



## DEPARTMENT OF THE ARMY

OFFICE OF ASSISTANT CHIEF OF STAFF FOR INSTALLATION MANAGEMENT  
U.S. ARMY FORT MONMOUTH  
P.O. 148  
OCEANPORT, NEW JERSEY 07757

December 8, 2015

Ms. Linda Range  
New Jersey Department of Environmental Protection  
Case Manager  
Bureau of Southern Field Operations  
401 East State Street, 5<sup>th</sup> Floor  
PO Box 407  
Trenton, NJ 08625

**Re: No Further Action Request  
Site Investigation Report Addendum for the ECP Parcel 51 Underground Storage Tanks  
(Excluding the Building 750 Motor Pool Area)  
Fort Monmouth, NJ**

### Attachments:

- A. Correspondence
- B. Site Layout Drawings of Parcel 51 (Recent and Historical)
- C. Summary Table of Parcel 51 Underground Storage Tanks
- D. No Further Action Letters from NJDEP
- E. UST 114-2 Report
- F. UST 545 Report
- G. UST 563 Report
- H. UST 601 Report
- I. UST 608 Report
- J. UST 614 Report
- K. UST 616 Report
- L. UST 620 Report
- M. UST 622 Report
- N. UST 625 Report
- O. UST 637 File Review and Analyses
- P. UST 645 File Review and Analyses
- Q. UST 646 File Review and Analyses
- R. UST 647 File Review and Analyses
- S. UST 648 File Review and Analyses
- T. UST 649 File Review and Analyses
- U. UST 650 File Review and Analyses
- V. UST 651 File Review and Analyses
- W. UST 652 File Review and Analyses
- X. UST 653 File Review and Analyses
- Y. UST 654 File Review and Analyses
- Z. UST 655 File Review and Analyses

- AA. UST 656 File Review and Analyses
- BB. UST 657 File Review and Analyses
- CC. UST 658 File Review and Analyses
- DD. UST 659 Report
- EE. UST 660 File Review and Analyses
- FF. UST 661 File Review and Analyses
- GG. UST 662 File Review and Analyses
- HH. UST 663 File Review and Analyses
- II. UST 665 File Review and Analyses
- JJ. UST 667 File Review and Analyses
- KK. UST 669 File Review and Analyses
- LL. UST 676 Report
- MM. UST 682 Report
- NN. UST 686 File Review and Analyses
- OO. UST 789 Report
- PP. UST 1103 Report
- QQ. UST 1106 Report
- RR. Parcel 51 Groundwater Monitoring Assessment

**Previous Correspondence (provided in Attachment A):**

1. NJDEP letter to the Army dated July 10, 2012, re: *March 2012 Army Response to NJDEP Correspondence Letter Dated October 28, 2008.*

Dear Ms. Range:

The U.S. Army Fort Monmouth (FTMM) has reviewed existing file information for underground storage tank (UST) sites at Fort Monmouth within Environmental Condition of Property (ECP) Parcel 51 (excluding the Building 750 Motor Pool area). The purpose of this submittal is to provide comprehensive documentation of the location and updated closure status of all USTs identified within this parcel. This information may be useful for the future Phase II property transfer. This submittal provides the information for Parcel 51 USTs as requested by NJDEP in Correspondence 1 (provided in Attachment A). USTs located within the Building 750 Motor Pool area will be addressed within a separate submittal.

Parcel 51 includes a central portion of the Main Post, and is approximately bounded by Mill Creek to the west, Alexander Avenue to the south, Building 500 and the parade grounds to the east, and Sherrill Avenue to the north (see recent and historical layout drawings presented in Attachment B). There are multiple Installation Restoration Program (IRP) sites located immediately adjacent to Parcel 51, as follows:

- FTMM-4, FTMM-5, and FTMM-8 Landfills;
- FTMM-53 Former Gasoline Station at Building 699;
- FTMM-54 Building 296 Former Gasoline USTs;
- FTMM-59 Building 1122 Former Auto Hobby Shop; and
- FTMM-68 Former Dry Cleaners at Building 700.

These IRP sites will be addressed under separate submittals. The USTs within the Building 750 Motor Pool area (bounded by Echo Avenue to the north, the Fort boundary to the west, Vanguard Road to the south, and Wilson Avenue to the east) will also be addressed under a separate submittal.

The locations of the USTs within Parcel 51 (excluding the Building 750 Motor Pool area) are presented in Attachment B, and a summary table of these USTs is provided in Attachment C. All of the USTs identified within Parcel 51 have been removed. A total of 74 of these 82 USTs were used for residential heating oil, or were less than 2000 gallons in size and used to store heating oil for nonresidential buildings, and are therefore considered unregulated heating oil tanks (UHOTs).

Multiple USTs within Parcel 51 were previously approved for No Further Action (NFA) by NJDEP; documentation of this approval is provided in Attachment D, and referenced below. In these cases, there is generally a supporting investigation report that was previously submitted to NJDEP and that describes the basis for closure. For the sake of brevity, we have not included these reports for USTs where NFA has already been approved. However, these reports are available within the FTMM environmental records.

In the Attachment C table, the term "Case Closed" has been used (consistent with previous FTMM procedures) to indicate the Army previously determined that no further sampling or remedial actions were warranted for a specific UST site. "Case Open" indicates the Army previously determined that ongoing monitoring, reporting or possibly even remedial action was warranted. In contrast, "No Further Action" or NFA has been reserved for NJDEP approval that no further sampling or remedial actions are warranted. "Case Open" sites previously identified within Parcel 83 in Attachment C can now be considered as "Closed" by this submittal. However, for two locations (USTs 616 and 686, as described below), additional assessment has been determined to be appropriate, and so these two sites can still be considered as "Case Open."

Since the time of most of the Parcel 51 investigations, revisions to the analytical requirements for the investigation of petroleum hydrocarbons were made by NJDEP, notably the use of the extractable petroleum hydrocarbons (EPH) analysis which replaced the total petroleum hydrocarbons (TPH) analysis in September 2010. The EPH method focuses on the non-volatile products, such as No. 2 fuel oil. However, the quality (and abundance) of the TPH data previously developed at FTMM using the Environmental Protection Agency (EPA) Method 418.1 analyses are believed to accurately characterize the No. 2 fuel oil at the site for the purpose of site closure. Specifically, the NJDEP response to FAQ#2 in NJDEP's Health Based and Ecological Screening Criteria for Petroleum Hydrocarbons Frequency Asked Questions (NJDEP, 2010) indicates that TPH and EPH data generated from a NJDEP field study of residential fuel oil tanks in 2007 are comparable at a ratio of roughly 1:1.

We are submitting the following documentation for the multiple UHOTs and USTs that were previously removed from the Parcel 51 Area, and we request a No Further Action determination for each site as explained further below (sites that have been previously approved for NFA by NJDEP are highlighted in green):

- UST 114-2 investigation report is presented in Attachment E.
- UST 500 NFA was approved by NJDEP on 10/23/2000 (Attachment D).
- UST 501 NFA was approved by NJDEP on 7/10/1998, and confirmed on 5/30/2013 (Attachment D).
- UST 502 NFA was approved by NJDEP on 8/29/2000 (Attachment D).
- UST 545 investigation report is presented in Attachment F.

- UST 550 NFA was approved by NJDEP on 10/23/2000 (Attachment D).
- UST 552 NFA was approved by NJDEP on 8/29/2000 (Attachment D).
- UST 563 investigation report is presented in Attachment G.
- UST 600A NFA was approved by NJDEP on 1/10/2003 (Attachment D).
- UST 600B NFA was approved by NJDEP on 1/10/2003 (Attachment D).
- UST 601 investigation report is presented in Attachment H.
- UST 605 NFA was approved by NJDEP on 1/10/2003 (Attachment D).
- UST 608 investigation report is presented in Attachment I.
- UST 611 NFA was approved by NJDEP on 1/10/2003 (Attachment D).
- UST 614 investigation report is presented in Attachment J.
- UST 615 NFA was approved by NJDEP on 1/10/2003 (Attachment D).
- UST 616 investigation report is presented in Attachment K. However, NFA may not be supported at this site, since TPH concentrations exceeded the EPH criteria of 5,100 mg/kg in soil.
- UST 618 NFA was approved by NJDEP on 1/10/2003 (Attachment D).
- UST 619 NFA was approved by NJDEP on 1/10/2003 (Attachment D).
- UST 620 investigation report is presented in Attachment L.
- UST 621 NFA was approved by NJDEP on 1/10/2003 (Attachment D).
- UST 622 investigation report is presented in Attachment M.
- UST 625 investigation report is presented in Attachment N.
- UST 634 NFA was approved by NJDEP on 1/10/2003 (Attachment D).
- UST 635 NFA was approved by NJDEP on 5/30/2013 (Attachment D).
- UST 637 file review summary and analyses are presented in Attachment O.
- UST 638 NFA was approved by NJDEP on 1/10/2003 (Attachment D).
- UST 639 NFA was approved by NJDEP on 1/10/2003 (Attachment D).
- UST 640 NFA was approved by NJDEP on 1/10/2003 (Attachment D).
- UST 641 NFA was approved by NJDEP on 1/10/2003 (Attachment D).
- UST 642 NFA was approved by NJDEP on 5/30/2013 (Attachment D).
- UST 643 NFA was approved by NJDEP on 5/30/2013 (Attachment D).
- UST 644 NFA was approved by NJDEP on 1/10/2003 (Attachment D).
- UST 645 file review summary and analyses are presented in Attachment P.
- UST 646 file review summary and analyses are presented in Attachment Q.
- UST 647 file review summary and analyses are presented in Attachment R.
- UST 648 file review summary and analyses are presented in Attachment S.
- UST 649 file review summary and analyses are presented in Attachment T.
- UST 650 file review summary and analyses are presented in Attachment U.
- UST 651 file review summary and analyses are presented in Attachment V.
- UST 652 file review summary and analyses are presented in Attachment W.
- UST 653 file review summary and analyses are presented in Attachment X.
- UST 654 file review summary and analyses are presented in Attachment Y.
- UST 655 file review summary and analyses are presented in Attachment Z.
- UST 656 file review summary and analyses are presented in Attachment AA.
- UST 657 file review summary and analyses are presented in Attachment BB.
- UST 658 file review summary and analyses are presented in Attachment CC.

- UST 659 investigation report is presented in Attachment DD.
- UST 660 file review summary and analyses are presented in Attachment EE.
- UST 661 file review summary and analyses are presented in Attachment FF.
- UST 662 file review summary and analyses are presented in Attachment GG.
- UST 663 file review summary and analyses are presented in Attachment HH.
- UST 664 NFA was approved by NJDEP on 1/10/2003 (Attachment D).
- UST 665 file review summary and analyses are presented in Attachment II.
- UST 666 NFA was approved by NJDEP on 1/10/2003 (Attachment D).
- UST 667 file review summary and analyses are presented in Attachment JJ.
- UST 669 file review summary and analyses are presented in Attachment KK.
- UST 671A NFA was approved by NJDEP on 2/24/2000 (Attachment D).
- UST 676 investigation report is presented in Attachment LL.
- UST 678 NFA was approved by NJDEP on 1/10/2003 (Attachment D).
- UST 682 investigation report is presented in Attachment MM.
- UST 686 file review summary and analyses are presented in Attachment NN. NFA was approved by NJDEP on 1/10/2003 (Attachment D); additional assessment is recommended as described in Appendix D, Section 3.2 of the November 2015 *Environmental Condition of Property Supplemental Phase II Site Investigation Work Plan Addendum, Revision No. 1*.
- UST 689A NFA was approved by NJDEP on 8/29/2000 (Attachment D).
- UST 689B NFA was approved by NJDEP on 8/29/2000 (Attachment D).
- UST 695 NFA was approved by NJDEP on 2/24/2000, and confirmed on 5/30/2013 (Attachment D).
- UST 787 NFA was approved by NJDEP on 2/24/2000 (Attachment D).
- UST 788 NFA was approved by NJDEP on 2/24/2000 (Attachment D).
- UST 789 investigation report is presented in Attachment OO.
- UST 1102 NFA was approved by NJDEP on 1/10/2003 (Attachment D).
- UST 1103 investigation report is presented in Attachment PP.
- UST 1104 NFA was approved by NJDEP on 1/10/2003 (Attachment D).
- UST 1105 NFA was approved by NJDEP on 2/24/2000 (Attachment D).
- UST 1106 investigation report is presented in Attachment QQ.
- UST 1107 NFA was approved by NJDEP on 10/23/2000 (Attachment D).
- UST 1107B NFA was approved by NJDEP on 10/23/2000 (Attachment D).
- UST 1108 NFA was approved by NJDEP on 8/29/2000 (Attachment D).
- UST 1109 NFA was approved by NJDEP on 2/24/2000 (Attachment D).
- UST 1110 NFA was approved by NJDEP on 2/24/2000 (Attachment D).
- UST 1123 NFA was approved by NJDEP on 2/24/2000 (Attachment D).
- UST 1123B NFA was approved by NJDEP on 6/16/2015 (Attachment D).
- UST 1123C NFA was approved by NJDEP on 6/16/2015 (Attachment D).
- UST 1221 NFA was approved by NJDEP on 2/24/2000 (Attachment D).

The potential for impacts to groundwater from Parcel 51 USTs was assessed further to support this request for NFA, as presented below.

- Figure 3.12-1 of the 2008 *U.S. Army BRAC 2005 Site Investigation Report, Fort Monmouth* (the SI Report) is provided as Enclosure 1 in Attachment RR and shows the lateral coverage

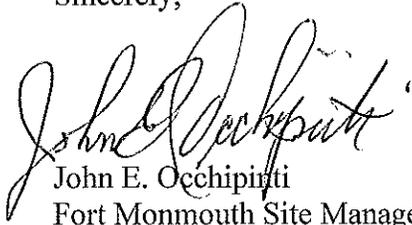
of extensive Geoprobe soil and groundwater sampling that was previously performed within Parcel 51. As previously noted by NJDEP (see the June 16, 2016 letter in Attachment D), 2-methylnaphthalene was encountered in excess of Ground Water Quality Criteria (GWQC) at SI sample location P51-G12; this occurrence is attributed to releases from former UST 686 (see Attachment NN). There were no other significant exceedances of GWQCs in groundwater within Parcel 51 based on this SI Report investigation. Therefore, potential impacts to groundwater from USTs have been adequately assessed within most of the Parcel 51 area, although additional assessment of the P51-G12 occurrence is warranted (see the UST 686 discussion above).

- There was no Geoprobe soil and groundwater data coverage for the portion of Parcel 51 herein designated as the “Building 600 Area,” which is located approximately from the Building 600 McAfee Center to the east, to Sherrill Avenue to the north and west. Therefore, previous site data from existing monitor wells was evaluated to assess the potential for impacts to groundwater from “Building 600 Area” USTs (see Enclosures 2 and 3 of Attachment RR for information on existing monitor wells).
- Groundwater typically flows towards the north and northwest within the “Building 600 Area” of Parcel 51 (see Enclosure 4 of Attachment RR). Monitor wells 600MW02, 600MW03, M5MW15, and 699MW15 encountered groundwater from 9 to 11 feet below ground surface (see Enclosure 5 of Attachment RR boring logs). The depth of TPH soil sampling provided in this area was typically from 6.0 to 6.5 ft bgs (as at UST 650; see Attachment U) or 7 to 7.5 ft bgs (as at UST 661; see Attachment FF). Therefore, depth to groundwater was approximately 2 feet below any soil contamination encountered in the UST excavations, thereby limiting any impact to groundwater.
- As demonstrated in Attachments E through QQ, soil left in place at individual UST sites was typically below the 1000 mg/kg TPH threshold for additional contingency analysis. This threshold was developed by NJDEP with consideration of potential impacts to groundwater from 2-methylnaphthalene, as well as other contaminants (as described in NJDEP’s 2010 *Protocol for Addressing Extractable Petroleum Hydrocarbons*). Therefore, there is minimal risk of impact to groundwater from the soils remaining at former UST sites within the “Building 600 Area.”
- Monitor wells 600MW01 (also labeled as 600A MW-01, or 600MW-A) and 600MW02 (also labeled as 600B MW-02, or 600MW-B) were installed downgradient of the 600 Area in 2009. The results of three rounds of analyses provided in 2010 are included in Enclosure 6 of Attachment RR. There were no VOCs detected during any sample events from either of these wells.
- Chlorinated VOCs encountered in FTMM-5 wells (such as M5MW15) are not associated with the Parcel 51 fuel oil USTs, and therefore will be addressed under separate cover.

This information supports the conclusion that multiple UHOTs and USTs identified within Parcel 51 have been adequately addressed by previous environmental activities under the FTMM tank removal and assessment program. In summary, we submit that the Army has provided adequate due diligence with regards to the environmental condition of USTs and UHOTS within Parcel 51 (excluding the Building 750 Motor Pool area, which will be addressed under separate cover), and we request that NJDEP approve No Further Action for Parcel 51 USTs. Additional assessment will be provided for the UST 616 and 686 sites.

The technical Point of Contact (POC) for this matter is Kent Friesen at (732) 383-7201 or by email at [kent.friesen@parsons.com](mailto:kent.friesen@parsons.com). Should you have any questions or require additional information, please contact me by phone at (732) 383-5104 or by email at [john.e.occhipinti.civ@mail.mil](mailto:john.e.occhipinti.civ@mail.mil).

Sincerely,



John E. Occhipinti  
Fort Monmouth Site Manager

cc: Delight Balducci, HQDA ACSIM  
Joseph Pearson, Calibre  
James Moore, USACE  
Cris Grill, Parsons



## ATTACHMENT A

### Correspondence

#### Contents:

- NJDEP letter to the Army dated July 10, 2012, re: *March 2012 Army Response to NJDEP Correspondence Letter Dated October 28, 2008.*





## State of New Jersey

CHRIS CHRISTIE  
Governor

KIM GUADAGNO  
Lt. Governor

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BOB MARTIN  
Commissioner

July 10, 2012

Wanda Green  
BRAC Environmental Coordinator  
OACSIM – U.S. Army Fort Monmouth  
PO Box 148  
Oceanport, NJ 07757

Re: March 2012 Army Response to NJDEP Correspondence Letter Dated October 28, 2008  
Fort Monmouth, NJ  
PI G000000032

Dear Ms. Green:

A review of the above referenced report, received March 27, 2012 and submitted in response to the Department's comments regarding the Draft Site investigation Report of July 21, 2008 by Shaw Environmental, Inc., has been completed by this office. Many of the parcel comments involved suspected USTs; in addition to that information provided in this submittal and the July 2008 SI, a review and comparison of Appendix G, Appendix O, and Figures 15 and 16 of the January 2007 ECP Report was conducted by this office in an attempt to ascertain the location and status of all tanks located within the parcels. Unless otherwise noted, comments and questions are provided only for each parcel referenced in the submittal and are generally presented by parcel.

### **Parcel 13 – Former Barracks (Buildings 2004-2016)**

Geophysical surveys were performed, and sampling was conducted throughout that area at which USTs were known to or may have been present. No USTs were found; all soils analytical results were below cleanup criteria applicable to the site; no additional action for the parcel is necessary.

### **Parcel 14 – Former Buildings and Housing Area Northwest Portion of CWA**

As indicated in the Department's correspondence of May 30, 2012, the geophysical surveys performed and sampling conducted throughout that area at which USTs were or may have been present were sufficient to adequately characterize the area. No USTs were found; all soils analytical results collected were below cleanup criteria applicable to the site. The parcel was re-categorized from Category 2 to Category 1.

**Parcel 15 – Building 2700**

Parcel 15 was issued a designation of No Further Action for soils and ground water, *exclusive of CW-1*, on May 9, 2012. Remediation efforts involving CW-1 continue.

**Parcel 27 – Southwestern Corner CWA**

The single outstanding issue at Parcel 27 was the USTs. As previously indicated, numerous USTs were removed from the parcel, however, additional documentation for same was required.

It is agreed fourteen (14) USTs have been removed and given NJDEP Closure Approval Letters/NFAs. Although it is understood Departmental approval may have been granted for an additional five USTs, as indicated on Page 6 of the referenced submittal and in Appendix G, please be advised this office does not have documentation confirming Closure Approval/NFA for the following USTs.

UST 2506-17	Reported NJDEP UST Closure Approval Date 7/10/98
UST 2624-34	Reported NJDEP UST Closure Approval Date 7/23/93
UST 2624-57	Reported NJDEP UST Closure Approval Date 9/21/95
UST 2624-58	Reported NJDEP UST Closure Approval Date 9/21/95
UST 2624-59	Reported NJDEP UST Closure Approval Date 9/21/95

Additionally, please provide information as to the status of the USTs noted in Appendix O at what appear to be Buildings 2566 and 2505, located just north of Building 2503?

Any sediment issues which may have resulted from parcel operations are to be addressed as part of the ongoing facility wide ecological assessment.

**Parcel 28 – Former Eatontown Laboratory**

Underground Storage Tanks

Although this office is in agreement with the information submitted in regard to the majority of the USTs as noted on Parcel 28, questions remain on several, which are not considered as given a designation of NFA at this time.

As above, documentation for closure approval or NFA is not available for confirmation on the following USTs.

UST 2539-28	Reported NJDEP UST Closure Approval Date 3/31/93
UST 2539-64	Reported NJDEP UST Closure Approval Date 3/31/93
UST-2531-21	Reported NJDEP UST Closure Approval Date 8/29/00

UST 2542-29 and UST 2564-32 are reported as no release observed. A Standard Reporting Form and/or Site Assessment Compliance Statement were reported sent to us 11/22/91, however, no designation of NFA was granted, nor comments apparently generated.

Appendix O indicates three USTs within that area which underwent a geophysical survey between Building 2525 & Heliport Drive. The center UST appears to correlate to UST P28-8, which, based upon the investigation performed, warrants no further action. Although it is agreed no tanks remain in that area, please provide any record of their removal or indication as to evidence of a discharge upon removal. As previously discussed, a designation of NFA for USTs cannot be granted without sampling.

### Septic Tanks & Leachfields

*Leachfield East of Heliport Drive, South of Radiac Way* – It is agreed the four test pits were adequate for characterization of the leachfield; no additional action is necessary for the leachfield. It does not appear, however, the suspected D-box/entirety of the septic system was investigated. Although they are not designed to hold liquids/sludges (but rather to distribute the liquids after the solids fall out into the holding tank), particularly as the structure apparently remains in place, additional information is required as to whether the structure could have been/functioned as a holding tank (field notes do reference it as a septic tank) which did contain solids or liquids which should have been sampled.

*Septic System & Septic Tank A* – Located off the northeast corner of Building 2525, a suspected septic tank was located via GPR scanning, as denoted as “A” on Figure 3.5-2 of the ECP Site Investigation. Sampling efforts, however, were performed only at the associated leachfield. What efforts were made to adequately characterize any holding tank contents of the actual septic tank, as required by the Tech Regulations in effect at the time of investigation (NJAC 7:26E-3.9(e)3)? As regarding the associated leachfield, a minimum of 4 samples is required. A single soil and single ground water sample is inadequate.

*Septic System at Southeastern Corner of Parcel* - For that septic system located in the southeastern corner of the parcel as sampled by P28-SB1, the findings/requirements noted in the above paragraph also apply.

*Former Storage Areas/Possible Former Tank Pads* – This area received a designation of NFA on March 29, 2012.

### **Parcel 34 – Building 2567/FTMM 58**

Elevated levels of ground water contamination underwent treatment via a Permit-by-Rule approved in October of 2010. The Department most recently responded on March 7, 2012 approving monitoring via two rounds of seasonal high ground water analytical sampling.

As recently discussed, although piping was cleaned at the time of tank removal, it necessary to remove the piping and dispensing equipment/island.

**Parcel 38 – Former Outdoor Pistol Range (1940-1955)**

Although no exceedences were noted, Departmental comments indicated the surface soil sampling was not adequate due to the possibility the parcel soils had been re-worked; a ground water investigation was therefore required. The Army will be submitting the results of a ground water investigation in a future letter report to this office. If you wish to receive comments on anticipated frequency and locations of the ground water sampling points and methodology (ie low-flow), please submit the sampling plan prior to implementation.

**Parcel 39 – Building 1150/Vail Hall**

Previous comments indicated the soil exceedences, although permitted to remain in place with institutional controls (Deed Notice), must be compared to and delineated to the RDCSCC. The Army has agreed, in this submittal, to prepare a revised map indicating delineation boundaries to the more stringent criteria, as appropriate. A draft Deed Notice for same is to be submitted to this office for review and comment.

Any sediment issues which may have resulted from operations are to be addressed as part of the ongoing facility wide ecological assessment.

**Parcel 43 – Building 1122 (Do-it-Yourself Auto Repair)**

No comments based on submittal; Army acknowledges Department's March 18, 2011 comments; remedial efforts are ongoing.

Any sediment issues which may have resulted from parcel operations are to be addressed as part of the ongoing facility wide ecological assessment.

**Parcel 49 – Former Squier Laboratory Complex**

The Site Investigation indicated five surface soil samples contained base neutrals at concentrations above the NRDCSCC, while one sample contained PCBs above the NRDCSCC. The Department concurred with the recommendation of additional sampling for delineation purposes. The March 2012 submittal, however, specifies no sampling will be performed in regard to the BNs exceedences as they "are commonly detected in soil directly beneath asphalt pavement".

*Base Neutrals (BNs)*

Although it is agreed elevated levels of BN constituents related to asphalt rather than a discharge may be encountered beneath asphalt paving, it is not agreed sufficient information has been provided at this time to document each location at which BN exceedences are noted is unrelated to site operations. The previously approved proposal for additional sampling remains appropriate for each sample location at which exceedences were noted.

### *PCBs*

Regarding PCBs, a re-sample is currently proposed in the location at which PCBs were noted to exceed the NRDCSCC, sample P49-SS8-A. As no Remedial Action Workplan for this parcel was previously approved, the Soil Remediation Standards (0.2 ppm) apply. As such, PCBs exceed the standard at three locations – P49-SB3-A and P49-SS7-A (which also exhibits the highest levels of BN contamination), in addition to SS8-A. Delineation to the most stringent standard is required.

### *Arsenic*

A review of the site operations and the analytical data, including the horizontal and vertical distribution of the arsenic, the lead to arsenic ratio, as well as the presence of glauconitic soils indicate the arsenic encountered in this area is representative of naturally occurring levels.

### *Volatile Organics*

It is agreed further discussion regarding volatile organics in ground water at the M-18 Landfill is to be discussed in a forthcoming Remedial Investigation Report for the landfill.

### *USTs*

As with the above parcels, although many tanks have received a designation of NFA, several tanks do not have sufficient documentation to be designated same. These include:

- UST-293-67 – per Appendix G, report submitted 2/26/96; no Departmental response
- UST-290-193 - per Appendix G, report submitted October 1993, no Departmental response
- UST 283-59 – per Appendix G, reported Closure Approval 2/24/00; no confirmation available
- UST 283-58 - per Appendix G, no sampling was performed
- UST 296-69 – per Appendix G, report submitted 2/26/96; no Departmental response

For those USTs which Appendix G indicates reports were previously submitted and not responded to, unfortunately, this office has no record of same and re-submittal is required for comment.

### **Parcel 50 – IRP Sites FTMM-54, FTMM-55 & FTMM-61**

The Army acknowledges the Department's August 14, 2007 letter, the comments of which are to be addressed via Remedial Investigation Report Addendums for FTMM-54 (Site 296), FTMM-55 (Site 290) and FTMM-61 (Site 283). Submittal dates were not indicated. This office will await submittal of same.

### **Parcel 51 – 750 Area, 500 Area, 600 Area, 1100 Area – Former Buildings**

The geophysical survey and sampling conducted at portions of the parcel were insufficient to allow for determination of NFA for the USTs previously/currently located in the parcel. Further investigation conducted north of Building 750 revealed the presence of USTs UHOT 1123B and 1123C at the two northernmost previously identified anomalies. The USTs were subsequently removed, as was affected soil. Although it is indicated all soils were removed to below 1000 ppm TPH, Table 2 at Attachment D appears to indicate soils at sample 1123B East Wall at 8.5-9' contains TPH at 9832.44 ppm. Clarification is needed.

Although it is understood the additional investigation undertaken in June of 2009 revealed the presence of the two above referenced USTs located above Semaphore Ave, it is unclear what efforts were made to investigate the nine potential USTs/anomalies noted on Figure 3.12-2 south of Echo Avenue? Are they all to be included in the Building 750 submittal?

Additional questions regarding USTs within the parcel remain. As above, documentation for closure approval or NFA is not available for confirmation on the following USTs.

No geophysical surveys, sampling or at least reports appear to have been performed or submitted for the following USTs - UST 68, 635, 637, 642, 643, 645, 647, 648, 649, 650, 651, 652, 653, 654, 656-97, 656-98, 657-90, 658-100, 660, 662, 663, 665, 667, 689-102.

Appendix O indicates USTs which do not appear to be "closed" per Appendix G which were/are also present in areas outside the geophysical survey, including those at Building 676, several along Sherrill Avenue north of Building 600, east of Brewer Ave by Buildings 545 and 554, Building 555, and several by Building 557.

Although Appendix G indicates closure reports were submitted, it also indicates no Departmental response was received for the following USTs - UST-682-106, UST 656-104, UST 659-101, UST 114-1, UST 645-78, UST 789-126.

USTs 750 – report pending

UST 501-76 – Appendix G indicates NFAed July 10, 1998, however confirmation unavailable

UST 551-80 – Appendix G indicates NFAed August 29, 2000, however, confirmation unavailable

UST 695 – Appendix indicates NFA August 24, 2000, however, confirmation unavailable

#### **Parcel 52 – Building 699 – Army Exchange Services Gas Station**

No comments based on submittal; Army acknowledges Department's March 18, 2011 comments; remedial efforts are ongoing.

#### **Parcel 57 – Former Coal Storage & Railroad Unloading – 800 Area**

Three surface soil samples contained B/Ns at concentrations above the NRDCSCC. The Department concurred with the general recommendation to conduct additional sampling, and required the submittal of a Remedial Investigation Workplan. The March 2012 submittal, however, states the exceedences were related to the asphalt pavement under which the samples were collected.

As with Parcel 49, it is agreed elevated levels of BN constituents related to asphalt rather than a discharge may be encountered beneath asphalt paving. However, information has not been submitted to document these sample results are not reflective of site operations, particularly given the nature of operations in the area. Delineation is necessary.

PCBs analyses was required due to the proximity of the railroad tracks/unloading area, as indicated in the Department's June 15, 2007 letter, rather than historical operations at Parcel 57.

As PCBs are often associated with rail road tracks and spurs, analysis for same is appropriate and remains a requirement.

#### *Ground Water*

Although the previous proposal for delineation of ground water exceedences was approved, the current submittal indicates NFA is warranted due to naturally occurring background conditions. The Department is conducting further review of the information provided.

#### **Parcel 61 - Building 1075 – Patterson Health Clinic**

Soil sampling conducted at the parcel indicated elevated levels of three base neutral compounds in a soil sample collected beneath an area of former asphalt paving at the southeastern corner of Building 1075. The Department is in agreement the PAHs are not reflective of a discharge nor of operations performed at the site. No additional action for same is necessary.

As discussed, the analyses for PCBs as indicated in the Department's October 2008 correspondence is not required, based upon a review of areas of concern located within the parcel.

*UST 1076-209* – Although Appendix G indicates the closure report was being prepared, recent conversation indicates no submittal of the report is anticipated as the tank was a “clean closure.” This would, of course, not allow for comment or designation of NFA for this tank. Additionally, information previously submitted indicates this tank was installed at a location at which a leaking UST was removed and remediated. It does not appear closure information for that UST was submitted.

#### **Parcel 69 – Building 900 – Former Vehicle Repair/Motor Pool**

The previous Departmental comments indicated soil sampling was inadequate for designation of NFA as analytical parameters did not include PCBs. Although it is understood your position is that PCBs are not suspected to have been disposed of in the former waste oil AST at Building 900, the Technical Requirements for Site Remediation, both those in effect at the time of sampling, as well as those currently in effect, require the inclusion of PCBs in the analytical parameters for sampling of soil when waste oil is involved.

Regarding analytical parameters for sediment sampling, that will be addressed as part of the ongoing facility wide ecological assessment.

One ground water sample previously indicated an exceedence of PCE. Per this submittal, the Army plans to resample the ground water at the location of temporary well point P69GW-1. Previous Departmental correspondence, however, stated the submittal of a ground water remedial investigation workplan was required for NJDEP review and approval. If resampling of a single location, in anticipation of a “clean” result is performed, rather than several delineation sampling points, please ensure the resultant submittal includes adequate rationale/justification to confirm the area of greatest possible contamination was sufficiently targeted.

Two USTs were previously noted as within the parcel. UST 900-142 was granted Closure Approval Letter/NFA on July 10, 1998, while documentation for closure approval or NFA is not available for confirmation on the following UST:

UST 900-141 Reported NJDEP UST Closure Approval Date 7/10/98

**Parcel 70 – Building 551 – Former Photoprocessing**

The October 28, 2008 Departmental correspondence concurred with the recommendation for no further action. As a note however, we do not have a copy of the Appendix G referenced 8/29/00 Closure Approval Letter for UST 551-80

**Parcel 76 – 200 Area, 300 Area – Former Barracks**

A geophysical survey was performed throughout Parcel 76, with suspect USTs noted in the western portion of the parcel. Although sampling conducted within that western portion of the parcel indicated no exceedences of the applicable cleanup criteria, additional investigation was required regarding the possible USTs.

Additional evaluation was documented in the June 2011 Remedial Investigation and Closure Report, which references Incident #s 09-11-04-1553-32, 10-04-28-1333-57, 10-04-13-1710-23, 09-11-19-1710-57 and 10-01-06-1342-44 and the removal of UHOTS 544, 543, 542, 541, 540, 539 and 538. Affected soils were reported removed to below the 1000 ppm contingency analytical threshold; a ground water investigation was performed via the installation of four monitor wells as ground water was encountered in the excavations.

The adequacy of the investigations/remedial actions presented in the report submittal cannot be determined, as insufficient information has been provided. No information was contained in Appendices A through E, nor were any Figures included (this information was missing in many of the Attachment D reports, some of which was obtainable through previous submittals and information, some not). No comparison could be made of UST locations against geophysical anomalies, sample locations, or monitor well locations. A review of Table 2/Summary of Laboratory Analyses as a stand-alone document (without sampling location/result maps, further association between sample ID and tank) is insufficient to allow for documentation of soils removal to below the above stated 1000 ppm contingency analytical threshold, or even the 5100 ppm EPH standard at each tank, or to determine if the ground water investigation (placement of monitor wells) was adequate.

Additionally, although it is agreed no USTs appear to remain in the eastern portion of Parcel 76, no remedial documentation was submitted for those former tank locations as noted on Appendix O and Figure 15 of the January 2007 ECP Report in the eastern portion of Parcel 76, as follows:

UST-261-45    UST-262-46    UST-263-47    UST-264-48    UST-265-49  
UST-266-50    UST-267-51    UST-268-52    UST-269-53(contamination per Appendix G)

As previously discussed, a designation of no further action for these USTs cannot be issued without an investigation in accordance with the Technical Requirements for Site Remediation.

### **Parcel 79 – 400 Area Former Barracks**

A geophysical survey was previously performed throughout the parcel, identifying potential USTs in only that portion as noted in Figure 3.19-1. Additional evaluation of the area encountered eight USTs, noted as UHOTs 437, 440, 441, 444, 445, 448 and 450 which were subsequently removed, while contamination was noted at Building 449. A ground water investigation is to be performed based upon the presence of ground water in the excavation. Additional comments regarding same will be forthcoming pending submittal.

As with Parcel 76, above, although it is agreed no USTs appear to remain, no remedial documentation was submitted for many of those former tank locations noted on Appendix O and Figure 15 of the January 2007 ECP Report at other areas of the parcel, and/or insufficient information currently exists to allow for designation of NFA.

#### *North of Fisher Avenue*

- UST-401-26 – per Appendix G, no samples were collected, no report submitted
- UST-411-28 – per Appendix G, report submitted 02/26/96, no Departmental response noted
- UST-416-32 – per Appendix G, no samples collected, no report submitted
- UST-421-37 – per Appendix G, report submitted 7/22/98, no Departmental response noted
- UST-423-39 – per Appendix G, report submitted 2/26/96, no Departmental response noted

#### *South of Fisher Ave, North of Leonard Ave*

- UST-430-45 – per Appendix G, report submitted 10/23/97, no Departmental response noted
- UST-447 – Not referenced on Appendix G; located east of grid sampling; sampling status unclear

#### *South of Leonard Avenue*

- UST-454-51 – Reported Closure Approval date 7/10/98 – no record of same
- UST-142-73 – per Appendix G, report submitted 10/23/97, no Departmental response received
- UST-142-13 – per Appendix G, report submitted 10/23/97, no Departmental response received
- UST-29-1 – per Appendix G, report submitted 11/22/91, no Departmental response noted
- UST-490-58 – per Appendix G, no sampling; “site closed by NJDEP”; no record of same
- UST-492-59 – Reported Closure Approval date 8/29/00 – no record of same
- UST-202-a – “clean closure”, no report submitted
- UST-202-b – per Appendix G, *30 tons of soil removed, report submittal pending*
- UST-202-21 – per Appendix G, TPH ND, no report submitted
- UST-202-22 – per Appendix G, TPH ND, no report submitted

Please submit documentation in accordance with the Tech Regs for each of the above to allow for comment/designation of NFA. For those which Appendix G indicates reports were previously submitted and not responded to, unfortunately, this office has no record of same and re-submittal is required.

Additionally, with the exception of the above referenced UST-454-51, and UST 475-52 (NFA 10/23/00), no documentation of sampling activities for that area shown on Appendix O extending from Tilly Avenue north to Leonard Avenue, previously shown to include approximately 22 USTs, appears to have been submitted.

Finally, please indicate what investigation, if any, has taken place at the two former and one current ASTs located north of Hazen Drive.

**Parcel 80 – Former Buildings 105 & 106 - Photoprocessing**

Prior to issuing a determination as to the adequacy of the soil sampling, additional information is required regarding the basis for establishment of the sample locations. Were as-builts or other plans available for the demolished buildings to assist in locating former floor drains, septic systems, discharge points, etc.?

Although the previous proposal for delineation of ground water exceedences was approved, the current submittal indicates NFA is warranted due to naturally occurring background conditions. The Department is conducting further review of the information provided.

**Parcel 83 – Former Photoprocessing, Vehicle Maintenance, Coal Storage & Railroad Unloading, Maintenance Shops**

The 2008 SI Report, Section 4.1.2, indicates “eight surface soil samples contained B/Ns at concentrations above the NJDEP NRDCSCC. Two surface soil samples contain lead at concentrations above the NJDEP NRDCSCC and MPBC. Further evaluation is recommended.”

While the exceedences at P83-SB9C were apparently not included in that statement, nor plotted, several PAH constituents were noted above the residential and non-residential criteria at 4.5-5'. Vertical delineation appears incomplete at this location.

Although this office does not as yet agree the PAH exceedences at this parcel are due to current/former asphalt (particularly at SB9 or B5), re-collection of the samples as proposed to assist in determining same is acceptable. The further evaluation must, of course, include all exceeded contaminant categories if the intent is to prove no discharge.

Trichloroethylene is reported on Table 3.21-4 of the SI Report above criteria at sample location P83-SB9B, at 5.8 ppm, at 1.5-2', with no discussion provided. Please provide same.

Metals exceedences were noted at three locations – SB10A, SB9A and B5A; this office considers location SB-10 to be above criteria for arsenic and lead (residential criteria is 400 ppm).

As regarding arsenic in soils, although it is agreed the site soils are often associated with elevated levels of naturally occurring arsenic, the parcel specific soil analytical results, the lead to arsenic ratio, and the decrease of arsenic with depth at those locations exhibiting an elevated level, do not appear to indicate the exceedences are naturally occurring, and must be included in a remedy.

As with the above parcels, although many tanks have received a designation of NFA, several tanks do not have sufficient documentation to be designated same. These include:

UST-421-37 – Per Appendix G, report submitted 10/23/97; no Departmental response  
UST-273-65 - Per Appendix G, 6000 gallon gasoline tank still in use  
UST-273-66 – Per Appendix G, 10000 gallon gasoline tank still in use  
UST-273-67 – Per Appendix G, 10000 gal gasoline tank still in use  
UST-117-72 – Per Appendix G, remedial action report completed July '98; status unknown  
UST-108-7 – Per Appendix G, report submitted 2/26/96; no Departmental response  
UST-108-60 through 64 – Per Appendix G, remediation efforts ongoing  
UST-161-68 – Per Appendix G, waste oil tank RAR submitted 2/26/96, no response  
UST-161-14 – Per Appendix G, RAR submitted 2/26/96, no Departmental response

Appendix O also includes several former USTs on the parcel which appear to have had no documentation of closure or investigation submitted, including those at Buildings 479, 66, 276, 485, 280, 281 and 167.

### **Electrical Substations**

The October 28, 2008 correspondence indicated the need for establishment of a Deed Notice and engineering controls due to elevated levels of PCBs above the RDCSCC of 0.49 ppm. The March 2012 proposal is for resampling of the two locations at which results were above the criteria, with a letter report to follow. This is acceptable, however, please be advised a Deed Notice will be required for any soils left in place *within these two areas*, which exhibit a result of greater than 0.2 ppm PCBs. No engineering controls are required if all results are below 1 ppm.

### **Miscellaneous**

Attachment E of the submittal references numerous letters from the NJDEP regarding UST closure approvals/NFAs, however, the letters dated July 23, 1993 and September 21, 1995 were not included in the submittal. Submittal of those two letters would be beneficial and appreciated.

#### *Vapor Intrusion Investigation*

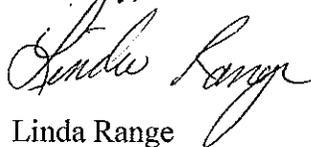
Submittal of the report is anticipated shortly.

#### *Baseline Ecological Evaluation*

Submittal of the amended report is anticipated shortly.

If you have any questions regarding this matter contact this office at (609) 984-6606.

Sincerely,



Linda Range  
Bureau of Case Management

C: Joe Pearson, Calibre Systems  
Rich Harrison, FMERA  
Julie Carver, Matrix



ATTACHMENT B

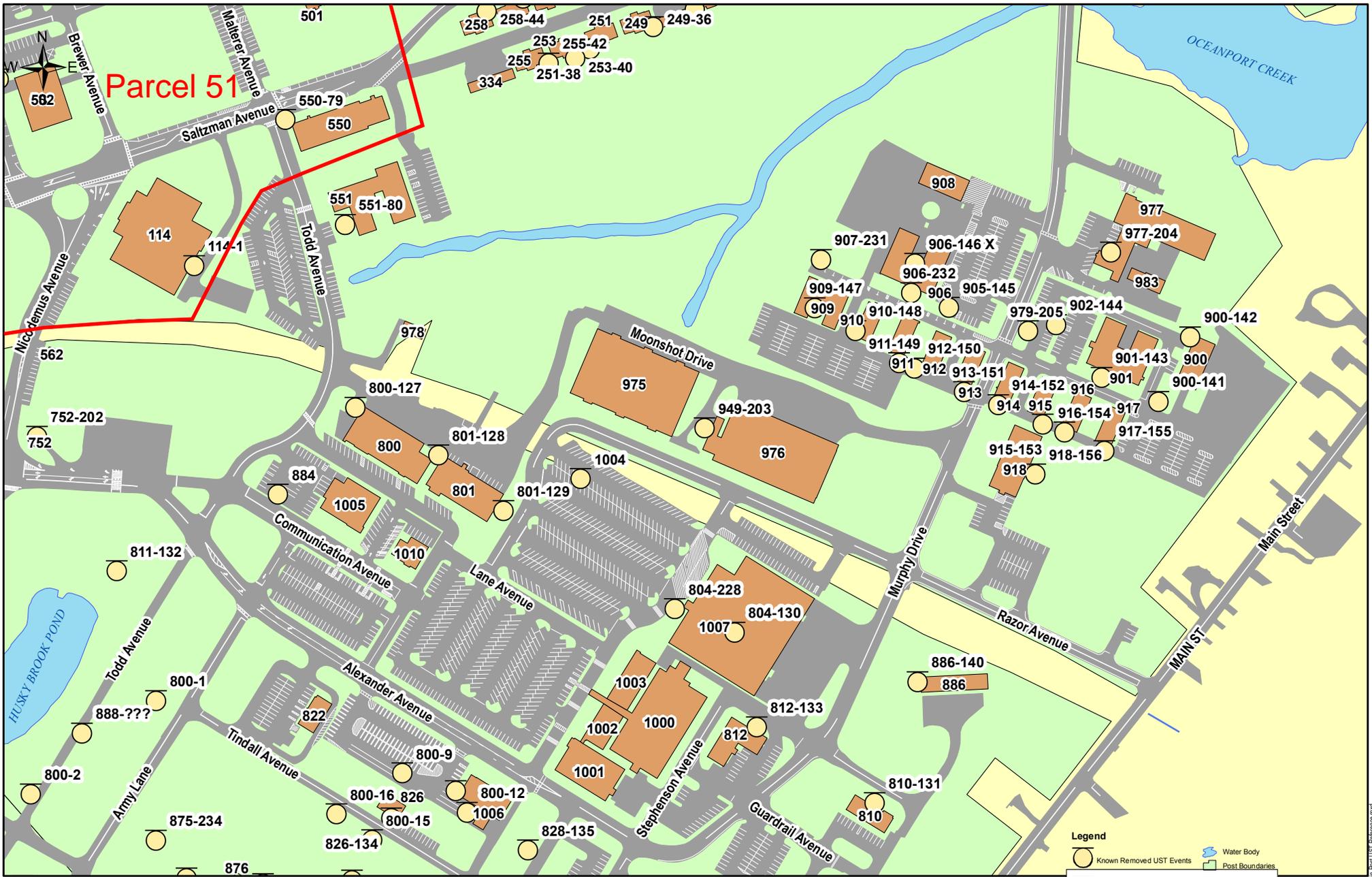
Site Layout Drawings of Parcel 51

(Recent and Historical)









**UST Removal Reference Map**  
**Grid C3; Main Post**  
**Fort Monmouth, New Jersey**  
**FOUO**



**Legend**

- Known Removed UST Events
- Known\_Removed\_UST Events
- Reference Map Links
- Demolished Building
- Existing Building
- Roadway & Parking
- Water Body
- Post Boundaries

Map Created by:  
 Fort Monmouth Installation GIO, Environmental Division  
 Fort Monmouth, New Jersey  
 Date: August 10, 2011  
 All drawings must be field verified.  
 New Jersey State Plane Feet, NAD83

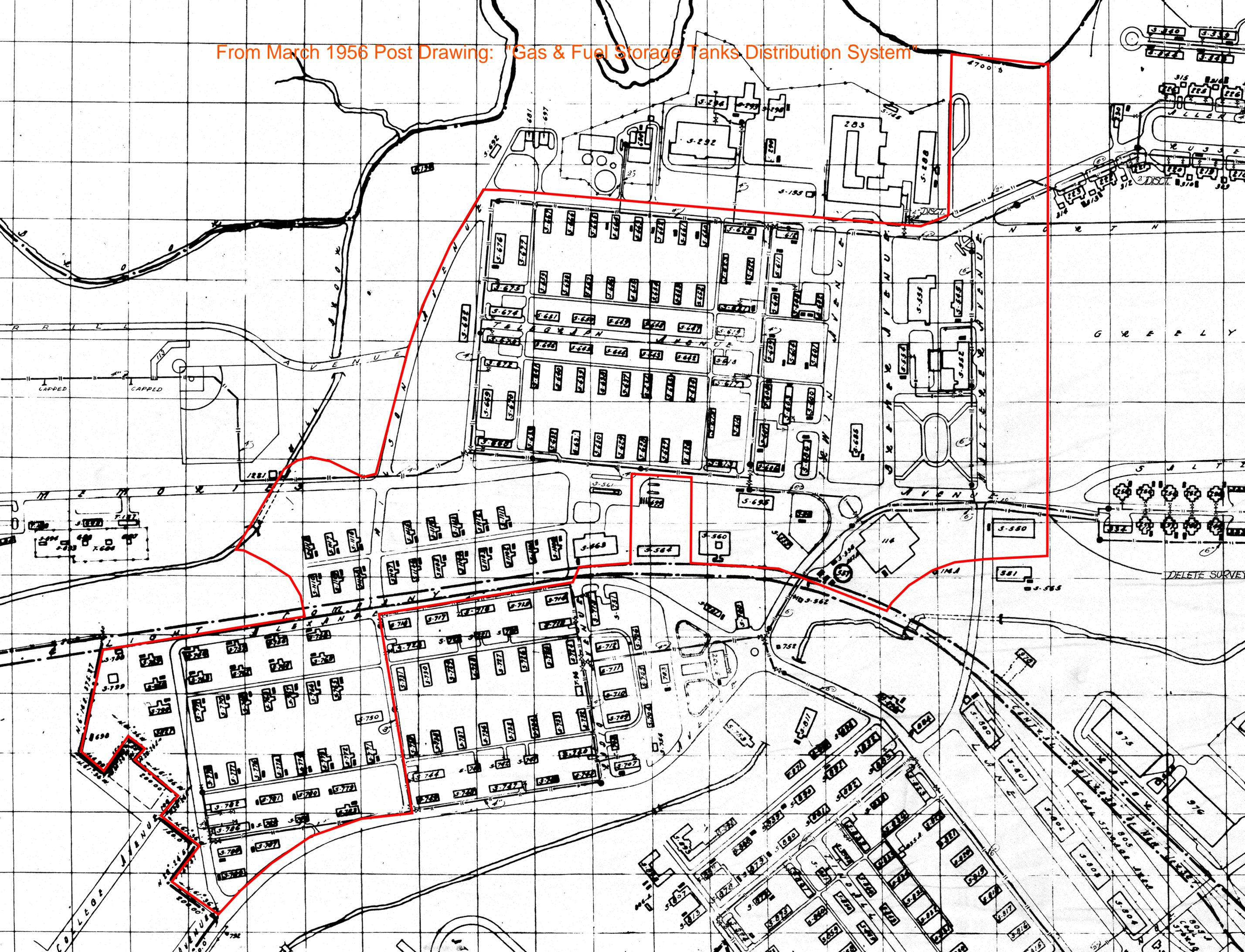




From May 2014 ECP UHOT Investigation Report  
(shows both Known Removed UHOTs, and Potential UHOTs)



From March 1956 Post Drawing: "Gas & Fuel Storage Tanks Distribution System"





ATTACHMENT C

Summary Table of Parcel 51 Underground Storage Tanks



## Summary Table of Parcel 51 USTs (Excluding Building 750 Motor Pool Area)

Site Name	RESIDENTIAL	Registration ID	DICAR	Tank Size and Type	Product	Army CaseStatus	Comments on Current or Requested NJDEP Status
114-2	NO	81533-1		8000 gallon steel	#2 FUEL OIL	Case Closed	Submit Smith report; request NFA
500	NO	81533-75	97-7-8-1439-02	5000 gallon steel	#2 FUEL OIL	Case Closed	NFA approved per 10/23/2000 NJDEP letter
501	NO	81533-76		1000 gallon steel	#2 FUEL OIL	Case Closed	NFA approved per 7/10/1998 and 5/30/2013 NJDEP letters
502	NO	81533-77		3000 gallon steel	#2 FUEL OIL	Case Closed	NFA approved per 8/29/2000 NJDEP letter
545	NO	81533-78	94-12-06-1355-21	1500 gallon steel	#2 FUEL OIL	Case Closed	Submit Smith report; request NFA
550	NO	81533-79	95-10-04-1553-32	1000 gallon steel	#2 FUEL OIL	Case Closed	NFA approved per 10/23/2000 NJDEP letter
552	NO	81533-81	95-10-26-1144-06	2000 gallon steel	#2 FUEL OIL	Case Closed	NFA approved per 8/29/2000 NJDEP letter
563	NO	81533-82		1000 gallon steel	#2 FUEL OIL	Case Closed	Submit Smith report; request NFA
600A	NO	81533-83		550 gallon steel	#2 FUEL OIL	Case Closed	NFA approved per 1/10/2003 NJDEP letter
600B	NO	81533-212	93-11-09-0923-00	1000 gallon steel	#2 FUEL OIL	Case Closed	NFA approved per 1/10/2003 NJDEP letter
601	NO	81533-84	94-08-18-1613-35	1000 gallon steel	#2 FUEL OIL	Case Closed	Submit Smith report; request NFA
605	NO	81533-85	93-12-16-1343-29	1000 gallon steel	#2 FUEL OIL	Case Closed	NFA approved per 1/10/2003 NJDEP letter
608	NO	81533-86		1000 gallon steel	#2 FUEL OIL	Case Closed	Submit Smith report; request NFA
611	NO	81533-87	94-08-18-1613-35	1000 gallon steel	#2 FUEL OIL	Case Closed	NFA approved per 1/10/2003 NJDEP letter
614	NO	81533-88		1000 gallon steel	#2 FUEL OIL	Case Closed	Submit TVS report; request NFA
615	NO	81533-89		1000 gallon steel	#2 FUEL OIL	Case Closed	NFA approved per 1/10/2003 NJDEP letter
616	NO	81533-90	94-12-08-1040-10	1000 gallon steel	#2 FUEL OIL	Case Closed	Submit Smith report; TPH>5100 mg/kg so exceeds criteria.
618	NO	81533-91	94-8-19-1612-06	1000 gallon steel	#2 FUEL OIL	Case Closed	NFA approved per 1/10/2003 NJDEP letter
619	NO	81533-92	94-08-24-1320-18	1000 gallon steel	#2 FUEL OIL	Case Closed	NFA approved per 1/10/2003 NJDEP letter
620	NO	81533-93		1000 gallon steel	#2 FUEL OIL	Case Closed	Submit Smith report; request NFA
621	NO	81533-94	94-08-25-1302-00	1000 gallon steel	#2 FUEL OIL	Case Closed	NFA approved per 1/10/2003 NJDEP letter
622	NO	81533-95		1000 gallon steel	#2 FUEL OIL	Case Closed	Submit TVS report; request NFA
625	NO	81533-96		550 gallon steel	#2 FUEL OIL	Case Closed	Submit Smith report; request NFA
634	YES	81533-	941921084116	Unknown/UST previously removed	#2 FUEL OIL	Case Closed	NFA approved per 1/10/2003 NJDEP letter
635	YES	81533-		Unknown/UST previously removed	#2 FUEL OIL	Case Closed	NFA approved per 5/30/2013 NJDEP letter
637	YES	81533-		Unknown/UST previously removed	#2 FUEL OIL	Case Closed	Submit review summary and data; request NFA
638	YES	81533-	94-10-21-0841-16	Unknown/no UST found	#2 FUEL OIL	Case Closed	NFA approved per 1/10/2003 NJDEP letter
639	YES	81533-	94-10-21-0841-16	Unknown/no UST found	#2 FUEL OIL	Case Closed	NFA approved per 1/10/2003 NJDEP letter
640	YES	81533-	94-10-21-0841-16	Unknown/UST previously removed	#2 FUEL OIL	Case Closed	NFA approved per 1/10/2003 NJDEP letter
641	YES	81533-	94-10-21-0841-16	Unknown/UST previously removed	#2 FUEL OIL	Case Closed	NFA approved per 1/10/2003 NJDEP letter
642	YES	81533-		1080 gallons/UST previously removed	#2 FUEL OIL	Case Closed	NFA approved per 5/30/2013 NJDEP letter

## Summary Table of Parcel 51 USTs (Excluding Building 750 Motor Pool Area)

Site Name	RESIDENTIAL	Registration ID	DICAR	Tank Size and Type	Product	Army CaseStatus	Comments on Current or Requested NJDEP Status
643	YES	81533-		1080 gallons/UST previously removed	#2 FUEL OIL	Case Closed	NFA approved per 5/30/2013 NJDEP letter
644	YES	81533-		1080 gallons/UST previously removed	#2 FUEL OIL	Case Closed	NFA approved per 1/10/2003 NJDEP letter
645	YES	81533-		1080 gallons/UST previously removed	#2 FUEL OIL	Case Closed	Submit review summary and data; request NFA
646	YES	81533-		1080 gallons/UST previously removed	#2 FUEL OIL	Case Closed	Submit review summary and data; request NFA
647	YES	81533-		1080 gallons/UST previously removed	#2 FUEL OIL	Case Closed	Submit review summary and data; request NFA
648	YES	81533-		1080 gallons/UST previously removed	#2 FUEL OIL	Case Closed	Submit review summary and data; request NFA
649	YES	81533-		1080 gallons/UST previously removed	#2 FUEL OIL	Case Closed	Submit review summary and data; request NFA
650	YES	81533-		1080 gallons/UST previously removed	#2 FUEL OIL	Case Closed	Submit review summary and data; request NFA
651	YES	81533-		1080 gallons/UST previously removed	#2 FUEL OIL	Case Closed	Submit review summary and data; request NFA
652	YES	81533-		1080 gallons/UST previously removed	#2 FUEL OIL	Case Closed	Submit review summary and data; request NFA
653	YES	81533-		1080 gallons/UST previously removed	#2 FUEL OIL	Case Closed	Submit review summary and data; request NFA
654	YES	81533-		1080 gallons steel	#2 FUEL OIL	Case Closed	Submit review summary and data; request NFA
655	YES	81533-97		1080 gallons steel	#2 FUEL OIL	Case Closed	Submit review summary and data; request NFA
656	YES	81533-98		1080 gallons steel	#2 FUEL OIL	Case Closed	Submit review summary and data; request NFA
657	YES	81533-99		1080 gallons steel	#2 FUEL OIL	Case Closed	Submit review summary and data; request NFA
658	YES	81533-100		1080 gallons steel	#2 FUEL OIL	Case Closed	Submit review summary and data; request NFA
659	NO	81533-101		1080 gallons steel	#2 FUEL OIL	Case Closed	Submit Smith report; request NFA
660	YES	81533-		1000 gallon steel	#2 FUEL OIL	Case Closed	Submit review summary and data; request NFA
661	YES	81533-		1000 gallon steel	#2 FUEL OIL	Case Closed	Submit review summary and data; request NFA
662	YES	81533-		1000 gallon steel	#2 FUEL OIL	Case Closed	Submit review summary and data; request NFA
663	YES	81533-		1000 gallon steel	#2 FUEL OIL	Case Closed	Submit review summary and data; request NFA
664	NO	81533-		Unknown/UST previously removed	#2 FUEL OIL	Case Closed	NFA approved per 1/10/2003 NJDEP letter
665	YES	81533-		Unknown/UST previously removed	#2 FUEL OIL	Case Closed	Submit review summary and data; request NFA
666	NO	81533-		Unknown/UST previously removed	#2 FUEL OIL	Case Closed	NFA approved per 1/10/2003 NJDEP letter
667	YES	81533-		1000 gallon steel	#2 FUEL OIL	Case Closed	Submit review summary and data; request NFA
669	YES	81533-102		1000 gallon steel	#2 FUEL OIL	Case Closed	Submit review summary and data; request NFA
671A	NO	81533-103	97-08-20-0748-27	1000 gallon steel	#2 FUEL OIL	Case Closed	NFA approved per 2/24/2000 NJDEP letter
676	NO	81533-104		1000 gallon steel	#2 FUEL OIL	Case Closed	Submit TVS report; request NFA
678	NO	81533-105	94-08-29-1141-51	550 gallon steel	#2 FUEL OIL	Case Closed	NFA approved per 1/10/2003 NJDEP letter

## Summary Table of Parcel 51 USTs (Excluding Building 750 Motor Pool Area)

Site Name	RESIDENTIAL	Registration ID	DICAR	Tank Size and Type	Product	Army CaseStatus	Comments on Current or Requested NJDEP Status
682	NO	81533-106		1080 gallons steel	#2 FUEL OIL	Case Closed	Submit Smith report; request NFA
686	NO	81533-107	94-12-08-1040-10	2000 gallon steel	#2 FUEL OIL	Case Closed	See review summary; NFA was previously approved per 1/10/2003 NJDEP letter. Additional review indicates 2-methylnaphthalene exceeded GWQC in groundwater.
689 A	NO	81533-108	93-11-10-758-23	550 gallon steel	#2 FUEL OIL	Case Closed	NFA approved per 8/29/2000 NJDEP letter
689 B	NO	81533-109	93-11-17-1759-33	2000 gallon steel	#2 FUEL OIL	Case Closed	NFA approved per 8/29/2000 NJDEP letter
695	NO	81533-111		2000 gallon fiberglass	#2 FUEL OIL	Case Closed	NFA approved per 2/24/2000 and 5/30/2013 NJDEP letters
787	NO	81533-124		1000 gallon steel	#2 FUEL OIL	Case Closed	NFA approved per 2/24/2000 NJDEP letter
788	NO	81533-125		1000 gallon steel	#2 FUEL OIL	Case Closed	NFA approved per 2/24/2000 NJDEP letter
789	NO	81533-126		550 gallon steel	#2 FUEL OIL	Case Closed	Submit Smith report; request NFA
1102	NO	81533-162		1000 gallon steel	#2 FUEL OIL	Case Closed	NFA approved per 1/10/2003 NJDEP letter
1103	NO	81533-163		1000 gallon fiberglass	#2 FUEL OIL	Case Closed	Submit TVS report; request NFA
1104	NO	81533-164	10-06-04-0858-25	1000 gallon steel	#2 FUEL OIL	Case Open	NFA approved per 1/10/2003 NJDEP letter
1105	NO	81533-165	98-06-23-1657-45	1000 gallon steel	#2 FUEL OIL	Case Closed	NFA approved per 2/24/2000 NJDEP letter
1106	NO	81533-166		1000 gallon fiberglass	#2 FUEL OIL	Case Closed	Submit Smith report; request NFA
1107	NO	81533-167	98-05-12-0151-41	1000 gallon fiberglass	#2 FUEL OIL	Case Closed	NFA approved per 10/23/2000 NJDEP letter
1107B	NO	81533-233	98-05-12-0151-41	1000 gallon steel	#2 FUEL OIL	Case Closed	NFA approved per 10/23/2000 NJDEP letter
1108	NO	81533-168	94-05-13-0932-29	1000 gallon steel	#2 FUEL OIL	Case Closed	NFA approved per 8/29/2000 NJDEP letter
1109	NO	81533-169	98-07-08-1128-44	1000 gallon fiberglass	#2 FUEL OIL	Case Closed	NFA approved per 2/24/2000 NJDEP letter
1110	NO	81533-170		1000 gallon fiberglass	#2 FUEL OIL	Case Closed	NFA approved per 2/24/2000 NJDEP letter
1123	NO	81533-172		1000 gallon steel	#2 FUEL OIL	Case Closed	NFA approved per 2/24/2000 NJDEP letter
1123B	YES	-	09-09-16-1611-16	1000 gallon steel	#2 FUEL OIL	Case Open	NFA approved per 6/16/2015 NJDEP letter
1123C	YES	-	09-09-21-1213-31		#2 FUEL OIL	Case Open	NFA approved per 6/16/2015 NJDEP letter
1221	NO	81533-208		275 gallon steel	DIESEL	Case Closed	NFA approved per 2/24/2000 NJDEP letter



ATTACHMENT D

No Further Action Letters from NJDEP





# State of New Jersey

Department of Environmental Protection

Christine Todd Whitman  
Governor

Robert C. Shinn, Jr.  
Commissioner

Mr. James Ott  
Director - Public Works  
U.S. Army, Fort Monmouth  
Fort Monmouth, NJ 07703

JUL 10 1998

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

Dear Mr. Ott:

The NJDEP is in receipt of UST closure reports noted below. These documents have been reviewed by the NJDEP throughout the closure process and the documents submitted were discussed throughout their drafting and in great detail upon submittal. Based on these steps and the final review conducted by me, the NJDEP accepts the closure reports and all of the NFA requests commensurate with these submittals.

NJDEP REG. NO.	BUILDING	CONTENTS	CAPACITY	PROPOSAL	DEP APPROVAL
90010-10	116C-MP/E	No. 2 Fuel Oil	2000	NFA	YES
81533-134	826-MP/W	No. 2 Fuel Oil	550	NFA	YES
81533-144	902-MP/W	No. 2 Fuel Oil	1000	NFA	YES
81515-20	2529-CW	No. 2 Fuel	1000	NFA	YES
81515-22	2532-CW	No. 2 Fuel Oil	550	NFA	YES
81515-23	2533-CW	No. 2 Fuel Oil	1000	NFA	YES
81515-31	2561-CW	No. 2 Fuel Oil	550	NFA	YES
90010-27	410-MP/E	No. 2 Fuel Oil	1080	NFA	YES
81533-206	1075	NOT SUBMITTED		WITH	PACKAGE
81515-16	2504B-CW	No. 2 Fuel Oil	1000	NFA	YES
81515-18	2507-CW	No. 2 Fuel Oil	1080	NFA	YES
81515-26	2536-CW	No. 2 Fuel Oil	1000	NFA	YES
81515-14	2503-CW	No. 2 Fuel Oil	1000	NFA	YES
90010-12	117B-MP/E	No. 2 Fuel Oil	2000	NFA	YES
90010-34	418-MP/E	No. 2 Fuel Oil	1080	NFA	YES
90010-36	420-MP/E	No. 2 Fuel Oil	1080	NFA	YES
90010-38	422-MP/E	No. 2 Fuel Oil	1080	NFA	YES
90010-41	427-MP/E	No. 2 Fuel Oil	1080	NFA	YES
90010-44	430A-MP/E	No. 2 Fuel Oil	550	NFA	YES
90010-50	453-MP/E	No. 2 Fuel Oil	1080	NFA	YES
90010-51	454-MP/E	No. 2 Fuel Oil	1080	NFA	YES
81533-76	501-MP/W	No. 2 Fuel Oil	1000	NFA	YES
81533-141	900A-MP/W	No. 2 Fuel Oil	1000	NFA	YES
81515-17	2506-CW	No. 2 Fuel Oil	1000	NFA	YES
90010-9	116A-MP/E	No. 2 Fuel Oil	1000	NFA	YES
90010-11	117A-MP/E	No. 2 Fuel Oil	2000	NFA	YES
90010-53	480-MP/E	No. 2 Fuel Oil	1000	NFA	YES

81515-19	2508-CW	No. 2 Fuel Oil	550	NFA	YES
81533-228	804B-MP/W	No. 2 Fuel Oil	1000	NFA	YES
81534-142	900B-MP/W	No. 2 Fuel Oil	1000	NFA	YES

The efforts made to assure protection of human health and the environment as well as the efforts made to make the entire closure process efficient and consistent with the NJDEP's Technical Requirements for Site Remediation (N.J.A.C. 7:9-6 et seq.) has been exceptional.

If I can be of any assistance, please do not hesitate to contact me should you have any questions or comments.

Sincerely,



Ian R. Curtis, Case Manager  
Bureau of Federal Case Management  
ICURTIS@DEP.STATE.NJ.US

cc. Kevin Kratina, BUST

FTMMTH51.DOC



# State of New Jersey

Department of Environmental Protection

Christine Todd Whitman  
Governor

Robert C. Shinn, Jr.  
Commissioner

Mr. James Ott  
C/O: Dinker Desai  
Director – Public Works  
U.S. Army, Fort Monmouth  
Fort Monmouth, NJ 07703

FEB 24 2000

Re: UST Closure Reports - Closure Approvals  
Fort Monmouth Army Base  
Fort Monmouth, Monmouth County

Dear Mr. Ott:

The NJDEP has reviewed the UST Closure and Site Investigation Reports for the Fort Monmouth underground storage tank sites noted below. Based on the NJDEP review of these documents, your request that the NJDEP approve the closure reports for those tanks listed below.

The following tanks were removed, sampled and analyzed in accordance with State and Federal requirements. Additionally, the reports consistently state the Fort Monmouth Public Works Department policy of removing all soils which are determined to have total petroleum hydrocarbon contamination (TPHC) greater than 1000 ppm. NJDEP criteria requires similar removal for TPHC contamination greater than 10,000 ppm. These activities are conservative and therefore further assure the NJDEP that no further action is necessary at these sites.

NJDEP Req. #	Bldg. #	NJDEP Req. #	Bldg. #
0090016-16	165	0081533-151	913
0090010-69	170D	0081533-155	917
0090010-20	197	0081533-165	1105
0081533-54	270	0081533-169	1109
0081533-60	286	0081533-173	1213A
0081533-65	291	0081533-208	1221
0090010-70	400	00192486-34	2018
0081533-103	671A	00192486-35	2021A
0081533-138	876A	0081515-30	2543
0081533-149	911	0081515-40	2707
0081533-150	912		

If you should have any questions or comments, please do not hesitate to contact me at (609) 633-7232 or via E-mail.

Sincerely,

Ian R. Curtis, Case Manager  
Bureau of Case Management  
[ICURTIS@DEP.STATE.NJ.US](mailto:ICURTIS@DEP.STATE.NJ.US)

FTMMTH064IRC.DOC



# State of New Jersey

Department of Environmental Protection

Robert C. Shinn, Jr.  
Commissioner

Christine Todd Whitman  
Governor

Mr. James Ott  
C/O: Dinker Desai  
Director - Public Works  
U.S. Army, Fort Monmouth  
Fort Monmouth, NJ 07703

FEB 24 2000

Re: UST Closure Reports - Closure Approvals  
Fort Monmouth Army Base  
Fort Monmouth, Monmouth County

Dear Mr. Ott:

The NJDEP has reviewed the UST Closure and Site Investigation Reports for the Fort Monmouth underground storage tank sites noted below. Based on the NJDEP review of these documents, your request that the NJDEP approve the closure reports for those tanks listed below.

The following tanks were removed, sampled and analyzed in accordance with State and Federal requirements. Additionally, the reports consistently state the Fort Monmouth Public Works Department policy of removing all soils which are determined to have total petroleum hydrocarbon contamination (TPHC) greater than 1000 ppm. NJDEP criteria requires similar removal for TPHC contamination greater than 10,000 ppm. These activities are conservative and therefore further assure the NJDEP that no further action is necessary at these sites.

NJDEP Reg. #	Bldg. #	NJDEP Reg. #	Bldg. #
0081533-59	283B	*0081533-135	828
0090010-46	430C	0081533-136	864A
0081533-111	695	0081533-137	866
0081533-117	739	*0081533-231	907
0081533-118	744	0081533-154	916
0081533-121	747	0081533-156	918
0081533-124	787	0081533-170	1110
0081533-125	788	0081533-172	1123
0081533-128	801A	0081533-207	1150
0081533-133	812		

\* No product lines were found during the excavation of the UST due to the fact the buildings were removed prior to the USTs. Based on a review of available maps and drawings, the product lines were less than 15 feet in length at each of the locations. Thus, no additional sampling was required.

If you should have any questions or comments, please do not hesitate to contact me at (609) 633-7232 or via E-mail.

Sincerely,

Ian R. Curtis, Case Manager  
Bureau of Case Management  
[ICURTIS@DEP.STATE.NJ.US](mailto:ICURTIS@DEP.STATE.NJ.US)

FTMMTH063IRC.DOC



# State of New Jersey

Department of Environmental Protection

Christine Todd Whitman  
Governor

Robert C. Shinn, Jr.  
Commissioner

AUG 29 2001

Mr. Dinkerrai Desai  
DEPARTMENT OF THE ARMY  
HEADQUARTERS, U.S. ARMY COMMUNICATIONS-ELECTRONIC COMMAND  
FORT MONMOUTH, NJ 07703-5000

Re: UST Closure Approval/NFA  
Fort Monmouth Main Post  
Monmouth County

Dear Mr. Desai:

The NJDEP is in receipt of nine (9) UST closure reports dated July 27, 1998. The Army has requested to receive No Further Action approval letters for each of these reports. This letter approves the NFA requests for the following 9 UST located on the Main Post of the Fort Monmouth site:

NJDEP Req. #	Bldg. #
0090010-35	419
0090010-48	439
0090010-56	484
0081533-77	502
0081533-143	901
0081515-12	2275
0081515-13	2502
0081515-25	2535
0081515-27	2537

The NJDEP has determined that the Army has performed the remedial actions in a manner consistent or in excess of the regulatory requirements, specifically the Technical Requirements For Site Remediation (N.J.A.C. 7:26E et seq.). Soils with contamination in excess of the NJDEP residential cleanup criteria have been excavated and the Army has taken great care to provide documentation which assures us that all sources of contamination have been remediated.

If you should have any questions or comments, please do not hesitate to contact me at (609) 633-7232 or via E-mail.

Sincerely,

Ian R. Curtis, Case Manager  
Bureau of Case Management  
[ICURTIS@DEP.STATE.NJ.US](mailto:ICURTIS@DEP.STATE.NJ.US)

FTMMTH069IRC.DOC



# State of New Jersey

Christine Todd Whitman  
Governor

Department of Environmental Protection

Robert C. Shinn, Jr.  
Commissioner

Mr. Dinkerrai Desai  
DEPARTMENT OF THE ARMY  
HEADQUARTERS, U.S. ARMY COMMUNICATIONS-ELECTRONIC COMMAND  
FORT MONMOUTH, NJ 07703-5000

AUG 29 2000

Re: UST Closure Approval/NFA  
Fort Monmouth Main Post  
Monmouth County

Dear Mr. Desai:

The NJDEP is in receipt of twenty-five (25) UST closure reports dated August 1, 2000. The Army has requested to receive No Further Action approval letters for each of these reports. This letter approves the NFA requests for the following 25 UST located on the Main Post of the Fort Monmouth site:

NJDEP Req. #	Bldg. #	NJDEP Req. #	Bldg. #
0090010-03	64	0081533-80	551
0090010-05	65	0081533-81	552
0090010-05	74	0081533-120	746
0081533-03	205	0081533-122	748
0090010-29	412	0081533-123	749
0090010-30	413	0081533-131	810
0090010-31	414	0081533-132	811
0090010-33	417	0081533-232	906B
0090010-42	428	0081533-159	1006
0090010-47	434	0081533-206	1075
0090010-47	447	0081515-21	2531
0090010-57	485	00192486-02	2018
0090010-59	492		

The NJDEP has determined that the Army has performed the remedial actions in a manner consistent or in excess of the regulatory requirements, specifically the Technical Requirements For Site Remediation (N.J.A.C. 7:26E et seq.). Soils with contamination in excess of the NJDEP residential cleanup criteria have been excavated and the Army has taken great care to provide documentation which assures us that all sources of contamination have been remediated.

The NJDEP has one comment in that we request that future reports provide ground water flow direction indications on the well location maps.

If you should have any questions or comments, please do not hesitate to contact me at (609) 633-7232 or via E-mail.

Sincerely

Ian R. Curtis, Case Manager  
Bureau of Case Management  
[ICURTIS@DEP.STATE.NJ.US](mailto:ICURTIS@DEP.STATE.NJ.US)



# State of New Jersey

Department of Environmental Protection

Christine Todd Whitman  
Governor

Robert C. Shinn, Jr.  
Commissioner

Mr. Dinkerrai Desai  
DEPARTMENT OF THE ARMY  
HEADQUARTERS, U.S. ARMY COMMUNICATIONS-ELECTRONIC COMMAND  
FORT MONMOUTH, NJ 07703-5000

AUG 29 2000

Re: UST Closure Approval/NFA  
Fort Monmouth Main Post  
Monmouth County

Dear Mr. Desai:

The NJDEP is in receipt of seventeen (17) UST closure reports dated June 1, 2000. The Army has requested to receive No Further Action approval letters for each of these reports. This letter approves the NFA requests for the following 17 UST located on the Main Post of the Fort Monmouth site:

NJDEP Req. #	Bldg. #	NJDEP Req. #	Bldg. #
0090010-06	80	0081533-226	707
0090010-17	166	0081533-119	745
0081533-5	207A	0081533-160	1076
0081533-211	207B	0081533-161	1076
0081533-57	282	0081533-168	1108
0081533-64	290	00192486-1	2000
0081533-68	295	0081515-62	2700.4
0081533-108	689A	00192486-30	3050
0081533-109	689B		

The NJDEP has determined that the Army has performed the remedial actions in a manner consistent or in excess of the regulatory requirements, specifically the Technical Requirements For Site Remediation (N.J.A.C. 7:26E et seq.). Soils with contamination in excess of the NJDEP residential cleanup criteria have been excavated and the Army has taken great care to provide documentation which assures us that all sources of contamination have been remediated.

The NJDEP has one comment in that we request that future reports provide ground water flow direction indications on the well location maps.

If you should have any questions or comments, please do not hesitate to contact me at (609) 633-7232 or via E-mail.

Sincerely,

Ian R. Curtis, Case Manager  
Bureau of Case Management  
[ICURTIS@DEP.STATE.NJ.US](mailto:ICURTIS@DEP.STATE.NJ.US)



# State of New Jersey

Christine Todd Whitman  
Governor

Department of Environmental Protection

Robert C. Shinn, Jr.  
Commissioner

Mr. Dinkerrai Desai  
DEPARTMENT OF THE ARMY  
HEADQUARTERS, U.S. ARMY COMMUNICATIONS-ELECTRONIC COMMAND  
FORT MONMOUTH, NJ 07703-5000

Re: UST Closure Approval/NFA  
Fort Monmouth Main Post  
Monmouth County

OCT 23 2000

Dear Mr. Desai:

The NJDEP is in receipt of forty [REDACTED] UST closure reports dated September 11, 2000. The Army has requested to receive No Further Action approval letters for each of these reports. This letter approves the NFA requests for the following 40 UST located on the Main Post of the Fort Monmouth site:

NJDEP Req. #	Bldg. #	NJDEP Req. #	Bldg. #	NJDEP Req. #	Bldg. #
0090010-04	64B	0081533-79	550	0081533-179	1220F
0090010-09	116B	0081533-116	718	0081533-180	1220E
0090010-09	206B	0081533-202	752	0081533-181	1220D
0081533-56	275	0081533-147	909	0081533-182	1220C
0090010-23	276	0081533-152	914	0081533-183	1220B
0090010-25	280	0081533-153	915	00192486-36	2043
0081533-201	286/548A	0081533-204	977	0081515-15	2504A
0081533-62	288	0081533-205	979	0081515-35	2700
0081533-63	289	0081533-167	1107	0081515-36	2700
0081533-66	292	0081533-233	1107B	0081515-37	2700
0090010-43	429	0081533-175	1220J	0081515-38	2700
0090010-52	475	0081533-176	1220I	0081515-39	2700
0090010-55	483	0081533-177	1220H		
0081533-75	500	0081533-178	1220G		

The NJDEP has determined that the Army has performed the remedial actions in a manner consistent with the regulatory requirements, specifically the Technical Requirements For Site Remediation (N.J.A.C. 7:26E et seq.). Soils with contamination in excess of the NJDEP residential cleanup criteria have been excavated and the Army has taken great care to provide documentation that assures us that all sources of contamination have been remediated.

If you should have any questions or comments, please do not hesitate to contact me at (609) 633-7232 or via E-mail.

Sincerely,

Ian R. Curtis, Case Manager  
Bureau of Case Management  
[ICURTIS@DEP.STATE.NJ.US](mailto:ICURTIS@DEP.STATE.NJ.US)

FTMMTH71IRC.DOC



State of New Jersey

Department of Environmental Protection

James E. McGreevey  
Governor

Bradley M. Campbell  
Commissioner

Mr. Dinkerrai Desai  
DEPARTMENT OF THE ARMY  
HEADQUARTERS, U.S. ARMY COMMUNICATIONS-ELECTRONIC COMMAND  
FORT MONMOUTH, NJ 07703-5000

Re: UST Closure Approval/NFA  
Fort Monmouth Main Post  
Monmouth County

JAN 10 2003

Dear Mr. Desai:

The NJDEP is in receipt of sixty-eight (68) underground storage tank (UST) closure reports dated between July 17, 2001 and May 15, 2002. The Army has requested to receive No Further Action (NFA) approval letters for each of these reports. This letter approves the NFA requests for the following 68 UST that are located on the Main Post of the Fort Monmouth site:

Submittal Date	Building No.	NJDEP Reg. #	Residential
07/17/2001	104	90010-75	NO
07/17/2001	699A	81533-112	NO
07/17/2001	800A	81533-127	NO
07/17/2001	875	81533-234	NO
07/17/2001	949	81533-203	NO
07/17/2001	1220A	81533-184	NO
07/17/2001	2000B	192486-38	NO
01/02/2002	257	81533-200	NO
01/02/2002	283C	81533-229	NO
01/02/2002	290B	81533-224	NO
01/02/2002	290B	81533-225	NO
01/02/2002	491	90010-71	NO
01/02/2002	605	81533-85	NO
01/02/2002	678	81533-105	NO
01/02/2002	699	81533-236	NO
01/02/2002	699	81533-238	NO
01/02/2002	699	81533-237	NO
01/02/2002	699	81533-235	NO
01/02/2002	801B	81533-129	NO
01/02/2002	804A	81533-130	NO
01/02/2002	2337	81515-65	NO
01/02/2002	2562A	81515-41	NO
01/02/2002	2707	81515-50	NO
01/02/2002	2707	81515-49	NO
01/02/2002	2707	81515-51	NO
01/02/2002	2707	81515-47	NO
01/02/2002	2707	81515-48	NO

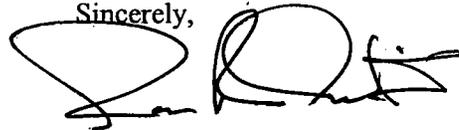
Submittal Date	Building No.	NJDEP Reg. #	Residential
02/13/2002	2044	192486-24	NO
02/13/2002	2044	192486-32	NO
02/13/2002	2044	192486-33	NO
02/26/2002	208B	81533-210	YES
03/05/2002	246	N/A	YES
03/05/2002	261B	N/A	YES
05/15/2002	106	90010-74	NO
05/15/2002	164	90010-15	NO
05/15/2002	173	90010-19	NO
05/15/2002	200	81533-2	NO
05/15/2002	208A	81533-6	YES
05/15/2002	233	81533-21	YES
05/15/2002	237	81533-25	YES
05/15/2002	271	81533-55	YES
05/15/2002	277	90010-24	NO
05/15/2002	296B	81533-217	NO
05/15/2002	296B	81533-223	NO
05/15/2002	296B	81533-221	NO
05/15/2002	296B	81533-220	NO
05/15/2002	296B	81533-222	NO
05/15/2002	296B	81533-218	NO
05/15/2002	296B	81533-216	NO
05/15/2002	296B	81533-215	NO
05/15/2002	296B	81533-214	NO
05/15/2002	296B	81533-213	NO
05/15/2002	296B	81533-219	NO
05/15/2002	426	90010-40	NO
05/15/2002	482	90010-54	NO
05/15/2002	600 A	81533-83	NO
05/15/2002	600 B	81533-212	NO
05/15/2002	611	81533-87	NO
05/15/2002	615	81533-89	NO
05/15/2002	618	81533-91	NO
05/15/2002	619	81533-92	NO
05/15/2002	621	81533-94	NO
05/15/2002	634	N/A	NO
05/15/2002	638	N/A	NO
05/15/2002	639-2	N/A	NO
05/15/2002	640	N/A	NO
05/15/2002	641	N/A	NO
05/15/2002	644	N/A	NO
05/15/2002	664	N/A	NO
05/15/2002	666	N/A	NO
05/15/2002	686	81533-107	NO
05/15/2002	697	81533-194	NO
05/15/2002	697	81533-195	NO

Submittal Date	Building No.	NJDEP Reg. #	Residential
05/15/2002	697	81533-196	NO
05/15/2002	876B	81533-139	NO
05/15/2002	886	81533-140	NO
05/15/2002	905	81533-145	NO
05/15/2002	1102	81533-162	NO
05/15/2002	1104	81533-164	NO
05/15/2002	2067	192486-37	NO
05/15/2002	2534	81515-24	NO
05/15/2002	2603	81515-60	NO
05/15/2002	2700 2,6	81515-61	NO

The NJDEP has determined that the Army has performed the remedial actions in a manner consistent with the regulatory requirements, specifically the Technical Requirements For Site Remediation (N.J.A.C. 7:26E et seq.). Soils with contamination in excess of the NJDEP residential cleanup criteria have been excavated and the Army has taken great care to provide documentation that assures us that all sources of contamination have been remediated.

If you should have any questions or comments, please do not hesitate to contact me at (609) 633-7232 or via E-mail.

Sincerely,



Ian R. Curtis, Case Manager  
 Bureau of Case Management  
[ICURTIS@DEP.STATE.NJ.US](mailto:ICURTIS@DEP.STATE.NJ.US)



## State of New Jersey

CHRIS CHRISTIE  
Governor

KIM GUADAGNO  
Lt. Governor

DEPARTMENT OF ENVIRONMENTAL PROTECTION  
Bureau of Case Management  
401 East State Street  
P.O. Box 420/Mail Code 401-05F  
Trenton, NJ 08625-0028  
Phone #: 609-633-1455  
Fax #: 609-633-1439

BOB MARTIN  
Commissioner

May 30, 2013

Wanda Green  
BRAC Environmental Coordinator  
OACSIM – U.S. Army Fort Monmouth  
PO Box 148  
Oceanport, NJ 07757

Re: Army's January 31, 2013 Correspondence – Miscellaneous USTs  
Main Post & Charles Wood Area  
Fort Monmouth, New Jersey  
PI G000000032

Dear Ms. Green:

The New Jersey Department of Environmental Protection (Department) has completed review of the referenced correspondence (and associated Attachments A through T), submitted to address several of the unresolved underground storage tank (UST) issues noted in this office's letter of July 10, 2012. As indicated in the referenced submittal, additional information regarding the various USTs will be forthcoming. The following comments are offered.

**Parcel 28 – Former Eatontown Laboratory**

As has been discussed, it is agreed no additional action is necessary for UST 2539-28, UST 2539-64, UST 2531-21, and two of the three USTs previously located between Building 2525 and Heliport Drive. Documentation as to the adequate evaluation of tanks UST 2542-29, UST 2564-32 and the UST at Building 2544 (T-7) has not yet been submitted.

**Parcel 49 – Former Squier Laboratory Complex**

Upon review of the documentation included in the submittal, it is agreed no further action is necessary for the UST at Building 293-67, or UST 283B-59.

**Parcel 51 – 750 Area, 500 Area, 600 Area, 1100 Area – Former Buildings**

Upon review of the documentation included in the submittal, it is agreed no further action is necessary for UST 695-111, UST 635, UST 642, UST 643 and 501-76.

As no sampling was apparently performed at UST 637, this office cannot concur there has been no discharge associated with the UST. As regarding Appendix K, and USTs at Buildings 644 through 654, evidently no sampling was performed; again, without same, this office cannot concur there has been no discharge.

**Parcel 76 – 200 Area, 300 Area – Former Barracks**

Review of the documentation included in the submittal indicates no additional action is necessary for UST 261 and UST 261B.

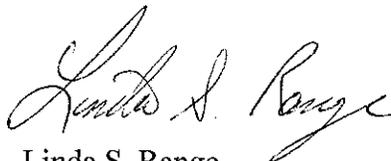
**Parcel 79 – 400 Area Former Barracks**

Review of the documentation included in the submittal, as well as that included in the files, indicates no further action is necessary for UST 411-28, UST 421-37, UST 423-39

As no sampling was evidently performed at UST 401-26 or UST 416-32, this office cannot concur there has been no discharge associated with the USTs.

If you have any questions regarding this matter, please contact this office at (609) 984-6606.

Sincerely,



Linda S. Range  
Bureau of Case Management

C: Joe Pearson, Calibre Systems  
Rich Harrison, FMERA  
Julie Carver, Matrix



## State of New Jersey

CHRIS CHRISTIE  
Governor

KIM GUADAGNO  
Lt. Governor

DEPARTMENT OF ENVIRONMENTAL PROTECTION  
Bureau of Case Management  
401 East State Street  
P.O. Box 420/Mail Code 401-05F  
Trenton, NJ 08625-0028  
Phone #: 609-633-1455  
Fax #: 609-633-1439

BOB MARTIN  
Commissioner

June 16, 2015

John Occhipinti  
BRAC Environmental Coordinator  
OACSIM – U.S. Army Fort Monmouth  
PO Box 148  
Oceanport, NJ 07757

Re: *Final Environmental Condition of Property Supplemental Phase II Site Investigation  
Work Plan Addendum for Parcels 34, 50, 51, 52, 66, 80 and 83 dated February 2015*  
Fort Monmouth  
Oceanport, Monmouth County  
PI G000000032

Dear Mr. Occhipinti:

The New Jersey Department of Environmental Protection (Department) has completed review of the referenced report, received March 2, 2015, prepared by Parsons Government Services Inc. (Parsons), on behalf of the U.S. Army Engineering and Support Center, Huntsville (USAESCH). As indicated in the report, activities are to be performed with the goal of Decision Document acceptance in compliance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the National Contingency Plan (NCP), 40 CFR Part 300, and “to the extent possible to meet the requirements of New Jersey Administrative Code (NJAC) 7:26E Technical Requirements for Site Remediation”, as well as support closure of environmental sites to facilitate transfer of real property.

The workplan describes Site Investigation activities to be performed at the ECP Parcels referenced above. Comments and questions are as follows:

Tables 3.1 and 3.2 also will require revision based upon the following comments.

### **Parcel 34/Building 2567/FTMM-58**

*Section 2.4.1, Page B4-line 2* – Although this office agrees with the statement “post excavation soil samples were collected...and analyzed for TPHCs, VOCs, and lead”, review of historic

information appears to indicate elevated levels of benzene remain in the soil in the area of the dispenser island south of Building 2567. See additional detail under Section 3.2, below.

*Section 2.5, Page B-7, line 21* – This statement regarding the removal of piping was amended via email to Wanda Green (copy to Rob Youhas and Joe Pearson) on June 18, 2013 1519 hrs. The report documenting the investigation of the piping, however, as you likely are aware, has not been received by this office.

*Section 3.2 Sampling Plan* – Although it is agreed the proposal is appropriate for the TBA in ground water, the referenced submittal considers only the issue of TBA in ground water (the proposal for two annual sampling events of monitor wells 2567MW01 and 2567MW03 was approved on July 3, 2014). However, as briefly discussed in a conference call on June 12, 2015, a review of historic information appears to indicate levels of benzene above both the residential and non-residential criteria/standard remain in numerous locations in the vicinity of the dispenser area south of Building 2567. The information was obtained from the October 28, 2005 RIR/RAW, including Figure 2-1 dated 6/9/94, which indicates levels of benzene remain up to 85 ppm. The June 2010 RAPR appears to omit reference to analytical results from the post excavation soil sampling performed in 1993 during removal of USTs 42 through 45, stating only the samples were analyzed for TPHC, VOCs, and lead, however, a copy of the September 2, 2010 PBR Request contained within the submittal's Appendix B referenced benzene remaining to 45 ppm. Pages i, 3-5 and 6-1 of the June 2010 RAPR also indicate the "remaining original UST dispenser island areas" would undergo assessment upon BRAC closure. It is understood available information is currently being evaluated to determine the status of the soils in this area. At this time, however, this office considers the soil in the area an unaddressed area of concern in need of additional delineation.

## **Parcel 50**

*Section 2.2.1 - FTMM-54 - Page C-2 lines 39 & 42* reference the year of the eleven tank removals as 2003, while page C-3, line 17 indicates removal of the eleven tanks was 1993, which appears correct.

*Section 2.2.2 – FTMM-55 - Page C-5, line 11* – Waste oil UST No. 91533-193 is indicated as being NFAed in a January 10, 2003 letter. Although the tanks referenced on line 15 were found on the January 10, 2003 NJDEP NFA letter, that letter does not appear to reference UST No. 91533-193; no record of a letter of no further action for that tank could be located.

*Section 3.2 Sampling Plan* – As noted on page C-6, line 37, levels of TPHC remained in soil at the former location of UST No. 81533-64 at 16,200 and 11,900 ppm, at samples A and B, both at a depth of 5.5-6'. The proposal indicates horizontal delineation sampling is to be performed at locations A (16,200 ppm) and F (9,670 ppm), which is acceptable. Vertical delineation is also required. It is unclear, however, why sampling is not proposed at sample location B, as it does not appear to be vertically delineated.

The Department's EPH Protocol, [http://www.nj.gov/dep/srp/guidance/srra/eph\\_protocol.pdf](http://www.nj.gov/dep/srp/guidance/srra/eph_protocol.pdf), is to be followed, with contingency samples collected/analyzed as required. As per EPH Methodology Version 3.0, the non-fractionation option is appropriate only if the EPH level is anticipated to be below 1,700 ppm. As this cannot be presumed, the "unfractionated EPH" does not appear to be the appropriate option.

## Parcel 51

*Section 2.5, Page D-5, line 40 and Page D-6, line 4* - The submittal indicates the UST questions contained in this office's July 10, 2012 letter are to be addressed under the UHOT program. This office looks forward to submittal of same.

*Section 3.0* - With receipt of the additional clarification provided on page D-4, as well as the figure received on June 15, 2015, the questions noted in the Department's July 2012 letter relative to USTs 1123B and 1123C have been answered. It is agreed no additional action is necessary for UST 1123B. However, it is not agreed there are no COCs at Parcel 51. As indicated on line 11, 2-methylnaphthalene was found in the ground water at P51-G12 above the Ground Water Quality Standards (GWQS), as reported in the July 2008 SI. TPHC (collected due to elevated field screening readings) was also found in soil at that location at 6-6.5' at 7,487 ppm. Additional sampling is necessary.

*Motor Pool Area* - Although information regarding the 750 Motor Pool is not contained within this submittal, concerns regarding the area include, but are not limited to, adequate investigation of;

- Building 750 - UST 191 (15,000 gallon diesel) & UST192 (8000 gallon unleaded gasoline)
- two outdoor service pits for draining vehicle oil, the pipes from which discharged to a former oil water separator (OWS), north of garage bays
- current wash rack previously connected to former OWS, then to new OWS
- Building 753 - three hydraulic lifts and floor drain
- Building 754 - floor drain

Is FTMM 68/Building 700 not considered within Parcel 51?

## Parcel 52/FTMM-53/Building 699 Gas Station

*Section 1.0, Page E-1, line 8* - As many of the parcel narratives include, a listing of NJDEP correspondence by year is provided, which refers the reader back to *Section 5 References* to ascertain which document is being referenced. It does not include, however, this office's January 8, 2014 response to the September 2013 RI/FS Workplan, nor the May 6, 2014 response to the Army's April 22, 2014 response to same, in which delineation sampling was discussed and

the revised proposal accepted. Results of the investigation have not yet been received by this office.

*Section 2.4, Previous Investigation and Historical Data* – No mention is made of the 2000 gallon #2 fuel UST, 0081533-112, given an NFA designation in January of 2003, nor more particularly, of waste oil UST 0081533-197, a 1000 gallon waste oil UST removed in January of 1992 from east of UST-112, at which analytical results indicate TPHC to 11,600 ppm remains in soil. As acceptably indicated in the Army's April 22, 2014 response letter, Response C4, additional sampling was to be performed.

*Section 2.4, Page E-5, lines 21-27* – It appears "IASL" (indoor air screening levels) may have been inadvertently used in the narrative, on lines 22, 26 and 27. These lines reference sub-slab results, the measure of which is against the SGSLs (Soil Gas Screening Levels), accurately referenced on lines 18, 20, 23, 25 and 25.

*Section 2.5 Synthesis of Results, Correspondence and Data Gaps* – As indicated above, the submittal does not appear to include the activities proposed in the September 2013 RI/FS Workplan, nor the followup communications.

*Section 3.2 Sampling Plan* – As indicated, above and through previous correspondence, additional delineation sampling is necessary.

## **Parcel 66**

*Section 1.0 & Section 2.5, Page F-3, line 15* – No mention appears to be made among the listed correspondence between NJDEP and FTMM of the *August 1, 2012 Proposed Soil Sampling and Delineation Plan for Electrical Substations at Building 2700 (Charles Wood Area) and Building 978 (Main Post)*, nor the September 10, 2012 NJDEP approval letter for delineation of the PCBs.

*Section 2.2, Page F-1, line 20* – typo - It is believed FTMM-56 should read FTMM-66.

*Section 2.2, Page F-2, lines 2-4 & Section 2.5* – The submittal references the ECP Report's Appendix A, stating, "no release or disposal of hazardous substances or petroleum products has occurred at Parcel 66...", and that Parcel 66 was assigned an ECP Category of 1. This office does not agree with same, as PCBs are noted present up to 0.84 ppm.

*Section 3.2 Sampling Plan* – The sampling as proposed on pages F-3 and F-4 is acceptable.

## **Parcel 80**

*Section 1.0, line 14* – For clarification, per the 2008 ECP Main Post map (Figure 19), FTMM-56 is also known as Parcel 84 (Building 80), a small ¼+ acre area designated within the larger Parcel 83.

*Section 2.4 Previous Investigations and Historical Data* – As previously indicated, the Weston report was not accepted by the Department as representative of background conditions at Fort Monmouth.

The section also references the July 10, 2012 letter, in which the NJDEP requested additional information regarding the basis for determination of the sample locations, i.e., were as-builts or other plans for the demolished buildings used to assist in locating former floor drains, septic systems, discharge points, etc, and therefore the boring locations. No rationale for sample location selection has been received; therefore a determination remains unavailable regarding the adequacy of the soil sampling performed.

*Section 3.2 Sampling Plan* – The proposal to further evaluate beryllium in ground water reported in the 2008 SI as indicated is acceptable.

### **Parcel 83**

In October of 2008, the NJDEP requested depiction of all areas of concern (AOCs) on a site figure. Although a structures figure was submitted, no figure designating AOCs has been received.

*Section 2.4, Page H-4* - As previously indicated, the Weston “background” report was not accepted by the Department. As regarding the elevated levels of arsenic (SB10A, SB9A), as acknowledged in Section 3.1, this office at this time does not agree these levels of arsenic are representative of naturally occurring conditions. Arsenic is currently considered a contaminant of concern, based on analytical findings at P83-SB9&10. As the NJDEP July 10, 2012 correspondence stated, although Fort Monmouth site soils are often associated with elevated levels of naturally occurring arsenic, the parcel specific soil analytical results, the lead to arsenic ratio, and the decrease of arsenic with depth at those locations exhibiting an elevated level do not appear to indicate the exceedences are naturally occurring, and must be investigated and included in a remedy.

*Section 2.5, line 35* – The submittal indicates further information on the various USTs referenced in the July 10, 2012 letter are to be referred to the “UHOT Program”. Although not familiar with same, this office looks forward to receipt of additional information regarding the USTs.

*Section 3.2 Sampling Plan* – Sampling at the former Building 72 area to better define PAH exceedances, as proposed, is acceptable.

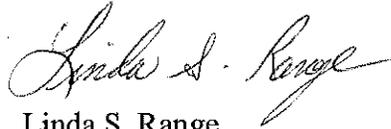
*Section 3.2, lines 15, 16* – PCBs - Please ensure these delineation samples, include PCBs analyses, for delineation of the 0.8 ppm PCBs noted at P83-B5, 1-1.5’.

*Section 3.2* – Building 279 – Although the proposed sampling locations are acceptable, they are inadequate to complete delineation. Arsenic remains undelineated at P83SB10. It is anticipated elevated levels of lead may be present west of P83SB9; what efforts for delineation

are planned? If location FTMM-83-SS-13 is considered a resample of P83SB9, it should be located within 10' feet of the original sample location.

Please contact this office if you have any questions.

Sincerely,

A handwritten signature in cursive script that reads "Linda S. Range". The signature is written in black ink and is positioned above the printed name.

Linda S. Range

C: Joe Pearson, Calibre  
James Moore, USACE  
Rick Harrison, FMERA  
Joe Fallon, FMERA  
Frank Barricelli, RAB



ATTACHMENT E

UST 114-2 Report



**United States Army**

Fort Monmouth, New Jersey

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

***Building 114  
Main Post Area***

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**NJDEP UST Registration No. 081533-1  
NJDEP Closure Approval Letter Dated  
June 7, 1994**

February 1996

**SMITH**  
ENVIRONMENTAL TECHNOLOGIES CORPORATION



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Appendix B	Certifications
Appendix C	Waste Manifest
Appendix D	UST Disposal Certificate
Appendix E	Soil Analytical Data Package



## EXECUTIVE SUMMARY

### UST Closure

On June 22, 1994, a steel underground storage tank (UST) was closed by removal in accordance with the New Jersey Department of Environmental Protection (NJDEP) Closure Approval Letter dated June 7, 1994 at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey. The UST, NJDEP Registration No. 081533-1, was located immediately adjacent to Building 114 in the Main Post area of U.S. Army, Fort Monmouth. UST No. 081533-1 was an 8,000-gallon No. 2 diesel 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

The site assessment was performed by U.S. Army personnel in accordance with the NJDEP *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E) and the NJDEP *Field Sampling Procedures Manual*. Soils surrounding the tank were screened visually and with air monitoring instruments for evidence of contamination. Following removal, the UST was inspected for holes. No holes were noted in the UST. Potentially contaminated soils were observed along the south wall of the excavation.

On June 22, 1994, following removal of the UST, approximately two cubic yards of potentially contaminated soil were removed along the south wall. Following removal of the soil, post-excavation soil samples were collected. Post-excavation samples A, B, C, D, E, F, G, H, DUP D, and DUP E, were collected from a total of eight (8) locations along the base and sidewalls of the excavation. Post-excavation soil samples K and L were also collected from the base of the piping portion of the excavation, which was less than 3 feet. All samples were analyzed for total petroleum hydrocarbons (TPHC).

On June 23, 1994, approximately 1 cubic yard of potentially contaminated soil was removed from sample location C, and the area was resampled. Sample C-2 was collected from the base of the soil removal area and was analyzed for TPHC.

### Findings

All post-excavation soil samples collected on June 22, 1994 from the UST excavation and from below piping associated with the former UST at Building 114, contained TPHC concentrations below the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 milligrams per kilogram (mg/kg) (N.J.A.C. 7:26E and revisions dated February 3, 1994). The samples collected on June 22, 1994 (A, B, D, E, F, G, H, DUP D, DUP E, K, and L) contained TPHC concentrations ranging from 20.4 mg/kg to 86.6 mg/kg. Sample C had a TPHC concentration of 1,160.0 mg/kg. Due to the elevated TPHC concentration of 1,160.0 mg/kg



detected in sample C, additional soil was removed on June 23, 1994 and the area was resampled (sample C-2). Sample C-2 contained a TPHC concentration of 108.0 mg/kg, which is in compliance with the NJDEP soil cleanup criteria.

#### Site Restoration

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 Quality Assurance

The sampling and laboratory analysis conducted during the site assessment 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 TPHC concentrations exceeding the NJDEP soil cleanup criteria for total organic contaminants of 10,000 mg/kg do not remain in the former location of the UST or associated piping.

No further action is proposed in regard to the closure and site assessment of UST No. 081533-1 at Building 114.



## 1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

### 1.1 OVERVIEW

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 081533-1, was closed at Building 114 at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey on June 22, 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 May 31, 1994. The plan was approved on June 7, 1994. The UST was a steel 8,000-gallon tank containing No. 2 diesel oil.

Decommissioning activities for UST No. 081533-1 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. 081533-1 proceeded under the approval of the NJDEP Bureau of Underground Storage Tanks (NJDEP-BUST). The NJDEP-BUST closure approval letter dated June 7, 1994, and the signed certifications for UST No. 081533-1 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 no significant historical discharges are associated with the UST or associated piping.

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. Where possible, information required by the *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E) (*Technical Requirements*) was included. 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.



## 1.2 SITE DESCRIPTION

Building 114 is located in the central portion of the Main Post area of Fort Monmouth, as shown on Figure 1. UST No. 081533-1 was located south of Building 114 and appurtenant piping ran less than 3 feet southwest to the fill port area. A site map is provided on Figure 2. The fill port area was located directly above the tank.

### 1.2.1 Geological/Hydrogeological Setting

The following is a description of the geological/hydrogeological setting of the area surrounding Building 114. Included is a description of the regional geology of the area surrounding Fort Monmouth as well as descriptions of the local geology and hydrogeology of the Main Post area.

#### Regional Geology

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

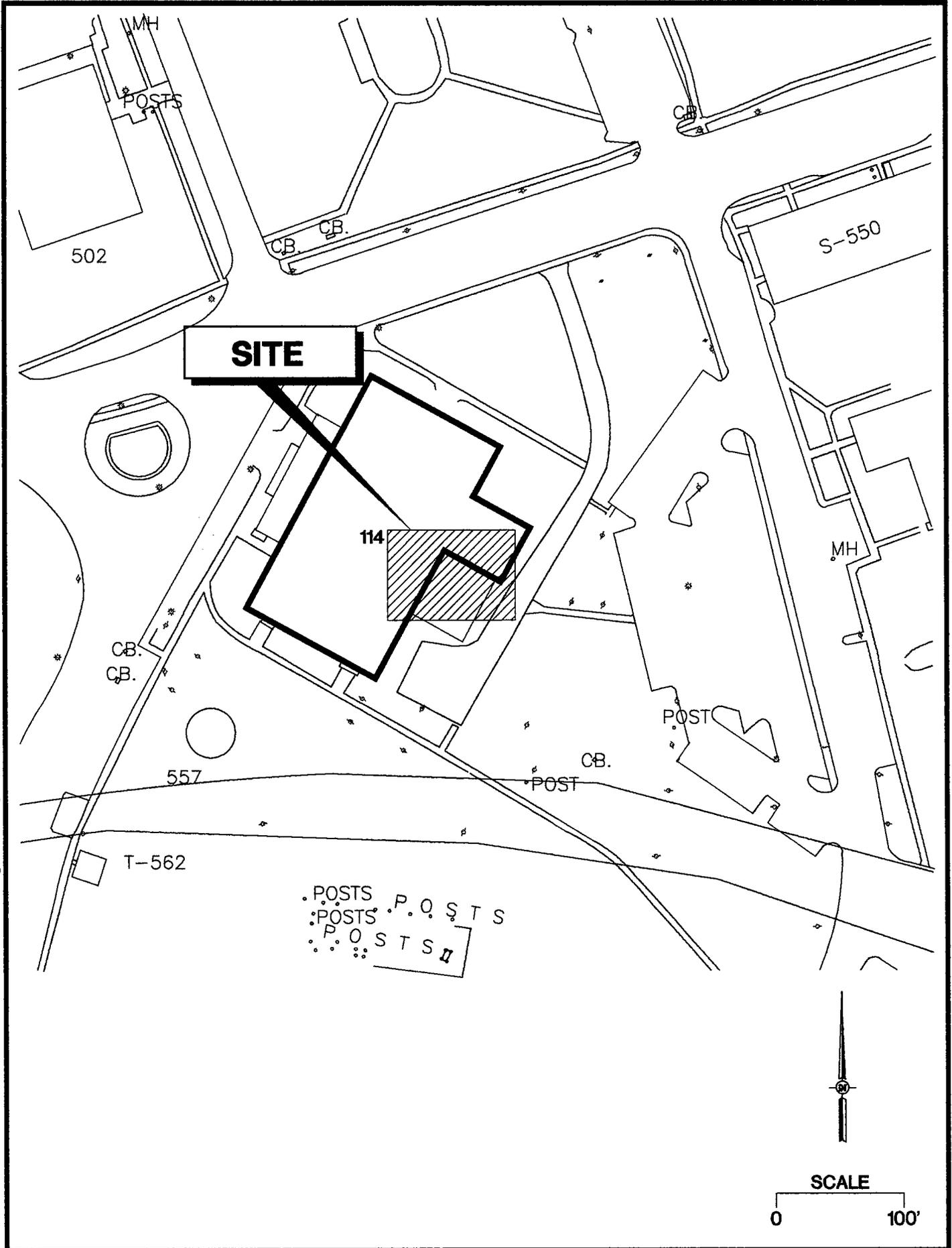
In general, New Jersey Coastal Plain formations consist of a seaward-dipping wedge of unconsolidated deposits of clay, silt, and gravel. These formations typically strike northeast-southwest with a dip ranging from 10 to 60 feet per mile and were deposited on Precambrian and lower Paleozoic rocks (Zapeczka,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

The formations record several major transgressive/regressive cycles and contain units which are generally thicker to the southeast and reflect a deeper water environment. 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 Zapeczka, 1990).

#### Local Geology

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

Source: BCM/Smith Environmental Technologies Corporation (060)



Project No. 09-5004-07

Figure 2  
**Building 114  
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 iron oxide encrusted (Minard).

### Hydrogeology

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

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

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

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

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

Due to the fluvial nature of the overburden deposits (e.g., 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.



### **1.3 HEALTH AND SAFETY**

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

### **1.4 REMOVAL OF UNDERGROUND STORAGE TANK**

#### **1.4.1 General Procedures**

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

#### **1.4.2 Underground Storage Tank Excavation and Cleaning**

Prior to UST decommissioning activities, surficial soil was removed to expose the UST and associated piping. All free product present in the piping was drained into the UST, and the UST was purged to remove vapors prior to cutting and removal of the piping. After removal of the associated piping, a manway was made in the UST to allow for proper cleaning. The UST was completely emptied of all liquids prior to removal from the ground. Approximately 1,000 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 (No. NJA-1603184).

The UST was cleaned prior to removal from the excavation in accordance with the NJDEP-BUST regulations. After the UST was removed from the excavation, it was staged on



polyethylene sheeting and examined for corrosion holes. No holes or punctures were observed during the inspection by the Sub-Surface Evaluator. Soils surrounding the UST were screened visually and with an OVA for evidence of contamination. All sites appeared to be clean except for possible contamination in sample location C.

Soil screening was also performed along the USTs piping. No contamination was noted anywhere along the piping length.

## **1.5 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL**

The tank was transported by CUTE Inc., to Mazza and Sons Inc. for disposal 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, two cubic yards of potentially contaminated soils were excavated from sample location area C on June 22, 1994. On June 23, 1994, one additional cubic yard of potentially contaminated soil was removed from the same location. All potentially contaminated soils were stockpiled separately from other excavated material and were placed on and covered with polyethylene sheets. Potentially contaminated soils were transported to the Main Post ID-27 Soil Staging Area (T-80) prior to ultimate disposal at Soil Remediation of Philadelphia. Soils that did not exhibit signs of contamination were used as backfill following removal of the UST.



## 2.0 SITE INVESTIGATION ACTIVITIES

### 2.1 OVERVIEW

The Site Investigation was managed and carried out by U.S. Army DPW personnel. All analyses were performed and reported by U.S. Army Fort Monmouth Environmental Laboratory, a NJDEP-certified testing laboratory. All sampling was performed under the direct supervision of a NJDEP Certified Sub-Surface Evaluator according to the methods described in the NJDEP Field Sampling Procedures Manual (1992). Sampling frequency and parameters analyzed complied with the NJDEP-BUST document *Interim Closure Requirements for Underground Storage Tank Systems* (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: Dinkerria 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
- Hazardous Waste Hauler: Freehold Cartage, Inc.  
Contact Person: Barry Olsen  
Phone Number: (908)462-1001  
NJDEP Hazardous Waste Hauler No.: 2265

### 2.2 FIELD SCREENING/MONITORING

Field screening was performed by a NJDEP certified Sub-Surface Evaluator using an OVA and visual observations to identify potentially contaminated material. Soils were removed from the south wall of the excavation until no evidence of contamination remained.

## 2.3 SOIL SAMPLING

On June 22, 1994, following removal of two cubic yards of potentially contaminated soil, post-excavation soil samples A, B, C, D, E, F, G, H, DUP E, and DUP G were collected from a total of eight (8) locations along the base and sidewalls of the UST excavation. Two (2) post-excavation soil samples (K and L) were also collected immediately below the former location of piping associated with the UST. Refer to soil sampling location map on Figure 3. All samples were analyzed for TPHC.

On June 23, 1994, soils from sampling location area C were excavated due to a TPHC concentration over 1,000 mg/kg. Following removal of one additional cubic yard of potentially contaminated soil, area C was resampled (sample C-2) and was analyzed for TPHC. Refer to soil sampling location map on Figure 3.

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 post-excavation soil samples were collected using polystyrene scoops. Actual soil TPHC values may be higher than reported, due to sample utensil absorbency. If absorbency resulted in reducing the actual soil TPHC concentration by 50 %, the highest soil contaminant would have been 216.0 mg/kg, still below the applicable NJDEP soil cleanup standard for total organic contaminants of 10,000 mg/kg. Following soil sampling activities, the samples were chilled and delivered to U.S. Army, Fort Monmouth Environmental Laboratory located in Fort Monmouth, New Jersey for analysis.

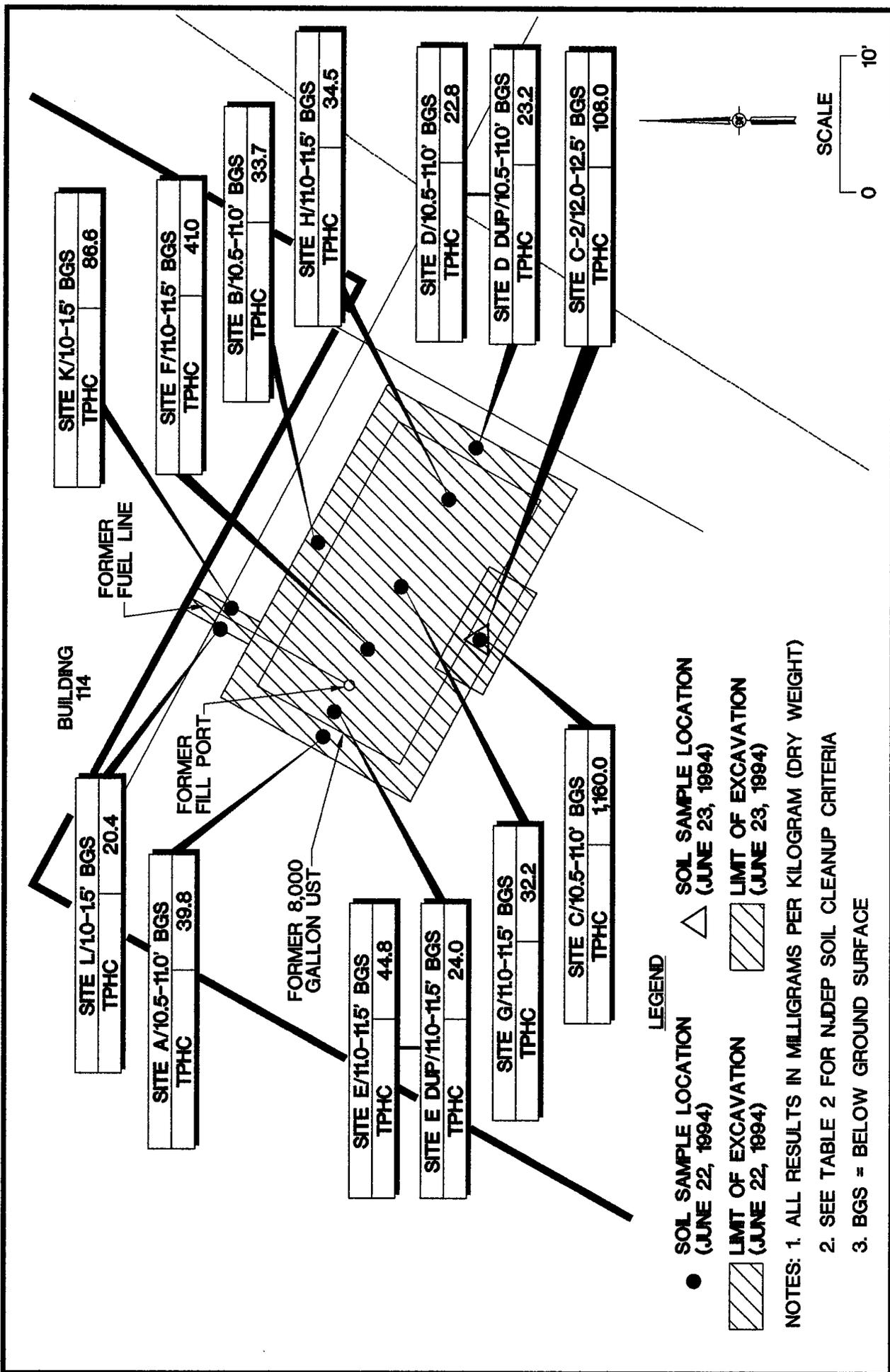


TABLE 1.

SUMMARY OF SAMPLING ACTIVITIES  
BUILDING 114, MAIN POST  
FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Matrix	Sample Type	Analytical Parameters (and USEPA Methods) *	Sampling Method
A	06-22-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
B	06-22-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
C	06-22-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
D	06-22-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
E	06-22-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
F	06-22-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
G	06-22-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
H	06-22-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
DUP E	06-22-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
DUP D	06-22-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
K	06-22-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
L	06-22-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
C-2	06-23-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop

\*Note: TPHC Total Petroleum Hydrocarbons (Method 418.1 / soil and aqueous)



### 3.0 CONCLUSIONS AND RECOMMENDATIONS

#### 3.1 SOIL SAMPLING RESULTS

To evaluate soil conditions following removal of the UST and associated piping, post-excavation soil samples were collected from a total of ten (10) locations on June 22, 1994 and from one location on June 23, 1994. All samples were analyzed for TPHC. The post-excavation soil sample results were compared to the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 mg/kg (N.J.A.C. 7:26D and revisions dated February 3, 1994). A summary of the analytical results and comparison to the NJDEP soil cleanup criteria is provided on Table 2 and the soil sampling results are shown on Figure 3. The analytical data package is provided in Appendix E. 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 June 22, 1994, from the UST excavation and from below piping associated with the UST contained concentrations of TPHC below the NJDEP soil cleanup criteria. Post-excavation samples A, B, D, E, F, G, H, DUP D, and DUP E contained TPHC concentrations ranging from 20.4 mg/kg to 86.6 mg/kg. Sample C contained an elevated TPHC concentration of 1,160.0 mg/kg.

All post-excavation soil samples collected on June 23, 1994 from the UST excavation contained concentrations of contaminants below the NJDEP soil cleanup criteria. Post-excavation soil sample C-2 contained a TPHC concentration of 108.0 mg/kg.

#### 3.2 CONCLUSIONS AND RECOMMENDATIONS

The analytical results for all of post-excavation soil samples collected from the UST closure excavation at Building 114 were below the NJDEP soil cleanup criteria for total organic contaminants.

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

No further action is proposed in regard to the closure and site assessment of UST No. 081533-1 at Building 114.

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS  
 BUILDING 114  
 FT. MONMOUTH, NEW JERSEY

PAGE 1 OF 2

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/10.5-11.0'	1536.1	06-22-94	06-22-94	Total Solid TPHC	--	--	88 %	--	--
B/10.5-11.0'	1536.2	06-22-94	06-22-94	Total Solid TPHC	6.6	yes	39.8	10,000	--
C/10.5-11.0'	1536.3	06-22-94	06-22-94	Total Solid TPHC	--	yes	88 %	10,000	--
D/10.5-11.0'	1536.4	06-22-94	06-22-94	Total Solid TPHC	6.6	yes	33.7	--	--
E/11.0-11.5'	1536.5	06-22-94	06-22-94	Total Solid TPHC	6.6	yes	84 %	10,000	--
F/11.0-11.5'	1536.6	06-22-94	06-22-94	Total Solid TPHC	6.6	yes	1,160.0	--	--
G/11.0-11.5'	1536.7	06-22-94	06-22-94	Total Solid TPHC	--	yes	95 %	10,000	--
H/11.0-11.5'	1536.8	06-22-94	06-22-94	Total Solid TPHC	6.6	yes	22.8	--	--
DUP E/11.0-11.5'	1536.9	06-22-94	06-22-94	Total Solid TPHC	6.6	yes	90 %	10,000	--
					6.6	yes	44.8	--	--
					6.6	yes	92 %	10,000	--
					6.6	yes	41.0	--	--
					6.6	yes	92 %	10,000	--
					6.6	yes	32.2	--	--
					6.6	yes	86 %	10,000	--
					6.6	yes	34.5	--	--
					6.6	yes	90 %	10,000	--
					6.6	yes	24.0	--	--

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS  
 BUILDING 114  
 FT. MONMOUTH, NEW JERSEY

PAGE 2 OF 2

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
DUP D/10.5-11.0'	1536.10	06-22-94	06-22-94	Total Solid TPHC	--	--	93 %	--	--
					6.6	yes	23.2	10,000	--
K/1.0-1.5'	1536.11	06-22-94	06-22-94	Total Solid TPHC	--	yes	93 %	--	--
					6.6	yes	86.6	10,000	--
L/1.0-1.5'	1536.12	06-22-94	06-22-94	Total Solid TPHC	--	yes	93 %	--	--
					6.6	yes	20.4	10,000	--
C-2/12.0-12.5'	1537.1	06-23-94	06-23-94	Total Solid TPHC	--	yes	84 %	--	--
					6.6	yes	108.0	10,000	--

## Notes:

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

Smith Environmental Technologies Corporation (Project No. 09-5004-07)

soil114.doc



**APPENDIX A**

**NJDEP BUST CLOSURE APPROVAL**



State of New Jersey  
DEPARTMENT OF ENVIRONMENTAL  
PROTECTION AND ENERGY

ROBERT C. SHINN, JR.  
Commissioner

CHRISTINE TODD WHITMAN  
Governor

Mr. Joseph Fallon  
SELFM-EH-EV  
Department of the Army  
Headquarters CECOM Fort Monmouth  
Fort Monmouth, NJ 077703-5000

JUN 7 1994

Dear Mr. Fallon:

Re: UST Closures - Fort Monmouth  
Fort Monmouth Army Base  
Tinton Falls, Monmouth County

The NJDEPE has reviewed the four underground storage tank closure plans for UST number 0081533 tanks 1 and 171 and for UST number 0090010 tanks 17 and 18 submitted on May 31, 1994 for NJDEPE review and approval. The NJDEPE has determined that the closure plans for these tanks are consistent with the Technical Requirements for Site Remediation.

The remedial efforts associated with the closures of these tanks may commence as scheduled in each of the associated closure plans. This letter must be made available to any authorized personnel responsible for review and oversight of UST removals. This approval does not relinquish Fort Monmouth from fulfilling any Federal, County or Municipal requirement associated with the removal of underground storage tanks.

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

Sincerely,

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

RPCEBFCMFTMMTH12.JRC



**APPENDIX B**  
**CERTIFICATIONS**

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 sealed 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. 114

081533-1  
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?  Yes  No If Yes, Case No. \_\_\_\_\_  
(Note: All discharges must be reported to the Environmental Action Hotline (609) 292-7172)
- B. The substance(s) discharged was(were) N/A
- C. Have any vapor hazards been mitigated?  Yes  No  N/A

## III. DECOMMISSIONING OF TANK SYSTEMS

Closure Approval No. June 7, 1994 letter

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:

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

### C. Soil samples and borings (check appropriate answer)

- Were soil samples taken from the excavation as prescribed?  Yes  No  N/A
- Were soil borings taken at the tank system closure site as prescribed?  Yes  No  N/A
- Attach the analytical results in tabular form and include the following information about each sample:
  - Customer sample number (keyed to the site map)
  - The depth of the soil sample
  - Soil boring logs
  - Method detection limit of the method used
  - QA/QC Information as required

D. Ground Water Monitoring

1. Number of ground water monitoring wells installed 0
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?  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. N/A ppb total BTEX, N/A ppb total non-targeted VOC
  2. N/A ppb total B/N, N/A ppb total non-targeted B/N
  3. 108 ppm TPHC
  4. N/A ppb \_\_\_\_\_ (for non-petroleum substance)

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  No
2. Free product contaminated soils are suspected to exist below the water table  Yes  No
3. Free product contaminated soils are suspected to exist off the property boundaries.  Yes  No

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

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

VI. GROUND WATER CONTAMINATION N/A

- A. Was ground water contamination found?  Yes  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:

1. \_\_\_\_\_ ppb total BTEX, \_\_\_\_\_ ppb total non-targeted VOC
2. \_\_\_\_\_ ppb total B/N, \_\_\_\_\_ ppb total non-targeted B/N
3. \_\_\_\_\_ ppb total MTBE, \_\_\_\_\_ ppb total TBA
4. \_\_\_\_\_ ppb \_\_\_\_\_ (for non-petroleum substance)
5. greatest thickness of separate phase product found \_\_\_\_\_
6. separate phase product has been delineated  Yes  No  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  N/A
2. The number of these wells identified is \_\_\_\_\_

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 \_\_\_\_\_ 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 \_\_\_\_\_ feet from the source and its screening begins at a depth of \_\_\_\_\_ 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 \_\_\_\_\_ feet below grade. This well is located \_\_\_\_\_ 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 \_\_\_\_\_ feet from the source. This well is \_\_\_\_\_ feet deep and screening begins at a depth of \_\_\_\_\_ feet.

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

F. A ground water contour map has been submitted which includes the ground water elevations for each well.  
 Yes  No  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
2. The plume is suspected to continue off the property at concentrations greater than MCLs.  
 Yes  No
3. Off property access (circle one):    is being sought    has been approved    has been denied

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)1].

*"I certify under penalty of law that the information provided in this document is true, accurate, and complete. I am aware that there are significant 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)2]:

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 \_\_\_\_\_

**UNDERGROUND STORAGE TANK (UST)  
CLOSURE CERTIFICATION**

BUILDING NO. 114

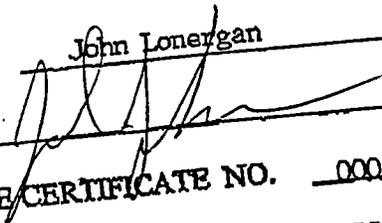
NJDEP UST REGISTRATION NO. 81533-1

DATE TANK REMOVED 6/22/94

LJO / CONTRACT NUMBER 91-0148

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 Loneragan

SIGNATURE 

NJDEP UST CLOSURE CERTIFICATE NO. 0003248

COMPANY PERFORMING TANK DECOMMISSIONING CUTE Inc

NJDEP UST CLOSURE CORPORATE CERTIFICATE NO. 0200128

DATE OF SUBMITTAL 7/19/94



**APPENDIX C**  
**WASTE MANIFEST**



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

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

Form Approved OMB No. 2050-0022 Expires 9-30-94

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No. NJ 1321101021015191703184	Manifest Number 03184	2. RCRA ID 1	Information in the shaded areas is not required by Federal law.
3. Shipper's Name and Mailing Address US Army Communications Electronic Command Main Post, c/o James Shirghio, Bldg 2504 ATTN: SELFM-DL-EM-MS, Fort Monmouth, NJ 07703 908 532-6224		4. State and ZIP Code NJ 07703		5. Manifest Number NJ 1603184	
6. Recipient's Name and Mailing Address Eeshold Cartage Inc. NJ D 01 51 41 261 64		7. State and ZIP Code NJ 07703		8. Recipient's US EPA ID Number 908 462-1001	
9. Recipient's Name and Mailing Address Eionetti Oil Recovery CO. INC. Runyon & Cheesequake Rds. Cold Bridge, NJ 08857		10. State and ZIP Code NJ D 0 8 4 0 4 4 0 6 4		11. Recipient's US EPA ID Number 908 721-0900	

- X Petroleum Oil N.O.S. Class 3 (Petroleum Oil)  
Combustible Liquid UN 1270 PG III 001TT00067 G X 7 2 2 ✓
  - X Petroleum oil NOS class 3 (Petroleum oil)  
Combustible Liquid UN 1270 PG III 001TT00257 G X 7 2 2 ✓
  - X Combustible Liquid UN 1270 PG III  
Petroleum oil NOS class 3 (Petroleum oil) 001TT00989 G X 7 2 2 ✓
  - X Combustible Liquid UN 1270 PG III  
Petroleum oil NOS class 3 (Petroleum oil) 001TT00259 G X 7 2 2 ✓
- Additional Descriptions for Materials Listed Above
- |                       |                       |                |                |
|-----------------------|-----------------------|----------------|----------------|
| T,L Petroleum Oil 80% | T,L Petroleum oil 98% | T04 Filtration | T04 Filtration |
| Water 20%             | Water 2%              |                | T04 Filtration |
| T,L Petroleum oil 98% | T,L Petroleum oil 98% |                | T04 Filtration |
| Water 2%              | Water 2%              |                |                |

NOT REGULATED BY EPA. REGULATED AS HAZARDOUS WASTE IN NJ  
 24 HOUR EMERGENCY PHONE: 201-427-2881  
 NJ DECAL# 55182  
 a) B125167 0090010-18  
 b) B125197-0090010-20  
 c) B125114 0081533-18  
 ERG# 27

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

As a small 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 appropriate, and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future adverse impacts on 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.

Sender's Name: DINKEL, M. DESAI  
 Signature: [Signature]  
 Month Day Year: 06/20/94

Receiver's Name: David S. Smith  
 Signature: [Signature]  
 Month Day Year: 06/20/94

Receiver's Name: [Blank]  
 Signature: [Blank]  
 Month Day Year: [Blank]

Receiver's Name: [Blank]  
 Signature: [Blank]  
 Month Day Year: [Blank]

Receiver's Name: [Blank]  
 Signature: [Blank]  
 Month Day Year: [Blank]

NJ 1603184

# CALCULATION SHEET

Building No. 114

NJDEPE Reg. No. 0681533-1

Tank Size 8000 gal

Tank Void 60.0 tons

## CLEAN FILL

ITEM NO.	DESCRIPTION	QUANTITY	TICKET #
02222-1.1	Clean fill	21.63	18803
		21.75	18804
		22.25	18784

TOTAL 65.63

## STONE

ITEM NO.	DESCRIPTION	QUANTITY	TICKET #
	<u>N/A</u>		

## TOTAL

ID#27 soil to stockpile:  $(65.63 + \cancel{60.0}) - 60.0 = 5.63$  tons  
Chargeable clean fill 5.63 tons  
Chargeable stone N/A



1453 W. Park Ave., Wayside  
Asbury Park, N.J. 07712  
908-493-3333

18803

Order Date 7/10/10

Deliver Date 7/10/10

Delivered  C.O.D.

F.O.B./P.U.  Charge

name \_\_\_\_\_  
address \_\_\_\_\_  
\_\_\_\_\_

Item(s)	Quantity / Measure (tons, lbs., yds., ea.)	Unit Price	Total
	68250		
	25000	21.63 T	
	43250		

Driver \_\_\_\_\_  
Received \_\_\_\_\_

Sub Total	
Delivery	
N.J. Tax	
Total	

\* Company not responsible for damage done off public roads. Color not guaranteed!

*Have gravel will travel!  
since 1925*



1453 W. Park Ave., Wayside  
Asbury Park, N.J. 07712  
908-493-3333

*Cam 1/11*

**18804**

Order Date Feb 11/11

Deliver Date 1/1/11

Delivered  C.O.D.

F.O.B./P.U.  Charge

Name \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_ *Fill*

Item(s)	Quantity / Measure (tons, lbs., yds., ea.)	Unit Price	Total
	<i>68500</i>		
	<i>25000</i>	<i>21.75 T</i>	
	<i>43500</i>		
Sub Total			
Delivery			
N.J. Tax			
Total			

Driver \_\_\_\_\_

Received \_\_\_\_\_

Company not responsible for damage done off-public roads. Color not guaranteed!

*Have gravel will travel!  
since 1925*

No. 2501-



1453 W. Park Ave., Wayside  
Asbury Park, N.J. 07712  
908-493-3333

18784

Order Date June 18/11

Deliver Date 1/1

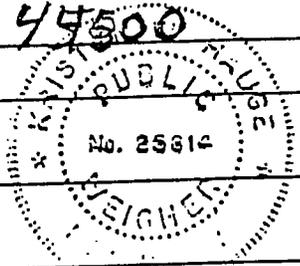
Delivered  C.O.D.

F.O.B./P.U.  Charge

Name Big A Trucking  
Address 291

Clean Fill

Item(s)	Quantity / Measure (tons, lbs., yds., ea.)	Unit Price	Total
	G 70 000		
	T 25 500	22.25T	
	N 44 500		
Sub Total			
Delivery			
N.J. Tax			
Total			



Order \_\_\_\_\_

Received \_\_\_\_\_

\* Company not responsible for damage done off public roads. Color not guaranteed!

*Have gravel will travel!  
since 1925*



**APPENDIX D**

**UST DISPOSAL CERTIFICATE**





**APPENDIX E**

**SOIL ANALYTICAL DATA PACKAGE**

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

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

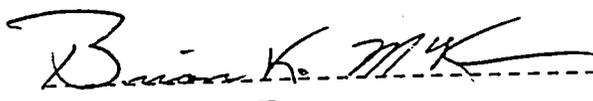
Lab. ID #: 1536.1-.12  
 Sample Rec'd: 06/22/94  
 Analysis Start: 06/22/94  
 Analysis Comp: 06/22/94

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

NJDEPE UST Reg.#: 0081533-1  
 Closure #: 07-June-94 Letter  
 DICAR #:  
 Location #: Bldg. 114

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1536.1	Site A, West Side OVA= ND	88	39.8	6.6
1536.2	Site B, North Side OVA= ND	88	33.7	6.6
1536.3	Site C, South Side OVA= ND	84	1160.	6.6
1536.4	Site D, East Side OVA= ND	95	22.8	6.6
1536.5	Site E, West Bottom OVA= ND	90	44.8	6.6
1536.6	Site F, E/West Bottom OVA= ND	92	41.0	6.6
1536.7	Site G, W/East Bottom OVA= ND	92	32.2	6.6
1536.8	Site H, East Bottom OVA= ND	86	34.5	6.6
1536.9	Site I, Dupe of E OVA= ND	90	24.0	6.6
1536.10	Site J, Dupe of D OVA= ND	93	23.2	6.6
1536.11	Site K, Pipe Hole OVA= ND	93	86.6	6.6
1536.12	Site L, Pipe Bldg. OVA= ND	93	20.4	6.6
M. Bl.	Method Blank	100	ND	3.3

Notes: ND = Not Detected, MDL = Method Detection Limit  
 \* = Silica Gel Added, NA = Not Applicable  
 1536.12dup= 86% 1536.12s= 86% 1536.12sd= 89% RPD= 6.6%

  
 Brian K. McKee  
 Laboratory Director

# U.S. ARMY FORT MONMOUTH

Chain of Custody

P.O. #: PWS-07

Project #:	Sampler:	Date / Time	Analysis Parameters	Start:
Customer: SELFN-PW-EV D. DESSAI	CYTE INC	6-21-94	THFC SOLID MUNSGL	Finish:
Phone: X 21475	Site Name: BLDG 114 VST 081533-1 CLOSURE LTR 7 JUN 94			Preservation Method
Lab Sample ID Number	Customer Sample Location/ID Number	Sample Matrix	# of Bottles	Remarks
1536.1	621-94 1207	WEST SIDE SOIL	1	ND
.2	1210	B - NORTH SIDE		ND
.3	1213	C - SOUTH SIDE		ND
.4	1225	D - EAST SIDE		ND
.5	1218	E - WEST BOTTOM		ND
.6	1215	F - E/WEST BOTTOM		ND
.7	1222	G - W/EAST BOTTOM		ND
.8	1228	H - EAST BOTTOM		ND
.9	1218	I - DUPE OF E		ND
.10	1225	J - DUPE OF D		ND
.11	1230	K - PIPE HOUSE		ND
Relinquished By (signature)	Date / Time	Received By (signature)	Date / Time	Shipped By:
<i>[Signature]</i>	6/21/94	<i>[Signature]</i>	6/21/94 1300	
Relinquished By (signature)	Date / Time	Received for Lab by (signature):	Date / Time	
<i>[Signature]</i>		<i>[Signature]</i>		

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

Environmental Laboratory

Certification Number 13461





June 22, 1994 *Sarah Hubbard*

BLANK 0 MV

40.75 103 MV

81.5 204 MV

163 406 MV

1536.1 14 MV

1536.2 12 MV

1536.3 365 MV

1536.4 9 MV

1536.5 16 MV

1536.6 15 MV

1536.7 12 MV

1536.8 12 MV

1536.9 9 MV

1536.10 9 MV

1536.11 31 MV

1536.12 8 MV

1536.12 7 MV

Dup.

1536.12 36 MV

Spk.

1536.12 38 MV

Dup Spk.

193-6970-00

PRINTI

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.

5. Extraction holding time met. (If not met, list number of days exceeded for each sample)

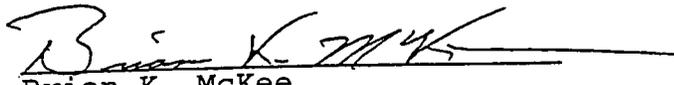
6. Analysis holding time met. (If not met, list number of days exceeded for each sample)

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.

Project #1536

  
Brian K. McKee  
Laboratory Manager

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

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

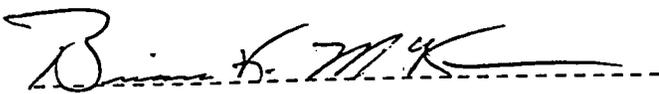
Lab. ID #: 1537.1  
 Sample Rec'd: 06/23/94  
 Analysis Start: 06/23/94  
 Analysis Comp: 06/23/94

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

NJDEPE UST Reg.#: 0081533-1  
 Closure #: 07-June-94 Letter  
 DICAR #:  
 Location #: Bldg. 114

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1537.1	Site C-2 OVA= NA	84	108.	6.6
M. Bl.	Method Blank	100	ND	3.3

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

  
 Brian K. McKee  
 Laboratory Director





155-0970-00

June 23, 1994 Thursday  
0930

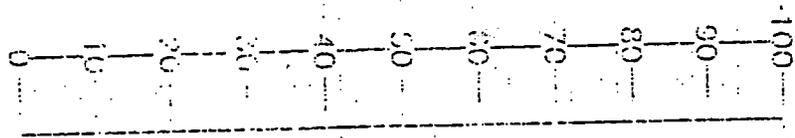
Blank

40.75

81.5

163

1537.1 264V



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.

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.

Project #1537

  
Brian K. McKee  
Laboratory Manager

ATTACHMENT F

UST 545 Report



**United States Army**

Fort Monmouth, New Jersey

---

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

***Former Building 545  
Main Post***

---

**NJDEP UST Registration No. 081533-78  
NJDEP Closure Approval Letter Dated October 7, 1994  
Spill Case No. 94-12-6-1355-21**

February 1997

**SMITH**  
TECHNOLOGY CORPORATION



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

**FORMER BUILDING 545**

**MAIN POST**

**NJDEP UST REGISTRATION NO. 081533-78  
NJDEP CLOSURE APPROVAL LETTER DATED OCTOBER 7, 1994  
SPILL CASE NO. 94-12-6-1355-21**

**FEBRUARY 1997**

**PROJECT NO.: 09-5004-08  
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 TECHNOLOGY CORPORATION  
BROMLEY CORPORATE CENTER  
THREE TERRI LANE  
BURLINGTON, NEW JERSEY 08016**



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Appendix B	Certifications
Appendix C	Waste Manifest
Appendix D	UST Disposal Certificate
Appendix E	Soil Analytical Data Package



## EXECUTIVE SUMMARY

### UST Closure

On December 6, 1994, a steel underground storage tank (UST) was closed by removal in accordance with the New Jersey Department of Environmental Protection (NJDEP) Closure Approval Letter dated October 7, 1994 at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey. The UST, NJDEP Registration No. 081533-78, was located immediately adjacent to former Building 545 in the Main Post area of U.S. Army, Fort Monmouth. UST No. 081533-78 was a 1,500-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

The site assessment was performed by U.S. Army personnel in accordance with the NJDEP *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E) and the NJDEP *Field Sampling Procedures Manual*. Soils surrounding the tank were screened visually and with air monitoring equipment for evidence of contamination. Following removal, the UST was inspected for corrosion holes. Several holes were noted in the UST and evidence of potentially contaminated soil was observed surrounding the tank.

On December 9, 1994, following the removal of the UST, approximately 160 cubic yards of potentially contaminated soil was removed from the excavation due to visible contamination. Following removal of the soil, post-excavation soil samples A, B, C, D, and DUP D were collected from a total of four (4) locations along the sidewalls of the excavation, immediately above groundwater. The samples were collected at a depth of 6.5 feet below ground surface (bgs). Groundwater was present at approximately 7.0 feet bgs. Sample F was collected along the former piping length of the excavation, which was approximately 5.0 feet in length. The piping sample was collected at a depth of 1.0 foot bgs. All samples were analyzed for total petroleum hydrocarbons (TPHC).

### Findings

All post-excavation soil samples collected from the UST excavation and from below piping associated with the former UST at former Building 545 contained TPHC concentrations below the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 milligrams per kilogram (mg/kg) (N.J.A.C. 7:26D and revisions dated February 3, 1994). Samples A, B, C, D, DUP D, and F, contained levels of TPHC ranging in concentrations from 71.2 mg/kg to 258.0 mg/kg.



### Site Restoration

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 Quality Assurance

The sampling and laboratory analysis conducted during the site assessment were performed in accordance with Section 7:26E-2.1 of the *Technical Requirements for Site Remediation*.

### Conclusions and Recommendations

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

No further action is proposed in regard to the closure and site assessment of UST No. 081533-78 at former Building 545.



## 1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

### 1.1 OVERVIEW

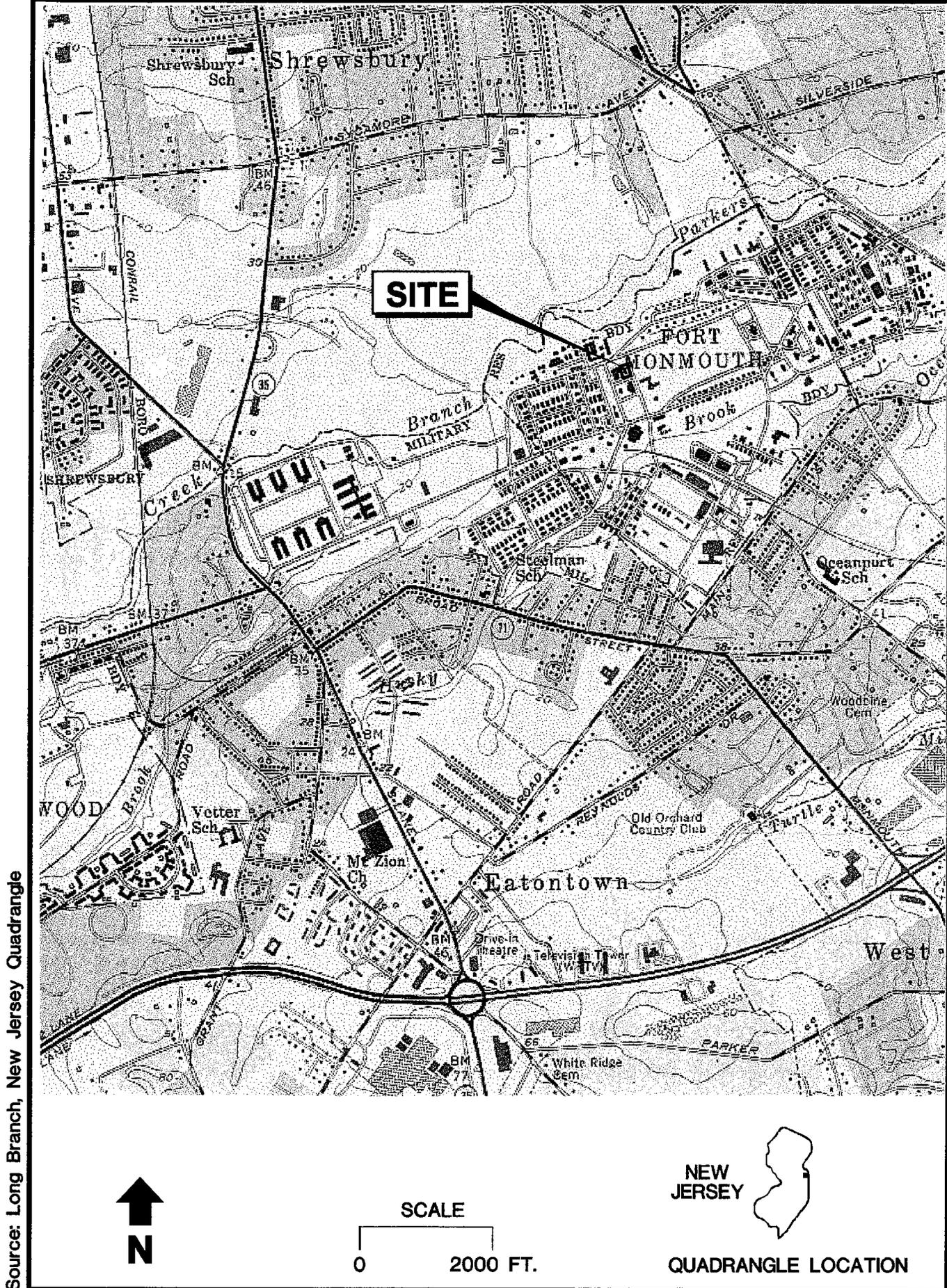
One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 081533-78, was closed at former Building 545 at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey on December 6, 1994. Refer to site location map on Figure 1. This report presents the results of the DPW's implementation of the UST Decommissioning/Closure Plan submitted to the NJDEP on September 2, 1994. The plan was approved on October 7, 1994. The UST was a steel 1,500-gallon tank containing No. 2 fuel oil.

Decommissioning activities for UST No. 081533-78 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. 081533-78 proceeded under the approval of the NJDEP Bureau of Underground Storage Tanks (NJDEP-BUST). The NJDEP-BUST closure approval and signed certifications for UST No. 081533-78 are included in Appendices A and B, respectively.

Based on an inspection of the UST, and field screening of subsurface soils, the DPW has concluded that an historical discharge was associated with the UST. On December 6, 1994, a spill was reported to the NJDEP "Hotline" for UST No. 081533-78 and was assigned Spill Case No. 94-12-6-1355-21.

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

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



Source: Long Branch, New Jersey Quadrangle



## 1.2 SITE DESCRIPTION

Former Building 545 is located in the central portion of the Main Post area of Fort Monmouth, as shown on Figure 1. UST No. 081533-78 was located west of former Building 545 and appurtenant piping ran approximately 5.0 feet east from the excavation to former Building 545. 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 former Building 545. Included is a description of the regional geology of the area surrounding Fort Monmouth as well as descriptions of the local geology and hydrogeology of the Main Post area.

#### Regional Geology

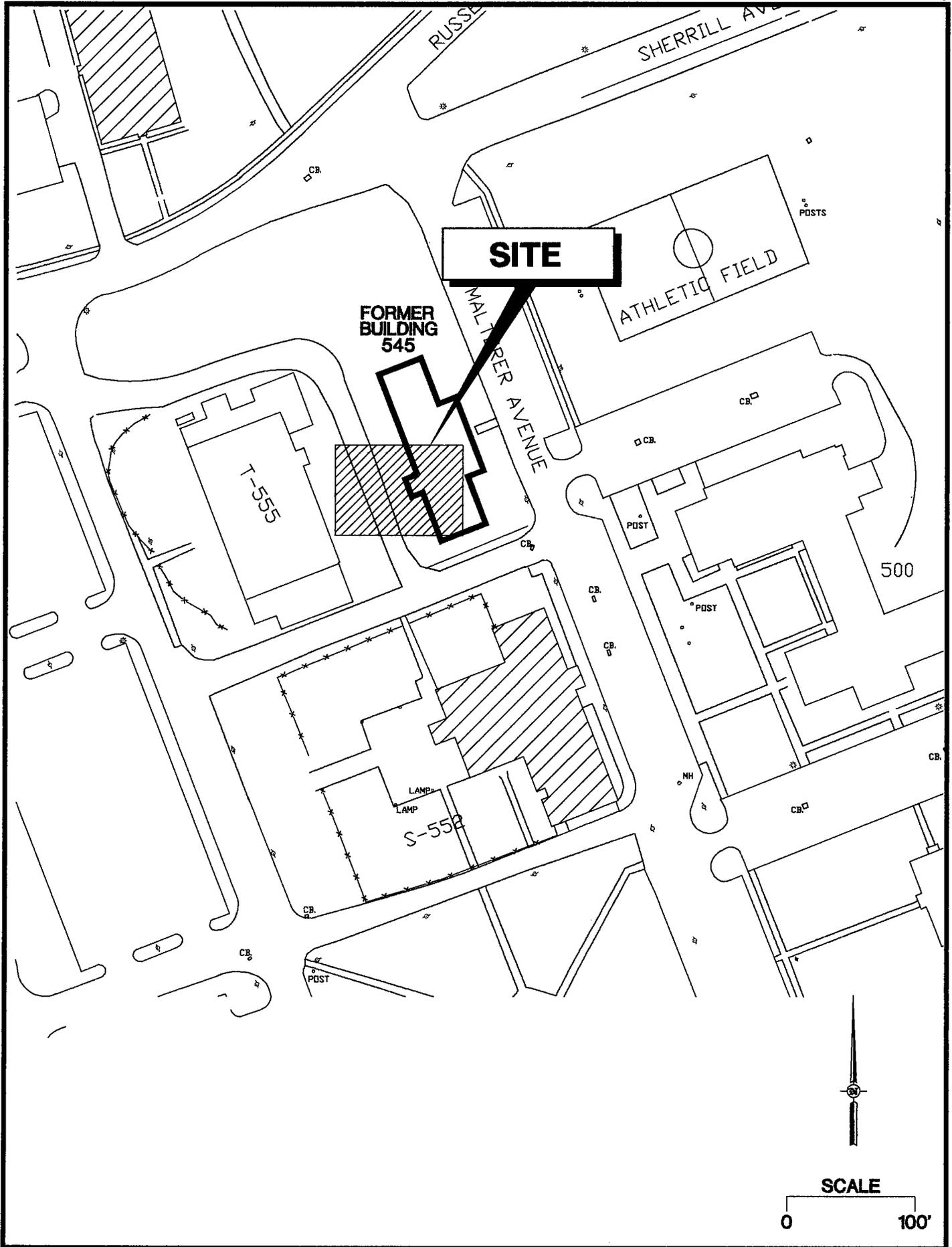
Monmouth County lies within the New Jersey Section of the Atlantic Coastal Plain physiographic province. The Main Post, Charles Wood, and the Evans areas are located in what may be referred to as the Outer Coastal Plain subprovince, or the Outer Lowlands.

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

The formations record several major transgressive/regressive cycles and contain units which are generally thicker to the southeast and reflect a deeper water environment. 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 Zapeczka, 1990).

#### Local Geology

Based on the regional geologic map (Jablonski, 1968), the Cretaceous age Red Bank and Tinton Sands outcrop at the Main Post area. The Red Bank sand conformably overlies the Navesink Formation and dips to the southeast at 35 feet per mile. The upper member



Source: Smith Technology Corporation (094)

Project No. 09-5004-08

Figure 2  
**Building 545**  
**Site Map**



(Shrewsbury) of the Red Bank sand is a yellowish-gray to reddish brown clayey, medium-to-coarse-grained sand that contains abundant rock fragments, minor mica and glauconite (Jablonski). The lower member (Sandy Hook) is a dark gray to black, medium-to-fine grained sand with abundant clay, mica, and glauconite.

