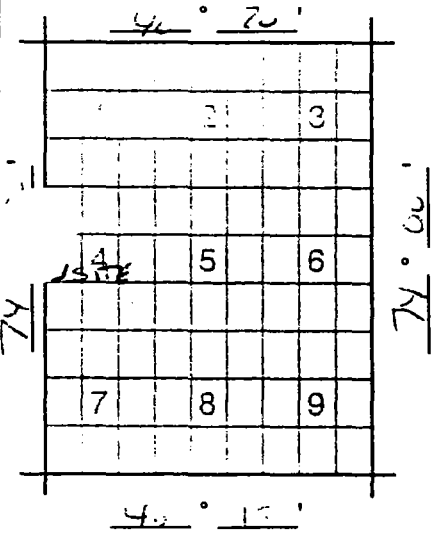
LOCATION OF WELL(S)

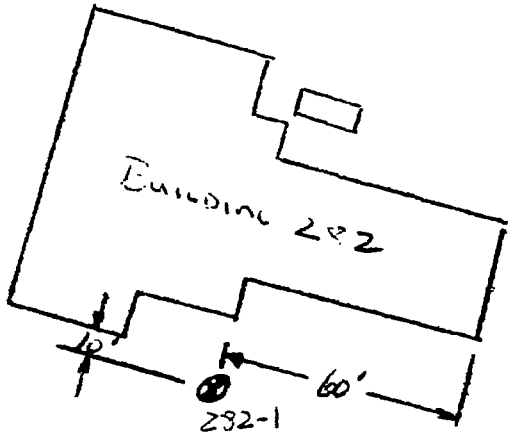
Lot #	Block #	Municipality	County
		FORT MONMOUTH	MONMOUTH

State Atlas Map No. 29

Draw sketch of well(s) nearest roads, buildings, etc. with marked distances in feet. Each well MUST be labeled with a name and/or number on the sketch.

HILDRETH AVE





FOR MONITORING WELLS, RECOVERY WELLS, OR PIEZOMETERS, THE FOLLOWING MUST BE COMPLETED BY THE APPLICANT. PLEASE INDICATE WHY THE WELLS ARE BEING INSTALLED:

- ☐ Spill Fund Case
- ☐ ECRA Case
- ☐ CERCLA (Superfund) Site
- ☐ RCRA Site
- ☒ Underground Storage Tank
- ☐ NJPDES Municipal Discharge Permit
- ☐ NJPDES Industrial Discharge Permit
- ☐ Water and Hazardous Waste Enforcement Case
- ☐ Water Supply Aquifer Test Observation Well
- ☐ Other (explain)

Case I.D. Number
93-11-29-1738-37

This Space for Approval Stamp

WELL PERMIT APPROVED
Dept. of Environmental Protection
Water Resources/Water Allocation
APR 5 1994

FOR D.E.P.E. USE
☐ Issuance of this permit is subject to the conditions attached. (see next page)
☑ For monitoring purposes only
☑ The well(s) may not be completed ~~with more than 25 feet of total screen or a~~ uncased borehole.
☐

REVERSE SIDE FOR IMPORTANT PROVISIONS AND REGULATIONS PERTAINING TO THIS PERMIT.

In compliance with N.J.S.A. 58:4A-14, application is made for a permit to drill a well as described above.

Date MARCH 25, 1994

Signature of Driller [signature] License # 1421

Signature of Owner [signature] SELFM-PW-EV

COPIES: Water Allocation — White and Pink Health Dept. — Yellow Owner — Blue Driller — White

U.S. ARMY
FORT MONMOUTH
SELFM PW EV

LOG OF BORING 282-MW1

Produced for Charles Appleby

Project Name	: BLDG. 282	Completion Date	: 07/08/94
NJDEP CASE #	: 93-11-29-1738-37	NORTHING	: N 540706.167
Logged By	: TYREE INC.	EASTING	: E 2176132.475
start date	: 07/08/94	Driller	: M. BECK

29-30962
ELEV: 10.56

Depth in Feet	DESCRIPTION	GRAPHIC	USCS	Samples	Blows/Ft	% Rec-overy
0	Concrete		14	1	0	100
2	Brown sand and silt		SM	2	0	75
4				3	0	100
6	Green clay and sand encountered water		CL			
8	Light brown, medium sand with clay and silt		SC	4	0	25
10						
12						
14						
15						
16						

.6
1
2
09/94

Well Construction Information

WELL CONSTRUCTION

Date Compl. : 09/14/94
Hole Diameter : 8 in
Drill. Method : HSA
Company Rep. : M. BECK

WELL CASING

Material : PVC
Diameter : 4 in.
Joints : threaded

WELL SCREEN

Material : PVC
Diameter : 4 in.
Joints : threaded
Opening : 20 slot

SAND PACK : #2 MORIE SAND

ANNULUS SEAL : Bentonite/Portland
: TREMMIE

WELL SCREEN

Material : PVC
Diameter : 4 in.
Cap :

NOTES

Well #1 is 282 MW1
Flushmount
Water level 4'

3-5-1996 c:\mp1\geo\282mw1.ge3

MONITORING WELL CERTIFICATION-FORM B-LOCATION CERTIFICATION

Name of Permittee: U.S. ARMY
Name of Facility: FORT MONMOUTH
Location: MONMOUTH COUNTY, NJ
Case ~~NJPDES~~ Number: 93-11-29-1738-37

