United States Army

Fort Monmouth, New Jersey

Underground Storage Tank Closure and Site Investigation Report

Building 210
Main Post Area

NJDEP UST Registration No. 081533-8
NJDEP Closure Approval No. C-93-2610

Volume 1 of 2
Text, Tables, Figures, and Appendices A through F

February 1996

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ENVIRONMENTAL TECHNOLOGIES CORPORATION

DEPARTMENT OF THE ARMY
Headquarters, U.S. Army Garrison Fort Monmouth
Fort Monmouth, New Jersey 07703 - 5101

FEB 1996

REPLY TO
ATTENTION OF

Directorate of Public Works

N.J. Dept of Environmental Protection
Division of Responsible Party Site Remediation
Bureau of Federal Case Management- CN029
401 East State Street - 5th Floor
Trenton, N.J. 08625-0028
Attn: Ian Curtis - Case Manager

Dear Mr. Curtis:

Enclosed please find UST Closure and Site Investigation Reports for the following Fort Monmouth Sites:

Building 108 - 0090010-7	Building 411 - 0090010-28	Building 682 - 0081533-106
Building 114 - 0081533-1	Building 423 - 0090010-39	Building 161 - 0090010- 14
Building 443 - 0090010-49	Building 702 - 0081533-114	Building 167 - 0090010-18
Building 563 - 0081533-82	Building 789 - 0081533-126	Building 206 - 0081533-4
Building 608 - 0081533-86	Building 1106 - 0081533-166	Building 210 - 0081533-8
Building 620 - 0081533-93	Building 1122 - 0081533-199	Building 293 - 0081533-67
Building 625 - 0081533-96	Building 3027 - 0192486-28	Building 296 - 0081533-69
Building 659 - 0081533-101	Building 9002 - 0192468-1	Building 9017 - 0090029-6
Building 9049 - 0090029-20	Building 697 - 0081533-194	Building 2500 - 0081515-52
Building 9090 - 0090029-30	thru 196	thru 56

If the information provided in this enclosure is inadequate or you require further information with regard to these documents please contact Mr. Appleby at (908) 532-6224.

Sincerely,

James Ott
Director of Public Works

UNDERGROUND STORAGE TANK
CLOSURE AND SITE INVESTIGATION REPORT

BUILDING 210

MAIN POST AREA
NJDEP UST REGISTRATION NO. 081533-8
CLOSURE APPROVAL NO. C-93-2610

FEBRUARY 1996

PROJECT NO.: 09-5004-01
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:

SMITH ENVIRONMENTAL TECHNOLOGIES CORPORATION
BROMLEY CORPORATE CENTER
THREE TERRI LANE
BURLINGTON, NEW JERSEY 08016

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EXECUTIVE SUMMARY

UST Closure

On January 14, 1994, a steel underground storage tank (UST) was closed by removal in accordance with Closure Approval No 081533-8 at U S Army Fort Monmouth, Fort Monmouth, New Jersey The UST, New Jersey Department of Environmental Protection (NJDEP) Registration No 081533-8, was located immediately adjacent to Building 210 in the Main Post area of U S Army, Fort Monmouth UST No 081533-8 was a 550-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)

Site Assessment - Soil

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* Due to precipitation and temperatures below freezing, only visual soil screening could be performed Following removal, the UST was inspected for corrosion holes Although no corrosion holes were noted in the UST, potentially contaminated soils were observed along the south wall of the excavation

On January 14, 1994, following removal of the UST, post-excavation soil samples A, B, C, D, and E were collected from a total of four (4) locations along the sidewalls of the UST excavation immediately above groundwater Sample A was collected along the southern wall of the excavation, immediately below the former piping associated with the UST, which was approximately 10 feet Groundwater was present at approximately 4 5 feet below ground surface (BGS) All samples were analyzed for total petroleum hydrocarbons (TPHC)

On January 19, 1994, approximately 10 cubic yards of potentially contaminated soils were removed from the southern portion of the excavation in the vicinity of sample A A post-excavation soil sample designated as B0189 was then collected from the expanded portion of the excavation and was analyzed for volatile organic compounds with a forward library search for 15 tentatively identified compounds (VO+15)

Findings - Soil

All samples collected from the UST excavation and from below piping associated with the UST contained concentrations of contaminants below the corresponding NJDEP residential direct contact and impact to groundwater soil cleanup criteria (N J A C 7 26D and revisions dated February 3, 1994) Samples B, C, and D contained TPHC concentrations ranging from 15 9 mg/kg to 21 6 mg/kg Sample A contained an elevated TPHC concentration of

3,440 0 mg/kg Sample E was the duplicate of sample A but was not sampled properly For this reason sample E and its results are not listed in any of the tables or figures

Post-excavation soil sample B0189, collected on January 19, 1994, contained acetone at 0 62 mg/kg, methylene chloride at 0 22 mg/kg, total xylenes at 0 42 mg/kg, and 1,1,1-trichloroethane at 2 5 mg/kg All of the detected VOCs were below the most stringent NJDEP soil cleanup criteria.

Based on the elevated TPHC concentration of 3,440 0 detected in sample A, a discharge was reported to the NJDEP by the DPW on January 25, 1994 Spill Case No 94-1-25-0913-00 was assigned

Site Restoration

Following removal of all potentially contaminated soils, and 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

Site Assessment - Groundwater

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 210 area on September 22, 1994 It was installed approximately 24 feet north of the UST excavation in the assumed downgradient direction It was screened in the 2- to 12- foot depth interval, across the water table, which is approximately 6 feet below grade surface

On May 19, 1995 and June 13, 1995, MW-1 was sampled for volatile organic compounds (with xylene) plus 10 tentatively identified compounds, and semivolatile organic compounds plus 15 tentatively identified compounds Sampling and analysis were performed in accordance with the NJDEP *Field Sampling Procedures Manual* and the *Technical Requirement*

Findings - Groundwater

The sample collected on May 19, 1995, contained a methylene chloride concentration of 2 2 micrograms per liter (ug/l) This result exceeded the Ground Water Quality Criteria (GWQC) for methylene chloride of 2 0 ug/l All other groundwater analytical results from MW-1 contained non-detectable concentrations of contaminants The trip blank and field blank collected for MW-1 on May 19, 1995 contained methylene chloride concentrations of 6 4 ug/l and 6 3 ug/l, respectively The trip blank also contained a toluene concentration of 0 80 ug/l, and a 2-Chlorotoluene concentration of 0 60 ug/l No other compounds were detected in the trip and field blanks

The sample collected on June 13, 1995, contained a methylene chloride concentration of 1.3 ug/l All other groundwater analytical results from MW-1 contained non-detectable concentrations of contaminants The trip blank and field blank collected for MW-1 on June 13, 1995 contained methylene chloride concentrations of 2 3 ug/l and 2 1 ug/l, respectively No other compounds were detected in the trip and field blanks

The depth to the water table was 6 52 feet below grade on May 19, 1995, and 7 01 feet below grade on June 13, 1995 No product or sheen was observed in MW-1 on either of the sampling dates

Site Assessment Quality Assurance

The sampling and laboratory analyses conducted during the site assessments were performed in accordance with Section 7 26E-2 1 of the *Technical Requirements*

Conclusions and Recommendations

Based on the post-excavation soil sampling results, soils with concentrations of TPHC or volatile organic compounds exceeding the NJDEP soil cleanup criteria do not remain in the former location of the UST or associated piping

Based on the analytical results of the groundwater samples collected on May 19, 1995, and on June 13, 1995, groundwater quality at the Building 206 UST closure site complies with the New Jersey Quality Criteria for volatile organic compounds and semivolatile organic compounds The trace concentrations of methylene chloride detected during both sampling rounds is attributed to sampling and/or analytical interference, based on the detection of methylene chloride, a common source of laboratory interference, in the sampling blanks

No further action is proposed in regard to the closure and site assessment of UST No 081533-8 at Building 210

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1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

1.1 OVERVIEW

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No 081533-8, was closed at Building 210 at U S Army Fort Monmouth, Fort Monmouth, New Jersey on January 14, 1994 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 July 12, 1993 and assigned TMS No C-93-2610 The UST was a steel, 550-gallon tank containing No 2 fuel oil

Decommissioning activities for UST No 081533-8 complied with all applicable Federal, State and Local laws and ordinances in effect at the date of decommissioning These laws included but were not limited to N J A C 7 14B-1 et seq , N J A C 5 23-1 et seq , and Occupational Safety and Health Administration (OSHA) 1910.146 & 1910 120 All permits including but not limited to the NJDEP-approved Decommissioning/Closure Plan were posted onsite for inspection CUTE Inc , the contractor that conducted the decommissioning activities, is registered and certified by the NJDEP for performing UST closure activities Closure of UST No 081533-8 proceeded under the approval of the NJDEP Bureau of Underground Storage Tanks (NJDEP-BUST) The NJDEP-BUST closure approval and the signed certifications for UST No 081533-8 are included in Appendices A and B, respectively

Based on an inspection of the UST, field screening of subsurface soils and analytical results of collected soil samples, the DPW has concluded that an historical discharge was associated with the UST On January 25, 1994, a spill was reported to the NJDEP "Hotline" for UST No 081533-8 and was assigned Spill Case No 94-1-25-0913-00

This UST Closure and Site Investigation Report has been prepared by Smith Environmental Technologies 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

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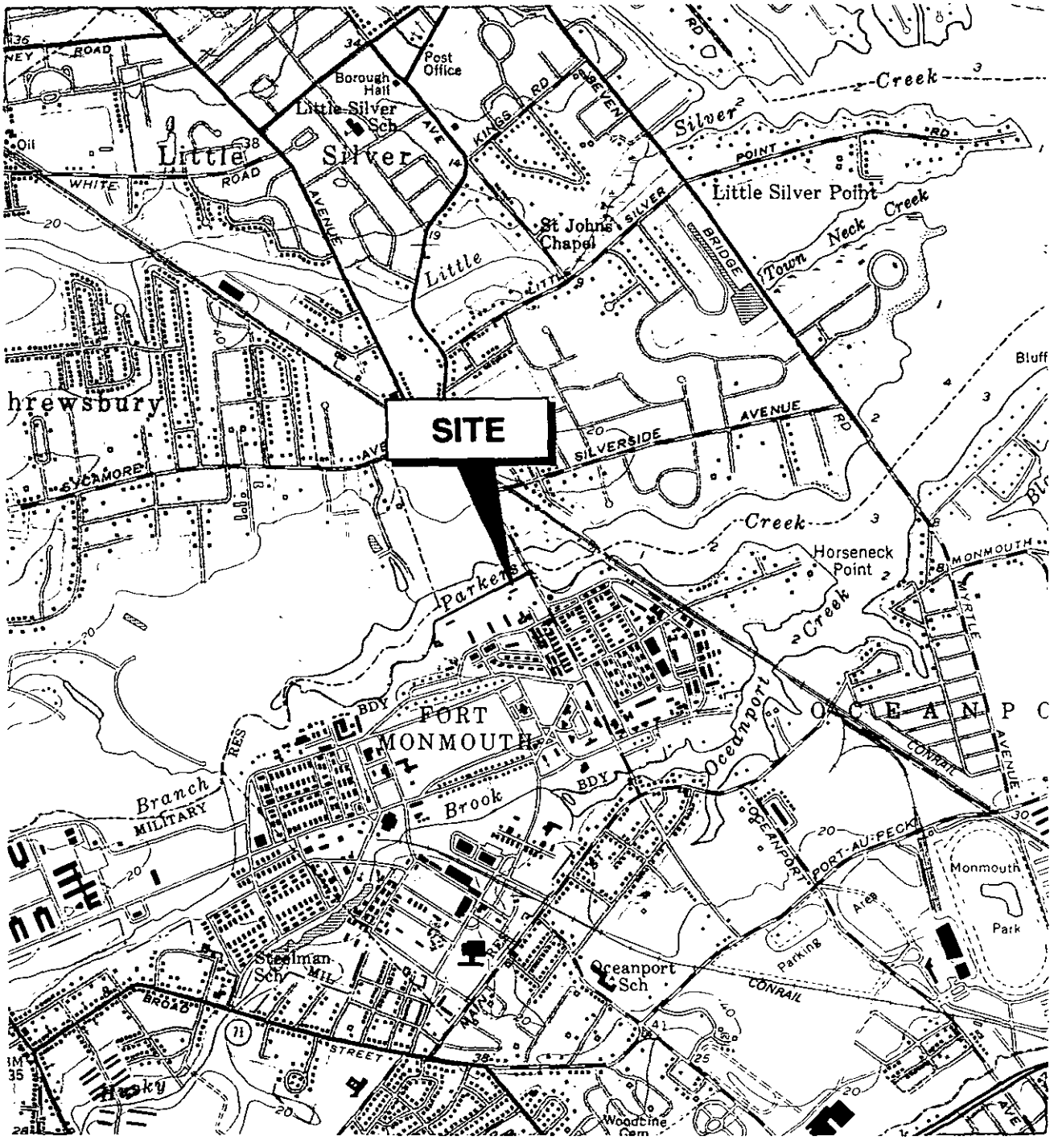
Department of Public Works
Fort Monmouth, New Jersey



N

SCALE
0 2000 FT.

NEW JERSEY
QUADRANGLE LOCATION

Source: U.S.G.S. Quadrangle Long Branch, N.J.

Project No. 00-5004-01

Figure 1
Site Location Map

1.2 SITE DESCRIPTION

Building 210 is located in the northern portion of the Main Post area of Fort Monmouth as shown on Figure 1 UST No 081533-8 was located north of Building 210 The USTs appurtenant piping ran approximately 10 feet south to the fill port area 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 210 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

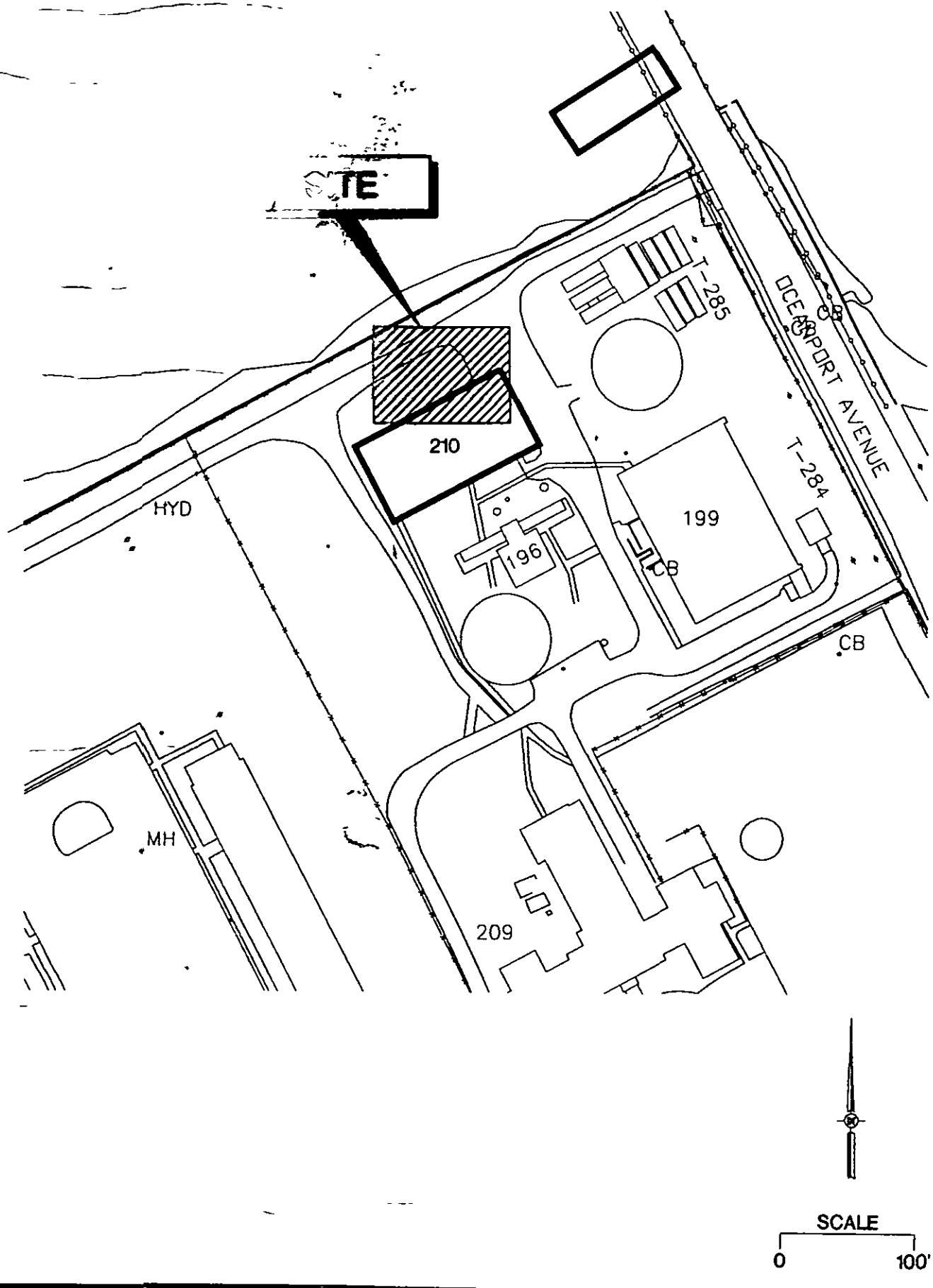
Monmouth County lies within the New Jersey Section of the Atlantic Coastal Plain physiographic province The Main Post, Charles Wood, and Evans areas are located in what may be referred to as the Outer Coastal Plain subprovince, or the Outer Lowlands.

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



Source: BCM/Smith Environmental Technologies Corporation (002)

Project No. 09-5004-01

Figure 2
Building 210
Site Map

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

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

Hydrogeology

The water table aquifer at 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 at the Main Post area, water is typically encountered at depths of 2 to 9 feet below ground surface (bgs) The depth to the water table measured on September 22, 1994 in the Building 210 monitoring well MW-1, was approximately 6 feet below grade According to Jablonski, wells drilled in the Red Bank and Tinton Sands may produce 2 to 25 gallons per minute (gpm) Some well owners have reported acidic water that requires treatment to remove iron

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

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

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

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

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Building 081533-8 is located approximately 500 feet miles Southeast of Parkers Creek, the nearest water body The groundwater flow in the area of Building 081533-8 has been determined to be the west

1.3 HEALTH AND SAFETY

Before, during, and after all decommissioning activities, hazards at the work site which may have posed a threat to the Health and Safety of all personnel who were 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 (weather permitting) 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 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 closure activities

1.4.2 Underground Storage Tank Excavation and Cleaning

Prior to UST decommissioning activities, surficial soil was excavated to expose the UST and associated piping All free product present in the piping was drained into the UST, and the UST was purged to remove vapors prior to cutting and removal of the piping After removal of the associated piping, a manway was made in the UST to allow for proper cleaning The UST was completely emptied of all liquids prior to removal from the ground Approximately 30 gallons of liquid were transported by Freehold Cartage Inc , to Lionetti Oil Recovery Co Inc , a NJDEP-

approved petroleum recycling and disposal facility located in Old Bridge, New Jersey Refer to Appendix C for waste manifest (manifest No NJA-1603206)

The UST was cleaned prior to removal from the excavation in accordance with NJDEP-BUST regulations After the UST was removed from the excavation, it was staged on polyethylene sheeting and examined for corrosion holes No punctures or corrosion holes were observed during the inspection by the Sub-Surface Evaluator Weather conditions permitted only visual soil screening Apparent soil contamination was seen at the south end of the excavation, at the point nearest to Building 210.

Slight contamination was also noted in some of the standing water at the bottom of the excavation Potentially contaminated soils were excavated and stockpiled

1.5 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The tank was transported by CUTE Inc , to Mazza and Sons Inc , for recycling in compliance with all applicable regulations and laws Refer to Appendix D for UST disposal certificate

The Subsurface Evaluator 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 10 cubic yards of potentially contaminated soils were excavated from the south end and bottom of the 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

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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 VO+10 analyses were performed and reported by Twenty First Century Environmental Laboratory 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 the 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)
  Contact Person Nancy Williams
  Phone Number (201)427-2881
  NJDEP Company Certification No 0200128

- Subsurface Evaluator Dinkerrai M Desai
  Employer U S Army, Fort Monmouth
  Phone Number (908)532-1475
  NJDEP Certification No E0002266

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

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

- Hazardous Waste Hauler Freehold Cartage, Inc
  Contact Person Barry Olsen
  Phone Number (908) 462-1001
  NJDEP Hazardous Waste Hauler No 2265

TABLE 1

SUMMARY OF SAMPLING ACTIVITIES
BUILDING 210, MAIN POST
FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Matrix	Sample Type	Analytical Parameters (and USEPA Methods) *	Sampling Method
A	1/14/94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
B	1/14/94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
C	1/14/94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
D	1/14/94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
B0189	1/19/94	Soil	Post-Excavation	VOCs	Polystyrene Scoop
MW-1	5/19/95	Aqueous	Groundwater	VOCs, BNCs	Teflon Bottom Bailer
MW-1	6/13/95	Aqueous	Groundwater	VOCs, BNCs	Teflon Bottom Bailer

*Note

TPHC	Total Petroleum Hydrocarbons (Method 418 1 / soil and aqueous)
VOCs	Volatile Organic Compounds plus 15 tentatively identified compounds (Method 8240 soil)
	Volatile Organic Compounds plus 10 tentatively identified compounds (Method 524 2 aqueous)
BNCs	Semivolatile Organic Compounds plus 15 tentatively identified compounds (Method 625 aqueous)

2.2 FIELD SCREENING/MONITORING

Due to precipitation and temperatures below freezing, soil screening was not performed However, contamination was noted at the south end of the excavation and also in some of the standing water at the bottom of the excavation

On January 16, 1994, approximately 10 cubic yards of potentially contaminated soils were excavated from the south end and bottom of the excavation and were stockpiled for disposal

2.3 SOIL SAMPLING

On January 14, 1994, post-excavation soil samples A, B, C, D, and E were collected from a total of four (4) locations along the sidewalls of the UST excavation immediately above groundwater Sample A was collected immediately below the former piping associated with the UST Groundwater was present at approximately 4 5 feet below ground surface Refer to soil sampling location map on Figure 3 All samples were analyzed for total petroleum hydrocarbons (TPHC)

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 on Table 1 The samples were collected using decontaminated stainless steel scoops 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 The sample being analyzed for VO+15 was chilled and delivered to Twenty First Century Environmental, 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 overburden monitoring (MW-1) was installed at the Building 210 area on September 22, 1994 It was installed approximately 24 feet north of the UST excavation in the assumed downgradient direction A monitoring well location map is provided on Figure 4 It was screened in the 2- to 12- foot depth interval, across the water table, which is approximately 6 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

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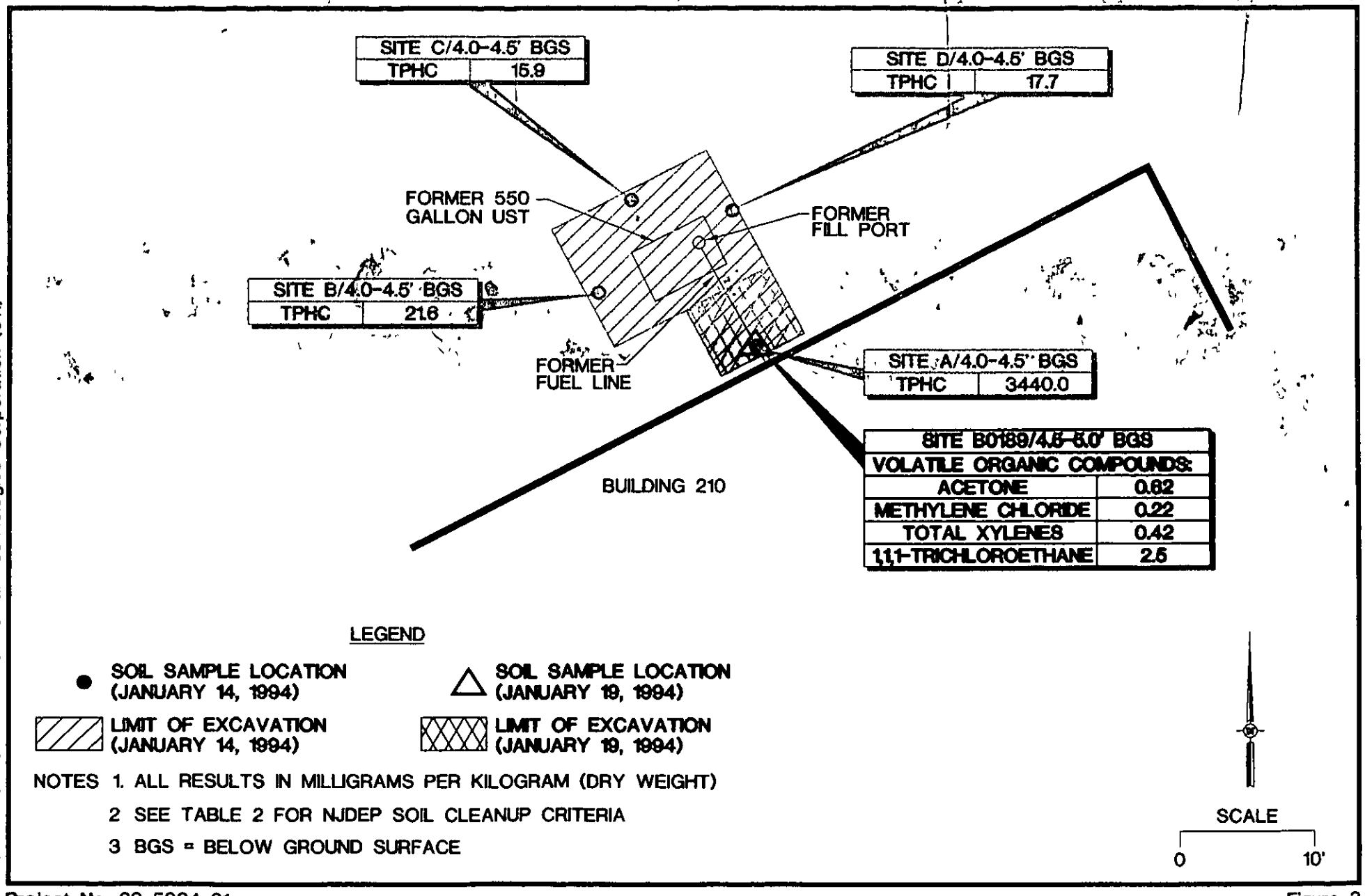