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

### Hydrogeology

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

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

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

## **1.3 HEALTH AND SAFETY**

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



## **1.4 REMOVAL OF UNDERGROUND STORAGE TANK**

### **1.4.1 General Procedures**

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

### **1.4.2 Underground Storage Tank Excavation and Cleaning**

Prior to UST decommissioning activities, surficial soil was removed to expose the UST and associated piping. All free product present in the piping was drained into the UST, and the UST was purged to remove vapors prior to cutting and removal of the piping. 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 100 gallons of liquid were transported by Freehold Cartage Inc. to Lionetti Oil Recovery Co. Inc., a NJDEP-approved petroleum recycling and disposal company located in Old Bridge, New Jersey. Refer to Appendix C for the waste manifest (NJA-1907257).

The UST was cleaned prior to removal from the excavation in accordance with the NJDEP-BUST regulations. After the UST was removed from the excavation, it was staged on polyethylene sheeting and examined for holes. Holes were observed during the inspection by the Sub-Surface Evaluator. Soils surrounding the UST were screened visually and with an OVA for evidence of contamination. Evidence of contamination was observed surrounding the tank.

Soil screening was also performed along the piping associated with the UST. No contamination was noted anywhere along the piping length.



## 1.5 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The tank was transported by CUTE Inc. to Mazza and Sons Inc. for disposal in compliance with all applicable regulations and laws. See Appendix D for UST Disposal Certificate.

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

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

## 1.6 MANAGEMENT OF EXCAVATED SOILS

Based on visual observations, approximately 160 cubic yards of potentially contaminated soil was removed from the UST excavation on December 9, 1994. All potentially contaminated soils were stockpiled separately from other excavated material and were placed on and covered with polyethylene sheets. Potentially contaminated soils were transported to ID-27 soil staging area on Main Post prior to ultimate disposal at Soil Remediation of Philadelphia. Soils that did not exhibit signs of contamination were used as backfill following removal of the UST.



## 2.0 SITE INVESTIGATION ACTIVITIES

### 2.1 OVERVIEW

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

The following Parties participated in Closure and Site Investigation Activities.

- Closure Contractor: Cleaning Up The Environment Inc. (CUTE)  
Closure Supervisor: George Bernotsky  
Phone Number: (201) 427-2881  
NJDEP Certification No.: 3249
- 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
- Hazardous Waste Hauler: Freehold Cartage Inc.  
Contact Person: Barry Olsen  
Phone Number: (908) 721-0900  
NJDEP Hazardous Waste Hauler No.: 2265

### 2.2 FIELD SCREENING/MONITORING

Field screening was performed by a NJDEP Certified Sub-Surface Evaluator using an OVA and visual observations to identify potentially contaminated material. Soils were removed from the excavation until no evidence of contamination remained.



### 2.3 SOIL SAMPLING

On December 9, 1994, post-excavation soil samples A, B, C, D, and DUP D were collected from a total of a total of four (4) locations along the sidewalls of the excavation, at a depth of 6.5 feet below ground surface (bgs). Groundwater was present in the excavation at a depth of 7.0 feet bgs. Sample F was collected along the former piping length of the excavation, which was approximately 5.0 feet in length. The piping sample was collected at a depth of 1.0 foot bgs. All samples were analyzed for 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 in Table 1. Following soil sampling activities, the samples were chilled and delivered to U.S. Army Fort Monmouth Environmental Laboratory located in Fort Monmouth, New Jersey, for analysis.

TABLE 1  
PAGE 1 OF 1

SUMMARY OF SAMPLING ACTIVITIES  
BUILDING 545, MAIN POST  
FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Matrix	Sample Type	Analytical Parameters (and USEPA Methods) *	Sampling Method
A	12/09/94	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
B	12/09/94	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
C	12/09/94	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
D	12/09/94	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
Dup D	12/09/94	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
F	12/09/94	Soil	Post-Excavation	TPHC	Stainless Steel Scoop

\* Note:

TPHC Total Petroleum Hydrocarbons (Method 418.1 / soil and aqueous)

Smith Technology Corporation (Project No. 09-5004-08)

soil545.doc



## 3.0 CONCLUSIONS AND RECOMMENDATIONS

### 3.1 SOIL SAMPLING RESULTS

To evaluate soil conditions following removal of the UST and associated piping, post-excavation soil samples were collected from a total of five (5) locations on December 9, 1994. All samples were analyzed for TPHC. The post-excavation sampling results were compared to the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 mg/kg (N.J.A.C. 7:26D and revisions dated February 3, 1994). A summary of the analytical results and comparison to the NJDEP soil cleanup criteria is provided in Table 2 and the soil sampling results are shown on Figure 3. The analytical data package is provided in Appendix E.

All post-excavation soil samples collected on December 9, 1994 from the UST excavation and from below piping associated with the UST contained concentrations of TPHC below the NJDEP soil cleanup criteria. Post-excavation soil samples A, B, C, D, DUP D, and F contained levels of TPHC ranging in concentration from 71.2 mg/kg to 258.0 mg/kg.

### 3.2 CONCLUSIONS AND RECOMMENDATIONS

The analytical results for all post-excavation soil samples collected from the UST closure excavation at former Building 545 were below the NJDEP soil cleanup criteria for total organic contaminants.

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

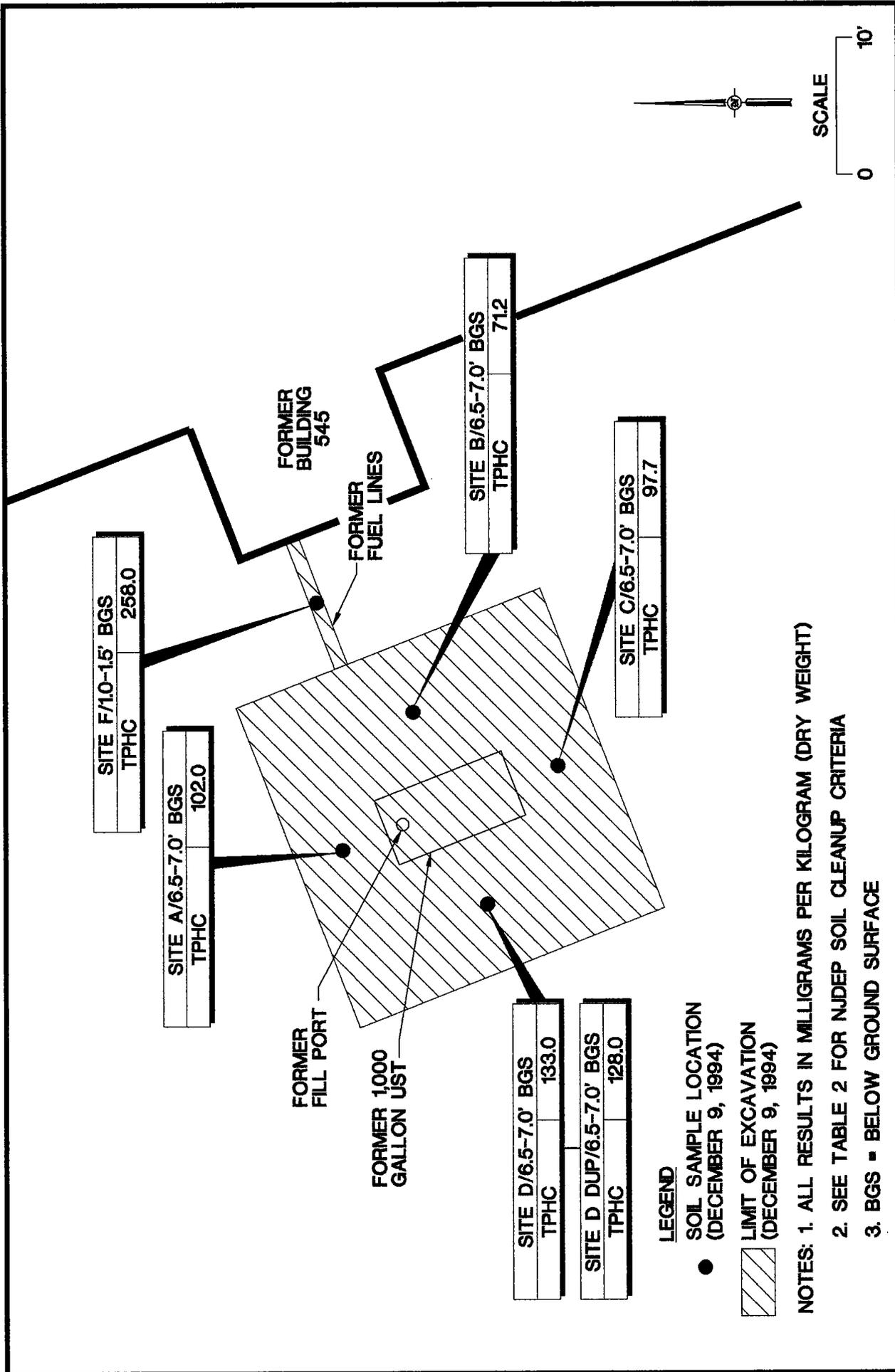
No further action is proposed in regard to the closure and site assessment of UST No. 081533-78 at former Building 545.

TABLE 2  
PAGE 1 OF 1

POST-EXCAVATION SOIL SAMPLING RESULTS  
BUILDING 545  
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/6.5-7.0'	1761.1	12/09/94	12/14/94	Total Solid TPHC	--	--	81 %	--	--
B/6.5-7.0'	1761.2	12/09/94	12/14/94	Total Solid TPHC	7.9	yes	102.0	10,000	--
C/6.5-7.0'	1761.3	12/09/94	12/14/94	Total Solid TPHC	8.3	yes	86 %	10,000	--
D/6.5-7.0'	1761.4	12/09/94	12/14/94	Total Solid TPHC	7.9	yes	71.2	--	--
Dup D/6.5-7.0'	1761.5	12/09/94	12/14/94	Total Solid TPHC	8.1	yes	85 %	10,000	--
F/1.0-1.5'	1761.6	12/09/94	12/14/94	Total Solid TPHC	8.1	yes	97.7	10,000	--
							89 %	10,000	--
							133.0	--	--
							87 %	10,000	--
							128.0	--	--
							82 %	10,000	--
							258.0	10,000	--

Notes:  
\* Cleanup criteria for total organics  
-- Not applicable / does not exceed criteria  
TPHC Total Petroleum Hydrocarbons  
Smith Technology Corporation (Project No. 09-5004-08)



Source: Smith Technology Corporation (120)

**SMITH**

**APPENDIX A**

**NJDEP BUST CLOSURE APPROVAL**



State of New Jersey

Christine Todd Whitman  
Governor

Department of Environmental Protection

Robert C. Shinn, Jr.  
Commissioner

Mr. Dinker Desai  
SELFM-EH-EV  
Department of the Army  
Headquarters CECOM Fort Monmouth  
Fort Monmouth, NJ 07703-5000

OCT 7 1994

Dear Mr. Desai:

Re: Underground Storage Tank Closure Approvals  
Fort Monmouth Army Facility  
Tinton Falls, Monmouth County

The NJDEP has reviewed the Underground Storage Tank (UST) Closure Plan Approval Requests dated September 2, 1994 for the following USTs:

<u>Tank No.</u>	<u>Building No.</u>	<u>Product</u>	<u>Size</u>	<u>Piping Length</u>
86	608	No. 2 Fuel Oil	1000	12'
103	671	No. 2 Fuel Oil	1000	14'
107	686	No. 2 Fuel Oil	2000	18'
93	620	No. 2 Fuel Oil	1000	22'
90	616	No. 2 Fuel Oil	1000	12'
106	682	No. 2 Fuel Oil	1080	22'
78	508	No. 2 Fuel Oil	1500	15'

These closure requests are consistent with the *Technical Requirements for Site Remediation* (N.J.A.C.7:26E) and are therefore acceptable to the NJDEP (with the incorporation of the comment below). A copy of this letter should be immediately accessible at each of these UST removal locations.

The NJDEP has also received a request dated September 9, 1994 from Mr. James Ott, Acting Director, which requests a variance from the Closure Approval Requests for use of polytetrafluoroethylene (PTFE) trowels to polystyrene trowels. Neither of these types of trowels is acceptable to the NJDEP. In accordance with the *Field Sampling Procedures Manual (May 1992)*, only appropriately decontaminated stainless steel trowels are acceptable. Please correct the UST closure plans to reflect the requirement to use stainless steel trowels.

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

Sincerely,

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

cc. Mr. James Ott, FTMMTH

S:\RCPCE\BFCM\FTMMTH17.JRC

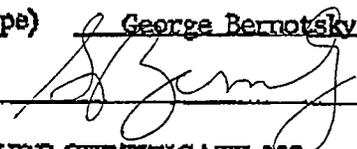
**SMITH**

**APPENDIX B**  
**CERTIFICATIONS**

**UNDERGROUND STORAGE TANK (UST)  
CLOSURE CERTIFICATION**

BUILDING NO. 545NJDEP UST REGISTRATION NO. 81533-78DATE TANK REMOVED 12/6/94UO / CONTRACT NUMBER 91-0148

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) George BernotskySIGNATURE NJDEP UST CLOSURE CERTIFICATE NO. 0003249COMPANY PERFORMING TANK DECOMMISSIONING CUTE IncNJDEP UST CLOSURE CORPORATE CERTIFICATE NO. 0200128DATE OF SUBMITTAL 1/13/95

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 028  
Trenton, NJ 08625-0028  
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 UST's, 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. 545

081533-78

**FACILITY REGISTRATION #**

**I. FACILITY NAME AND ADDRESS**

US Army Fort Monmouth, New Jersey

Directorate of Public Works, Building 167

Fort Monmouth, NJ 07703

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?  Yes  No If Yes, Case No. \_\_\_\_\_  
(Note: All discharges must be reported to the Environmental Action Hotline (609) 292-7172)

B. The substance(s) discharged was(were) N/A

C. Have any vapor hazards been mitigated?  Yes  No  N/A

## III. DECOMMISSIONING OF TANK SYSTEMS

Closure Approval No. letter dated  
October 7, 1994

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:

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

### C. Soil samples and borings (check appropriate answer)

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

2. Were soil borings taken at the tank system closure site as prescribed?  Yes  No  I

3. Attach the analytical results in tabular form and include the following information about each sample

- Customer sample number (keyed to the site map)
- The depth of the soil sample
- Soil boring logs
- Method detection limit of the method used
- QA/QC information as required

D. Ground Water Monitoring

1. Number of ground water monitoring wells installed 0

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?  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. N/A ppb total BTEX, N/A ppb total non-targeted VOC
- 2. N/A ppb total B/N, N/A ppb total non-targeted B/N
- 3. 258.0 ppm TPHC
- 4. N/A ppb \_\_\_\_\_ (for non-petroleum substance)

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  No
- 2. Free product contaminated soils are suspected to exist below the water table  Yes  No
- 3. Free product contaminated soils are suspected to exist off the property boundaries.  Yes  No

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

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

VI. GROUND WATER CONTAMINATION N/A

A. Was ground water contamination found?  Yes  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:

- 1. \_\_\_\_\_ ppb total BTEX, \_\_\_\_\_ ppb total non-targeted VOC
- 2. \_\_\_\_\_ ppb total B/N, \_\_\_\_\_ ppb total non-targeted B/N
- 3. \_\_\_\_\_ ppb total MTBE, \_\_\_\_\_ ppb total TBA
- 4. \_\_\_\_\_ ppb \_\_\_\_\_ (for non-petroleum substance)
- 5. greatest thickness of separate phase product found \_\_\_\_\_
- 6. separate phase product has been delineated  Yes  No  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  N/A

2. The number of these wells identified is \_\_\_\_\_

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 \_\_\_\_\_ 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 \_\_\_\_\_ feet from the source and its screening begins at a depth of \_\_\_\_\_ 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 \_\_\_\_\_ feet below grade. This well is located \_\_\_\_\_ 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 \_\_\_\_\_ feet from the source. This well is \_\_\_\_\_ feet deep and screening begins at a depth of \_\_\_\_\_ feet.

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

F. A ground water contour map has been submitted which includes the ground water elevations for each well.  Yes  No  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
2. The plume is suspected to continue off the property at concentrations greater than MCLs.  Yes  No
3. Off property access (circle one):  is being sought  has been approved  has been denied

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 9.1. 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 US Army Fort Monmouth DATE \_\_\_\_\_  
(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) See Appendix B 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)1]:

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

NAME (Print or Type) James Ott SIGNATURE \_\_\_\_\_  
COMPANY NAME US Army Fort Monmouth DATE \_\_\_\_\_

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

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 \_\_\_\_\_

**SMITH**

**APPENDIX C**  
**WASTE MANIFEST**



State of New Jersey  
 Department of Environmental Protection and Energy  
 Hazardous Waste Regulation Program  
 Manifest Section  
 CN 421, Trenton, NJ 08625-0421

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

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

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No. NJ 1131211101012101519171010101		Manifest Document No. 010101		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 Main Post, c/o James Shirghio, Bldg 2504, ATTN: SELFM-DL-E4 MS Fort Monmouth, NJ 07703		A. State Manifest Document Number NJ A 1907257		B. State Generator's ID (Gen. Site Address) Main Post		C. State Trans. ID (NJDEP) S32265		Decal No. 64499					
4. Generator's Phone (908) 532-6223		6. US EPA ID Number INJID1015141121611614		D. Transporter's Phone (908) 462-1001		E. State Trans. ID (NJDEP)		F. Transporter's Phone (908) 462-1001					
5. Transporter 1 Company Name Freehold Cartage Inc.		7. Transporter 2 Company Name		8. US EPA ID Number		G. State Facility's ID		H. Facility's Phone (908) 721-0900					
9. Designated Facility Name and Site Address Lionetti Oil Recovery Co., Inc. Cheesequake & Runyon Rds. Old Bridge, NJ 08857		10. US EPA ID Number INJID101814101414101614		11. US DOT Description (Including Proper Shipping Name, Hazard Class or Division, HM ID Number and Packing Group)		12. Containers No. Type		13. Total Quantity		14. Unit Wt/Vol		Waste No.	
a. X Petroleum Oil, N.O.S. Class 3 (Petroleum Oil) Combustible Liquid UN 1270 PG III BLDG 608		01011		TIT		00008		G		X 7 2 2			
b. X Petroleum Oil, N.O.S. Class 3 (Petroleum Oil) Combustible Liquid UN 1270 PG III BLDG 545		01011		TIT		00100		G		X 7 2 2			
c. X Petroleum Oil, N.O.S. Class 3 (Petroleum Oil) Combustible Liquid UN 1270 PG III BLDG 682		01011		TIT		00100		G		X 7 2 2			
d. X Petroleum Oil, N.O.S. Class 3 (Petroleum Oil) Combustible Liquid UN 1270 PG III BLDG 626		01011		TIT		00200		G		X 7 2 2			
J. Additional Descriptions for Materials Listed Above		K. Handling Codes for Wastes Listed Above		R04=Extraction R04=Extraction		R04=Extraction R04=Extraction		R04=Extraction R04=Extraction		R04=Extraction R04=Extraction		R04=Extraction R04=Extraction	
Petroleum Oil 50% Water 50% T.L.		Petroleum Oil 50% Water 50% T.L.		Petroleum Oil 50% Water 50% T.L.		Petroleum Oil 50% Water 50% T.L.		Petroleum Oil 50% Water 50% T.L.		Petroleum Oil 50% Water 50% T.L.		Petroleum Oil 50% Water 50% T.L.	
15. Special Handling Instructions and Additional Information THIS MATERIAL IS NOT REGULATED BY THE FEDERAL EPA. IT IS REGULATED AS HAZARDOUS WASTE IN NJ. 71A-088533-86 11b.-78 11c.-106 11d.-93 24 HOUR EMERGENCY PHONE: 201-427-2881 11 a, b, c, d ERG# 27													
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.													
Printed/Typed Name Joseph M. Fallon				Signature Joseph M. Fallon				Month Day Year 11/22/94					
17. Transporter 1 Acknowledgement of Receipt of Materials Printed/Typed Name David Smith				Signature David Smith				Month Day Year 11/22/94					
18. Transporter 2 Acknowledgement of Receipt of Materials Printed/Typed Name				Signature				Month Day Year					
19. Discrepancy Indication Space													
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19. Printed/Typed Name													
Signature				Month Day Year									

NJ A 1907257

CALCULATION SHEET

Building No. 545

NJDEPE Reg. No. 0081533-78

Tank Size 1500 gal

Tank Void 11.25 tons

CLEAN FILL

ITEM NO.	DESCRIPTION	QUANTITY	TICKET #
	<i>Fill</i>	21.15	18869
		20.90	18870
		20.50	18871
		20.55	18872
		20.88	18873

TOTAL 103.98

STONE

ITEM NO.	DESCRIPTION	QUANTITY	TICKET #
		<del>0</del>	

TOTAL

ID#27 soil to stockpile ( +103.98 ) - 11.25 = 92.73 tons

Chargeable clean fill 92.73

Chargeable stone ∅

Bldg 545



1453 W. Park Ave., Wayside  
Asbury Park, N.J. 07712  
908-499-3333

296

18869

Name Big A Trucking  
Address Class Fill

Order Date 1/1

Deliver Date Dec 15, 94

Delivered  C.O.D.

F.O.B./P.U.  Charge

Item(s)	Quantity / Measure (tons, lbs., yds., ea.)	Unit Price	Total
	G 68790		
	T 27500		
	N 42290	21.15 tons	

Sub Total

Delivery

N.J. Tax

Total

Driver \_\_\_\_\_

Received Don Ellis

\* Company not responsible for damage done off public roads. Color not guaranteed

*Have gravel will travel!  
since 1925*

Bldg 545



Joseph Scarsone Sand & Gravel Co.

1453 W. Park Ave., Wayside  
Asbury Park, N.J. 07712  
908-493-3333

(296)

18870

Name Bay A Trucking  
Address CLM Fill

Order Date 1/1/95  
Deliver Date Dec 15, 94  
Delivered  C.O.D.   
F.O.B./P.U.  Charge

Item(s)	Quantity / Measure (tons, lbs., yds., ea.)	Unit Price	Total
	G 69300		
	T 22500		
	N 41800		
		20.90 tons	
Driver _____		Sub Total	
Received <u>Dorville</u>		Delivery	
* Company not responsible for damage done off public roads. Color not guaranteed		N.J. Tax	
		Total	

Have gravel well traveled  
since 1925

*Bldg 545*



1458 W. Park Ave., Wayside  
Asbury Park, N.J. 07712  
908-493-3333

*296*

18871

Name *By A. T. Mackin*  
Address *CLON FALL*

Order Date     /    /    

Deliver Date *Dec 15, 94*

Delivered  C.O.D.

F.O.B./P.U.  Charge

Item(s)	Quantity / Measure (tons, lbs., yds., ea.)	Unit Price	Total
	<i>G 68500</i>		
	<i>T 29500</i>		
	<i>N 41000</i>		
		<i>20.50 tons</i>	

Driver \_\_\_\_\_

Received *Dorell*

\* Company not responsible for damage done off public roads. Color not guaranteed

*Have gravel will travel  
since 1925*

Sub Total	
Delivery	
N.J. Tax	
Total	

*Bldg 545*



1453 W. Park Ave., Wayside  
Asbury Park N.J. 07712  
808-498-6333

296

18872

Name Big A Trucking  
Address Clon Fill

Order Date 1/5/94  
Deliver Date Dec 15, 94  
Delivered  C.O.D.   
F.O.B./P.U.  Charge

Item(s)	Quantity / Measure (tons, lbs., yds., ea.)	Unit Price	Total
	<i>S 69100</i>		
	<i>T 28000</i>		
	<i>N 46,700</i>	<i>20.55 tons</i>	

Driver \_\_\_\_\_  
Received Donella

Sub Total	
Delivery	
N.J. Tax	
Total	

\* Company not responsible for damage done off public roads. Color not guaranteed!

*Have gravel will travel!  
since 1925*

*Bldg 545*



Joseph Scarano Sand & Gravel Co.

1453 W. Park Ave., Wayakla  
Asbury Park, N.J. 07712  
808-493-8333

*296*

18873

Name *Big A Trucking*  
Address *Clark Hill*

Order Date 1/1  
Deliver Date *Dec 15, 84*  
Delivered  C.O.D.   
F.O.B./P.U.  Charge

Item(s)	Quantity / Measure (tons, lbs., yds., sq.)	Unit Price	Total
	<i>G 89250</i>		
	<i>T 27500</i>	<i>20.98 tons</i>	
	<i>N 41750</i>		
Sub Total			
Delivery			
N.J. Tax			
Total			

Driver \_\_\_\_\_  
Received *Don Silke*

\* Company not responsible for damage done off public roads. Color not guaranteed!

*Have gravel will travel!  
since 1925*

**SMITH**

**APPENDIX D**

**UST DISPOSAL CERTIFICATE**

Tanks Removal  
ET MOUNTAIN  
Easton, NJ

**MAZZA & SONS, INC.**

Metal Recyclers  
 Auto and Truck  
 3230 Shatto Rd.  
 Tinton Falls, NJ  
 (800) 922-9292

NO. \_\_\_\_\_  
 DATE 7 Dec 94

Customer's Name Cute inc  
 Address 103 Godwin Ave. P.O. Box 237, Midland PK NJ 07432

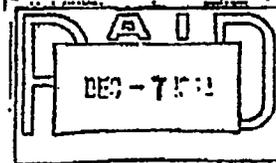
B12 # 206 UST-unknown  
 B12 # 545 UST 81533-78

Make of Autos \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 Tires \_\_\_\_\_  
 Tank \_\_\_\_\_  
 Price: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

40340 LB 6

35900 LB 6

4540



	Weight	Price
Cool Iron		
Steel		<u>90.80</u>
LI Iron		
Copper #1		
Copper #2		
LI Copper		
BRASS		
Alum Clean		
Lead		
Stainless		
Radiators		
Battery		
TOTAL AMOUNT:		

Weigher \_\_\_\_\_ Customer Donella

**SMITH**

**APPENDIX E**  
**SOIL ANALYTICAL DATA PACKAGE**

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

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

Lab. ID #: 1761.1-.6  
 Sample Rec'd: 12/09/94  
 Analysis Start: 12/14/94  
 Analysis Comp: 12/15/94

Analysis: 418.1 (TPH)  
 Matrix: Soil  
 Analyst: S. Hubbard  
 Ext. Meth: 3540A

NJDEPE UST Reg.#: 81533-78  
 Closure #:  
 DICAR #: 94-12-6-1355-21  
 Location #: Bldg. 545

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1761.1	Site A, OVA=ND	81	102.	7.9
1761.2	Site B, OVA=ND	86	71.2	8.3
1761.3	Site C, OVA=ND	85	97.7	7.9
1761.4	Site D, OVA=ND	89	133.	8.1
1761.5	Site E, dup of D OVA=ND	87	128.	6.8
1761.6	Fuel line (Site F) OVA=ND	82	258.	8.1
M. Bl.	Method Blank	100	ND	3.3

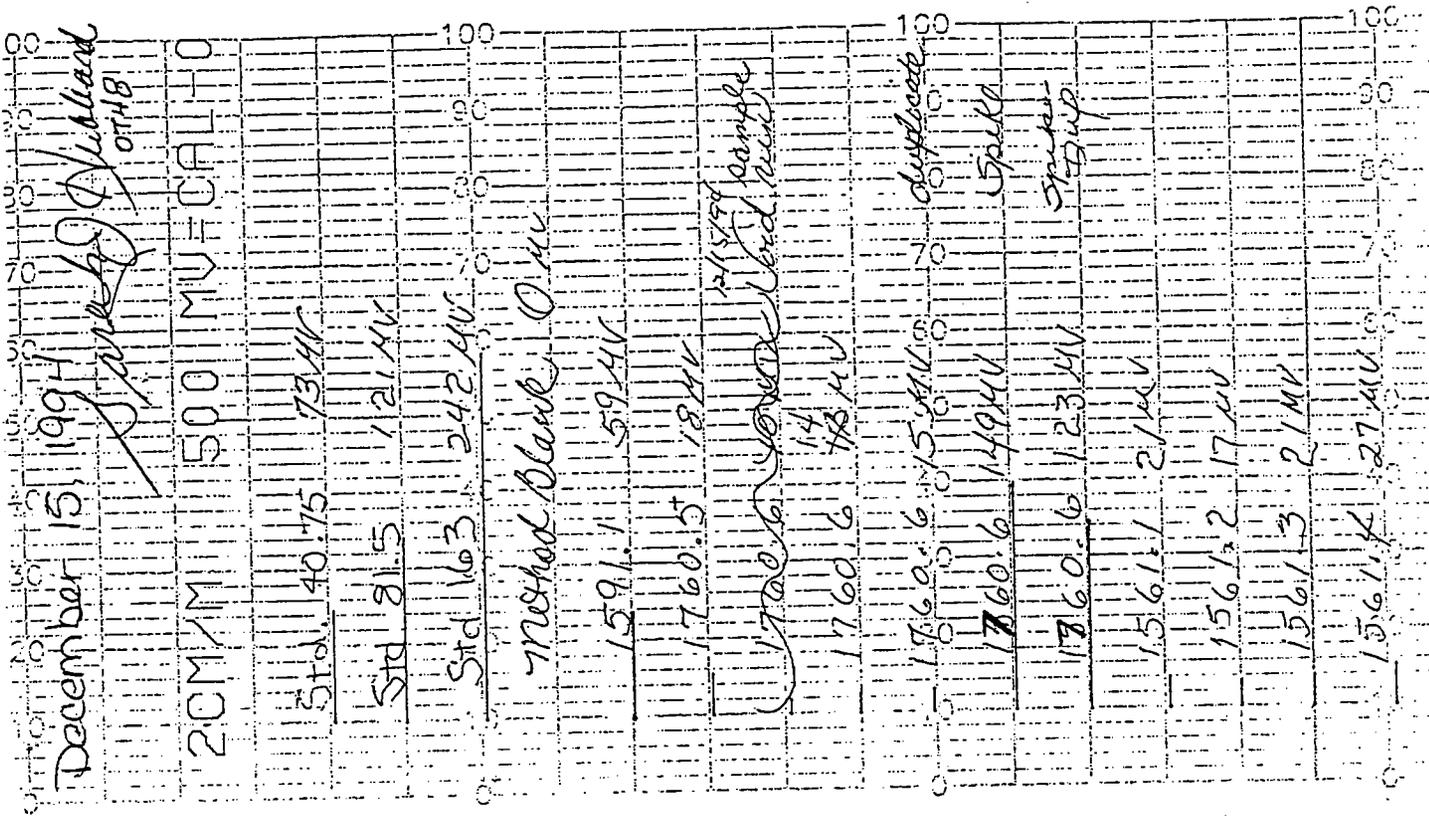
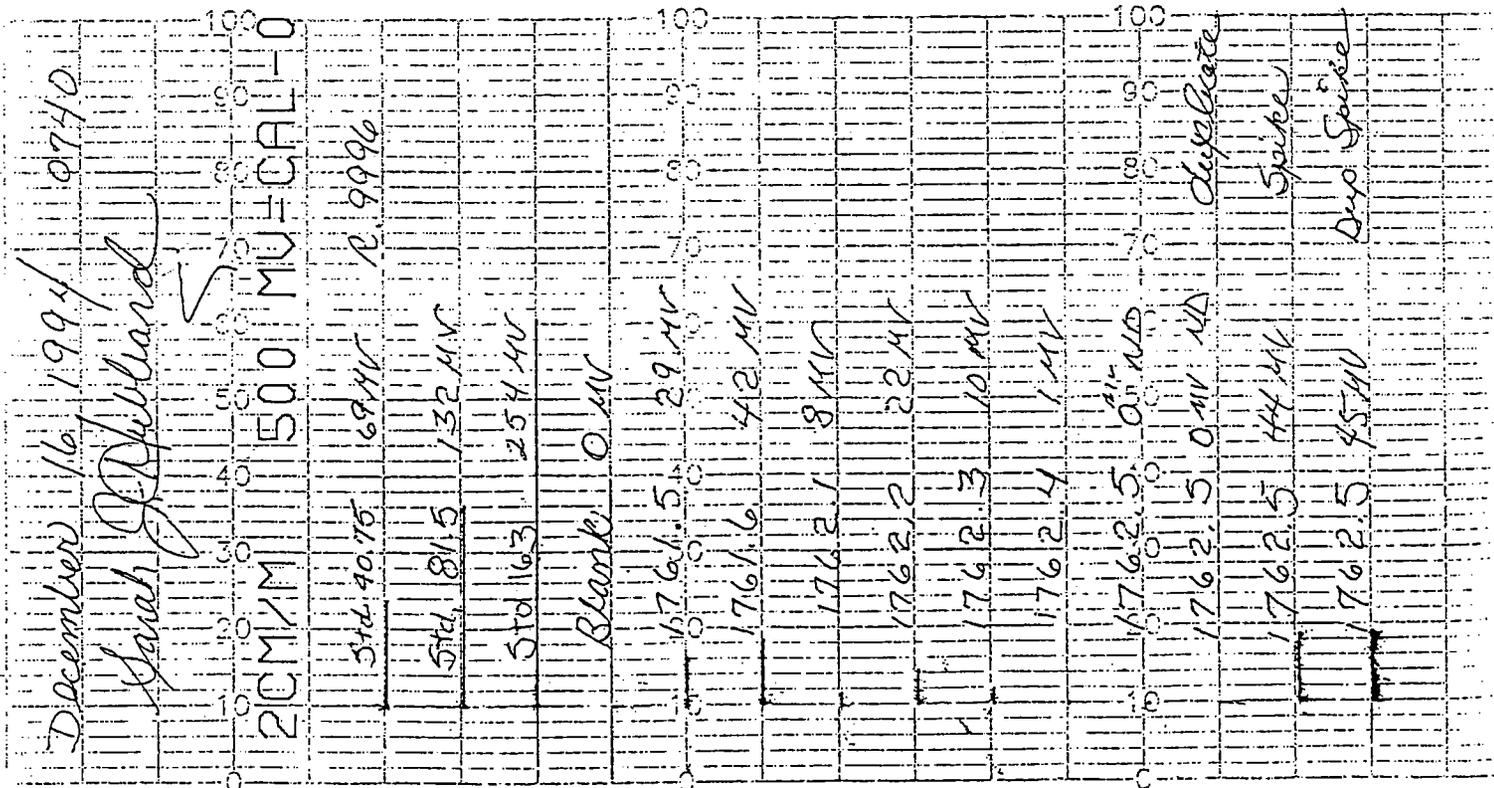
Notes: ND = Not Detected, MDL = Method Detection Limit  
 \* = Silica Gel Added, NA = Not Applicable  
 1760.6S= 92%, 1760.6SD= 76%, RPD=19.2% 1760.6 Dup=112%  
 1762.5S= 93%, 1762.5SD= 96%, RPD= 2.4% 1762.5 Dup=100%  
 QC Limits: Recovery= +/-24%, RPD=23%

*Brian K. McKee*

Brian K. McKee  
 Laboratory Director







PRINTED IN U.S.A.

PHC Conformance/Non-conformance Summary Report

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

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.

Project #1761

  
Brian K. McKee  
Laboratory Manager

ATTACHMENT G

UST 563 Report



**United States Army**  
Fort Monmouth, New Jersey

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

***Building 563  
Main Post Area***

---

**NJDEP UST Registration No. 081533-82  
NJDEP Closure Approval No. C-93-3911**

**February 1996**

**SMITH**  
ENVIRONMENTAL TECHNOLOGIES CORPORATION

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

**BUILDING 563**

**MAIN POST AREA  
NJDEP UST REGISTRATION NO. 081533-82  
NJDEP CLOSURE APPROVAL NO. C-93-3911**

**FEBRUARY 1996**

**PROJECT NO.: 09-5004-07  
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**

563.DOC

**SMITH**  
ENVIRONMENTAL TECHNOLOGIES CORPORATION

*Engineering • Consulting • Remediation • Construction*



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Appendix C	Waste Manifest
Appendix D	UST Disposal Certificate
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## EXECUTIVE SUMMARY

### UST Closure

On September 26, 1994, a steel underground storage tank (UST) was closed by removal in accordance with the New Jersey Department of Environmental Protection (NJDEP) Closure Approval No. C-93-3911 at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey. The UST, NJDEP Registration No. 081533-82, was located immediately adjacent to Building 563 in the Main Post area of U.S. Army, Fort Monmouth. UST No. 081533-82 was a 1,000-gallon No. 2 diesel 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

The site assessment was performed by U.S. Army personnel in accordance with the NJDEP *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E) and the NJDEP *Field Sampling Procedures Manual*. Soils surrounding the tank were screened visually and with air monitoring instruments for evidence of contamination. Following removal, the UST was inspected for holes. No holes were noted in the UST and no evidence of potentially contaminated soils was observed surrounding the tank.

On September 27, 1994, following removal of the UST, post-excavation soil samples were collected. Post-excavation soil samples A, B, C, D, E, and DUP E were collected from a total of five (5) locations along the sidewalls of the excavation at a depth of 8.0 feet below ground surface (bgs). Post-excavation soil sample F was also collected from the base of the piping portion of the excavation, which was approximately 5 feet in length. The piping sample was collected at a depth of 1.0 feet bgs. All samples were analyzed for total petroleum hydrocarbons (TPHC).

### Findings

All post-excavation soil samples collected from the UST excavation and from below piping associated with the former UST at Building 563 contained TPHC concentrations below the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 milligrams per kilogram (mg/kg) (N.J.A.C. 7:26E and revisions dated February 3, 1994). The samples collected on September 27, 1994 (A, B, and F) contained TPHC concentrations ranging from 81.0 mg/kg to 102.0 mg/kg. All other samples (C, D, E, and DUP E) contained non-detectable concentrations of TPHC.



### Site Restoration

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 Quality Assurance

The sampling and laboratory analysis conducted during the site assessment 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 TPHC concentrations exceeding the NJDEP soil cleanup criteria for total organic contaminants of 10,000 mg/kg do not exist in the former location of the UST or associated piping.

No further action is proposed in regard to the closure and site assessment of UST No. 081533-82 at Building 563.



## 1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

### 1.1 OVERVIEW

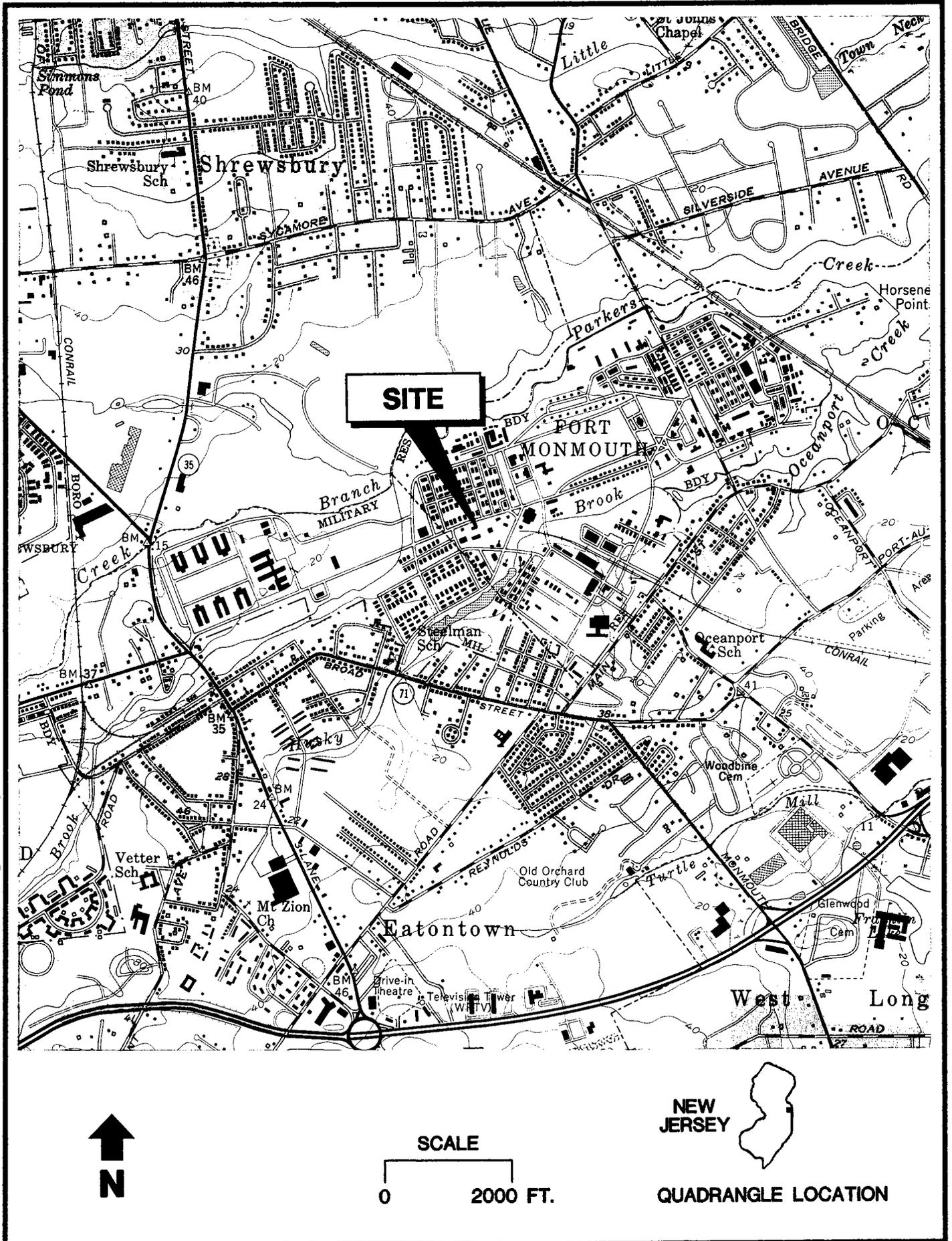
One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 081533-82, was closed at Building 563 at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey on September 26, 1994. Refer to site location map on Figure 1. This report presents the results of the DPW's implementation of the UST Decommissioning/Closure Plan submitted to the NJDEP on August 2, 1993. The plan was approved on September 7, 1993 and assigned TMS No. C-93-3911. The UST was a steel, 1,000-gallon tank containing No. 2 diesel.

Decommissioning activities for UST No. 081533-82 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. 081533-82 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. 081533-82 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 no significant historical discharges are associated with the UST or associated piping.

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.



Source: BCM/Smith Environmental Technologies Corporation (028)

## 1.2 SITE DESCRIPTION

Building 563 is located in the southwestern portion of the Main Post area of Fort Monmouth, as shown on Figure 1. UST No. 081533-82 was located south of Building 563 and appurtenant piping ran approximately 5 feet northwest from the excavation to Building 563. The fill port area was located directly above the UST. 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 563. Included is a description of the regional geology of the area surrounding Fort Monmouth as well as descriptions of the local geology and hydrogeology of the Main Post area.

#### Regional Geology

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

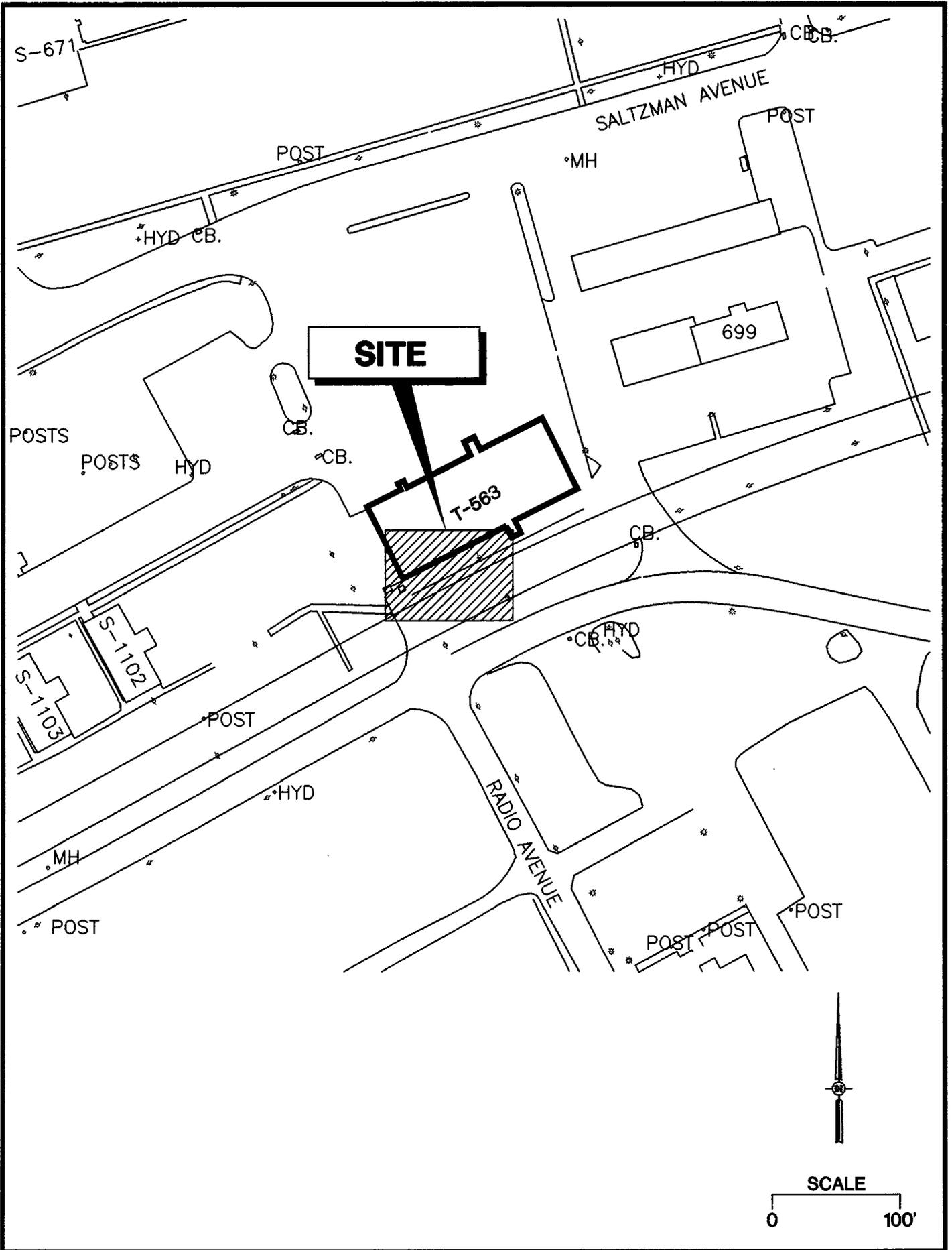
In general, New Jersey Coastal Plain formations consist of a seaward-dipping wedge of unconsolidated deposits of clay, silt, and gravel. These formations typically strike northeast-southwest with a dip ranging from 10 to 60 feet per mile and were deposited on Precambrian and lower Paleozoic rocks (Zapczka, 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 Cohansy 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 Zapczka, 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

Source: BCM/Smith Environmental Technologies Corporation (074)



(Shrewsbury) of the Red Bank sand is a yellowish-gray to reddish brown clayey, medium- to coarse-grained sand that contains abundant rock fragments, minor mica and glauconite (Jablonski). The lower member (Sandy Hook) is a dark gray to black, medium-to-fine grained sand with abundant clay, mica, and glauconite.

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

## Hydrogeology

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

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

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

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

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

Due to the fluvial nature of the overburden deposits (e.g., 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.



### 1.3 HEALTH AND SAFETY

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

### 1.4 REMOVAL OF UNDERGROUND STORAGE TANK

#### 1.4.1 General Procedures

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

#### 1.4.2 Underground Storage Tank Excavation and Cleaning

Prior to UST decommissioning activities, surficial soil was removed to expose the UST and associated piping. All free product present in the piping was drained into the UST, and the UST was purged to remove vapors prior to cutting and removal of the piping. After removal of the associated piping, a manway was made in the UST to allow for proper cleaning. The UST was completely emptied of all liquids prior to removal from the ground. Approximately 280 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 (No. NJA-1907296).

The UST was cleaned prior to removal from the excavation in accordance with the NJDEP-BUST regulations. After the UST was removed from the excavation, it was staged on



polyethylene sheeting and examined for holes. No holes or punctures were observed during the inspection by the Sub-Surface Evaluator. Soils surrounding the UST were screened visually and with an OVA for evidence of contamination.

Soil screening was also performed along the USTs piping. No contamination was noted anywhere along the piping length.

## **1.5 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL**

The tank was transported by CUTE Inc., to Mazza and Sons Inc. for disposal 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 OVA air monitoring and TPHC analysis results from the post-excitation soil samples, no soils exhibited signs of contamination. Therefore, the excavated soils were used as backfill following removal of the UST.



## 2.0 SITE INVESTIGATION ACTIVITIES

### 2.1 OVERVIEW

The Site Investigation was managed and carried out by U.S. Army DPW personnel. All analyses were performed and reported by U.S. Army Fort Monmouth Environmental Laboratory, a NJDEP-certified testing laboratory. All sampling was performed under the direct supervision of a NJDEP Certified Sub-Surface Evaluator according to the methods described in the NJDEP Field Sampling Procedures Manual (1992). Sampling frequency and parameters analyzed complied with the NJDEP-BUST document *Interim Closure Requirements for Underground Storage Tank Systems* (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
- Hazardous Waste Hauler: Freehold Cartage, Inc.  
Contact Person: Barry Olsen  
Phone Number: (908)462-1001  
NJDEP Hazardous Waste Hauler No.: 2265

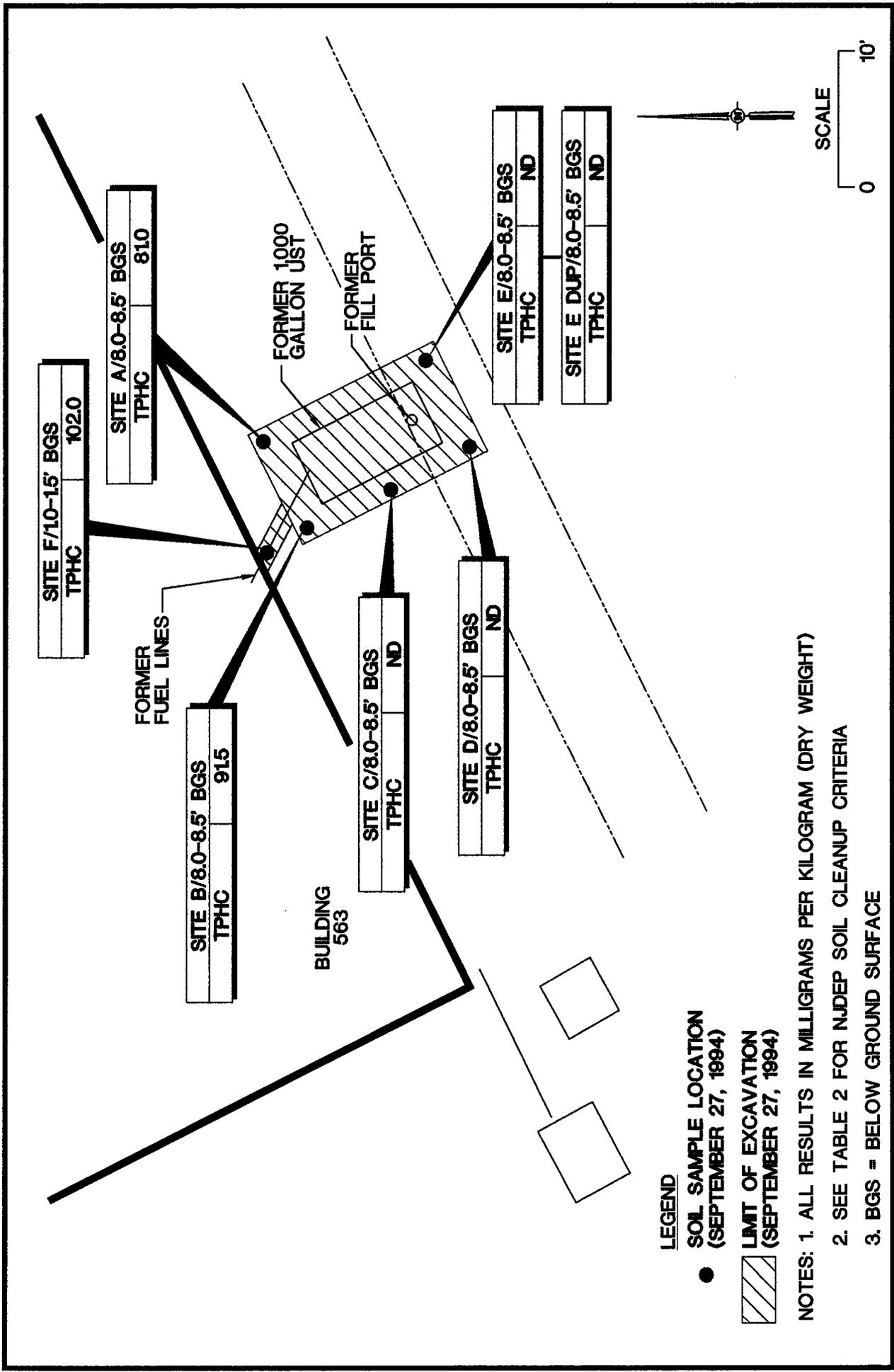
### 2.2 FIELD SCREENING/MONITORING

Field screening was performed by a NJDEP certified Sub-Surface Evaluator using an OVA and visual observations to identify potentially contaminated material. Soil excavated from around the tank and appurtenant piping, as well as the UST excavation sidewalls and bottom did not exhibit any evidence of potential contamination.

### 2.3 SOIL SAMPLING

On September 27, 1994, post-excavation soil samples A, B, C, D, E, and DUP E were collected from a total of five (5) locations along the sidewalls of the UST excavation at a depth of 8.0 feet below ground surface (bgs). Post-excavation soil sample F was also collected immediately below the former location of piping, which was approximately 5 feet in length. The piping sample was collected at a depth of 1.0 feet bgs. Refer to soil sampling location map on Figure 3. All samples were analyzed for TPHC. Because none of the soil samples exhibited a concentration exceeding 1,000 milligrams per kilogram (mg/kg), none were analyzed for volatile organic compounds with a forward library search for 10 tentatively identified compounds (VO+ 10).

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 post-excavation soil samples were collected using polystyrene scoops. Actual soil TPHC values may be higher than reported, due to sample utensil absorbency. If absorbency resulted in reducing the actual soil TPHC concentration by 50 %, the highest soil contaminant would have been 204.0 mg/kg, still below the applicable NJDEP soil cleanup standard for total organic contaminants of 10,000 mg/kg. Following soil sampling activities, the samples were chilled and delivered to U.S. Army, Fort Monmouth Environmental Laboratory located in Fort Monmouth, New Jersey for analysis.



Source: BCM/Smith Environmental Technologies Corporation (075)

TABLE 1

SUMMARY OF SAMPLING ACTIVITIES  
 BUILDING 563, MAIN POST  
 FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Matrix	Sample Type	Analytical Parameters (and USEPA Methods) *	Sampling Method
A	09/27/94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
B	09/27/94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
C	09/27/94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
D	09/27/94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
E	09/27/94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
F	09/27/94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
DUPE	09/27/94	Soil	Post-Excavation	TPHC	Polystyrene Scoop

\*Note: TPHC Total Petroleum Hydrocarbons (Method 418.1 / soil and aqueous)



### 3.0 CONCLUSIONS AND RECOMMENDATIONS

#### 3.1 SOIL SAMPLING RESULTS

To evaluate soil conditions following removal of the UST and associated piping, post-excavation soil samples were collected from a total of six (6) locations on September 27, 1994. All samples were analyzed for TPHC. The post-excavation soil sample results were compared to the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 mg/kg (N.J.A.C. 7:26D and revisions dated February 3, 1994). A summary of the analytical results and comparison to the NJDEP soil cleanup criteria is provided on Table 2 and the soil sampling results are shown on Figure 3. The analytical data package is provided in Appendix E. 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 September 27, 1994, from the UST excavation and from below piping associated with the UST contained concentrations of TPHC below the NJDEP soil cleanup criteria. Post-excavation samples A, B, and F contained TPHC concentrations ranging from 81.0 mg/kg to 102.0 mg/kg. All other samples contained non-detectable concentrations of TPHC.

#### 3.2 CONCLUSIONS AND RECOMMENDATIONS

The analytical results for all of post-excavation soil samples collected from the UST closure excavation at Building 563 were below the NJDEP soil cleanup criteria for total organic contaminants.

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

No further action is proposed in regard to the closure and site assessment of UST No. 081533-82 at Building 563.

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS  
 BUILDING 563  
 FT. MONMOUTH, NEW JERSEY

PAGE 1 OF 1

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/8.0-8.5'	1654.1	09/27/94	10/03/94	Total Solid TPHC	--	--	88 %	--	--
B/8.0-8.5'	1654.2	09/27/94	10/03/94	Total Solid TPHC	6.6	yes	81.0	10,000	--
C/8.0-8.5'	1654.3	09/27/94	10/03/94	Total Solid TPHC	6.6	yes	88 %	--	--
D/8.0-8.5'	1654.4	09/27/94	10/03/94	Total Solid TPHC	6.6	yes	91.5	10,000	--
E/8.0-8.5'	1654.5	09/27/94	10/03/94	Total Solid TPHC	6.6	yes	87 %	--	--
F/8.0-8.5'	1654.6	09/27/94	10/03/94	Total Solid TPHC	6.6	yes	ND	10,000	--
DUP E/8.0-8.5'	1654.7	09/27/94	10/03/94	Total Solid TPHC	6.6	yes	87 %	--	--
				Total Solid TPHC	6.6	yes	ND	10,000	--
				Total Solid TPHC	6.6	yes	87 %	--	--
				Total Solid TPHC	6.6	yes	88 %	--	--
				Total Solid TPHC	6.6	yes	102.0	10,000	--
				Total Solid TPHC	6.6	yes	87 %	--	--
				Total Solid TPHC	6.6	yes	ND	10,000	--

## Notes:

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

Smith Environmental Technologies Corporation (Project No. 09-5004-07)

soil563.doc



## 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 #

UST #

C-93-3911

0081533

US Army  
BLDG. 563  
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 1,000 gallon #2 diesel UST(s) and appurtenant piping.

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

ON-SITE MANAGER: C. Appleby

908-532-1475  
TELEPHONE:

OWNER:

TELEPHONE:

EFFECTIVE DATE: **SEP 07 1993**

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



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

**APPENDIX B  
CERTIFICATIONS**

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. Welner -  
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. 563

081533-82  
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 07703 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?  Yes  No If Yes, Case No. \_\_\_\_\_  
(Note: All discharges must be reported to the Environmental Action Hotline (609) 292-7172)
- B. The substance(s) discharged was(were) N/A
- C. Have any vapor hazards been mitigated?  Yes  No  N/A

## III. DECOMMISSIONING OF TANK SYSTEMS

Closure Approval No. C-93-3911

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:

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

### C. Soil samples and borings (check appropriate answer)

- Were soil samples taken from the excavation as prescribed?  Yes  No  N/A
- Were soil borings taken at the tank system closure site as prescribed?  Yes  No  N/A
- Attach the analytical results in tabular form and include the following information about each sample:
  - Customer sample number (keyed to the site map)
  - The depth of the soil sample
  - Soil boring logs
  - Method detection limit of the method used
  - QA/QC Information as required

D. Ground Water Monitoring

1. Number of ground water monitoring wells installed 0
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?  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. N/A ppb total BTEX, N/A ppb total non-targeted VOC
  2. N/A ppb total B/N, N/A ppb total non-targeted B/N
  3. 102.0 ppm TPHC
  4. N/A ppb \_\_\_\_\_ (for non-petroleum substance)

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  No
2. Free product contaminated soils are suspected to exist below the water table  Yes  No
3. Free product contaminated soils are suspected to exist off the property boundaries.  Yes  No

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

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

VI. GROUND WATER CONTAMINATION N/A

- A. Was ground water contamination found?  Yes  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:

1. \_\_\_\_\_ ppb total BTEX, \_\_\_\_\_ ppb total non-targeted VOC
2. \_\_\_\_\_ ppb total B/N, \_\_\_\_\_ ppb total non-targeted B/N
3. \_\_\_\_\_ ppb total MTBE, \_\_\_\_\_ ppb total TBA
4. \_\_\_\_\_ ppb \_\_\_\_\_ (for non-petroleum substance)
5. greatest thickness of separate phase product found \_\_\_\_\_
6. separate phase product has been delineated  Yes  No  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  N/A
2. The number of these wells identified is \_\_\_\_\_

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 \_\_\_\_\_ 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 \_\_\_\_\_ feet from the source and its screening begins at a depth of \_\_\_\_\_ 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 \_\_\_\_\_ feet below grade. This well is located \_\_\_\_\_ 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 \_\_\_\_\_ feet from the source. This well is \_\_\_\_\_ feet deep and screening begins at a depth of \_\_\_\_\_ feet.

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

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

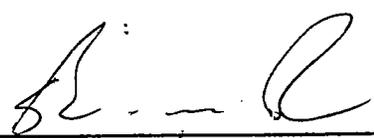
G. Delineation of contamination

1. The ground water contaminants have been delineated to MCLs or lower values at the property boundaries.  Yes  No
2. The plume is suspected to continue off the property at concentrations greater than MCLs.  Yes  No
3. Off property access (circle one):  is being sought  has been approved  has been denied

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 Desai SIGNATURE 

COMPANY NAME U.S. Army Fort Monmouth DATE 4/2/91  
(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]

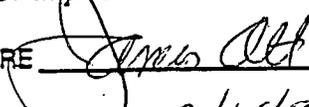
*"I certify under penalty of law that tank decommissioning activities were performed in compliance with N.J.A.C. 7:14B-9.2(b)3. I am aware that there are significant penalties for submitting false, inaccurate, or incomplete information, including fines and/or imprisonment."*

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)1].

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

NAME (Print or Type) James Ott SIGNATURE   
COMPANY NAME U.S. Army, Fort Monmouth DATE 2/14/90

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

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.

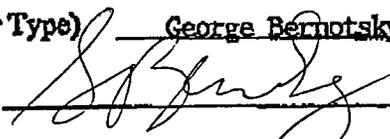
*"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information 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 \_\_\_\_\_

**UNDERGROUND STORAGE TANK (UST)  
CLOSURE CERTIFICATION**

BUILDING NO. 563NJDEP UST REGISTRATION NO. 81533-82DATE TANK REMOVED 9/26/94IJO / CONTRACT NUMBER 91-0148

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) George BernotskySIGNATURE NJDEP UST CLOSURE CERTIFICATE NO. 0003249COMPANY PERFORMING TANK DECOMMISSIONING CUTE IncNJDEP UST CLOSURE CORPORATE CERTIFICATE NO. 0200128DATE OF SUBMITTAL 12/5/94

# CALCULATION SHEET

Building No. 563

NJDEPE Reg. No. 81533 - 82

Tank Size 1000 gal

Tank Void 7.5 tons

## CLEAN FILL

ITEM NO.	DESCRIPTION	QUANTITY	TICKET #
----------	-------------	----------	----------

~~0~~

TOTAL

## STONE

ITEM NO.	DESCRIPTION	QUANTITY	TICKET #
	STONE	1.1	980768
	"	6.4	980850

TOTAL 7.5

ID#27 soil to stockpile ( ~~0~~ + 7.5 ) - 7.5 = ~~0~~ tons

Chargeable clean fill ~~0~~

Chargeable stone ~~0~~

S.C.M.I. BOUND BROOK



CUSTOMER'S COPY

CONTROL NO. A-980768

# Stavola Construction Materials, Inc.

PLANT: CHIMNEY ROCK ROAD, BOUND BROOK, N.J. • 908/958-5700

22.5 TONS Bldg 360  
1.1 Ton Bldg 563

*X R.C. Brown*  
DRIVER'S SIGNATURE

RECEIVED & ACCEPTED BY:

*X*  
CUSTOMER'S SIGNATURE

CRUSHED STONE • SAND  
• GRAVEL

EXECUTIVE OFFICE  
HAMILTON ROAD  
TUNTON FALLS, N.J.  
908/642-2828

ADDRESS REPLY TO  
P.O. BOX 482  
RED BANK, N.J. 07701

THIS COMPANY WILL NOT BE RESPONSIBLE FOR DAMAGE CAUSED BY VEHICLES DELIVERING MATERIALS OFF PUBLIC ROADS.

EXPLANATION OF DELIVERY CODES  
1 - F.O.R.  
2 - DELIVERED  
3 - NET DELIVERED

10/83/94	CUST. NO. 88688	JOB NO. 08139	TICKET NO. 980768
ORDER CLEANING UP THE ENVIRONMENT 83 GODWIN AVE. P.O. BOX 237 MIDLAND PARK NJ 07438		DELIVER TO ZONE 1 FT. MONMOUTH P/U BY SIG A	GROSS 38.80 TARE 15.20 NET 23.60
TRUCK NO.	DRIVER NO.	METHOD OF PAYMENT	DELIVERY CODE
		CHARGE	ZONE
QUANTITY	PRODUCT CODE/DESCRIPTION	UNIT OF MEASURE	UNIT PRICE
23.60	11-1 1/2" CLEAN STO		EXTENDED
LOADS ACCU. TO		FREIGHT	
		SALES TAX	
		TOTAL	
		WAIT TIME	
		GRAND TOTAL	

# CUSTOMER'S COPY

S.C.M.I. - BOUND BROOK



CONTROL NO.  
**A-980850**

## Stavola Construction Materials, Inc.

PLANT: CHIMNEY ROCK ROAD, BOUND BROOK, N.J. • 908/366-5700

*6.4 TONS Bldg 563*  
*18.17 Tons Bldg 661*

RECEIVED & ACCEPTED BY:

**X** *[Signature]*  
DRIVER'S SIGNATURE

**X**  
CUSTOMER'S SIGNATURE

CRUSHED STONE • SAND  
• GRAVEL

ADDRESS REPLY TO  
P.O. BOX 482  
RED BANK, N.J. 07701

EXECUTIVE OFFICE  
HAMILTON ROAD  
TINTON HILLS, N.J.  
908/366-2325

THIS COMPANY WILL NOT BE RESPONSIBLE FOR DAMAGE CAUSED BY VEHICLES DELIVERING MATERIALS OFF PUBLIC ROADS.

EXPLANATION OF DELIVERY CODES  
1 - F.O.B.  
2 - DELIVERED  
5 - NET DELIVERED

DATE	10/03/84	CUST. NO.	08888	JOB NO.	11-36	TICKET NO.	980850
CUSTOMER	CLEANING UP THE ENVIRONMENT 103 GODWIN AVE. P.O. BOX 837 MIDLAND PARK, NJ 07732				DELIVER TO	ZONE 1 FT. MONMOUTH BLDG. 296 P/U B10 A	
TRUCKS	TRUCK NO.	DRIVER NO.	METHOD OF PAYMENT CHARGE			DELIVERY CODE	ZONE 030
QUANTITY	PRODUCT CODE/DESCRIPTION		UNIT OF MEASURE	UNIT PRICE	EXTENDED	FREIGHT	SALES TAX
24.57	11-1-1/2" CLEAN STD		T			4.30	
COMMENTS	Load - Accy. TMS					WAIT TIME	
						GRAND TOTAL	

**SMITH**

**APPENDIX C**  
**WASTE MANIFEST**



State of New Jersey  
Department of Environmental Protection and Energy  
Hazardous Waste Regulation Program  
Manifest Section  
CN 421, Trenton, NJ 08625-0421

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-

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No. NJ 321002059767296		Manifest Document No. 67296		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 Main Post, c/o James Shirghio, Bldg 2504, ATTN: SECFM-DL-EM-MS Fort Monmouth, NJ 07703						Manifest Document Number <b>NJA 1907296</b>									
4. Generator's Phone (908) 532-6223						B. State Generator's ID (Gen. Site Address) Main Post Ft. Monmouth									
5. Transporter 1 Company Name Freehold Cartage, Inc.				6. US EPA ID Number NJ D 05411261164		C. State Trans. ID-NJDEPE -53265									
7. Transporter 2 Company Name				8. US EPA ID Number		D. Transporter's Phone (908) 462-1001									
9. Designated Facility Name and Site Address Lionetti Oil Recovery co., Inc. Cheesequake & Runyon Rds. Old Bridge, NJ 08857						10. US EPA ID Number NJ D 084044064		E. State Trans. ID-NJDEPE							
11. US DOT Description (Including Proper Shipping Name, Hazard Class or Division, HM)						12. Containers		13. Total Quantity		14. Unit Wt/Vol		15. Waste No.			
a. X Petroleum Oil, N.O.S. Class 3 (Petroleum Oil) Combustible Liquid UN 1270 PG III						0   0   1   T   T   0   0   2   0   6		G		X   7   2   2					
b. X Petroleum Oil, N.O.S. Class 3 (Petroleum Oil) Combustible Liquid UN1270 PG III						0   0   1   T   T   0   0   2   7   9		6		X   7   2   2					
c. X Petroleum Oil, N.O.S. Class 3 (Petroleum Oil) Combustible Liquid UN 1270 PG III						0   0   1   T   T   6   6   8   6		6		X   7   2   2					
d. X Petroleum Oil, N.O.S. Class 3 (Petroleum Oil) Combustible Liquid UN 1270 PG III						0   0   1   T   T   0   0   1   0   0		6		X   7   2   2					
16. Special Handling Instructions for this Consignment Petroleum Oil 60% Water 40% T,L Petroleum Oil 60% Water 40% T,L Petroleum Oil 60% Water 40% T,L Petroleum Oil 60% Water 40% T,L						K. Handling Codes for Wastes Listed Above		T04=Filtration		T04=Filtration					
15. Special Handling instructions and Additional Information NOT EPA REGULATED BY EPA. REGULATED AS HAZARDOUS WASTE IN NJ 24 HOUR EMERGENCY PHONE: 201-427-2881 NJ DECAL# -55404						11a, b, c, d ERG# 27 a) 0081533-166 b) 0081533-82 c) 0081533-81 d) 0081533-129									
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 selected the best waste management method that is available to me and that I can afford.					
Printed/Typed Name DINKER. M. DESAI				Signature <i>[Signature]</i>				Month Day Year 10/9/15 9/14							
17. Transporter 1 Acknowledgement of Receipt of Materials				Printed/Typed Name David S. Smith				Signature <i>[Signature]</i>				Month Day Year 10/9/15 9/14			
18. Transporter 2 Acknowledgement of Receipt of Materials				Printed/Typed Name				Signature				Month Day Year			
19. Discrepancy Indication Space															
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.															
Printed/Typed Name				Signature				Month Day Year							

In case of an emergency, call the emergency number on the label immediately. Do not use the material unless you are properly trained and equipped. For more information, call the National Response Center at 1-800-424-9312.



## APPENDIX D

### UST DISPOSAL CERTIFICATE

Tom Fornus  
ET Manassas  
Edinstown, NJ

**MAZZA & SONS, INC.**

Metal Recyclers  
Auto and Truck  
3230 Shatto Rd,  
Tinton Falls, NJ  
(908) 922-8292

NO. \_\_\_\_\_

DATE 5-2-91

Customer's Name Cute Inc

Address 103 Godwin Ave P.O. Box 937, Marlton Pk, NJ 07142

Make of  
Autos

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

44.176  
3.5712 d  
5.12

Tires Tomk 4  
Tank -523 - 1000 ✓ - USF # 0081538-82  
Pneck 295 - 3000 ✓ - USF # 0081533-68

	Weight	Price
Cash		
Steel	12.5	
Lt. Iron		
Copper #1		
Copper #2		
Lt. Copper		
Brass		
Alum Clean		
Lead		
Stainless		
Radiators		
Battery		
TOTAL AMOUNT:		

211-5

*Copy printed  
+ Berger 10/6*

Weighter \_\_\_\_\_ Customer [Signature]



## APPENDIX E

### SOIL ANALYTICAL DATA PACKAGE

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

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

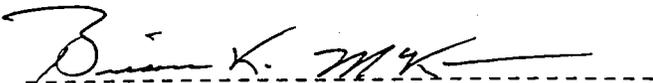
Lab. ID #: 1654.1-.7  
 Sample Rec'd: 09/27/94  
 Analysis Start: 10/03/94  
 Analysis Comp: 10/04/94

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

NJDEPE UST Reg.#: 0081533-82  
 Closure #: C93-3911  
 DICAR #:  
 Location #: Bldg. 563

Lab ID.	Description	%Solid	Result	MDL
			(mg/Kg)	
1654.1	Site A, Sidewall OVA= ND.	88	81.0	6.6
1654.2	Site B, Sidewall OVA= ND.	88	91.5	6.6
1654.3	Site C, Sidewall OVA= ND.	87	ND	6.6
1654.4	Site D, Sidewall OVA= ND.	87	ND	6.6
1654.5	Site E, Sidewall OVA= ND.	87	ND	6.6
1654.6	Site F, Feedline OVA= ND.	88	102.	6.6
1654.7	Site H, Dup of E OVA= ND.	87	ND	6.6
M. Bl.	Method Blank	100	ND	3.3

Notes: ND = Not Detected, MDL = Method Detection Limit  
 \* = Silica Gel Added, NA = Not Applicable  
 Batch dup= 100% Batch s= 102% Batch sd= 102% RPD= 0.0%  
 Cal Chk = 95%

  
 Brian K. McKee  
 Laboratory Director



# U.S. ARMY FORT MONMOUTH

Chain of Custody

P.O. #: Pub-7 TPAC

Project #: C93-3911		Sampler: George/cute		Date / Time		Analysis Parameters		Start:	
Customer: Dean		Site Name: B009 563		9/27 0900		None		Finish:	
DPW-Eiviro		0 081533 -82				TPAC		Preservation Method	
Phone (908) 532-1475		C93-3911				TPAC		Remarks	
Lab Sample #	Date/Time	Customer Sample Location/ID Number	Sample Matrix	# of Bottles	Date / Time	Analysis Parameters	Start	Finish	Preservation Method
1654.1	9/27 3-23	Site A Frame	Soil	1	9/27 0900	TPAC	ND		
1654.2	" 3-25	Site B	"	1	"	"	ND		<40C Cooler
1654.3	" 3-28	Site C	"	1	"	"	ND		
1654.4	" 3-31	Site D	"	1	"	"	ND		TPAC - Oxidized to 2000
1654.5	" 3-34	Site E	"	1	"	"	ND		TPAC - 95% AC
1654.6	" 3-38	Site F (Feedline)	"	1	"	"	ND		TPAC - 81
1654.7	" 3-40	Site G (Dopoffe)	"	1	"	"	ND		
Relinquished By (signature)		Date / Time		Received By (signature)		Shipped By:			
[Signature]		9/27 1600		[Signature]		Hand			
Relinquished By (signature)		Date / Time		Received for Lab by (signature)		Date / Time			
[Signature]		9/27 1600		[Signature]		9/27/94 1600			

Note: A drawing depicting sample location should be attached or drawn on the reverse side of this chain of custody. Map attached to C93-3911

Environmental Laboratory

Oct. 3, 1994 Sarah J. Nuttall

1120

Blank 0 MV

40.75 53 MV

81.5 112 MV

163 232 MV

Method Blank Bldg. 619 0 MV

1638.1 100 MV (dil 7)

1638.2 17 MV

1638.3 0 MV

1638.4 0 MV

Method Blank Bldg. 618 0 MV

1653.1 70 MV (dil 7)

1653.2 0 MV

1653.2 0 MV Duplicate

1653.2 68 MV Spike

1653.2 68 MV Dup Spike

Calibration Check 40.75 52 MV

Method Blank Bldg. 565

1654.1 12 MV

1654.2 14 MV

1654.3 0 MV

1654.4 0 MV

1654.5 0 MV

1654.6 16 MV

1654.7 0 MV

PRINTED IN U.S.A.

191-5870-00

PHC Conformance/Non-conformance Summary Report

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

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.

Project #1654

  
Brian K. McKee  
Laboratory Manager



ATTACHMENT H

UST 601 Report



**United States Army**  
Fort Monmouth, New Jersey

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

***Building 601  
Main Post***

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**NJDEP UST Registration No. 081533-84  
NJDEP Closure Approval Letter Dated June 10, 1994  
Spill Case No. 94-8-18-1613-35**

February 1997

**SMITH**  
TECHNOLOGY CORPORATION

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

**BUILDING 601**

**MAIN POST**

**NJDEP UST REGISTRATION NO. 081533-84  
NJDEP CLOSURE APPROVAL LETTER DATED JUNE 10, 1994  
SPILL CASE NO. 94-8-18-1613-35**

**FEBRUARY 1997**

**PROJECT NO.: 09-5004-08  
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 TECHNOLOGY CORPORATION  
BROMLEY CORPORATE CENTER  
THREE TERRI LANE  
BURLINGTON, NEW JERSEY 08016**



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Appendix B	Certifications
Appendix C	Waste Manifest
Appendix D	UST Disposal Certificate
Appendix E	Soil Analytical Data Package.



## EXECUTIVE SUMMARY

### UST Closure

On August 16, 1994, a steel underground storage tank (UST) was closed by removal in accordance with the New Jersey Department of Environmental Protection (NJDEP) Closure Approval Letter dated June 10, 1994 at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey. The UST, NJDEP Registration No. 081533-84, was located immediately adjacent to Building 601 in the Main Post area of U.S. Army, Fort Monmouth. UST No. 081533-84 was a 1,000-gallon No. 2 fuel oil UST. The UST fill port was located directly above the tank. The tank closure was performed by Cleaning Up The Environment Inc. (CUTE).

### Site Assessment

The site assessment was performed by U.S. Army personnel in accordance with the NJDEP *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E) and the NJDEP *Field Sampling Procedures Manual*. Soils surrounding the tank were screened visually and with air monitoring equipment for evidence of contamination. Following removal, the UST was inspected for corrosion holes. Holes were noted in the UST, however, no evidence of potentially contaminated soils was observed surrounding the tank.

On August 16, 1994, following the removal of the UST, post-excavation soil samples A, B, C, and D were collected from a total of four (4) locations along the sidewalls of the excavation, immediately above groundwater. The samples were collected at a depth of 5.0 feet below ground surface (bgs). Groundwater was present at approximately 5.5 feet bgs. Sample E was collected along the former piping length of the excavation, which was approximately 15 feet in length. The piping sample was collected at a depth of 0.5 feet bgs. All samples were analyzed for total petroleum hydrocarbons (TPHC).

On August 18, 1994, due to elevated TPHC levels, the DPW had concluded that an historical discharge was associated with the UST and associated piping. A spill was reported to the NJDEP "Hotline" for UST No. 081533-84 and was assigned Spill Case No. 94-8-18-1613-35.

On August 26, 1994, due to elevated TPHC levels in the former piping trench, approximately 10 cubic yards of potentially contaminated soil was removed. The area in the vicinity of sample E was resampled at a depth of 1.0 feet bgs, following removal of soil. The sample was designated as E1, and was analyzed for TPHC.

### Findings

All post-excavation soil samples collected from the UST excavation and from below piping associated with the former UST at Building 601 contained TPHC concentrations below the NJDEP residential direct contact total organic contaminants soil cleanup criteria of



10,000 milligrams per kilogram (mg/kg) (N.J.A.C. 7:26D and revisions dated February 3, 1994). Samples A, B, C, and D, collected on August 16, 1994, contained levels of TPHC ranging in concentration from 42.7 mg/kg to 55.3. Sample E contained a TPHC concentration of 1,190.0 mg/kg. Sample E-1, collected on August 26, 1994, contained a TPHC concentration of 82.6 mg/kg.

#### Site Restoration

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 Quality Assurance

The sampling and laboratory analysis conducted during the site assessment were performed in accordance with Section 7:26E-2.1 of the *Technical Requirements for Site Remediation*.

#### Discrepancies

The removal contractor collected soil samples using polystyrene scoops instead of NJDEP approved stainless steel scoops. The results of the soil samples were therefore evaluated at 50% of the actual value to compensate for any potential loss due to absorbency of the polystyrene scoop.

#### Conclusions and Recommendations

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

No further action is proposed in regard to the closure and site assessment of UST No. 081533-84 at Building 601.



## 1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

### 1.1 OVERVIEW

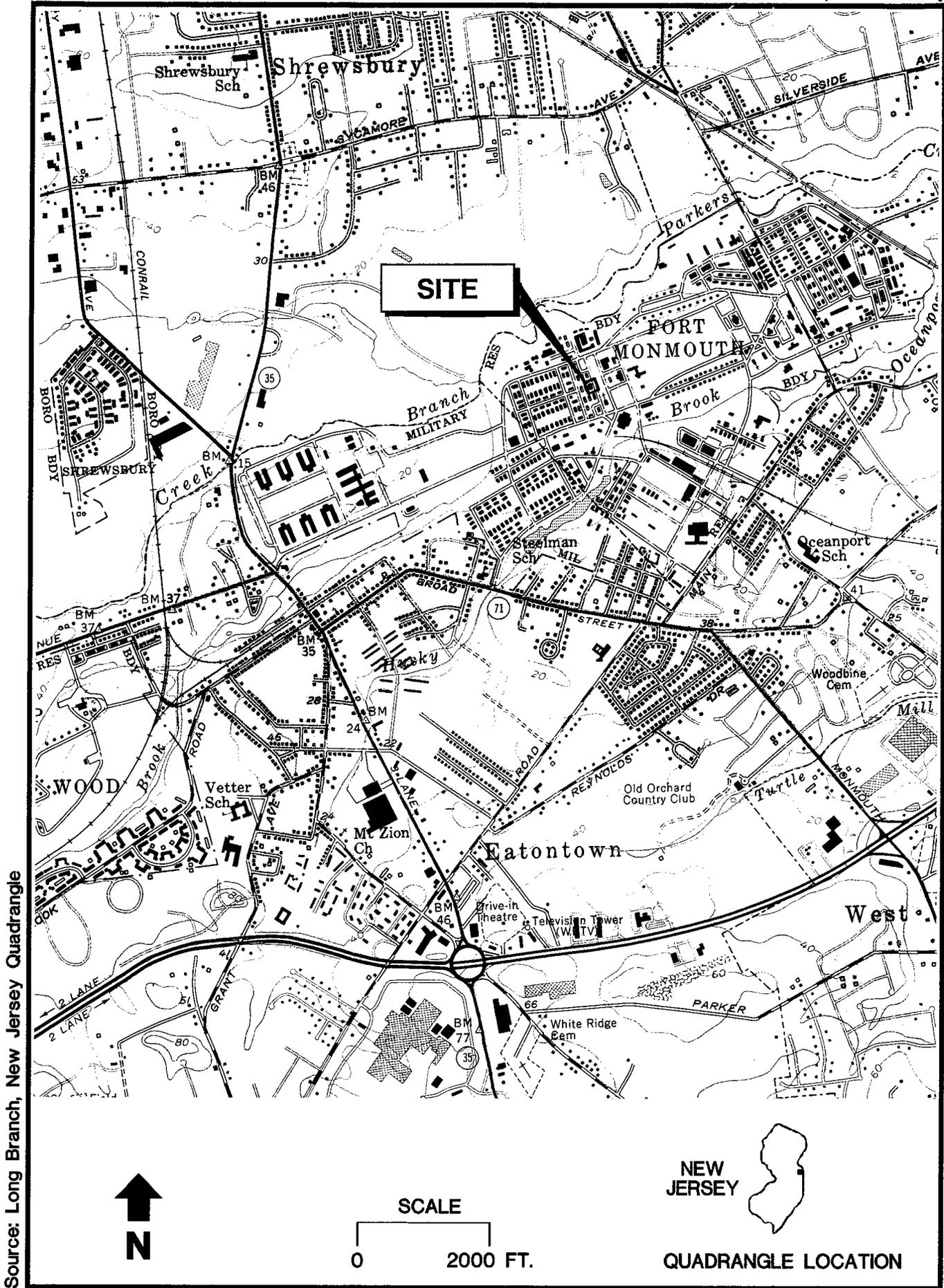
One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 081533-84, was closed at Building 601 at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey on August 16, 1994. Refer to site location map on Figure 1. This report presents the results of the DPW's implementation of the UST Decommissioning/Closure Plan submitted to the NJDEP on June 10, 1994. The plan was approved on July 5, 1994. The UST was a steel 1,000-gallon tank containing No. 2 fuel oil.

Decommissioning activities for UST No. 081533-84 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. 081533-84 proceeded under the approval of the NJDEP Bureau of Underground Storage Tanks (NJDEP-BUST). The NJDEP-BUST closure approval and signed certifications for UST No. 081533-84 are included in Appendices A and B, respectively.

Based on elevated TPHC levels, the DPW has concluded that an historical discharge was associated with the UST and associated piping. On August 18, 1994, a spill was reported to the NJDEP "Hotline" for UST No. 081533-84 and was assigned Spill Case No. 94-8-18-1613-35.

This UST Closure and Site Investigation Report has been prepared by Smith Technology Corporation. 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.



## 1.2 SITE DESCRIPTION

Building 601 is located in the central portion of the Main Post area of Fort Monmouth, as shown on Figure 1. UST No. 081533-84 was located south of Building 601 and appurtenant piping ran approximately 15 feet north from the excavation to Building 601. 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 601. Included is a description of the regional geology of the area surrounding Fort Monmouth as well as descriptions of the local geology and hydrogeology of the Main Post area.

#### Regional Geology

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

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

The formations record several major transgressive/regressive cycles and contain units which are generally thicker to the southeast and reflect a deeper water environment. 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 Zapeczka, 1990).

#### Local Geology

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

Source: Smith Technology Corporation (118)

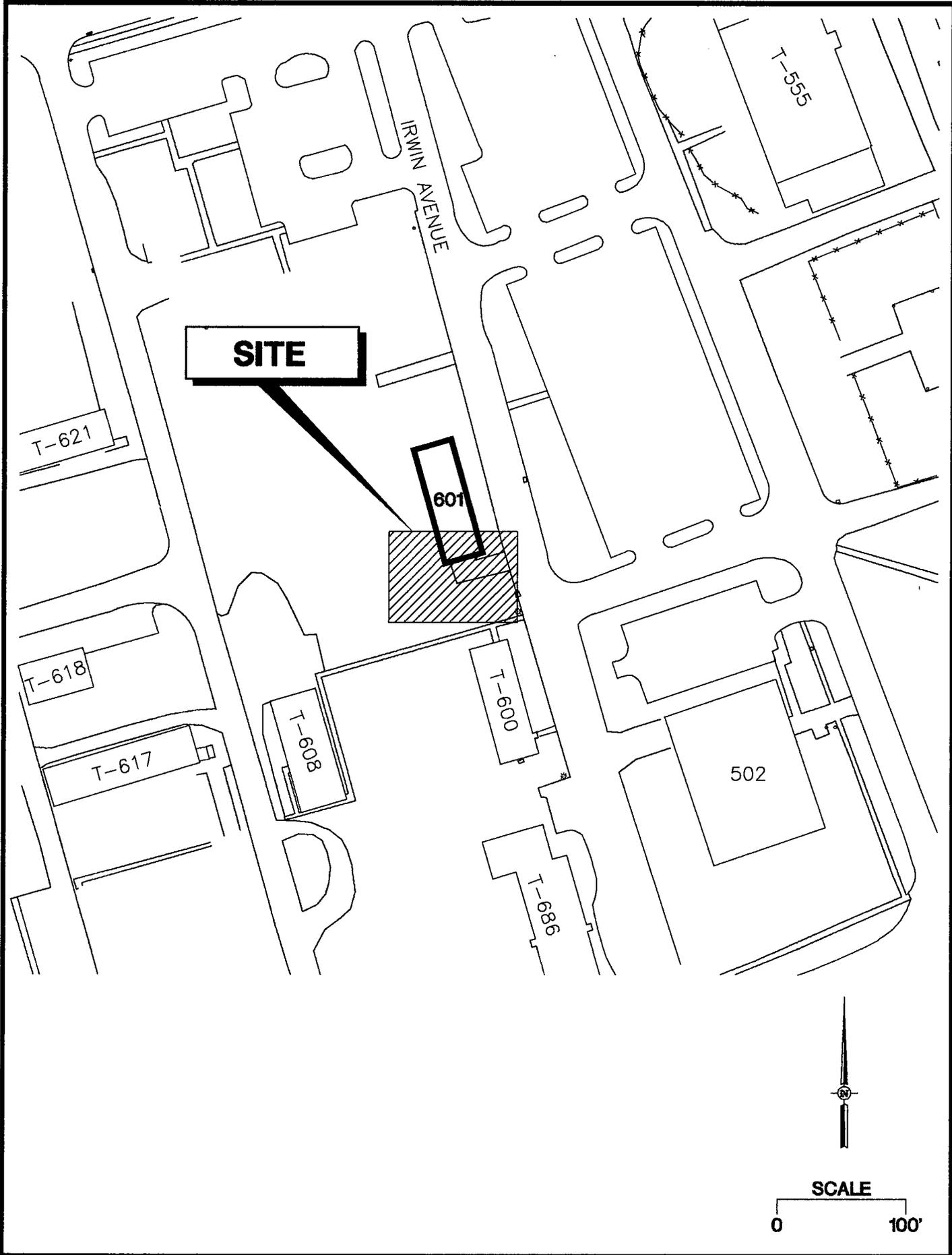


Figure 2  
**Building 601  
Site Map**



(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 iron oxide encrusted (Minard).

### Hydrogeology

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

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

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

## **1.3 HEALTH AND SAFETY**

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



## **1.4 REMOVAL OF UNDERGROUND STORAGE TANK**

### **1.4.1 General Procedures**

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

### **1.4.2 Underground Storage Tank Excavation and Cleaning**

Prior to UST decommissioning activities, surficial soil was removed to expose the UST and associated piping. All free product present in the piping was drained into the UST, and the UST was purged to remove vapors prior to cutting and removal of the piping. 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. The waste manifest for this UST was not available.

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

Soil screening was also performed along the piping associated with the UST. No contamination was noted anywhere along the piping length.

## **1.5 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL**

The tank was transported by CUTE Inc. to Mazza & Sons Inc. for disposal in compliance with all applicable regulations and laws. The UST Disposal Certificate was not available.



It is assumed the removal contractor labeled the UST prior to transport with the following information:

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

The UST was removed prior to photographic documentation by the Subsurface Evaluator.

## **1.6 MANAGEMENT OF EXCAVATED SOILS**

Based on elevated TPHC results, approximately 10 cubic yards of potentially contaminated soils were excavated from the piping portion of the excavation on August 26, 1994. All potentially contaminated soils were stockpiled separately from other excavated material and were placed on and covered with polyethylene sheets. Potentially contaminated soils were transported to a hazardous storage area on Main Post prior to ultimate disposal at soil Remediation of Philadelphia. Soils that did not exhibit signs of contamination used as backfill following removal of the UST.



## 2.0 SITE INVESTIGATION ACTIVITIES

### 2.1 OVERVIEW

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

The following Parties participated in Closure and Site Investigation Activities.

- Closure Contractor: Cleaning Up The Environment Inc. (CUTE)  
Closure Supervisor: George Bernotsky  
Phone Number: (201) 427-2881  
NJDEP Certification No.: 3249
- Subsurface Evaluator: Charles Appleby  
Employer: U.S. Army, Fort Monmouth  
Phone Number: (908) 532-6224  
NJDEP Certification No.: 2056
- Analytical Laboratory: U.S. Army Fort Monmouth Environmental Laboratory  
Contact Person: Brian K. McKee  
Phone Number: (908) 532-4359  
NJDEP Company Certification No.: 13461
- Hazardous Waste Hauler: Unknown \*  
Contact Person: Unknown  
Phone Number: Unknown  
NJDEP Hazardous Waste Hauler No.: Unknown

\* It is assumed by the Subsurface Evaluator that only a small quantity of tank bottom sludge was generated from the draining of the UST and that the waste was combined with wastes from other UST closures by the contractor. All such wastes were disposed of IAW the Fort Monmouth Hazardous Waste Management Plan. For this reason, no documentation of the waste materials are available for this specific site.



## 2.2 FIELD SCREENING/MONITORING

Field screening was performed by a NJDEP Certified Sub-Surface Evaluator using an OVA and visual observations to identify potentially contaminated material. Soils were removed from the excavation until no evidence of contamination remained.

## 2.3 SOIL SAMPLING

On August 16, 1994, following the removal of the UST, post-excavation soil samples A, B, C, and D were collected from a total of four (4) locations along the sidewalls of the excavation, immediately above groundwater. The samples were collected at a depth of 5.0 feet below ground surface (bgs). Groundwater was present at approximately 5.5 feet bgs. Sample E was collected along the former piping length of the excavation, which was approximately 15-feet in length. The piping sample was collected at a depth of 0.5 feet bgs. All samples were analyzed for total petroleum hydrocarbons (TPHC).

On August 18, 1994, due to elevated TPHC levels, the DPW had concluded that an historical discharge was associated with the UST and associated piping. A spill was reported to the NJDEP "Hotline" for UST No. 081533-84 and was assigned Spill Case No. 94-8-18-1613-35.

On August 26, 1994, due to elevated TPHC levels in the former piping trench, approximately 10 cubic yards of potentially contaminated soil was removed. The area in the vicinity of sample E was resampled at a depth of 1.0 feet bgs, following removal of soil. The sample was designated as E1, and was analyzed for 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 in Table 1. The post-excavation soil samples were collected using polystyrene scoops. Actual soil TPHC values may be higher than reported, due to sample utensil absorbency. If absorbency resulted in reducing the actual soil TPHC concentration by 50 %, the highest soil contaminant would have been 165.2 mg/kg, still below the applicable NJDEP soil cleanup standard for total organic contaminants of 10,000 mg/kg. Following soil sampling activities, the samples were chilled and delivered to U.S. Army Fort Monmouth Environmental Laboratory located in Fort Monmouth, New Jersey, for analysis.

TABLE 1  
PAGE 1 OF 1

SUMMARY OF SAMPLING ACTIVITIES  
BUILDING 601, MAIN POST  
FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Matrix	Sample Type	Analytical Parameters (and USEPA Methods) *	Sampling Method
A	8/16/94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
B	8/16/94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
C	8/16/94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
D	8/16/94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
E	8/16/94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
E1	8/26/94	Soil	Post-Excavation	TPHC	Polystyrene Scoop

\* Note:

TPHC Total Petroleum Hydrocarbons (Method 418.1 / soil and aqueous)

Smith Technology Corporation (Project No. 09-5004-08)

soil601.doc



## 3.0 CONCLUSIONS AND RECOMMENDATIONS

### 3.1 SOIL SAMPLING RESULTS

To evaluate soil conditions following removal of the UST and associated piping, post-excavation soil samples were collected from a total of five (5) locations on August 16, 1994, and from one (1) location on August 26, 1994. All samples were analyzed for TPHC. The post-excavation sampling results were compared to the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 mg/kg (N.J.A.C. 7:26D and revisions dated February 3, 1994). A summary of the analytical results and comparison to the NJDEP soil cleanup criteria is provided in Table 2 and the soil sampling results are shown on Figure 3. The analytical data package is provided in Appendix C.

All post-excavation soil samples collected on August 16, 1994, and on August 26, 1994, from the UST excavation and from below piping associated with the UST contained concentrations of TPHC below the NJDEP soil cleanup criteria. Post-excavation soil samples A, B, C, and D collected on August 16, 1994 contained levels of TPHC ranging in concentration from 42.7 mg/kg to 55.3 mg/kg. Sample E contained a TPHC concentration of 1,190.0 mg/kg. Post-excavation soil sample E1, collected on August 26, 1994, contained a TPHC concentration of 82.6 mg/kg.

### 3.2 CONCLUSIONS AND RECOMMENDATIONS

The analytical results for all post-excavation soil samples collected from the UST closure excavation at Building 601 were below the NJDEP soil cleanup criteria for total organic contaminants.

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

The existing discrepancy as listed in the Executive Summary is believed to be acceptable as explained and does not warrant further investigation or explanation. Procedures have been corrected to eliminate recurrences in the future.

No further action is proposed in regard to the closure and site assessment of UST No. 081533-84 at Building 601.

TABLE 2  
PAGE 1 OF 2

POST-EXCAVATION SOIL SAMPLING RESULTS  
BUILDING 601  
FT. MONMOUTH, NEW JERSEY

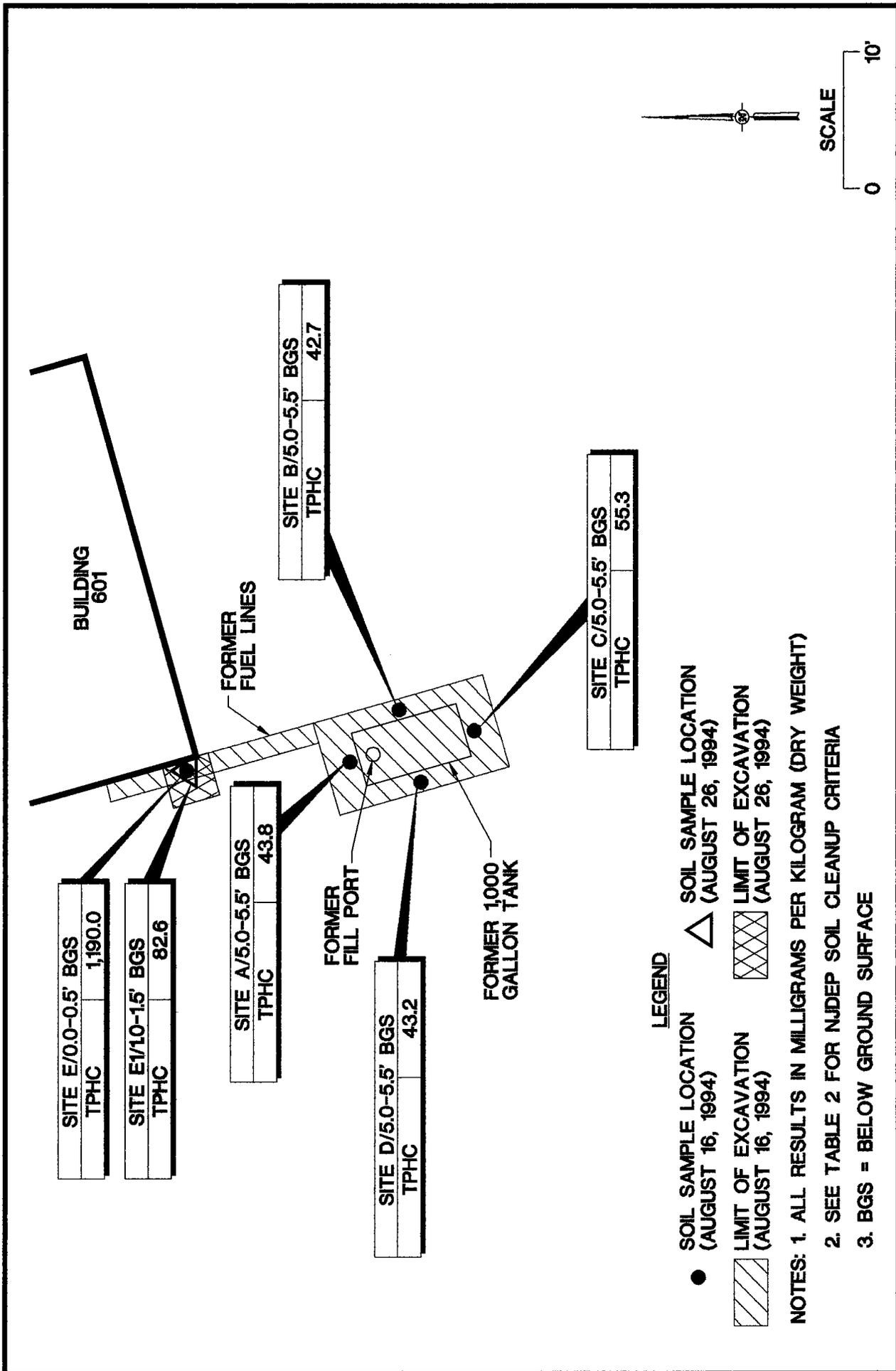
Sample ID/Depth	Sample Laboratory ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (mg/kg)	Compound of Concern	Result (mg/kg)	NJDEP Soil Cleanup Criteria * (mg/kg)	Exceeds Cleanup Criteria
A/5.0-5.5'	1614.1	8/16/94	8/17/94	Total Solid TPHC	--	--	85 %	--	--
B/5.0-5.5'	1614.2	8/16/94	8/17/94	Total Solid TPHC	6.6	Yes	43.8	10,000	--
C/5.0-5.5'	1614.3	8/16/94	8/17/94	Total Solid TPHC	6.6	Yes	87 %	10,000	--
D/5.0-5.5'	1614.4	8/16/94	8/17/94	Total Solid TPHC	6.6	Yes	42.7	10,000	--
E/0.0-0.5'	1614.5	8/16/94	8/17/94	Total Solid TPHC	6.6	Yes	84 %	10,000	--
E1/1.0-1.5'	1623.1	8/26/94	8/31/94	Total Solid TPHC	6.6	Yes	55.3	10,000	--
					6.6	Yes	86 %	10,000	--
					6.6	Yes	43.2	10,000	--
					6.6	Yes	86 %	10,000	--
					6.6	Yes	1,190.0	10,000	--
					6.6	Yes	87 %	--	--
					6.6	Yes	82.6	10,000	--

Notes:

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

Actual soil TPHC values may be higher than reported due to absorbency by polystyrene scoops. If absorbency resulted in reducing the actual soil TPHC concentration by 50%, the highest soil contaminant would be 165.2 mg/kg.

Smith Technology Corporation (Project No. 09-5004-08)



Source: Smith Technology Corporation (119)

**APPENDIX A**  
**NJDEP BUST CLOSURE APPROVAL**



State of New Jersey  
DEPARTMENT OF ENVIRONMENTAL  
PROTECTION AND ENERGY

CHRISTINE TODD WHITMAN  
Governor

ROBERT C. SHINN, JR.  
Commissioner

Mr. Joseph Fallon  
SELFM-EH-EV  
Headquarters CECOM Fort Monmouth  
Fort Monmouth, NJ 077703-5000

JUL 5 1994

Dear Mr. Fallon:

Re: UST Closure Approval Applications (#2)  
Fort Monmouth, Monmouth County

I have reviewed the Underground Storage Tank (UST) Closure Approval Applications submitted on June 10, 1994 for the five registered tanks numbers 0090010-20; and 0081533-96, 101, 105, and 84. The applications are technically accurate and the NJDEPE approves the applications with the following required changes.

Since the reports are all drafted from the same shell document, the required changes noted here apply to all of these documents and future UST Closure Approval Applications.

1. "UNDERGROUND STORAGE TANK (UST) DECOMMISSIONING/CLOSURE PLAN" Section A. General Requirements: The laws listed should include the *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E et seq.).
2. Same Section: THE NJDEPE, will be changing its name to NJDEP on 7/1/94. Documents which are named NJDEPE should remain so named, however references to the Department should be abbreviated NJDEP.
3. Section E. Excavated Soils Management: The NJDEPE has updated the document titled "Management of Excavated Soils". This updated version is dated May 14, 1993.
4. Section F. Changes/Authorizations: Prior authorization must be obtained from the Bureau of Federal Case Management (BFCM), not BUST.
5. "UNDERGROUND ... ASSESSMENT PLAN" General: See comment 1 and 4. Sentence should be modified to read "... and submitted to the NJDEPE-BFCM in accordance with N.J.A.C. 7:14B-9.2 and 9.3 and N.J.A.C. 7:26E et seq.
6. CERTIFICATION section, this paragraph should include a reference to compliance with the minimum requirements of the *Technical Regulations for Site Remediation*, N.J.A.C. 7:26E et seq.

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

Sincerely,

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

cc. Kevin Kratina, BUST  
RPCE\BFCM\FTMMTH14.JRC

**SMITH**

**APPENDIX B**  
**CERTIFICATIONS**

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 02B  
Trenton, NJ 08625-002B  
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 UST's, 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 \_\_\_\_\_

081533-84  
**FACILITY REGISTRATION #**

Bldg. 601

**I. FACILITY NAME AND ADDRESS**

US Army Fort Monmouth, New Jersey  
Directorate of Public Works, Bldg. 167  
Fort Monmouth, NJ 07703 County Monmouth  
Telephone No. 908-532-6224

**OWNER'S NAME AND ADDRESS, if different from above**

\_\_\_\_\_  
\_\_\_\_\_  
Telephone No. \_\_\_\_\_

II. DISCHARGE REPORTING REQUIREMENTS

A. Was contamination found?  Yes  No If Yes, Case No. 94-8-18-1613-35  
(Note: All discharges must be reported to the Environmental Action Hotline (609) 292-7172)

B. The substance(s) discharged was(were) #2 fuel oil

C. Have any vapor hazards been mitigated?  Yes  No  N/A

Letter dated July 5  
Closure Approval No. 1994 from NJDEP-BFC

III. DECOMMISSIONING OF TANK SYSTEMS

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:

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

C. Soil samples and borings (check appropriate answer)

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

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

3. Attach the analytical results in tabular form and include the following information about each sample

- Customer sample number (keyed to the site map)
- The depth of the soil sample
- Soil boring logs
- Method detection limit of the method used
- QA/QC information as required

D. Ground Water Monitoring

1. Number of ground water monitoring wells installed 0

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?  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. <u>N/A</u>	ppb total BTEX, <u>N/A</u>	ppb total non-targeted VOC, <u>N/A</u>
2. <u>N/A</u>	ppb total B/N, <u>N/A</u>	ppb total non-targeted B/N, <u>N/A</u>
3. <u>82.6</u>	ppm TPHC	
4. <u>N/A</u>	ppb _____	(for non-petroleum substance)

C. Remediation of free product contaminated soils N/A

- 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  No
- 2. Free product contaminated soils are suspected to exist below the water table  Yes  No
- 3. Free product contaminated soils are suspected to exist off the property boundaries.  Yes  No

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

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

VI. GROUND WATER CONTAMINATION N/A

A. Was ground water contamination found?  Yes  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:

- |          |  |                                   |
|----------|--|-----------------------------------|
| 1. _____ | ppb total BTEX, _____  | ppb total non-targeted VOC, _____ |
| 2. _____ | ppb total B/N, _____   | ppb total non-targeted B/N, _____ |
| 3. _____ | ppb total MTBE, _____  | ppb total TBA, _____              |
| 4. _____ | ppb _____  | (for non-petroleum substance)     |
| 5. _____ | greatest thickness of separate phase product found   |                                   |
| 6. _____ | separate phase product has been delineated <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> 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  N/A
- 2. The number of these wells identified is \_\_\_\_\_.

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 \_\_\_\_\_ 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 \_\_\_\_\_ feet from the source and its screening begins at a depth of \_\_\_\_\_ 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 \_\_\_\_\_ feet below grade. This well is located \_\_\_\_\_ 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 \_\_\_\_\_ feet from the source. This well is \_\_\_\_\_ feet deep and screening begins at a depth of \_\_\_\_\_ feet.

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

F. A ground water contour map has been submitted which includes the ground water elevations for each well.  Yes  No  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
2. The plume is suspected to continue off the property at concentrations greater than MCLs.  Yes  No
3. Off property access (circle one):  is being sought  has been approved  has been denied

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 9.1. I am aware that there are significant penalties for submitting false, inaccurate, or incomplete information, including fines and/or imprisonment."*

NAME (Print or Type) Charles M. Appleby SIGNATURE \_\_\_\_\_

COMPANY NAME US Army Fort Monmouth DATE \_\_\_\_\_  
(Preparer of Site Assessment Plan)

CERTIFYING ORGANIZATION NJDEP CERTIFICATION NUMBER 2056

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) George Bernotsky SIGNATURE N/A

COMPANY NAME CUTE DATE N/A  
(Performer of Tank Decommissioning)

\* The contractor was not available for signing this document

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)1].

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

NAME (Print or Type) James Ott SIGNATURE \_\_\_\_\_

COMPANY NAME US Army Fort Monmouth DATE \_\_\_\_\_

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

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**  
**SOIL ANALYTICAL DATA PACKAGE**

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

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

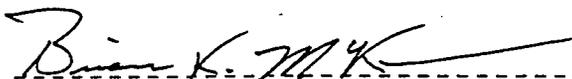
Lab. ID #: 1614.1-.5  
 Sample Rec'd: 08/16/94  
 Analysis Start: 08/17/94  
 Analysis Comp: 08/17/94

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

NJDEPE UST Reg.#: 0081533-84  
 Closure #: BFCM-7-5-94  
 DICAR #:  
 Location #: Bldg. 601

Lab ID.	Description	%Solid	Result	MDL (mg/Kg)
1614.1	Site A, N-Sidewall 5.5' OVA= <1	85	43.8	6.6
1614.2	Site B, E-Sidewall 5.5' OVA= <1	87	42.7	6.6
1614.3	Site C, S-Sidewall 5.5' OVA= <1	84	55.3	6.6
1614.4	Site D, W-Sidewall 5.5' OVA= <1	86	43.2	6.6
1614.5	Site E, Piperun .5' OVA= <1 *	86	1190.	6.6
M. Bl.	Method Blank	100	ND	3.3

Notes: ND = Not Detected, MDL = Method Detection Limit  
 \* = Silica Gel Added, NA = Not Applicable  
 Batch dup= 97% Batch s= 75% Batch sd= 71% RPD= 1.4%

  
 -----  
 Brian K. McKee  
 Laboratory Director



# U.S. ARMY FORT MONMOUTH

Chain of Custody

P.O. #: PWS-007 TPAC

ducar, # 94-8-18-1613-35

Project #:	0081533-84	Sampler:	George B / Cete Inc. 8-16-94 1515	Date / Time	Analysis Parameters	Start:
Customer:	C. Apply SELFm-PW-EV	Site Name:	Bldg. 601 UST# 0081533-84 Close - BFCM - 7-5-94			Finish:
Phone:	X26224	Customer Sample Location/ID Number	Sample Matrix	# of Bottles	Remarks	Preservation Method
1614.1	8/16/94 1500	Site A - N-Sidewalk 5.5	Soil	1	X X X X X X	Sample kept < 40C
1.2	1530	Site B - E-Sidewalk 5.5		1	X X X X X X	Sample Jars ESS: for clean
1.3	1523	Site C - S-Sidewalk 5.5		1	X X X X X X	Lot 72094
1.4	1521	Site D - W-Sidewalk 5.5		1	X X X X X X	
1.5	1525	Site E - Pipe Ren. 5.5		1	X X X X X X	one SN A52114
						cal. limited w/ zero air
						+ 95 ppm methan at
						Gas Select = 3 - Panel 85 ppm
						8-18-94 10:85 am
						C. Apply SELFm-PW-EV
Relinquished By (signature)		Date / Time	Received By (signature)	Date / Time	Shipped By:	
Relinquished By (signature)		Date / Time	Received for Lab by (signature):	Date / Time		
		8-16-94/1600	Sarah J. Hubbard	8/16/94/1600		

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

Environmental Laboratory

Certification Number 13461

3A

Samples extracted 8/17/94

Samples analyzed on 8/18/94 0840

Jarah Hubbard

Blank 0 MV

40.75 55 MV

81.5 111 MV

163 234 MV

Method Blank 0 MV

1612.1 9 MV Building 656

1612.2 6 MV

1612.3 5 MV

1612.4 5 MV

1612.5 30 MV

1612.5 29 MV dup

1612.5 144 MV Spks

1612.5 142 MV dup. Spks

Method Blank - Building 655

1613.1 16 MV

1613.2 3 MV

1613.4 (3) 27 MV

1613.5 (4) 4 MV

1613.5 1 MV

1613.6 14 MV

1613.7 2 MV

1613.8 4 MV

Method Blank 0 MV Bldg 601

195 (6370)-09

PRINTED IN U.S.A.

195-6970-00

Method Blank 0 MV

1612.1 9 MV Building 656

1612.2 6 MV

1612.3 5 MV

1612.4 5 MV

1612.5 30 MV

1612.5 29 MV dup

1612.5 144 MV Spk

1612.5 142 MV dup. Spk

Method Blank - Building 655  
0 MV

1613.1 16 MV

1613.2 3 MV

1613.4 (3) 27 MV  
<sup>lost</sup>

1613.5 (4) 4 MV  
<sup>dup</sup>

1613.5 1 MV

1613.6 14 V

1613.7 2 MV

1613.8 4 MV

Method Blank 0 MV Bldg - 601

1614.1 5 MV

1614.2 8 MV

1614.3 7 MV

1614.4 5 MV

1614.5 27 MV

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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.

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)

\_\_\_\_\_  
\_\_\_\_\_

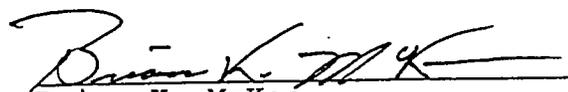
Comments: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

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.

Project #1614

  
Brian K. McKee  
Laboratory Manager

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

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

Lab. ID #: 1623.1  
 Sample Rec'd: 08/26/94  
 Analysis Start: 08/31/94  
 Analysis Comp: 08/31/94

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

NJDEPE UST Reg.#: 0081533-84  
 Closure #:  
 DICAR #:  
 Location #: Bldg. 601

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1623.1	Site E1 FEEDLINE OVA= ND	87	82.6	6.6
M. Bl.	Method Blank	100	ND	3.3

Notes: ND = Not Detected, MDL = Method Detection Limit  
 \* = Silica Gel Added, NA = Not Applicable  
 BATHC dup= 115% BATCH s= 116% BATCH sd= 115% RPD= 0.8%

  
 -----  
 Brian K. McKee  
 Laboratory Director





*Jack P. Melton* 105

Blank

40.75 54 MV

81.5 111 MV

163 240 MV

1628.1 <sup>MV</sup> 80 Building 625

1628.2 5 MV

1628.3 5 MV

1628.4 2 MV

1628.4 Dup 3 MV

1628.4 Spk 123 MV

1628.4 Dup Spk 122 MV

1628.5 13 MV

1628.6 4 MV

1628.7 3 MV

1623.1 11 MV Building 601

1624.1 0 MV Building 621

1624.2 0 MV

1624.3 0 MV

1624.4 0 MV

1624.5 3 MV

1624.6 0 MV

1624.7 2 MV

1624.8 29 MV

1625.1 <sup>198</sup> <sub>dil 70</sub> Building 482

1625.2 66 dil 7

1625.3 128 MV

135-6970-00

PRINTED IN U.S.A.

PHC Conformance/Non-conformance Summary Report

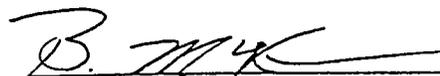
- |   | <u>No</u> | <u>Yes</u>                |
|---|-----------|---------------------------|
| 1. Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank   | <u>  </u> | <u>  </u> ✓               |
| <hr/> <hr/>   |           |                           |
| 2.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

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.

Project #1623

  
\_\_\_\_\_  
Brian K. McKee  
Laboratory Manager



ATTACHMENT I

UST 608 Report



**United States Army**  
Fort Monmouth, New Jersey

---

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

*Building 608  
Main Post Area*

---

**NJDEP UST Registration No. 081533-86  
NJDEP Closure Approval Letter Dated  
October 7, 1994**

February 1996

**SMITH**  
ENVIRONMENTAL TECHNOLOGIES CORPORATION

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

**BUILDING 608**

**MAIN POST AREA  
NJDEP UST REGISTRATION NO. 081533-86  
NJDEP CLOSURE APPROVAL LETTER DATED  
OCTOBER 7, 1994**

**FEBRUARY 1996**

**PROJECT NO.: 09-5004-07  
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**

608.DOC

**SMITH**  
ENVIRONMENTAL TECHNOLOGIES CORPORATION



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### APPENDICES

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Appendix B	Certifications
Appendix C	Waste Manifest
Appendix D	UST Disposal Certificate
Appendix E	Soil Analytical Data Package



## EXECUTIVE SUMMARY

### UST Closure

On November 29, 1994, a steel underground storage tank (UST) with fiberglass coating was closed by removal in accordance with the New Jersey Department of Environmental Protection (NJDEP) Closure Approval Letter dated October 7, 1994 at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey. The UST, NJDEP Registration No. 081533-86, was located immediately adjacent to Building 608 in the Main Post area of U.S. Army, Fort Monmouth. UST No. 081533-86 was a 1,000-gallon No. 2 diesel 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

The site assessment was performed by U.S. Army personnel in accordance with the NJDEP *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E) and the NJDEP *Field Sampling Procedures Manual*. Soils surrounding the tank were screened visually and with air monitoring instruments for evidence of contamination. Following removal, the UST was inspected for holes. No holes were noted in the UST and no potentially contaminated soils were observed surrounding the tank.

On November 29, 1994, following removal of the UST, post-excavation soil samples were collected. Post-excavation soil samples A, B, C, D, E, and DUP E, were collected from a total of five (5) locations along the base and sidewalls of the excavation. Post-excavation soil sample G was also collected from the piping portion of the excavation, which was approximately 19 feet. All samples were analyzed for total petroleum hydrocarbons (TPHC).

On December 7, 1994, following removal of approximately 2 cubic yards of potentially contaminated soils, one post-excavation soil sample identified as "site-piping" was collected from the expanded portions of the piping length, and was analyzed for TPHC.

### Findings

All post-excavation soil samples collected from the UST excavation and from below piping associated with the former UST at Building 608, contained TPHC concentrations below the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 milligrams per kilogram (mg/kg) (N.J.A.C. 7:26E and revisions dated February 3, 1994). The samples collected on November 29, 1994 (A, B, C, D, E, and DUP E) contained TPHC concentrations ranging from 32.2 mg/kg to 346.0 mg/kg. Sample G, also collected on November 29, 1994, contained an elevated TPHC concentration of 1,750.0 mg/kg. The sample



collected on December 7, 1994 (identified as site-piping) contained a TPHC concentration of 330.0 mg/kg, which is in compliance with the NJDEP soil cleanup criteria.

#### Site Restoration

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 Quality Assurance

The sampling and laboratory analysis conducted during the site assessment 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 TPHC concentrations exceeding the NJDEP soil cleanup criteria for total organic contaminants of 10,000 mg/kg do not remain in the former location of the UST or associated piping.

No further action is proposed in regard to the closure and site assessment of UST No. 081533-86 at Building 608.



## 1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

### 1.1 OVERVIEW

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 081533-86, was closed at Building 608 at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey on November 29, 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 September 2, 1994. The plan was approved on October 7, 1994. The UST was a fiberglass coated, steel 1,000-gallon tank containing No. 2 diesel oil.

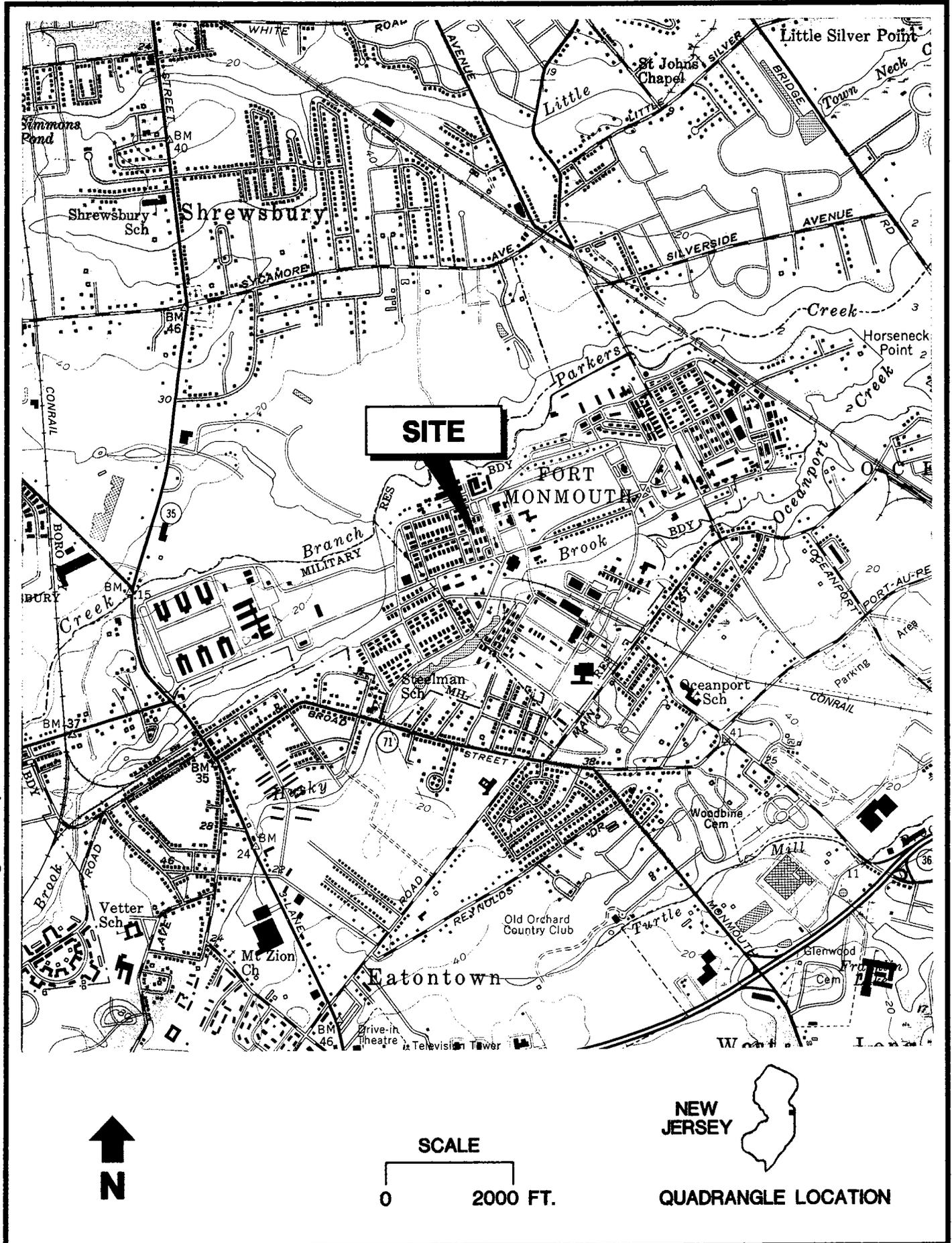
Decommissioning activities for UST No. 081533-86 complied with all applicable federal, state and local laws and ordinances in effect at the date of decommissioning. These laws included but were not limited to: N.J.A.C. 7:14B-1 et seq., N.J.A.C. 5:23-1 et seq., and Occupational Safety and Health Administration (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. 081533-86 proceeded under the approval of the NJDEP Bureau of Underground Storage Tanks (NJDEP-BUST). The NJDEP-BUST closure approval letter dated October 7, 1994, and the signed certifications for UST No. 081533-86 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 no significant historical discharges are associated with the UST or associated piping.

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.

Source: BCM/Smith Environmental Technologies Corporation (028)



## 1.2 SITE DESCRIPTION

Building 608 is located in the northwestern portion of the Main Post area of Fort Monmouth, as shown on Figure 1. UST No. 081533-86 was located northwest of Building 608 and appurtenant piping ran approximately 19 feet northwest from the building to the fill port area. A site map is provided on Figure 2. The fill port area was located directly above the tank.

### 1.2.1 Geological/Hydrogeological Setting

The following is a description of the geological/hydrogeological setting of the area surrounding Building 608. Included is a description of the regional geology of the area surrounding Fort Monmouth as well as descriptions of the local geology and hydrogeology of the Main Post area.

#### Regional Geology

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

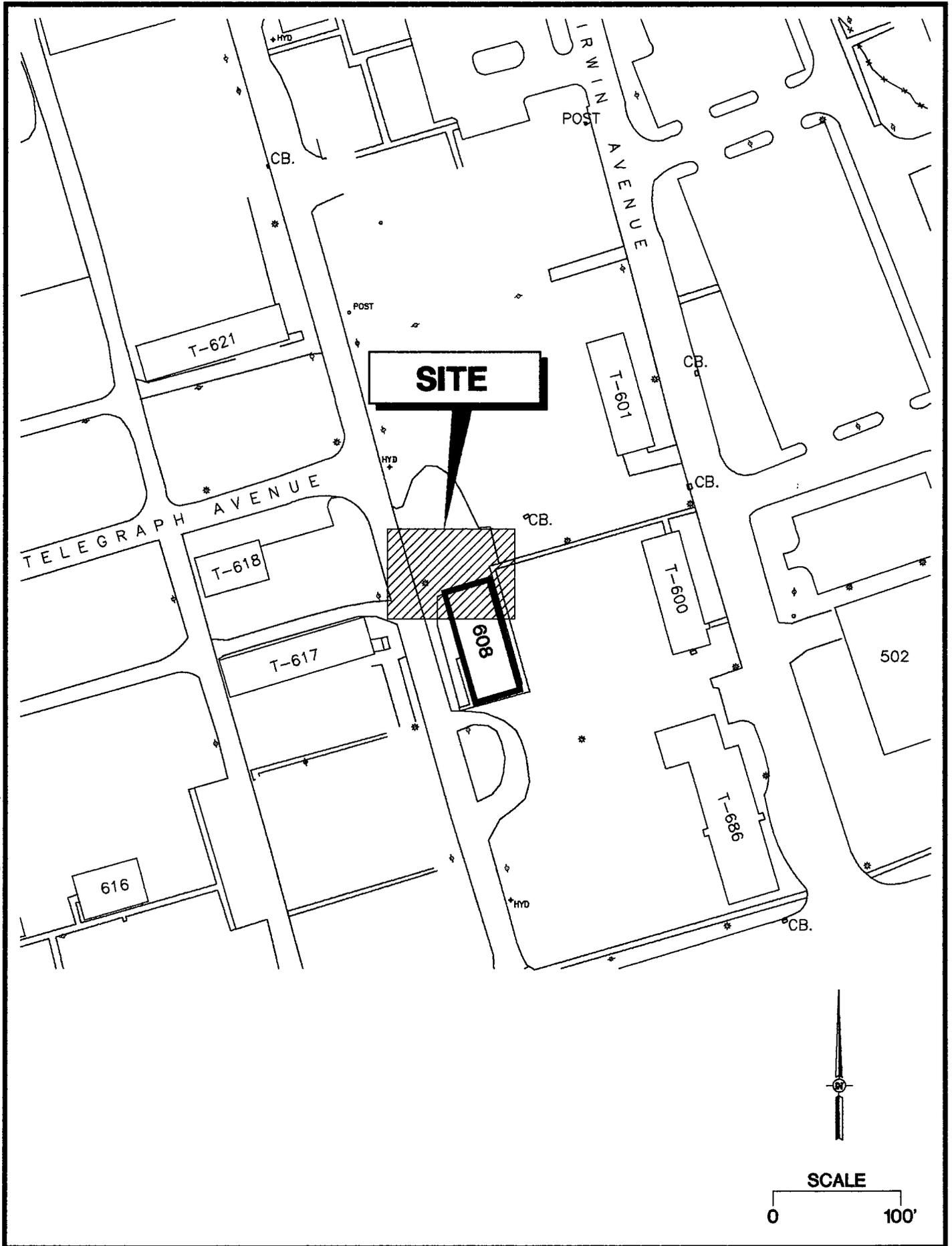
In general, New Jersey Coastal Plain formations consist of a seaward-dipping wedge of unconsolidated deposits of clay, silt, and gravel. These formations typically strike northeast-southwest with a dip ranging from 10 to 60 feet per mile and were deposited on Precambrian and lower Paleozoic rocks (Zapeczka,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

The formations record several major transgressive/regressive cycles and contain units which are generally thicker to the southeast and reflect a deeper water environment. 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 Zapeczka, 1990).

#### Local Geology

Based on the regional geologic map (Jablonski, 1968), the Cretaceous age Red Bank and Tinton Sands outcrop at the Main Post area. The Red Bank sand conformably overlies the Navesink Formation and dips to the southeast at 35 feet per mile. The upper member

Source: BCM/Smith Environmental Technologies Corporation (042)



(Shrewsbury) of the Red Bank sand is a yellowish-gray to reddish brown clayey, medium- to coarse-grained sand that contains abundant rock fragments, minor mica and glauconite (Jablonski). The lower member (Sandy Hook) is a dark gray to black, medium-to-fine grained sand with abundant clay, mica, and glauconite.

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

## Hydrogeology

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

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

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

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

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

Due to the fluvial nature of the overburden deposits (e.g., 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.



### 1.3 HEALTH AND SAFETY

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

### 1.4 REMOVAL OF UNDERGROUND STORAGE TANK

#### 1.4.1 General Procedures

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

#### 1.4.2 Underground Storage Tank Excavation and Cleaning

Prior to UST decommissioning activities, surficial soil was removed to expose the UST and associated piping. All free product present in the piping was drained into the UST, and the UST was purged to remove vapors prior to cutting and removal of the piping. After removal of the associated piping, a manway was made in the UST to allow for proper cleaning. The UST was completely emptied of all liquids prior to removal from the ground. Approximately 8 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 (No. NJA-1907257).

The UST was cleaned prior to removal from the excavation in accordance with the NJDEP-BUST regulations. After the UST was removed from the excavation, it was staged on



polyethylene sheeting and examined for corrosion holes. No holes or punctures were observed during the inspection by the Sub-Surface Evaluator. Soils surrounding the UST and along the piping length were screened visually and with an OVA for evidence of contamination. No contamination was identified surrounding the former location of the UST or anywhere along the piping length.

## **1.5 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL**

The tank was transported by CUTE Inc., to Mazza and Sons Inc. for disposal 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 OVA air monitoring and visual observations, approximately 2 cubic yards of potentially contaminated soils were excavated from sample location area G on December 7, 1994. All potentially contaminated soils were stockpiled separately from other excavated material and were placed in and covered with polyethylene sheets. Potentially contaminated soils were transported to the Main Post ID 27 Soil Staging Area (T-80) prior to ultimate disposal at Soil Remediation of Philadelphia. Soils that did not exhibit signs of contamination were used as backfill following removal of the UST.



## 2.0 SITE INVESTIGATION ACTIVITIES

### 2.1 OVERVIEW

The Site Investigation was managed and carried out by U.S. Army DPW personnel. All analyses were performed and reported by U.S. Army Fort Monmouth Environmental Laboratory, a NJDEP-certified testing laboratory. All sampling was performed under the direct supervision of a NJDEP Certified Sub-Surface Evaluator according to the methods described in the NJDEP Field Sampling Procedures Manual (1992). Sampling frequency and parameters analyzed complied with the NJDEP-BUST document *Interim Closure Requirements for Underground Storage Tank Systems* (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: Dinkerria 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
- Hazardous Waste Hauler: Freehold Cartage, Inc.  
Contact Person: Barry Olsen  
Phone Number: (908)462-1001  
NJDEP Hazardous Waste Hauler No.: 2265

### 2.2 FIELD SCREENING/MONITORING

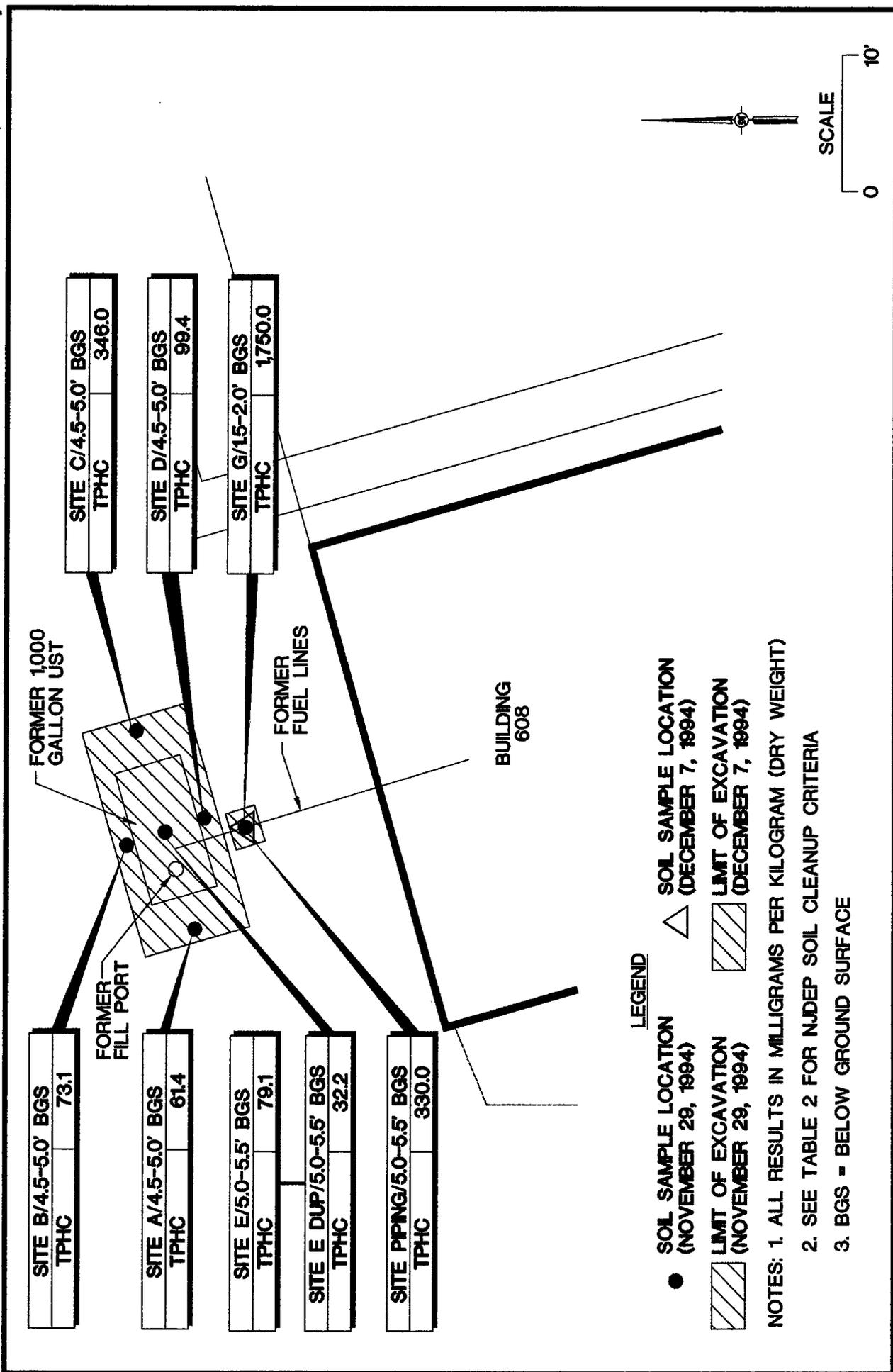
Field screening was performed by a NJDEP certified Sub-Surface Evaluator using an OVA and visual observations to identify potentially contaminated material. Soils were removed from the piping length until no evidence of contamination remained.

## 2.3 SOIL SAMPLING

On November 29, 1994, post-excavation soil samples A, B, C, D, E, and DUP E, were collected from a total of five (5) locations along the base and sidewalls of the UST excavation. One (1) post-excavation soil sample (G) was also collected immediately below the former location of piping associated with the UST. Refer to soil sampling location map on Figure 3. All samples were analyzed for TPHC.

On December 7, 1994, soils from sampling location area G were excavated due to an elevated TPHC result of 1,750.0 mg/kg. Following removal of approximately 2 cubic yards of potentially contaminated soils from this area, one post-excavated soil sample (identified as site-piping) was collected along the expanded portions of the piping length and was analyzed for TPHC. Refer to soil sampling location map on Figure 3.

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 post-excavation soil samples were collected using decontaminated stainless steel scoops. Following soil sampling activities, the samples were chilled and delivered to U.S. Army, Fort Monmouth Environmental Laboratory located in Fort Monmouth, New Jersey for analysis.



Source: Smith Environmental Technologies Corporation (047)

TABLE I

SUMMARY OF SAMPLING ACTIVITIES  
 BUILDING 608, MAIN POST  
 FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Matrix	Sample Type	Analytical Parameters (and USEPA Methods) *	Sampling Method
A	11-29-94	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
B	11-29-94	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
C	11-29-94	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
D	11-29-94	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
E	11-29-94	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
DUPE	11-29-94	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
G	11-29-94	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
Site-Piping	12-07-94	Soil	Post-Excavation	TPHC	Stainless Steel Scoop

\*Note: TPHC Total Petroleum Hydrocarbons (Method 418.1 / soil and aqueous)



### 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, D, E, DUP E, and G) were collected from a total of six (6) locations on November 29, 1994. All samples were analyzed for TPHC. Due to the elevated TPHC concentration detected in sample G, the area was excavated and resampled on December 7, 1994. The sample was analyzed for TPHC. All post-excavation soil sample results were compared to the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 mg/kg (N.J.A.C. 7:26D and revisions dated February 3, 1994). A summary of the analytical results and comparison to the NJDEP soil cleanup criteria is provided on Table 2 and the soil sampling results are shown on Figure 3. The analytical data package is provided in Appendix E. 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 November 29, 1994, from the UST excavation and from below piping associated with the UST contained concentrations of TPHC below the NJDEP soil cleanup criteria. Post-excavation samples A, B, C, D, E, and DUP E, contained TPHC concentrations ranging from 32.2 mg/kg to 346.0 mg/kg. Sample G contained an elevated TPHC concentration of 1,750.0 mg/kg.

The post-excavation soil sample collected on December 7, 1994 from the piping length contained a concentration of contaminants below the NJDEP soil cleanup criteria. The post-excavation soil sample identified as site-piping contained a TPHC concentration of 330.0 mg/kg.

#### 3.2 CONCLUSIONS AND RECOMMENDATIONS

The analytical results for all of post-excavation soil samples collected from the UST closure excavation at Building 608 were below the NJDEP soil cleanup criteria for total organic contaminants.

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

No further action is proposed in regard to the closure and site assessment of UST No. 081533-86 at Building 608.

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS  
 BUILDING 608  
 FT. MONMOUTH, NEW JERSEY

PAGE 1 OF 1

Sample ID/Depth	Sample Laboratory ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (mg/kg)	Compound of Concern	Result (mg/kg)	NJDEP Soil Cleanup Criteria * (mg/kg)	Exceeds Cleanup Criteria
A/4.5-5.0'	1740.1	11-29-94	12-06-94	Total Solid TPHC	--	--	93 %	--	--
B/4.5-5.0'	1740.2	11-29-94	12-06-94	Total Solid TPHC	6.6	yes	61.4	10,000	--
C/4.5-5.0'	1740.3	11-29-94	12-06-94	Total Solid TPHC	7.4	yes	85 %	10,000	--
D/4.5-5.0'	1740.4	11-29-94	12-06-94	Total Solid TPHC	6.3	yes	73.1	--	--
E/5.0-5.5'	1740.5	11-29-94	12-06-94	Total Solid TPHC	6.4	yes	82 %	10,000	--
DUP E/5.0-5.5'	1740.6	11-29-94	12-06-94	Total Solid TPHC	7.3	yes	346.0	--	--
G/1.5-2.0'	1740.7	11-29-94	12-06-94	Total Solid TPHC	6.6	yes	84 %	10,000	--
Site-Piping/ 5.0-5.5'	1759.1	12-07-94	12-14-94	Total Solid TPHC	55.0	yes	99.4	--	--
					6.9	yes	95 %	10,000	--
							32.2	10,000	--
							90 %	10,000	--
							1,750.0	--	--
							77 %	--	--
							330.0	10,000	--

Notes:

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

Smith Environmental Technologies Corporation (Project No. 09-5004-07)

soil608.doc

**SMITH**

**APPENDIX A**

**NJDEP BUST CLOSURE APPROVAL**



State of New Jersey

Department of Environmental Protection

Robert C. Shinn, Jr.  
Commissioner

Christine Todd Whitman  
Governor

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

OCT 7 1994

Dear Mr. Desai:

Re: Underground Storage Tank Closure Approvals  
Fort Monmouth Army Facility  
Tinton Falls, Monmouth County

The NJDEP has reviewed the Underground Storage Tank (UST) Closure Plan Approval Requests dated September 2, 1994 for the following USTs:

<u>Tank No.</u>	<u>Building No.</u>	<u>Product</u>	<u>Size</u>	<u>Piping Length</u>
86	608	No. 2 Fuel Oil	1000	12'
103	671	No. 2 Fuel Oil	1000	14'
107	686	No. 2 Fuel Oil	2000	18'
93	620	No. 2 Fuel Oil	1000	22'
90	616	No. 2 Fuel Oil	1000	12'
106	682	No. 2 Fuel Oil	1080	22'
78	508	No. 2 Fuel Oil	1500	15'

These closure requests are consistent with the *Technical Requirements for Site Remediation* (N.J.A.C.7:26E) and are therefore acceptable to the NJDEP (with the incorporation of the comment below). A copy of this letter should be immediately accessible at each of these UST removal locations.

The NJDEP has also received a request dated September 9, 1994 from Mr. James Ott, Acting Director, which requests a variance from the Closure Approval Requests for use of polytetrafluoroethylene (PTFE) trowels to polystyrene trowels. Neither of these types of trowels is acceptable to the NJDEP. In accordance with the *Field Sampling Procedures Manual* (May 1992), only appropriately decontaminated stainless steel trowels are acceptable. Please correct the UST closure plans to reflect the requirement to use stainless steel trowels.

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

Sincerely,

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

cc. Mr. James Ott, FTMMTH

S:\R\PC\BFCM\FTMMTH17.IRC

**SMITH**

**APPENDIX B  
CERTIFICATIONS**

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.* 608

081533-86  
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?  Yes  No If Yes, Case No. \_\_\_\_\_  
(Note: All discharges must be reported to the Environmental Action Hotline (609) 292-7172)
- B. The substance(s) discharged was(were) N/A
- C. Have any vapor hazards been mitigated?  Yes  No  N/A

III. DECOMMISSIONING OF TANK SYSTEMS

Closure Approval No. October 7, 1994 letter

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:

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

C. Soil samples and borings (check appropriate answer)

- Were soil samples taken from the excavation as prescribed?  Yes  No  N/A
- Were soil borings taken at the tank system closure site as prescribed?  Yes  No  N/A
- Attach the analytical results in tabular form and include the following information about each sample:
  - Customer sample number (keyed to the site map)
  - The depth of the soil sample
  - Soil boring logs
  - Method detection limit of the method used
  - QA/QC information as required

D. Ground Water Monitoring

1. Number of ground water monitoring wells installed 0
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?  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. N/A ppb total BTEX, N/A ppb total non-targeted VOC
  2. N/A ppb total B/N, N/A ppb total non-targeted B/N
  3. 346.0 ppm TPHC
  4. N/A ppb \_\_\_\_\_ (for non-petroleum substance)

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  No
2. Free product contaminated soils are suspected to exist below the water table  Yes  No
3. Free product contaminated soils are suspected to exist off the property boundaries.  Yes  No

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

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

VI. GROUND WATER CONTAMINATION N/A

- A. Was ground water contamination found?  Yes  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:

1. \_\_\_\_\_ ppb total BTEX, \_\_\_\_\_ ppb total non-targeted VOC
2. \_\_\_\_\_ ppb total B/N, \_\_\_\_\_ ppb total non-targeted B/N
3. \_\_\_\_\_ ppb total MTBE, \_\_\_\_\_ ppb total TBA
4. \_\_\_\_\_ ppb \_\_\_\_\_ (for non-petroleum substance)
5. greatest thickness of separate phase product found \_\_\_\_\_
6. separate phase product has been delineated  Yes  No  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  N/A
2. The number of these wells identified is \_\_\_\_\_

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 \_\_\_\_\_ 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 \_\_\_\_\_ feet from the source and its screening begins at a depth of \_\_\_\_\_ 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 \_\_\_\_\_ feet below grade. This well is located \_\_\_\_\_ 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 \_\_\_\_\_ feet from the source. This well is \_\_\_\_\_ feet deep and screening begins at a depth of \_\_\_\_\_ feet.

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

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

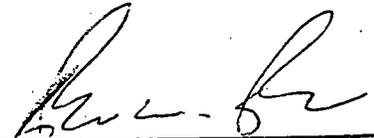
G. Delineation of contamination

1. The ground water contaminants have been delineated to MCLs or lower values at the property boundaries.  Yes  No
2. The plume is suspected to continue off the property at concentrations greater than MCLs.  Yes  No
3. Off property access (circle one):  is being sought  has been approved  has been denied

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. Fort Monmouth DATE 11/1/85  
(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)1].

*"I certify under penalty of law that the information provided in this document is true, accurate, and complete. I am aware that there are significant 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 2/17/96

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

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 \_\_\_\_\_

**SMITH**

**APPENDIX C  
WASTE MANIFEST**



State of New Jersey  
Department of Environmental Protection and Energy  
Hazardous Waste Regulation Program  
Manifest Section  
CN 421, Trenton, NJ 08625-0421

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

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

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No. NJ 312110102101519171010101		Manifest Document No. 01010101	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 Main Post, c/o James Shirghio, Bldg 2504, ATTN: SELFM-DL-EM-MS Fort Monmouth, NJ 07703 173JF				A. State Manifest Document Number NJ A 1907257		B. State Generator's ID (Gen. Site Address) Main Post	
4. Generator's Phone (908) 532-6223		6. US EPA ID Number INJID1015141121611614		C. State Trans. ID (NJDEPE) S2265		D. Decal No. 64499	
5. Transporter 1 Company Name Freehold Cartage Inc.		7. Transporter 2 Company Name		E. Transporter's Phone (908) 462-1001		F. State Facility ID	
9. Designated Facility Name and Site Address Lionetti Oil Recovery Co., Inc. Cheesequake & Runyon Rds. Old Bridge, NJ 08857				10. US EPA ID Number INJID1018141014101614		G. Facility's Phone (908) 721-0900	
11. US DOT Description (Including Proper Shipping Name, Hazard Class or Division, ID Number and Packing Group) HM					12. Containers No.	13. Total Quantity	14. Unit Wt/Vol
X	Petroleum Oil, N.O.S. Class 3 (Petroleum Oil) Combustible Liquid UN 1270 PG III	BLDG 608	0101	TIT	00008	G	X 7 2 2
X	Petroleum Oil, N.O.S. Class 3 (Petroleum Oil) Combustible Liquid UN 1270 PG III	BLDG 545	0101	TIT	00100	G	X 7 2 2
X	Petroleum Oil, N.O.S. Class 3 (Petroleum Oil) Combustible Liquid UN 1270 PG III	BLDG 682	0101	TIT	00100	G	X 7 2 2
X	Petroleum Oil, N.O.S. Class 3 (Petroleum Oil) Combustible Liquid UN 1270 PG III	BLDG 620	0101	TIT	00200	G	X 7 2 2
15. Special Handling Instructions and Additional Information THIS MATERIAL IS NOT REGULATED BY THE FEDERAL EPA. IT IS REGULATED AS HAZARDOUS WASTE IN NJ. 91A-082533-86 11b.-78 11c.-706 11d.-93 24 HOUR EMERGENCY PHONE: 201-427-2881 11 a, b, c, d ERG# 27					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.		
17. Transporter 1 Acknowledgement of Receipt of Materials		Printed/Typed Name Joseph M. Fallon		Signature Joseph M. Fallon		Month Day Year 11/12/94	
18. Transporter 2 Acknowledgement of Receipt of Materials		Printed/Typed Name David Smith		Signature David Smith		Month Day Year 11/12/94	
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							

NJ A 1907257

**SMITH**

**APPENDIX D**

**UST DISPOSAL CERTIFICATE**

P. 02/02

FAX NO. 1908 636 7816  
FAX NO. 201 423 8050

CUTE INC.  
C. U. T. E.

DEC-30-89 FRI 13:53  
DEC 09 09 FRI 12:58

Fort Monmouth  
Easton NJ

**MAZZA & SONS, INC.**

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

NO. \_\_\_\_\_

DATE 12 Dec 95

Customer's Name

Cute Inc

Address

103 Godwin Ave PO Box 237 Midland Park NJ

Make of

Auto  
BLAC

608

686

39340 LB 6

36020 LB 5

3320

Tires

Tank

Price

Weight

Price

Cast Iron

Steel

LL Iron

Copper #1

Copper #2

LL Copper

Brass

Alum Chem

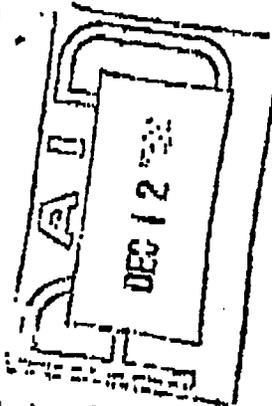
Lead

Stainless

High Alloy

Battery

TOTAL AMOUNT:



Weight

Customer

Daniel

**SMITH**

**APPENDIX E**

**SOIL ANALYTICAL DATA PACKAGE**

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

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

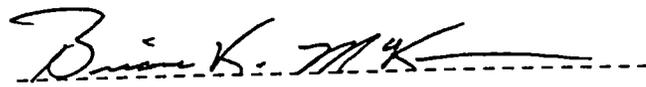
Lab. ID #: 1740.1-.7  
 Sample Rec'd: 11/29/94  
 Analysis Start: 12/06/94  
 Analysis Comp: 12/07/94

Analysis: 418.1 (TPH)  
 Matrix: Soil  
 Analyst: S. Hubbard  
 Ext. Meth: 3540A

NJDEPE UST Reg.#: 81533-86  
 Closure #:  
 DICAR #:  
 Location #: Bldg. 608

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1740.1	Site A, Sidewall OVA=ND	93	61.4	6.6
1740.2	Site B, Sidewall OVA=ND	85	73.1	7.4
1740.3	Site C, Sidewall OVA=ND	82	346.	6.3
1740.4	Site D, Sidewall OVA=ND	84	99.4	6.4
1740.5	Site E, CENTER OVA=ND	95	79.1	7.3
1740.6	Site F, Dup. of E. OVA=ND	95	32.2	6.6
1470.7	Site G, Feedline OVA=ND	90	1750.	55.
M. Bl.	Method Blank	100	ND	3.3

Notes: ND = Not Detected, MDL = Method Detection Limit  
 \* = Silica Gel Added, NA = Not Applicable  
 Batch dup= 108% 1740.6S= 115% 1740.6SD= 121% RPD= 4.5%

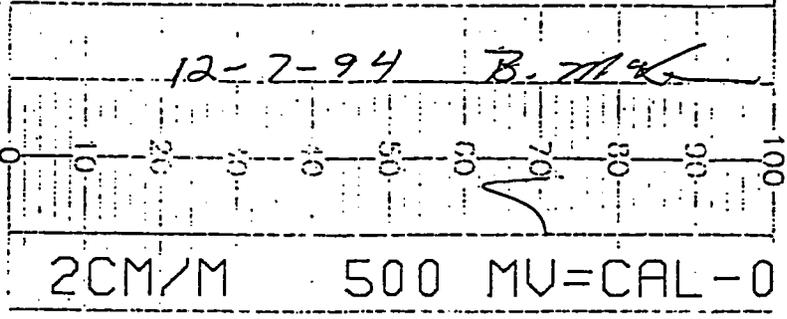


Brian K. McKee  
 Laboratory Director





12-7-94 B. 71%



2CM/M 500 MV=CAL-0

B2

40.75 = 72mV

81.5 = 130mV R = .9992

163 = 251mV

1740.6 mS = 66mV

1740.6 = 30mV

1740.6 mSD = 62mV

1740.6 DSP = 32mV

1740.1 = 19mV

1740.2 = 18mV

1740.3 = 74mV

1740.4 = 25mV

1740.5 = 21mV

1740.6 = 30mV (Check)

~~1740.7~~

PRINTED IN U.S.A.