LAND SURVEYOR'S CERTIFICATION

Well Permit Number: This number must be permanently affixed to the well casing.	29-209162-
Longitude (to nearest second):	West 74° 02' 06.25"
Latitude (to nearest second):	North 40° 18' 57.86"
Elevation of Top of Inner Casing (cap off) (one-hundredth of a foot):	10.56
Elevation of ground level (1/100th ft.)	10.96
Source of elevation datum (benchmark, nail, etc.) and year. (If an alternate datum has been approved by the Department, identify here, assume datum of 100', and give approximated actual elevation.)	Source: FM-6 ☒ 1927 ☐ 1983 Elev.: 6.94
Owners Well Number (As shown on application or plans):	BLDG 282 MW-1

Elevations are to be determined by double run, three wire leveling methods using balanced sights, commencing from a well marked and described point. This beginning point shall either be derived from Federal or State benchmarks if not more than 1000 feet from the site or from an alternate datum approved by the Department. Tolerances should meet third order standards, which are 0.05 ft x $(\text{mile})^{1/2}$. For sections less than 0.1 mile, let miles = 0.1.

AUTHENTICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Wayne W Burgett
PROFESSIONAL LAND SURVEYOR'S SIGNATURE

WAYNE W BURGETT
PROFESSIONAL LAND SURVEYOR'S NAME
(Please print or type)

SEAL

31654
PROFESSIONAL LAND SURVEYOR'S LICENSE #

DWR-138 M
12/91

New Jersey Department of Environmental Protection and Energy
Bureau of Water Allocation

MONITORING WELL RECORD

Well Permit No. 29 - 30962
Atlas Sheet Coordinates 29 : 14 : 444

OWNER IDENTIFICATION - Owner U S ARMY FORT MONMOUTH
Address
City FORT MONMOUTH State NJ Zip Code

WELL LOCATION - If not the same as owner please give address. Owner's Well No. Bldg. 282 MW-1
County MONMOUTH Municipality OCEANPORT BORO Lot No. N/A Block No. N/A
Address

TYPE OF WELL (as per Well Permit Categories) MONITORING Date well completed 7/8/94
Regulatory Program Requiring Well UST Case I.D. # 93-11-29-173837
CONSULTING FIRM/FIELD SUPERVISOR (if applicable) Tele. #

WELL CONSTRUCTION

Total depth drilled 15 ft.
Well finished to 15 ft.
Borehole diameter:
Top 8 in.
Bottom 8 in.
Well was finished: ☐ above grade ☑ flush mounted
If finished above grade, casing height (stick up) above land surface ft.
Was steel protective casing installed? ☐ Yes ☑ No

	Depth to Top (ft.) [From land surface]	Depth to Bottom (ft.)	Diameter (inches)	Type and Material
Inner Casing	6"	2'	4"	PVC
Outer Casing (Not Protective Casing)				
Screen (Note slot size)	2'	15'	4"	20 Slot PVC
Tail Piece				
Gravel Pack	1'	15'		#2
Annular Seal/Grout	6"	1'		Gencuite
Method of Grouting	Pour			

Static water level after drilling 4 ft.
Water level was measured using TAPE
Well was developed for 1 hours at 10 gpm
Method of development Pump
Was permanent pumping equipment installed? ☐ Yes ☑ No
Pump capacity gpm
Pump type:
Drilling Method Auger
Drilling Fluid Type of Rig B-80
Name of Driller Michael E Beck
Health and Safety Plan submitted? ☑ Yes ☐ No
Level of Protection used on site (circle one) (None) D C B A
N.J. License No. 1421
Name of Drilling Company TYREE ENVIRONMENTAL TECHNOLOGY

GEOLOGIC LOG (Copies of other geologic logs and/or geophysical logs should be attached.)

0-1' Concrete
1'-6' Brown Sand + Silt
6'-8' Green Clay + Sand
8'-15' Brown Sand Clay + Silt

I certify that I have drilled the above-referenced well in accordance with all well permit requirements and all applicable state rules and regulations.

Driller's Signature Michael E Beck Date 7-11-94

COPIES: White & Green - DEPE Canary - Driller Pink - Owner Goldenrod - Health Dept.

APPENDIX F

SOIL ANALYTICAL DATA PACKAGE

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

Client: U.S. Army
DEH, SELFM-EH-EV
Bldg. 167
Ft. Monmouth, NJ 07703

Lab. ID #: 1301.1-.7
Sample Rec'd: 10/28/93
Analysis Start: 10/28/93
Analysis Comp: 10/28/93

Analysis: 418.1 (TPH)
Matrix: Soil
Analyst: S. Hubbard
Ext. Method: SONC.