Source BCM/Smith Environmental Technologies Corporation (011)

Project No 09-5004-01

Figure 3

Building 210
Soil Sampling Results

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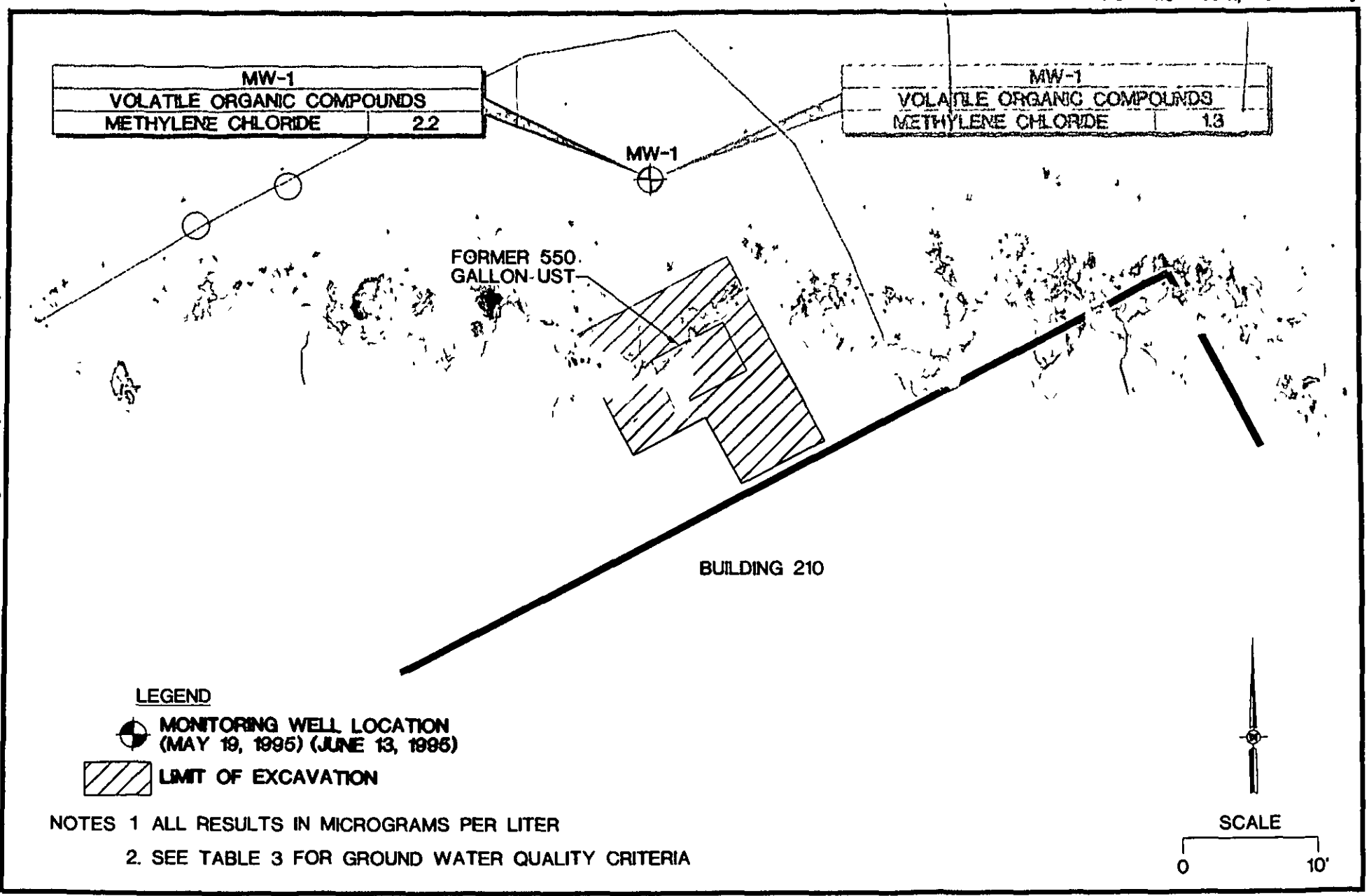
Department of Public Works
Fort Monmouth, New Jersey



Source. BCM/Smith Environmental Technologies Corporation (026)

Project No. 09-5004-01

Figure 4
Building 210
Groundwater Sampling Results

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 2 feet 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 6 inches bgs The well was secured with a steel protective casing with a stickup that is approximately 3 feet above ground surface The steel protective casing 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 submersible pump The well was pumped for 1 hour or until silt free 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 offsite disposal

2.4.2 Monitoring Well Sampling

On May 19, 1995 and on June 13, 1995, MW-1 was sampled for volatile organic compounds (with xylenes) plus 10 tentatively identified compounds and semivolatile organic compounds plus 15 tentatively identified compounds Sampling and analysis were completed in accordance with the NJDEP *Field Sampling Procedures Manual* and the *Technical Requirements*

Prior to sampling, the water level was measured to the nearest 0 01 feet, and the distance to the bottom of the well was be measured to the nearest 0 1 feet The well was checked for floating product (light non-aqueous phase liquids) The well was then purged of three to five well volumes of standing water Sample volume was then collected using a dedicated decontaminated Teflon bottom-fill bailer attached to PTFE (Teflon)-coated stainless steel

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3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 SOIL SAMPLING RESULTS

To evaluate soil conditions following removal of the UST and associated piping, post-excavation soil samples A, B, C, and D were collected from a total of four (4) locations on January 14, 1994 and analyzed for TPHC. (Sample E was the duplicate of sample A but was not sampled properly. For this reason sample E and its results are not listed in any of the tables or figures.). The post-excavation soil sample results were compared to the NJDEP residential direct contact and impact to groundwater soil cleanup criteria (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 on Table 2, and the soil sampling results are shown on Figure 3. The soil analytical data package is provided in Appendix F. The full data package, including associated quality control data, is on file at the U.S. Army Fort Monmouth, DPW.

All post-excavation soil samples collected on January 14, 1994 from the UST from below piping associated with the UST contained concentrations of contaminants below the NJDEP soil cleanup criteria of 10,000 mg/kg for total organic contaminants. The TPHC concentrations for samples B, C, and D ranged from 15.9 mg/kg to 21.6 mg/kg. Sample A contained an elevated TPHC concentration of 3,400 mg/kg. Based on the elevated TPHC concentrations detected in sample A, a discharge was reported to the NJDEP by the DPW on January 25, 1994 and was assigned Spill Case No. 94-1-25-0913-00.

On January 19, 1994, soil sample B0189 was collected from the location of sample A and analyzed for volatile organic compounds plus 15 tentatively identified compounds. Sample B0189 contained acetone at 0.62 mg/kg, methylene chloride at 0.22 mg/kg, total xylenes at 0.42 mg/kg, and 1,1,1-trichloroethane at 2.5 mg/kg. All of the detected VOCs were below the most stringent NJDEP residential direct contact or impact to groundwater soil cleanup criteria, which are listed in Table 2.

3.2 GROUNDWATER SAMPLING RESULTS

The sample collected on May 19, 1995, contained a methylene chloride concentration of 2.2 micrograms per liter (ug/l). This result exceeded the Ground Water Quality Criteria (GWQC) for methylene chloride of 2.0 ug/l. All other groundwater analytical results from MW-1 contained non-detectable concentrations of contaminants. The trip blank and field blank collected for MW-1 on May 19, 1995 contained methylene chloride concentrations of 6.4 ug/l and 6.3 ug/l, respectively. The trip blank also contained a toluene concentration of 0.80 ug/l, and a 2-Chlorotoluene concentration of 0.60 ug/l. No other compounds were detected in the trip and field blanks.

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 210
FT 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 0-4 5'	1370 1	1-14-94	1-18-94	Total Solid	--	--	84%	--	--
				TPHC	20 0	yes	3,440 0	10,000	--
B/4 0-4 5'	1370 2	1-14-94	1-18-94	Total Solid	--	--	89%	--	--
				TPHC	3 3	yes	21 6	10,000	--
C/4 0-4 5'	1370 3	1-14-94	1-18-94	Total Solid	--	--	86%	--	--
				TPHC	3 3	yes	15 9	10,000	--
D/4 0-4 5'	1370 4	1-14-94	1-18-94	Total Solid	--	--	85%	--	--
				TPHC	3 3	yes	17 7	10,000	--

Note

* Cleanup criteria for total organics
-- Not applicable / does not exceed criteria
TPHC Total Petroleum Hydrocarbons

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 210, MAIN POST, SITE A
FORT MONMOUTH, NEW JERSEY
VOLATILE ORGANICS

Sample ID/Depth	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
B0189/ 4 5-5 0'	01-19-94	01-24-94	Acrolein	7 4	--	ND	--	--
			Acrylonitrile	7 4	--	ND	1/1	--
			Chloromethane	1 5	--	ND	520/10	--
			Bromomethane	1 5	--	ND	79/1	--
			Vinyl Chloride	1 5	--	ND	2/10	--
			Chloroethane	1 5	--	ND	--	--
			Acetone	1 5	--	0 62 J	1,000/100	--
			1;1-Dichloroethene	0 74	--	ND	8/10	--
			Carbon Disulfide	1 5	--	ND	--	--
			Methylene Chloride	0 74	--	0 22 JB	49/1	--
			1,2-Dichloroethene (trans)	0 74	--	ND	1,000/50	--
			1,1-Dichloroethane	0 74	--	ND	570/10	--
			Vinyl Acetate	0 74	--	ND	--	--
			2-Butanone	1 5	--	ND	1,000/50	--
			Chloroform	0 74	--	ND	19/1	--
			1,1,1-Trichloroethane	0 74	--	2 5	210/50	--
			Carbon Tetrachloride	0 74	--	ND	2/1	--
			1,2-Dichloroethane	0 74	--	ND	6/1	--
			Benzene	0 74	--	ND	3/1	--
			Trichloroethene	0 74	--	ND	23/1	--
			1,2-Dichloropropane	0 74	--	ND	10	--
			Bromodichloromethane	0 74	--	ND	11/1	--
			2-Chloroethylvinylether	1 5	--	ND	--	--
			2-Hexanone	1 5	--	ND	--	--
			trans-1,3-Dichloropropene	0 74	--	ND	4/1	--
			Toluene	0 74	--	ND	1,000/500	--

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 210, MAIN POST, SITE A
FORT MONMOUTH, NEW JERSEY
VOLATILE ORGANICS (Continued)

Sample ID/Depth	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
B0189/ 4 5-5 0'	01-19-94	01-24-94	cis-1,3-Dichloropropene	0 74	--	ND	4/1	--
			1,1,2,2-Tetrachloroethane	0 74	--	ND	34/1	--
			1,1,2-Trichloroethane	0 74	--	ND	22/1	--
			4-Methyl-2-pentanone	1 5	--	ND	1,000/100	--
			Tetrachloroethene	0 74	--	ND	4/1 **	--
			Dibromochloromethane	0 74	--	ND	110/1	--
			Chlorobenzene	0 74	--	ND	37/1	--
			Ethylbenzene	0 74	--	ND	1,000/100	--
			Xylenes (Total)	0 74	--	0 42 J	410/10	--
			Styrene	0 74	--	ND	--	--
			Bromoform	0 74	--	ND	86/1	--
			m-Dichlorobenzene	0 74	--	ND	--	--
			p-Dichlorobenzene	0 74	--	ND	--	--
			o-Dichlorobenzene	0 74	--	ND	--	--
			Methyl Tertiary Butyl Ether	i 5	--	ND	--	--
			Tertiary Butyl Alcohol	7 4	--	ND	--	--

Note

* Residential Direct Contact / Impact to Groundwater

** The tetrachloroethene results were compared to the soil cleanup criteria for tetrachloroethylene, tetrachloroethene is a synonym for tetrachloroethylene

-- Not applicable / does not exceed criteria

(J) Indicates detected below sample quantitation limit

(B) Indicates also present in blank

(ND) Indicates compound not detected

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 210, MAIN POST, SITE A
FORT MONMOUTH, NEW JERSEY
VOLATILE TICS

Sample ID/Depth	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
B0189/ 4 5-5 0'	01-19-94	01-24-94	Cyclohexane,1,1,3-trimethyl-	--	--	3 6	--	--
			Cyclohexane,1,2,4-trimethyl-	--	--	3 8	--	--
			Octane,3-methyl-	--	--	2 3	--	--
			Cyclohexane,1-ethyl-4-methyl-cis	--	--	2 6	--	--
			2-Hexene,3,4,4-trimethyl-	--	--	6 2	--	--
			Cyclohexane,propyl	--	--	7 5	--	--
			Cyclohexane,1-methyl-3-propyl-	--	--	3 6	--	--
			Benzene,1-methyl-4-propyl-	--	--	5 1	--	--
			Cyclohexane,(2-methylpropyl)	--	--	8 0	--	--
			Benzene,1,3-diethyl-	--	--	6 8	--	--
			Naphthalene,decahydro-	--	--	14 0	--	--
			Cyclopentane,2-isopropyl-1,3-dimethyl-	--	--	2 6	--	--

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 210, MAIN POST, SITE A
FORT MONMOUTH, NEW JERSEY
VOLATILE TICS (Continued)

Sample ID/Depth	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
B0189/ 4 5-5 0'	01-19-94	01-24-94	Benzene,2-ethyl-1,3-dimethyl-	--	--	12 0	--	--
			1H-Indene,2,3-dihydro-1-methyl	--	--	11 0	--	--
			Benzamide,2-methyl-	--	--	9 9	--	--
			Benzene,1,2,3,5-tetramethyl-	--	--	6 5	--	--
			Benzene,(1-ethylpropyl)-	--	--	12 0	--	--
			Benzene,(1,1-dimethyl-2-propenyl)-	--	--	3 7	--	--
			Benzene,(1-methyl-1-propenyl)-	--	--	5 8	--	--
			Total TICS	--	--	127 0	10,000	--

Note

* Cleanup criteria for total organic compounds
-- Not applicable / does not exceed criteria

The sample collected on June 13, 1995, contained a methylene chloride concentration of 1 3 ug/l All other groundwater analytical results from MW-1 contained non-detectable concentrations of contaminants The trip blank and field blank collected for MW-1 on June 13, 1995 contained methylene chloride concentrations of 2 3 ug/l and 2 1 ug/l, respectively No other compounds were detected in the trip and field blanks

The depth to the water table was 6.52 feet below grade on May 19, 1995, and 7 01 feet below grade on June 13, 1995 No product or sheen was observed in MW-1 on either of the sampling dates The groundwater sampling results are listed in Table 3 and shown on Figure 4 The laboratory documentation is in Appendix G

3.3 CONCLUSIONS AND RECOMMENDATIONS

The analytical results for all post-excavation soil samples collected from the UST closure excavation at Building 210 were below the proposed NJDEP soil cleanup criteria for total organic contaminants (Samples A, B, C, D, and E)

Based on the post-excavation soil sampling results, soils with concentrations of contaminants exceeding the NJDEP soil cleanup criteria do not remain in the former location of the UST or associated piping

Based on the analytical results of the groundwater samples collected on May 19, 1995, and on June 13, 1995, groundwater quality at the Building 210 UST site complies with the New Jersey Groundwater Quality Criteria for VOCs and BNCs The trace concentrations of methylene chloride detected during both sampling rounds is attributed to sampling and/or analytical interference, based on the detection of methylene chloride, a common source of laboratory interference, in the sampling blanks

No further action is proposed in regard to the closure and site assessment of UST No 081533-8 at Building 210

TABLE 3

GROUNDWATER SAMPLING RESULTS
BUILDING 210, MAIN POST, MW-1
FT MONMOUTH, NEW JERSEY
VOLATILE ORGANICS

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQC (ug/l)	Exceeds Criteria
MW-1	5/19/95	6/02/95	Dichlorodifluoromethane	0 50	--	ND	--	--
			Chloromethane	0 50	--	ND	--	--
			Bromomethane	0 50	--	ND	--	--
			Vinyl Chloride	0 50	--	ND	5	--
			Chloroethane	0 50	--	ND	--	--
			Trichlorofluoromethane	0 50	--	ND	--	--
			Methylene Chloride	0 50	--	2 2 B	2	yes
			1,2-Dichloroethene (trans)	0 50	--	ND	100*	--
			1,1-Dichloroethene	0 50	--	ND	2*	--
			1,1 Dichloroethane	0 50	--	ND	70	--
			2,2-Dichloropropane	0 50	--	ND	--	--
			Bromochloromethane	0 50	--	ND	--	--
			cis-1,2-Dichloroethene	0 50	--	ND	10*	--
			Chloroform	0 50	--	ND	6	--
			1,1-Dichloropropene	0 50	--	ND	--	--
			1,2-Dichloroethane	0 50	--	ND	2	--
			1,1,1-Trichloroethane	0 50	--	ND	30	--
			Dibromomethane	0 50	--	ND	--	--
			Carbon Tetrachloride	0 50	--	ND	2	--
			Bromodichloromethane	0 50	--	ND	1	--
			1,2-Dichloropropane	0 50	--	ND	1	--
			cis-1,3-Dichloropropene	0 50	--	ND	NA	--
			1,3-Dichloropropane	0 50	--	ND	--	--
			Trichloroethene	0 50	--	ND	1	--
			Dibromochloromethane	0 50	--	ND	10	--

TABLE 3

GROUNDWATER SAMPLING RESULTS
BUILDING 210, MAIN POST, MW-1
FORT MONMOUTH, NEW JERSEY
VOLATILE ORGANICS (Continued)

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQC (ug/l)	Exceeds Criteria
MW-1	5/19/95	6/02/95	1,1,2-Trichloroethane	0 50	--	ND	3	--
			Benzene	0 50	--	ND	1	--
			trans-1,3-Dichloropropene	0 50	--	ND	NA	--
			Bromoform	0 50	--	ND	4	--
			1,1,2,2-Tetrachloroethane	0 50	--	ND	10	--
			Tetrachloroethene	0 50	--	ND	1*	--
			1,1,2,2-Tetrachloroethane	0 50	--	ND	2	--
			Toluene	0 50	--	ND	1,000	--
			1,2-Dibromoethane	0 50	--	ND	--	--
			Chlorobenzene	0 50	--	ND	4	--
			Ethylbenzene	0 50	--	ND	700	--
			Xylenes (Total)	0 50	--	ND	40	--
			Styrene	0 50	--	ND	100	--
			Isopropylbenzene	0 50	--	ND	--	--
			Bromobenzene	0 50	--	ND	--	--
			1,2,3-Trichloropropane	0 50	--	ND	--	--
			n-Propylbenzene	0 50	--	ND	--	--
			2-Chlorotoluene	0 50	--	ND	--	--
			4-Chlorotoluene	0 50	--	ND	--	--
			1,3,5-Trimethylbenzene	0 50	--	ND	--	--
			tert-Butylbenzene	0 50	--	ND	--	--
			1,2,4-Trimethylbenzene	0 50	--	ND	--	--
			sec-Butylbenzene	0 50	--	ND	--	--
			1,3-Dichlorobenzene	0 50	--	ND	600	--
			1,4-Dichlorobenzene	0 50	--	ND	75	--

TABLE 3

GROUNDWATER SAMPLING RESULTS
BUILDING 210, MAIN POST, MW-1
FORT MONMOUTH, NEW JERSEY
VOLATILE ORGANICS (Continued)

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQC (ug/l)	Exceeds Criteria
MW-1	5/19/95	6/03/95	4-Isopropyltoluene	0 50	--	ND	--	--
			1,2-Dichlorobenzene	0 50	--	ND	600	--
			n-Butylbenzene	0 50	--	ND	--	--
			1,2-Dibromo-3-chloropropane	0 50	--	ND	NA	--
			1,2,4-Trichlorobenzene	0 50	--	ND	9	--
			Hexachlorobutadiene	0 50	--	ND	1	--
			Naphthalene	0 50	--	ND	--	--
			1,2,3-Trichlorobenzene	0 50	--	ND	--	--

Notes

* The tetrachloroethene, 1,2-Dichloroethene(trans), 1,1-Dichloroethene, and cis-1,2-Dichloroethene results were compared to the GWQC for their respective synonym (tetrachlororethylene, 1,2-Dichloroethylene(trans), 1,1-Dichloroethylene, and cis-1,2-Dichloroethylene)

-- 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

GWQC Ground Water Quality Criteria

TABLE 3

GROUNDWATER SAMPLING RESULTS
BUILDING 210, MAIN POST, MW-1
FORT MONMOUTH, NEW JERSEY
VOLATILE TICS

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQC (ug/l)	Exceeds Criteria
MW-1	5/19/95	6/03/95	NO TICS FOUND	--	--	--	--	--

Note

-- Not applicable / does not exceed criteria
(J) Indicates detected below sample quantitation limit
(B) Indicates also present in blank
(ND) Indicates compound not detected
GWQC Groundwater Quality Criteria

TABLE 3

GROUNDWATER SAMPLING RESULTS
BUILDING 210, MAIN POST, MW-1
FORT MONMOUTH, NEW JERSEY
SEMIVOLATILES

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQC (ug/l)	Exceeds Criteria
MW-1	5/19/95	6/03/95	N-Nitrosodiethylamine	2	--	ND	20	--
			bis(2 chloroethyl)Ether	1	--	ND	10	--
			1,3-Dichlorobenzene	2	--	ND	600	--
			1,4-Dichlorobenzene	1	--	ND	75	--
			1,2-Dichlorobenzene	2	--	ND	600	--
			bis(2-chloroisopropyl)Ether	5	--	ND	300	--
			N-Nitroso-Di-n-propylamine	2	--	ND	20	--
			Hexachloroethane	1	--	ND	10	--
			Nitrobenzene	2	--	ND	10	--
			Isophorone	1	--	ND	100	--
			bis(2-Chloroethoxy)Methane	3	--	ND	--	--
			1,2,4-Trichlorobenzene	2	--	ND	9	--
			Naphthalene	2	--	ND	--	--
			Hexachlorobutadiene	2	--	ND	1	--
			Hexachlorocyclopentadiene	12	--	ND	50	--
			2-Chloronaphthalene	1	--	ND	--	--
			Dimethyl Phthalate	1	--	ND	--	--
			Acenaphthylene	5	--	ND	NA	--
			2,6-Dinitrotoluene	2	--	ND	NA	
			Acenaphthene	3	--	ND	400	--
			2,4-Dinitrotoluene	3	--	ND	10	--
			Diethylphthalate	1	--	ND	5,000	--
			Fluorene	3	--	ND	300	--
			4-Chlorophenyl-phenlyether	3	--	ND	--	--
			N-Nitrosodiphenylamine	6	--	ND	20	--
			1,2-Diphenylhydrazine	6	--	ND	0.04	--
			4-Bromophenyl-phenylether	2	--	ND	--	--
			Hexachlorobenzene	2	--	ND	10	--
			Phenanthrene	2	--	ND	NA	--

TABLE 3

GROUNDWATER SAMPLING RESULTS
BUILDING 210, MAIN POST, MW-1
FORT MONMOUTH, NEW JERSEY
SEMIVOLATILES (Continued)

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQC (ug/l)	Exceeds Criteria
MW-1	5/19/95	6/03/95	Anthracene	2	--	ND	2,000	--
			Di-n-butylphthalate	5	--	ND	900	--
			Fluoranthene	1	--	ND	300	--
			Benzidine	1	--	ND	50	--
			Pyrene	2	--	ND	200	--
			Butylbenzylphthalate	9	--	ND	100	--
			Benzo(a)Anthracene	2	--	ND	NA	--
			3,3-Dichlorobenzidine	15	--	ND	60	--
			Chrysene	2	--	ND	NA	--
			bis(2-Ethylhexyl)Phthalate	4	--	ND	30	--
			Di-n-Octyl Phthalate	2	--	ND	100	--
			Benzo(b)Fluoranthene	1	--	ND	NA	--
			Benzo(k)Fluoranthene	2	--	ND	NA	--
			Benzo(a)Pyrene	2	--	ND	NA	--
			Indeno(1,2,3-cd)pyrene	2	--	ND	NA	--
			Dibenzo(a,h)anthracene	3	--	ND	NA	--
			Benzo(g,h,i)perylene	2	--	ND	NA	--

Notes
-- 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
GWQC Ground Water Quality Criteria

TABLE 3

GROUNDWATER SAMPLING RESULTS
BUILDING 210, MAIN POST, MW-1
FORT MONMOUTH, NEW JERSEY
SEMIVOLATILE TICS

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQC (ug/l)	Exceeds Criteria
MW-1	5/19/95	6/03/95	Unknown	--	--	4 0 J	--	--

Note

-- Not applicable / does not exceed criteria
(J) Indicates detected below sample quantitation limit
(B) Indicates also present in blank
(ND) Indicates compound not detected
GWQC Groundwater Quality Criteria