PHC Conformance/Non-conformance Summary Report

No Yes

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

\_\_\_\_\_

2. Matrix Spike/Matrix Sp Dup. Recoveries Meet Criteria (If not met, list the sample and corresponding recovery which falls outside the acceptable range)

\_\_\_\_\_

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

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

NA

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)

\_\_\_\_\_

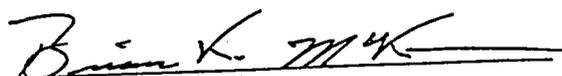
Comments: \_\_\_\_\_

\_\_\_\_\_

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.

Project #1740

  
Brian K. McKee  
Laboratory Manager



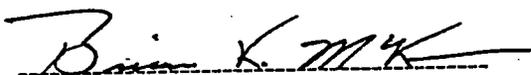
**Report of Analysis**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEPE Certification # 13461**

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

Lab. ID #: 1759.1  
Sample Rec'd: 12/07/94  
Analysis Start: 12/14/94  
Analysis Comp: 12/15/94

Analysis: Munsel

Lab ID#	Soil Color
1759.1	5 Y 3/4 Olive



Brian K. McKee  
Laboratory Director



December 15, 1994

*J. J. Hubbard*  
OT48

2 CM/M 500 MV = CAL HO

Std. 40.75 73 MV

Std 81.5 121 MV

Std 163 242 MV

Method Blank 0 MV

1591.1 59 MV

1760.5 18 MV

~~1760.6~~ <sup>12/15/94</sup> sample  
~~1760.6~~ <sup>14</sup> ~~1760.6~~ <sup>173 MV</sup>

1760.6 173 MV

1760.6 154 MV

*duplicate*

1760.6 149 MV

*Spike*

1760.6 123 MV

*Spikes  
Dup*

1561.1 21 MV

1561.2 17 MV

1561.3 21 MV

1561.4 27 MV

PRINTED IN U.S.A.

PHC Conformance/Non-conformance Summary Report

No Yes

1. Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank ✓ —

\_\_\_\_\_

2. Matrix Spike/Matrix Sp Dup. Recoveries Meet Criteria (If not met, list the sample and corresponding recovery which falls outside the acceptable range) — ✓

\_\_\_\_\_

3. IR Spectra submitted for standards, blanks, & samples — ✓

4. Chromatograms submitted for standards, blanks, and samples if GC fingerprinting was conducted. — ✓

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.

Project #1759

Brian K. McKee  
 Brian K. McKee  
 Laboratory Manager

ATTACHMENT J

UST 614 Report



**U.S. Army Garrison**  
Fort Monmouth, New Jersey

---

**Underground Storage Tank  
Closure Report**

*Main Post – former Building 614  
Harmon Ave.*

---

**NJDEP UST Registration No. 81533-88**

**January 2008**

**UNDERGROUND STORAGE TANK REPORT**

**MAIN POST -FORMER BUILDING 614  
NJDEP UST REGISTRATION NO. 81533-88**

**JANUARY 2008**

**PREPARED FOR:**

**U.S. ARMY GARRISON, FORT MONMOUTH, NJ  
DIRECTORATE OF PUBLIC WORKS  
BUILDING 167  
FORT MONMOUTH, NJ 07703**

**PROJECT NO. 06-34880**

**PREPARED BY:**

**TECOM-VINNELL SERVICES, INC.  
P.O. BOX 60  
FT. MONMOUTH, NJ 07703**

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- Appendix B     Soil and Groundwater Analytical Data Package**

## EXECUTIVE SUMMARY

### UST Closure

A single wall steel underground storage tank (UST) was closed by removal in accordance with the New Jersey Department of Environmental Protection (NJDEP) guidelines on June 14, 1990. The UST was located on the east side of former Building 614 in the Main Post area of Fort Monmouth. UST No. 81533-88 was a 1,000-gallon tank containing No. 2 heating oil. Appendix A includes a letter certifying that the UST was emptied, cleaned, removed and disposed of in accordance with the NJDEP guidelines.

### Site Assessment

This site assessment was performed by TVS personnel in accordance with the NJDEP *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E) and the NJDEP *Field Sampling Procedures Manual*.

During the time of UST removal, no closure soil samples were collected. Soil sampling was not required at the time. However, in order to confirm that the tank did not leak, this subsurface investigation was conducted. On January 26, 2006, a Geoprobe was utilized to collect soil samples 614-N, 614-C, 614-S and 614-C (groundwater) from a total of three (3) locations along the tank centerline bottom. All soil samples were analyzed for total petroleum hydrocarbons (TPH). Groundwater was encountered at approximately six and one half (6.5) feet below surface grade in the borings. A sample of it was collected and analyzed for volatile organic analysis (VOA) and semi-volatile organic analysis (SVOA).

### Findings

The closure soil samples collected from the location associated with former UST No. 81533-88, contained TPH concentrations below the NJDEP health based criterion of 10,000 milligrams per kilogram (mg/kg) for total organic contaminants (N.J.A.C. 7:26E and revisions dated February 3, 1994). Soil samples contained TPH concentrations of 3,257 mg/kg, 159 mg/kg and Not Detected.

### Conclusions and Recommendations

Based on the closure soil sampling results, soils with TPH concentrations exceeding the NJDEP health based criterion of 10,000 mg/kg for total organic contaminants are not present in the location of the former UST. A groundwater sample, analyzed for volatile organic analysis and semi-volatile organic analysis, did not contain any compounds that exceed the NJDEP Class II Ground Water Quality Criteria.

**No Further Action** is proposed in regard to the closure and site assessment of UST No. 81533-88 at former Building 614.

## **1.0 UNDERGROUND STORAGE TANK CLOSURE SOIL SAMPLING ACTIVITIES**

### **1.1 OVERVIEW**

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 81533-88, was closed at former Building 614 of the Main Post at the U.S. Army Garrison, Fort Monmouth, New Jersey. Refer to site location map on Figure 1. This report presents the results of soil and groundwater sampling analysis to confirm that the tank did not leak. The UST was a 1,000-gallon, single-wall steel tank containing No. 2 heating oil for residential use. The UST was installed in 1941 and removal was done on June 14, 1990.

This UST Closure Report has been prepared by TVS to assist the U.S. Army Garrison DPW in complying with the NJDEP - Underground Storage Tanks regulations. The applicable NJDEP regulations at the date of closure were the *Closure of Underground Storage Tank Systems* (N.J.A.C. 7:14B-9 et seq. December, 1987 and revisions dated April 20, 2003).

This report was prepared using information required by the *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E) (*Technical Requirements*). Section 1 of this UST Closure Report provides a summary of the UST site. Section 2 of this report describes the site investigation activities. Conclusions and recommendations, including the results of the soil sampling investigation, are presented in Section 3 of this report.

### **1.2 SITE DESCRIPTION**

Former Building 614, Harmon Ave., was located in the east-central portion (600 Area) of the Main Post of Fort Monmouth, as shown on Figure 1. UST No. 81533-88 was located on the east side of Building 614. Historical maps were used to determine the exact location of the former building and tank. A historical 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 600 Area. Included is a description of the regional geology of the area surrounding Fort Monmouth as well as descriptions of the local geology and hydrogeology of the Main Post area.

##### Regional Geology

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

In general, New Jersey Coastal Plain formations consist of a seaward-dipping wedge of unconsolidated deposits of clay, silt, sand and gravel. These formations typically strike

northeast-southwest with a dip ranging from 10 to 60 feet per mile and were deposited on Precambrian and lower Paleozoic rocks (Zapeczka, 1989). These sediments, predominantly derived from deltaic, shallow marine, and continental shelf environments, date from Cretaceous through the Quaternary Periods. The mineralogy ranges from quartz to glauconite.

The formations record several major transgressive/regressive cycles and contain units which are generally thicker to the southeast and reflect a deeper water environment. 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 Cohansy Sand) while the transgressive deposits act as confining units (e.g., the Merchantville, Marshalltown, and Navesink Formations). The individual thicknesses for these units vary greatly (i.e., from several feet to several hundred feet). The Coastal Plain deposits thicken to the southeast from the Fall Line to greater than 6,500 feet in Cape May County (Brown and Zapeczka, 1990).

### Local Geology

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

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

### Hydrogeology

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

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

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

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

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

Due to the fluvial nature of the overburden deposits (e.g., 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.

Former Building 614 was located approximately 1,300 feet south of Parkers Creek, the nearest water body, which flows into the Shrewsbury River. Based on the Main Post topography, the groundwater flow in the area of the Building 614 is anticipated to be to the north.

### **1.3 HEALTH AND SAFETY**

Work site health and safety hazards were minimized during all site investigation activities. All areas which posed a vapor hazard were monitored by a qualified individual utilizing a calibrated photo-ionizer detector : Thermo Instruments Organic Vapor Monitor (OVM) – Model #580-B. The individual ascertained if the area was properly vented to render the area safe, as defined by OSHA. All work areas were properly vented to insure that there were no contaminants present in the breathing zone above permissible exposure limits (PEL's).

## 2.0 SITE INVESTIGATION ACTIVITIES

### 2.1 OVERVIEW

The Site Investigation was managed and carried out by U.S. Army DPW personnel. All analyses were performed and reported by Fort Monmouth Environmental Testing Laboratory, a NJDEP-certified testing laboratory. All sampling was performed by a NJDEP Certified Subsurface Evaluator according to the methods described in the NJDEP Field Sampling Procedures Manual (1992). Sampling frequency and parameters analyzed complied with the NJDEP document *Technical Requirements for Site Remediation, 7:26E-3.9* (December 17, 2002 and revisions dated February 3, 2003) which was the applicable regulation at the date of the investigation. All records of the Site Investigation activities are maintained by the Fort Monmouth DPW Environmental Office.

The following Parties participated in Closure and Site Assessment Activities.

- Ft. Monmouth Directorate of Public Works-Environmental Division  
Contact Person: Joseph Fallon  
Phone Number: (732) 532-6223
- Subsurface Evaluator: Frank Accorsi  
Employer: TECOM-Vinnell Services, Inc. (TVS)  
Phone Number: (732) 532-5241  
NJDEP License No.: 0010042  
TVS - NJDEP License No.: US252302
- Analytical Laboratory: Fort Monmouth Environmental Testing Laboratory  
Contact Person: Dan Wright  
Phone Number: (732) 532-4359  
NJDEP Laboratory Certification No.: 13461

### 2.2 FIELD SCREENING/MONITORING

Field screening of the soils was performed by a NJDEP certified Subsurface Evaluator using an OVM and visual observations to identify potentially contaminated material of which none were found.

## **2.3 SOIL SAMPLING**

On January 26, 2006, closure soil samples 614-N, 614-C, 614-S and 614-C (groundwater) were collected from a total of three (3) locations along the tank centerline bottom of the former UST. Groundwater was encountered at approximately six and one-half (6.5) below surface grade in the borings. All soil samples were analyzed for TPH. A soil sample location map is provided on Figure 3.

The site assessment was performed by TVS personnel in accordance with the NJDEP *Technical Requirements for Site Remediation* and the NJDEP *Field Sampling Procedures Manual*. A summary of sampling activities including parameters analyzed is provided on Table 1. The soil samples were collected into laboratory prepared glassware using properly decontaminated stainless steel trowels. After collection, the samples were immediately placed on ice in a cooler and delivered to Fort Monmouth Environmental Testing Laboratory for analysis.

## **2.4 GROUNDWATER SAMPLING**

On January 26, 2006, sample 614-C groundwater was collected from soil borehole 614-C to assess the groundwater quality in the location of the former tank. A temporary piezometer was installed in the borehole for sample collection. The sample was collected into laboratory prepared glassware using a disposable teflon bailer. The sample was analyzed for volatile organic analysis (VOA) and semi-volatile organic analysis (SVOA).

### 3.0 CONCLUSIONS AND RECOMMENDATIONS

#### 3.1 SOIL SAMPLING RESULTS

Closure soil samples were collected from a total of three locations on January 26, 2006 to evaluate soil conditions in the location of the former UST. All samples were analyzed for TPH. The closure soil sample results were compared to the NJDEP health based criterion of 10,000 mg/kg for total organic contaminants (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. The analytical data package, including associated quality control data, is provided in Appendix B.

Closure soil samples collected on January 26, 2006 from UST 81533-88 contained concentrations of TPH below the NJDEP soil cleanup criteria. Soil samples 614N, 614C and 614S contained concentrations of 159 mg/kg, 3,257 mg/kg and Not Detected, respectively. Soil sample 614C, which was above the 1,000 mg/kg threshold for contingent VOA analysis, was further analyzed. Sample 614-C contained no compounds detected above the method detection limits for the contingent VOA analysis.

#### 3.2 GROUNDWATER SAMPLING RESULTS

One groundwater sample was collected via temporary piezometer installed in soil borehole 614-C. There were no compounds detected above the method detection limits for the volatile organic analysis. Compounds detected above the method detection limits for the semi-volatile organic analysis were naphthalene at 4.2 ug/L, 2-Methylnaphthalene at 15.6 ug/L, acenaphthene at 2.5 ug/L, dibenzofuran at 0.78 ug/L, fluorene at 0.96 ug/L and phenathrene at 2.4 ug/L. These were below the regulatory levels of 300 ug/L for naphthalene, No Limit Established (NLE) for 2-Methylnaphthalene, 400 ug/L for acenaphthene, NLE for dibenzofuran, 300 ug/L for fluorene and NLE for phenathrene.

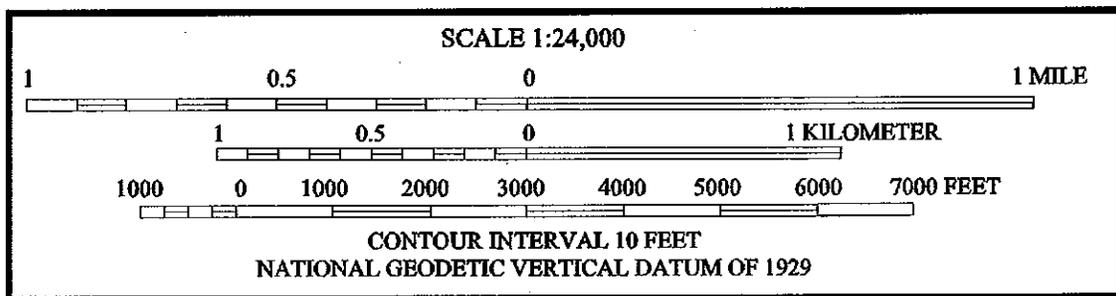
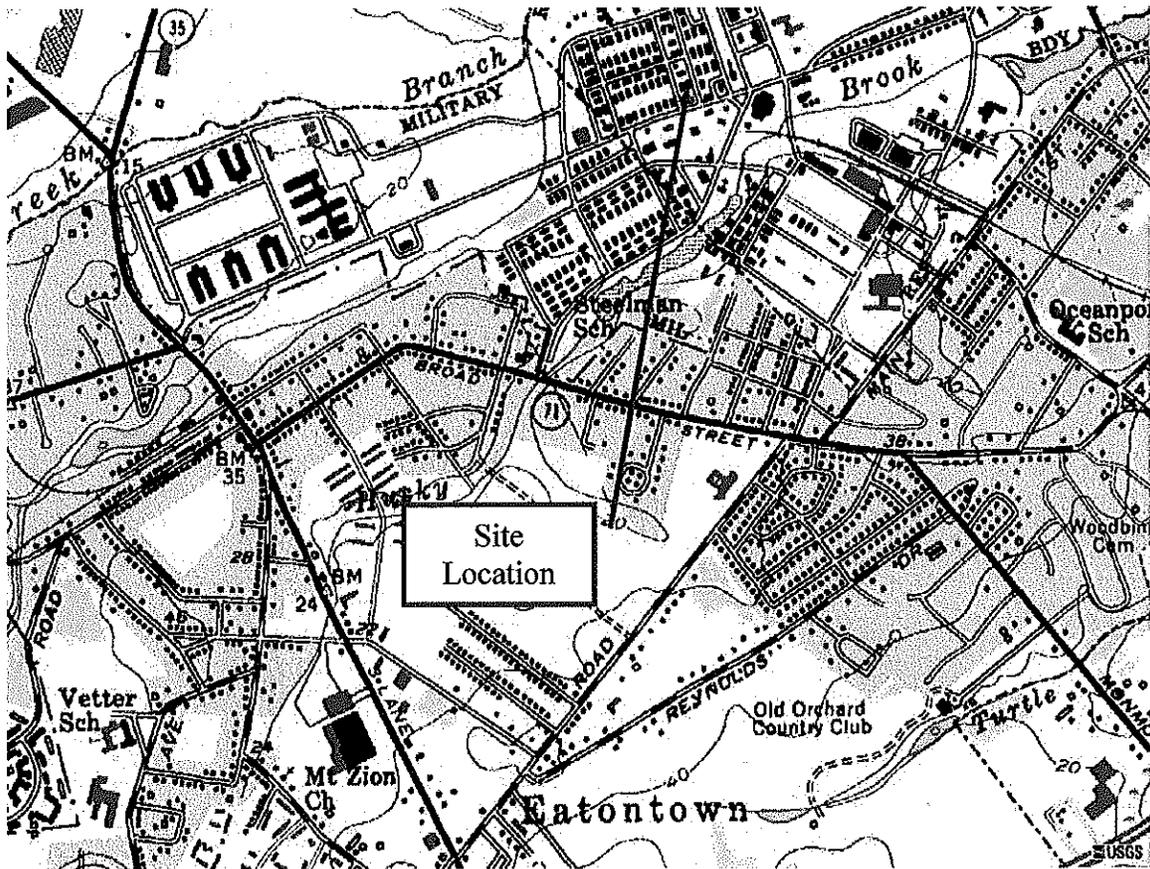
#### 3.3 CONCLUSIONS AND RECOMMENDATIONS

The analytical results for all soil and groundwater samples collected from the UST closure assessment at UST No. 81533-88 were below the regulatory limit.

Based on the closure soil sampling results, soils with TPH concentrations exceeding the NJDEP health based criterion for total organic contaminants of 10,000 mg/kg are not present at the location of former UST No. 81533-88.

**No Further Action** is proposed in regard to the closure and site assessment of UST No. 81533-88 at former Building 614.

# FIGURES



**FIGURE 1**

SITE LOCATION MAP  
FORMER BUILDING 614  
UST NO. 81533-88  
FT. MONMOUTH, NJ

SOURCE: USGS 7½-MINUTE SERIES (TOPOGRAPHIC)  
LONG BRANCH QUADRANGLE, NEW JERSEY, 1981.

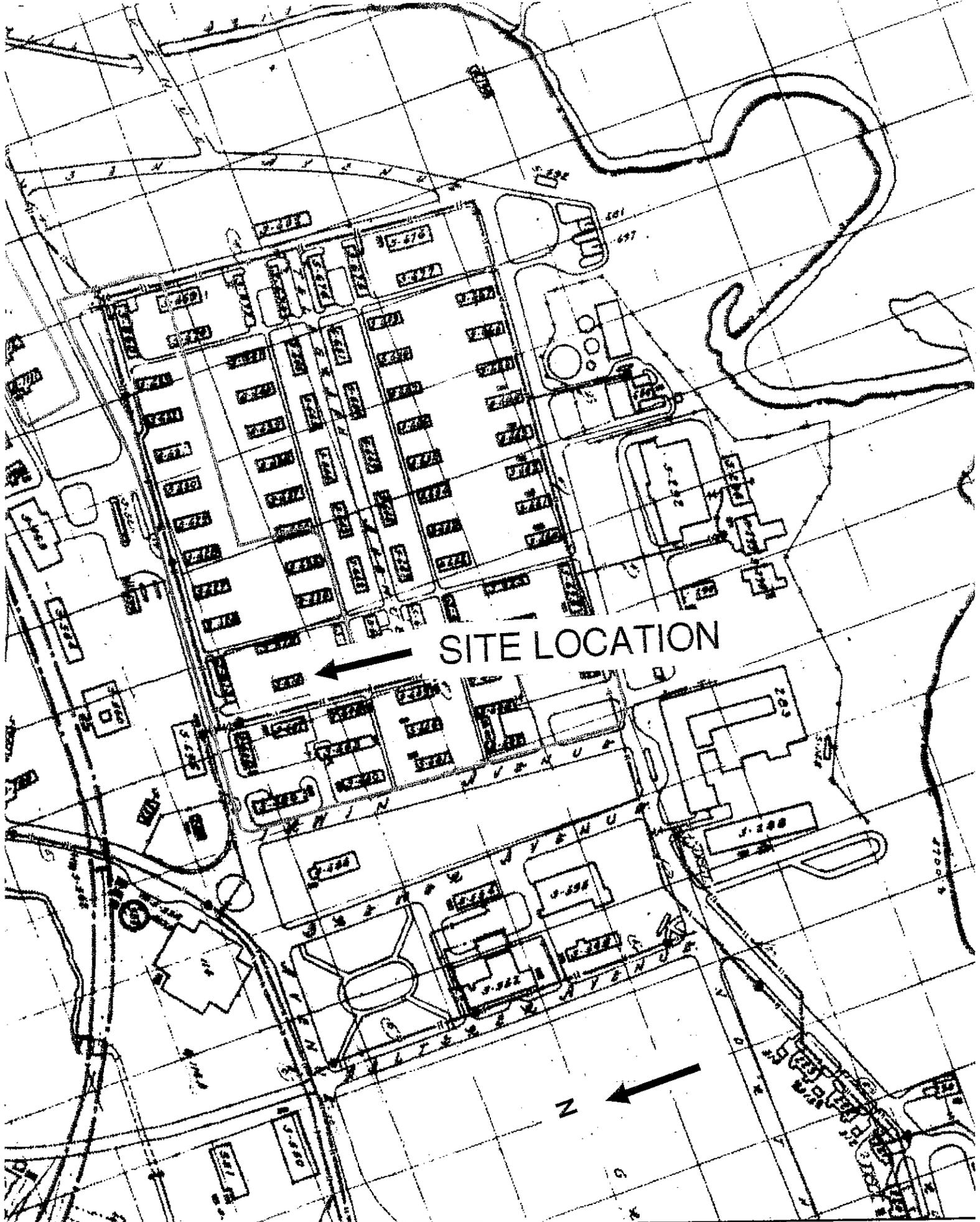


FIGURE 2

HARMON AVE.

614N

614C

614S

**FIGURE 3**  
Soil Sample Location Map  
(former) Building 614

U.S. Army Garrison  
Fort Monmouth, New Jersey

SCALE: 1" = 30' Approx.  
DATE: September 13, 2007

# TABLES

# TABLE 1

## SUMMARY OF LABORATORY ANALYSIS

FT. MONMOUTH, (former) BUILDING 614, UST No. 81533-88  
26 January 2006

SAMPLE ID	LABORATORY SAMPLE ID	SAMPLE DATE	SAMPLE MATRIX	ANALYTICAL PARAMETER	ANALYTICAL METHOD
614-N	6005701	26-Jan-06	SOIL	TPH	OQA-QAM-25
614-C	6005702	26-Jan-06	SOIL	TPH, VOA	OQA-QAM-25, 8260
614-S	6005703	26-Jan-06	SOIL	TPH	OQA-QAM-25
614-C- Groundwater	6005704	26-Jan-06	AQUEOUS	VOA, SVOA	SW-846, 8260 SW-846, 8270
Trip Blank	6005607	26-Jan-06	AQUEOUS	VOA	SW-846, 8260

### ABBREVIATIONS:

TPH = Total Petroleum Hydrocarbons, Method NJDEP OQA-QAM-25

VOA = Volatile Organic Analysis, EPA SW-846 Method 8260

SVOA = Semi-Volatile Organic Analysis, EPA SW-846, Method 8270

# TABLE 2

## SUMMARY OF LABORATORY ANALYTICAL RESULTS-SOIL

FT. MONMOUTH, (former) BUILDING 614, UST No. 81533-88  
26 January 2006

### TOTAL PETROLEUM HYDROCARBONS

SAMPLE ID	LABORATORY SAMPLE ID	SAMPLE LOCATION	SAMPLE DEPTH (in feet)	MATRIX	TPH RESULTS mg/kg
614-N	6005701	NORTH END UST	7.5 – 8.0	Soil	159
614-C	6005702	CENTER UST	6.0 – 6.5	Soil	3,257*
614-S	6005703	SOUTH END UST	6.0 – 6.5	Soil	ND

#### ABBREVIATIONS:

mg/kg = milligrams per kilogram = parts per million

ND = Compound Not Detected

NA = Compound Not Analyzed

\*= Further Analyzed for Volatile Organic Compounds

#### Notes:

Gray shading indicates exceedance of NJDEP

health based criterion of 10,000 ppm total organic contaminants

### VOLATILE ORGANIC COMPOUNDS

SAMPLE ID	LAB SAMPLE ID	Benzene	Toluene	Ethyl- benzene	Xylenes (Total)
UNITS		mg/kg	mg/kg	mg/kg	mg/kg
614-C	6005702	ND	ND	ND	ND
NJDEP Criteria	Residential	3	1,000	1,000	410

# TABLE 3

## SUMMARY OF LABORATORY ANALYTICAL RESULTS- GROUNDWATER

FT. MONMOUTH, (former) BUILDING 614, UST No. 81533-88

26 January 2006

### VOLATILE ORGANIC COMPOUNDS

SAMPLE ID	LAB SAMPLE ID	Benzene	Toluene	Ethyl- benzene	Xylenes (Total)
UNITS		ug/L	ug/L	ug/L	ug/L
614- Groundwater	6005704	ND	ND	ND	ND
NJDEP Criteria	Ground Water Quality Crireria	2	1,000	700	NLE

### SEMI-VOLATILE ORGANIC COMPOUNDS

SAMPLE ID	LAB SAMPLE ID	Naphtha- lene	2Methyl- naphthalene	Ace- naphthene	Fluorene	Phenan- threne
UNITS		ug/L	ug/L	ug/L	ug/L	ug/L
614- Groundwater	6005704	4.2	15.6	2.5	0.96	2.4
NJDEP Criteria	Ground Water Quality Crireria	300	400	NLE	300	NLE

#### ABBREVIATIONS:

ug/L = Micrograms Per Liter = parts per billion

ND = Compound Not Detected

NA = Compound Not Analyzed

NLE = No Limit Established

#### Notes:

Gray shading indicates exceedance of NJDEP

Class II Ground Water Quality Criteria

**APPENDIX A**  
**CERTIFICATION**



**DEPARTMENT OF THE ARMY**  
Headquarters, U.S. Army Garrison Fort Monmouth  
Fort Monmouth, New Jersey 07703-5000



REPLY TO  
ATTENTION OF

Directorate of Engineering  
and Housing

22 NOV 1991

SUBJECT: Removal Procedure:

U.S. Army Fort Monmouth  
Main Post West  
Site Registration #0081533  
Tank #58, 88, 95, 104, 110, 113, 146, 148, 158, 163  
POC: Joseph M. Fallon (908) 532-6223

The remaining product inside each tank was removed for disposal by Lionetti Oil Recovery Co., Inc. Lionetti is a licensed hazardous waste transporter and treatment, storage, and disposal facility (USEPA ID #NJ084044064).

The top of each tank was excavated and cut open across the entire length of the tank. In addition, the inside of each tank was hand cleaned and thoroughly wiped down. The soil from the top of each excavation was visually inspected and analyzed using a HNU Model PI-101 photoionizer. No contamination was detected.

After each tank was cleaned, a visual inspection was made inside the tanks for signs of leakage. No corrosion was found inside the tanks.

Each tank was then removed from the ground and disposed of through a metal recycler. No contamination was discovered at the sites upon removing the tanks.

Each site was then backfilled with the excavated soil to close out the project.

**Site Remediation Program  
UST Site Remedial Investigation Report**

**A.** Facility Name: (former) Building 614  
 Facility Street Address: Harmon Ave.  
 Municipality: Oceanport County: Monmouth  
 Block: NA Lot(s): NA Telephone Number: 732-532-6223

**B.** Owner (RP)'s Name: U.S. Army Garrison - Directorate of Public Works  
 Street Address: Building 167, Riverside Ave. City: Ft. Monmouth  
 State: NJ Zip: 07703 Telephone Number: 732-532-6223

**C.** (Check as appropriate)  
 Site Investigation Report (SIR) \$500 Fee  
 Remedial Investigation Report (RIR) \$1000 Fee

**D.** (Complete all that apply)  
 Assigned Case Manager: \_\_\_\_\_  
 UST Registration Number: 0081533-88 (7 digits)  
 • Incident Report Number: \_\_\_\_\_ (10 or 12 digits)  
 • Tank Closure Number C(N)9 -    C 9 -    C9 - \_\_\_\_\_ (7 characters)

**E. Certification by the Subsurface Evaluator:**  
 The attached report conforms to the specific reporting requirements of N.J.A.C. 7:26E ..... Yes No  
 Name: Frank Accorsi Signature: \_\_\_\_\_ UST Cert. No.: 0010042  
 Firm: Tecom-Vinnell Services, Inc. Firm's UST Cert. Number: US252302  
 Firm Address: P.O. 60 City: Ft. Monmouth  
 State: NJ Zip: 07703 Telephone Number: 732-532-5241

(NOTE: Certification numbers required only if work was conducted on USTs regulated per N.J.S.A. 5 8: 10A-2 1 et seq.)

**F. Certification by the Responsible Party(ies) of the Facility:**  
 The following certification shall be signed [according to the requirements of N.J.A.C. 7: 14B-1.7(b)]as follows:  
 1. For a Corporation by a person authorized by a resolution of the board of directors to sign the document. A copy of the resolution, certified as a true copy by the secretary of the corporation, shall be submitted along with the certification; or  
 2. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or  
 3. For a municipality, State, federal or other public agency by either a principal executive officer or ranking elected Official.

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

Name (Print or Type): \_\_\_\_\_ Title: \_\_\_\_\_  
 Signature: \_\_\_\_\_  
 Company Name: \_\_\_\_\_ Date: \_\_\_\_\_

## **APPENDIX B**

# **SOIL AND GROUNDWATER ANALYTICAL DATA PACKAGE**

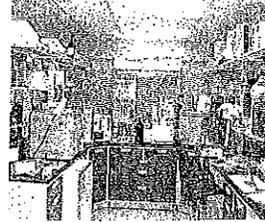
# FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS

PHONE: (732) 532-4359 FAX: (732) 532-6263

WET-CHEM - METALS - ORGANICS - FIELD SAMPLING

CERTIFICATIONS: NJDEP #13461, NYSDOH #11699



ANALYTICAL DATA REPORT  
Fort Monmouth Environmental Laboratory  
ENVIRONMENTAL DIVISION  
Fort Monmouth, New Jersey  
PROJECT: BLDG. 614

**Bldg. 614**

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
614N 7.5-8.0'	6005701	Soil	26-Jan-06 13:20	01/26/06
614C 6.0-6.5'	6005702	Soil	26-Jan-06 13:50	01/26/06
614S 6.0-6.5'	6005703	Soil	26-Jan-06 14:21	01/26/06
614C GW	6005704	Aqueous	26-Jan-06 14:30	01/26/06

**ANALYSIS:**

FORT MONMOUTH ENVIRONMENTAL LAB  
VOA+15, BN+15, TPHC, % SOLIDS

ENCLOSURE:  
CHAIN OF CUSTODY  
RESULTS

  
3-8-06  
Daniel Wright/Date  
Laboratory Director

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**CHAIN  
OF  
CUSTODY**

000001



## SAMPLE RECEIPT FORM

Date Received: 1-26-06

Work Order ID#: 60054

Site/Proj. Name: Bldg 141 UST

Cooler Temp (°C): 4.0°

Received By: J. Verma  
(Print name)

Sign: J. Verma

**Check the appropriate box**

1. Did the samples come in a cooler?  yes  no  n/a
2. Were samples rec'd in good condition?  yes  no
3. Was the chain of custody filled out correctly and legibly?  yes  no
4. Was the chain of custody signed in the appropriate place?  yes  no
5. Did the labels agree with the chain of custody?  yes  no
6. Were the correct containers/preservatives used?  yes  no
7. Was a sufficient amount of sample supplied?  yes  no
8. Were air bubbles present in VOA vials?  yes  no  n/a
9. Were samples received on ice?  yes  no
10. Were analyze-immediately tests perform within 15 minutes  yes  no  n/a

**Fill out the following table for each sample bottle**

Lims ID	pH	Preservative	Sample ID	pH	Preservative
<u>60054/1</u>	<u>2</u>	<u>PH</u>			

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



**Former UST 614 Sample Location GPS Positions**

US State Plane 1983 New Jersey ( NY East ) 2900

NAD 1983 ( Conus)

Geoid 96 ( Conus)

( In US Survey Feet)

<b>Position</b>	<b>Northing ( Y Coord.)</b>	<b>Easting ( X Coord.)</b>
614N	539372.466	618832.156
614C	539367.466	618833.459
614S	539362.316	618834.959

# **METHOD SUMMARY**

## Methodology Summary

### **EPA Method 624**

#### **Gas Chromatographic Determination of Volatiles in Water**

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

### **EPA SW-846 Method 8260**

#### **Gas Chromatographic Determination of Volatiles in Methanol**

A 10-gram volume of soil is combined with 25-ml of Methanol and surrogates in the field. Internal standards are added and the sample is placed on a purge and trap concentrator. The sample is purged and desorbed into a GC/MS system. Volatiles are identified and quantitated. The final concentration is calculated using soil weight, percent moisture and concentration.

### **EPA Method 625**

#### **Gas Chromatographic Determination of Semi-volatiles in Water**

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

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

Fifteen grams (15g) of soil is added to a 125-ml acid cleaned and solvent rinsed capped Erlenmeyer flask. 15g anhydrous Sodium Sulfate is added to dry the sample. Surrogate standard spiking solution is then added to the flask.

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

The extract is then injected directly into a GC-FID for analysis. The sample is analyzed for Petroleum Hydrocarbons covering a range of C8-C42, including Pristane and Phytane. Total Petroleum Hydrocarbon concentration is determined by integrating between 5 minutes and 22 minutes. The baseline is established by starting the integration after the end of the solvent peak and stopping after the last peak. The final concentration of Total Petroleum Hydrocarbons is calculated using percent moisture, sample weight and concentration.

# LABORATORY CHRONICLE

# Laboratory Chronicle

Lab ID: 60057

Site: UST  
Bldg. 614

	Date	Hold Time
Date Sampled	01/26/06	NA
Receipt/Refrigeration	01/26/06	NA
<b>Extractions</b>		
1. BN	01/27/06	7 days
2. TPHC	02/01/06	14 days
<b>Analyses</b>		
1. VOA (Aqueous)	02/07,08/06	14 days
2. VOA (Soil)	02/07/06	14 days
3. BN	01/30/06	40 days
4. TPHC	02/02/06	40 days

000010

**CONFORMANCE/  
NON-  
CONFORMANCE  
SUMMARY**

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

- Indicate  
Yes, No, N/A
1. Chromatograms labeled/Compounds identified  
(Field samples and method blanks) yes
  2. Retention times for chromatograms provided yes
  3. GC/MS Tune Specifications
    - a. BFB Meet Criteria yes
    - b. DFTPP Meet Criteria yes
  4. GC/MS Tuning Frequency— Performed every 24 hours for 600 series and 12 hours for 8000 series yes
  5. GC/MS Calibration – Initial Calibration performed before sample analysis and continuing calibration performed within 24 hours of sample analysis for 600 series and 12 hours for 8000 series yes
  6. GC/MS Calibration requirements
    - a. Calibration Check Compounds Meet Criteria yes
    - b. System Performance Check Compounds Meet Criteria yes
  7. Blank Contamination – If yes, List compounds and concentrations in each blank: yes
    - a. VOA Fraction Acetone 3.55 ug/L
    - b. B/N Fraction \_\_\_\_\_
    - c. Acid Fraction NA
  8. Surrogate Recoveries Meet Criteria yes

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

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

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

\_\_\_\_\_
  9. Matrix Spike/Matrix Spike Duplicate Recoveries Meet Criteria NO

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

    - a. VOA Fraction Various out see form
    - b. B/N Fraction Benzidine rec. low
    - c. Acid Fraction NA

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

Indicate  
Yes, No, N/A

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

yes

- a. VOA Fraction \_\_\_\_\_
- b. B/N Fraction \_\_\_\_\_
- c. Acid Fraction N/A

11. Extraction Holding Time Met

yes

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

12. Analysis Holding Time Met

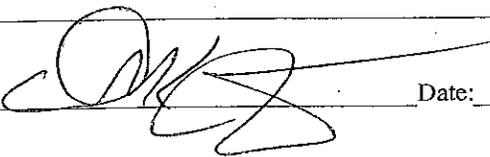
yes

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

Additional Comments:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Laboratory Manager:



Date: 3-8-06

# TPHC CONFORMANCE/NON-CONFORMANCE SUMMARY REPORT

Indicate  
Yes, No, N/A

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

Additional comments: \_\_\_\_\_  
\_\_\_\_\_

Laboratory Manager: \_\_\_\_\_

Date: \_\_\_\_\_

3-8-06

000014

**VOLATILE  
ORGANICS  
(AQUEOUS)**

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY  
NJDEP CERTIFICATION # 13461

Definition of Qualifiers

- U:** The compound was analyzed for but not detected.
- B:** Indicates that the compound was found in the associated method blank as well as in the sample.
- J:** Indicates an estimated value. This flag is used:
- (1) When the mass spec and retention time data indicate the presence of a compound however the result is less than the MDL but greater than zero.
  - (2) When estimating the concentration of a tentatively identified compound (TIC), where a 1:1 response is assumed.
- D:** This flag is used to identify all compounds (target or TIC) that required a dilution.
- E:** Indicates the compound's concentration exceeds the calibration range of the instrument for that specific analysis.
- N:** This flag is only used for TICs. It indicates the presumptive evidence of a compound. For a generic characterization of a TIC, such as unknown hydrocarbon, the flag is not used.

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

Data File VB021635.D  
 Operator Skelton  
 Date Acquired 7 Feb 2006 8:34 pm

Sample Name MB 07Feb2006  
 Field ID MB 07Feb2006  
 Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.01 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	5	1.23 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	5.70 ug/L	10.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.21 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.26 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.20 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	nle	0.24 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.23 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	0.26 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	0.29 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.23 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.19 ug/L	2.00 ug/L	
67-64-1	Acetone	11.94	45398	3.55 ug/L	6000	0.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.24 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.21 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.24 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	50	0.24 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.26 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.20 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	70	0.22 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.20 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.24 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.24 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.23 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.26 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.24 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.23 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.22 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.35 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.26 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.25 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.28 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.20 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.43 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.28 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.27 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	0.43 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.21 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.21 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.27 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.45 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.36 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.35 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.45 ug/L	2.00 ug/L	

\*Results between MDL and RL are estimated values  
 \*Higher of PQL's and Interim Criteria as per N.J.A.C. 7:9C 07Nov2005

**Qualifiers**

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

MB 07Feb2006

Lab Name: FMETL NJDEP#: 13461  
Project: 06-34880 Case No.: 60056 Location: 692 SDG No.: UST  
Matrix: (soil/water) WATER Lab Sample ID: MB 07Feb2006  
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB021635.D  
Level: (low/med) LOW Date Received: 1/26/2006  
% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 2/7/2006  
GC Column: RTX502 ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

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

Number TICs found: 1

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 000079-20-9	Acetic acid, methyl ester	12.44	21	JN

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

Data File VB021641.D  
 Operator Skelton  
 Date Acquired 8 Feb 2006 12:37 am

Sample Name 6005606  
 Field ID Trip Blank  
 Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifier
107028	Acrolein			not detected	5	2.01 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	5	1.23 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	5.70 ug/L	10.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.21 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.26 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.20 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	nle	0.24 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.23 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	0.26 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	0.29 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.23 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.19 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	6000	0.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.24 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride	11.66	49080	2.09 ug/L	3	0.21 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.24 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	50	0.24 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.26 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.20 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	70	0.22 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.20 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.24 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.24 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.23 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.26 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.24 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.23 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.22 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.35 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.26 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.25 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.28 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.20 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.43 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.28 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.27 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	0.43 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.21 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.21 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.27 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.45 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.36 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.35 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.45 ug/L	2.00 ug/L	

\*Results between MDL and RL are estimated values  
 \*Higher of PQL's and Interim Criteria as per N.J.A.C. 7:9C 01/Nov/2005

**Qualifiers**

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

**Trip Blank**

Lab Name: FMETL NJDEP#: 13461  
Project: 06-34880 Case No.: 60056 Location: 692 SDG No.: UST  
Matrix: (soil/water) WATER Lab Sample ID: 6005606  
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB021641.D  
Level: (low/med) LOW Date Received: 1/26/2006  
% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 2/8/2006  
GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

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

Number TICs found: 1

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 000079-20-9	Acetic acid, methyl ester	12.46	12	JN

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

Data File **VB021642.D**  
 Operator **Skelton**  
 Date Acquired **8 Feb 2006 1:17 am**

Sample Name **6005704**  
 Field ID **614C GW**  
 Sample Multiplier **1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.01 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	5	1.23 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	5.70 ug/L	10.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.21 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.26 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.20 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	nle	0.24 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.23 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	0.26 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	0.29 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.23 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.19 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	6000	0.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.24 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride	11.69	39160	1.68 ug/L	3	0.21 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.24 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	50	0.24 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.26 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.20 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	70	0.22 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.20 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.24 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.24 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.23 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.26 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.24 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.23 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.22 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.35 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.26 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.25 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.28 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.20 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.43 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.28 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.27 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	0.43 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.21 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.21 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.27 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.45 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.36 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.35 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.45 ug/L	2.00 ug/L	

\*Results between MDL and RL are estimated values  
 \*Higher of PQL's and Interim Criteria as per N.J.A.C. 7:9C 07Nov2005

**Qualifiers**

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

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

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

614C GW

Lab Name: FMETL NJDEP#: 13461  
 Project: 06-34880 Case No.: 60057 Location: 614 SDG No.: UST  
 Matrix: (soil/water) WATER Lab Sample ID: 6005704  
 Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB021642.D  
 Level: (low/med) LOW Date Received: 1/26/2006  
 % Moisture: not dec. \_\_\_\_\_ Date Analyzed: 2/8/2006  
 GC Column: RTX502 ID: 0.25 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

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

Number TICs found: 6

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 000079-20-9	Acetic acid, methyl ester	12.46	15	JN
2. 000526-73-8	Benzene, 1,2,3-trimethyl-	30.21	3	JN
3. 000135-01-3	Benzene, 1,2-diethyl-	30.39	4	JN
4. 000496-11-7	Indane	30.50	8	JN
5. 000768-00-3	Benzene, (1-methyl-1-propenyl)-,	31.48	3	JN
6. 000768-49-0	Benzene, (2-methyl-1-propenyl)-	31.59	16	JN

**VOLATILE  
ORGANICS  
(SOIL)**

1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID:

MB 07Feb2006

Lab Name: FMETL NJDEP#: 13461  
 Project: 06-34880 Case No.: 60057 Location: 614 SDG No.: UST  
 Matrix: (soil/water) SOIL Lab Sample ID: MB 07Feb2006  
 Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB021635.D  
 Level: (low/med) MED Date Received: 1/26/2006  
 % Moisture: not dec. 0 Date Analyzed: 2/7/2006  
 GC Column: RTX502 ID: 0.25 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 125 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/KG	Q
107028	Acrolein		1000	U
107131	Acrylonitrile		1000	U
75650	tert-Butyl alcohol		1000	U
1634044	Methyl-tert-Butyl ether		100	U
108203	Di-isopropyl ether		100	U
75718	Dichlorodifluoromethane		100	U
74-87-3	Chloromethane		100	U
75-01-4	Vinyl Chloride		100	U
74-83-9	Bromomethane		100	U
75-00-3	Chloroethane		100	U
75-69-4	Trichlorofluoromethane		100	U
75-35-4	1,1-Dichloroethene		100	U
67-64-1	Acetone		360	
75-15-0	Carbon Disulfide		100	U
75-09-2	Methylene Chloride		100	U
156-60-5	trans-1,2-Dichloroethene		100	U
75-34-3	1,1-Dichloroethane		100	U
108-05-4	Vinyl Acetate		100	U
78-93-3	2-Butanone		100	U
156-59-2	cis-1,2-Dichloroethene		100	U
67-66-3	Chloroform		100	U
71-55-6	1,1,1-Trichloroethane		100	U
56-23-5	Carbon Tetrachloride		100	U
71-43-2	Benzene		100	U
107-06-2	1,2-Dichloroethane		100	U
79-01-6	Trichloroethene		100	U
78-87-5	1,2-Dichloropropane		100	U
75-27-4	Bromodichloromethane		100	U
110-75-8	2-Chloroethyl vinyl ether		100	U
10061-01-5	cis-1,3-Dichloropropene		100	U
108-10-1	4-Methyl-2-Pentanone		100	U
108-88-3	Toluene		100	U
10061-02-6	trans-1,3-Dichloropropene		100	U
79-00-5	1,1,2-Trichloroethane		100	U
127-18-4	Tetrachloroethene		100	U
591-78-6	2-Hexanone		100	U
124-48-1	Dibromochloromethane		100	U
108-90-7	Chlorobenzene		100	U
100-41-4	Ethylbenzene		100	U

1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID:

MB 07Feb2006

Lab Name: FMETL NJDEP#: 13461  
 Project: 06-34880 Case No.: 60057 Location: 614 SDG No.: UST  
 Matrix: (soil/water) SOIL Lab Sample ID: MB 07Feb2006  
 Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB021635.D  
 Level: (low/med) MED Date Received: 1/26/2006  
 % Moisture: not dec. 0 Date Analyzed: 2/7/2006  
 GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 125 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	<u>UG/KG</u>	Q
1330-20-7	m+p-Xylenes		200	U
95-47-6	o-Xylene		100	U
100-42-5	Styrene		100	U
75-25-2	Bromoform		100	U
79-34-5	1,1,2,2-Tetrachloroethane		100	U
541-73-1	1,3-Dichlorobenzene		100	U
106-46-7	1,4-Dichlorobenzene		100	U
95-50-1	1,2-Dichlorobenzene		100	U
91-20-3	Naphthalene		100	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

**MB 07Feb2006**

Lab Name: FMETL NJDEP#: 13461  
Project: 06-34880 Case No.: 60057 Location: 614 SDG No.: UST  
Matrix: (soil/water) SOIL Lab Sample ID: MB 07Feb2006  
Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB021635.D  
Level: (low/med) MED Date Received: 1/26/2006  
% Moisture: not dec. 0 Date Analyzed: 2/7/2006  
GC Column: RTX502 ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 125 (uL)

CONCENTRATION UNITS:

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

Number TICs found: 1

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 000079-20-9	Acetic acid, methyl ester	12.44	2100	JN

## VOLATILE ORGANICS ANALYSIS DATA SHEET

Trip Blank

Lab Name: FMETL NJDEP#: 13461

Project: 06-34880 Case No.: 60057 Location: 614 SDG No.: UST

Matrix: (soil/water) SOIL Lab Sample ID: 6005607

Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB021636.D

Level: (low/med) MED Date Received: 1/26/2006

% Moisture: not dec. 0 Date Analyzed: 2/7/2006

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

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 125 (uL)

## CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/KG	Q
107028	Acrolein		1000	U
107131	Acrylonitrile		1000	U
75650	tert-Butyl alcohol		1000	U
1634044	Methyl-tert-Butyl ether		100	U
108203	Di-isopropyl ether		100	U
75718	Dichlorodifluoromethane		100	U
74-87-3	Chloromethane		100	U
75-01-4	Vinyl Chloride		100	U
74-83-9	Bromomethane		100	U
75-00-3	Chloroethane		100	U
75-69-4	Trichlorofluoromethane		100	U
75-35-4	1,1-Dichloroethene		100	U
67-64-1	Acetone		100	U
75-15-0	Carbon Disulfide		100	U
75-09-2	Methylene Chloride		100	U
156-60-5	trans-1,2-Dichloroethene		100	U
75-34-3	1,1-Dichloroethane		100	U
108-05-4	Vinyl Acetate		100	U
78-93-3	2-Butanone		100	U
156-59-2	cis-1,2-Dichloroethene		100	U
67-66-3	Chloroform		100	U
71-55-6	1,1,1-Trichloroethane		100	U
56-23-5	Carbon Tetrachloride		100	U
71-43-2	Benzene		100	U
107-06-2	1,2-Dichloroethane		100	U
79-01-6	Trichloroethene		100	U
78-87-5	1,2-Dichloropropane		100	U
75-27-4	Bromodichloromethane		100	U
110-75-8	2-Chloroethyl vinyl ether		100	U
10061-01-5	cis-1,3-Dichloropropene		100	U
108-10-1	4-Methyl-2-Pentanone		100	U
108-88-3	Toluene		100	U
10061-02-6	trans-1,3-Dichloropropene		100	U
79-00-5	1,1,2-Trichloroethane		100	U
127-18-4	Tetrachloroethene		100	U
591-78-6	2-Hexanone		100	U
124-48-1	Dibromochloromethane		100	U
108-90-7	Chlorobenzene		100	U
100-41-4	Ethylbenzene		100	U

1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID:

**Trip Blank**

Lab Name: FMETL NJDEP#: 13461  
 Project: 06-34880 Case No.: 60057 Location: 614 SDG No.: UST  
 Matrix: (soil/water) SOIL Lab Sample ID: 6005607  
 Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB021636.D  
 Level: (low/med) MED Date Received: 1/26/2006  
 % Moisture: not dec. 0 Date Analyzed: 2/7/2006  
 GC Column: RTX502 ID: 0.25 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 125 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/KG	Q
1330-20-7	m+p-Xylenes		200	U
95-47-6	o-Xylene		100	U
100-42-5	Styrene		100	U
75-25-2	Bromoform		100	U
79-34-5	1,1,2,2-Tetrachloroethane		100	U
541-73-1	1,3-Dichlorobenzene		100	U
106-46-7	1,4-Dichlorobenzene		100	U
95-50-1	1,2-Dichlorobenzene		100	U
91-20-3	Naphthalene		100	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

**Trip Blank**

Lab Name: FMETL NJDEP#: 13461  
Project: 06-34880 Case No.: 60057 Location: 614 SDG No.: UST  
Matrix: (soil/water) SOIL Lab Sample ID: 6005607  
Sample wt/vol: 10.0 (g/ml) G Lab File ID: VB021636.D  
Level: (low/med) MED Date Received: 1/26/2006  
% Moisture: not dec. 0 Date Analyzed: 2/7/2006  
GC Column: RTX502 ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 125 (uL)

CONCENTRATION UNITS:

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

Number TICs found: 4

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	5.11	870	J
2. 000079-20-9	Acetic acid, methyl ester	12.43	12000	JN
3. 001112-39-6	Silane, dimethoxydimethyl-	17.38	1900	JN
4. 000554-12-1	Propanoic acid, methyl ester	17.83	370	JN

## VOLATILE ORGANICS ANALYSIS DATA SHEET

614C

Lab Name: FMETL NJDEP#: 13461

Project: 06-34880 Case No.: 60057 Location: 614 SDG No.: UST

Matrix: (soil/water) SOIL Lab Sample ID: 6005702

Sample wt/vol: 10.2 (g/ml) G Lab File ID: VB021637.D

Level: (low/med) MED Date Received: 1/26/2006

% Moisture: not dec. 19.37 Date Analyzed: 2/7/2006

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

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 125 (uL)

## CONCENTRATION UNITS:

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

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/KG	Q
107028	Acrolein		1200	U
107131	Acrylonitrile		1200	U
75650	tert-Butyl alcohol		1200	U
1634044	Methyl-tert-Butyl ether		120	U
108203	Di-isopropyl ether		120	U
75718	Dichlorodifluoromethane		120	U
74-87-3	Chloromethane		120	U
75-01-4	Vinyl Chloride		120	U
74-83-9	Bromomethane		120	U
75-00-3	Chloroethane		120	U
75-69-4	Trichlorofluoromethane		120	U
75-35-4	1,1-Dichloroethene		120	U
67-64-1	Acetone		120	U
75-15-0	Carbon Disulfide		120	U
75-09-2	Methylene Chloride		120	U
156-60-5	trans-1,2-Dichloroethene		120	U
75-34-3	1,1-Dichloroethane		120	U
108-05-4	Vinyl Acetate		120	U
78-93-3	2-Butanone		120	U
156-59-2	cis-1,2-Dichloroethene		120	U
67-66-3	Chloroform		120	U
71-55-6	1,1,1-Trichloroethane		120	U
56-23-5	Carbon Tetrachloride		120	U
71-43-2	Benzene		120	U
107-06-2	1,2-Dichloroethane		120	U
79-01-6	Trichloroethene		120	U
78-87-5	1,2-Dichloropropane		120	U
75-27-4	Bromodichloromethane		120	U
110-75-8	2-Chloroethyl vinyl ether		120	U
10061-01-5	cis-1,3-Dichloropropene		120	U
108-10-1	4-Methyl-2-Pentanone		120	U
108-88-3	Toluene		120	U
10061-02-6	trans-1,3-Dichloropropene		120	U
79-00-5	1,1,2-Trichloroethane		120	U
127-18-4	Tetrachloroethene		120	U
591-78-6	2-Hexanone		120	U
124-48-1	Dibromochloromethane		120	U
108-90-7	Chlorobenzene		120	U
100-41-4	Ethylbenzene		120	U

## VOLATILE ORGANICS ANALYSIS DATA SHEET

614C

Lab Name: FMETL NJDEP#: 13461

Project: 06-34880 Case No.: 60057 Location: 614 SDG No.: UST

Matrix: (soil/water) SOIL Lab Sample ID: 6005702

Sample wt/vol: 10.2 (g/ml) G Lab File ID: VB021637.D

Level: (low/med) MED Date Received: 1/26/2006

% Moisture: not dec. 19.37 Date Analyzed: 2/7/2006

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

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 125 (uL)

## CONCENTRATION UNITS:

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	UG/KG	
1330-20-7	m+p-Xylenes		240	U
95-47-6	o-Xylene		120	U
100-42-5	Styrene		120	U
75-25-2	Bromoform		120	U
79-34-5	1,1,2,2-Tetrachloroethane		120	U
541-73-1	1,3-Dichlorobenzene		120	U
106-46-7	1,4-Dichlorobenzene		120	U
95-50-1	1,2-Dichlorobenzene		120	U
91-20-3	Naphthalene		120	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

614C

Lab Name: FMETL NJDEP#: 13461

Project: 06-34880 Case No.: 60057 Location: 614 SDG No.: UST

Matrix: (soil/water) SOIL Lab Sample ID: 6005702

Sample wt/vol: 10.2 (g/ml) G Lab File ID: VB021637.D

Level: (low/med) MED Date Received: 1/26/2006

% Moisture: not dec. 19.37 Date Analyzed: 2/7/2006

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

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 125 (uL)

CONCENTRATION UNITS:

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

Number TICs found: 4

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	5.11	980	J
2. 000079-20-9	Acetic acid, methyl ester	12.44	9100	JN
3. 001112-39-6	Silane, dimethoxydimethyl-	17.38	1200	JN
4. 000554-12-1	Propanoic acid, methyl ester	17.83	670	JN

# **SEMI-VOLATILE ORGANICS**

000063

## Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name BNA11471.D  
 Operator BPatel  
 Date Acquired 30-Jan-06

Sample Name MB-012706-01  
 Misc Info MB-012706-01  
 Sample Multiplier 1

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifiers
110-86-1	Pyridine			not detected	NLE	1.13	10.00	ug/L
62-75-9	N-nitroso-dimethylamine			not detected	0.8	0.60	10.00	ug/L
62-53-3	Aniline			not detected	6	2.38	10.00	ug/L
111-44-4	bis(2-Chloroethyl)ether			not detected	7	0.71	10.00	ug/L
541-73-1	1,3-Dichlorobenzene			not detected	600	1.02	10.00	ug/L
106-46-7	1,4-Dichlorobenzene			not detected	75	0.99	10.00	ug/L
100-51-6	Benzyl alcohol			not detected	2000	0.66	10.00	ug/L
95-50-1	1,2-Dichlorobenzene			not detected	600	0.96	10.00	ug/L
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.88	10.00	ug/L
621-64-7	n-Nitroso-di-n-propylamine			not detected	10	0.76	10.00	ug/L
67-72-1	Hexachloroethane			not detected	7	0.96	10.00	ug/L
98-95-3	Nitrobenzene			not detected	6	0.86	10.00	ug/L
78-59-1	Isophorone			not detected	40	0.76	10.00	ug/L
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.79	10.00	ug/L
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.89	10.00	ug/L
91-20-3	Naphthalene			not detected	300	0.76	10.00	ug/L
106-47-8	4-Chloroaniline			not detected	30	1.37	10.00	ug/L
87-68-3	Hexachlorobutadiene			not detected	1	0.99	10.00	ug/L
91-57-6	2-Methylnaphthalene			not detected	NLE	1.01	10.00	ug/L
77-47-4	Hexachlorocyclopentadiene			not detected	40	0.92	10.00	ug/L
91-58-7	2-Chloronaphthalene			not detected	600	0.72	10.00	ug/L
88-74-4	2-Nitroaniline			not detected	NLE	0.77	10.00	ug/L
131-11-3	Dimethylphthalate			not detected	NLE	0.78	10.00	ug/L
208-96-8	Acenaphthylene			not detected	NLE	0.67	10.00	ug/L
606-20-2	2,6-Dinitrotoluene			not detected	10	0.71	10.00	ug/L
99-09-2	3-Nitroaniline			not detected	NLE	1.18	10.00	ug/L
83-32-9	Acenaphthene			not detected	400	0.73	10.00	ug/L
132-64-9	Dibenzofuran			not detected	NLE	0.69	10.00	ug/L
121-14-2	2,4-Dinitrotoluene			not detected	10	0.81	10.00	ug/L
84-66-2	Diethylphthalate			not detected	6000	0.96	10.00	ug/L
86-73-7	Fluorene			not detected	300	0.71	10.00	ug/L
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.73	10.00	ug/L
100-01-6	4-Nitroaniline			not detected	NLE	1.11	10.00	ug/L
86-30-6	n-Nitrosodiphenylamine			not detected	10	0.62	10.00	ug/L
103-33-3	Azobenzene			not detected	NLE	0.72	10.00	ug/L
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.92	10.00	ug/L
118-74-1	Hexachlorobenzene			not detected	0.02	0.95	10.00	ug/L
85-01-8	Phenanthrene			not detected	NLE	0.81	10.00	ug/L
120-12-7	Anthracene			not detected	2000	0.76	10.00	ug/L
84-74-2	Di-n-butylphthalate			not detected	700	0.92	10.00	ug/L
206-44-0	Fluoranthene			not detected	300	0.82	10.00	ug/L

## Semi-Volatile Analysis Report

Page 2

Data File Name **BNA11471.D**  
 Operator **BPatel**  
 Date Acquired **30-Jan-06**

Sample Name **MB-012706-01**  
 Misc Info **MB-012706-01**  
 Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifiers
92-87-5	Benzidine			not detected	20	0.98	10.00	ug/L
129-00-0	Pyrene			not detected	200	0.79	10.00	ug/L
85-68-7	Butylbenzylphthalate			not detected	100	0.86	10.00	ug/L
56-55-3	Benzo[a]anthracene			not detected	0.1	0.82	10.00	ug/L
91-94-1	3,3'-Dichlorobenzidine			not detected	30	1.31	10.00	ug/L
218-01-9	Chrysene			not detected	5	0.77	10.00	ug/L
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	3	1.28	10.00	ug/L
117-84-0	Di-n-octylphthalate			not detected	100	1.02	10.00	ug/L
205-99-2	Benzo[b]fluoranthene			not detected	0.2	0.98	10.00	ug/L
207-08-9	Benzo[k]fluoranthene			not detected	0.5	0.92	10.00	ug/L
50-32-8	Benzo[a]pyrene			not detected	0.1	0.71	10.00	ug/L
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	0.2	0.76	10.00	ug/L
53-70-3	Dibenz[a,h]anthracene			not detected	0.3	0.76	10.00	ug/L
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.80	10.00	ug/L

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

### Qualifiers

E= Value Exceeds Linear Range

D= Value from dilution

B= Compound in Related Blank

RL= Reporting Limit. The values between the MDL and RL are considered estimated.

MDL= Method Detection Limit

NLE= No Limit Established

R.T.=Retention Time

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MB-012706-01

Lab Name: FMETL Lab Code 13461  
Project: 06-34880 Case No.: 60057 Location: 614 SDG No.: \_\_\_\_\_  
Matrix: (soil/water) WATER Lab Sample ID: MB-012706-01  
Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA11471.D  
Level: (low/med) LOW Date Received: 1/26/2006  
% Moisture: \_\_\_\_\_ decanted: (Y/N) N Date Extracted: 1/27/2006  
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/30/2006  
Injection Volume: 1.0 (uL) Dilution Factor: 1.0  
GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

CONCENTRATION UNITS:

Number TICs found: 0

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

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

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name BNA11482.D  
 Operator BPatel  
 Date Acquired 30-Jan-06

Sample Name 6005704  
 Misc Info 614C-GW  
 Sample Multiplier 1

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RI	Qualifiers
110-86-1	Pyridine			not detected	NLE	1.13	10.00	ug/L
62-75-9	N-nitroso-dimethylamine			not detected	0.8	0.60	10.00	ug/L
62-53-3	Aniline			not detected	6	2.38	10.00	ug/L
111-44-4	bis(2-Chloroethyl)ether			not detected	7	0.71	10.00	ug/L
541-73-1	1,3-Dichlorobenzene			not detected	600	1.02	10.00	ug/L
106-46-7	1,4-Dichlorobenzene			not detected	75	0.99	10.00	ug/L
100-51-6	Benzyl alcohol			not detected	2000	0.66	10.00	ug/L
95-50-1	1,2-Dichlorobenzene			not detected	600	0.96	10.00	ug/L
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.88	10.00	ug/L
621-64-7	n-Nitroso-di-n-propylamine			not detected	10	0.76	10.00	ug/L
67-72-1	Hexachloroethane			not detected	7	0.96	10.00	ug/L
98-95-3	Nitrobenzene			not detected	6	0.86	10.00	ug/L
78-59-1	Isophorone			not detected	40	0.76	10.00	ug/L
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.79	10.00	ug/L
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.89	10.00	ug/L
91-20-3	Naphthalene	13.33	298045	4.21 ug/L	300	0.76	10.00	ug/L
106-47-8	4-Chloroaniline			not detected	30	1.37	10.00	ug/L
87-68-3	Hexachlorobutadiene			not detected	1	0.99	10.00	ug/L
91-57-6	2-Methylnaphthalene	14.99	716201	15.61 ug/L	NLE	1.01	10.00	ug/L
77-47-4	Hexachlorocyclopentadiene			not detected	40	0.92	10.00	ug/L
91-58-7	2-Chloronaphthalene			not detected	600	0.72	10.00	ug/L
88-74-4	2-Nitroaniline			not detected	NLE	0.77	10.00	ug/L
131-11-3	Dimethylphthalate			not detected	NLE	0.78	10.00	ug/L
208-96-8	Acenaphthylene			not detected	NLE	0.67	10.00	ug/L
606-20-2	2,6-Dinitrotoluene			not detected	10	0.71	10.00	ug/L
99-09-2	3-Nitroaniline			not detected	NLE	1.18	10.00	ug/L
83-32-9	Acenaphthene	17.57	103283	2.50 ug/L	400	0.73	10.00	ug/L
132-64-9	Dibenzofuran	18.00	47196	0.78 ug/L	NLE	0.69	10.00	ug/L
121-14-2	2,4-Dinitrotoluene			not detected	10	0.81	10.00	ug/L
84-66-2	Diethylphthalate			not detected	6000	0.96	10.00	ug/L
86-73-7	Fluorene	18.82	48483	0.96 ug/L	300	0.71	10.00	ug/L
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.73	10.00	ug/L
100-01-6	4-Nitroaniline			not detected	NLE	1.11	10.00	ug/L
86-30-6	n-Nitrosodiphenylamine			not detected	10	0.62	10.00	ug/L
103-33-3	Azobenzene			not detected	NLE	0.72	10.00	ug/L
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.92	10.00	ug/L
118-74-1	Hexachlorobenzene			not detected	0.02	0.95	10.00	ug/L
85-01-8	Phenanthrene	21.13	189412	2.37 ug/L	NLE	0.81	10.00	ug/L
120-12-7	Anthracene			not detected	2000	0.76	10.00	ug/L
84-74-2	Di-n-butylphthalate			not detected	700	0.92	10.00	ug/L
206-44-0	Fluoranthene			not detected	300	0.82	10.00	ug/L

**Semi-Volatile Analysis Report**  
**Page 2**

Data File Name **BNA11482.D**  
Operator **BPatel**  
Date Acquired **30-Jan-06**

Sample Name **6005704**  
Misc Info **614C-GW**  
Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifiers
92-87-5	Benzidine			not detected	20	0.98	10.00	ug/L
129-00-0	Pyrene			not detected	200	0.79	10.00	ug/L
85-68-7	Butylbenzylphthalate			not detected	100	0.86	10.00	ug/L
56-55-3	Benzo[a]anthracene			not detected	0.1	0.82	10.00	ug/L
91-94-1	3,3'-Dichlorobenzidine			not detected	30	1.31	10.00	ug/L
218-01-9	Chrysene			not detected	5	0.77	10.00	ug/L
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	3	1.28	10.00	ug/L
117-84-0	Di-n-octylphthalate			not detected	100	1.02	10.00	ug/L
205-99-2	Benzo[b]fluoranthene			not detected	0.2	0.98	10.00	ug/L
207-08-9	Benzo[k]fluoranthene			not detected	0.5	0.92	10.00	ug/L
50-32-8	Benzo[a]pyrene			not detected	0.1	0.71	10.00	ug/L
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	0.2	0.76	10.00	ug/L
53-70-3	Dibenz[a,h]anthracene			not detected	0.3	0.76	10.00	ug/L
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.80	10.00	ug/L

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

**Qualifiers**

E= Value Exceeds Linear Range

D= Value from dilution

B= Compound in Related Blank

RL= Reporting Limit. The values between the MDL and RL are considered estimated.

MDL= Method Detection Limit

NLE= No Limit Established

R.T.=Retention Time

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

614C-GW

Lab Name: FMETL Lab Code 13461

Project: 06-34880 Case No.: 60057 Location: 614 SDG No.: \_\_\_\_\_

Matrix: (soil/water) WATER Lab Sample ID: 6005704

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA11482.D

Level: (low/med) LOW Date Received: 1/26/2006

% Moisture: \_\_\_\_\_ decanted: (Y/N) N Date Extracted: 1/27/2006

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/30/2006

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

## CONCENTRATION UNITS:

Number TICs found: 20 (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000496-11-7	Indane	10.76	5	JN
2. 056253-64-6	Benzene, (2-methyl-1-butenyl)-	13.44	7	JN
3. 003877-19-8	Naphthalene, 1,2,3,4-tetrahydro-2	13.78	5	JN
4. 001680-51-9	Naphthalene, 1,2,3,4-tetrahydro-6	14.52	8	JN
5. 002142-73-6	Ethanone, 1-(2,5-dimethylphenyl)	14.59	7	JN
6. 000264-09-5	Benzocycloheptatriene	15.22	14	JN
7. 000000-00-0	1,4-Dimethyl-1,2,3,4-tetrahydrona	15.29	4	JN
8. 000092-52-4	Biphenyl	16.13	4	JN
9. 000873-66-5	Benzene, 1-propenyl-, (E)-	16.28	21	JN
10.	unknown	16.52	23	J
11. 000582-16-1	Naphthalene, 2,7-dimethyl-	16.70	15	JN
12. 000575-43-9	Naphthalene, 1,6-dimethyl-	16.76	6	JN
13. 000581-40-8	Naphthalene, 2,3-dimethyl-	16.97	4	JN
14. 006939-35-1	1(2H)-Naphthalenone, 3,4-dihydr	17.94	19	JN
15. 002131-42-2	Naphthalene, 1,4,6-trimethyl-	18.30	6	JN
16. 005037-60-5	1H-Inden-1-one, 2,3-dihydro-4,7-	18.56	6	JN
17. 000093-08-3	2-Naphthyl methyl ketone	19.13	7	JN
18. 051015-31-7	1(2H)-Naphthalenone, 5-ethyl-3,4	19.21	5	JN
19.	unknown	19.70	4	J
20.	unknown	22.07	6	J

**TPHC**



## LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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

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

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

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

Laboratory Manager or Environmental Consultant's Signature

Date: 3/31/06

Laboratory Certification # 13461

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

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## Laboratory Authentication Statement

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



Daniel K. Wright  
Laboratory Manager



ATTACHMENT K

UST 616 Report



**United States Army**  
Fort Monmouth, New Jersey

---

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

***Building 616  
Main Post***

---

**NJDEP UST Registration No. 081533-90  
NJDEP Closure Approval Letter Dated October 7, 1994  
Spill Case No. 94-12-8-1040-10**

**VOLUME 1 OF 3  
TEXT, TABLES, APPENDICES A THROUGH F**

**February 1997**

**SMITH**  
TECHNOLOGY CORPORATION

*DPW File Copy*



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

**BUILDING 616**

**MAIN POST  
NJDEP UST REGISTRATION NO. 081533-90  
NJDEP CLOSURE APPROVAL LETTER DATED OCTOBER 7, 1994  
SPILL CASE NO. 94-12-8-1040-10**

**FEBRUARY 1997**

**PROJECT NO.: 09-5004-08  
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 TECHNOLOGY CORPORATION  
BROMLEY CORPORATE CENTER  
THREE TERRI LANE  
BURLINGTON, NEW JERSEY 08016**



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Appendix C	Waste Manifest
Appendix D	UST Disposal Certificate
Appendix E	Monitoring Well Permit and Construction Log
Appendix F	Soil Analytical Data Package
Appendix G	Groundwater Analytical Data Package



## EXECUTIVE SUMMARY

### UST Closure

On December 7, 1994, a steel underground storage tank (UST) was closed by removal in accordance with the New Jersey Department of Environmental Protection (NJDEP) at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey. The UST, NJDEP Registration No. 081533-90, was located immediately adjacent to Building 616 in the Main Post area of U.S. Army, Fort Monmouth. UST No. 081533-90 was a 1,000-gallon No. 2 fuel oil UST. The UST fill port was located directly above the tank. The tank closure was performed by Cleaning Up The Environment Inc. (CUTE).

### 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*. Soils surrounding the tank were screened visually and with air monitoring equipment for evidence of contamination. Following removal, the UST was inspected for corrosion holes. Several holes were noted in the UST, and evidence of potentially contaminated soils were observed surrounding the former tank.

On December 9, 1994, approximately 18 cubic yards of potentially contaminated soil were removed from the excavation. An additional 180 cubic yards of potentially contaminated soils were removed on December 28, 1994.

On December 29, 1994, following removal of approximately 198 cubic yards of potentially contaminated soil, post-excavation soil samples A, B, C, D, and DUP D were collected from a total of four (4) locations along the sidewalls of the UST excavation, immediately above groundwater. The samples were collected at a depth of 7.5 feet below ground surface (bgs). Groundwater was present at approximately 8.0 feet bgs. Sample F was collected along the former piping length of the excavation, which was approximately 2 feet in length. The piping sample was collected at a depth of 1.0 foot bgs. All samples were analyzed for total petroleum hydrocarbons (TPHC).

On January 27, 1995, one (1) post-excavation soil sample (sample D) was collected from the west sidewall, in the vicinity of sample D, and was analyzed for volatile organic compounds plus 15 tentatively identified compounds (VOCs). The sample was collected at a depth of 7.0 feet bgs. Because the excavation was left open for more than two weeks, the sample was collected by backhoe at approximately 2 feet into the sidewall.



### Findings - Soil

All post-excavation soil samples collected from the UST excavation and from below piping associated with the former UST at Building 616 contained TPHC concentrations below the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 milligrams per kilogram (mg/kg) (N.J.A.C. 7:26D and revisions dated February 3, 1994). Samples A, B, C, and F contained levels of TPHC ranging in concentration from 76.8 mg/kg to 244.0 mg/kg. Samples D and DUP D contained TPHC concentrations of 8,680.0 mg/kg and 6,700.0 mg/kg, respectively.

Due to excessive TPHC results from the west sidewall of the UST excavation, the area surrounding sample location D was resampled on January 27, 1995. The sample was analyzed for volatile organic compounds plus 15 tentatively identified compounds (VOCs). The sample contained methylene chloride at 0.10 mg/kg, acetone at 0.27 mg/kg (both known laboratory contaminants), 2-butanone at 0.54 mg/kg, ethylbenzene at 3.2 mg/kg, and total xylenes at 5.2 mg/kg. All of the detected VOCs were below the most stringent NJDEP soil cleanup criteria.

### Site Restoration

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 Quality Assurance

The sampling and laboratory analysis conducted during the site assessment were performed in accordance with Section 7:26E-2.1 of the *Technical Requirements for Site Remediation*.

### 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 616 area on August 17, 1995. It was installed approximately 27 feet south of Building 616 in the verified downgradient direction. It was screened in the 4- to 14-foot depth interval, across the water table, which is approximately 6 feet below ground surface.

On November 27, 1995 and December 18, 1995, MW-1 was sampled for volatile organic compounds calibrated for xylene plus 15 tentatively identified compounds (VOCs), and semivolatile organic compounds plus 15 tentatively identified compounds (SVOCs). Sampling and analysis were performed in accordance with the NJDEP *Field Sampling Procedures Manual* and the *Technical Requirements For Site Remediation*.



### Findings - Groundwater

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

The depth to the water table was 4.82 feet below grade on November 27, 1995, and 4.27 feet below grade on December 18, 1995.

### Conclusions and Recommendations

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

Based on the analytical results of the groundwater samples collected on November 27, 1995 and December 18, 1995, groundwater quality at the Building 616 UST closure site complies with the New Jersey Groundwater Quality Criteria for VOCs and SVOCs.

No further action is proposed in regard to the closure and site assessment of UST No. 081533-90 at Building 616.



## 1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

### 1.1 OVERVIEW

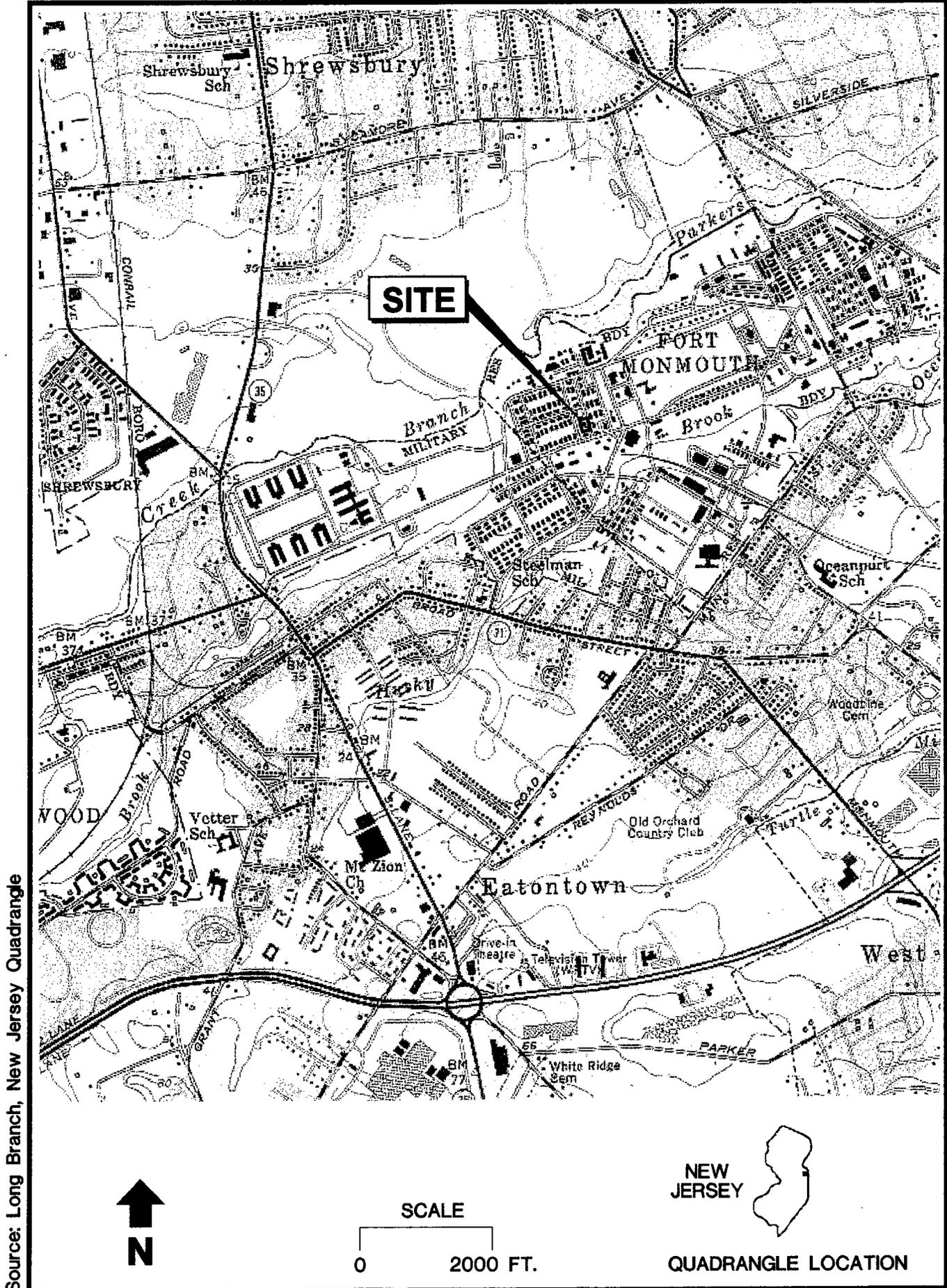
One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 081533-90, was closed at Building 616 at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey on December 7, 1994. Refer to site location map on Figure 1. This report presents the results of the DPW's implementation of the UST Decommissioning/Closure Plan submitted to the NJDEP on September 2, 1994. The plan was approved on October 7, 1994. The UST was a steel 1,000-gallon tank containing No. 2 fuel oil.

Decommissioning activities for UST No. 081533-90 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. 081533-90 proceeded under the approval of the NJDEP Bureau of Underground Storage Tanks (NJDEP-BUST). The NJDEP-BUST closure approval and signed certifications for UST No. 081533-90 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 and associated piping. On December 8, 1994, a spill was reported to the NJDEP "Hotline" for UST No. 081533-90 and was assigned Spill Case No. 94-12-8-1040-10. This spill case number was also assigned to building 686.

This UST Closure and Site Investigation Report has been prepared by Smith Technology Corporation. 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.



Source: Long Branch, New Jersey Quadrangle

## 1.2 SITE DESCRIPTION

Building 616 is located in the central portion of the Main Post area of Fort Monmouth, as shown on Figure 1. UST No. 081533-90 was located south of Building 616 and appurtenant piping ran approximately 2 feet north from the excavation to Building 616. 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 616. Included is a description of the regional geology of the area surrounding Fort Monmouth as well as descriptions of the local geology and hydrogeology of the Main Post area.

#### Regional Geology

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

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

The formations record several major transgressive/regressive cycles and contain units which are generally thicker to the southeast and reflect a deeper water environment. 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 Zapeczka, 1990).

#### Local Geology

Based on the regional geologic map (Jablonski, 1968), the Cretaceous age Red Bank and Tinton Sands outcrop at the Main Post area. The Red Bank sand conformably overlies the Navesink Formation and dips to the southeast at 35 feet per mile. The upper member

Source: Smith Technology Corporation (098)

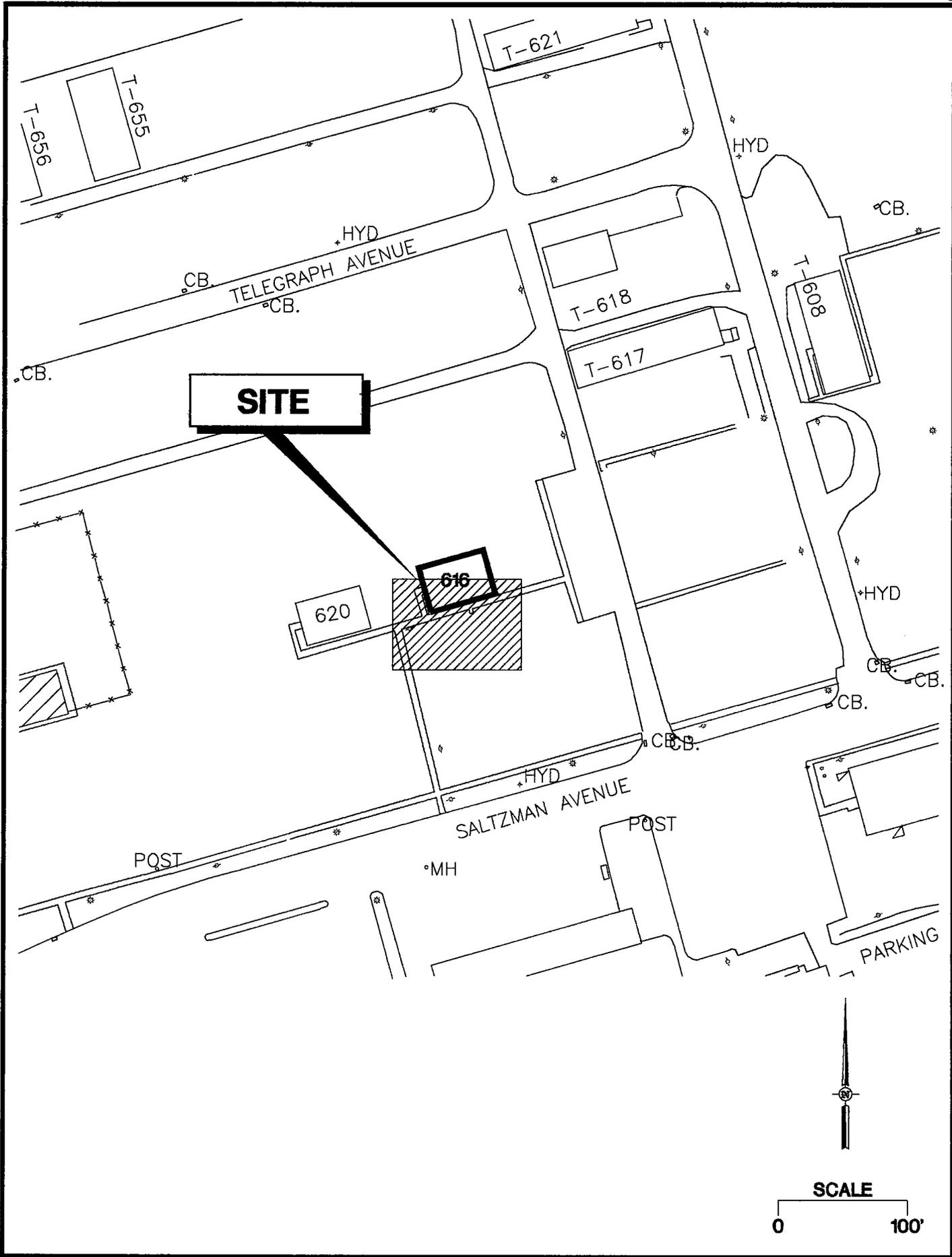


Figure 2  
**Building 616  
Site Map**



(Shrewsbury) of the Red Bank sand is a yellowish-gray to reddish brown clayey, medium-to-coarse-grained sand that contains abundant rock fragments, minor mica and glauconite (Jablonski). The lower member (Sandy Hook) is a dark gray to black, medium-to-fine grained sand with abundant clay, mica, and glauconite.

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

### Hydrogeology

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

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

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

## **1.3 HEALTH AND SAFETY**

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



## **1.4 REMOVAL OF UNDERGROUND STORAGE TANK**

### **1.4.1 General Procedures**

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

### **1.4.2 Underground Storage Tank Excavation and Cleaning**

Prior to UST decommissioning activities, surficial soil was removed to expose the UST and associated piping. All free product present in the piping was drained into the UST, and the UST was purged to remove vapors prior to cutting and removal of the piping. After removal of the associated piping, a manway was made in the UST to allow for proper cleaning. The UST was completely emptied of all liquids prior to removal from the ground. Approximately 25 gallons of liquid were transported by Freehold Cartage Inc. to Lionetti Oil Recovery Co. Inc., a NJDEP-approved petroleum recycling and disposal company located in Old Bridge, New Jersey. Refer to Appendix C for the waste manifest (NJA-1907259).

The UST was cleaned prior to removal from the excavation in accordance with the NJDEP-BUST regulations. After the UST was removed from the excavation, it was staged on polyethylene sheeting and examined for holes. Several holes were observed during the inspection by the Sub-Surface Evaluator. Soils surrounding the UST were screened visually and with an OVA for evidence of contamination. Potentially contaminated soils were observed within the excavation.

Soil screening was also performed along the piping associated with the UST. No contamination was noted anywhere along the piping length.



## **1.5 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL**

The tank was transported by CUTE Inc. to Mazza and Sons Inc. for disposal in compliance with all applicable regulations and laws. See Appendix D for UST Disposal Certificate.

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

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

## **1.6 MANAGEMENT OF EXCAVATED SOILS**

Based on visual observations, approximately 396 cubic yards of potentially contaminated soils had been excavated from 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 the hazardous storage area on Main Post prior to ultimate disposal at Soil Remediation of Philadelphia. Soils that did not exhibit signs of contamination were used as backfill following removal of the UST.



## 2.0 SITE INVESTIGATION ACTIVITIES

### 2.1 OVERVIEW

The Site Investigation was managed and carried out by U.S. Army DPW personnel. All TPHC analyses were performed and reported by U.S. Army Fort Monmouth Environmental Laboratory Inc. All VOC analyses were performed and reported by Princeton Testing Laboratory Inc. Both laboratories are NJDEP-certified testing laboratories. All sampling was performed under the direct supervision of a NJDEP Certified Sub-Surface Evaluator according to the methods described in the NJDEP *Field Sampling Procedures Manual* (1992). Sampling frequency and parameters analyzed complied with 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)  
Closure Supervisor: George Bernotsky  
Phone Number: (201) 427-2881  
NJDEP Certification No.: 3249
- 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: Princeton Testing Laboratory  
Contact Person: W. Alan Volk  
Phone Number: (609)452-9050  
NJDEP Company Certification No.: 11118
- Hazardous Waste Hauler: Freehold Cartage Inc.  
Contact Person: Barry Olsen  
Phone Number: (908) 721-0900  
NJDEP Hazardous Waste Hauler No.: 2265

## 2.2 FIELD SCREENING/MONITORING

Field screening was performed by a NJDEP Certified Sub-Surface Evaluator using an OVA and visual observations to identify potentially contaminated material. Soils were removed from the UST excavation and associated piping area until no evidence of contamination remained.

## 2.3 SOIL SAMPLING

Due to field screening of subsurface soils, approximately 18 cubic yards of potentially contaminated soil were removed from the excavation on December 9, 1994. An additional 180 cubic yards of potentially contaminated soil were removed from the excavation on December 28, 1994.

On December 29, 1994, following removal of approximately 198 cubic yards of potentially contaminated soil, post-excavation soil samples A, B, C, D, and DUP D were collected from a total of four (4) locations along the sidewalls of the UST excavation, immediately above groundwater. The samples were collected at a depth of 7.5 feet below ground surface (bgs). Groundwater was present at approximately 8.0 feet bgs. Sample F was collected along the former piping length of the excavation, which was approximately 2 feet in length. The piping sample was collected at a depth of 1.0 feet bgs. All samples were analyzed for total petroleum hydrocarbons (TPHC).

On January 27, 1995, post-excavation soil sample D was collected from the expanded portions of the excavation, in the vicinity of sample D, and was analyzed for volatile organic compounds plus 15 tentatively identified compounds (VOCs). The sample was collected at a depth of 7.0 feet bgs. Because the excavation was open for more than 2 weeks, the sample was collected by backhoe at approximately 2 feet into the sidewall.

The site assessment was performed by U.S. Army personnel in accordance with the NJDEP *Technical Requirements* and the NJDEP *Field Sampling Procedures Manual*. A summary of sampling activities including parameters analyzed is provided in Table 1. Following soil sampling activities, the TPHC samples were chilled and delivered to U.S. Army Fort Monmouth Environmental Laboratory located in Fort Monmouth, New Jersey, for analysis. The VOC samples were chilled and delivered to Princeton Testing Laboratory Inc., located in Princeton, New Jersey, for analysis.

## 2.4 GROUNDWATER SAMPLING

### 2.4.1 Monitoring Well Installation

In response to the observation of potentially contaminated soil near the shallow water table, one shallow monitoring well (MW-1) was installed at the Building 616 area on August 17, 1995. It was installed approximately 27 feet south of Building 616 in the assumed downgradient direction.

TABLE 1  
PAGE 1 OF 1

SUMMARY OF SAMPLING ACTIVITIES  
BUILDING 616, MAIN POST  
FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Matrix	Sample Type	Analytical Parameters (and USEPA Methods) *	Sampling Method
A	12/29/94	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
B	12/29/94	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
C	12/29/94	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
D	12/29/94	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
Dup D	12/29/94	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
F	12/29/94	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
D	01/27/95	Soil	Post-Excavation	VOCs	Stainless Steel Scoop
MW-1	11/27/95	Aqueous	Groundwater	VOCs, SVOCs	Teflon Bottom Bailer
MW-1	12/18/95	Aqueous	Groundwater	VOCs, SVOCs	Teflon Bottom Bailer

\* Note:  
TPHC Total Petroleum Hydrocarbons (Method 418.1 / soil and aqueous)  
VOCs Volatile Organic Compounds calibrated for Xylene plus 15 tentatively identified compounds (Method 524.2 / aqueous)  
SVOCs Semivolatile Organic Compounds plus 15 tentatively identified compounds (Method 625 / aqueous)

Smith Technology Corporation (Project No. 09-5004-08)



It was screened in the 4- to 14 foot 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.

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 0.5 inches bgs. The well was secured with a steel protective casing with a stickup that is approximately 2.5 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.

#### **2.4.1 Monitoring Well Sampling**

On November 27, 1995 and December 18, 1995, MW-1 was sampled for volatile organic compounds calibrated for xylene plus 15 tentatively identified compounds (VOCs), and semivolatile organic compounds plus 15 tentatively identified compounds (SVOCs). Sampling and analysis were performed in accordance with the NJDEP *Field Sampling Procedures Manual* and the *Technical Requirements For Site Remediation*.

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



### 3.0 CONCLUSIONS AND RECOMMENDATIONS

#### 3.1 SOIL SAMPLING RESULTS

To evaluate soil conditions following removal of the UST and associated piping, post-excavation soil samples were collected from a total of five (5) locations on December 29, 1994, and were analyzed for TPHC. Due to excessive TPHC results, one (1) post-excavation soil sample was collected from the west side of the excavation in the vicinity of sample D on January 27, 1995. The sample was analyzed for VOCs. The post-excavation sampling results were compared to the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 mg/kg (N.J.A.C. 7:26D and revisions dated February 3, 1994). A summary of the analytical results and comparison to the NJDEP soil cleanup criteria is provided in Table 2 and the soil sampling results are shown on Figure 3. The analytical data package is provided in Appendix E.

All post-excavation soil samples collected from the UST excavation and from below piping associated with the former UST at Building 616 contained TPHC concentrations below the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 milligrams per kilogram (mg/kg) (N.J.A.C. 7:26D and revisions dated February 3, 1994). Samples A, B, C, and F contained levels of TPHC ranging in concentration from 76.8 mg/kg to 244.0 mg/kg. Samples D and DUP D contained TPHC concentrations of 8,680.0 mg/kg and 6,700.0 mg/kg, respectively.

Due to excessive TPHC results from samples D and DUP D, soils surrounding the former sample location was resampled on January 27, 1995. The sample was analyzed for VOCs. The sample contained methylene chloride at a concentration of 0.10 mg/kg, acetone at 0.27 mg/kg (both are known laboratory contaminants), 2-butanone at 0.54 mg/kg, ethylbenzene at 3.2 mg/kg, and total xylenes at 5.2 mg/kg. All of the detected VOCs were below the most stringent NJDEP soil cleanup criteria.

#### 3.2 GROUNDWATER SAMPLING RESULTS

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

The sample collected from MW-1 on November 27, 1995, contained methylene chloride at 3.2 ug/l. No other compounds were detected.

The sample collected from MW-1 on December 18, 1995, contained methylene chloride at 1.0 ug/l. No other compounds were detected.

TABLE 2  
PAGE 1 OF 2

POST-EXCAVATION SOIL SAMPLING RESULTS  
BUILDING 616, MAIN POST  
FORT MONMOUTH, NEW JERSEY

Sample ID/Depth	Sample Laboratory ID	Sample Date	Analysis Date	Compound Name	Sample quantitation Limit (mg/kg)	Compound of Concern	Result (mg/kg)	NJDEP Soil Cleanup Criteria * (mg/kg)	Exceeds Cleanup Criteria
A/7.5-8.0'	1773.1	12/29/94	12/29/94	Total Solid TPHC	--	--	80 %	--	--
B/7.5-8.0'	1773.2	12/29/94	12/29/94	Total Solid TPHC	8.1	yes	244.0	10,000	--
C/7.5-8.0'	1773.3	12/29/94	12/29/94	Total Solid TPHC	8.1	yes	89 %	10,000	--
D/7.5-8.0'	1773.4	12/29/94	12/29/94	Total Solid TPHC	7.9	yes	85.4	--	--
Dup D/7.5-8.0'	1773.5	12/29/94	12/29/94	Total Solid TPHC	53.0	yes	81 %	10,000	--
F/8.0-8.5'	1773.6	12/29/94	12/29/94	Total Solid TPHC	7.6	yes	91.9	--	--
							83 %	10,000	--
							8,680.0	10,000	--
							90 %	--	--
							76.8	10,000	--
							84 %	--	--
							6,700.0	10,000	--

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

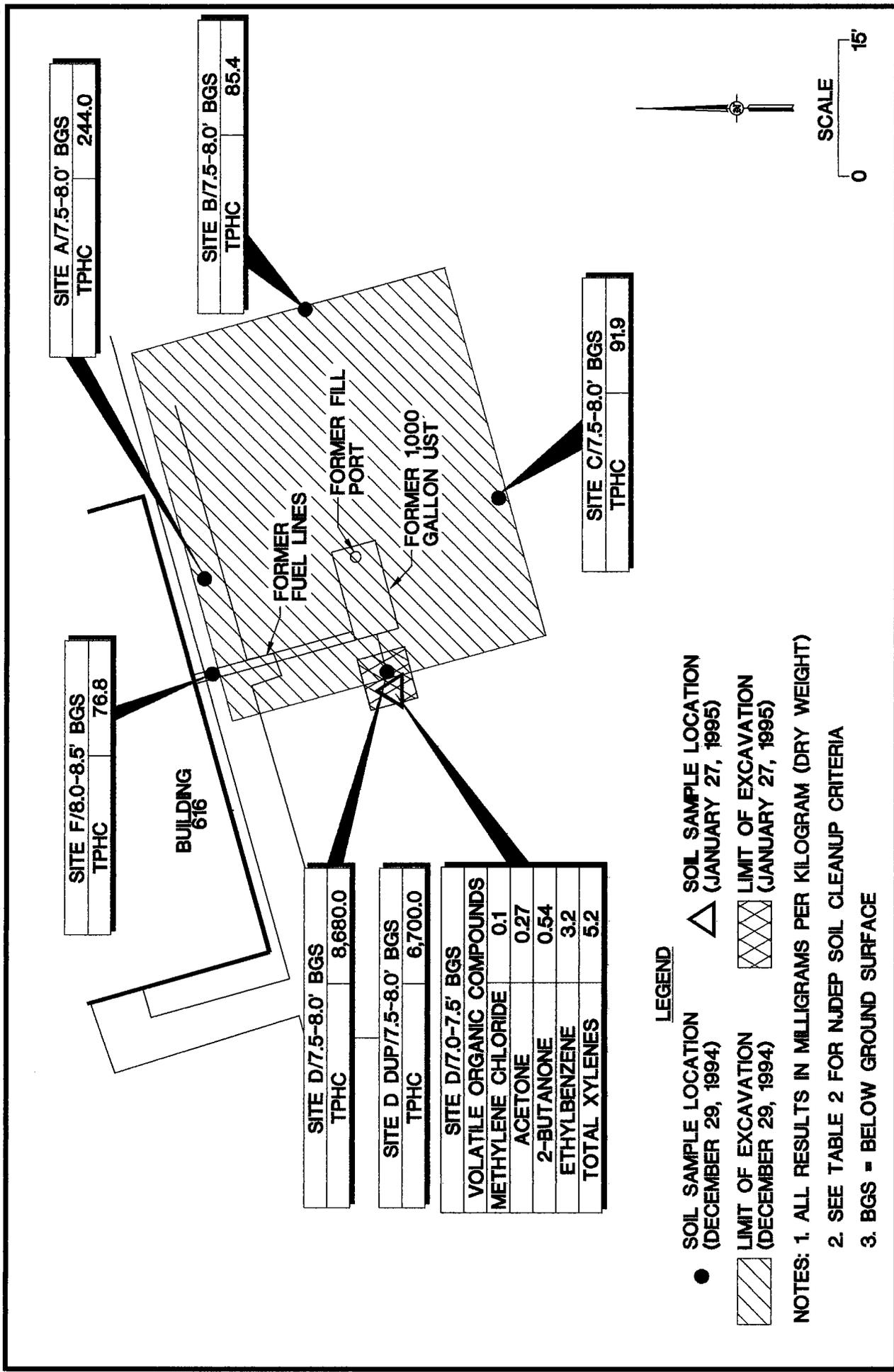
TABLE 2  
PAGE 2 OF 2

POST-EXCAVATION SOIL SAMPLING RESULTS  
BUILDING 616, MAIN POST, SITE D  
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
D/7.0-7.5'	01/27/95	01/30/95	Chloromethane	0.63	--	ND	520/10	--
			Bromomethane	0.63	--	ND	79/1	--
			Vinyl chloride	0.63	--	ND	2/10	--
			Chloroethane	0.63	--	ND	--	--
			Methylene chloride	0.63	--	0.10 JB	49/1	--
			Acetone	0.31	--	0.27 JB	1,000/100	--
			Carbon disulfide	0.31	--	ND	--	--
			1,1-Dichloroethene	0.31	--	ND	8/10	--
			1,1-Dichloroethane	0.31	--	ND	570/10	--
			1,2-Dichloroethene (total)	0.31	--	ND	--	--
			Chloroform	0.31	--	ND	19/1	--
			1,2-Dichloroethane	0.31	--	ND	6/1	--
			2-Butanone	0.31	--	0.54 B	1,000/50	--
			1,1,1-Trichloroethane	0.31	--	ND	210/50	--
			Carbon tetrachloride	0.31	--	ND	2/1	--
			Bromodichloromethane	0.31	--	ND	11/1	--
			1,1,2,2-Tetrachloroethane	0.31	--	ND	34/1	--
			1,2-Dichloropropane	0.31	--	ND	--	--
			trans-1,3-Dichloropropene	0.31	--	ND	4/1	--
			Trichloroethene	0.31	--	ND	--	--
			Dibromochloromethane	0.31	--	ND	110/1	--
			1,1,2-Trichloroethane	0.31	--	ND	22/1	--
			Benzene	0.31	--	ND	3/1	--
			cis-1,3-Dichloropropene	0.31	--	ND	4/1	--
			Bromoform	0.31	--	ND	86/1	--
			2-Hexanone	0.31	--	ND	--	--
			4-Methyl-2-Pentanone	0.31	--	ND	1,000/50	--
			Tetrachloroethene	0.31	--	ND	4/1 **	--
			Toluene	0.31	--	ND	1,000/500	--
			Chlorobenzene	0.31	--	ND	37/1	--
			Ethylbenzene	0.31	--	3.2	1,000/100	--
			Styrene	0.31	--	ND	23/100	--
			Total Xylenes	0.31	--	5.2	410/10	--

NOTES

- \* Residential Direct Contact / Impact to Groundwater
- Not applicable / does not exceed criteria
- (J) Indicates detected below sample quantitation limit
- (B) Indicates also present in blank
- (ND) Indicates compound not detected



Source: Smith Technology Corporation (099)



The depth to the water table was 4.82 feet below grade on November 27, 1995, and 4.27 feet below grade on December 18, 1995.

All groundwater analytical results are presented in Table 3 and shown on Figure 4. The groundwater analytical data package is provided in Appendix G. The full data package, including quality control data, is on file at U.S. Army Fort Monmouth, DPW.

### **3.3 CONCLUSIONS AND RECOMMENDATIONS**

The analytical results for all post-excavation soil samples collected from the UST closure excavation at Building 616 were below the NJDEP soil cleanup criteria for total organic contaminants.

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

Based on the analytical results of the groundwater samples collected on November 27, 1995 and December 18, 1995, groundwater quality at the Building 616 UST closure site complies with the New Jersey Groundwater Quality Criteria for VOCs and SVOCs.

No further action is proposed in regard to the closure and site assessment of UST No. 081533-90 at Building 616.

TABLE 3  
PAGE 1 OF 20

GROUNDWATER SAMPLING RESULTS  
BUILDING 616, 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)	GMQC (ug/L)	Exceeds Criteria
MW-1	11/27/95	12/11/95	Dichlorodifluoromethane	0.50	--	ND	--	--
			Chloromethane	0.50	--	ND	--	--
			Vinyl Chloride	0.50	--	ND	--	--
			Bromomethane	0.50	--	ND	5	--
			Chloroethane	0.50	--	ND	--	--
			Trichlorofluoromethane	0.50	--	ND	--	--
			1,1-Dichloroethene	0.50	--	ND	--	--
			Methylene Chloride	0.50	--	ND	2	--
			1,2-Dichloroethene (trans)	3.2	--	3.2 B	100*	--
			1,1 Dichloroethane	0.50	--	ND	2*	--
			2,2-Dichloropropane	0.50	--	ND	70	--
			cis-1,2-Dichloroethene	0.50	--	ND	--	--
			Bromochloromethane	0.50	--	ND	--	--
			Chloroform	0.50	--	ND	10*	--
			1,1,1-Trichloroethane	0.50	--	ND	6	--
			Carbon Tetrachloride	0.50	--	ND	--	--
			1,1-Dichloropropene	0.50	--	ND	2	--
			Benzene	0.50	--	ND	30	--
			1,2-Dichloroethane	0.50	--	ND	--	--
			Trichloroethene	0.50	--	ND	2	--
			1,2-Dichloropropane	0.50	--	ND	1	--
			Dibromomethane	0.50	--	ND	1	--
			Bromodichloromethane	0.50	--	ND	NA	--
			cis-1,3-Dichloropropene	0.50	--	ND	--	--
			Toluene	0.50	--	ND	1	--
			trans-1,3-Dichloropropene	0.50	--	ND	10	--
			1,1,2-Trichloroethane	0.50	--	ND	3	--
			Tetrachloroethene	0.50	--	ND	1	--
			1,3-Dichloropropane	0.50	--	ND	NA	--
			Dibromochloromethane	0.50	--	ND	4	--
			1,2-Dibromomethane	0.50	--	ND	10	--
			Chlorobenzene	0.50	--	ND	1*	--
			1,1,2,2-Tetrachloroethane	0.50	--	ND	2	--
			Ethylbenzene	0.50	--	ND	1,000	--
			Xylenes (Total)	0.50	--	ND	--	--
			Styrene	0.50	--	ND	4	--
			Bromoform	0.50	--	ND	700	--
			Isopropylbenzene	0.50	--	ND	40	--
			Bromobenzene	0.50	--	ND	100	--
			1,1,2,2-Tetrachloroethane	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	--	--

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GROUNDWATER SAMPLING RESULTS  
BUILDING 616, 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)	GMQC (ug/l)	Exceeds Criteria
MW-1	11/27/95	12/11/95	tert-Butylbenzene	0.50	--	ND	--	--
			1,2,4-Trimethylbenzene	0.50	--	ND	--	--
			sec-Butylbenzene	0.50	--	ND	--	--
			1,3-Dichlorobenzene	0.50	--	ND	600	--
			4-Isopropyltoluene	0.50	--	ND	75	--
			1,4-Dichlorobenzene	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	--	--
			Methy-tertiary butyl ether	0.50	--	ND	--	--
			tertiary-Butyl alcohol	2.0	--	ND	--	--
			Column Bleed	--	--	1 J	--	---
			Column Bleed	--	--	2 J	--	---

TENTATIVELY IDENTIFIED COMPOUNDS:

Notes:

- Not applicable / does not exceed criteria
- (B) Indicates also present in blank
- (ND) Indicates compound not detected
- (NA) Not available for this constituent
- (J) Indicates detected below sample quantitation limit
- GMQC Ground Water Quality Criteria

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TABLE 3  
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GROUNDWATER SAMPLING RESULTS  
BUILDING 616, 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	11/27/95	12/8/95	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	--
			Anthracene	2	--	ND	2,000	--
			Di-n-butylphthalate	5	--	ND	900	--
			Fluoranthene	1	--	ND	300	--
			Benidine	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	--

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GROUNDWATER SAMPLING RESULTS  
BUILDING 616, MAIN POST, MW-1  
FORT MONMOUTH, NEW JERSEY  
SEMIVOLATILE ORGANICS (Continued)

Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/L)	Compound of Concern	Result (ug/L)	GMQC (ug/L)	Exceeds Criteria
MW-1	11/27/95	12/8/95	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	--
			Unknown Hydrocarbon	--	--	6 J	--	--

TENTATIVELY IDENTIFIED COMPOUNDS:

Notes:

- Not applicable / does not exceed criteria
- (B) Indicates also present in blank
- (ND) Indicates compound not detected
- (NA) Not available for this constituent
- (J) Indicates detected below sample quantitation limit
- GMQC Ground Water Quality Criteria

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GROUNDWATER SAMPLING RESULTS  
BUILDING 616, 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)	GMQC (ug/L)	Exceeds Criteria
Trip Blank	11/27/95	12/5/95	Dichlorodifluoromethane	0.50	--	ND	--	--
			Chloromethane	0.50	--	ND	--	--
			Vinyl Chloride	0.50	--	ND	--	--
			Bromomethane	0.50	--	ND	5	--
			Chloroethane	0.50	--	ND	--	--
			Trichlorofluoromethane	0.50	--	ND	--	--
			1,1-Dichloroethene	0.50	--	ND	--	--
			Methylene Chloride	0.50	--	0.70 B	100*	--
			1,2-Dichloroethene (trans)	0.50	--	ND	2*	--
			1,1 Dichloroethane	0.50	--	ND	70	--
			1,1 Dichloropropane	0.50	--	ND	--	--
			2,2-Dichloropropane	0.50	--	ND	--	--
			cis-1,2-Dichloroethene	0.50	--	ND	--	--
			Bromochloromethane	0.50	--	ND	10*	--
			Chloroform	0.50	--	ND	6	--
			1,1,1-Trichloroethane	0.50	--	ND	--	--
			Carbon Tetrachloride	0.50	--	ND	2	--
			1,1-Dichloropropene	0.50	--	ND	30	--
			Benzene	0.50	--	ND	--	--
			1,2-Dichloroethane	0.50	--	ND	2	--
			Trichloroethene	0.50	--	ND	1	--
			1,2-Dichloropropane	0.50	--	ND	1	--
			Dibromomethane	0.50	--	ND	NA	--
			Bromodichloromethane	0.50	--	ND	--	--
			cis-1,3-Dichloropropene	0.50	--	ND	1	--
			Toluene	0.50	--	ND	10	--
			trans-1,3-Dichloropropene	0.50	--	ND	3	--
			1,1,2-Trichloroethane	0.50	--	ND	1	--
			Tetrachloroethene	0.50	--	ND	NA	--
			1,3-Dichloropropane	0.50	--	ND	4	--
			Dibromochloromethane	0.50	--	ND	10	--
			1,2-Dibromomethane	0.50	--	ND	1*	--
			Chlorobenzene	0.50	--	ND	2	--
			1,1,2,2-Tetrachloroethane	0.50	--	ND	1,000	--
			Ethylbenzene	0.50	--	ND	--	--
			Xylenes (Total)	0.50	--	ND	4	--
			Styrene	0.50	--	ND	700	--
			Bromoform	0.50	--	ND	40	--
			Isopropylbenzene	0.50	--	ND	100	--
			Bromobenzene	0.50	--	ND	--	--
			1,1,2,2-Tetrachloroethane	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	--	--

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GROUNDWATER SAMPLING RESULTS  
BUILDING 616, 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)	GMQC (ug/l)	Exceeds Criteria
Trip Blank	11/27/95	12/5/95	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	--
			4-Isopropyltoluene	0.50	--	ND	75	--
			1,4-Dichlorobenzene	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	--	--
			Methy-tertiary butyl ether	0.50	--	ND	--	--
			tertiary-Butyl alcohol	2.0	--	ND	--	--
TENTATIVELY IDENTIFIED COMPOUNDS:			Furan, tetrahydro-	--	--	3 J	--	--
			Column Bleed	--	--	1 J	--	--

Notes:

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

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GROUNDWATER SAMPLING RESULTS  
BUILDING 616, 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)	GWQC (ug/L)	Exceeds Criteria
Field Blank	11/27/95	12/5/95	Dichlorodifluoromethane	0.50	--	ND	--	--
			Chloromethane	0.50	--	ND	--	--
			Vinyl Chloride	0.50	--	ND	--	--
			Bromomethane	0.50	--	ND	5	--
			Chloroethane	0.50	--	ND	--	--
			Trichlorofluoromethane	0.50	--	ND	--	--
			1,1-Dichloroethene	0.50	--	ND	--	--
			Methylene Chloride	0.60 B	--	0.60 B	2	--
			1,2-Dichloroethene (trans)	0.50	--	ND	100*	--
			1,1 Dichloroethane	0.50	--	ND	2*	--
			2,2-Dichloropropane	0.50	--	ND	70	--
			cis-1,2-Dichloroethene	0.50	--	ND	--	--
			Bromochloromethane	0.50	--	ND	--	--
			Chloroform	0.50	--	ND	10*	--
			1,1,1-Trichloroethane	0.50	--	ND	6	--
			Carbon Tetrachloride	0.50	--	ND	--	--
			1,1-Dichloropropene	0.50	--	ND	2	--
			Benzene	0.50	--	ND	30	--
			1,2-Dichloroethane	0.50	--	ND	--	--
			Trichloroethene	0.50	--	ND	2	--
			1,2-Dichloropropane	0.50	--	ND	1	--
			Dibromomethane	0.50	--	ND	1	--
			Bromodichloromethane	0.50	--	ND	NA	--
			cis-1,3-Dichloropropene	0.50	--	ND	--	--
			Toluene	0.50	--	ND	1	--
			trans-1,3-Dichloropropene	0.50	--	ND	10	--
			1,1,2-Trichloroethane	0.50	--	ND	3	--
			Tetrachloroethene	0.50	--	ND	1	--
			1,3-Dichloropropane	0.50	--	ND	NA	--
			Dibromochloromethane	0.50	--	ND	4	--
			1,2-Dibromomethane	0.50	--	ND	10	--
			Chlorobenzene	0.50	--	ND	1*	--
			1,1,2,2-Tetrachloroethane	0.50	--	ND	2	--
			Ethylbenzene	0.50	--	ND	1,000	--
			Xylenes (Total)	0.50	--	ND	--	--
			Styrene	0.50	--	ND	4	--
			Bromoform	0.50	--	ND	700	--
			Isopropylbenzene	0.50	--	ND	40	--
			Bromobenzene	0.50	--	ND	100	--
			1,1,2,2-Tetrachloroethane	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	--	--

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GROUNDWATER SAMPLING RESULTS  
BUILDING 616, 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)	GWQC (ug/L)	Exceeds Criteria
Field Blank	11/27/95	12/5/95	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	--
			4-Isopropyltoluene	0.50	--	ND	75	--
			1,4-Dichlorobenzene	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	--	--
			Methy-tertiary butyl ether	0.50	--	ND	--	--
			tertiary-Butyl alcohol	2.0	--	ND	--	--
TENTATIVELY IDENTIFIED COMPOUNDS:								
			Column Bleed	--	--	1 J	--	--
			Furan, tetrahydro-	--	--	3 J	--	--
			Column Bleed	--	--	1 J	--	--
			Unknown Hydrocarbon	--	--	2 J	--	--

Notes:

- Not applicable / does not exceed criteria
- (B) Indicates also present in blank
- (ND) Indicates compound not detected
- (NA) Not available for this constituent
- (J) Indicates detected below sample quantitation limit
- GWQC Ground Water Quality Criteria

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GROUNDWATER SAMPLING RESULTS  
BUILDING 616, MAIN POST, FIELD BLANK  
FORT MONMOUTH, NEW JERSEY  
SEMITVOLATILES

Sample ID	Sample Date	Analysis Date	Compound Name	Compound of Concern	Sample Quantitation Limit (ug/l)	Result (ug/l)	GWQC (ug/l)	Exceeds Criteria
Field Blank	11/27/95	12/8/95	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	--
			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	--

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GROUNDWATER SAMPLING RESULTS  
BUILDING 616, 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)	GMQC (ug/L)	Exceeds Criteria
Field Blank	11/27/95	12/8/95	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	--
TENTATIVELY IDENTIFIED COMPOUNDS:								
			Unknown Hydrocarbon	--	--	5 J	--	--
			Hexadecanoic acid	--	--	2 J	--	--

Notes:

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

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GROUNDWATER SAMPLING RESULTS  
BUILDING 616, 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)	GMQC (ug/L)	Exceeds Criteria
MW-1	12/18/95	12/29/95	Dichlorodifluoromethane	0.50	--	ND	--	--
			Chloromethane	0.50	--	ND	--	--
			Vinyl Chloride	0.50	--	ND	--	--
			Bromomethane	0.50	--	ND	5	--
			Chloroethane	0.50	--	ND	--	--
			Trichlorofluoromethane	0.50	--	ND	--	--
			1,1-Dichloroethene	0.50	--	ND	--	--
			Methylene Chloride	1.0	--	1.0 B	100*	--
			1,2-Dichloroethene (trans)	0.50	--	ND	2*	--
			1,1-Dichloroethane	0.50	--	ND	70	--
			2,2-Dichloropropane	0.50	--	ND	--	--
			cis-1,2-Dichloroethene	0.50	--	ND	--	--
			Bromochloromethane	0.50	--	ND	10*	--
			Chloroform	0.50	--	ND	6	--
			1,1,1-Trichloroethane	0.50	--	ND	--	--
			Carbon Tetrachloride	0.50	--	ND	2	--
			1,1-Dichloropropene	0.50	--	ND	30	--
			Benzene	0.50	--	ND	--	--
			1,2-Dichloroethane	0.50	--	ND	2	--
			Trichloroethene	0.50	--	ND	1	--
			1,2-Dichloropropane	0.50	--	ND	1	--
			Dibromomethane	0.50	--	ND	NA	--
			Bromodichloromethane	0.50	--	ND	--	--
			cis-1,3-Dichloropropene	0.50	--	ND	1	--
			Toluene	0.50	--	ND	10	--
			trans-1,3-Dichloropropene	0.50	--	ND	3	--
			1,1,2-Trichloroethane	0.50	--	ND	1	--
			Tetrachloroethene	0.50	--	ND	NA	--
			1,3-Dichloropropane	0.50	--	ND	4	--
			Dibromochloromethane	0.50	--	ND	10	--
			1,2-Dibromomethane	0.50	--	ND	1*	--
			Chlorobenzene	0.50	--	ND	2	--
			1,1,2,2-Tetrachloroethane	0.50	--	ND	1,000	--
			Ethylbenzene	0.50	--	ND	--	--
			Xylenes (Total)	0.50	--	ND	4	--
			Styrene	0.50	--	ND	700	--
			Bromoform	0.50	--	ND	40	--
			Isopropylbenzene	0.50	--	ND	100	--
			Bromobenzene	0.50	--	ND	--	--
			1,1,2,2-Tetrachloroethane	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	--	--

TABLE 3  
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GROUNDWATER SAMPLING RESULTS  
BUILDING 616, 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)	GMQC (ug/L)	Exceeds Criteria
MW-1	12/18/95	12/29/95	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	--
			4-Isopropyltoluene	0.50	--	ND	75	--
			1,4-Dichlorobenzene	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	--	--
			Methy-tertiary butyl ether	0.50	--	ND	--	--
			tertiary-Butyl alcohol	2.0	--	ND	--	--
TENTATIVELY IDENTIFIED COMPOUNDS:								
			Column Bleed	--	--	1 J	--	--
			Column Bleed	--	--	5 J	--	--

Notes:

- Not applicable / does not exceed criteria
- (B) Indicates also present in blank
- (ND) Indicates compound not detected
- (NA) Not available for this constituent
- (J) Indicates detected below sample quantitation limit
- GMQC Ground Water Quality Criteria

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TABLE 3  
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GROUNDWATER SAMPLING RESULTS  
BUILDING 616, 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	12/18/95	12/26/95	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	100	--
			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	--
			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	--

TABLE 3  
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GROUNDWATER SAMPLING RESULTS  
BUILDING 616, 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	12/18/95	12/26/95	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	--
			NONE FOUND	--	--	--	--	--

TENTATIVELY IDENTIFIED COMPOUNDS:

Notes:

- Not applicable / does not exceed criteria
- (B) Indicates also present in blank
- (ND) Indicates compound not detected
- (NA) Not available for this constituent
- (J) Indicates detected below sample quantitation limit
- GWQC Ground Water Quality Criteria

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TABLE 3  
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GROUNDWATER SAMPLING RESULTS  
BUILDING 616, 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)	GWQC (ug/l)	Exceeds Criteria
Trip Blank	12/18/95	12/29/95	Dichlorodifluoromethane	0.50	--	ND	--	--
			Chloromethane	0.50	--	ND	--	--
			Vinyl Chloride	0.50	--	ND	--	--
			Bromomethane	0.50	--	ND	5	--
			Chloroethane	0.50	--	ND	--	--
			Trichlorofluoromethane	0.50	--	ND	--	--
			1,1-Dichloroethene	0.50	--	ND	--	--
			Methylene Chloride	1.4	--	1.4 B	100*	--
			1,2-Dichloroethene (trans)	0.50	--	ND	2*	--
			1,1 Dichloroethane	0.50	--	ND	70	--
			2,2-Dichloropropane	0.50	--	ND	--	--
			cis-1,2-Dichloroethene	0.50	--	ND	--	--
			Bromochloromethane	0.50	--	ND	10*	--
			Chloroform	0.50	--	ND	6	--
			1,1,1-Trichloroethane	0.50	--	ND	--	--
			Carbon Tetrachloride	0.50	--	ND	2	--
			1,1-Dichloropropene	0.50	--	ND	30	--
			Benzene	0.50	--	ND	--	--
			1,2-Dichloroethane	0.50	--	ND	2	--
			Trichloroethene	0.50	--	ND	1	--
			1,2-Dichloropropane	0.50	--	ND	1	--
			Dibromomethane	0.50	--	ND	NA	--
			Bromodichloromethane	0.50	--	ND	--	--
			cis-1,3-Dichloropropene	0.50	--	ND	1	--
			Toluene	0.50	--	ND	10	--
			trans-1,3-Dichloropropene	0.50	--	ND	3	--
			1,1,2-Trichloroethane	0.50	--	ND	1	--
			Tetrachloroethene	0.50	--	ND	NA	--
			1,3-Dichloropropane	0.50	--	ND	4	--
			Dibromochloromethane	0.50	--	ND	10	--
			1,2-Dibromomethane	0.50	--	ND	1*	--
			Chlorobenzene	0.50	--	ND	2	--
			1,1,2,2-Tetrachloroethane	0.50	--	ND	1,000	--
			Ethylbenzene	0.50	--	ND	--	--
			Xylenes (Total)	0.50	--	ND	4	--
			Styrene	0.50	--	ND	700	--
			Bromoform	0.50	--	ND	40	--
			Isopropylbenzene	0.50	--	ND	100	--
			Bromobenzene	0.50	--	ND	--	--
			1,1,2,2-Tetrachloroethane	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	--	--

TABLE 3  
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GROUNDWATER SAMPLING RESULTS  
BUILDING 616, 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)	GMQC (ug/l)	Exceeds Criteria
Trip Blank	12/18/95	12/29/95	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	--
			4-Isopropyltoluene	0.50	--	ND	75	--
			1,4-Dichlorobenzene	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	--	--
			Methy-tertiary butyl ether	0.50	--	ND	--	--
			tertiary-Butyl alcohol	2.0	--	ND	--	--
<b>TENTATIVELY IDENTIFIED COMPOUNDS:</b>								
			Furan, tetrahydro-	--	--	2 J	--	--
			Column Bleed	--	--	2 J	--	--
			Column Bleed	--	--	1 J	--	--

Notes:

- Not applicable / does not exceed criteria
- (B) Indicates also present in blank
- (ND) Indicates compound not detected
- (NA) Not available for this constituent
- (J) Indicates detected below sample quantitation limit
- GMQC Ground Water Quality Criteria

Smith Technology Corporation (Project No. 09-5004-08)

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GROUNDWATER SAMPLING RESULTS  
BUILDING 616, 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)	GMQC (ug/L)	Exceeds Criteria
Field Blank	12/18/95	12/29/95	Dichlorodifluoromethane	0.50	--	ND	--	--
			Chloromethane	0.50	--	ND	--	--
			Vinyl Chloride	0.50	--	ND	--	--
			Bromomethane	0.50	--	ND	5	--
			Chloroethane	0.50	--	ND	--	--
			Trichlorofluoromethane	0.50	--	ND	--	--
			1,1-Dichloroethene	0.50	--	ND	2	--
			Methylene Chloride	1.4	--	1.4 B	100*	--
			1,2-Dichloroethene (trans)	0.50	--	ND	2*	--
			1,1 Dichloroethane	0.50	--	ND	70	--
			2,2-Dichloropropane	0.50	--	ND	--	--
			cis-1,2-Dichloroethene	0.50	--	ND	--	--
			Bromochloromethane	0.50	--	ND	10*	--
			Chloroform	0.50	--	ND	6	--
			1,1,1-Trichloroethane	0.50	--	ND	--	--
			Carbon Tetrachloride	0.50	--	ND	2	--
			1,1-Dichloropropene	0.50	--	ND	30	--
			Benzene	0.50	--	ND	--	--
			1,2-Dichloroethane	0.50	--	ND	2	--
			Trichloroethene	0.50	--	ND	1	--
			1,2-Dichloropropane	0.50	--	ND	1	--
			Dibromomethane	0.50	--	ND	NA	--
			Bromodichloromethane	0.50	--	ND	--	--
			cis-1,3-Dichloropropene	0.50	--	ND	1	--
			Toluene	0.50	--	ND	10	--
			trans-1,3-Dichloropropene	0.50	--	ND	3	--
			1,1,2-Trichloroethane	0.50	--	ND	1	--
			Tetrachloroethene	0.50	--	ND	NA	--
			1,3-Dichloropropane	0.50	--	ND	4	--
			Dibromochloromethane	0.50	--	ND	10	--
			1,2-Dibromomethane	0.50	--	ND	1*	--
			Chlorobenzene	0.50	--	ND	2	--
			1,1,2,2-Tetrachloroethane	0.50	--	ND	1,000	--
			Ethylbenzene	0.50	--	ND	--	--
			Xylenes (Total)	0.50	--	ND	4	--
			Styrene	0.50	--	ND	700	--
			Bromoform	0.50	--	ND	40	--
			Isopropylbenzene	0.50	--	ND	100	--
			Bromobenzene	0.50	--	ND	--	--
			1,1,2,2-Tetrachloroethane	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	--	--

TABLE 3  
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GROUNDWATER SAMPLING RESULTS  
BUILDING 616, 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)	GMQC (ug/L)	Exceeds Criteria
Field Blank	12/18/95	12/29/95	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	--
			4-Isopropyltoluene	0.50	--	ND	75	--
			1,4-Dichlorobenzene	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	--	--
			Methy-tertiary butyl ether	0.50	--	ND	--	--
			tertiary-Butyl alcohol	2.0	--	ND	--	--
TENTATIVELY IDENTIFIED COMPOUNDS:								
			Column Bleed	--	--	2 J	--	--
			Furan, tetrahydro-	--	--	1 J	--	--

Notes:

- Not applicable / does not exceed criteria
- (B) Indicates also present in blank
- (ND) Indicates compound not detected
- (NA) Not available for this constituent
- (J) Indicates detected below sample quantitation limit
- GMQC Ground Water Quality Criteria

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TABLE 3  
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GROUNDWATER SAMPLING RESULTS  
BUILDING 616, MAIN POST, FIELD BLANK  
FORT MONMOUTH, NEW JERSEY  
SEMIVOLATILES

Sample ID	Sample Date	Analysis Date	Compound Name	Compound of Concern	Sample Quantitation Limit (ug/L)	Result (ug/L)	GMQC (ug/L)	Exceeds Criteria
Field Blank	12/18/95	12/26/95	Phenol	--	10	ND	4000	--
			bis(2-chloroethyl)Ether	--	10	ND	20	--
			2-Chlorophenol	--	10	ND	40	--
			1,3-Dichlorobenzene	--	10	ND	600	--
			1,4-Dichlorobenzene	--	10	ND	75	--
			1,2-Dichlorobenzene	--	10	ND	600	--
			2-Methylphenol	--	10	ND	--	--
			bis(2-chloroisopropyl)Ether	--	10	ND	300	--
			4-Methylphenol	--	10	ND	--	--
			N-Nitroso-Di-n-propylamine	--	10	ND	20	--
			Hexachloroethane	--	10	ND	10	--
			Nitrobenzene	--	10	ND	10	--
			Isophorone	--	10	ND	100	--
			2-Nitrophenol	--	10	ND	--	--
			2,4-Dimethylphenol	--	10	ND	100	--
			bis(2-Chloroethoxy)Methane	--	10	ND	--	--
			2,4-Dichlorophenol	--	10	ND	20	--
			1,2,4-Trichlorobenzene	--	10	ND	9	--
			Naphthalene	--	10	ND	--	--
			4-Chloroaniline	--	10	ND	--	--
			Hexachlorobutadiene	--	10	ND	1	--
			4-Chloro-3-methylphenol	--	10	ND	--	--
			2-methylnaphthanene	--	10	ND	--	--
			Hexachlorocyclopentadiene	--	10	ND	50	--
			2,4,6-Trichlorophenol	--	10	ND	20	--
			2,4,5-Trichlorophenol	--	25	ND	700	--
			2-Chloronaphthalene	--	10	ND	--	--
			2-Nitroaniline	--	25	ND	--	--
			Dimethyl Phthalate	--	10	ND	--	--
			Acenaphthylene	--	10	ND	NA	--
			2,6-Dinitrotoluene	--	10	ND	NA	--
			3-Nitroaniline	--	25	ND	--	--
			Acenaphthene	--	10	ND	400	--
			2,4-Dinitrophenol	--	25	ND	40	--
			4-Nitrophenol	--	25	ND	--	--
			Dibenzofuran	--	10	ND	--	--
			2,4-Dinitrotoluene	--	10	ND	10	--
			Diethylphthalate	--	10	ND	5,000	--
			Fluorene	--	10	ND	300	--
			4-Chlorophenyl-phenylether	--	10	ND	--	--
			4-Nitroaniline	--	25	ND	--	--
			4,6-Dinitro-2-methylphenol	--	25	ND	--	--
			N-Nitrosodiphenylamine	--	10	ND	--	--
			4-Bromophenyl-phenylether	--	10	ND	20	--
				--		ND	--	--

TABLE 3  
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GROUNDWATER SAMPLING RESULTS  
BUILDING 616, MAIN POST, FIELD BLANK  
FORT MONMOUTH, NEW JERSEY  
SEMIVOLATILES (Continued)

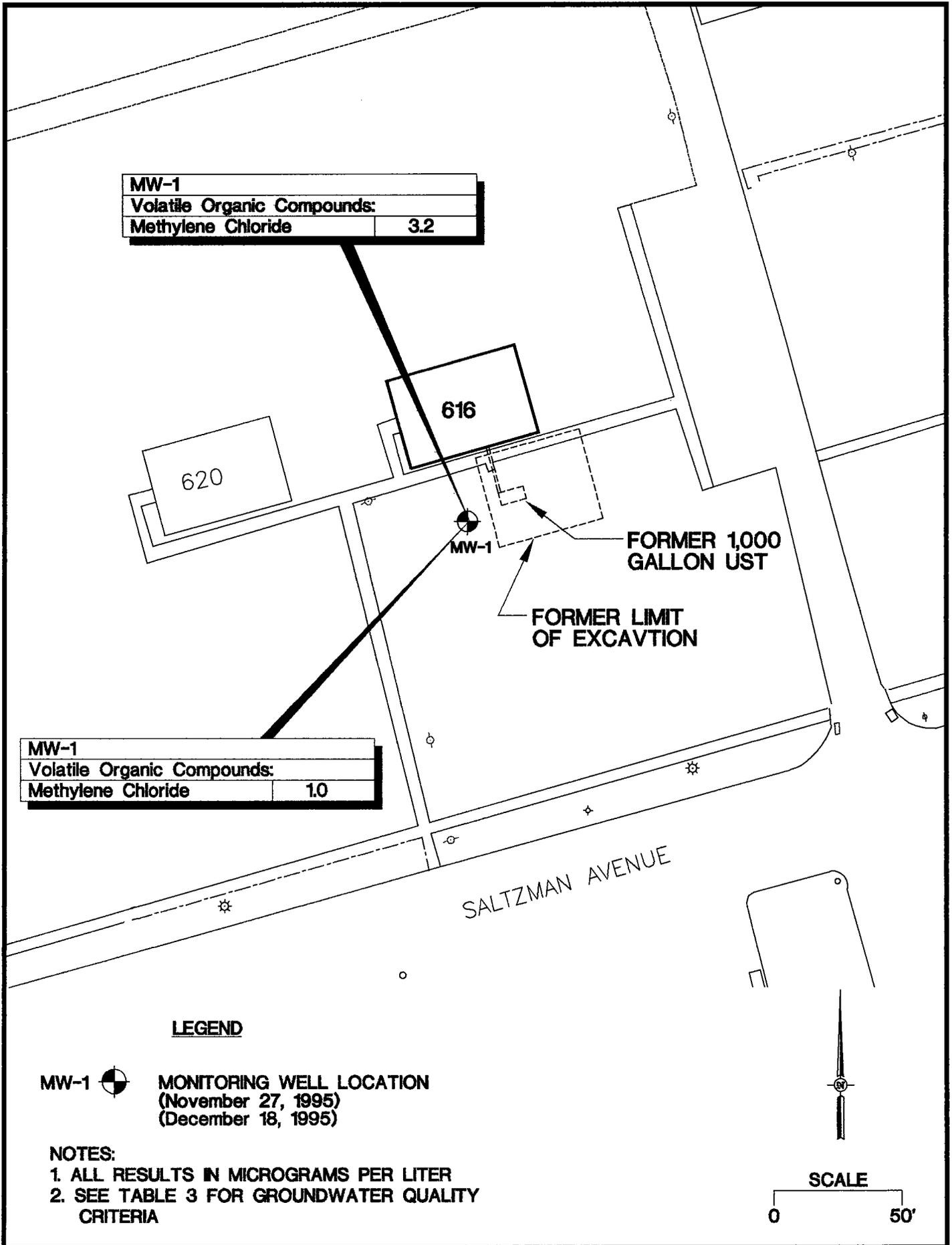
Sample ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (ug/L)	Compound of Concern	Result (ug/L)	GWQC (ug/L)	Exceeds Criteria
Field Blank	12/18/95	12/26/95	Hexachlorobenzene	10	--	ND	10	--
			Pentachlorophenol	25	--	ND	1	--
			Phenanthrene	10	--	ND	NA	--
			Anthracene	10	--	ND	2,000	--
			Carbazole	10	--	ND	--	--
			Di-n-butylphthalate	10	--	ND	900	--
			Fluoranthene	10	--	ND	300	--
			Pyrene	10	--	ND	200	--
			Butylbenzylphthalate	10	--	ND	100	--
			Benzo(a)Anthracene	10	--	ND	NA	--
			3,3-Dichlorobenzidine	20	--	ND	60	--
			Chrysene	10	--	ND	NA	--
			bis(2-Ethylhexyl)phthalate	10	--	ND	30	--
			Di-n-Octyl Phthalate	10	--	ND	100	--
			Benzo(b)Fluoranthene	10	--	ND	NA	--
			Benzo(k)Fluoranthene	10	--	ND	NA	--
			Benzo(a)Pyrene	10	--	ND	NA	--
			Indeno(1,2,3-cd)pyrene	10	--	ND	NA	--
			Dibenzo(a,h)anthracene	10	--	ND	NA	--
			Benzo(g,h,i)perylene	10	--	ND	NA	--
			Unknown Hydrocarbon	--	--	6 J	--	--

TENTATIVELY IDENTIFIED COMPOUNDS:

- Notes:
- Not applicable / does not exceed criteria
  - (B) Indicates also present in blank
  - (ND) Indicates compound not detected
  - (NA) Not available for this constituent
  - (J) Indicates detected below sample quantitation limit
  - GWQC Ground Water Quality Criteria

Smith Technology Corporation (Project No. 09-5004-08)

Source: Smith Technology Corporation (123)





**APPENDIX A**

**NJDEP BUST CLOSURE APPROVAL**



State of New Jersey

Department of Environmental Protection

Christine Todd Whitman  
Governor

Robert C. Shinn, Jr.  
Commissioner

Mr. Dinker Desai  
SELFMEH-EV  
Department of the Army  
Headquarters CECOM Fort Monmouth  
Fort Monmouth, NJ 077703-5000

OCT 7 1994

Dear Mr. Desai:

Re: Underground Storage Tank Closure Approvals  
Fort Monmouth Army Facility  
Tinton Falls, Monmouth County

The NJDEP has reviewed the Underground Storage Tank (UST) Closure Plan Approval Requests dated September 2, 1994 for the following USTs:

<u>Tank No.</u>	<u>Building No.</u>	<u>Product</u>	<u>Size</u>	<u>Piping Length</u>
86	608	No. 2 Fuel Oil	1000	12'
103	671	No. 2 Fuel Oil	1000	14'
107	686	No. 2 Fuel Oil	2000	18'
93	620	No. 2 Fuel Oil	1000	22'
90	616	No. 2 Fuel Oil	1000	12'
106	682	No. 2 Fuel Oil	1080	22'
78	508	No. 2 Fuel Oil	1500	15'

These closure requests are consistent with the *Technical Requirements for Site Remediation* (N.J.A.C.7:26E) and are therefore acceptable to the NJDEP (with the incorporation of the comment below). A copy of this letter should be immediately accessible at each of these UST removal locations.

The NJDEP has also received a request dated September 9, 1994 from Mr. James Ott, Acting Director, which requests a variance from the *Closure Approval Requests* for use of polytetrafluoroethylene (PTFE) trowels to polystyrene trowels. **Neither** of these types of trowels is acceptable to the NJDEP. In accordance with the *Field Sampling Procedures Manual (May 1992)*, only appropriately decontaminated stainless steel trowels are acceptable. Please correct the UST closure plans to reflect the requirement to use stainless steel trowels.

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

Sincerely,

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

cc. Mr. James Ott, FTMMTH

S:\RPCE\BFCM\FTMMTH17.JRC



**APPENDIX B**  
**CERTIFICATIONS**

**UNDERGROUND STORAGE TANK (UST)  
CLOSURE CERTIFICATION**

BUILDING NO. 616

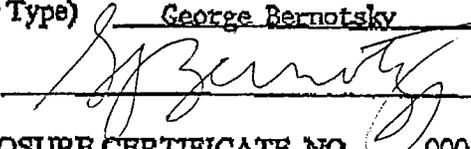
NJDEP UST REGISTRATION NO. 81533-90

DATE TANK REMOVED 12/9/94

IJO / CONTRACT NUMBER 91-0148

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) George Bernotsky

SIGNATURE 

NJDEP UST CLOSURE CERTIFICATE NO. 0003249

COMPANY PERFORMING TANK DECOMMISSIONING CUTE Inc

NJDEP UST CLOSURE CORPORATE CERTIFICATE NO. 0200128

DATE OF SUBMITTAL 1/13/95

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 028  
Trenton, NJ 08625-0028  
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 UST's, 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 \_\_\_\_\_

081533-90  
**FACILITY REGISTRATION #**

Bldg. 616

**I. FACILITY NAME AND ADDRESS**

US Army Fourt Monmouth, New Jersey  
Directorate of Public Works, Bldg. 167  
Fort Monmouth, NJ 07703 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?  Yes  No If Yes, Case No. 94-12-8-1040-10  
(Note: All discharges must be reported to the Environmental Action Hotline (609) 292-7172)

B. The substance(s) discharged was(were) #2 Fuel Oil

C. Have any vapor hazards been mitigated?  Yes  No  N/A

Letter dated October  
7, 1994

Closure Approval No. \_\_\_\_\_

## III. DECOMMISSIONING OF TANK SYSTEMS

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:

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

### C. Soil samples and borings (check appropriate answer)

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

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

3. Attach the analytical results in tabular form and include the following information about each sample

- Customer sample number (keyed to the site map)
- The depth of the soil sample
- Soil boring logs
- Method detection limit of the method used
- QA/QC Information as required

D. Ground Water Monitoring

1. Number of ground water monitoring wells installed 17 Adjacent MW's used to confirm GW flow direction
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?  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. ND ppb total BTEX, 5.2 ppb total non-targeted VOC
  2. N/A ppb total B/N, N/A ppb total non-targeted B/N
  3. 8,680.0 ppm TPHC
  4. N/A ppb \_\_\_\_\_ (for non-petroleum substance)
- 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  No as pertains to this site
  2. Free product contaminated soils are suspected to exist below the water table  Yes  No
  3. Free product contaminated soils are suspected to exist off the property boundaries.  Yes  No
- D. Was the vertical and horizontal extent of contamination determined?  Yes  No  N/A
- E. Does soil contamination intersect ground water?  Yes  No  N/A

VI. GROUND-WATER CONTAMINATION

- A. Was ground water contamination found?  Yes  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:
1. ND ppb total BTEX, 3.2 ppb total non-targeted VOC
  2. N/A ppb total B/N, N/A 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  N/A
- (Refer to Table 3 for other parameters)
- 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  N/A
  2. The number of these wells identified is 0

D. Proximity of wells and contaminant plume N/A

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 \_\_\_\_\_ 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 \_\_\_\_\_ feet from the source and its screening begins at a depth of \_\_\_\_\_ 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 \_\_\_\_\_ feet below grade. This well is located \_\_\_\_\_ 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 \_\_\_\_\_ feet from the source. This well is \_\_\_\_\_ feet deep and screening begins at a depth of \_\_\_\_\_ feet.

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

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

G. Delineation of contamination N/A

1. The ground water contaminants have been delineated to MCLs or lower values at the property boundaries.  Yes  No
2. The plume is suspected to continue off the property at concentrations greater than MCLs.  
 Yes  No
3. Off property access (circle one):  is being sought  has been approved  has been denied

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 US Army Fort Monmouth DATE \_\_\_\_\_  
(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] See Appendix B

*"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)11].

*"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 \_\_\_\_\_  
COMPANY NAME US Army Fort Monmouth \_\_\_\_\_ DATE \_\_\_\_\_

B. The following certification shall be signed as follows [according to the requirements of N.J.A.C. 7:14B-2.3(C)21]:

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**  
**WASTE MANIFEST**



State of New Jersey  
 Department of Environmental Protection and Energy  
 Hazardous Waste Regulation Program  
 Manifest Section  
 CN 421, Trenton, NJ 08625-0421

Please type or print in block letters. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039. Expires 9-30-94

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No. NJ1312110102105191701010102		Manifest Document No. 02		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 Main Post, c/o James Shirghio, Bldg 2504, ATTN: SELFM-DE-EM-MS Fort Monmouth, NJ 07703 PW-EV				A. State Manifest Document Number NJA 1907259		B. State Generator's ID (Gen. Site Address) Main Post			
4. Generator's Phone (908) 532-6223				6. US EPA ID Number IN1J1D1015141121611614		C. State Trans. ID-NJDEPE S2265		Decal No. 64499	
5. Transporter 1 Company Name Freehold Cartage Inc.				8. US EPA ID Number		D. Transporter's Phone (908) 462-1001		E. State Trans. ID-NJDEPE	
7. Transporter 2 Company Name				10. US EPA ID Number IN1J1D101814101414101614		F. Facility's Phone (-908) 721-0900		G. State Facility's ID	
9. Designated Facility Name and Site Address Lionetti Oil Recovery Co., Inc. Cheesequake & Runyon Rds. Old Bridge, NJ 08857				12. Containers No. Type		13. Total Quantity		14. Unit Wt/Vol	
11. US DOT Description (Including Proper Shipping Name, Hazard Class or Division, ID Number and Packing Group) HM				15. Special Handling Instructions and Additional Information		K. Handling Codes for Wastes Listed Above			
a. X Petroleum Oil, N.O.S. Class 3 (Petroleum Oil) Combustible Liquid UN 1270 PG III Bldg 671				001 TT		00200		G X 17 12 12	
b. X Petroleum Oil, N.O.S. Class 3 (Petroleum Oil) Combustible Liquid UN 1270 PG III Bldg 686				001 TT		00025		G X 17 12 12	
c. X Petroleum Oil, N.O.S. Class 3 (Petroleum Oil) Combustible Liquid UN 1270 PG III Bldg 616				01011 TT		00025		G X 17 12 12	
d. X Petroleum Oil, N.O.S. Class 3 (Petroleum Oil) Combustible Liquid UN 1270 PG III Bldg 246				01011 TT		02258		G X 17 12 12	
J. Additional Descriptions for Materials Listed Above				Petroleum Oil 50% Water 50% T,L		Petroleum Oil 50% Water 50% T,L		T04= Filtration T04= Filtration	
a. Petroleum Oil 50% Water 50% T,L				Petroleum Oil 50% Water 50% T,L		T04= Filtration		T04= Filtration	
b. Petroleum Oil 50% Water 50% T,L				Petroleum Oil 50% Water 50% T,L		T04= Filtration		T04= Filtration	
15. Special Handling Instructions and Additional Information NOT EPA REGULATED. REGULATED AS HAZARDOUS WASTE IN NJ 11a. 0081533-103 Hb0081533-107 24 HOUR EMERGENCY PHONE: 201-427-2881 11c 0081533-90 11d. Bldg 206 11a, b, c, d ERG# 27				16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.					
Printed/Typed Name Joseph M. Fallon				Signature Joseph M. Fallon		Month Day Year 11/22/94			
17. Transporter 1 Acknowledgement of Receipt of Materials Printed/Typed Name David Smith				Signature David Smith		Month Day Year 11/22/94			
18. Transporter 2 Acknowledgement of Receipt of Materials Printed/Typed Name				Signature		Month Day Year			
19. Discrepancy Indication Space									
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19. Printed/Typed Name				Signature		Month Day Year			

# CALCULATION SHEET

Building No. 616

NJDEPE Reg. No. 0081533 - 90

Tank Size 1000 gal

Tank Void 7.5 tons

## CLEAN FILL

ITEM NO.	DESCRIPTION	QUANTITY	TICKET #
	Fill	6.52	18866
		20.93	18963
		21.63	18961
		21.45	18849
		22.00	18850
		22.23	18983
		22.05	18984
<i>(see continuations)</i> TOTAL		494.44	

## STONE

ITEM NO.	DESCRIPTION	QUANTITY	TICKET #
	Stone	25.76	1027096

TOTAL

ID#27 soil to stockpile  $(494.44 + 25.76) - 7.5 = 512.7$  tons

Chargeable clean fill  $494.44 - 7.5 = 486.94$

Chargeable stone 25.76

# CALCULATION SHEET (CONT)

Building No. 616

NJDEPE Reg. No.                     -

Tank Size            gal

Tank Void            tons

## CLEAN FILL

ITEM NO.	DESCRIPTION	QUANTITY	TICKET #
	<i>Fill</i>	21.00	18985
		21.90	18986
		20.93	18863
		21.30	18864
		21.35	18865
		22.25	18987
		21.25	18877
	TOTAL	22.00	18878
		21.50	18879
		20.63	18880

## STONE

ITEM NO.	DESCRIPTION	QUANTITY	TICKET #
----------	-------------	----------	----------

TOTAL

ID#27 soil to stockpile (        +        ) -        =        tons

Chargeable clean fill

Chargeable stone

# CALCULATION SHEET (cont)

Building No. 616

NJDEPE Reg. No.                     

Tank Size              gal

Tank Void              tons

### CLEAN FILL

ITEM NO.	DESCRIPTION	QUANTITY	TICKET #
	Fill	20.75	18881
		21.55	18882
		21.06	18883
		21.25	18884
		22.50	18979
		22.28	18981
		14.13	18982

TOTAL

### STONE

ITEM NO.	DESCRIPTION	QUANTITY	TICKET #
----------	-------------	----------	----------

TOTAL

ID#27 soil to stockpile (       +       ) -       =       tons

Chargeable clean fill

Chargeable stone



# CUSTOMER'S COPY

CONTROL NO.  
**A-1027096**

## Stavola Construction Materials, Inc.

PLANT: CHIMNEY ROCK ROAD, BOUND BROOK, N.J. - 908/356-5700

*Handwritten:* TIL  
JOID

**X** *Handwritten signature*  
DRIVER'S SIGNATURE

RECEIVED & ACCEPTED BY:  
**X**  
CUSTOMER'S SIGNATURE

EXECUTIVE OFFICE  
HAMILTON ROAD  
TINTON FALLS, N.J.  
908/542-2328

### CRUSHED STONE • SAND GRAVEL

ADDRESS REPLY TO  
P.O. BOX 482  
RED BANK, N.J. 07701

EXPLANATION OF DELIVERY CODES  
1 - F.O.B.  
2 - DELIVERED  
3 - NET DELIVERED

THIS COMPANY WILL NOT BE RESPONSIBLE FOR DAMAGE CAUSED BY VEHICLES DELIVERING MATERIALS OFF PUBLIC ROADS.

DATE	01/18/95	CUST. NO.	08888	JOB NO.	10245	TICKET NO.	027096	
CUSTOMER				DELIVER TO		GROSS		
CLEANING UP THE ENVIRONMENT				ZONE 1		38.76		
103 GODWIN AVE.				FT MON		TARE		
P.O. BOX 237						13.00		
MIDLAND PARK NJ 07432						NET		
						25.76		
TRUCKER	TRUCK NO.	DRIVER NO.	METHOD OF PAYMENT			DELIVERY CODE	ZONE	
S1495	1		CHARGE			2	330	
QUANTITY	PRODUCT CODE/DESCRIPTION		UNIT OF MEASURE	UNIT PRICE	EXTENDED	FREIGHT	SALES TAX	TOTAL
25.76	20 3/4 RPE DSA		T			5.00		
PAYMENTS						WAIT TIME		
<i>Handwritten signature</i>						GRAND TOTAL		
				LOADS	ACCU. TONS.			
				3	75.83			



Joseph Scavano Sand & Gravel Co.

1453 W. Park Ave., Wayside  
Asbury Park, N.J. 07712  
908-493-3333

18963

Name Big A  
Address Clean Fill

Order Date Feb 18 1995

Deliver Date     

Delivered

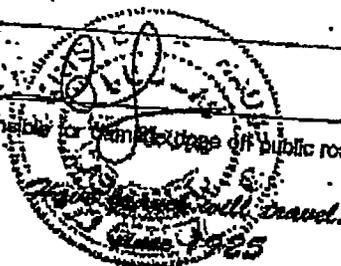
G.O.D.

F.O.B./P.U.

Charge

Item(s)	Quantity / Measure (tons, lbs., yds., ea.)	Unit Price	Total
	C 67350		
	T 25500		
	N 41850		
		20.93 tons	

Driver [Signature]  
Received [Signature]  
Company not responsible for items dropped off public roads. Color not guaranteed!



Sub Total	
Delivery	
N.J. Tax	
Total	



1453 W. Park Ave., Wayside  
Asbury Park, N.J. 07712  
908-493-3333

18961

Name Pig A

Order Date Feb 18 1995

Address 111

Deliver Date 1/1

Delivered  C.O.D.

F.O.B./P.U.  Charge

Item(s)	Quantity / Measure (tons, lbs., yds., ea.)	Unit Price	Total
	<u>C 68250</u>		
	<u>T 25000</u>		
	<u>N 43750</u>		
		<u>21.63675</u>	
		Sub Total	
		Delivery	
		N.J. Tax	
		Total	



*Ben*

Company not responsible for damage done on public roads. Color not guaranteed!

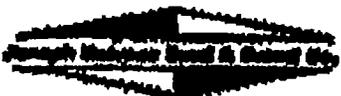
*Have gravel will travel!*  
*since 1925*

JAN-11-05 HED 15:18

C.U.T.E.

PAR NO. 201 423 0050

P. 05/48



1400 W Park Ave, Weymouth  
Johney Park, N.J. 07718  
800-760-5889

296

18866

Name Big A Trucking  
Address CLAY FILL

Order Date 1/1/05  
Deliver Date Dec 5, 04  
Debit  C.O.D.   
FOB/PU  Charge

Item(s)	Quantity / Measure (cub, ton, yds, etc.)	Unit Price	Total
	G 71540		
	T 29500		
	N 43040		
		<u>21.52 tons</u>	

Driver \_\_\_\_\_  
Received D. E. [Signature]  
\* Company not responsible for damage done off public roads. Color not guaranteed

Sub Total	
Delivery	
N.J. Tax	
Total	

*Please gravel will handle  
calls 1988*

Bldg 616      6.52 Tons  
 Bldg 686      15.00 Tons  
 -----  
 21.52



1453 W. Park Ave., Wayside  
Asbury Park, N.J. 07712  
908-493-3333

286

18849

Order Date FEB 8 95

Name Big A

Deliver Date     /    /    

Address Fill

Delivered

C.O.D.