NJDEPE UST Reg.#: **0081533-57**
TMS #:
Closure #: **93-3182**
Location #: **Bldg. # 282**

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1301.1	Site A, 4.5 - 5' ova=1.0	79	200.	3.3
1301.2	Site B, 4.5 - 5' ova=3.0	85	342.	6.6
1301.3	Site C, 4.5 - 5' ova<1.0	84	6.17	3.3
1301.4	Site D, 4.5 - 5' ova<1.0	84	19.3	3.3
1301.5 *	Site E, 3 - 3.5' ova=1.0(biased)	90	48.6	3.3
1301.6	Site F, B dup. ova=3.0	86	1316.	46.
1301.7	Site G, 4 - 4.5	85	221.	23.
M. BL.	Method Blank	100	ND	3.3

Notes: ND = Not Detected, MDL = Method Detection Limit
* = Silica Gel Added

1301.6 Spike= 93%, 1301.6 Spike Dup.= 83% RPD=89%

Brian K. McKee
Laboratory Director

SERV-AIR, INC.
An E-SYSTEMS Company

P.O. #:

Chain of Custody

Project #: 93-3182
Customer: C. Appleby DRW-Env. Sub Surface
Phone: x 26224

Sampler: Cute Inc.
Site Name: Bldg. 282
UST # 0081533-57
Closure 93-3182

Date / Time: 10/28/93 | 10:20

Analysis Parameters — TA-24hrs.

Start:
Finish:

Preservation Method

Lab Sample ID Number	Date	Time	Customer Sample Location/ID Number	Sample Matrix	# of Bottles	TPHC	% Solid	Munsell	OVA-Reading	Remarks
1301.1	10/28/93	11:30	Site A 4'-4.5'	Soil	1	X	X	X	1.0	Note: OVA Reac for Site B and the dup Site are the same,
.2		11:32	Site B 4'-4.5'		1	X	X	X	3.0	
.3		11:34	Site C 4-4.5		1	X	X	X	<1.0	
.4		11:36	Site D 4-4.5		1	X	X	X	<1.0	
.5		11:38	Site E ~~4-4.5~~ 3-3.5' Biased		1	X	X	X	1.0	Samples Kept 2-4°C
.6		11:32	Site F Duplicate of B		1	X	X	X	3.0	
.7		11:39	Site G 4-4.5'		1	X	X	X		Note: DTW = 4.5'
										OVA -
										Calibrated 1010 am
										w/ 95 ppm methane to
										95 ppm Reading - Excellent Cal.

Relinquished By (signature) | Date / Time 10/28/93 1215 | Received By (signature) | Shipped By: Hand

Relinquished By (signature) | Date / Time | Received for Lab by (signature): | Date / Time

Note: A drawing depicting sample location should be attached or drawn on the reverse side of this chain of custody.

FT. MONMOUTH OFFICE
E-SYSTEMS, INC. • P. O. BOX 369, BUILDING 1209 • FT. MONMOUTH, NEW JERSEY 07703-5000 • (201) 544-0995

Oct 28, 1993 1505
Blank Sarah Hubbard

33.75 82 MV

67.5 164 MV

R. 9999

135 327 MV

1301.1 115 MV

1301.2 106 MV

1301.3 4 MV

1301.4 12 MV

1301.5 32 MV

1301.6 (Dup of .2) 59 MV (del 7)

1301.7 (del 7) 101

PRINTED IN U.S.A.

PHC Conformance/Non-conformance Summary Report

	No	Yes
1. Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank		✓
2. Matrix Spike/Matrix Sp Dup. Recoveries Meet Criteria (If not met, list the sample and corresponding recovery which falls outside the acceptable range)		✓
3. IR Spectra submitted for standards, blanks, & samples		✓
4. Chromatograms submitted for standards, blanks, and samples if GC fingerprinting was conducted.	N/A	
5. Extraction holding time met. (If not met, list number of days exceeded for each sample)		✓
6. Analysis holding time met. (If not met,list number of days exceeded for each sample)		✓

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.

Brian K. McKee
Laboratory Manager

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

Client: U.S. Army
DEH, SELFM-EH-EV
Bldg. 167
Ft. Monmouth, NJ 07703

Lab. ID #: 1301.1-.7
Sample Rec'd: 10/28/93
Analysis Start: 10/28/93
Analysis Comp: 10/28/93

Analysis: Munsel

Lab ID#	Soil Color
1301.1	5Y 4/3 Olive
1301.2	5Y 4/2 Olive Gray
1301.3	5Y 3/2 Dark Olive Gray
1301.4	5Y 3/1 Very Dark Gray
1301.5	5Y 3/1 Very Dark Gray
1301.6	5Y 4/2 Olive Gray
1301.7	5Y 4/2 Olive Gray

Brian K. McKee
Laboratory Director

11/8/93 2:20 PM

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

Client: U.S. Army
DPW, SELFM-DP-EV
Bldg. 167
Ft. Monmouth, NJ 07703

Lab. ID #: 1317.1-.4
Sample Rec'd: 11/08/93
Analysis Start: 11/09/93
Analysis Comp: 11/09/93

Analysis: 418.1 (TPH)
Matrix: Soil
Analyst: S. Hubbard
Ext. Method: SONC.