TABLE 3

GROUNDWATER SAMPLING RESULTS
BUILDING 210, MAIN POST TRIP BLANK
FT MONMOUTH, NEW JERSEY
VOLATILE ORGANICS

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)
Trip Blank	5/19/95	6/02/95	Dichlorodifluoromethane	0 50	--	ND
			Chloromethane	0 50	--	ND
			Bromomethane	0 50	--	ND
			Vinyl Chloride	0 50	--	ND
			Chloroethane	0 50	--	ND
			Trichlorofluoromethane	0 50	--	ND
			Methylene Chloride	0 50	--	6 4 B
			1,2-Dichloroethene (trans)	0 50	--	ND
			1,1-Dichloroethene	0 50	--	ND
			1,1 Dichloroethane	0 50	--	ND
			2,2-Dichloropropane	0 50	--	ND
			Bromochloromethane	0 50	--	ND
			cis-1,2-Dichloroethene	0 50	--	ND
			Chloroform	0 50	--	ND
			1,1-Dichloropropene	0 50	--	ND
			1,2-Dichloroethane	0 50	--	ND
			1,1,1-Trichloroethane	0 50	--	ND
			Dibromomethane	0 50	--	ND
			Carbon Tetrachloride	0 50	--	ND
			Bromodichloromethane	0 50	--	ND
			1,2-Dichloropropane	0 50	--	ND
			cis-1,3-Dichloropropene	0 50	--	ND
			1,3-Dichloropropane	0 50	--	ND
			Trichloroethene	0 50	--	ND
			Dibromochloromethane	0 50	--	ND

TABLE 3

GROUNDWATER SAMPLING RESULTS
BUILDING 210, MAIN POST, TRIP BLANK
FORT MONMOUTH, NEW JERSEY
VOLATILE ORGANICS (Continued)

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)
Trip Blank	5/19/95	6/02/95	1,1,2-Trichloroethane	0 50	--	ND
			Benzene	0 50	--	ND
			trans-1,3-Dichloropropene	0 50	--	ND
			Bromoform	0 50	--	ND
			1,1,2,2-Tetrachloroethane	0 50	--	ND
			Tetrachloroethene	0 50	--	ND
			1,1,2,2-Tetrachloroethene	0 50	--	ND
			Toluene	0 50	--	0 80
			1,2-Dibromoethane	0 50	--	ND
			Chlorobenzene	0 50	--	ND
			Ethylbenzene	0 50	--	ND
			Xylenes (Total)	0 50	--	ND
			Styrene	0 50	--	ND
			Isopropylbenzene	0 50	--	ND
			Bromobenzene	0 50	--	ND
			1,2,3-Trichloropropane	0 50	--	ND
			n-Propylbenzene	0 50	--	ND
			2-Chlorotoluene	0 50	--	0 60
			4-Chlorotoluene	0 50	--	ND
			1,3,5-Trimethylbenzene	0 50	--	ND
			tert-Butylbenzene	0 50	--	ND
			1,2,4-Trimethylbenzene	0 50	--	ND
			sec-Butylbenzene	0 50	--	ND
			1,3-Dichlorobenzene	0 50	--	ND
			1,4-Dichlorobenzene	0 50	--	ND

TABLE 3

GROUNDWATER SAMPLING RESULTS
BUILDING 210, MAIN POST, TRIP BLANK
FORT MONMOUTH, NEW JERSEY
VOLATILE ORGANICS (Continued)

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)
Trip Blank	5/19/95	6/02/95	4-Isopropyltoluene	0 50	--	ND
			1,2-Dichlorobenzene	0 50	--	ND
			n-Butylbenzene	0 50	--	ND
			1,2-Dibromo-3-chloropropane	0 50	--	ND
			1,2,4-Trichlorobenzene	0 50	--	ND
			Hexachlorobutadiene	0 50	--	ND
			Naphthalene	0 50	--	ND
			1,2,3-Trichlorobenzene	0 50	--	ND

Notes

-- Not applicable / does not exceed criteria
(J) Indicates detected below sample quantitation limit
(B) Indicates also present in blank
(ND) Indicates compound not detected

TABLE 3

GROUNDWATER SAMPLING RESULTS
BUILDING 210, MAIN POST, TRIP BLANK
FORT MONMOUTH, NEW JERSEY
VOLATILE TICS

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)
Trip Blank	5/19/95	6/02/95	NO TICS FOUND	--	--	--

Note

-- Not applicable / does not exceed criteria
(J) Indicates detected below sample quantitation limit
(B) Indicates also present in blank
(ND) Indicates compound not detected
GWQC Groundwater Quality Criteria

TABLE 3

GROUNDWATER SAMPLING RESULTS
BUILDING 210, MAIN POST, FIELD BLANK
FT MONMOUTH, NEW JERSEY
VOLATILE ORGANICS

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)
Field Blank	5/19/95	6/02/95	Dichlorodifluoromethane	0 50	--	ND
			Chloromethane	0 50	--	ND
			Bromomethane	0 50	--	ND
			Vinyl Chloride	0 50	--	ND
			Chloroethane	0 50	--	ND
			Trichlorofluoromethane	0 50	--	ND
			Methylene Chloride	0 50	--	6 3 B
			1,2-Dichloroethene (trans)	0 50	--	ND
			1,1-Dichloroethene	0 50	--	ND
			1,1 Dichloroethane	0 50	--	ND
			2,2-Dichloropropane	0 50	--	ND
			Bromochloromethane	0 50	--	ND
			cis-1,2-Dichloroethene	0 50	--	ND
			Chloroform	0 50	--	ND
			1,1-Dichloropropene	0 50	--	ND
			1,2-Dichloroethane	0 50	--	ND
			1,1,1-Trichloroethane	0 50	--	ND
			Dibromomethane	0 50	--	ND
			Carbon Tetrachloride	0 50	--	ND
			Bromodichloromethane	0 50	--	ND
			1,2-Dichloropropane	0 50	--	ND
			cis-1,3-Dichloropropene	0 50	--	ND
			1,3-Dichloropropane	0 50	--	ND
			Trichloroethene	0 50	--	ND
			Dibromochloromethane	0 50	--	ND

TABLE 3

GROUNDWATER SAMPLING RESULTS
BUILDING 210, MAIN POST, FIELD BLANK
FORT MONMOUTH, NEW JERSEY
VOLATILE ORGANICS (Continued)

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)
Field Blank	5/19/95	6/02/95	1,1,2-Trichloroethane	0 50	--	ND
			Benzene	0 50	--	ND
			trans-1,3-Dichloropropene	0 50	--	ND
			Bromoform	0 50	--	ND
			1,1,2,2-Tetrachloroethane	0 50	--	ND
			Tetrachloroethene	0 50	--	ND
			1,1,2,2-Tetrachloroethane	0 50	--	ND
			Toluene	0 50	--	ND
			1,2-Dibromoethane	0 50	--	ND
			Chlorobenzene	0 50	--	ND
			Ethylbenzene	0 50	--	ND
			Xylenes (Total)	0 50	--	ND
			Styrene	0 50	--	ND
			Isopropylbenzene	0 50	--	ND
			Bromobenzene	0 50	--	ND
			1,2,3-Trichloropropane	0 50	--	ND
			n-Propylbenzene	0 50	--	ND
			2-Chlorotoluene	0 50	--	ND
			4-Chlorotoluene	0 50	--	ND
			1,3,5-Trimethylbenzene	0 50	--	ND
			tert-Butylbenzene	0 50	--	ND
			1,2,4-Trimethylbenzene	0 50	--	ND
			sec-Butylbenzene	0 50	--	ND
			1,3-Dichlorobenzene	0 50	--	ND
			1,4-Dichlorobenzene	0 50	--	ND

TABLE 3

GROUNDWATER SAMPLING RESULTS
BUILDING 210, MAIN POST, FIELD BLANK
FORT MONMOUTH, NEW JERSEY
VOLATILE ORGANICS (Continued)

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)
Field Blank	5/19/95	6/02/95	4-Isopropyltoluene	0 50	--	ND
			1,2-Dichlorobenzene	0 50	--	ND
			n-Butylbenzene	0 50	--	ND
			1,2-Dibromo-3-chloropropane	0 50	--	ND
			1,2,4-Trichlorobenzene	0 50	--	ND
			Hexachlorobutadiene	0 50	--	ND
			Naphthalene	0 50	--	ND
			1,2,3-Trichlorobenzene	0 50	--	ND

Notes

-- Not applicable / does not exceed criteria
(J) Indicates detected below sample quantitation limit
(B) Indicates also present in blank
(ND) Indicates compound not detected

TABLE 3

GROUNDWATER SAMPLING RESULTS
BUILDING 210, MAIN POST, FIELD BLANK
FORT MONMOUTH, NEW JERSEY
VOLATILE TICS

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)
Field Blank	5/19/95	6/02/95	NO TICS FOUND	--	--	--

Note:

-- Not applicable / does not exceed criteria
(J) Indicates detected below sample quantitation limit
(B) Indicates also present in blank
(ND) Indicates compound not detected
GWQC Groundwater Quality Criteria

TABLE 3

GROUNDWATER SAMPLING RESULTS
BUILDING 210, MAIN POST, FIELD BLANK
FORT MONMOUTH, NEW JERSEY
SEMIVOLATILES

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)
Field Blank	5/19/95	6/03/95	N-Nitrosodiethylamine	2	--	ND
			bis(2 chloroethyl)Ether	1	--	ND
			1,3-Dichlorobenzene	2	--	ND
			1,4-Dichlorobenzene	1	--	ND
			1,2-Dichlorobenzene	2	--	ND
			bis(2-chloroisopropyl)Ether	5	--	ND
			N-Nitroso-Di-n-propylamine	2	--	ND
			Hexachloroethane	1	--	ND
			Nitrobenzene	2	--	ND
			Isophorone	1	--	ND
			bis(2-Chloroethoxy)Methane	3	--	ND
			1,2,4-Trichlorobenzene	2	--	ND
			Naphthalene	2	--	ND
			Hexachlorobutadiene	2	--	ND
			Hexachlorocyclopentadiene	12	--	ND
			2-Chloronaphthalene	1	--	ND
			Dimethyl Phthalate	1	--	ND
			Acenaphthylene	5	--	ND
			2,6-Dinitrotoluene	2	--	ND
			Acenaphthene	3	--	ND
			2,4-Dinitrotoluene	3	--	ND
			Diethylphthalate	1	--	ND
			Fluorene	3	--	ND
			4-Chlorophenyl-phenlyether	3	--	ND
			N-Nitrosodiphenylamine	6	--	ND
			1,2-Diphenylhydrazine	6	--	ND
			4-Bromophenyl-phenylether	2	--	ND
			Hexachlorobenzene	2	--	ND
			Phenanthrene	2	--	ND

TABLE 3

GROUNDWATER SAMPLING RESULTS
BUILDING 210, MAIN POST, FIELD BLANK
FORT MONMOUTH, NEW JERSEY
SEMIVOLATILES (Continued)

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)
Field Blank	5/19/95	6/03/95	Anthracene	2	--	ND
			Di-n-butylphthalate	5	--	ND
			Fluoranthene	1	--	ND
			Benzidine	1	--	ND
			Pyrene	2	--	ND
			Butylbenzylphthalate	9	--	ND
			Benzo(a)Anthracene	2	--	ND
			3,3-Dichlorobenzidine	15	--	ND
			Chrysene	2	--	ND
			bis(2-Ethylhexyl)Phthalate	4	--	ND
			Di-n-Octyl Phthalate	2	--	ND
			Benzo(b)Fluoranthene	1	--	ND
			Benzo(k)Fluoranthene	2	--	ND
			Benzo(a)Pyrene	2	--	ND
			Indeno(1,2,3-cd)pyrene	2	--	ND
			Dibenzo(a,h)anthracene	3	--	ND
			Benzo(g,h,i)perylene	2	--	ND

Notes

-- Not applicable / does not exceed criteria
(J) Indicates detected below sample quantitation limit
(B) Indicates also present in blank
(ND) Indicates compound not detected

TABLE 3

GROUNDWATER SAMPLING RESULTS
BUILDING 210, MAIN POST, FIELD BLANK
FORT MONMOUTH, NEW JERSEY
SEMIVOLATILE TICS

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)
Field Blank	5/19/95	6/02/95	Unknown	--	--	7 0 J

Note

-- Not applicable / does not exceed criteria
(J) Indicates detected below sample quantitation limit
(B) Indicates also present in blank
(ND) Indicates compound not detected
GWQC Groundwater Quality Criteria

TABLE 3

GROUNDWATER SAMPLING RESULTS
BUILDING 210, MAIN POST, MW-1
FT MONMOUTH, NEW JERSEY
VOLATILE ORGANICS

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQC (ug/l)	Exceeds Criteria
MW-1	6/13/95	6/22/95	Dichlorodifluoromethane	0 50	--	ND	--	--
			Chloromethane	0 50	--	ND	--	--
			Bromomethane	0 50	--	ND	--	--
			Vinyl Chloride	0 50	--	ND	5	--
			Chloroethane	0 50	--	ND	--	--
			Trichlorofluoromethane	0 50	--	ND	--	--
			Methylene Chloride	0 50	--	1 3 B	2	--
			1,2-Dichloroethene (trans)	0 50	--	ND	100*	--
			1,1-Dichloroethene	0 50	--	ND	2*	--
			1,1 Dichloroethane	0 50	--	ND	70	--
			2,2-Dichloropropane	0 50	--	ND	--	--
			Bromochloromethane	0 50	--	ND	--	--
			cis-1,2-Dichloroethene	0 50	--	ND	10*	--
			Chloroform	0 50	--	ND	6	--
			1,1-Dichloropropene	0 50	--	ND	--	--
			1,2-Dichloroethane	0 50	--	ND	2	--
			1,1,1-Trichloroethane	0 50	--	ND	30	--
			Dibromomethane	0 50	--	ND	--	--
			Carbon Tetrachloride	0 50	--	ND	2	--
			Bromodichloromethane	0 50	--	ND	1	--
			1,2-Dichloropropane	0 50	--	ND	1	--
			cis-1,3-Dichloropropene	0 50	--	ND	NA	--
			1,3-Dichloropropane	0 50	--	ND	--	--
			Trichloroethene	0 50	--	ND	1	--
			Dibromochloromethane	0 50	--	ND	10	--

TABLE 3

GROUNDWATER SAMPLING RESULTS
BUILDING 210, MAIN POST, MW-1
FORT MONMOUTH, NEW JERSEY
VOLATILE ORGANICS (Continued)

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQC (ug/l)	Exceeds Criteria
MW-1	6/13/95	6/22/95	1,1,2-Trichloroethane	0 50	--	ND	3	--
			Benzene	0 50	--	ND	1	--
			trans-1,3-Dichloropropene	0 50	--	ND	NA	--
			Bromoform	0 50	--	ND	4	--
			1,1,2,2-Tetrachloroethane	0 50	--	ND	10	--
			Tetrachloroethene	0 50	--	ND	1*	--
			1,1,2,2-Tetrachloroethane	0 50	--	ND	2	--
			Toluene	0 50	--	ND	1,000	--
			1,2-Dibromoethane	0 50	--	ND	--	--
			Chlorobenzene	0 50	--	ND	4	--
			Ethylbenzene	0 50	--	ND	700	--
			Xylenes (Total)	0 50	--	ND	40	--
			Styrene	0 50	--	ND	100	--
			Isopropylbenzene	0 50	--	ND	--	--
			Bromobenzene	0 50	--	ND	--	--
			1,2,3-Trichloropropane	0 50	--	ND	--	--
			n-Propylbenzene	0 50	--	ND	--	--
			2-Chlorotoluene	0 50	--	ND	--	--
			4-Chlorotoluene	0 50	--	ND	--	--
			1,3,5-Trimethylbenzene	0 50	--	ND	--	--
			tert-Butylbenzene	0 50	--	ND	--	--
			1,2,4-Trimethylbenzene	0 50	--	ND	--	--
			sec-Butylbenzene	0 50	--	ND	--	--
			1,3-Dichlorobenzene	0 50	--	ND	600	--
			1,4-Dichlorobenzene	0 50	--	ND	75	--

TABLE 3

GROUNDWATER SAMPLING RESULTS
BUILDING 210, MAIN POST, MW-1
FORT MONMOUTH, NEW JERSEY
VOLATILE ORGANICS (Continued)

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQC (ug/l)	Exceeds Criteria
MW-1	6/13/95	6/22/95	4-Isopropyltoluene	0 50	--	ND	--	--
			1,2-Dichlorobenzene	0 50	--	ND	600	--
			n-Butylbenzene	0 50	--	ND	--	--
			1,2-Dibromo-3-chloropropane	0 50	--	ND	NA	--
			1,2,4-Trichlorobenzene	0 50	--	ND	9	--
			Hexachlorobutadiene	0 50	--	ND	1	--
			Naphthalene	0 50	--	ND	--	--
			1,2,3-Trichlorobenzene	0 50	--	ND	--	--

Notes

* The tetrachloroethene, 1,2-Dichloroethene(trans), 1,1-Dichloroethene, and cis-1,2-Dichloroethene results were compared to the GWQC for their respective synonym (tetrachlororethylene, 1,2-Dichloroethylene(trans), 1,1-Dichloroethylene, and cis-1,2-Dichloroethylene)

-- 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

GWQC Ground Water Quality Criteria

TABLE 3

GROUNDWATER SAMPLING RESULTS
BUILDING 210, MAIN POST, MW-1
FORT MONMOUTH, NEW JERSEY
VOLATILE TICS

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQC (ug/l)	Exceeds Criteria
MW-1	6/13/95	6/22/95	Unknown	--	--	10 J	--	--

Note

-- Not applicable / does not exceed criteria
(J) Indicates detected below sample quantitation limit
(B) Indicates also present in blank
(ND) Indicates compound not detected
GWQC Groundwater Quality Criteria

TABLE 3

GROUNDWATER SAMPLING RESULTS
BUILDING 210, MAIN POST, MW-1
FORT MONMOUTH, NEW JERSEY
SEMIVOLATILES

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQC (ug/l)	Exceeds Criteria
MW-1	6/13/95	6/26/95	N-Nitrosodiethylamine	2	--	ND	20	--
			bis(2 chloroethyl)Ether	1	--	ND	10	--
			1,3-Dichlorobenzene	2	--	ND	600	--
			1,4-Dichlorobenzene	1	--	ND	75	--
			1,2-Dichlorobenzene	2	--	ND	600	--
			bis(2-chloroisopropyl)Ether	5	--	ND	300	--
			N-Nitroso-Di-n-propylamine	2	--	ND	20	--
			Hexachloroethane	1	--	ND	10	--
			Nitrobenzene	2	--	ND	10	--
			Isophorone	1	--	ND	100	--
			bis(2-Chloroethoxy)Methane	3	--	ND	--	--
			1,2,4-Trichlorobenzene	2	--	ND	9	--
			Naphthalene	2	--	ND	--	--
			Hexachlorobutadiene	2	--	ND	1	--
			Hexachlorocyclopentadiene	12	--	ND	50	--
			2-Chloronaphthalene	1	--	ND	--	--
			Dimethyl Phthalate	1	--	ND	--	--
			Acenaphthylene	5	--	ND	NA	--
			2,6-Dinitrotoluene	2	--	ND	NA	
			Acenaphthene	3	--	ND	400	--
			2,4-Dinitrotoluene	3	--	ND	10	--
			Diethylphthalate	1	--	ND	5,000	--
			Fluorene	3	--	ND	300	--
			4-Chlorophenyl-phenylether	3	--	ND	--	--
			N-Nitrosodiphenylamine	6	--	ND	20	--
			1,2-Diphenylhydrazine	6	--	ND	0 04	--
			4-Bromophenyl-phenylether	2	--	ND	--	--
			Hexachlorobenzene	2	--	ND	10	--
			Phenanthrene	2	--	ND	NA	--

TABLE 3

GROUNDWATER SAMPLING RESULTS
BUILDING 210, MAIN POST, MW-1
FORT MONMOUTH, NEW JERSEY
SEMIVOLATILES (Continued)

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQC (ug/l)	Exceeds Criteria
MW-1	6/13/95	6/26/95	Anthracene	2	--	ND	2,000	--
			Di-n-butylphthalate	5	--	ND	900	--
			Fluoranthene	1	--	ND	300	--
			Benzidine	1	--	ND	50	--
			Pyrene	2	--	ND	200	--
			Butylbenzylphthalate	9	--	ND	100	--
			Benzo(a)Anthracene	2	--	ND	NA	--
			3,3-Dichlorobenzidine	15	--	ND	60	--
			Chrysene	2	--	ND	NA	--
			bis(2-Ethylhexyl)Phthalate	4	--	ND	30	--
			Di-n-Octyl Phthalate	2	--	ND	100	--
			Benzo(b)Fluoranthene	1	--	ND	NA	--
			Benzo(k)Fluoranthene	2	--	ND	NA	--
			Benzo(a)Pyrene	2	--	ND	NA	--
			Indeno(1,2,3-cd)pyrene	2	--	ND	NA	--
			Dibenzo(a,h)anthracene	3	--	ND	NA	--
			Benzo(g,h,i)perylene	2	--	ND	NA	--

Notes

-- 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
GWQC Ground Water Quality Criteria

TABLE 3

GROUNDWATER SAMPLING RESULTS
BUILDING 210, MAIN POST, MW-1
FORT MONMOUTH, NEW JERSEY
SEMIVOLATILE TICS

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)	GWQC (ug/l)	Exceeds Criteria
MW-1	6/13/95	6/26/95	NO TICS FOUND	--	--	--	--	--

Note

-- Not applicable / does not exceed criteria
(J) Indicates detected below sample quantitation limit
(B) Indicates also present in blank
(ND) Indicates compound not detected
GWQC Groundwater Quality Criteria

TABLE 3

GROUNDWATER SAMPLING RESULTS
BUILDING 210, MAIN POST, TRIP BLANK
FT MONMOUTH, NEW JERSEY
VOLATILE ORGANICS

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)
Trip Blank	6/13/95	6/21/95	Dichlorodifluoromethane	0 50	--	ND
			Chloromethane	0 50	--	ND
			Bromomethane	0 50	--	ND
			Vinyl Chloride	0 50	--	ND
			Chloroethane	0 50	--	ND
			Trichlorofluoromethane	0 50	--	ND
			Methylene Chloride	0 50	--	2 3 B
			1,2-Dichloroethene (trans)	0 50	--	ND
			1,1-Dichloroethene	0 50	--	ND
			1,1 Dichloroethane	0 50	--	ND
			2,2-Dichloropropane	0 50	--	ND
			Bromochloromethane	0 50	--	ND
			cis-1,2-Dichloroethene	0 50	--	ND
			Chloroform	0 50	--	ND
			1,1-Dichloropropene	0 50	--	ND
			1,2-Dichloroethane	0 50	--	ND
			1,1,1-Trichloroethane	0 50	--	ND
			Dibromomethane	0 50	--	ND
			Carbon Tetrachloride	0 50	--	ND
			Bromodichloromethane	0 50	--	ND
			1,2-Dichloropropane	0 50	--	ND
			cis-1,3-Dichloropropene	0 50	--	ND
			1,3-Dichloropropane	0 50	--	ND
			Trichloroethene	0 50	--	ND
			Dibromochloromethane	0 50	--	ND

TABLE 3

GROUNDWATER SAMPLING RESULTS
BUILDING 210, MAIN POST, TRIP BLANK
FORT MONMOUTH, NEW JERSEY
VOLATILE ORGANICS (Continued)

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)
Trip Blank	6/13/95	6/21/95	1,1,2-Trichloroethane	0 50	--	ND
			Benzene	0 50	--	ND
			trans-1,3-Dichloropropene	0 50	--	ND
			Bromoform	0 50	--	ND
			1,1,2,2-Tetrachloroethane	0 50	--	ND
			Tetrachloroethene	0 50	--	ND
			1,1,2,2-Tetrachloroethane	0 50	--	ND
			Toluene	0 80	--	ND
			1,2-Dibromoethane	0 50	--	ND
			Chlorobenzene	0 50	--	ND
			Ethylbenzene	0 50	--	ND
			Xylenes (Total)	0 50	--	ND
			Styrene	0 50	--	ND
			Isopropylbenzene	0 50	--	ND
			Bromobenzene	0 50	--	ND
			1,2,3-Trichloropropane	0 50	--	ND
			n-Propylbenzene	0 50	--	ND
			2-Chlorotoluene	0 60	--	ND
			4-Chlorotoluene	0 50	--	ND
			1,3,5-Trimethylbenzene	0 50	--	ND
			tert-Butylbenzene	0 50	--	ND
			1,2,4-Trimethylbenzene	0 50	--	ND
			sec-Butylbenzene	0 50	--	ND
			1,3-Dichlorobenzene	0 50	--	ND
			1,4-Dichlorobenzene	0 50	--	ND

TABLE 3

GROUNDWATER SAMPLING RESULTS
BUILDING 210, MAIN POST, TRIP BLANK
FORT MONMOUTH, NEW JERSEY
VOLATILE ORGANICS (Continued)

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)
Trip Blank	6/13/95	6/21/95	4-Isopropyltoluene	0 50	--	ND
			1,2-Dichlorobenzene	0 50	--	ND
			n-Butylbenzene	0 50	--	ND
			1,2-Dibromo-3-chloropropane	0 50	--	ND
			1,2,4-Trichlorobenzene	0 50	--	ND
			Hexachlorobutadiene	0 50	--	ND
			Naphthalene	0 50	--	ND
			1,2,3-Trichlorobenzene	0 50	--	ND