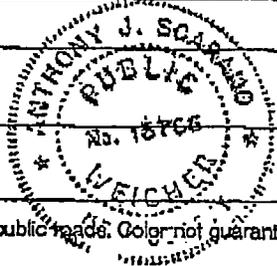
F.O.B./P.U.

Charge

Item(s)	Quantity / Measure (tons, lbs., yds., ea.)	Unit Price	Total
	G 68400		
	T 25500		
	N 42900		
		<u>21.45 tons</u>	

Driver Cliff Wood

Received Cliff Wood



\* Company not responsible for damage done off public roads. Color not guaranteed!

*Have gravel will travel  
since 1925*

Sub Total	
Delivery	
N.J. Tax	
Total	



1463 W. Park Ave., Wayside  
Asbury Park, N.J. 07712  
908-493-3333

296

18850

Order Date Feb 18, 95

Name By A

Deliver Date     

Address Fill

Delivered

C.O.D.

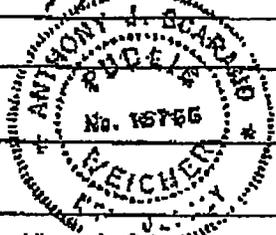
F.O.B./P.U.

Charge

Item(s)	Quantity / Measure (tons, lbs., yds., ea.)	Unit Price	Total
	G 67500		
	T 25500		
	N 44000		
		22 tons	

Driver     

Received     



Sub Total	
Delivery	
N.J. Tax	
Total	

\* Company not responsible for damage done off public roads/Color not guaranteed

*Have gravel will travel!  
since 1925*



1453 W. Park Ave., Wayside  
Asbury Park, N.J. 07712  
908-493-3333

18983

Order Date

Jan 19 1995

Deliver Date

1 / 1

Delivered

C.O.D.

F.O.B./P.U.

Charge

Name

Big A

Address

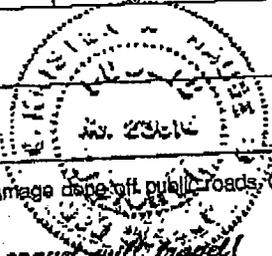
Clean Fill

Item(s)	Quantity / Measure (tons, lbs., yds., ea.)	Unit Price	Total
	G 69150	22.23 tons	
	F 25000		
	N 44150		
Sub Total			
Delivery			
N.J. Tax			
Total			

Driver

S. Barnley

Received



\* Company not responsible for damage done off public roads. Color not guaranteed!

Have gravel with gravel!  
since 1925



1453 W. Park Ave., Wayside  
Asbury Park, N.J. 07712  
908-493-3333

18984

Order Date JAN 9 1995

Deliver Date 1 / 1

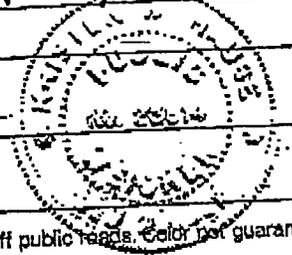
Delivered  C.O.D.

F.O.B./P.U.  Charge

*Big A Trucking*

*Claw Fill*

Item(s)	Quantity / Measure (tons, lbs., yds., ea.)	Unit Price	Total
	G 69100	<i>22.05 tons</i>	
	K 20000		
	N 44100		
Sub Total			
Delivery			
N.J. Tax			
Total			



Driver \_\_\_\_\_  
Received *Dr Bully*  
\*Company not responsible for damage done off public roads. Color not guaranteed!

*Have gravel will travel!  
since 1925*



1453 W. Park Ave., Wayside  
Asbury Park, N.J. 07712  
908-493-3333

18985

Order Date Jan 19, 1995

Name Big A

Deliver Date 1/19/95

Address Fill

Delivered  C.O.D.   
F.O.B./P.U.  Charge

Item(s)	Quantity / Measure (tons, lbs., yds., ea.)	Unit Price	Total
	G 67000	<u>21 tons</u>	
	+ 25000		
	N. 42000		

Driver \_\_\_\_\_

Received S. Benelli

\* Company not responsible for damage done off public roads. Color not guaranteed!

*Have gravel with travel!*  
*since 1925*

Sub Total	
Delivery	
N.J. Tax	
Total	



1453 W. Park Ave., Wayside  
Asbury Park, N.J. 07712  
908-493-3333

18986

Order Date JAN 9 1995

Deliver Date     /    /    

Name Big A

Delivered  C.O.D.

Address FILL

F.O.B./P.U.  Charge

Item(s)	Quantity / Measure (tons, lbs., yds., ea.)	Unit Price	Total
	G 68800	21.90 tons	
	T 25000		
	N 43800		
Driver <u>[Signature]</u>		Sub Total	
Received <u>[Signature]</u>		Delivery	
* Company not responsible for damage done off public roads. Color not guaranteed!		N.J. Tax	
<p><i>Have gravel with gravel!</i> <i>since 1925</i></p>		Total	





1453 W. Park Ave., Wayside  
Asbury Park, N.J. 07712  
908-493-3333

296

18864

Order Date FEB 8 1995

Name Buy A

Deliver Date 1/1/1

Address Fill

Delivered

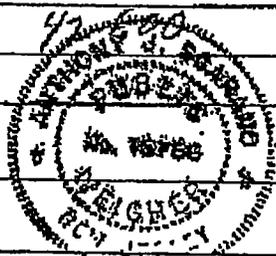
C.O.D.

F.O.B./P.U.

Charge

Item(s)	Quantity / Measure (tons, lbs., yds., ea.)	Unit Price	Total
G	68100		
T	25500		
N	42000		
		<b>21.30 tons</b>	
Sub Total			
Delivery			
N.J. Tax			
Total			

Driver COFF  
Received COFF



Company not responsible for damage done off public roads. Color not guaranteed!

*Have gravel will travel!  
since 1925*



1453 W. Park Ave., Wayside  
Asbury Park, N.J. 07712  
808-493-3333

2 1/2

18865

Order Date

FEB 18 1995

Time

Big A

Deliver Date

1-1-1

Address

Fill

Delivered

C.O.D.

F.O.B./P.U.

Charge

Item(s)	Quantity / Measure (tons, lbs., yds., ea.)	Unit Price	Total
	<u>S 68200</u>		
	<u>T 25500</u>	<u>21.35 tons</u>	
	<u>N 42700</u>		
Sub Total			
Delivery			
N.J. Tax			
Total			

Driver

Cliff Jones



Received

\* Company not responsible for damage done off public roads. Color not guaranteed

*Have gravel will travel!  
since 1925*



1453 W. Park Ave., Wayside  
Asbury Park, N.J. 07712  
908-493-3333

18987

Order Date FEB 18 1995

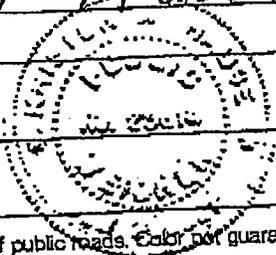
Deliver Date 1 / 1

Delivered  C.O.D.

F.O.B./P.U.  Charge

Name Big A  
Address Fill

Item(s)	Quantity / Measure (tons, lbs., yds., ea.)	Unit Price	Total
	G 70 000	22.25 tons	
	T 25 500		
	N 44 500		
		Sub Total	
		Delivery	
		N.J. Tax	
		Total	



Driver \_\_\_\_\_  
Received Cliff Tondi  
Company not responsible for damage done off public roads. Color not guaranteed!

*Have gravel will travel!  
since 1925*



1453 W. Park Ave., Wayside  
Asbury Park, N.J. 07712  
908-493-3333

296

18877

Order Date FEB 8 1995

Name 2314 A

Deliver Date 1 / 1

Address Fill

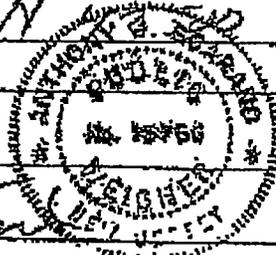
Delivered

C.O.D.

F.O.B./P.U.

Charge

Item(s)	Quantity / Measure (tons, lbs., yds., ea.)	Unit Price	Total
	G 68000		
	T 25500	21.25 tons	
	N		



Driver [Signature]

Sub Total

Received [Signature]

Delivery

Company not responsible for damage done off public roads. Color not guaranteed!

N.J. Tax

*Have gravel will travel!  
since 1925*

Total



1459 W. Park Ave., Wyzisick  
Asbury Park, N.J. 07712  
808-483-3333

276

18878

Feb 8, 95

Phone \_\_\_\_\_  
Address \_\_\_\_\_  
\_\_\_\_\_ *Fill* \_\_\_\_\_

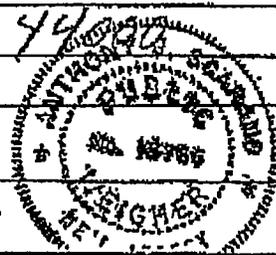
Order Date \_\_\_\_\_

Deliver Date \_\_\_\_\_

Delivered  C.O.D.

F.O.B./P.U.  Charge

Item(s)	Quantity / Measure (tons, lbs., yds., ea.)	Unit Price	Total
	G 69500		
	T 23500		
	N 44000		
		22 tons	



Driver \_\_\_\_\_  
Received *Cliff Todd*

Sub Total	
Delivery	
N.J. Tax	
Total	

\* Company not responsible for damage done off public roads. Cost not guaranteed!

*Have gravel will travel!*  
*since 1925*



1453 W. Park Ave., Waynside  
Asbury Park, N.J. 07712  
808-493-3333

296

18879

Order Date FEB 8 1995

Name Bill A

Deliver Date 1/1

Address Fill

Delivered  C.O.D.

F.O.B./P.U.  Charge

Item(s)	Quantity / Measure (tons, lbs., yds., ea.)	Unit Price	Total
	G 7000		
	T 2700		
	N 4300		
		21.50 tons	

Driver \_\_\_\_\_

Received [Signature]

\* Company not responsible for damage done off public roads. Color not guaranteed!

*Have gravel with gravel  
since 1925*

Sub Total	
Delivery	
N.J. Tax	
Total	



1453 W. Park Ave., Wayside  
Asbury Park, N.J. 07712  
908-493-3333

296

18880

Order Date FEB 5 1995

Name Big A

Deliver Date 1 1

Address Fill

Delivered  C.O.D.

F.O.B./P.U.  Charge

Item(s)	Quantity / Measure (tons, lbs., yds., sq.)	Unit Price	Total
	G 68250		
	T 27000		
	K 41250		
		20.63 tons	

Driver Call

Received Call



Company not responsible for damage done off public roads. Color not guaranteed

*Have gravel will travel!  
since 1925*

Sub Total	
Delivery	
N.J. Tax	
Total	



1453 W. Park Ave., Wayside  
Asbury Park, N.J. 07712  
908-493-3333

296

18881

Order Date 2 / 8 / 95

Deliver Date 1 / 1 /

Delivered  C.O.D.

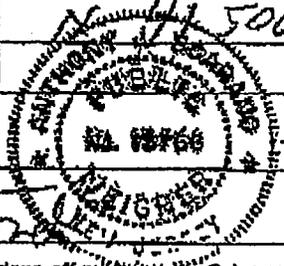
F.O.B./P.U.  Charge

Name B. G. A

Address \_\_\_\_\_

Fill

Item(s)	Quantity / Measure (tons, lbs., yds., ea.)	Unit Price	Total
	G 68500		
	T 27000		
	11500		
		20.75 tons	
Driver		Sub Total	
Received <u>COFF</u>		Delivery	
		N.J. Tax	
		Total	



\* Company not responsible for damage done off public roads. Color not guaranteed

*Have gravel will travel!  
since 1925*



1453 W. Park Ave., Wayside  
Asbury Park, N.J. 07712  
908-493-3333

296

18882

Name B. B. A

Order Date 2/8/95

Address \_\_\_\_\_

Deliver Date 1/1

Fill

Delivered

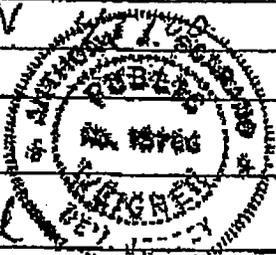
C.O.D.

F.O.B./P.U.

Charge

Item(s)	Quantity / Measure (tons, lbs., yds., ea.)	Unit Price	Total
	G 70100		
	T 27000		
	N	21.55 tons	

Driver \_\_\_\_\_  
Received [Signature]



Company not responsible for damage done off public roads. Color not guaranteed!

Sub Total	
Delivery	
N.J. Tax	
Total	

*Have gravel well travel!  
since 1985*





1453 W. Park Ave., Wayalda  
Asbury Park, N.J. 07712  
908-493-3333

296

18884

Order Date 2, 8, 95

Name B. G. A

Deliver Date 1 / 1

Address \_\_\_\_\_

Delivered  C.O.D.

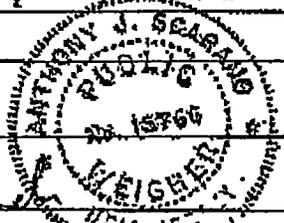
Fill

F.O.B./P.U.  Charge

Item(s)	Quantity / Measure (tons, lbs., yds., ea.)	Unit Price	Total
	G 69500		
	T 27000		
	N 47500		

21.25 tons

Driver \_\_\_\_\_  
Received [Signature]



Sub Total	
Delivery	
N.J. Tax	
Total	

Company not responsible for damage done off public roads. Color not guaranteed!

*Have gravel will travel  
since 1925*



1450 W. Park Ave., Wayala  
Asbury Park, N.J. 07712  
808-493-3333

18982

Order Date Feb 18, 1995

Deliver Date 1/1/1

Name Big A

Address fill

Delivered  C.O.D.

F.O.B./P.U.  Charge

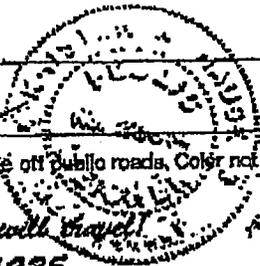
Item(s)	Quantity / Measure (tons, lbs., yds., ea.)	Unit Price	Total
	G 68250	<u>21.63 tons</u>	
	T 25000		
	N 43250		

Driver \_\_\_\_\_

Received [Signature]

\* Company not responsible for damage done off public roads. Color not guaranteed!

*Have gravel with gravel  
since 1925*



Sub Total	
Delivery	
N.J. Tax	
Total	

Bldg 1106 7.5 tons  
Bldg 616 14.13 tons



Joseph Sciarano Sand & Gravel Co.

1453 W. Park Ave., Wayside  
Asbury Park, N.J. 07712  
808-493-3333

0716

18979

Order Date FEB 13, 95

Name Billy A.

Deliver Date 1 / 1

Address F11

Delivered

C.O.D.

F.O.B./P.U.

Charge

Item(s)	Quantity / Measure (tons, lbs., yds., ea.)	Unit Price	Total
	7000		
	7000		
		22.50 tons	

Driver \_\_\_\_\_

Sub Total

Received [Signature]

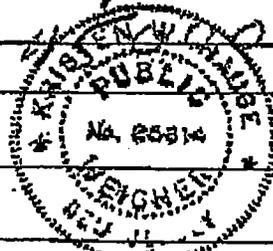
Delivery

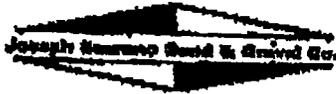
Company not responsible for damage done off public roads. Color not guaranteed!

N.J. Tax

*Have gravel will travel!  
since 1925*

Total





1489 W. Park Ave. Vineland  
Asbury Park, N.J. 07712  
800-423-8050

18981

Order Date

Jan 18, 95

Deliver Date

1/17

Delivered

C.O.D.

FOB/P.U.

Charge

Name Big A  
Address Fill  
FT MONMOUTH

Item(s)	Quantity / Measure (tons, lbs., yds., ea.)	Unit Price	Total
	G 69550		
	N 25000		
	N 94350		
			22.28 tons

Driver [Signature]  
Received [Signature]  
Company not responsible for damage to goods in transit. Color not guaranteed.



These gravel pits opened since 1925

Sub Total	
Delivery	
N.J. Tax	
Total	



**APPENDIX D**  
**UST DISPOSAL CERTIFICATE**

Fort Monmouth  
 Eatontown, NJ  
 Tank# UST#  
 620- 0081533-95  
 682- 0081533-106  
 616- 0081533-90

MAZZA & SONS, INC.

Metal Recyclers  
 Auto and Truck  
 8220 Shaflo Rd.  
 Tinton Falls, NJ  
 (908) 822-9292

NO. \_\_\_\_\_

DATE 12 Dec 94

Customer's Name Cute 112

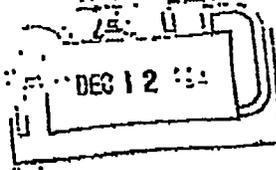
Address 103 Godwin Ave, P.O. 237, Midland Pt., NJ 07432

Make of Auto  
 Ploc  
 682-81533-106  
 616-0081533-90  
 620-81533-93  
 Tires  
 Tank  
 Prep:

39820 LB :

39900 LB 6

39:0



	Weight	Price
Cast Iron		
Steel	76.50	
LI Iron		
Copper #1		
Copper #2		
LI Copper		
Brass		
Alum Clean		
Lead		
Stirrers		
Radiators		
Battery		
TOTAL AMOUNT:		

Wagner \_\_\_\_\_ Customer Don



## APPENDIX E

### MONITORING WELL PERMIT AND WELL CONSTRUCTION LOG



U.S. ARMY  
FORT MONMOUTH  
SELFM-PW-EV

# LOG OF BORING 616-MW1

(Page 1 of 1)

Produced for Charles Appleby

Project Name : BLDG. 616  
 NJDEP Case # : 29-33760  
 Logged By : Shore Drilling  
 Start Date : 8/17/95

Completion Date : 8/17/95  
 Northing : N 539584.356  
 Easting : E 2172306.050  
 Driller : R. Barnes

Depth in Feet	29-33760 ELEV: 18.92	DESCRIPTION	GRAPHIC	USCS	Samples	Blows/Ft.	TPHC	Well Construction Information
0		Topsoil and Roots						<b>Well Construction</b> Date Completed : 8/17/95 Hole Diameter : 8 in Drill Method : HSA Company Rep : R. Barnes <b>Well Casing</b> Material : PVC Diameter : 4 in Joints : Threaded <b>Well Screen</b> Material : PVC Diameter : 4 in Joints : Threaded Opening : 20 Slot <b>Sand Pack</b> : # 2 Morie Sand <b>Annulus Seal</b> : Bentonite/Portland : Tremmie <b>Well Screen</b> Material : PVC Diameter : 4 in
0.5		Brown clayey, dry moist		CL	1	15		
2.5	2				12			
4		Green + black silty clay, mottled moist		CL	3	14		
6	4				16			
8	5				16			
10		Iron stained area		CL	6	15		
12								
14	14							
16								

**NOTES**  
 Well #1 is 616 MW1  
 Stick up 2.5'  
 Water level 6'

3-20-199- c:\mtech\31mwell\sgo\616mw.gp3



**APPENDIX F**  
**SOIL ANALYTICAL DATA PACKAGE**

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

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

Lab. ID #: 1773.1-.6  
 Sample Rec'd: 12/29/94  
 Analysis Start: 12/29/94  
 Analysis Comp: 12/30/94

Analysis: 418.1 (TPH)  
 Matrix: Soil  
 Analyst: S. Hubbard  
 Ext. Meth: 3540A

NJDEPE UST Reg.#: 81533-90  
 Closure #:   
 DICAR #: 94-12-8-1040-10  
 Location #: Bldg. 616

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1773.1	Site A, NW Sidewall OVA=15.	80	244.	8.1
1773.2	Site B, East Sidewall OVA=ND	89	85.4	8.1
1773.3	Site C, SW Sidewall OVA=4.	81	91.9	7.9
1773.4	Site D, W. Sidewall OVA=26.	83	8680.	53.
1773.5	Site F. fuel pipe OVA=ND	90	76.8	7.6
1773.6	Site E, dup of D OVA=25	84	6700.	57.
M. Bl.	Method Blank	100	ND	8.1

Notes: ND = Not Detected, MDL = Method Detection Limit  
 \* = Silica Gel Added, NA = Not Applicable  
 1773.5S= 96%, 1773.5SD= 94%, RPD= 2.3% 1773.5 Dup=100%  
 QC Limits: Recovery= 100+/-28%, RPD=19.7%

*Brian K. McKee*  
 -----  
 Brian K. McKee  
 Laboratory Director



# U.S. ARMY FORT MONMOUTH

Chain of Custody

P.O. #: Sub 7

Project #:		Sampler: <u>Goose / cube</u>		Date / Time: <u>12/29 1-10</u>		Analysis Parameters		Start:	
Customer: <u>Dosone</u>		Site Name: <u>Bldg GIC</u>		Date / Time: <u>1-10</u>		Analysis Parameters		Finish:	
Phone: <u>532-445</u>		Customer Sample Location/ID Number: <u>9A-12-8-1040-10</u>		Date / Time: <u>1-10</u>		Analysis Parameters		Preservation Method	
Lab Sample ID Number	Date/Time	Customer Sample Location/ID Number	Sample Matrix	# of Bottles	Analysis Parameters	Remarks	Preservation Method		
1223.1	12/29 1-30	Site A Sidewalk NW	Soil	1	X			OXA	
.2	" 1-34	Site B " (S1)	"	1	X			ND	
.3	" 1-37	Site C " SW	"	1	X			24	
.4	" 1-41	Site D " (SW)	"	1	X			26	
.5	" 1-49	Fuel pipe F	"	1	X			ND	
.6	" 1-45	E (Group) of D	"	1	X			25	
Relinquished By (signature): <u>[Signature]</u>		Date / Time: <u>12/29</u>		Received By (signature):		Shipped By:			
Relinquished By (signature):		Date / Time:		Received for Lab by (signature): <u>B. Mack</u>		Date / Time: <u>12/29/94 1405</u>			

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

Environmental Laboratory

Certification Number 13461

December 30, 1994 Sarah D. Hubbard

0935

Bldg. 6.16

Golf Course Put 142

— Soxlet Extraction —

2CM/M 500 MV=CAL-0

40.75 Std. 45 MV

81.5 Std. 114 MV

163 Std. 243 MV

1773.1 27 MV

1773.2 5 MV

1773.3 5 MV

1773.4 ~~du~~ 193 MV

1773.5 4 MV

1773.5 4 MV dup

1773.5 48 MV Spk

1773.5 47 MV Dup Spk

1773.6 ~~du~~ 150 MV

1772.3 21 MV ~~du~~

1772.4 9 MV

81.5 Cal CK 109 MV

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.
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: \_\_\_\_\_

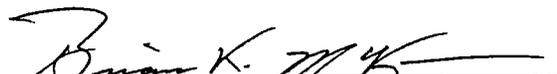
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Laboratory Authentication Statement

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

Project #1773

  
\_\_\_\_\_  
Brian K. McKee  
Laboratory Manager

UST - Vol analysis - Bldg. 616



princeton testing  
laboratory inc.

P.O. Box 3108  
3490 U.S. Route 1  
Princeton, NJ 08543-3108  
(609) 452-9050  
FAX (609) 452-0347

U.S. ARMY, FORT MONMOUTH  
ATTN: SELFM-PW  
Building 167  
Fort Monmouth, New Jersey 07703-5108

Attn: Charles Appleby

Project # 94-12-8-1040-10  
Building 616

JOB # 9500366-001M

Laboratory Certification # 11118

Reviewed by:

W. Alan Volk  
W. Alan Volk

3/19/95

UST file copy.

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Raw spectra and background-subtracted mass spectra of target compounds identified	
Quantitation Reports	
Mass spectra of all reported TICs with three best library matches	
Standards Data (All Instruments) . . . . .	80
Initial Calibration Data	
RICs and Quan Reports for all Standards	
Raw QC Data . . . . .	104
BFB	
Blank Data	
Matrix Spike/Matrix Spike Duplicate Data	

LABORATORY DELIVERABLES

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

The following laboratory deliverables shall be included in the data submission. All deviations from the accepted methodology and procedures, or performance values outside acceptable ranges shall be summarized in the Non-Conformance Summary. The proposed "Technical Requirements for Site Remediation" rules, which appeared in the May 4, 1992 New Jersey Register, provides further details. The document shall be bound and paginated, contain a table of contents, and all pages shall be legible. Incomplete packages will be returned or held without review until the data package is completed.

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

- |   | Check if Complete                   |
|---|-------------------------------------|
| 1. Cover Page, Title Page listing Lab Certification #, facility name & address, & date of report              | <input checked="" type="checkbox"/> |
| 2. Table of Contents  | <input checked="" type="checkbox"/> |
| 3. Summary Sheets listing analytical results for all targeted and non-targeted compounds                      | <input checked="" type="checkbox"/> |
| 4. Summary Table cross-referencing field ID #'s vs. Lab ID #'s  | <input checked="" type="checkbox"/> |
| 5. Document bound, paginated and legible  | <input checked="" type="checkbox"/> |
| 6. Chain of Custody   | <input checked="" type="checkbox"/> |
| 7. Methodology Summary  | <input checked="" type="checkbox"/> |
| 8. Laboratory Chronicle and Holding Time Check  | <input checked="" type="checkbox"/> |
| 9. Results submitted on a dry weight basis (if applicable)  | <input checked="" type="checkbox"/> |
| 10. Method Detection Limits   | <input checked="" type="checkbox"/> |
| 11. Lab certified by NJDEPE for parameters or appropriate category of parameters or a member of the USEPA CLP | <input checked="" type="checkbox"/> |
| 12. Non-Conformance Summary   | <input checked="" type="checkbox"/> |

W. A. [Signature]

3/9/95

Laboratory Manager or Environmental Consultant's Signature

Date

ORGANICS COMPLETE SDG FILE (CSF) INVENTORY SHEET

LABORATORY NAME PRINCETON TESTING LABS  
 CITY/STATE PRINCETON, N.J.  
 CASE NO. 0366 SDG NO. \_\_\_\_\_ SDG NOS. TO FOLLOW \_\_\_\_\_  
 \_\_\_\_\_ SAS NO. \_\_\_\_\_  
 CONTRACT NO. US ARMY FORT MONMOUTH  
 SOW NO. ILMD2.0

All documents delivered in the complete SDG file must be original documents where possible. (REFERENCE EXHIBIT B, SECTION II and SECTION III.)

	PAGE NOs		CHECK	
	FROM	TO	LAB	EPA
1. <u>Inventory Sheet (Form DC-2) (Do not number)</u>	_____	_____	<input checked="" type="checkbox"/>	_____
2. <u>SDG Case Narrative</u>	_____	_____	<input checked="" type="checkbox"/>	_____
3. <u>SDG Cover Sheet/Traffic Report</u>	_____	_____	<input checked="" type="checkbox"/>	_____
4. <u>Volatiles Data</u>	_____	_____	<input checked="" type="checkbox"/>	_____
a. QC Summary				
System Monitoring Compound Summary (Form II VOA)	_____	_____	<input checked="" type="checkbox"/>	_____
Matrix Spike/Matrix Spike Duplicate Summary (Form III VOA)	_____	_____	<input checked="" type="checkbox"/>	_____
Method Blank Summary (Form IV VOA)	_____	_____	<input checked="" type="checkbox"/>	_____
GC/MS Instrument Performance Check (Form V VOA)	_____	_____	<input checked="" type="checkbox"/>	_____
Internal Standard Area and RT Summary (Form VIII VOA)	_____	_____	<input checked="" type="checkbox"/>	_____
b. Sample Data				
TCL Results - (Form I VOA)	_____	_____	<input checked="" type="checkbox"/>	_____
Tentatively Identified Compounds (Form I VOA-TIC)	_____	_____	<input checked="" type="checkbox"/>	_____
Reconstructed total ion chromatograms (RIC) for each sample	_____	_____	<input checked="" type="checkbox"/>	_____
For each sample:				
Raw spectra and background-subtracted mass spectra of target compounds identified	_____	_____	<input checked="" type="checkbox"/>	_____
Quantitation reports	_____	_____	<input checked="" type="checkbox"/>	_____
Mass spectra of all reported TICs with three best library matches	_____	_____	<input checked="" type="checkbox"/>	_____
c. Standards Data (All Instruments)				
Initial Calibration Data (Form VI VOA)	_____	_____	<input checked="" type="checkbox"/>	_____
RICs and Quan Reports for all Standards	_____	_____	<input checked="" type="checkbox"/>	_____
Continuing Calibration Data (Form VII VOA)	_____	_____	<input checked="" type="checkbox"/>	_____
RICs and Quantitation Reports for all Standards	_____	_____	<input checked="" type="checkbox"/>	_____
d. Raw QC Data				
BFB	_____	_____	<input checked="" type="checkbox"/>	_____
Blank Data	_____	_____	<input checked="" type="checkbox"/>	_____
Matrix Spike/Matrix Spike Duplicate Data	_____	_____	<input checked="" type="checkbox"/>	_____

ORGANICS COMPLETE SDG FILE (CSF) INVENTORY SHEET (Cont.)

CASH NO. _____	SDG NO. _____	SDG NOS. TO FOLLOW _____
_____	SAS NO. _____	_____

PAGE NOS  
FROM TO  
CHECK  
LAB EPA

Miscellaneous Data

Original preparation and analysis forms or copies of  
preparation and analysis logbook pages  
Internal sample and sample extract transfer  
chain-of-custody records  
Screening records  
All instrument output, including strip charts  
from screening activities (describe or list)

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

EPA Shipping/Receiving Documents

Airbills (No. of shipments \_\_\_\_\_)  
Chain-of-Custody Records  
Sample Tags  
Sample Log-In Sheet (Lab & DCI)  
Miscellaneous Shipping/Receiving Records  
(describe or list)

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Internal Lab Sample Transfer Records and Tracking Sheets  
(describe or list)

_____	_____	_____	_____
_____	_____	_____	_____

Other Records (describe or list)

Telephone Communication Log

_____	_____	_____	_____
_____	_____	_____	_____

Comments:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Completed by:  
(GLC Lab)

*W. A. Volk*  
(Signature)

W.A. Volk, QAPC Coordinator  
(Printed Name/Title)

3-9-95  
(Date)

Audited by:  
(EPA)

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Printed Name/Title)

\_\_\_\_\_  
(Date)

**APPROVED SAMPLE ANALYSIS REQUEST**

U.S. Army, Fort Monmouth N.J.  
 Attn: SELFM-PW  
 Building 167  
 Fort Monmouth, New Jersey 07703-5108  
 Attention: Charles Appleby  
 Phone:(908) 532-6224 FAX:(908) 532-2367

**Project No.: 9500366-001M**  
 Client Job#: 94-12-8-1040-10  
 Date Received: 01/30/95  
 Analysis Due : 02/01/95

Number Of Samples : 2  
 Number Of Containers: 2

Approved By: Steven Burns

Reports: Custom Report Format

Customer Number: 1636-000  
 P.O. Number: D01-95U  
 Standard Tests  
 Project Name: Bldg. 616 UST# 0081533-90

Sample I.D.'s	Code	Requested Analytical Services	Sampled
001 1785.1 Field Blank 01/27/95	VMW01 VMW0A	Volatile Organics Library Search Volatile Organics, WW, SW-846 8240	01/27/95
002 1786.1 Site D West Sidewall 01/27/95	VMS0B VMS0A	Volatile Organics Library Search Volatile Organics, SW, SW-846 8240	01/27/95

**Project Notes:**

48 Hr. Verbal TAT. Hard Copy 3 week TAT.

**Customer Notes:**

Three copies of packages. See Data Mgmt. for details.

Received By Lab: \_\_\_\_\_  
 Reviewed By: \_\_\_\_\_  
 Q.A. Approved: \_\_\_\_\_

Initials/Date

Printed By: Rose Kovacs  
 Date: 03/06/95  
 Time: 18:08:12

1



# CHAIN OF CUSTODY

U.S. Army, Fort Monmouth N.J.  
Attn: SELFM-PW  
Building 167  
Fort Monmouth, New Jersey 07703-5108  
Phone:(908) 532-6224 FAX:(908) 532-2367

Project Number: 9500366-001M  
Date Received : 01/30/95  
Time Received : 16:45  
Number of Containers: 2  
Number of Samples : 2

Attention: Charles Appleby

Page#: 1 of 1

## Sample I.D.'s

001	1785.1 Field Blank 01/27/95	002	1786.1 Site D West Sidewall 01/27/95
-----	-----------------------------------	-----	--

Relinquished By	Received By	Date	Time
A. Richards	S. Burns	01/30/95	
<i>[Signature]</i>	<i>[Signature]</i>	1/30/95	10:25

**VOLATILES**

METHODOLOGY SUMMARY

VOLATILE ORGANICS:

A.) SOIL: US EPA SW-846 METHOD 8240.

B.) WATER: US EPA SW-846 METHOD 8240.

LABORATORY CHRONICLE  
ORGANIC ANALYSIS

Company: US Army Job #: 95000366

Date Received & Refrigerated: 01/30/95

EXTRACTION INFORMATION

Base-Neutral Extractables

\_\_\_ / \_\_\_ / \_\_\_  
\_\_\_ / \_\_\_ / \_\_\_  
\_\_\_ / \_\_\_ / \_\_\_  
\_\_\_ / \_\_\_ / \_\_\_  
\_\_\_ / \_\_\_ / \_\_\_

Acid Extractables

\_\_\_ / \_\_\_ / \_\_\_  
\_\_\_ / \_\_\_ / \_\_\_  
\_\_\_ / \_\_\_ / \_\_\_

Pesticides/ PCBs

\_\_\_ / \_\_\_ / \_\_\_  
\_\_\_ / \_\_\_ / \_\_\_

PCBs only

\_\_\_ / \_\_\_ / \_\_\_  
\_\_\_ / \_\_\_ / \_\_\_

Herbicides

\_\_\_ / \_\_\_ / \_\_\_  
\_\_\_ / \_\_\_ / \_\_\_

Pesticides (EPTOX)

\_\_\_ / \_\_\_ / \_\_\_

Other: \_\_\_\_\_

\_\_\_ / \_\_\_ / \_\_\_

ANALYSIS INFORMATION

Base-Neutral Extractables

\_\_\_ / \_\_\_ / \_\_\_  
\_\_\_ / \_\_\_ / \_\_\_  
\_\_\_ / \_\_\_ / \_\_\_  
\_\_\_ / \_\_\_ / \_\_\_  
\_\_\_ / \_\_\_ / \_\_\_

Acid Extractables

\_\_\_ / \_\_\_ / \_\_\_  
\_\_\_ / \_\_\_ / \_\_\_  
\_\_\_ / \_\_\_ / \_\_\_

Pesticides/ PCBs

\_\_\_ / \_\_\_ / \_\_\_  
\_\_\_ / \_\_\_ / \_\_\_

PCBs only

\_\_\_ / \_\_\_ / \_\_\_  
\_\_\_ / \_\_\_ / \_\_\_

Herbicides

\_\_\_ / \_\_\_ / \_\_\_  
\_\_\_ / \_\_\_ / \_\_\_

Pesticides (EPTOX)

\_\_\_ / \_\_\_ / \_\_\_

Volatiles - 601/602

\_\_\_ / \_\_\_ / \_\_\_  
\_\_\_ / \_\_\_ / \_\_\_

Volatiles - 624/8240

Urc 02/02/95

\_\_\_ / \_\_\_ / \_\_\_  
\_\_\_ / \_\_\_ / \_\_\_

Other: \_\_\_\_\_

\_\_\_ / \_\_\_ / \_\_\_

Dept. Manager Review and Approval: [Signature] 2/10/95

QC Supervisor Review and Approval: [Signature] 3/7/95

**GCMS ANALYSIS NON CONFORMANCE SUMMARY**

	<u>NO</u>	<u>YES</u>
1. <u>GCMS TUNE SPECIFICATION.</u>		
a. BFB Passed	___	___ ✓
b. DFTPP Passed	___	___
2. <u>GCMS TUNING FREQUENCY.</u>		
a. Performed every 12 hours.	___	___ ✓
b. Performed every 24 hours.	___	___
3. <u>GCMS Calibration.</u>		
a. Initial calibration performed w/i 30 days of sample analysis.	___	___ ✓
b. Continuing calibration w/i 12 hours.	___	___
c. Continuing calibration w/i 24 hours.	___	___
4. <u>GCMS Calibration requirements.</u>		
a. Calibration check compounds.	___	___ ✓
b. System performance check compounds.	___	___
5. <u>Blank Contamination.</u>		
a. VOA Fraction <u>Methylene chloride, Acetone &amp; 2-Butanone below MPLs.</u>		
b. B/N Fraction		
c. Acid Fraction		
6. <u>Surrogate Recoveries Within Limits.</u>		
a. VOA Fraction	___	___ ✓
b. B/N Fraction	___	___
c. Acid Fraction	___	___
7. Extraction Holding Time Met.	___	___ ✓
8. Analysis Holding Time Met.		
a. VOA Fraction	___	___ ✓
b. BNA Fraction	___	___

Comments:

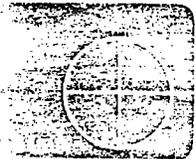
\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Laboratory Manager

*[Handwritten Signature]*

Date

2/10/95



princeton testing  
laboratory inc.

P.O. Box 3108  
3490 U.S. Route 1  
Princeton, NJ 08543-3108  
(609) 452-9050  
FAX (609) 452-0347

Feb 9, 1995.

U.S. Army, Fort Monmouth N.J  
ATTN: SELFM-PW  
Building 167  
Fort Monmouth, New Jersey 07703-5108

Attention: Charles Appleby

Job Number: 9500366

**CASE NARRATIVE**

The following package contains analytical data pertaining to samples received by Princeton Testing Laboratory on 01/30/95. The samples were analyzed for volatile organics by GC/MS.

**VOLATILE ORGANICS**

**BLANKS:** Blank from 02/02/95 had acetone, methylene chloride and 2-butanone below MDLs.

**SAMPLES:** The sample was run at 50X dilution due to the smelly nature of it.

**SURROGATES:** All surrogate recoveries are within QC limits.

**MS/MSD:** Sample 1785.2 from the same job was used for matrix spike and duplicate. All recoveries were within the QC limits.

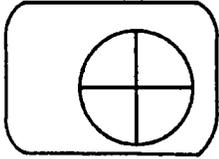
If you have any further questions please do not hesitate to call me.

Khaja Eazazuddin.  
GC/MS Supervisor.

**SAMPLE DATA**

Initial Calibration Data  
New Calibration  
Data

Initial Calibration Data  
New Calibration  
Data



# Princeton Testing Laboratory Inc.

P.O. Box 3108  
3490 U.S. Route 1  
Princeton, NJ 08543-3108  
(609) 452-9050  
(FAX) (609) 452-1959

U.S. Army, Fort Monmouth N.J.  
Attn: SELFM-PW  
Building 167  
Fort Monmouth, New Jersey 07703-5108  
Attention: Charles Appleby  
Project Name: Bldg. 616 UST# 0081533-90

Report Date: 02/09/95  
Job Number: 9500366-001  
Date Received: 01/30/95  
Client Job No.: 94-12-8-1040-10  
Page: 1

### Analysis: Volatile Organics, WW, SW-846 8240 Units: ug/liter

Parameters	Sample I.D.:	1785.1
	Field Blank	01/27/95
Chloromethane		<10
Bromomethane		<10
Vinyl chloride		<10
Chloroethane		<10
Methylene chloride		<5.0
Acetone		5.8 B
Carbon disulfide		<5.0
1,1-Dichloroethene		<5.0
1,1-Dichloroethane		<5.0
1,2-Dichloroethene (Total)		<5.0
Chloroform		<5.0
1,2-Dichloroethane		<5.0
2-Butanone		1.2 JB
1,1,1-Trichloroethane		<5.0
Carbon tetrachloride		<5.0
Bromodichloromethane		<5.0
1,1,2,2-Tetrachloroethane		<5.0
1,2-Dichloropropane		<5.0
trans-1,3-Dichloropropene		<5.0
Trichloroethene		<5.0
Dibromochloromethane		<5.0
1,1,2-Trichloroethane		<5.0
Benzene		<5.0
cis-1,3-Dichloropropene		<5.0
Bromoform		<5.0
2-Hexanone		<5.0
4-Methyl-2-Pentanone		<5.0
Tetrachloroethene		<5.0
Toluene		<5.0
Chlorobenzene		<5.0
Ethylbenzene		<5.0
Styrene		<5.0
Total Xylenes		<5.0

### RECOVERY DATA                      QC LIMITS

1,2-Dichloroethane-d4 (Surrogate)	76-114%	107
Toluene-d8 (Surrogate)	88-110%	98
4-Bromofluorobenzene (Surrogate)	86-115%	95

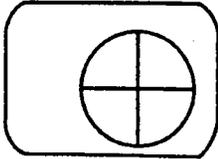
J - Estimated Value Detected Below MDL                      B - Compound Found In Blank

1E  
 VOLATILE ORGANICS ANALYSIS DATA SHEET  
 TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO. 1785.1 FLD BLK
----------------------------------

Lab Name: Princeton Testing Lab US ARMY, FORT MONMOUTH N.J.  
 Lab Code: PTL Case No.: 9500366 SAS No.: XXX SDG No.: XXX  
 Matrix: (Soil/Water) WATER Lab Sample ID: 01  
 Sample wt/vol: 5.0 (g/mL)mL Lab File ID: C9999  
 Level: (low/med) LOW Date Received: 01/30/95  
 Moisture: not dec. Date Analyzed: 02/02/95  
 GC Column: VOCOL ID: 0.53 mm Dilution Factor: 1  
 Soil Extract Vol: \_\_\_\_\_ ul Soil Aliquot Vol: \_\_\_\_\_ ul  
 Number POCs found: 1 CONCENTRATION UNITS:  
 (ug/L or ug/Kg) ug/L

#S	CAS NUMB	COMPOUND NAME	RT	EST. CONC.	SCAN
1	124-19-6	NONANAL	39:35	4.8	3111



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U.S. Army, Fort Monmouth N.J.  
Attn: SELFM-PW  
Building 167  
Fort Monmouth, New Jersey 07703-5108  
Attention: Charles Appleby  
Project Name: Bldg. 616 UST# 0081533-90

Report Date: 02/09/95  
Job Number: 9500366-001  
Date Received: 01/30/95  
Client Job No.: 94-12-8-1040-10  
Page: 1

**Analysis: Volatile Organics, SW, SW-846 8240**  
**Units: ug/kg**

Parameters Sample I.D.: 1786.1 Site D  
West Sidewall  
01/27/95

Chloromethane	<630
Bromomethane	<630
Vinyl chloride	<630
Chloroethane	<630
Methylene chloride	100 JB
Acetone	270 JB
Carbon disulfide	<310
1,1-Dichloroethene	<310
1,1-Dichloroethane	<310
1,2-Dichloroethene (Total)	<310
Chloroform	<310
1,2-Dichloroethane	<310
2-Butanone	540 B
1,1,1-Trichloroethane	<310
Carbon tetrachloride	<310
Bromodichloromethane	<310
1,1,2,2-Tetrachloroethane	<310
1,2-Dichloropropane	<310
trans-1,3-Dichloropropene	<310
Trichloroethene	<310
Dibromochloromethane	<310
1,1,2-Trichloroethane	<310
Benzene	<310
cis-1,3-Dichloropropene	<310
Bromoform	<310
2-Hexanone	<310
4-Methyl-2-Pentanone	<310
Tetrachloroethene	<310
Toluene	<310
Chlorobenzene	<310
Ethylbenzene	3200
Styrene	<310
Total Xylenes	5200

**RECOVERY DATA**                      **QC LIMITS**

1,2-Dichloroethane-d4 (Surrogate)	70-121%	86
Toluene-d8 (Surrogate)	84-138%	90
4-Bromofluorobenzene (Surrogate)	59-113%	90

J - Estimated Value Detected Below MDL                      B - Compound Found In Blank

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO. 1786.1 SITE D
---------------------------------

Lab Name: Princeton Testing Lab US ARMY, FORT MONMOUTH N.J.

Lab Code: PTL Case No.: 9500366 SAS No.: XXX SDG No.: XXX

Matrix: (Soil/Water) soil Lab Sample ID: 02

Sample wt/vol: 5.0 (g/mL) g Lab File ID: C1001

Level: (low/med) LOW Date Received: 01/30/95

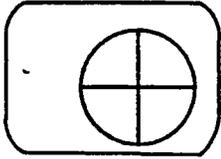
%Moisture: not dec. 20 Date Analyzed: 02/02/95

GC Column: VOCOL ID: 0.53 mm Dilution Factor: 50

Soil Extract Vol:          ul Soil Aliquot Vol:          ul

Number TICs found: 16 CONCENTRATION UNITS:  
(ug/L or ug/Kg) ug/L

#S	CAS NUMB	COMPOUND NAME	RT	EST. CONC.	SCAN
1	526-73-8	BENZENE,1,2,3-TRIMETHYL	32:31	41000	2555
2	95-63-6	BENZENE,1,2,4-TRIMETHYL	34:37	80000	2721
3	91-17-8	NAPHTHALENE,DECAHYDRO	37:25	10000	2940
4	1074-43-7	UNKNOWN HYDROCARBON	37:27	36000	2943
5	611-15-4	UNKNOWN HYDROCARBON	37:44	52000	2966
6	1758-88-9	UNKNOWN HYDROCARBON	37:46	61000	2968
7	0-00-0	UNKNOWN HYDROCARBON	39:10	39000	3078
8	0-00-0	UNKNOWN	39:40	12000	3117
9	0-00-0	UNKNOWN	39:44	27000	3123
10	0-00-0	UNKNOWN HYDROCARBON	32:48	33000	2578
11	0-00-0	UNKNOWN HYDROCARBON	33:17	10000	2616
12	0-00-0	UNKNOWN HYDROCARBON	33:57	23000	2668
13	0-00-0	UNKNOWN HYDROCARBON	35:58	16000	2827
14	0-00-0	UNKNOWN HYDROCARBON	36:34	31000	2874
15	0-00-0	UNKNOWN HYDROCARBON	38:51	57000	3053
16	0-00-0	UNKNOWN HYDROCARBON	36:26	13000	3099



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U.S. Army, Fort Monmouth N.J.  
Attn: SELFM-PW  
Building 167  
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Attention: Charles Appleby  
Project Name: Bldg. 616 UST# 0081533-90

Report Date: 02/09/95  
Job Number: 9500366-001  
Date Received: 01/30/95  
Client Job No.: 94-12-8-1040-10  
Page: 1

**Analysis: Volatile Organics, SW, SW-846 8240**  
**Units: ug/kg**

**Parameters**

*Sample I.D.: Blank 02/02/95*

Chloromethane	<10
Bromomethane	<10
Vinyl chloride	<10
Chloroethane	<10
Methylene chloride	<5.0
Acetone	1.4 J
Carbon disulfide	<5.0
1,1-Dichloroethene	<5.0
1,1-Dichloroethane	<5.0
1,2-Dichloroethene (Total)	<5.0
Chloroform	<5.0
1,2-Dichloroethane	<5.0
2-Butanone	<5.0
1,1,1-Trichloroethane	<5.0
Carbon tetrachloride	<5.0
Bromodichloromethane	<5.0
1,1,2,2-Tetrachloroethane	<5.0
1,2-Dichloropropane	<5.0
trans-1,3-Dichloropropene	<5.0
Trichloroethene	<5.0
Dibromochloromethane	<5.0
1,1,2-Trichloroethane	<5.0
Benzene	<5.0
cis-1,3-Dichloropropene	<5.0
Bromoform	<5.0
2-Hexanone	<5.0
4-Methyl-2-Pentanone	<5.0
Tetrachloroethene	<5.0
Toluene	<5.0
Chlorobenzene	<5.0
Ethylbenzene	<5.0
Styrene	<5.0
Total Xylenes	<5.0

**RECOVERY DATA**

**QC LIMITS**

1,2-Dichloroethane-d4 (Surrogate)	70-121%	108
Toluene-d8 (Surrogate)	84-138%	97
4-Bromofluorobenzene (Surrogate)	59-113%	88

J - Estimated Value Detected Below MDL

EPA SAMPLE NO.  
M. BLANK

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: Princeton Testing Lab US ARMY, FORT MONMOUTH N.J.

Lab Code: PTL Case No.: 9500366 SAS No.: XXX SDG No.: XXX

Matrix: (Soil/Water) SOIL Lab Sample ID: Lab blank

Sample wt/vol: 5.0 (g/mL) g Lab File ID: CELK202A

Level: (low/med) LOW Date Received: \_\_\_\_\_

%Moisture: not dec. \_\_\_\_\_ Date Analyzed: 02/02/95

GC Column: VOCOL ID: 0.53 mm Dilution Factor: 1

Soil Extract Vol: \_\_\_\_\_ ul Soil Aliquot Vol: \_\_\_\_\_ ul

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

#S	CAS NUMB.	COMPOUND NAME	RT	EST. CONC.	SCAN



ATTACHMENT L

UST 620 Report



**United States Army**  
Fort Monmouth, New Jersey

---

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

*Building 620  
Main Post*

---

**NJDEP UST Registration No. 081533-93  
NJDEP Closure Approval Letter Dated  
October 7, 1994**

February 1996

**SMITH**  
ENVIRONMENTAL TECHNOLOGIES CORPORATION

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

**BUILDING 620**

**MAIN POST  
NJDEP UST REGISTRATION NO. 081533-93  
NJDEP CLOSURE APPROVAL LETTER DATED  
OCTOBER 7, 1994**

**FEBRUARY 1996**

**PROJECT NO.: 09-5004-07  
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 08061**

620.DOC

**SMITH**  
ENVIRONMENTAL TECHNOLOGIES CORPORATION

*Engineering • Consulting • Remediation • Construction*



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Appendix D	UST Disposal Certificate
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## EXECUTIVE SUMMARY

### UST Closure

On December 7, 1994, a steel underground storage tank (UST) was closed by removal in accordance with the New Jersey Department of Environmental Protection (NJDEP) Closure Approval Letter dated October 7, 1994 at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey. The UST, NJDEP Registration No. 081533-93 (Fort Monmouth ID No. 620), was located immediately adjacent to Building 620 in the Main Post area of U.S. Army, Fort Monmouth. UST No. 081533-93 was a 1,000-gallon No. 2 diesel 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

The site assessment was performed by U.S. Army personnel in accordance with the NJDEP *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E) and the NJDEP *Field Sampling Procedures Manual*. Soils surrounding the tank were screened visually and with air monitoring equipment for evidence of contamination. Following removal, the UST was inspected for corrosion holes. No holes were noted in the UST and no evidence of potentially contaminated soils was observed surrounding the tank.

On December 9, 1994, following the removal of the UST, post-excavation soil samples A, B, C, D, and DUP D were collected from a total of a total of four (4) locations along the sidewalls of the excavation. The samples were collected at a depth of 4.5 feet below ground surface (bgs). Sample F was collected from the piping portion of the excavation, which was approximately 20 feet in length. The piping sample was collected at a depth of 1.5 feet bgs. All samples were analyzed for total petroleum hydrocarbons (TPHC).

### Findings

All post-excavation soil samples collected from the UST excavation and from below piping associated with the former UST at Building 620 contained TPHC concentrations below the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 milligrams per kilogram (mg/kg) (N.J.A.C. 7:26D and revisions dated February 3, 1994). Samples A, B, and C contained levels of TPHC ranging in concentration from 26.3 mg/kg to 109.0 mg/kg. All other samples contained non-detectable concentrations of TPHC.



Site Restoration

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 Quality Assurance

The sampling and laboratory analysis conducted during the site assessment 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 TPHC concentrations exceeding the NJDEP soil cleanup criteria for total organic contaminants of 10,000 mg/kg, do not exist in the former location of the UST or associated piping.

No further action is proposed in regard to the closure and site assessment of UST No. 081533-93 at Building 620.



## 1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

### 1.1 OVERVIEW

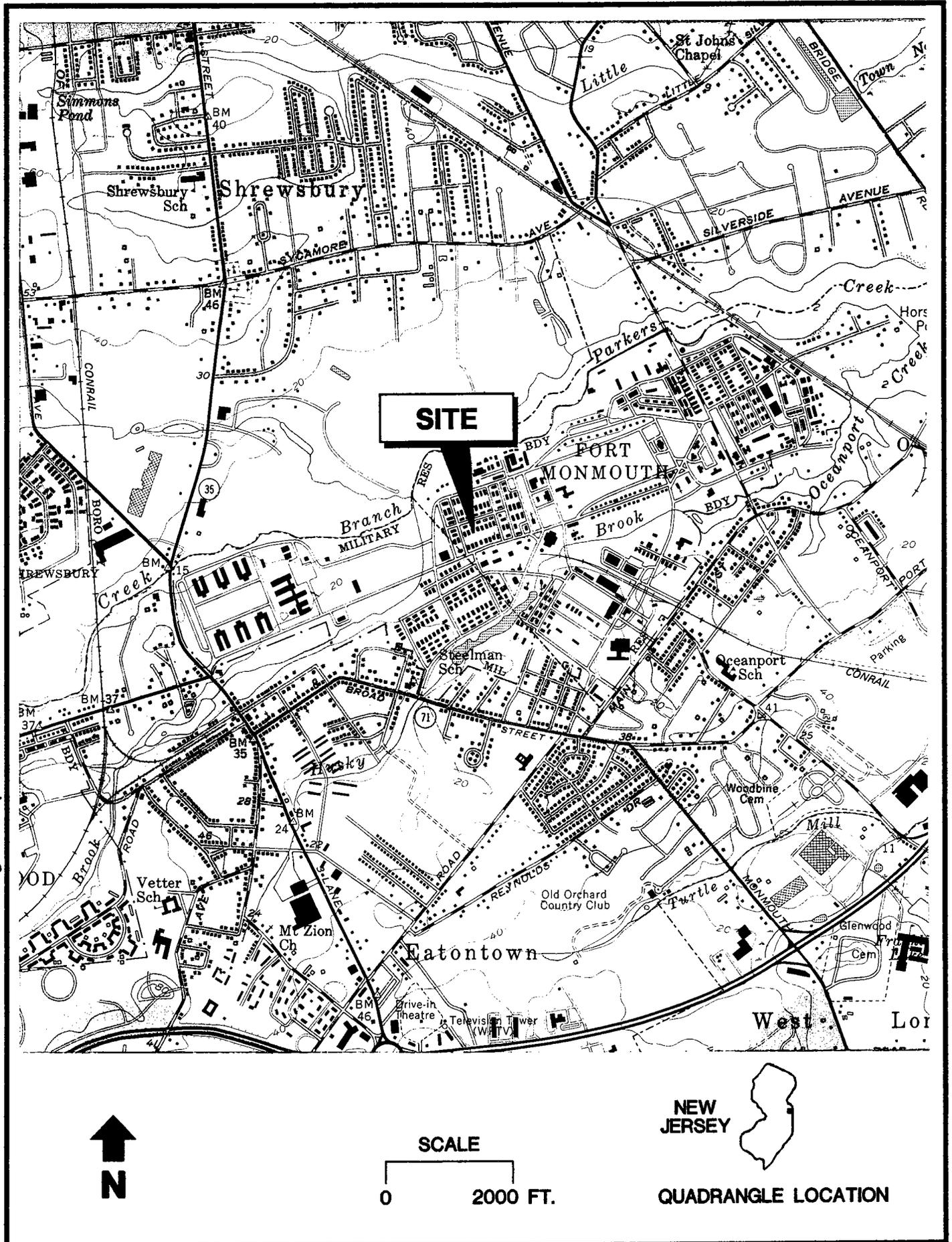
One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 081533-93, was closed at Building 620 at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey on December 7, 1994. Refer to site location map on Figure 1. This report presents the results of the DPW's implementation of the UST Decommissioning/Closure Plan submitted to the NJDEP on September 2, 1994. The plan was approved on October 7, 1994. The UST was a steel, 1,000-gallon tank containing No. 2 diesel oil.

Decommissioning activities for UST No. 081533-93 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. 081533-93 proceeded under the approval of the NJDEP Bureau of Underground Storage Tanks (NJDEP-BUST). The NJDEP-BUST closure approval and signed certifications for UST No. 081533-93 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 no significant historical discharges are associated with the UST or associated piping.

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.



Source: BCM/Smith Environmental Technologies Corporation (028)

## 1.2 SITE DESCRIPTION

Building 620 is located in the western portion of the Main Post area of Fort Monmouth, as shown on Figure 1. UST No. 081533-93 was located south of Building 620 and appurtenant piping ran approximately 20 feet north from the excavation to Building 620. 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 620. Included is a description of the regional geology of the area surrounding Fort Monmouth as well as descriptions of the local geology and hydrogeology of the Main Post area.

#### Regional Geology

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

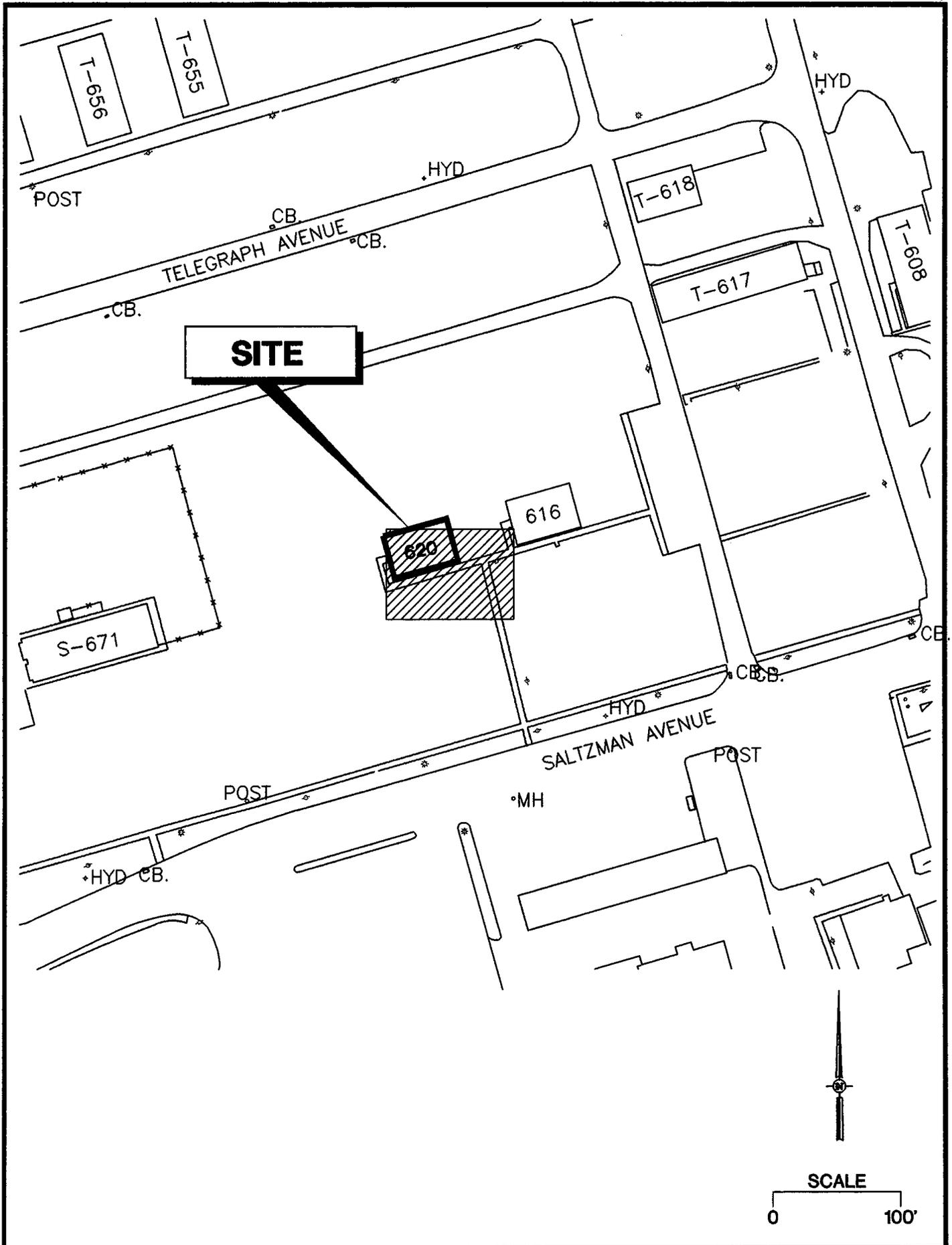
In general, New Jersey Coastal Plain formations consist of a seaward-dipping wedge of unconsolidated deposits of clay, silt, and gravel. These formations typically strike northeast-southwest with a dip ranging from 10 to 60 feet per mile and were deposited on Precambrian and lower Paleozoic rocks (Zapeczka,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

The formations record several major transgressive/regressive cycles and contain units which are generally thicker to the southeast and reflect a deeper water environment. 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 Zapeczka, 1990).

#### Local Geology

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

Source: BCM/Smith Environmental Technologies Corporation (076)



coarse-grained sand that contains abundant rock fragments, minor mica and glauconite (Jablonski). The lower member (Sandy Hook) is a dark gray to black, medium-to-fine grained sand with abundant clay, mica, and glauconite.

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

## Hydrogeology

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

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

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

## **1.3 HEALTH AND SAFETY**

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

## 1.4 REMOVAL OF UNDERGROUND STORAGE TANK

### 1.4.1 General Procedures

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

### 1.4.2 Underground Storage Tank Excavation and Cleaning

Prior to UST decommissioning activities, surficial soil was removed to expose the UST and associated piping. All free product present in the piping was drained into the UST, and the UST was purged to remove vapors prior to cutting and removal of the piping. After removal of the associated piping, a manway was made in the UST to allow for proper cleaning. The UST was completely emptied of all liquids prior to removal from the ground. Approximately 200 gallons of liquid were transported by Freehold Cartage Inc. to Lionetti Oil Recovery Co. Inc., a NJDEP-approved petroleum recycling and disposal company located in Old Bridge, New Jersey. Refer to Appendix C for the waste manifest (NJA-1907257).

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

Soil screening was also performed along the piping associated with the UST. No contamination was noted anywhere along the piping length.



## **1.5 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL**

The tank was transported by CUTE Inc. to Mazza and Sons Inc., for disposal in compliance with all applicable regulations and laws. See 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 OVA air monitoring and TPHC analysis results from the post-excitation soil samples, no soils exhibited signs of contamination. Therefore, the excavated soils were used as backfill following removal of the UST.



## 2.0 SITE INVESTIGATION ACTIVITIES

### 2.1 OVERVIEW

The Site Investigation was managed and carried out by U.S. Army DPW personnel. All analyses were performed and reported by U.S. Army Fort Monmouth Environmental Laboratory, a NJDEP-certified testing laboratory. All sampling was performed under the direct supervision of a NJDEP Certified Sub-Surface Evaluator according to the methods described in the NJDEP *Field Sampling Procedures Manual* (1992). Sampling frequency and parameters analyzed complied with the NJDEP-BUST document *Interim Closure Requirements for Underground Storage Tank Systems* (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
- Hazardous Waste Hauler: Freehold Cartage Inc.  
Contact Person: Barry Olsen  
Phone Number: (908)721-0900  
NJDEP Hazardous Waste Hauler No.: 2265

### 2.2 FIELD SCREENING/MONITORING

Field screening was performed by a NJDEP Certified Sub-Surface Evaluator using an OVA and visual observations to identify potentially contaminated material. Soil excavated from around the tank and appurtenant piping, as well as the UST excavation sidewalls and bottom, did not exhibit any evidence of potential contamination.



### 2.3 SOIL SAMPLING

On December 9, 1994, post-excavation soil samples A, B, C, D, and DUP D were collected from a total of a total of four (4) locations along the sidewalls of the UST excavation. The samples were collected at a depth of 4.5 feet below ground surface (bgs). Sample F was collected from the piping portion of the excavation, which was 20 feet in length. The piping sample was collected at a depth of 1.5 feet bgs. All samples were analyzed for 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 in Table 1. The post-excavation soil samples were collected using decontaminated stainless steel scoops. Following soil sampling activities, the samples were chilled and delivered to U.S. Army Fort Monmouth Environmental Laboratory located in Fort Monmouth, New Jersey, for analysis.

TABLE 1

SUMMARY OF SAMPLING ACTIVITIES  
 BUILDING 620, MAIN POST  
 FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Matrix	Sample Type	Analytical Parameters (and USEPA Methods) *	Sampling Method
A	12-09-94	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
B	12-09-94	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
C	12-09-94	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
D	12-09-94	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
DUP D	12-09-94	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
F	12-09-94	Soil	Post-Excavation	TPHC	Stainless Steel Scoop

\*Note: TPHC Total Petroleum Hydrocarbons (Method 418.1 / soil and aqueous)



## 3.0 CONCLUSIONS AND RECOMMENDATIONS

### 3.1 SOIL SAMPLING RESULTS

To evaluate soil conditions following removal of the UST and associated piping, post-excavation soil samples were collected from a total of five (5) locations on December 9, 1994. All samples were analyzed for TPHC. The post-excavation sampling results were compared to the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 mg/kg (N.J.A.C. 7:26D and revisions dated February 3, 1994). A summary of the analytical results and comparison to the NJDEP soil cleanup criteria is provided in Table 2 and the soil sampling results are shown on Figure 3. The analytical data package is provided in Appendix E.

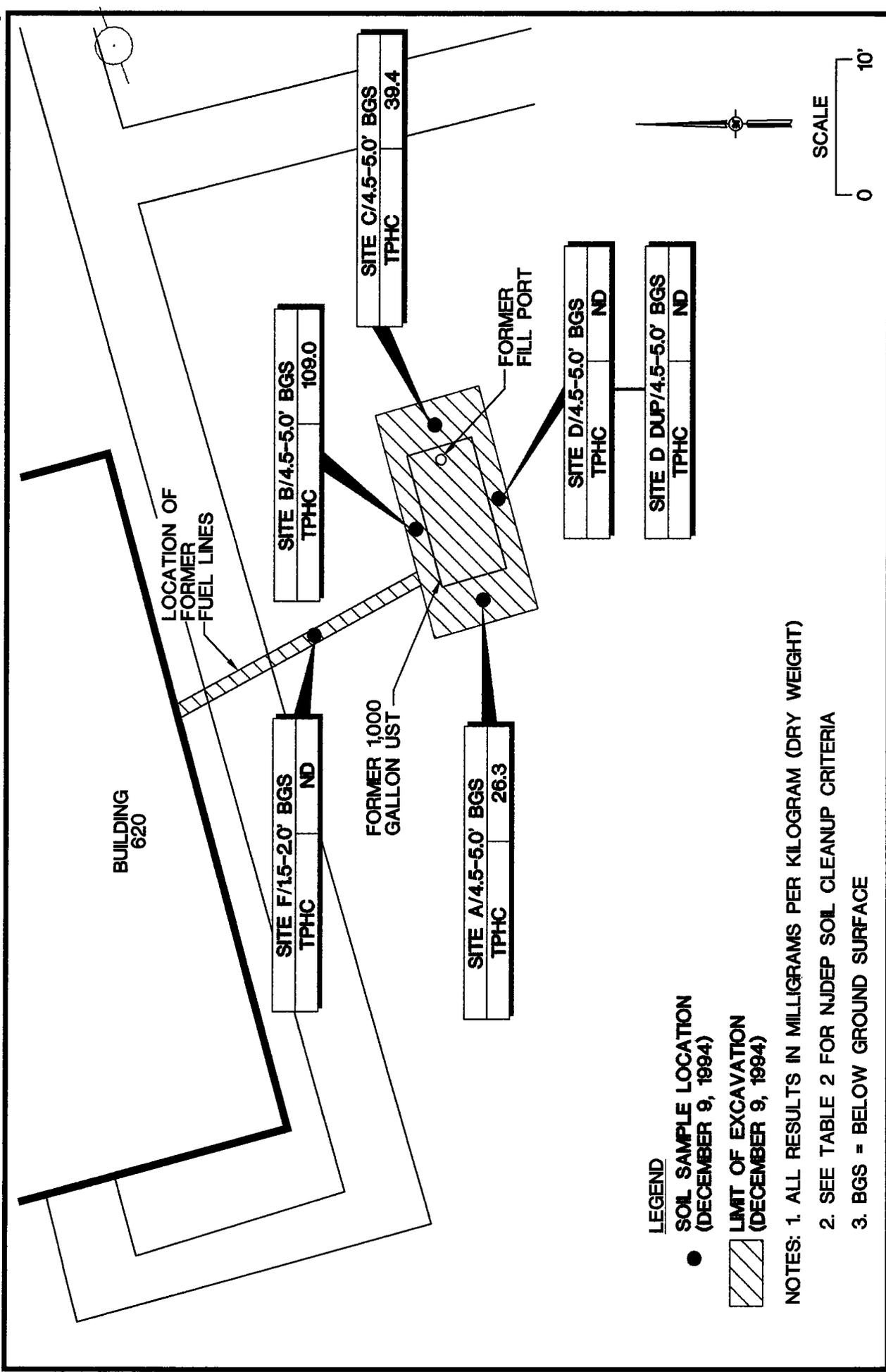
All post-excavation soil samples collected on December 9, 1994 from the UST excavation and from below piping associated with the UST contained concentrations of TPHC below the NJDEP soil cleanup criteria. Post-excavation samples A, B, and C contained TPHC concentrations ranging from 26.3 mg/kg to 109.0 mg/kg. All other samples contained non-detectable concentrations of TPHC.

### 3.2 CONCLUSIONS AND RECOMMENDATIONS

The analytical results for all post-excavation soil samples collected from the UST closure excavation at Building 620 were below the NJDEP soil cleanup criteria for total organic contaminants.

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

No further action is proposed in regard to the closure and site assessment of UST No. 081533-93 at Building 620.



Source: BCM/Smith Environmental Technologies Corporation (077)

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS  
 BUILDING 620  
 FT. MONMOUTH, NEW JERSEY

PAGE 1 OF 1

Sample ID/Depth	Sample Laboratory ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (mg/kg)	Compound of Concern	Result (mg/kg)	NJDEP Soil Cleanup Criteria * (mg/kg)	Exceeds Cleanup Criteria
A/4.5-5.0'	1762.1	12-09-94	12-16-94	Total Solid TPHC	--	--	86 %	--	--
B/4.5-5.0'	1762.2	12-09-94	12-16-94	Total Solid TPHC	8.1	yes	26.3	10,000	--
C/4.5-5.0'	1762.3	12-09-94	12-16-94	Total Solid TPHC	8.1	yes	88 %	10,000	--
D/4.5-5.0'	1762.4	12-09-94	12-16-94	Total Solid TPHC	8.1	yes	109.0	10,000	--
DUP D/4.5-5.0'	1762.5	12-09-94	12-16-94	Total Solid TPHC	8.1	yes	84 %	10,000	--
F/1.5-2.0'	1762.6	12-09-94	12-16-94	Total Solid TPHC	8.1	yes	39.4	10,000	--
					8.1	yes	85 %	10,000	--
					8.1	yes	ND	10,000	--
					8.1	yes	85 %	10,000	--
					8.1	yes	ND	10,000	--
					7.4	yes	87 %	10,000	--
							ND	10,000	--

Notes:

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

Smith Environmental Technologies Corporation (Project No. 09-5004-07)

soil620.doc

**SMITH**

**APPENDIX A**  
**NJDEP BUST CLOSURE APPROVAL**



# State of New Jersey

Department of Environmental Protection

Robert C. Shinn, Jr.  
Commissioner

OCT 7 1994

Mr. Todd Whitman

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

Dear Mr. Desai:

Re: Underground Storage Tank Closure Approvals  
Fort Monmouth Army Facility  
Tinton Falls, Monmouth County

The NJDEP has reviewed the Underground Storage Tank (UST) Closure Plan Approval Requests dated September 2, 1994 for the following USTs:

<u>Tank No.</u>	<u>Building No.</u>	<u>Product</u>	<u>Size</u>	<u>Piping Length</u>
36	608	No. 2 Fuel Oil	1000	12'
C	671	No. 2 Fuel Oil	1000	14'
07	686	No. 2 Fuel Oil	2000	18'
13	620	No. 2 Fuel Oil	1000	22'
10	616	No. 2 Fuel Oil	1000	12'
0	682	No. 2 Fuel Oil	1080	22'
8	508	No. 2 Fuel Oil	1500	15'

The closure requests are consistent with the *Technical Requirements for Site Remediation* (N.J.A.C.7:26E) and are therefore acceptable to the NJDEP (with the incorporation of the comment below). A copy of this letter should be immediately accessible at each of these UST removal locations.

The NJDEP has also received a request dated September 9, 1994 from Mr. James Ott, Acting Director, which requests a variance from the Closure Approval Requests for use of polytetrafluoroethylene (PTFE) trowels to polystyrene trowels. Neither of these types of trowels is acceptable to the NJDEP. In accordance with the *Field Sampling Procedures Manual* (May 1992), only appropriately decontaminated stainless steel trowels are acceptable. Please correct the UST closure plans to reflect the requirement to use stainless steel trowels.

If you should have any questions or require additional information, please do not hesitate to contact me at (609) 455-1345.

Sincerely,

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

Mr. James Ott, FTMMTH

CE:\CM1FTMMTH17.IRC



**APPENDIX B**  
**CERTIFICATIONS**



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. 620

081533-93  
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 07703	County Monmouth
Telephone No. (908) 532-6224	

OWNER'S NAME AND ADDRESS, if different from above

\_\_\_\_\_  
 \_\_\_\_\_  
 Telephone No. \_\_\_\_\_

## II. DISCHARGE REPORTING REQUIREMENTS

- A. Was contamination found?  Yes  No If Yes, Case No. \_\_\_\_\_  
(Note: All discharges must be reported to the Environmental Action Hotline (609) 292-7172)
- B. The substance(s) discharged was(were) N/A
- C. Have any vapor hazards been mitigated?  Yes  No  N/A

## III. DECOMMISSIONING OF TANK SYSTEMS

Closure Approval No. Letter dated October 7, 1994

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:

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

### C. Soil samples and borings (check appropriate answer)

- Were soil samples taken from the excavation as prescribed?  Yes  No  N/A
- Were soil borings taken at the tank system closure site as prescribed?  Yes  No  N/A
- Attach the analytical results in tabular form and include the following information about each sample:
  - Customer sample number (keyed to the site map)
  - The depth of the soil sample
  - Soil boring logs
  - Method detection limit of the method used
  - QA/QC Information as required

D. Ground Water Monitoring

1. Number of ground water monitoring wells installed 0
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?  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. N/A ppb total BTEX, N/A ppb total non-targeted VOC
  2. N/A ppb total B/N, N/A ppb total non-targeted B/N
  3. 109.0 ppm TPHC
  4. N/A ppb \_\_\_\_\_ (for non-petroleum substance)

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  No
2. Free product contaminated soils are suspected to exist below the water table  Yes  No
3. Free product contaminated soils are suspected to exist off the property boundaries.  Yes  No

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

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

VI. GROUND WATER CONTAMINATION N/A

- A. Was ground water contamination found?  Yes  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:

1. \_\_\_\_\_ ppb total BTEX, \_\_\_\_\_ ppb total non-targeted VOC
2. \_\_\_\_\_ ppb total B/N, \_\_\_\_\_ ppb total non-targeted B/N
3. \_\_\_\_\_ ppb total MTBE, \_\_\_\_\_ ppb total TBA
4. \_\_\_\_\_ ppb \_\_\_\_\_ (for non-petroleum substance)
5. greatest thickness of separate phase product found \_\_\_\_\_
6. separate phase product has been delineated  Yes  No  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  N/A
2. The number of these wells identified is \_\_\_\_\_.

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 \_\_\_\_\_ 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 \_\_\_\_\_ feet from the source and its screening begins at a depth of \_\_\_\_\_ 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 \_\_\_\_\_ feet below grade. This well is located \_\_\_\_\_ 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 \_\_\_\_\_ feet from the source. This well is \_\_\_\_\_ feet deep and screening begins at a depth of \_\_\_\_\_ feet.

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

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

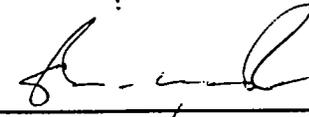
G. Delineation of contamination

1. The ground water contaminants have been delineated to MCLs or lower values at the property boundaries.  Yes  No
2. The plume is suspected to continue off the property at concentrations greater than MCLs.  Yes  No
3. Off property access (circle one):  is being sought  has been approved  has been denied

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 Desai SIGNATURE 

COMPANY NAME U.S. Army Fort Monmouth DATE 11/21/91  
(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]

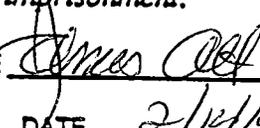
*"I certify under penalty of law that tank decommissioning activities were performed in compliance with N.J.A.C. 7:14B-9.2(b)3. I am aware that there are significant penalties for submitting false, inaccurate, or incomplete information, including fines and/or imprisonment."*

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)1].

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

NAME (Print or Type) James Ott SIGNATURE   
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)2]:

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 \_\_\_\_\_

**SMITH**

**APPENDIX C**  
**WASTE MANIFEST**



**State of New Jersey  
Department of Environmental Protection and Energy  
Hazardous Waste Regulation Program  
Manifest Section  
CN 421, Trenton, NJ 08625-0421**

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

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

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No. NJ11312110101210151917101010101		Manifest Document No. 01010101	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 Main Post, c/o James Shirghio, Bldg 2504, ATTN: SELFM-DL-EM-MS Fort Monmouth, NJ 07703 173 JF PW-EV JF				A. State Manifest Document Number NJ A 1907257			
4. Generator's Phone (908) 532-6223				B. State Generator's ID (Gen./Site Address) Main Post			
5. Transporter 1 Company Name Freehold Cartage Inc.		6. US EPA ID Number NJ1J1D101541121611614		C. State Trans. ID-NJDEPE S2265		Decal No. 64499	
7. Transporter 2 Company Name		8. US EPA ID Number		D. Transporter's Phone (908) 462-1001		E. State Trans. ID-NJDEPE	
9. Designated Facility Name and Site Address Lionetti Oil Recovery Co., Inc. Cheesequake & Runyon Rds. Old Bridge, NJ 08857				10. US EPA ID Number NJ1J1D101841044101614		F. Transporter's Phone (908) 721-0900	
11. US DOT Description (Including Proper Shipping Name, Hazard Class or Division, HM ID Number and Packing Group)				12. Containers No.	13. Total Quantity	14. Unit Wt/Vol	Waste No.
a.	X	Petroleum Oil, N.O.S. Class 3 (Petroleum Oil) Combustible Liquid UN 1270 PG III BLDG 608		0101	TIT	00008	G X 7 2 2
b.	X	Petroleum Oil, N.O.S. Class 3 (Petroleum/Oil) Combustible Liquid UN 1270 PG III BLDG 545		0101	TIT	00100	G X 7 2 2
c.	X	Petroleum Oil, N.O.S. Class 3 (Petroleum Oil) Combustible Liquid UN 1270 PG III BLDG 682		0101	TIT	00100	G X 7 2 2
d.	X	Petroleum Oil, N.O.S. Class 3 (Petroleum Oil) Combustible Liquid UN 1270 PG III BLDG 624		0101	TIT	00200	G X 7 2 2
15. Special Handling Instructions and Additional Information THIS MATERIAL IS NOT REGULATED BY THE FEDERAL EPA. IT IS REGULATED AS HAZARDOUS WASTE IN NJ. 11A-082537-86 11b.-78 11c.-106 11d.-93 24 HOUR EMERGENCY PHONE: 201-427-2881 11 a, b, c, d ERG# 27				K. Handling Codes for Wastes Listed Above R04= Filtration R04= Filtration			
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.				Printed/Typed Name Joseph M. Fallon			
17. Transporter 1 Acknowledgement of Receipt of Materials				Signature Joseph M. Fallon			
18. Transporter 2 Acknowledgement of Receipt of Materials				Signature David Smith			
19. Discrepancy Indication Space				Month Day Year 11/22/94			
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.				Signature David Smith			
Printed/Typed Name				Month Day Year 11/22/94			

NJ A 1907257



## APPENDIX D

### UST DISPOSAL CERTIFICATE

Fort Monmouth  
Paterson, NJ

Tank #      UST #  
620-      0081533-99  
682-      0081533-106  
616-      0081533-90

**MAZZA & SONS, INC.**

Metal Recyclers  
Auto and Truck  
8250 Shallo Rd.  
Tinton Falls, NJ  
(800) 822-8288

NO. \_\_\_\_\_

DATE 12 Dec 84

Customer's Name Cute Inc

Address 103 Godwin Ave, P.O. 237, Middland Pt, NJ 07432

Make of  
Auto

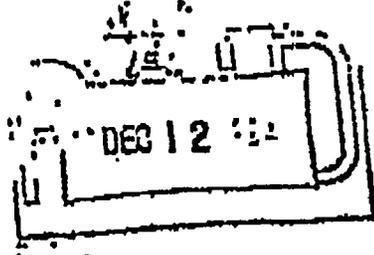
Blue 1981  
687-81533-106  
616-0081533-90  
620-81533-93

Tire \_\_\_\_\_  
Tank \_\_\_\_\_  
Fitter \_\_\_\_\_

39820 LB :

35780 LB :

38.4



Weight      Price

Cold Iron		
Steel	76.50	
Lt. Iron		
Copper #1		
Copper #2		
Lt. Copper		
Brass		
Alum Clean		
Lead		
Shardan		
Radiators		
Battery		

TOTAL AMOUNT:

Wagner \_\_\_\_\_ Customer Dan



**APPENDIX E**

**SOIL ANALYTICAL DATA PACKAGE**

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

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

Lab. ID #: 1762.1-.6  
 Sample Rec'd: 12/09/94  
 Analysis Start: 12/16/94  
 Analysis Comp: 12/20/94

Analysis: 418.1 (TPH)  
 Matrix: Soil  
 Analyst: S. Hubbard  
 Ext. Meth: 3540A

NJDEPE UST Reg.#: 81533-93  
 Closure #:  
 DICAR #:  
 Location #: Bldg. 620

Lab ID.	Description	%Solid	Result	MDL
			(mg/Kg)	
1762.1	Site A, Sidewall OVA=ND	86	26.3	8.1
1762.2	Site B, Sidewall OVA=ND	88	109.	8.1
1762.3	Site C, Sidewall OVA=ND	84	39.4	8.1
1762.4	Site D, Sidewall OVA=ND	85	ND	8.1
1762.5	Site E, Dup. of <del>1762.5</del> OVA=ND	85	ND	8.1
1762.6	Site F, Feed line OVA=ND	87	ND	7.4
M. Bl.	Method Blank	100	ND	3.3

Notes: ND = Not Detected; MDL = Method Detection Limit  
 \* = Silica Gel Added, NA = Not Applicable  
 1762.5S= 93%, 1762.5SD= 96%, RPD= 2.5%    1762.5 Dup=100%  
 1762.6S= 122%, 1762.6SD= 114%, RPD= 7.0%    1762.6 Dup=100%  
 QC Limits: Recovery= +/-28%, RPD=19.7%

*Brian K. McKee*  
 -----  
 Brian K. McKee  
 Laboratory Director



# U.S. ARMY FORT MONMOUTH

Chain of Custody

P.O. #: Pass-9

Project #:	Sampler:	Date / Time	Analysis Parameters	Start:			
Customer: <i>Debra</i>	<i>Goerke/Cute</i>	12/9 2-40	724 96% Solids Dissolved	Finish:			
Phone:	Site Name:						
	620						
	1533-93						
Lab Sample ID Number	Date/Time	Customer Sample Location/ID Number	Sample Matrix	# of Bottles	Analysis Parameters	Remarks	Preservation Method
1762.1	12/9 2-41	Site A Dickerson	SW	1	X	Single Striped	
1762.2	" 2-45	Site B	"	1	X	CYR	
1762.3	" 2-48	Site C	"	1	X	ND	
1762.4	" 2-52	Site D	"	1	X	ND	
1762.5	" 2-54	E (Dup) of D	"	1	X	OVA Calculation = 0.0200 CIV	
1762.6	" 2-59	F-feral 11m	"	1	X	95 11m M&K	
						Ready-60	
Relinquished By (signature)		Date / Time	Received By (signature)	Shipped By:			
<i>[Signature]</i>		12/9 3-30	<i>[Signature]</i>				
Relinquished By (signature)		Date / Time	Received for Lab by (signature)	Date / Time			

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

Environmental Laboratory

Copy

December 16 1994 0740

Sarah J. DeLubard

2CM/M 500 MV=CAL-0

Std 40.75 69 MV R.9996

Std 81.5 132 MV

Std 163 254 MV

Blank 0 MV

176.1.5 29 MV

176.1.6 42 MV

176.2.1 8 MV

176.2.2 22 MV

176.2.3 10 MV

176.2.4 1 MV

176.2.5 0<sup>th</sup> ND

176.2.5 0 MV NA Duplicate

176.2.5 44 MV Spikes

176.2.5 45 MV Dup Spikes

PRINTED IN U.S.A.

135-6970-00

December 20, 1994

Jarah D. Hubbard 0655

2CM/M 500 MV=CAL-0

Std 40.75 69.4V

Std 81.5 123MV

Std 163 246 MV

Method (blank) 0 MV

1762.6 0 MV

1762.6 0 MV

1762.6 63.4V Spk

1762.6 59MV Dup Spk

1768.1 5 MV

1768.2 8 MV

1768.3 13 MV

1768.4 6 MV

1768.5 6 MV

~~1768.6 void~~

1761.1 16 MV

R. 1994

PHC Conformance/Non-conformance Summary Report

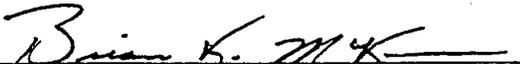
- |   | <u>No</u> | <u>Yes</u>   |
|---|-----------|--------------|
| 1. Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank   | ✓         | —            |
| <hr/> <hr/>   |           |              |
| 2. Matrix Spike/Matrix Sp Dup. Recoveries Meet Criteria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

Project #1762

  
\_\_\_\_\_  
Brian K. McKee  
Laboratory Manager

ATTACHMENT M

UST 622 Report



**U.S. Army Garrison**  
Fort Monmouth, New Jersey

---

**Underground Storage Tank  
Closure Report**

*Main Post – former Building 622  
Harmon Ave.*

---

**NJDEP UST Registration No. 81533-95**

**January 2008**

**UNDERGROUND STORAGE TANK REPORT**

**MAIN POST -FORMER BUILDING 622  
NJDEP UST REGISTRATION NO. 81533-95**

**JANUARY 2008**

**PREPARED FOR:**

**U.S. ARMY GARRISON, FORT MONMOUTH, NJ  
DIRECTORATE OF PUBLIC WORKS  
BUILDING 167  
FORT MONMOUTH, NJ 07703**

**PROJECT NO. 06-34950**

**PREPARED BY:**

**TECOM-VINNELL SERVICES, INC.  
P.O. BOX 60  
FT. MONMOUTH, NJ 07703**

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## EXECUTIVE SUMMARY

### UST Closure

A single wall steel underground storage tank (UST) was closed by removal in accordance with the New Jersey Department of Environmental Protection (NJDEP) guidelines on May 28, 1990. The UST was located on the east side of former Building 622 in the Main Post area of Fort Monmouth. UST No. 81533-95 was a 1,000-gallon tank containing No. 2 heating oil.

### Site Assessment

This site assessment was performed by TVS personnel in accordance with the NJDEP *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E) and the NJDEP *Field Sampling Procedures Manual*.

During the time of UST removal, no closure soil samples were collected. Soil sampling was not required at the time. However, in order to confirm that the tank did not leak, this subsurface investigation was conducted. On January 27, 2006, a Geoprobe was utilized to collect soil samples 622-S, 622-C, 622-N and 622-C (groundwater) from a total of three (3) locations along the tank centerline bottom. All soil samples were analyzed for total petroleum hydrocarbons (TPH). Groundwater was encountered at approximately seven and one half (7.5) feet below surface grade in the borings. A sample of it was collected and analyzed for volatile organic analysis (VOA) and semi-volatile organic analysis (SVOA).

### Findings

The closure soil samples collected from the location associated with former UST No. 81533-95, contained TPH concentrations below the NJDEP health based criterion of 10,000 milligrams per kilogram (mg/kg) for total organic contaminants (N.J.A.C. 7:26E and revisions dated February 3, 1994). All soil samples contained TPH concentrations of Not Detected.

### Conclusions and Recommendations

Based on the closure soil sampling results, soils with TPH concentrations exceeding the NJDEP health based criterion of 10,000 mg/kg for total organic contaminants are not present in the location of the former UST. A groundwater sample, analyzed for volatile organic analysis and semi-volatile organic analysis, did not contain any compounds above the analytical method detection limits.

**No Further Action** is proposed in regard to the closure and site assessment of UST No. 81533-95 at former Building 622.

# 1.0 UNDERGROUND STORAGE TANK CLOSURE SOIL SAMPLING ACTIVITIES

## 1.1 OVERVIEW

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 81533-95, was closed at former Building 622 of the Main Post at the U.S. Army Garrison, Fort Monmouth, New Jersey. Refer to site location map on Figure 1. This report presents the results of soil and groundwater sampling analysis to confirm that the tank did not leak. The UST was a 1,000-gallon, single-wall steel tank containing No. 2 heating oil for residential use. The UST was installed in 1941 and removal was done on May 28, 1990. An archived letter detailing the removal procedures along with the NJDEP UST Site Investigation Report Form are included in Appendix A.

This UST Closure Report has been prepared by TVS to assist the U.S. Army Garrison DPW in complying with the NJDEP - Underground Storage Tanks regulations. The applicable NJDEP regulations at the date of closure were the *Closure of Underground Storage Tank Systems* (N.J.A.C. 7:14B-9 et seq. December, 1987 and revisions dated April 20, 2003).

This report was prepared using information required by the *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E) (*Technical Requirements*). Section 1 of this UST Closure Report provides a summary of the UST site. Section 2 of this report describes the site investigation activities. Conclusions and recommendations, including the results of the soil sampling investigation, are presented in Section 3 of this report.

## 1.2 SITE DESCRIPTION

Former Building 622, Harmon Ave., was located in the east-central portion (600 Area) of the Main Post of Fort Monmouth, as shown on Figure 1. UST No. 81533-95 was located on the east side of Building 622. Historical maps were used to determine the exact location of the former building and tank. A historical 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 600 Area. Included is a description of the regional geology of the area surrounding Fort Monmouth as well as descriptions of the local geology and hydrogeology of the Main Post area.

#### Regional Geology

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

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

The formations record several major transgressive/regressive cycles and contain units which are generally thicker to the southeast and reflect a deeper water environment. 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 Zapeczka, 1990).

### Local Geology

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

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

### Hydrogeology

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

Based on records of wells drilled in the Main Post area, water is typically encountered at depths of 2 to 9 feet below ground surface (bgs). According to Jablonski, wells drilled in the Red Bank

and Tinton Sands may produce 2 to 25 gallons per minute (gpm). Some well owners have reported acidic water that requires treatment to remove iron.

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

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

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

Due to the fluvial nature of the overburden deposits (e.g., 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.

Former Building 622 was located approximately 1,200 feet south of Parkers Creek, the nearest water body, which flows into the Shrewsbury River. Based on the Main Post topography, the groundwater flow in the area of the Building 622 is anticipated to be to the north.

### **1.3 HEALTH AND SAFETY**

Work site health and safety hazards were minimized during all site investigation activities. All areas which posed a vapor hazard were monitored by a qualified individual utilizing a calibrated photo-ionizer detector : Thermo Instruments Organic Vapor Monitor (OVM) – Model #580-B. The individual ascertained if the area was properly vented to render the area safe, as defined by OSHA. All work areas were properly vented to insure that there were no contaminants present in the breathing zone above permissible exposure limits (PEL's).

## 2.0 SITE INVESTIGATION ACTIVITIES

### 2.1 OVERVIEW

The Site Investigation was managed and carried out by U.S. Army DPW personnel. All analyses were performed and reported by Fort Monmouth Environmental Testing Laboratory, a NJDEP-certified testing laboratory. All sampling was performed by a NJDEP Certified Subsurface Evaluator according to the methods described in the NJDEP Field Sampling Procedures Manual (1992). Sampling frequency and parameters analyzed complied with the NJDEP document *Technical Requirements for Site Remediation, 7:26E-3.9* (December 17, 2002 and revisions dated February 3, 2003) which was the applicable regulation at the date of the investigation. All records of the Site Investigation activities are maintained by the Fort Monmouth DPW Environmental Office.

The following Parties participated in Closure and Site Assessment Activities.

- Ft. Monmouth Directorate of Public Works-Environmental Division  
Contact Person: Joseph Fallon  
Phone Number: (732) 532-6223
- Subsurface Evaluator: Frank Accorsi  
Employer: TECOM-Vinnell Services, Inc. (TVS)  
Phone Number: (732) 532-5241  
NJDEP License No.: 0010042  
TVS - NJDEP License No.: US252302
- Analytical Laboratory: Fort Monmouth Environmental Testing Laboratory  
Contact Person: Dan Wright  
Phone Number: (732) 532-4359  
NJDEP Laboratory Certification No.: 13461

### 2.2 FIELD SCREENING/MONITORING

Field screening of the soils was performed by a NJDEP certified Subsurface Evaluator using an OVM and visual observations. No potentially contaminated material was found during the investigation.

### **2.3 SOIL SAMPLING**

On January 27, 2006, closure soil samples 622-S, 622-C, 622-N and 622-C (groundwater) were collected from a total of three (3) locations along the tank centerline bottom of the former UST. Groundwater was encountered at approximately seven and one-half (7.5) feet below surface grade in the borings. All soil samples were analyzed for TPH. A soil sample location map is provided on Figure 3.

The site assessment was performed by TVS personnel in accordance with the NJDEP *Technical Requirements for Site Remediation* and the NJDEP *Field Sampling Procedures Manual*. A summary of sampling activities including parameters analyzed is provided on Table 1. The soil samples were collected into laboratory prepared glassware using properly decontaminated stainless steel trowels. After collection, the samples were immediately placed on ice in a cooler and delivered to Fort Monmouth Environmental Testing Laboratory for analysis.

### **2.4 GROUNDWATER SAMPLING**

On January 27, 2006, sample 622-C groundwater was collected from soil borehole 622-C to assess the groundwater quality in the location of the former tank. A temporary piezometer was installed in the borehole for sample collection. The sample was collected into laboratory prepared glassware using a disposable teflon bailer. The sample was analyzed for volatile organic analysis (VOA) and semi-volatile organic analysis (SVOA).

### 3.0 CONCLUSIONS AND RECOMMENDATIONS

#### 3.1 SOIL SAMPLING RESULTS

Closure soil samples were collected from a total of three locations on January 27, 2006 to evaluate soil conditions in the location of the former UST. All samples were analyzed for TPH. The closure soil sample results were compared to the NJDEP health based criterion of 10,000 mg/kg for total organic contaminants (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. The analytical data package, including associated quality control data, is provided in Appendix B.

Closure soil samples collected on January 27, 2006 from UST 81533-95 contained no concentrations of TPH above the method detection limits.

#### 3.2 GROUNDWATER SAMPLING RESULTS

One groundwater sample was collected via temporary piezometer installed in soil borehole 622-C. There were also no compounds detected above the method detection limits for the volatile organic analysis. There were no compounds detected above the method detection limits for the semi-volatile organic analysis

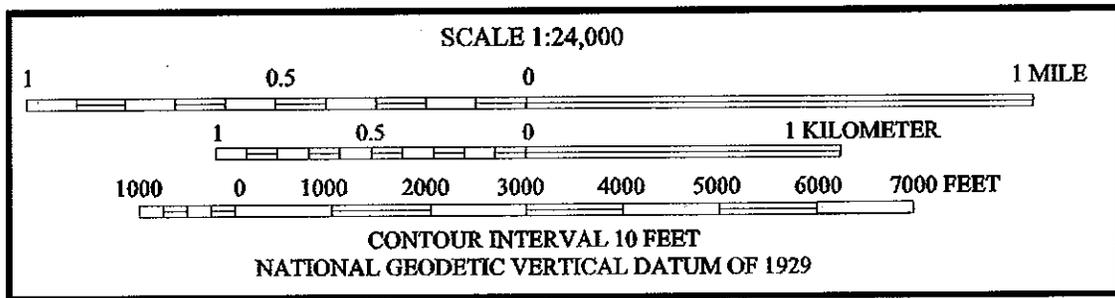
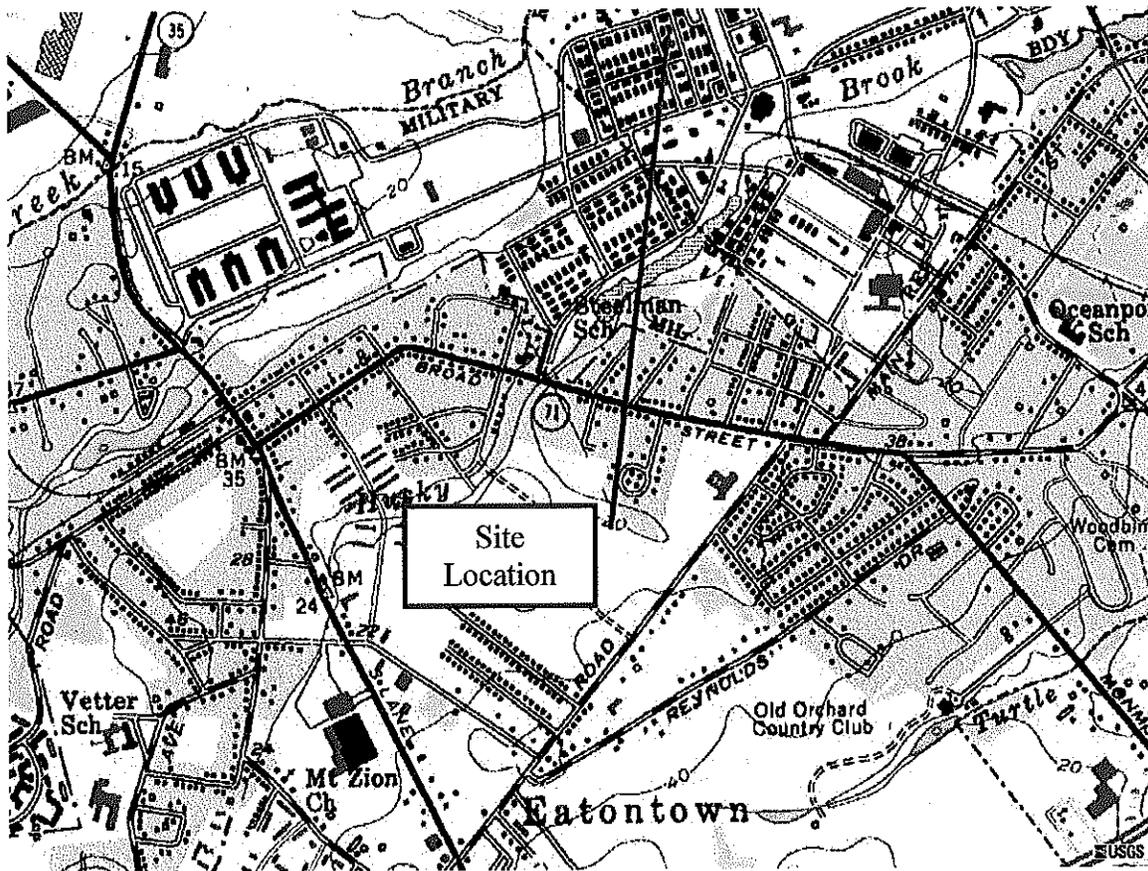
#### 3.3 CONCLUSIONS AND RECOMMENDATIONS

The analytical results for all soil and groundwater samples collected from the UST closure assessment at UST No. 81533-95 were below the regulatory limit.

Based on the closure soil sampling results, soils with TPH concentrations exceeding the NJDEP health based criterion for total organic contaminants of 10,000 mg/kg are not present at the location of former UST No. 81533-95.

**No Further Action** is proposed in regard to the closure and site assessment of UST No. 81533-95 at former Building 622.

# FIGURES



**FIGURE 1**

SITE LOCATION MAP  
FORMER BUILDING 622  
UST NO. 81533-95  
FT. MONMOUTH, NJ

SOURCE: USGS 7½-MINUTE SERIES (TOPOGRAPHIC)  
LONG BRANCH QUADRANGLE, NEW JERSEY, 1981.

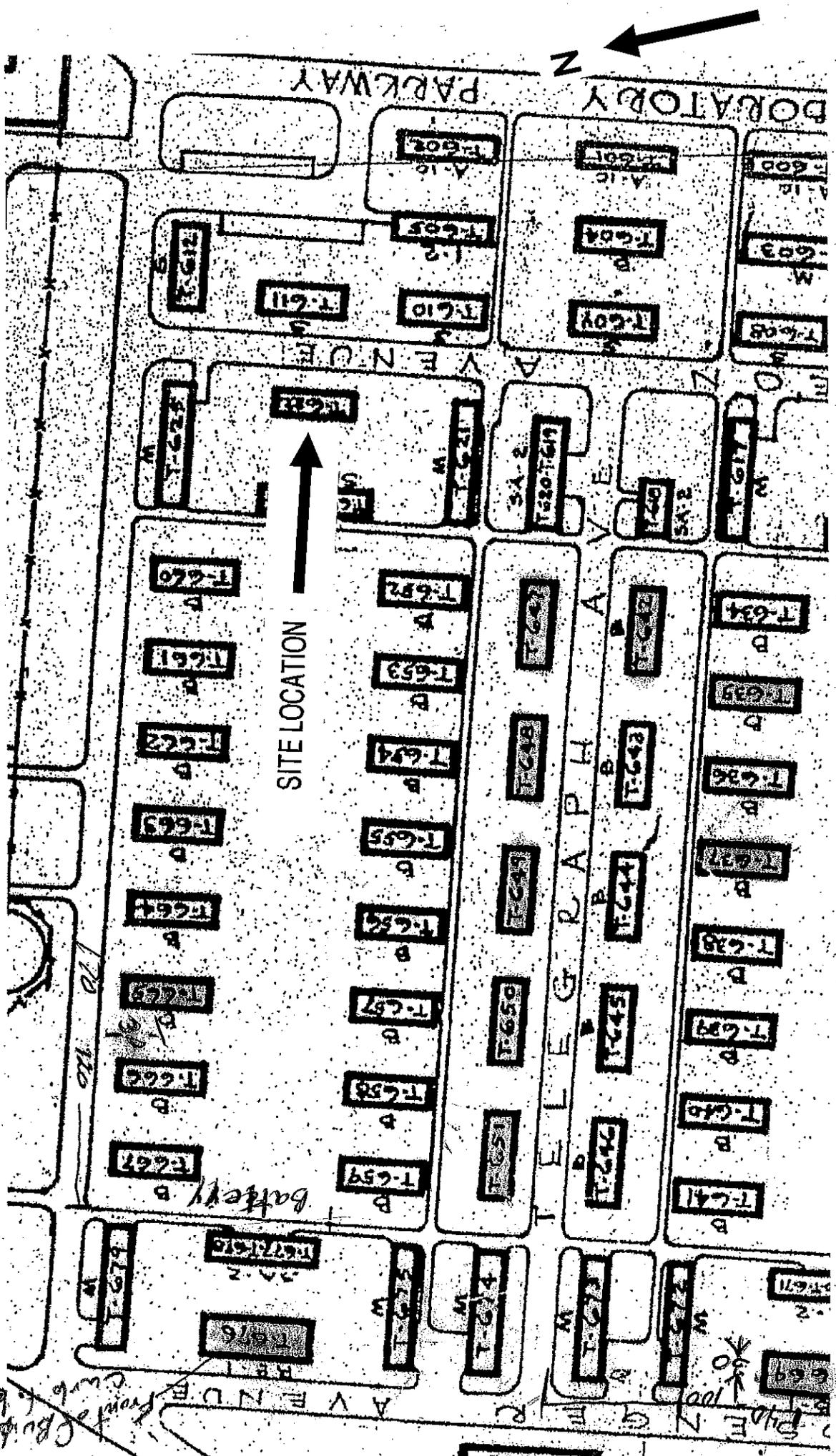


FIGURE 2

HISTORICAL MAP

W

Front of Building  
Curb to building

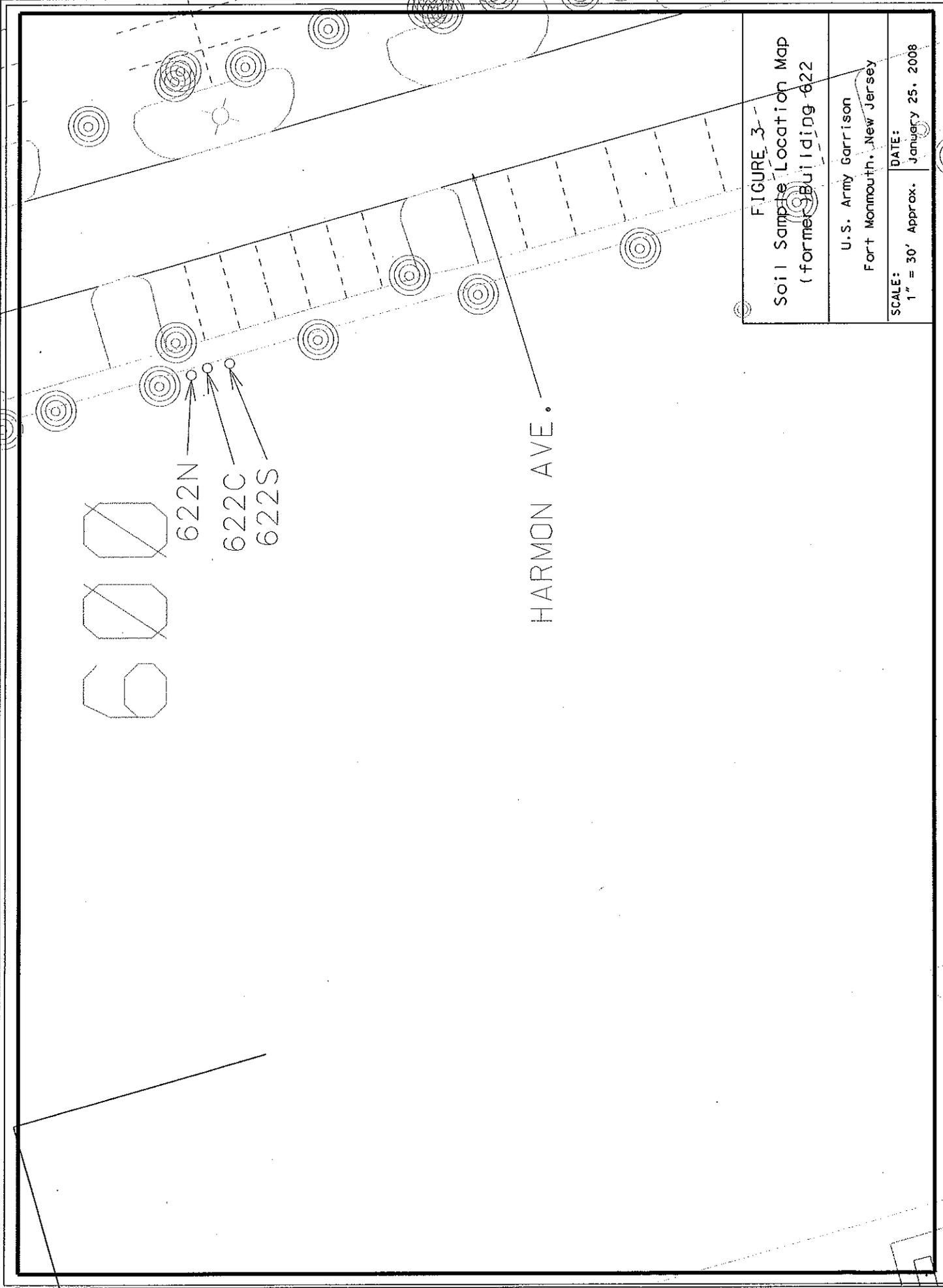


FIGURE 3--  
 Soil Sample Location Map  
 (former Building 622)

U.S. Army Garrison  
 Fort Monmouth, New Jersey

SCALE: 1" = 30' Approx.  
 DATE: January 25, 2008

# TABLES

# TABLE 1

## SUMMARY OF LABORATORY ANALYSIS

FT. MONMOUTH, (former) BUILDING 622, UST No. 81533-95  
27 January 2006

SAMPLE ID	LABORATORY SAMPLE ID	SAMPLE DATE	SAMPLE MATRIX	ANALYTICAL PARAMETER	ANALYTICAL METHOD
622-S	6006101	27-Jan-06	SOIL	TPH	OQA-QAM-25
622-C	6006102	27-Jan-06	SOIL	TPH	OQA-QAM-25
622-N	6006104	27-Jan-06	SOIL	TPH	OQA-QAM-25
622-C-Groundwater	6006105	27-Jan-06	AQUEOUS	VOA, SVOA	SW-846, EPA 625
622-Duplic.	6006103	27-Jan-06	SOIL	TPH	OQA-QAM-25
Trip Blank	6006106	27-Jan-06	AQUEOUS	VOA	SW-846
Trip Blank	6006107	27-Jan-06	METHANOL	VOA	SW-846

### ABBREVIATIONS:

TPH = Total Petroleum Hydrocarbons, Method NJDEP OQA-QAM-25

VOA = Volatile Organic Analysis, EPA SW-846 Method 8260

SVOA = Semi-Volatile Organic Analysis in Water, EPA Method 625

# TABLE 2

## SUMMARY OF LABORATORY ANALYTICAL RESULTS-SOIL

FT. MONMOUTH, (former) BUILDING 622, UST No. 81533-95  
27 January 2006

### TOTAL PETROLEUM HYDROCARBONS

SAMPLE ID	LABORATORY SAMPLE ID	SAMPLE LOCATION	SAMPLE DEPTH (in feet)	MATRIX	TPH RESULTS mg/kg
622-S	6005701	SOUTH END UST	7.5 - 8.0	Soil	ND
622-C	6005702	CENTER UST	7.5 - 8.0	Soil	ND
622-N	6005703	NORTH END UST	7.5 - 8.0	Soil	ND

ABBREVIATIONS:

mg/kg = milligrams per kilogram = parts per million

ND = Compound Not Detected

NA = Compound Not Analyzed

\*= Further Analyzed for Volatile Organic Compounds

Notes:

Gray shading indicates exceedance of NJDEP  
health based criterion of 10,000 ppm total organic contaminants

# TABLE 3

## SUMMARY OF LABORATORY ANALYTICAL RESULTS- GROUNDWATER

FT. MONMOUTH, (former) BUILDING 622, UST No. 81533-95

27 January 2006

### VOLATILE ORGANIC COMPOUNDS

SAMPLE ID	LAB SAMPLE ID	Benzene	Toluene	Ethyl- benzene	Xylenes (Total)
UNITS		ug/L	ug/L	ug/L	ug/L
622-C Groundwater	6006105	ND	ND	ND	ND
NJDEP Criteria	Ground Water Quality Crireria	2	1,000	700	NLE

### SEMI-VOLATILE ORGANIC COMPOUNDS

SAMPLE ID	LAB SAMPLE ID	Naphtha- lene	2Methyl- naphthalene	Ace- naphthene	Fluorene	Phenan- threne
UNITS		ug/L	ug/L	ug/L	ug/L	ug/L
622-C Groundwater	6006105	ND	ND	ND	ND	ND
NJDEP Criteria	Ground Water Quality Crireria	300	NLE	NLE	300	NLE

#### ABBREVIATIONS:

ug/L = Micrograms Per Liter = parts per billion

ND = Compound Not Detected

NA = Compound Not Analyzed

NLE = No Limit Established

#### Notes:

Gray shading indicates exceedance of NJDEP  
Class II Ground Water Quality Criteria

**APPENDIX A**  
**CERTIFICATIONS**



STATE OF NEW JERSEY  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
Bureau of Underground Storage Tanks  
CN-029, Trenton, NJ 08625

Date Rec'd	_____
Auth	_____
Routing	_____
UST NO.	_____

**SITE ASSESSMENT COMPLIANCE STATEMENT**

Supplement to the New Jersey Standard Reporting Form  
(Complete for ALL regulated UST abandonments or removals)

Within ninety (90) days of completing the UST closure of any State or Federally-regulated tank, the owner or operator must submit this completed form to the NJDEP Bureau of Underground Storage Tanks. If the facility is located in one of the counties listed on the back, a copy of this form must also be sent to the Health Agency indicated.

The owner or operator of any Federally-regulated tank must also comply with the following:

**40 CFR Part 280.72 Assessing the site at closure or change-in-service**

"(a) Before permanent closure or a change-in-service is completed, owners and operators must measure for the presence of a release where contamination is most likely to be present at the UST site. In selecting sample types, sample locations, and measurement methods, owners and operators must consider the method of closure, the nature of the stored substance, the type of backfill, the depth to ground water, and other factors appropriate for identifying the presence of a release."

FACILITY U.S. Army Fort Monmouth UST # 0081533 Tank No. \_\_\_\_\_

- Check off the following items as appropriate for the site.
- The UST facility is only regulated by State law, therefore a site assessment is not mandatory. 58, 88, 95, 104, 110, 113, 146, 148, 158, 163.
  - The UST facility is regulated by Federal law and a site assessment was conducted.

The results of the site assessment indicate:

- There was NO release from the UST system.
- There was a release from the UST system and it was reported to the DEP Environmental Hotline (609-292-7172).

NOTE: The results of the site assessment are not to be submitted to the DEP or Health Agency unless requested to do so. The results are to be available for inspection at the UST facility.

Questions can be directed to the Bureau at (609) 984-3156.

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

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

SACS-2,1/89

22 NOV 1991  
Date / /

*James Ott*  
\_\_\_\_\_  
SIGNATURE  
JAMES OTT  
Acting Director  
Div. Engineering and Housing  
\_\_\_\_\_  
(Title)



**DEPARTMENT OF THE ARMY**  
Headquarters, U.S. Army Garrison Fort Monmouth  
Fort Monmouth, New Jersey 07703-5000



REPLY TO  
ATTENTION OF

Directorate of Engineering  
and Housing

22 NOV 1991

SUBJECT: Removal Procedure:

U.S. Army Fort Monmouth  
Main Post West  
Site Registration #0081533  
Tank #58, 88, 95, 104, 110, 113, 146, 148, 158, 163  
POC: Joseph M. Fallon (908) 532-6223

The remaining product inside each tank was removed for disposal by Lionetti Oil Recovery Co., Inc. Lionetti is a licensed hazardous waste transporter and treatment, storage, and disposal facility (USEPA ID #NJD084044064).

The top of each tank was excavated and cut open across the entire length of the tank. In addition, the inside of each tank was hand cleaned and thoroughly wiped down. The soil from the top of each excavation was visually inspected and analyzed using a HNU Model PI-101 photoionizer. No contamination was detected.

After each tank was cleaned, a visual inspection was made inside the tanks for signs of leakage. No corrosion was found inside the tanks.

Each tank was then removed from the ground and disposed of through a metal recycler. No contamination was discovered at the sites upon removing the tanks.

Each site was then backfilled with the excavated soil to close out the project.

**Site Remediation Program**  
**UST Site Remedial Investigation Report**

**A.** Facility Name: (former) Building 622  
Facility Street Address: Harmon Ave.  
Municipality: Oceanport County: Monmouth  
Block: NA Lot(s): NA Telephone Number: 732-532-6223

**B.** Owner (RP)'s Name: U.S. Army Garrison - Directorate of Public Works  
Street Address: Building 167, Riverside Ave. City: Ft. Monmouth  
State: NJ Zip: 07703 Telephone Number: 732-532-6223

**C.** (Check as appropriate)  
 Site Investigation Report (SIR) \$500 Fee  
 Remedial Investigation Report (RIR) \$1000 Fee

**D.** (Complete all that apply)  
Assigned Case Manager: \_\_\_\_\_  
UST Registration Number: 0081533-95 (7 digits)  
• Incident Report Number: \_\_\_\_\_ (10 or 12 digits)  
• Tank Closure Number C(N)9\_\_\_\_ - \_\_\_\_ C 9- \_\_\_\_ C9\_\_\_\_ - \_\_\_\_ (7 characters)

**E. Certification by the Subsurface Evaluator:**  
The attached report conforms to the specific reporting requirements of N.J.A.C. 7:26E . . . . . Yes No  
Name: Frank Accorsi Signature: \_\_\_\_\_ UST Cert. No.: 0010042  
Firm: Tecom-Vinnell Services, Inc. Firm's UST Cert. Number: US252302  
Firm Address: P.O. 60 City: Ft. Monmouth  
State: NJ Zip: 07703 Telephone Number: 732-532-5241

(NOTE: Certification numbers required only if work was conducted on USTs regulated per N.J.S.A. 5 8: 10A-2 1 et seq.)

**F. Certification by the Responsible Party(ies) of the Facility:**  
The following certification shall be signed [according to the requirements of N.J.A.C. 7: 14B-1.7(b)]as follows:  
1. For a Corporation by a person authorized by a resolution of the board of directors to sign the document. A copy of the resolution, certified as a true copy by the secretary of the corporation, shall be submitted along with the certification; or  
2. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or  
3. For a municipality, State, federal or other public agency by either a principal executive officer or ranking elected Official.

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

Name (Print or Type): \_\_\_\_\_ Title: \_\_\_\_\_  
Signature: \_\_\_\_\_  
Company Name: \_\_\_\_\_ Date: \_\_\_\_\_

## **APPENDIX B**

# **SOIL AND GROUNDWATER ANALYTICAL DATA PACKAGE**

# FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS

PHONE: (732) 532-4359 FAX: (732) 532-6263

WET-CHEM - METALS - ORGANICS - FIELD SAMPLING

CERTIFICATIONS: NJDEP #13461, NYSDOH #11699



ANALYTICAL DATA REPORT  
Fort Monmouth Environmental Laboratory  
ENVIRONMENTAL DIVISION  
Fort Monmouth, New Jersey  
PROJECT: BLDG. 622

**Bldg. 622**

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
622S 7.5-8.0'	6006101	Soil	27-Jan-06 08:57	01/27/06
622C 7.5-8.0'	6006102	Soil	27-Jan-06 09:37	01/27/06
Duplicate	6006103	Soil	27-Jan-06 09:37	01/27/06
622N 7.5-8.0'	6006104	Soil	27-Jan-06 10:12	01/27/06
622C GW	6006105	Aqueous	27-Jan-06 10:22	01/27/06
Trip Blank	6006106	Aqueous	27-Jan-06	01/27/06
Trip Blank	6006107	Methanol	27-Jan-06	01/27/06

**ANALYSIS:**

FORT MONMOUTH ENVIRONMENTAL LAB  
VOA+15, BN+15, TPHC, % SOLIDS

ENCLOSURE:  
CHAIN OF CUSTODY  
RESULTS

  
3-10-08  
Daniel Wright/Date  
Laboratory Director

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**CHAIN  
OF  
CUSTODY**

# Fort Monmouth Environmental Testing Laboratory

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

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

NJDEP Certification #13461

## Chain of Custody Record

Customer: John McCarthy		Project No: 06-34880		Analysis Parameters				Comments:	
Phone: X26224		Location: 622		TPH	VO+10	BN+15	Remarks / Preservation Method		
() DERA () OMA () Other: Former US T		Date		Sample #	Sample Type				
Samplers Name / Company: George Boyce / TVS		Sample Location	Date	Time	bottles				
600061 01	622S 75-80	1/27/06	0857	2	Soil	X			4467
02	622C 75-80		0937	2	Soil	X			4468
03	Dupe		0937	2	Soil	X			4469
04	622N 75-80		1012	2	Soil	X			4470
05	622C GW		1022	3	AQ	X	X		
06	TRIP		-	2	AQ	X			
07	TRIP		-	1	Meth				4464
Relinquished by (signature): George Boyce		Date/Time: 1/27/06 10:00	Received by (signature): J. McCarthy		Relinquished by (signature):		Date/Time:	Received by (signature):	
Relinquished by (signature):		Date/Time:	Received by (signature):		Relinquished by (signature):		Date/Time:	Received by (signature):	
Report Type: () Full, (X) Reduced, () Standard, () Screen / non-certified, () EDD		Remarks: VO+10 on 25% > 1000 PPM TPH							
Turnaround time: (X) Standard 3 wks, ( ) Rush Days, ( ) ASAP Verbal Hrs.									



**Former UST 622 Sample Location GPS Positions**

US State Plane 1983 New Jersey ( NY East ) 2900  
NAD 1983 ( Conus)  
Geoid 96 ( Conus)

( In US Survey Feet)

<b>Position</b>	<b>Northing ( Y Coord.)</b>	<b>Easting ( X Coord.)</b>
622N	539859.427	618731.450
622C	539855.530	618733.151
622S	539850.055	618734.218

# **METHOD SUMMARY**

## **Methodology Summary**

### **EPA Method 624**

#### **Gas Chromatographic Determination of Volatiles in Water**

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

### **EPA SW-846 Method 8260**

#### **Gas Chromatographic Determination of Volatiles in Methanol**

A 10-gram volume of soil is combined with 25-ml of Methanol and surrogates in the field. Internal standards are added and the sample is placed on a purge and trap concentrator. The sample is purged and desorbed into a GC/MS system. Volatiles are identified and quantitated. The final concentration is calculated using soil weight, percent moisture and concentration.

### **EPA Method 625**

#### **Gas Chromatographic Determination of Semi-volatiles in Water**

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

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

Fifteen grams (15g) of soil is added to a 125-ml acid cleaned and solvent rinsed capped Erlenmeyer flask. 15g anhydrous Sodium Sulfate is added to dry the sample. Surrogate standard spiking solution is then added to the flask.

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

The extract is then injected directly into a GC-FID for analysis. The sample is analyzed for Petroleum Hydrocarbons covering a range of C8-C42, including Pristane and Phytane. Total Petroleum Hydrocarbon concentration is determined by integrating between 5 minutes and 22 minutes. The baseline is established by starting the integration after the end of the solvent peak and stopping after the last peak. The final concentration of Total Petroleum Hydrocarbons is calculated using percent moisture, sample weight and concentration.

# **LABORATORY CHRONICLE**

# Laboratory Chronicle

Lab ID: 60061

Site: UST  
Bldg. 622

	Date	Hold Time
<b>Date Sampled</b>	01/27/06	NA
<b>Receipt/Refrigeration</b>	01/27/06	NA
<b>Extractions</b>		
1. BN	02/02/06	7 days
2. TPHC	02/01/06	14 days
<b>Analyses</b>		
1. VOA	02/07,08/06	14 days
2. BN	02/02,03/06	40 days
3. TPHC	02/02/06	40 days

000009

**CONFORMANCE/  
NON-  
CONFORMANCE  
SUMMARY**

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

Indicate  
Yes, No, N/A

1. Chromatograms labeled/Compounds identified  
(Field samples and method blanks) yes
2. Retention times for chromatograms provided yes
3. GC/MS Tune Specifications
  - a. BFB Meet Criteria yes
  - b. DFTPP Meet Criteria yes
4. GC/MS Tuning Frequency – Performed every 24 hours for 600 series and 12 hours for 8000 series yes
5. GC/MS Calibration – Initial Calibration performed before sample analysis and continuing calibration performed within 24 hours of sample analysis for 600 series and 12 hours for 8000 series yes
6. GC/MS Calibration requirements
  - a. Calibration Check Compounds Meet Criteria yes
  - b. System Performance Check Compounds Meet Criteria yes
7. Blank Contamination – If yes, List compounds and concentrations in each blank: yes
  - a. VOA Fraction Acetone 3.55 well
  - b. B/N Fraction \_\_\_\_\_
  - c. Acid Fraction \_\_\_\_\_
8. Surrogate Recoveries Meet Criteria NO

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

  - a. VOA Fraction \_\_\_\_\_
  - b. B/N Fraction Terphenyl-d14 low in initial + reanalysis
  - c. Acid Fraction NA

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

yes
9. Matrix Spike/Matrix Spike Duplicate Recoveries Meet Criteria (If not met, list those compounds and their recoveries, which fall outside the acceptable range) NO
  - a. VOA Fraction Various out see form
  - b. B/N Fraction Benzidine rec. low
  - c. Acid Fraction NA

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

Indicate  
Yes, No, N/A

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

yes

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

11. Extraction Holding Time Met

yes

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

\_\_\_\_\_

12. Analysis Holding Time Met

yes

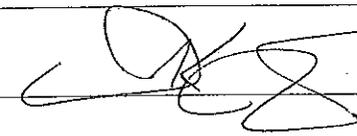
If not met, list the number of days exceeded for each sample: \_\_\_\_\_

\_\_\_\_\_

Additional Comments:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Laboratory Manager: \_\_\_\_\_



Date: 3-10-06

## TPHC CONFORMANCE/NON-CONFORMANCE SUMMARY REPORT

Indicate  
Yes, No, N/A

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

Additional comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Laboratory Manager: \_\_\_\_\_

Date: 3-10-06

000013

**VOLATILE  
ORGANICS  
(AQUEOUS)**

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

**Definition of Qualifiers**

- U:** The compound was analyzed for but not detected.
- B:** Indicates that the compound was found in the associated method blank as well as in the sample.
- J:** Indicates an estimated value. This flag is used:
- (1) When the mass spec and retention time data indicate the presence of a compound however the result is less than the MDL but greater than zero.
  - (2) When estimating the concentration of a tentatively identified compound (TIC), where a 1:1 response is assumed.
- D:** This flag is used to identify all compounds (target or TIC) that required a dilution.
- E:** Indicates the compound's concentration exceeds the calibration range of the instrument for that specific analysis.
- N:** This flag is only used for TICs. It indicates the presumptive evidence of a compound. For a generic characterization of a TIC, such as unknown hydrocarbon, the flag is not used.

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

Data File VB021635.D  
 Operator Skelton  
 Date Acquired 7 Feb 2006 8:34 pm

Sample Name MB 07Feb2006  
 Field ID MB 07Feb2006  
 Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.01 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	5	1.23 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	5.70 ug/L	10.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.21 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.26 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.20 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	nle	0.24 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.23 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	0.26 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	0.29 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.23 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.19 ug/L	2.00 ug/L	
67-64-1	Acetone	11.94	45398	3.55 ug/L	6000	0.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.24 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.21 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.24 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	50	0.24 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.26 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.20 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	70	0.22 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.20 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.24 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.24 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.23 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.26 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.24 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.23 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.22 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.35 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.26 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.25 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.28 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.20 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.43 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.28 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.27 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	0.43 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.21 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.21 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.27 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.45 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.36 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.35 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.45 ug/L	2.00 ug/L	

\*Results between MDL and RL are estimated values  
 \*Higher of PQL's and Interim Criteria as per N.J.A.C. 7:9C 07Nov2005

**Qualifiers**

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

**MB 07Feb2006**

Lab Name: FMETL NJDEP#: 13461  
Project: 06-34880 Case No.: 60061 Location: 622 SDG No.: UST  
Matrix: (soil/water) WATER Lab Sample ID: MB 07Feb2006  
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB021635.D  
Level: (low/med) LOW Date Received: 1/27/2006  
% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 2/7/2006  
GC Column: RTX502 ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

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

Number TICs found: 1

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 000079-20-9	Acetic acid, methyl ester	12.44	21	JN

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

Data File **VB021644.D**  
 Operator **Skelfon**  
 Date Acquired **8 Feb 2006 2:39 am**

Sample Name **6006106**  
 Field ID **Trip Blank**  
 Sample Multiplier **1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.01 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	5	1.23 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	5.70 ug/L	10.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.21 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.26 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.20 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	nle	0.24 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.23 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	0.26 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	0.29 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.23 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.19 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	6000	0.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.24 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride	11.68	48348	2.27 ug/L	3	0.21 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.24 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	50	0.24 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.26 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.20 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	70	0.22 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.20 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.24 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.24 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.23 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.26 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.24 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.23 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.22 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.35 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.26 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.25 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.28 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.20 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.43 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.28 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.27 ug/L	2.00 ug/L	
1330-20-7	m-p-Xylenes			not detected	nle	0.43 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.21 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.21 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.27 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.45 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.36 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.35 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.45 ug/L	2.00 ug/L	

\*Results between MDL and RL are estimated values  
 \*Higher of PQL's and Interim Criteria as per N.J.A.C. 7:9C.07Nov2005

**Qualifiers**

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

**Trip Blank**

Lab Name: FMETL NJDEP#: 13461

Project: 06-34880 Case No.: 60061 Location: 622 SDG No.: UST

Matrix: (soil/water) WATER Lab Sample ID: 6006106

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB021644.D

Level: (low/med) LOW Date Received: 1/27/2006

% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 2/8/2006

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

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

CONCENTRATION UNITS:

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

Number TICs found: 1

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 000079-20-9	Acetic acid, methyl ester	12.46	16	JN

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

Data File VB021643.D  
 Operator Skelton  
 Date Acquired 8 Feb 2006 1:58 am

Sample Name 6006105  
 Field ID 622C GW  
 Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.01 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	5	1.23 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	5.70 ug/L	10.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.21 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.26 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.20 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	nle	0.24 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.23 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	0.26 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	0.29 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2900	0.23 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.19 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	6000	0.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.24 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride	11.68	44144	2.00 ug/L	3	0.21 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethane			not detected	100	0.24 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	50	0.24 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.26 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.20 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	70	0.22 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.20 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.24 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.24 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.23 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.26 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.24 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.23 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.22 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.35 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.26 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.25 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.28 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.20 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.43 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.28 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.27 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	0.43 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.21 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.21 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.27 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.45 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.36 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.35 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.45 ug/L	2.00 ug/L	

\*Results between MDL and RL are estimated values  
 \*Higher of PQL's and Interim Criteria as per N.J.A.C. 7:9C 07Nov2005

**Qualifiers**

B = Compound found in related blank  
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 PQL = Practical Quantitation Limit

MDL = Method Detection Limit  
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 R.T. = Retention Time  
 R.L. = Reporting Limit

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

622C GW

Lab Name: FMETL NJDEP#: 13461  
Project: 06-34880 Case No.: 60061 Location: 622 SDG No.: UST  
Matrix: (soil/water) WATER Lab Sample ID: 6006105  
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB021643.D  
Level: (low/med) LOW Date Received: 1/27/2006  
% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 2/8/2006  
GC Column: RTX502 ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

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

Number TICs found: 1

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 000079-20-9	Acetic acid, methyl ester	12.45	17	JN

# **SEMI-VOLATILE ORGANICS**

000035

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

Data File Name    **BNA11494.D**  
 Operator            **BPatel**  
 Date Acquired     **2-Feb-06**

Sample Name        **MB-020206-01**  
 Misc Info          **MB-020206-01**  
 Sample Multiplier   **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifiers
110-86-1	Pyridine			not detected	NLE	1.13	10.00 ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	0.8	0.60	10.00 ug/L	
62-53-3	Aniline			not detected	6	2.38	10.00 ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	7	0.71	10.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	1.02	10.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.99	10.00 ug/L	
100-51-6	Benzyl alcohol			not detected	2000	0.66	10.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.96	10.00 ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.88	10.00 ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	10	0.76	10.00 ug/L	
67-72-1	Hexachloroethane			not detected	7	0.96	10.00 ug/L	
98-95-3	Nitrobenzene			not detected	6	0.86	10.00 ug/L	
78-59-1	Isophorone			not detected	40	0.76	10.00 ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.79	10.00 ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.89	10.00 ug/L	
91-20-3	Naphthalene			not detected	300	0.76	10.00 ug/L	
106-47-8	4-Chloroaniline			not detected	30	1.37	10.00 ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.99	10.00 ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	1.01	10.00 ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	40	0.92	10.00 ug/L	
91-58-7	2-Chloronaphthalene			not detected	600	0.72	10.00 ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.77	10.00 ug/L	
131-11-3	Dimethylphthalate			not detected	NLE	0.78	10.00 ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.67	10.00 ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	10	0.71	10.00 ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	1.18	10.00 ug/L	
83-32-9	Acenaphthene			not detected	400	0.73	10.00 ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.69	10.00 ug/L	
121-14-2	2,4-Dinitrotoluene			not detected	10	0.81	10.00 ug/L	
84-66-2	Diethylphthalate			not detected	6000	0.96	10.00 ug/L	
86-73-7	Fluorene			not detected	300	0.71	10.00 ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.73	10.00 ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.11	10.00 ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	10	0.62	10.00 ug/L	
103-33-3	Azobenzene			not detected	NLE	0.72	10.00 ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.92	10.00 ug/L	
118-74-1	Hexachlorobenzene			not detected	0.02	0.95	10.00 ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.81	10.00 ug/L	
120-12-7	Anthracene			not detected	2000	0.76	10.00 ug/L	
84-74-2	Di-n-butylphthalate			not detected	700	0.92	10.00 ug/L	
206-44-0	Fluoranthene			not detected	300	0.82	10.00 ug/L	

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## Semi-Volatile Analysis Report

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Data File Name **BNA11494.D**  
 Operator **BPatel**  
 Date Acquired **2-Feb-06**

Sample Name **MB-020206-01**  
 Misc Info **MB-020206-01**  
 Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifiers
92-87-5	Benzidine			not detected	20	0.98	10.00	ug/L
129-00-0	Pyrene			not detected	200	0.79	10.00	ug/L
85-68-7	Butylbenzylphthalate			not detected	100	0.86	10.00	ug/L
56-55-3	Benzo[a]anthracene			not detected	0.1	0.82	10.00	ug/L
91-94-1	3,3'-Dichlorobenzidine			not detected	30	1.31	10.00	ug/L
218-01-9	Chrysene			not detected	5	0.77	10.00	ug/L
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	3	1.28	10.00	ug/L
117-84-0	Di-n-octylphthalate			not detected	100	1.02	10.00	ug/L
205-99-2	Benzo[b]fluoranthene			not detected	0.2	0.98	10.00	ug/L
207-08-9	Benzo[k]fluoranthene			not detected	0.5	0.92	10.00	ug/L
50-32-8	Benzo[a]pyrene			not detected	0.1	0.71	10.00	ug/L
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	0.2	0.76	10.00	ug/L
53-70-3	Dibenz[a,h]anthracene			not detected	0.3	0.76	10.00	ug/L
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.80	10.00	ug/L

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

### Qualifiers

E= Value Exceeds Linear Range

D= Value from dilution

B= Compound in Related Blank

RL= Reporting Limit. The values between the MDL and RL are considered estimated.

MDL= Method Detection Limit

NLE= No Limit Established

R.T.=Retention Time

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

**MB-020206-01**

Lab Name: FMETL Lab Code 13461  
Project: 06-34880 Case No.: 60061 Location: 622 SDG No.: \_\_\_\_\_  
Matrix: (soil/water) WATER Lab Sample ID: MB-020206-01  
Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA11494.D  
Level: (low/med) LOW Date Received: 1/27/2006  
% Moisture: \_\_\_\_\_ decanted: (Y/N) N Date Extracted: 2/2/2006  
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 2/2/2006  
Injection Volume: 1.0 (uL) Dilution Factor: 1.0  
GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

CONCENTRATION UNITS:

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

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

Data File Name **BNA11496.D**  
 Operator **BPatel**  
 Date Acquired **2-Feb-06**

Sample Name **6006105**  
 Misc Info **622C GW**  
 Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifiers
110-86-1	Pyridine			not detected	NLE	1.13	10.00	ug/L
62-75-9	N-nitroso-dimethylamine			not detected	0.8	0.60	10.00	ug/L
62-53-3	Aniline			not detected	6	2.38	10.00	ug/L
111-44-4	bis(2-Chloroethyl)ether			not detected	7	0.71	10.00	ug/L
541-73-1	1,3-Dichlorobenzene			not detected	600	1.02	10.00	ug/L
106-46-7	1,4-Dichlorobenzene			not detected	75	0.99	10.00	ug/L
100-51-6	Benzyl alcohol			not detected	2000	0.66	10.00	ug/L
95-50-1	1,2-Dichlorobenzene			not detected	600	0.96	10.00	ug/L
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.88	10.00	ug/L
621-64-7	n-Nitroso-di-n-propylamine			not detected	10	0.76	10.00	ug/L
67-72-1	Hexachloroethane			not detected	7	0.96	10.00	ug/L
98-95-3	Nitrobenzene			not detected	6	0.86	10.00	ug/L
78-59-1	Isophorone			not detected	40	0.76	10.00	ug/L
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.79	10.00	ug/L
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.89	10.00	ug/L
91-20-3	Naphthalene			not detected	300	0.76	10.00	ug/L
106-47-8	4-Chloroaniline			not detected	30	1.37	10.00	ug/L
87-68-3	Hexachlorobutadiene			not detected	1	0.99	10.00	ug/L
91-57-6	2-Methylnaphthalene			not detected	NLE	1.01	10.00	ug/L
77-47-4	Hexachlorocyclopentadiene			not detected	40	0.92	10.00	ug/L
91-58-7	2-Chloronaphthalene			not detected	600	0.72	10.00	ug/L
88-74-4	2-Nitroaniline			not detected	NLE	0.77	10.00	ug/L
131-11-3	Dimethylphthalate			not detected	NLE	0.78	10.00	ug/L
208-96-8	Acenaphthylene			not detected	NLE	0.67	10.00	ug/L
606-20-2	2,6-Dinitrotoluene			not detected	10	0.71	10.00	ug/L
99-09-2	3-Nitroaniline			not detected	NLE	1.18	10.00	ug/L
83-32-9	Acenaphthene			not detected	400	0.73	10.00	ug/L
132-64-9	Dibenzofuran			not detected	NLE	0.69	10.00	ug/L
121-14-2	2,4-Dinitrotoluene			not detected	10	0.81	10.00	ug/L
84-66-2	Diethylphthalate			not detected	6000	0.96	10.00	ug/L
86-73-7	Fluorene			not detected	300	0.71	10.00	ug/L
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.73	10.00	ug/L
100-01-6	4-Nitroaniline			not detected	NLE	1.11	10.00	ug/L
86-30-6	n-Nitrosodiphenylamine			not detected	10	0.62	10.00	ug/L
103-33-3	Azobenzene			not detected	NLE	0.72	10.00	ug/L
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.92	10.00	ug/L
118-74-1	Hexachlorobenzene			not detected	0.02	0.95	10.00	ug/L
85-01-8	Phenanthrene			not detected	NLE	0.81	10.00	ug/L
120-12-7	Anthracene			not detected	2000	0.76	10.00	ug/L
84-74-2	Di-n-butylphthalate			not detected	700	0.92	10.00	ug/L
206-44-0	Fluoranthene			not detected	300	0.82	10.00	ug/L

**Semi-Volatile Analysis Report**  
**Page 2**

Data File Name **BNA11496.D**  
Operator **BPatel**  
Date Acquired **2-Feb-06**

Sample Name **6006105**  
Misc Info **622C GW**  
Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifiers
92-87-5	Benzidine			not detected	20	0.98	10.00 ug/L	
129-00-0	Pyrene			not detected	200	0.79	10.00 ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.86	10.00 ug/L	
56-55-3	Benzo[a]anthracene			not detected	0.1	0.82	10.00 ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	30	1.31	10.00 ug/L	
218-01-9	Chrysene			not detected	5	0.77	10.00 ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	3	1.28	10.00 ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.02	10.00 ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	0.2	0.98	10.00 ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	0.5	0.92	10.00 ug/L	
50-32-8	Benzo[a]pyrene			not detected	0.1	0.71	10.00 ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	0.2	0.76	10.00 ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	0.3	0.76	10.00 ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.80	10.00 ug/L	

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

**Qualifiers**

E= Value Exceeds Linear Range

D= Value from dilution

B= Compound in Related Blank

RL= Reporting Limit. The values between the MDL and RL are considered estimated.

MDL= Method Detection Limit

NLE= No Limit Established

R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

622C-GW

Lab Name: FMETL Lab Code 13461  
Project: 06-34880 Case No.: 60061 Location: 622 SDG No.: \_\_\_\_\_  
Matrix: (soil/water) WATER Lab Sample ID: 6006105  
Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA11496.D  
Level: (low/med) LOW Date Received: 1/27/2006  
% Moisture: \_\_\_\_\_ decanted: (Y/N) N Date Extracted: 2/2/2006  
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 2/2/2006  
Injection Volume: 1.0 (uL) Dilution Factor: 1.0  
GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

CONCENTRATION UNITS:

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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**TPHC**

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

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

Project # : 60061  
 Location : 622  
 UST Reg. # : 06-34880

Analysis : OQA-QAM-025  
 Matrix : Soil  
 Inst. ID. : GC TPHC INST. #1  
 Column Type : RTX-5, 0.32mm ID, 30M  
 Injection Volume : 1uL

Date Received : 27-Jan-06  
 Date Extracted : 01-Feb-06  
 Extraction Method : Shake  
 Analysis Complete : 02-Feb-06  
 Analyst : B.Patel

Lab ID	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	RL	TPHC Result (mg/kg)
6006101	622S	1.00	15.28	79.24	80	413	ND
6006102	622C	1.00	15.30	74.39	85	439	ND
6006103	Dupe	1.00	15.08	73.90	86	449	ND
6006104	622N	1.00	15.28	75.36	84	434	ND
METHOD BLANK	MB-020106-01	1.00	15.00	100.00	64	333	ND

ND = Not Detected

MDL = Method Detection Limit

RL = Reporting Limits

**Note :** The TPHC result between the MDL and RL are considered an estimated value

## LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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

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

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

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

Laboratory Manager or Environmental Consultant's Signature \_\_\_\_\_

Date: 3/10/06

Laboratory Certification # 13461

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

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## Laboratory Authentication Statement

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



Daniel K. Wright  
Laboratory Manager

ATTACHMENT N

UST 625 Report



**United States Army**  
Fort Monmouth, New Jersey

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

*Building 625  
Main Post*

---

**NJDEP UST Registration No. 081533-96  
NJDEP Closure Approval Letter Dated  
July 5, 1994**

February 1996

**SMITH**  
ENVIRONMENTAL TECHNOLOGIES CORPORATION

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

**BUILDING 625**

**MAIN POST  
NJDEP UST REGISTRATION NO. 081533-96  
NJDEP CLOSURE APPROVAL LETTER DATED  
JULY 5, 1994**

**FEBRUARY 1996**

**PROJECT NO.: 09-5004-06  
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 08061**

625.DOC

**SMITH**  
ENVIRONMENTAL TECHNOLOGIES CORPORATION



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### APPENDICES

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Appendix C	Waste Manifest
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Appendix E	Soil Analytical Data Package



## EXECUTIVE SUMMARY

### UST Closure

On August 25, 1994, a steel underground storage tank (UST) with fiberglass coating was closed by removal in accordance with the New Jersey Department of Environmental Protection (NJDEP) Closure Approval Letter dated July 5, 1994 at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey. The UST, NJDEP Registration No. 081533-96 (Fort Monmouth ID No. 625), was located immediately adjacent to Building 625 in the Main Post area of U.S. Army, Fort Monmouth. UST No. 081533-96 was a 550-gallon No. 2 diesel 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

The site assessment was performed by U.S. Army personnel in accordance with the NJDEP *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E) and the NJDEP *Field Sampling Procedures Manual*. Soils surrounding the tank were screened visually and with air monitoring equipment for evidence of contamination. Following removal, the UST was inspected for corrosion holes. No holes were observed in the UST, and no evidence of potentially contaminated soils was observed surrounding the tank or piping area.

On August 29, 1994, post-excavation soil samples A, B, C, D, E, and DUP D were collected from five (5) locations along the sidewalls of the excavation immediately above groundwater. The samples were collected at a depth of 3.5 feet below grade surface (bgs). Groundwater was present in the base of the excavation at approximately 4.0 feet bgs. Sample G was collected from the piping portion of the excavation, which was less than 15 feet in length. The piping sample was collected at a depth of 3.0 feet bgs. All samples were analyzed for total petroleum hydrocarbons (TPHC).

### Findings

All post-excavation soil samples collected from the UST excavation and from below piping associated with the former UST at Building 625 contained TPHC concentrations below the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 milligrams per kilogram (mg/kg) (N.J.A.C. 7:26D and revisions dated February 3, 1994). All samples contained levels of TPHC ranging in concentration from 35.7 mg/kg to 469.0 mg/kg.



### Site Restoration

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 Quality Assurance

The sampling and laboratory analysis conducted during the site assessment was 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 TPHC concentrations exceeding the NJDEP soil cleanup criteria for total organic contaminants of 10,000 mg/kg, do not exist in the former location of the UST or associated piping.

No further action is proposed in regard to the closure and site assessment of UST No. 081533-96 at Building 625.



## 1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

### 1.1 OVERVIEW

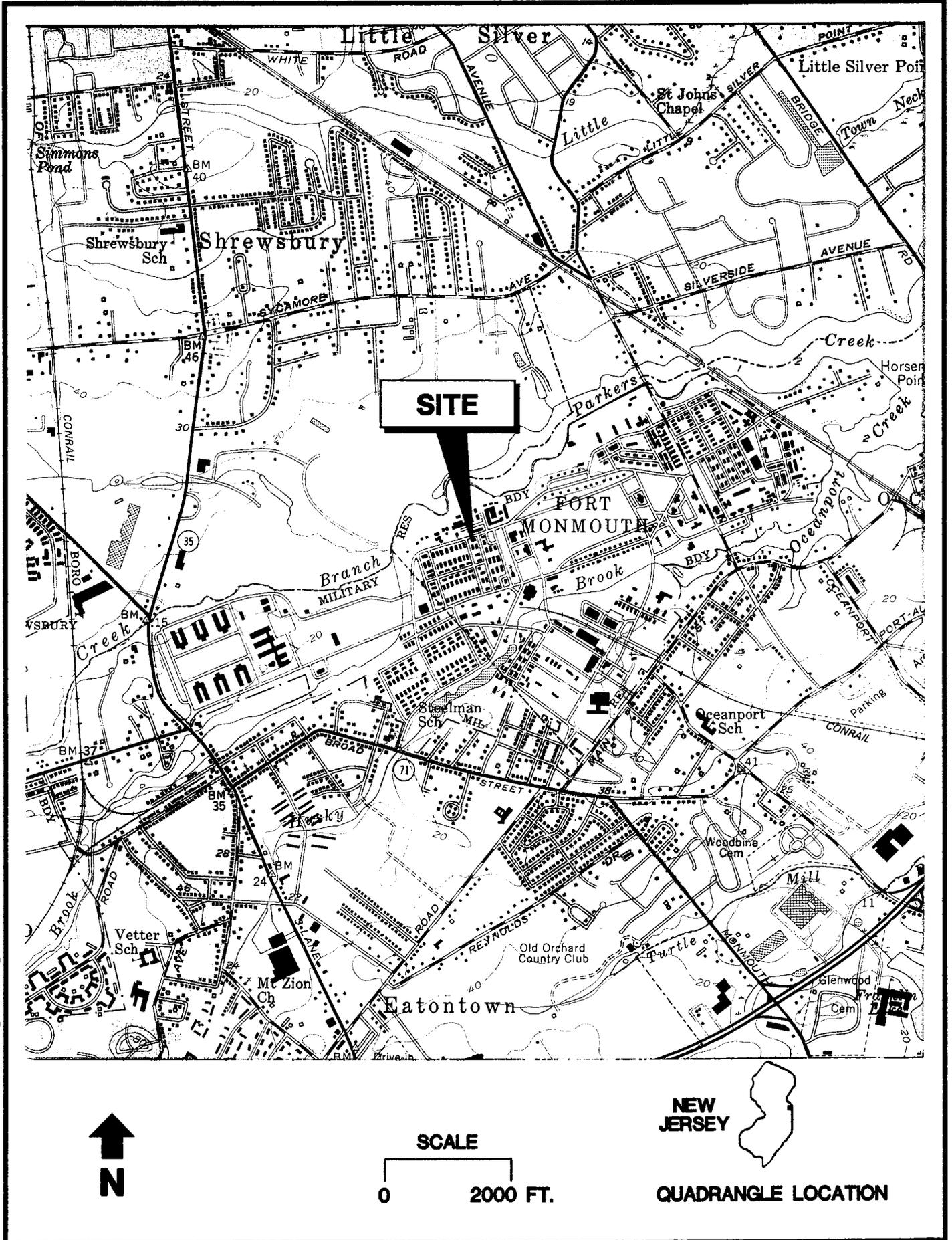
One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 081533-96, was closed at Building 625 at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey on August 25, 1994. Refer to site location map on Figure 1. This report presents the results of the DPW's implementation of the UST Decommissioning/Closure Plan submitted to the NJDEP on June 10, 1994. The plan was approved on July 5, 1994. The UST was a steel 550-gallon tank with fiberglass coating, containing No. 2 diesel oil.

Decommissioning activities for UST No. 081533-96 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, the contractor that conducted the decommissioning activities, is registered and certified by the NJDEP for performing UST closure activities. Closure of UST No. 081533-96 proceeded under the approval of the NJDEP Bureau of Underground Storage Tanks (NJDEP-BUST). The NJDEP-BUST closure approval and signed certifications for UST No. 081533-96 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 no significant historical discharges are associated with the UST or associated piping.

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.



Source: U.S.G.S. Quadrangle Long Branch, N.J. (Photorevised 1961)

## 1.2 SITE DESCRIPTION

Building 625 is located in the northwestern portion of the Main Post area of Fort Monmouth, as shown on Figure 1. UST No. 081533-96 was located south of Building 625 and appurtenant piping ran less than 15 feet north from the fill port area to Building 625. 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 625. Included is a description of the regional geology of the area surrounding Fort Monmouth as well as descriptions of the local geology and hydrogeology of the Main Post area.