NJDEPE UST Reg.#: **0081533-57**
TMS #: **C-93-3182**
NJDEPE Case #:
Location #: **Bldg. # 282**

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1317.1	Site H, 3.5 - 4' hNu =0.0	82	2140.	23.
1317.2	Site I, 3.5 - 4' hNu =9.0	85	3950.	23.
1317.3	Site J, 3.5 - 4' hNu =0.0	83 *	16.7	3.3
1317.4	Site K, 3.5 - 4' hNu =5.0 (Dup of I)	84	3280.	86.
M. BL.	Method Blank	100	ND	3.3

Notes: ND = Not Detected, MDL = Method Detection Limit
* = Silica Gel Added

1317.3 Dup. = 91% 1317.3 Spike= 89% 1317.3 Spike Dup.= 91% RPD: 98%

Brian K. McKee
Laboratory Director

SERV-AIR, INC.
An E-SYSTEMS Company

P.O. #:

Chain of Custody

Project #: C-93-3182	Sampler: Cute Inc.	Date / Time 11/8/93 1000	Analysis Parameters
Customer: C. Appleby	Site Name: Bldg. 282 UST# 81533-57 C-93-3182		
Phone: X26224			

Start:

Finish:

Lab Sample ID Number	Date	Time	Customer Sample Location/ID Number	Sample Matrix	# of Bottles	TPHC	% Solid	Moisture	HNU - Reading	Preservat Meth / Remarks
1317.1	11/8/93	1010	Site H ~~Clay 6.5'~~ 3.5-4'	Soil	1	X	X	X	0.0	
.2		1014	Site I ~~Clay 6.5'~~ 3.5-4'	Soil	1	X	X	X	9.0	
.3		1018	Site J ~~Clay 6.5'~~ 3.5-4'	Soil	1	X	X	X	0.0	
.4		1014	Site K ~~Clay 6.5'~~ 3.5-4'	Soil	1	X	X	X	5.0	
										Sample Kept <4°C
										HNU Calibrated SN 270136 Cal - 55 ppm Methane Span 4.2 C 9:45 AM

Relinquished By (signature)	Date / Time	Received By (signature)	Shipped By:
Relinquished By (signature)	Date / Time	Received for Lab by (signature):	Date / Time
	11/8/93 1130		

Note: A drawing depicting sample location should be attached or drawn on the reverse side of this chain of custody.

FT. MONMOUTH OFFICE

November 8, 1995

Paul L. Hubbard

0926

Blank 0 MV

33.75 8 MV

67.5 16 MV

135 32 MV

1317.1 (dil 7) 92 MV

1317.2 (dil 7) 174 MV

1317.3 12 MV

1317.3 Dup 13 MV

1317.3 Spk 82 MV

1317.3 Dup Spk 84

1317.4 (dil 3) 78

1318.1 23 MV

1318.2 14 MV

1318.3 14 MV

1318.4 15 MV

1318.5 (dil 7) 14 MV

1318.6 (dil 7) 34 MV

1318.7 (dil 7) 252 MV

1319.1 (dil 7) 163 MV

1319.2 12 MV

1319.3 11 MV

1319.4 (dil 7) 172

PHC Conformance/Non-conformance Summary Report

	No	Yes
1. Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank		✓
2. Matrix Spike/Matrix Sp Dup. Recoveries Meet Criteria (If not met, list the sample and corresponding recovery which falls outside the acceptable range)		✓
3. IR Spectra submitted for standards, blanks, & samples		✓
4. Chromatograms submitted for standards, blanks, and samples if GC fingerprinting was conducted.	N/A	
5. Extraction holding time met. (If not met, list number of days exceeded for each sample)		✓
6. Analysis holding time met. (If not met, list number of days exceeded for each sample)		✓

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.

Brian K. McKee
Laboratory Manager

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

Client: U.S. Army
DEH, SELFM-EH-EV
Bldg. 167
Ft. Monmouth, NJ 07703

Lab. ID #: 1318.1-.7
Sample Rec'd: 11/08/93
Analysis Start: 11/09/93
Analysis Comp: 11/09/93

Analysis: Munsel

Lab ID#	Soil Color
1317.1	5Y 4/2 Olive Gray
1317.2	5Y 4/3 Olive
1317.3	5Y 3/2 Dark Olive Gray
1317.4	5y 3/2 Dark Olive Gray

Brian K. McKee
Laboratory Director

11/9/93 1:30 PM

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

Client: U.S. Army
DPW, SELFM-DP-EV
Bldg. 167
Ft. Monmouth, NJ 07703

Lab. ID #: 1323.1-.4
Sample Rec'd: 11/10/93
Analysis Start: 11/12/93
Analysis Comp: 11/12/93

Analysis: 418.1 (TPH)
Matrix: Soil
Analyst: S. Hubbard
Ext. Method: SONC.

NJDEPE UST Reg.#: **81533-57**
Closure #: **C-93-3182**
NJDEPE Case #:
Location #: **Bldg. # 282**

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1323.1	Site L, 3.5 - 4' hNu = 10.	85	1250.	20.
1323.2	Site M, 3.5- 4' hNu = 10.	84	2840.	20.
1323.3	Site N, 3.5 - 4' hNu = 10.	86	ND	3.3
1323.4	Site O, 3.5 - 4' hNu = 10. (Dup of M)	83	2140.	20.
M. BL.	Method Blank	100	ND	3.3

Notes: ND = Not Detected, MDL = Method Detection Limit
* = Silica Gel Added

1324.3 Dup. = 82% 1324.3 Spike= 90% 1324.3 Spike Dup.= 88% RPD: 97%

Brian K. McKee
Laboratory Director

SERV-AIR, INC.
An E-SYSTEMS Company

Call [illegible] Appleby after T.P.H. results. He will select sample to go out for VOA+15

P.O. #: PWS 007.