Notes

-- Not applicable / does not exceed criteria
(J) Indicates detected below sample quantitation limit
(B) Indicates also present in blank
(ND) Indicates compound not detected

TABLE 3

GROUNDWATER SAMPLING RESULTS
BUILDING 210, MAIN POST, TRIP BLANK
FORT MONMOUTH NEW JERSEY
VOLATILE TICS

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)
Trip Blank	6/13/95	6/21/95	NO TICS FOUND	--	--	--

Note

-- Not applicable / does not exceed criteria
(J) Indicates detected below sample quantitation limit
(B) Indicates also present in blank
(ND) Indicates compound not detected
GWQC Groundwater Quality Criteria

TABLE 3

GROUNDWATER SAMPLING RESULTS
BUILDING 210, MAIN POST, FIELD BLANK
FT MONMOUTH, NEW JERSEY
VOLATILE ORGANICS

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)
Field Blank	6/13/95	6/21/95	Dichlorodifluoromethane	0 50	--	ND
			Chloromethane	0 50	--	ND
			Bromomethane	0 50	--	ND
			Vinyl Chloride	0 50	--	ND
			Chloroethane	0 50	--	ND
			Trichlorofluoromethane	0 50	--	ND
			Methylene Chloride	0 50	--	2 1 B
			1,2-Dichloroethene (trans)	0 50	--	ND
			1,1-Dichloroethene	0 50	--	ND
			1,1 Dichloroethane	0 50	--	ND
			2,2-Dichloropropane	0 50	--	ND
			Bromochloromethane	0 50	--	ND
			cis-1,2-Dichloroethene	0 50	--	ND
			Chloroform	0 50	--	ND
			1,1-Dichloropropene	0 50	--	ND
			1,2-Dichloroethane	0 50	--	ND
			1,1,1-Trichloroethane	0 50	--	ND
			Dibromomethane	0 50	--	ND
			Carbon Tetrachloride	0 50	--	ND
			Bromodichloromethane	0 50	--	ND
			1,2-Dichloropropane	0 50	--	ND
			cis-1,3-Dichloropropene	0 50	--	ND
			1,3-Dichloropropane	0 50	--	ND
			Trichloroethene	0 50	--	ND
			Dibromochloromethane	0 50	--	ND

TABLE 3

GROUNDWATER SAMPLING RESULTS
BUILDING 210, MAIN POST, FIELD BLANK
FORT MONMOUTH, NEW JERSEY
VOLATILE ORGANICS (Continued)

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)
Field Blank	6/13/95	6/21/95	1,1,2-Trichloroethane	0 50	--	ND
			Benzene	0 50	--	ND
			trans-1,3-Dichloropropene	0 50	--	ND
			Bromoform	0 50	--	ND
			1,1,2,2-Tetrachloroethane	0 50	--	ND
			Tetrachloroethene	0 50	--	ND
			1,1,2,2-Tetrachloroethane	0 50	--	ND
			Toluene	0 50	--	ND
			1,2-Dibromoethane	0 50	--	ND
			Chlorobenzene	0 50	--	ND
			Ethylbenzene	0 50	--	ND
			Xylenes (Total)	0 50	--	ND
			Styrene	0 50	--	ND
			Isopropylbenzene	0 50	--	ND
			Bromobenzene	0 50	--	ND
			1,2,3-Trichloropropane	0 50	--	ND
			n-Propylbenzene	0 50	--	ND
			2-Chlorotoluene	0 50	--	ND
			4-Chlorotoluene	0 50	--	ND
			1,3,5-Trimethylbenzene	0 50	--	ND
			tert-Butylbenzene	0 50	--	ND
			1,2,4-Trimethylbenzene	0 50	--	ND
			sec-Butylbenzene	0 50	--	ND
			1,3-Dichlorobenzene	0 50	--	ND
			1,4-Dichlorobenzene	0 50	--	ND

TABLE 3

GROUNDWATER SAMPLING RESULTS
BUILDING 210, MAIN POST, FIELD BLANK
FORT MONMOUTH, NEW JERSEY
VOLATILE ORGANICS (Continued)

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)
Field Blank	6/13/95	6/21/95	4-Isopropyltoluene	0 50	--	ND
			1,2-Dichlorobenzene	0 50	--	ND
			n-Butylbenzene	0 50	--	ND
			1,2-Dibromo-3-chloropropane	0 50	--	ND
			1,2,4-Trichlorobenzene	0 50	--	ND
			Hexachlorobutadiene	0 50	--	ND
			Naphthalene	0 50	--	ND
			1,2,3-Trichlorobenzene	0 50	--	ND

Notes

-- Not applicable / does not exceed criteria
(J) Indicates detected below sample quantitation limit
(B) Indicates also present in blank
(ND) Indicates compound not detected

TABLE 3

GROUNDWATER SAMPLING RESULTS
BUILDING 210, MAIN POST, FIELD BLANK
FORT MONMOUTH, NEW JERSEY
VOLATILE TICS

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)
Field Blank	6/13/95	6/21/95	NO TICS FOUND	--	--	--

Note

-- Not applicable / does not exceed criteria
(J) Indicates detected below sample quantitation limit
(B) Indicates also present in blank
(ND) Indicates compound not detected
GWQC Groundwater Quality Criteria

TABLE 3

GROUNDWATER SAMPLING RESULTS
BUILDING 210, MAIN POST, FIELD BLANK
FORT MONMOUTH, NEW JERSEY
SEMIVOLATILES

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)
Field Blank	6/13/95	6/26/95	N-Nitrosodiethylamine	2	--	ND
			bis(2 chloroethyl)Ether	1	--	ND
			1,3-Dichlorobenzene	2	--	ND
			1,4-Dichlorobenzene	1	--	ND
			1,2-Dichlorobenzene	2	--	ND
			bis(2-chloroisopropyl)Ether	5	--	ND
			N-Nitroso-Di-n-propylamine	2	--	ND
			Hexachloroethane	1	--	ND
			Nitrobenzene	2	--	ND
			Isophorone	1	--	ND
			bis(2-Chloroethoxy)Methane	3	--	ND
			1,2,4-Trichlorobenzene	2	--	ND
			Naphthalene	2	--	ND
			Hexachlorobutadiene	2	--	ND
			Hexachlorocyclopentadiene	12	--	ND
			2-Chloronaphthalene	1	--	ND
			Dimethyl Phthalate	1	--	ND
			Acenaphthylene	5	--	ND
			2,6-Dinitrotoluene	2	--	ND
			Acenaphthene	3	--	ND
			2,4-Dinitrotoluene	3	--	ND
			Diethylphthalate	1	--	ND
			Fluorene	3	--	ND
			4-Chlorophenyl-phenylether	3	--	ND
			N-Nitrosodiphenylamine	6	--	ND
			1,2-Diphenylhydrazine	6	--	ND
			4-Bromophenyl-phenylether	2	--	ND
			Hexachlorobenzene	2	--	ND
			Phenanthrene	2	--	ND

TABLE 3

GROUNDWATER SAMPLING RESULTS
BUILDING 210, MAIN POST, FIELD BLANK
FORT MONMOUTH, NEW JERSEY
SEMIVOLATILES (Continued)

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)
Field Blank	6/13/95	6/26/95	Anthracene	2	--	ND
			Di-n-butylphthalate	5	--	ND
			Fluoranthene	1	--	ND
			Benzidine	1	--	ND
			Pyrene	2	--	ND
			Butylbenzylphthalate	9	--	ND
			Benzo(a)Anthracene	2	--	ND
			3,3-Dichlorobenzidine	15	--	ND
			Chrysene	2	--	ND
			bis(2-Ethylhexyl)Phthalate	4	--	ND
			Di-n-Octyl Phthalate	2	--	ND
			Benzo(b)Fluoranthene	1	--	ND
			Benzo(k)Fluoranthene	2	--	ND
			Benzo(a)Pyrene	2	--	ND
			Indeno(1,2,3-cd)pyrene	2	--	ND
			Dibenzo(a,h)anthracene	3	--	ND
			Benzo(g,h,i)perylene	2	--	ND

Notes

-- Not applicable / does not exceed criteria
(J) *Indicates detected below sample quantitation limit*
(B) Indicates also present in blank
(ND) Indicates compound not detected

TABLE 5

GROUNDWATER SAMPLING RESULTS
BUILDING 210, MAIN POST, FIELD BLANK
FORT MONMOUTH, NEW JERSEY
SEMIVOLATILE TICS

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/l)	Compound of Concern	Result (ug/l)
Field Blank	6/13/95	6/21/95	NO TICS FOUND	--	--	--

Note

-- Not applicable / does not exceed criteria
(J) Indicates detected below sample quantitation limit
(B) Indicates also present in blank
(ND) Indicates compound not detected
GWQC Groundwater Quality Criteria

Appendix **A**

SMITH
ENVIRONMENTAL TECHNOLOGIES CORPORATION

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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-93-2610 **UST #** 0081515 0081533 CA

US Army Fort Monmouth
DEH Bldg. 167
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 550 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 samples will be analyzed for VO+10.

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

OWNER: TELEPHONE:

EFFECTIVE DATE: JUL 12 1993

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

Fred DeLamater

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

Appendix **B**

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ENVIRONMENTAL TECHNOLOGIES CORPORATION

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APPENDIX B

CERTIFICATIONS

UNDERGROUND STORAGE TANK (UST)
CLOSURE CERTIFICATION

BUILDING NO. 210

NJDEP UST REGISTRATION NO. 81533-8

DATE TANK REMOVED Jan. 14, 1994

IJO / CONTRACT NUMBER 93-1017

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 CUE Inc.

NJDEP UST CLOSURE CORPORATE CERTIFICATE NO. 0200128

DATE OF SUBMITTAL 2/20/95

UST-014
2/91

FOR STATE USE ONLY

UST # _____
Date Rec'd _____
TMS # _____
Staff _____

State of New Jersey
Department of Environmental Protection and Energy
Division of Responsible Party Site Remediation
CN 029
Trenton, NJ 08625-0029
Tel. # 609-984-3156
Fax. # 609-292-5604

Scott A. Weiner
Commissioner

Karl J Delaney
Director

UNDERGROUND STORAGE TANK SITE ASSESSMENT SUMMARY

Under the provisions of the Underground Storage of Hazardous Substances Act in accordance with N.J.A.C. 7:14B

This Summary form shall be used by all owners and operators of Underground Storage Tank Systems (USTS) who have either reported a release and are subject to the site assessment requirements of N.J.A.C. 7.14B-8.2 or who have closed USTS pursuant to N.J.A.C. 7.14B-9.1 et seq. and are subject to the site assessment requirements of N.J.A.C. 7.14B-9.2 and 9.3.

INSTRUCTIONS:

- *Please print legibly or type.*
- *Fill in all applicable blanks. This form will require various attachments in order to complete the Summary. The technical guidance document, Interim Closure Requirements for USTs, explains the regulatory (and technical) requirements for closure and the Scope of Work, Investigation and Corrective Action Requirements for Discharges from Underground Storage Tanks and Piping Systems explains the regulatory (and technical) requirements for corrective action.*
- *Return one original of the form and all required attachments to the above address.*
- *Attach a scaled site diagram of the subject facility which shows the information specified in Item IV B of this form.*
- *Explain any "No" or "N/A" response on a separate sheet.*

Date of Submission _____

Bldg. 210

081533-8
FACILITY REGISTRATION #

I. FACILITY NAME AND ADDRESS

U.S. Army, Fort Monmouth, New Jersey
Directorate of Engineering and Housing, Building 167
Fort Monmouth, New Jersey County Monmouth
Telephone No. (908) 532-1475

OWNER'S NAME AND ADDRESS, if different from above

_____
_____
_____

Telephone No. _____

II. DISCHARGE REPORTING REQUIREMENTS

A. Was contamination found? X Yes ___ No If Yes, Case No. 94-1-25-0913-00
(Note: All discharges must be reported to the Environmental Action Hotline (609) 292-7172)

B. The substance(s) discharged was(were) No. 2 fuel oil

C. Have any vapor hazards been mitigated? ___Yes ___No X N/A

III. DECOMMISSIONING OF TANK SYSTEMS Closure Approval No. C-93-2610

The site assessment requirements associated with tank decommissioning are explained in the Technical Guidance Document, Interim Closure Requirements for UST's, Section V. A-D. Attach complete documentation of the methods used and the results obtained for each of the steps of tank decommissioning used. Please include a site map which shows the locations of all samples and borings, the location of all tanks and piping runs at the facility at the beginning of the tank closure operation and annotated to differentiate the status of all tanks and piping (e.g., removed, abandoned, temporarily closed, etc.). The same site map can be used to document other parts of the site assessment requirements, if it is properly and legibly annotated.

IV. SITE ASSESSMENT REQUIREMENTS

A. Excavated Soil

Any evidence of contamination in excavated soil will require that the soil be classified as either Hazardous Waste or Non-Hazardous Waste. Please include all required documentation of compliance with the requirements for handling contaminated excavated soil (if any was present) as explained in the technical guidance documents for closure and corrective action. Describe amount of soil removed, its classification, and disposal location.

B. Scaled Site Diagrams

1. Scaled site diagrams must be attached which include the following information:

a. North arrow and scale
b. The locations of the ground water monitoring wells
c. Location and depth of each soil sample and boring
d. All major surface and sub-surface structures and utilities
e. Approximate property boundaries
f. All existing or closed underground storage tank systems, including appurtenant piping
g. A cross-sectional view indicating depth of tank, stratigraphy and location of water table
h. Locations of surface water bodies

C. Soil samples and borings (check appropriate answer)

1. Were soil samples taken from the excavation as prescribed? X Yes ___ No ___N/A

2. Were soil borings taken at the tank system closure site as prescribed? ___ Yes ___ No X N A

3. Attach the analytical results in tabular form and include the following information about each sample:
a. Customer sample number (keyed to the site map)
b. The depth of the soil sample
c. Soil boring logs
d. Method detection limit of the method used
e. QA/QC information as required

D. Ground Water Monitoring

1. Number of ground water monitoring wells installed 1

2. Attach the analytical results of the ground water samples in tabular form. Include the following information for each sample from each well:

   a. Site diagram number for each well installed
   b. Depth of ground water surface
   c. Depth of screened interval
   d. Method detection limit of the method used
   e. Well logs
   f. Well permit numbers
   g. QA/QC information as required

V. SOIL CONTAMINATION

A. Was soil contamination found? X Yes ___ No
If "Yes", please answer Question B-E
If "No", please answer Question B

B. The highest soil contamination still remaining in the ground has been determined to be:
1. 0.42 ppb total BTEX, 14.0 ppb total non-targeted VOC
2. N/A ppb total B/N, N/A ppb total non-targeted B/N
3. 21.6 ppm TPHC
4. N/A ppb _____ (for non-petroleum substance)
(See Table 2 for other parameters)

C. Remediation of free product contaminated soils

1. All free product contaminated soil on the property boundaries and above the water table are believed to have been removed from the subsurface ___ Yes X No
2. Free product contaminated soils are suspected to exist below the water table ___ Yes X No
3. Free product contaminated soils are suspected to exist off the property boundaries. ___ Yes X No

D. Was the vertical and horizontal extent of contamination determined? ___ Yes ___ No X N/A

E. Does soil contamination intersect ground water? ___ Yes X No ___ N/A

VI. GROUND WATER CONTAMINATION

A. Was ground water contamination found? ___ Yes X No
If "Yes", please answer Questions B-G.
If "No", please answer only Question B.

B. The highest ground water contamination at any 1 sampling location and at any 1 sampling event to date has been determined to be:
(See Table 3 for other parameters)
1. ND ppb total BTEX, ND ppb total non-targeted VOC
2. ND ppb total B/N, ND ppb total non-targeted B/N
3. N/A ppb total MTBE, N/A ppb total TBA
4. N/A ppb _____ (for non-petroleum substance)
5. greatest thickness of separate phase product found N/A
6. separate phase product has been delineated ___ Yes ___ No X N/A

C. Result(s) of well search

1. A well search (including a review of manual well records) indicates that private, municipal or commercial wells do exist within the distances specified in the Scope of Work. ___ Yes ___ No X N/A

2. The number of these wells identified is N/A.

D. Proximity of wells and contaminant plume

1. The shallowest depth of any well noted in the well search which may be in the horizontal or vertical potential path(s) of the contaminant plume(s) is N/A feet below grade (consideration has been given for the effects of pumping, subsurface structures, etc. on the direction(s) of contaminant migration). This well is N/A feet from the source and its screening begins at a depth of N/A feet.

2. The shallowest depth to the top of the well screen for any well in the potential path of the plume(s) (as described in D1 above) is N/A feet below grade. This well is located N/A feet from the source.

3. The closest horizontal distance of a private, commercial or municipal well in the potential path of the plume (as determined in D1) is N/A feet from the source. This well is N/A feet deep and screening begins at a depth of N/A feet.

E. A plan for separate phase product recovery has been included. ___ Yes ___ No X N/A

F. A ground water contour map has been submitted which includes the ground water elevations for each well.
___ Yes ___ No X N/A

G. Delineation of contamination

1. The ground water contaminants have been delineated to MCLs or lower values at the property boundaries. ___ Yes ___ No X N/A

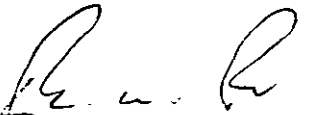
2. The plume is suspected to continue off the property at concentrations greater than MCLs.
___ Yes ___ No X N/A

3. Off property access (circle one): is being sought has been approved has been denied
N/A

VII. SITE ASSESSMENT CERTIFICATION [preparer of site assessment plan - N.J.A.C. 7:14B-8.3(b) &9.5(a)3]

The person signing this certification as the "Qualified Ground Water Consultant" (as defined in N.J.A.C.7:14B-1.6) responsible for the design and implementation of the site assessment plan as specified in N.J.A.C. 7:14B-8.3(a) & 9.2(b)2, must supply the name of the certifying organization and certification number.

"I certify under penalty of law that the information provided in this document is true, accurate, and complete and was obtained by procedures in compliance with N.J.A.C. 7:14B-8 and 9. I am aware that there are significant penalties for submitting false, inaccurate, or incomplete information, including fines and/or imprisonment."

NAME (Print or Type) Dinkerrai M. Desai SIGNATURE 

COMPANY NAME U.S. Army, Fort Monmouth DATE 11/1/95
(Preparer of Site Assessment Plan)

CERTIFYING ORGANIZATION NJDEP CERTIFICATION NUMBER E0002266

VIII. TANK DECOMMISSIONING CERTIFICATION [person performing tank decommissioning portion of closure plan - N.J.A.C. 7:14B-9.5(a)4]

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

NAME (Print or Type) _____ SIGNATURE _____

COMPANY NAME _____ DATE _____
(Performer of Tank Decommissioning)

IX. CERTIFICATIONS BY THE RESPONSIBLE PARTY(IES) OF THE FACILITY

A. The following certification shall be signed by the highest ranking individual with overall responsibility for that facility [N.J.A.C. 7:14B-2.3(c)1i].

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

NAME (Print or Type) James Ott SIGNATURE James Ott

COMPANY NAME U.S. Army, Fort Monmouth DATE 2/14/96

B. The following certification shall be signed as follows [according to the requirements of N.J.A.C. 7:14B-2.3(C)2i]:

1. For a corporation, by a principal executive officer of at least the level of vice president.
2. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
3. For a municipality, State, Federal or other public agency by either the principal executive officer or ranking elected official.
4. In cases where the highest ranking corporate partnership, governmental officer or official at the facility as required in A above is the same person as the official required to certify in B, only the certification in A need to be made. In all other cases, the certifications of A and B shall be made.

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false, inaccurate, or incomplete information, including fines and/or imprisonment."

NAME (Print or Type) _____ SIGNATURE _____

COMPANY NAME _____ DATE _____

Appendix **C**

SMITH
ENVIRONMENTAL TECHNOLOGIES CORPORATION

SMITH

APPENDIX C

WASTE MANIFEST

Bldg. 210 ALL

File Copy

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 9-30-9.

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. NJ3210020597 | Manifest Document No. 00015 | 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 James Shirghio, Bldg 2504, ATTN: SELFM-DL-EM-MS Fort Monmouth, NJ 07703

4. Generator's Phone (908) 532-6223 Main Post

A. State Manifest Document Number: NJA 1603206

B. State Generator's ID: Bldg 209-210 Main Post

C. State Transporter's ID: NJDEPE 5 2265

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

E. State Trans. ID

F. Transporter's Phone ( )

G. State Facility's ID

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

5. Transporter 1 Company Name: Freehold Cartage Inc. | 6. US EPA ID Number: NJD015411261164

7. Transporter 2 Company Name | 8. US EPA ID Number

9. Designated Facility Name and Site Address: Lionetti Oil Recovery Co., Inc. Runyon & Cheesequake Rds. Old Bridge, NJ 08857 | 10. US EPA ID Number: NJD080440616 4

	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.	X Petroleum Oil NOS Class 3 (Petroleum Oil) Combustible Liquid UN 1270 PG III	001	TT	X684	G	X722
b.	X Petroleum Oil NOS Class 3 (Petroleum Oil) Combustible Liquid UN 1270 PG III	001	TT	X330	G	X722
c.						
d.						

J. Additional Descriptions for Materials Listed Above

a. T,L Petroleum Oil 80% Water 20 %

b. T,L Petroleum Oil 80% Water 20%

K. Handling Codes for Wastes Listed Above: a. | b. | c. | d.

15. Special Handling Instructions and Additional Information

Not EPA regulated, regulated as hazardous waste in NJ
24 hour Emergency Response # 201-427-2881
NJ Decal# 5542g Pkt #5 XV-5[illegible] ERG# 27

11a Bldg 209 UST #81533-7 C-93-2611

11b Bldg 210 UST #81533-8 C-93-2610

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.

GENERATOR — Printed/Typed Name: Joseph M. Fallon | Signature: Joseph M. Fallon | Month Day Year: 02 07 94

TRANSPORTER — 17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: David S. Smith | Signature: David S. Smith | Month Day Year: 02 07 94

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

EPA Form 8700-22 (Rev. 9-88) Previous editions are obsolete.

SIGNATURE AND INFORMATION *MUST* BE LEGIBLE ON ALL COPIES

...emergency... occurred in ... and the N.J. Dept. of Environmental Protection and Energy. (609) 292-7172

Appendix **D**

SMITH
ENVIRONMENTAL TECHNOLOGIES CORPORATION

SMITH

APPENDIX D

UST DISPOSAL CERTIFICATE

MAZZA & SONS, INC.