#### Regional Geology

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

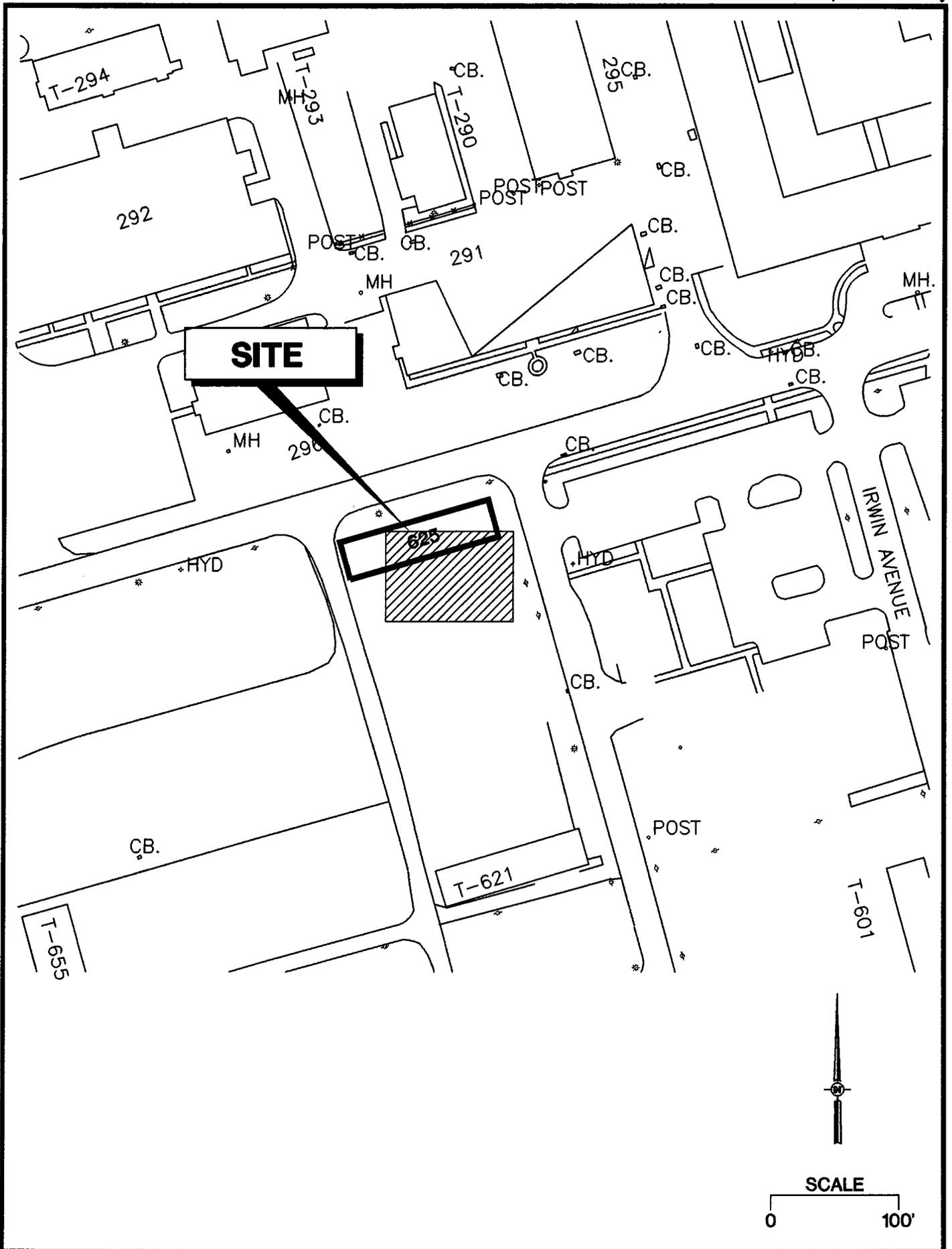
In general, New Jersey Coastal Plain formations consist of a seaward-dipping wedge of unconsolidated deposits of clay, silt, and gravel. These formations typically strike northeast-southwest with a dip ranging from 10 to 60 feet per mile and were deposited on Precambrian and lower Paleozoic rocks (Zapeczka,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

The formations record several major transgressive/regressive cycles and contain units which are generally thicker to the southeast and reflect a deeper water environment. 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 Zapeczka, 1990).

#### Local Geology

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

Source: BCM/Smith Environmental Technologies Corporation (064)





coarse-grained sand that contains abundant rock fragments, minor mica and glauconite (Jablonski). The lower member (Sandy Hook) is a dark gray to black, medium-to-fine grained sand with abundant clay, mica, and glauconite.

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

### Hydrogeology

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

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

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

## **1.3 HEALTH AND SAFETY**

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



## 1.4 REMOVAL OF UNDERGROUND STORAGE TANK

### 1.4.1 General Procedures

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

### 1.4.2 Underground Storage Tank Excavation and Cleaning

Prior to UST decommissioning activities, surficial soil was removed to expose the UST and associated piping. All free product present in the piping was drained into the UST, and the UST was purged to remove vapors prior to cutting and removal of the piping. After removal of the associated piping, a manway was made in the UST to allow for proper cleaning. The UST was completely emptied of all liquids prior to removal from the ground. Approximately 10 gallons of liquid were transported by Freehold Cartage Inc. to Lionetti Oil Recovery Co. Inc., a NJDEP-approved petroleum recycling and disposal company located in Old Bridge, New Jersey. Refer to Appendix C for the waste manifest(s).

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

Soil screening was also performed along the piping associated with the UST. No contamination was observed anywhere along the piping length.



## 1.5 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The tank was transported by CUTE Inc., to Mazza and Sons Inc. for disposal in compliance with all applicable regulations and laws. See 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 OVA air monitoring and TPHC analysis results from the post-excitation soil samples, no soils exhibited signs of contamination. Therefore, the excavated soils were used as backfill following removal of the UST.



## 2.0 SITE INVESTIGATION ACTIVITIES

### 2.1 OVERVIEW

The Site Investigation was managed and carried out by U.S. Army DPW personnel. All analyses were performed and reported by U.S. Army Fort Monmouth Environmental Laboratory, a NJDEP-certified testing laboratory. All sampling was performed under the direct supervision of a NJDEP Certified Sub-Surface Evaluator according to the methods described in the NJDEP *Field Sampling Procedures Manual* (1992). Sampling frequency and parameters analyzed complied with the NJDEP-BUST document *Interim Closure Requirements for Underground Storage Tank Systems* (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
- Hazardous Waste Hauler: Freehold Cartage Inc.  
Contact Person: Barry Olsen  
Phone Number: (908)721-0900  
NJDEP Hazardous Waste Hauler No.: 2265

### 2.2 FIELD SCREENING/MONITORING

Field screening was performed by a NJDEP Certified Sub-Surface Evaluator using an OVA and visual observations to identify potentially contaminated material. Soil excavated from around the tank and appurtenant piping, as well as the UST excavation sidewalls and bottom, did not exhibit any evidence of potential contamination.

### 2.3 SOIL SAMPLING

On August 29, 1994, post-excavation soil samples A, B, C, D, E, and DUP D were collected from a total of five (5) locations along the sidewalls of the excavation, immediately above groundwater at a depth of 3.5 feet below grade surface (bgs). Groundwater was present at a depth of 4.0 feet bgs. Sample G was collected from the piping portion of the excavation, which was less than 15 feet in length. The piping sample was collected at a depth of 3.0 feet bgs. All samples were analyzed for total petroleum hydrocarbons (TPHC). All samples were analyzed for 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 in Table 1. The post-excavation soil samples were collected using polystyrene scoops. Actual soil TPHC values may be higher than reported, due to sample utensil absorbency. If absorbency resulted in reducing the actual soil TPHC concentration by 50%, the highest soil contaminant would have been 938.0 mg/kg, still below the applicable NJDEP soil cleanup standard for total organic contaminants of 10,000 mg/kg. Following soil sampling activities, the samples were chilled and delivered to U.S. Army Fort Monmouth Environmental Laboratory located in Fort Monmouth, New Jersey, for analysis.

TABLE I

SUMMARY OF SAMPLING ACTIVITIES  
 BUILDING 625, MAIN POST  
 FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Matrix	Sample Type	Analytical Parameters (and USEPA Methods) *	Sampling Method
A	08-29-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
B	08-29-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
C	08-29-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
D	08-29-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
E	08-29-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
DUP D	08-29-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
G	08-29-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop

\*Note: TPHC Total Petroleum Hydrocarbons (Method 418.1 / soil and aqueous)



### 3.0 CONCLUSIONS AND RECOMMENDATIONS

#### 3.1 SOIL SAMPLING RESULTS

To evaluate soil conditions following removal of the UST and associated piping, post-excavation soil samples were collected from a total of six (6) locations on August 29, 1994. All samples were analyzed for TPHC. The post-excavation sampling results were compared to the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 mg/kg (N.J.A.C. 7:26D and revisions dated February 3, 1994). A summary of the analytical results and comparison to the NJDEP soil cleanup criteria is provided in Table 2 and the soil sampling results are shown on Figure 3. The analytical data package is provided in Appendix E.

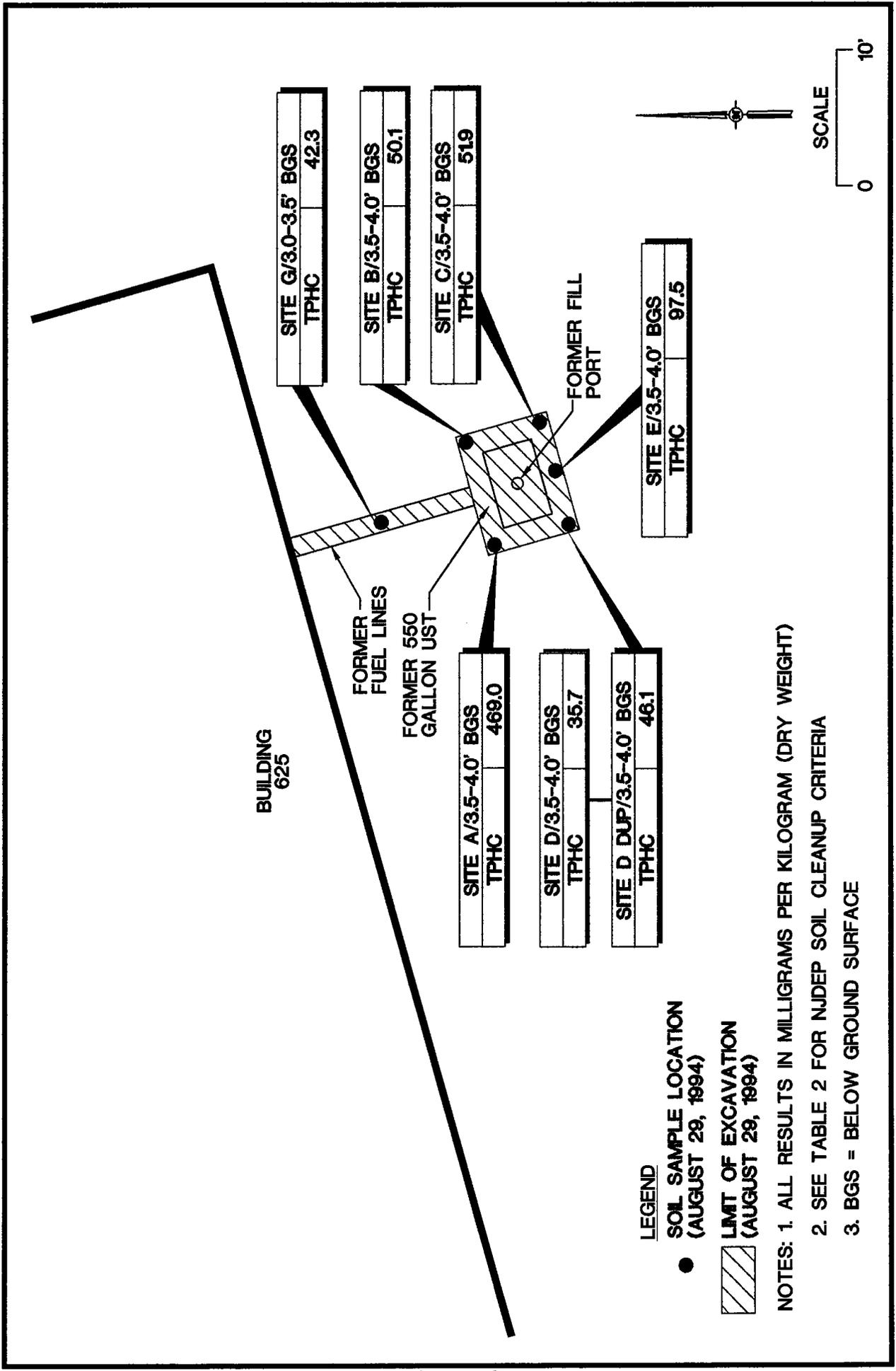
All post-excavation soil samples collected on August 29, 1994 from the UST excavation and from below piping associated with the UST contained concentrations of TPHC below the NJDEP soil cleanup criteria. All post-excavation samples contained TPHC concentrations ranging from 35.7 mg/kg to 469.0 mg/kg.

#### 3.2 CONCLUSIONS AND RECOMMENDATIONS

The analytical results for all post-excavation soil samples collected from the UST closure excavation at Building 625 were below the NJDEP soil cleanup criteria for total organic contaminants.

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

No further action is proposed in regard to the closure and site assessment of UST No. 081533-96 at Building 625.



Source: BCM/Smith Environmental Technologies Corporation (065)

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS  
 BUILDING 625  
 FT. MONMOUTH, NEW JERSEY

PAGE 1 OF 1

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/3.5-4.0'	1628.1	08-29-94	08-31-94	Total Solid TPHC	--	--	82 %	--	--
B/3.5-4.0'	1628.2	08-29-94	08-31-94	Total Solid TPHC	6.6	yes	469.0	10,000	--
C/3.5-4.0'	1628.3	08-29-94	08-31-94	Total Solid TPHC	--	yes	89 %	10,000	--
D/3.5-4.0'	1628.4	08-29-94	08-31-94	Total Solid TPHC	6.6	yes	50.1	--	--
E/3.5-4.0'	1628.5	08-29-94	08-31-94	Total Solid TPHC	6.6	yes	86 %	10,000	--
DUP D/3.5-4.0'	1628.6	08-29-94	08-31-94	Total Solid TPHC	--	yes	51.9	--	--
G/3.0-3.5'	1628.7	08-29-94	08-31-94	Total Solid TPHC	6.6	yes	87 %	10,000	--
					6.6	yes	35.7	--	--
					6.6	yes	83 %	10,000	--
					6.6	yes	97.5	--	--
					6.6	yes	87 %	10,000	--
					6.6	yes	46.1	--	--
					6.6	yes	84 %	10,000	--
					6.6	yes	42.3	10,000	--

Notes:

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

Smith Environmental Technologies Corporation (Project No. 09-5004-06)

soil625.doc



**APPENDIX A**

**NJDEP BUST CLOSURE APPROVAL**



# State of New Jersey

## DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY

CHRISTINE TODD WHITMAN  
Governor

ROBERT C. SHINN, JR.  
Commissioner

Mr. Joseph Fallon  
SELFM-EH-EV  
Headquarters CECOM Fort Monmouth  
Fort Monmouth, NJ 077703-5000

JUL 5 1994

Dear Mr. Fallon:

Re: UST Closure Approval Applications (#2)  
Fort Monmouth, Monmouth County

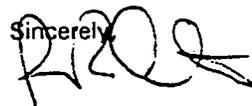
I have reviewed the Underground Storage Tank (UST) Closure Approval Applications submitted on June 10, 1994 for the five registered tanks numbers 0090010-20; and 0081533-96, 101, 105, and 84. The applications are technically accurate and the NJDEPE approves the applications with the following required changes.

Since the reports are all drafted from the same shell document, the required changes noted here apply to all of these documents and future UST Closure Approval Applications.

1. "UNDERGROUND STORAGE TANK (UST) DECOMMISSIONING/CLOSURE PLAN" Section A. General Requirements: The laws listed should include the *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E et seq.).
2. Same Section: THE NJDEPE, will be changing its name to NJDEP on 7/1/94. Documents which are named NJDEPE should remain so named, however references to the Department should be abbreviated NJDEP.
3. Section E. Excavated Soils Management: The NJDEPE has updated the document titled "Management of Excavated Soils". This updated version is dated May 14, 1993.
4. Section F. Changes/Authorizations: Prior authorization must be obtained from the Bureau of Federal Case Management (BFCM), not BUST.
5. "UNDERGROUND ... ASSESSMENT PLAN" General: See comment 1 and 4. Sentence should be modified to read "... and submitted to the NJDEPE-BFCM in accordance with N.J.A.C. 7:14B-9.2 and 9.3 and N.J.A.C. 7:26E et seq.
6. CERTIFICATION section, this paragraph should include a reference to compliance with the minimum requirements of the *Technical Regulations for Site Remediation*, N.J.A.C. 7:26E et seq.

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

Sincerely,

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

cc. Kevin Kratina, BUST  
RPCEBFCMFTMMTH14.JRC

**APPENDIX B**  
**CERTIFICATIONS**



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. Welner  
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. 625

081533-96  
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 07703 County Monmouth  
 Telephone No. (908) 532-6224

OWNER'S NAME AND ADDRESS, if different from above

\_\_\_\_\_  
 \_\_\_\_\_  
 Telephone No. \_\_\_\_\_

## II. DISCHARGE REPORTING REQUIREMENTS

A. Was contamination found?  Yes  No If Yes, Case No. \_\_\_\_\_  
(Note: All discharges must be reported to the Environmental Action Hotline (609) 292-7172)

B. The substance(s) discharged was(were) N/A

C. Have any vapor hazards been mitigated?  Yes  No  N/A

## III. DECOMMISSIONING OF TANK SYSTEMS

Closure Approval No. Letter dated July 5, 1994

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:

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

### C. Soil samples and borings (check appropriate answer)

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

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

3. Attach the analytical results in tabular form and include the following information about each sample:

- Customer sample number (keyed to the site map)
- The depth of the soil sample
- Soil boring logs
- Method detection limit of the method used
- QA/QC Information as required

D. Ground Water Monitoring

1. Number of ground water monitoring wells installed 0
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?  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. N/A ppb total BTEX, N/A ppb total non-targeted VOC
  2. N/A ppb total B/N, N/A ppb total non-targeted B/N
  3. 469.0 ppm TPHC
  4. N/A ppb \_\_\_\_\_ (for non-petroleum substance)

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  No
2. Free product contaminated soils are suspected to exist below the water table  Yes  No
3. Free product contaminated soils are suspected to exist off the property boundaries.  Yes  No

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

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

VI. GROUND WATER CONTAMINATION N/A

- A. Was ground water contamination found?  Yes  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:

1. \_\_\_\_\_ ppb total BTEX, \_\_\_\_\_ ppb total non-targeted VOC
2. \_\_\_\_\_ ppb total B/N, \_\_\_\_\_ ppb total non-targeted B/N
3. \_\_\_\_\_ ppb total MTBE, \_\_\_\_\_ ppb total TBA
4. \_\_\_\_\_ ppb \_\_\_\_\_ (for non-petroleum substance)
5. greatest thickness of separate phase product found \_\_\_\_\_
6. separate phase product has been delineated  Yes  No  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  N/A
2. The number of these wells identified is \_\_\_\_\_.

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 \_\_\_\_\_ 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 \_\_\_\_\_ feet from the source and its screening begins at a depth of \_\_\_\_\_ 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 \_\_\_\_\_ feet below grade. This well is located \_\_\_\_\_ 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 \_\_\_\_\_ feet from the source. This well is \_\_\_\_\_ feet deep and screening begins at a depth of \_\_\_\_\_ feet.

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

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

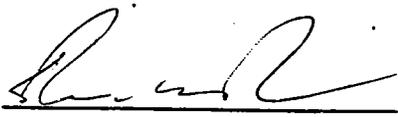
G. Delineation of contamination

1. The ground water contaminants have been delineated to MCLs or lower values at the property boundaries.  Yes  No
2. The plume is suspected to continue off the property at concentrations greater than MCLs.  
 Yes  No
3. Off property access (circle one):  is being sought  has been approved  has been denied

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 Desai SIGNATURE 

COMPANY NAME U.S. Army Fort Monmouth DATE 11/2/95  
(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)1].

*"I certify under penalty of law that the information provided in this document is true, accurate, and complete. I am aware that there are significant 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)2]:

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**  
**WASTE MANIFEST**

L. & L. OIL SERVICE, INC.

D.E.P. & E.P.A. Approved

RD1 Box 5A

Old Bridge, N.J. 08857

Tel: 908-721-0900 • Fax(908) 721-0231

8194

SOLD TO:

*St Monmouth*

BILL TO:

*Cate*

CONTACT:

*John*

*RIVER DR.*

ATTN:

ACCT. #	ORDER DATE	DRIVER	JOB SCHEDULED FOR
			<i>8-24-94</i>

PHONE #	EPA ID #	CUSTOMER PO #	TERMS
<i>901-907-1026</i>			

#	TYPE OF WORK	TYPE OF MATERIALS
1	<i>Pump out</i>	<i>Soil <del>removal</del></i>
2		

SPECIAL INSTRUCTIONS:

*Trans 2 1672 gallons into boiler house tank.  
Pumped from uSTII 0081533-94, 96, 105*

PRICE QUOTED:

ESTIMATED GALLONAGE: *1672 gallons*

DISPOSAL PER GALLON:

HOURLY RATE:

ENTER & CLEAN TANK:

THIS WORK HAS BEEN INSPECTED AND PERFORMED TO THE CUSTOMER'S SATISFACTION.

SIGNATURE:

*[Signature]*  
CATE INC.

This order has been signed and confirmed by the customer that L.&L. Oil Service has left the grounds in good condition and is not responsible for any spills or soil contamination.

WHITE/OFFICE

YELLOW/DRIVER

PINK/CUSTOMER



## APPENDIX D

### UST DISPOSAL CERTIFICATE



**SMITH**

**APPENDIX E**

**SOIL ANALYTICAL DATA PACKAGE**

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

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

Lab. ID #: 1628.1-.7  
 Sample Rec'd: 08/29/94  
 Analysis Start: 08/31/94  
 Analysis Comp: 08/31/94

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

NJDEPE UST Reg.#: 0081533-96  
 Closure #:  
 DICAR.#:  
 Location #: Bldg. 625

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1628.1	Site A, Sidewall NW OVA= ND	82	469.	6.6
1628.2	Site B, Sidewall NE OVA= ND	89	50.1	6.6
1628.3	Site C, Sidewall SE OVA= ND	86	51.9	6.6
1628.4	Site D, Sidewall SW OVA= ND	87	35.7	6.6
1628.5	Site E, Sidewall S OVA= ND	83	97.5	6.6
1628.6	Site F, DUPE OF D OVA= ND	87	46.1	6.6
1628.7	Site G, PIPERUN OVA= ND	84	42.3	6.6
M. Bl.	Method Blank	100	ND	3.3

Notes: ND = Not Detected, MDL = Method Detection Limit  
 \* = Silica Gel Added, NA = Not Applicable  
 1628.4dup= 115% 1628.4s= 116% 1628.4sd= 115% RPD= 0.8%

*B. McK*

Brian K. McKee  
 Laboratory Director



# U.S. ARMY FORT MONMOUTH

Chain of Custody

P.O. #: ANS-7777

Project #: <u>81533-96</u>		Sampler: <u>George Oude/DEAT</u>		Date / Time: <u>8/29/10-10</u>		Analysis Parameters		Start:	
Customer: <u>Dinker Dede</u>		Site Name: <u>819 Coz 81533 96</u>		Date / Time: <u>8/29/10-10</u>		Analysis Parameters		Finish:	
Phone: <u>2047</u>		Customer Location/ID Number		Sample Matrix		# of Bottles		Preservation Method	
Lab Sample ID Number	Date/Time	Customer Location/ID Number	Sample Matrix	# of Bottles	Analysis Parameters	Remarks	Preservation Method		
1678.1	8/29/10	Site A - Stream NW	Soil	1	X	NO	Substrate 44°C		
1678.2	"	Site B - " NE	"	1	X	NO	Spore - 9-30 AM		
1678.3	"	Site C - " SE	"	1	X	NO	Spore - 10/20/10		
1678.4	"	Site D - " SW	"	1	X	NO	Spore - 10/20/10		
1678.5	"	Site E - " South	"	1	X	NO	Spore - 10/20/10		
1678.6	"	Site F (DUPED) - "	"	1	X	NO	Spore - 10/20/10		
1678.7	"	Site G (DUPED) - "	"	1	X	NO	Spore - 10/20/10		
							QA#		
							AS1903		
Relinquished By (signature)		Date / Time		Received By (signature)		Date / Time		Shipped By:	
Relinquished By (signature)		Date / Time		Received for Lab by (signature)		Date / Time			
<u>[Signature]</u>		8/29/10		<u>Sarah J. Hubbard</u>		8/29/10 1130			

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

Environmental Laboratory

Certification Number 13461

*Sarah J. Nelson 1.5*

Blank

40.75 54 MV

81.5 111 MV

163 240 MV

1628.1 <sup>MV</sup> 80 Building 625

1628.2 5 MV

1628.3 5 MV

1628.4 2 MV

1628.4 Dup 3 MV

1628.4 Spks 123 MV

1628.4 Dup Spk 122 MV

1628.5 13 MV

1628.6 4 MV

1628.7 3 MV

1623.1 11 MV Building 601

1624.1 0 MV Building 621

1624.2 0 MV

1624.3 0 MV

1624.4 0 MV

1624.5 3 MV

1624.6 0 MV

1624.7 2 MV

1624.8 29 MV

1625.1 <sup>198</sup> <sub>del 19</sub> Building 482

1625.2 66 del F

1625.3 128 MV

195-6970-00

PRINTED IN U.S.A.

100 90 80 70 60 50 40 30 20 10 0

100 90 80 70 60 50 40 30 20 10 0

100 90 80 70 60 50 40 30 20 10 0

100 90 80 70 60 50 40 30 20 10 0

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.

5. Extraction holding time met. (If not met, list number of days exceeded for each sample)

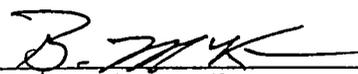
6. Analysis holding time met. (If not met, list number of days exceeded for each sample)

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.

Project #1628

  
\_\_\_\_\_  
Brian K. McKee  
Laboratory Manager



ATTACHMENT O

UST 637 File Review and Analyses



UNDERGROUND STORAGE TANK FILE REVIEW  
FORT MONMOUTH BRAC 05 FACILITY  
OCEANPORT, NEW JERSEY

Date: September 22, 2015 Review Performed By: Kent Friesen, Parsons

Site ID: **Bldg. 637**

Registration ID: None

Recommended Status of Site: **Case Closed (no change)**

UST Probability (from May 2014 "Addendum 1 ECP UHOT Report"): **None**

Based on the file review, were there indications of a contaminant release? [ ] Yes [X] No

NJDEP Release No. or DICAR (If applicable): \_\_\_\_\_

Did NJDEP approve No Further Action (NFA) for this site? [ ] Yes [X] No [ ] Not Applicable

Tank Description: [ ] Steel [ ] Fiberglass Size: Unknown Contents: #2 Fuel Oil

[X] Residential [ ] Commercial/Industrial

Tank Removed? [X] Yes [ ] No If "yes," removal date: Unknown

Were closure soil samples taken? [X] Yes [ ] No Analyses: TPH

Comparison criteria: 5,100 mg/kg

Were closure soil sample results less than comparison criteria? [X] Yes [ ] No

**Brief Narrative**

The Building 637 residential barracks were demolished in 1980. A tank removal contractor excavated to 11 feet below ground surface at the former building location on October 7, 1994. Based on visual observations, it was determined that the former No. 2 fuel oil tank location was encountered, but that the tank had been previously removed.

Additional sampling of soil and groundwater was completed by FTMM in January 2006 at the former UST 637 site using a Geoprobe; the resulting analytical data are attached. Three soil samples and one field duplicate were collected from the former UST location and analyzed by the Fort Monmouth Environmental Laboratory for total petroleum hydrocarbons (TPH). The soil sample results were all not detected (ND) for TPH. The results were less than 5,100 mg/kg for TPH, which is the current TPH remediation criterion. One groundwater grab sample was also collected and analyzed for both VOCs and SVOCs; no analytes were detected in groundwater. Therefore, there are no indications of a release to soil or groundwater, and NFA is warranted at Site 637.

Recommendations (if any): Request NFA from NJDEP



Signed: \_\_\_\_\_

Kent A. Friesen, Parsons

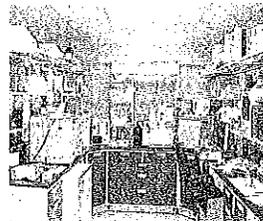
# FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS

PHONE: (732) 532-4359 FAX: (732) 532-6263

WET-CHEM - METALS - ORGANICS - FIELD SAMPLING

CERTIFICATIONS: NJDEP #13461, NYSDOH #11699



ANALYTICAL DATA REPORT  
Fort Monmouth Environmental Laboratory  
ENVIRONMENTAL DIVISION  
Fort Monmouth, New Jersey  
PROJECT: BLDG. 637

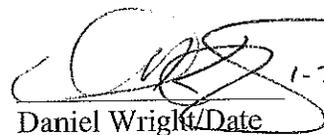
Bldg. 637

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
637 W 7.5-8.0'	6000601	Soil	04-Jan-06 08:54	01/04/06
637 C 7.5-8.0'	6000602	Soil	04-Jan-06 09:28	01/04/06
637 E 7.5-8.0'	6000603	Soil	04-Jan-06 09:52	01/04/06
Duplicate	6000604	Soil	04-Jan-06 09:28	01/04/06
637 C	6000605	Aqueous	04-Jan-06 10:14	01/04/06
Trip Blank	6000606	Methanol	04-Jan-06	01/04/06
Trip Blank	6000607	Aqueous	04-Jan-06	01/04/06

ANALYSIS:

FORT MONMOUTH ENVIRONMENTAL LAB  
VOA+15, BN+15, TPHC, % SOLIDS

ENCLOSURE:  
CHAIN OF CUSTODY  
RESULTS

  
1-24-06  
Daniel Wright/Date  
Laboratory Director

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**CHAIN  
OF  
CUSTODY**





**Former UST 637 Sample Location GPS Positions**

US State Plane 1983 New Jersey ( NY East ) 2900  
NAD 1983 ( Conus)  
Geoid 96 ( Conus)

( In US Survey Feet)

<b>Position</b>	<b>Northing ( Y Coord.)</b>	<b>Easting ( X Coord.)</b>
637 E	539402.133	618405.790
637 C	539401.031	618400.874
637 W	539400.487	618395.113

# **METHOD SUMMARY**

## **Methodology Summary**

### **EPA Method 624**

#### **Gas Chromatographic Determination of Volatiles in Water**

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

### **EPA SW-846 Method 8260**

#### **Gas Chromatographic Determination of Volatiles in Methanol**

A 10-gram volume of soil is combined with 25-ml of Methanol and surrogates in the field. Internal standards are added and the sample is placed on a purge and trap concentrator. The sample is purged and desorbed into a GC/MS system. Volatiles are identified and quantitated. The final concentration is calculated using soil weight, percent moisture and concentration.

### **EPA Method 625**

#### **Gas Chromatographic Determination of Semi-volatiles in Water**

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

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

Fifteen grams (15g) of soil is added to a 125-ml acid cleaned and solvent rinsed capped Erlenmeyer flask. 15g anhydrous Sodium Sulfate is added to dry the sample. Surrogate standard spiking solution is then added to the flask.

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

The extract is then injected directly into a GC-FID for analysis. The sample is analyzed for Petroleum Hydrocarbons covering a range of C8-C42, including Pristane and Phytane. Total Petroleum Hydrocarbon concentration is determined by integrating between 5 minutes and 22 minutes. The baseline is established by starting the integration after the end of the solvent peak and stopping after the last peak. The final concentration of Total Petroleum Hydrocarbons is calculated using percent moisture, sample weight and concentration.

# **LABORATORY CHRONICLE**

# Laboratory Chronicle

Lab ID: 60006

Site: UST  
Bldg. 637

	Date	Hold Time
Date Sampled	01/04/06	NA
Receipt/Refrigeration	01/04/06	NA

## Extractions

1. BN	01/09/06	7 days
2. TPHC	01/06/06	14 days

## Analyses

1. VOA	01/10,11/06	14 days
2. BN	01/17/06	40 days
3. TPHC	01/07/06	40 days

000009

**CONFORMANCE/  
NON-  
CONFORMANCE  
SUMMARY**

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

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

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

    - a. VOA Fraction \_\_\_\_\_
    - b. B/N Fraction toluene 42%
    - c. Acid Fraction \_\_\_\_\_

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

yes
  9. Matrix Spike/Matrix Spike Duplicate Recoveries Meet Criteria NO

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

    - a. VOA Fraction Naphthalene MS+MSD rec low
    - b. B/N Fraction Benzidine MSD low RPD high
    - c. Acid Fraction \_\_\_\_\_

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

Indicate  
Yes, No, N/A

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

YES

- a. VOA Fraction \_\_\_\_\_
- b. B/N Fraction \_\_\_\_\_
- c. Acid Fraction \_\_\_\_\_

11. Extraction Holding Time Met

YES

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

12. Analysis Holding Time Met

YES

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

Additional Comments:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Laboratory Manager: \_\_\_\_\_



Date: 1-24-06

## TPHC CONFORMANCE/NON-CONFORMANCE SUMMARY REPORT

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

Additional comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Laboratory Manager: \_\_\_\_\_

Date: \_\_\_\_\_

1-24-06

000013

**VOLATILE  
ORGANICS  
(AQUEOUS)**

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

**Definition of Qualifiers**

- U:** The compound was analyzed for but not detected.
- B:** Indicates that the compound was found in the associated method blank as well as in the sample.
- J:** Indicates an estimated value. This flag is used:
- (1) When the mass spec and retention time data indicate the presence of a compound however the result is less than the MDL but greater than zero.
  - (2) When estimating the concentration of a tentatively identified compound (TIC), where a 1:1 response is assumed.
- D:** This flag is used to identify all compounds (target or TIC) that required a dilution.
- E:** Indicates the compound's concentration exceeds the calibration range of the instrument for that specific analysis.
- N:** This flag is only used for TICs. It indicates the presumptive evidence of a compound. For a generic characterization of a TIC, such as unknown hydrocarbon, the flag is not used.

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

Data File VB02L318.D  
 Operator Skelton  
 Date Acquired 11 Jan 2006 8:48 pm

Sample Name MB 11Jan2006  
 Field ID MB 11Jan2006  
 Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.01 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	5	1.23 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	5.70 ug/L	10.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.21 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.26 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.20 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	nle	0.24 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.23 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	0.26 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	0.29 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.23 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.19 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	6000	0.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.24 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.21 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.24 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	50	0.24 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.26 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.20 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	70	0.22 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.20 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.24 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.24 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.23 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.26 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.24 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.23 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.22 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.35 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.26 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.25 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.28 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.20 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.43 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.28 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.27 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	0.43 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.21 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.21 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.27 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.45 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.36 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.35 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.45 ug/L	2.00 ug/L	

\*Results between MDL and RL are estimated values  
 \*Higher of PQL's and Interim Criteria as per N.J.A.C. 7:9C 07Nov2005

**Qualifiers**

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

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

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

MB 11Jan2006

Lab Name: FMETL NJDEP#: 13461  
Project: 0634880 Case No.: 60006 Location: 637 SDG No.: UST  
Matrix: (soil/water) WATER Lab Sample ID: MB 11Jan2006  
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB021318.D  
Level: (low/med) LOW Date Received: 1/4/2006  
% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 1/11/2006  
GC Column: RTX502 ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

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

Number TICs found: 1

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 000079-20-9	Acetic acid, methyl ester	12.47	4	JN

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

Data File VB021320.D  
 Operator Skelton  
 Date Acquired 11 Jan 2006 10:10 pm

Sample Name 6000606  
 Field ID Trip Blank  
 Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.01 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	5	1.23 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	5.70 ug/L	10.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.21 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.26 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.20 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	nle	0.24 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.23 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	0.26 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	0.29 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.23 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.19 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	6000	0.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.24 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.21 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.24 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	50	0.24 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.26 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.20 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	70	0.22 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.20 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.24 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.24 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.23 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.26 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.24 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.23 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.22 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.35 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.26 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.25 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.28 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.20 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.43 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.28 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.27 ug/L	2.00 ug/L	
1330-20-7	m,p-Xylenes			not detected	nle	0.43 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.21 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.21 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.27 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.45 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.36 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.35 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.45 ug/L	2.00 ug/L	

\*Results between MDL and RL are estimated values  
 \*Higher of PQL's and Interim Criteria as per N.J.A.C. 7:9C 07Nov2005

**Qualifiers**

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

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

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

Trip Blank

Lab Name: FMETL NJDEP#: 13461  
Project: 0634880 Case No.: 60006 Location: 637 SDG No.: UST  
Matrix: (soil/water) WATER Lab Sample ID: 6000606  
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB021320.D  
Level: (low/med) LOW Date Received: 1/4/2006  
% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 1/11/2006  
GC Column: RTX502 ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

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

Number TICs found: 1

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 000079-20-9	Acetic acid, methyl ester	12.47	4	JN

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

Data File VB021319.D  
 Operator Skelton  
 Date Acquired 11 Jan 2006 9:29 pm

Sample Name 6000605  
 Field ID 637C  
 Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.01 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	5	1.23 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	5.70 ug/L	10.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.21 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.26 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.20 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	nle	0.24 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.23 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	0.26 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	0.29 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.23 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.19 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	6000	0.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.24 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.21 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.24 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	50	0.24 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.26 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.20 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	70	0.22 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.20 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.24 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.24 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.23 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.26 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.24 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.23 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.22 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.35 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.26 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.25 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.28 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.20 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.43 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.28 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.27 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	0.43 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.21 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.21 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.27 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.45 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.36 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.35 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.45 ug/L	2.00 ug/L	

\*Results between MDL and RL are estimated values  
 \*Higher of PQL's and Interim Criteria as per N.J.A.C. 7:9C 07Nov2005

**Qualifiers**

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

637C

Lab Name: FMETL NJDEP#: 13461  
 Project: 0634880 Case No.: 60006 Location: 637 SDG No.: UST  
 Matrix: (soil/water) WATER Lab Sample ID: 6000605  
 Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB021319.D  
 Level: (low/med) LOW Date Received: 1/4/2006  
 % Moisture: not dec. \_\_\_\_\_ Date Analyzed: 1/11/2006  
 GC Column: RTX502 ID: 0.25 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

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

Number TICs found: 1

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 000079-20-9	Acetic acid, methyl ester	12.48	4	JN

# **SEMI-VOLATILE ORGANICS**

000035

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

Data File Name BNA11446.D  
 Operator Skelton  
 Date Acquired 17-Jan-06

Sample Name MB 01090601  
 Misc Info MB 01090601  
 Sample Multiplier 1

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifiers
110-86-1	Pyridine			not detected	NLE	1.13	10.00	ug/L
62-75-9	N-nitroso-dimethylamine			not detected	20	0.60	10.00	ug/L
62-53-3	Aniline			not detected	NLE	2.38	10.00	ug/L
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.71	10.00	ug/L
541-73-1	1,3-Dichlorobenzene			not detected	600	1.02	10.00	ug/L
106-46-7	1,4-Dichlorobenzene			not detected	75	0.99	10.00	ug/L
100-51-6	Benzyl alcohol			not detected	NLE	0.66	10.00	ug/L
95-50-1	1,2-Dichlorobenzene			not detected	600	0.96	10.00	ug/L
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.88	10.00	ug/L
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.76	10.00	ug/L
67-72-1	Hexachloroethane			not detected	10	0.96	10.00	ug/L
98-95-3	Nitrobenzene			not detected	10	0.86	10.00	ug/L
78-59-1	Isophorone			not detected	100	0.76	10.00	ug/L
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.79	10.00	ug/L
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.89	10.00	ug/L
91-20-3	Naphthalene			not detected	NLE	0.76	10.00	ug/L
106-47-8	4-Chloroaniline			not detected	NLE	1.37	10.00	ug/L
87-68-3	Hexachlorobutadiene			not detected	1	0.99	10.00	ug/L
91-57-6	2-Methylnaphthalene			not detected	NLE	1.01	10.00	ug/L
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.92	10.00	ug/L
91-58-7	2-Chloronaphthalene			not detected	NLE	0.72	10.00	ug/L
88-74-4	2-Nitroaniline			not detected	NLE	0.77	10.00	ug/L
131-11-3	Dimethylphthalate			not detected	7000	0.78	10.00	ug/L
208-96-8	Accnaphthylene			not detected	NLE	0.67	10.00	ug/L
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.71	10.00	ug/L
99-09-2	3-Nitroaniline			not detected	NLE	1.18	10.00	ug/L
83-32-9	Acenaphthene			not detected	400	0.73	10.00	ug/L
132-64-9	Dibenzofuran			not detected	NLE	0.69	10.00	ug/L
121-14-2	2,4-Dinitrotoluene			not detected	10	0.81	10.00	ug/L
84-66-2	Diethylphthalate			not detected	5000	0.96	10.00	ug/L
86-73-7	Fluorene			not detected	300	0.71	10.00	ug/L
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.73	10.00	ug/L
100-01-6	4-Nitroaniline			not detected	NLE	1.11	10.00	ug/L
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.62	10.00	ug/L
103-33-3	Azobenzene			not detected	NLE	0.72	10.00	ug/L
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.92	10.00	ug/L
118-74-1	Hexachlorobenzene			not detected	10	0.95	10.00	ug/L
85-01-8	Phenanthrene			not detected	NLE	0.81	10.00	ug/L
120-12-7	Anthracene			not detected	2000	0.76	10.00	ug/L
84-74-2	Di-n-butylphthalate			not detected	900	0.92	10.00	ug/L
206-44-0	Fluoranthene			not detected	300	0.82	10.00	ug/L

**Semi-Volatile Analysis Report**  
**Page 2**

Data File Name **BNA11446.D**  
 Operator **Skelton**  
 Date Acquired **17-Jan-06**

Sample Name **MB 01090601**  
 Misc Info **MB 01090601**  
 Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifiers
92-87-5	Benzidine			not detected	50	0.98	10.00	ug/L
129-00-0	Pyrene			not detected	200	0.79	10.00	ug/L
85-68-7	Butylbenzylphthalate			not detected	100	0.86	10.00	ug/L
56-55-3	Benzo[a]anthracene			not detected	10	0.82	10.00	ug/L
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.31	10.00	ug/L
218-01-9	Chrysene			not detected	20	0.77	10.00	ug/L
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.28	10.00	ug/L
117-84-0	Di-n-octylphthalate			not detected	100	1.02	10.00	ug/L
205-99-2	Benzo[b]fluoranthene			not detected	10	0.98	10.00	ug/L
207-08-9	Benzo[k]fluoranthene			not detected	2	0.92	10.00	ug/L
50-32-8	Benzo[a]pyrene			not detected	20	0.76	10.00	ug/L
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	0.76	10.00	ug/L
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.76	10.00	ug/L
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.80	10.00	ug/L

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

**Qualifiers**

E= Value Exceeds Linear Range

D= Value from dilution

B= Compound in Related Blank

RL= Reporting Limit. The values between the MDL and RL are considered estimated.

MDL= Method Detection Limit

NLE= No Limit Established

R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MB-010906-01

Lab Name: FMETL Lab Code 13461  
Project: 06-34880 Case No.: 60006 Location: UST SDG No.: \_\_\_\_\_  
Matrix: (soil/water) WATER Lab Sample ID: MB 01090601  
Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA11446.D  
Level: (low/med) LOW Date Received: 1/4/2006  
% Moisture: \_\_\_\_\_ decanted: (Y/N) N Date Extracted: 1/9/2006  
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/17/2006  
Injection Volume: 1.0 (uL) Dilution Factor: 1.0  
GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

CONCENTRATION UNITS:

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
<u>1.</u>	<u>unknown hydrocarbon</u>	<u>6.82</u>	<u>7</u>	<u>J</u>

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

Data File Name **BNA11450.D**  
 Operator **Skelton**  
 Date Acquired **17-Jan-06**

Sample Name **6000605**  
 Misc Info **637C**  
 Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	ug/L	Qualifiers
110-86-1	Pyridine			not detected	NLE	1.13	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.60	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	2.38	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.71	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	1.02	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.99	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.66	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.96	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.88	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.76	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.96	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.86	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.76	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.79	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.89	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.76	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.37	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.99	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	1.01	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.92	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.72	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.77	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.78	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.67	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.71	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	1.18	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.73	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.69	10.00	ug/L	
121-14-2	2,4-Dinitrotoluene			not detected	10	0.81	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.96	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.71	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.73	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.11	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.62	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.72	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.92	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.95	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.81	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	0.76	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.92	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	0.82	10.00	ug/L	

**Semi-Volatile Analysis Report**  
**Page 2**

Data File Name **BNA11450.D**  
Operator **Skelton**  
Date Acquired **17-Jan-06**

Sample Name **6000605**  
Misc Info **637C**  
Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifiers
92-87-5	Benzidine			not detected	50	0.98	10.00	ug/L
129-00-0	Pyrene			not detected	200	0.79	10.00	ug/L
85-68-7	Butylbenzylphthalate			not detected	100	0.86	10.00	ug/L
56-55-3	Benzo[a]anthracene			not detected	10	0.82	10.00	ug/L
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.31	10.00	ug/L
218-01-9	Chrysene			not detected	20	0.77	10.00	ug/L
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.28	10.00	ug/L
117-84-0	Di-n-octylphthalate			not detected	100	1.02	10.00	ug/L
205-99-2	Benzo[b]fluoranthene			not detected	10	0.98	10.00	ug/L
207-08-9	Benzo[k]fluoranthene			not detected	2	0.92	10.00	ug/L
50-32-8	Benzo[a]pyrene			not detected	20	0.71	10.00	ug/L
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	0.76	10.00	ug/L
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.76	10.00	ug/L
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.80	10.00	ug/L

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

**Qualifiers**

E= Value Exceeds Linear Range

D= Value from dilution

B= Compound in Related Blank

RL= Reporting Limit. The values between the MDL and RL are considered estimated.

MDL= Method Detection Limit

NLE= No Limit Established

R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

637C

Lab Name: FMETL Lab Code 13461  
Project: 06-34880 Case No.: 60006 Location: UST SDG No.: \_\_\_\_\_  
Matrix: (soil/water) WATER Lab Sample ID: 6000605  
Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA11450.D  
Level: (low/med) LOW Date Received: 1/4/2006  
% Moisture: \_\_\_\_\_ decanted: (Y/N) N Date Extracted: 1/9/2006  
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/17/2006  
Injection Volume: 1.0 (uL) Dilution Factor: 1.0  
GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

CONCENTRATION UNITS:

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown hydrocarbon	6.82	10	J

**TPHC**

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

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

Project # : 60006  
 Location : 637  
 UST Reg. # :

Analysis : OQA-QAM-025  
 Matrix : Soil  
 Inst. ID. : GC TPHC INST. #1  
 Column Type : RTX-5, 0.32mm ID, 30M  
 Injection Volume : 1uL

Date Received : 03-Jan-06  
 Date Extracted : 06-Jan-06  
 Extraction Method : Shake  
 Analysis Complete : 07-Jan-06  
 Analyst : P.Skelton

Lab ID	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	RL	TPHC Result (mg/kg)
6000601	637W	1.00	15.84	75.07	81	420	ND
6000602	637C	1.00	15.11	75.10	85	441	ND
6000603	637E	1.00	15.37	75.05	83	433	ND
6000604	Dupe	1.00	15.01	76.04	84	438	ND
METHOD BLANK	MB-01060601	1.00	15.00	100.00	64	333	ND

ND = Not Detected

MDL = Method Detection Limit

RL = Reporting Limits

**Note :** The TPHC result between the MDL and RL are considered an estimated value

## LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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

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

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

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

Laboratory Manager or Environmental Consultant's Signature

Date: 1/24/06



Laboratory Certification # 13461

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

000084

## Laboratory Authentication Statement

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



Daniel K. Wright  
Laboratory Manager



ATTACHMENT P

UST 645 File Review and Analyses



UNDERGROUND STORAGE TANK FILE REVIEW  
FORT MONMOUTH BRAC 05 FACILITY  
OCEANPORT, NEW JERSEY

Date: November 3, 2015 Review Performed By: Kent Friesen, Parsons

Site ID: **Bldg. 645** Registration ID: None

Recommended Status of Site: **Case Closed (no change)**

UST Probability (from May 2014 "Addendum 1 ECP UHOT Report"): **NFA**

Based on the file review, were there indications of a contaminant release? [ ] Yes [X] No

NJDEP Release No. or DICAR (If applicable): \_\_\_\_\_

Did NJDEP approve No Further Action (NFA) for this site? [ ] Yes [X] No [ ] Not Applicable

Tank Description: [X] Steel [ ] Fiberglass Size: 1080 gals. Contents: #2 Fuel Oil

[X] Residential [ ] Commercial/Industrial

Tank Removed? [X] Yes [ ] No If "yes," removal date: Unknown

Were closure soil samples taken? [X] Yes [ ] No Analyses: TPH

Comparison criteria: 5,100 mg/kg

Were closure soil sample results less than comparison criteria? [X] Yes [ ] No

**Brief Narrative**

The Building 645 residential barracks building was demolished in 1978. A tank removal contractor excavated at the former building location on September 29 to 30, 1994 using historic aerial photographs and site maps to determine the approximate fuel oil tank location. Based on visual observations, it was determined that the former No. 2 fuel oil tank location was encountered, but that the tank had been previously removed and the excavation filled with old construction material. As stated in a Memorandum to File (attached), it was surmised that the tank was removed during building demolition, and the excavation was filled with demolition debris. "Heavy organic material" was observed in the test pit excavation.

Additional sampling of soil was completed by FTMM in July 1995 at the former UST 645 site, presumably using an excavator for test pit excavation. The resulting analytical data are attached. Five soil samples were collected from the former UST location and analyzed by the Fort Monmouth Environmental Laboratory for total petroleum hydrocarbons (TPH). The soil sample results ranged from 169 mg/kg to 491 mg/kg for TPH. The results were less than 5,100 mg/kg for TPH, which is the current TPH remediation criterion. Therefore, there are no indications of a significant release to soil or groundwater, and NFA is warranted at Site 645.

Recommendations (if any): Request NFA from NJDEP



Signed: \_\_\_\_\_

Kent A. Friesen, Parsons

MEMORANDUM TO FILE

FROM: EUGENE W. LESINSKI

DATE: 30 SEPTEMBER 1994

TO: FILE

SUBJ: UST REMOVAL IN THE 600 AREA

1. I directed the UST tank hunt in the 600 Area for Buildings 642 through 654 (13 tanks total) with CUTE, Inc. on 29-30 September 1994. Of 13 possible existing UST's, only 1 UST was found (Bldg 654). The following information germane:

- A) Buildings 642 thru 651: These tanks were determined to be a capacity of 1080 gallons (2 tank markers with this information were found in tank excavations). From old aerial photographs and site maps approximate tank locations were determined. Excavation revealed that these 10 tanks were removed and excavations were filled with old construction material. It was surmised that these tanks were removed during building demolition and filled with demolition debris. Excavations for BLDG's 642 thru 646 were visually observed to be with heavy organic material while BLDG's 647 thru 651 were visually clean. Readings from HNU showed no hits for petroleum hydrocarbons. Excavations for Buildings 642 thru 651 were back-filled late afternoon on the 29th of September 1994.
- B) Buildings 652 thru 654 were excavated on 30 September 1994 and only 1 UST was found (BLDG 654 - 1080 gallons). Excavations for 652 and 653 appeared visually to have heavy organic material. Building 654 appeared clean.

V/R

  
Eugene W. Lesinski

Bldg 645 Soil Anal 7/26/95

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

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

Lab. ID #: 1897.1-.5  
 Sample Rec'd: 07/26/95  
 Analysis Start: 07/27/95  
 Analysis Comp: 07/28/95

Analysis: 418.1 (TPH)  
 Matrix: Soil  
 Analyst: S. Hubbard  
 Ext. Meth: 3540A

NJDEPE UST Reg.#:  
 Closure #:  
 DICAR #:  
 Location #: Bldg. 645

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1897.1	Sample A, Center 7'-8'	75	265.	16.
1897.2	Sample B, So. Wall 7'	79	357.	16.
1897.3	Sample C, E. Wall 7'	79	169.	16.
1897.4	Sample D, No. Wall 7'	81	357.	16.
1897.5	Sample E, W. Wall 7',	81	491.	16.
M. Bl.	Method Blank	100	ND	3.3

Notes: ND = Not Detected, MDL = Method Detection Limit  
 \* = Silica Gel Added, NA = Not Applicable  
 1898.5S=122%, 1898.5SD=122%, RPD= 0.0%, 1898.5Dup= NA% Check=108%  
 QC Limits: Recovery = 60% to 140% and RPD = 14.9% at 2 Std. Dev.

*Brian K. McKee*  
 -----  
 Brian K. McKee  
 Laboratory Director



# SERV-AIR, INC. AN E-SYSTEMS CO.

Chain of Custody

P.O. #:

Project #: <span style="border: 1px solid black; display: inline-block; width: 100px; height: 20px;"></span>		Sampler: <i>B. Hubbard</i>		Date / Time: <i>7/26/95 07:30</i>		Analysis Parameters		Start:			
Customer: <i>DPW Engstrom</i>		Site Name: <i>Bldg 645</i>		Date / Time: <i>7/26/95 10:30</i>		<div style="border: 1px solid black; padding: 5px; transform: rotate(-45deg); display: inline-block;">                 MATRIX SAMPLES TYPIC             </div>		Finish:			
Phone: <span style="border: 1px solid black; display: inline-block; width: 100px; height: 20px;"></span>		Customer Sample Location/ID Number		Sample Matrix				Remarks		Preservation Method	
Lab Sample ID Number	Date/Time										
<i>1897.1</i>	<i>7/26/95 10:30</i>	<i>A center @ 7'-8'</i>		<i>solid</i>							
<i>1.2</i>	<i>10:31</i>	<i>B. So wall @ 7' 9"</i>		<i>↓</i>							
<i>1.3</i>	<i>10:35</i>	<i>C E wall @ 7' 9"</i>		<i>↓</i>							
<i>1.4</i>	<i>10:40</i>	<i>D N wall @ 7' 9"</i>		<i>↓</i>							
<i>1.5</i>	<i>10:41</i>	<i>E W wall @ 7' 9"</i>		<i>↓</i>							
Relinquished By (signature)		Date / Time		Received By (signature)		Date / Time		Shipped By:			
<i>[Signature]</i>											
Relinquished By (signature)		Date / Time		Received for Lab by (signature)		Date / Time					
<i>[Signature]</i>		<i>7/26/95 11:30</i>									

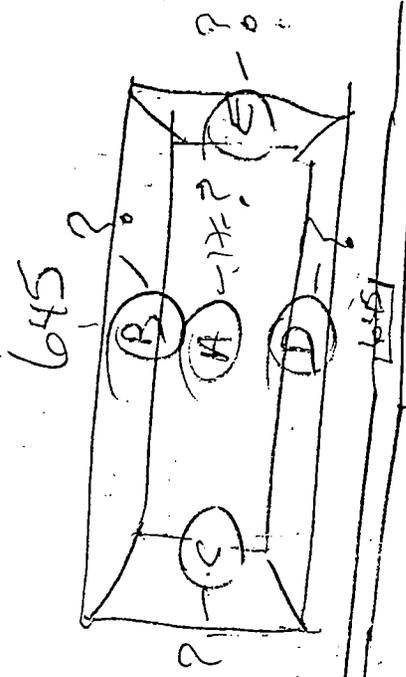
Note: A drawing depicting sample location should be attached or drawn on the reverse side of this chain of custody.

Environmental Laboratory

*A Map Attached*

10x9x7

14'0"  
08'0"



12'0" Rd

PARKING  
LOT

N ↓

NOT to  
SCALE

# NEW PARKING LOT

x

642

643

644

645

646

RESERVATION ROAD

652

653

2 samples  
5/12/15  
5 samples  
5/12/15

SHERMILL AVENUE

ABULINIS  
ALLEY

**PHC Conformance/Non-conformance Summary Report**

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

Comments: None

---

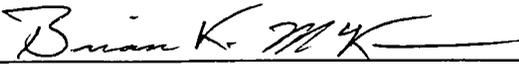


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**Laboratory Authentication Statement**

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

Project #1897

  
Brian K. McKee  
 Brian K. McKee  
 Laboratory Manager

ATTACHMENT Q

UST 646 File Review and Analyses



UNDERGROUND STORAGE TANK FILE REVIEW  
FORT MONMOUTH BRAC 05 FACILITY  
OCEANPORT, NEW JERSEY

Date: November 3, 2015 Review Performed By: Kent Friesen, Parsons

Site ID: **Bldg. 646**

Registration ID: None

Recommended Status of Site: **Case Closed (no change)**

UST Probability (from May 2014 "Addendum 1 ECP UHOT Report"): **NFA**

Based on the file review, were there indications of a contaminant release? [ ] Yes [X] No

NJDEP Release No. or DICAR (If applicable): \_\_\_\_\_

Did NJDEP approve No Further Action (NFA) for this site? [ ] Yes [X] No [ ] Not Applicable

Tank Description: [X] Steel [ ] Fiberglass Size: 1080 gals. Contents: #2 Fuel Oil

[X] Residential [ ] Commercial/Industrial

Tank Removed? [X] Yes [ ] No If "yes," removal date: Unknown

Were closure soil samples taken? [X] Yes [ ] No Analyses: TPH

Comparison criteria: 5,100 mg/kg

Were closure soil sample results less than comparison criteria? [X] Yes [ ] No

**Brief Narrative**

The Building 646 residential barracks building was demolished in 1980. A tank removal contractor excavated at the former building location on September 29 to 30, 1994 using historic aerial photographs and site maps to determine the approximate fuel oil tank location. Based on visual observations, it was determined that the former No. 2 fuel oil tank location was encountered, but that the tank had been previously removed and the excavation filled with old construction material. As stated in a Memorandum to File (attached), it was surmised that the tank was removed during building demolition, and the excavation was filled with demolition debris. "Heavy organic material" was observed in the test pit excavation.

Additional sampling of soil was completed by FTMM in July 1995 at the former UST 646 site, presumably using an excavator for test pit excavation. The resulting analytical data are attached. Five soil samples were collected from the former UST location and analyzed by the Fort Monmouth Environmental Laboratory for total petroleum hydrocarbons (TPH). The soil sample results ranged from not detected (ND) to 225 mg/kg for TPH. The results were less than 5,100 mg/kg for TPH, which is the current TPH remediation criterion. Therefore, there are no indications of a significant release to soil or groundwater, and NFA is warranted at Site 646.

Recommendations (if any): Request NFA from NJDEP



Signed: \_\_\_\_\_

Kent A. Friesen, Parsons

MEMORANDUM TO FILE

FROM: EUGENE W. LESINSKI

DATE: 30 SEPTEMBER 1994

TO: FILE

SUBJ: UST REMOVAL IN THE 600 AREA

1. I directed the UST tank hunt in the 600 Area for Buildings 642 through 654 (13 tanks total) with CUTE, Inc. on 29-30 September 1994. Of 13 possible existing UST's, only 1 UST was found (Bldg 654). The following information germane:

- A) Buildings 642 thru 651: These tanks were determined to be a capacity of 1080 gallons (2 tank markers with this information were found in tank excavations). From old aerial photographs and site maps approximate tank locations were determined. Excavation revealed that these 10 tanks were removed and excavations were filled with old construction material. It was surmised that these tanks were removed during building demolition and filled with demolition debris. Excavations for BLDG's 642 thru 646 were visually observed to be with heavy organic material while BLDG's 647 thru 651 were visually clean. Readings from HNU showed no hits for petroluem hydrocarbons. Excavations for Buildings 642 thru 651 were back-filled late afternoon on the 29th of September 1994.
- B) Buildings 652 thru 654 were excavated on 30 September 1994 and only 1 UST was found (BLDG 654 - 1080 gallons). Excavations for 652 and 653 appeared visually to have heavy organic material. Building 654 appeared clean.

V/R

  
Eugene W. Lesinski

Bldg 646

Soil Anal 7/26/95

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

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

Lab. ID #: 1898.1-.5  
Sample Rec'd: 07/26/95  
Analysis Start: 07/27/95  
Analysis Comp: 07/28/95

Analysis: 418.1 (TPH)  
Matrix: Soil  
Analyst: S. Hubbard  
Ext. Meth: 3540A

NJDEPE UST Reg. #:  
Closure #:  
DICAR #:  
Location #: Bldg. 646

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1898.1	Sample A, Center 7'-8', OVA=ND	78	ND	16.
1898.2	Sample B, So. Wall 6', OVA=ND	82	225.	16.
1898.3	Sample C, W. Wall 6', OVA=ND	90	171.	16.
1898.4	Sample D, No. Wall 6', OVA=ND	82	155.	16.
1898.5	Sample E, E. Wall 6', OVA=ND	83	ND	16.
M. Bl.	Method Blank	100	ND	3.3

Notes: ND = Not Detected, MDL = Method Detection Limit  
\* = Silica Gel Added, NA = Not Applicable  
1898.5S=122%, 1898.5SD=122%, RPD= 0.0%, 1898.5Dup= NA% Check=108%  
QC Limits: Recovery = 60% to 140% and RPD = 14.9% at 2 Std. Dev.

Brian K. McKee  
Laboratory Director



# SERV-AIR, INC. - AN E-SYSTEMS CO.

Chain of Custody

P.O. #:

Project #:		Sampler:		Date / Time		Analysis Parameters		Start:	
Customer: <i>D.P. Emerson</i>		Site Name: <i>Henry Green</i>		Customer Sample Location/ID Number		Sample Matrix		Finish:	
Phone:		Date/Time		Sample # of Bottles		Remarks		Preservation Method	
1898.1	<i>7/26/85</i>	<i>10:45</i>	<i>A center @ 7'-8'</i>	<i>Soil</i>	<i>1</i>	<i>✓</i>	<i>MANIFEST</i>		
.2		<i>10:50</i>	<i>B. So. wall @ 6' @</i>			<i>✓</i>			
.3		<i>10:52</i>	<i>C W. wall @ 6' @</i>			<i>✓</i>			
.4		<i>10:55</i>	<i>D No. wall @ 6' @</i>			<i>✓</i>			
.5		<i>10:59</i>	<i>E E. wall @ 6' @</i>			<i>✓</i>			
								<i>00AHS1903</i>	
								<i>CAL 1500</i>	<i>7/26/85</i>
								<i>2# NR=0</i>	
								<i>95 PPM CHL</i>	<i>87</i>
								<i>Select 8.6</i>	
								<i>BKNY</i>	
Relinquished By (signature)		Date / Time		Received By (signature)		Shipped By:			
Relinquished By (signature)		Date / Time		Received for Lab by (signature)		Date / Time			
<i>[Signature]</i>		<i>7/26/85 11:30</i>		<i>[Signature]</i>					

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

Environmental Laboratory *Map attached on back*

Parking  
Lot

10:45  
10:59

15X9K7

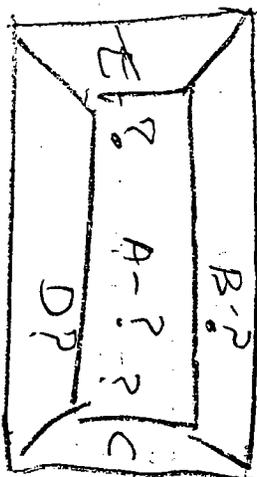
642

643

644

645

Telephone # PD

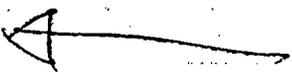


646

646

ROAD  
MARK

N



BOWLING ALLEY

642

643

644

645

646

TELEGRAPH ROAD

2 BOMBS  
7/23/95  
3 copies  
5/19/95  
1/26/95

652

653

SHERILL AVENUE

NEW PARKING LOT

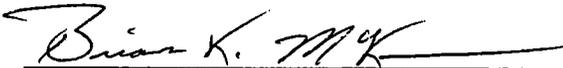
PHC Conformance/Non-conformance Summary Report

	<u>No</u>	<u>Yes</u>
1. Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <i>BKm</i>
_____		
_____		
2. Matrix Spike/Matrix Sp Dup. Recoveries Meet Criteria (If not met, list the sample and corresponding recovery which falls outside the acceptable range)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
_____		
_____		
3. IR Spectra submitted for standards, blanks, & samples	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Chromatograms submitted for standards, blanks, and samples if GC fingerprinting was conducted.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Extraction holding time met. (If not met, list number of days exceeded for each sample)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
_____		
_____		
6. Analysis holding time met. (If not met, list number of days exceeded for each sample)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
_____		
_____		
Comments: <i>None</i>		
_____		
_____		

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.

Project #1898

  
\_\_\_\_\_  
Brian K. McKee  
Laboratory Manager

ATTACHMENT R

UST 647 File Review and Analyses



UNDERGROUND STORAGE TANK FILE REVIEW  
FORT MONMOUTH BRAC 05 FACILITY  
OCEANPORT, NEW JERSEY

Date: November 3, 2015 Review Performed By: Kent Friesen, Parsons

Site ID: **Bldg. 647** Registration ID: None

Recommended Status of Site: **Case Closed (no change)**

UST Probability (from May 2014 "Addendum 1 ECP UHOT Report"): **NFA**

Based on the file review, were there indications of a contaminant release? [ ] Yes [X] No

NJDEP Release No. or DICAR (If applicable): \_\_\_\_\_

Did NJDEP approve No Further Action (NFA) for this site? [ ] Yes [X] No [ ] Not Applicable

Tank Description: [X] Steel [ ] Fiberglass Size: 1080 gals. Contents: #2 Fuel Oil

[X] Residential [ ] Commercial/Industrial

Tank Removed? [X] Yes [ ] No If "yes," removal date: Unknown

Were closure soil samples taken? [X] Yes [ ] No Analyses: TPH

Comparison criteria: 5,100 mg/kg

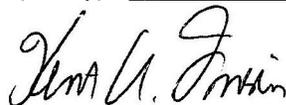
Were closure soil sample results less than comparison criteria? [X] Yes [ ] No

**Brief Narrative**

The Building 647 residential barracks building was demolished in 1980. A tank removal contractor excavated at the former building location on September 29 to 30, 1994 using historic aerial photographs and site maps to determine the approximate fuel oil tank location. Based on visual observations, it was determined that the former No. 2 fuel oil tank location was encountered, but that the tank had been previously removed and the excavation filled with old construction material. As stated in a Memorandum to File (attached), it was surmised that the tank was removed during building demolition, and the excavation was filled with demolition debris. Soils observed in the test pit excavation were visibly clean.

Sampling and analysis of soil was completed by FTMM in January 2006 at the former UST 647 site using a geoprobe, and the resulting analytical data are attached. Three soil samples were collected from the former UST location and analyzed by the Fort Monmouth Environmental Laboratory for total petroleum hydrocarbons (TPH). The soil sample results were all not detected (ND) for TPH. The results were less than 5,100 mg/kg for TPH, which is the current TPH remediation criterion. A single groundwater sample was also collected from the former tank location; results were ND for all volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs). Therefore, there are no indications of a significant release to soil or groundwater, and NFA is warranted at Site 647.

Recommendations (if any): Request NFA from NJDEP



Signed: \_\_\_\_\_

Kent A. Friesen, Parsons

MEMORANDUM TO FILE

FROM: EUGENE W. LESINSKI

DATE: 30 SEPTEMBER 1994

TO: FILE

SUBJ: UST REMOVAL IN THE 600 AREA

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- A) Buildings 642 thru 651: These tanks were determined to be a capacity of 1080 gallons (2 tank markers with this information were found in tank excavations). From old aerial photographs and site maps approximate tank locations were determined. Excavation revealed that these 10 tanks were removed and excavations were filled with old construction material. It was surmised that these tanks were removed during building demolition and filled with demolition debris. Excavations for BLDG's 642 thru 646 were visually observed to be with heavy organic material while BLDG's 647 thru 651 were visually clean. Readings from HNU showed no hits for petroluem hydrocarbons. Excavations for Buildings 642 thru 651 were back-filled late afternoon on the 29th of September 1994.
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V/R

  
Eugene W. Lesinski

# FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS

PHONE: (732) 532-4359 FAX: (732) 532-6263  
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING  
CERTIFICATIONS: NJDEP #13461, NYSDOH #11699



ANALYTICAL DATA REPORT  
Fort Monmouth Environmental Laboratory  
ENVIRONMENTAL DIVISION  
Fort Monmouth, New Jersey  
PROJECT: BLDG. 647

*Bldg. 647*

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
647 C 6.5-7.0'	6002101	Soil	10-Jan-06 09:10	01/10/06
647 W 6.5-7.0'	6002102	Soil	10-Jan-06 10:07	01/10/06
647 E 6.5-7.0'	6002103	Soil	10-Jan-06 10:37	01/10/06
647 C GW	6002104	Aqueous	10-Jan-06 10:52	01/10/06
Trip Blank	6002105	Aqueous	10-Jan-06	01/10/06
Trip Blank	6002106	Methanol	10-Jan-06	01/10/06

ANALYSIS:

FORT MONMOUTH ENVIRONMENTAL LAB  
VOA+15, BN+15, TPHC, % SOLIDS

ENCLOSURE:  
CHAIN OF CUSTODY  
RESULTS

  
1-25-06  
Daniel Wright/Date  
Laboratory Director

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**CHAIN  
OF  
CUSTODY**





**Former UST 647 Sample Location GPS Positions**

US State Plane 1983 New Jersey ( NY East ) 2900  
NAD 1983 ( Conus)  
Geoid 96 ( Conus)

( In US Survey Feet)

<b>Position</b>	<b>Northing ( Y Coord.)</b>	<b>Easting ( X Coord.)</b>
647 E	539658.575	618554.845
647 C	539659.156	618548.638
647 W	539657.774	618542.929

# **METHOD SUMMARY**

## Methodology Summary

### **EPA Method 624**

#### **Gas Chromatographic Determination of Volatiles in Water**

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

### **EPA SW-846 Method 8260**

#### **Gas Chromatographic Determination of Volatiles in Methanol**

A 10-gram volume of soil is combined with 25-ml of Methanol and surrogates in the field. Internal standards are added and the sample is placed on a purge and trap concentrator. The sample is purged and desorbed into a GC/MS system. Volatiles are identified and quantitated. The final concentration is calculated using soil weight, percent moisture and concentration.

### **EPA Method 625**

#### **Gas Chromatographic Determination of Semi-volatiles in Water**

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

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

Fifteen grams (15g) of soil is added to a 125-ml acid cleaned and solvent rinsed capped Erlenmeyer flask. 15g anhydrous Sodium Sulfate is added to dry the sample. Surrogate standard spiking solution is then added to the flask.

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

The extract is then injected directly into a GC-FID for analysis. The sample is analyzed for Petroleum Hydrocarbons covering a range of C8-C42, including Pristane and Phytane. Total Petroleum Hydrocarbon concentration is determined by integrating between 5 minutes and 22 minutes. The baseline is established by starting the integration after the end of the solvent peak and stopping after the last peak. The final concentration of Total Petroleum Hydrocarbons is calculated using percent moisture, sample weight and concentration.

# **LABORATORY CHRONICLE**

# Laboratory Chronicle

Lab ID: 60021

Site: UST  
Bldg. 647

	Date	Hold Time
<b>Date Sampled</b>	01/10/06	NA
<b>Receipt/Refrigeration</b>	01/10/06	NA
<b>Extractions</b>		
1. BN	01/11/06	7 days
2. TPHC	01/13/06	14 days
<b>Analyses</b>		
1. VOA	01/11,12/06	14 days
2. BN	01/17,18/06	40 days
3. TPHC	01/13/06	40 days

000009

**CONFORMANCE/  
NON-  
CONFORMANCE  
SUMMARY**

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

Indicate  
Yes, No, N/A

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

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

  - a. VOA Fraction \_\_\_\_\_
  - b. B/N Fraction Tetraphenyl 36%
  - c. Acid Fraction \_\_\_\_\_

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

\_\_\_\_\_
9. Matrix Spike/Matrix Spike Duplicate Recoveries Meet Criteria NO

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

  - a. VOA Fraction Naphthalene MS + MSD LOW
  - b. B/N Fraction Benidine MSD low RPD high
  - c. Acid Fraction \_\_\_\_\_

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

Indicate  
Yes, No, N/A

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

yes

- a. VOA Fraction \_\_\_\_\_
- b. B/N Fraction \_\_\_\_\_
- c. Acid Fraction \_\_\_\_\_

11. Extraction Holding Time Met

yes

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

\_\_\_\_\_

12. Analysis Holding Time Met

yes

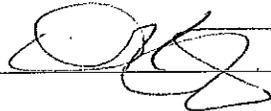
If not met, list the number of days exceeded for each sample: \_\_\_\_\_

\_\_\_\_\_

Additional Comments:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Laboratory Manager:



Date: 1-25-06

# TPHC CONFORMANCE/NON-CONFORMANCE SUMMARY REPORT

Indicate  
Yes, No, N/A

1. Method Detection Limits Provided yes
2. Method Blank Contamination – If yes, list the sample and the corresponding concentrations in each blank  
\_\_\_\_\_  
\_\_\_\_\_ no
3. Matrix Spike Results Summary Meet Criteria  
(If not met, list the sample and corresponding recovery which falls outside the acceptable range)  
\_\_\_\_\_  
\_\_\_\_\_ yes
4. Duplicate Results Summary Meet Criteria  
\_\_\_\_\_  
\_\_\_\_\_ yes
5. IR Spectra submitted for standards, blanks and samples NA
6. Chromatograms submitted for standards, blanks and samples if GC fingerprinting was conducted yes
7. Analysis holding time met  
(If not met, list number of days exceeded for each sample)  
\_\_\_\_\_  
\_\_\_\_\_ yes

Additional comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Laboratory Manager: \_\_\_\_\_

Date: \_\_\_\_\_

1-25-06

**VOLATILE  
ORGANICS  
(AQUEOUS)**

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

**Definition of Qualifiers**

- U:** The compound was analyzed for but not detected.
- B:** Indicates that the compound was found in the associated method blank as well as in the sample.
- J:** Indicates an estimated value. This flag is used:
- (1)** When the mass spec and retention time data indicate the presence of a compound however the result is less than the MDL but greater than zero.
  - (2)** When estimating the concentration of a tentatively identified compound (TIC), where a 1:1 response is assumed.
- D:** This flag is used to identify all compounds (target or TIC) that required a dilution.
- E:** Indicates the compound's concentration exceeds the calibration range of the instrument for that specific analysis.
- N:** This flag is only used for TICs. It indicates the presumptive evidence of a compound. For a generic characterization of a TIC, such as unknown hydrocarbon, the flag is not used.

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

Data File VB021318.D  
 Operator Skelton  
 Date Acquired 11 Jan 2006 8:48 pm

Sample Name MB 11Jan2006  
 Field ID MB 11Jan2006  
 Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.01 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	5	1.23 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	5.70 ug/L	10.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.21 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.26 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.20 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	nle	0.24 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.23 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	0.26 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	0.29 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.23 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.19 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	6000	0.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.24 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.21 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.24 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	50	0.24 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.26 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.20 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	70	0.22 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.20 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.24 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.24 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.23 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.26 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.24 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.23 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.22 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.35 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.26 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.25 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.28 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.20 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.43 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.28 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.27 ug/L	2.00 ug/L	
1330-20-7	m-p-Xylenes			not detected	nle	0.43 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.21 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.21 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.27 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.45 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.36 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.35 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.45 ug/L	2.00 ug/L	

\*Results between MDL and RL are estimated values  
 \*Higher of PQL's and Interim Criteria as per N.J.A.C. 7:9C 07Nov2005

**Qualifiers**

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

**MB 11Jan2006**

Lab Name: FMETL NJDEP#: 13461  
Project: 0634880 Case No.: 60021 Location: 647 SDG No.: UST  
Matrix: (soil/water) WATER Lab Sample ID: MB 11Jan2006  
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB021318.D  
Level: (low/med) LOW Date Received: 1/11/2006  
% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 1/11/2006  
GC Column: RTX502 ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

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

Number TICs found: 1

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 000079-20-9	Acetic acid, methyl ester	12.47	4	JN

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

Data File VB021333.D  
 Operator Skelton  
 Date Acquired 12 Jan 2006 7:03 am

Sample Name 6002105  
 Field ID Trip Blank  
 Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.01 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	5	1.23 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	5.70 ug/L	10.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.21 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.26 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.20 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	nle	0.24 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.23 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	0.26 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	0.29 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.23 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.19 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	6000	0.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.24 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.21 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.24 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	50	0.24 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.26 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.20 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	70	0.22 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.20 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.24 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.24 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.23 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.26 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.24 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.23 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.22 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.35 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.26 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.25 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.28 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.20 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.43 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.28 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.27 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	0.43 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.21 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.21 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.27 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.45 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.36 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.35 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.45 ug/L	2.00 ug/L	

\*Results between MDL and RL are estimated values  
 \*Higher of PQL's and Interim Criteria as per N.J.A.C. 7:9C 07Nov2005

**Qualifiers**

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

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

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

Trip Blank

Lab Name: FMETL NJDEP#: 13461  
Project: 0634880 Case No.: 60021 Location: 647 SDG No.: UST  
Matrix: (soil/water) WATER Lab Sample ID: 6002105  
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB021333.D  
Level: (low/med) LOW Date Received: 1/11/2006  
% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 1/12/2006  
GC Column: RTX502 ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

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

Number TICs found: 1

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 000079-20-9	Acetic acid, methyl ester	12.48	3	JN

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

Data File VB021332.D  
 Operator Skelton  
 Date Acquired 12 Jan 2006 6:22 am

Sample Name 6002104  
 Field ID 647C  
 Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.01 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	5	1.23 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	5.70 ug/L	10.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.21 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.26 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.20 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	nle	0.24 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.23 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	0.26 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	0.29 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.23 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.19 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	6000	0.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.24 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.21 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.24 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	50	0.24 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.26 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.20 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	70	0.22 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.20 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.24 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.24 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.23 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.26 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.24 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.23 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.22 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.35 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.26 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.25 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.28 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.20 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.43 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.28 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.27 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	0.43 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.21 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.21 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.27 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.45 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.36 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.35 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.45 ug/L	2.00 ug/L	

\*Results between MDL and RL are estimated values  
 \*Higher of PQL's and Interim Criteria as per N.J.A.C. 7:9C 07Nov2005

**Qualifiers**

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

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

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

647C-GW

Lab Name: FMETL NJDEP#: 13461  
Project: 0634880 Case No.: 60021 Location: 647 SDG No.: UST  
Matrix: (soil/water) WATER Lab Sample ID: 6002104  
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB021332.D  
Level: (low/med) LOW Date Received: 1/11/2006  
% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 1/12/2006  
GC Column: RTX502 ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

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

Number TICs found: 2

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
<u>1.</u>	<u>unknown hydrocarbon</u>	<u>5.13</u>	<u>10</u>	<u>J</u>
<u>2. 000079-20-9</u>	<u>Acetic acid, methyl ester</u>	<u>12.47</u>	<u>4</u>	<u>JN</u>

# **SEMI-VOLATILE ORGANICS**

000035

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

Data File Name BNA11454.D  
 Operator Skelton  
 Date Acquired 17-Jan-06

Sample Name MB 01110601  
 Misc Info MB 01110601  
 Sample Multiplier 1

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	ug/L	Qualifiers
110-86-1	Pyridine			not detected	NLE	1.13	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.60	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	2.38	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.71	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	1.02	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.99	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.66	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.96	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.88	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.76	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.86	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	100	0.76	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.76	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.79	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.89	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.76	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.37	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.99	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	1.01	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.92	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.72	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.77	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.78	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.67	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.71	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	1.18	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.73	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.69	10.00	ug/L	
121-14-2	2,4-Dinitrotoluene			not detected	10	0.81	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.96	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.71	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.73	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.11	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.62	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.72	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.92	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.95	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.81	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	0.76	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.92	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	0.82	10.00	ug/L	

## Semi-Volatile Analysis Report Page 2

Data File Name BNA11454.D  
Operator Skelton  
Date Acquired 17-Jan-06

Sample Name MB 01110601  
Misc Info MB 01110601  
Sample Multiplier 1

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	ug/L	Qualifiers
92-87-5	Benzidine			not detected	50	0.98	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.79	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.86	10.00	ug/L	
56-55-3	Butylbenzylphthalate			not detected	10	0.82	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	60	1.31	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	20	0.77	10.00	ug/L	
218-01-9	Chrysene			not detected	30	1.28	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	100	1.02	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	10	0.98	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	2	0.92	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	20	0.71	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.76	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	0.76	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	NLE	0.80	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.80	10.00	ug/L	

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

### Qualifiers

E= Value Exceeds Linear Range  
D= Value from dilution  
B= Compound in Related Blank  
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

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

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

**MB-011106-01**

Lab Name: FMETL Lab Code 13461  
Project: 06-34880 Case No.: 60021 Location: UST SDG No.: \_\_\_\_\_  
Matrix: (soil/water) WATER Lab Sample ID: MB 01110601  
Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA11454.D  
Level: (low/med) LOW Date Received: 1/11/2006  
% Moisture: \_\_\_\_\_ decanted: (Y/N) N Date Extracted: 1/11/2006  
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/17/2006  
Injection Volume: 1.0 (uL) Dilution Factor: 1.0  
GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

CONCENTRATION UNITS:

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

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

Data File Name **BNA11461.D**  
 Operator **Skelton**  
 Date Acquired **18-Jan-06**

Sample Name **6002104**  
 Misc Info **647C-GW**  
 Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifiers
110-86-1	Pyridine			not detected	NLE	1.13	10.00	ug/L
62-75-9	N-nitroso-dimethylamine			not detected	20	0.60	10.00	ug/L
62-53-3	Aniline			not detected	NLE	2.38	10.00	ug/L
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.71	10.00	ug/L
541-73-1	1,3-Dichlorobenzene			not detected	600	1.02	10.00	ug/L
106-46-7	1,4-Dichlorobenzene			not detected	75	0.99	10.00	ug/L
100-51-6	Benzyl alcohol			not detected	NLE	0.66	10.00	ug/L
95-50-1	1,2-Dichlorobenzene			not detected	600	0.96	10.00	ug/L
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.88	10.00	ug/L
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.76	10.00	ug/L
67-72-1	Hexachloroethane			not detected	10	0.96	10.00	ug/L
98-95-3	Nitrobenzene			not detected	10	0.86	10.00	ug/L
78-59-1	Isophorone			not detected	100	0.76	10.00	ug/L
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.79	10.00	ug/L
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.89	10.00	ug/L
91-20-3	Naphthalene			not detected	NLE	0.76	10.00	ug/L
106-47-8	4-Chloroaniline			not detected	NLE	1.37	10.00	ug/L
87-68-3	Hexachlorobutadiene			not detected	1	0.99	10.00	ug/L
91-57-6	2-Methylnaphthalene			not detected	NLE	1.01	10.00	ug/L
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.92	10.00	ug/L
91-58-7	2-Chloronaphthalene			not detected	NLE	0.72	10.00	ug/L
88-74-4	2-Nitroaniline			not detected	NLE	0.77	10.00	ug/L
131-11-3	Dimethylphthalate			not detected	7000	0.78	10.00	ug/L
208-96-8	Acenaphthylene			not detected	NLE	0.67	10.00	ug/L
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.71	10.00	ug/L
99-09-2	3-Nitroaniline			not detected	NLE	1.18	10.00	ug/L
83-32-9	Acenaphthene			not detected	400	0.73	10.00	ug/L
132-64-9	Dibenzofuran			not detected	NLE	0.69	10.00	ug/L
121-14-2	2,4-Dinitrotoluene			not detected	10	0.81	10.00	ug/L
84-66-2	Diethylphthalate			not detected	5000	0.96	10.00	ug/L
86-73-7	Fluorene			not detected	300	0.71	10.00	ug/L
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.73	10.00	ug/L
100-01-6	4-Nitroaniline			not detected	NLE	1.11	10.00	ug/L
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.62	10.00	ug/L
103-33-3	Azobenzene			not detected	NLE	0.72	10.00	ug/L
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.92	10.00	ug/L
118-74-1	Hexachlorobenzene			not detected	10	0.95	10.00	ug/L
85-01-8	Phenanthrene			not detected	NLE	0.81	10.00	ug/L
120-12-7	Anthracene			not detected	2000	0.76	10.00	ug/L
84-74-2	Di-n-butylphthalate			not detected	900	0.92	10.00	ug/L
206-44-0	Fluoranthene			not detected	300	0.82	10.00	ug/L

**Semi-Volatile Analysis Report**  
**Page 2**

Data File Name **BNA11461.D**  
Operator **Skelton**  
Date Acquired **18-Jan-06**

Sample Name **6002104**  
Misc Info **647C-GW**  
Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifiers
92-87-5	Benzidine			not detected	50	0.98	10.00	ug/L
129-00-0	Pyrene			not detected	200	0.79	10.00	ug/L
85-68-7	Butylbenzylphthalate			not detected	100	0.86	10.00	ug/L
56-55-3	Benzo[a]anthracene			not detected	10	0.82	10.00	ug/L
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.31	10.00	ug/L
218-01-9	Chrysene			not detected	20	0.77	10.00	ug/L
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.28	10.00	ug/L
117-84-0	Di-n-octylphthalate			not detected	100	1.02	10.00	ug/L
205-99-2	Benzo[b]fluoranthene			not detected	10	0.98	10.00	ug/L
207-08-9	Benzo[k]fluoranthene			not detected	2	0.92	10.00	ug/L
50-32-8	Benzo[a]pyrene			not detected	20	0.71	10.00	ug/L
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	0.76	10.00	ug/L
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.76	10.00	ug/L
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.80	10.00	ug/L

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

**Qualifiers**

E= Value Exceeds Linear Range

D= Value from dilution

B= Compound in Related Blank

RL= Reporting Limit. The values between the MDL and RL are considered estimated.

MDL= Method Detection Limit

NLE= No Limit Established

R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

647C-GW

Lab Name: FMETL Lab Code 13461  
Project: 06-34880 Case No.: 60021 Location: UST SDG No.: \_\_\_\_\_  
Matrix: (soil/water) WATER Lab Sample ID: 6002104  
Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA11461.D  
Level: (low/med) LOW Date Received: 1/11/2006  
% Moisture: \_\_\_\_\_ decanted: (Y/N) N Date Extracted: 1/11/2006  
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/18/2006  
Injection Volume: 1.0 (uL) Dilution Factor: 1.0  
GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

CONCENTRATION UNITS:

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
------------	---------------	----	------------	---

**TPHC**



# LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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

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

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

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

Laboratory Manager or Environmental Consultant's Signature \_\_\_\_\_  
Date: 1/25/06

Laboratory Certification # 13461

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

## Laboratory Authentication Statement

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



Daniel K. Wright  
Laboratory Manager

ATTACHMENT S

UST 648 File Review and Analyses



UNDERGROUND STORAGE TANK FILE REVIEW  
 FORT MONMOUTH BRAC 05 FACILITY  
 OCEANPORT, NEW JERSEY

Date: November 3, 2015 Review Performed By: Kent Friesen, Parsons

Site ID: **Bldg. 648** Registration ID: None

Recommended Status of Site: **Case Closed (no change)**

UST Probability (from May 2014 "Addendum 1 ECP UHOT Report"): **NFA**

Based on the file review, were there indications of a contaminant release? [ ] Yes [X] No

NJDEP Release No. or DICAR (If applicable): \_\_\_\_\_

Did NJDEP approve No Further Action (NFA) for this site? [ ] Yes [X] No [ ] Not Applicable

Tank Description: [X] Steel [ ] Fiberglass Size: 1080 gals. Contents: #2 Fuel Oil

[X] Residential [ ] Commercial/Industrial

Tank Removed? [X] Yes [ ] No If "yes," removal date: Unknown

Were closure soil samples taken? [X] Yes [ ] No Analyses: TPH

Comparison criteria: 5,100 mg/kg

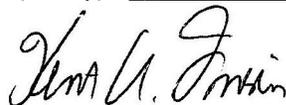
Were closure soil sample results less than comparison criteria? [X] Yes [ ] No

**Brief Narrative**

The Building 648 residential barracks building was demolished in 1980. A tank removal contractor excavated at the former building location on September 29 to 30, 1994 using historic aerial photographs and site maps to determine the approximate fuel oil tank location. Based on visual observations, it was determined that the former No. 2 fuel oil tank location was encountered, but that the tank had been previously removed and the excavation filled with old construction material. As stated in a Memorandum to File (attached), it was surmised that the tank was removed during building demolition, and the excavation was filled with demolition debris. Soils observed in the test pit excavation were visibly clean.

Sampling and analysis of soil was completed by FTMM in January 2006 at the former UST 648 site using a geoprobe; the resulting analytical data are attached. Three soil samples and one field duplicate were collected from the former UST location and analyzed by the Fort Monmouth Environmental Laboratory for total petroleum hydrocarbons (TPH). The soil sample results were all not detected (ND) for TPH. The results were less than 5,100 mg/kg for TPH, which is the current TPH remediation criterion. A single groundwater sample was also collected from the former tank location; results were ND for all volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs). Therefore, there are no indications of a significant release to soil or groundwater, and NFA is warranted at Site 648.

Recommendations (if any): Request NFA from NJDEP



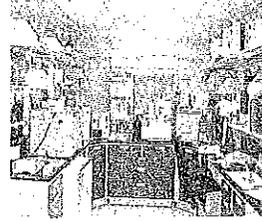
Signed: \_\_\_\_\_

Kent A. Friesen, Parsons

# FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS

PHONE: (732) 532-4359 FAX: (732) 532-6263  
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING  
CERTIFICATIONS: NJDEP #13461, NYSDOH #11699



ANALYTICAL DATA REPORT  
Fort Monmouth Environmental Laboratory  
ENVIRONMENTAL DIVISION  
Fort Monmouth, New Jersey  
PROJECT: BLDG. 648

Bldg. 648

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
648 C 6.5-7.0'	6002301	Soil	10-Jan-06 11:46	01/10/06
648 E 6.5-7.0'	6002302	Soil	10-Jan-06 12:20	01/10/06
Duplicate	6002303	Soil	10-Jan-06 12:20	01/10/06
648 W 6.5-7.0'	6002304	Soil	10-Jan-06 13:05	01/10/06
648 C GW	6002305	Aqueous	10-Jan-06 12:55	01/10/06

ANALYSIS:

FORT MONMOUTH ENVIRONMENTAL LAB  
VOA+15, BN+15, TPHC, % SOLIDS

ENCLOSURE:  
CHAIN OF CUSTODY  
RESULTS

  
1-27-06  
Daniel Wright/Date  
Laboratory Director

The enclosed report relates only to the items tested. The report may not be reproduced, except in full, without written approval of the U.S. Army Fort Monmouth Directorate of Public Works.

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**CHAIN  
OF  
CUSTODY**



## SAMPLE RECEIPT FORM

Date Received: 1-11-06

Work Order ID#: 60023

Site/Proj. Name: Bldg WR/UST

Cooler Temp (°C): ICE

Received By: J. Geronima  
(Print name)

Sign: J. Geronima

**Check the appropriate box**

1. Did the samples come in a cooler?  yes  no  n/a
2. Were samples rec'd in good condition?  yes  no
3. Was the chain of custody filled out correctly and legibly?  yes  no
4. Was the chain of custody signed in the appropriate place?  yes  no
5. Did the labels agree with the chain of custody?  yes  no
6. Were the correct containers/preservatives used?  yes  no
7. Was a sufficient amount of sample supplied?  yes  no
8. Were air bubbles present in VOA vials?  yes  no  n/a
9. Were samples received on ice?  yes  no
10. Were analyze-immediately tests perform within 15 minutes  yes  no  n/a

**Fill out the following table for each sample bottle**

Lims ID	pH	Preservative	Sample ID	pH	Preservative
<u>60023/4</u>	<u>7.2</u>	<u>HCL</u>			

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Former UST 648 Sample Location GPS Positions**

US State Plane 1983 New Jersey ( NY East ) 2900  
NAD 1983 ( Conus)  
Geoid 96 ( Conus)

( In US Survey Feet)

<b>Position</b>	<b>Northing ( Y Coord.)</b>	<b>Easting ( X Coord.)</b>
648 E	539627.770	618435.409
648 C	539624.925	618430.929
648 W	539623.658	618425.486

# **METHOD SUMMARY**

## **Methodology Summary**

### **EPA Method 624**

#### **Gas Chromatographic Determination of Volatiles in Water**

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

### **EPA SW-846 Method 8260**

#### **Gas Chromatographic Determination of Volatiles in Methanol**

A 10-gram volume of soil is combined with 25-ml of Methanol and surrogates in the field. Internal standards are added and the sample is placed on a purge and trap concentrator. The sample is purged and desorbed into a GC/MS system. Volatiles are identified and quantitated. The final concentration is calculated using soil weight, percent moisture and concentration.

### **EPA Method 625**

#### **Gas Chromatographic Determination of Semi-volatiles in Water**

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

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

Fifteen grams (15g) of soil is added to a 125-ml acid cleaned and solvent rinsed capped Erlenmeyer flask. 15g anhydrous Sodium Sulfate is added to dry the sample. Surrogate standard spiking solution is then added to the flask.

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

The extract is then injected directly into a GC-FID for analysis. The sample is analyzed for Petroleum Hydrocarbons covering a range of C8-C42, including Pristane and Phytane. Total Petroleum Hydrocarbon concentration is determined by integrating between 5 minutes and 22 minutes. The baseline is established by starting the integration after the end of the solvent peak and stopping after the last peak. The final concentration of Total Petroleum Hydrocarbons is calculated using percent moisture, sample weight and concentration.

# **LABORATORY CHRONICLE**

# Laboratory Chronicle

Lab ID: 60023

Site: UST  
Bldg. 648

	Date	Hold Time
<b>Date Sampled</b>	01/10/06	NA
<b>Receipt/Refrigeration</b>	01/10/06	NA
<b>Extractions</b>		
1. BN	01/11/06	7 days
2. TPHC	01/13/06	14 days
<b>Analyses</b>		
1. VOA	01/11,12/06	14 days
2. BN	01/17,18/06	40 days
3. TPHC	01/17/06	40 days

000009

**CONFORMANCE/  
NON-  
CONFORMANCE  
SUMMARY**

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

Indicate  
Yes, No, N/A

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

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

  - a. VOA Fraction \_\_\_\_\_
  - b. B/N Fraction TCP phenyl 43%
  - c. Acid Fraction \_\_\_\_\_

If not met, were the calculations checked and the results qualified as "estimated"? yes
9. Matrix Spike/Matrix Spike Duplicate Recoveries Meet Criteria (If not met, list those compounds and their recoveries, which fall outside the acceptable range) NO
  - a. VOA Fraction Naphthalene MS + MS D low
  - b. B/N Fraction Benzidine MS D low EPD high
  - c. Acid Fraction \_\_\_\_\_

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

Indicate  
Yes, No, N/A

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

yes

- a. VOA Fraction \_\_\_\_\_
- b. B/N Fraction \_\_\_\_\_
- c. Acid Fraction \_\_\_\_\_

11. Extraction Holding Time Met

yes

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

\_\_\_\_\_

12. Analysis Holding Time Met

yes

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

\_\_\_\_\_

Additional Comments:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Laboratory Manager: \_\_\_\_\_



Date: 1-27-06

# TPHC CONFORMANCE/NON-CONFORMANCE SUMMARY REPORT

Indicate  
Yes, No, N/A

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

Additional comments: \_\_\_\_\_  
\_\_\_\_\_

Laboratory Manager:  Date: 1-27-06

**VOLATILE  
ORGANICS  
(AQUEOUS)**

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY  
NJDEP CERTIFICATION # 13461

Definition of Qualifiers

- U:** The compound was analyzed for but not detected.
- B:** Indicates that the compound was found in the associated method blank as well as in the sample.
- J:** Indicates an estimated value. This flag is used:
- (1) When the mass spec and retention time data indicate the presence of a compound however the result is less than the MDL but greater than zero.
  - (2) When estimating the concentration of a tentatively identified compound (TIC), where a 1:1 response is assumed.
- D:** This flag is used to identify all compounds (target or TIC) that required a dilution.
- E:** Indicates the compound's concentration exceeds the calibration range of the instrument for that specific analysis.
- N:** This flag is only used for TICs. It indicates the presumptive evidence of a compound. For a generic characterization of a TIC, such as unknown hydrocarbon, the flag is not used.

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

Data File      **VB021318.D**  
 Operator       **Skelton**  
 Date Acquired   **11 Jan 2006 8:48 pm**

Sample Name     **MB 11Jan2006**  
 Field ID        **MB 11Jan2006**  
 Sample Multiplier   **1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.01 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	5	1.23 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	5.70 ug/L	10.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.21 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.26 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.20 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	nle	0.24 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.23 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	0.26 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	0.29 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.23 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.19 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	6000	0.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.24 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.21 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.24 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	50	0.24 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.26 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.20 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	70	0.22 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.20 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.24 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.24 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.23 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.26 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.24 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.23 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.22 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.35 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.26 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.25 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.28 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.20 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.43 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.28 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.27 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	0.43 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.21 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.21 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.27 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.45 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.36 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.35 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.45 ug/L	2.00 ug/L	

\*Results between MDL and RL are estimated values  
 \*Higher of PQL's and Interim Criteria as per N.J.A.C. 7:9C 07Nov2005

**Qualifiers**

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

**MB 11Jan2006**

Lab Name: FMETL NJDEP#: 13461  
Project: 0634880 Case No.: 60023 Location: 648 SDG No.: UST  
Matrix: (soil/water) WATER Lab Sample ID: MB 11Jan2006  
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB021318.D  
Level: (low/med) LOW Date Received: 1/11/2006  
% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 1/11/2006  
GC Column: RTX502 ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

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

Number TICs found: 1

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 000079-20-9	Acetic acid, methyl ester	12.47	4	JN

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

Data File VB021333.D  
 Operator Skelton  
 Date Acquired 12 Jan 2006 7:03 am

Sample Name 6002105  
 Field ID Trip Blank  
 Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.01 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	5	1.23 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	5.70 ug/L	10.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.21 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.26 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.20 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	nle	0.24 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.23 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	0.26 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	0.29 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.23 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.19 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	6000	0.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.24 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.21 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.24 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	50	0.24 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.26 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.20 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	70	0.22 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.20 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.24 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.24 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.23 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.26 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.24 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.23 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.22 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.35 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.26 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.25 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.28 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.20 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.43 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.28 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.27 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	0.43 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.21 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.21 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.27 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.45 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.36 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.35 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.45 ug/L	2.00 ug/L	

\*Results between MDL and RL are estimated values  
 \*Higher of PQL's and Interim Criteria as per N.J.A.C. 7:9C 07Nov2005

**Qualifiers**

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

Trip Blank

Lab Name: FMETL NJDEP#: 13461  
Project: 0634880 Case No.: 60021 Location: 647 SDG No.: UST  
Matrix: (soil/water) WATER Lab Sample ID: 6002105  
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB021333.D  
Level: (low/med) LOW Date Received: 1/11/2006  
% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 1/12/2006  
GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

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

Number TICs found: 1

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 000079-20-9	Acetic acid, methyl ester	12.48	3	JN

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

Data File VB021335.D  
 Operator Skelton  
 Date Acquired 12 Jan 2006 8:25 am

Sample Name 6002305  
 Field ID 648C  
 Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.01 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	5	1.23 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	5.70 ug/L	10.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.21 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.26 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.20 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	nle	0.24 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.23 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	0.26 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	0.29 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.23 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.19 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	6000	0.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.24 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.21 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.24 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	50	0.24 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.26 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.20 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	70	0.22 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.20 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.24 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.24 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.23 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.26 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.24 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.23 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.22 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.35 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.26 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.25 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.28 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.20 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.43 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.28 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.27 ug/L	2.00 ug/L	
1330-20-7	m-tp-Xylenes			not detected	nle	0.43 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.21 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.21 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.27 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.45 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.36 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.35 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.45 ug/L	2.00 ug/L	

\*Results between MDL and RL are estimated values  
 \*If higher of PQL's and Interim Criteria as per N.J.A.C. 7:9C 07Nov2005

**Qualifiers**

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

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

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

648C-GW

Lab Name: FMETL NJDEP#: 13461  
Project: 0634880 Case No.: 60023 Location: 648 SDG No.: UST  
Matrix: (soil/water) WATER Lab Sample ID: 6002305  
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB021335.D  
Level: (low/med) LOW Date Received: 1/11/2006  
% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 1/12/2006  
GC Column: RTX502 ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

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

Number TICs found: 1

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 000079-20-9	Acetic acid, methyl ester	12.48	3	JN

# **SEMI-VOLATILE ORGANICS**

000039

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

Data File Name BNA11454.D  
 Operator Skelton  
 Date Acquired 17-Jan-06

Sample Name MB 01110601  
 Misc Info MB 01110601  
 Sample Multiplier 1

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifiers
110-86-1	Pyridine			not detected	NLE	1.13	10.00	ug/L
62-75-9	N-nitroso-dimethylamine			not detected	20	0.60	10.00	ug/L
62-53-3	Aniline			not detected	NLE	2.38	10.00	ug/L
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.71	10.00	ug/L
541-73-1	1,3-Dichlorobenzene			not detected	600	1.02	10.00	ug/L
106-46-7	1,4-Dichlorobenzene			not detected	75	0.99	10.00	ug/L
100-51-6	Benzyl alcohol			not detected	NLE	0.66	10.00	ug/L
95-50-1	1,2-Dichlorobenzene			not detected	600	0.96	10.00	ug/L
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.88	10.00	ug/L
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.76	10.00	ug/L
67-72-1	Hexachloroethane			not detected	10	0.96	10.00	ug/L
98-95-3	Nitrobenzene			not detected	10	0.86	10.00	ug/L
78-59-1	Isophorone			not detected	100	0.76	10.00	ug/L
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.79	10.00	ug/L
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.89	10.00	ug/L
91-20-3	Naphthalene			not detected	NLE	0.76	10.00	ug/L
106-47-8	4-Chloroaniline			not detected	NLE	1.37	10.00	ug/L
87-68-3	Hexachlorobutadiene			not detected	1	0.99	10.00	ug/L
91-57-6	2-Methylnaphthalene			not detected	NLE	1.01	10.00	ug/L
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.92	10.00	ug/L
91-58-7	2-Chloronaphthalene			not detected	NLE	0.72	10.00	ug/L
88-74-4	2-Nitroaniline			not detected	NLE	0.77	10.00	ug/L
131-11-3	Dimethylphthalate			not detected	7000	0.78	10.00	ug/L
208-96-8	Acenaphthylene			not detected	NLE	0.67	10.00	ug/L
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.71	10.00	ug/L
99-09-2	3-Nitroaniline			not detected	NLE	1.18	10.00	ug/L
83-32-9	Acenaphthene			not detected	400	0.73	10.00	ug/L
132-64-9	Dibenzofuran			not detected	NLE	0.69	10.00	ug/L
121-14-2	2,4-Dinitrotoluene			not detected	10	0.81	10.00	ug/L
84-66-2	Diethylphthalate			not detected	5000	0.96	10.00	ug/L
86-73-7	Fluorene			not detected	300	0.71	10.00	ug/L
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.73	10.00	ug/L
100-01-6	4-Nitroaniline			not detected	NLE	1.11	10.00	ug/L
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.62	10.00	ug/L
103-33-3	Azobenzene			not detected	NLE	0.72	10.00	ug/L
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.92	10.00	ug/L
118-74-1	Hexachlorobenzene			not detected	10	0.95	10.00	ug/L
85-01-8	Phenanthrene			not detected	NLE	0.81	10.00	ug/L
120-12-7	Anthracene			not detected	2000	0.76	10.00	ug/L
84-74-2	Di-n-butylphthalate			not detected	900	0.92	10.00	ug/L
206-44-0	Fluoranthene			not detected	300	0.82	10.00	ug/L

**Semi-Volatile Analysis Report**  
**Page 2**

Data File Name BNA11454.D  
Operator Skelton  
Date Acquired 17-Jan-06

Sample Name MB 01110601  
Misc Info MB 01110601  
Sample Multiplier 1

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifiers
92-87-5	Benzidine			not detected	50	0.98	10.00	ug/L
129-00-0	Pyrene			not detected	200	0.79	10.00	ug/L
85-68-7	Butylbenzylphthalate			not detected	100	0.86	10.00	ug/L
56-55-3	Benzo[a]anthracene			not detected	10	0.82	10.00	ug/L
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.31	10.00	ug/L
218-01-9	Chrysene			not detected	20	0.77	10.00	ug/L
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.28	10.00	ug/L
117-84-0	Di-n-octylphthalate			not detected	100	1.02	10.00	ug/L
205-99-2	Benzo[b]fluoranthene			not detected	10	0.98	10.00	ug/L
207-08-9	Benzo[k]fluoranthene			not detected	2	0.92	10.00	ug/L
50-32-8	Benzo[a]pyrene			not detected	20	0.71	10.00	ug/L
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	0.76	10.00	ug/L
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.76	10.00	ug/L
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.80	10.00	ug/L

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

**Qualifiers**

E= Value Exceeds Linear Range

D= Value from dilution

B= Compound in Related Blank

RL= Reporting Limit. The values between the MDL and RL are considered estimated.

MDL= Method Detection Limit

NLE= No Limit Established

R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MB-011106-01

Lab Name: FMETL Lab Code 13461  
Project: 06-34880 Case No.: 60023 Location: UST SDG No.: \_\_\_\_\_  
Matrix: (soil/water) WATER Lab Sample ID: MB 01110601  
Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA11454.D  
Level: (low/med) LOW Date Received: 1/11/2006  
% Moisture: \_\_\_\_\_ decanted: (Y/N) N Date Extracted: 1/11/2006  
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/17/2006  
Injection Volume: 1.0 (uL) Dilution Factor: 1.0  
GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

CONCENTRATION UNITS:

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

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

Page 2

Data File Name BNA11463.D  
 Operator Skelton  
 Date Acquired 18-Jan-06

Sample Name 6002305  
 Misc Info 648C-GW  
 Sample Multiplier 1

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	ug/L	Qualifiers
92-87-5	Benzidine			not detected	50	0.98	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.79	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.86	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.82	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.31	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.77	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.28	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.02	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.98	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	0.92	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.71	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	0.76	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.76	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.80	10.00	ug/L	

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

### Qualifiers

E= Value Exceeds Linear Range

D= Value from dilution

B= Compound in Related Blank

RL= Reporting Limit. The values between the MDL and RL are considered estimated.

MDL= Method Detection Limit

NLE= No Limit Established

R.T.=Retention Time

Page 2 of 2

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1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

648C-GW

Lab Name: FMETL Lab Code 13461  
Project: 06-34880 Case No.: 60023 Location: UST SDG No.: \_\_\_\_\_  
Matrix: (soil/water) WATER Lab Sample ID: 6002305  
Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA11463.D  
Level: (low/med) LOW Date Received: 1/11/2006  
% Moisture: \_\_\_\_\_ decanted: (Y/N) N Date Extracted: 1/11/2006  
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/18/2006  
Injection Volume: 1.0 (uL) Dilution Factor: 1.0  
GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

CONCENTRATION UNITS:

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
------------	---------------	----	------------	---

**TPHC**



## LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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

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

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

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

Laboratory Manager or Environmental Consultant's Signature

Date: 1/27/06

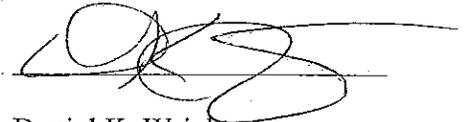
Laboratory Certification # 13461

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

000084

## Laboratory Authentication Statement

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



Daniel K. Wright  
Laboratory Manager



ATTACHMENT T

UST 649 File Review and Analyses



UNDERGROUND STORAGE TANK FILE REVIEW  
 FORT MONMOUTH BRAC 05 FACILITY  
 OCEANPORT, NEW JERSEY

Date: November 3, 2015 Review Performed By: Kent Friesen, Parsons

Site ID: **Bldg. 649** Registration ID: None

Recommended Status of Site: **Case Closed (no change)**

UST Probability (from May 2014 "Addendum 1 ECP UHOT Report"): **NFA**

Based on the file review, were there indications of a contaminant release? [ ] Yes [X] No

NJDEP Release No. or DICAR (If applicable): \_\_\_\_\_

Did NJDEP approve No Further Action (NFA) for this site? [ ] Yes [X] No [ ] Not Applicable

Tank Description: [X] Steel [ ] Fiberglass Size: 1080 gals. Contents: #2 Fuel Oil

[X] Residential [ ] Commercial/Industrial

Tank Removed? [X] Yes [ ] No If "yes," removal date: Unknown

Were closure soil samples taken? [X] Yes [ ] No Analyses: TPH

Comparison criteria: 5,100 mg/kg

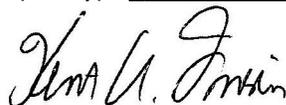
Were closure soil sample results less than comparison criteria? [X] Yes [ ] No

**Brief Narrative**

The Building 649 residential barracks building was demolished in 1980. A tank removal contractor excavated at the former building location on September 29 to 30, 1994 using historic aerial photographs and site maps to determine the approximate fuel oil tank location. Based on visual observations, it was determined that the former No. 2 fuel oil tank location was encountered, but that the tank had been previously removed and the excavation filled with old construction material. As stated in a Memorandum to File (attached), it was surmised that the tank was removed during building demolition, and the excavation was filled with demolition debris. Soils observed in the test pit excavation were visibly clean.

Sampling and analysis of soil was completed by FTMM in January 2006 at the former UST 649 site using a geoprobe; the resulting analytical data are attached. Three soil samples were collected from the former UST location and analyzed by the Fort Monmouth Environmental Laboratory for total petroleum hydrocarbons (TPH). The soil sample results were all not detected (ND) for TPH. The results were less than 5,100 mg/kg for TPH, which is the current TPH remediation criterion. A single groundwater sample was also collected from the former tank location; results were ND for all volatile organic compounds (VOCs). Phenanthrene was the only semi-volatile organic compound (SVOC) detected in groundwater at 0.86 µg/L, which is well below the NJDEP interim Ground Water Quality Standard (GWQS) of 100 µg/L. Therefore, there are no indications of a significant release to soil or groundwater, and NFA is warranted at Site 649.

Recommendations (if any): Request NFA from NJDEP



Signed: \_\_\_\_\_

Kent A. Friesen, Parsons

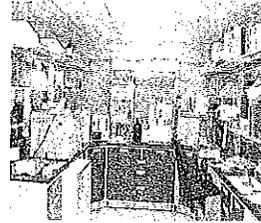
# FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS

PHONE: (732) 532-4359 FAX: (732) 532-6263

WET-CHEM - METALS - ORGANICS - FIELD SAMPLING

CERTIFICATIONS: NJDEP #13461, NYSDOH #11699



ANALYTICAL DATA REPORT  
Fort Monmouth Environmental Laboratory  
ENVIRONMENTAL DIVISION  
Fort Monmouth, New Jersey  
PROJECT: BLDG. 649

Bldg. 649

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
649 C 7.5-8.0'	6002201	Soil	10-Jan-06 14:54	01/10/06
649 W 7.5-8.0'	6002202	Soil	10-Jan-06 15:38	01/10/06
649 E 7.5-8.0'	6002203	Soil	10-Jan-06 16:46	01/10/06
649 C GW	6002204	Aqueous	10-Jan-06 17:20	01/10/06

ANALYSIS:

FORT MONMOUTH ENVIRONMENTAL LAB  
VOA+15, BN+15, TPHC, % SOLIDS

ENCLOSURE:  
CHAIN OF CUSTODY  
RESULTS

  
Daniel Wright/Date  
Laboratory Director

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**CHAIN  
OF  
CUSTODY**

000001



## SAMPLE RECEIPT FORM

Date Received: 1-11-06

Work Order ID#: 60022

Site/Proj. Name: Bldg 649/UST

Cooler Temp (°C): ICE

Received By: J. Thompson  
(Print name)

Sign: [Signature]

**Check the appropriate box**

1. Did the samples come in a cooler?  yes  no  n/a
2. Were samples rec'd in good condition?  yes  no
3. Was the chain of custody filled out correctly and legibly?  yes  no
4. Was the chain of custody signed in the appropriate place?  yes  no
5. Did the labels agree with the chain of custody?  yes  no
6. Were the correct containers/preservatives used?  yes  no
7. Was a sufficient amount of sample supplied?  yes  no
8. Were air bubbles present in VOA vials?  yes  no  n/a
9. Were samples received on ice?  yes  no
10. Were analyze-immediately tests perform within 15 minutes  yes  no  n/a

**Fill out the following table for each sample bottle**

Lims ID	pH	Preservative	Sample ID	pH	Preservative
<u>60022/4</u>	<u>12</u>	<u>PCL</u>			

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Former UST 649 Sample Location GPS Positions**

US State Plane 1983 New Jersey ( NY East ) 2900  
NAD 1983 ( Conus)  
Geoid 96 ( Conus)

( In US Survey Feet)

<b>Position</b>	<b>Northing ( Y Coord.)</b>	<b>Easting ( X Coord.)</b>
649 E	539588.596	618317.137
649 C	539587.944	618313.166
649 W	539585.112	618308.150

# **METHOD SUMMARY**

## **Methodology Summary**

### **EPA Method 624**

#### **Gas Chromatographic Determination of Volatiles in Water**

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

### **EPA SW-846 Method 8260**

#### **Gas Chromatographic Determination of Volatiles in Methanol**

A 10-gram volume of soil is combined with 25-ml of Methanol and surrogates in the field. Internal standards are added and the sample is placed on a purge and trap concentrator. The sample is purged and desorbed into a GC/MS system. Volatiles are identified and quantitated. The final concentration is calculated using soil weight, percent moisture and concentration.

### **EPA Method 625**

#### **Gas Chromatographic Determination of Semi-volatiles in Water**

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

**NJDEP Method OQA-QAM-025 10/97**

**Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil**

Fifteen grams (15g) of soil is added to a 125-ml acid cleaned and solvent rinsed capped Erlenmeyer flask. 15g anhydrous Sodium Sulfate is added to dry the sample. Surrogate standard spiking solution is then added to the flask.

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

The extract is then injected directly into a GC-FID for analysis. The sample is analyzed for Petroleum Hydrocarbons covering a range of C8-C42, including Pristane and Phytane. Total Petroleum Hydrocarbon concentration is determined by integrating between 5 minutes and 22 minutes. The baseline is established by starting the integration after the end of the solvent peak and stopping after the last peak. The final concentration of Total Petroleum Hydrocarbons is calculated using percent moisture, sample weight and concentration.

# **LABORATORY CHRONICLE**

000008

# Laboratory Chronicle

Lab ID: 60022

Site: UST  
Bldg. 649

	Date	Hold Time
<b>Date Sampled</b>	01/10/06	NA
<b>Receipt/Refrigeration</b>	01/10/06	NA
<b>Extractions</b>		
1. BN	01/11/06	7 days
2. TPHC	01/13/06	14 days
<b>Analyses</b>		
1. VOA	01/11,12/06	14 days
2. BN	01/17,18/06	40 days
3. TPHC	01/17/06	40 days

000009

**CONFORMANCE/  
NON-  
CONFORMANCE  
SUMMARY**

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

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

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

    - a. VOA Fraction \_\_\_\_\_
    - b. B/N Fraction Terphenyl 48%
    - c. Acid Fraction \_\_\_\_\_

If not met, were the calculations checked and the results qualified as “estimated”? yes
  9. Matrix Spike/Matrix Spike Duplicate Recoveries Meet Criteria no

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

    - a. VOA Fraction Naphthalene MS + MSD low
    - b. B/N Fraction Benzidine MSD low RPD high
    - c. Acid Fraction \_\_\_\_\_

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

Indicate  
Yes, No, N/A

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

yes

- a. VOA Fraction \_\_\_\_\_
- b. B/N Fraction \_\_\_\_\_
- c. Acid Fraction \_\_\_\_\_

11. Extraction Holding Time Met

yes

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

12. Analysis Holding Time Met

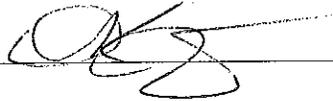
yes

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

Additional Comments:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Laboratory Manager:



Date: 1-26-06

# TPHC CONFORMANCE/NON-CONFORMANCE SUMMARY REPORT

Indicate  
Yes, No, N/A

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

Additional comments: \_\_\_\_\_  
\_\_\_\_\_

Laboratory Manager:  Date: 1-26-06

**VOLATILE  
ORGANICS  
(AQUEOUS)**

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY  
NJDEP CERTIFICATION # 13461

Definition of Qualifiers

- U:** The compound was analyzed for but not detected.
- B:** Indicates that the compound was found in the associated method blank as well as in the sample.
- J:** Indicates an estimated value. This flag is used:
- (1) When the mass spec and retention time data indicate the presence of a compound however the result is less than the MDL but greater than zero.
  - (2) When estimating the concentration of a tentatively identified compound (TIC), where a 1:1 response is assumed.
- D:** This flag is used to identify all compounds (target or TIC) that required a dilution.
- E:** Indicates the compound's concentration exceeds the calibration range of the instrument for that specific analysis.
- N:** This flag is only used for TICs. It indicates the presumptive evidence of a compound. For a generic characterization of a TIC, such as unknown hydrocarbon, the flag is not used.

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

Data File VB021318.D  
 Operator Skelton  
 Date Acquired 11 Jan 2006 8:48 pm

Sample Name MB 11Jan2006  
 Field ID MB 11Jan2006  
 Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.01 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	5	1.23 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	5.70 ug/L	10.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.21 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.26 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.20 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	nle	0.24 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.23 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	0.26 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	0.29 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.23 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.19 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	6000	0.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.24 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.21 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.24 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	50	0.24 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.26 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethane			not detected	70	0.20 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	70	0.22 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.20 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.24 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.24 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.23 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.26 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.24 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.23 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.22 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.35 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.26 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.25 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.28 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.20 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.43 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.28 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.27 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	0.43 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.21 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.21 ug/L	2.00 ug/L	
75-25-2	Bromofom			not detected	4	0.27 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.45 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.36 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.35 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzenc			not detected	600	0.45 ug/L	2.00 ug/L	

\*Results between MDL and RL are estimated values  
 \*Higher of PQL's and Interim Criteria as per N.J.A.C. 7:9C 07Nov2005

**Qualifiers**

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

MB 11Jan2006

Lab Name: FMETL NJDEP#: 13461  
Project: 0634880 Case No.: 60021 Location: 647 SDG No.: UST  
Matrix: (soil/water) WATER Lab Sample ID: MB 11Jan2006  
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB021318.D  
Level: (low/med) LOW Date Received: 1/11/2006  
% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 1/11/2006  
GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

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

Number TICs found: 1

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 000079-20-9	Acetic acid, methyl ester	12.47	4	JN

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

Data File VB021333.D  
 Operator Skelton  
 Date Acquired 12 Jan 2006 7:03 am

Sample Name 6002105  
 Field ID Trip Blank  
 Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.01 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	5	1.23 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	5.70 ug/L	10.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.21 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.26 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.20 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	nle	0.24 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.23 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	0.26 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	0.29 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.23 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.19 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	6000	0.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.24 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.21 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.24 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	50	0.24 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.26 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.20 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	70	0.22 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.20 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.24 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.24 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.23 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.26 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.24 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.23 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.22 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.35 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.26 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.25 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.28 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.20 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.43 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.28 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.27 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	0.43 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.21 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.21 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.27 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.45 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.36 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.35 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.45 ug/L	2.00 ug/L	

\*Results between MDL and RL are estimated values  
 \*Higher of PQL's and Interim Criteria as per N.J.A.C. 7:9C 07Nov2005

**Qualifiers**

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

**Trip Blank**

Lab Name: FMETL NJDEP#: 13461  
Project: 0634880 Case No.: 60021 Location: 647 SDG No.: UST  
Matrix: (soil/water) WATER Lab Sample ID: 6002105  
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB021333.D  
Level: (low/med) LOW Date Received: 1/11/2006  
% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 1/12/2006  
GC Column: RTX502 ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

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

Number TICs found: 1

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 000079-20-9	Acetic acid, methyl ester	12.48	3	JN

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

Data File VB021334.D  
 Operator Skelton  
 Date Acquired 12 Jan 2006 7:44 am

Sample Name 6002204  
 Field ID 649C  
 Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.01 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	5	1.23 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	5.70 ug/L	10.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.21 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.26 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.20 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	nle	0.24 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.23 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	0.26 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	0.29 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.23 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.19 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	6000	0.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.24 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.21 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.24 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	50	0.24 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.26 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.20 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	70	0.22 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.20 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.24 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.24 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.23 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.26 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.24 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.23 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.22 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.35 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.26 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.25 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.28 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.20 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.43 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.28 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.27 ug/L	2.00 ug/L	
1330-20-7	m-p-Xylenes			not detected	nle	0.43 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.21 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.21 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.27 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.45 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.36 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.35 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.45 ug/L	2.00 ug/L	

\*Results between MDL and RL are estimated values

\*Higher of PQL's and Interim Criteria as per N.J.A.C. 7:9C 07Nov2005

**Qualifiers**

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

649C-GW

Lab Name: FMETL NJDEP#: 13461  
Project: 0634880 Case No.: 60022 Location: 649 SDG No.: UST  
Matrix: (soil/water) WATER Lab Sample ID: 6002204  
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB021334.D  
Level: (low/med) LOW Date Received: 1/9/2006  
% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 1/12/2006  
GC Column: RTX502 ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

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

Number TICs found: 1

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 000079-20-9	Acetic acid, methyl ester	12.48	4	JN

# **SEMI-VOLATILE ORGANICS**

000039

## Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name **BNA11454.D**  
 Operator **Skelton**  
 Date Acquired **17-Jan-06**

Sample Name **MB 01110601**  
 Misc Info **MB 01110601**  
 Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifiers
110-86-1	Pyridine			not detected	NLE	1.13	10.00	ug/L
62-75-9	N-nitroso-dimethylamine			not detected	20	0.60	10.00	ug/L
62-53-3	Aniline			not detected	NLE	2.38	10.00	ug/L
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.71	10.00	ug/L
541-73-1	1,3-Dichlorobenzene			not detected	600	1.02	10.00	ug/L
106-46-7	1,4-Dichlorobenzene			not detected	75	0.99	10.00	ug/L
100-51-6	Benzyl alcohol			not detected	NLE	0.66	10.00	ug/L
95-50-1	1,2-Dichlorobenzene			not detected	600	0.96	10.00	ug/L
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.88	10.00	ug/L
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.76	10.00	ug/L
67-72-1	Hexachloroethane			not detected	10	0.96	10.00	ug/L
98-95-3	Nitrobenzene			not detected	10	0.86	10.00	ug/L
78-59-1	Isophorone			not detected	100	0.76	10.00	ug/L
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.79	10.00	ug/L
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.89	10.00	ug/L
91-20-3	Naphthalene			not detected	NLE	0.76	10.00	ug/L
106-47-8	4-Chloroaniline			not detected	NLE	1.37	10.00	ug/L
87-68-3	Hexachlorobutadiene			not detected	1	0.99	10.00	ug/L
91-57-6	2-Methylnaphthalene			not detected	NLE	1.01	10.00	ug/L
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.92	10.00	ug/L
91-58-7	2-Chloronaphthalene			not detected	NLE	0.72	10.00	ug/L
88-74-4	2-Nitroaniline			not detected	NLE	0.77	10.00	ug/L
131-11-3	Dimethylphthalate			not detected	7000	0.78	10.00	ug/L
208-96-8	Acenaphthylene			not detected	NLE	0.67	10.00	ug/L
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.71	10.00	ug/L
99-09-2	3-Nitroaniline			not detected	NLE	1.18	10.00	ug/L
83-32-9	Acenaphthene			not detected	400	0.73	10.00	ug/L
132-64-9	Dibenzofuran			not detected	NLE	0.69	10.00	ug/L
121-14-2	2,4-Dinitrotoluene			not detected	10	0.81	10.00	ug/L
84-66-2	Diethylphthalate			not detected	5000	0.96	10.00	ug/L
86-73-7	Fluorene			not detected	300	0.71	10.00	ug/L
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.73	10.00	ug/L
100-01-6	4-Nitroaniline			not detected	NLE	1.11	10.00	ug/L
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.62	10.00	ug/L
103-33-3	Azobenzene			not detected	NLE	0.72	10.00	ug/L
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.92	10.00	ug/L
118-74-1	Hexachlorobenzene			not detected	10	0.95	10.00	ug/L
85-01-8	Phenanthrene			not detected	NLE	0.81	10.00	ug/L
120-12-7	Anthracene			not detected	2000	0.76	10.00	ug/L
84-74-2	Di-n-butylphthalate			not detected	900	0.92	10.00	ug/L
206-44-0	Fluoranthene			not detected	300	0.82	10.00	ug/L

Semi-Volatile Analysis Report  
Page 2

Data File Name BNA11454.D  
Operator Skelton  
Date Acquired 17-Jan-06

Sample Name MB 01110601  
Misc Info MB 01110601  
Sample Multiplier 1

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifiers
92-87-5	Benzidine			not detected	50	0.98	10.00	ug/L
129-00-0	Pyrene			not detected	200	0.79	10.00	ug/L
85-68-7	Butylbenzylphthalate			not detected	100	0.86	10.00	ug/L
56-55-3	Benzo[a]anthracene			not detected	10	0.82	10.00	ug/L
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.31	10.00	ug/L
218-01-9	Chrysene			not detected	20	0.77	10.00	ug/L
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.28	10.00	ug/L
117-84-0	Di-n-octylphthalate			not detected	100	1.02	10.00	ug/L
205-99-2	Benzo[b]fluoranthene			not detected	10	0.98	10.00	ug/L
207-08-9	Benzo[k]fluoranthene			not detected	2	0.92	10.00	ug/L
50-32-8	Benzo[a]pyrene			not detected	20	0.71	10.00	ug/L
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	0.76	10.00	ug/L
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.76	10.00	ug/L
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.80	10.00	ug/L

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

Qualifiers

E= Value Exceeds Linear Range

D= Value from dilution

B= Compound in Related Blank

RL= Reporting Limit. The values between the MDL and RL are considered estimated.

MDL= Method Detection Limit

NLE= No Limit Established

R.T.=Retention Time

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MB-011106-01

Lab Name: FMETL Lab Code 13461

Project: 06-34880 Case No.: 60022 Location: UST SDG No.: \_\_\_\_\_

Matrix: (soil/water) WATER Lab Sample ID: MB 01110601

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA11454.D

Level: (low/med) LOW Date Received: 1/11/2006

% Moisture: \_\_\_\_\_ decanted: (Y/N) N Date Extracted: 1/11/2006

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/17/2006

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

## CONCENTRATION UNITS:

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

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

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name BNA11462.D  
 Operator Skelton  
 Date Acquired 18-Jan-06

Sample Name 6002204  
 Misc Info 649C-GW  
 Sample Multiplier 1

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifiers
110-86-1	Pyridine			not detected	NLE	1.13	10.00	ug/L
62-75-9	N-nitroso-dimethylamine			not detected	20	0.60	10.00	ug/L
62-53-3	Aniline			not detected	NLE	2.38	10.00	ug/L
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.71	10.00	ug/L
541-73-1	1,3-Dichlorobenzene			not detected	600	1.02	10.00	ug/L
106-46-7	1,4-Dichlorobenzene			not detected	75	0.99	10.00	ug/L
100-51-6	Benzyl alcohol			not detected	NLE	0.66	10.00	ug/L
95-50-1	1,2-Dichlorobenzene			not detected	600	0.96	10.00	ug/L
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.88	10.00	ug/L
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.76	10.00	ug/L
67-72-1	Hexachloroethane			not detected	10	0.96	10.00	ug/L
98-95-3	Nitrobenzene			not detected	10	0.86	10.00	ug/L
78-59-1	Isophorone			not detected	100	0.76	10.00	ug/L
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.79	10.00	ug/L
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.89	10.00	ug/L
91-20-3	Naphthalene			not detected	NLE	0.76	10.00	ug/L
106-47-8	4-Chloroaniline			not detected	NLE	1.37	10.00	ug/L
87-68-3	Hexachlorobutadiene			not detected	1	0.99	10.00	ug/L
91-57-6	2-Methylnaphthalene			not detected	NLE	1.01	10.00	ug/L
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.92	10.00	ug/L
91-58-7	2-Chloronaphthalene			not detected	NLE	0.72	10.00	ug/L
88-74-4	2-Nitroaniline			not detected	NLE	0.77	10.00	ug/L
131-11-3	Dimethylphthalate			not detected	7000	0.78	10.00	ug/L
208-96-8	Acenaphthylene			not detected	NLE	0.67	10.00	ug/L
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.71	10.00	ug/L
99-09-2	3-Nitroaniline			not detected	NLE	1.18	10.00	ug/L
83-32-9	Acenaphthene			not detected	400	0.73	10.00	ug/L
132-64-9	Dibenzofuran			not detected	NLE	0.69	10.00	ug/L
121-14-2	2,4-Dinitrotoluene			not detected	10	0.81	10.00	ug/L
84-66-2	Diethylphthalate			not detected	5000	0.96	10.00	ug/L
86-73-7	Fluorene			not detected	300	0.71	10.00	ug/L
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.73	10.00	ug/L
100-01-6	4-Nitroaniline			not detected	NLE	1.11	10.00	ug/L
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.62	10.00	ug/L
103-33-3	Azobenzene			not detected	NLE	0.72	10.00	ug/L
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.92	10.00	ug/L
118-74-1	Hexachlorobenzene			not detected	10	0.95	10.00	ug/L
85-01-8	Phenanthrene	21.14	66908	0.86 ug/L	NLE	0.81	10.00	ug/L
120-12-7	Anthracene			not detected	2000	0.76	10.00	ug/L
84-74-2	Di-n-butylphthalate			not detected	900	0.92	10.00	ug/L
206-44-0	Fluoranthene			not detected	300	0.82	10.00	ug/L

**Semi-Volatile Analysis Report**  
**Page 2**

Data File Name **BNA11462.D**  
Operator **Skelton**  
Date Acquired **18-Jan-06**

Sample Name **6002204**  
Misc Info **649C-GW**  
Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifiers
92-87-5	Benzidine			not detected	50	0.98	10.00	ug/L
129-00-0	Pyrene			not detected	200	0.79	10.00	ug/L
85-68-7	Butylbenzylphthalate			not detected	100	0.86	10.00	ug/L
56-55-3	Benzo[a]anthracene			not detected	10	0.82	10.00	ug/L
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.31	10.00	ug/L
218-01-9	Chrysene			not detected	20	0.77	10.00	ug/L
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.28	10.00	ug/L
117-84-0	Di-n-octylphthalate			not detected	100	1.02	10.00	ug/L
205-99-2	Benzo[b]fluoranthene			not detected	10	0.98	10.00	ug/L
207-08-9	Benzo[k]fluoranthene			not detected	2	0.92	10.00	ug/L
50-32-8	Benzo[a]pyrene			not detected	20	0.71	10.00	ug/L
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	0.76	10.00	ug/L
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.76	10.00	ug/L
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.80	10.00	ug/L

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

**Qualifiers**

E= Value Exceeds Linear Range

D= Value from dilution

B= Compound in Related Blank

RL= Reporting Limit. The values between the MDL and RL are considered estimated.

MDL= Method Detection Limit

NLE= No Limit Established

R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

**649C-GW**

Lab Name: FMETL Lab Code 13461  
Project: 06-34880 Case No.: 60022 Location: UST SDG No.: \_\_\_\_\_  
Matrix: (soil/water) WATER Lab Sample ID: 6002204  
Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA11462.D  
Level: (low/med) LOW Date Received: 1/11/2006  
% Moisture: \_\_\_\_\_ decanted: (Y/N) N Date Extracted: 1/11/2006  
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/18/2006  
Injection Volume: 1.0 (uL) Dilution Factor: 1.0  
GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

CONCENTRATION UNITS:

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
------------	---------------	----	------------	---

**TPHC**

000064



## LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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

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

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

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

Laboratory Manager or Environmental Consultant's Signature

Date: 1/26/96

Laboratory Certification # 13461

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

000082

## Laboratory Authentication Statement

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



Daniel K. Wright  
Laboratory Manager



ATTACHMENT U

UST 650 File Review and Analyses



UNDERGROUND STORAGE TANK FILE REVIEW  
FORT MONMOUTH BRAC 05 FACILITY  
OCEANPORT, NEW JERSEY

Date: November 3, 2015 Review Performed By: Kent Friesen, Parsons

Site ID: **Bldg. 650** Registration ID: None

Recommended Status of Site: **Case Closed (no change)**

UST Probability (from May 2014 "Addendum 1 ECP UHOT Report"): **NFA**

Based on the file review, were there indications of a contaminant release? [ ] Yes [X] No

NJDEP Release No. or DICAR (If applicable): \_\_\_\_\_

Did NJDEP approve No Further Action (NFA) for this site? [ ] Yes [X] No [ ] Not Applicable

Tank Description: [X] Steel [ ] Fiberglass Size: 1080 gals. Contents: #2 Fuel Oil

[X] Residential [ ] Commercial/Industrial

Tank Removed? [X] Yes [ ] No If "yes," removal date: Unknown

Were closure soil samples taken? [X] Yes [ ] No Analyses: TPH

Comparison criteria: 5,100 mg/kg

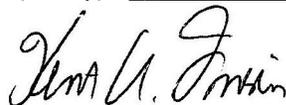
Were closure soil sample results less than comparison criteria? [X] Yes [ ] No

**Brief Narrative**

The Building 650 residential barracks building was demolished in 1980. A tank removal contractor excavated at the former building location on September 29 to 30, 1994 using historic aerial photographs and site maps to determine the approximate fuel oil tank location. Based on visual observations, it was determined that the former No. 2 fuel oil tank location was encountered, but that the tank had been previously removed and the excavation filled with old construction material. As stated in a Memorandum to File (attached), it was surmised that the tank was removed during building demolition, and the excavation was filled with demolition debris. Soils observed in the test pit excavation were visibly clean.

Sampling and analysis of soil was completed by FTMM in January 2006 at the former UST 650 site using a geoprobe; the resulting analytical data are attached. Three soil samples were collected from the former UST location and analyzed by the Fort Monmouth Environmental Laboratory for total petroleum hydrocarbons (TPH). The soil sample results were all not detected (ND) for TPH. The results were less than 5,100 mg/kg for TPH, which is the current TPH remediation criterion. A single groundwater sample was also collected from the former tank location; results were ND for all volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs). Therefore, there are no indications of a significant release to soil or groundwater, and NFA is warranted at Site 650.

Recommendations (if any): Request NFA from NJDEP



Signed: \_\_\_\_\_

Kent A. Friesen, Parsons

MEMORANDUM TO FILE

FROM: EUGENE W. LESINSKI

DATE: 30 SEPTEMBER 1994

TO: FILE

SUBJ: UST REMOVAL IN THE 600 AREA

1. I directed the UST tank hunt in the 600 Area for Buildings 642 through 654 (13 tanks total) with CUTE, Inc. on 29-30 September 1994. Of 13 possible existing UST's, only 1 UST was found (Bldg 654). The following information germane:

- A) Buildings 642 thru 651: These tanks were determined to be a capacity of 1080 gallons (2 tank markers with this information were found in tank excavations). From old aerial photographs and site maps approximate tank locations were determined. Excavation revealed that these 10 tanks were removed and excavations were filled with old construction material. It was surmised that these tanks were removed during building demolition and filled with demolition debris. Excavations for BLDG's 642 thru 646 were visually observed to be with heavy organic material while BLDG's 647 thru 651 were visually clean. Readings from HNU showed no hits for petroluem hydrocarbons. Excavations for Buildings 642 thru 651 were back-filled late afternoon on the 29th of September 1994.
- B) Buildings 652 thru 654 were excavated on 30 September 1994 and only 1 UST was found (BLDG 654 - 1080 gallons). Excavations for 652 and 653 appeared visually to have heavy organic material. Building 654 appeared clean.

V/R

  
Eugene W. Lesinski

# FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS

PHONE: (732) 532-4359 FAX: (732) 532-6263

WET-CHEM - METALS - ORGANICS - FIELD SAMPLING

CERTIFICATIONS: NJDEP #13461, NYSDOH #11699



ANALYTICAL DATA REPORT  
Fort Monmouth Environmental Laboratory  
ENVIRONMENTAL DIVISION  
Fort Monmouth, New Jersey  
PROJECT: BLDG. 650

Bldg. 650

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
650 C 6.0-6.5'	6001701	Soil	09-Jan-06 13:07	01/09/06
650 W 6.0-6.5'	6001702	Soil	09-Jan-06 13:40	01/09/06
650 E 6.0-6.5'	6001703	Soil	09-Jan-06 14:12	01/09/06
650 C GW	6001704	Aqueous	09-Jan-06 14:43	01/09/06

ANALYSIS:

FORT MONMOUTH ENVIRONMENTAL LAB  
VOA+15, BN+15, TPHC, % SOLIDS

ENCLOSURE:  
CHAIN OF CUSTODY  
RESULTS

  
1-25-06  
Daniel Wright/Date  
Laboratory Director

The enclosed report relates only to the items tested. The report may not be reproduced, except in full, without written approval of the U.S. Army Fort Monmouth Directorate of Public Works.

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**CHAIN  
OF  
CUSTODY**

000001

# Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703  
 Tel (732)532-4359 Fax (732)532-6263 EMail:wrightd@mail1.monmouth.army.mil  
 NJDEP Certification #13461

## Chain of Custody Record

Customer: <u>John McCarthy</u>		Project No: <u>06-34880</u>		Analysis Parameters		Comments:	
Phone: <u>X 26224</u>		Location: <u>650 (Farmer AST)</u>		VO+10			
() DERA () OMA () Other: _____				BN+15			
Samplers Name / Company: <u>George Boyce IVS</u>		Sample #					
LIMS/Work Order #	Sample Location	Date	Time	Type	# bottles	Remarks / Preservation Method	
<u>00017 01</u>	<u>650C</u>	<u>6-0-65</u>	<u>1307</u>	<u>Soil</u>	<u>2</u>	<u>4425</u>	
<u>02</u>	<u>650W</u>	<u>6-0-65</u>	<u>1340</u>	<u>Soil</u>	<u>2</u>	<u>4426</u>	
<u>03</u>	<u>650E</u>	<u>6-0-65</u>	<u>1412</u>	<u>Soil</u>	<u>2</u>	<u>4427</u>	
<u>04</u>	<u>650C-CAN</u>	<u>-</u>	<u>1443</u>	<u>AQ</u>	<u>4</u>		
Reinquished by (signature): <u>George Boyce</u>		Date/Time: <u>19-06-05</u>		Received by (signature): <u>[Signature]</u>		Date/Time:	
Reinquished by (signature):		Date/Time:		Reinquished by (signature):		Date/Time:	
Report Type: () Full, ( <input checked="" type="checkbox"/> ) Reduced, ( ) Standard, ( ) Screen / non-certified, ( ) EDD		Turnaround time: ( <input checked="" type="checkbox"/> ) Standard 3 wks, ( ) Rush Days, ( ) ASAP Verbal Hrs.		Remarks: <u>VO+10 on 25% &gt; 1000 ppm TPH</u>			
				Shared TRIP with 651			

## SAMPLE RECEIPT FORM

Date Received: 1-9-06

Work Order ID#: 60017

Site/Proj. Name: Bldg 650/1st

Cooler Temp (°C): 3.0

Received By: J. Verduin  
(Print name)

Sign: [Signature]

**Check the appropriate box**

- |   |   |  |   |
|---|---|--|---|
| 1. Did the samples come in a cooler?                          | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no            | <input type="checkbox"/> n/a            |
| 2. Were samples rec'd in good condition?                      | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no            |   |
| 3. Was the chain of custody filled out correctly and legibly? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no            |   |
| 4. Was the chain of custody signed in the appropriate place?  | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no            |   |
| 5. Did the labels agree with the chain of custody?            | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no            |   |
| 6. Were the correct containers/preservatives used?            | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no            |   |
| 7. Was a sufficient amount of sample supplied?                | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no            |   |
| 8. Were air bubbles present in VOA vials?                     | <input type="checkbox"/> yes            | <input checked="" type="checkbox"/> no | <input type="checkbox"/> n/a            |
| 9. Were samples received on ice?                              | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no            |   |
| 10. Were analyze-immediately tests perform within 15 minutes  | <input type="checkbox"/> yes            | <input type="checkbox"/> no            | <input checked="" type="checkbox"/> n/a |

**Fill out the following table for each sample bottle**

Lims ID	pH	Preservative	Sample ID	pH	Preservative
<u>60017/01</u>	<u>7.2</u>	<u>HCL</u>			

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Former UST 650 Sample Location GPS Positions**

US State Plane 1983 New Jersey ( NY East ) 2900  
NAD 1983 ( Conus)  
Geoid 96 ( Conus)

( In US Survey Feet)

<b>Position</b>	<b>Northing ( Y Coord.)</b>	<b>Easting ( X Coord.)</b>
650 E	539555.239	618199.065
650 C	539554.280	618192.399
650 W	539553.756	618187.102

# **METHOD SUMMARY**

## Methodology Summary

### **EPA Method 624**

#### **Gas Chromatographic Determination of Volatiles in Water**

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

### **EPA SW-846 Method 8260**

#### **Gas Chromatographic Determination of Volatiles in Methanol**

A 10-gram volume of soil is combined with 25-ml of Methanol and surrogates in the field. Internal standards are added and the sample is placed on a purge and trap concentrator. The sample is purged and desorbed into a GC/MS system. Volatiles are identified and quantitated. The final concentration is calculated using soil weight, percent moisture and concentration.

### **EPA Method 625**

#### **Gas Chromatographic Determination of Semi-volatiles in Water**

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

**NJDEP Method OQA-QAM-025 10/97**

**Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil**

Fifteen grams (15g) of soil is added to a 125-ml acid cleaned and solvent rinsed capped Erlenmeyer flask. 15g anhydrous Sodium Sulfate is added to dry the sample. Surrogate standard spiking solution is then added to the flask.

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

The extract is then injected directly into a GC-FID for analysis. The sample is analyzed for Petroleum Hydrocarbons covering a range of C8-C42, including Pristane and Phytane. Total Petroleum Hydrocarbon concentration is determined by integrating between 5 minutes and 22 minutes. The baseline is established by starting the integration after the end of the solvent peak and stopping after the last peak. The final concentration of Total Petroleum Hydrocarbons is calculated using percent moisture, sample weight and concentration.

# **LABORATORY CHRONICLE**

000008

# Laboratory Chronicle

Lab ID: 60017

Site: UST  
Bldg. 650

	Date	Hold Time
Date Sampled	01/09/06	NA
Receipt/Refrigeration	01/09/06	NA
<b>Extractions</b>		
1. BN	01/11/06	7 days
2. TPHC	01/13/06	14 days
<b>Analyses</b>		
1. VOA	01/11,12/06	14 days
2. BN	01/17,18/06	40 days
3. TPHC	01/13/06	40 days

000009

**CONFORMANCE/  
NON-  
CONFORMANCE  
SUMMARY**

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

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

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

    - a. VOA Fraction \_\_\_\_\_
    - b. B/N Fraction \_\_\_\_\_
    - c. Acid Fraction \_\_\_\_\_

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

\_\_\_\_\_
  9. Matrix Spike/Matrix Spike Duplicate Recoveries Meet Criteria NO

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

    - a. VOA Fraction Naphthalene ms + MSD low
    - b. B/N Fraction Benzadiaz. msd low RPD high
    - c. Acid Fraction \_\_\_\_\_

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

Indicate  
Yes, No, N/A

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

yes

- a. VOA Fraction \_\_\_\_\_
- b. B/N Fraction \_\_\_\_\_
- c. Acid Fraction \_\_\_\_\_

11. Extraction Holding Time Met

yes

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

\_\_\_\_\_

12. Analysis Holding Time Met

yes

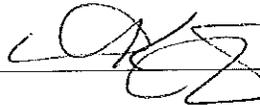
If not met, list the number of days exceeded for each sample: \_\_\_\_\_

\_\_\_\_\_

Additional Comments:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Laboratory Manager: \_\_\_\_\_



Date: 1-25-06

## TPHC CONFORMANCE/NON-CONFORMANCE SUMMARY REPORT

Indicate  
Yes, No, N/A

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

Additional comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Laboratory Manager:



Date:

1-25-06

000013

**VOLATILE  
ORGANICS  
(AQUEOUS)**

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY  
NJDEP CERTIFICATION # 13461

Definition of Qualifiers

- U:** The compound was analyzed for but not detected.
- B:** Indicates that the compound was found in the associated method blank as well as in the sample.
- J:** Indicates an estimated value. This flag is used:
- (1) When the mass spec and retention time data indicate the presence of a compound however the result is less than the MDL but greater than zero.
  - (2) When estimating the concentration of a tentatively identified compound (TIC), where a 1:1 response is assumed.
- D:** This flag is used to identify all compounds (target or TIC) that required a dilution.
- E:** Indicates the compound's concentration exceeds the calibration range of the instrument for that specific analysis.
- N:** This flag is only used for TICs. It indicates the presumptive evidence of a compound. For a generic characterization of a TIC, such as unknown hydrocarbon, the flag is not used.

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

Data File VB021318.D  
 Operator Skelton  
 Date Acquired 11 Jan 2006 8:48 pm

Sample Name MB 11Jan2006  
 Field ID MB 11Jan2006  
 Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ng/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.01 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	5	1.23 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	5.70 ug/L	10.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.21 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.26 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.20 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	nle	0.24 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.23 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	0.26 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	0.29 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.23 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.19 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	6000	0.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.24 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.21 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.24 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	50	0.24 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.26 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.20 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	70	0.22 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.20 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.24 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.24 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.23 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.26 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.24 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.23 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.22 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.35 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.26 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.25 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.28 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.20 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.43 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.28 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.27 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	0.43 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.21 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.21 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.27 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.45 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.36 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.35 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.45 ug/L	2.00 ug/L	

\*Results between MDL and RL are estimated values  
 \*Higher of PQL's and Interim Criteria as per N.J.A.C. 7:9C 07Nov2005

**Qualifiers**

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

MB 11Jan2006

Lab Name: FMETL NJDEP#: 13461  
Project: 0634880 Case No.: 60017 Location: 650 SDG No.: UST  
Matrix: (soil/water) WATER Lab Sample ID: MB 11Jan2006  
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB021318.D  
Level: (low/med) LOW Date Received: 1/9/2006  
% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 1/11/2006  
GC Column: RTX502 ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

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

Number TICs found: 1

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 000079-20-9	Acetic acid, methyl ester	12.47	4	JN

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

Data File VB021330.D  
 Operator Skelton  
 Date Acquired 12 Jan 2006 5:00 am

Sample Name 6001606  
 Field ID Trip Blank  
 Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/D)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.01 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	5	1.23 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	5.70 ug/L	10.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.21 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.26 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.20 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	nle	0.24 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.23 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	0.26 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	0.29 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.23 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.19 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	6000	0.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.24 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.21 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.24 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	50	0.24 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.26 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.20 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	70	0.22 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.20 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.24 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.24 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.23 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.26 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.24 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.23 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.22 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.35 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.26 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.25 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.28 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.20 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.43 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.28 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.27 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	0.43 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.21 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.21 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.27 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.45 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.36 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.35 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.45 ug/L	2.00 ug/L	

\*Results between MDL and RL are estimated values  
 \*Higher of PQL's and Interim Criteria as per N.J.A.C. 7:9C 07Nov2005

**Qualifiers**

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

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

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

Trip Blank

Lab Name: FMETL NJDEP#: 13461  
Project: 0634880 Case No.: 60016 Location: 651 SDG No.: UST  
Matrix: (soil/water) WATER Lab Sample ID: 6001606  
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB021330.D  
Level: (low/med) LOW Date Received: 1/9/2006  
% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 1/12/2006  
GC Column: RTX502 ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

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

Number TICs found: 1

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 000079-20-9	Acetic acid, methyl ester	12.48	3	JN

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

Data File VB021331.D  
 Operator Skelton  
 Date Acquired 12 Jan 2006 5:41 am

Sample Name 6001704  
 Field ID 650C  
 Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.01 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	5	1.23 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	5.70 ug/L	10.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.21 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.26 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.20 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	nle	0.24 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.23 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	0.26 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	0.29 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.23 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.19 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	6000	0.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.24 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.21 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.24 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	50	0.24 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.26 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.20 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	70	0.22 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.20 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.24 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.24 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.23 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.26 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.24 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.23 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.22 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.35 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.26 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.25 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.28 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.20 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.43 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.28 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.27 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	0.43 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.21 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.21 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.27 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.45 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.36 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.35 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.45 ug/L	2.00 ug/L	

\*Results between MDL and RL are estimated values  
 \*Higher of PQL's and Interim Criteria as per N.J.A.C. 7:9C 07Nov2005

**Qualifiers**

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

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

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

650C-GW

Lab Name: FMETL NJDEP#: 13461  
Project: 0634880 Case No.: 60017 Location: 650 SDG No.: UST  
Matrix: (soil/water) WATER Lab Sample ID: 6001704  
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB021331.D  
Level: (low/med) LOW Date Received: 1/9/2006  
% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 1/12/2006  
GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

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

Number TICs found: 2

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 000079-20-9	Acetic acid, methyl ester	12.48	4	JN
2.	unknown	16.61	8	J

# **SEMI-VOLATILE ORGANICS**

000039

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

Data File Name **BNA11454.D**  
 Operator **Skelfon**  
 Date Acquired **17-Jan-06**

Sample Name **MB 01110601**  
 Misc Info **MB 01110601**  
 Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifiers
110-86-1	Pyridine			not detected	NLE	1.13	10.00	ug/L
62-75-9	N-nitroso-dimethylamine			not detected	20	0.60	10.00	ug/L
62-53-3	Aniline			not detected	NLE	2.38	10.00	ug/L
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.71	10.00	ug/L
541-73-1	1,3-Dichlorobenzene			not detected	600	1.02	10.00	ug/L
106-46-7	1,4-Dichlorobenzene			not detected	75	0.99	10.00	ug/L
100-51-6	Benzyl alcohol			not detected	NLE	0.66	10.00	ug/L
95-50-1	1,2-Dichlorobenzene			not detected	600	0.96	10.00	ug/L
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.88	10.00	ug/L
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.76	10.00	ug/L
67-72-1	Hexachloroethane			not detected	10	0.96	10.00	ug/L
98-95-3	Nitrobenzene			not detected	10	0.86	10.00	ug/L
78-59-1	Isophorone			not detected	100	0.76	10.00	ug/L
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.79	10.00	ug/L
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.89	10.00	ug/L
91-20-3	Naphthalene			not detected	NLE	0.76	10.00	ug/L
106-47-8	4-Chloroaniline			not detected	NLE	1.37	10.00	ug/L
87-68-3	Hexachlorobutadiene			not detected	1	0.99	10.00	ug/L
91-57-6	2-Methylnaphthalene			not detected	NLE	1.01	10.00	ug/L
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.92	10.00	ug/L
91-58-7	2-Chloronaphthalene			not detected	NLE	0.72	10.00	ug/L
88-74-4	2-Nitroaniline			not detected	NLE	0.77	10.00	ug/L
131-11-3	Dimethylphthalate			not detected	7000	0.78	10.00	ug/L
208-96-8	Acenaphthylene			not detected	NLE	0.67	10.00	ug/L
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.71	10.00	ug/L
99-09-2	3-Nitroaniline			not detected	NLE	1.18	10.00	ug/L
83-32-9	Acenaphthene			not detected	400	0.73	10.00	ug/L
132-64-9	Dibenzofuran			not detected	NLE	0.69	10.00	ug/L
121-14-2	2,4-Dinitrotoluene			not detected	10	0.81	10.00	ug/L
84-66-2	Diethylphthalate			not detected	5000	0.96	10.00	ug/L
86-73-7	Fluorene			not detected	300	0.71	10.00	ug/L
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.73	10.00	ug/L
100-01-6	4-Nitroaniline			not detected	NLE	1.11	10.00	ug/L
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.62	10.00	ug/L
103-33-3	Azobenzene			not detected	NLE	0.72	10.00	ug/L
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.92	10.00	ug/L
118-74-1	Hexachlorobenzene			not detected	10	0.95	10.00	ug/L
85-01-8	Phenanthrene			not detected	NLE	0.81	10.00	ug/L
120-12-7	Anthracene			not detected	2000	0.76	10.00	ug/L
84-74-2	Di-n-butylphthalate			not detected	900	0.92	10.00	ug/L
206-44-0	Fluoranthene			not detected	300	0.82	10.00	ug/L

**Semi-Volatile Analysis Report**  
Page 2

Data File Name BNA11454.D  
Operator Skelton  
Date Acquired 17-Jan-06

Sample Name MB 01110601  
Misc Info MB 01110601  
Sample Multiplier 1

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifiers
92-87-5	Benzidine			not detected	50	0.98	10.00	ug/L
129-00-0	Pyrene			not detected	200	0.79	10.00	ug/L
85-68-7	Butylbenzylphthalate			not detected	100	0.86	10.00	ug/L
56-55-3	Benzo[a]anthracene			not detected	10	0.82	10.00	ug/L
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.31	10.00	ug/L
218-01-9	Chrysene			not detected	20	0.77	10.00	ug/L
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.28	10.00	ug/L
117-84-0	Di-n-octylphthalate			not detected	100	1.02	10.00	ug/L
205-99-2	Benzo[b]fluoranthene			not detected	10	0.98	10.00	ug/L
207-08-9	Benzo[k]fluoranthene			not detected	2	0.92	10.00	ug/L
50-32-8	Benzo[a]pyrene			not detected	20	0.71	10.00	ug/L
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	0.76	10.00	ug/L
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.76	10.00	ug/L
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.80	10.00	ug/L

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

**Qualifiers**

E= Value Exceeds Linear Range

D= Value from dilution

B= Compound in Related Blank

RL= Reporting Limit. The values between the MDL and RL are considered estimated.