Chain of Custody

Project #: C-93-3182	Sampler: Cafe Inc, George	Date / Time: 11/10/93 1320	Analysis Parameters	Start:
Customer: C. Appleby DPW	Site Name: Bldg. 282, UST # 81533-57, Excavation Resample C-93-3182			Finish:
Phone: X 26224				Preservation Method

Lab Sample ID Number	Date/Time		Customer Sample Location/ID Number	Sample Matrix	# of Bottles		TPHC	% Solids	Munsell	VOA+15 Pb.			Hnu - Reading	Remarks
1323.1	11/10/93	1350	Site L 3.5-4'	Soil	1		X	X	X	X			10.0	
.2	↓		Site M 3.5-4'	↓	1		X	X	X	X			10.0	
.3	↓	1348	Site N 3.5-4'	↓	1		X	X	X	X			10.0	
.4	↓	1345	Site O 3.5-4'	↓	1		X	X	X	X			10.0	Kept <4°C.
														VOA+15 if Req. - See SSE
														no TB or FB Taken.
														Hnu Calibrated to
														55 PPM methane
														@ Span = 4.20

Relinquished By (signature)	Date / Time	Received By (signature)	Shipped By: 1130 hrs CG	
Relinquished By (signature)	**Date / Time**	**Received for Lab by (signature):**	**Date / Time**	
[signature]	11/10/93 1500	Sarah J Hubbard	11/10/93 1530	

Note: A drawing depicting sample location should be attached or drawn on the reverse side of this chain of custody.

FT. MONMOUTH OFFICE
E-SYSTEMS, INC. • P. O. BOX 369, BUILDING 1209 • FT MONMOUTH, NEW JERSEY 07703-5000 • (201) 544-0995

PHC Conformance/Non-conformance Summary Report

	No	Yes
1. Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank	✓	
2. Matrix Spike/Matrix Sp Dup. Recoveries Meet Criteria (If not met, list the sample and corresponding recovery which falls outside the acceptable range)		✓
3. IR Spectra submitted for standards, blanks, & samples		✓
4. Chromatograms submitted for standards, blanks, and samples if GC fingerprinting was conducted.	N/A	
5. Extraction holding time met. (If not met, list number of days exceeded for each sample)		✓
6. Analysis holding time met. (If not met, list number of days exceeded for each sample)		✓

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.

Brian K. McKee
Laboratory Manager

Nov. 12, 1993 Sarah Hubbard

1324.1 6 MV

1324.1 Dup 7 MV

1324.2 Spk 96 MV

1324.1 Spk Dup 94 MV

1324.2 70 MV (dil 7)

1324.3 13 MV

1324.4 119 MV (dil 7)

1325.1 201 MV (dil 13)

1325.2 277 MV

1325.3 114 MV (dil 7)

1325.4 177 (dil 7)

1325.5 106 (dil 7)

1325.6 309 MV (dil 7)

1326.1 13 MV

1326.2 8 MV

1326.3 6 MV

November 12, 1993 1200

Sarah Hubbard

Blank 0 MV

33.75 80 MV

67.5 159 MV R 9999

135 313 MV

1322.1 253 MV

1322.2 37 MV

1322.3 57 (27)

1322.4 112 MV

1322.5 191 MV

1323.1 125 MV

1323.2 278 MV

1323.3 ND

1323.4 207 MV

195-6970-00

PRINTED IN U.S.A.

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

Client: U.S. Army
DEH, SELFM-EH-EV
Bldg. 167
Ft. Monmouth, NJ 07703

Lab. ID #: 1323.1-.4
Sample Rec'd: 11/10/93
Analysis Start: 11/11/93
Analysis Comp: 11/11/93

Analysis: Munsel

Lab ID#	Soil Color
1323.1	5Y 3/2 Dark Olive Gray
1323.2	5Y 4/2 Olive Gray
1323.3	5Y 4/2 Olive Gray
1323.4	5Y 5/2 Olive Gray

Brian K. McKee
Laboratory Director

11/15/93 11:12 AM

21ST CENTURY ENVIRONMENTAL

618 HERON DRIVE, P.O. BOX 489 • BRIDGEPORT, NJ 08014-0489 • 609-467-9521

Bldg 282
Rpt - 12/7/93 CS
for SAI

Soil Site M

TELECOPIER TRANSMITTAL COVER SHEET

Date: [redacted] 4

Number of Pages (Including Cover Sheet): [redacted] 15 18

PLEASE DELIVER THE FOLLOWING PAGES TO:

NAME: BRIAN McKEE
E-SYS Fort Monmouth -- U.S.A.B.
SERV. AR

FROM:

COMMENTS:

TELECOPY NUMBER TO: ~~908-532-5994~~
908-532-1263

618 HERON DRIVE, P.O. BOX 489 • BRIDGEPORT, NJ 08014-0489 • 609-467-9521

E-SYSTEMS, INC.

PROJECT: U.S. ARMY-FORT MONMOUTH, NJ BLDG 282

ANALYSIS NO:	CLIENT ID:	
A 5356	1323.2	Site M TPHC 2840 mg/kg.