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

NO. _____

DATE 18 Feb 94

TK 210
Fort Monmouth

Customer's Name CUTT INC

Address _____

Make of Autos

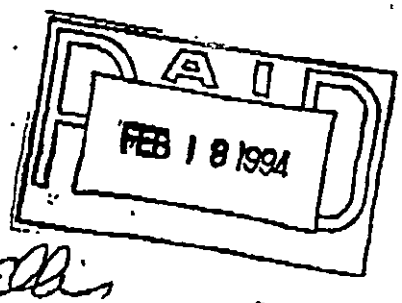
Tires
Tank
Price:

35740 LB G

39340 LB G

3600

	Weight	Price
Cast Iron		
Steel		
Lt. Iron		
Copper #1		
Copper #2		
Lt. Copper		
Brass		
Alum Clean		
Lead		
Stainless		
Radiators		$
Battery		$
TOTAL AMOUNT:		



Weigher Don Ellis Customer _____

Appendix E

SMITH
ENVIRONMENTAL TECHNOLOGIES CORPORATION

SMITH

APPENDIX E

NJDEP WELL PERMITS AND WELL CONSTRUCTION LOGS

MONITORING WELL CERTIFICATION-FORM B-LOCATION CERTIFICATION

Name of Permittee: U.S. ARMY
Name of Facility: FORT MONMOUTH
Location: MONMOUTH COUNTY, NJ
~~NJPDES~~ Number: 94-1-25-0913-00
Dear

LAND SURVEYOR'S CERTIFICATION

Well Permit Number:
This number must be permanently affixed to the well casing. 29-31792-

Longitude (to nearest second): West 74°02'15.02"

Latitude (to nearest second): North 40°19'16.02"

Elevation of Top of Inner Casing (cap off) (one-hundredth of a foot): 10.82

Elevation of ground level (1/100th ft.) 8.58

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: Mon. FM-5

☒ 1927 ☐ 1983

Elev.:

Owners Well Number (As shown on application or plans): BLDG 210 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 foot from the site or from an alternate datum approved by the Department. Tolerances should meet third order standards, which are 0.05 ft x $(\text{miles})^{1/2}$. 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 - 31792
Atlas Sheet Coordinates ____ : ____ : 634

OWNER IDENTIFICATION - Owner [illegible]
Address [illegible]
City [illegible] State NJ Zip Code ____

WELL LOCATION - If not the same as owner please give address. Owner's Well No. Bldg 210 MW-1
County [illegible] Municipality [illegible] Lot No. ____ Block No. ____
Address ____

TYPE OF WELL (as per Well Permit Categories) [illegible] Date well completed 9, 22, 94
Regulatory Program Requiring Well [illegible] Case I.D. # 94-1-25-0913-20

CONSULTING FIRM/FIELD SUPERVISOR (if applicable) ____ Tele. # ____

WELL CONSTRUCTION
Total depth drilled 12 ft.
Well finished to 12 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 3 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	0	2'	4	PVC
Outer Casing (Not Protective Casing)				
Screen (Note slot size)	2'	12'	4	20 slot PVC
Tail Piece				
Gravel Pack	1'	12'		#2 Morie Sand
Annular Seal/Grout	6"	1'		Bentonite Portland
Method of Grouting	Tremie			

Static water level after drilling 6 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 J 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. 1721
Name of Drilling Company [illegible]

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

0-6" Grassy area, top soil
6"-2' Light brown, fine sand + silts
2'-3' Light brown, medium sand
3'-7' Med. brown, med. sand w/ silts
7'-12' Med. brown, silty sand

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 [signature] Date [illegible]

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

SERIAL # 41171

DWR-133M (10/93)

Mail to

I 'DEPE
Bureau Water Allocation
CN426
enton, NJ 08625

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

MONITORING WELL PERMIT

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

Permit No. 931792

COORD #: 38 39 21 74 01 24

Owner US Army Fort Monmouth
Address SELFM PW-EV
Fort Monmouth, NJ 07703
lame of Facility Building 210
Address Main Post
Fort Monmouth, NJ

Driller Tyree Organization, Ltd.
Address 1350 US Hwy 130
Burlington, NJ 08016

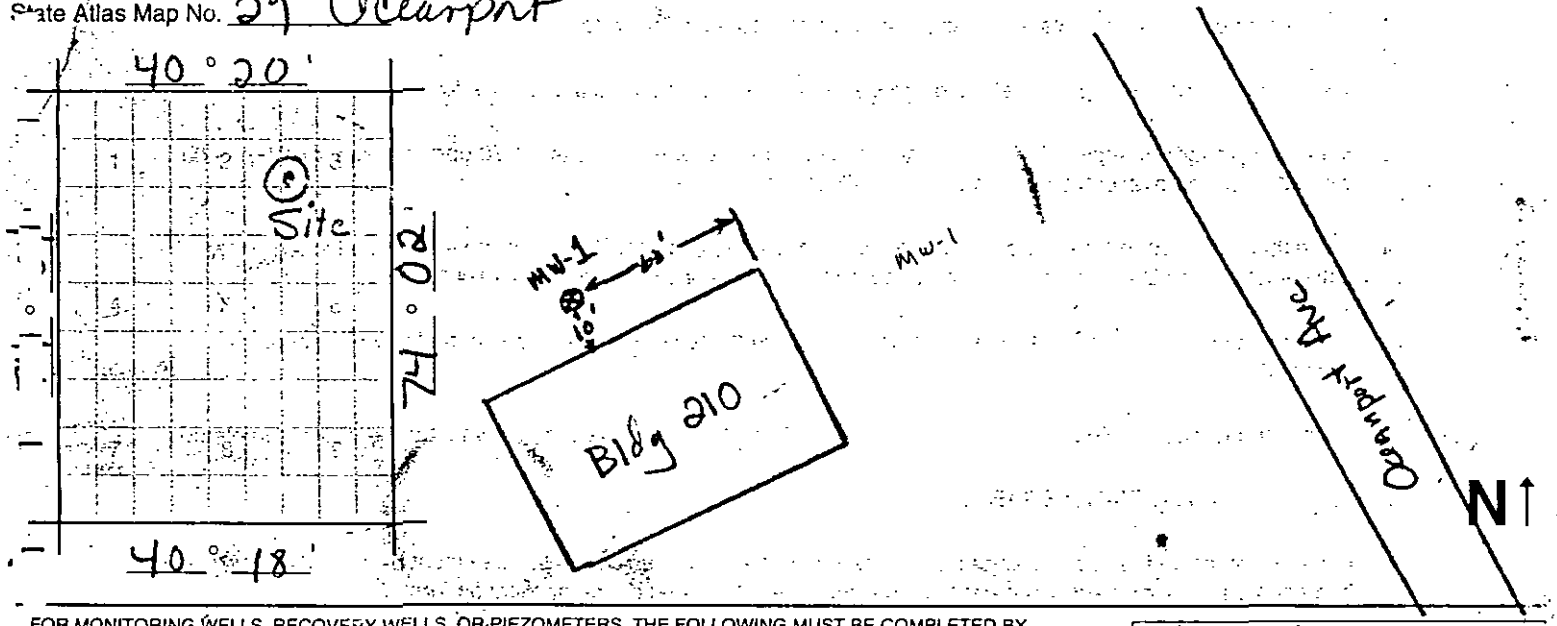
Diameter of Well(s)	4 Inches	Proposed Depth of Well(s)	15 Feet
# of Wells Applied for (max. 10)	1	Will pumping equipment be installed? YES ☐ NO ☒	
Type of Well (see reverse)	Monitoring	If Yes, give pump capacity	N/A GPM

LOCATION OF WELL(S)

t #	Block #	Municipality	County
		~~Fort Monmouth~~	Monmouth

State Atlas Map No. 29 Oceanport

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.



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

- Spill Site
- ISRA Site
- ☐ CERCLA (Superfund) Site
- RCRA Site
- Underground Storage Tank Site
- ☐ Operational Ground Water Permit Site
- ☐ Pretreatment and Residuals Site
- Water and Hazardous Waste Enforcement Case
- ☐ Water Supply Aquifer Test Observation Well
- ☐ Other (explain) _____

CASE I.D. Number
94-1-25-0913-00
(Site Bldg 210)

This Space for Approval Stamp

WELL PERMIT APPROVED
N.J.D.E.P.
AUG 3 [illegible]
BUREAU OF WATER ALLOCATION

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 uncased borehole.

E 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.

7-25-94

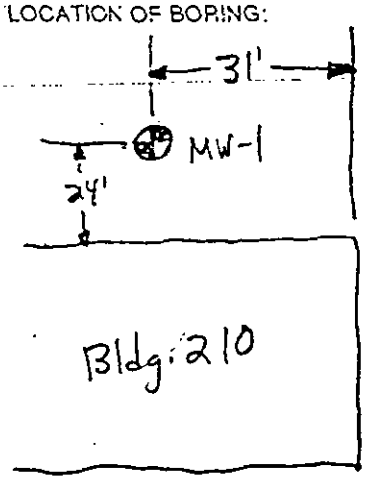
Signature of Driller _____ License # 1421

Signature of Owner _____ SELFM-PW-EV

FIELD LOG OF BORING

SHEET 1 OF 2

LOCATION OF BORING:



PROJECT: US Army Ft. Monmouth	BORING NO: MW-1
	TOTAL DEPTH: 12'
JOB NO:	LOGGED BY: E. Fife
PROJ. MGR.: Capriotti	EDITED BY:
DRILLING CONTRACTOR: Tyree	
DRILL RIG TYPE: B 80	
DRILLERS NAME: M. Beck	
SAMPLING METHODS: SS	
HAMMER WT.: 20 lbs.	DROP:
STARTED, TIME: 11:00 AM	DATE:
COMPLETED, TIME: 2:00	DATE:
BORING DEPTH (ft): 12	
CASING DEPTH (ft): 2	
WATER DEPTH (ft): 6'2"	
TIME:	
DATE: 10/3/94	
BACKFILLED, TIME: 2:05 PM	DATE: 9/22/94 BY: Tyree
SURFACE ELEV:	DATUM:
CONDITIONS:	

Occupancy Ave

SAMPLE DEPTH	SAMPLER TYPE	BLOWS / 6 IN.	INCHES DRIVEN	INCHES RECOVERED	SAMPLE CONDITION	DRILLING RATE (min./ft.)	PID READING (ppm)	ODOR (Y / N ?)	GRAPHIC WELL CONST.	DEPTH IN FEET	GRAPHIC LOG	
												Grassy area, top soil
									Casing w/ 3" stick-up, bentonite	1	SM	Light brown, fine sand + silts
2-4'	SS	3	6	20			<1	N		2	SP	Light brown, medium sand
		2	6							3	SM	Medium brown, medium sand with silts; wet at approx. 4'
		3	6									
		2	6				<1	N		4		
										5		
									Screen w/ Morie sand	6		
										7	SM	Medium brown, silty sands
										8		
										9		
										10		* No samples were collected

210

FIELD LOG OF BORING (CONTINUED)

SHEET 2 OF 2

PROJECT:	NO:	BORING NO: MW-1

DEPTH	TYPE	BLOWS	DRIVEN	REC'VD	COND.	D. RATE	PID	ODOR	GR.WELL	DEPTH	GRAPHIC LOG
									Screen / Sand	11	SM
										12	
										13	
										4	
										5	
										6	
										7	
										8	
										9	
										0	
										1	
										2	
										3	
										4	
										5	
										6	
										7	
										8	

No Samples Taken

TYREE ENVIRONMENTAL TECHNOLOGIES

Appendix **F**

SMITH
ENVIRONMENTAL TECHNOLOGIES CORPORATION

SMITH

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 #. 1370.1-.5
Sample Rec'd: 01/14/94
Analysis Start 01/18/94
Analysis Comp: 01/18/94

Analysis: 418.1 (TPH)
Matrix: Soil
Analyst: S. Hubbard
Ext. Meth: Sonc.

NJDEPE UST Reg #: 81533-08
TMS #:
NJDEPE Case #:
Location #: 210

Lab ID	Description	%Solid	Result (mg/Kg)	MDL
1370.1	Near Foundation (A) hNu=NA +	84	3440.	20
1370.2	Center West Wall (B) hNu=NA +	89	21.6	3.3
1370.3	Center North Wall (C) hNu=NA +	86	15.9	3.3
1370.4	Under Piping E.Wall (D) hNu=NA +	85	17.7	3.3
1370.5 *	Dupe. of A _ E hNu=NA +	88	90.4	3 3
M. Bl	Method Blank	100	ND	3.3

Notes: ND = Not Detected, MDL = Method Detection Limit
* = Silica Gel Added, NA = Not Applicable
+ = Temp. and Weather Conditions prohibited hNu use.
1370.2 Dup.= 93% 1370 2 Spike=120%, 1370.2 Spike Dup.=123%, RPD=19%

Brian K. McKee
Laboratory Director

* E is the Duplicate of A
IGNOR E (1370.1)

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 # 1370 1- 5
Sample Rec'd 01/14/94
Analysis Start. 01/18/94
Analysis Comp 01/18/94

Analysis. Munsel

Lab ID#	Soil Color
1370 1	2 5Y 4/3 Olive Brown
1370 2	2.5Y 5/6 Light Olive Brown
1370 3	2 5Y 5/6 Light Olive Brown
1370 4	2 5Y 5/6 Light Olive Brown
1370 5	2 5Y 4/4 Olive Brown

Brian K McKee
Laboratory Director

1/18/94 3 52 PM

SERV-AIR, INC.
An E-SYSTEMS Company

P.O. #:

Chain of Custody

Project #:

Customer:

Phone:

Sampler: Rodkovsky

Site Name: B209 550 gal UST# 00815338

Date / Time

Analysis Parameters: TPHC

Start:

Finish:

Preservation Method

Lab Sample ID Number	Date/Time		Customer Sample Location/ID Number	Sample Matrix	# of Bottles	TPHC	Remarks
1370.1	1/14	1400	A near foundation	So.1	1	X	LAB #
1370.2	"	1410	B Cent. West Wall	"	1	X	
1370.3	"	1413	C Cent North Wall	"	1	X	
1370.4	"	1415	D Underlying E Wall	"	1	X	
1370.5	"	1418	E Dup of A	"	1	X	

Relinquished By (signature)	Date / Time	Received By (signature)	Shipped By:

Relinquished By (signature)	Date / Time	Received for Lab by (signature):	Date / Time
Rodkovsky	1-14-94 / 1500		

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

Jan. 18, 1991 1152 Sarah Hubbard

Bldg. 209

Blank 0 MV

20.75 95 MV

81.5 193 MV

163 396 MV

1370.1 348

1370.2 11 MV

1370.2 Dup 10.1 V

1370.2 Spk 108

1370.2 Dup Spk 11 MV

1370.3 7 MV

1370.4 8 MV

1370.5 55 MV

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

RECEIVED
FEB 10 1994
By B. McKee
Reviewed

E-SYSTEMS, INC./SERV-AIR

PROJECT: U.S. ARMY-FORT MONMOUTH BLDG 210

ANALYSIS NO:	CLIENT ID:
B 0189	1370.1

DATE RECEIVED: JANUARY 20, 1994

TWENTY FIRST CENTURY
ENVIRONMENTAL, INC.

Richard W. Lynch
RICHARD W. LYNCH
LABORATORY MANAGER

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

	No	Yes
1. Chromatograms Labeled/Compounds Identified (Field Samples and Method Blanks)	___	✓
2. GC/MS Tune Specifications		
a. BFB Meet Criteria	___	✓
b. DFTPP Meet Criteria	___	N/A
3. GC/MS Tuning Frequency - Performed every 24 hours for 600 series and 12 hours for 8000 series.	___	✓
4. GC/MS Calibration - Initial Calibration performed within 30 days before sample analysis and continuing calibration performed within 24 hours of sample analysis for 600 series and 12 hours for 8000 series	___	✓
5. GC/MS Calibration Requirements		
a. Calibration Check Compounds	___	✓
b. System Performance Check Compounds	___	✓

6. Blank Contamination - If yes, list compounds and concentrations in each blank:

a. VOA Fraction None - Extraction Blank: Meets Below MDL
b. B/N Fraction _____
c. Acid Fraction _____

7. Surrogate Recoveries Meet Criteria	___	✓

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

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

If not met, were the calculations checked and the results qualified as "estimated"?	___	N/A
8. Matrix Spike/ Matrix Spike Duplicate Recoveries Meet Criteria (If not met, list those compounds and their recoveries which fall outside the acceptable range)	___	✓

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

9. Internal Standard Area/Retention Time Shift Meet Criteria	___	✓

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

	No	Yes
10. Extraction Holding Time Met	___	✓

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

11. Analysis Holding Time Met	___	✓

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

Additional Comments: No T.B. or F.B. submitted for this sample

Laboratory Manager: B. McKee Date: 2/10/94

TABLE OF CONTENTS

Narrative 00001

Chain of Custody Forms 00002

Methodology 00003

Laboratory Chronicle 00004

Result Summary 00005

Data Package 00006

Quality Control Data 00013

NARRATIVE

There were no problems encountered during the analysis of this sample (B0189). All analysis were completed within proper hold times.

~~B0189 DHT~~

B0189

SERV-AIR, INC.
An E SYSTEMS Company

P.O. #: U.S.T TANK Removal

Chain of Custody 00502

Project #:	Sampler: George Rochkovsky	Date / Time 1/19/94 1335	Analysis Parameters	Start:
Customer: Serv-Air, Inc	Site Name: US Army Base Fort Monmouth			Finish:
Phone: (908) 532-4359				Preser at Hell

Lab Sample ID Number	Date/Time	Customer Sample Location/ID Number	Sample Matrix	# of Bottles	VOA +15	Remarks
137001	1/14/94 1400	A-Near Foundation Bldg ~~259~~ 210 UST# 0081533-8	Soil	1(40c)	X	To cold for bN

Relinquished By (signature)	Date / Time	Received By (signature)	Shipped By:

Relinquished By (signature)	Date / Time	Received for Lab by (signature):	Date / Time
Sarah Stubbard	1/19/93 1400	Federal Express	1/19/94 1402

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

FT [illegible] Project Office

Purgeables

U.S.E.P.A. Method 624 - This is a purge and trap Gas Chromatograph/ Mass Spectrometer (GC/MS) method applicable to the determination of the compounds listed in the U.S.E.P.A. Manual entitled "Test Procedures for the Analysis of Organic Pollutants".

An HP5996 GC/MS was used with a capillary column.

Method detection limits are as stated.

Soil samples are prepared for analysis as prescribed in Method 8240/8260 from SW-846.

LABORATORY CHRONICLE

RECEIPT/REFRIGERATION 1/20/94

ORGANICS
EXTRACTION

1. Acids NA
2. Base/Neutrals NA
3. Pesticides/PCB's/Herbicides NA
4. Petroleum Hydrocarbons/Oil & Grease NA

ANALYSIS

1. Volatiles 1/24/94
2. Acids NA
3. Base/Neutrals NA
4. Pesticides/PCB's/Herbicides NA
5. Petroleum Hydrocarbons/Oil & Grease NA
6. Total Organic Carbon NA

Section Supervisor
Review & Approval Jeffrey G Martin

INORGANICS

1. Metals NA
2. Cyanides NA
3. Phenols NA

OTHER ANALYTES

Section Supervisor
Review & Approval NA

Quality Control Supervisor
Review & Approval

Laboratory Director
Review & Approval Richard W Ryan

If fractions are re-extracted and re-analyzed because initial endeavors did not meet quality control acceptance criteria, include dates for both.

RESULT SUMMARY

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER	US ARMY FT. MONMOUTH NJ	MATRIX	Soil
SAMPLE NUMBER	80189	DILUTION FACTOR	125.00
CLIENT ID	A-NEAR FOUNDATION BLDG 210	COMMENTS	HNU NA
DATA FILE	>A4850	DATE ANALYZED	01/24/94

COMPOUND	UG/KG	MDL	COMPOUND	UG/KG	MDL
Acrolein	ND	7400	2-Chloroethylvinylether	ND	1500
Acrylonitrile	ND	7400	2-Hexanone	ND	1500
Chloromethane	ND	1500	trans-1,3-Dichloropropene	ND	740
Bromomethane	ND	1500	Toluene	ND	740
Vinyl Chloride	ND	1500	cis-1,3-Dichloropropene	ND	740
Chloroethane	ND	1500	1,1,2,2-Tetrachloroethane	ND	740
Acetone	620 J	1500	1,1,2-Trichloroethane	ND	740
1,1-Dichloroethene	ND	740	4-Methyl-2-pentanone	ND	1500
Carbon Disulfide	ND	1500	Tetrachloroethene	ND	740
Methylene Chloride	220 JB	740	Dibromochloromethane	ND	740
1,2-Dichloroethene(trans)	ND	740	Chlorobenzene	ND	740
1,1-Dichloroethane	ND	740	Ethylbenzene	ND	740
Vinyl Acetate	ND	740	m&p-Xylenes	420 J	740
2-Butanone	ND	1500	o-Xylene	ND	740
Chloroform	ND	740	Styrene	ND	740
1,1,1-Trichloroethane	2500	740	Bromoform	ND	740
Carbon Tetrachloride	ND	740	m-Dichlorobenzene	ND	740
1,2-Dichloroethane	ND	740	p-Dichlorobenzene	ND	740
Benzene	ND	740	o-Dichlorobenzene	ND	740
Trichloroethene	ND	740	Methyl Tertiary Butyl Ether	ND	1500
1,2-Dichloropropane	ND	740	Tertiary Butyl Alcohol	ND	7400
Bromodichloromethane	ND	740			

SURROGATE COMPOUNDS	% RECOVERY	LIMITS	STATUS
1,2-Dichloroethane-d4	106	70 - 121	OK
Toluene-d8	105	81 - 117	OK
Bromofluorobenzene	101	74 - 121	OK

Percent Solid of 84.0 is used for all Target compounds.

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

E1

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NUMBER

A NEAR FOUND.

Client Name: US ARMY FT. MONMOUTH, NJ

Client ID: BLDG 210

Matrix: (soil/water) SOIL

Lab Samole ID: B0189

Sample wt/vol: .04 (g/mL) g

Lab File ID: >A4850

Level: MED

Date Received: 01/20/94

Moisture: 16

Date Analyzed 01/24/94

Column: CAP

Dilution Factor: 125

Number TICs Found 19

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

	CAS NUMBER	COMPOUND NAME	RT	EST CONC
1	3073663	Cyclohexane, 1,1,3-trimethyl- (8CI9CI)	16.08	3600
2	7667609	Cyclohexane, 1,2,4-trimethyl-, (1.alpha.,2.b	16.45	3800
3	2216333	Octane, 3-methyl- (8CI9CI)	16.66	2300
4	4926787	Cyclohexane, 1-ethyl-4-methyl-, cis- (8CI9CI	17.40	2600
5	53941198	2-Hexene, 3,4,4-trimethyl- (9CI)	17.97	6200
6	1678928	Cyclohexane, propyl- (8CI9CI)	18.51	7500
7	4291809	Cyclohexane, 1-methyl-3-propyl- (8CI9CI)	19.76	3600
8	1074551	Benzene, 1-methyl-4-propyl- (9CI)	20.81	5100
9	1678984	Cyclohexane, (2-methylpropyl)- (9CI)	20.95	8000
10	141935	Benzene, 1,3-diethyl- (9CI)	21.63	6800
11	91178	Naphthalene, decahydro- (8CI9CI)	21.89	14000
12	32281859	Cyclopentane, 2-isopropyl-1,3-dimethyl- (8CI	22.40	2600
13	2870044	Benzene, 2-ethyl-1,3-dimethyl- (9CI)	22.52	12000
14	767588	1H-Indene, 2,3-dihydro-1-methyl- (9CI)	22.77	11000
15	527855	Benzamide, 2-methyl- (9CI)	23.10	9900
16	527537	Benzene, 1,2,3,5-tetramethyl- (8CI9CI)	23.27	6500
17	1196583	Benzene, (1-ethylpropyl)- (8CI9CI)	23.50	12000
18	18321363	Benzene, (1,1-dimethyl-2-propenyl)- (9CI)	23.81	3700
19	767997	Benzene, (1-methyl-1-propenyl)-, (Z)- (9CI)	23.90	5800

DATA PACKAGE

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER	US ARMY FT. MONMOUTH NJ	MATRIX	Soil
SAMPLE NUMBER	80189	DILUTION FACTOR	125.00
CLIENT ID	A-NEAR FOUNDATION BLDG 210	COMMENTS	HNU NA
DATA FILE	>A4850	DATE ANALYZED	01/24/94

COMPOUND	UG/KG	MDL	COMPOUND	UG/KG	MDL
Acrolein	ND	7400	2-Chloroethylvinylether	ND	1500
Acrylonitrile	ND	7400	2-Hexanone	ND	1500
Chloromethane	ND	1500	trans-1,3-Dichloropropene	ND	740
Bromomethane	ND	1500	Toluene	ND	740
Vinyl Chloride	ND	1500	cis-1,3-Dichloropropene	ND	740
Chloroethane	ND	1500	1,1,2,2-Tetrachloroethane	ND	740
Acetone	620 J	1500	1,1,2-Trichloroethane	ND	740
1,1-Dichloroethene	ND	740	4-Methyl-2-pentanone	ND	1500
Carbon Disulfide	ND	1500	Tetrachloroethene	ND	740
Methylene Chloride	220 JB	740	Dibromochloromethane	ND	740
1,2-Dichloroethene(trans)	ND	740	Chlorobenzene	ND	740
1,1-Dichloroethane	ND	740	Ethylbenzene	ND	740
Vinyl Acetate	ND	740	m&p-Xylenes	420 J	740
2-Butanone	ND	1500	o-Xylene	ND	740
Chloroform	ND	740	Styrene	ND	740
1,1,1-Trichloroethane	2500	740	Bromoform	ND	740
Carbon Tetrachloride	ND	740	m-Dichlorobenzene	ND	740
1,2-Dichloroethane	ND	740	p-Dichlorobenzene	ND	740
Benzene	ND	740	o-Dichlorobenzene	ND	740
Trichloroethene	ND	740	Methyl Tertiary Butyl Ether	ND	1500
1,2-Dichloropropane	ND	740	Tertiary Butyl Alcohol	ND	7400
Bromodichloromethane	ND	740			

SURROGATE COMPOUNDS	% RECOVERY	LIMITS	STATUS
1,2-Dichloroethane-d4	106	70 - 121	OK
Toluene-d8	105	81 - 117	OK
Bromofluorobenzene	101	74 - 121	OK

Percent Solid of 84.0 is used for all Target compounds.

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

E1

EPA SAMPLE NUMBER

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

A NEAR FOUND.