MDL= Method Detection Limit

NLE= No Limit Established

R.T.=Retention Time

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MB-011106-01

Lab Name: FMETL Lab Code 13461

Project: 06-34880 Case No.: 60017 Location: UST SDG No.: \_\_\_\_\_

Matrix: (soil/water) WATER Lab Sample ID: MB 01110601

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA11454.D

Level: (low/med) LOW Date Received: 1/9/2006

% Moisture: \_\_\_\_\_ decanted: (Y/N) N Date Extracted: 1/11/2006

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/17/2006

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

## CONCENTRATION UNITS:

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

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

Data File Name **BNA11465.D**  
 Operator **Skelton**  
 Date Acquired **18-Jan-06**

Sample Name **6001704**  
 Misc Info **650C-GW**  
 Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	ug/L	Qualifiers
110-86-1	Pyridine			not detected	NLE	1.13	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.60	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	2.38	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.71	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	1.02	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.99	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.66	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.96	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.88	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.76	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.96	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.86	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.76	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.79	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.89	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.76	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.37	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.99	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	1.01	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.92	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.72	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.77	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.78	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.67	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.71	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	1.18	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.73	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.69	10.00	ug/L	
121-14-2	2,4-Dinitrotoluene			not detected	10	0.81	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.96	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.71	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.73	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.11	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.62	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.72	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.92	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.95	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.81	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	0.76	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.92	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	0.82	10.00	ug/L	

**Semi-Volatile Analysis Report**  
**Page 2**

Data File Name **BNA11465.D**  
Operator **Skelton**  
Date Acquired **18-Jan-06**

Sample Name **6001704**  
Misc Info **650C-GW**  
Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifiers
92-87-5	Benzidine			not detected	50	0.98	10.00	ug/L
129-00-0	Pyrene			not detected	200	0.79	10.00	ug/L
85-68-7	Butylbenzylphthalate			not detected	100	0.86	10.00	ug/L
56-55-3	Benzo[a]anthracene			not detected	10	0.82	10.00	ug/L
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.31	10.00	ug/L
218-01-9	Chrysene			not detected	20	0.77	10.00	ug/L
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.28	10.00	ug/L
117-84-0	Di-n-octylphthalate			not detected	100	1.02	10.00	ug/L
205-99-2	Benzo[b]fluoranthene			not detected	10	0.98	10.00	ug/L
207-08-9	Benzo[k]fluoranthene			not detected	2	0.92	10.00	ug/L
50-32-8	Benzo[a]pyrene			not detected	20	0.71	10.00	ug/L
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	0.76	10.00	ug/L
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.76	10.00	ug/L
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.80	10.00	ug/L

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

**Qualifiers**

E= Value Exceeds Linear Range

D= Value from dilution

B= Compound in Related Blank

RL= Reporting Limit. The values between the MDL and RL are considered estimated.

MDL= Method Detection Limit

NLE= No Limit Established

R.T.=Retention Time

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1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

650C-GW

Lab Name: FMETL Lab Code 13461  
Project: 06-34880 Case No.: 60017 Location: UST SDG No.: \_\_\_\_\_  
Matrix: (soil/water) WATER Lab Sample ID: 6001704  
Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA11465.D  
Level: (low/med) LOW Date Received: 1/9/2006  
% Moisture: \_\_\_\_\_ decanted: (Y/N) N Date Extracted: 1/11/2006  
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/18/2006  
Injection Volume: 1.0 (uL) Dilution Factor: 1.0  
GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

CONCENTRATION UNITS:

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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**TPHC**



## LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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

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

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

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

Laboratory Manager or Environmental Consultant's Signature

Date: 1 / 25 / 06



Laboratory Certification # 13461

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

000080

## Laboratory Authentication Statement

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



Daniel K. Wright  
Laboratory Manager

ATTACHMENT V

UST 651 File Review and Analyses



UNDERGROUND STORAGE TANK FILE REVIEW  
FORT MONMOUTH BRAC 05 FACILITY  
OCEANPORT, NEW JERSEY

Date: November 3, 2015 Review Performed By: Kent Friesen, Parsons

Site ID: **Bldg. 651** Registration ID: None

Recommended Status of Site: **Case Closed (no change)**

UST Probability (from May 2014 "Addendum 1 ECP UHOT Report"): **NFA**

Based on the file review, were there indications of a contaminant release? [ ] Yes [X] No

NJDEP Release No. or DICAR (If applicable): \_\_\_\_\_

Did NJDEP approve No Further Action (NFA) for this site? [ ] Yes [X] No [ ] Not Applicable

Tank Description: [X] Steel [ ] Fiberglass Size: 1080 gals. Contents: #2 Fuel Oil

[X] Residential [ ] Commercial/Industrial

Tank Removed? [X] Yes [ ] No If "yes," removal date: Unknown

Were closure soil samples taken? [X] Yes [ ] No Analyses: TPH

Comparison criteria: 5,100 mg/kg

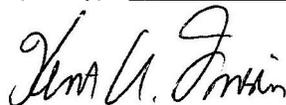
Were closure soil sample results less than comparison criteria? [X] Yes [ ] No

**Brief Narrative**

The Building 651 residential barracks building was demolished in 1980. A tank removal contractor excavated at the former building location on September 29 to 30, 1994 using historic aerial photographs and site maps to determine the approximate fuel oil tank location. Based on visual observations, it was determined that the former No. 2 fuel oil tank location was encountered, but that the tank had been previously removed and the excavation filled with old construction material. As stated in a Memorandum to File (attached), it was surmised that the tank was removed during building demolition, and the excavation was filled with demolition debris. Soils observed in the test pit excavation were visibly clean.

Sampling and analysis of soil was completed by FTMM in January 2006 at the former UST 651 site using a geoprobe; the resulting analytical data are attached. Three soil samples and one field duplicate were collected from the former UST location and analyzed by the Fort Monmouth Environmental Laboratory for total petroleum hydrocarbons (TPH). The soil sample results were all not detected (ND) for TPH. The results were less than 5,100 mg/kg for TPH, which is the current TPH remediation criterion. A single groundwater sample was also collected from the former tank location; results were ND for all volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs). Therefore, there are no indications of a significant release to soil or groundwater, and NFA is warranted at Site 651.

Recommendations (if any): Request NFA from NJDEP



Signed: \_\_\_\_\_

Kent A. Friesen, Parsons

MEMORANDUM TO FILE

FROM: EUGENE W. LESINSKI

DATE: 30 SEPTEMBER 1994

TO: FILE

SUBJ: UST REMOVAL IN THE 600 AREA

1. I directed the UST tank hunt in the 600 Area for Buildings 642 through 654 (13 tanks total) with CUTE, Inc. on 29-30 September 1994. Of 13 possible existing UST's, only 1 UST was found (Bldg 654). The following information germane:

- A) Buildings 642 thru 651: These tanks were determined to be a capacity of 1080 gallons (2 tank markers with this information were found in tank excavations). From old aerial photographs and site maps approximate tank locations were determined. Excavation revealed that these 10 tanks were removed and excavations were filled with old construction material. It was surmised that these tanks were removed during building demolition and filled with demolition debris. Excavations for BLDG's 642 thru 646 were visually observed to be with heavy organic material while BLDG's 647 thru 651 were visually clean. Readings from HNU showed no hits for petroluem hydrocarbons. Excavations for Buildings 642 thru 651 were back-filled late afternoon on the 29th of September 1994.
- B) Buildings 652 thru 654 were excavated on 30 September 1994 and only 1 UST was found (BLDG 654 - 1080 gallons). Excavations for 652 and 653 appeared visually to have heavy organic material. Building 654 appeared clean.

V/R

  
Eugene W. Lesinski

# FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS

PHONE: (732) 532-4359 FAX: (732) 532-6263

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



ANALYTICAL DATA REPORT  
Fort Monmouth Environmental Laboratory  
ENVIRONMENTAL DIVISION  
Fort Monmouth, New Jersey  
PROJECT: BLDG. 651

### Bldg. 651

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
651 C 7.0-7.5'	6001601	Soil	09-Jan-06 10:38	01/09/06
Duplicate	6001602	Soil	09-Jan-06 10:38	01/09/06
651 W 7.0-7.5'	6001603	Soil	09-Jan-06 11:06	01/09/06
651 E 7.0-7.5'	6001604	Soil	09-Jan-06 11:57	01/09/06
651 C GW	6001605	Aqueous	09-Jan-06 12:13	01/09/06
Trip Blank	6001606	Aqueous	09-Jan-06	01/09/06
Trip Blank	6001607	Methanol	09-Jan-06	01/09/06

### ANALYSIS:

FORT MONMOUTH ENVIRONMENTAL LAB  
VOA+15, BN+15, TPHC, % SOLIDS

ENCLOSURE:  
CHAIN OF CUSTODY  
RESULTS

  
Daniel Wright/Date  
Laboratory Director

The enclosed report relates only to the items tested. The report may not be reproduced, except in full, without written approval of the U.S. Army Fort Monmouth Directorate of Public Works.

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**CHAIN  
OF  
CUSTODY**

000001

# Fort Monmouth Environmental Testing Laboratory

## Chain of Custody Record

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

NJDEP Certification #13461

Customer: John McCarthy		Project No: 06-34880		Analysis Parameters		Comments:	
Phone: X2 6224		Location: 651 (Former AST)		VOH10		Remarks / Preservation Method	
Company: George Boyce IVS		Date	Time	Sample Type	# bottles		
LIMS/Work Order #	Sample Location						
44016 01	651C 70-75	1/9/06	1038	Soil	2		4421
02	Dupe		1038	Soil	2		4422
03	651W 70-75		1106	Soil	2		4423
04	651E 70-75		1157	Soil	2		4424
05	651C-COW		1213	AQ	4		
06	Trip		-	AQ Meth			4420
07	Trip		-				

Relinquished by (signature): <i>George Boyce</i>	Date/Time: 1/9/06 15:15	Received by (signature): <i>J. McCarthy</i>	Date/Time:
Relinquished by (signature):	Date/Time:	Received by (signature):	Date/Time:

Remarks: VOH10 on 25% > 1,000 ppm TPH

Report Type:  Full,  Reduced,  Standard,  Screen / non-certified,  EDD  
 Turnaround time:  Standard 3 wks,  Rush Days,  ASAP Verbal Hrs.

## SAMPLE RECEIPT FORM

Date Received: 1-9-06

Work Order ID#: 100016

Site/Proj. Name: Bldg 651 / UST

Cooler Temp (°C): 3.0

Received By: J. Cerqueira  
(Print name)

Sign: J. Cerqueira

### Check the appropriate box

- |   |   |  |   |
|---|---|--|---|
| 1. Did the samples come in a cooler?                          | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no            | <input type="checkbox"/> n/a            |
| 2. Were samples rec'd in good condition?                      | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no            |   |
| 3. Was the chain of custody filled out correctly and legibly? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no            |   |
| 4. Was the chain of custody signed in the appropriate place?  | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no            |   |
| 5. Did the labels agree with the chain of custody?            | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no            |   |
| 6. Were the correct containers/preservatives used?            | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no            |   |
| 7. Was a sufficient amount of sample supplied?                | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no            |   |
| 8. Were air bubbles present in VOA vials?                     | <input type="checkbox"/> yes            | <input checked="" type="checkbox"/> no | <input type="checkbox"/> n/a            |
| 9. Were samples received on ice?                              | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no            |   |
| 10. Were analyze-immediately tests perform within 15 minutes  | <input type="checkbox"/> yes            | <input type="checkbox"/> no            | <input checked="" type="checkbox"/> n/a |

**Fill out the following table for each sample bottle**

Lims ID	pH	Preservative	Sample ID	pH	Preservative
<u>100016/5-10-12</u>	<u>12</u>	<u>ACU</u>			

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Former UST 651 Sample Location GPS Positions**

US State Plane 1983 New Jersey ( NY East ) 2900  
NAD 1983 ( Conus)  
Geoid 96 ( Conus)

( In US Survey Feet)

<b>Position</b>	<b>Northing ( Y Coord.)</b>	<b>Easting ( X Coord.)</b>
651 E	539518.463	618074.312
651 C	539517.854	618069.588
651 W	539515.640	618065.777

# **METHOD SUMMARY**

000005

## **Methodology Summary**

### **EPA Method 624**

#### **Gas Chromatographic Determination of Volatiles in Water**

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

### **EPA SW-846 Method 8260**

#### **Gas Chromatographic Determination of Volatiles in Methanol**

A 10-gram volume of soil is combined with 25-ml of Methanol and surrogates in the field. Internal standards are added and the sample is placed on a purge and trap concentrator. The sample is purged and desorbed into a GC/MS system. Volatiles are identified and quantitated. The final concentration is calculated using soil weight, percent moisture and concentration.

### **EPA Method 625**

#### **Gas Chromatographic Determination of Semi-volatiles in Water**

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

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

Fifteen grams (15g) of soil is added to a 125-ml acid cleaned and solvent rinsed capped Erlenmeyer flask. 15g anhydrous Sodium Sulfate is added to dry the sample. Surrogate standard spiking solution is then added to the flask. Twenty-five ml of Methylene Chloride is added to the flask and it is secured on an orbital shaker table. The agitation rate is set to 400 rpm and the sample is shaken for 30 minutes. The flask is removed from the table and the particulate matter is allowed to settle. The extract is transferred to a Teflon capped vial. A second 25-ml of Methylene Chloride is added to the flask and shaken for an additional 30 minutes. The flask is again removed and allowed to settle. The extracts are combined in the vial then transferred to a 1-ml auto-sampler vial.

The extract is then injected directly into a GC-FID for analysis. The sample is analyzed for Petroleum Hydrocarbons covering a range of C8-C42, including Pristane and Phytane. Total Petroleum Hydrocarbon concentration is determined by integrating between 5 minutes and 22 minutes. The baseline is established by starting the integration after the end of the solvent peak and stopping after the last peak. The final concentration of Total Petroleum Hydrocarbons is calculated using percent moisture, sample weight and concentration.

000007

# **LABORATORY CHRONICLE**

000008

# Laboratory Chronicle

Lab ID: 60016

Site: UST  
Bldg. 651

	Date	Hold Time
<b>Date Sampled</b>	01/09/06	NA
<b>Receipt/Refrigeration</b>	01/09/06	NA
<b>Extractions</b>		
1. BN	01/11/06	7 days
2. TPHC	01/11/06	14 days
<b>Analyses</b>		
1. VOA	01/11,12/06	14 days
2. BN	01/17,18/06	40 days
3. TPHC	01/12/06	40 days

000009

**CONFORMANCE/  
NON-  
CONFORMANCE  
SUMMARY**

000010

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

Indicate  
Yes, No, N/A

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

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

  - a. VOA Fraction \_\_\_\_\_
  - b. B/N Fraction Terphenyl 40%
  - c. Acid Fraction \_\_\_\_\_

If not met, were the calculations checked and the results qualified as "estimated"? yes
  
9. Matrix Spike/Matrix Spike Duplicate Recoveries Meet Criteria (If not met, list those compounds and their recoveries, which fall outside the acceptable range) NO
  - a. VOA Fraction Naphthalene ms + MSD low
  - b. B/N Fraction Benzidine MSD low RPD high
  - c. Acid Fraction \_\_\_\_\_

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

Indicate  
Yes, No, N/A

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

yes

- a. VOA Fraction \_\_\_\_\_
- b. B/N Fraction \_\_\_\_\_
- c. Acid Fraction \_\_\_\_\_

11. Extraction Holding Time Met

yes

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

\_\_\_\_\_

12. Analysis Holding Time Met

yes

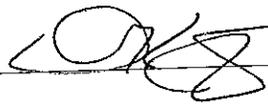
If not met, list the number of days exceeded for each sample: \_\_\_\_\_

\_\_\_\_\_

Additional Comments:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Laboratory Manager: \_\_\_\_\_



Date: 1-25-06

# TPHC CONFORMANCE/NON-CONFORMANCE SUMMARY REPORT

Indicate  
Yes, No, N/A

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

Additional comments: \_\_\_\_\_  
\_\_\_\_\_

Laboratory Manager:  Date: 1-25-06

**VOLATILE  
ORGANICS  
(AQUEOUS)**

000014

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY  
NJDEP CERTIFICATION # 13461

Definition of Qualifiers

- U:** The compound was analyzed for but not detected.
- B:** Indicates that the compound was found in the associated method blank as well as in the sample.
- J:** Indicates an estimated value. This flag is used:
- (1) When the mass spec and retention time data indicate the presence of a compound however the result is less than the MDL but greater than zero.
  - (2) When estimating the concentration of a tentatively identified compound (TIC), where a 1:1 response is assumed.
- D:** This flag is used to identify all compounds (target or TIC) that required a dilution.
- E:** Indicates the compound's concentration exceeds the calibration range of the instrument for that specific analysis.
- N:** This flag is only used for TICs. It indicates the presumptive evidence of a compound. For a generic characterization of a TIC, such as unknown hydrocarbon, the flag is not used.

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

Data File **VB021318.D**  
 Operator **Skelton**  
 Date Acquired **11 Jan 2006 8:48 pm**

Sample Name **MB 11Jan2006**  
 Field ID **MB 11Jan2006**  
 Sample Multiplier **1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.01 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	5	1.23 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	5.70 ug/L	10.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.21 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.26 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.20 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	nle	0.24 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.23 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	0.26 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	0.29 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.23 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.19 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	6000	0.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.24 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.21 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.24 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	50	0.24 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.26 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.20 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	70	0.22 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.20 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.24 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.24 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.23 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.26 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.24 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.23 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.22 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.35 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.26 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.25 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.28 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.20 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.43 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.28 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.27 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	0.43 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.21 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.21 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.27 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.45 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.36 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.35 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.45 ug/L	2.00 ug/L	

\*Results between MDL and RL are estimated values  
 \*Higher of PQL's and Interim Criteria as per N.J.A.C. 7:9C 07Nov2005

**Qualifiers**

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

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

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

MB 11Jan2006

Lab Name: FMETL NJDEP#: 13461  
Project: 0634880 Case No.: 60016 Location: 651 SDG No.: UST  
Matrix: (soil/water) WATER Lab Sample ID: MB 11Jan2006  
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB021318.D  
Level: (low/med) LOW Date Received: 1/9/2006  
% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 1/11/2006  
GC Column: RTX502 ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

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

Number TICs found: 1

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 000079-20-9	Acetic acid, methyl ester	12.47	4	JN

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

Data File VB021330.D  
 Operator Skelton  
 Date Acquired 12 Jan 2006 5:00 am

Sample Name 6001606  
 Field ID Trip Blank  
 Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
				not detected	5	2.01 ug/L	5.00 ug/L	
107028	Acrolein			not detected	5	1.23 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	100	5.70 ug/L	10.00 ug/L	
75650	tert-Butyl alcohol			not detected	70	0.21 ug/L	2.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	20000	0.26 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	1000	0.20 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	0.24 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	1	0.23 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	10	0.26 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	nle	0.29 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	2000	0.23 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	1	0.19 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	6000	0.36 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	0.24 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	3	0.21 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	100	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	50	0.24 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	7000	0.20 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	300	0.26 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	70	0.20 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.22 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	30	0.20 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	1	0.24 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.24 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	2	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	1	0.26 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.24 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.22 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	nle	0.23 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	1	0.22 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.35 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	1000	0.26 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1	0.25 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	3	0.28 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	1	0.20 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	nle	0.43 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	1	0.22 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	50	0.28 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	700	0.27 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	nle	0.43 ug/L	4.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	0.21 ug/L	2.00 ug/L	
95-47-6	o-Xylene			not detected	100	0.21 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	4	0.27 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	1	0.45 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	600	0.36 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	75	0.35 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	600	0.45 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected				

\*Results between MDL and RL are estimated values  
 \*Higher of PQL's and Interim Criteria as per N.J.A.C. 7:9C 07Nov2005

**Qualifiers**

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

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

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

**Trip Blank**

Lab Name: FMETL NJDEP#: 13461  
Project: 0634880 Case No.: 60016 Location: 651 SDG No.: UST  
Matrix: (soil/water) WATER Lab Sample ID: 6001606  
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB021330.D  
Level: (low/med) LOW Date Received: 1/9/2006  
% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 1/12/2006  
GC Column: RTX502 ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

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

Number TICs found: 1

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 000079-20-9	Acetic acid, methyl ester	12.48	3	JN

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

Data File VB021329.D  
 Operator Skelton  
 Date Acquired 12 Jan 2006 4:19 am

Sample Name 6001605  
 Field ID 651C  
 Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.01 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	5	1.23 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	5.70 ug/L	10.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.21 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.26 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.20 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	nle	0.24 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.23 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	0.26 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	0.29 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.23 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.19 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	6000	0.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.24 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.21 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.24 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	50	0.24 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.26 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.20 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	70	0.22 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.20 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.24 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.26 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.24 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.22 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.23 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.22 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.35 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.26 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.25 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.28 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.20 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.43 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.28 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.27 ug/L	2.00 ug/L	
1330-20-7	m-p-Xylenes			not detected	nle	0.43 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.21 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.21 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.27 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.45 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.36 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.35 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.45 ug/L	2.00 ug/L	

\*Results between MDL and RL are estimated values  
 \*Higher of PQLs and Interim Criteria as per N.J.A.C. 7:9C 07Nov2005

**Qualifiers**

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

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

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

651C

Lab Name: FMETL NJDEP#: 13461  
Project: 0634880 Case No.: 60016 Location: 651 SDG No.: UST  
Matrix: (soil/water) WATER Lab Sample ID: 6001605  
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB021329.D  
Level: (low/med) LOW Date Received: 1/9/2006  
% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 1/12/2006  
GC Column: RTX502 ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

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

Number TICs found: 1

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 000079-20-9	Acetic acid, methyl ester	12.48	4	JN

# **SEMI-VOLATILE ORGANICS**

000035

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

Data File Name BNA11454.D  
 Operator Skelton  
 Date Acquired 17-Jan-06

Sample Name MB 01110601  
 Misc Info MB 01110601  
 Sample Multiplier 1

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	ug/L	Qualifiers
110-86-1	Pyridine			not detected	NLE	1.13	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.60	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	2.38	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.71	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	1.02	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.99	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.66	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.96	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.88	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.76	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.96	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.86	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.76	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.79	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.89	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.76	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.37	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.99	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	1.01	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.92	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.72	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.77	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.78	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.67	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.71	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	1.18	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.73	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.69	10.00	ug/L	
121-14-2	2,4-Dinitrotoluene			not detected	10	0.81	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.96	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.71	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.73	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.11	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.62	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.72	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.92	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.95	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.81	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	0.76	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.92	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	0.82	10.00	ug/L	

## Semi-Volatile Analysis Report

### Page 2

Data File Name **BNA11454.D**  
 Operator **Skelton**  
 Date Acquired **17-Jan-06**

Sample Name **MB 01110601**  
 Misc Info **MB 01110601**  
 Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifiers
92-87-5	Benzidine			not detected	50	0.98	10.00	ug/L
129-00-0	Pyrene			not detected	200	0.79	10.00	ug/L
85-68-7	Butylbenzylphthalate			not detected	100	0.86	10.00	ug/L
56-55-3	Benzo[a]anthracene			not detected	10	0.82	10.00	ug/L
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.31	10.00	ug/L
218-01-9	Chrysene			not detected	20	0.77	10.00	ug/L
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.28	10.00	ug/L
117-84-0	Di-n-octylphthalate			not detected	100	1.02	10.00	ug/L
205-99-2	Benzo[b]fluoranthene			not detected	10	0.98	10.00	ug/L
207-08-9	Benzo[k]fluoranthene			not detected	2	0.92	10.00	ug/L
50-32-8	Benzo[a]pyrene			not detected	20	0.71	10.00	ug/L
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	0.76	10.00	ug/L
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.76	10.00	ug/L
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.80	10.00	ug/L

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

#### Qualifiers

E= Value Exceeds Linear Range  
 D= Value from dilution  
 B= Compound in Related Blank  
 RL= Reporting Limit. The values between the MDL and RL are considered estimated.

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

1F  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

**MB-011106-01**

Lab Name: FMETL Lab Code 13461  
Project: 06-34880 Case No.: 60016 Location: UST SDG No.: \_\_\_\_\_  
Matrix: (soil/water) WATER Lab Sample ID: MB 01110601  
Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA11454.D  
Level: (low/med) LOW Date Received: 1/9/2006  
% Moisture: \_\_\_\_\_ decanted: (Y/N) N Date Extracted: 1/11/2006  
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/17/2006  
Injection Volume: 1.0 (uL) Dilution Factor: 1.0  
GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

CONCENTRATION UNITS:

Number TICs found: 0

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

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

Data File Name **BNA11459.D**  
 Operator **Skelton**  
 Date Acquired **18-Jan-06**

Sample Name **6001605**  
 Misc Info **651C-GW**  
 Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	ug/L	Qualifiers
110-86-1	Pyridine			not detected	NLE	1.13	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.60	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	2.38	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.71	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	1.02	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.99	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.66	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.96	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.88	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.76	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.96	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.86	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.76	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.79	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.89	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.76	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.37	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.99	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	1.01	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.92	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.72	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.77	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.78	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.67	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.71	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	1.18	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.73	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.69	10.00	ug/L	
121-14-2	2,4-Dinitrotoluene			not detected	10	0.81	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.96	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.71	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.73	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.11	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.62	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.72	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.92	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.95	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.81	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	0.76	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.92	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	0.82	10.00	ug/L	

**Semi-Volatile Analysis Report**  
**Page 2**

Data File Name **BNA11459.D**  
Operator **Skelton**  
Date Acquired **18-Jan-06**

Sample Name **6001605**  
Misc Info **651C-GW**  
Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	ug/L	Qualifiers
92-87-5	Benzidine			not detected	50	0.98	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.79	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.86	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.82	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.31	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.77	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.28	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.02	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.98	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	0.92	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.71	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	0.76	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.76	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.80	10.00	ug/L	

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

**Qualifiers**

E= Value Exceeds Linear Range  
D= Value from dilution  
B= Compound in Related Blank  
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

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

1F  
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

651C-GW

Lab Name: FMETL Lab Code 13461  
Project: 06-34880 Case No.: 60016 Location: UST SDG No.: \_\_\_\_\_  
Matrix: (soil/water) WATER Lab Sample ID: 6001605  
Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA11459.D  
Level: (low/med) LOW Date Received: 1/9/2006  
% Moisture: \_\_\_\_\_ decanted: (Y/N) N Date Extracted: 1/11/2006  
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/18/2006  
Injection Volume: 1.0 (uL) Dilution Factor: 1.0  
GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

CONCENTRATION UNITS:

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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# TPHC

000060



## LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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

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

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

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

Laboratory Manager or Environmental Consultant's Signature \_\_\_\_\_  
Date: 1/25/06

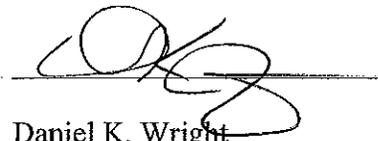
Laboratory Certification # 13461

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

000084

## Laboratory Authentication Statement

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



Daniel K. Wright  
Laboratory Manager

000085

ATTACHMENT W

UST 652 File Review and Analyses



UNDERGROUND STORAGE TANK FILE REVIEW  
FORT MONMOUTH BRAC 05 FACILITY  
OCEANPORT, NEW JERSEY

Date: November 4, 2015 Review Performed By: Kent Friesen, Parsons

Site ID: **Bldg. 652** Registration ID: None

Recommended Status of Site: **Case Closed (no change)**

UST Probability (from May 2014 "Addendum 1 ECP UHOT Report"): **High**

Based on the file review, were there indications of a contaminant release? [ ] Yes [X] No

NJDEP Release No. or DICAR (If applicable): \_\_\_\_\_

Did NJDEP approve No Further Action (NFA) for this site? [ ] Yes [X] No [ ] Not Applicable

Tank Description: [X] Steel [ ] Fiberglass Size: 1080 gals. Contents: #2 Fuel Oil

[X] Residential [ ] Commercial/Industrial

Tank Removed? [X] Yes [ ] No If "yes," removal date: Unknown

Were closure soil samples taken? [X] Yes [ ] No Analyses: TPH

Comparison criteria: 5,100 mg/kg

Were closure soil sample results less than comparison criteria? [X] Yes [ ] No

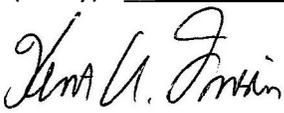
**Brief Narrative**

The Building 652 residential barracks building was demolished in 1978. A tank removal contractor excavated at the former building location on September 30, 1994 using historic aerial photographs and site maps to determine the approximate fuel oil tank location. Based on visual observations, it was determined that the former No. 2 fuel oil tank location was encountered, but that the tank had been previously removed and the excavation filled with old construction material. As stated in a Memorandum to File (attached), it was surmised that the tank was removed during building demolition, and the excavation was filled with demolition debris. "Heavy organic material" was observed in the test pit excavation.

Additional sampling of soil was completed by FTMM in July 1995 at the former UST 652 site, presumably using an excavator for test pit excavation; the resulting analytical data are attached. Field notes indicated that organic debris such as leaves and wood was encountered and removed from the excavation. Five soil samples were collected from the former UST location and analyzed by the Fort Monmouth Environmental Laboratory for total petroleum hydrocarbons (TPH). The soil sample results ranged from not detected (ND) to 248 mg/kg for TPH. The results were less than 5,100 mg/kg for TPH, which is the current TPH remediation criterion. Therefore, there are no indications of a significant release to soil or groundwater, and NFA is warranted at Site 652.

Since there was no tank encountered during test pit excavation in 1994, the UST Probability of "High" from the Addendum 1 ECP UHOT Report appears over-rated.

Recommendations (if any): Request NFA from NJDEP

Signed:   
\_\_\_\_\_

Kent A. Friesen, Parsons

MEMORANDUM TO FILE

FROM: EUGENE W. LESINSKI

DATE: 30 SEPTEMBER 1994

TO: FILE

SUBJ: UST REMOVAL IN THE 600 AREA

1. I directed the UST tank hunt in the 600 Area for Buildings 642 through 654 (13 tanks total) with CUTE, Inc. on 29-30 September 1994. Of 13 possible existing UST's, only 1 UST was found (Bldg 654). The following information germane:

- A) Buildings 642 thru 651: These tanks were determined to be a capacity of 1080 gallons (2 tank markers with this information were found in tank excavations). From old aerial photographs and site maps approximate tank locations were determined. Excavation revealed that these 10 tanks were removed and excavations were filled with old construction material. It was surmised that these tanks were removed during building demolition and filled with demolition debris. Excavations for BLDG's 642 thru 646 were visually observed to be with heavy organic material while BLDG's 647 thru 651 were visually clean. Readings from HNU showed no hits for petroluem hydrocarbons. Excavations for Buildings 642 thru 651 were back-filled late afternoon on the 29th of September 1994.
- B) Buildings 652 thru 654 were excavated on 30 September 1994 and only 1 UST was found (BLDG 654 - 1080 gallons). Excavations for 652 and 653 appeared visually to have heavy organic material. Building 654 appeared clean.

V/R

  
Eugene W. Lesinski

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

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

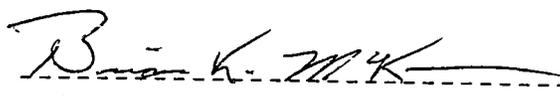
Lab. ID #: 1892.1-.5  
 Sample Rec'd: 07/26/95  
 Analysis Start: 07/26/95  
 Analysis Comp: 07/27/95

Analysis: 418.1 (TPH)  
 Matrix: Soil  
 Analyst: S. Hubbard  
 Ext. Meth: 3540A

NJDEPE UST Reg. #:  
 Closure #:  
 DICAR #:  
 Location #: Bldg. 652

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1892.1	Sample A, Center 6', OVA=22	86	155.	16.
1892.2	Sample B, So. Wall 5', OVA=ND	88	ND	16.
1892.3	Sample C, W. Wall 5', OVA=29	86	219.	16.
1892.4	Sample D, No. Wall 5', OVA=ND	90	114.	16.
1892.5	Sample E, E. Wall 5', OVA=34	85	248.	16.
M. Bl.	Method Blank	100	ND	3.3

Notes: ND = Not Detected, MDL = Method Detection Limit  
 \* = Silica Gel Added, NA = Not Applicable  
 1893.2S=112%, 1893.2SD=102%, RPD= 9.9%, 1893.2Dup=103% Check=111%  
 QC Limits: Recovery = 60% to 140% and RPD = 14.9% at 2 Std. Dev.

  
 Brian K. McKee  
 Laboratory Director

# NEW PARKING LOT

x

642

643

644

645

646

652

653

2 samples  
5/12/05  
5 samples  
5/15/05

SHERMILL ROAD

SHERMILL AVENUE

BOWLING ALLEY

ATTACHMENT X

UST 653 File Review and Analyses



UNDERGROUND STORAGE TANK FILE REVIEW  
 FORT MONMOUTH BRAC 05 FACILITY  
 OCEANPORT, NEW JERSEY

Date: November 4, 2015 Review Performed By: Kent Friesen, Parsons

Site ID: **Bldg. 653** Registration ID: None

Recommended Status of Site: **Case Closed (no change)**

UST Probability (from May 2014 "Addendum 1 ECP UHOT Report"): **NFA**

Based on the file review, were there indications of a contaminant release?  Yes  No

NJDEP Release No. or DICAR (If applicable): \_\_\_\_\_

Did NJDEP approve No Further Action (NFA) for this site?  Yes  No  Not Applicable

Tank Description:  Steel  Fiberglass Size: 1080 gals. Contents: #2 Fuel Oil

Residential  Commercial/Industrial

Tank Removed?  Yes  No If "yes," removal date: Unknown

Were closure soil samples taken?  Yes  No Analyses: TPH

Comparison criteria: 5,100 mg/kg

Were closure soil sample results less than comparison criteria?  Yes  No

**Brief Narrative**

The Building 653 residential barracks building was demolished in 1978. A tank removal contractor excavated at the former building location on September 30, 1994 using historic aerial photographs and site maps to determine the approximate fuel oil tank location. Based on visual observations, it was determined that the former No. 2 fuel oil tank location was encountered, but that the tank had been previously removed and the excavation filled with old construction material. As stated in a Memorandum to File (attached), it was surmised that the tank was removed during building demolition, and the excavation was filled with demolition debris. "Heavy organic material" was observed in the test pit excavation.

Additional sampling of soil was completed by FTMM in July 1995 at the former UST 653 site, presumably using an excavator for test pit excavation; the resulting analytical data are attached. On July 18, 1995, approximately 5 cubic yards of contaminated soil was removed from the excavation. Five soil samples were collected from the former UST location on July 26, 1995 and analyzed by the Fort Monmouth Environmental Laboratory for total petroleum hydrocarbons (TPH). The soil sample results ranged from 167 mg/kg to 373 mg/kg for TPH in the side wall samples, and 18,800 mg/kg for TPH in the center sample from the excavation. Two soil samples collected on August 2, 1995 from the center of the excavation were analyzed for TPH, and results ranged from 209 to 330 mg/kg, indicating that additional contaminated soil was removed from the center of the excavation. An additional soil sample was also collected on August 8, 1995 and analyzed for volatile organic compounds (VOCs); results were ND for all analytes. The final results were less than 5,100 mg/kg for TPH, which is the current TPH remediation criterion. Therefore, there are no indications of a significant release to soil or groundwater, and NFA is warranted at Site 653.

Recommendations (if any): Request NFA from NJDEP

Signed:   
 Kent A. Friesen, Parsons

MEMORANDUM TO FILE

FROM: EUGENE W. LESINSKI

DATE: 30 SEPTEMBER 1994

TO: FILE

SUBJ: UST REMOVAL IN THE 600 AREA

1. I directed the UST tank hunt in the 600 Area for Buildings 642 through 654 (13 tanks total) with CUTE, Inc. on 29-30 September 1994. Of 13 possible existing UST's, only 1 UST was found (Bldg 654). The following information germane:

- A) Buildings 642 thru 651: These tanks were determined to be a capacity of 1080 gallons (2 tank markers with this information were found in tank excavations). From old aerial photographs and site maps approximate tank locations were determined. Excavation revealed that these 10 tanks were removed and excavations were filled with old construction material. It was surmised that these tanks were removed during building demolition and filled with demolition debris. Excavations for BLDG's 642 thru 646 were visually observed to be with heavy organic material while BLDG's 647 thru 651 were visually clean. Readings from HNU showed no hits for petroleum hydrocarbons. Excavations for Buildings 642 thru 651 were back-filled late afternoon on the 29th of September 1994.
- B) Buildings 652 thru 654 were excavated on 30 September 1994 and only 1 UST was found (BLDG 654 - 1080 gallons). Excavations for 652 and 653 appeared visually to have heavy organic material. Building 654 appeared clean.

V/R

  
Eugene W. Lesinski

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

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

Lab. ID #: 1893.1-.5  
 Sample Rec'd: 07/26/95  
 Analysis Start: 07/26/95  
 Analysis Comp: 07/27/95

Analysis: 418.1 (TPH)  
 Matrix: Soil  
 Analyst: S. Hubbard  
 Ext. Meth: 3540A

NJDEPE UST Reg.#:  
 Closure #:  
 DICAR #:  
 Location #: Bldg. 653

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1893.1	Sample A, Center 7'-8', OVA=ND	87	18800.	48.
1893.2	Sample B, So. Wall 6', OVA=ND	89	193.	16.
1893.3	Sample C, W. Wall 6', OVA=ND	95	373.	16.
1893.4	Sample D, No. Wall 6', OVA=ND	90	167.	16.
1893.5	Sample E, E. Wall 6', OVA=ND	85	182.	16.
M. Bl.	Method Blank	100	ND	3.3

Notes: ND = Not Detected, MDL = Method Detection Limit  
 \* = Silica Gel Added, NA = Not Applicable  
 1893.2S=112%, 1893.2SD=102%, RPD= 9.9%, 1893.2Dup=103% Check=111%  
 QC Limits: Recovery = 60% to 140% and RPD = 14.9% at 2 Std. Dev.

  
 -----  
 Brian K. McKee  
 Laboratory Director



# SERV-AIR, INC. AN E-SYSTEMS CO.

P.O. #:

Chain of Custody

Project #:		Sampler: Kerry Green		Date / Time: 7/26/95 0736		Analysis Parameters		Start:	
Customer: DPW Envir.		Site Name: 653				MURKIN 965		Finish:	
Phone:		Customer Sample Location/ID Number		Sample Matrix		# of Bottles		Preservation Method	
Lab Sample ID Number	Date/Time							Remarks	
1893.1	7/26/95 08:59	A Center @ 7-8'	Soil	1					
.2	08:55	B So. wall @ 6' d	↓	↓					
.3	08:59	C W. wall @ 6' d	↓	↓					
.4	09:05	D No. wall @ 6' d	↓	↓					
.5	09:10	E E. wall @ 6' d	↓	↓					
									OUA-AS1903
									CALI 1300
									0 AIR = 0
									95 PPM 244
									Select
									BKm
									7/28/95
Relinquished By (signature)		Date / Time		Received By (signature)		Shipped By:			
Relinquished By (signature)		Date / Time		Received for Lab by (signature):		Date / Time			
Kerry Green		7/28/95 11:30							

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

Environmental Laboratory \* Map drawn on back

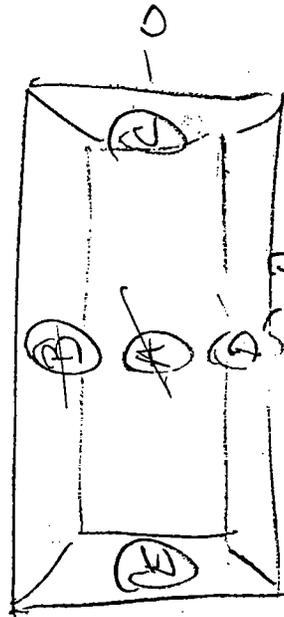
8150  
9110

14x14x6'

Telegraph RD

Parking  
Lot

652



653

← 50' →



# NEW PARKING LOT

642

643

644

645

646

652

653

2 samples  
5/19/15  
7/22/15  
5 samples  
5/19/15

~~SHERMILL ROAD~~

SHERMILL AVENUE

(BOWLING ALLEY)

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.

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: None

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.

Project #1893

  
Brian K. McKee  
Laboratory Manager

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

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

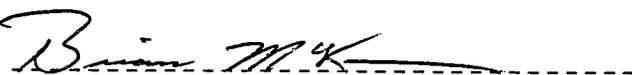
Lab. ID #: 1902.1-.2  
 Sample Rec'd: 08/02/95  
 Analysis Start: 08/02/95  
 Analysis Comp: 08/03/95

Analysis: 418.1 (TPH)  
 Matrix: Soil  
 Analyst: S. Hubbard  
 Ext. Meth: 3540A

NJDEPE UST Reg. #:  
 Closure #:  
 DICAR #:  
 Location #: Bldg. 653

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1902.1	A Center, Right 8'-9' OVA=ND	83	209.	16.
1902.2	B Center, Left 8'-9' OVA=ND	81	330.	16.
M. Bl.	Method Blank	100	ND	3.3

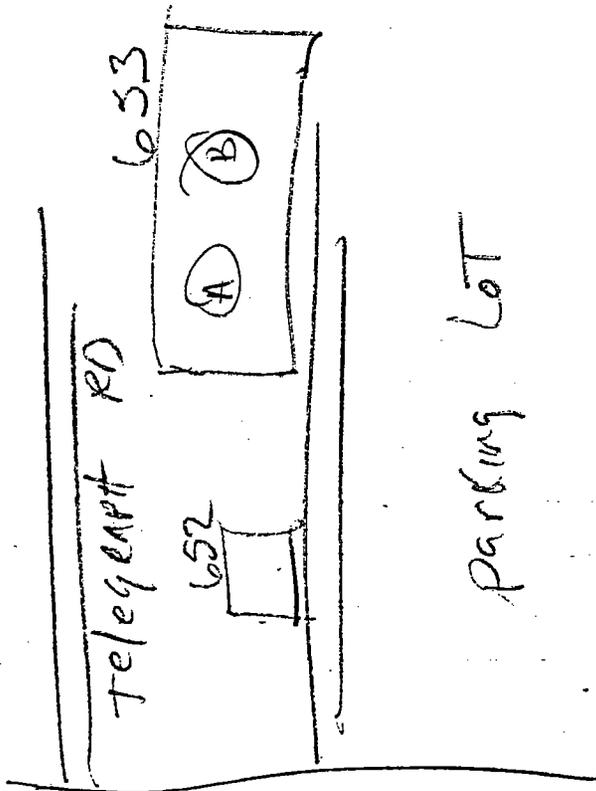
Notes: ND = Not Detected, MDL = Method Detection Limit  
 \* = Silica Gel Added, NA = Not Applicable  
 1900.2S=116%, 1900.2SD=114%, RPD= 1.2%, 1900.2Dup=133% Check=108%  
 QC Limits: Recovery = 60% to 140% and RPD = 14.9% at 2 Std. Dev.

  
 Brian K. McKee  
 Laboratory Director





14x14x9'  
1:20  
1:25



Parking Lot



PHC Conformance/Non-conformance Summary Report

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

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.

Project #1902

Brian K. McKee  
Brian K. McKee  
Laboratory Manager

August 30, 1995

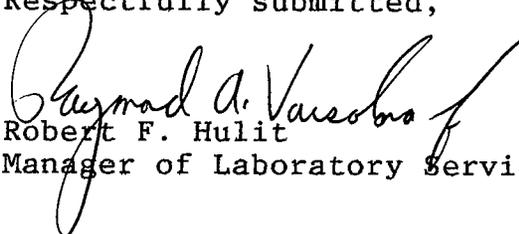
U.S. ARMY  
P.O. Box 360  
Fort Monmouth, New Jersey 07703  
Attn: Charles Appleby

Analytical Report: 95-08-0257      Project: BLDG 653

This technical report contains the analytical results of one (1) sample submitted to Analab on August 11, 1995. The following analysis was requested:

VOLATILE ORGANICS (8240) (1)  
LIBRARY SEARCHES (1)

Respectfully submitted,

  
Robert F. Hulit  
Manager of Laboratory Services

RH/rd

## LABORATORY DELIVERABLES CHECKLIST

95-08-0257

THIS FORM HAS BEEN COMPLETED BY THE LABORATORY AND IS AVAILABLE TO THE ENVIRONMENTAL CONSULTANT TO ACCOMPANY ALL DATA SUBMISSIONS

The following laboratory deliverables are included in this Analytical Report. Any deviations from the accepted methodology and procedures, or performance values outside acceptable ranges are summarized in the Non-Conformance Summary.

- |       |   |                                     |
|-------|---|-------------------------------------|
| I.    | Report Cover Page, Laboratory Certification and Field Sample to Lab Sample ID Cross Reference | <input checked="" type="checkbox"/> |
| II.   | Table of Contents   | <input checked="" type="checkbox"/> |
| III.  | Chain of Custody Documents  | <input checked="" type="checkbox"/> |
| IV.   | Methodology Summaries   | <input checked="" type="checkbox"/> |
| V.    | Laboratory Chronicle and Hold Time Checks   | <input checked="" type="checkbox"/> |
| VI.   | Non-Conformance Summary   | <input checked="" type="checkbox"/> |
| VII.  | Tabulated Analytical Results  | <input checked="" type="checkbox"/> |
| VIII. | Initial and Continuing Calibration Information  | <input checked="" type="checkbox"/> |
| IX.   | Tune and Internal Standard Area Summaries (GC/MS)   | <input checked="" type="checkbox"/> |
| X.    | Quality Control Summary Reports   | <input checked="" type="checkbox"/> |
| XI.   | Surrogate Recovery Summary  | <input checked="" type="checkbox"/> |
| XII.  | Raw Data Chromatograms, Blank, QCs and Samples  | <input checked="" type="checkbox"/> |
| XIII. | Subsidiary Information (Subcontract if applicable)  | <u>N/A</u>                          |

  
\_\_\_\_\_  
Laboratory Manager or QA/QC Coordinator

09/11/95  
Date

## ANALYTICAL DATA REPORT PACKAGE

U.S. ARMY

P.O. BOX 360

FORT MONMOUTH, NJ 07703

CLIENT PROJECT: BLDG 653

SAMPLE(s) RECEIVED DATE: 08/11/95

PROJECT: 950089

<u>SAMPLE ID</u>	<u>SAMPLE DESCRIPTION/LOCATION</u>	<u>SAMPLE DATE/TIME</u>
95-08-0257-001	1906.1	8/8/95 ; 0905

### LABORATORY CERTIFICATION NUMBERS

NJDEP ID:12531 MADEQE ID:NJ302 VADGS ID:00007 NYDOH:11104

NHDES ID:250492-A,B CTDHS ID:PH-0649 MDDHMH ID:186

  
\_\_\_\_\_  
DEANNE SLOUGHFY/FRED KHALIL  
QUALITY CONTROL COORDINATOR

  
\_\_\_\_\_  
ROBERT F. HULIT  
MANAGER OF LABORATORY SERVICES

### COMMENTS:

NA = NOT AVAILABLE FROM CHAIN OF CUSTODY / NOT APPLICABLE

# U.S. ARMY FORT MONMOUTH

25-08-257  
Chain of Custody  
NOTE

P.O. #: ANACAS 9500 89

DICAR

Project #	Customer	Site Name	Customer Sample Location/ID Number	Sample Matrix	# of Bottles	Date / Time	Analysis Parameters	Date / Time	Start	Finish	Preservation Method	Remarks
95072708379	C. Amleby	Kerey Green	A Bottom C 8'	SOL	1	8/8/95 9:00	UVA HIS 500M EXTRACTOR	9:00	9:00	9:25		
	SELF-M-PW-EV	Bldg # 653	FIELD BLANK	AA	1	8/8/95 9:04						1-402 MURKONLY
												UVA #1
												UVA CALIB 8/8/95 08:30
												GH4 = 95
												0 AIR = 0
												Select 0.6
												KG

Relinquished By (signature)	Date / Time	Received By (signature)	Date / Time
<i>[Signature]</i>	8/8/95 9:20	<i>[Signature]</i>	8/11/95
Relinquished By (signature)	Date / Time	Received for Lab by (signature)	Date / Time

Temp	Cool	Yes	No
Samples Intact	Yes	No	No
Properly Preserved	Yes	No	No

NOTE: FIELD BLANK IS THE SAME FOUR PART CHAINS

DATE: 8/8/95 9:20

RECEIVED BY: PAUSM

DATE: 8/11/95

RECEIVED FOR LAB BY: BEST TA

DATE: 8/11/95

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

# CHANGE OF WORK ORDER

Date of Contact

8/11/95

ANALab PROJECT No.

95-08-257

Client Name

U.S. Army

Contact Person

REMARKS

VOA +15 by 8240. Please run sample #1 for 8240 +15 only. Please cancel Sample #2. Please report Sample #2 results (field blank) from 95-08-256 in 95-08-257 Hard copy.

## CHANGES REQUESTED

ANALAB SAMPLE ID	CLIENT ID	TEST CHANGE REQUESTED /ADDED /DELETED
1		8240 +15
		003

Person Completing this form:

H. O'Keefe

DATE:

8/15/95

THIS DOCUMENT IS ENCLOSED TO REFLECT ANY CHANGES THAT HAVE OCCURRED SINCE THE ORIGINAL CHANGE OF CUSTODY WAS SIGNED.



**METHOD SUMMARIES**

## METHODOLOGY SUMMARY

<u>PARAMETER</u>	<u>REFERENCES</u>
Alumina Column Cleanup and Separation of Petroleum Wastes	<u>Test Methods for Evaluating Solid Wastes: Vol. 1B, USEPA SW-846, 1986, Method 3611.</u>
Volatile Organics (GC/MS)	<u>Test Methods for Evaluating Solid Wastes: Vol. 1B, USEPA SW-846, 1986, Method 8240.</u> <u>Test Methods for Evaluating Solid Wastes Physical/Chemical Methods: 2nd USEPA SW-846, 1982, Methods 5020 and 5030.</u> Title 40 CFR Part 136 " Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act, Method 624", July 1, USEPA Contact Laboratory Program (CLP) Statement of Work for Organics Analysis, 9/88.
Semi-Volatile Organics (GC/MS)	<u>Test Methods for Evaluating Solid Wastes Physical/Chemical Methods: 2nd d., USEPA SW-846, 1982, Method 8270.</u> <u>Test Methods for Evaluating Solid Wastes: Vol. 1B, USEPA SW-846, 1986, Method 3550.</u> Title 40 CFR Part 136 " Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act, Method 625", July 1, 1988. USEPA Contact Laboratory Program (CLP) Statement of Work for Organic Analysis, 9/88.
Volatile Aromatics (GC)	<u>Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater: USEPA 600/4-81-057, 1981, Method 503.1.</u> Title 40 CFR Part 136 " Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act, Method 602", July 1, 1988.
TCLP (Toxicity Characteristics Leachate Procedure)	Title 40 CFR Part 261 "Hazardous Waste Management System; Identification and Listing of Hazardous Waste; Toxicity Characteristics Revisions; Final Rule", June 29, 1990.
Percent Solids	<u>Methods for Chemical Analysis of Water and Wastes; USEPA 600/4-79-200, 1983, Method 160.3.</u> Standard Methods for the Examination of Water and Wastewater, 16th ed., pp. 92-94, Method 209A, (1985).

**ANALab inc.**

205 Campus Plaza 1, Raritan Center, Edison, NJ 08837, Tel: (908) 225-4111, Fax: (908) 225-4110

**LABORATORY CHRONICLE**

007

## SAMPLE MANAGEMENT LABORATORY CHRONICLE

CLIENT NAME: US Army Ft. MonmouthLAB PROJECT ID: 95-08-257CLIENT PROJECT: BLDG-653SAMPLE TEMP ON RECEIPT: coolRAS #: Heating oil dischargeSAMPLE RECEIVE DATE: 8/11/95SAMPLE DATE(S): 8/8/95ANALAB COOLER ID #: N/ASAMPLE MATRIX: H2O, SOIL,

CONDITION OF SAMPLES RECEIVED BY LAB:	NA	YES	NO	COMMENTS
Cooler Seal Intact . . . . .	NA	YES	<input checked="" type="radio"/> NO	
Samples Received Cool (2-6'C) . . . . .	NA	<input checked="" type="radio"/> YES	NO	<u>no Temp uabl</u>
Samples Received Intact . . . . .		<input checked="" type="radio"/> YES	NO	
Sample Labels Match Chain of Custody. . . . .		<input checked="" type="radio"/> YES	NO	
VOAs HCL Preserved as per Label or Custody .	NA	<input checked="" type="radio"/> YES	NO	
VOAs w/out Bubbles, Septa TFE Side Down . .	NA	YES	<input checked="" type="radio"/> NO	<u>Sample 002 Has Bubbles</u>
Samples Delivered via ANALAB PICK UP. . . .	NA	<input checked="" type="radio"/> YES	NO	
Samples Delivered via CLIENT DROP OFF . . .	NA	YES	<input checked="" type="radio"/> NO	
Airbill # Present, if by Common Carrier. . .	NA	YES	<input checked="" type="radio"/> NO	
Traffic Reports Present, if applicable . . .	NA	YES	<input checked="" type="radio"/> NO	
Subcontract Analysis Required (Sub COC). . .		YES	<input checked="" type="radio"/> NO	

### \*PRESERVATION CHECKS PERFORMED FOR AQUEOUS SAMPLES NEEDING PH ADJUSTMENT\*

(N/A) = IF NOT APPLICABLE

LAB SAMPLE	FRACTION	PH MEASURED	OK	COMMENTS BY SM ON RECEIPT
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Note: NA = Not Applicable or Not Available from Chain of Custody  
Temperature taken on receipt from Temperature Surrogate Vial

[Signature]  
Sample Custodian Signature  
8/11/95  
Date

**CASE NARRATIVE / NONCONFORMANCE SUMMARY**

95-08-256<sup>2</sup>-0257

GC/MS ANALYSIS CONFORMANCE/ NON-CONFORMANCE SUMMARY

	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	_____	_____NA
3. GC/MS Tune 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 vinyl chloride 46.6870D	_____✓	_____
b. System Performance Check Compounds in CC C7E2094	_____	_____✓
6. Blank Free of Contamination, If Not, then list the Compounds and Concentration in each	_____✓	_____
a. VOA Fraction <u>Aqueous blk &gt;X2027 4-methyl-2-pentanone</u>		
b. <del>B/N Fraction</del>		
c. <del>Acid Fraction</del>		
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" ?		
	_____	_____
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 _____		

GC/MS ANALYSIS CONFORMANCE/NONCONFORMANCE SUMMARY (CONTINUED)

NO YES

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

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

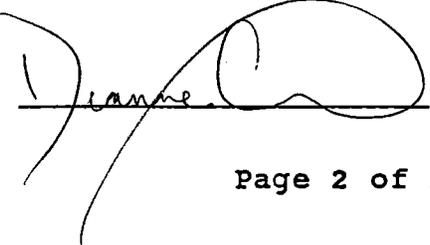
10. Extraction Holding Time Met          N/A  

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 \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

QA Coordinator(s) :   Jeanne   

Date:   09/11/95

**TABULATED ANALYTICAL RESULTS**

**GC/MS VOLATILE ORGANICS**

**ANALYTICAL REPORT FLAGS:**

- U** . Compound was analyzed but not detected. The number proceeding the analytical flag "U" is the minimum attainable detection limit for the sample.
- J** Compound was detected but below the Method Detected Limits (MDL). Quantitation is approximate.
- B** Compound was found to be present in the Method Blank.
- F** Compound concentration exceeded the calibration range of the GC/MS instrument. Secondary dilution was required.
- D** Compound was identified in the analysis at a secondary dilution factor.

BMDL Compound was detected but below the Method Detection Limit (MDL). Quantitation is approximate.

Compounds detected for Soil/Solid Analysis are reported on a dry weight basis.

## Method 8240 Volatile Organics By GC/MS - Non-Aqueous Matrix

CLIENT : U.S. ARMY  
 SAMPLE ID: 1906.1  
 PROJECT: BLDG 653  
 SAMPLE VOL. : 5.0GM  
 DATA FILE : >A1303  
 EXTRACT/DATE : N/A  
 NJDEP LAB ID : 12531

LAB SAMPLE ID : 95-08-257-1  
 DATE SAMPLED: 8/8/95  
 DATE RECEIVED: 08/11/95  
 DATE ANALYZED: 08/16/95  
 DIL. FACT : 1.00  
 ANALYST: JK/MRP

CAS #	COMPOUND	UG/KG	Q	MDL
74-87-3	CHLOROMETHANE	U		13
74-83-9	BROMOMETHANE	U		13
75-01-4	VINYL CHLORIDE	U		13
75-00-3	CHLOROETHANE	U		13
75-09-2	METHYLENE CHLORIDE	U		7
67-64-1	ACETONE	U		130
75-15-0	CARBON DISULFIDE	U		7
75-35-4	1,1-DICHLOROETHENE	U		7
75-34-3	1,1-DICHLOROETHANE	U		7
156-60-5	TRANS-1,2-DICHLOROETHENE	U		7
67-66-3	CHLOROFORM	U		7
107-06-2	1,2-DICHLOROETHANE	U		7
78-93-3	2-BUTANONE	U		130
71-55-6	1,1,1-TRICHLOROETHANE	U		7
56-23-5	CARBON TETRACHLORIDE	U		7
108-05-4	VINYL ACETATE	U		64
75-27-4	BROMODICHLOROMETHANE	U		7
78-87-5	1,2-DICHLOROPROPANE	U		7
79-01-6	TRICHLOROETHENE	U		7
71-43-2	BENZENE	U		7
10061-015	CIS-1,3-DICHLOROPROPENE	U		7
124-48-1	DIBROMOCHLOROMETHANE	U		7
10061-026	TRANS-1,3-DICHLOROPROPENE	U		7
79-00-5	1,1,2-TRICHLOROETHANE	U		7
75-25-2	BROMOFORM	U		7
108-10-1	4-METHYL-2-PENTANONE	U		64
591-78-6	2-HEXANONE	U		64
79-34-5	1,1,2,2-TETRACHLOROETHANE	U		7
127-18-4	TETRACHLOROETHENE	U		7
108-88-3	TOLUENE	U		7
108-90-7	CHLOROBENZENE	U		7
100-41-4	ETHYLBENZENE	U		7
100-42-5	STYRENE	U		7
95-47-6	O-XYLENE	U		7
1330-20-7	M/P-XYLENE	U		7

### QUALIFIERS

J Indicates detected below MDL, Estimated Value  
 U Indicates compound not detected  
 B Indicates compound also present in blank  
 E Exceeds Calibration Range, Estimated Value



## Method 8240 Volatile Organics By GC/MS - Aqueous Matrix

CLIENT : U.S. ARMY  
 SAMPLE ID: 1906.3  
 PROJECT: BLDG 644  
 SAMPLE VOL. : 5.0ML  
 DATA FILE : >E2106  
 EXTRACT/DATE : N/A  
 NJDEP LAB ID : 12531

LAB SAMPLE ID : 95-08-256-2  
 DATE SAMPLED: 8/8/95  
 DATE RECEIVED: 08/11/95  
 DATE ANALYZED: 08/14/95  
 DIL. FACT : 1.00  
 ANALYST: SR/MRP

CAS #	COMPOUND	UG/L	Q	MDL
74-87-3	CHLOROMETHANE	U		10
74-83-9	BROMOMETHANE	U		10
75-01-4	VINYL CHLORIDE	U		10
75-00-3	CHLOROETHANE	U		10
75-09-2	METHYLENE CHLORIDE	2.9	J	5
67-64-1	ACETONE	U		100
75-15-0	CARBON DISULFIDE	U		5
75-35-4	1,1-DICHLOROETHENE	U		5
75-34-3	1,1-DICHLOROETHANE	U		5
540-59-0	CIS/TRANS-1,2-DICHLOROETHENE	U		5
67-66-3	CHLOROFORM	U		5
107-06-2	1,2-DICHLOROETHANE	U		5
78-93-3	2-BUTANONE	U		100
71-55-6	1,1,1-TRICHLOROETHANE	U		5
56-23-5	CARBON TETRACHLORIDE	U		5
108-05-4	VINYL ACETATE	U		50
75-27-4	BROMODICHLOROMETHANE	U		5
78-87-5	1,2-DICHLOROPROPANE	U		5
79-01-6	TRICHLOROETHENE	U		5
71-43-2	BENZENE	U		5
10061-015	CIS-1,3-DICHLOROPROPENE	U		5
124-48-1	DIBROMOCHLOROMETHANE	U		5
10061-026	TRANS-1,3-DICHLOROPROPENE	U		5
79-00-5	1,1,2-TRICHLOROETHANE	U		5
75-25-2	BROMOFORM	U		5
108-10-1	4-METHYL-2-PENTANONE	U		50
591-78-6	2-HEXANONE	U		50
79-34-5	1,1,2,2-TETRACHLOROETHANE	U		5
127-18-4	TETRACHLOROETHENE	U		5
108-88-3	TOLUENE	U		5
108-90-7	CHLOROBENZENE	U		5
100-41-4	ETHYLBENZENE	U		5
100-42-5	STYRENE	U		5
108-38-3	M-XYLENE	U		5
1330-20-7	O/P-XYLENE	U		5

### QUALIFIERS

J Indicates detected below MDL, Estimated Value  
 U Indicates compound not detected  
 B Indicates compound also present in blank  
 E Exceeds Calibration Range, Estimated Value



**TABULATED ANALYTICAL RESULTS**

**WET CHEMISTRY**

**ANALYTICAL REPORT  
PERCENT SOLIDS**

CLIENT: U.S. ARMY  
CLIENT PROJECT: BLDG 653  
REPORT DATE : SEPT 11 1995  
PROJECT RECEIPT DATE : 08/11/95

PROJECT: 95-08-0257  
ANALYZED BY: SR

<u>CLIENT ID</u>	<u>LAB ID</u>	<u>RESULTS</u>	<u>ANALYSIS DATE</u>
1906.1	001	77.6	8/17/95
wc115			

END ANALYTICAL REPORT



ATTACHMENT Y

UST 654 File Review and Analyses



UNDERGROUND STORAGE TANK FILE REVIEW  
FORT MONMOUTH BRAC 05 FACILITY  
OCEANPORT, NEW JERSEY

Date: November 6, 2015 Review Performed By: Kent Friesen, Parsons

Site ID: **Bldg. 654** Registration ID: None

Recommended Status of Site: **Case Closed (no change)**

UST Probability (from May 2014 "Addendum 1 ECP UHOT Report"): **NFA**

Based on the file review, were there indications of a contaminant release? [ ] Yes [X] No

NJDEP Release No. or DICAR (If applicable): \_\_\_\_\_

Did NJDEP approve No Further Action (NFA) for this site? [ ] Yes [X] No [ ] Not Applicable

Tank Description: [X] Steel [ ] Fiberglass Size: 1080 gals. Contents: #2 Fuel Oil

[X] Residential [ ] Commercial/Industrial

Tank Removed? [X] Yes [ ] No If "yes," removal date: 9/30/1994

Were closure soil samples taken? [X] Yes [ ] No Analyses: TPH

Comparison criteria: 5,100 mg/kg

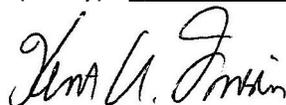
Were closure soil sample results less than comparison criteria? [X] Yes [ ] No

**Brief Narrative**

The Building 654 residential barracks building was demolished, presumably in the 1980's. A tank removal contractor excavated at the former building location on September 30, 1994 using historic aerial photographs and site maps to determine the approximate fuel oil tank location, and a 1080 gallon UST was removed. Soils observed in the test pit excavation were visibly clean.

Sampling and analysis of soil was completed by FTMM in November 1994 from the tank excavation; the resulting analytical data are attached. Five soil samples and one field duplicate were collected from the former UST location and analyzed by the Fort Monmouth Environmental Laboratory for total petroleum hydrocarbons (TPH). The soil sample results ranged from 24.5 to 82.1 mg/kg of TPH. The results were less than 5,100 mg/kg for TPH, which is the current TPH remediation criterion. Therefore, there are no indications of a significant release to soil or groundwater, and NFA is warranted at Site 654.

Recommendations (if any): Request NFA from NJDEP



Signed: \_\_\_\_\_

Kent A. Friesen, Parsons

MEMORANDUM TO FILE

FROM: EUGENE W. LESINSKI

DATE: 30 SEPTEMBER 1994

TO: FILE

SUBJ: UST REMOVAL IN THE 600 AREA

1. I directed the UST tank hunt in the 600 Area for Buildings 642 through 654 (13 tanks total) with CUTE, Inc. on 29-30 September 1994. Of 13 possible existing UST's, only 1 UST was found (Bldg 654). The following information germane:

- A) Buildings 642 thru 651: These tanks were determined to be a capacity of 1080 gallons (2 tank markers with this information were found in tank excavations). From old aerial photographs and site maps approximate tank locations were determined. Excavation revealed that these 10 tanks were removed and excavations were filled with old construction material. It was surmised that these tanks were removed during building demolition and filled with demolition debris. Excavations for BLDG's 642 thru 646 were visually observed to be with heavy organic material while BLDG's 647 thru 651 were visually clean. Readings from HNU showed no hits for petroleum hydrocarbons. Excavations for Buildings 642 thru 651 were back-filled late afternoon on the 29th of September 1994.
- B) Buildings 652 thru 654 were excavated on 30 September 1994 and only 1 UST was found (BLDG 654 - 1080 gallons). Excavations for 652 and 653 appeared visually to have heavy organic material. Building 654 appeared clean.

V/R

  
Eugene W. Lesinski

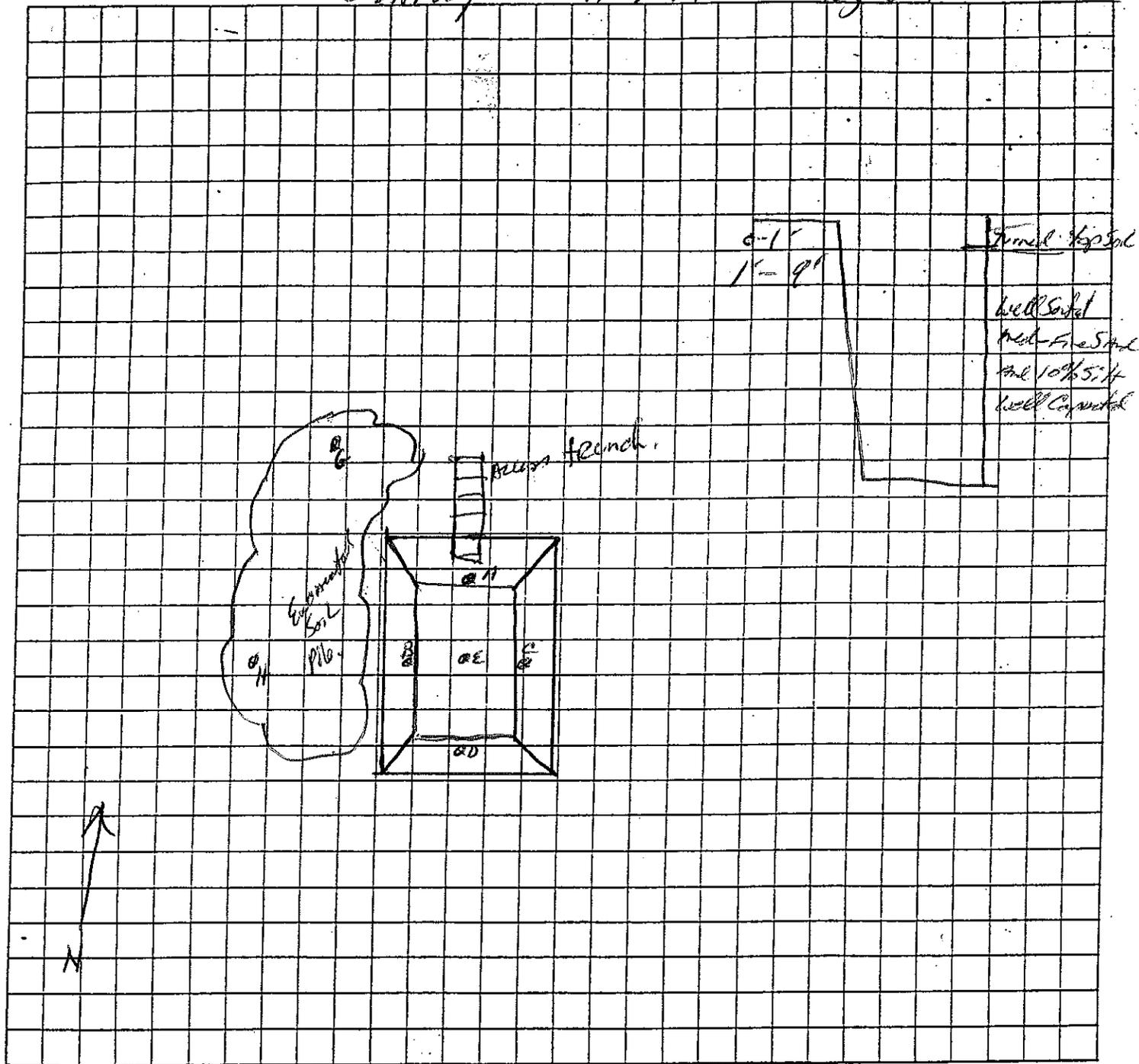


PROPOSED SITE PLAN

Apply

11-9-94

Bldg 654



NOTE: Indicate scale and compass direction.

Scale = 1' = 10'  
TANK LOCATION

REMARKS  
 - Site was additionally Excavated today by Cube to prepare for SA.  
 - Depth 9' ~~no water~~ water level at 9.5'  
 - All samples at Base of Excavate - 9.0' F is depth of Er

BLDG# 654  
 TANK # NA  
 TANK SIZE 1080  
 TANK CONTENTS #2 fuel oil

- Need Lat / Long. - no Bldgs near Site.  
 - Sampled via stainless steel Spoon - by Cube Inc.

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

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

Lab. ID #: 1715.1-.8  
 Sample Rec'd: 11/09/94  
 Analysis Start: 11/10/94  
 Analysis Comp: 11/10/94

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

NJDEPE UST Reg.#:  
 Closure #:  
 DICAR #:  
 Location #: Bldg. 654 excav.

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1715.1	Site A, N. Sidewall 9' ova= ND	80	57.2	6.6
1715.2	Site B, W.Sidewall 9' ova= ND	88	82.1	6.6
1715.3	Site C, E.Sidewall 9' ova= ND	79	41.2	6.6
1715.4	Site D, S. Sidewall 7' ova= ND	81	45.6	6.6
1715.5	Site E, Bottom 9' ova= ND	79	24.5	6.6
1715.6	Site F, DUP. ova= ND	78	36.1	6.6
1715.7	Site G, N. PILE ova= ND	87	47.6	6.6
1715.8	Site H, S. PILE ova= ND	91	55.2	6.6
M. Bl.	Method Blank	100	ND	3.3

Notes: ND = Not Detected, MDL = Method Detection Limit  
 \* = Silica Gel Added, NA = Not Applicable  
 1715.3dup= 100% 1715.3S= 109% 1715.3SD= 107% RPD= 1.6%  
 Cal Chk = 98%



Brian K. McKee  
 Laboratory Director



November 10, 1994

Sarah Hubbard

40.75 65 MV

81.5 124 MV

163 247 MV

Method BLANK Bldg. 663

1711.1 7 MV

1711.2 7 MV

1711.3 7 MV

1711.4 8 MV

1711.5 13 MV

1711.6 9 MV

1711.7 18 MV

1711.8 21 MV

81.5 Std 127

1715.1 12 MV

1715.2 18 MV

1715.3 9 MV

1715.3 9 MV dup

1715.3 76 MV Spk

1715.3 75 MV Dup Spk

1715.4 10 MV

1715.5 6 MV

1715.6 8 MV

1715.7 11 MV

1715.8 13 MV

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.

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.

Project #1715



Brian K. McKee  
Laboratory Manager

ATTACHMENT Z

UST 655 File Review and Analyses



UNDERGROUND STORAGE TANK FILE REVIEW  
FORT MONMOUTH BRAC 05 FACILITY  
OCEANPORT, NEW JERSEY

Date: November 6, 2015 Review Performed By: Kent Friesen, Parsons

Site ID: **Bldg. 655** Registration ID: 81533-97

Recommended Status of Site: **Case Closed (no change)**

UST Probability (from May 2014 "Addendum 1 ECP UHOT Report"): **NFA**

Based on the file review, were there indications of a contaminant release? [ ] Yes [X] No

NJDEP Release No. or DICAR (If applicable): \_\_\_\_\_

Did NJDEP approve No Further Action (NFA) for this site? [ ] Yes [X] No [ ] Not Applicable

Tank Description: [X] Steel [ ] Fiberglass Size: 1080 gals. Contents: #2 Fuel Oil

[X] Residential [ ] Commercial/Industrial

Tank Removed? [X] Yes [ ] No If "yes," removal date: 8/16/1994

Were closure soil samples taken? [X] Yes [ ] No Analyses: TPH

Comparison criteria: 5,100 mg/kg

Were closure soil sample results less than comparison criteria? [X] Yes [ ] No

**Brief Narrative**

Building 655 was a residential barracks building that was present during tank removal in 1994 but was subsequently demolished. Sampling and analysis of soil was completed by FTMM in August 1994 from the tank excavation and pipe runs; the resulting analytical data are attached. Eight soil samples and one field duplicate were collected from the former UST location and analyzed by the Fort Monmouth Environmental Laboratory for total petroleum hydrocarbons (TPH). The soil sample results ranged from 21.7 to 168 mg/kg of TPH. The results were less than 5,100 mg/kg for TPH, which is the current TPH remediation criterion. Therefore, there are no indications of a significant release to soil or groundwater, and NFA is warranted at Site 655.

Recommendations (if any): Request NFA from NJDEP



Signed: \_\_\_\_\_

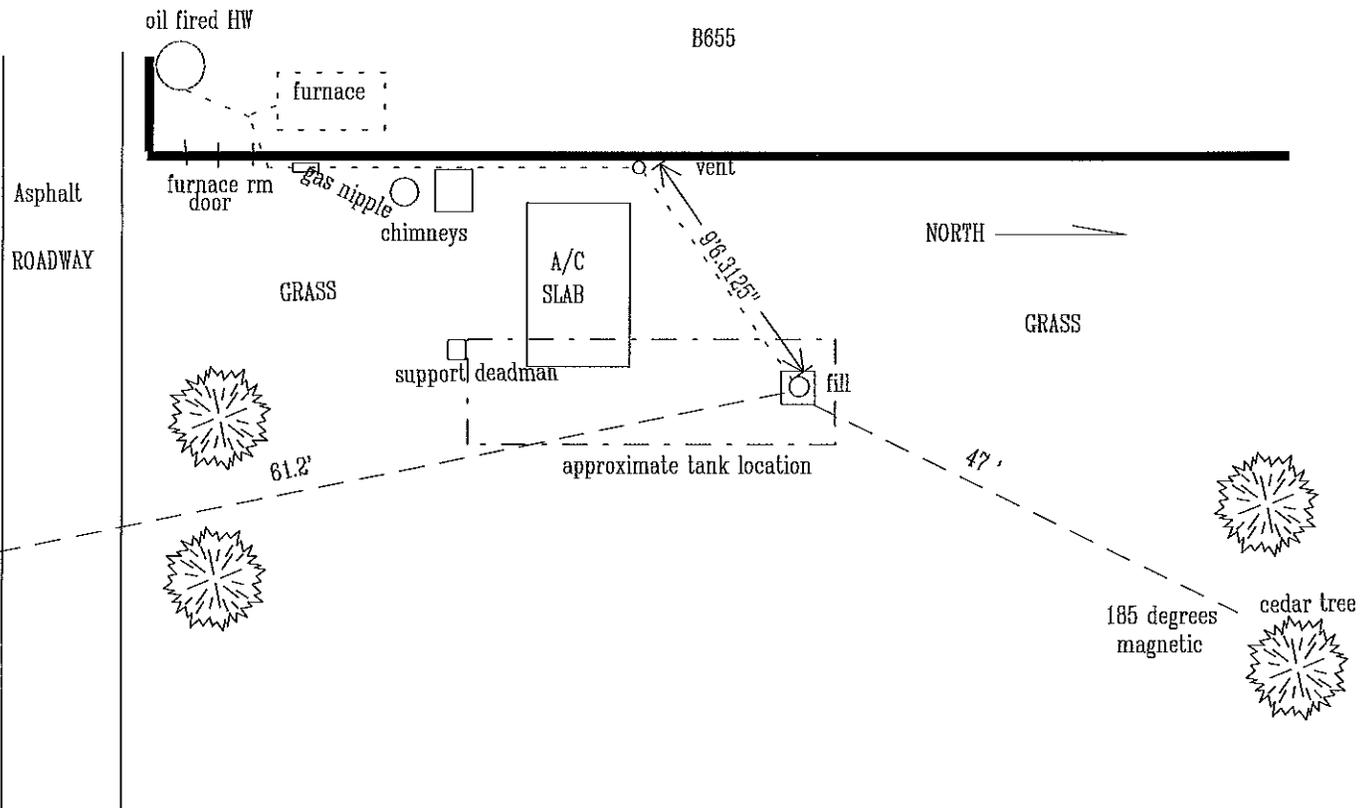
Kent A. Friesen, Parsons

B655

UST # 0081533 - 97 1080 gallons #2 fuel oil

SCALE: 1 inch = 12 feet

B655



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

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

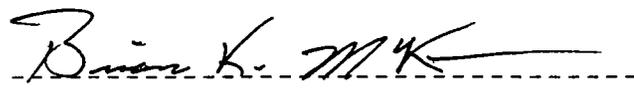
Lab. ID #: 1613.1-.8  
 Sample Rec'd: 08/17/94  
 Analysis Start: 08/17/94  
 Analysis Comp: 08/17/94

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

NJDEPE UST Reg.#: 0081533-97  
 Closure #: RESIDENTIAL  
 DICAR #:  
 Location #: Bldg. 655

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1613.1	Site A, E-Piperun 1' OVA= <1	88	100.	6.6
1613.2	Site B, W-Piperun 1' OVA= <1	92	30.3	6.6
1613.3	Site C, S-Sidewall 6.5' OVA= <1	83	168.	6.6
1613.4	Site D, E-Sidewall 6.5' OVA= <1	82	39.7	6.6
1613.5	Site E, N-Sidewall 6.5' OVA= <1	88	21.1	6.6
1613.6	Site F, W-Sidewall 6.5' OVA= <1	82	22.7	6.6
1613.7	Site G, S-PitBottom 7' OVA= <1	85	27.3	6.6
1613.8	Site H, N-PitBottom 7' OVA= <1	84	38.7	6.6
M. Bl.	Method Blank	100	ND	3.3

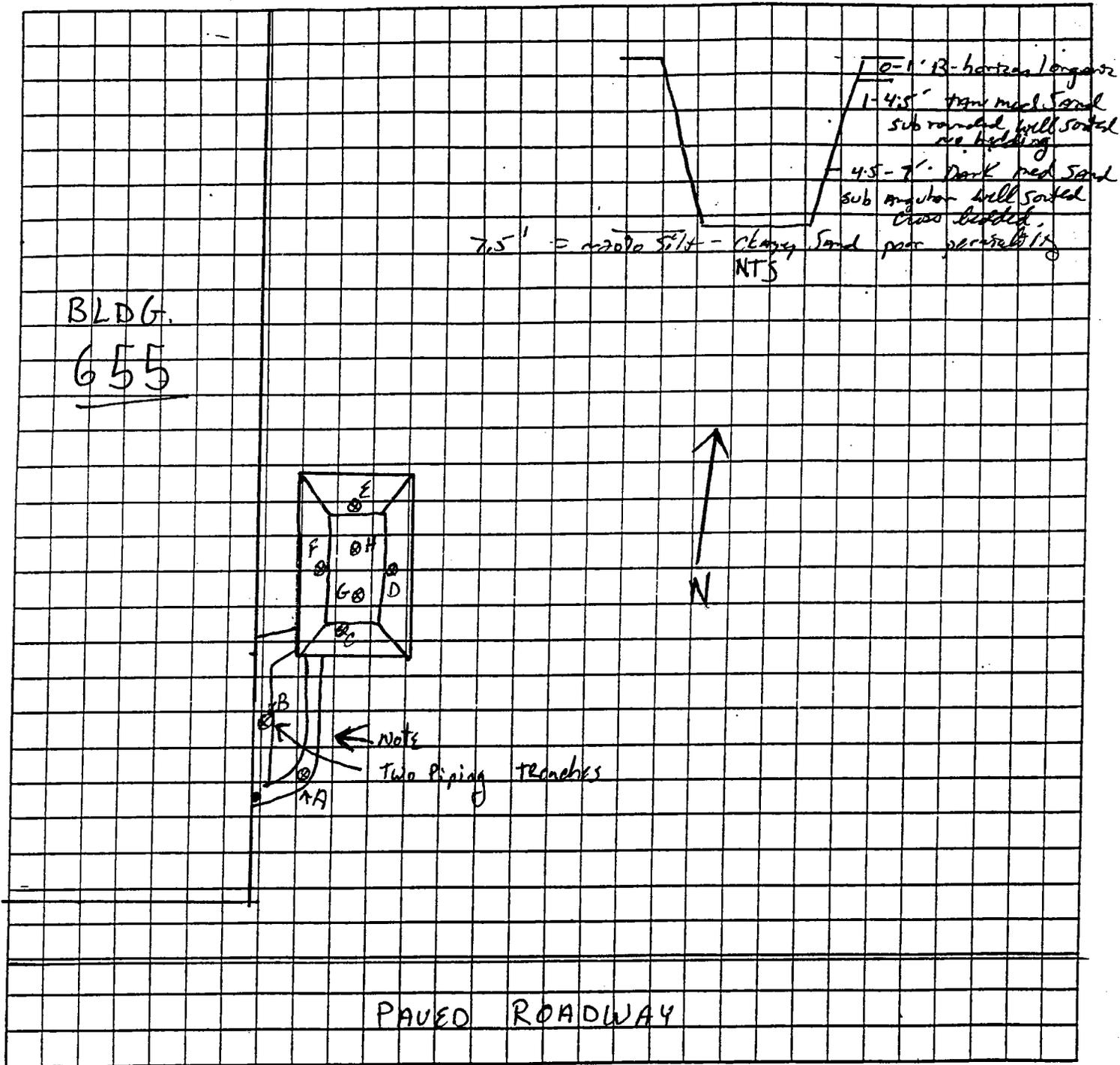
Notes: ND = Not Detected, MDL = Method Detection Limit  
 \* = Silica Gel Added, NA = Not Applicable  
 BATCH dup= 97% BATCH s= 75% BATCH sd= 71% RPD= 1.4%

  
 -----  
 Brian K. McKee  
 Laboratory Director





PROPOSED SITE PLAN



NOTE: Indicate scale and compass direction.

C. Appleby SELPM-PW-EU

8-16-94

1" = 10'

TANK LOCATION

Scale

REMARKS
- VST Removal Site Assessment
- Excavation to GW 7.5' (slightly Perked up)
- 1-4.5' tan sand - Probable Fill material
- Sample depth 0-6" <sup>Anticipated:</sup> above GW (6.5'-7.0') at sides
- Screened Complete excavation w/ OWA
- Pit Bottom Sample taken even though water was

BLDG# 655  
 TANK # 0081533-97  
 TANK SIZE 1080  
 TANK CONTENTS #2 Fuel oil

slightly Perked up.

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.

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.

Project #1613

  
Brian K. McKee  
Laboratory Manager



ATTACHMENT AA

UST 656 File Review and Analyses



UNDERGROUND STORAGE TANK FILE REVIEW  
FORT MONMOUTH BRAC 05 FACILITY  
OCEANPORT, NEW JERSEY

Date: November 6, 2015 Review Performed By: Kent Friesen, Parsons

Site ID: **Bldg. 656** Registration ID: 81533-98

Recommended Status of Site: **Case Closed (no change)**

UST Probability (from May 2014 "Addendum 1 ECP UHOT Report"): **NFA**

Based on the file review, were there indications of a contaminant release? [ ] Yes [X] No

NJDEP Release No. or DICAR (If applicable): \_\_\_\_\_

Did NJDEP approve No Further Action (NFA) for this site? [ ] Yes [X] No [ ] Not Applicable

Tank Description: [X] Steel [ ] Fiberglass Size: 1080 gals. Contents: #2 Fuel Oil

[X] Residential [ ] Commercial/Industrial

Tank Removed? [X] Yes [ ] No If "yes," removal date: 8/16/1994

Were closure soil samples taken? [X] Yes [ ] No Analyses: TPH

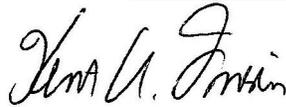
Comparison criteria: 5,100 mg/kg

Were closure soil sample results less than comparison criteria? [X] Yes [ ] No

**Brief Narrative**

Building 656 was a residential barracks building that was present during tank removal in 1994 but was subsequently demolished. Sampling and analysis of soil was completed by FTMM in August 1994 from the tank excavation and pipe runs; the resulting analytical data are attached. Five soil samples were collected from the former UST location and analyzed by the Fort Monmouth Environmental Laboratory for total petroleum hydrocarbons (TPH). The soil sample results ranged from 43.8 to 183 mg/kg of TPH. The results were less than 5,100 mg/kg for TPH, which is the current TPH remediation criterion. Therefore, there are no indications of a significant release to soil or groundwater, and NFA is warranted at Site 656.

Recommendations (if any): Request NFA from NJDEP



Signed: \_\_\_\_\_

Kent A. Friesen, Parsons

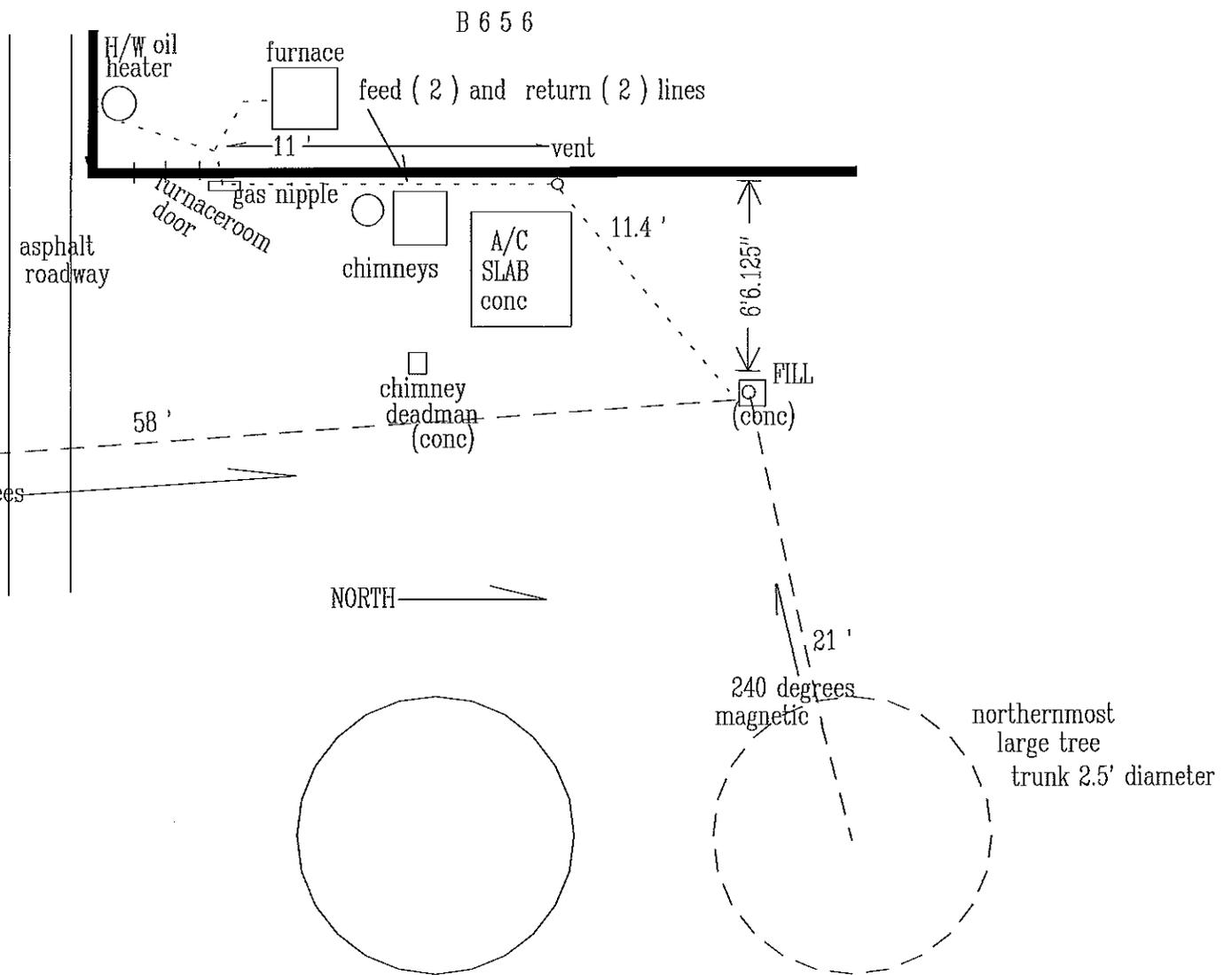
B 6 5 6

UST # 0081533 - 98

1080 gal steel

#2 fuel oil

SCALE : 1 inch = 5 feet



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

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

Lab. ID #: 1612.1-.5  
 Sample Rec'd: 08/16/94  
 Analysis Start: 08/17/94  
 Analysis Comp: 08/17/94

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

NJDEPE UST Reg.#: 0081533-98  
 Closure #: RESIDENTIAL  
 DICAR #:  
 Location #: Bldg. 656

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1612.1	Site A, Piperun 1' OVA= <1	89	62.7	6.6
1612.2	Site B, W-Sidewall 7-7.5' OVA= <1	90	46.5	6.6
1612.3	Site C, S-Sidewall 7-7.5' OVA= <1	85	43.8	6.6
1612.4	Site D, E-Sidewall 7-7.5' OVA= <1	84	44.3	6.6
1612.5	Site E, N-Sidewall 7-7.5' OVA= <1	84	183.	6.6
M. Bl.	Method Blank	100	ND	3.3

Notes: ND = Not Detected, MDL = Method Detection Limit  
 \* = Silica Gel Added, NA = Not Applicable  
 1612.5dup= 97% 1612.5s= 75% 1612.5sd= 71% RPD= 1.4%

  
 Brian K. McKee  
 Laboratory Director



# U.S. ARMY FORT MONMOUTH

Chain of Custody

P.O. #: PWS-007-TPHC

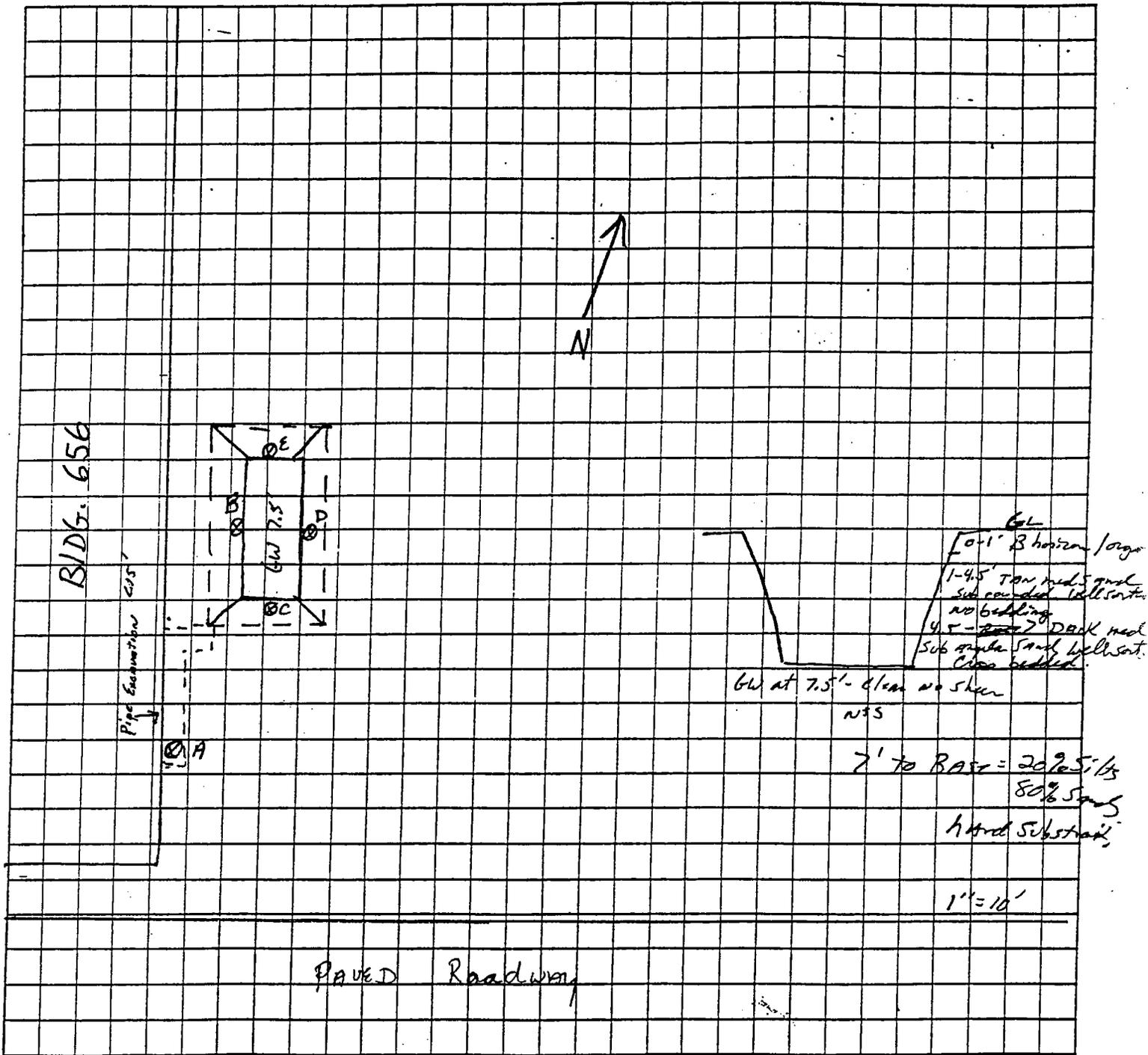
Project #: 0081533-98	Sampler: George B / Crite Fine	Date / Time: 8-16-99 1040	Analysis Parameters	Start:
Customer: C. Appleby SECFM-PW-EU	Site Name: Bldg. 656 Unit # 0081533-98 Residential			Finish:
Phone: X26224	Customer Sample Location/ID Number	Sample Matrix	# of Bottles	Preservation Method
Lab Sample ID Number	Date/Time			Remarks
1612.1	8/16/99 11:28	Site A - Por Run 1'	1	Kept 240 C
1612.2	11:30	Site B - West Sidewalk 7-7.5'	1	Sample Jars ESS Preserved
1612.3	11:30	Site C - South Sidewalk 7-7.5'	1	Lot # 70094
1612.4	11:34	Site D - East Sidewalk 7-7.5'	1	DVA S/N A52114
1612.5	11:35	Site E - North Sidewalk 7-7.5'	1	Calibrated w/ Zero Air + 95 PPM methan at
				Gas Select 3 - Read
				8.5 PPM 8-18-99 10:50 AM
				C. Appleby SECFM-PW-EU
Relinquished By (signature)	Date / Time	Received By (signature)	Date / Time	Shipped By:
Relinquished By (signature)	8/16/99 1201	Received for Lab by (signature): Sarah J. Hubbard	8/16/99 1202	

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

Environmental Laboratory

Certification Number 13461

PROPOSED SITE PLAN



NOTE: Indicate scale and compass direction.

C. Appby SELFM-PLU-EV

8-16-94

TANK LOCATION

BLDG# 656  
 TANK # 0081533- 98 - Residential  
 TANK SIZE 1080  
 TANK CONTENTS #2 Fuel oil

REMARKS

- UST Removal Site Assessment,
- Lat/Long 40° 18.85 N 74° 02.88 W
- Excavation to GW 7.5'
- 1-4.5' tan sand probable fill material
- sample depth 0-6" above GW (6.5'-7.0')
- Sealed Complete Excavation w/ over all area 41 ppm

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.

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.

Project #1612

  
Brian K. McKee  
Laboratory Manager



ATTACHMENT BB

UST 657 File Review and Analyses



UNDERGROUND STORAGE TANK FILE REVIEW  
FORT MONMOUTH BRAC 05 FACILITY  
OCEANPORT, NEW JERSEY

Date: November 6, 2015 Review Performed By: Kent Friesen, Parsons

Site ID: **Bldg. 657** Registration ID: 81533-99

Recommended Status of Site: **Case Closed (no change)**

UST Probability (from May 2014 "Addendum 1 ECP UHOT Report"): **NFA**

Based on the file review, were there indications of a contaminant release? [ ] Yes [X] No

NJDEP Release No. or DICAR (If applicable): \_\_\_\_\_

Did NJDEP approve No Further Action (NFA) for this site? [ ] Yes [X] No [ ] Not Applicable

Tank Description: [X] Steel [ ] Fiberglass Size: 1080 gals. Contents: #2 Fuel Oil

[X] Residential [ ] Commercial/Industrial

Tank Removed? [X] Yes [ ] No If "yes," removal date: 8/11/1994

Were closure soil samples taken? [X] Yes [ ] No Analyses: TPH

Comparison criteria: 5,100 mg/kg

Were closure soil sample results less than comparison criteria? [X] Yes [ ] No

**Brief Narrative**

Building 657 was a residential barracks building that was present during tank removal in 1994 but was subsequently demolished. Sampling and analysis of soil was completed by FTMM in August 1994 from the tank excavation and pipe runs; the resulting analytical data are attached. Seven soil samples and one field duplicate were collected from the former UST location and analyzed by the Fort Monmouth Environmental Laboratory for total petroleum hydrocarbons (TPH). The soil sample results ranged from not detected (ND) to 84.6 mg/kg of TPH. The results were less than 5,100 mg/kg for TPH, which is the current TPH remediation criterion. Therefore, there are no indications of a significant release to soil or groundwater, and NFA is warranted at Site 657.

Recommendations (if any): Request NFA from NJDEP



Signed: \_\_\_\_\_

Kent A. Friesen, Parsons

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

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

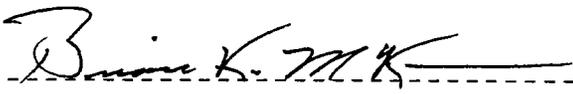
Lab. ID #: 1608.1-.8  
 Sample Rec'd: 08/12/94  
 Analysis Start: 08/16/94  
 Analysis Comp: 08/16/94

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

NJDEPE UST Reg.#: 0081533-99  
 Closure #: RESIDENTIAL  
 DICAR #:  
 Location #: Bldg. 657

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1608.1	Site A, NW OVA= ND	84	51.1	6.6
1608.2	Site B, N OVA= ND	89	84.6	6.6
1608.3	Site C, NE OVA= ND	88	80.3	6.6
1608.4	Site D, SE OVA= ND	88	22.6	6.6
1608.5	Site E, S OVA= ND	89	37.9	6.6
1608.6	Site F, SW OVA= ND	89	17.1	6.6
1608.7	Site G (dup) OVA= ND	90	ND	6.6
1608.8	Site H, FEED LINE OVA= ND	95	25.8	6.6
M. Bl.	Method Blank	100	ND	3.3

**Notes:** ND = Not Detected, MDL = Method Detection Limit  
 \* = Silica Gel Added, NA = Not Applicable  
 BATCH dup= 112% BATCH s= 87% BATCH sd= 88% RPD= 1.0%

  
 -----  
 Brian K. McKee  
 Laboratory Director



# U.S. ARMY FORT MONMOUTH

Chain of Custody

P.O. #: PWS-007 TRHC

Project #: 781533-99		Sampler:		Date / Time		Analysis Parameters		Start:	
Customer: D. Desai		Site Name: BOP 657		Date / Time: 8/12/94		Analysis Parameters: <i>NOX, CO, SO2, H2S, NH3</i>		Finish:	
SELF-PW-EV		No Closure - Residenced		Customer Sample Location/ID Number		Sample Matrix		Preservation Method	
Phone: (908) 532-1475		UST 0081533-99		Date/Time		# of Bottles		Remarks	
Lab Sample ID Number	Date/Time	Customer Sample Location/ID Number	Sample Matrix	# of Bottles	Analysis Parameters	Remarks	Preservation Method		
1608.1	8/12	Site# NW	Soil	1			NONE		
1608.2	"	Site# N	"	1					
1608.3	"	Site# NE	"	1					
1608.4	"	Site# SE	"	1					
1608.5	"	Site# S	"	1					
1608.6	"	Site# SW	"	1					
1608.7	"	Site# (dup)	"	1					
1608.8	"	Site# (fuel, i.e.)	"	1					
Relinquished By (signature): <i>Dinker Desai</i>		Date / Time: 8/12/94		Received By (signature):		Shipped By:			
Relinquished By (signature): <i>[Signature]</i>		Date / Time: 8/12/94		Received for Lab by (signature): <i>[Signature]</i>		Date / Time: 8/12/94		1608	

Note: A drawing depicting sample location should be attached or drawn on the reverse side of this chain of custody. \* No site map enclosed with samples.

SRI-ENV COC form 01 Page 1 of 1 Pages Rev. A Date: 02 Apr 93

Environmental Laboratory

\* Chain-of-Custody corrected by Sample Custodian.

Certification Number 13461

PHC Conformance/Non-conformance Summary Report

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

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.

Project #1608

  
Brian K. McKee  
Laboratory Manager



ATTACHMENT CC

UST 658 File Review and Analyses



UNDERGROUND STORAGE TANK FILE REVIEW  
FORT MONMOUTH BRAC 05 FACILITY  
OCEANPORT, NEW JERSEY

Date: November 6, 2015 Review Performed By: Kent Friesen, Parsons

Site ID: **Bldg. 658** Registration ID: 81533-100

Recommended Status of Site: **Case Closed (no change)**

UST Probability (from May 2014 "Addendum 1 ECP UHOT Report"): **NFA**

Based on the file review, were there indications of a contaminant release? [ ] Yes [X] No

NJDEP Release No. or DICAR (If applicable): \_\_\_\_\_

Did NJDEP approve No Further Action (NFA) for this site? [ ] Yes [X] No [ ] Not Applicable

Tank Description: [X] Steel [ ] Fiberglass Size: 1080 gals. Contents: #2 Fuel Oil

[X] Residential [ ] Commercial/Industrial

Tank Removed? [X] Yes [ ] No If "yes," removal date: 8/15/1994

Were closure soil samples taken? [X] Yes [ ] No Analyses: TPH

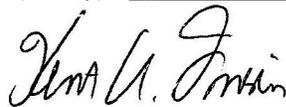
Comparison criteria: 5,100 mg/kg

Were closure soil sample results less than comparison criteria? [X] Yes [ ] No

**Brief Narrative**

Building 658 was a residential barracks building that was demolished prior to the tank removal in 1994. Sampling and analysis of soil was completed by FTMM in August 1994 from the tank excavation; the resulting analytical data are attached. Six soil samples were collected from the former UST location and analyzed by the Fort Monmouth Environmental Laboratory for total petroleum hydrocarbons (TPH). The soil sample results ranged from 55.3 to 171 mg/kg of TPH. The results were less than 5,100 mg/kg for TPH, which is the current TPH remediation criterion. Therefore, there are no indications of a significant release to soil or groundwater, and NFA is warranted at Site 658.

Recommendations (if any): Request NFA from NJDEP



Signed: \_\_\_\_\_

Kent A. Friesen, Parsons

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

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

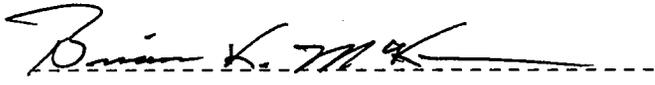
Lab. ID #: 1603.1-.7  
 Sample Rec'd: 08/15/94  
 Analysis Start: 08/16/94  
 Analysis Comp: 08/16/94

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

NJDEPE UST Reg.#: **0081533-100**  
 Closure #: **RESIDENTIAL**  
 DICAR #:  
 Location #: **Bldg. 658**

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1603.1	Site A, N-WALL OVA= <1	90	58.0	6.6
1603.2	Site B, E-WALL OVA= <1	85	61.4	6.6
1603.3	Site C, S-WALL OVA= <1	86	55.3	6.6
1603.4	Site D, W-WALL OVA= <1	84	56.6	6.6
1603.5	Site E, N-PIT BOTTOM OVA= <1	86	66.1	6.6
1603.6	Site F, S-PIT BOTTOM OVA= <1	87	171.	6.6
M. Bl.	Method Blank	100	ND	3.3

**Notes:** ND = Not Detected, MDL = Method Detection Limit  
 \* = Silica Gel Added, NA = Not Applicable  
 BATCH dup= 112% BATCH s= 87% BATCH sd= 88% RPD= 1.0%

  
 Brian K. McKee  
 Laboratory Director



# U.S. ARMY FORT MONMOUTH

Chain of Custody

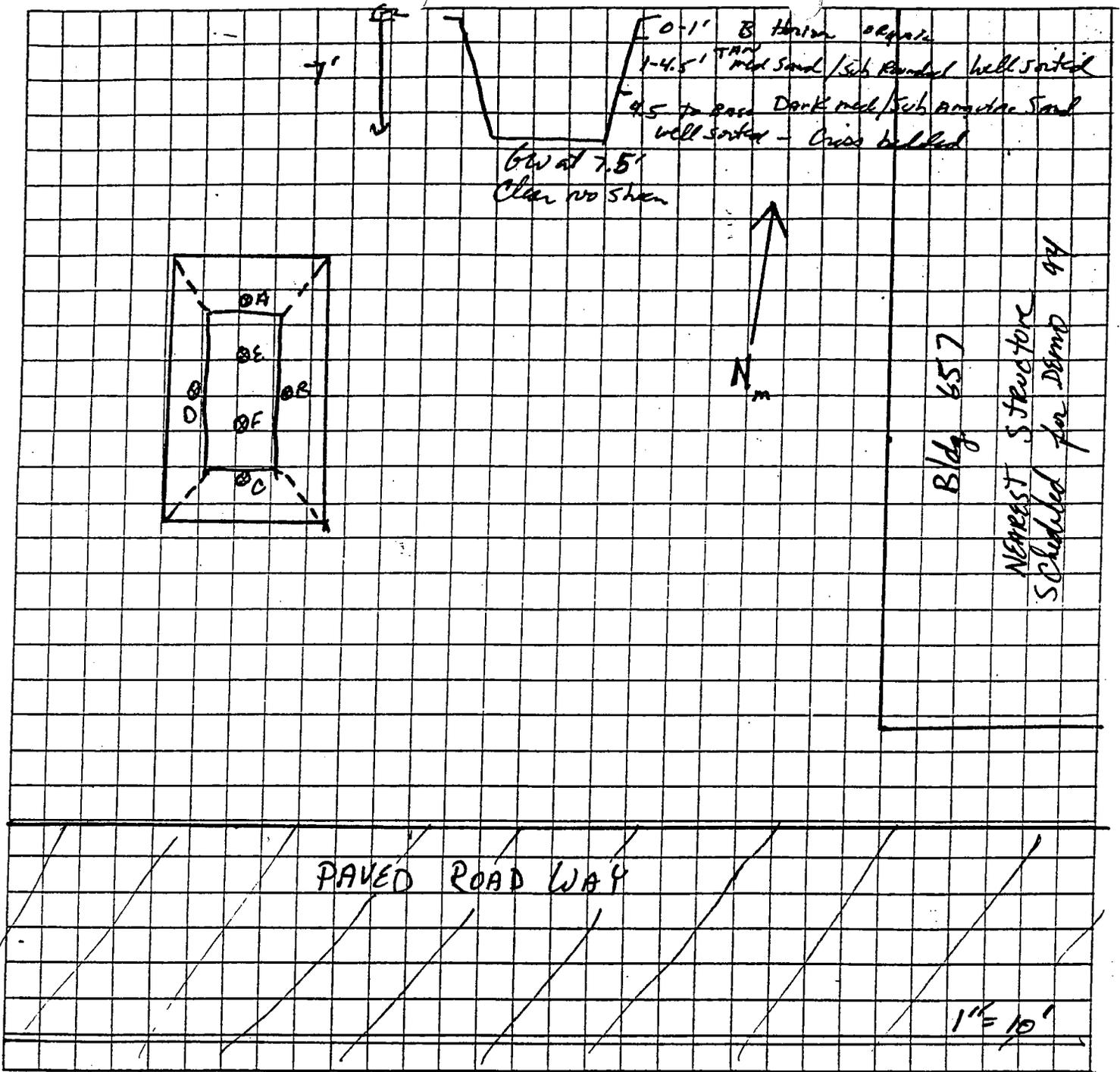
P.O. #: PWS-007

Project #:	81533-100	Sampler:	George B / Cote Inc.	Date / Time	8-15-94 1500	Analysis Parameters	Start:
Customer:	C. APPLEBY	Site Name:	815 658				Finish:
	SELFA-PW-EV	UST #	0081533-100				
Phone:	X 26224	Customer Sample Location/ID Number	Sample Matrix	# of Bottles			Preservation Method
Lab Sample ID Number	Date/Time						Remarks
1603.1	8-15-94	Site A N-wall	Soil	1	X	X	Sample kept < 4°C
1603.2		Site B E-wall		1	X	X	Ess Packaged bottles
1603.3		Site C S-wall		1	X	X	Lr 72094
1603.4		Site D W-wall		1	X	X	
1603.5		Site E N-Py/Barton		1	X	X	
1603.6		Site F S-Py/Barton		1	X	X	0001286C SW ASD114
							Cal w/ Zero Aie + 95 PPM
							Method - Prod 8/19/94
							Gras Select. 3
							OK C. Appleby 1515hrs
							8-15-94
Relinquished By (signature)		Received By (signature)		Shipped By:			
Date / Time		Date / Time		Date / Time			
8-15-94 1530		B. ZAK		8/15/94 1530			

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

Attached

PROPOSED SITE PLAN



NOTE: Indicate scale and compass direction.

C. Appleby SELF-MANAGED

8-15-94 1500hrs to 1540hrs

TANK LOCATION

BLDG# 658  
 TANK # 0081533-100  
 TANK SIZE 1080  
 TANK CONTENTS #2 Fuel o.c

REMARKS

- Lot / Loc = 40-18.89 N / 74-02.90 W GPS
- No Lines Found - Assume 15' AS Similar Bldgs. Are.
- Depth of Excavation 7' - b/w Perked up to ~7.5'
- 1-4.5' Clear Tan Sand Probable Fill material.
- Sample Depth 6x5' + 7' for Pit Bottom Samples.

PHC Conformance/Non-conformance Summary Report

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

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.

Project #1603

  
Brian K. McKee  
Laboratory Manager

ATTACHMENT DD

UST 659 Report



**United States Army**  
Fort Monmouth, New Jersey

---

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

***Former Building 659  
Main Post***

---

**NJDEP UST Registration No. 081533-101  
NJDEP Closure Approval Letter Dated  
July 5, 1994**

February 1996

**SMITH**  
ENVIRONMENTAL TECHNOLOGIES CORPORATION

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

**FORMER BUILDING 659**

**MAIN POST  
NJDEP UST REGISTRATION NO. 081533-101  
NJDEP CLOSURE APPROVAL LETTER DATED  
JULY 5, 1994**

**FEBRUARY 1996**

**PROJECT NO.: 09-5004-06  
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 08061**

659.DOC

**SMITH**  
ENVIRONMENTAL TECHNOLOGIES CORPORATION

*Engineering • Consulting • Remediation • Construction*



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### APPENDICES

Appendix A	NJDEP-BUST Closure Approval
Appendix B	Certifications
Appendix C	Waste Manifest
Appendix D	UST Disposal Certificate
Appendix E	Soil Analytical Data Package



## EXECUTIVE SUMMARY

### UST Closure

On August 12, 1994, a steel underground storage tank (UST) was closed by removal in accordance with the New Jersey Department of Environmental Protection (NJDEP) Closure Approval Letter dated July 5, 1994 at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey. The UST, NJDEP Registration No. 081533-101 (Fort Monmouth ID No. 659), was located immediately adjacent to Former Building 659 in the Main Post area of U.S. Army, Fort Monmouth. UST No. 081533-101 was a 1,080-gallon No. 2 diesel 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

The site assessment was performed by U.S. Army personnel in accordance with the NJDEP *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E) and the NJDEP *Field Sampling Procedures Manual*. Soils surrounding the tank were screened visually and with air monitoring equipment for evidence of contamination. Following removal, the UST was inspected for corrosion holes. No holes were noted in the UST and no evidence of potentially contaminated soils was observed surrounding the tank.

On August 12, 1994, following the removal of the UST, post-excavation soil samples A, B, C, D, E, F, and DUP F were collected from a total of a total of six (6) locations along the sidewalls of the excavation at a depth of 6.5 feet below ground surface (bgs). All samples were analyzed for total petroleum hydrocarbons (TPHC). No fuel lines were found during the closure of UST No. 081533-101, therefore no piping samples were collected.

### Findings

All post-excavation soil samples collected from the UST excavation and from below piping associated with the former UST at Former Building 659 contained TPHC concentrations below the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 milligrams per kilogram (mg/kg) (N.J.A.C. 7:26D and revisions dated February 3, 1994). Samples A, B, C, D, E, F, and DUP F contained levels of TPHC ranging in concentration from 22.6 mg/kg to 122.0 mg/kg.

### Site Restoration

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 Quality Assurance

The sampling and laboratory analysis conducted during the site assessment were performed in accordance with Section 7:26E-2.1 of the *Technical Requirements*.

### Conclusions and Recommendations

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

No further action is proposed in regard to the closure and site assessment of UST No. 081533-101 at Former Building 659.



## 1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

### 1.1 OVERVIEW

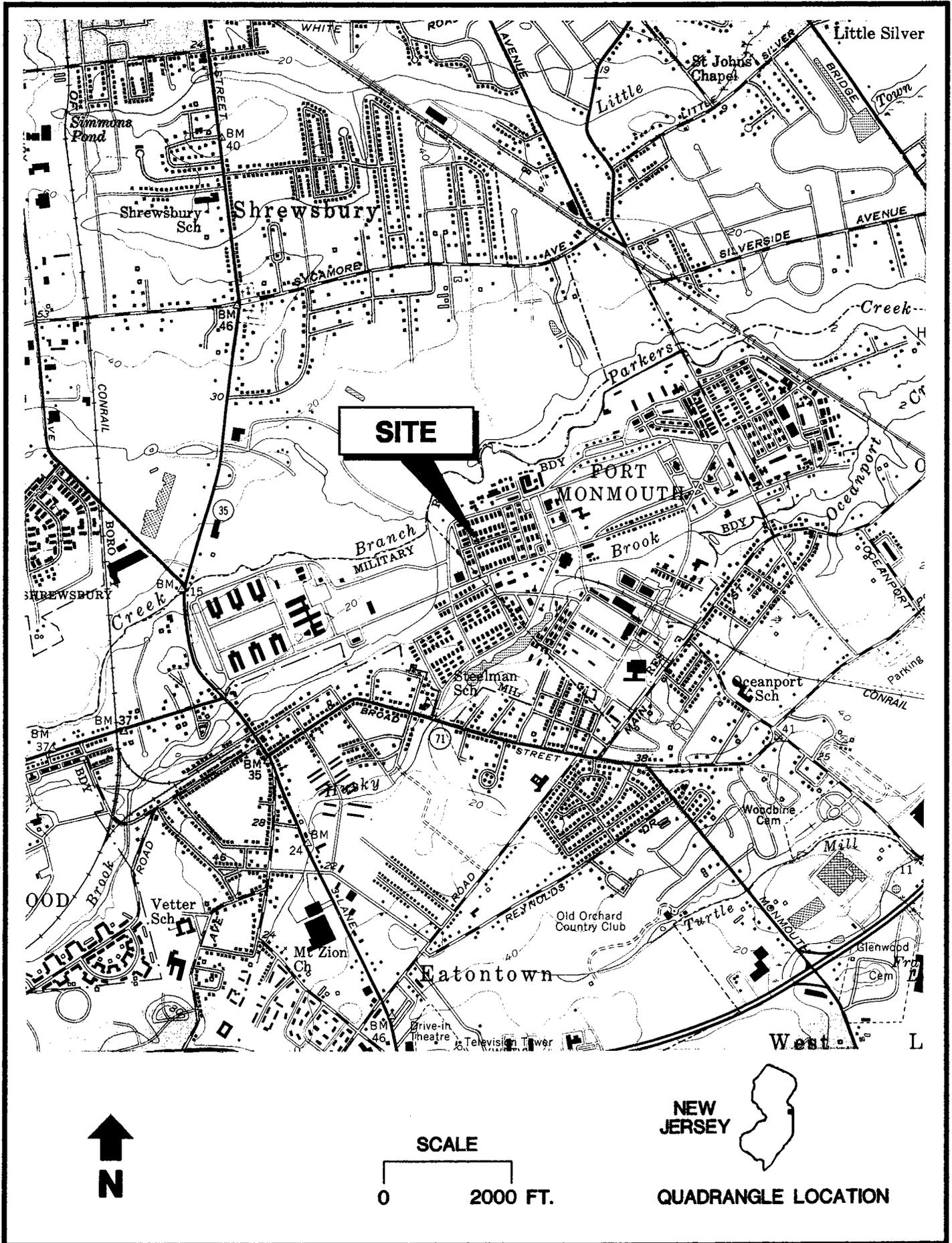
One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 081533-101, was closed at Former Building 659 at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey on August 12, 1994. Refer to site location map on Figure 1. This report presents the results of the DPW's implementation of the UST Decommissioning/Closure Plan submitted to the NJDEP on June 10, 1994. The plan was approved on July 5, 1994. The UST was a steel 1,080-gallon tank containing No. 2 diesel oil.

Decommissioning activities for UST No. 081533-101 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, the contractor that conducted the decommissioning activities, is registered and certified by the NJDEP for performing UST closure activities. Closure of UST No. 081533-101 proceeded under the approval of the NJDEP Bureau of Underground Storage Tanks (NJDEP-BUST). The NJDEP-BUST closure approval and signed certifications for UST No. 081533-101 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 no significant historical discharges are associated with the UST or associated piping.

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.



Source: BCM/Smith Environmental Technologies Corporation (028)

## 1.2 SITE DESCRIPTION

Former Building 659 was located in the northwestern portion of the Main Post area of Fort Monmouth, as shown on Figure 1. The Building had been demolished prior to the removal of UST No. 081533-101. UST No. 081533-101 was located northeast of Former Building 659. No fuel lines were found during closure of the UST, however, appurtenant piping was estimated to have been less than 15 feet from the tank to Former Building 659. 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 Former Building 659. Included is a description of the regional geology of the area surrounding Fort Monmouth as well as descriptions of the local geology and hydrogeology of the Main Post area.

#### Regional Geology

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

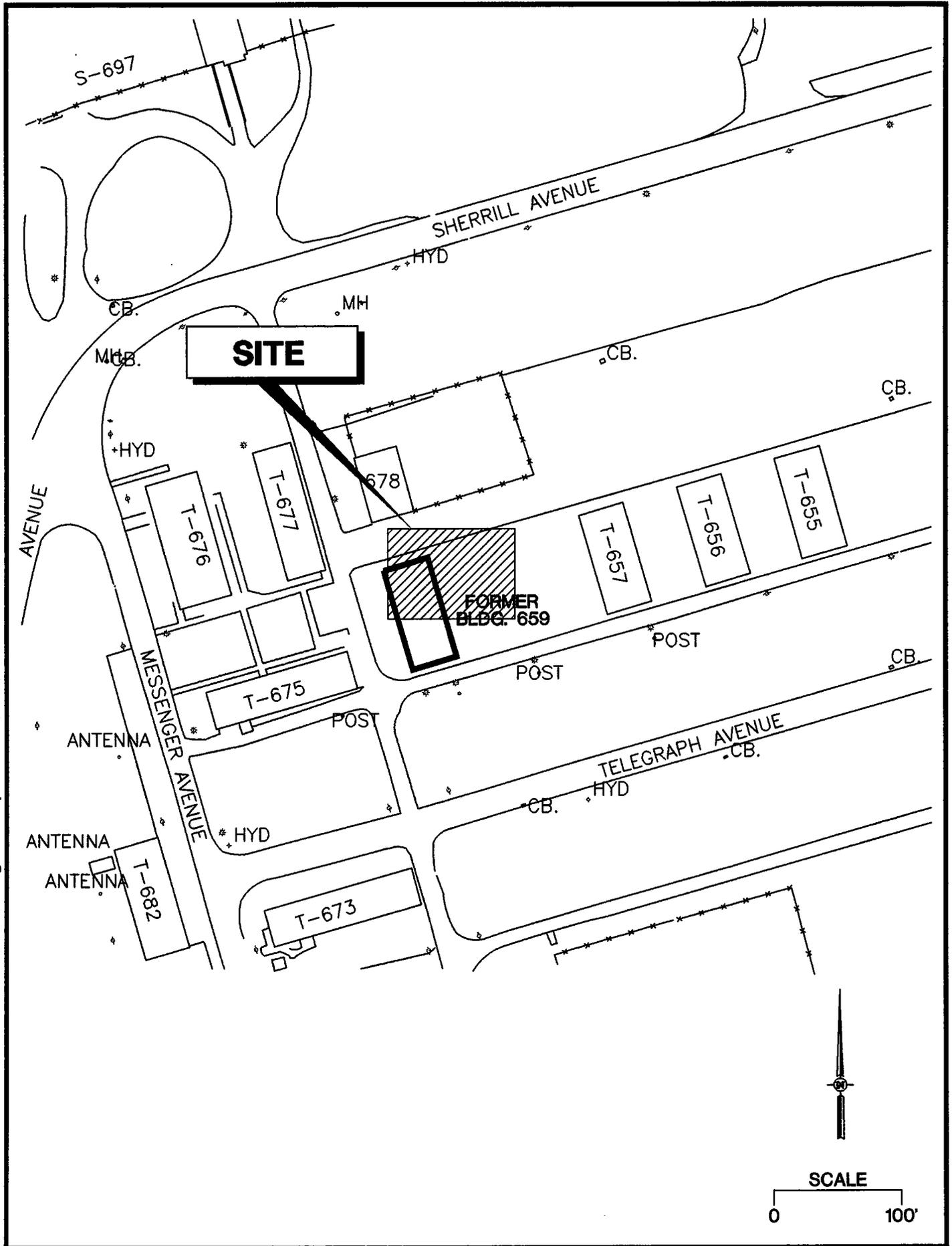
In general, New Jersey Coastal Plain formations consist of a seaward-dipping wedge of unconsolidated deposits of clay, silt, and gravel. These formations typically strike northeast-southwest with a dip ranging from 10 to 60 feet per mile and were deposited on Precambrian and lower Paleozoic rocks (Zapczka, 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 Zapczka, 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

Source: BCM/Smith Environmental Technologies Corporation (066)





Navesink Formation and dips to the southeast at 35 feet per mile. The upper member (Shrewsbury) of the Red Bank sand is a yellowish-gray to reddish brown clayey, medium-to-coarse-grained sand that contains abundant rock fragments, minor mica and glauconite (Jablonski). The lower member (Sandy Hook) is a dark gray to black, medium-to-fine grained sand with abundant clay, mica, and glauconite.

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

### Hydrogeology

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

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

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

## 1.3 HEALTH AND SAFETY

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



## 1.4 REMOVAL OF UNDERGROUND STORAGE TANK

### 1.4.1 General Procedures

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

### 1.4.2 Underground Storage Tank Excavation and Cleaning

Prior to UST decommissioning activities, surficial soil was removed to expose the UST and associated piping. All free product present in the piping was drained into the UST, and the UST was purged to remove vapors prior to cutting and removal of the piping. After removal of the associated piping, a manway was made in the UST to allow for proper cleaning. The UST was completely emptied of all liquids prior to removal from the ground. Approximately 111 gallons of liquid were transported by Freehold Cartage Inc. to Lionetti Oil Recovery Co. Inc., a NJDEP-approved petroleum recycling and disposal company located in Old Bridge, New Jersey. Refer to Appendix C for the waste manifest(s) (No. NJA-1907274).

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

Soil screening was also performed along the piping associated with the UST. No contamination was noted anywhere along the piping length.



## 1.5 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The tank was transported by CUTE Inc., to Mazza and Sons Inc. for disposal in compliance with all applicable regulations and laws. See 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 OVA air monitoring and TPHC analysis results from the post-excavation soil samples, no soils exhibited signs of contamination. Therefore, the excavated soils were used as backfill following removal of the UST.



## 2.0 SITE INVESTIGATION ACTIVITIES

### 2.1 OVERVIEW

The Site Investigation was managed and carried out by U.S. Army DPW personnel. All analyses were performed and reported by U.S. Army Fort Monmouth Environmental Laboratory, a NJDEP-certified testing laboratory. All sampling was performed under the direct supervision of a NJDEP Certified Sub-Surface Evaluator according to the methods described in the NJDEP *Field Sampling Procedures Manual* (1992). Sampling frequency and parameters analyzed complied with the NJDEP-BUST document *Interim Closure Requirements for Underground Storage Tank Systems* (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
- Hazardous Waste Hauler: Freehold Cartage Inc.  
Contact Person: Barry Olsen  
Phone Number: (908)721-0900  
NJDEP Hazardous Waste Hauler No.: 2265

### 2.2 FIELD SCREENING/MONITORING

Field screening was performed by a NJDEP Certified Sub-Surface Evaluator using an OVA and visual observations to identify potentially contaminated material. Soil excavated from around the tank and appurtenant piping, as well as the UST excavation sidewalls and bottom, did not exhibit any evidence of potential contamination.

## 2.3 SOIL SAMPLING

On August 12, 1994, post-excavation soil samples A, B, C, D, E, F, and DUP F were collected from a total of a total of six (6) locations along the sidewalls of the UST excavation at a depth of 6.5 feet below ground surface (bgs). No fuel lines were found during the closure of UST No. 081533-101, therefore no piping samples were collected. All samples were analyzed for 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 in Table 1. The post-excavation soil samples were collected using polystyrene scoops. Actual soil TPHC values may be higher than reported, due to sample utensil absorbency. If absorbency resulted in reducing the actual soil TPHC concentration by 50%, the highest soil contaminant would have been 244.0 mg/kg, still below the applicable NJDEP soil cleanup standard for total organic contaminants of 10,000 mg/kg. Following soil sampling activities, the samples were chilled and delivered to U.S. Army Fort Monmouth Environmental Laboratory located in Fort Monmouth, New Jersey, for analysis.

TABLE 1

SUMMARY OF SAMPLING ACTIVITIES  
 BUILDING 659, MAIN POST  
 FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Matrix	Sample Type	Analytical Parameters (and USEPA Methods) *	Sampling Method
A	08-12-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
B	08-12-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
C	08-12-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
D	08-12-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
E	08-12-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
F	08-12-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
DUP F	08-12-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop

\*Note: TPHC Total Petroleum Hydrocarbons (Method 418.1 / soil and aqueous)



## 3.0 CONCLUSIONS AND RECOMMENDATIONS

### 3.1 SOIL SAMPLING RESULTS

To evaluate soil conditions following removal of the UST and associated piping, post-excavation soil samples were collected from six (6) locations on August 12, 1994. All samples were analyzed for TPHC. The post-excavation sampling results were compared to the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 mg/kg (N.J.A.C. 7:26D and revisions dated February 3, 1994). A summary of the analytical results and comparison to the NJDEP soil cleanup criteria is provided in Table 2 and the soil sampling results are shown on Figure 3. The soil analytical data package is provided in Appendix E.

All post-excavation soil samples collected on August 12, 1994 from the UST excavation and from below piping associated with the UST contained concentrations of TPHC below the NJDEP soil cleanup criteria. Post-excavation samples A, B, C, D, E, F, and DUP F contained TPHC concentrations ranging from 22.6 mg/kg to 122.0 mg/kg.

### 3.2 CONCLUSIONS AND RECOMMENDATIONS

The analytical results for all post-excavation soil samples collected from the UST closure excavation at Former Building 659 were below the NJDEP soil cleanup criteria for total organic contaminants.

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

No further action is proposed in regard to the closure and site assessment of UST No. 081533-101 at Former Building 659.

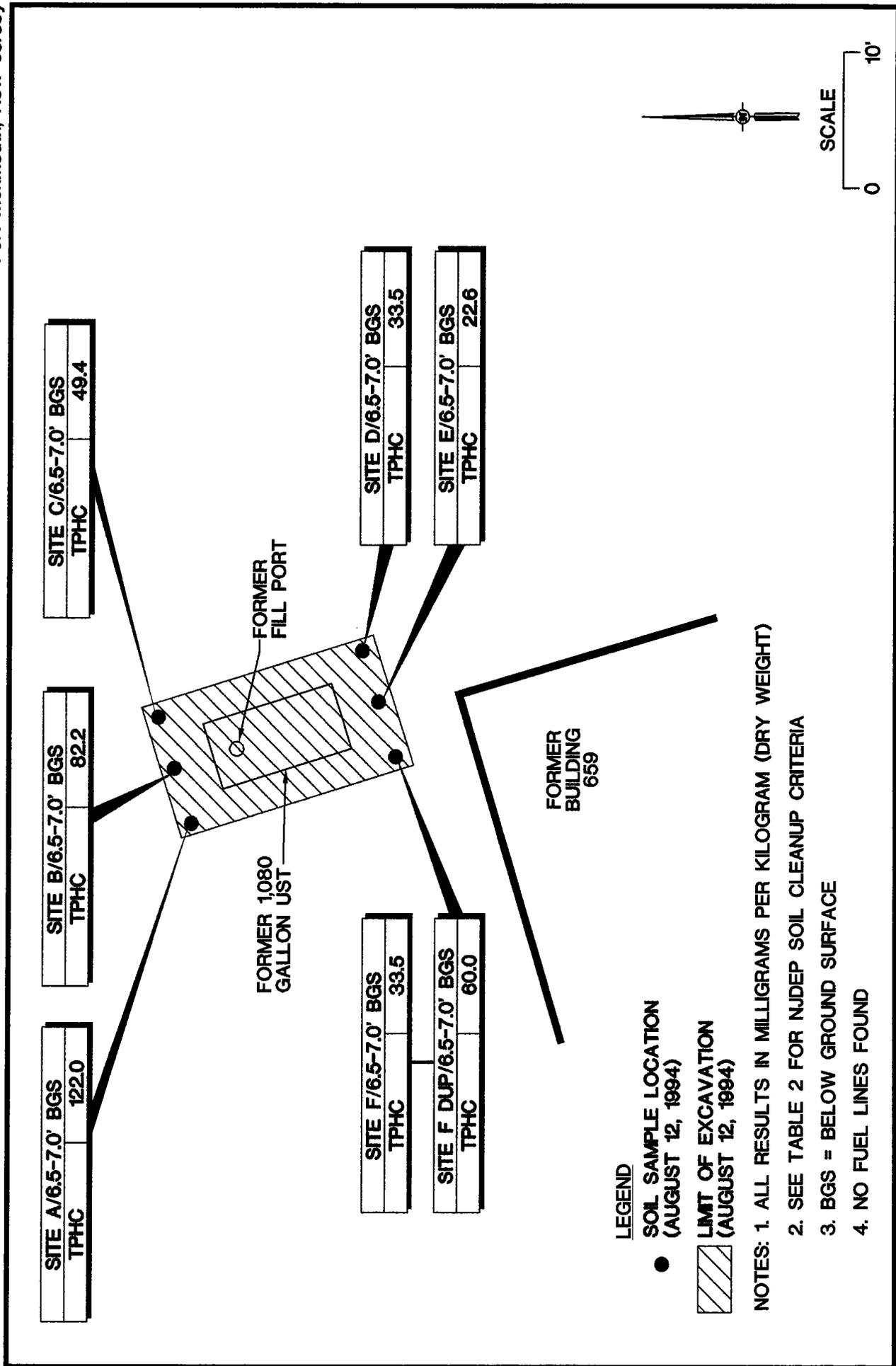


TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS  
BUILDING 659  
FT. MONMOUTH, NEW JERSEY

PAGE 1 OF 1

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/6.5-7.0'	1607.1	08-12-94	08-16-94	Total Solid	--	--	88 %	--	--
				TPHC	6.6	yes	122.0	10,000	--
B/6.5-7.0'	1607.2	08-12-94	08-16-94	Total Solid	--	--	86 %	--	--
				TPHC	6.6	yes	82.2	10,000	--
C/6.5-7.0'	1607.3	08-12-94	08-16-94	Total Solid	--	--	87 %	--	--
				TPHC	6.6	yes	49.4	10,000	--
D/6.5-7.0'	1607.4	08-12-94	08-16-94	Total Solid	--	--	87 %	--	--
				TPHC	6.6	yes	33.5	10,000	--
E/6.5-7.0'	1607.5	08-12-94	08-16-94	Total Solid	--	--	88 %	--	--
				TPHC	6.6	yes	22.6	10,000	--
F/6.5-7.0'	1607.6	08-12-94	08-16-94	Total Solid	--	--	87 %	--	--
				TPHC	6.6	yes	33.5	10,000	--
DUP F/6.5-7.0'	1607.7	08-12-94	08-16-94	Total Solid	--	---	87 %	--	--
				TPHC	6.6	yes	60.0	10,000	--

## Notes:

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

Smith Environmental Technologies Corporation (Project No. 09-5004-06)

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**APPENDIX A**

**NJDEP BUST CLOSURE APPROVAL**



State of New Jersey  
DEPARTMENT OF ENVIRONMENTAL  
PROTECTION AND ENERGY

CHRISTINE TODD WHITMAN  
Governor

ROBERT C. SHINN, JR.  
Commissioner

Mr. Joseph Fallon  
SELFM-EH-EV  
Headquarters CECOM Fort Monmouth  
Fort Monmouth, NJ 077703-5000

JUL 5 1994

Dear Mr. Fallon:

Re: UST Closure Approval Applications (#2)  
Fort Monmouth, Monmouth County

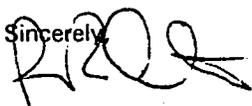
I have reviewed the Underground Storage Tank (UST) Closure Approval Applications submitted on June 10, 1994 for the five registered tanks numbers 0090010-20; and 0081533-96, 101, 105, and 84. The applications are technically accurate and the NJDEPE approves the applications with the following required changes.

Since the reports are all drafted from the same shell document, the required changes noted here apply to all of these documents and future UST Closure Approval Applications.

1. "UNDERGROUND STORAGE TANK (UST) DECOMMISSIONING/CLOSURE PLAN" Section A. General Requirements: The laws listed should include the *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E et seq.).
2. Same Section: THE NJDEPE, will be changing its name to NJDEP on 7/1/94. Documents which are named NJDEPE should remain so named, however references to the Department should be abbreviated NJDEP.
3. Section E. Excavated Soils Management: The NJDEPE has updated the document titled "Management of Excavated Soils". This updated version is dated May 14, 1993.
4. Section F. Changes/Authorizations: Prior authorization must be obtained from the Bureau of Federal Case Management (BFCM), not BUST.
5. "UNDERGROUND ... ASSESSMENT PLAN" General: See comment 1 and 4. Sentence should be modified to read "... and submitted to the NJDEPE-BFCM in accordance with N.J.A.C. 7:14B-9.2 and 9.3 and N.J.A.C. 7:26E et seq.
6. CERTIFICATION section, this paragraph should include a reference to compliance with the minimum requirements of the *Technical Regulations for Site Remediation*, N.J.A.C. 7:26E et seq.

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

Sincerely,

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

cc. Kevin Kratina, BUST  
RPCE\BFCM\FTMMTH14.IRC

**APPENDIX B  
CERTIFICATIONS**



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. 659

081533-101  
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 07703 County Monmouth  
Telephone No. (908) 532-6224

OWNER'S NAME AND ADDRESS, if different from above

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Telephone No. \_\_\_\_\_

II. DISCHARGE REPORTING REQUIREMENTS

A. Was contamination found?  Yes  No If Yes, Case No. \_\_\_\_\_  
(Note: All discharges must be reported to the Environmental Action Hotline (609) 292-7172)

B. The substance(s) discharged was(were) N/A

C. Have any vapor hazards been mitigated?  Yes  No  N/A

III. DECOMMISSIONING OF TANK SYSTEMS

Closure Approval No. Letter dated July 5, 1994

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?  Yes  No  N/A

2. Were soil borings taken at the tank system closure site as prescribed?  Yes  No  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 0
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?  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. N/A ppb total BTEX, N/A ppb total non-targeted VOC
  2. N/A ppb total B/N, N/A ppb total non-targeted B/N
  3. 122.0 ppm TPHC
  4. N/A ppb \_\_\_\_\_ (for non-petroleum substance)

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  No
2. Free product contaminated soils are suspected to exist below the water table  Yes  No
3. Free product contaminated soils are suspected to exist off the property boundaries.  Yes  No

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

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

VI. GROUND WATER CONTAMINATION N/A

- A. Was ground water contamination found?  Yes  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:

1. \_\_\_\_\_ ppb total BTEX, \_\_\_\_\_ ppb total non-targeted VOC
2. \_\_\_\_\_ ppb total B/N, \_\_\_\_\_ ppb total non-targeted B/N
3. \_\_\_\_\_ ppb total MTBE, \_\_\_\_\_ ppb total TBA
4. \_\_\_\_\_ ppb \_\_\_\_\_ (for non-petroleum substance)
5. greatest thickness of separate phase product found \_\_\_\_\_
6. separate phase product has been delineated  Yes  No  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  N/A
2. The number of these wells identified is \_\_\_\_\_.

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 \_\_\_\_\_ 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 \_\_\_\_\_ feet from the source and its screening begins at a depth of \_\_\_\_\_ 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 \_\_\_\_\_ feet below grade. This well is located \_\_\_\_\_ 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 \_\_\_\_\_ feet from the source. This well is \_\_\_\_\_ feet deep and screening begins at a depth of \_\_\_\_\_ feet.

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

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

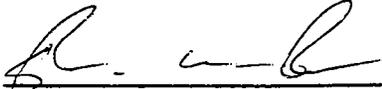
G. Delineation of contamination

1. The ground water contaminants have been delineated to MCLs or lower values at the property boundaries.  Yes  No
2. The plume is suspected to continue off the property at concentrations greater than MCLs.  Yes  No
3. Off property access (circle one):  is being sought  has been approved  has been denied

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 Desai SIGNATURE 

COMPANY NAME U.S. Army Fort Monmouth DATE 11/2/91  
(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."*

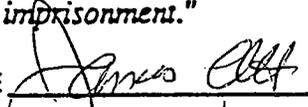
NAME (Print or Type) \_\_\_\_\_ SIGNATURE \_\_\_\_\_

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)1].

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

NAME (Print or Type) James Ott SIGNATURE 

COMPANY NAME U.S. Army, Fort Monmouth DATE 2/27/96

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

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**  
**WASTE MANIFEST**



State of New Jersey  
 Department of Environmental Protection and Energy  
 Hazardous Waste Regulation Program  
 Manifest Section  
 CN 421, Trenton, NJ 08625-0421

6830  
 0779

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

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

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No. NJ 3211G02059707274		Manifest Document No. 07274		2. Page 1 of 1		Information in the shaded areas is not required by Federal law.	
Generator's Name and Mailing Address US Army Communications Electronics Center Main Post, c/o James M Shirghio, Bldg 2504, ATTN: SELFM-DL-EM-MS, Fort Monmouth, NJ 07703 Generator's Phone (908) 532-6224				A. State Manifest Document Number <b>NJA-1907274</b>					
5. Transporter 1 Company Name Freehold Cartage, Inc.		6. US EPA ID Number NJ 0054126164		C. State Trans. ID-NJDEPE -52265		Decal No. -55263			
Generator's Name and Mailing Address Lionatti Oil Recovery, Co., Inc. Runyon & Cheesequake Rds. Old Bridge, NJ 08857		10. US EPA ID Number		D. Transporter's Phone (908) 462-1001		E. State Trans. ID-NJDEPE			
9. Designated Facility Name and Site Address		10. US EPA ID Number		F. Transporter's Phone		G. State Facility's ID			
11. US DOT Description (Including Proper Shipping Name, Hazard Class or Division, ID Number and Packing Group)		12. Containers		13. Total Quantity		14. Unit Wt/Vol		15. Waste No.	
a. X Petroleum Oil N.O.S. Class 3 (Petroleum Oil) Combustible Liquid UN 1270 PG III		0 0 1 T T		00242 G		X 17 2 2			
b. X Petroleum Oil N.O.S. Class 3 (Petroleum Oil) Combustible Liquid Un 1270 PG III		0 0 1 T T		00111 G		X 17 2 2			
c. X Petroleum Oil N.O.S. Class 3 (Petroleum Oil) Combustible Liquid UN 1270 PG III		0 0 1 T T		00335 G		X 17 2 2			
d. X Petroleum Oil N.O.S. Class 3 (Petroleum Oil) Combustible Liquid UN 1270 PG III		0 0 1 T T		00238 G		X 17 2 2			
Additional Descriptions for Materials Listed Above				K. Handling Codes for Wastes Listed Above					
Petroleum Oil 90%		Petroleum Oil 90%		T04-Filtration		T04-Filtration			
Water 10%		Water 10%		T04-Filtration		T04-Filtration			
petroleum oil 90%		Petroleum Oil 90%		T04-Filtration		T04-Filtration			
T,L Water 10%		T,L Water 10%		T04-Filtration		T04-Filtration			
15. Special Handling Instructions and Additional Information NOT REGULATED BY EPA. REGULATED AS HAZARDOUS WASTE IN NJ 24 HOUR EMERGENCY PHONE: 201-427-2881 NJ X DECAL# 55263 NA. 0081533-100 11B. 0081533-101 11C. 0081533-84 11D. Bldg. 121									
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.									
Printed/Typed Name Joseph M. Fallon				Signature Joseph M. Fallon		Month Day Year 08/09/94			
7. Transporter 1 Acknowledgement of Receipt of Materials Printed/Typed Name David S. Smith				Signature David S. Smith		Month Day Year 10/8/09/94			
18. Transporter 2 Acknowledgement of Receipt of Materials Printed/Typed Name				Signature		Month Day Year			
19. Discrepancy Indication Space									
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19. Printed/Typed Name UTPAL JAGAD									
Signature U.S. Jagad				Month Day Year 10/8/10/94					

NJ 1907274

**SMITH**

**APPENDIX D**  
**UST DISPOSAL CERTIFICATE**

MAZZA & SONS, INC.

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

NO. \_\_\_\_\_

DATE 16 July 91

LDG-656-UST 0081533-98  
658 " 100 ✓  
659 " 101  
482B 0090610-54

Port Monmouth  
Tinton Falls, NJ

Customer's Name Cute inc, 103 Godwin Ave Midland Pk NJ

Address Scrap tanks

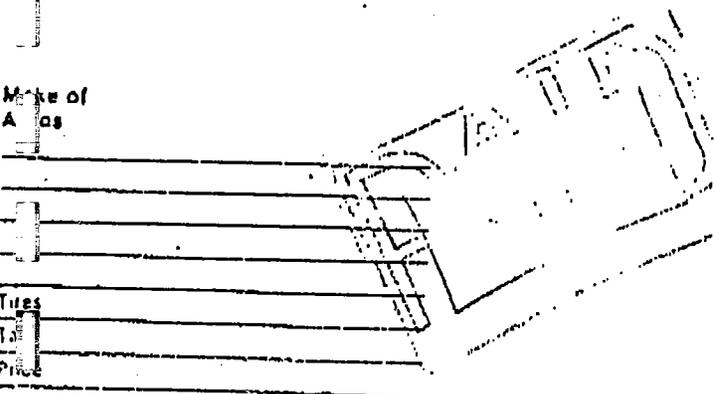
Make of  
A / os

Tires  
T  
P

Port Monmouth  
Tinton Falls, NJ

Bldg # UST #'s  
656 0081533-98  
658 0081533-100  
659 0081533-101  
482B 0090610-54

Weigher \_\_\_\_\_ Customer Don Ellis



41720 LB 6

35900 LB 6

5820

	Weight	Price
Cast Iron		
Sten	<u>116 1/2</u>	
Lt Iron		
Copper #1		
Copper #2		
Lt. Copper		
Brass		
Alum Clean		
Lead		
Stainless		
Radiators		
Battery		
TOTAL AMOUNT:		

**SMITH**

**APPENDIX E**

**SOIL ANALYTICAL DATA PACKAGE**

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

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

Lab. ID #: 1607.1-.7  
 Sample Rec'd: 08/12/94  
 Analysis Start: 08/16/94  
 Analysis Comp: 08/16/94

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

NJDEPE UST Reg.#: 0081533-101  
 Closure #: RESIDENTIAL  
 DICAR.#:  
 Location #: Bldg. 659

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1607.1	Site A, NW OVA= ND	88	122.	6.6
1607.2	Site B, N OVA= ND	86	82.2	6.6
1607.3	Site C, NE OVA= ND	87	49.4	6.6
1607.4	Site D, SE OVA= ND	87	33.5	6.6
1607.5	Site E, S OVA= ND	88	22.6	6.6
1607.6	Site F, SW OVA= ND	87	33.5	6.6
1607.7	Site G (dup) OVA= ND	87	60.0	6.6
M. Bl.	Method Blank	100	ND	3.3

Notes: ND = Not Detected, MDL = Method Detection Limit  
 \* = Silica Gel Added, NA = Not Applicable  
 1607.7dup= 74% 1607.7s= 80% 1607.7sd= 80% RPD= 0.8%

  
 -----  
 Brian K. McKee  
 Laboratory Director





Aug 16, 1994 Fred P. Hillman

BLANK 0 MV 1310

40.75 57 MV

81.5 112 MV

163 236 MV

1610.1 220 MV

1607.1 21 MV

1607.2 13 MV

1607.3 7 MV

1607.4 4 MV

1607.5 2 MV

1607.6 4 MV

1607.7 9 MV

1607.7 6 MV Dup.

1607.7 116 MV Spk

1607.7 117 MV Dup. Spk

40.75 <sup>60</sup> Standard Check

1608.1 7 MV

1608.2 14 MV

1608.3 13 MV

1608.4 2 MV

1608.5 5 MV

1608.6 1 MV

1608.7 0 MV

1608.8 3 MV

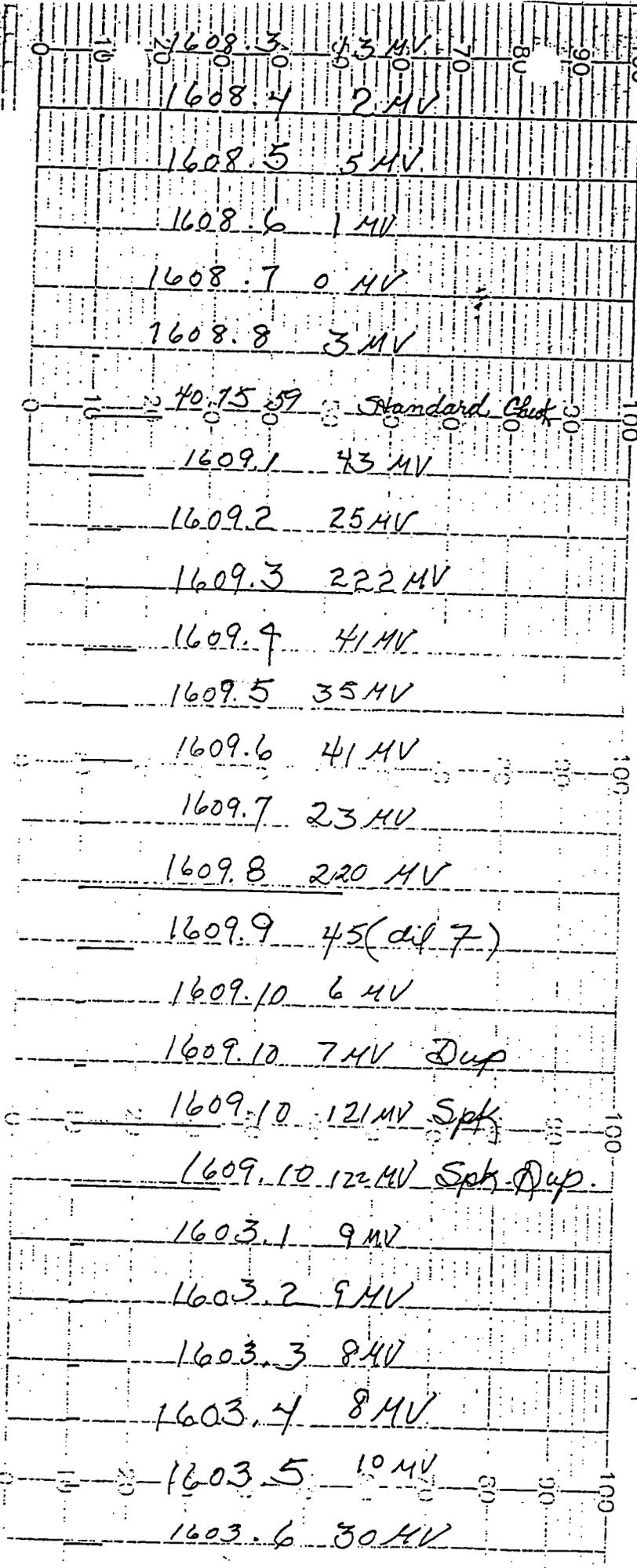
40.75 <sup>59</sup> Standard Check

1609.1 43 MV

195-6370-00

PRINTED IN U.S.A.