DATE RECEIVED: NOVEMBER 16, 1993

TWENTY FIRST CENTURY
ENVIRONMENTAL, INC.

RICHARD W. LYNCH
LABORATORY MANAGER

CERTIFICATE OF ANALYSIS

U.S. ARMY-FORT MONMOUTH, NJ BLDG 282

LEAD

ANALYSIS NO:	CLIENT ID:	MDL (mg/Kg)	RESULT (mg/Kg)
A 5356	1323.2	5.00	14.9

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER	US ARMY FT MONMOUTH, NJ	MATRIX	Soil
SAMPLE NUMBER	65356	DILUTION FACTOR	5.00
CLIENT ID	1323.2 BLDG 282	QA BATCH	HNU= 10
DATA FILE	>82148	DATE ANALYZED	11/10/93

COMPOUND	UG/KG	MDL	COMPOUND	UG/KG	MDL
Acrolein	ND	310	Bromodichloromethane	ND	31
Acrylonitrile	ND	310	2-Chloroethylvinylether	ND	62
Chloroethane	ND	62	2-Hexanone	ND	62
Bromomethane	ND	62	trans-1,3-Dichloropropene	ND	31
Vinyl Chloride	ND	62	Toluene	ND	31
Chloroethane	ND	62	cis-1,3-Dichloropropene	ND	31
Acetone	75	62	1,1,2,2-Tetrachloroethane	ND	31
1,1-Dichloroethene	ND	31	1,1,2-Trichloroethane	ND	31
Carbon Disulfide	ND	62	4-Methyl-2-pentanone	ND	62
Methylene Chloride	ND	31	Tetrachloroethene	ND	31
1,2-Dichloroethene(trans)	ND	31	Dibromochloromethane	ND	31
1,1-Dichloroethane	ND	31	Chlorobenzene	ND	31
Vinyl Acetate	ND	31	Ethylbenzene	ND	31
2-Butanone	ND	62	m&p-Xylenes	ND	31
Chloroform	ND	31	o-Xylene	ND	31
1,1,1-Trichloroethane	ND	31	Styrene	ND	31
Carbon Tetrachloride	ND	31	Bromoform	ND	31
1,2-Dichloroethane	ND	31	m-Dichlorobenzene	ND	31
Benzene	ND	31	p-Dichlorobenzene	ND	31
Trichloroethene	ND	31	o-Dichlorobenzene	ND	31
1,2-Dichloropropane	ND	31			

SURROGATE COMPOUNDS	% RECOVERY	LIMITS	STATUS
1,2-Dichloroethane-d4	106	70 - 121	OK
Toluene-d8	95.9	81 - 117	OK
Bromofluorobenzene	102	74 - 121	OK

Percent Solid of 81.8 is used for all Target compounds.

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

APPENDIX G

GROUNDWATER ANALYTICAL DATA PACKAGE

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

Page ______ of ______

Customer: ( )DERA ( )OMA ( )Other:______

Project No:

Location: 282 Bldg ~~482~~

Sampler's Signature: [signature] Ray Bogvist

Analysis Parameters: 624 GC

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	624 GC					Comments: Remarks / Preservation Method
2396.1	Trip Blank	3-19-97	0800	AQUA	X					624 - HCl
↓ .2	Field Blank	↓	945	↓	X					All Samples Kept @ ≤ 4°C
↓ .3	Bldg 482 MW-1	↓	1100	↓	X					# 29-30962

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
[signature]	3-19-97 320	Sarah Hubbard			

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Relinquished by (signature):	Date/Time:	Received for laboratory by (signature):	Date/Time:	Remarks:

print legibly

U.S. ARMY FORT MOMOUTH
MONITORING WELL SAMPLING DATASHEET

BLDG 282
MW# 1
NJDEP ID# 29-30962
NJDEP CERT# 13461
SAMPLING CONTRATOR TVS
SAMPLER RAY POGWIST

DATE 3-19-97 WEATHER Overcast 40's

ELEVATION OF CASING SURVEY MARK 10.56
DTW 4.19
DEPTH OF WELL 15.11
HEIGHT OF WATER 10.92
10.92 X 0.65 X 3 = 21.29
GAL OF H2O TO BE EVACUATED 21.3 GAL
PURGE METHOD: (FLOW OF <0.5 TO >5.0 GPM) PERISTALIC
PURGE RATE 0.3 GPM 70 ml
Hnu READING 0

PURGE START TIME 930
pH 6.10 TEMP 50.8 DEG °F
DISSOLVED O2 2.1 PPM SPECIFIC CONDUCTIVITY 320 us/cm

PURGE END TIME 1045
pH 5.81 TEMP 51.2 DEG °F
DISSOLVED O2 1.7 PPM SPECIFIC CONDUCTIVITY 215 us/cm

DEPTH TO H2O AFTER PURGING AND BEFORE SAMPLING 5.80 FT
sampling method : dedicated (law NJDEP FSPM 1992) teflon ® bailer
TOTAL VOLUME PURGED: 21.3 GAL

pH 5.82 TEMP 51.2 DEG ° F
DISSOLVED O2 1.6 PPM SPECIFIC CONDUCTIVITY 221 us/cm

COMMENTS: _____

FMETL - GC/MS Volatile Data

Sample Name	**2396.01**	Date Acquired	**03/26/97 07:47**
Misc Info	**Trip Blank**	Operator	**Paul Skelton**
Data File Name	**v00356.d**		