Client Name: US ARMY FT. MONMOUTH, NJ

Client ID: BLDG 210

Matrix: (soil/water) SOIL

Lab Sample ID: B0189

Sample wt/vol: .04 (g/mL) g

Lab File ID: >A4850

Level: MED

Date Received: 01/20/94

% Moisture: 16

Date Analyzed 01/24/94

Column: CAP

Dilution Factor: 125

Number TICs Found 19

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

	CAS NUMBER	COMPOUND NAME	RT	EST CONC
1	3073663	Cyclohexane, 1,1,3-trimethyl- (8CI9CI)	16.08	3600
2	7667609	Cyclohexane, 1,2,4-trimethyl-, (1.alpha.,2.b	16.45	3800
3	2216333	Octane, 3-methyl- (8CI9CI)	16.66	2300
4	4926787	Cyclohexane, 1-ethyl-4-methyl-, cis- (8CI9CI	17.40	2600
5	53941198	2-Hexene, 3,4,4-trimethyl- (9CI)	17.97	6200
6	1678928	Cyclohexane, propyl- (8CI9CI)	18.51	7500
7	4291809	Cyclohexane, 1-methyl-3-propyl- (8CI9CI)	19.76	3600
8	1074551	Benzene, 1-methyl-4-propyl- (9CI)	20.81	5100
9	1678984	Cyclohexane, (2-methylpropyl)- (9CI)	20.95	8000
10	141935	Benzene, 1,3-diethyl- (9CI)	21.63	6800
11	91178	Naphthalene, decahydro- (8CI9CI)	21.89	14000
12	32281859	Cyclopentane, 2-isopropyl-1,3-dimethyl- (8CI	22.40	2600
13	2870044	Benzene, 2-ethyl-1,3-dimethyl- (9CI)	22.52	12000
14	767588	1H-Indene, 2,3-dihydro-1-methyl- (9CI)	22.77	11000
15	527855	Benzamide, 2-methyl- (9CI)	23.10	9900
16	527537	Benzene, 1,2,3,5-tetramethyl- (8CI9CI)	23.27	6500
17	1196583	Benzene, (1-ethylpropyl)- (8CI9CI)	23.50	12000
18	18321363	Benzene, (1,1-dimethyl-2-propenyl)- (9CI)	23.81	3700
19	767997	Benzene, (1-methyl-1-propenyl)-, (Z)- (9CI)	23.90	5800

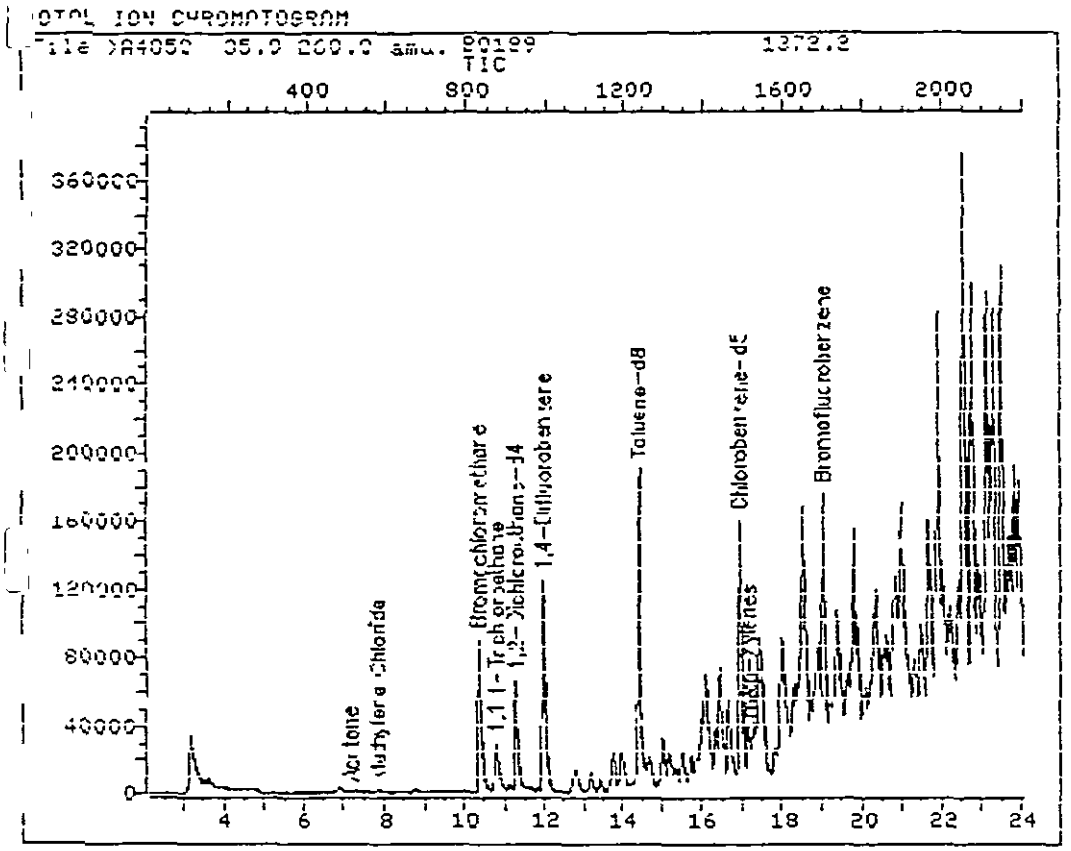
QUANT REPORT

O rator ID: MANAGER Quant Rev: 6 Quant Time: 940124 15:59
O put File: ^A4850::QT Injected at: 940124 15:30
Data File: >A4850::D3 Dilution Factor: 1.00000
N me: B0189
M oc: 1372.2 0.04g

ID File: ID0127::M1
T le: USEPA 624 VOLATILES
L st Calibration: 940124 12:30

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*Bromochloromethane	10.33	827	62275	50.00	UG/L	100
)	Acetone	7.15	507	2693	4.14	UG/L	90
1)	Methylene Chloride	7.82	574	3054	1.52	UG/L	67
2.)	1,1,1-Trichloroethane	10.78	872	44992	17.03	UG/L	100
23)	1,2-Dichloroethane-d4	11.26	920	117014	52.92	UG/L	100
.)	*1,4-Difluorobenzene	11.95	989	287817	50.00	UG/L	100
)	Toluene-d8	14 40	1236	306843	52.28	UG/L	100
35,	*Chlorobenzene-d5	16.91	148`	246205	50.00	UG/L	100
4)	m&p-Xylenes	17.12	1509	16637	2.81	UG/L	73
4)	Bromofluorobenzene	19.00	1697	142082	50.60	UG/L	100

* Compound is ISTD



Data File: >A4850::03 Quant Output File: ^A4850::QT
Name: B0189
Misc: 1372.2 0 04g

Id File: ID0127::M1
Title: USEPA 624 VOLATILES
Last Calibration: 940124 12:30

Operator ID: MANAGER
Quant Time: 940124 15:59
Injected at: 940124 15:30

Q C RESULTS

21st Century Environmental Inc
SOIL VOLATILE SURROGATE RECOVERY

SAMPLE NO.	S1 (DCE)#	S2 (TOL)#	S3 (BFB)#	TOT OUT
BLANK	101	99	102	0
MeOH BLK	102	102	96	0
B0190	104	101	100	0
B0189	106	105	101	0
B0100MS	96	96	91	0
B0100MSD	97	95	91	0

	QC LIMITS
S1 (DCE) = 1.2-Dichloroethane-d4	70-121
S2 (TOL) = Toluene-d8	81-117
S3 (BFB) = Bromofluorobenzene	74-121

Column used to flag surrogate recovery values

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Contract:N/A

Lab Code: Case No.: N/A SAS No.: N/A SDG No.: N/A

Matrix Spike - EPA Sample No.: B0100 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	50.0	ND	37.9	76	59-172
Trichloroethene	50.0	ND	38.1	76	62-137
Benzene	50.0	ND	45.9	92	66-142
Toluene	50.0	ND	44.4	89	59-139
Chlorobenzene	50.0	ND	52.8	106	60-133

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC
1,1-Dichloroethene	50.00	39.3	79	4	22	59-172
Trichloroethene	50.00	42.9	86	12	24	62-137
Benzene	50.00	51.0	102	9	21	66-142
Toluene	50.00	49.4	99	11	21	59-139
Chlorobenzene	50.00	60.9	122	14	21	60-133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of qc limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

COMMENTS: _____

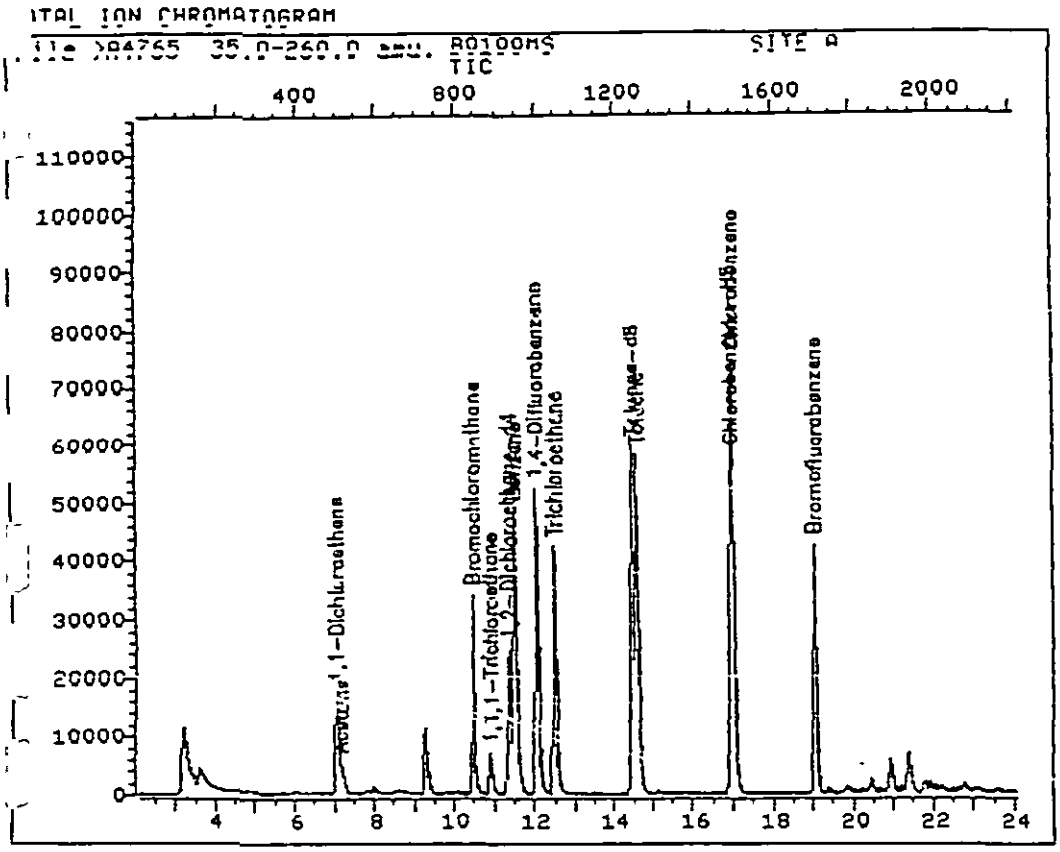
QUANT REPORT

C erator ID: JEFF Quant Rev: 6 Quant Time: 940104 16:01
C tput File: ^A4765::D4 Injected at: 940104 15:33
Data File: >A4765::D6 Dilution Factor: 1.00000
" me: B0100MS
sc: SITE A 5g

ID File: ID0127::M1
T tle: USEPA 624 VOLATILES
L_st Calibration: 940104 13:31

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*Bromochloromethane	10.45	840	24488	50.00	UG/L	100
^)	Acetone	7.17	510	18014	113.54	UG/L	82
1)	1,1-Dichloroethene	7.05	498	35530	37.87	UG/L	100
21)	1,1,1-Trichloroethane	10.90	885	13429	12.19	UG/L	100
23)	1,2-Dichloroethane-d4	11.36	931	42382	48.23	UG/L	100
)	*1,4-Difluorobenzene	12.03	999	124046	50.00	UG/L	100
)	Benzene	11.48	944	110391	45.86	UG/L	100
27)	Trichloroethene	12.49	1045	37465	38.10	UG/L	80
)	Toluene-d8	14.46	1243	114665	47.86	UG/L	100
)	Toluene	14.58	1255	114815	44.39	UG/L	98
35)	*Chlorobenzene-d5	16.93	1492	85966	50.00	UG/L	100
4?)	Chlorobenzene	16.98	1497	85058	52.78	UG/L	96
)	Bromofluorobenzene	19.03	1703	41837	45.70	UG/L	100

* Compound is ISTD



Data File: >A4765::D6 Quant Output File: ^A4765::D4
Name: B0100MS
Misc: SITE A 5g

Id File: ID0127::M1
Title: USEPA 624 VOLATILES
Last Calibration: 940104 13:31

Operator ID: JEFF
Quant Time: 940104 16:01
Injected at: 940104 15:33

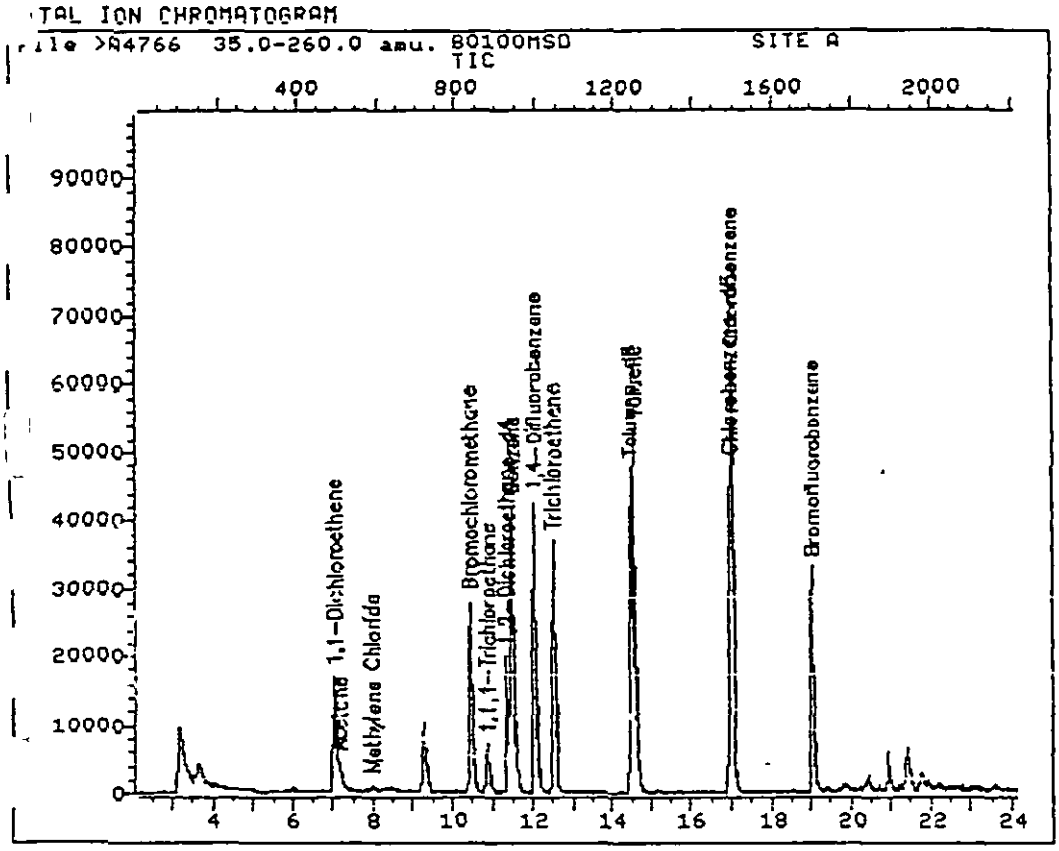
QUANT REPORT

Operator ID: JEFF Quant Rev: 6 Quant Time: 940104 16:32
Output File: ^A4766::D4 Injected at: 940104 16:04
Data File: >A4766::D6 Dilution Factor: 1.00000
Name: B0100MSD
Misc: SITE A 5g

ID File: ID0127::M1
Title: USEPA 624 VOLATILES
Last Calibration: 940104 13:31

	Compound	R.T.	Scan#	Area	Conc	Units	q
1)	*Bromochloromethane	10.44	831	20084	50.00	UG/L	100
9)	Acetone	7.16	501	18604	142.98	UG/L	86
1)	1,1-Dichloroethene	7.04	489	30201	39.25	UG/L	100
1)	Methylene Chloride	7.98	584	2168	3.81	UG/L	74
21)	1,1,1-Trichloroethane	10.88	876	14073	15.57	UG/L	100
2)	1,2-Dichloroethane-d4	11.35	923	35106	48.71	UG/L	100
2)	*1,4-Difluorobenzene	12.04	992	98300	50.00	UG/L	100
2)	Benzene	11.48	936	97214	50.56	UG/L	100
27)	Trichloroethene	12.49	1038	33421	42.89	UG/L	79
3)	Toluene-d8	14.46	1236	89980	47.39	UG/L	100
3)	Toluene	14.58	1248	101148	49.35	UG/L	99
35)	*Chlorobenzene-d5	16.95	1486	68218	50.00	UG/L	100
4)	Chlorobenzene	17.00	1491	77820	60.85	UG/L	94
4)	Bromofluorobenzene	19.04	1697	33130	45.60	UG/L	100

* Compound is ISTD



Data File: >A4766::D6 Quant Output File: ^A4766::D4
Name: 80100MSD
Misc: SITE A 5g

Id File: ID0127::M1
Title: USEPA 624 VOLATILES
Last Calibration: 940104 13:31

Operator ID: JEFF
Quant Time: 940104 16:32
Injected at: 940104 16:04

21st Century Environmental Inc.

GC/MS STANDARD o-BROMOFLUOROBENZENE (BFB) TUNE
CRITERIA FOR VOLATILES 50ng

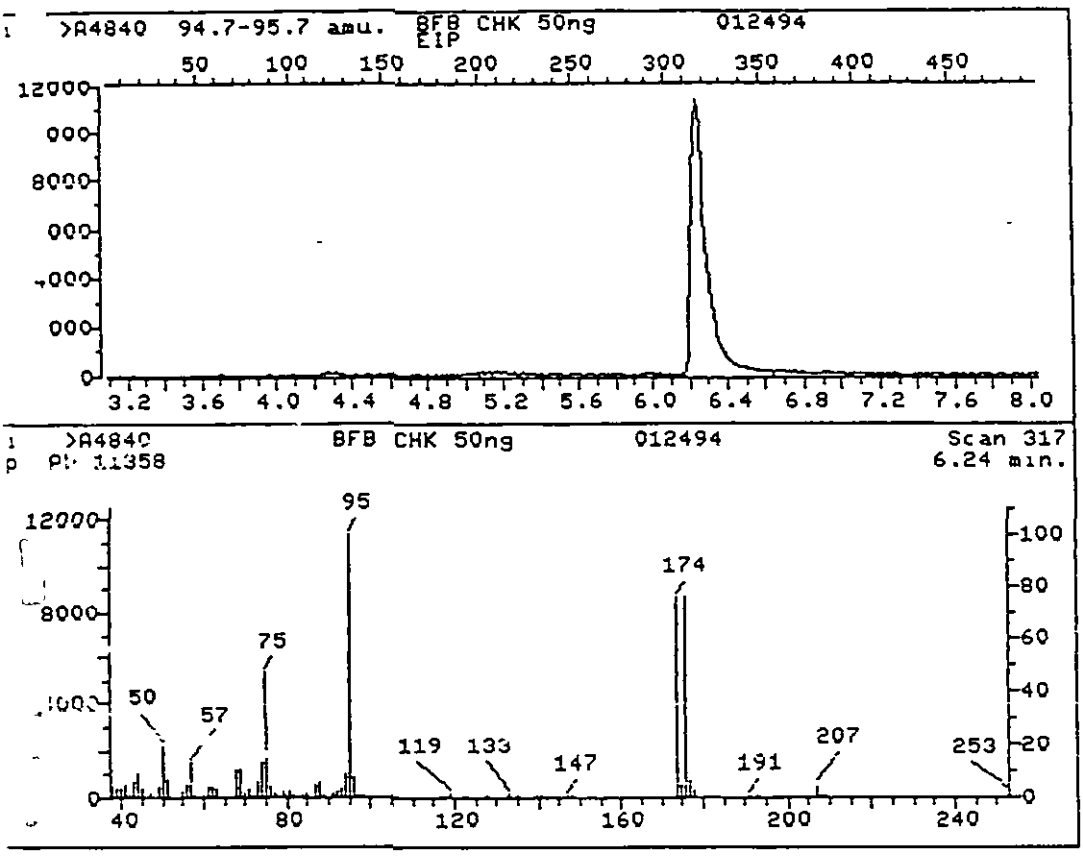
DATE AND TIME OF INJECTION: 1/24/94 9:32
INSTRUMENT ID: 5995

DATA RELEASE AUTHORIZED BY Richard W Lynch

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	Apropriate Peak	Status
50	15-40% of mass 95	19.31	19.31	Ok
75	30-60% of mass 95	47.11	47.11	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	7.58	7.58	Ok
173	Less than 2% of mass 174	0.00	0 00	Ok
174	Greater than 50% of mass 95	75.97	75.97	Ok
175	5-9% of mass 174	5.15	6.78	Ok
176	95-101% of mass 174	75.69	99.63	Ok
177	5-9% of mass 176	5.53	7.30	Ok

THIS PERFORMANCE AFFECTS ALL SAMPLES
STANDARDS AND BLANKS LISTED BELOW

SAMPLE ID	LAB ID		DATE TIME
I>A4840::D21	BFB CHK 50ng		1/24/94 9:32
I>A4841::D21	HSL CAL CHK 50ppb		1/24/94 10:11
I>A4842::D31	BLANK		1/24/94 11:19
I>A4843::D31	A5714		1/24/94 11:52
I>A4844::D31	MeOH BLK		1/24/94 12:23
I>A4845::D31	B0176		1/24/94 12:55
I>A4846::D31	B0177		1/24/94 13:25
I>A4847::D31	B0178		1/24/94 13:56
I>A4848::D31	B0179		1/24/94 14:27
I>A4849::D31	B0190		1/24/94 14:58
I>A4850::D31	B0189		1/24/94 15:30



> 840 BFB CHK 50ng 012494
317 NRM

File: >A4840 Scan #: 317 Retn. time: 6.24

m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.
36.95	5.318	56.95	13.127	76.90	1.963	94.00	9.429	142.80	.431
37.95	4.120	57.90	.704	77.90	.960	95.00	100.000	147.00	.625
38.85	3.610	59.90	1.321	78.90	2.342	96.00	7.581	147.90	.599
39.85	3.469	60.90	4.288	79.80	.819	97.05	.757	173.85	75.973
40.95	4.728	61.90	4.068	80.90	2.439	98.05	.757	174.95	5.151
41.95	1.127	62.90	3.134	81.90	.977	104.95	.792	175.95	75.691
42.95	5.520	67.90	10.486	82 90	1.021	105.85	.581	176.95	5.529
43.95	8.928	68.90	10.961	84.00	.678	116.85	.960	178.05	2.280
44.95	3.002	70.00	1.682	85.00	2.122	118.95	1.699	179.05	.467
45.95	1.356	71.00	3.786	87.00	5.432	127.95	.634	191.05	.704
48.95	4.173	71.90	.669	87.90	5.635	131.05	.502	193.05	.634
49.95	19.308	73.00	5.494	88.90	.652	133.05	1.699	207.05	4.569
50.95	6.612	74.00	13.691	91.00	1.911	135.00	1.197	208.05	.942
54.95	2.553	74.90	47.112	92.00	2.324	139.50	.511	208.95	.678
56.05	5.071	76.00	4.129	93.00	3.302	140.90	.590	252.95	.933

Continuing Calibration Check
HSL Compounds

a: No: _____ Calibration Date: 01/24/94 _____

or**actor: 21st Century Env. _____ Time: 10:11 _____

ol...act No: _____ Laboratory ID: >A4841 _____

n ument ID: Volatile Inst A _____ Initial Calibration Date: 01/24/94 _____

Minimum $\overline{RF}$ for SPCC is .300 Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
h omethane	.76590	.68794	10.18		**	
Bromomethane	.33516	.32480	3.09			
Vinyl Chloride	.87317	.83366	4.53	*		
Ch oethane	.41050	.38144	7.08			
ic ein	.03048	.03345	9.78			(Conc=100.00)
,1,2-Trichlorotrifluoroethane	2.06846	2.18973	5.86			
Tr lorofluoromethane	2.82415	3.12304	10.58			
Ac ne	.46000	.52257	13.60			
,1-Dichloroethene	1.75983	2.11149	19.98	*		
Ca n Disulfide	3.33519	3.02830	9.20			
ic lonitrile	.39229	.43289	10.35			
le ylene Chloride	1.40786	1.61779	14.91			
,2-Dichloroethene(trans)	1.66657	1.91550	14.94			
Te iary Butyl Alcohol	.81807	.87909	7.46			(Conc=100.00)
Me yl Tertiary Butyl Ether	.93981	.79020	15.92			
1,1-Dichloroethane	2.70827	2.85976	5.59		**	
Vi l Acetate	3.92861	4.44372	13.11			
2- tanone	.82155	.87168	6.10			
Chloroform	2.64749	2.87534	8.61	*		
1,1,1-Trichloroethane	1.92247	2.12120	10.34			
Ca n Tetrachloride	1.55874	1.82665	17.19			
1,2-Dichloroethane-d4	1.52782	1.77548	16.21			(Conc=50.00)
,2-Dichloroethane	.36014	.37757	4.84			
Be ene	.95503	1.00448	5.18			
Tr loroethene	.32725	.34881	6.59			
1,2-Dichloropropane	.35481	.36804	3.73	*		
Br odichloromethane	.40710	.44241	8.67			
2 loroethylvinylether	.21090	.25338	20.14			
2-He xanone	.25974	.27583	6.20			
rans-1,3-Dichloropropene	.52489	.55217	5.20			
To ene-d8	1.02332	1.01962	.36			
To ene	1.07547	1.12757	4.84	*		

RF - Response Factor from daily standard file at 50.00 UG/L

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%D f - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

No: Calibration Date: 01/24/94

ractor: 21st Century Env. Time: 10:11

ontract No: Laboratory ID: >A4841

rument ID: Volatile Inst A Initial Calibration Date: 01/24/94

Minimum $\overline{RF}$ for SPCC is .300 Maximum % Diff for CCC is 25%

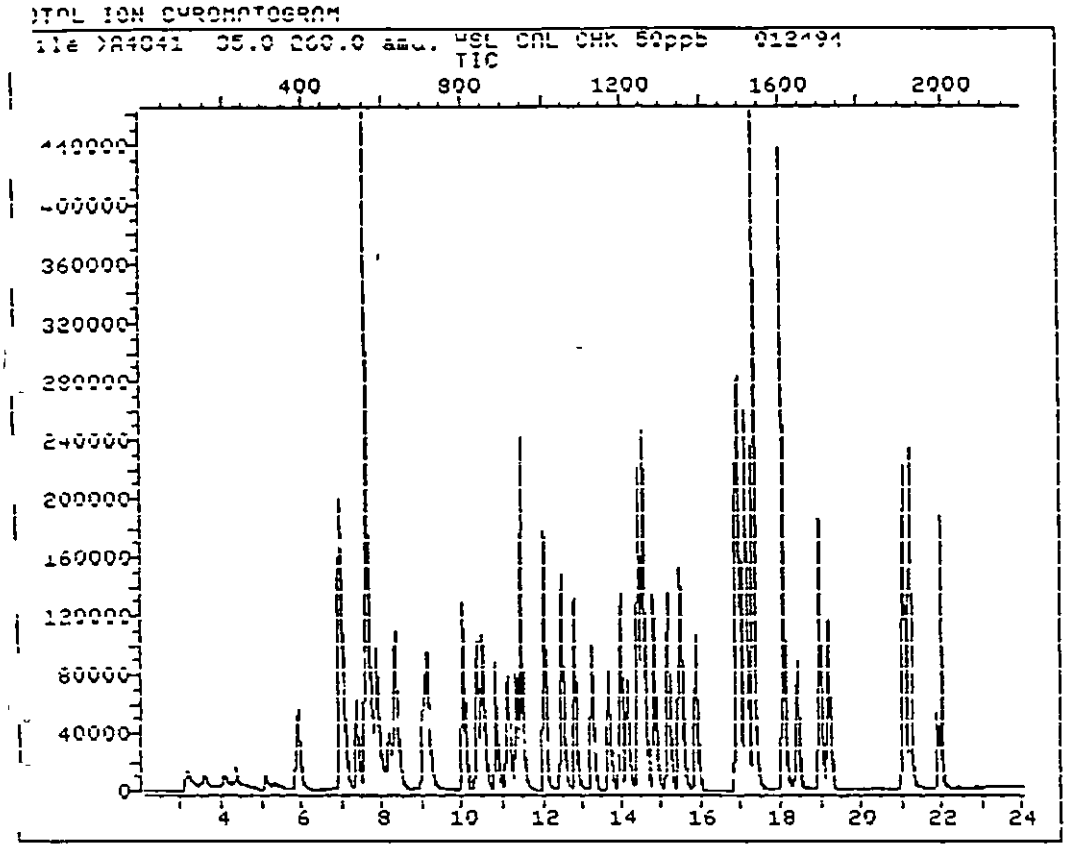
Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
1,3-Dichloropropene	.55309	.57136	3.30			
,1,2,2-Tetrachloroethane	.53857	.55497	3.05		**	
2-Trichloroethane	.35038	.35513	1.36			
thyl-2-pentanone	.31335	.32235	2.87			
achloroethene	.39637	.39762	.32			
Dibromochloromethane	.41115	.44179	7.45			
robenzene	.91272	.92298	1.12		**	
lbenzene	1.51192	1.54863	2.43	*		
-Xylenes	1.15341	1.20201	4.21			(Conc=100.00)
ylene	1.11787	1.17668	5.26			
ene	.86752	.92356	6.46			
Bromoform	.32111	.31960	.47		**	
nofluorobenzene	.59078	.57027	3.47			
ichlorobenzene	.71706	.73751	2.85			
Dichlorobenzene	.76134	.77851	2.26			
-Dichlorobenzene	.68234	.34766	49.05			

- Response Factor from daily standard file at 50.00 UG/L

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)



Data File: >A4841::D2 Quant Output File: ^A4841::D1
Name: HSL CAL CHK 50ppb
Misc: 012494

Id File: ID0127::M1
Title: USEPA 624 VOLATILES
Last Calibration: 940121 16:02

Operator ID: MANAGER
Quant Time: 940124 10:42
Injected at: 940124 10:11

21st Century Environmental Inc.