PRINTED IN U.S.A.



195-6971-000

FIGURE

PHC Conformance/Non-conformance Summary Report

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

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.

Project #1607

  
Brian K. McKee  
Laboratory Manager

ATTACHMENT EE

UST 660 File Review and Analyses



UNDERGROUND STORAGE TANK FILE REVIEW  
FORT MONMOUTH BRAC 05 FACILITY  
OCEANPORT, NEW JERSEY

Date: November 6, 2015 Review Performed By: Kent Friesen, Parsons

Site ID: **Bldg. 660** Registration ID: None

Recommended Status of Site: **Case Closed (no change)**

UST Probability (from May 2014 "Addendum 1 ECP UHOT Report"): **NFA**

Based on the file review, were there indications of a contaminant release? [ ] Yes [X] No

NJDEP Release No. or DICAR (If applicable): \_\_\_\_\_

Did NJDEP approve No Further Action (NFA) for this site? [ ] Yes [X] No [ ] Not Applicable

Tank Description: [X] Steel [ ] Fiberglass Size: 1000 gals. Contents: #2 Fuel Oil

[X] Residential [ ] Commercial/Industrial

Tank Removed? [X] Yes [ ] No If "yes," removal date: 10/13/1994

Were closure soil samples taken? [X] Yes [ ] No Analyses: TPH

Comparison criteria: 5,100 mg/kg

Were closure soil sample results less than comparison criteria? [X] Yes [ ] No

**Brief Narrative**

The Building 660 residential barracks building was demolished, presumably in the 1980's. A tank removal contractor excavated for a UST at the former building location on October 5, 1994. Soil at the site appeared to be clean based on visual observations.

Soil sampling was completed by FTMM in November 1994 at the former UST 660 site; the resulting analytical data are attached. Five soil samples and one field duplicate were collected from the former UST location and analyzed by the Fort Monmouth Environmental Laboratory for total petroleum hydrocarbons (TPH). The soil sample results ranged from not detected (ND) to 156 mg/kg for TPH. The results were less than 5,100 mg/kg for TPH, which is the current TPH remediation criterion. Therefore, there are no indications of a significant release to soil or groundwater, and NFA is warranted at Site 660.

Recommendations (if any): Request NFA from NJDEP

Signed:   
\_\_\_\_\_   
Kent A. Friesen, Parsons

MEMORANDUM TO FILE

FROM: EUGENE W. LESINSKI

DATE: 5 OCTOBER 1994

TO: FILE

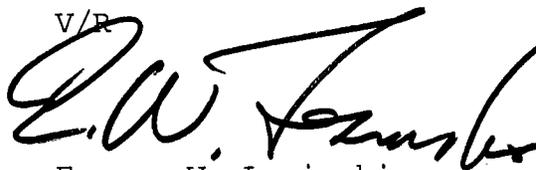
SUBJ: UST REMOVAL IN THE 600 AREA

1. I directed the UST tank hunt in the 600 Area for buildings 660 through 667 (8 tanks total) with CUTE Inc today. Of 8 possible existing UST's; we have found 5 UST's. The following information germane:

BLDG NO.	TANK SIZE	REMARKS
660	1000 GAL	SITE APPEARS CLEAN
661	1000 GAL	SITE APPEARS CLEAN
662	1000 GAL	SITE APPEARS CLEAN
663	1000 GAL	SITE APPEARS CLEAN
664	-	NO TANKS FOUND - ALL 3
THRU		SITES INDICATE UST WAS
666		REMOVED AND CLEAN FILL
		ADDED
667	1000 GAL	SITE APPEARS CLEAN

2. After conferring with CUTE, Inc. and Tom Berger, it was decided that all 8 excavations were to back-filled awaiting scheduling of newly-found UST removals.

V/R

  
Eugene W. Lesinski

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

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

Lab. ID #: 1734.1-.7  
 Sample Rec'd: 11/17/94  
 Analysis Start: 11/21/94  
 Analysis Comp: 11/21/94

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

NJDEPE UST Reg. #:  
 Closure #:  
 DICAR #:  
 Location #: **Bldg. 660 excav.**

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1734.1	Site A, NW OVA=ND	82	156.	6.6
1734.2	Site B, N OVA=ND	82	61.4	6.6
1734.3	Site C, NE OVA=ND	80	73.7	6.6
1734.4	Site D, S OVA=ND	80	ND	6.6
1734.5	Site E, CENTER OVA=ND	87	ND	6.6
1734.6	Site F, Dup. of E OVA=ND	80	25.0	6.6
1734.7	Site G, Dirt Pile OVA=ND	91	136.	6.6
M. Bl.	Method Blank	100	ND	3.3

**Notes:** ND = Not Detected, MDL = Method Detection Limit  
 \* = Silica Gel Added, NA = Not Applicable  
 1734.3dup= 85% 1734.3S= 80% 1734.3SD= 81% RPD= 1.9%  
 Cal Chk =105%

  
 -----  
 Brian K. McKee  
 Laboratory Director



Residential tank

# U.S. ARMY FORT MONMOUTH

Chain of Custody

P.O. #: PCB-7 SAE

Project #:		Sampler: <u>Cade/George</u>		Date / Time: <u>11/17 13:30</u>		Analysis Parameters		Start:	
Customer: <u>D. DeSai</u> <u>Self-Insured</u>		Site Name: <u>Bldg 660</u>		Date / Time: <u>11/17 13:30</u>		Analysis Parameters		Finish:	
Phone:		Customer Sample Location/ID Number		Sample Matrix		# of Bottles		Preservation Method	
Lab Sample ID Number	Date/Time	Customer Sample Location/ID Number	Sample Matrix	# of Bottles	Date / Time	Analysis Parameters	Remarks	Preservation Method	
1734.1	11/17 1-45	Site A NW	Soil	1	X	X	Shake test		
.2	11/17 1-54	Site B W	Soil	1	X	X	ZPC		
.3	11/17 1-49	Site C NE	Soil	1	X	X			
.4	11/17 1-57	Site D S	Soil	1	X	X			
.5	11/17 2-05	Site E (center)	Soil	1	X	X			
.6	11/17 2-09	Site F (Dirt pile)	Soil	1	X	X			
→ .7	11/17 2-13	Site G (Dirt pile)	Soil	1	X	X			
Relinquished By (signature)		Date / Time		Received By (signature)		Shipped By:			
Relinquished By (signature)		Date / Time		Received for Lab by (signature)		Date / Time			
<i>[Signature]</i>		11/17 1530		<i>[Signature]</i>		11/17/94 1500			

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

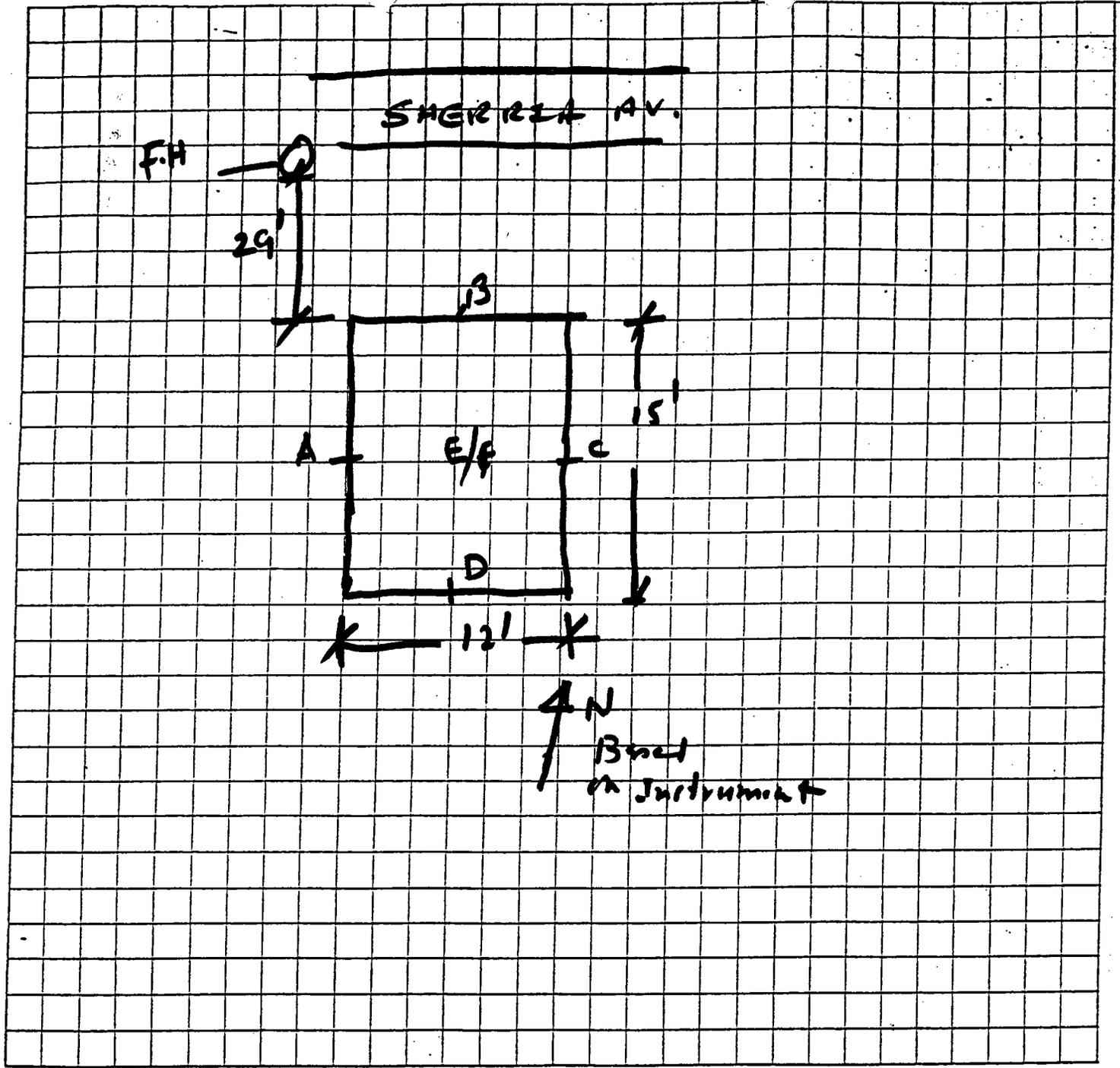
SAI-ENV COC form 01 Page 1 of 1 Pages Rev. A Date: 02 Apr 93

Environmental Laboratory

Certification Number 13461

PROPOSED SITE PLAN

B 76 660



NOTE: Indicate scale and compass direction.

REMARKS

TANK LOCATION

BLDG# **660**  
 TANK #  
 TANK SIZE  
 TANK CONTENTS

PHC Conformance/Non-conformance Summary Report

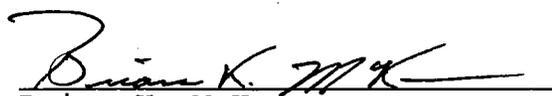
- |   | <u>No</u> | <u>Yes</u> |
|---|-----------|------------|
| 1. Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank   | —         | ✓          |
| <hr/> <hr/>   |           |            |
| 2. Matrix Spike/Matrix Sp Dup. Recoveries Meet Criteria (If not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

Project #1734

  
Brian K. McKee  
Laboratory Manager



ATTACHMENT FF

UST 661 File Review and Analyses



UNDERGROUND STORAGE TANK FILE REVIEW  
FORT MONMOUTH BRAC 05 FACILITY  
OCEANPORT, NEW JERSEY

Date: November 6, 2015 Review Performed By: Kent Friesen, Parsons

Site ID: **Bldg. 661** Registration ID: None

Recommended Status of Site: **Case Closed (no change)**

UST Probability (from May 2014 "Addendum 1 ECP UHOT Report"): **NFA**

Based on the file review, were there indications of a contaminant release? [ ] Yes [X] No

NJDEP Release No. or DICAR (If applicable): \_\_\_\_\_

Did NJDEP approve No Further Action (NFA) for this site? [ ] Yes [X] No [ ] Not Applicable

Tank Description: [X] Steel [ ] Fiberglass Size: 1000 gals. Contents: #2 Fuel Oil

[X] Residential [ ] Commercial/Industrial

Tank Removed? [X] Yes [ ] No If "yes," removal date: 10/13/1994

Were closure soil samples taken? [X] Yes [ ] No Analyses: TPH

Comparison criteria: 5,100 mg/kg

Were closure soil sample results less than comparison criteria? [X] Yes [ ] No

**Brief Narrative**

The Building 661 residential barracks building was demolished, presumably in the 1980's. A tank removal contractor excavated for a UST at the former building location on October 5, 1994. Soil at the site appeared to be clean based on visual observations.

Soil sampling was completed by FTMM in November 1994 at the former UST 661 site; the resulting analytical data are attached. Seven soil samples and one field duplicate were collected on November 7, 1994 from the former UST location and analyzed by the Fort Monmouth Environmental Laboratory for total petroleum hydrocarbons (TPH). These initial soil sample results ranged from 25.8 to 739 mg/kg for TPH, with higher concentrations occurring in the north and east sidewalls of the excavation. Additional sampling of the north and east side walls was performed on November 17, 1994, suggesting that additional soil had been excavated; these results were 169 to 227 mg/kg for TPH. The results were less than 5,100 mg/kg for TPH, which is the current TPH remediation criterion. Therefore, there are no indications of a significant release to soil or groundwater, and NFA is warranted at Site 661.

Recommendations (if any): Request NFA from NJDEP



Signed: \_\_\_\_\_

Kent A. Friesen, Parsons

MEMORANDUM TO FILE

FROM: EUGENE W. LESINSKI

DATE: 5 OCTOBER 1994

TO: FILE

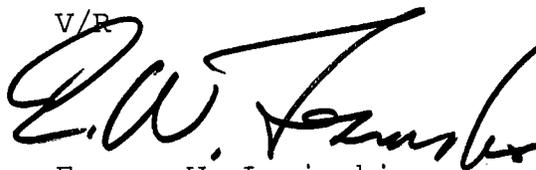
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1. I directed the UST tank hunt in the 600 Area for buildings 660 through 667 (8 tanks total) with CUTE Inc today. Of 8 possible existing UST's; we have found 5 UST's. The following information germane:

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660	1000 GAL	SITE APPEARS CLEAN
661	1000 GAL	SITE APPEARS CLEAN
662	1000 GAL	SITE APPEARS CLEAN
663	1000 GAL	SITE APPEARS CLEAN
664	-	NO TANKS FOUND - ALL 3
THRU		SITES INDICATE UST WAS
666		REMOVED AND CLEAN FILL
		ADDED
667	1000 GAL	SITE APPEARS CLEAN

2. After conferring with CUTE, Inc. and Tom Berger, it was decided that all 8 excavations were to back-filled awaiting scheduling of newly-found UST removals.

V/R

  
Eugene W. Lesinski

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

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

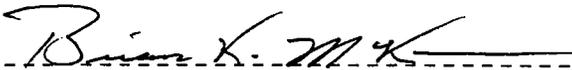
Lab. ID #: 1704.1-.8  
 Sample Rec'd: 11/07/94  
 Analysis Start: 11/09/94  
 Analysis Comp: 11/09/94

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

NJDEPE UST Reg.#:  
 Closure #:  
 DICAR #:  
 Location #: **Bldg. 661 excav.**

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1704.1	Site A, SE Sidewall 7' ova=2.0	93	365.	6.6
1704.2	Site B, E Sidewall 7' ova= ND	83	488.	9.9
1704.3	Site C, N Sidewall 7' ova=2.0	82	739.	9.9
1704.4	Site D, SW Sidewall 7' ova=8.0	81	411.	9.9
1704.5	Site E, S Sidewall 7' ova=ND	88	89.4	6.6
1704.6	Site F, W Bottom 7.5' ova=ND	88	25.8	6.6
1704.7	Site G, E Bottom 7.5' ova=ND	87	174.	9.9
1704.8	Site H, DUP	87	293.	9.9
M. Bl.	Method Blank	100	ND	3.3

**Notes:** ND = Not Detected, MDL = Method Detection Limit  
 \* = Silica Gel Added, NA = Not Applicable  
 Batch dup= 80% Batch S= 97% Batch SD= 93% RPD= 4.9%  
 Cal Chk = 99%

  
 -----  
 Brian K. McKee  
 Laboratory Director



# U.S. ARMY FORT MONMOUTH

Chain of Custody

P.O. #: SAI / RWS-007

Project #: <u>661</u>		Sampler: <u>Charles Appleby</u>		Date / Time: <u>11/7/94 3:30</u>		Analysis Parameters		Start:	
Customer: <u>C. Appleby</u>		Site Name: <u>Bldg. 661</u>		Sample Matrix		TTHC		Finish:	
Phone: <u>X226224</u>		Customer Location/ID Number		# of Bottles		MUSE		Preservation Method	
Lab Sample ID Number	Date/Time	Customer Location/ID Number	Sample Matrix	# of Bottles					Remarks
1704.1	11/7/94	Site A SE-sidewalk - 7'd	Soil	1	X	X	X	2.0	Sample kept @ 4°C
1704.2		Site B E-sidewalk - 7'd		1	X	X	X	ND	
1704.3		Site C - N-sidewalk - 7'd		1	X	X	X	2.0	
1704.4		Site D SW-sidewalk - 7'd		1	X	X	X	8.0	
1704.5		Site E S-sidewalk - 7'd		1	X	X	X	ND	
1704.6		Site F W-P4 Bottom - 7.5'd		1	X	X	X	ND	OVA-SM - A-50114
1704.7		<del>Site G - E-P4 Bottom - 7.5'd</del>		1	X	X	X	ND	Cal of 95 ppm with
1704.8		Deep (Site H)		1	X	X	X	NA	+ zero AX - bar select
									3.00, Read 92 ppm
									o/c Col <sub>2</sub> @ 11/7/94 3:30
									ND = < 1 ppm
Relinquished By (signature)	Date / Time	Received By (signature)	Date / Time	Shipped By:					
<i>[Signature]</i>	11/7/94 1600	<i>[Signature]</i>	11/7/94 1600	Ford					
Relinquished By (signature)	Date / Time	Received for Lab by (signature)	Date / Time	Date / Time					
<i>[Signature]</i>		<i>[Signature]</i>							

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

Environmental Laboratory

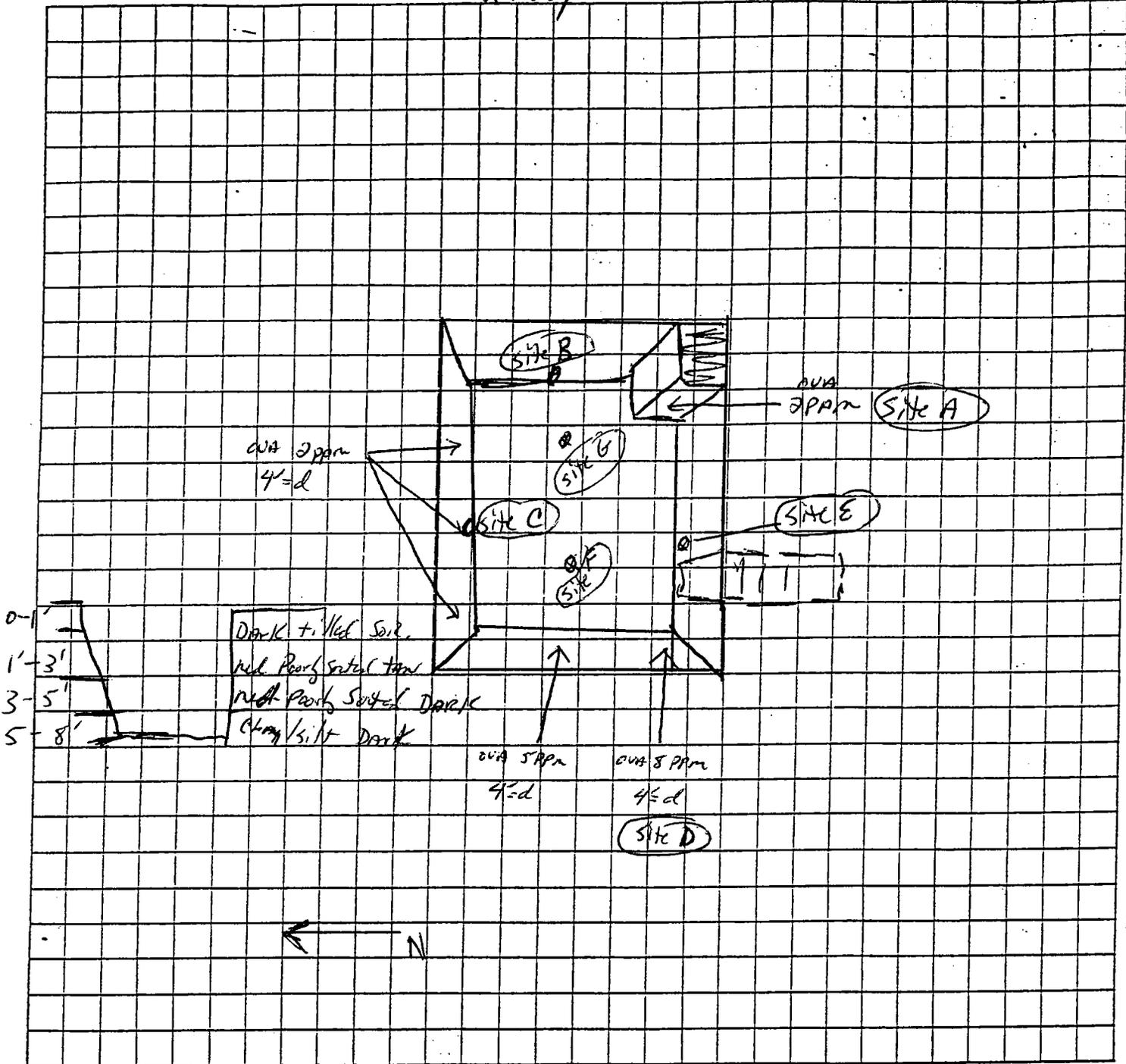
Certification Number 13461

PROPOSED SITE PLAN

C. Appleby

11-7-94

3PM



NOTE: Indicate scale and compass direction.

1"=10'

REMARKS

UST Removed Prior Approx 10-6-94

Depth: - 7'

Screened w/ ova All ~~around~~ side walls and floor  
 noted all readings > 1 ppm. All other areas  
 < 1 ppm ova.

- Sampled ~ 7' Depth at Sidewalls And 7.5' depth at Bottom
- Site H (Dupe) is Site D
- Sampled by Cate/George - Stainless Steel second Spoons & glass.

TANK LOCATION

BLDG# 661  
 TANK # NA  
 TANK SIZE 1080  
 TANK CONTENTS #2 Heating Oil.

PHC Conformance/Non-conformance Summary Report

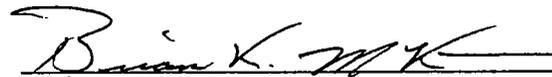
- |   | <u>No</u>                           | <u>Yes</u>                          |
|---|-------------------------------------|-------------------------------------|
| 1. Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank   | <input checked="" type="checkbox"/>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

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.

Project #1704

  
\_\_\_\_\_  
Brian K. McKee  
Laboratory Manager

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

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

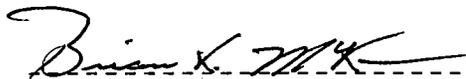
Lab. ID #: 1733.1-.2  
 Sample Rec'd: 11/17/94  
 Analysis Start: 11/21/94  
 Analysis Comp: 11/21/94

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

NJDEPE UST Reg. #:  
 Closure #:  
 DICAR #:  
 Location #: **Bldg. 661 excav.**

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1733.1	Site B1 OVA=ND	89	227.	6.6
1733.2	Site C1 OVA=ND	86	169.	6.6
M. Bl.	Method Blank	100	ND	3.3

**Notes:** ND = Not Detected, MDL = Method Detection Limit  
 \* = Silica Gel Added, NA = Not Applicable  
 Batch dup= 85% Batch S= 80% Batch SD= 81% RPD= 1.9%  
 Cal Chk =105%



Brian K. McKee  
 Laboratory Director



Residential tank

# U.S. ARMY FORT MONMOUTH

Chain of Custody

P.O. #: SAI PWS-007

Project #: 661		Sampler: Duke George		Date / Time		Analysis Parameters		Start:	
Customer: D. Dasari Delphi, IN, IN		Site Name: Resampled - two sites Bury 661		Date / Time		Analysis Parameters		Finish:	
Phone:		Customer Sample Location/ID Number		Sample Matrix		# of Bottles		Preservation Method	
Lab Sample ID Number	Date/Time							Remarks	
1733-1	11/17 2-18	SITE B1		Soil		1		Sample	
402	11/17 2-20	SITE C1		Soil		1		100% E402	
								DNA - chemical to 200% air & pressure 95 PPM - Randy 90	
Relinquished By (signature)		Date / Time		Received By (signature)		Date / Time		Shipped By:	
42. v. 66		11/17 1530		Sarah E. Lullard		11/17/93 1530			
Note: A drawing depicting sample location should be attached or drawn on the reverse side of this chain of custody.									

Environmental Laboratory

Certification Number 13461

PHC Conformance/Non-conformance Summary Report

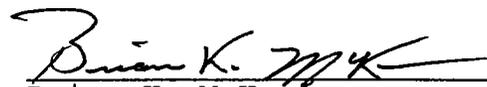
- |   | <u>No</u> | <u>Yes</u> |
|---|-----------|------------|
| 1. Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank   | —         | ✓          |
| <hr/> <hr/>   |           |            |
| 2. Matrix Spike/Matrix Sp Dup. Recoveries Meet Criteria (If not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

Project #1733

  
\_\_\_\_\_  
Brian K. McKee  
Laboratory Manager



ATTACHMENT GG

UST 662 File Review and Analyses



UNDERGROUND STORAGE TANK FILE REVIEW  
FORT MONMOUTH BRAC 05 FACILITY  
OCEANPORT, NEW JERSEY

Date: November 9, 2015 Review Performed By: Kent Friesen, Parsons

Site ID: **Bldg. 662** Registration ID: None

Recommended Status of Site: **Case Closed (no change)**

UST Probability (from May 2014 "Addendum 1 ECP UHOT Report"): **NFA**

Based on the file review, were there indications of a contaminant release? [ ] Yes [X] No

NJDEP Release No. or DICAR (If applicable): \_\_\_\_\_

Did NJDEP approve No Further Action (NFA) for this site? [ ] Yes [X] No [ ] Not Applicable

Tank Description: [X] Steel [ ] Fiberglass Size: 1000 gals. Contents: #2 Fuel Oil

[X] Residential [ ] Commercial/Industrial

Tank Removed? [X] Yes [ ] No If "yes," removal date: 10/11/1994

Were closure soil samples taken? [X] Yes [ ] No Analyses: TPH

Comparison criteria: 5,100 mg/kg

Were closure soil sample results less than comparison criteria? [X] Yes [ ] No

**Brief Narrative**

The Building 662 residential barracks building was demolished, presumably in the 1980's. A tank removal contractor excavated for a UST at the former building location on October 5, 1994. Soil at the site appeared to be clean based on visual observations.

Soil sampling was completed by FTMM in November 1994 at the former UST 662 site; the resulting analytical data are attached. Seven soil samples and one field duplicate were collected on November 9, 1994 from the former UST location and analyzed by the Fort Monmouth Environmental Laboratory for total petroleum hydrocarbons (TPH). These soil sample results ranged from 41.0 to 115 mg/kg for TPH. The results were less than 5,100 mg/kg for TPH, which is the current TPH remediation criterion. Therefore, there are no indications of a significant release to soil or groundwater, and NFA is warranted at Site 662.

Recommendations (if any): Request NFA from NJDEP

Signed:   
\_\_\_\_\_   
Kent A. Friesen, Parsons

MEMORANDUM TO FILE

FROM: EUGENE W. LESINSKI

DATE: 5 OCTOBER 1994

TO: FILE

SUBJ: UST REMOVAL IN THE 600 AREA

1. I directed the UST tank hunt in the 600 Area for buildings 660 through 667 (8 tanks total) with CUTE Inc today. Of 8 possible existing UST's; we have found 5 UST's. The following information germane:

BLDG NO.	TANK SIZE	REMARKS
660	1000 GAL	SITE APPEARS CLEAN
661	1000 GAL	SITE APPEARS CLEAN
662	1000 GAL	SITE APPEARS CLEAN
663	1000 GAL	SITE APPEARS CLEAN
664	-	NO TANKS FOUND - ALL 3
THRU		SITES INDICATE UST WAS
666		REMOVED AND CLEAN FILL
		ADDED
667	1000 GAL	SITE APPEARS CLEAN

2. After conferring with CUTE, Inc. and Tom Berger, it was decided that all 8 excavations were to back-filled awaiting scheduling of newly-found UST removals.

V/P

  
Eugene W. Lesinski

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

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

Lab. ID #: 1710.1-.8  
 Sample Rec'd: 11/09/94  
 Analysis Start: 11/09/94  
 Analysis Comp: 11/09/94

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

NJDEPE UST Reg. #:  
 Closure #:  
 DICAR #:  
 Location #: **Bldg. 662 excav.**

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1710.1	Site A, S. Sidewall 7' ova= ND	91	48.7	6.6
1710.2	Site B, E.Sidewall 7' ova= ND	91	58.3	6.6
1710.3	Site C, N.Sidewall 7' ova= ND	90	54.1	6.6
1710.4	Site D, W. Sidewall 7' ova= ND	90	63.7	6.6
1710.5	Site E, S.Bottom 7.5' ova= ND	87	41.0	6.6
1710.6	Site F, N.Bottom 7.5' ova= ND	88	89.8	6.6
1710.7	Site G, Dup.	86	102.	6.6
1710.8	Site H,	91	115.	6.6
M. Bl.	Method Blank	100	ND	3.3

**Notes:** ND = Not Detected, MDL = Method Detection Limit  
 \* = Silica Gel Added, NA = Not Applicable  
 1710.1dup= 80% 1710.1S= 97% 1710.1SD= 93% RPD= 4.9%  
 Cal Chk = 99%

  
 -----  
 Brian K. McKee  
 Laboratory Director



# U.S. ARMY FORT MONMOUTH

Chain of Custody

P.O. #: PW5007

Project #: 660		Sampler: C. Appley, DRW / George Cook		Date / Time: 11-8-94 1330		Analysis Parameters		Start:			
Customer: C. Appley, DRW		Site Name: Bldg. 662		UST Examination		X POC X PCB X PAHs X Solids X Metals		Finish:			
Phone: X26224		Customer Sample Location/ID Number		Sample Matrix		# of Bottles		Preservation Method			
Lab Sample ID Number	Date/Time	Customer Sample Location/ID Number	Sample Matrix	# of Bottles	Received By (signature)	Date / Time	Shipped By:	Remarks			
1710.1	11-8-94	Site A - S-Side wall 7' d	Soil	1	Sarah J. Dillard	11/9/94 10235	Hand - Placed in Lat 11-8-94 - 3:30 Lat was closed.	21 Samples Pkg 2400			
1710.2		Site B - E-Side wall 7' d		1				X	X		
1710.3		Site C - N-Side wall 7' d		1				X	X		
1710.4		Site D - W-Side wall 7' d		1				X	X		
1710.5		Site E - S-PY BETA 7.5' d		1				X	X		
1710.6		Site F - N-PY BETA 7.5' d		1				X	X		
1710.7		Site G - Degr.		1				X	X		
1710.8		Site H -		1				X	X		
Relinquished By (signature)		Date / Time		Received By (signature)		Date / Time		Shipped By:			
[Signature]		11/9/94 10235		Sarah J. Dillard		11-8-94 - 3:30		Lat was closed.			
Relinquished By (signature)		Date / Time		Received for Lab by (signature)		Date / Time		Remarks			
[Signature]				[Signature]				Lat was closed.			

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

SRI-ENV COC form 01 Page ----- of ----- Pages Rev. A Date: 02 Apr. 93

Environmental Laboratory

Certification Number 13461

PROPOSED SITE PLAN

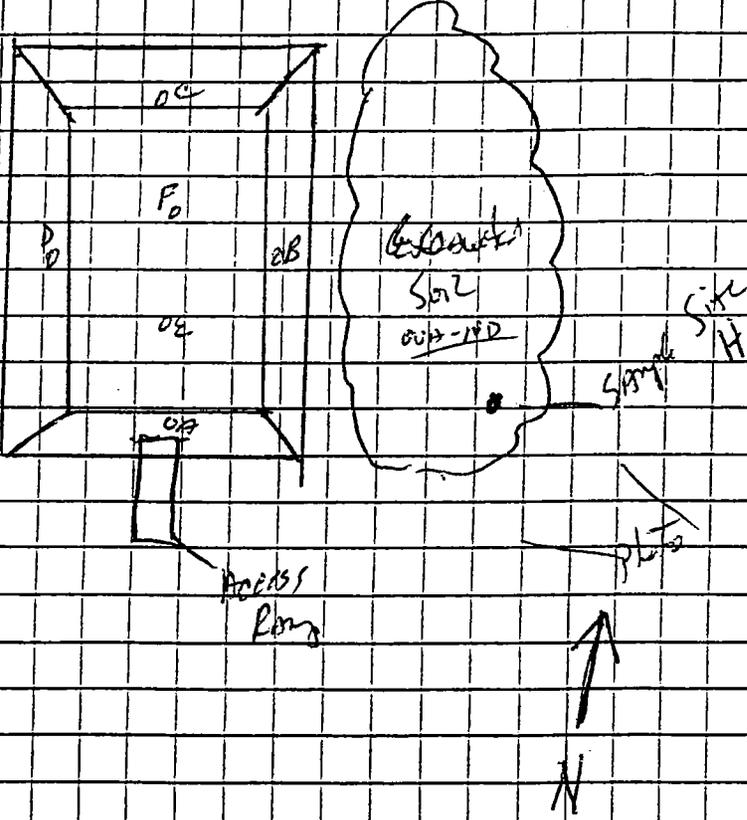
C. Appleby

11-8-1

Bldg 662

5-11'  
1-25'  
2-5-3'  
3-7'

med. fine sand  
fine pebbles  
Poorly sorted  
med. sand sub  
angular  
poorly sorted  
fine sand  
Poorly sorted  
med. sand  
Sub angular



NOTE: Indicate scale and compass direction.

REMARKS

- Site Excavated enlarged for 4 wks ago
- Med SA Samples Completed today.
- Site Sampled w/ OVA's
- Depth of Excavation 7.0 ft.
- Dupl - for F All OVA Plots at Excavation L VPR

TANK LOCATION  
 BLDG# 662  
 TANK # Residential  
 TANK SIZE 1080  
 TANK CONTENTS #2 fuel oil

Photos taken of Area.

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.

5. Extraction holding time met. (If not met, list number of days exceeded for each sample)

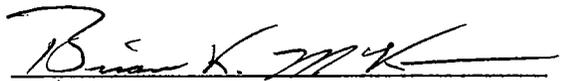
6. Analysis holding time met. (If not met, list number of days exceeded for each sample)

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.

Project #1710

  
\_\_\_\_\_  
Brian K. McKee  
Laboratory Manager



ATTACHMENT HH

UST 663 File Review and Analyses



UNDERGROUND STORAGE TANK FILE REVIEW  
FORT MONMOUTH BRAC 05 FACILITY  
OCEANPORT, NEW JERSEY

Date: November 9, 2015 Review Performed By: Kent Friesen, Parsons

Site ID: **Bldg. 663**

Registration ID: None

Recommended Status of Site: **Case Closed (no change)**

UST Probability (from May 2014 "Addendum 1 ECP UHOT Report"): **NFA**

Based on the file review, were there indications of a contaminant release? [ ] Yes [X] No

NJDEP Release No. or DICAR (If applicable): \_\_\_\_\_

Did NJDEP approve No Further Action (NFA) for this site? [ ] Yes [X] No [ ] Not Applicable

Tank Description: [X] Steel [ ] Fiberglass Size: 1000 gals. Contents: #2 Fuel Oil

[X] Residential [ ] Commercial/Industrial

Tank Removed? [X] Yes [ ] No If "yes," removal date: 10/11/1994

Were closure soil samples taken? [X] Yes [ ] No Analyses: TPH

Comparison criteria: 5,100 mg/kg

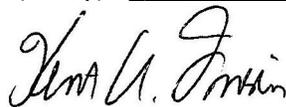
Were closure soil sample results less than comparison criteria? [X] Yes [ ] No

**Brief Narrative**

The Building 663 residential barracks building was demolished, presumably in the 1980's. A tank removal contractor excavated for a UST at the former building location on October 5, 1994. Soil at the site appeared to be clean based on visual observations.

Soil sampling was completed by FTMM in November 1994 at the former UST 663 site; the resulting analytical data are attached. Seven soil samples and one field duplicate were collected on November 9, 1994 from the former UST location and analyzed by the Fort Monmouth Environmental Laboratory for total petroleum hydrocarbons (TPH). These soil sample results ranged from 26.4 to 97.1 mg/kg for TPH. The results were less than 5,100 mg/kg for TPH, which is the current TPH remediation criterion. Therefore, there are no indications of a significant release to soil or groundwater, and NFA is warranted at Site 663.

Recommendations (if any): Request NFA from NJDEP



Signed: \_\_\_\_\_

Kent A. Friesen, Parsons

MEMORANDUM TO FILE

FROM: EUGENE W. LESINSKI

DATE: 5 OCTOBER 1994

TO: FILE

SUBJ: UST REMOVAL IN THE 600 AREA

1. I directed the UST tank hunt in the 600 Area for buildings 660 through 667 (8 tanks total) with CUTE Inc today. Of 8 possible existing UST's; we have found 5 UST's. The following information germane:

BLDG NO.	TANK SIZE	REMARKS
660	1000 GAL	SITE APPEARS CLEAN
661	1000 GAL	SITE APPEARS CLEAN
662	1000 GAL	SITE APPEARS CLEAN
663	1000 GAL	SITE APPEARS CLEAN
664	-	NO TANKS FOUND - ALL 3
THRU		SITES INDICATE UST WAS
666		REMOVED AND CLEAN FILL
		ADDED
667	1000 GAL	SITE APPEARS CLEAN

2. After conferring with CUTE, Inc. and Tom Berger, it was decided that all 8 excavations were to back-filled awaiting scheduling of newly-found UST removals.

V/P

  
Eugene W. Lesinski

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

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

Lab. ID #: 1711.1-.8  
 Sample Rec'd: 11/09/94  
 Analysis Start: 11/10/94  
 Analysis Comp: 11/10/94

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

NJDEPE UST Reg.#:  
 Closure #:  
 DICAR #:  
 Location #: **Bldg. 663 excav.**

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1711.1	Site A, E. Sidewall 7' ova= ND	83	28.6	6.6
1711.2	Site B, N.Sidewall 7' ova= ND	90	26.4	6.6
1711.3	Site C, W.Sidewall 7' ova= ND	88	27.0	6.6
1711.4	Site D, S. Sidewall 7' ova= ND	89	31.6	6.6
1711.5	Site E, S.Bottom 7.5' ova= ND	89	56.4	6.6
1711.6	Site F, N.Bottom 7.5' ova= ND	81	29.3	6.6
1711.7	Site G, DUP. ova= ND	80	90.3	6.6
1711.8	Site H, SE of Pile ova= 5.0	80	97.1	6.6
M. Bl.	Method Blank	100	ND	3.3

**Notes:** ND = Not Detected, MDL = Method Detection Limit  
 \* = Silica Gel Added, NA = Not Applicable  
 Batch dup= 100% Batch S= 109% Batch SD= 107% RPD= 1.6%  
 Cal Chk = 98%

  
 Brian K. McKee  
 Laboratory Director



# U.S. ARMY FORT MONMOUTH

Chain of Custody

P.O. #: SAI/PWS-007

Project #:	663	Sampler:	Charles Appleby SSE / Cete	Date / Time	11-8-94	Analysis Parameters	Start:
Customer:	Charles Appleby SELFW-PW-EL	Site Name:	Bldg 663				Finish:
Phone:	X26224	Customer Sample Location/ID Number	Sample Matrix	# of Bottles			Preservation Method
Lab Sample ID Number	Date/Time						Remarks
1711.1	11-8-94	1051 Site A-E-Sidewalk 7'	Soil	1	X	X	MD Samples kept < 40C
18		1052 Site B-N-Sidewalk 7'		1	X	X	MD - Sampled w/ SS Decon Spans, by Cete Inc.
19		1054 Site C-W-Sidewalk 7'		1	X	X	MD
20		1056 Site D-S-Sidewalk 7'		1	X	X	MD
21		1058 Site E-S-Pit Both 7.5'		1	X	X	MD
22		1059 Site F-N-Pit Both 7.5'		1	X	X	MD OVA SW-AS0114
23		NA Site G-Dupe.		1	X	X	NA Collected w/ Zero Air +
24		1301 Site H -SE of Soil Pit		1	X	X	5.0 95ppm Methane Read
							100ppm at 10 meters 8-11-94
							Crucial Solid = 3.00
							Placed in Lab 11-8-94, 3:30pm - Lab was closed.
Relinquished By (signature)	<i>[Signature]</i>	Date / Time	11/9/94 10:35	Received By (signature)	<i>[Signature]</i>	Shipped By:	
Relinquished By (signature)	<i>[Signature]</i>	Date / Time		Received for Lab by (signature):		Date / Time	

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

SAI-ENV COC form 01

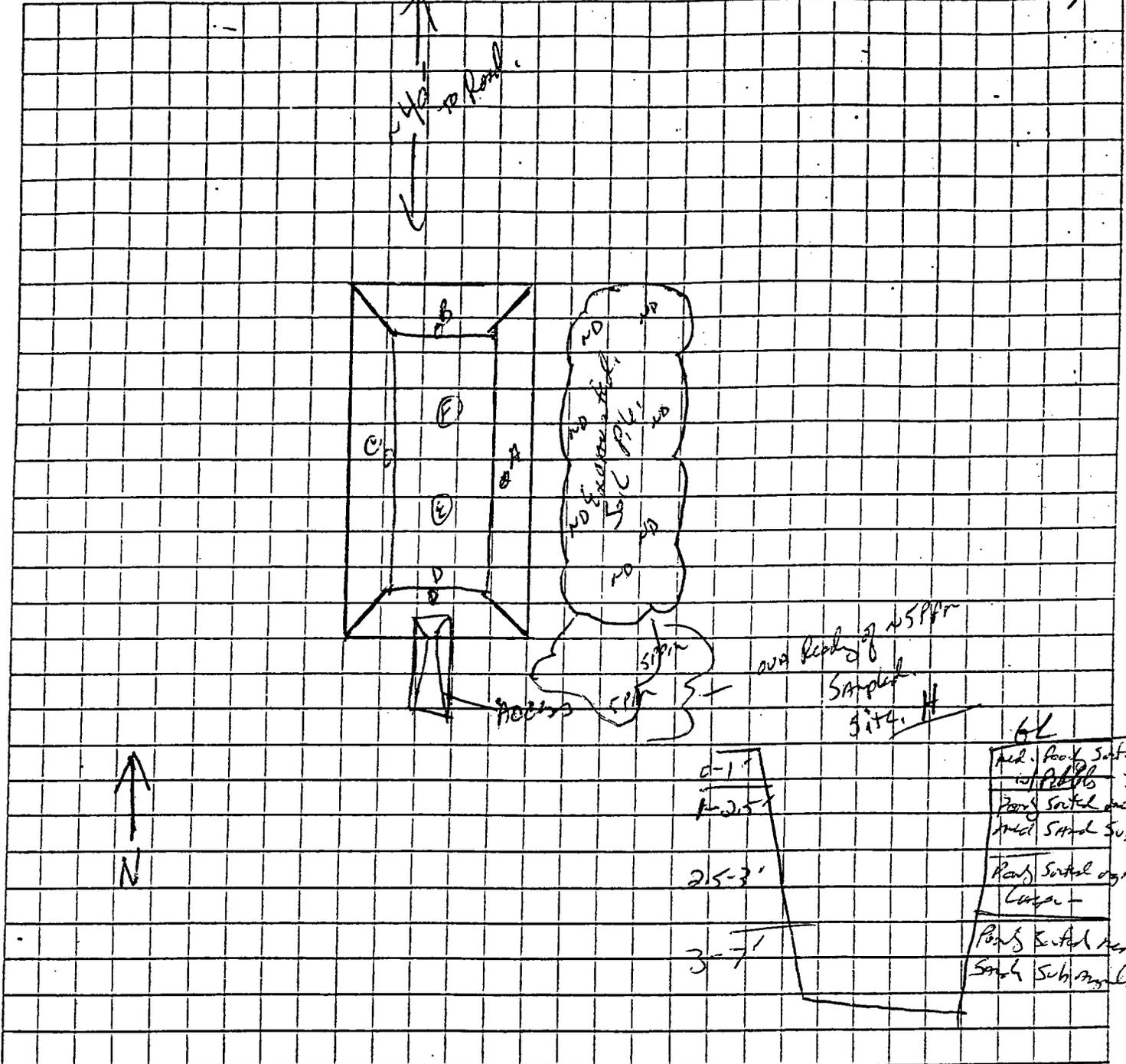
Page --- of --- Pages Rev. A Date: 02 Apr 93

Environmental Laboratory

Certification Number 13461

PROPOSED SITE PLAN

11-8-94 Charles Appleby



NOTE: Indicate scale and compass direction.

REMARKS  
 1st removed ~4 wks prior. today site estimated to 2ft around sides and pit bottom  
 - second site of ova - all areas 2 ipam - clear  
 Site G is dup of SITE F JAC  
 Sampled w/ foil wrapped Stainless Steel Spoons.  
 Depth - 7'

TANK LOCATION  
 BLDG# 663  
 TANK # NA  
 TANK SIZE 1030  
 TANK CONTENTS #2 fuel oil

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.

5. Extraction holding time met. (If not met, list number of days exceeded for each sample)

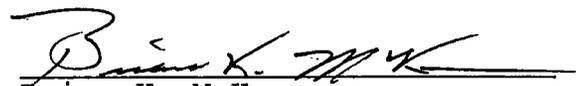
6. Analysis holding time met. (If not met, list number of days exceeded for each sample)

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.

Project #1711

  
Brian K. McKee  
Laboratory Manager



ATTACHMENT II

UST 665 File Review and Analyses



UNDERGROUND STORAGE TANK FILE REVIEW  
 FORT MONMOUTH BRAC 05 FACILITY  
 OCEANPORT, NEW JERSEY

Date: November 9, 2015 Review Performed By: Kent Friesen, Parsons

Site ID: **Bldg. 665** Registration ID: None

Recommended Status of Site: **Case Closed (no change)**

UST Probability (from May 2014 "Addendum 1 ECP UHOT Report"): **NFA**

Based on the file review, were there indications of a contaminant release? [ ] Yes [X] No

NJDEP Release No. or DICAR (If applicable): \_\_\_\_\_

Did NJDEP approve No Further Action (NFA) for this site? [ ] Yes [X] No [ ] Not Applicable

Tank Description: [ ] Steel [ ] Fiberglass Size: unk. Contents: #2 Fuel Oil

[X] Residential [ ] Commercial/Industrial

Tank Removed? [X] Yes [ ] No If "yes," removal date: unknown

Were closure soil samples taken? [X] Yes [ ] No Analyses: TPH

Comparison criteria: 5,100 mg/kg

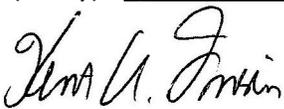
Were closure soil sample results less than comparison criteria? [X] Yes [ ] No

**Brief Narrative**

The Building 665 residential barracks building was demolished, presumably in the 1980's. A tank removal contractor excavated for a UST at the former building location on October 5, 1994. No tank was found; the contractor noted that the tank was previously removed and clean fill placed for backfill.

Soil sampling was subsequently completed by FTMM in January 2006 using a geoprobe at the former UST 665 site; the resulting analytical data are attached. Three soil samples were collected from the former UST location and analyzed by the Fort Monmouth Environmental Laboratory for total petroleum hydrocarbons (TPH). These soil sample results were all not detected (ND) for TPH. The results were less than 5,100 mg/kg for TPH, which is the current TPH remediation criterion. One groundwater sample was also collected from the UST vicinity and analyzed for volatile organic compounds (VOCs) and semivolatile organic compounds (SVOCs); no VOC or SVOC analytes were detected. Therefore, there are no indications of a significant release to soil or groundwater, and NFA is warranted at Site 665.

Recommendations (if any): Request NFA from NJDEP

Signed:   
 \_\_\_\_\_  
 Kent A. Friesen, Parsons

MEMORANDUM TO FILE

FROM: EUGENE W. LESINSKI

DATE: 5 OCTOBER 1994

TO: FILE

SUBJ: UST REMOVAL IN THE 600 AREA

1. I directed the UST tank hunt in the 600 Area for buildings 660 through 667 (8 tanks total) with CUTE Inc today. Of 8 possible existing UST's; we have found 5 UST's. The following information germane:

BLDG NO.	TANK SIZE	REMARKS
660	1000 GAL	SITE APPEARS CLEAN
661	1000 GAL	SITE APPEARS CLEAN
662	1000 GAL	SITE APPEARS CLEAN
663	1000 GAL	SITE APPEARS CLEAN
664	-	NO TANKS FOUND - ALL 3
THRU		SITES INDICATE UST WAS
666		REMOVED AND CLEAN FILL
		ADDED
667	1000 GAL	SITE APPEARS CLEAN

2. After conferring with CUTE, Inc. and Tom Berger, it was decided that all 8 excavations were to back-filled awaiting scheduling of newly-found UST removals.

V/P

  
Eugene W. Lesinski

# FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS

PHONE: (732) 532-4359 FAX: (732) 532-6263

WET-CHEM - METALS - ORGANICS - FIELD SAMPLING

CERTIFICATIONS: NJDEP #13461, NYSDOH #11699



ANALYTICAL DATA REPORT  
Fort Monmouth Environmental Laboratory  
ENVIRONMENTAL DIVISION  
Fort Monmouth, New Jersey  
PROJECT: BLDG. 665

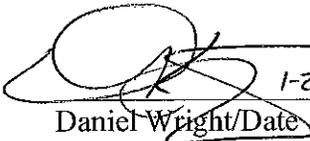
## Bldg. 665

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
665 C 7.0-7.5'	6001401	Soil	06-Jan-06 11:40	01/06/06
665 W 7.0-7.5'	6001402	Soil	06-Jan-06 12:08	01/06/06
665 E 7.0-7.5'	6001403	Soil	06-Jan-06 12:38	01/06/06
665 C GW	6001404	Aqueous	06-Jan-06 12:56	01/06/06

### ANALYSIS:

FORT MONMOUTH ENVIRONMENTAL LAB  
VOA+15, BN+15, TPHC, % SOLIDS

ENCLOSURE:  
CHAIN OF CUSTODY  
RESULTS

  
1-25-06  
Daniel Wright/Date  
Laboratory Director

The enclosed report relates only to the items tested. The report may not be reproduced, except in full, without written approval of the U.S. Army Fort Monmouth Directorate of Public Works.

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**CHAIN  
OF  
CUSTODY**

000001



## SAMPLE RECEIPT FORM

Date Received: 1-6-06

Work Order ID#: 00014

Site/Proj. Name: Blenheim/UKT

Cooler Temp (°C): ICE

Received By: J. Deoria  
(Print name)

Sign: J. Deoria

**Check the appropriate box**

1. Did the samples come in a cooler?  yes  no  n/a
2. Were samples rec'd in good condition?  yes  no
3. Was the chain of custody filled out correctly and legibly?  yes  no
4. Was the chain of custody signed in the appropriate place?  yes  no
5. Did the labels agree with the chain of custody?  yes  no
6. Were the correct containers/preservatives used?  yes  no
7. Was a sufficient amount of sample supplied?  yes  no
8. Were air bubbles present in VOA vials?  yes  no  n/a
9. Were samples received on ice?  yes  no
10. Were analyze-immediately tests perform within 15 minutes  yes  no  n/a

**Fill out the following table for each sample bottle**

Lims ID	pH	Preservative	Sample ID	pH	Preservative
<u>00014/4</u>	<u>7.2</u>	<u>ACL</u>			

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Former UST 665 Sample Location GPS Positions**

US State Plane 1983 New Jersey ( NY East ) 2900  
NAD 1983 ( Conus)  
Geoid 96 ( Conus)

( In US Survey Feet)

<b>Position</b>	<b>Northing ( Y Coord.)</b>	<b>Easting ( X Coord.)</b>
665 E	539870.696	618113.950
665 C	539870.552	618110.049
665 W	539868.789	618105.509

# **METHOD SUMMARY**

## **Methodology Summary**

### **EPA Method 624**

#### **Gas Chromatographic Determination of Volatiles in Water**

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

### **EPA SW-846 Method 8260**

#### **Gas Chromatographic Determination of Volatiles in Methanol**

A 10-gram volume of soil is combined with 25-ml of Methanol and surrogates in the field. Internal standards are added and the sample is placed on a purge and trap concentrator. The sample is purged and desorbed into a GC/MS system. Volatiles are identified and quantitated. The final concentration is calculated using soil weight, percent moisture and concentration.

### **EPA Method 625**

#### **Gas Chromatographic Determination of Semi-volatiles in Water**

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

**NJDEP Method OQA-QAM-025 10/97**

**Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil**

Fifteen grams (15g) of soil is added to a 125-ml acid cleaned and solvent rinsed capped Erlenmeyer flask. 15g anhydrous Sodium Sulfate is added to dry the sample. Surrogate standard spiking solution is then added to the flask.

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

The extract is then injected directly into a GC-FID for analysis. The sample is analyzed for Petroleum Hydrocarbons covering a range of C8-C42, including Pristane and Phytane. Total Petroleum Hydrocarbon concentration is determined by integrating between 5 minutes and 22 minutes. The baseline is established by starting the integration after the end of the solvent peak and stopping after the last peak. The final concentration of Total Petroleum Hydrocarbons is calculated using percent moisture, sample weight and concentration.

# **LABORATORY CHRONICLE**

000008

# Laboratory Chronicle

Lab ID: 60014

Site: UST  
Bldg. 665

	Date	Hold Time
<b>Date Sampled</b>	01/06/06	NA
<b>Receipt/Refrigeration</b>	01/06/06	NA
<b>Extractions</b>		
1. BN	01/11/06	7 days
2. TPHC	01/11/06	14 days
<b>Analyses</b>		
1. VOA	01/11,12/06	14 days
2. BN	01/17,18/06	40 days
3. TPHC	01/12/06	40 days

000009

**CONFORMANCE/  
NON-  
CONFORMANCE  
SUMMARY**

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

Indicate  
Yes, No, N/A

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

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

  - a. VOA Fraction \_\_\_\_\_
  - b. B/N Fraction Terphenyl 44%
  - c. Acid Fraction \_\_\_\_\_

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

yes
9. Matrix Spike/Matrix Spike Duplicate Recoveries Meet Criteria NO

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

  - a. VOA Fraction Naphthalene MS + MSD low
  - b. B/N Fraction Benzidine MSD low RPD high
  - c. Acid Fraction \_\_\_\_\_

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

Indicate  
Yes, No, N/A

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

yes

- a. VOA Fraction \_\_\_\_\_
- b. B/N Fraction \_\_\_\_\_
- c. Acid Fraction \_\_\_\_\_

11. Extraction Holding Time Met

yes

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

\_\_\_\_\_

\_\_\_\_\_

12. Analysis Holding Time Met

yes

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

\_\_\_\_\_

\_\_\_\_\_

Additional Comments:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Laboratory Manager: \_\_\_\_\_ Date: \_\_\_\_\_

**TPHC CONFORMANCE/NON-CONFORMANCE SUMMARY REPORT**

Indicate  
Yes, No, N/A

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

Additional comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Laboratory Manager:  Date: 1-25-06

**VOLATILE  
ORGANICS  
(AQUEOUS)**

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY  
NJDEP CERTIFICATION # 13461

Definition of Qualifiers

- U:** The compound was analyzed for but not detected.
- B:** Indicates that the compound was found in the associated method blank as well as in the sample.
- J:** Indicates an estimated value. This flag is used:
- (1) When the mass spec and retention time data indicate the presence of a compound however the result is less than the MDL but greater than zero.
  - (2) When estimating the concentration of a tentatively identified compound (TIC), where a 1:1 response is assumed.
- D:** This flag is used to identify all compounds (target or TIC) that required a dilution.
- E:** Indicates the compound's concentration exceeds the calibration range of the instrument for that specific analysis.
- N:** This flag is only used for TICs. It indicates the presumptive evidence of a compound. For a generic characterization of a TIC, such as unknown hydrocarbon, the flag is not used.

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

Data File **VB021318.D**  
 Operator **Skelton**  
 Date Acquired **11 Jan 2006 8:48 pm**

Sample Name **MB 11Jan2006**  
 Field ID **MB 11Jan2006**  
 Sample Multiplier **1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.01 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	5	1.23 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	5.70 ug/L	10.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.21 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.26 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.20 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	nle	0.24 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.23 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	0.26 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	0.29 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.23 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.19 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	6000	0.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.24 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.21 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.24 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	50	0.24 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.26 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.20 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	70	0.22 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.20 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.24 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.24 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.23 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.26 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.24 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.23 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.22 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.35 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.26 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.25 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.28 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.20 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.43 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.28 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.27 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	0.43 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.21 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.21 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.27 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.45 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.36 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.35 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.45 ug/L	2.00 ug/L	

\*Results between MDL and RL are estimated values  
 \*Higher of PQL's and Interim Criteria as per N.J.A.C. 7:9C 07Nov2005

**Qualifiers**

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

**MB 11Jan2006**

Lab Name: FMETL NJDEP#: 13461  
Project: 0634880 Case No.: 60014 Location: 665 SDG No.: UST  
Matrix: (soil/water) WATER Lab Sample ID: MB 11Jan2006  
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB021318.D  
Level: (low/med) LOW Date Received: 1/6/2006  
% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 1/11/2006  
GC Column: RTX502 ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

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

Number TICs found: 1

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 000079-20-9	Acetic acid, methyl ester	12.47	4	JN

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

Data File VB021326.D  
 Operator Skelton  
 Date Acquired 12 Jan 2006 2:16 am

Sample Name 6001206  
 Field ID Trip Blank  
 Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.01 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	5	1.23 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	5.70 ug/L	10.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.21 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.26 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.20 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	nle	0.24 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.23 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	0.26 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	0.29 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.23 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.19 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	6000	0.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.24 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.21 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.24 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	50	0.24 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.26 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.20 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	70	0.22 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.20 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.24 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.24 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.23 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.26 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.24 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.23 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.22 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.35 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.26 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.25 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.28 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.20 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.43 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.28 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.27 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	0.43 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.21 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.21 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.27 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.45 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.36 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.35 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.45 ug/L	2.00 ug/L	

\*Results between MDL and RL are estimated values  
 \*Higher of PQL's and Interim Criteria as per N.J.A.C. 7:9C 07Nov2005

**Qualifiers**

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

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

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

**Trip Blank**

Lab Name: FMETL NJDEP#: 13461  
 Project: 0634880 Case No.: 60006 Location: 637 SDG No.: UST  
 Matrix: (soil/water) WATER Lab Sample ID: 6001206  
 Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB021326.D  
 Level: (low/med) LOW Date Received: 1/4/2006 1/12/06  
 % Moisture: not dec. \_\_\_\_\_ Date Analyzed: 1/12/2006  
 GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

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

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 000079-20-9	Acetic acid, methyl ester	12.47	4	JN

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

Data File VB021328.D  
 Operator Skelton  
 Date Acquired 12 Jan 2006 3:38 am

Sample Name 6001404  
 Field ID 665C  
 Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.01 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	5	1.23 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	5.70 ug/L	10.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.21 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.26 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.20 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	nle	0.24 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.23 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	0.26 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	0.29 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.23 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.19 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	6000	0.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.24 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.21 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.24 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	50	0.24 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.26 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.20 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	70	0.22 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.20 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.24 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.24 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.23 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.26 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.24 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.23 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.22 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.35 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.26 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.25 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.28 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.20 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.43 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.28 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.27 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	0.43 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.21 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.21 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.27 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.45 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.36 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.35 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.45 ug/L	2.00 ug/L	

\*Results between MDL and RL are estimated values  
 \*Higher of PQLs and Interim Criteria as per N.J.A.C. 7:9C 07Nov2005

**Qualifiers**

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

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

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

665C

Lab Name: FMETL NJDEP#: 13461  
Project: 0634880 Case No.: 60006 Location: 637 SDG No.: UST  
Matrix: (soil/water) WATER Lab Sample ID: 6001404  
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB021328.D  
Level: (low/med) LOW Date Received: 1/4/2006 1/21  
% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 1/12/2006  
GC Column: RTX502 ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

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

Number TICs found: 1

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 000079-20-9	Acetic acid, methyl ester	12.47	3	JN

# **SEMI-VOLATILE ORGANICS**

**000039**

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

Data File Name **BNA11454.D**  
 Operator **Skelton**  
 Date Acquired **17-Jan-06**

Sample Name **MB 01110601**  
 Misc Info **MB 01110601**  
 Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	ug/L	Qualifiers
110-86-1	Pyridine			not detected	NLE	1.13	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.60	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	2.38	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.71	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	1.02	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.99	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.66	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.96	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.88	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.76	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.96	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.86	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.76	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.79	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.89	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.76	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.37	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.99	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	1.01	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.92	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.72	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.77	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.78	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.67	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.71	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	1.18	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.73	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.69	10.00	ug/L	
121-14-2	2,4-Dinitrotoluene			not detected	10	0.81	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.96	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.71	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.73	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.11	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.62	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.72	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.92	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.95	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.81	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	0.76	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.92	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	0.82	10.00	ug/L	

**Semi-Volatile Analysis Report**  
**Page 2**

Data File Name **BNA11454.D**  
 Operator **Skelton**  
 Date Acquired **17-Jan-06**

Sample Name **MB 01110601**  
 Misc Info **MB 01110601**  
 Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifiers
92-87-5	Benzidine			not detected	50	0.98	10.00	ug/L
129-00-0	Pyrene			not detected	200	0.79	10.00	ug/L
85-68-7	Butylbenzylphthalate			not detected	100	0.86	10.00	ug/L
56-55-3	Benzo[a]anthracene			not detected	10	0.82	10.00	ug/L
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.31	10.00	ug/L
218-01-9	Chrysene			not detected	20	0.77	10.00	ug/L
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.28	10.00	ug/L
117-84-0	Di-n-octylphthalate			not detected	100	1.02	10.00	ug/L
205-99-2	Benzo[b]fluoranthene			not detected	10	0.98	10.00	ug/L
207-08-9	Benzo[k]fluoranthene			not detected	2	0.92	10.00	ug/L
50-32-8	Benzo[a]pyrene			not detected	20	0.71	10.00	ug/L
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	0.76	10.00	ug/L
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.76	10.00	ug/L
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.80	10.00	ug/L

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

**Qualifiers**

E= Value Exceeds Linear Range

D= Value from dilution

B= Compound in Related Blank

RL= Reporting Limit. The values between the MDL and RL are considered estimated.

MDL= Method Detection Limit

NLE= No Limit Established

R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

**MB-011106-01**

Lab Name: FMETL Lab Code 13461  
Project: 06-34880 Case No.: 60014 Location: UST SDG No.: \_\_\_\_\_  
Matrix: (soil/water) WATER Lab Sample ID: MB 01110601  
Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA11454.D  
Level: (low/med) LOW Date Received: 1/6/2006  
% Moisture: \_\_\_\_\_ decanted: (Y/N) N Date Extracted: 1/11/2006  
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/17/2006  
Injection Volume: 1.0 (uL) Dilution Factor: 1.0  
GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

CONCENTRATION UNITS:

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

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

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name **BNA11458.D**  
 Operator **Skelton**  
 Date Acquired **18-Jan-06**

Sample Name **6001404**  
 Misc Info **665C**  
 Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifiers
110-86-1	Pyridine			not detected	NLE	1.13	10.00	ug/L
62-75-9	N-nitroso-dimethylamine			not detected	20	0.60	10.00	ug/L
62-53-3	Aniline			not detected	NLE	2.38	10.00	ug/L
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.71	10.00	ug/L
541-73-1	1,3-Dichlorobenzene			not detected	600	1.02	10.00	ug/L
106-46-7	1,4-Dichlorobenzene			not detected	75	0.99	10.00	ug/L
100-51-6	Benzyl alcohol			not detected	NLE	0.66	10.00	ug/L
95-50-1	1,2-Dichlorobenzene			not detected	600	0.96	10.00	ug/L
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.88	10.00	ug/L
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.76	10.00	ug/L
67-72-1	Hexachloroethane			not detected	10	0.96	10.00	ug/L
98-95-3	Nitrobenzene			not detected	10	0.86	10.00	ug/L
78-59-1	Isophorone			not detected	100	0.76	10.00	ug/L
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.79	10.00	ug/L
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.89	10.00	ug/L
91-20-3	Naphthalene			not detected	NLE	0.76	10.00	ug/L
106-47-8	4-Chloroaniline			not detected	NLE	1.37	10.00	ug/L
87-68-3	Hexachlorobutadiene			not detected	1	0.99	10.00	ug/L
91-57-6	2-Methylnaphthalene			not detected	NLE	1.01	10.00	ug/L
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.92	10.00	ug/L
91-58-7	2-Chloronaphthalene			not detected	NLE	0.72	10.00	ug/L
88-74-4	2-Nitroaniline			not detected	NLE	0.77	10.00	ug/L
131-11-3	Dimethylphthalate			not detected	7000	0.78	10.00	ug/L
208-96-8	Acenaphthylene			not detected	NLE	0.67	10.00	ug/L
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.71	10.00	ug/L
99-09-2	3-Nitroaniline			not detected	NLE	1.18	10.00	ug/L
83-32-9	Acenaphthene			not detected	400	0.73	10.00	ug/L
132-64-9	Dibenzofuran			not detected	NLE	0.69	10.00	ug/L
121-14-2	2,4-Dinitrotoluene			not detected	10	0.81	10.00	ug/L
84-66-2	Diethylphthalate			not detected	5000	0.96	10.00	ug/L
86-73-7	Fluorene			not detected	300	0.71	10.00	ug/L
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.73	10.00	ug/L
100-01-6	4-Nitroaniline			not detected	NLE	1.11	10.00	ug/L
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.62	10.00	ug/L
103-33-3	Azobenzene			not detected	NLE	0.72	10.00	ug/L
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.92	10.00	ug/L
118-74-1	Hexachlorobenzene			not detected	10	0.95	10.00	ug/L
85-01-8	Phenanthrene			not detected	NLE	0.81	10.00	ug/L
120-12-7	Anthracene			not detected	2000	0.76	10.00	ug/L
84-74-2	Di-n-butylphthalate			not detected	900	0.92	10.00	ug/L
206-44-0	Fluoranthene			not detected	300	0.82	10.00	ug/L

**Semi-Volatile Analysis Report**  
**Page 2**

Data File Name **BNA11458.D**  
Operator **Skelton**  
Date Acquired **18-Jan-06**

Sample Name **6001404**  
Misc Info **665C**  
Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifiers
92-87-5	Benzidine			not detected	50	0.98	10.00	ug/L
129-00-0	Pyrene			not detected	200	0.79	10.00	ug/L
85-68-7	Butylbenzylphthalate			not detected	100	0.86	10.00	ug/L
56-55-3	Benzo[a]anthracene			not detected	10	0.82	10.00	ug/L
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.31	10.00	ug/L
218-01-9	Chrysene			not detected	20	0.77	10.00	ug/L
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.28	10.00	ug/L
117-84-0	Di-n-octylphthalate			not detected	100	1.02	10.00	ug/L
205-99-2	Benzo[b]fluoranthene			not detected	10	0.98	10.00	ug/L
207-08-9	Benzo[k]fluoranthene			not detected	2	0.92	10.00	ug/L
50-32-8	Benzo[a]pyrene			not detected	20	0.71	10.00	ug/L
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	0.76	10.00	ug/L
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.76	10.00	ug/L
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.80	10.00	ug/L

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

**Qualifiers**

E= Value Exceeds Linear Range

D= Value from dilution

B= Compound in Related Blank

RL= Reporting Limit. The values between the MDL and RL are considered estimated.

MDL= Method Detection Limit

NLE= No Limit Established

R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

665C

Lab Name: FMETL Lab Code 13461  
Project: 06-34880 Case No.: 60014 Location: UST SDG No.: \_\_\_\_\_  
Matrix: (soil/water) WATER Lab Sample ID: 6001404  
Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA11458.D  
Level: (low/med) LOW Date Received: 1/6/2006  
% Moisture: \_\_\_\_\_ decanted: (Y/N) N Date Extracted: 1/11/2006  
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/18/2006  
Injection Volume: 1.0 (uL) Dilution Factor: 1.0  
GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

CONCENTRATION UNITS:

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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**TPHC**

000064



## LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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

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

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

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

Laboratory Manager or Environmental Consultant's Signature

Date: 1/25/06

Laboratory Certification # 13461

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

000086

## Laboratory Authentication Statement

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



Daniel K. Wright  
Laboratory Manager

ATTACHMENT JJ

UST 667 File Review and Analyses



UNDERGROUND STORAGE TANK FILE REVIEW  
FORT MONMOUTH BRAC 05 FACILITY  
OCEANPORT, NEW JERSEY

Date: November 9, 2015 Review Performed By: Kent Friesen, Parsons

Site ID: **Bldg. 667** Registration ID: None

Recommended Status of Site: **Case Closed (no change)**

UST Probability (from May 2014 "Addendum 1 ECP UHOT Report"): **NFA**

Based on the file review, were there indications of a contaminant release? [ ] Yes [X] No

NJDEP Release No. or DICAR (If applicable): \_\_\_\_\_

Did NJDEP approve No Further Action (NFA) for this site? [ ] Yes [X] No [ ] Not Applicable

Tank Description: [X] Steel [ ] Fiberglass Size: 1000 gals. Contents: #2 Fuel Oil

[X] Residential [ ] Commercial/Industrial

Tank Removed? [X] Yes [ ] No If "yes," removal date: 10/12/1994

Were closure soil samples taken? [X] Yes [ ] No Analyses: TPH

Comparison criteria: 5,100 mg/kg

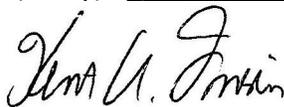
Were closure soil sample results less than comparison criteria? [X] Yes [ ] No

**Brief Narrative**

The Building 667 residential barracks building was demolished, presumably in the 1980's. A tank removal contractor excavated for a UST at the former building location on October 5, 1994. Soil at the site appeared to be clean based on visual observations.

Soil sampling was performed by FTMM on November 23, 1994 at the former UST 667 site; the resulting analytical data are attached. Five soil samples and one field duplicate were collected from the former UST location and analyzed by the Fort Monmouth Environmental Laboratory for total petroleum hydrocarbons (TPH). These soil sample results ranged from 19.0 to 34.6 mg/kg for TPH. The results were less than 5,100 mg/kg for TPH, which is the current TPH remediation criterion. Therefore, there are no indications of a significant release to soil or groundwater, and NFA is warranted at Site 667.

Recommendations (if any): Request NFA from NJDEP



Signed: \_\_\_\_\_

Kent A. Friesen, Parsons

MEMORANDUM TO FILE

FROM: EUGENE W. LESINSKI

DATE: 5 OCTOBER 1994

TO: FILE

SUBJ: UST REMOVAL IN THE 600 AREA

1. I directed the UST tank hunt in the 600 Area for buildings 660 through 667 (8 tanks total) with CUTE Inc today. Of 8 possible existing UST's; we have found 5 UST's. The following information germane:

BLDG NO.	TANK SIZE	REMARKS
660	1000 GAL	SITE APPEARS CLEAN
661	1000 GAL	SITE APPEARS CLEAN
662	1000 GAL	SITE APPEARS CLEAN
663	1000 GAL	SITE APPEARS CLEAN
664	-	NO TANKS FOUND - ALL 3
THRU		SITES INDICATE UST WAS
666		REMOVED AND CLEAN FILL
		ADDED
667	1000 GAL	SITE APPEARS CLEAN

2. After conferring with CUTE, Inc. and Tom Berger, it was decided that all 8 excavations were to back-filled awaiting scheduling of newly-found UST removals.

V/P

  
Eugene W. Lesinski

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

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

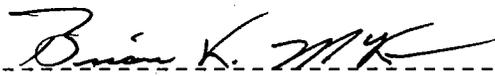
Lab. ID #: 1737.1-.6  
 Sample Rec'd: 11/23/94  
 Analysis Start: 11/28/94  
 Analysis Comp: 11/28/94

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

NJDEPE UST Reg. #:  
 Closure #:  
 DICAR #:  
 Location #: **Bldg. 667**

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1737.1	Site A, NW Sidewall OVA=ND	97	31.7	6.6
1737.2	Site B, N Sidewall OVA=ND	95	19.0	6.6
1737.3	Site C, NE Sidewall OVA=ND	96	23.2	6.6
1737.4	Site D, S Sidewall OVA=ND	97	27.3	6.6
1737.5	Site E, CENTER OVA=ND	91	33.8	6.6
1737.6	Site F, Dup. OVA=ND	89	34.6	6.6
M. Bl.	Method Blank	100	ND	3.3

Notes: ND = Not Detected, MDL = Method Detection Limit  
 \* = Silica Gel Added, NA = Not Applicable  
 Batch dup= 100% Batch S= 121% Batch SD= 109% RPD= 1.3%  
 Cal Chk =104%

  
 -----  
 Brian K. McKee  
 Laboratory Director



Residential

# U.S. ARMY FORT MONMOUTH

Chain of Custody

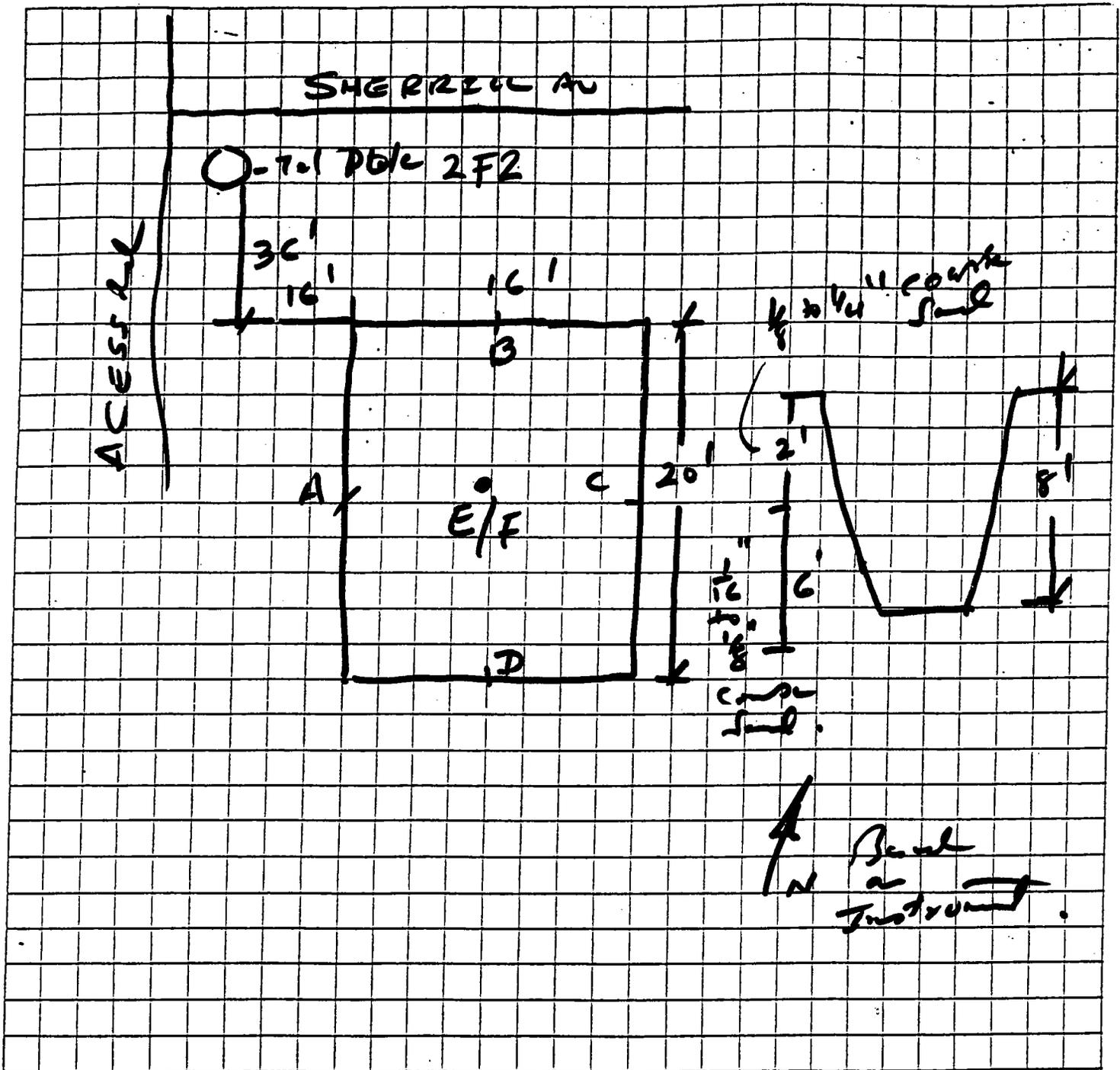
P.O. #: PWS-7

Project #:		Sampler:		Date / Time		Analysis Parameters		Start:	
Customer:		Site Name:		11/27		9-50		Finish:	
Desai		Bldg 867							
Sethu-pw-en									
Phone:		Customer Location/ID Number		Sample Matrix		# of Bottles		Remarks	
Lab Sample ID Number		Date/Time						Preservation Method	
1737.1		11/23 9:57		Site A		1		ND Sample Preserved	
1737.2		" 9:54		Site B		1		ND	
1737.3		" 9:58		Site C		1		ND	
1737.4		" 10:03		Site D		1		ND	
1737.5		" 10:05		Site E (Control)		1		ND Collected	
1737.6		" 10:16		Site F (dup)		1		ND with Zirconia protection 9/1/14	
								Kury 890	
								A 52-1114	
Relinquished By (signature)		Date / Time		Received By (signature)		Shipped By:			
[Signature]		11/23/94 11:00		[Signature]					
Relinquished By (signature)		Date / Time		Received for Lab by (signature):		Date / Time			
[Signature]		11/23/94 11:00		[Signature]		11/23/94 11:00			
Note: A drawing depicting sample location should be attached or drawn on the reverse side of this chain of custody. Map attached									

Environmental Laboratory

Certification Number 13461

PROPOSED SITE PLAN



NOTE: Indicate scale and compass direction.

REMARKS  
 Residential tank.

TANK LOCATION  
 BLDG# 667  
 TANK #  
 TANK SIZE 1000  
 TANK CONTENTS

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.

5. Extraction holding time met. (If not met, list number of days exceeded for each sample)

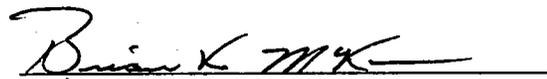
6. Analysis holding time met. (If not met, list number of days exceeded for each sample)

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.

Project #1737

  
Brian K. McKee  
Laboratory Manager



ATTACHMENT KK

UST 669 File Review and Analyses



UNDERGROUND STORAGE TANK FILE REVIEW  
FORT MONMOUTH BRAC 05 FACILITY  
OCEANPORT, NEW JERSEY

Date: November 12, 2015 Review Performed By: Kent Friesen, Parsons

Site ID: **Bldg. 669** Registration ID: 81533-102

Recommended Status of Site: **Case Closed (no change)**

UST Probability (from May 2014 "Addendum 1 ECP UHOT Report"): **None**

Based on the file review, were there indications of a contaminant release? [ ] Yes [X] No

NJDEP Release No. or DICAR (If applicable): \_\_\_\_\_

Did NJDEP approve No Further Action (NFA) for this site? [ ] Yes [X] No [ ] Not Applicable

Tank Description: [X] Steel [ ] Fiberglass Size: 1000 gal. Contents: #2 Fuel Oil

[X] Residential [ ] Commercial/Industrial

Tank Removed? [X] Yes [ ] No If "yes," removal date: unknown

Were closure soil samples taken? [X] Yes [ ] No Analyses: TPH

Comparison criteria: 5,100 mg/kg

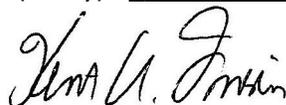
Were closure soil sample results less than comparison criteria? [X] Yes [ ] No

**Brief Narrative**

The Building 669 residential barracks building has been demolished, presumably in the 1980's. The date of tank removal is unknown. Tank closure records were recovered from wet files following the 2012 Hurricane Sandy event.

Soil sampling was subsequently completed by FTMM in January 2006 using a geoprobe at the former UST 669 site; the resulting analytical data are attached. Three soil samples were collected from the former UST location and analyzed by the Fort Monmouth Environmental Laboratory for total petroleum hydrocarbons (TPH). These soil sample results were all not detected (ND) for TPH. The results were less than 5,100 mg/kg for TPH, which is the current TPH remediation criterion. One groundwater sample was also collected from the UST vicinity and analyzed for volatile organic compounds (VOCs) and semivolatile organic compounds (SVOCs); no VOC or SVOC analytes were detected. Therefore, there are no indications of a significant release to soil or groundwater, and NFA is warranted at Site 669.

Recommendations (if any): Request NFA from NJDEP



Signed: \_\_\_\_\_

Kent A. Friesen, Parsons

# Fort Monmouth UST Status Summary Report

---

## UST REGISTRATION INFORMATION SUMMARY

**LOCATION:** 669 **NJDEP REG ID:** 81533 - 102  
**RESIDENTIAL? :** YES

---

## UST CONSTRUCTION INFORMATION SUMMARY

**SIZE (GALLONS):** 1000 **CONSTRUCTION:** STEEL  
**PRODUCT:** #2 FUEL OIL **YEAR INSTALLED:** 1941

---

## UST REMOVAL/INVESTIGATION SUMMARY

**REMOVAL DATE:** **REMOVAL CONTRACTOR:**

**SRF SEND DATE:** **TMS:**

**DICAR NO.** **LEAK DETECT.**

**REMEDIALION COMMENTS:** Investigate if exsistent needs survey Clean site, delisted

**REGISTRATION COMMENTS:** 9/22/98 Notified NJDEP that UST was residential to update NJDEP records CA

**SAS DONE:** **CONSULTANT:** SMC

**MW's NEEDED:** **MONITORING WELLS:** 0

**SUB-SURFACE EVALUATOR:**

---

## CURRENT UST STATUS

**UST STATUS:** Removed, Report Submitted/Not Nec **CASE STATUS:** Case Closed

**SUBMITTAL DATE:** **APPROVAL DATE:**

---

U.S. ARMY, Fort Monmouth  
Directorate of Public Works  
Fort Monmouth, New Jersey 07703

August 18, 1998

New Jersey Department of  
Environmental Protection  
BUREAU OF STATE CASE MANAGEMENT  
BILLING AND REGISTRATION UNIT  
CN 029  
401 EAST STATE STREET,  
Trenton, NJ 08625 - 0028  
ATTN: Patricia Wilbon,

Regarding: UST inventory status update corrections

Dear Ms. Wilbon:

We have reviewed the DEP UST database printout obtained from our Federal Case Manager, Ian Curtis in an effort to determine any inconsistencies. Several discrepancies between the NJDEP database and the Fort Monmouth database were identified to you in a July memo. After further review we have identified additional discrepancies which need correction.

I have enclosed the Standard Reporting Forms for the sites below. The following sites need to have their status changed:

BLDG. #	NJDEP Reg. #	DEP STATUS	CORRECT STATUS
63B	0090010-002	Empty 12 months	Removed prior to 01/01/91
220B	0081533-014	In-use	Delist Is a residential UST, should have been de-listed
1213B	0081533-174	In-use	Delist Does not exist, assumed to have been a double entry for UST#173
669	0081533-102	Empty 12 months	Delist Is a residential UST, should have been de-listed

I have enclosed a copy of the Standard Reporting Form for the site below. The following site needs to have its status changed to removed:

BLDG. #	NJDEP Reg. #	Date removed	Date SRF Sent
2018	00192486-34	05/20/98	5/22/98

If the information provided in this enclosure is inadequate or you require further information with regard to these documents please contact me at (732) 532-6224.

Sincerely,

Charles Appleby  
Environmental Specialist  
Directorate of Public Works

Enclosure:  
SRF for above ref. sites  
CC: UST Inventory File  
UST Bldg. Files

200 = 1  
Scale

S-296

S-291

SHERIDAN AVENUE

T-676 T-677  
 T-675 T-678 T-679 T-680 T-681 T-682 T-683 T-684 T-685  
 T-686 T-687 T-688 T-689 T-690 T-691 T-692 T-693 T-694 T-695  
 T-696 T-697 T-698 T-699 T-700 T-701 T-702 T-703 T-704 T-705

T-682  
 T-674 T-675  
 T-676 T-677 T-678 T-679 T-680 T-681 T-682 T-683 T-684 T-685  
 T-686 T-687 T-688 T-689 T-690 T-691 T-692 T-693 T-694 T-695

T-676 T-677  
 T-678 T-679 T-680 T-681 T-682 T-683 T-684 T-685  
 T-686 T-687 T-688 T-689 T-690 T-691 T-692 T-693 T-694 T-695  
 T-696 T-697 T-698 T-699 T-700 T-701 T-702 T-703 T-704 T-705

T-668 T-669 T-670  
 T-671 T-672 T-673 T-674 T-675 T-676 T-677 T-678 T-679 T-680  
 T-681 T-682 T-683 T-684 T-685 T-686 T-687 T-688 T-689 T-690  
 T-691 T-692 T-693 T-694 T-695 T-696 T-697 T-698 T-699 T-700  
 T-581 T-582 T-583 T-584 T-585 T-586 T-587 T-588 T-589 T-590  
 T-591 T-592 T-593 T-594 T-595 T-596 T-597 T-598 T-599 T-600

SALZMAN

HARMON

AVENUE

PARKING

PARKING

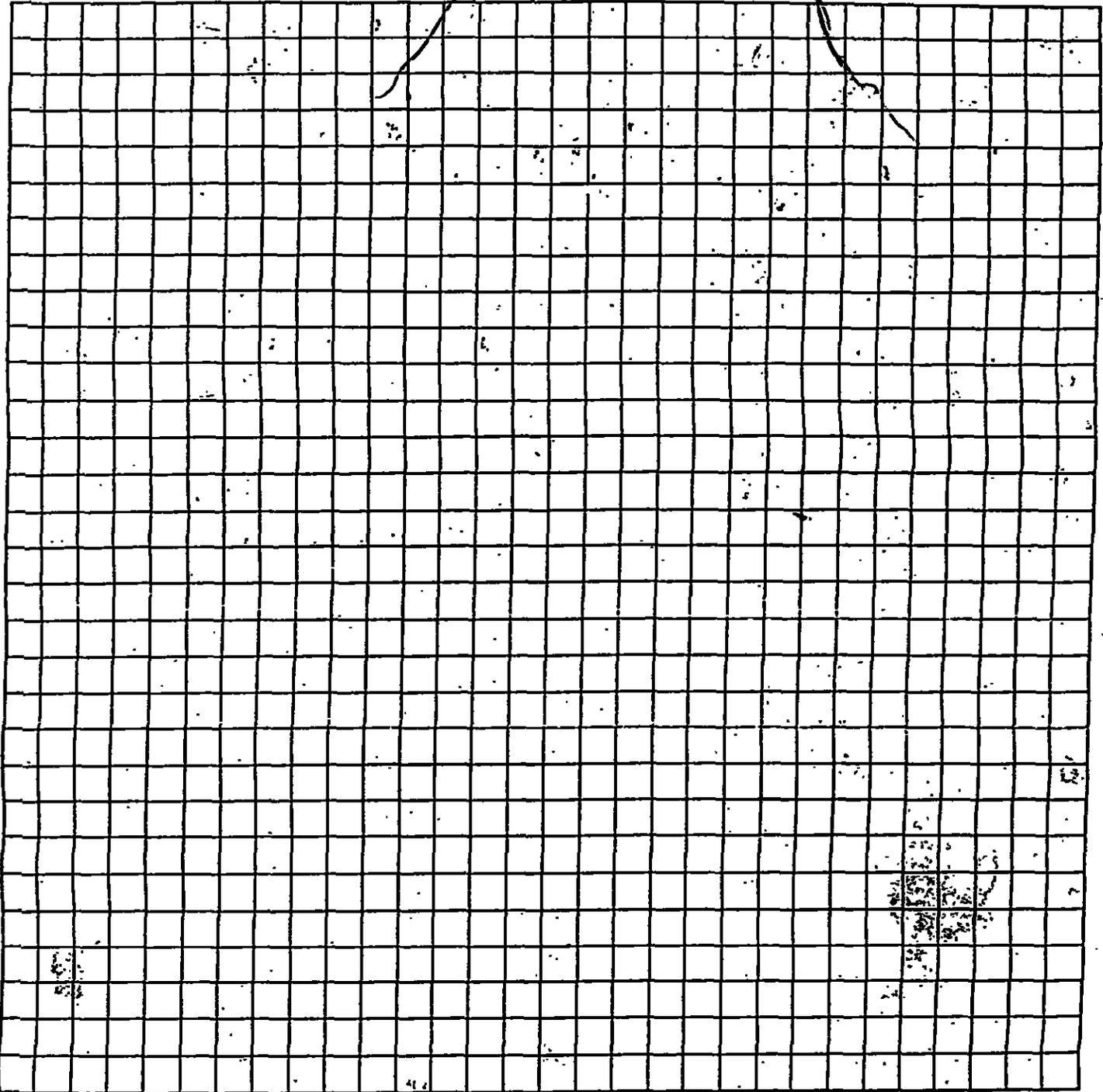
689

699

S-695

T-698

PROPOSED SITE PLAN



NOTE: Indicate scale and compass direction.

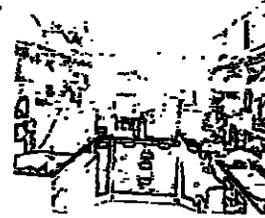
REMARKS

TANK LOCATION  
 BLDG# 669 (deno - north of 668)  
 TANK # NR 2 story Bldg  
 TANK SIZE 1000 gal.  
 TANK CONTENTS #2 H-oil

(-needs Survey)  
 VACANT LAND 930 BC CA 4/2/77

**FORT MONMOUTH ENVIRONMENTAL  
TESTING LABORATORY**

**DIRECTORATE OF PUBLIC WORKS**  
PHONE: (732) 532-4359 FAX: (732) 532-6263  
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING  
CERTIFICATIONS: NJDEP #13461, NYSDOH #11699



**ANALYTICAL DATA REPORT**  
Fort Monmouth Environmental Laboratory  
ENVIRONMENTAL DIVISION  
Fort Monmouth, New Jersey  
PROJECT: BLDG. 669

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
669 S 7.0-7.5'	6001301	Soil	06-Jan-06 14:22	01/06/06
669 C 7.0-7.5'	6001302	Soil	06-Jan-06 14:39	01/06/06
669 W 7.0-7.5'	6001303	Soil	06-Jan-06 15:02	01/06/06
669 C GW	6001304	Aqueous	06-Jan-06 15:31	01/06/06

**ANALYSIS:**  
FORT MONMOUTH ENVIRONMENTAL LAB  
VOA+15, BN+15, TPHC, % SOLIDS

**ENCLOSURE:  
CHAIN OF CUSTODY  
RESULTS**

  
Daniel Wright/Date  
Laboratory Director

1-25-06

The enclosed report relates only to the items tested. The report may not be reproduced, except in full, without written approval of the U.S. Army Fort Monmouth Directorate of Public Works.

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**CHAIN  
OF  
CUSTODY**

000001



## SAMPLE RECEIPT FORM

Date Received: 1-6-06

Work Order ID#: 00013

Site/Proj. Name: BIOLOGY COAST/CAST

Cooler Temp (°C): ICE

Received By: J. DeMunnia  
(Print name)

Sign: [Signature]

### Check the appropriate box

1. Did the samples come in a cooler?  yes  no  n/a
2. Were samples rec'd in good condition?  yes  no
3. Was the chain of custody filled out correctly and legibly?  yes  no
4. Was the chain of custody signed in the appropriate place?  yes  no
5. Did the labels agree with the chain of custody?  yes  no
6. Were the correct containers/preservatives used?  yes  no
7. Was a sufficient amount of sample supplied?  yes  no
8. Were air bubbles present in VOA vials?  yes  no  n/a
9. Were samples received on ice?  yes  no
10. Were analyze-immediately tests perform within 15 minutes  yes  no  n/a

**Fill out the following table for each sample bottle**

Lims ID	pH	Preservative	Sample ID	pH	Preservative
<u>00013/4</u>	<u>12</u>	<u>ACL</u>			

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Former UST 669 Sample Location GPS Positions**

US State Plane 1983 New Jersey ( NY East ) 2900  
NAD 1983 ( Conus)  
Geoid 96 ( Conus)

( In US Survey Feet)

<b>Position</b>	<b>Northing ( Y Coord.)</b>	<b>Easting ( X Coord.)</b>
669 N	539182.284	617979.420
669 C	539176.837	617981.145
669 S	539170.695	617981.570

# **METHOD SUMMARY**

## Methodology Summary

### **EPA Method 624**

#### **Gas Chromatographic Determination of Volatiles in Water**

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

### **EPA SW-846 Method 8260**

#### **Gas Chromatographic Determination of Volatiles in Methanol**

A 10-gram volume of soil is combined with 25-ml of Methanol and surrogates in the field. Internal standards are added and the sample is placed on a purge and trap concentrator. The sample is purged and desorbed into a GC/MS system. Volatiles are identified and quantitated. The final concentration is calculated using soil weight, percent moisture and concentration.

### **EPA Method 625**

#### **Gas Chromatographic Determination of Semi-volatiles in Water**

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

**NJDEP Method OQA-QAM-025 10/97**

**Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil**

*Fifteen grams (15g) of soil is added to a 125-ml acid cleaned and solvent rinsed capped Erlenmeyer flask. 15g anhydrous Sodium Sulfate is added to dry the sample. Surrogate standard spiking solution is then added to the flask.*

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

*The extract is then injected directly into a GC-FID for analysis. The sample is analyzed for Petroleum Hydrocarbons covering a range of C8-C42, including Pristane and Phytane. Total Petroleum Hydrocarbon concentration is determined by integrating between 5 minutes and 22 minutes. The baseline is established by starting the integration after the end of the solvent peak and stopping after the last peak. The final concentration of Total Petroleum Hydrocarbons is calculated using percent moisture, sample weight and concentration.*

# LABORATORY CHRONICLE

000008

# Laboratory Chronicle

Lab ID: 60013

Site: UST  
Bldg. 669

	<b>Date</b>	<b>Hold Time</b>
<b>Date Sampled</b>	01/06/06	NA
<b>Receipt/Refrigeration</b>	01/06/06	NA
<b>Extractions</b>		
1. BN	01/11/06	7 days
2. TPHC	01/11/06	14 days
<b>Analyses</b>		
1. VOA	01/11,12/06	14 days
2. BN	01/17,18/06	40 days
3. TPHC	01/12/06	40 days

000009

**CONFORMANCE/  
NON-  
CONFORMANCE  
SUMMARY**

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

Indicate  
Yes, No, N/A

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

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

  - a. VOA Fraction \_\_\_\_\_
  - b. B/N Fraction \_\_\_\_\_
  - c. Acid Fraction \_\_\_\_\_

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

\_\_\_\_\_
9. Matrix Spike/Matrix Spike Duplicate Recoveries Meet Criteria No

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

  - a. VOA Fraction Naphthalene MS+MSD low
  - b. B/N Fraction Benidine MSD low EPD high
  - c. Acid Fraction \_\_\_\_\_

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

Indicate  
Yes, No, N/A

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

Yes

- a. VOA Fraction \_\_\_\_\_
- b. B/N Fraction \_\_\_\_\_
- c. Acid Fraction \_\_\_\_\_

11. Extraction Holding Time Met

Yes

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

\_\_\_\_\_

12. Analysis Holding Time Met

Yes

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

\_\_\_\_\_

Additional Comments:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Laboratory Manager: \_\_\_\_\_



Date: 1-25-06

**TPHC CONFORMANCE/NON-CONFORMANCE SUMMARY REPORT**

Indicate  
Yes, No, N/A

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

Additional comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Laboratory Manager: [Signature] Date: 1-25-06

**VOLATILE  
ORGANICS  
(AQUEOUS)**

000014

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

**Definition of Qualifiers**

- U:** The compound was analyzed for but not detected.
- B:** Indicates that the compound was found in the associated method blank as well as in the sample.
- J:** Indicates an estimated value. This flag is used:
- (1) When the mass spec and retention time data indicate the presence of a compound however the result is less than the MDL but greater than zero.
  - (2) When estimating the concentration of a tentatively identified compound (TIC), where a 1:1 response is assumed.
- D:** This flag is used to identify all compounds (target or TIC) that required a dilution.
- E:** Indicates the compound's concentration exceeds the calibration range of the instrument for that specific analysis.
- N:** This flag is only used for TICs. It indicates the presumptive evidence of a compound. For a generic characterization of a TIC, such as unknown hydrocarbon, the flag is not used.

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

Data File VB021318.D  
 Operator Skelton  
 Date Acquired 11 Jan 2006 8:48 pm

Sample Name MB 11Jan2006  
 Field ID MB 11Jan2006  
 Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.01 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	5	1.23 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	5.70 ug/L	10.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.21 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.26 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.20 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	nb	0.24 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.23 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	0.26 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nb	0.29 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.23 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.19 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	6000	0.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.24 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.21 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.24 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	50	0.24 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.26 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.20 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	70	0.22 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.20 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.24 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.24 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.23 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.26 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.24 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nb	0.23 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.22 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nb	0.35 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.26 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.25 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.28 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.20 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nb	0.43 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.28 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.27 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nb	0.43 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nb	0.21 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.21 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.27 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.45 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.36 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.35 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.45 ug/L	2.00 ug/L	

\*Results between MDL and RL are estimated values  
 \*Higher of PQL's and Inertion Criteria as per N.J.A.C. 7:9C 07Nov2005

**Qualifiers**

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

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

VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

**MB 11Jan2006**

Lab Name: FMETL NJDEP#: 13461

Project: 0634880 Case No.: 60013 Location: 669 SDG No.: UST

Matrix: (soil/water) WATER Lab Sample ID: MB 11Jan2006

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB021318.D.

Level: (low/med) LOW Date Received: 1/4/2006 *ALC*

% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 1/11/2006

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

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

CONCENTRATION UNITS:

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

Number TICs found: 1

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 000079-20-9	Acetic acid, methyl ester	12.47	4	JN

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

Data File: VB021326.D  
 Operator: Skelton  
 Date Acquired: 12 Jan 2006 2:16 am

Sample Name: 6001206  
 Field ID: Trip Blank  
 Sample Multiplier: 1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/g)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.01 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	5	1.23 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	5.70 ug/L	10.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.21 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	2000	0.26 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.20 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	nlb	0.24 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.23 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	0.26 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nlb	0.29 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.23 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethane			not detected	1	0.19 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	6000	0.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.24 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.21 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethane			not detected	100	0.24 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	50	0.24 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.26 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethane			not detected	70	0.20 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	70	0.22 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.20 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.24 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.24 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.23 ug/L	2.00 ug/L	
79-01-6	Trichloroethane			not detected	1	0.26 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.24 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nlb	0.23 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.22 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nlb	0.35 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.26 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.25 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.28 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethane			not detected	1	0.20 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nlb	0.43 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.28 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.27 ug/L	2.00 ug/L	
1330-20-7	meta-Xylenes			not detected	nlb	0.43 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nlb	0.21 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.21 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.27 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.45 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.36 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.35 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.45 ug/L	2.00 ug/L	

\*Results between MDL and RL are estimated values  
 \*Higher of PQL's and Interim Criteria as per N.J.A.C. 7:30 07/Nov2005

**Qualifiers**

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

Trip Blank

Lab Name: FMETL NJDEP#: 13461

Project: 0634880 Case No.: 60006 Location: 637 SDG No.: UST

Matrix: (soil/water) WATER Lab Sample ID: 6001206

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB021326:D

Level: (low/med) LOW Date Received: 1/4/2006

% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 1/12/2006

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

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

CONCENTRATION UNITS:

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

Number TICs found: 1

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 000079-20-9	Acetic acid, methyl ester	12.47	4	JN

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

Data File VB021327.D  
 Operator Skelton  
 Date Acquired 12 Jan 2006 2:57 am

Sample Name 6001304  
 Field ID 669C  
 Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.01 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	5	1.23 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	5.70 ug/L	10.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.21 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.26 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.20 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	nle	0.24 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.23 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	0.26 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	0.29 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.23 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethane			not detected	1	0.19 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	6000	0.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.24 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.21 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.24 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	50	0.24 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.26 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.20 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	70	0.22 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.20 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.24 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.24 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.23 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.26 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.24 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.23 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.22 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.35 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.26 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.25 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.28 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.20 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.43 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.28 ug/L	2.00 ug/L	
100-41-1	Ethylbenzene			not detected	700	0.27 ug/L	2.00 ug/L	
1330-20-7	m-p-Xylenes			not detected	nle	0.43 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.21 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.21 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.27 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.45 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.36 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.35 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.45 ug/L	2.00 ug/L	

\*Results between MDL and RL are estimated values  
 \*Higher of PQL's and Interim Criteria as per N.J.A.C. 7:9C 07Nov2005

**Qualifiers**

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

669C-GW

Lab Name: FMETL NJDEP#: 13461

Project: 0634880 Case No.: 60006 Location: 637 SDG No.: UST

Matrix: (soil/water) WATER Lab Sample ID: 6001304

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB021327.D

Level: (low/med) LOW Date Received: 1/4/2006 <sup>9</sup> <sub>11/21</sub>

% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 1/12/2006

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

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

CONCENTRATION UNITS:

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

Number TICs found: 1

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 000079-20-9	Acetic acid, methyl ester	12.47	4	JN

# **SEMI-VOLATILE ORGANICS**

000039

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

Data File Name BNA11454.D  
 Operator Skelton  
 Date Acquired 17-Jan-06

Sample Name MB 01110601  
 Misc Info MB 01110601  
 Sample Multiplier 1

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	ug/L	Qualifiers
110-86-1	Pyridine			not detected	NLE	1.13	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.60	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	2.38	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.71	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	1.02	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.99	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.66	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.96	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.88	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.76	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.96	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.86	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.76	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.79	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.89	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.76	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.37	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.99	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	1.01	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.92	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.72	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.77	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.78	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.67	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.71	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	1.18	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.73	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.69	10.00	ug/L	
121-14-2	2,4-Dinitrotoluene			not detected	10	0.81	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.96	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.71	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.73	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.11	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.62	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.72	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.92	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.95	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.81	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	0.76	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.92	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	0.82	10.00	ug/L	

**Semi-Volatile Analysis Report**  
**Page 2**

Data File Name BNA11454.D  
 Operator Skelton  
 Date Acquired 17-Jan-06

Sample Name MB 01110601  
 Misc Info MB 01110601  
 Sample Multiplier 1

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	ug/L	Outliers
92-87-5	Benzidine			not detected	50	0.98	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.79	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.86	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.82	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.31	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.77	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.28	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.02	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.98	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	0.92	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.71	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	0.76	10.00	ug/L	
53-70-3	Dibenzo[a,h]anthracene			not detected	20	0.76	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.80	10.00	ug/L	

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

**Qualifiers**

E= Value Exceeds Linear Range

D= Value from dilution

B= Compound in Related Blank

RL= Reporting Limit. The values between the MDL and RL are considered estimated.

MDL= Method Detection Limit

NLE= No Limit Established

R.T.=Retention Time

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MB-011106-01

Lab Name: FMETL Lab Code 13461

Project: 06-34880 Case No.: 60013 Location: UST SDG No.: \_\_\_\_\_

Matrix: (soil/water) WATER Lab Sample ID: MB 01110601

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA11454.D.

Level: (low/med) LOW Date Received: 1/6/2006

% Moisture: \_\_\_\_\_ decanted: (Y/N) N Date Extracted: 1/11/2006

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/17/2006

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

## CONCENTRATION UNITS:

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

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

Data File Name **BNA11457.D**  
 Operator **Skelton**  
 Date Acquired **18-Jan-06**

Sample Name **6001304**  
 Misc Info **669C-GW**  
 Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifiers
110-86-1	Pyrindine			not detected	NLE	1.13	10.00	ug/L
62-75-9	N-nitroso-dimethylamine			not detected	20	0.60	10.00	ug/L
62-53-3	Aniline			not detected	NLE	2.38	10.00	ug/L
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.71	10.00	ug/L
541-73-1	1,3-Dichlorobenzene			not detected	600	1.02	10.00	ug/L
106-46-7	1,4-Dichlorobenzene			not detected	75	0.99	10.00	ug/L
100-51-6	Benzyl alcohol			not detected	NLE	0.66	10.00	ug/L
95-50-1	1,2-Dichlorobenzene			not detected	600	0.96	10.00	ug/L
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.88	10.00	ug/L
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.76	10.00	ug/L
67-72-1	Hexachloroethane			not detected	10	0.96	10.00	ug/L
98-95-3	Nitrobenzene			not detected	10	0.86	10.00	ug/L
78-59-1	Isophorone			not detected	100	0.76	10.00	ug/L
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.79	10.00	ug/L
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.89	10.00	ug/L
91-20-3	Naphthalene			not detected	NLE	0.76	10.00	ug/L
106-47-8	4-Chloroaniline			not detected	NLE	1.37	10.00	ug/L
87-68-3	Hexachlorobutadiene			not detected	1	0.99	10.00	ug/L
91-57-6	2-Methylnaphthalene			not detected	NLE	1.01	10.00	ug/L
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.92	10.00	ug/L
91-58-7	2-Chloronaphthalene			not detected	NLE	0.72	10.00	ug/L
88-74-4	2-Nitroaniline			not detected	NLE	0.77	10.00	ug/L
131-11-3	Dimethylphthalate			not detected	7000	0.78	10.00	ug/L
208-96-8	Acenaphthylene			not detected	NLE	0.67	10.00	ug/L
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.71	10.00	ug/L
99-09-2	3-Nitroaniline			not detected	NLE	1.18	10.00	ug/L
83-32-9	Acenaphthene			not detected	400	0.73	10.00	ug/L
132-64-9	Dibenzofuran			not detected	NLE	0.69	10.00	ug/L
121-14-2	2,4-Dinitrotoluene			not detected	10	0.81	10.00	ug/L
84-66-2	Diethylphthalate			not detected	5000	0.96	10.00	ug/L
86-73-7	Fluorene			not detected	300	0.71	10.00	ug/L
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.73	10.00	ug/L
100-01-6	4-Nitroaniline			not detected	NLE	1.11	10.00	ug/L
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.62	10.00	ug/L
103-33-3	Azobenzene			not detected	NLE	0.72	10.00	ug/L
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.92	10.00	ug/L
118-74-1	Hexachlorobenzene			not detected	10	0.95	10.00	ug/L
85-01-8	Phenanthrene			not detected	NLE	0.81	10.00	ug/L
120-12-7	Anthracene			not detected	2000	0.76	10.00	ug/L
84-74-2	Di-n-butylphthalate			not detected	900	0.92	10.00	ug/L
206-44-0	Fluoranthene			not detected	300	0.82	10.00	ug/L

**Semi-Volatile Analysis Report**  
Page 2

Data File Name **BNA11457.D**  
Operator **Skelton**  
Date Acquired **18-Jan-06**

Sample Name **6001304**  
Misc Info **669C-GW**  
Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifiers
92-87-5	Benzidine			not detected	50	0.98	10.00 ug/L	
129-00-0	Pyrene			not detected	200	0.79	10.00 ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.86	10.00 ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.82	10.00 ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.31	10.00 ug/L	
218-01-9	Chrysene			not detected	20	0.77	10.00 ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.28	10.00 ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.02	10.00 ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.98	10.00 ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	0.92	10.00 ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.71	10.00 ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	0.76	10.00 ug/L	
53-70-3	Dibenzo[a,h]anthracene			not detected	20	0.76	10.00 ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.80	10.00 ug/L	

\* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6.2-Sept-97

**Qualifiers**

E= Value Exceeds Linear Range

D= Value from dilution

B= Compound in Related Blank

RL= Reporting Limit. The values between the MDL and RL are considered estimated.

MDL= Method Detection Limit

NLE= No Limit Established

R.T.=Retention Time

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

669C-GW

Lab Name: FMETL Lab Code 13461

Project: 06-34880 Case No.: 60013 Location: UST SDG No.: \_\_\_\_\_

Matrix: (soil/water) WATER Lab Sample ID: 6001304

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA11457.D

Level: (low/med) LOW Date Received: 1/6/2006

% Moisture: \_\_\_\_\_ decanted: (Y/N) N Date Extracted: 1/11/2006

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/18/2006

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

## CONCENTRATION UNITS:

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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**TPHC**

**000064**



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

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

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

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

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

Laboratory Manager or Environmental Consultant's Signature \_\_\_\_\_  
Date: 1/27/06

Laboratory Certification # 13461

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



## Laboratory Authentication Statement

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



Daniel K. Wright  
Laboratory Manager

ATTACHMENT LL

UST 676 Report



**U.S. Army Garrison**  
Fort Monmouth, New Jersey

---

**Underground Storage Tank  
Closure Report**

*Main Post – Building 676  
Messenger Ave.*

---

**NJDEP UST Registration No. 81533-104**

**January 2008**

**UNDERGROUND STORAGE TANK REPORT**

**MAIN POST – BUILDING 676  
NJDEP UST REGISTRATION NO. 81533-104**

**JANUARY 2008**

**PREPARED FOR:**

**U.S. ARMY GARRISON, FORT MONMOUTH, NJ  
DIRECTORATE OF PUBLIC WORKS  
BUILDING 167  
FORT MONMOUTH, NJ 07703**

**PROJECT NO. 06-34950**

**PREPARED BY:**

**TECOM-VINNELL SERVICES, INC.  
P.O. BOX 60  
FT. MONMOUTH, NJ 07703**

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- Appendix B Soil and Groundwater Analytical Data Package**

## EXECUTIVE SUMMARY

### UST Closure

A single wall steel underground storage tank (UST) was closed by removal in accordance with the New Jersey Department of Environmental Protection (NJDEP) guidelines on June 13, 1990. The UST was located on the southwest side of Building 676 in the Main Post area of Fort Monmouth. UST No. 81533-104 was a 1,000-gallon tank containing No. 2 heating oil.

### Site Assessment

This site assessment was performed by TVS personnel in accordance with the NJDEP *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E) and the NJDEP *Field Sampling Procedures Manual*.

During the time of UST removal, no closure soil samples were collected. Soil sampling was not required at the time. However, in order to confirm that the tank did not leak, this subsurface investigation was conducted. On January 27, 2006, a Geoprobe was utilized to collect soil samples 676-C, 676-E, 676-W and 676-C (groundwater) from a total of three (3) locations along the tank centerline bottom. All soil samples were analyzed for total petroleum hydrocarbons (TPH). Groundwater was encountered at approximately six and one half (6.5) feet below surface grade in the borings. A sample of it was collected and analyzed for volatile organic analysis (VOA) and semi-volatile organic analysis (SVOA).

### Findings

The closure soil samples collected from the location associated with UST No. 81533-104, contained TPH concentrations below the NJDEP health based criterion of 10,000 milligrams per kilogram (mg/kg) for total organic contaminants (N.J.A.C. 7:26E and revisions dated February 3, 1994). All soil samples contained TPH concentrations of Not Detected.

### Conclusions and Recommendations

Based on the closure soil sampling results, soils with TPH concentrations exceeding the NJDEP health based criterion of 10,000 mg/kg for total organic contaminants are not present in the location of the UST. A groundwater sample, analyzed for volatile organic analysis and semi-volatile organic analysis, did not contain any compounds above the analytical method detection limits.

**No Further Action** is proposed in regard to the closure and site assessment of UST No. 81533-104 at Building 676.

## **1.0 UNDERGROUND STORAGE TANK CLOSURE SOIL SAMPLING ACTIVITIES**

### **1.1 OVERVIEW**

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No 81533-104, was closed at Building 676 of the Main Post at the U S Army Garrison, Fort Monmouth, New Jersey Refer to site location map on Figure 1 This report presents the results of soil and groundwater sampling analysis to confirm that the tank did not leak. The UST was a 1,000-gallon, single-wall steel tank containing No 2 heating oil for residential use The UST was installed in 1941 and removal was done on June 13, 1990 An archived letter detailing the removal procedures, a copy of Site Assessment Compliance Statement and the NJDEP UST Site Investigation Report Form are included in Appendix A

This UST Closure Report has been prepared by TVS to assist the U S Army Garrison DPW in complying with the NJDEP - Underground Storage Tanks regulations The applicable NJDEP regulations at the date of closure were the *Closure of Underground Storage Tank Systems* (N J A C 7 14B-9 et seq December, 1987 and revisions dated April 20, 2003)

This report was prepared using information required by the *Technical Requirements for Site Remediation* (N J A C 7 26E) (*Technical Requirements*) Section 1 of this UST Closure Report provides a summary of the UST site Section 2 of this report describes the site investigation activities Conclusions and recommendations, including the results of the soil sampling investigation, are presented in Section 3 of this report

### **1.2 SITE DESCRIPTION**

Building 676, Messenger Ave , is located in the central portion (600 Area) of the Main Post of Fort Monmouth, as shown on Figure 1 UST No 81533-104 was located on the southwest side of Building 676

#### **1.2.1 Geological/Hydrogeological Setting**

The following is a description of the geological/hydrogeological setting of the 600 Area Included is a description of the regional geology of the area surrounding Fort Monmouth as well as descriptions of the local geology and hydrogeology of the Main Post area

##### Regional Geology

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

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

The formations record several major transgressive/regressive cycles and contain units which are generally thicker to the southeast and reflect a deeper water environment. 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 Zapeczka, 1990).

### Local Geology

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

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

### Hydrogeology

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

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

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

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

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

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

Building 676 is located approximately 450 feet east of Mill Creek, the nearest water body, which flows into the Shrewsbury River. Based on the Main Post topography, the groundwater flow in the area of the Building 676 is anticipated to be to the west.

### **1.3 HEALTH AND SAFETY**

Work site health and safety hazards were minimized during all site investigation activities. All areas which posed a vapor hazard were monitored by a qualified individual utilizing a calibrated photo-ionizer detector Thermo Instruments Organic Vapor Monitor (OVM) – Model #580-B. The individual ascertained if the area was properly vented to render the area safe, as defined by OSHA. All work areas were properly vented to insure that there were no contaminants present in the breathing zone above permissible exposure limits (PEL's).

## **2.0 SITE INVESTIGATION ACTIVITIES**

### **2.1 OVERVIEW**

The Site Investigation was managed and carried out by U S Army DPW personnel. All analyses were performed and reported by Fort Monmouth Environmental Testing Laboratory, a NJDEP-certified testing laboratory. All sampling was performed by a NJDEP Certified Subsurface Evaluator according to the methods described in the NJDEP Field Sampling Procedures Manual (1992). Sampling frequency and parameters analyzed complied with the NJDEP document *Technical Requirements for Site Remediation, 7 26E-3 9* (December 17, 2002 and revisions dated February 3, 2003) which was the applicable regulation at the date of the investigation. All records of the Site Investigation activities are maintained by the Fort Monmouth DPW Environmental Office.

The following Parties participated in Closure and Site Assessment Activities

- Ft Monmouth Directorate of Public Works-Environmental Division  
Contact Person Joseph Fallon  
Phone Number (732) 532-6763
- Subsurface Evaluator Frank Accorsi  
Employer TECOM-Vinnell Services, Inc (TVS)  
Phone Number (732) 532-5241  
NJDEP License No 0010042  
TVS - NJDEP License No US252302
- Analytical Laboratory Fort Monmouth Environmental Testing Laboratory  
Contact Person Dan Wright  
Phone Number (732) 532-4359  
NJDEP Laboratory Certification No 13461

### **2.2 FIELD SCREENING/MONITORING**

Field screening of the soils was performed by a NJDEP certified Subsurface Evaluator using an OVM and visual observations to identify potentially contaminated material of which none were found.

### **2.3 SOIL SAMPLING**

On January 6, 2006, closure soil samples 676-C, 676-E, 676-W and 676-C (groundwater) were collected from a total of three (3) locations along the tank centerline bottom of the UST. Groundwater was encountered at approximately six and one-half (6.5) feet below surface grade in the borings. All soil samples were analyzed for TPH. A soil sample location map is provided on Figure 2.

The site assessment was performed by TVS personnel in accordance with the NJDEP *Technical Requirements for Site Remediation* and the NJDEP *Field Sampling Procedures Manual*. A summary of sampling activities including parameters analyzed is provided on Table 1. The soil samples were collected into laboratory prepared glassware using properly decontaminated stainless steel trowels. After collection, the samples were immediately placed on ice in a cooler and delivered to Fort Monmouth Environmental Testing Laboratory for analysis.

### **2.4 GROUNDWATER SAMPLING**

On January 6, 2006, sample 676-C groundwater was collected from soil borehole 676-C to assess the groundwater quality in the location of the tank. A temporary piezometer was installed in the borehole for sample collection. The sample was collected into laboratory prepared glassware using a disposable teflon bailer. The sample was analyzed for volatile organic analysis (VOA) and semi-volatile organic analysis (SVOA).

### **3.0 CONCLUSIONS AND RECOMMENDATIONS**

#### **3.1 SOIL SAMPLING RESULTS**

Closure soil samples were collected from a total of three locations on January 6, 2006 to evaluate soil conditions in the location of the UST. All samples were analyzed for TPH. The closure soil sample results were compared to the NJDEP health based criterion of 10,000 mg/kg for total organic contaminants (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. The analytical data package, including associated quality control data, is provided in Appendix B.

Closure soil samples collected on January 6, 2006 from UST 81533-104 contained no concentrations of TPH above the method detection limits.

#### **3.2 GROUNDWATER SAMPLING RESULTS**

One groundwater sample was collected via temporary piezometer installed in soil borehole 676-C. There were no compounds detected above the method detection limits for the volatile organic analysis. There were no compounds detected above the method detection limits for the semi-volatile organic analysis.

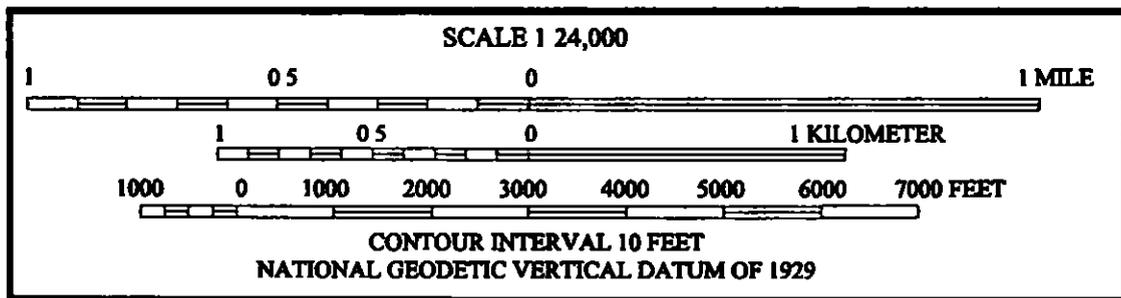
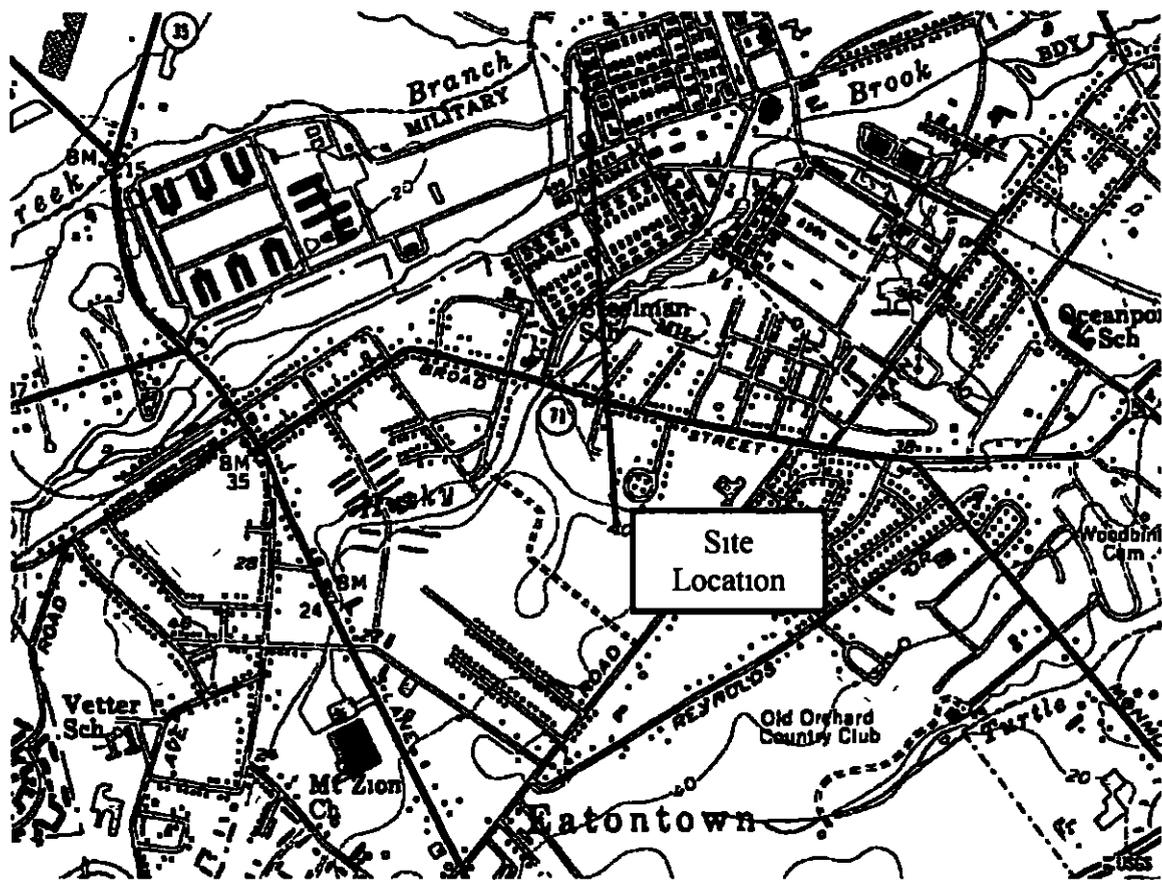
#### **3.3 CONCLUSIONS AND RECOMMENDATIONS**

The analytical results for all soil and groundwater samples collected from the UST closure assessment at UST No. 81533-104 were below the regulatory limits.

Based on the closure soil sampling results, soils with TPH concentrations exceeding the NJDEP health based criterion for total organic contaminants of 10,000 mg/kg are not present at the location of UST No. 81533-104.

**No Further Action** is proposed in regard to the closure and site assessment of UST No. 81533-104 at Building 676.

# **FIGURES**



**FIGURE 1**

SITE LOCATION MAP  
BUILDING 676  
UST NO 81533-104  
FT MONMOUTH, NJ

SOURCE USGS 7½-MINUTE SERIES (TOPOGRAPHIC)  
LONG BRANCH QUADRANGLE, NEW JERSEY, 1981

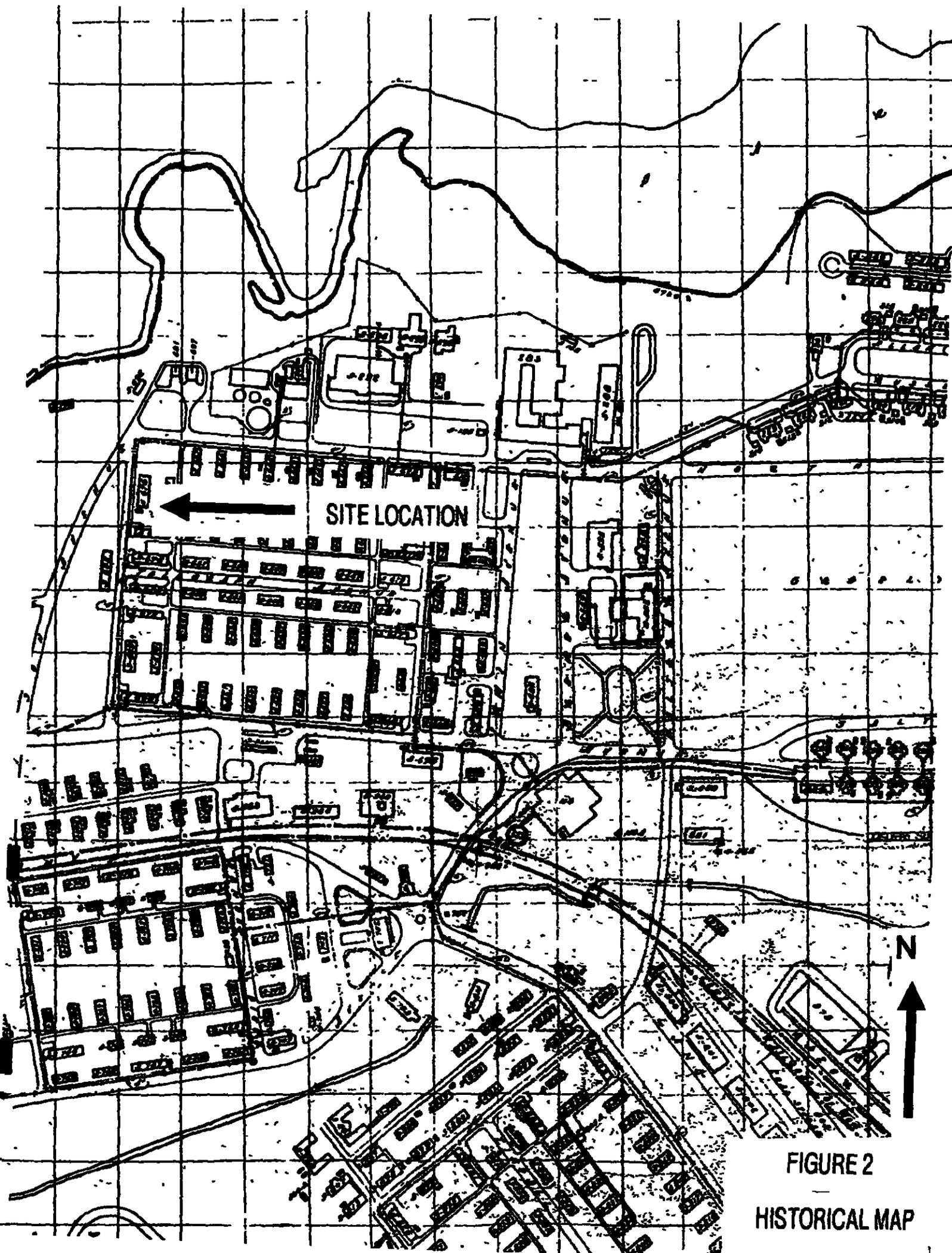
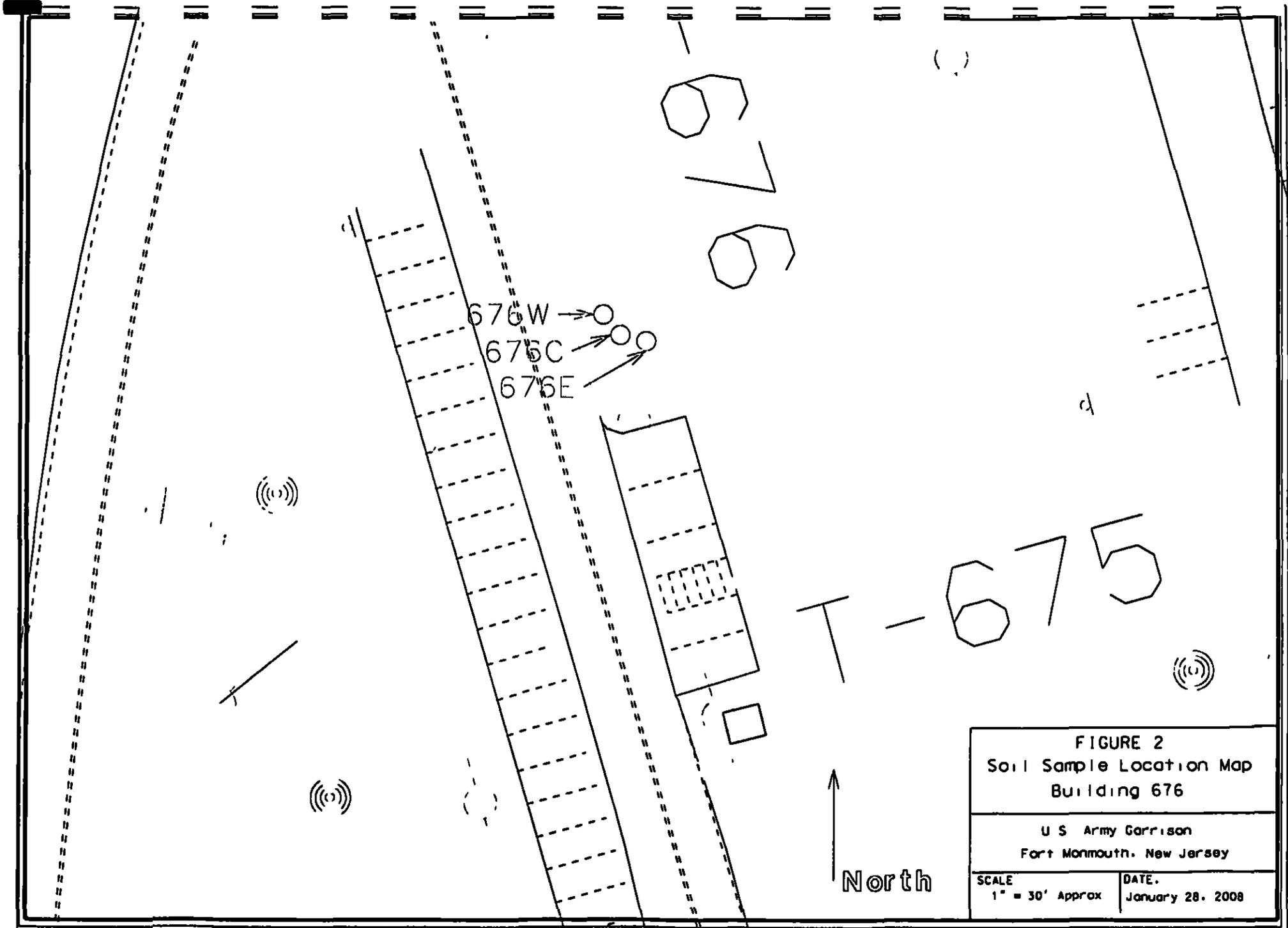


FIGURE 2  
HISTORICAL MAP



**FIGURE 2**  
**Soil Sample Location Map**  
**Building 676**

---

U S Army Garrison  
 Fort Monmouth, New Jersey

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SCALE 1" = 30' Approx	DATE January 28, 2008
--------------------------	--------------------------

# **TABLES**

# TABLE 1

## SUMMARY OF LABORATORY ANALYSIS

FT. MONMOUTH, BUILDING 676, UST No. 81533-104  
06 January 2006

SAMPLE ID	LABORATORY SAMPLE ID	SAMPLE DATE	SAMPLE MATRIX	ANALYTICAL PARAMETER	ANALYTICAL METHOD
676-C	6006101	06-Jan-06	SOIL	TPH	OQA-QAM-25
676-E	6006102	06-Jan-06	SOIL	TPH	OQA-QAM-25
676-W	6006104	06-Jan-06	SOIL	TPH	OQA-QAM-25
676-C- Groundwater	6006105	06-Jan-06	AQUEOUS	VOA, SVOA	SW-846, EPA 625
676-Duplic.	6006103	06-Jan-06	SOIL	TPH	OQA-QAM-25
Trip Blank	6006106	06-Jan-06	AQUEOUS	VOA	SW-846
Trip Blank	6006107	06-Jan-06	METHANOL	VOA	SW-846

### ABBREVIATIONS

TPH = Total Petroleum Hydrocarbons, Method NJDEP OQA-QAM-25

VOA = Volatile Organic Analysis, EPA SW-846 Method 8260

SVOA = Semi-Volatile Organic Analysis in Water, EPA Method 625

## TABLE 2

### SUMMARY OF LABORATORY ANALYTICAL RESULTS-SOIL

FT. MONMOUTH, BUILDING 676, UST No. 81533-104  
06 January 2006

#### TOTAL PETROLEUM HYDROCARBONS

SAMPLE ID	LABORATORY SAMPLE ID	SAMPLE LOCATION	SAMPLE DEPTH (in feet)	MATRIX	TPH RESULTS mg/kg
676-C	6001201	CENTER UST	6.0 - 6.5	Soil	ND
676-E	6001202	EAST END UST	6.0 - 6.5	Soil	ND
676-W	6001204	WEST END UST	6.0 - 6.5	Soil	ND
676-Duplic.	6001203	EAST END UST	6.0 - 6.5	Soil	ND

**ABBREVIATIONS:**

mg/kg = milligrams per kilogram = parts per million

ND = Compound Not Detected

NA = Compound Not Analyzed

\*= Further Analyzed for Volatile Organic Compounds

**Notes:**

Gray shading indicates exceedance of NJDEP health based criterion of 10,000 ppm total organic contaminants

# TABLE 3

## SUMMARY OF LABORATORY ANALYTICAL RESULTS- GROUNDWATER

FT. MONMOUTH, BUILDING 676, UST No. 81533-104

06 January 2006

### VOLATILE ORGANIC COMPOUNDS

SAMPLE ID	LAB SAMPLE ID	Benzene	Toluene	Ethyl- benzene	Xylenes (Total)
UNITS		ug/L	ug/L	ug/L	ug/L
676-C Groundwater	6001205	ND	ND	ND	ND
NJDEP Criteria	Ground Water Quality Criteria	2	1,000	700	NLE

### SEMI-VOLATILE ORGANIC COMPOUNDS

SAMPLE ID	LAB SAMPLE ID	Naphtha- lene	2Methyl- naphthalene	Ace- naphthene	Fluorene	Phenan- threne
UNITS		ug/L	ug/L	ug/L	ug/L	ug/L
676-C Groundwater	6001205	ND	ND	ND	ND	ND
NJDEP Criteria	Ground Water Quality Criteria	300	NLE	NLE	300	NLE

#### ABBREVIATIONS

ug/L = Micrograms Per Liter = parts per billion

ND = Compound Not Detected

NA = Compound Not Analyzed

NLE = No Limit Established

#### Notes

Gray shading indicates exceedance of NJDEP  
Class II Ground Water Quality Criteria

**APPENDIX A**

**CERTIFICATIONS**



STATE OF NEW JERSEY  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
Bureau of Underground Storage Tanks  
CN-029, Trenton, NJ 08625

Date Rec'd	_____
Auth	_____
Routing	_____
UST NO.	_____

**SITE ASSESSMENT COMPLIANCE STATEMENT**

Supplement to the New Jersey Standard Reporting Form  
(Complete for ALB regulated UST abandonments or removals)

Within ninety (90) days of completing the UST closure of any State or Federally-regulated tank, the owner or operator must submit this completed form to the NJDEP Bureau of Underground Storage Tanks. If the facility is located in one of the counties listed on the back, a copy of this form must also be sent to the Health Agency indicated.

The owner or operator of any Federally-regulated tank must also comply with the following:

**40 CFR Part 280.72 Assessing the site at closure or change-in-service**

"(a) Before permanent closure or a change-in-service is completed, owners and operators must measure for the presence of a release where contamination is most likely to be present at the UST site. In selecting sample types, sample locations, and measurement methods, owners and operators must consider the method of closure, the nature of the stored substance, the type of backfill, the depth to ground water, and other factors appropriate for identifying the presence of a release."

FACILITY U.S. Army Fort Monmouth UST # 0081533 Tank No. \_\_\_\_\_

Check off the following items as appropriate for the site.

58, 88, 95,  
104, 110, 113,  
146, 148, 158,  
163.

- The UST facility is only regulated by State law, therefore a site assessment is not mandatory.
- The UST facility is regulated by Federal law and a site assessment was conducted.

The results of the site assessment indicate:

- There was NO release from the UST system.
- There was a release from the UST system and it was reported to the DEP Environmental Hotline (609-292-7172).

NOTE: The results of the site assessment are not to be submitted to the DEP or Health Agency unless requested to do so. The results are to be available for inspection at the UST facility.

Questions can be directed to the Bureau at (609) 984-3156.

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

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

SACS-2,1/89

22 NOV 1991  
Date / /

*James Ott*  
SIGNATURE

JAMES OTT  
Acting Director  
NJ, Engineering and Housing

(Title)



**DEPARTMENT OF THE ARMY**  
Headquarters, U.S. Army Garrison Fort Monmouth  
Fort Monmouth, New Jersey 07703-5000



REPLY TO  
ATTENTION OF

Directorate of Engineering  
and Housing

22 NOV 1991

SUBJECT: Removal Procedure:

U.S. Army Fort Monmouth  
Main Post West  
Site Registration #0081533  
Tank #58, 88, 95, 104, 110, 113, 146, 148, 158, 163  
POC: Joseph M. Fallon (908) 532-6223

The remaining product inside each tank was removed for disposal by Lionetti Oil Recovery Co., Inc. Lionetti is a licensed hazardous waste transporter and treatment, storage, and disposal facility (USEPA ID #NJ084044064).

The top of each tank was excavated and cut open across the entire length of the tank. In addition, the inside of each tank was hand cleaned and thoroughly wiped down. The soil from the top of each excavation was visually inspected and analyzed using a HNU Model PI-101 photoionizer. No contamination was detected.

After each tank was cleaned, a visual inspection was made inside the tanks for signs of leakage. No corrosion was found inside the tanks.

Each tank was then removed from the ground and disposed of through a metal recycler. No contamination was discovered at the sites upon removing the tanks.

Each site was then backfilled with the excavated soil to close out the project.

**Site Remediation Program**  
**UST Site Remedial Investigation Report**

**A. Facility Name** Building 676  
**Facility Street Address** 676 Messenger Ave  
**Municipality** Oceanport **County** Monmouth  
**Block** NA **Lot(s)** NA **Telephone Number** 732-532-6223

**B. Owner (RP)'s Name** U S Army Garrison - Directorate of Public Works  
**Street Address** 167 Riverside Ave **City** Ft Monmouth  
**State** NJ **Zip** 07703 **Telephone Number** 732-532-6223

**C. (Check as appropriate)**  
 Site Investigation Report (SIR) \$500 Fee  
 Remedial Investigation Report (RIR) \$1000 Fee

**D. (Complete all that apply)**  
Assigned Case Manager \_\_\_\_\_  
UST Registration Number 81533-104 (7 digits)  
• Incident Report Number \_\_\_\_\_ (10 or 12 digits)  
• Tank Closure Number C(N)9 \_\_\_\_ - \_\_\_\_ C 9- \_\_\_\_ C9 \_\_\_\_ - \_\_\_\_ (7 characters)

**E. Certification by the Subsurface Evaluator**  
The attached report conforms to the specific reporting requirements of N J A C 7 26E Yes No  
**Name** Frank Accorsi **Signature** \_\_\_\_\_ **UST Cert No** 0010042  
**Firm** Tecom-Vinnell Services **Firm's UST Cert Number** US252302  
**Firm Address** P O Box 60 **City** Ft Monmouth  
**State** NJ **Zip** 07724 **Telephone Number** 732-532-5241

(NOTE Certification numbers required only if work was conducted on USTs regulated per N J S A 5 8 10A-2 1 et seq )

**F. Certification by the Responsible Party(ies) of the Facility**  
The following certification shall be signed [according to the requirements of N J A C 7 14B-1 7(b)]as follows  
1 For a Corporation by a person authorized by a resolution of the board of directors to sign the document A copy of the resolution certified as a true copy by the secretary of the corporation, shall be submitted along with the certification or  
2 For a partnership or sole proprietorship, by a general partner or the proprietor respectively, or  
3 For a municipality State, federal or other public agency by either a principal executive officer or ranking elected Official

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

**Name (Print or Type)** \_\_\_\_\_ **Title** \_\_\_\_\_  
**Signature** \_\_\_\_\_  
**Company Name** \_\_\_\_\_ **Date** \_\_\_\_\_

## **APPENDIX B**

# **SOIL AND GROUNDWATER ANALYTICAL DATA PACKAGE**

# FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS

PHONE (732) 532-4359 FAX (732) 532-6263

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



ANALYTICAL DATA REPORT  
Fort Monmouth Environmental Laboratory  
ENVIRONMENTAL DIVISION  
Fort Monmouth, New Jersey  
PROJECT BLDG 676

## Bldg. 676

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
676 C 6 0-6 5	6001201	Soil	06-Jan-06 08 51	01/06/06
676 E 6 0-6 5	6001202	Soil	06-Jan-06 09 19	01/06/06
Duplicate	6001203	Soil	06-Jan-06 09 19	01/06/06
676 W 6 0-6 5	6001204	Soil	06-Jan-06 10 08	01/06/06
676 C GW	6001205	Aqueous	06-Jan-06 11 03	01/06/06
Trp Blank	6001206	Aqueous	06-Jan-06	01/06/06
Trp Blank	6001207	Methanol	06-Jan-06	01/06/06

### ANALYSIS:

FORT MONMOUTH ENVIRONMENTAL LAB  
VOA+15, BN+15, TPHC, % SOLIDS

ENCLOSURE  
CHAIN OF CUSTODY  
RESULTS

  
Daniel Wright/Date  
Laboratory Director

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# **CHAIN OF CUSTODY**

**000001**

# Fort Monmouth Environmental Testing Laboratory

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

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

NJDEP Certification #13461

## Chain of Custody Record

Customer: <u>John McCarthy</u>		Project No <u>06-34880</u>		Analysis Parameters						Comments:	
Phone <u>X2 6224</u>		Location <u>676</u>		TPH	VO+10	BN+15					
<input type="checkbox"/> DERA <input type="checkbox"/> OMA <input type="checkbox"/> Other _____		(Former UST)									
Samplers Name / Company <u>George Boyce ITVS</u>				Sample #							
LIMS/Work Order #	Sample Location	Date	Time	Type	bottles						Remarks / Preservation Method
<u>00012 01</u>	<u>676C 6065</u>	<u>1/6/06</u>	<u>0851</u>	<u>Soil</u>	<u>2</u>	<u>X</u>					<u>4410</u>
<u>02</u>	<u>676E 6065</u>		<u>0919</u>	<u>Soil</u>	<u>2</u>	<u>X</u>					<u>4411</u>
<u>03</u>	<u>Dupe</u>		<u>0919</u>	<u>Soil</u>	<u>2</u>	<u>X</u>					<u>4412</u>
<u>04</u>	<u>676W 6065</u>		<u>1008</u>	<u>Soil</u>	<u>2</u>	<u>X</u>					<u>4413</u>
<u>05</u>	<u>676C-6W</u>		<u>1103</u>	<u>AQ</u>			<u>X</u>	<u>X</u>			
<u>06</u>	<u>TRIP</u>		<u>-</u>	<u>AQ</u>			<u>X</u>				
<u>07</u>	<u>TRIP</u>	<u>2</u>	<u>-</u>	<u>Soil Meth</u>							<u>4409</u>
Relinquished by (signature)		Date/Time	Received by (signature)		Relinquished by (signature)		Date/Time	Received by (signature)			
<u>George Boyce</u>		<u>1-6-06 10:00</u>	<u>J. Wright</u>								
Relinquished by (signature)		Date/Time	Received by (signature)		Relinquished by (signature)		Date/Time	Received by (signature)			
Report Type <input type="checkbox"/> Full, <input checked="" type="checkbox"/> Reduced, <input type="checkbox"/> Standard, <input type="checkbox"/> Screen / non-certified, <input type="checkbox"/> EDD					Remarks <u>VO+10 on 25% &gt; 1000 PPM TPH</u>						
Turnaround time <input checked="" type="checkbox"/> Standard 3 wks, <input type="checkbox"/> Rush Days, <input type="checkbox"/> ASAP Verbal Hrs											

## SAMPLE RECEIPT FORM

Date Received 1-6-06

Work Order ID# 00012

Site/Proj Name Bdy. W. rd / WST

Cooler Temp (°C) ICE

Received By J. Verquina  
(Print name)

Sign: J. Verquina

**Check the appropriate box**

- |  |   |  |   |
|--|---|--|---|
| 1 Did the samples come in a cooler?                          | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no            | <input type="checkbox"/> n/a            |
| 2 Were samples rec'd in good condition?                      | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no            |   |
| 3 Was the chain of custody filled out correctly and legibly? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no            |   |
| 4 Was the chain of custody signed in the appropriate place?  | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no            |   |
| 5 Did the labels agree with the chain of custody?            | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no            |   |
| 6 Were the correct containers/preservatives used?            | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no            |   |
| 7 Was a sufficient amount of sample supplied?                | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no            |   |
| 8 Were air bubbles present in VOA vials?                     | <input type="checkbox"/> yes            | <input checked="" type="checkbox"/> no | <input type="checkbox"/> n/a            |
| 9 Were samples received on ice?                              | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no            |   |
| 10 Were analyze-immediately tests perform within 15 minutes  | <input type="checkbox"/> yes            | <input type="checkbox"/> no            | <input checked="" type="checkbox"/> n/a |

**Fill out the following table for each sample bottle**

Lims ID	pH	Preservative	Sample ID	pH	Preservative
<u>00012/56</u>	<u>7.2</u>	<u>ACL</u>			

Comments \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Former UST 676 Sample Location GPS Positions**

**US State Plane 1983 New Jersey ( NY East ) 2900  
NAD 1983 ( Conus)  
Geoid 96 ( Conus)**

**( In US Survey Feet)**

<b>Position</b>	<b>Northing ( Y Coord )</b>	<b>Easting ( X Coord )</b>
<b>676 E</b>	<b>539597 934</b>	<b>617850 243</b>
<b>676 C</b>	<b>539599 438</b>	<b>617843 928</b>
<b>676 W</b>	<b>539604 476</b>	<b>617839 742</b>

# **METHOD SUMMARY**

## **Methodology Summary**

### **EPA Method 624**

#### **Gas Chromatographic Determination of Volatiles in Water**

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

### **EPA SW-846 Method 8260**

#### **Gas Chromatographic Determination of Volatiles in Methanol**

A 10-gram volume of soil is combined with 25-ml of Methanol and surrogates in the field. Internal standards are added and the sample is placed on a purge and trap concentrator. The sample is purged and desorbed into a GC/MS system. *Volatiles are identified and quantitated. The final concentration is calculated using soil weight, percent moisture and concentration.*

### **EPA Method 625**

#### **Gas Chromatographic Determination of Semi-volatiles in Water**

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

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

Fifteen grams (15g) of soil is added to a 125-ml acid cleaned and solvent rinsed capped Erlenmeyer flask. 15g anhydrous Sodium Sulfate is added to dry the sample. Surrogate standard spiking solution is then added to the flask.

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

The extract is then injected directly into a GC-FID for analysis. The sample is analyzed for Petroleum Hydrocarbons covering a range of C8-C42, including Pristane and Phytane. Total Petroleum Hydrocarbon concentration is determined by integrating between 5 minutes and 22 minutes. The baseline is established by starting the integration after the end of the solvent peak and stopping after the last peak. The final concentration of Total Petroleum Hydrocarbons is calculated using percent moisture, sample weight and concentration.