CAS #	Name	Ret Time	Amount	Units	MDL
	Dichlorodifluoromethane	0.00	0.00	ug/L	3.63
74873	Chloromethane	0.00	0.00	ug/L	0.79
75014	Vinyl Chloride	0.00	0.00	ug/L	2.61
74839	Bromomethane	0.00	0.00	ug/L	1.45
75003	Chloroethane	0.00	0.00	ug/L	2.20
75694	Trichlorofluoromethane	0.00	0.00	ug/L	1.31
75354	1,1-Dichloroethene	0.00	0.00	ug/L	0.74
67641	Acetone	0.00	0.00	ug/L	1.57
75150	Carbon Disulfide	0.00	0.00	ug/L	0.54
540590	Methylene Chloride	0.00	0.00	ug/L	1.66
75092	trans-1,2-Dichloroethene	0.00	0.00	ug/L	0.50
75353	1,1-Dichloroethane	0.00	0.00	ug/L	0.83
108054	Vinyl Acetate	0.00	0.00	ug/L	2.07
78933	2-Butanone	0.00	0.00	ug/L	2.06
	cis-1,2-Dichloroethene	0.00	0.00	ug/L	0.65
67663	Chloroform	0.00	0.00	ug/L	0.43
75555	1,1,1-Trichloroethane	0.00	0.00	ug/L	0.81
56235	Carbon Tetrachloride	0.00	0.00	ug/L	1.20
71432	Benzene	0.00	0.00	ug/L	0.51
107062	1,2-Dichloroethane	0.00	0.00	ug/L	1.27
79016	Trichloroethene	0.00	0.00	ug/L	0.94
78875	1,2-Dichloropropane	0.00	0.00	ug/L	0.78
75274	Bromodichloromethane	0.00	0.00	ug/L	0.77
110758	2-Chloroethyl vinyl ether	0.00	0.00	ug/L	1.05
10061015	cis-1,3-Dichloropropene	0.00	0.00	ug/L	0.60
108101	4-Methyl-2-Pentanone	0.00	0.00	ug/L	1.33
108883	Toluene	0.00	0.00	ug/L	0.73
10061026	trans-1,3-Dichloropropene	0.00	0.00	ug/L	1.43
79005	1,1,2-Trichloroethane	0.00	0.00	ug/L	1.49
127481	Tetrachloroethene	0.00	0.00	ug/L	0.92
591786	2-Hexanone	0.00	0.00	ug/L	1.12
126481	Dibromochloromethane	0.00	0.00	ug/L	1.36
108907	Chlorobenzene	0.00	0.00	ug/L	0.66
100414	Ethylbenzene	0.00	0.00	ug/L	1.14
1330207	m+p-Xylenes	0.00	0.00	ug/L	2.53
1330207	o-Xylene	0.00	0.00	ug/L	1.92
100425	Styrene	0.00	0.00	ug/L	1.57
75252	Bromoform	0.00	0.00	ug/L	1.68
79345	1,1,2,2-Tetrachloroethane	0.00	0.00	ug/L	1.71
541731	1,3-Dichlorobenzene	0.00	0.00	ug/L	2.51
106467	1,4-Dichlorobenzene	0.00	0.00	ug/L	3.08
95501	1,2-Dichlorobenzene	0.00	0.00	ug/L	2.75