GC/MS STANDARD p-BROMOFLUOROBENZENE (BFB) TUNE
CRITERIA FOR VOLATILES 50ng

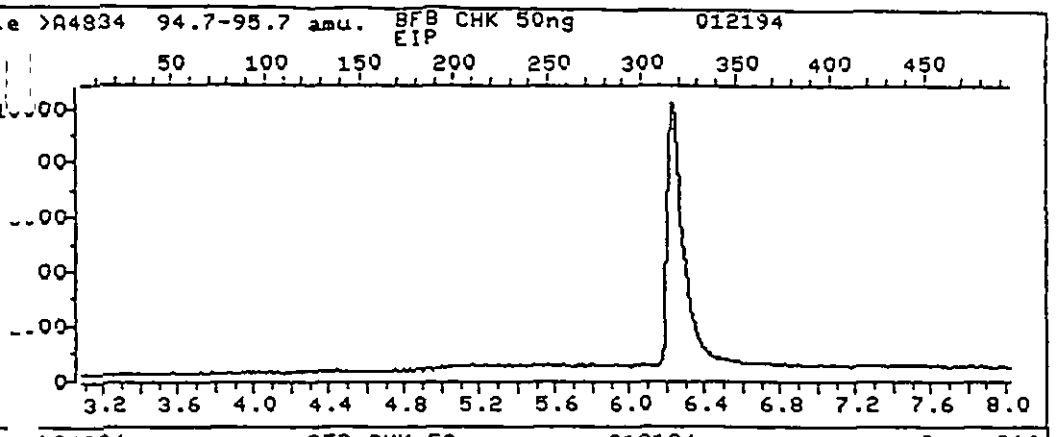
DATE AND TIME OF INJECTION: 1/21/94 13:36
INSTRUMENT ID: 5995

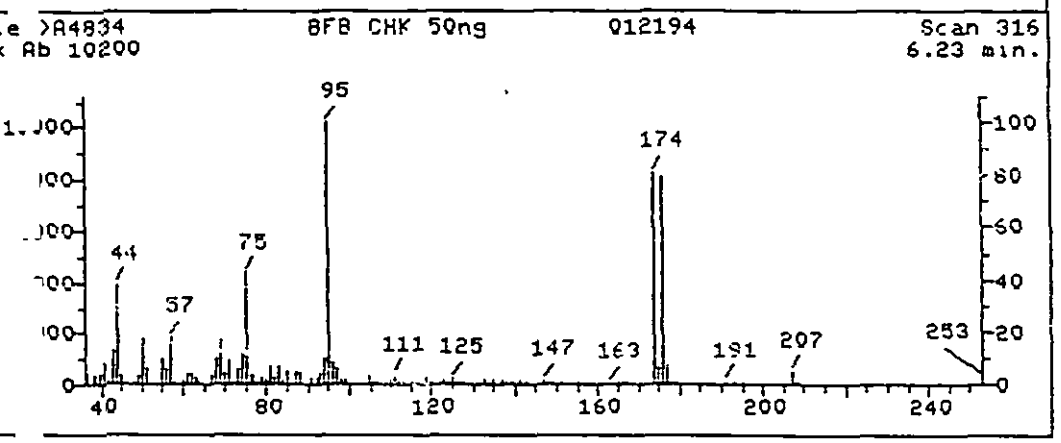
DATA RELEASE AUTHORIZED BY Richard W Lynch

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	Appropriate Peak	Status
50	15-40% of mass 95	17.56	17.56	Ok
75	30-60% of mass 95	42.66	42.66	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	8.50	8.50	Ok
173	Less than 2% of mass 174	0.00	0.00	Ok
174	Greater than 50% of mass 95	80.94	80.94	Ok
175	5-9% of mass 174	5.73	7.07	Ok
176	95-101% of mass 174	79.79	98.58	Ok
177	5-9% of mass 176	6.35	7.96	Ok

THIS PERFORMANCE AFFECTS ALL SAMPLES
STANDARDS AND BLANKS LISTED BELOW

SAMPLE ID		LAB ID		DATE TIME
>A4834::D2		BFB CHK 50ng		1/21/94 13:36
>A4835::D2		HSL CAL CHK 50ppb		1/21/94 14:18
>A4836::D2		HSL CAL CHK 20ppb		1/21/94 14:56
>A4837::D2		HSL CAL CHK 100ppb		1/21/94 15:32
>A4838::D2		HSL CAL CHK 150ppb		1/21/94 16:15
>A4839::D2		HSL CAL CHK 200ppb		1/21/94 16:51





A4834 BFB CHK 50ng 012194
16 NRM

: >A4834 Scan #: 316 Retn. time: 6.23

m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.
85	.990	61.90	3.990	85.00	5.284	116.85	1.206	149.00	1.010
85	4.549	62.90	2.853	86.90	5.039	118.95	2.304	151.00	1.000
37.95	3.765	63.80	1.069	87.90	4.873	119.95	.706	155.00	.627
95	3.422	67.00	3.578	90.90	2.618	121.95	.706	163.10	.784
85	4.294	67.90	9.971	92.00	2.618	122.95	1.667	165.10	.765
40.95	8.363	68.90	17.010	92.90	4.196	124.05	.882	166.10	.520
41.95	2.167	70.00	4.157	94.00	10.294	125.05	2.559	167.10	.647
95	13.520	71.00	8.804	95.00	100.000	125.95	.971	173.85	80.941
85	38.284	71.90	1.078	96.00	8.500	127.05	1.127	174.85	5.725
44.95	3.294	72.90	5.608	96.95	6.137	127.85	.794	175.85	79.794
85	.784	73.90	12.441	97.95	1.451	132.95	2.078	176.85	6.353
95	3.657	74.90	42.657	99.05	1.667	134.90	1.706	178.05	.696
49.95	17.559	76.00	3.735	104.95	3.059	137.00	1.333	179.05	.637
95	6.147	76.90	3.196	105.85	1.000	138.00	.539	190.95	1.059
95	.873	77.90	1.235	106.95	1.029	139.10	1.225	193.05	.892
.95	10.353	78.90	2.667	108.95	2.637	139.70	.676	194.95	.657
55.95	5.716	80.00	1.490	109.95	1.373	140.90	1.382	206.95	5.324
95	17.941	80.90	6.314	110.95	3.657	142.80	.696	208.05	1.069
00	1.137	81.90	2.480	112.05	1.176	147.00	1.461	208.95	.941
59.90	1.510	83.00	6.324	113.05	1.275	147.90	.578	252.95	1.843
90	4.265	84.00	1.706	114.95	618				

Initial Calibration Data
HSL Compounds

Lab No: Instrument ID: Volatile Inst A

Contractor: 21st Century Env. Calibration Date: 01/24/94

Contract No:

Minimum $\overline{RF}$ for SPCC is .300 Maximum % RSD for CCC is 30%

Laboratory ID:	>A4836	>A4835	>A4837	>A4838	>A4839					
Compound	RF 20.00	RF 50.00	RF 100.00	RF 150.00	RF 200.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC
Chloromethane	.70746	.56744	.75755	.76844	.02864	.389	.76590	21.839		**
Bromomethane	.29365	.26416	.36013	.34758	.41029	.489	.33516	17.131		
Vinyl Chloride	.79968	.72180	.93176	.97687	.93576	.418	.87317	12.337	*	
Chloroethane	.36882	.26846	.53329	.41577	.46615	.512	.41050	24.396		
Acrolein	.03368	.02905	.02770	.03259	.02934	.648	.03048	8.321		(Conc=40.0,100.0,200.0,30
1,1,2-Trichlorotrifluoroethane	1.93647	2.00172	2.17351	2.18813	2.04249	.669	2.06846	5.291		
Trichlorofluoromethane	2.69108	2.66170	2.98557	2.98303	2.79938	.669	2.82415	5.486		
Acetone	.46890	.52941	.38495	.48183	.43490	.678	.46000	11.725		
1,1-Dichloroethene	1.69872	1.71081	1.76670	1.78840	1.83454	.667	1.75983	3.187	*	
Carbon Disulfide	2.61185	2.65005	3.61694	3.76522	4.03190	.705	3.33519	19.789		
Acrylonitrile	.39717	.37908	.36904	.41372	.40244	.792	.39229	4.597		
Methylene Chloride	1.33483	1.34125	1.46548	1.54310	1.35465	.754	1.40786	6.569		
1,2-Dichloroethene(trans)	1.56915	1.60703	1.68157	1.74748	1.72761	.801	1.66657	4.602		
Tertiary Butyl Alcohol	-	.79130	.69146	.97144	-	.782	.81807	17.345		(Conc=40.0,100.0,200.0,30
Methyl Tertiary Butyl Ether	-	.77898	.96825	1.07219	-	.804	.93981	15.818		
1,1-Dichloroethane	2.63535	2.73837	2.87869	3.01308	2.27583	.869	2.70827	10.365		**
Vinyl Acetate	3.89712	4.11760	4.30850	4.73988	2.57994	.878	3.92861	20.750		
2-Butanone	.98301	.85943	.73645	.85311	.67576	.964	.82155	14.530		
Chloroform	2.48212	2.64326	2.66039	2.76961	2.68208	1 012	2.64749	3.945	*	
1,1,1-Trichloroethane	1.80594	1.95881	1.96108	2.05921	1.82728	1.044	1.92247	5 465		
Carbon Tetrachloride	1.56505	1.60498	1.65518	1.75876	1.20974	1.072	1.55874	13.353		
1,2-Dichloroethane-d4	1 56846	1.59297	1.50639	1.57466	1.39663	1.090	1.52782	5 253		(Conc=50.0,50.0,50.0,50 0
1,2-Dichloroethane	.32233	.34773	.33505	.36414	.43144	.951	.36014	11.872		
Benzene	.92257	.95100	.93568	.95875	1.00714	.952	.95503	3.382		
Trichloroethene	.31162	.33532	.31462	.33089	.34381	1.038	.32725	4.202		
1,2-Dichloropropane	.33438	.34529	.34175	.35869	.39396	1.068	.35481	6 648	*	
Bromodichloromethane	.36980	.39770	39451	.41897	.45453	1.104	.40710	7.796		
2-Chloroethylvinylether	.23640	.23214	.22705	.24159	.11733	1 142	.21090	24 932		
2-Hexanone	28672	.25985	.22571	.26217	.26424	1.302	.25974	8.417		
trans-1,3-Dichloropropene	.48410	.52639	.51289	.54072	.56037	1.166	.52489	5 488		

RF - Response Factor (Subscript is amount in UG/L)

$\overline{RR}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Initial Calibration Data
HSL Compounds

ase No: Instrument ID: Volatile Inst A

ent ractor: 21st Century Env. Calibration Date: 01/24/94

ontract No:

Minimum $\overline{RF}$ for SPCC is .300 Maximum % RSD for CCC is 30%

Laboratory ID:	>A4836	>A4835	>A4837	>A4838	>A4839					
	RF	RF	RF	RF	RF					
Compound	20.00	50.00	100.00	150.00	200.00	RRT	$\overline{RF}$	% RSD	CCC	SPCC
luene-d8	.99297	.97511	1.01279	1.02492	1.11080	1.206	1.02332	5.127		(Conc=50.0,50.0,50.0,50.0
luene	1.01882	1.05126	1.05414	1.07980	1.17331	1.216	1.07547	5.470	*	
s ,3-Dichloropropene	.51502	.56360	.54806	.58607	.55269	.877	.55309	4.674		
1 ,2-Tetrachloroethane	.53670	.55183	.51365	.54788	.54277	1.137	.53857	2.792	**	
,1,2-Trichloroethane	.34089	.36586	.34409	.35875	.34229	.896	.35038	3.206		
Methyl-2-pentanone	.34443	.31404	.28098	.32678	.30051	.920	.31335	7.751		
t chloroethene	.38210	.42014	.39760	.40519	.37682	.915	.39637	4.425		
bromochloroethane	.38501	.42193	.41219	.43655	.40004	.938	.41115	4.817		
lorobenzene	.87292	.93896	.89988	.92331	.92852	1.003	.91272	2.898	**	
h benzene	1.41326	1.49538	1.50634	1.53967	1.60493	1.014	1.51192	4.613	*	
p ylenes	1.09768	1.16898	1.13752	1.13685	1.22601	1.026	1.15341	4.146		(Conc=40.0,100.0,200.0,30
Xylene	1.06166	1.14778	1.10085	1.08149	1.19756	1.068	1.11787	4.903		
y ne	.86700	.91356	.84733	.83719	.87250	1.069	.86752	3.396		
o form	.31196	.34606	.31272	.33637	.29845	1.090	.32111	6.076	**	
omofluorobenzene	.55242	.56786	.59310	.59719	.64334	1.125	.59078	5.867		(Conc=50.0,50.0,50.0,50.0
Dichlorobenzene	.67926	.73107	.70946	.71131	.75421	1.246	.71706	3.880		
D hlorobenzene	.72101	.78913	.75441	.76211	.78002	1.256	.76134	3.473		
Dichlorobenzene	.64964	.70057	.66701	.67496	.71953	1.298	.68234	4.063		

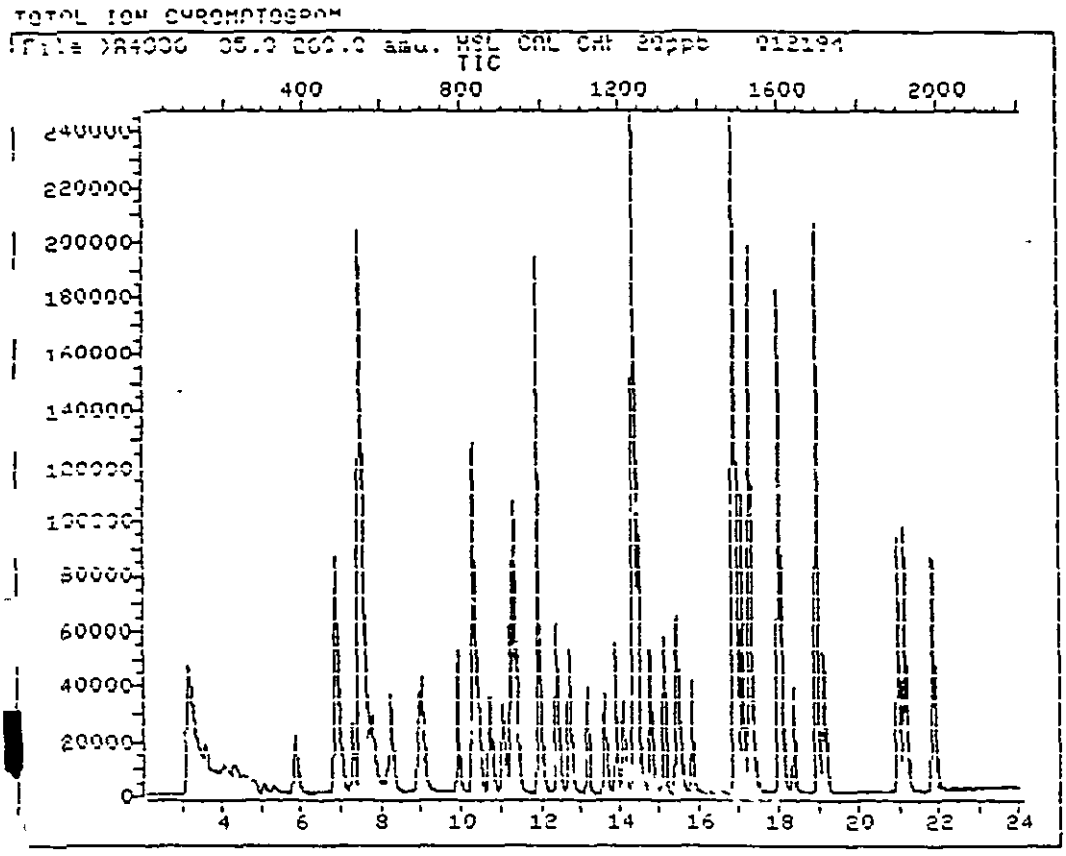
- Response Factor (Subscript is amount in UG/L)

T - Average Relative Retention Time (RT Std/RT Istd)

- Average Response Factor

SD - Percent Relative Standard Deviation

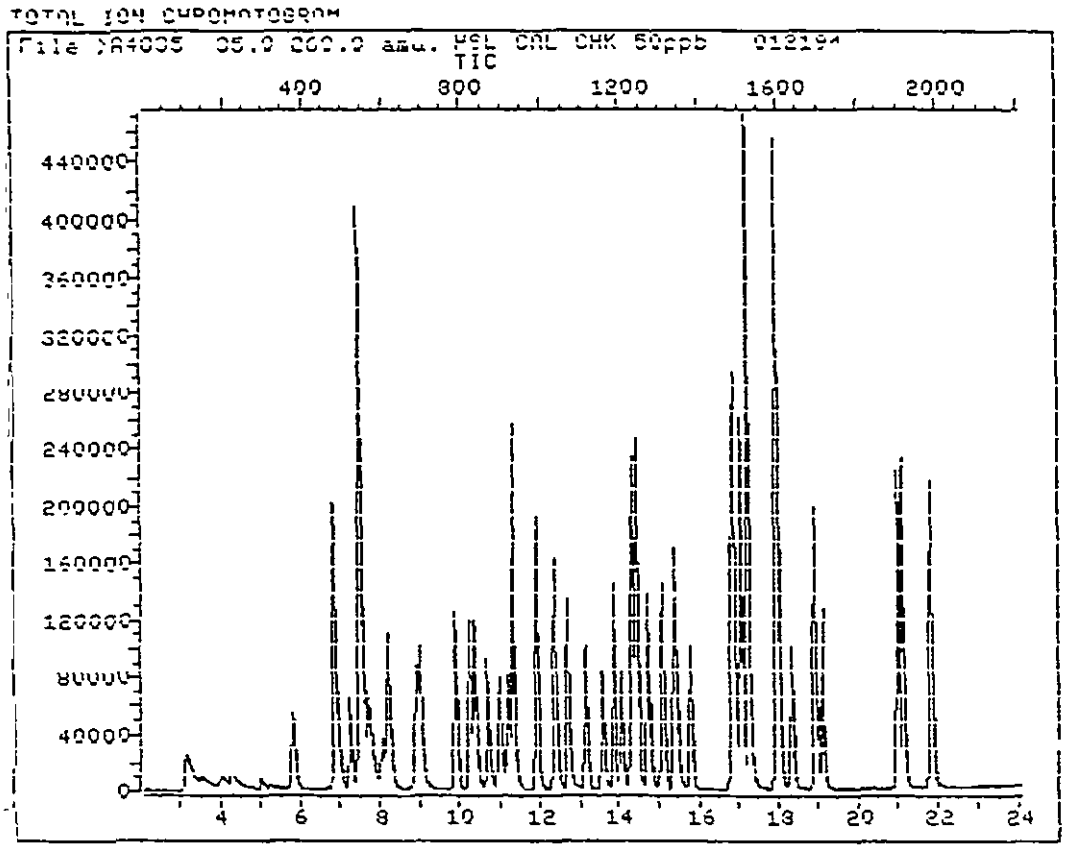
C - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)



Data File: >A4836::D2 Quant Output File: ^A4836::D1
Name: HSL CAL CHK 20ppb
Misc: 012194

Id File: ID0127::M1
Title: USEPA 624 VOLATILES
Last Calibration: 940111 16:12

Operator ID: MANAGER
Quant Time: 940121 15:25
Injected at: 940121 14:56

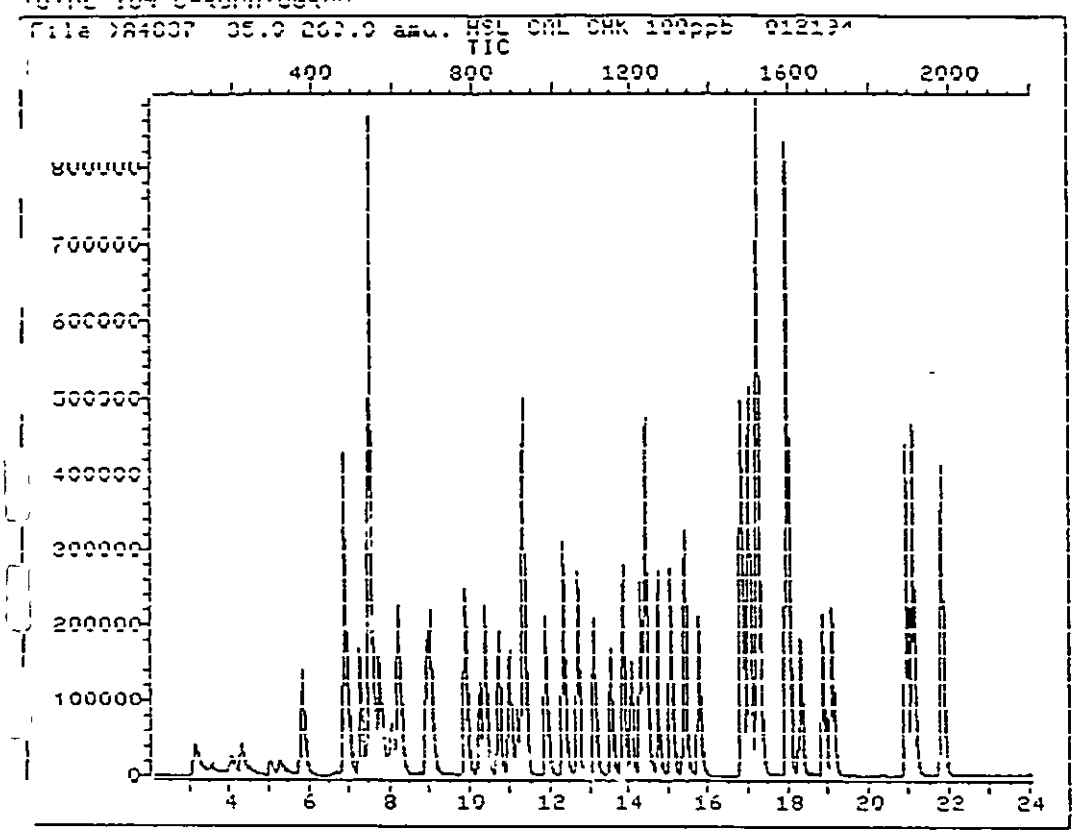


Data File: >A4835::D2 Quant Output File: ^A4835::D1
Name: HSL CAL CHK 50ppb
Misc: 012194