FMETL - GC/MS Volatile Data

Sample Name **2396.03**
Misc Info **Bldg 482 MW1**
Data File Name **V00362.D**

Date Acquired **03/26/97 13:08**
Operator **Paul Skelton**

CAS #	Name	Ret Time	Amount	Units	MDL
	Dichlorodifluoromethane	0.00	0.00	ug/L	3.63
74873	Chloromethane	0.00	0.00	ug/L	0.79
75014	Vinyl Chloride	0.00	0.00	ug/L	2.61
74839	Bromomethane	0.00	0.00	ug/L	1.45
75003	Chloroethane	0.00	0.00	ug/L	2.20
75694	Trichlorofluoromethane	0.00	0.00	ug/L	1.31
75354	1,1-Dichloroethene	0.00	0.00	ug/L	0.74
67641	Acetone	0.00	0.00	ug/L	1.57
75150	Carbon Disulfide	0.00	0.00	ug/L	0.54
540590	Methylene Chloride	0.00	0.00	ug/L	1.66
75092	trans-1,2-Dichloroethene	0.00	0.00	ug/L	0.50
75353	1,1-Dichloroethane	0.00	0.00	ug/L	0.83
108054	Vinyl Acetate	0.00	0.00	ug/L	2.07
78933	2-Butanone	0.00	0.00	ug/L	2.06
	cis-1,2-Dichloroethene	0.00	0.00	ug/L	0.65
67663	Chloroform	0.00	0.00	ug/L	0.43
75555	1,1,1-Trichloroethane	0.00	0.00	ug/L	0.81
56235	Carbon Tetrachloride	0.00	0.00	ug/L	1.20
71432	Benzene	0.00	0.00	ug/L	0.51
107062	1,2-Dichloroethane	0.00	0.00	ug/L	1.27
79016	Trichloroethene	0.00	0.00	ug/L	0.94
78875	1,2-Dichloropropane	0.00	0.00	ug/L	0.78
75274	Bromodichloromethane	0.00	0.00	ug/L	0.77
110758	2-Chloroethyl vinyl ether	0.00	0.00	ug/L	1.05
10061015	cis-1,3-Dichloropropene	0.00	0.00	ug/L	0.60
108101	4-Methyl-2-Pentanone	0.00	0.00	ug/L	1.33
108883	Toluene	0.00	0.00	ug/L	0.73
10061026	trans-1,3-Dichloropropene	0.00	0.00	ug/L	1.43
79005	1,1,2-Trichloroethane	0.00	0.00	ug/L	1.49
127481	Tetrachloroethene	0.00	0.00	ug/L	0.92
591786	2-Hexanone	0.00	0.00	ug/L	1.12
126481	Dibromochloromethane	0.00	0.00	ug/L	1.36
108907	Chlorobenzene	0.00	0.00	ug/L	0.66
100414	Ethylbenzene	0.00	0.00	ug/L	1.14
1330207	m+p-Xylenes	0.00	0.00	ug/L	2.53
1330207	o-Xylene	0.00	0.00	ug/L	1.92
100425	Styrene	0.00	0.00	ug/L	1.57
75252	Bromoform	0.00	0.00	ug/L	1.68
79345	1,1,2,2-Tetrachloroethane	0.00	0.00	ug/L	1.71
541731	1,3-Dichlorobenzene	0.00	0.00	ug/L	2.51
106467	1,4-Dichlorobenzene	0.00	0.00	ug/L	3.08
95501	1,2-Dichlorobenzene	0.00	0.00	ug/L	2.75

FMETL - GC/MS Volatile Data

Sample Name	2396.02	Date Acquired	03/26/97 08:32
Misc Info	Field Blank	Operator	Paul Skelton
Data File Name	v00357.d		

CAS #	Name	Ret Time	Amount	Units	MDL
	Dichlorodifluoromethane	0.00	0.00	ug/L	3.63
74873	Chloromethane	0.00	0.00	ug/L	0.79
75014	Vinyl Chloride	0.00	0.00	ug/L	2.61
74839	Bromomethane	0.00	0.00	ug/L	1.45
75003	Chloroethane	0.00	0.00	ug/L	2.20
75694	Trichlorofluoromethane	0.00	0.00	ug/L	1.31
75354	1,1-Dichloroethene	0.00	0.00	ug/L	0.74
67641	Acetone	0.00	0.00	ug/L	1.57
75150	Carbon Disulfide	0.00	0.00	ug/L	0.54
540590	Methylene Chloride	0.00	0.00	ug/L	1.66
75092	trans-1,2-Dichloroethene	0.00	0.00	ug/L	0.50
75353	1,1-Dichloroethane	0.00	0.00	ug/L	0.83
108054	Vinyl Acetate	0.00	0.00	ug/L	2.07
78933	2-Butanone	0.00	0.00	ug/L	2.06
	cis-1,2-Dichloroethene	0.00	0.00	ug/L	0.65
67663	Chloroform	0.00	0.00	ug/L	0.43
75555	1,1,1-Trichloroethane	0.00	0.00	ug/L	0.81
56235	Carbon Tetrachloride	0.00	0.00	ug/L	1.20
71432	Benzene	0.00	0.00	ug/L	0.51
107062	1,2-Dichloroethane	0.00	0.00	ug/L	1.27
79016	Trichloroethene	0.00	0.00	ug/L	0.94
78875	1,2-Dichloropropane	0.00	0.00	ug/L	0.78
75274	Bromodichloromethane	0.00	0.00	ug/L	0.77
110758	2-Chloroethyl vinyl ether	0.00	0.00	ug/L	1.05
10061015	cis-1,3-Dichloropropene	0.00	0.00	ug/L	0.60
108101	4-Methyl-2-Pentanone	0.00	0.00	ug/L	1.33
108883	Toluene	0.00	0.00	ug/L	0.73
10061026	trans-1,3-Dichloropropene	0.00	0.00	ug/L	1.43
79005	1,1,2-Trichloroethane	0.00	0.00	ug/L	1.49
127481	Tetrachloroethene	0.00	0.00	ug/L	0.92
591786	2-Hexanone	0.00	0.00	ug/L	1.12
126481	Dibromochloromethane	0.00	0.00	ug/L	1.36
108907	Chlorobenzene	0.00	0.00	ug/L	0.66
100414	Ethylbenzene	0.00	0.00	ug/L	1.14
1330207	m+p-Xylenes	0.00	0.00	ug/L	2.53
1330207	o-Xylene	0.00	0.00	ug/L	1.92
100425	Styrene	0.00	0.00	ug/L	1.57
75252	Bromoform	0.00	0.00	ug/L	1.68
79345	1,1,2,2-Tetrachloroethane	0.00	0.00	ug/L	1.71
541731	1,3-Dichlorobenzene	0.00	0.00	ug/L	2.51
106467	1,4-Dichlorobenzene	0.00	0.00	ug/L	3.08
95501	1,2-Dichlorobenzene	0.00	0.00	ug/L	2.75