Id File: ID0127::M1
Title: USEPA 624 VOLATILES
Last Calibration: 940111 16:12

Operator ID: MANAGER
Quant Time: 940121 14:57
Injected at: 940121 14:18

TOTAL ION CHROMATOGRAM

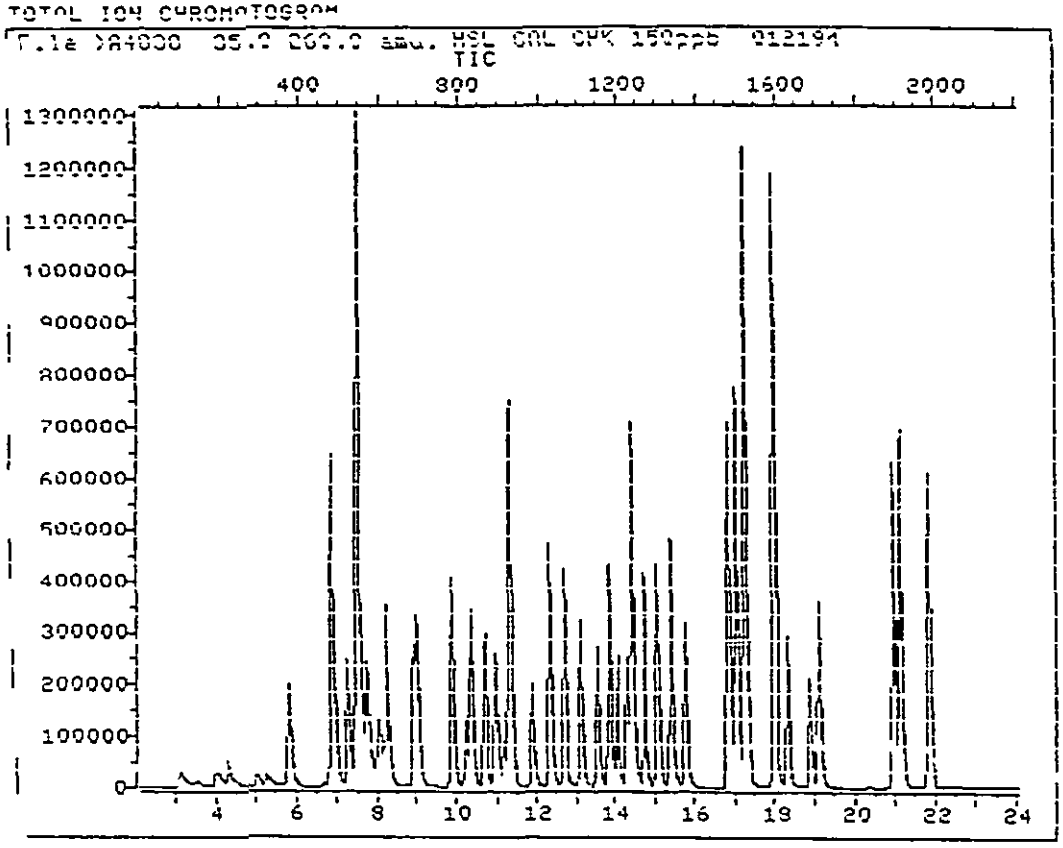


Data File: >A4837::D2 Quant Output File: ^A4837::D1
Name: HSL CAL CHK 100ppb
Misc: 012194

Id File: ID0127::M1
Title: USEPA 624 VOLATILES
Last Calibration: 940121 16:02

Operator ID: MANAGER
Quant Time: 940121 16:04
Injected at: 940121 15:32

TOTAL ION CHROMATOGRAM

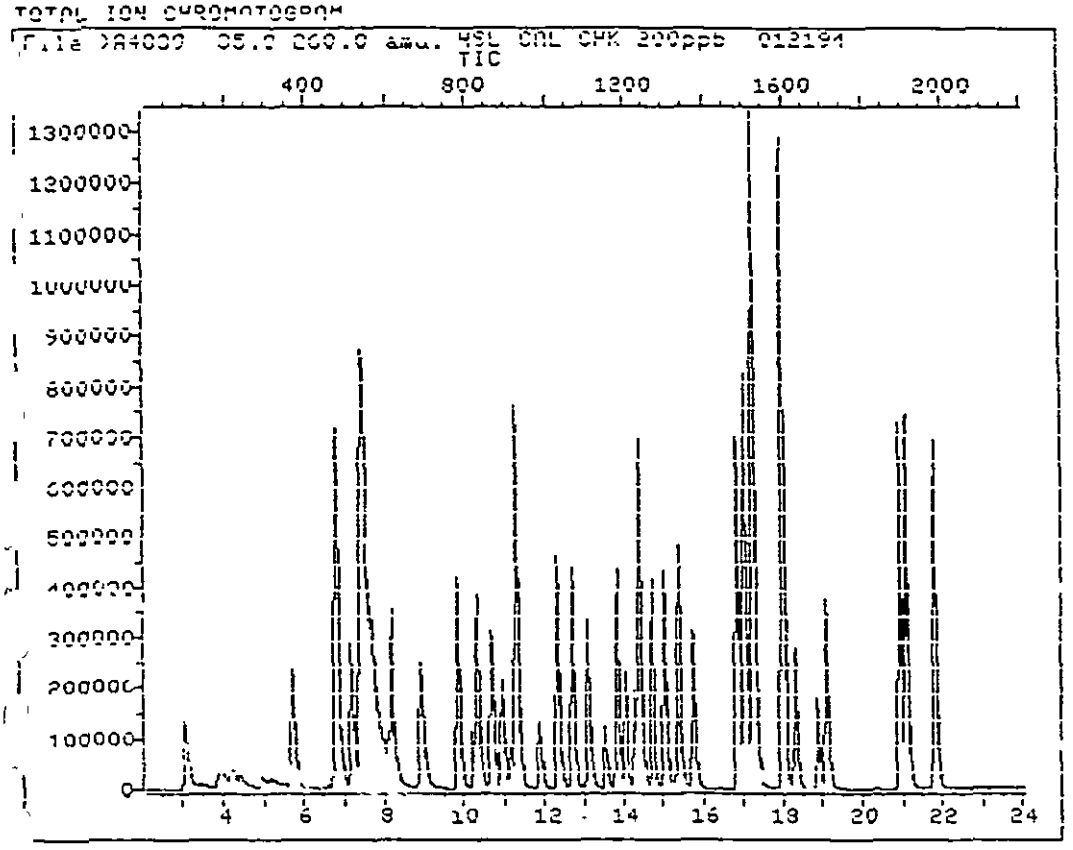


Data File: >A4838::D2 Quant Output File: ^A4838::D1
Name: HSL CAL CHK 150ppb
Misc: 012194

Id File: ID0127::M1
Title: USEPA 624 VOLATILES
Last Calibration: 940121 16:02

Operator ID: MANAGER
Quant Time: 940121 16:44
Injected at: 940121 16:15

TOTAL ION CHROMATOGRAM



Data File: >A4839::D2 Quant Output File: ^A4839::D1
Name: HSL CAL CHK 200ppb
Misc: 012194

Id File: ID0127::M1
Title: USEPA 624 VOLATILES
Last Calibration: 940121 16:02

Operator ID: MANAGER
Quant Time 940121 17:18
Injected at: 940121 16:51

21st Century Environmental Inc.
VOLATILE INTERNAL STANDARD AREA SUMMARY

LAB ID FILE (STANDARD): >A4841 DATE ANALYZED: 01/24/94

INSTRUMENT ID: 5970 TIME ANALYZED: 10:11

Matrix:(soil/water) Level:(low/med) Column:(pack/cap)

	IS1(BCM) AREA	#	RT	IS2(DFB) AREA	#	RT	IS3(CBZ) AREA	#	RT
12 HOUR STD	77658		10.38	404391		12.01	346038		16.89
UPPER LIMIT	155316			808782			692076		
LOWER LIMIT	38829			202195			173019		
LAB SAMPLE No.									
1 BLANK	69109		10.29	359052		11.90	304994		16.83
2 A5714	36295	*	10.39	187382	*	11.98	141976	*	16.88
3 MeOH B	67052		10.42	348038		12.04	288799		16.98
4 B0176	63888		10.40	332676		11.99	286505		16.89
5 B0177	66651		10.37	336001		11.98	276183		16.94
6 B0178	60594		10.50	333892		12.12	275898		17.06
7 B0179	63369		10.32	325160		11.95	270329		16.93
8 B0190	59621		10.38	303084		11.99	255382		16.91
9 B0189	62275		10.33	287817		11.95	246205		16.91
10									
11									
12									
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21									
22									
23									
24									
25									

IS1(DCB) = Bromochloromethane
IS2(DFB) = 1.4-Difluorobenzene
IS3(CBZ) = Chlorobenzene-d5

UPPER LIMIT = + 100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area

Column used to flag internal standard area values with an asterisk
* Outside volatile area limits

4A

VOLATILE METHOD BLANK SUMMARY

Lab Name: 21st CENTURY ENVIRONMENTAL INC. Contract No.:

Lab Code: Case No: SAS No.: SDG No.:

LAB ID FILE (BLANK): >A4842 DATE ANALYZED: 01/24/94

INSTRUMENT ID: A TIME ANALYZED: 11:19

Matrix: SOIL Level:(low/med) LOW Column:(pack/cap)

Sample ID: BLANK

THIS BLANK APPLIES TO THE FOLLOWING SAMPLES,MS AND MSD

	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	A5714	>A4843	01/24/94	11:52
2	MeOH BLK	>A4844	01/24/94	12:23
3	B0190	>A4849	01/24/94	14:58
4	B0189	>A4850	01/24/94	15:30
5				
6				
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11				
12				
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22				
23				
24				
25				

COMMENTS: _____

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER		MATRIX	Water
SAMPLE NUMBER	BLANK	DILUTION FACTOR	1.00
CLIENT ID	012494 METHOD BLANK	QA BATCH	
DATA FILE	>A4842	DATE ANALYZED	01/24/94

COMPOUND	UG/L	MDL	COMPOUND	UG/L	MDL
Acrolein	ND	50	2-Chloroethylvinylether	ND	10
Acrylonitrile	ND	50	2-Hexanone	ND	10
Chloromethane	ND	10	trans-1,3-Dichloropropene	ND	5
Bromomethane	ND	10	Toluene	ND	5
Vinyl Chloride	ND	10	cis-1,3-Dichloropropene	ND	5
Chloroethane	ND	10	1,1,2,2-Tetrachloroethane	ND	5
Acetone	ND	10	1,1,2-Trichloroethane	ND	5
1,1-Dichloroethene	ND	5	4-Methyl-2-pentanone	ND	10
Carbon Disulfide	ND	10	Tetrachloroethene	ND	5
Methylene Chloride	ND	5	Dibromochloromethane	ND	5
1,2-Dichloroethene(trans)	ND	5	Chlorobenzene	ND	5
1,1-Dichloroethane	ND	5	Ethylbenzene	ND	5
Vinyl Acetate	ND	5	m&p-Xylenes	ND	5
2-Butanone	ND	10	o-Xylene	ND	5
Chloroform	ND	5	Styrene	ND	5
1,1,1-Trichloroethane	ND	5	Bromoform	ND	5
Carbon Tetrachloride	ND	5	m-Dichlorobenzene	ND	5
1,2-Dichloroethane	ND	5	p-Dichlorobenzene	ND	5
Benzene	ND	5	o-Dichlorobenzene	ND	5
Trichloroethene	ND	5	Methyl Tertiary Butyl Ether	ND	10
1,2-Dichloropropane	ND	5	Tertiary Butyl Alcohol	ND	50
Bromodichloromethane	ND	5			

SURROGATE COMPOUNDS	% RECOVERY	LIMITS	STATUS
1,2-Dichloroethane-d4	101	76 - 114	OK
Toluene-d8	99 0	88 - 110	OK
Bromofluorobenzene	102	86 - 115	OK

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

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

BLANK

Lab Name: 21st Century Environmental Contract: N/A

Lab Code: Case No.: N/A SAS No.: N/A SDG No.: N/A

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

Sample wt/vol: 5 (g/mL) g Lab File ID: >A4842

Level: (low/med) LOW Date Received:

% Moisture: NA Date Analyzed: 01/24/94

Column: DB-624 Dilution Factor: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
	No Unknowns			

FORM I VOA-TIC 1/87 Rev.

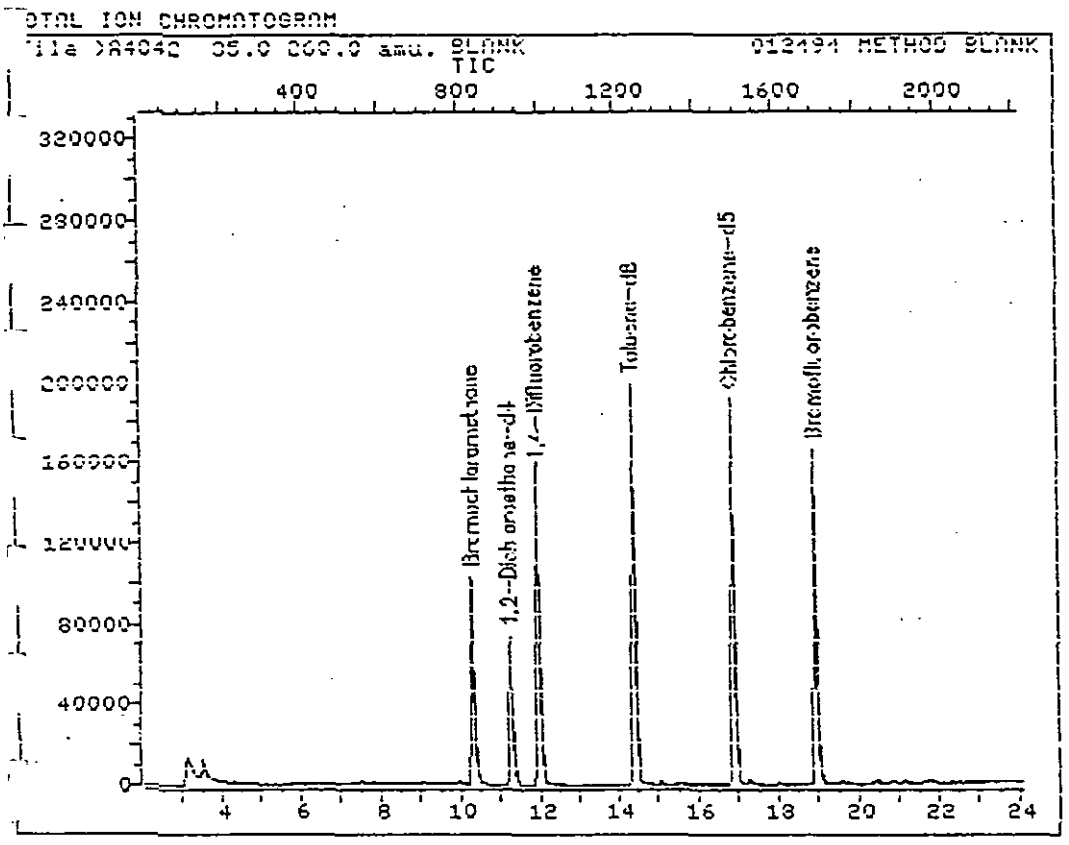
QUANT REPORT

Operator ID: MANAGER Quant Rev: 6 Quant Time: 940124 12:30
Data out File: ^A4842::QT Injected at: 940124 11:19
Data File: >A4842::D3 Dilution Factor: 1.00000
Name: BLANK
Misc: 012494 METHOD BLANK 5ml

ID File: ID0127::M1
Title: USEPA 624 VOLATILES
Last Calibration: 940124 12:30

	Compound	R.T.	Scan#	Area	Conc	Units	q
1	*Bromochloromethane	10.29	830	69109	50.00	UG/L	100
23)	1,2-Dichloroethane-d4	11.22	923	123366	50.27	UG/L	100
2	*1,4-Difluorobenzene	11.90	992	359090	50.00	UG/L	100
3	Toluene-d8	14.35	1238	362312	49.48	UG/L	100
35)	*Chlorobenzene-d5	16.83	1488	304994	50.00	UG/L	100
4?)	Bromofluorobenzene	18.93	1699	177373	50.99	UG/L	100

* Compound is ISTD



Data File: >A4842::D3 Quant Output File: ^A4842::QT
Name: BLANK
Misc: 012494 METHOD BLANK 5ml

Id File: ID0127::M1
Title: USEPA 624 VOLATILES
Last Calibration: 940124 12:30

Operator ID: MANAGER
Quant Time: 940124 12:30
Injected at: 940124 11:19

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER		MATRIX	Soil
SAMPLE NUMBER	MeOH BLK	DILUTION FACTOR	50.00
CLIENT ID	EXTRACTION BLANK	QA BATCH	
DATA FILE	>A4844	DATE ANALYZED	01/24/94

COMPOUND	UG/KG	MDL	COMPOUND	UG/KG	MDL
Acrolein	ND	2500	2-Chloroethylvinylether	ND	500
Acrylonitrile	ND	2500	2-Hexanone	ND	500
Chloromethane	ND	500	trans-1,3-Dichloropropene	ND	250
Bromomethane	ND	500	Toluene	ND	250
Vinyl Chloride	ND	500	cis-1,3-Dichloropropene	ND	250
Chloroethane	ND	500	1,1,2,2-Tetrachloroethane	ND	250
Acetone	ND	500	1,1,2-Trichloroethane	ND	250
1,1-Dichloroethene	ND	250	4-Methyl-2-pentanone	ND	500
Carbon Disulfide	ND	500	Tetrachloroethene	ND	250
Methylene Chloride	250 J	250	Dibromochloromethane	ND	250
1,2-Dichloroethene(trans)	ND	250	Chlorobenzene	ND	250
1,1-Dichloroethane	ND	250	Ethylbenzene	ND	250
Vinyl Acetate	ND	250	m&p-Xylenes	ND	250
2-Butanone	ND	500	o-Xylene	ND	250
Chloroform	ND	250	Styrene	ND	250
1,1,1-Trichloroethane	ND	250	Bromoform	ND	250
Carbon Tetrachloride	ND	250	m-Dichlorobenzene	ND	250
1,2-Dichloroethane	ND	250	p-Dichlorobenzene	ND	250
Benzene	ND	250	o-Dichlorobenzene	ND	250
Trichloroethene	ND	250	Methyl Tertiary Butyl Ether	ND	500
1,2-Dichloropropane	ND	250	Tertiary Butyl Alcohol	ND	2500
Bromodichloromethane	ND	250			

SURROGATE COMPOUNDS	% RECOVERY	LIMITS	STATUS
1,2-Dichloroethane-d4	102	70 - 121	OK
Toluene-d8	102	81 - 117	OK
Bromofluorobenzene	96.0	74 - 121	OK

Percent Solid of 100. is used for all Target compounds.

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

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

BLANK

t Name:21st Century Environmental Contract:N/A

b Code: Case No.: N/A SAS No.: N/A SDG No.: N/A

: ix: (soil/water) SOIL Lab Samole ID: BLANK

amole wt/vol: .1 (g/mL) g Lab File ID: >A4844

v l: (low/med) LOW Date Received:

l isture: NA Date Analyzed: 01/24/94

lumn: DB-624 Dilution Factor: 50

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
	No Unknowns			

FORM I VOA-TIC 1/87 Rev.

QUANT REPORT

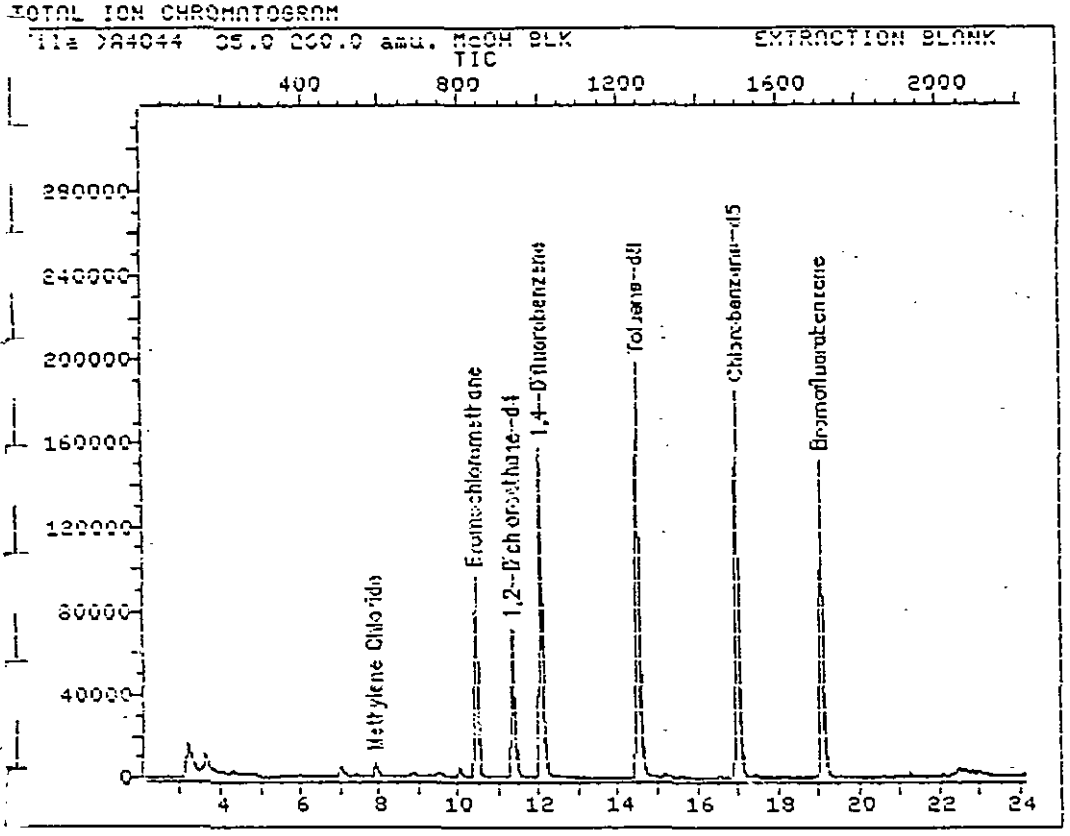
perator ID: MANAGER Quant Rev: 6 Quant Time: 940124 12:52
u out File: ^A4844::QT Injected at: 940124 12:23
a a File: >A4844::D3 Dilution Factor: 1.00000
ame: MeOH BLK
i c: EXTRACTION BLANK 100ul

C File: ID0127::M1
itle: USEPA 624 VOLATILES
a t Calibration: 940124 12:30

	Compound	R.T.	Scan#	Area	Conc	Units	q
1	*Bromochloromethane	10.42	832	67052	50.00	UG/L	100
3)	Methylene Chloride	7.89	577	10696	4.93	UG/L	77
7	1,2-Dichloroethane-d4	11.35	925	121414	50.99	UG/L	100
-	*1,4-Difluorobenzene	12.04	995	348038	50.00	UG/L	100
2,	Toluene-d8	14.50	1242	361582	50.95	UG/L	100
5)	*Chlorobenzene-d5	16.98	1492	288799	50.00	UG/L	100
4	Bromofluorobenzene	19.07	1702	158092	48.00	UG/L	100

* Compound is ISTD

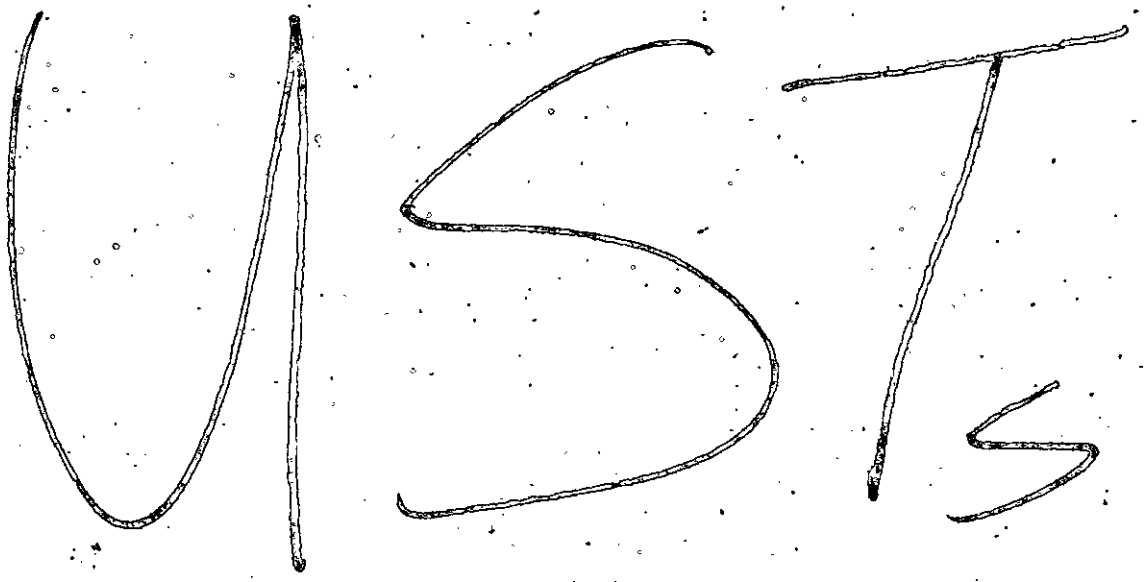
TOTAL ION CHROMATOGRAM



Data File: >A4844::D3 Quant Output File: ^A4844::QT
Name: MeOH BLK
Misc: EXTRACTION BLANK 100ul

Id File: ID0127::M1
Title: USEPA 624 VOLATILES
Last Calibration: 940124 12:30

Operator ID: MANAGER
Quant Time: 940124 12:52
Injected at: 940124 12:23


VISTA