# **LABORATORY CHRONICLE**

# Laboratory Chronicle

Lab ID: 60012

Site: UST  
Bldg. 676

	Date	Hold Time
<b>Date Sampled</b>	01/06/06	NA
<b>Receipt/Refrigeration</b>	01/06/06	NA
<b>Extractions</b>		
1. BN	01/11/06	7 days
2. TPHC	01/11/06	14 days
<b>Analyses</b>		
1. VOA	01/11,12/06	14 days
2. BN	01/17,18/06	40 days
3. TPHC	01/12/06	40 days

000009

**CONFORMANCE/  
NON-  
CONFORMANCE  
SUMMARY**

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

	Indicate Yes, No, N/A
1 Chromatograms labeled/Compounds identified (Field samples and method blanks)	_____
2 Retention times for chromatograms provided	_____
3 GC/MS Tune Specifications	
a BFB Meet Criteria	_____
b DFTPP Meet Criteria	_____
4 GC/MS Tuning Frequency – Performed every 24 hours for 600 series and 12 hours for 8000 series	_____
5 GC/MS Calibration – Initial Calibration performed before sample analysis and continuing calibration performed within 24 hours of sample analysis for 600 series and 12 hours for 8000 series	_____
6 GC/MS Calibration requirements	
a Calibration Check Compounds Meet Criteria	_____
b System Performance Check Compounds Meet Criteria	_____
7 Blank Contamination – If yes, List compounds and concentrations in each blank	_____
a VOA Fraction _____	
b B/N Fraction _____	
c Acid Fraction _____	
8 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??	_____
9 Matrix Spike/Matrix Spike Duplicate Recoveries Meet Criteria (If not met, list those compounds and their recoveries which fall outside the acceptable range)	_____
a VOA Fraction _____	
b B/N Fraction _____	
c Acid Fraction _____	

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

Indicate  
Yes, No, N/A

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

- a. VOA Fraction \_\_\_\_\_
- b. B/N Fraction \_\_\_\_\_
- c. Acid Fraction \_\_\_\_\_

**11 Extraction Holding Time Met** \_\_\_\_\_

If not met, list the number of days exceeded for each sample \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**12 Analysis Holding Time Met** \_\_\_\_\_

If not met, list the number of days exceeded for each sample \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Additional Comments**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Laboratory Manager



Date

1-25-06

**TPHC CONFORMANCE/NON-CONFORMANCE SUMMARY REPORT**

Indicate  
Yes No, N/A

- 1 Method Detection Limits Provided \_\_\_\_\_
- 2 Method Blank Contamination – If yes, list the sample and the corresponding concentrations in each blank  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- 3 Matrix Spike Results Summary Meet Criteria  
(If not met, list the sample and corresponding recovery which falls outside the acceptable range)  
\_\_\_\_\_  
\_\_\_\_\_
- 4 Duplicate Results Summary Meet Criteria  
\_\_\_\_\_  
\_\_\_\_\_
- 5 IR Spectra submitted for standards, blanks and samples \_\_\_\_\_
- 6 Chromatograms submitted for standards, blanks and samples if GC fingerprinting was conducted \_\_\_\_\_
- 7 Analysis holding time met  
(If not met, list number of days exceeded for each sample)  
\_\_\_\_\_  
\_\_\_\_\_

Additional comments \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Laboratory Manager  Date 1-25-06

**VOLATILE  
ORGANICS  
(AQUEOUS)**

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

**Definition of Qualifiers**

- U:** The compound was analyzed for but not detected
- B:** Indicates that the compound was found in the associated method blank as well as in the sample.
- J:** Indicates an estimated value. This flag is used.
- (1) When the mass spec and retention time data indicate the presence of a compound however the result is less than the MDL but greater than zero.
- (2) When estimating the concentration of a tentatively identified compound (TIC), where a 1:1 response is assumed.
- D:** This flag is used to identify all compounds (target or TIC) that required a dilution.
- E:** Indicates the compound's concentration exceeds the calibration range of the instrument for that specific analysis.
- N:** This flag is only used for TICs. It indicates the presumptive evidence of a compound. For a generic characterization of a TIC, such as unknown hydrocarbon, the flag is not used.

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

Data File VB02131&D  
 Operator Skelton  
 Date Acquired 11 Jan 2006 8 48 pm

Sample Name MB 11Jan2006  
 Field ID MB 11Jan2006  
 Sample Multiplier 1

CAS#	Compound Name	R.T	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2 01 ug/L	5 00 ug/L	
107131	Acrylonitrile			not detected	5	1 23 ug/L	5 00 ug/L	
75650	tert Butyl alcohol			not detected	100	5 70 ug/L	10 00 ug/L	
1634044	Methyl tert Butyl ether			not detected	70	0 21 ug/L	2 00 ug/L	
108203	Di isopropyl ether			not detected	20000	0 26 ug/L	2 00 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0 20 ug/L	2 00 ug/L	
74-87-3	Chloromethane			not detected	nle	0 24 ug/L	2 00 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0 23 ug/L	2 00 ug/L	
74-83 9	Bromomethane			not detected	10	0 26 ug/L	2 00 ug/L	
75-00-3	Chloroethane			not detected	nle	0 29 ug/L	2 00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0 23 ug/L	2 00 ug/L	
75-35-4	1 1-Dichloroethene			not detected	1	0 19 ug/L	2 00 ug/L	
67-64-1	Acetone			not detected	6000	0 36 ug/L	2 00 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0 24 ug/L	2 00 ug/L	
75-09-2	Methylene Chloride			not detected	3	0 21 ug/L	2 00 ug/L	
156-60-5	trans-1 2-Dichloroethene			not detected	100	0 24 ug/L	2 00 ug/L	
75-34-3	1 1-Dichloroethane			not detected	50	0 24 ug/L	2 00 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0 20 ug/L	2 00 ug/L	
78-93-3	2-Butanone			not detected	300	0 26 ug/L	2 00 ug/L	
156-59-2	cis-1 2-Dichloroethene			not detected	70	0 20 ug/L	2 00 ug/L	
67-66-3	Chloroform			not detected	70	0 22 ug/L	2 00 ug/L	
71-55-6	1 1 1 Trichloroethane			not detected	30	0 20 ug/L	2 00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0 24 ug/L	2 00 ug/L	
71-43-2	Benzene			not detected	1	0 24 ug/L	2 00 ug/L	
107-06-2	1 2 Dichloroethane			not detected	2	0 23 ug/L	2 00 ug/L	
79-01-6	Trichloroethene			not detected	1	0 26 ug/L	2 00 ug/L	
78-87-5	1 2 Dichloropropane			not detected	1	0 24 ug/L	2 00 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0 22 ug/L	2 00 ug/L	
110-75-8	2 Chloroethyl vinyl ether			not detected	nle	0 23 ug/L	2 00 ug/L	
10061-01-5	cis 1 3-Dichloropropene			not detected	1	0 22 ug/L	2 00 ug/L	
108-10-1	4-Methyl 2 Pentanone			not detected	nle	0 35 ug/L	2 00 ug/L	
108-88-3	Toluene			not detected	1000	0 26 ug/L	2 00 ug/L	
10061-02-6	trans-1 3 Dichloropropene			not detected	1	0 25 ug/L	2 00 ug/L	
79-00-5	1 1 2-Trichloroethane			not detected	3	0 28 ug/L	2 00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0 20 ug/L	2 00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0 43 ug/L	2 00 ug/L	
124-48-1	Dibromochloromethane			not detected	1	0 22 ug/L	2 00 ug/L	
108-90-7	Chlorobenzene			not detected	50	0 28 ug/L	2 00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0 27 ug/L	2 00 ug/L	
1330-20-7	m-p-Xylenes			not detected	nle	0 43 ug/L	4 00 ug/L	
95-47-6	o-Xylene			not detected	nle	0 21 ug/L	2 00 ug/L	
100-42-5	Styrene			not detected	100	0 21 ug/L	2 00 ug/L	
75-25-2	Bromoform			not detected	4	0 27 ug/L	2 00 ug/L	
79-34-5	1 1 2,2-Tetrachloroethane			not detected	1	0 45 ug/L	2 00 ug/L	
541-73-1	1 3 Dichlorobenzene			not detected	600	0 36 ug/L	2 00 ug/L	
106-46-7	1,4 Dichlorobenzene			not detected	75	0 35 ug/L	2 00 ug/L	
95-50-1	1 2-Dichlorobenzene			not detected	600	0 45 ug/L	2 00 ug/L	

\*Results between MDL and RL are estimated values  
 \*Higher of PQLs and Intern Criteria as per N.J.A.C. 7-9C 07Nov2005

**Qualifiers**

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

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

1E  
**VOLATILE ORGANICS ANALYSIS DATA SHEET**  
**TENTATIVELY IDENTIFIED COMPOUNDS**

FIELD ID

<b>MB 11Jan2006</b>
---------------------

Lab Name FMETL NJDEP# 13461

Project 0634880 Case No 60012 Location 676 SDG No UST

Matrix (soil/water) WATER Lab Sample ID MB 11Jan2006

Sample wt/vol 5.0 (g/ml) ML Lab File ID VB021318 D

Level (low/med) LOW Date Received 1/4/2006

% Moisture not dec \_\_\_\_\_ Date Analyzed 1/11/2006

GC Column RTX502 ID 0.25 (mm) Dilution Factor 1.0

Soil Extract Volume \_\_\_\_\_ (uL) Soil Aliquot Volume \_\_\_\_\_ (uL)

**CONCENTRATION UNITS**

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

CAS NO	COMPOUND NAME	RT	EST CONC	Q
1 000079-20-9	Acetic acid, methyl ester	12.47	4	JN

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

Data File VB021326.D  
 Operator Skelton  
 Date Acquired 12 Jan 2006 2 16 am

Sample Name 6001206  
 Field ID Trip Blank  
 Sample Multiplier 1

CAS#	Compound Name	R.T	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.01 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	5	1.23 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	5.70 ug/L	10.00 ug/L	
1634044	Methyl tert Butyl ether			not detected	70	0.21 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.26 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.20 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	nle	0.24 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.23 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	0.26 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	0.29 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	200	0.23 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.19 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	6000	0.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.24 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.21 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.24 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	50	0.24 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.26 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.20 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	70	0.22 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.20 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.24 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.24 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.23 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.26 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.24 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.23 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.22 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.35 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.26 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.25 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.28 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.20 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.43 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.28 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.27 ug/L	2.00 ug/L	
1330-20-7	m-p-Xylenes			not detected	nle	0.43 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.21 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.21 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.27 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.45 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.36 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.35 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.45 ug/L	2.00 ug/L	

\*Results between MDL and RL are estimated values  
 Higher of PQLs and Interns Criteria as per N.J.A.C. 7:9C 07-01.2005

**Qualifiers**

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID

**Trip Blank**

Lab Name FMETL NJDEP# 13461

Project 0634880 Case No 60006 Location 637 SDG No UST

Matrix (soil/water) WATER Lab Sample ID 6001206

Sample wt/vol 5.0 (g/ml) ML Lab File ID VB021326 D

Level (low/med) LOW Date Received 1/4/2006

% Moisture not dec \_\_\_\_\_ Date Analyzed 1/12/2006

GC Column RTX502 ID 0.25 (mm) Dilution Factor 1.0

Soil Extract Volume \_\_\_\_\_ (uL) Soil Aliquot Volume \_\_\_\_\_ (uL)

CONCENTRATION UNITS

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

Number TICs found 1

CAS NO	COMPOUND NAME	RT	EST CONC	Q
1 000079-20-9	Acetic acid, methyl ester	12.47	4	JN

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

Data File VB021325 D  
 Operator Skelton  
 Date Acquired 12 Jan 2006 1 35 am

Sample Name 6001205  
 Field ID 676C  
 Sample Multiplier 1

CAS#	Compound Name	R.T	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2 01 ug/L	5 00 ug/L	
107131	Acrylonitrile			not detected	5	1 23 ug/L	5 00 ug/L	
75650	tert Butyl alcohol			not detected	100	5 70 ug/L	10 00 ug/L	
1634044	Methyl tert Butyl ether			not detected	70	0 21 ug/L	2 00 ug/L	
108203	Di isopropyl ether			not detected	20000	0 26 ug/L	2 00 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0 20 ug/L	2 00 ug/L	
74-87-3	Chloromethane			not detected	nle	0 24 ug/L	2 00 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0 23 ug/L	2 00 ug/L	
74-83-9	Bromomethane			not detected	10	0 26 ug/L	2 00 ug/L	
75-00-3	Chloroethane			not detected	nle	0 29 ug/L	2 00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0 23 ug/L	2 00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0 19 ug/L	2 00 ug/L	
67-64-1	Acetone			not detected	6000	0 36 ug/L	2 00 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0 24 ug/L	2 00 ug/L	
75-09-2	Methylene Chloride			not detected	3	0 21 ug/L	2 00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0 24 ug/L	2 00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	50	0 24 ug/L	2 00 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0 20 ug/L	2 00 ug/L	
78-93-3	2-Butanone			not detected	300	0 26 ug/L	2 00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0 20 ug/L	2 00 ug/L	
67-66-3	Chloroform			not detected	70	0 22 ug/L	2 00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0 20 ug/L	2 00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0 24 ug/L	2 00 ug/L	
71-43-2	Benzene			not detected	1	0 24 ug/L	2 00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0 23 ug/L	2 00 ug/L	
79-01-6	Trichloroethene			not detected	1	0 26 ug/L	2 00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0 24 ug/L	2 00 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0 22 ug/L	2 00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0 23 ug/L	2 00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0 22 ug/L	2 00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0 35 ug/L	2 00 ug/L	
108-88-3	Toluene			not detected	1000	0 26 ug/L	2 00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0 25 ug/L	2 00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0 28 ug/L	2 00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0 20 ug/L	2 00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0 43 ug/L	2 00 ug/L	
124-48-1	Dibromochloromethane			not detected	1	0 22 ug/L	2 00 ug/L	
108-90-7	Chlorobenzene			not detected	50	0 28 ug/L	2 00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0 27 ug/L	2 00 ug/L	
1330-20-7	m,p-Xylenes			not detected	nle	0 43 ug/L	4 00 ug/L	
95-47-6	o-Xylene			not detected	nle	0 21 ug/L	2 00 ug/L	
100-42-5	Styrene			not detected	100	0 21 ug/L	2 00 ug/L	
75-25-2	Bromoform			not detected	1	0 27 ug/L	2 00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0 45 ug/L	2 00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0 36 ug/L	2 00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0 35 ug/L	2 00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0 45 ug/L	2 00 ug/L	

\*Results between MDL and RL are estimated values  
 Higher of PQL's and Interim Criteria as per N.J.A.C. 7:9C 07 Nov 2005

**Qualifiers**

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

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

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID

<b>676C-GW</b>
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Lab Name FMETL NJDEP# 13461

Project 0634880 Case No 60006 Location 637 SDG No UST

Matrix (soil/water) WATER Lab Sample ID 6001205

Sample wt/vol 5.0 (g/ml) ML Lab File ID VB021325 D

Level (low/med) LOW Date Received 1/4/2006

% Moisture not dec \_\_\_\_\_ Date Analyzed 1/12/2006

GC Column RTX502 ID 0.25 (mm) Dilution Factor 1.0

Soil Extract Volume \_\_\_\_\_ (uL) Soil Aliquot Volume \_\_\_\_\_ (uL)

CONCENTRATION UNITS

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

CAS NO	COMPOUND NAME	RT	EST CONC	Q
1 000079-20-9	Acetic acid, methyl ester	12.48	4	JN

# **SEMI-VOLATILE ORGANICS**

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

Data File Name **BNA11454 D**  
 Operator **Skelton**  
 Date Acquired **17-Jan-06**

Sample Name **MB 01110601**  
 Misc Info **MB 01110601**  
 Sample Multiplier **1**

CAS#	Name	R T	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifiers
110-86-1	Pyridine			not detected	NLE	1.13	10.00	ug/L
62-75-9	N-nitroso-dimethylamine			not detected	20	0.60	10.00	ug/L
62-53-3	Aniline			not detected	NLE	2.38	10.00	ug/L
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.71	10.00	ug/L
541-73-1	1,3-Dichlorobenzene			not detected	600	1.02	10.00	ug/L
106-46-7	1,4-Dichlorobenzene			not detected	75	0.99	10.00	ug/L
100-51-6	Benzyl alcohol			not detected	NLE	0.66	10.00	ug/L
95-50-1	1,2-Dichlorobenzene			not detected	600	0.96	10.00	ug/L
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.88	10.00	ug/L
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.76	10.00	ug/L
67-72-1	Hexachloroethane			not detected	10	0.96	10.00	ug/L
98-95-3	Nitrobenzene			not detected	10	0.86	10.00	ug/L
78-59-1	Isophorone			not detected	100	0.76	10.00	ug/L
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.79	10.00	ug/L
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.89	10.00	ug/L
91-20-3	Naphthalene			not detected	NLE	0.76	10.00	ug/L
106-47-8	4-Chloroaniline			not detected	NLE	1.37	10.00	ug/L
87-68-3	Hexachlorobutadiene			not detected	1	0.99	10.00	ug/L
91-57-6	2-Methylnaphthalene			not detected	NLE	1.01	10.00	ug/L
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.92	10.00	ug/L
91-58-7	2-Chloronaphthalene			not detected	NLE	0.72	10.00	ug/L
88-74-4	2-Nitroaniline			not detected	NLE	0.77	10.00	ug/L
131-11-3	Dimethylphthalate			not detected	7000	0.78	10.00	ug/L
208-96-8	Acenaphthylene			not detected	NLE	0.67	10.00	ug/L
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.71	10.00	ug/L
99-09-2	3-Nitroaniline			not detected	NLE	1.18	10.00	ug/L
83-32-9	Acenaphthene			not detected	400	0.73	10.00	ug/L
132-64-9	Dibenzofuran			not detected	NLE	0.69	10.00	ug/L
121-14-2	2,4-Dinitrotoluene			not detected	10	0.81	10.00	ug/L
84-66-2	Diethylphthalate			not detected	5000	0.96	10.00	ug/L
86-73-7	Fluorene			not detected	300	0.71	10.00	ug/L
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.73	10.00	ug/L
100-01-6	4-Nitroaniline			not detected	NLE	1.11	10.00	ug/L
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.62	10.00	ug/L
103-33-3	Azobenzene			not detected	NLE	0.72	10.00	ug/L
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.92	10.00	ug/L
118-74-1	Hexachlorobenzene			not detected	10	0.95	10.00	ug/L
85-01-8	Phenanthrene			not detected	NLE	0.81	10.00	ug/L
120-12-7	Anthracene			not detected	2000	0.76	10.00	ug/L
84-74-2	Di-n-butylphthalate			not detected	900	0.92	10.00	ug/L
206-44-0	Fluoranthene			not detected	300	0.82	10.00	ug/L

**Semi-Volatile Analysis Report**  
**Page 2**

Data File Name **BNA11454 D**  
 Operator **Skelton**  
 Date Acquired **17 Jan-06**

Sample Name **MB 01110601**  
 Misc Info **MB 01110601**  
 Sample Multiplier **1**

CAS#	Name	RT	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifiers
92-87-5	Benzdine			not detected	50	0.98	10.00	ug/L
129-00-0	Pyrene			not detected	200	0.79	10.00	ug/L
85-68-7	Butylbenzylphthalate			not detected	100	0.86	10.00	ug/L
56-55-3	Benzo[a]anthracene			not detected	10	0.82	10.00	ug/L
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.31	10.00	ug/L
218-01-9	Chrysene			not detected	20	0.77	10.00	ug/L
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.28	10.00	ug/L
117-84-0	Di-n-octylphthalate			not detected	100	1.02	10.00	ug/L
205-99-2	Benzo[b]fluoranthene			not detected	10	0.98	10.00	ug/L
207-08-9	Benzo[k]fluoranthene			not detected	2	0.92	10.00	ug/L
50-32-8	Benzo[a]pyrene			not detected	20	0.71	10.00	ug/L
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	0.76	10.00	ug/L
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.76	10.00	ug/L
191-24-2	Benzo[ghi]perylene			not detected	NLE	0.80	10.00	ug/L

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

**Qualifiers**

E= Value Exceeds Linear Range

D= Value from dilution

B= Compound in Related Blank

RL= Reporting Limit The values between the MDL and RL are considered estimated

MDL= Method Detection Limit

NLE= No Limit Established

RT =Retention Time

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO

MB-011105-01

Lab Name FMETL Lab Code 13461

Project 06-34880 Case No 60012 Location UST SDG No \_\_\_\_\_

Matrix (soil/water) WATER Lab Sample ID MB 01110601

Sample wt/vol 1000 (g/ml) ML Lab File ID BNA11454 D

Level (low/med) LOW Date Received 1/6/2006

% Moisture \_\_\_\_\_ decanted (Y/N) N Date Extracted 1/11/2006

Concentrated Extract Volume 1000 (uL) Date Analyzed 1/17/2006

Injection Volume 10 (uL) Dilution Factor 10

GPC Cleanup (Y/N) N pH \_\_\_\_\_

## CONCENTRATION UNITS

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

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

Data File Name **BNA11464 D**  
 Operator **Skelton**  
 Date Acquired **18-Jan-06**

Sample Name **6001205**  
 Misc Info **676C-GW**  
 Sample Multiplier **1**

CAS#	Name	R T	Response	Result	Regulatory Level (ug/L)*	MDL	RL	ug/L	Qualifiers
110-86-1	Pyridine			not detected	NLE	1 13	10 00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0 60	10 00	ug/L	
62-53-3	Aniline			not detected	NLE	2 38	10 00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0 71	10 00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	1 02	10 00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0 99	10 00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0 66	10 00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0 96	10 00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0 88	10 00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0 76	10 00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0 96	10 00	ug/L	
98-95-3	Nitrobenzene			not detected	10	0 86	10 00	ug/L	
78-59-1	Isophorone			not detected	100	0 76	10 00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0 79	10 00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0 89	10 00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0 76	10 00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1 37	10 00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0 99	10 00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	1 01	10 00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0 92	10 00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0 72	10 00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0 77	10 00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0 78	10 00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0 67	10 00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0 71	10 00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	1 18	10 00	ug/L	
83-32-9	Acenaphthene			not detected	400	0 73	10 00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0 69	10 00	ug/L	
121-14-2	2,4-Dinitrotoluene			not detected	10	0 81	10 00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0 96	10 00	ug/L	
86-73-7	Fluorene			not detected	300	0 71	10 00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0 73	10 00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1 11	10 00	ug/L	
86-30 6	n-Nitrosodiphenylamine			not detected	20	0 62	10 00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0 72	10 00	ug/L	
101 55-3	4-Bromophenyl-phenylether			not detected	NLE	0 92	10 00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0 95	10 00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0 81	10 00	ug/L	
120-12-7	Anthracene			not detected	2000	0 76	10 00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0 92	10 00	ug/L	
206-44-0	Fluoranthene			not detected	300	0 82	10 00	ug/L	

**Semi-Volatile Analysis Report**  
**Page 2**

Data File Name BNA11464 D  
Operator Skelton  
Date Acquired 18-Jan-06

Sample Name 6001205  
Misc Info 676C-GW  
Sample Multiplier 1

CAS#	Name	R T	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifiers
92-87-5	Benzidine			not detected	50	0.98	10.00	ug/L
129-00-0	Pyrene			not detected	200	0.79	10.00	ug/L
85-68-7	Butylbenzylphthalate			not detected	100	0.86	10.00	ug/L
56-55-3	Benzo[a]anthracene			not detected	10	0.82	10.00	ug/L
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.31	10.00	ug/L
218-01-9	Chrysene			not detected	20	0.77	10.00	ug/L
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.28	10.00	ug/L
117-84-0	Di-n-octylphthalate			not detected	100	1.02	10.00	ug/L
205-99-2	Benzo[b]fluoranthene			not detected	10	0.98	10.00	ug/L
207-08-9	Benzo[k]fluoranthene			not detected	2	0.92	10.00	ug/L
50-32-8	Benzo[a]pyrene			not detected	20	0.71	10.00	ug/L
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	0.76	10.00	ug/L
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.76	10.00	ug/L
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.80	10.00	ug/L

\* Higher of PQLs and Ground Water Criteria as per NJAC 7-9-6 2-Sept-97

**Qualifiers**

E= Value Exceeds Linear Range

D= Value from dilution

B= Compound in Related Blank

RL= Reporting Limit The values between the MDL and RL are considered estimated

MDL= Method Detection Limit

NLE= No Limit Established

R T =Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS .

EPA SAMPLE NO.

**676C-GW**

Lab Name: FMETL Lab Code 13461  
Project: 06-34880 Case No.: 60012 Location: UST SDG No.: \_\_\_\_\_  
Matrix: (soil/water) WATER Lab Sample ID: 6001205  
Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA11464.D  
Level: (low/med) LOW Date Received: 1/6/2006  
% Moisture: \_\_\_\_\_ decanted: (Y/N) N Date Extracted: 1/11/2006  
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/18/2006  
Injection Volume: 1.0 (uL) Dilution Factor: 1.0  
GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

CONCENTRATION UNITS:

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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**TPHC**





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

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

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

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

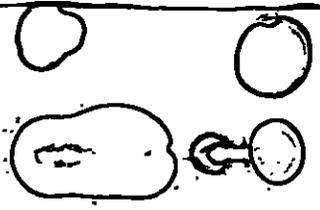
- 1. Cover Page, Title Page listing Lab Certification #, facility name and address, & date of report submitted. ✓
- 2. Table of Contents submitted. ✓
- 3. Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted. ✓
- 4. Document paginated and legible. ✓
- 5. Chain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

Laboratory Manager or Environmental Consultant's Signature

Date: 1 / 25 / 06

Laboratory Certification # 13461

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



0

## Laboratory Authentication Statement

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



Daniel K. Wright  
Laboratory Manager

ATTACHMENT MM

UST 682 Report



**United States Army**  
Fort Monmouth, New Jersey

---

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

*Building 682  
Main Post Area*

---

**NJDEP UST Registration No. 081533-106  
NJDEP Closure Approval Letter Dated  
October 7, 1994**

February 1996

**SMITH**  
ENVIRONMENTAL TECHNOLOGIES CORPORATION

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

**BUILDING 682**

**MAIN POST AREA  
NJDEP UST REGISTRATION NO. 081533-106  
NJDEP CLOSURE APPROVAL LETTER DATED  
OCTOBER 7, 1994**

**FEBRUARY 1996**

**PROJECT NO.: 09-5004-06  
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**

682.DOC

**SMITH**  
ENVIRONMENTAL TECHNOLOGIES CORPORATION



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Appendix A	NJDEP-BUST Closure Approval
Appendix B	Certifications
Appendix C	Waste Manifest
Appendix D	UST Disposal Certificate
Appendix E	Soil Analytical Data Package



## EXECUTIVE SUMMARY

### UST Closure

On December 9, 1994, a steel underground storage tank (UST) was closed by removal in accordance with the New Jersey Department of Environmental Protection (NJDEP) Closure Approval Letter dated October 7, 1994 at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey. The UST, NJDEP Registration No. 081533-106, was located immediately adjacent to Building 682 in the Main Post area of U.S. Army, Fort Monmouth. UST No. 081533-106 was a 1,080-gallon No. 2 diesel 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

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). Soils surrounding the tank were screened visually and with air monitoring instruments for evidence of contamination. Following removal, the UST was inspected for holes. No holes were noted in the UST and no evidence of potentially contaminated soils was observed surrounding the tank.

On December 16, 1994, one week after removal of the UST, post-excavation soil samples A, B, C, D, and DUP D were collected from a total of four (4) locations along the sidewalls of the excavation at a depth of 4.5 feet below ground surface (bgs). Sample F was collected along the former piping location in the excavation, which was approximately 22 feet in length. Sample F was collected at a depth of 1.5 feet bgs. All samples were analyzed for total petroleum hydrocarbons (TPHC).

### Findings

All post-excavation soil samples collected from the UST excavation and from below piping associated with the former UST at Building 682 contained TPHC concentrations below the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 milligrams per kilogram (mg/kg) (N.J.A.C. 7:26D and revisions dated February 3, 1994). Samples A, C, D, DUP D, and F contained levels of TPHC ranging in concentration from 10.4 mg/kg to 245.0 mg/kg. Sample B contained a non-detectable concentration of TPHC.

### Site Restoration

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 Quality Assurance

The sampling and laboratory analysis conducted during the site assessment was 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 TPHC concentrations exceeding the NJDEP soil cleanup criteria for total organic contaminants of 10,000 mg/kg do not exist in the former location of the UST or associated piping.

No further action is proposed in regard to the closure and site assessment of UST No. 081533-106 at Building 682.



## 1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

### 1.1 OVERVIEW

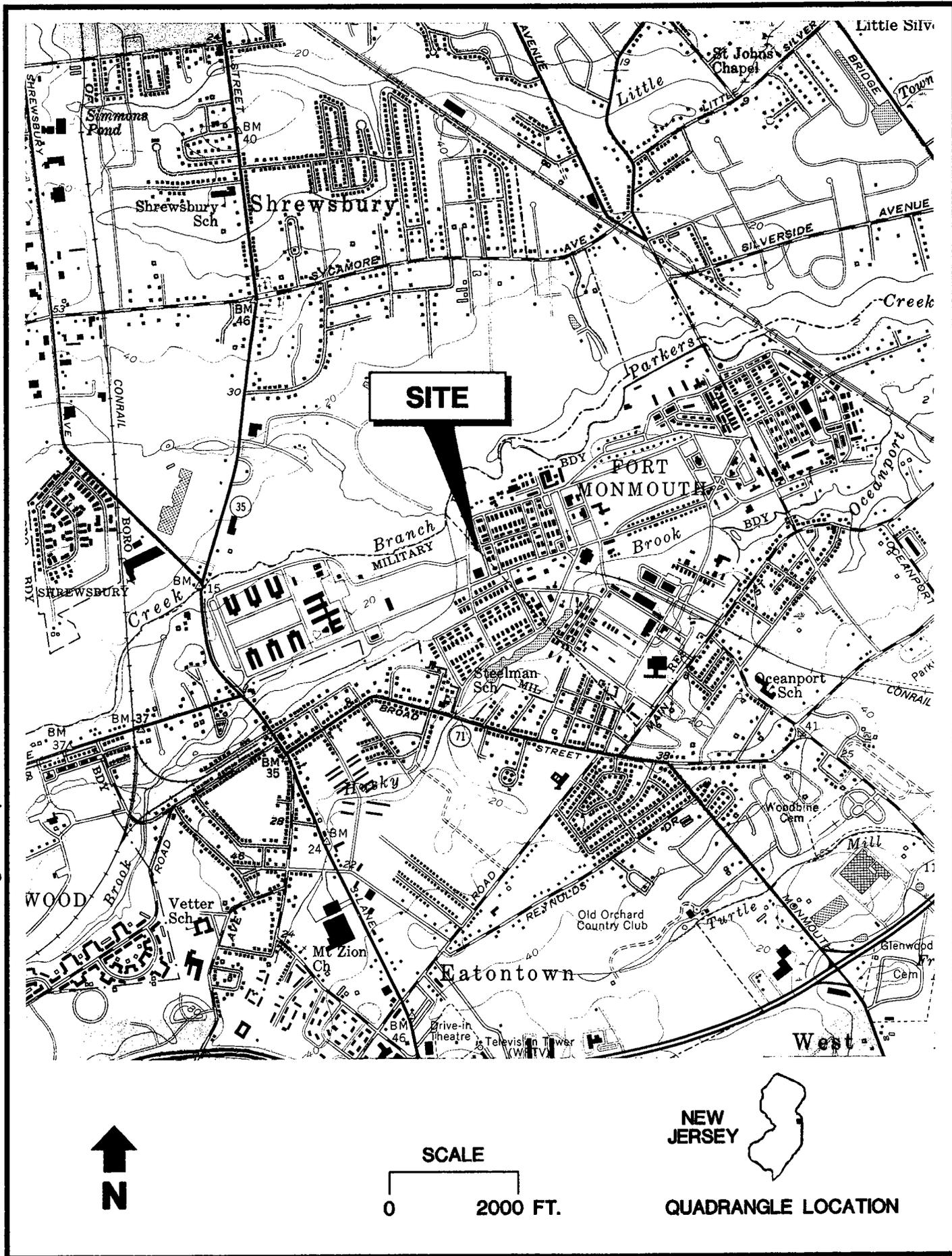
One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 081533-106, was closed at Building 682 at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey on December 9, 1994. Refer to site location map on Figure 1. This report presents the results of the DPW's implementation of the UST Decommissioning/Closure Plan submitted to the NJDEP on September 2, 1994. The plan was approved on October 7, 1994. The UST was a steel, 1,080-gallon tank containing No. 2 diesel oil.

Decommissioning activities for UST No. 081533-106 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. 081533-106 proceeded under the approval of the NJDEP Bureau of Underground Storage Tanks (NJDEP-BUST). The NJDEP-BUST closure approval and signed certifications for UST No. 081533-106 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 no significant historical discharges are associated with the UST or associated piping.

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.



Source: BCM/Smith Environmental Technologies Corporation (028)

## 1.2 SITE DESCRIPTION

Building 682 is located in the western portion of the Main Post area of Fort Monmouth as shown on Figure 1. UST No. 081533-106 was located west of Building 682 and appurtenant piping ran approximately 22 feet north from the excavation to Building 682. The fill port area was located directly above the UST. 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 682. Included is a description of the regional geology of the area surrounding Fort Monmouth as well as descriptions of the local geology and hydrogeology of the Main Post area.

#### Regional Geology

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

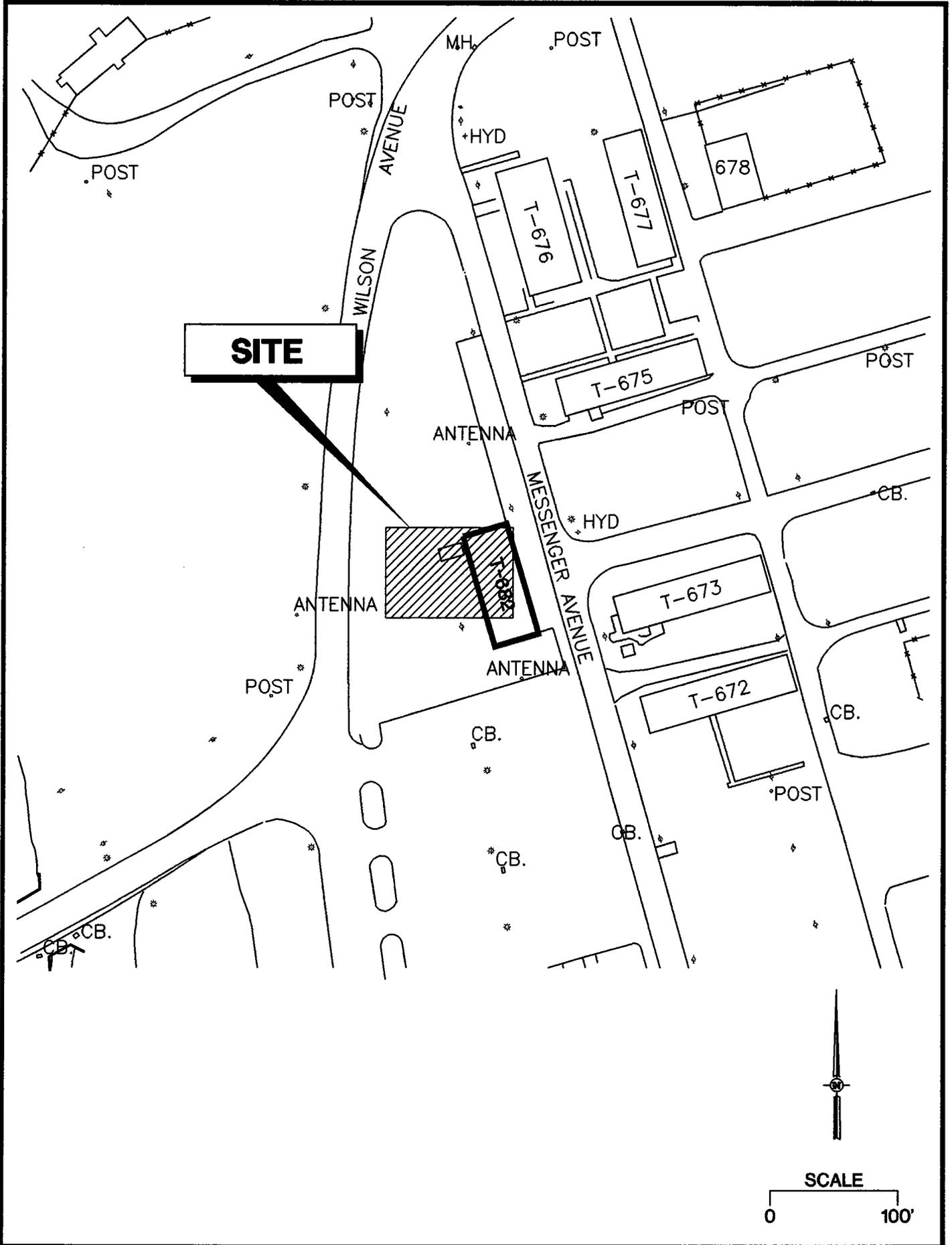
In general, New Jersey Coastal Plain formations consist of a seaward-dipping wedge of unconsolidated deposits of clay, silt, and gravel. These formations typically strike northeast-southwest with a dip ranging from 10 to 60 feet per mile and were deposited on Precambrian and lower Paleozoic rocks (Zapeczka,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

The formations record several major transgressive/regressive cycles and contain units which are generally thicker to the southeast and reflect a deeper water environment. 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 Zapeczka, 1990).

#### Local Geology

Based on the regional geologic map (Jablonski, 1968), the Cretaceous age Red Bank and Tinton Sands outcrop at the Main Post area. The Red Bank sand conformably overlies the Navesink Formation and dips to the southeast at 35 feet per mile. The upper member (Shrewsbury) of the Red Bank sand is a yellowish-gray to reddish brown clayey, medium-to-

Source: BCM/Smith Environmental Technologies Corporation (068)





coarse-grained sand that contains abundant rock fragments, minor mica and glauconite (Jablonski). The lower member (Sandy Hook) is a dark gray to black, medium-to-fine grained sand with abundant clay, mica, and glauconite.

The Tinton sand conformably overlies the Red Bank Sand and ranges from a clayey medium to very coarse grained feldspathic quartz and glauconite sand to a glauconitic coarse sand. The color varies from dark yellowish orange or light brown to moderate brown and from light olive to grayish olive. Glauconite may constitute 60 to 80 percent of the sand fraction in the upper part of the unit (Minard, 1969). The upper part of the Tinton is often highly oxidized and iron oxide encrusted (Minard).

### Hydrogeology

The water table aquifer in the Main Post area is identified as part of the "composite confining units," or minor aquifers. The minor aquifers include the Navesink formation, Red Bank Sand, Tinton Sand, Hornerstown Sand, Vincentown Formation, Manasquan Formation, Shark River Formation, Piney Point Formation, and the basal clay of the Kirkwood Formation.

Based on records of wells drilled in the Main Post area, water is typically encountered at depths of 2 to 9 feet below ground surface (bgs). According to Jablonski, wells drilled in the Red Bank and Tinton Sands may produce 2 to 25 gallons per minute (gpm). Some well owners have reported acidic water that requires treatment to remove iron.

Due to the proximity of the Atlantic Ocean to Fort Monmouth, shallow groundwater may be tidally influenced and may flow toward creeks and brooks as the tide goes out, and away from creeks and brooks as the tide comes in. However, an abundance of clay lenses and sand deposits were noted in borings installed throughout Fort Monmouth. Therefore the direction of shallow groundwater should be determined on a case by case basis.

## **1.3 HEALTH AND SAFETY**

Before, during, and after all decommissioning activities, hazards at the work site which may have posed a threat to the Health and Safety of all personnel who were involve with, or were affected by, the decommissioning of the UST system were minimized. All areas which posed, or may have been suspected to pose a vapor hazard were monitored by a qualified individual utilizing an organic vapor analyzer (OVA). The individual ascertained if the area was properly vented to render the area safe, as defined by OSHA.



## **1.4 REMOVAL OF UNDERGROUND STORAGE TANKS**

### **1.4.1 General Procedures**

- All underground obstructions (utilities, etc.) were marked out by the contractor performing the closure prior to excavation activities.
- All activities were carried out with the greatest regard to safety and health and the safeguarding of the environment.
- All excavated soils were visually examined and screened with an OVA for evidence of contamination. Potentially contaminated soils were identified and logged during closure activities.
- Surface materials (i.e., asphalt, concrete, etc.) were excavated and staged separately from all soil and recycled in accordance with all applicable regulations and laws.
- A Sub-Surface Evaluator from the DPW was present during all closure activities.

### **1.4.2 Underground Storage Tank Excavation and Cleaning**

Prior to UST decommissioning activities, surficial soil was removed to expose the UST and associated piping. All free product present in the piping was drained into the UST, and the UST was purged to remove vapors prior to cutting and removal of the piping. After removal of the associated piping, a manway was made in the UST to allow for proper cleaning. The UST was completely emptied of all liquids prior to removal from the ground. Approximately 100 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 (No. NJA-1907257).

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 holes. No holes or punctures were observed during the inspection by the Sub-Surface Evaluator. Soils surrounding the UST were screened visually and with an OVA for evidence of contamination. No evidence of contamination was observed.

Soil screening was also performed along the piping associated with the UST. No contamination was observed anywhere along the piping length.



## 1.5 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The tank was transported by CUTE Inc., to Mazza and Sons Inc. for disposal in compliance with all applicable regulations and laws. See 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 OVA air monitoring and TPHC analysis results from the post-excavation soil samples, no soils exhibited signs of contamination. Therefore, the excavated soils were used as backfill following removal of the UST.



## 2.0 SITE INVESTIGATION ACTIVITIES

### 2.1 OVERVIEW

The Site Investigation was managed and carried out by U.S. Army DPW personnel. All analyses were performed and reported by U.S. Army, Fort Monmouth Environmental Laboratory, a NJDEP-certified testing laboratory. All sampling was performed under the direct supervision of a NJDEP Certified Sub-Surface Evaluator according to the methods described in the NJDEP *Field Sampling Procedures Manual* (1992). Sampling frequency and parameters analyzed complied with the NJDEP-BUST document *Interim Closure Requirements for Underground Storage Tank Systems* (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
- Hazardous Waste Hauler: Freehold Cartage Inc.  
Contact Person: Barry Olsen  
Phone Number: (908) 462-1001  
NJDEP Hazardous Waste Hauler No.: 2265

### 2.2 FIELD SCREENING/MONITORING

Field screening was performed by a NJDEP certified Sub-Surface Evaluator using an OVA and visual observations to identify potentially contaminated material. Soil excavated from around the tank and appurtenant piping, as well as the UST excavation sidewalls and bottom did not exhibit any evidence of potential contamination.

### 2.3 SOIL SAMPLING

On December 16, 1994, post-excavation soil samples A, B, C, D, and DUP D were collected from a total of four (4) locations along the sidewalls of the UST excavation at a depth of 4.5 feet below ground surface (bgs). Post-excavation soil sample F was collected immediately below the former location of piping associated with the UST. The piping trench ran approximately 22 feet north from the fill port area to Building 682. Sample F was collected at a depth of 1.5 feet bgs. Refer to soil sampling location map on Figure 3. All samples were analyzed for total petroleum hydrocarbons (TPHC). Because none of the post-excavation soil samples exhibited a TPHC concentration exceeding 1,000 milligrams per kilogram (mg/kg), none were analyzed for volatile organic compounds with a forward library search for 10 tentatively identified compounds (VOCs).

The site assessment was performed by U.S. Army personnel in accordance with the NJDEP *Technical Requirements* and the NJDEP *Field Sampling Procedures Manual*. A summary of sampling activities including parameters analyzed is provided in Table 1. The post-excavation soil samples were collected using decontaminated stainless steel scoops. Following soil sampling activities, the samples were chilled and delivered to U.S. Army Fort Monmouth Environmental Laboratory located in Fort Monmouth, New Jersey, for analysis.

TABLE 1

SUMMARY OF SAMPLING ACTIVITIES  
 BUILDING 682, MAIN POST  
 FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Matrix	Sample Type	Analytical Parameters (and USEPA Methods) *	Sampling Method
A	12-16-94	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
B	12-16-94	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
C	12-16-94	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
D	12-16-94	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
DUP D	12-16-94	Soil	Post-Excavation	TPHC	Stainless Steel Scoop
F	12-16-94	Soil	Post-Excavation	TPHC	Stainless Steel Scoop

\*Note: TPHC Total Petroleum Hydrocarbons (Method 418.1 / soil and aqueous)

### 3.0 CONCLUSIONS AND RECOMMENDATIONS

#### 3.1 SOIL SAMPLING RESULTS

To evaluate soil conditions following removal of the UST and associated piping, post-excavation soil samples were collected from a total of five (5) locations on December 16, 1994. All samples were analyzed for TPHC. The post-excavation soil sample results were compared to the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 mg/kg (N.J.A.C. 7:26D and revisions dated February 3, 1994). A summary of the analytical results and comparison to the NJDEP soil cleanup criteria is provided in Table 2 and the soil sampling results are shown on Figure 3. The soil analytical data package is provided in Appendix E.

All post-excavation soil samples collected on December 16, 1994, from the UST excavation and from below piping associated with the UST contained either non-detectable concentrations of TPHC or concentrations below the NJDEP soil cleanup criteria. Samples A, C, D, DUP D, and F, contained levels of TPHC ranging in concentration from 10.4 mg/kg to 245.0 mg/kg. Sample B contained a non-detectable concentration of TPHC.

#### 3.2 CONCLUSIONS AND RECOMMENDATIONS

The analytical results for all post-excavation soil samples collected from the UST closure excavation at Building 682 were below the NJDEP soil cleanup criteria for total organic contaminants.

Based on the post-excavation soil sampling results, soils with TPHC concentrations exceeding the NJDEP soil cleanup criteria of 10,000 mg/kg do not exist in the former location of the UST or associated piping.

No further action is proposed in regard to the closure and site assessment of UST No. 081533-106 at Building 682.

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS  
 BUILDING 682  
 FT. MONMOUTH, NEW JERSEY

PAGE 1 OF 1

Sample ID/Depth	Sample Laboratory ID	Sample Date	Analysis Date	Compound Name	Sample Quantitation Limit (mg/kg)	Compound of Concern	Result (mg/kg)	NJDEP Soil Cleanup Criteria * (mg/kg)	Exceeds Cleanup Criteria
A/4.5-5.0'	1767.1	12-16-94	12-20-94	Total Solid TPHC	--	--	95 %	--	--
B/4.5-5.0'	1767.2	12-16-94	12-20-94	Total Solid TPHC	7.9	yes	70.4	10,000	--
C/4.5-5.0'	1767.3	12-16-94	12-20-94	Total Solid TPHC	7.4	yes	92 %	10,000	--
D/4.5-5.0'	1767.4	12-16-94	12-20-94	Total Solid TPHC	--	--	ND	--	--
				Total Solid TPHC	7.4	yes	10.4	10,000	--
				Total Solid TPHC	--	--	84 %	--	--
DUP D/4.5-5.0'	1767.5	12-16-94	12-20-94	Total Solid TPHC	7.6	yes	11.6	10,000	--
				Total Solid TPHC	--	--	85 %	--	--
F/1.5-2.0'	1767.6	12-16-94	12-20-94	Total Solid TPHC	7.8	yes	22.2	10,000	--
				Total Solid TPHC	--	--	90 %	--	--
				Total Solid TPHC	7.9	yes	245.0	10,000	--

Notes:

- \* Cleanup criteria for total organics
- Not applicable / does not exceed criteria
- TPHC Total Petroleum Hydrocarbons

Smith Environmental Technologies Corporation (Project No. 09-5004-06)

soil682.doc



## APPENDIX A

### NJDEP BUST CLOSURE APPROVAL



State of New Jersey

Department of Environmental Protection

Christine Todd Whitman  
Governor

Robert C. Shinn, Jr.  
Commissioner

Mr. Dinker Desai  
SELFM-EH-EV  
Department of the Army  
Headquarters CECOM Fort Monmouth  
Fort Monmouth, NJ 077703-5000

OCT 7 1994

Dear Mr. Desai:

Re: Underground Storage Tank Closure Approvals  
Fort Monmouth Army Facility  
Tinton Falls, Monmouth County

The NJDEP has reviewed the Underground Storage Tank (UST) Closure Plan Approval Requests dated September 2, 1994 for the following USTs:

<u>Tank No.</u>	<u>Building No.</u>	<u>Product</u>	<u>Size</u>	<u>Piping Length</u>
86	608	No. 2 Fuel Oil	1000	12'
103	671	No. 2 Fuel Oil	1000	14'
107	686	No. 2 Fuel Oil	2000	18'
93	620	No. 2 Fuel Oil	1000	22'
90	616	No. 2 Fuel Oil	1000	12'
106	682	No. 2 Fuel Oil	1080	22'
78	508	No. 2 Fuel Oil	1500	15'

These closure requests are consistent with the *Technical Requirements for Site Remediation* (N.J.A.C.7:26E) and are therefore acceptable to the NJDEP (with the incorporation of the comment below). A copy of this letter should be immediately accessible at each of these UST removal locations.

The NJDEP has also received a request dated September 9, 1994 from Mr. James Ott, Acting Director, which requests a variance from the *Closure Approval Requests* for use of polytetrafluoroethylene (PTFE) trowels to polystyrene trowels. Neither of these types of trowels is acceptable to the NJDEP. In accordance with the *Field Sampling Procedures Manual (May 1992)*, only appropriately decontaminated stainless steel trowels are acceptable. Please correct the UST closure plans to reflect the requirement to use stainless steel trowels.

If you should have any questions or require additional information, please do not hesitate to contact me at (609) 633-1455.

Sincerely,

Ian R. Curtis, Case Manager  
Bureau of Federal Case Management

cc. Mr. James Ott, FTMMTH

S:\RPCE\BFCM\FTMMTH17.JRC

**SMITH**

**APPENDIX B  
CERTIFICATIONS**

UST-014  
291



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. 682*

081533-106  
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 07703 County Monmouth  
Telephone No. (908) 532-6224

OWNER'S NAME AND ADDRESS, if different from above

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Telephone No. \_\_\_\_\_

## II. DISCHARGE REPORTING REQUIREMENTS

- A. Was contamination found?  Yes  No If Yes, Case No. \_\_\_\_\_  
(Note: All discharges must be reported to the Environmental Action Hotline (609) 292-7172)
- B. The substance(s) discharged was(were) N/A
- C. Have any vapor hazards been mitigated?  Yes  No  N/A

## III. DECOMMISSIONING OF TANK SYSTEMS

Closure Approval No. Not Issued

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:

- North arrow and scale
- The locations of the ground water monitoring wells
- Location and depth of each soil sample and boring
- All major surface and sub-surface structures and utilities
- Approximate property boundaries
- All existing or closed underground storage tank systems, including appurtenant piping
- A cross-sectional view indicating depth of tank, stratigraphy and location of water table
- Locations of surface water bodies

### C. Soil samples and borings (check appropriate answer)

1. Were soil samples taken from the excavation as prescribed?  Yes  No  N/A
2. Were soil borings taken at the tank system closure site as prescribed?  Yes  No  N/A
3. Attach the analytical results in tabular form and include the following information about each sample:
- Customer sample number (keyed to the site map)
  - The depth of the soil sample
  - Soil boring logs
  - Method detection limit of the method used
  - QA/QC Information as required

D. Ground Water Monitoring

1. Number of ground water monitoring wells installed 0
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?  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. N/A ppb total BTEX, N/A ppb total non-targeted VOC
  2. N/A ppb total B/N, N/A ppb total non-targeted B/N
  3. 245.0 ppm TPHC
  4. N/A ppb \_\_\_\_\_ (for non-petroleum substance)

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  No
2. Free product contaminated soils are suspected to exist below the water table  Yes  No
3. Free product contaminated soils are suspected to exist off the property boundaries.  Yes  No

D. Was the vertical and horizontal extent of contamination determined?  Yes  No  N/A

E. Does soil contamination intersect ground water?  Yes  No  N/A

VI. GROUND WATER CONTAMINATION N/A

- A. Was ground water contamination found?  Yes  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:

1. \_\_\_\_\_ ppb total BTEX, \_\_\_\_\_ ppb total non-targeted VOC
2. \_\_\_\_\_ ppb total B/N, \_\_\_\_\_ ppb total non-targeted B/N
3. \_\_\_\_\_ ppb total MTBE, \_\_\_\_\_ ppb total TBA
4. \_\_\_\_\_ ppb \_\_\_\_\_ (for non-petroleum substance)
5. greatest thickness of separate phase product found \_\_\_\_\_
6. separate phase product has been delineated  Yes  No  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  N/A
2. The number of these wells identified is \_\_\_\_\_

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 \_\_\_\_\_ 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 \_\_\_\_\_ feet from the source and its screening begins at a depth of \_\_\_\_\_ 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 \_\_\_\_\_ feet below grade. This well is located \_\_\_\_\_ 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 \_\_\_\_\_ feet from the source. This well is \_\_\_\_\_ feet deep and screening begins at a depth of \_\_\_\_\_ feet.

E. A plan for separate phase product recovery has been included.  Yes  No  N/A

F. A ground water contour map has been submitted which includes the ground water elevations for each well.  Yes  No  N/A

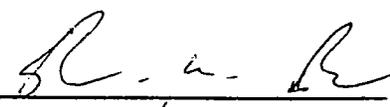
G. Delineation of contamination

1. The ground water contaminants have been delineated to MCLs or lower values at the property boundaries.  Yes  No
2. The plume is suspected to continue off the property at concentrations greater than MCLs.  Yes  No
3. Off property access (circle one):  is being sought  has been approved  has been denied

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 Desai SIGNATURE 

COMPANY NAME U.S. Army Fort Monmouth DATE 11/2/91  
(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)1].

*"I certify under penalty of law that the information provided in this document is true, accurate, and complete. I am aware that there are significant 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)2]:

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**  
**WASTE MANIFEST**



State of New Jersey  
 Department of Environmental Protection and Energy  
 Hazardous Waste Regulation Program  
 Manifest Section  
 CN 421, Trenton, NJ 08625-0421

Please type or print in block letters. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039. Expires 9-30-94

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No. NJ 13121101012101591710101010		Manifest Document No. PW-EV JF		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 Main Post, c/o James Shirghio, Bldg 2504, ATTN: SELFM-DL-EM-MS Fort Monmouth, NJ 07703 173JF						State Manifest Document Number NJ A 1907257							
4. Generator's Phone (908) 532-6223						B. State Generator's ID (Gen. Site Address) Main Post							
5. Transporter 1 Company Name Freehold Cartage Inc.				6. US EPA ID Number IN1JID1015141121611614		C. State Trans. ID-NJDEPE S 2265							
7. Transporter 2 Company Name				8. US EPA ID Number		D. Transporter's Phone (908) 462-1001							
9. Designated Facility Name and Site Address Lionetti Oil Recovery Co., Inc. Cheesequake & Runyon Rds. Old Bridge, NJ 08857						10. US EPA ID Number IN1JID101814101414101614							
11. US DOT Description (Including Proper Shipping Name, Hazard Class or Division, HM ID Number and Packing Group)						12. Containers No. Type		13. Total Quantity		14. Unit Wt/Vol		15. Waste No.	
a. X Petroleum Oil, N.O.S. Class 3 (Petroleum Oil) Combustible Liquid UN 1270 PG III BLDG 608						01011 TIT		010108		G		X 7 2 2	
b. X Petroleum Oil, N.O.S. Class 3 (Petroleum Oil) Combustible Liquid UN 1270 PG III BLDG 545						01011 TIT		010100		G		X 7 2 2	
c. X Petroleum Oil, N.O.S. Class 3 (Petroleum Oil) Combustible Liquid UN 1270 PG III BLDG 682						01011 TIT		010100		G		X 7 2 2	
d. X Petroleum Oil, N.O.S. Class 3 (Petroleum Oil) Combustible Liquid UN 1270 PG III BLDG 626						01011 TIT		002010		G		X 7 2 2	
16. Additional Descriptions for Materials Listed Above						17. Handling Codes for Waste(s) Listed Above							
Petroleum Oil 50% Water 50% T.L.						Petroleum Oil 50% Water 50% T.L.							
Petroleum Oil 50% Water 50% T.L.						Petroleum Oil 50% Water 50% T.L.							
18. Special Handling Instructions and Additional Information THIS MATERIAL IS NOT REGULATED BY THE FEDERAL EPA. IT IS REGULATED AS HAZARDOUS WASTE IN NJ. 11A-088533-86 11b.-78 11c.-106 11d.-93 24 HOUR EMERGENCY PHONE: 201-427-2881 11 a, b, c, d ERG# 27						19. Generator's Certification: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.							
Printed/Typed Name Joseph M. Fallon				Signature Joseph M. Fallon				Month Day Year 1112294					
17. Transporter 1 Acknowledgement of Receipt of Materials Printed/Typed Name David Smith				Signature David Smith				Month Day Year 1112294					
18. Transporter 2 Acknowledgement of Receipt of Materials Printed/Typed Name				Signature				Month Day Year					
19. Discrepancy Indication Space													
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19. Printed/Typed Name													
Signature				Month Day Year									

NJ A 1907257



## APPENDIX D

### UST DISPOSAL CERTIFICATE

JAN-11-85 WED 15:38

C. U. T. E.

FAX NO. 201 423 8050

P. 44/48

Fort Monmouth

Paterson, NJ

Tank #      U.S.T. #

620-      0081533-98

682-      0081533-106

616-      0081533-90

**MAZZA & SONS, INC.**

Metal Recyclers  
Auto and Truck  
8250 Shaffo Rd.  
Tinton Falls, NJ  
(800) 822-8288

NO. \_\_\_\_\_

DATE 12 Dec 84

Customer's Name Cute Inc

Address 103 Godwin Ave, P.O. 237, Midland Pt., NJ 07432

Make of  
Auto

Oldsmobile

687-91533-106

616-0081533-90

620-91533-98

Type

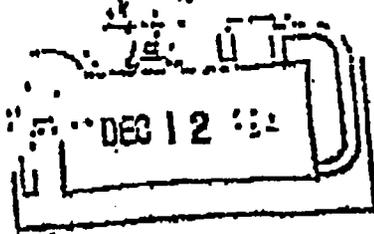
Tank

Prod.

39820 LB :

38740 LB E

38740



Weight

Price

	Weight	Price
Civilian		
Steel		
Lt. Iron		
Copper #1		
Copper #2		
Lt. Copper		
Brass		
Alum Clean		
Lead		
Stainless		
Paints		
Battery		
TOTAL AMOUNT:		

Weight

Customer

*Don*



## APPENDIX E

# SOIL ANALYTICAL DATA PACKAGE

Report of Analysis  
 U.S. Army, Fort Monmouth Environmental Laboratory  
 NJDEPE Certification # 13461

Client: U.S. Army  
 DPW, SELFM-PW-EV  
 Bldg. 167  
 Ft. Monmouth, NJ 07703

Lab. ID #: 1767.1-.6  
 Sample Rec'd: 12/16/94  
 Analysis Start: 12/20/94  
 Analysis Comp: 12/21/94

Analysis: 418.1 (TPH)  
 Matrix: Soil  
 Analyst: S. Hubbard  
 Ext. Meth: 3540A

NJDEPE UST Reg.#: 81533-106  
 Closure #:  
 DICAR #:  
 Location #: Bldg. 682

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1767.1	Site A, OVA=ND	95	70.4	7.9
1767.2	Site B, OVA=ND	92	ND	7.4
1767.3	Site C, OVA=ND	92	10.4	7.4
1767.4	Site D, OVA=ND	84	11.6	7.6
1767.5	Site E, Dup. of D OVA=ND	85	22.2	7.8
1767.6	Site F, Feed line * OVA=ND	90	245.	7.9
M. Bl.	Method Blank	100	ND	7.4

Notes: ND = Not Detected; MDL = Method Detection Limit  
 \* = Silica Gel Added, NA = Not Applicable  
 1762.6S= 122%, 1762.6SD= 114%, RPD= 7.0% 1762.6 Dup=100%  
 1767.2S= 90%, 1767.2SD= 84%, RPD= 6.4% 1767.2 Dup=100%  
 QC Limits: Recovery= 100+/-28%, RPD=19.7%

*Brian K. McKee*  
 -----  
 Brian K. McKee  
 Laboratory Director





December 20, 1994

Sarah P. Hubbard 0655

2CM/M 500 MV=CAL-0

Std 40.75 69 MV

Std 81.5 123 MV

Std 163 246 MV

R. 9994

Method (Blank) 0 MV

1762.6 0 MV

1762.6 0 MV

1762.6 63 MV

Spk

1762.6 59 MV

Dup Spk

1768.1 5 MV

1768.2 8 MV

1768.3 13 MV

1768.4 6 MV

1768.5 6 MV

~~1768.6~~ void

1761.1 16 MV

PRINTED IN U.S.A.

125-6970-00

December 21, 1994 0830

Sarah D. Hubbard

2CM/M 500 MV=CAL=0

Std. 40.75 74 MV

Std 81.5 149 MV

Std. 163 285 MV

Method Blank 2nd Bldg 682

1767.2 0 ND

1767.2 0 ND Dip

1767.2 50 MV Spk

1767.2 50 MV Dip Spk

1767.3 5 MV

1767.4 5 MV

Cal Ck. 40.75 71 MV

1767.5 7 MV

1767.6 51 MV

VSD NI 081811

PHC Conformance/Non-conformance Summary Report

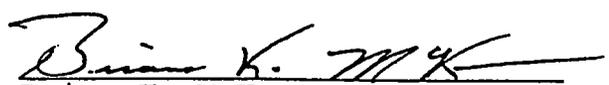
- |   | <u>No</u> | <u>Yes</u>  |
|---|-----------|-------------|
| 1. Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank   | <u>  </u> | <u>  </u> ✓ |
| <hr/> <hr/>   |           |             |
| 2. Matrix Spike/Matrix Sp Dup. Recoveries Meet Criteria (If not met, list the sample and corresponding recovery which falls outside the acceptable range) | <u>  </u> | <u>  </u> ✓ |
| <hr/> <hr/>   |           |             |
| 3. IR Spectra submitted for standards, blanks, & samples  | <u>  </u> | <u>  </u> ✓ |
| 4. Chromatograms submitted for standards, blanks, and samples if GC fingerprinting was conducted.   | <u>  </u> | <u>  </u> ✓ |
| 5. Extraction holding time met. (If not met, list number of days exceeded for each sample)  | <u>  </u> | <u>  </u> ✓ |
| <hr/> <hr/>   |           |             |
| 6. Analysis holding time met. (If not met, list number of days exceeded for each sample)  | <u>  </u> | <u>  </u> ✓ |

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.

Project #1767

  
Brian K. McKee  
Laboratory Manager



## ATTACHMENT NN

### UST 686 File Review and Analyses

#### Contents:

- Underground Storage Tank File Review
- Enclosure 1 - Field Maps and Analytical Results for 1995 to 1996 Soil Excavations and Sampling
- Enclosure 2 – Excerpts from “Closure and Site Investigation Report for Underground Storage Tanks in the 600 Area” (Versar, 2002)
- Enclosure 3 – January 2010 Soil and Groundwater Sampling
- Enclosure 4 – November 2010 Soil and Groundwater Sampling



UNDERGROUND STORAGE TANK FILE REVIEW  
 FORT MONMOUTH BRAC 05 FACILITY  
 OCEANPORT, NEW JERSEY

Date: November 20, 2015 Review Performed By: Kent Friesen, Parsons

Site ID: **Bldg. 686**

Registration ID: 81533-107

Recommended Status of Site: **Groundwater Monitoring (change from Case Closed)**

UST Probability (from May 2014 "Addendum 1 ECP UHOT Report"): **NFA**

Based on the file review, were there indications of a contaminant release?  Yes  No

NJDEP Release No. or DICAR (If applicable): 94-12-08-1040-10

Did NJDEP approve No Further Action (NFA) for this site?  Yes  No  Not Applicable

Tank Description:  Steel  Fiberglass Size: 2000 gal. Contents: #2 Fuel Oil

Residential  Commercial/Industrial

Tank Removed?  Yes  No If "yes," removal date: 12/8/1994

Were closure soil samples taken?  Yes  No Analyses: TPH

Comparison criteria: 5,100 mg/kg

Were closure soil sample results less than comparison criteria?  Yes  No

**Brief Narrative**

UST 686 was approved for No Further Action (NFA) by the NJDEP in 2003; however, further review indicates that this UST was the likely source of fuel oil constituents in groundwater in excess of the interim Ground Water Quality Criteria (GWQC) for 2-methylnaphthalene, as reported in the 2008 Site Investigation (SI) Report for Parcel 51.

Building 686 was a former thrift shop and was still standing at the time of this review. A steel heating oil tank was removed in 1994, and initial soil samples were collected from the tank excavation on January 18, 1995. Six soil samples and one field duplicate were collected from the former UST location and analyzed by the Fort Monmouth Environmental Laboratory for total petroleum hydrocarbons (TPH). These soil sample results ranged from 79 mg/kg to 14,700 mg/kg for TPH. Additional soil was excavated, and the excavation was resampled on January 27, 1995; these results ranged from 236 mg/kg to 1400 mg/kg for TPH.

Additional petroleum-contaminated soil was encountered in the area during a water main upgrade in July 1996, resulting in a soil remediation project. Several rounds of contaminated soil removal and soil sampling were performed from July through September 1996. Sketch maps and analytical results from the multiple rounds of excavation are presented in Enclosure 1. Soil excavation continued when post-excavation TPH results exceeded 1000 mg/kg, and approximately 700 cubic yards of petroleum contaminated soil was removed. However, soil with TPH in excess of 1000 mg/kg TPH was left in place beneath Building 686, beneath the water main east of Building 686, and on the east side of Irwin Avenue (see "Residual TPH Remaining in Soil at UST 686 Site" in Enclosure 1).

Additional Geoprobe soil sampling was performed in 2001 from multiple fuel oil UST sites within the 600 Area, including UST 686. Excerpts of this report pertaining to UST 686 are presented in Enclosure 2. The initial 1995 soil analyses were reported and two additional soil samples were collected in November 2001. However, the previous soil remediation was not discussed, and the additional 2001 samples were collected from the previously excavated area. Based on this report, the NJDEP approved NFA for UST 686 in their January 10, 2003 letter.

Extensive Geoprobe soil and groundwater sampling was performed on approximately 100-ft centers within Parcel 51 (specifically part of the 600 Area, the 1100 Area, and the Building 750 Motor Pool area) during the BRAC ECP Site Investigation (SI), as reported in Shaw (2008). 2-Methylnaphthalene in groundwater was detected at 40.5 ug/L in excess of the NJDEP Groundwater Quality Standard of 30 ug/L at temporary well point P51-G12, which was located just north and downgradient of Building 686.

Additional soil and groundwater sampling was performed by TVS in January 2010 to further assess the 2-methylnaphthalene occurrences reported in the SI (see Enclosure 3). One temporary well 51-TMP-1 was installed at a location near the previous P51-G12 SI sample location; 2-methylnaphthalene was also detected in this groundwater sample at 85.6 ug/L, which confirmed the exceedance of GWQC in groundwater downgradient of the former UST 686 tank location. Field screening results indicated that the petroleum contamination was present at higher concentrations near the water table, suggesting that fuels contamination had spread along the water table surface. Therefore, a soil sample was also collected from the 7.0 to 7.5 ft depth interval; results exceeded the impact-to-groundwater screening criteria for 2-methylnaphthalene, and the residential direct-contact soil remediation standard (RDCSRS) for naphthalene.

Additional soil and groundwater sampling was performed by TVS in October to November 2010 to further refine the extent of fuel oil contamination in soil and groundwater (see Enclosure 4). Soil was sampled from four additional Geoprobe boring locations placed approximately 25-feet from the previous 51-TMP-1 temporary well location. The 7.0 to 7.5 ft bgs soil interval was sampled from each boring and analyzed for VOCs and SVOCs. Multiple fuel constituents were detected in samples from borings P51-SB1 and P51-SB2, including ethylbenzene, m+p xylenes, naphthalene, anthracene, and 2-methylnaphthalene; naphthalene at 6.3 to 19 mg/kg exceeded the RDCSRS of 6 mg/kg. Groundwater was also sampled at a temporary well installed at the P51-SB2 boring, and benzene, ethylbenzene, m+p xylenes, and cis-1,2-dichloroethene were detected below the GWQC. However, 2-methylnaphthalene was detected at 139 ug/L in the P51-SB2 temporary well, which is in excess of the interim GWQC of 30 ug/L. Benzo(a)anthracene was also detected at 0.152 ug/L, which slightly exceeds the GWQC of 0.1 ug/L. VOCs and SVOCs were not detected in excess of GWQC in nearby well 600MW01.

A new monitoring well 600MW04 was installed near the boring/temporary well P51-SB2 location in August 2011; however, this well has not been sampled to date. This new well is also near the former UST 686 tank location. Installation of an additional well downgradient of Geoprobe boring P51-SB1 may be warranted to provide a downgradient monitoring location.

The summary results indicate that UST 686 was a source of fuel oil constituents that have impacted groundwater in excess of GWQC. Therefore, NFA is not warranted at Site 686.

Recommendations (if any): Monitor 2-methylnaphthalene in groundwater.

Signed:   
 Kent A. Friesen, Parsons

Enclosure 1

UST 686 – Field Maps and Analytical Results for  
1995 to 1996 Soil Excavations and Sampling



**UNDERGROUND STORAGE TANK (UST)  
CLOSURE CERTIFICATION**

BUILDING NO. 686

NJDEP UST REGISTRATION NO. 81533-107

DATE TANK REMOVED 12/8/94

LJO / CONTRACT NUMBER 91-0148

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) George Bernotsky

SIGNATURE *George Bernotsky*

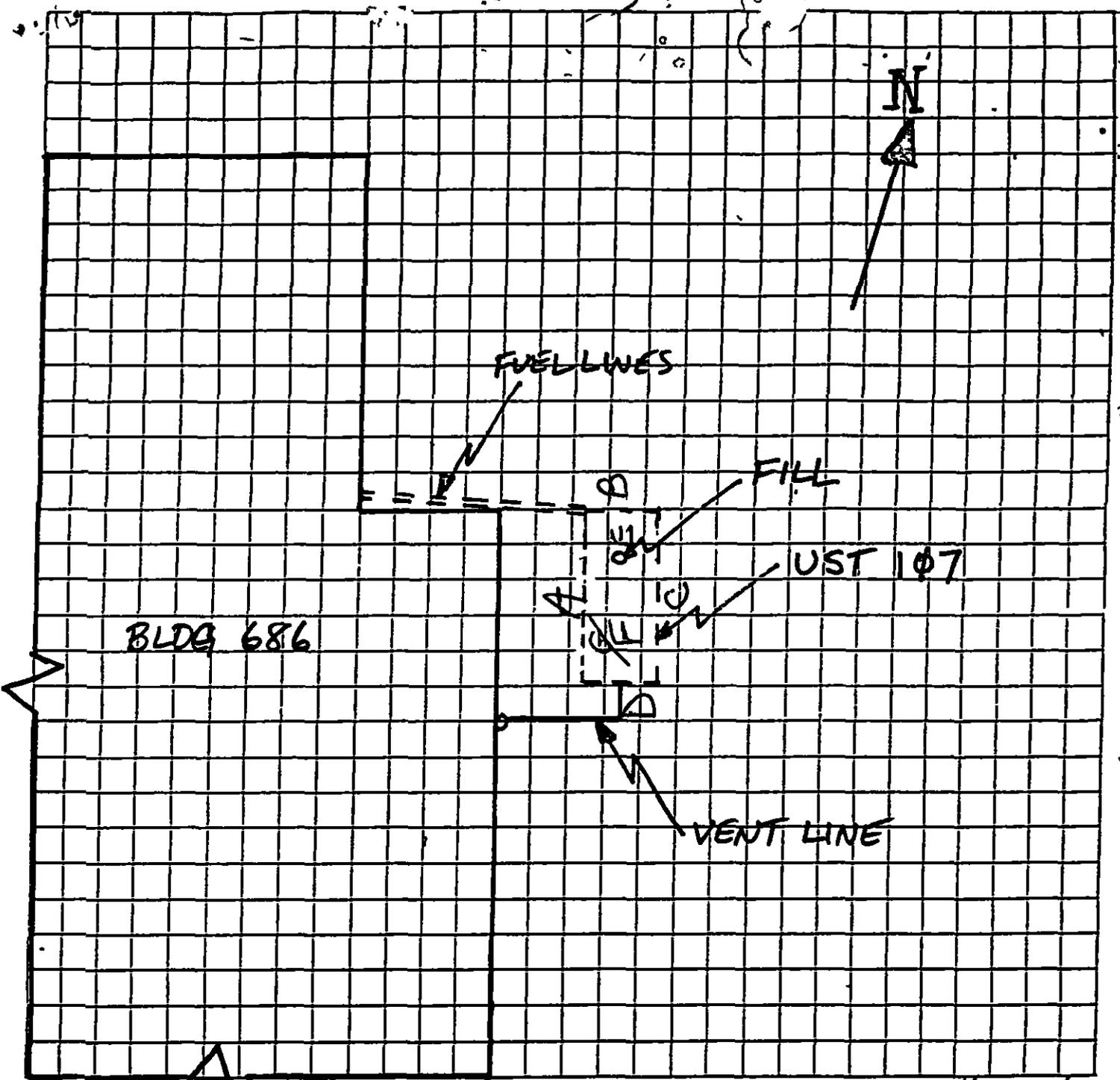
NJDEP UST CLOSURE CERTIFICATE NO. 0003249

COMPANY PERFORMING TANK DECOMMISSIONING CUTE Inc.

NJDEP UST CLOSURE CORPORATE CERTIFICATE NO. 0200128

DATE OF SUBMITTAL 1/13/95

PROPOSED SITE PLAN



NOTE. Indicate scale and compass direction.

SCALE: 1" = 10'

REMARKS

TANK LOCATION  
BLDG# 686  
TANK # 0081533-107  
TANK SIZE 2000 GALLONS  
TANK CONTENTS NO. 2 HEATING OIL

Report of Analysis  
 U.S. Army, Fort Monmouth Environmental Laboratory  
 NJDEPE Certification # 13461

Client: U.S. Army  
 DPW, SELFM-PW-EV  
 Bldg. 173  
 Ft. Monmouth, NJ 07703

Lab. ID #: 1782.1-.7  
 Sample Rec'd: 01/18/95  
 Analysis Start: 01/19/95  
 Analysis Comp: 01/20/95

Analysis: 418.1 (TPH)  
 Matrix: Soil  
 Analyst: S. Hubbard  
 Ext. Meth: 3540A

NJDEPE UST Reg.#: 81533-107  
 Closure #:   
 DICAR #: 94-12-8-1040-10  
 Location #: Bldg. 686

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1782.1	Site A, W. Sidewall OVA=ND	87	79.6	8.2
1782.2	Site B, N. Sidewall OVA=ND	88	14700.	100
1782.3	Site C, E. Sidewall OVA=ND	85	174.	8.4
1782.4	Site D, S. Sidewall OVA=1.	88	4400.	53.
1782.5	Site E, N. Floor OVA=ND	82	2900.	55.
1782.6	Site F, S. Floor OVA=ND	86	3200.	57.
1782.7	Site G, Dup	81	1600.	8.1
M. Bl.	Method Blank	100	ND	3.3

**Notes:** ND = Not Detected, MDL = Method Detection Limit  
 \* = Silica Gel Added, NA = Not Applicable  
 1782.3S= 115%, 1782.3SD= 113%, RPD= 2.1% 1782.3 Dup= 35%  
 Cal. Check = 103%  
 QC Limits: Recovery= +/-28%, RPD=19.7%

*Brian K. McKee*

Brian K. McKee  
 Laboratory Director

Report of Analysis  
 U.S. Army, Fort Monmouth Environmental Laboratory  
 NJDEPE Certification # 13461

Client: U.S. Army  
 DPW, SELFM-PW-EV  
 Bldg. 173  
 Ft. Monmouth, NJ 07703

Lab. ID #: 1790.1-.4  
 Sample Rec'd: 01/27/95  
 Analysis Start: 02/03/95  
 Analysis Comp: 02/04/95

Analysis: 418.1 (TPH)  
 Matrix: Soil  
 Analyst: S. Hubbard  
 Ext. Meth: 3540A

NJDEPE UST Reg.#: 81533-107  
 Closure #: \_\_\_\_\_  
 DICAR #: 94-12-8-1040-10  
 Location #: Bldg. 686

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1790.1	Site D1 OVA=	81	342.	16.
1790.2	Site B1 OVA=	85	667.	7.8
1790.3	Site E1 OVA=	87	236.	8.1
1790.4	Site F1 OVA=	86	1400.	7.7
M. Bl.	Method Blank	100	ND	3.3

**Notes:** ND = Not Detected, MDL = Method Detection Limit  
 \* = Silica Gel Added, NA = Not Applicable  
 1790.1S= 124%, 1790.1SD= 134%, RPD= 7.9% 1790.1 Dup=100%  
 Cal. Check = 107%  
 QC Limits: Recovery = 60% to 140% and RPD = 15.75% at 2 Std. Dev.

  
 -----  
 Brian K. McKee  
 Laboratory Director

Predicted Extent of Soil Contamination

BASED ON SITE CONDITIONS, THE FOLLOWING IS A PREDICTION OF WHAT THE FINAL EXCAVATION WILL BE LIKE AND EXTENT OF THE CONTAMINATION.

N →

POSSIBLE EXTENT OF CONTAMINATION

B 686

CURBS

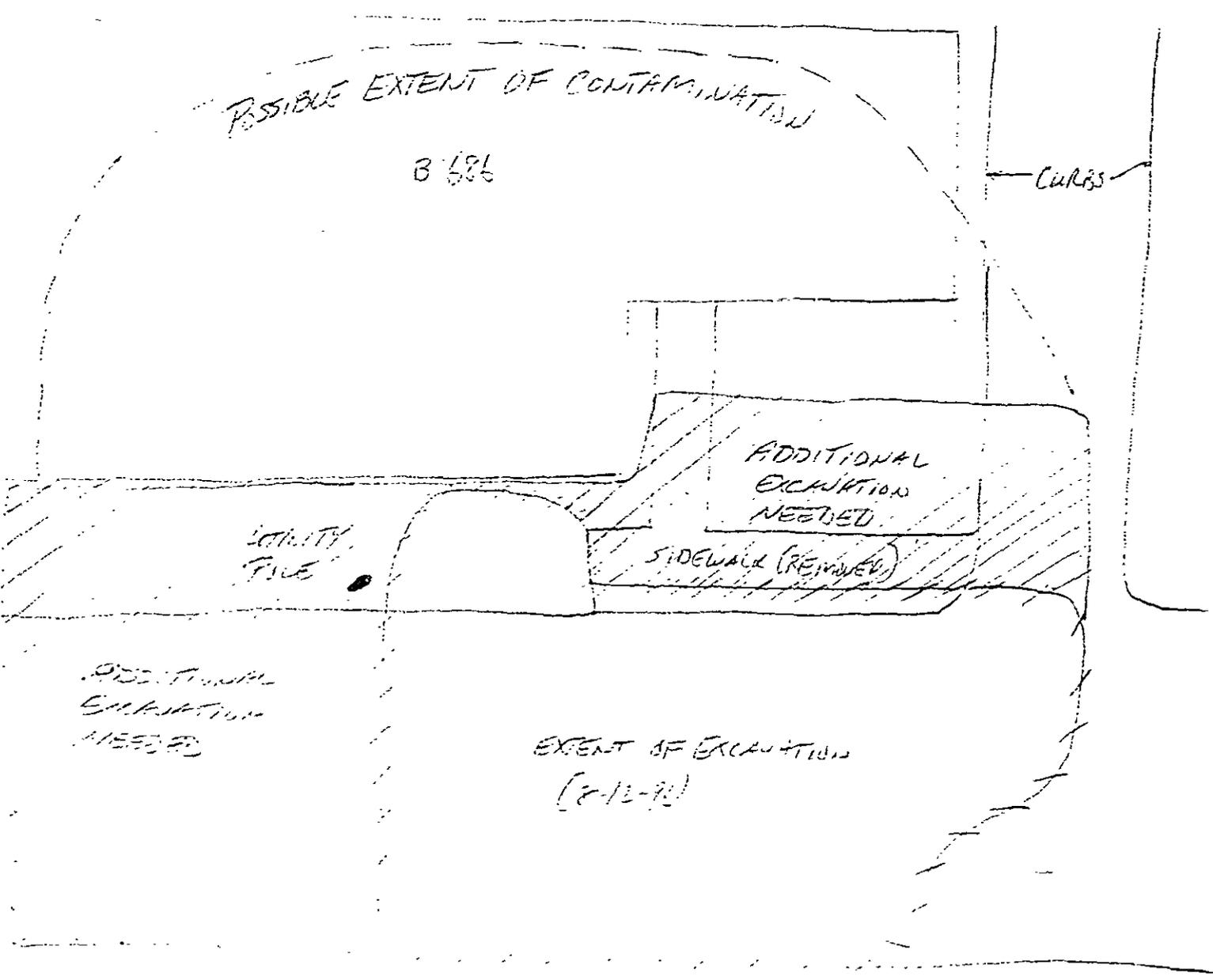
ADDITIONAL EXCAVATION NEEDED

SIDEWALK (REMOVED)

UTILITY PIPE

ADDITIONAL EXCAVATION NEEDED

EXTENT OF EXCAVATION  
(8-12-91)



Approx. Final Extent of Soil Contamination

BLDG. 686

CURBS

SANITARY SEWER

STORM SEWER

FIRE SYSTEM LATERAL

WATER MAIN

UTILITY POLE

APPROX. 700 Cubic Yards OF  
CONTAM. SOIL EXCAVATED AND REMOVED  
FROM THE SITE.

N

BUILDING NO. 686-REMEDIATION

TANK NO.

TANK SIZE:

TANK CONTENTS:

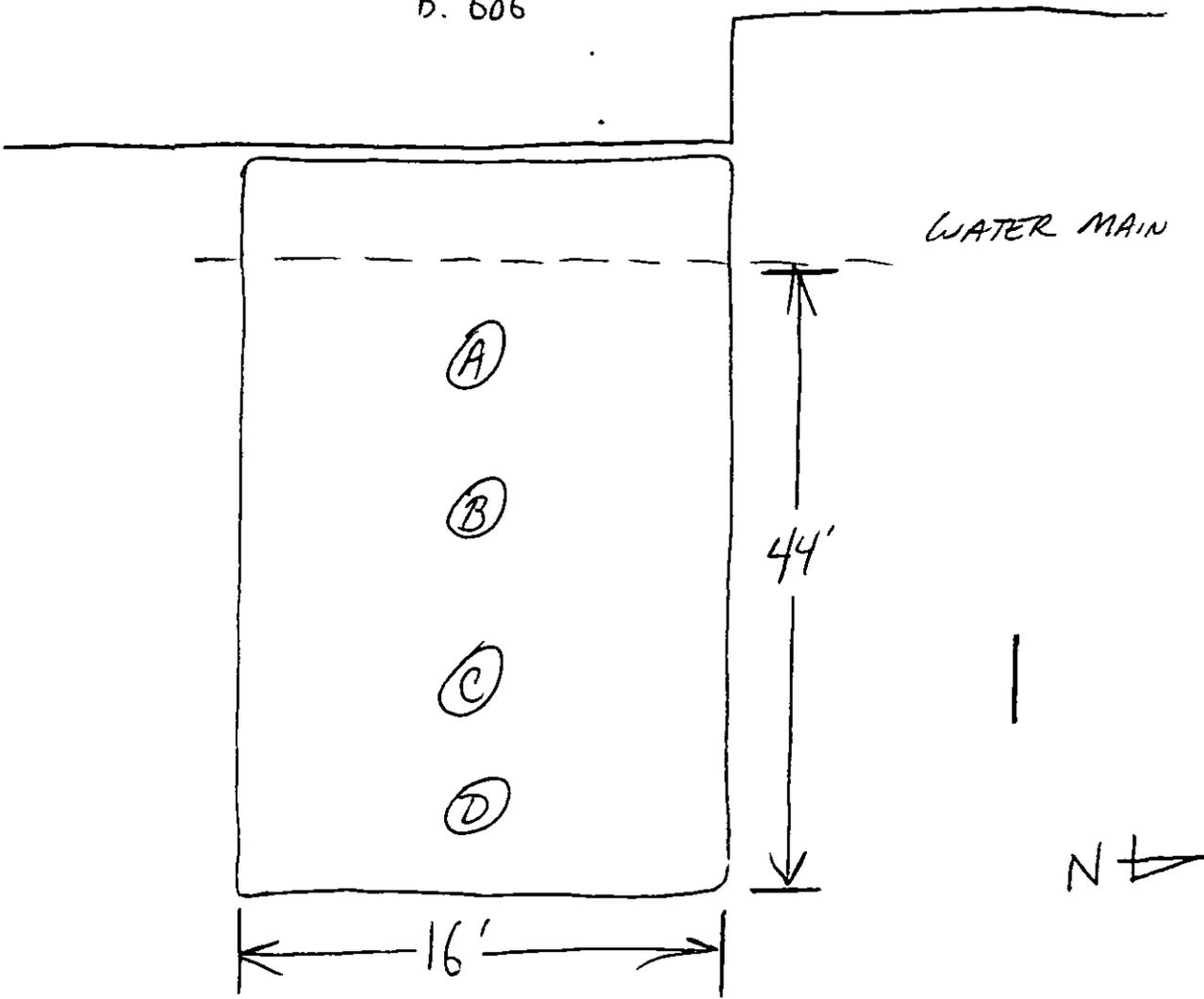
REMARKS:

SCALE: 1" = 10' (APPROX.)



7-2-96 SAMPLING EVENT

B. 686



FLOOR SAMPLES @ 9'  
DUP = A

Report of Analysis  
 U.S. Army, Fort Monmouth Environmental Laboratory  
 NJDEP Certification # 13461

Client: U.S. Army  
 DPW, SELFM-PW-EV  
 Bldg. 173  
 Ft. Monmouth, NJ 07703

Lab. ID #: 2108.1-.5  
 Sample Rec'd: 07/02/96  
 Analysis Start: 07/02/96  
 Analysis Comp: 07/03/96

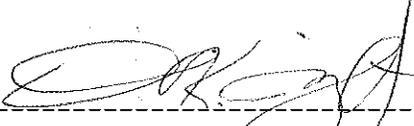
Analysis: OQA-QAM-025  
 Matrix: Soil  
 Analyst: D. Wright  
 Ext. Meth: Shake

NJDEP UST Reg. #: \_\_\_\_\_  
 Closure #: \_\_\_\_\_  
 DICAR #: \_\_\_\_\_  
 Location #: Bldg. 686

Description	OVA	%Solid	MDL (mg/Kg)	Surrogate % Recovery	Result (mg/Kg)
686-A(Exc. Floor @ 9')	10	96.6	200	64.5	ND
686-B	2	83.2	200	104.7	350
686-C	11	82.1	200	57.0	ND
686-D	1	80.6	200	83.7	ND
686-DUP (Field Dup)	-	86.2	200	62.7	ND
Method Blank	NA	100	200	87.5	ND

QC: 2097.1S= 97%, 2097.1SD= 79%, RPD=20.0%, 2097.1dup=100% @ ND  
 QC Limits: Surrogate: 50% - 165%  
 MS/MSD: not established RPD: not established

Notes: ND = Not Detected, MDL = Method Detection Limit  
 NA = Not Applicable  
 \* = Matrix Interference

  
 -----  
 Daniel K. Wright  
 Laboratory Director

B.686

WATER T' to BLDG.

2" GAS

↓ SANITARY SEWER

WATER LINE  
STORM

UTILITY  
POLE

SIDEWALK

E

B

F

B

STREET  
CENTER LINE

G

C

PARKING  
SPACES

D

H

I

CURB

TELEPHONE CONDUIT

7-11-96 SAMPLING EVENT  
GW@7'  
F=DUP

N



Indicates that TPH > 1000 mg/kg

Report of Analysis  
 U.S. Army, Fort Monmouth Environmental Laboratory  
 NJDEP Certification # 13461

Client: U.S. Army  
 DPW, SELFM-PW-EV  
 Bldg. 173  
 Ft. Monmouth, NJ 07703

Lab. ID #: 2115.1-.10  
 Sample Rec'd: 07/12/96  
 Analysis Start: 07/17/96  
 Analysis Comp: 07/18/96

Analysis: OQA-QAM-025  
 Matrix: Soil  
 Analyst: D. Wright  
 Ext. Meth: Shake

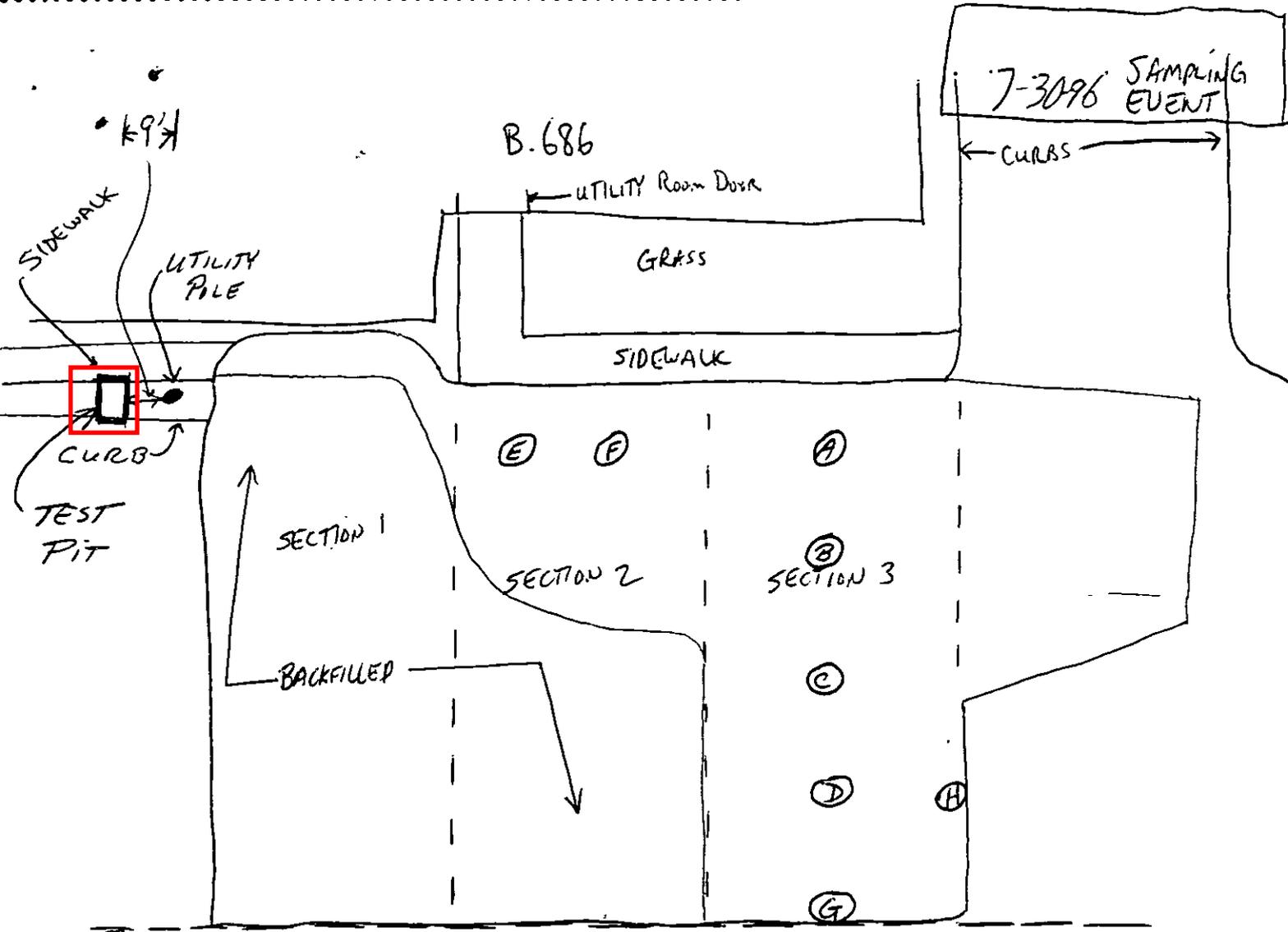
NJDEP UST Reg. #:  
 Closure #:  
 DICAR #:  
 Location #: Bldg. 686

Description	OVA	%Solid	MDL (mg/Kg)	Surrogate % Recovery	Result (mg/Kg)
686-A(EXC. FLOOR@9')	ND	79.8	200	84.5	8570
686-B	ND	79.7	200	121.2	ND
686-C	ND	80.7	200	142.0	ND
686-D	-	75.3	200	109.2	ND
686-E(SIDEWALL@6.5')		86.5	200	62.5	6480
686-F		86.9	200	95.2	6780
686-G		88.1	200	98.0	8640
686-H		85.8	200	115.0	ND
686-I		86.8	200	122.2	700
686-DUP(FIELD DUP.)		87.8	200	76.0	8100
Method Blank	NA	100	200	123.2	ND

QC: 2115.4S=124%, 2115.4SD=115%, RPD=7.5%, 2115.4 DUP=100% @ ND  
 QC Limits: Surrogate: 50% - 165%  
 MS/MSD: not established RPD: not established

Notes: ND = Not Detected, MDL = Method Detection Limit  
 NA = Not Applicable  
 \* = Matrix Interference

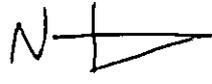
  
 Daniel K. Wright  
 Laboratory Director



Indicates that TPH > 1000 mg/kg

NOTE: GW @ 6.5'

OJA CAL. 1436 ON 7-30-96  
 CHECKED @ 0824 ON 7-31-96



FIELD ID	DATE	TIME	DESCRIPTION	QUA
686-TP/A	7-30-96	1447	TEST PIT @ 3.5'	100
(DUP) 686-TP/B	"	1452	" @ 6.0'	50
→ 686-TP/C	"	1501	" @ 8.5'	50
686-A	7-31-96	915	E.F. @ 9'	40
B		906	↓	60
C		853		10
D		842		10
E		932	E.F. @ 10.5'	50
F		945	"	50
G		832	S.W. @ 6'	4
H		836	"	ND

Report of Analysis  
 U.S. Army, Fort Monmouth Environmental Laboratory  
 NJDEP Certification # 13461

Client: U.S. Army  
 DPW, SELFM-PW-EV  
 Bldg. 173  
 Ft. Monmouth, NJ 07703

Lab. ID #: 2125.1-.12  
 Sample Rec'd: 07/31/96  
 Analysis Start: 07/31/96  
 Analysis Comp: 08/01/96

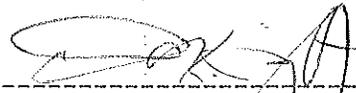
Analysis: OQA-QAM-025  
 Matrix: Soil  
 Analyst: D. Wright  
 Ext. Meth: Shake

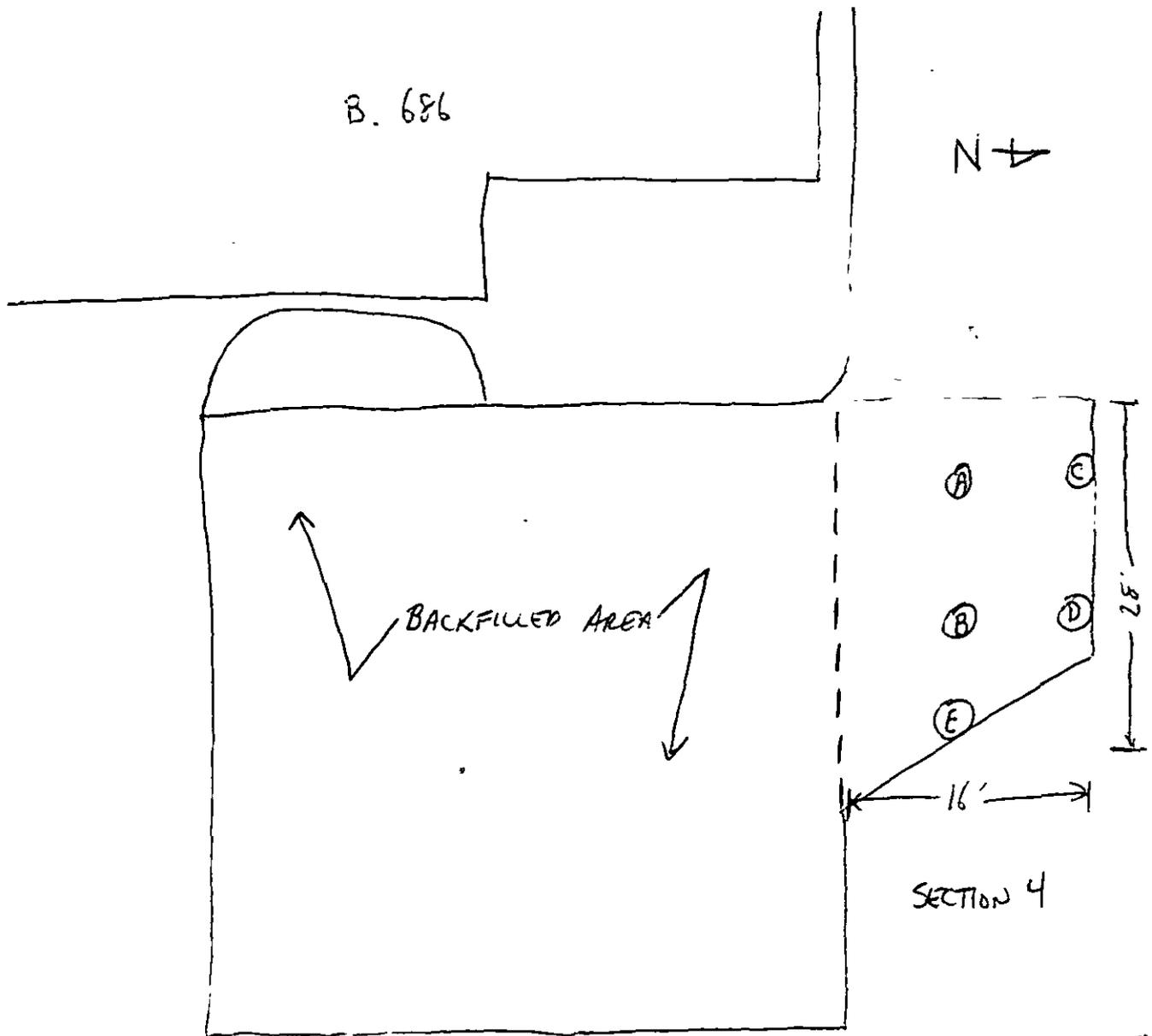
NJDEP UST Reg. #:
Closure #:
DICAR #:
Location #: Bldg. 686

Description	OVA	%Solid	MDL (mg/Kg)	Surrogate % Recovery	Result (mg/Kg)
686-TP/A-TESTPIT@3.5'	100	76.5	200	137.5	2020
686-TP/B-TESTPIT@6'	50	87.6	200	142.5	12500
686-TP/C-TESTPIT@8.5'	50	79.2	200	73.8	7380
686-A-EXC FLOOR@9'	40	79.2	200	107.5	ND
686-B	60	80.0	200	102.7	ND
686-C	10	77.1	200	99.2	ND
686-D	10	77.1	200	111.2	ND
686-E-EXCFL.@10.5'	50	74.0	200	103.2	ND
686-F	50	87.3	200	99.3	ND
686-G-SIDEWALL@6'	4	85.7	200	103.0	ND
686-H-SIDEWALL@6'	ND	82.4	200	108.0	ND
686-DUP(FIELD DUP)	--	85.6	200	65.2	6500
Method Blank	NA	100	200	60.5	ND

QC: \*2125.12S=0%, \*2125.12SD=0%, 2125.12DUP=80% @ 5210  
 QC Limits: Surrogate: 50% - 165%  
 MS/MSD: not established RPD: not established

Notes: ND = Not Detected, MDL = Method Detection Limit  
 NA = Not Applicable  
 \* = Matrix Interference

  
 Daniel K. Wright  
 Laboratory Director



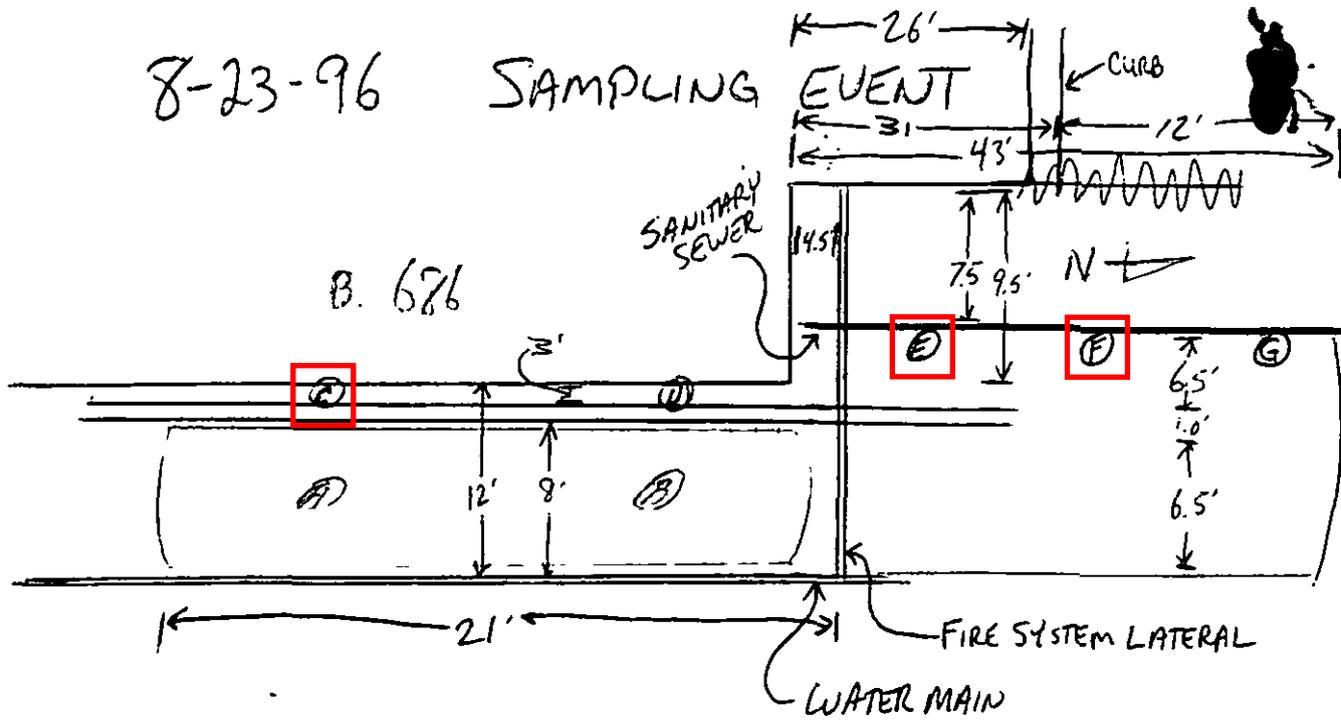
8-15-96 SAMPLING EVENT  
OVA CAL. @ 10:22  
DUP = E

GW @ 7'



8-23-96

SAMPLING EVENT



Indicates that TPH > 1000 mg/kg

8-23-96

OVA CAL @ 1000 (#A51903)  
(GW @ 6')

Location	Depth	8-23-96 @	OVA
686-A	(EF @ 10')	1045	ND
686-B	"	@ 1037	ND
686-C	(SW @ 5.5')	1336	100
686-D	"	1419	10
686-E	"	1428	30
686-F	"	1502	40
686-G	"	1516	10
686-FIELD	(FIELD BLANK)	1527	-
686-DUP	(FIELD DUPLICATE)	-	-

NOTE 686-A = FIELD DUPLICATE (TPHC)

Report of Analysis  
 U.S. Army, Fort Monmouth Environmental Laboratory  
 NJDEP Certification # 13461

Client: U.S. Army  
 DPW, SELFM-PW-EV  
 Bldg. 173  
 Ft. Monmouth, NJ 07703

Lab. ID #: 2140.1-.9  
 Sample Rec'd: 08/23/96  
 Analysis Start: 08/26/96  
 Analysis Comp: 08/28/96

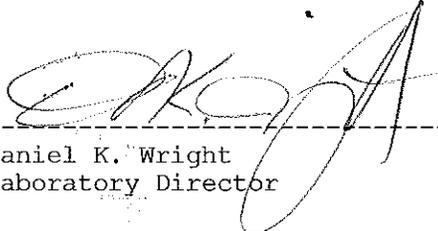
Analysis: OQA-QAM-025  
 Matrix: Soil  
 Analyst: G. Armstrong  
 Ext. Meth: Shake

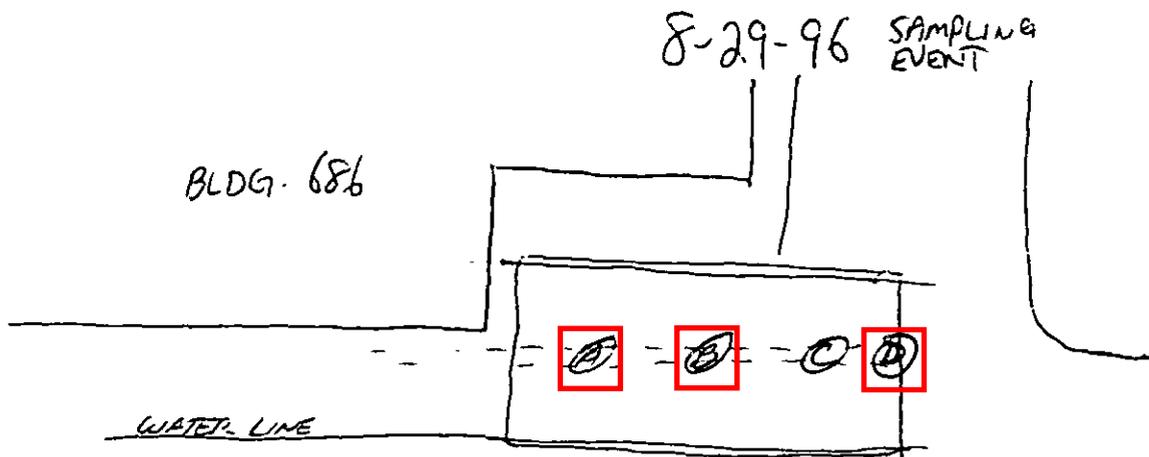
NJDEP UST Reg. #: \_\_\_\_\_  
 Closure #: \_\_\_\_\_  
 DICAR #: \_\_\_\_\_  
 Location #: Bldg. 686

Description	OVA	%Solid	MDL (mg/Kg)	Surrogate % Recovery	Result (mg/Kg)
686-A (Exc. Floor @ 10')	ND	80.1	200	78.4	ND
686-B (Exc. Floor @ 10')	ND	80.5	200	76.1	ND
686-C (Sidewall @ 5.5')	100	82.0	200	254*	7390
686-D (Sidewall @ 5.5')	10	82.3	200	124	834
686-E (Sidewall @ 5.5')	30	82.8	200	114	4100
686-F (Sidewall @ 5.5')	40	83.2	200	136	3550
686-G(Sidewall @ 5.5')	10	82.2	200	89.2	210
686-DUP (Field Dupl.)	--	79.8	200	58.8	220
Method Blank	NA	100	200	103	ND

QC: 2131.5MS=83%, 2131.5MSD=85%, RPD=2.4%, 2131.3DUP=90% @ 190  
 QC Limits: Surrogate: 50% - 165%  
 MS/MSD: not established RPD: not established

Notes: ND = Not Detected, MDL = Method Detection Limit  
 NA = Not Applicable  
 \* = Matrix Interference

  
 Daniel K. Wright  
 Laboratory Director



Indicates that TPH > 1000 mg/kg

8-29-96

OVA CAL. 8-29-96 @ 1415 (#A51903)

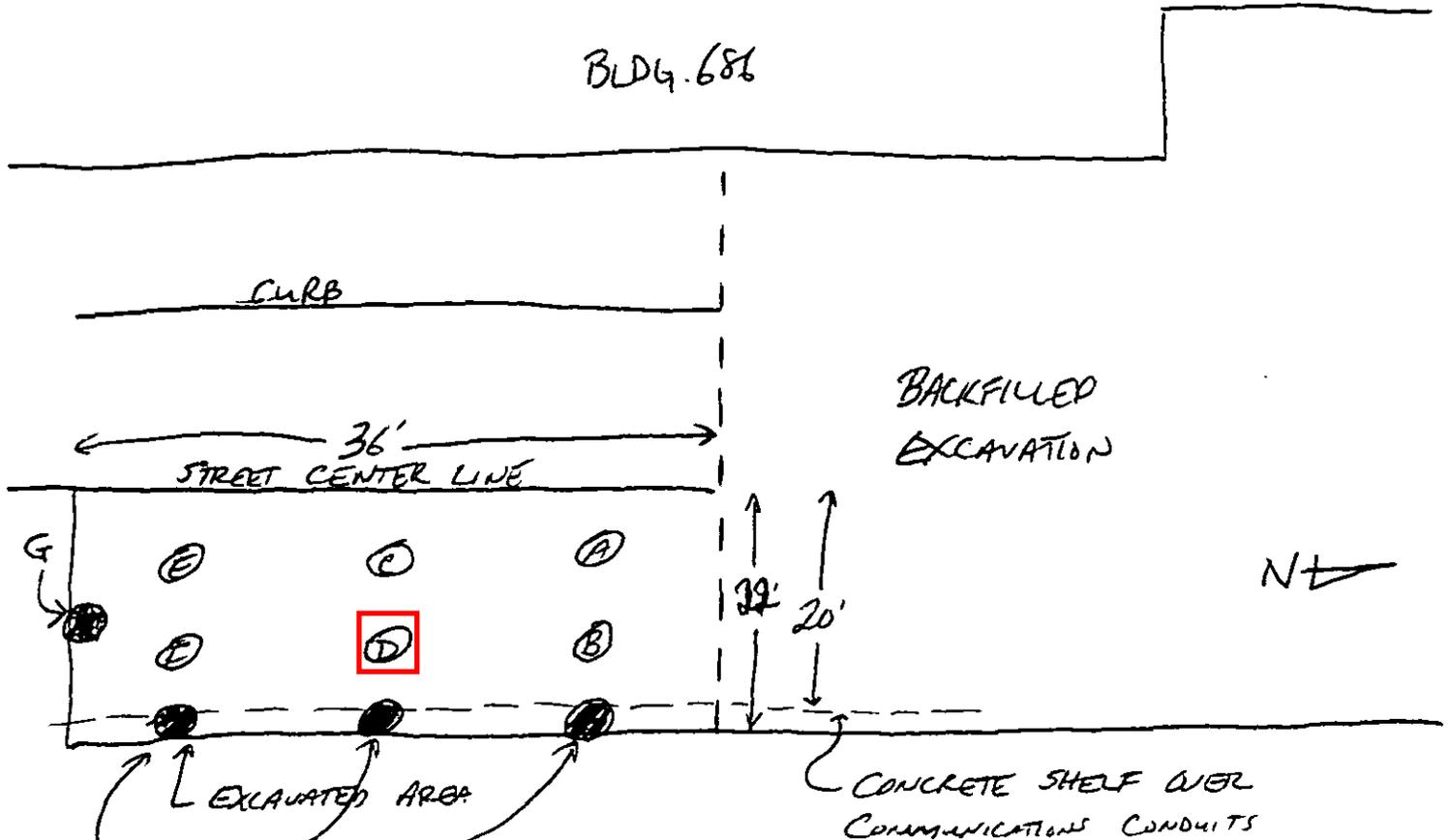
Dup=D

		Time	OVA
686-A (ETC. FLOOR @ 10')	8-29-96 @	1510	5
686-B	"	1504	ND
686-C	"	1453	ND
686-D (5W @ 5.5')	"	1444	10
686-DUP (FIELD DUP)	"	-	-
686-FIELD (FIELD BLANK)	"	1522	-



Indicates that TPH > 1000 mg/kg

9-11-96 SAMPLING EVENT  
 GW @ ~6' BELOW GRADE



THESE SAMPLES NOT COLLECTED (AT THAT TIME DUE TO UNSAFE EXCAVATION)

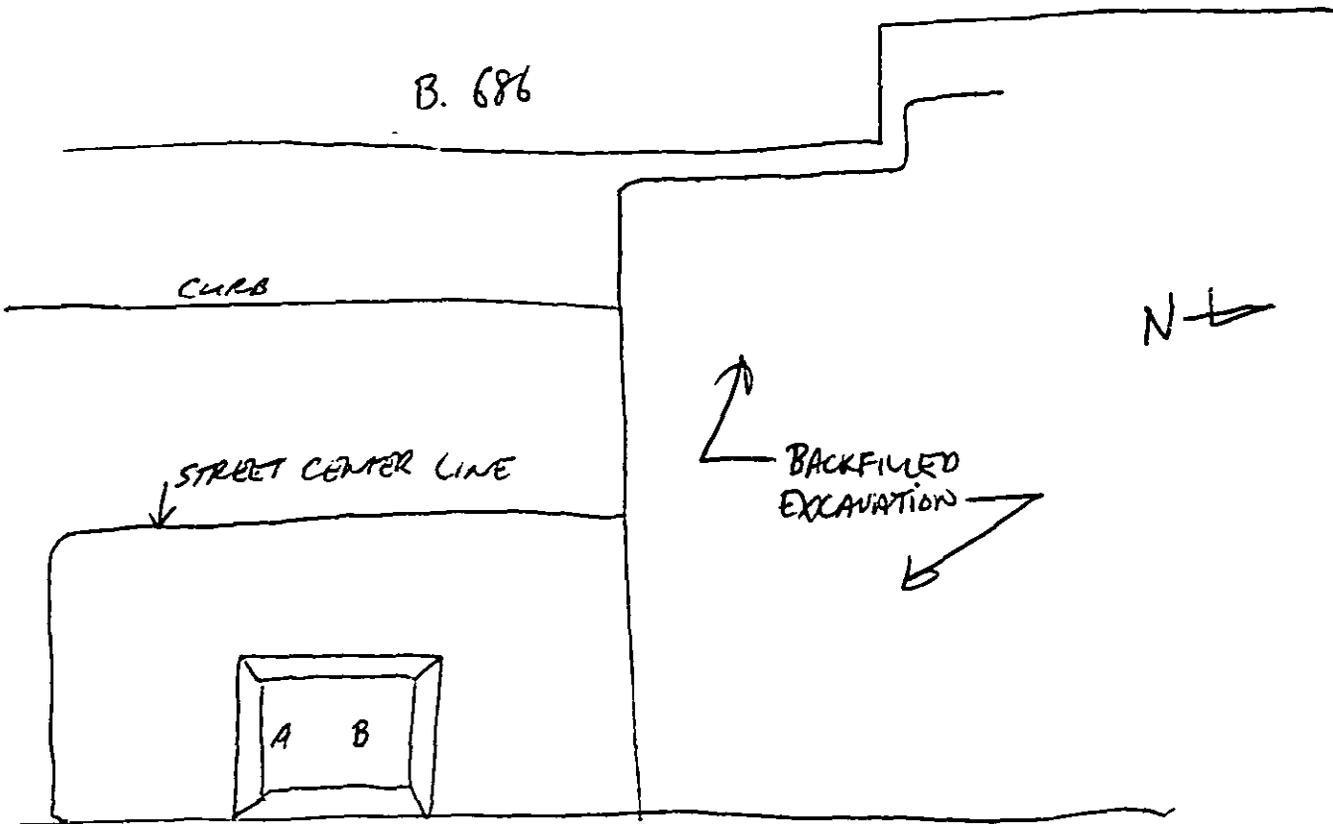
		TIME	DVA
ND	686-A (Exc. Floor @ 9')	1314	7
530	B	1333	5
ND	C	1336	9
1060	D	1343	ND
ND	E	1353	ND
ND	F	1359	ND
ND	G (S.W. @ 5.5')	1405	15
	H		} NOT COLLECTED
	I		
	J		
ND	DUP		

DUP = C



9-14-96 SAMPLING EVENT

B. 686



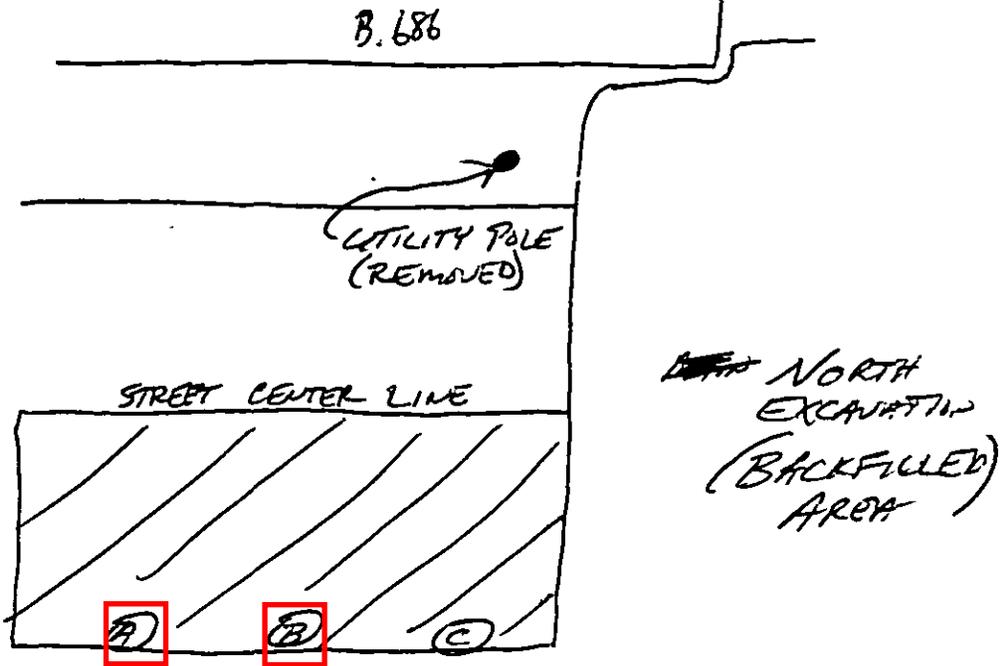
OVA CAL. @ 8:15 on 9-14-96 (A51203)

			OVA
686-A (EFe11)	9-14-96	@ 9:03	3
686-B (EFe11)	9-14-96	@ 8:44	ND
686-Dup	9-14-96	†	—

A = Dup



9-16-96  
 SAMPLING EVENT



Indicates that TPH > 1000 mg/kg

OUA CAL @ 3:40 on 9-16-96 (A51903)

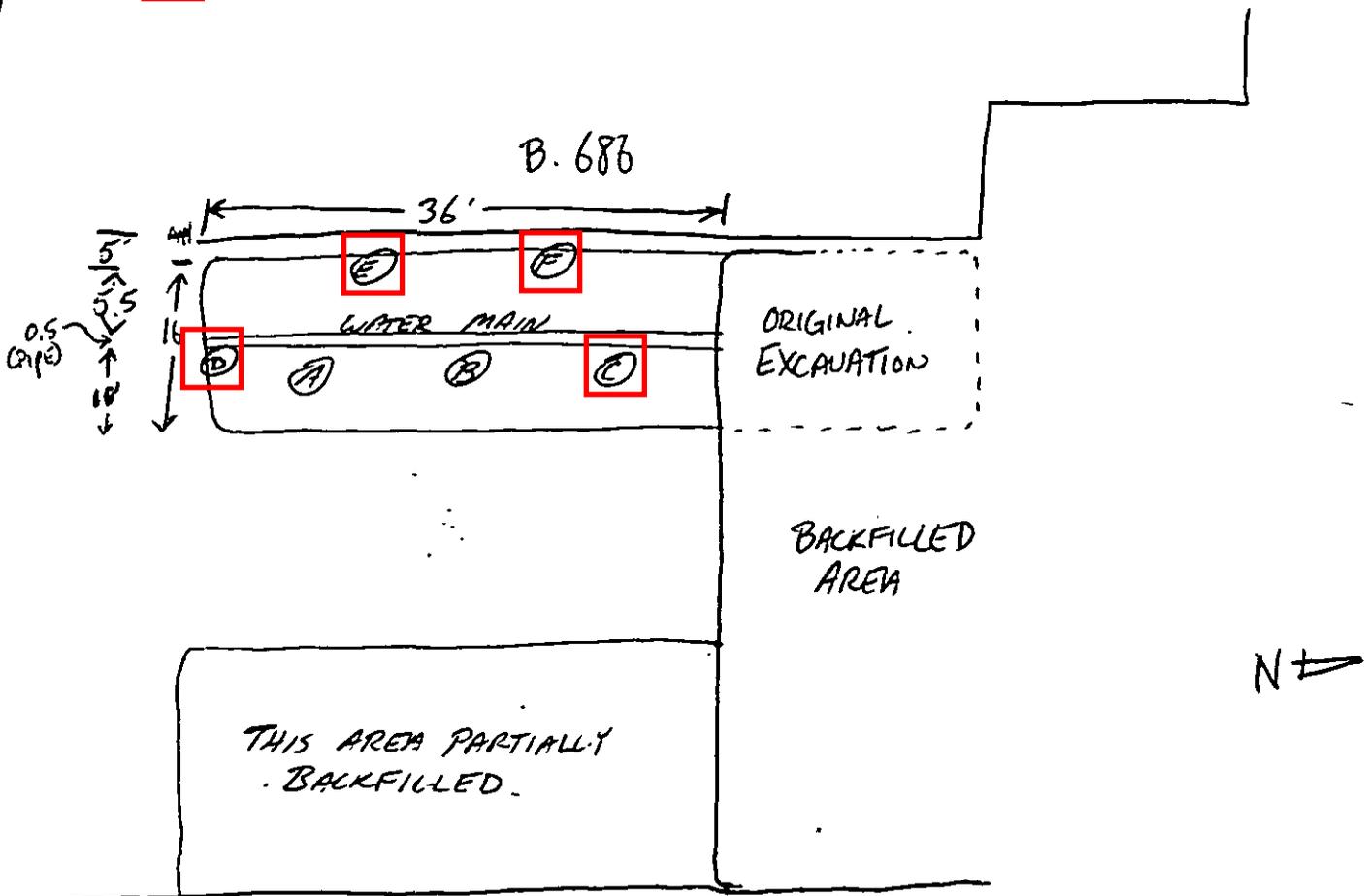
	DATE	TIME	OUA
686-A (SW @ 5.5')	9-16-96	1614	20
686-B		1606	30
686-C		1555	10
686-DUP		—	—

DUP = C



Indicates that TPH > 1000 mg/kg

9-19-96 Sampling EVENT



		<u>TIME</u>	<u>OUA</u>
A	EF @ 9'	1640	2
B		1627	2
C		<del>168</del>	7
D	SW @ 5.5'	1659	10
E		1710	15
F		1721	20

D = DUP

Report of Analysis  
 U.S. Army, Fort Monmouth Environmental Laboratory  
 NJDEP Certification # 13461

Client: U.S. Army  
 DPW, SELFM-PW-EV  
 Bldg. 173  
 Ft. Monmouth, NJ 07703

Lab. ID #: 2155.1-.7  
 Sample Rec'd: 09/20/96  
 Analysis Start: 09/20/96  
 Analysis Comp: 09/23/96

Analysis: OQA-QAM-025  
 Matrix: Soil  
 Analyst: G. Armstrong  
 Ext. Meth: Shake

NJDEP UST Reg. #: \_\_\_\_\_  
 Closure #: \_\_\_\_\_  
 DICAR #: \_\_\_\_\_  
 Location #: Bldg. 686

Description	OVA	%Solid	MDL (mg/Kg)	Surrogate % Recovery	TPHC Result (mg/Kg)
686-A (Exc. Floor @ 9')	2	84.2	200	110/103	ND
686-B (Exc. Floor @ 9')	2	89.4	200	121/95	560
686-C (Exc. Floor @ 9')	7	82.9	200	138/103	1140
686-D (Sidewall @ 5.5')	10	83.3	200	169/91*	2450
686-E (Sidewall @ 5.5')	15	80.2	200	248/90*	5440
686-F (Sidewall @ 5.5')	20	85.1	200	284/97*	6680
686-Dup (Field Duplicate)	-	83.8	200	132/104	760
Method Blank	NA	100	200	100/93	ND

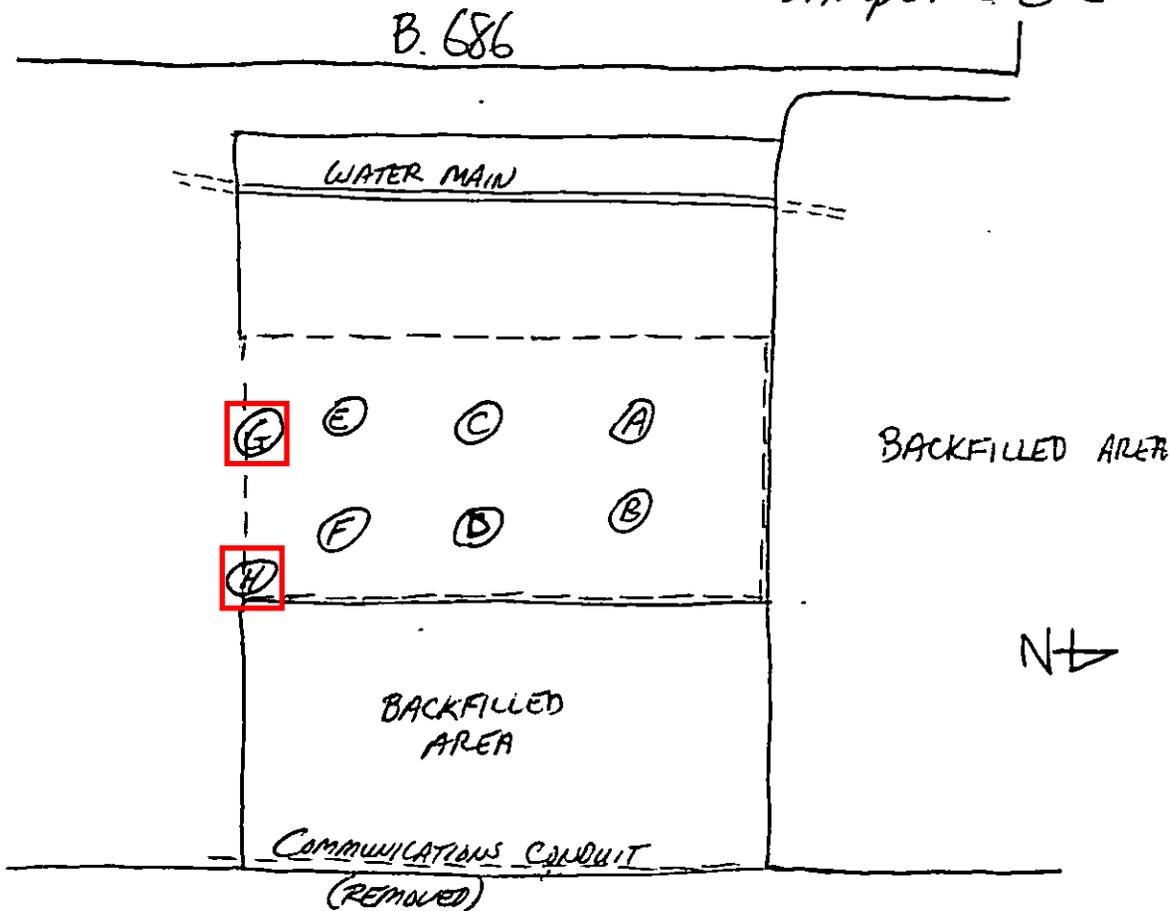
QC: 2154.3MS=115%, 2154.3MSD=114%, RPD=0.7%  
 QC Limits: Surrogate: 50% - 165%  
 MS/MSD: not established RPD: not established

Notes: ND = Not Detected, MDL = Method Detection Limit  
 NA = Not Applicable  
 \* = Matrix Interference

  
 -----  
 Daniel K. Wright  
 Laboratory Director

Indicates that TPH > 1000 mg/kg

9-21-96  
SAMPLING EVENT



	TIME	OVA
A (EF@9')	1210	5
B	1218	4
C	1214	ND
D	1222	2
E	1234	10
F	1241	ND
G (SW@5.5')	1246	15
H	1251	10
E = DUP	-	-

OVA #A51903  
CAL @ 11:50 ON  
9-21-96.

Report of Analysis  
 U.S. Army, Fort Monmouth Environmental Laboratory  
 NJDEP Certification # 13461

Client: U.S. Army  
 DPW, SELFM-PW-EV  
 Bldg. 173  
 Ft. Monmouth, NJ 07703

Lab. ID #: 2156.1-.9  
 Sample Rec'd: 09/23/96  
 Analysis Start: 09/23/96  
 Analysis Comp: 09/24/96

Analysis: OQA-QAM-025  
 Matrix: Soil  
 Analyst: G. Armstrong  
 Ext. Meth: Shake

NJDEP UST Reg.#:  
 Closure #:  
 DICAR #:  
 Location #: Bldg. 686

Description	OVA	%Solid	MDL (mg/Kg)	Surrogate % Recovery	TPHC Result (mg/Kg)
686-A (Exc. Floor @ 9')	5	81.6	200	110/103	ND
686-B (Exc. Floor @ 9')	4	81.6	200	103/97	ND
686-C (Exc. Floor @ 9')	ND	80.4	200	92/84	ND
686-D (Exc. Floor @ 9')	2	81.5	200	114/107	ND
686-E (Exc. Floor @ 9')	10	82.9	200	117/110	ND
686-F (Exc. Floor @ 9')	ND	81.9	200	118/111	ND
686-G (Sidewall @ 5.5')	15	83.3	200	291/84*	7290
686-H (Sidewall @ 5.5')	10	82.7	200	165/102*	2120
686-Dup (Field Duplicate)	-	83.3	200	110/102	ND
Method Blank	NA	100	200	110/103	ND

QC: 2156.4MS=113%, 2156.4MSD=110%, RPD=2.6%  
 QC Limits: Surrogate: 50% - 165%  
 MS/MSD: not established RPD: not established

Notes: ND = Not Detected, MDL = Method Detection Limit  
 NA = Not Applicable  
 \* = Matrix Interference

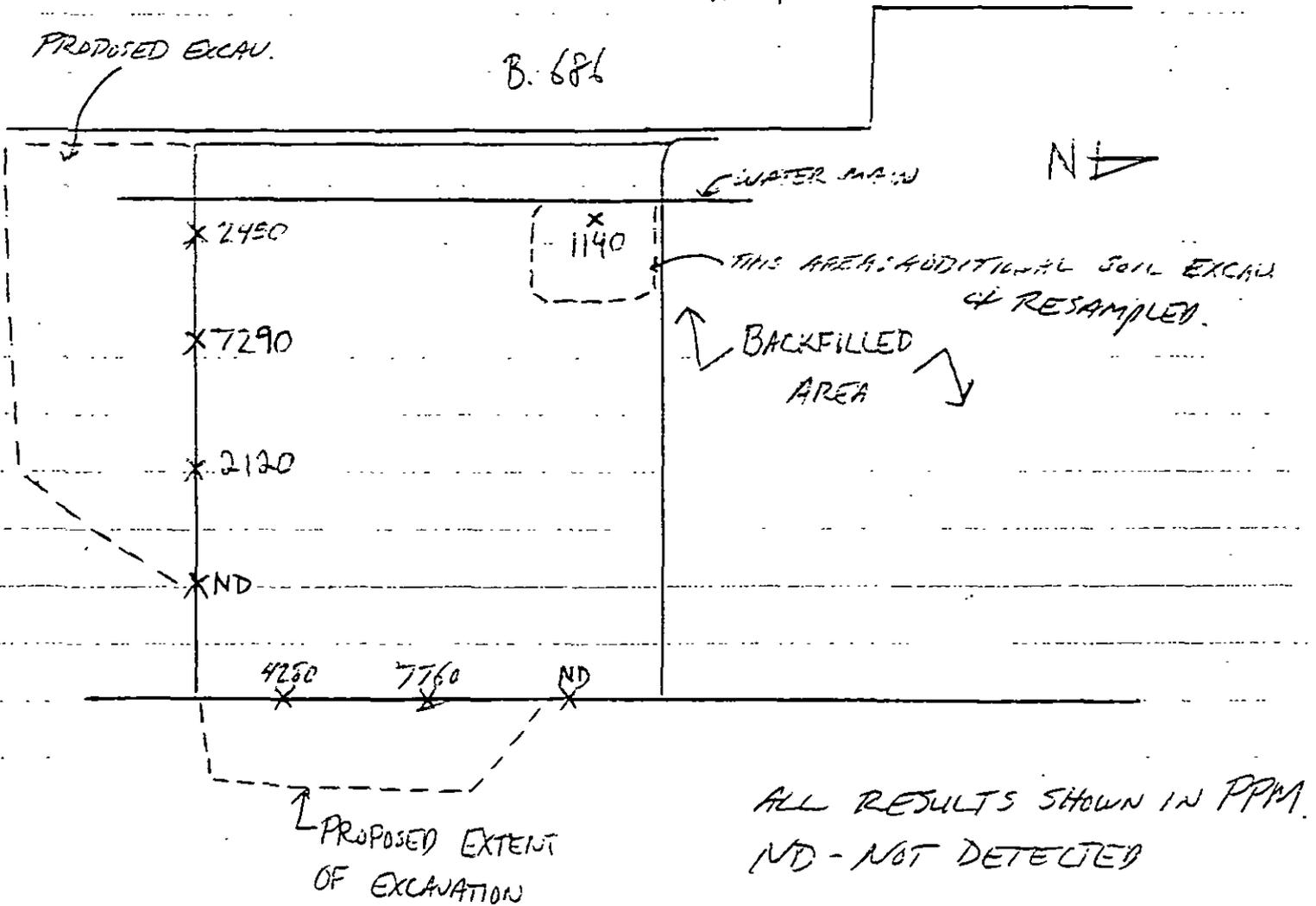
  
 Daniel K. Wright  
 Laboratory Director

9-26-96

GARY R.

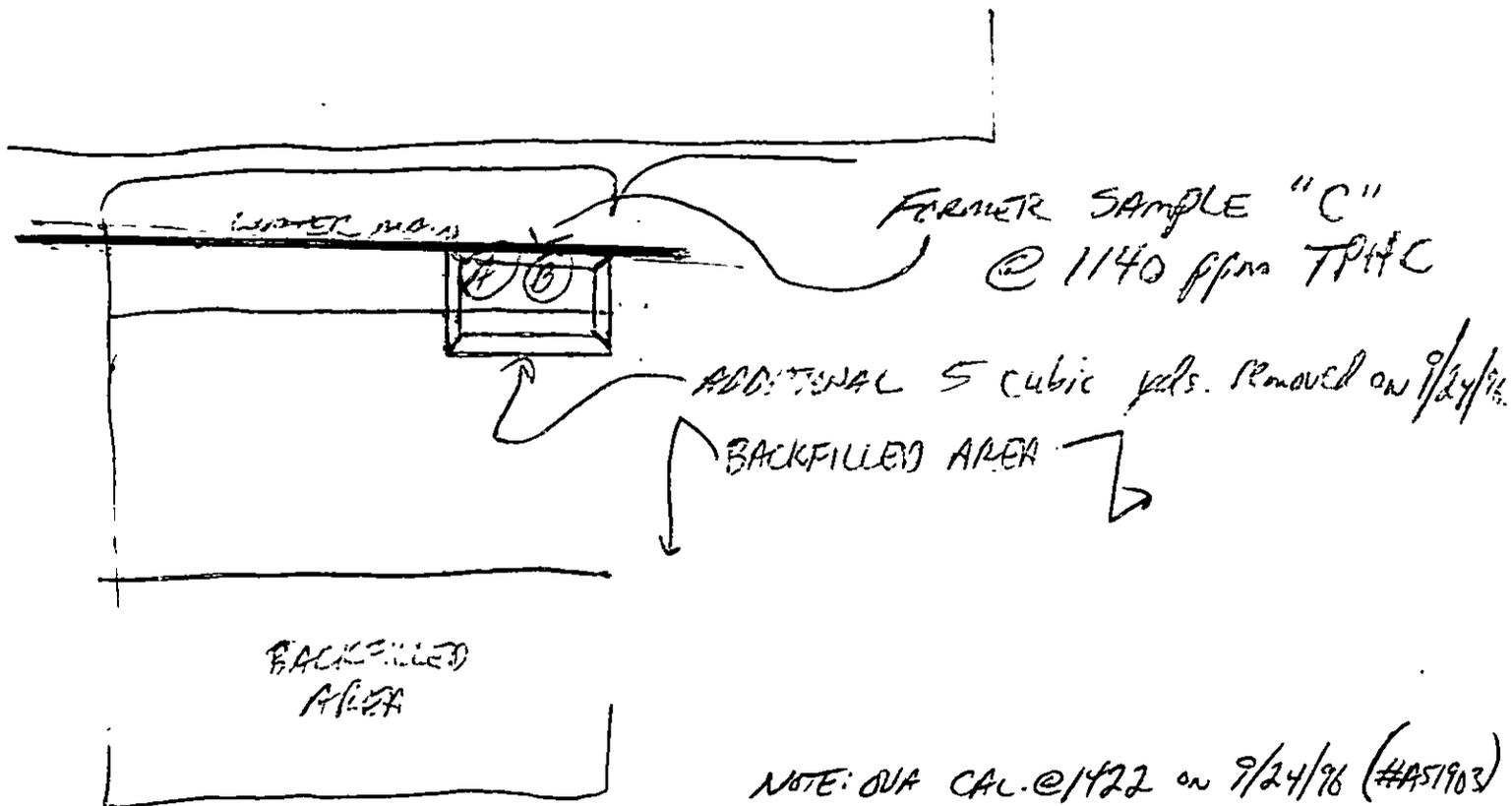
FOLLOWING IS A SKETCH OF B. 686. PER INSTRUCTIONS FROM GENE LESINSKI, DPW, WE ARE TO CONTINUE TO EXCAVATE CONTAMINATED SOIL AT LOCATIONS WHERE SAMPLE RESULTS INDICATE TPHC ~~PA~~ LEVELS  $> 1,000$  PPM. (EXCLUDING BUILDING AREA)

GARY D.





9-24-96  
 SAMPLING EVENT



NOTE: OUA CAL. @ 1422 on 9/24/96 (#A51903)

686-A (EF @ 11')  
 686-B (EF @ 11')  
 686-DUP

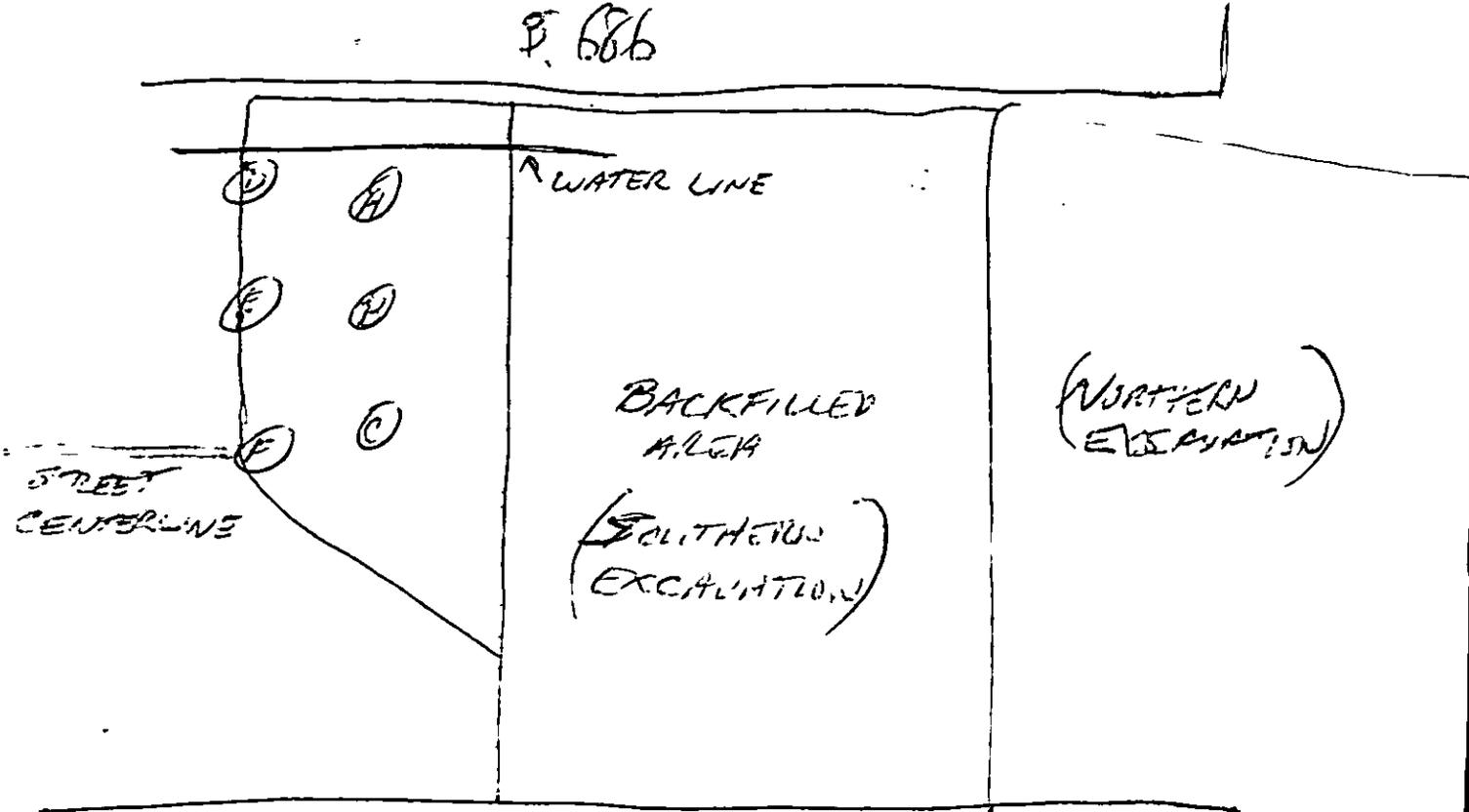
TIME	OUA
1501	ND
1506	10
—	—

A = DUP



9-26-96  
SAMPLING EVENT

P. 686



		TIME	OUA
686-A	EF @ 9'	1601	3
B	↓	1553	8
C	↓	1547	ND
D	SW @ 5.5'	1542	ND
E	↓	1537 <del>1537</del>	ND
F	↓	1528	ND

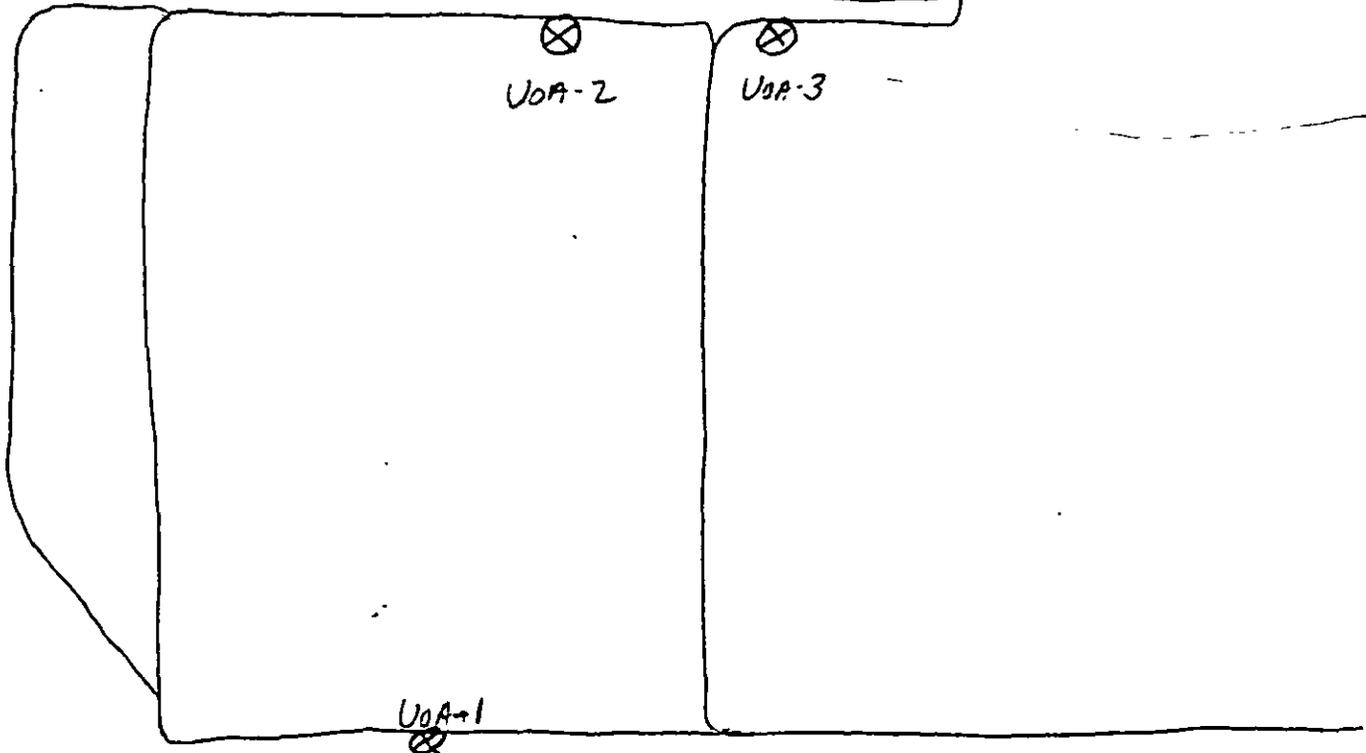
OUA CAL @ 1519 ON 9-26-96 (#A51903)

DUP = E



9-27-96  
SAMPLING EVENT

B. 686



	TIME	OVA
UOA-1 (SW @ 5.5')	1406	10
UOA-2	<del>1457</del>	10
UOA-3	1506	10
UOA-FIELD	1523	—
UOA-DUP		—

DUP = UOA-2

542-5994

PO# R97-00201

CHAIN-OF-CUSTODY

P.O. #: PWS-07

10031819

Project #: <b>GENE LEISINSKI</b>	Sampler: <b>GARY DiMartinis - TVS</b>	Date / Time <b>9-27-96 / 1330</b>	Analysis Parameters	Start:
Customer: <b>SELF M PW-EV</b>	Site Name: <b>BUILDING #686</b>			Finish:
Phone: <b>(908) 532-0989</b>	<b>(VOA ANALYSIS ONLY)</b>			Preservation Method

Lab Sample ID Number	Date/Time	Customer Sample Location/ID Number	Sample Matrix	# of Bottles	TPHC	PAHs	MUNSEL	VOA+15	VOA	Remarks
2163	9-27-96 1406	VOA-1 (SIDE WALL @ SS)	SOIL	1	X	X	X	X	10	* AB40780
2	1457	VOA-2			X	X	X	X	10	* = SAMPLES
3	1506	VOA-3			X	X	X	X	10	KEPT BELOW
4	-	VOA-DUP (FIELD DUPLICATE)			X	X	X	X	-	4°C
5	1523	VOA-FIELD (FIELD BLANK)	AIR	2	X	X	X	X	-	

Post-It® Fax Note	7671	Date	# of pages
To	Don Wright	From	Chris Hettzel
Co/Dept.		Co.	
Phone #		Phone #	
Fax #		Fax #	

Relinquished By (signature)	Date / Time	Received By (signature)	Shipped By:
<i>[Signature]</i>	9-27-96 1550	<i>[Signature]</i>	HAND
Relinquished By (signature)	Date / Time	Received For Lab by (signature):	Date / Time
<i>[Signature]</i>	10-3-96 1300	<i>[Signature]</i>	10/3/96 1300

Note: A drawing depicting sample location should be attached or drawn on the reverse side of this chain of custody. DEDICATED SAMPLING TOOLS USED. SEE PROJECT FILE FOR SAMPLING LOCATIONS

OCT-07-96 MON 14:41 HAMPTON CLARKE FAX NO. 12014921815 P. 01/11

HAMPTON-CLARKE/VERITECH  
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client ID : 2163.1 SOIL  
 Date Rcvd/Extd: 10/03/96 N/A  
 Sample Matrix : Soil  
 Percent Solid : 88  
 Column : J&W DB-624 75m .53mm ID Column

Lab Sample No. : AA40780  
 Lab File ID : DE9360  
 Date Analyzed : 10/03/96  
 Dilution Factor: 125  
 Sample Wt/Vol : 5.0ml

CONCENTRATION UNITS: UG/KG(PPB)

CAS No.	COMPOUND	PQL	CONC	CAS NO.	COMPOUND	PQL	CONC
74873	Chloromethane	1400	U	124481	Dibromochloromethane	710	U
74839	Bromomethane	1400	U	79005	1,1,2-Trichloroethane	430	U
75014	Vinyl Chloride	710	U	71432	Benzene	140	U
75003	Chloroethane	1400	U	10061026	Trans-1,3-Dichloropropene	710	U
75092	Methylene Chloride	2100	U	110758	2-Chloroethylvinylether	1400	U
67641	Acetone	2800	U	75252	Bromoform	570	U
75150	Carbon Disulfide	710	U	108101	4-Methyl-2-Pentanone	3600	U
75694	Trichlorofluoromethane	710	U	591786	2-Hexanone	2800	U
75354	1,1-Dichloroethene	280	U	127184	Tetrachloroethene	140	U
75343	1,1-Dichloroethane	710	U	79345	1,1,2,2-Tetrachloroethane	280	U
156605	Trans-1,2-Dichloroethene	710	U	108283	Toluene	710	U
67663	Chloroform	710	U	108907	Chlorobenzene	570	U
107062	1,2-Dichloroethane	280	U	100414	Ethylbenzene	710	U
78933	2-Butanone	3600	U	100425	Styrene	710	U
71556	1,1,1-Trichloroethane	710	U	108383	m,p-Xylenes	710	U
56235	Carbon Tetrachloride	280	U	95476	o-Xylene	710	U
108054	Vinyl Acetate	1400	U	541731	1,3-Dichlorobenzene	710	U
75274	Bromodichloromethane	140	U	95501	1,2-Dichlorobenzene	710	U
78875	1,2-Dichloropropane	140	U	106467	1,4-Dichlorobenzene	710	U
10861015	cis-1,3-Dichloropropene	710	U	1634044	Methyl-t-butyl ether	710	U
79016	Trichloroethene	140	U	108283	Di-isopropyl-ether	710	U
				75650	t-Butyl Alcohol	14000	U

TARGET COMPOUND SUMMARY: 0

DATA REPORTING QUALIFIERS

- U - Indicates the compound was analyzed for but not detected.
- J - Indicates an estimated value used when a compound is detected at less than the specified detection limit.
- B - Indicates the analyte was found in the blank as well as in the sample.
- E - Indicates the analyte concentration exceeds the calibration range of the GC/MS instrument for that specific analyte.



HAMPTON-CLARKE/VERITECH  
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client ID : 2163.2 SOIL  
 Date Rcvd/Extd: 10/03/96-MYA  
 Sample Matrix : Soil  
 Percent Solid : 85  
 Column : J&W DB-624 75M .53mm ID Column

Lab Sample No. : AA40781  
 Lab File ID : >E9361  
 Date Analyzed : 10/03/96  
 Dilution Factor: 125  
 Sample Wt/Vol : 5.0ml

CONCENTRATION UNITS: UG/KG (PPB)

CAS No.	COMPOUND	PQL	CONC	CAS NO.	COMPOUND	PQL	CONC
74873	Chloromethane	1500	U	124481	Dibromochloromethane	740	U
74839	Bromomethane	1500	U	79005	1,1,2-Trichloroethane	440	U
75014	Vinyl Chloride	740	U	71432	Benzene	150	U
75003	Chloroethane	1500	U	10061026	Trans-1,3-Dichloropropene	740	U
75092	Methylene Chloride	2200	U	110758	2-Chloroethylvinylether	1500	U
67641	Acetone	2900	U	75252	Bromoform	590	U
75150	Carbon Disulfide	740	U	106101	4-Methyl-2-Pentanone	3700	U
75694	Trichlorofluoromethane	740	U	591786	2-Hexanone	2900	U
75354	1,1-Dichloroethene	290	U	127184	Tetrachloroethene	150	U
75343	1,1-Dichloroethane	740	U	79345	1,1,2,2-Tetrachloroethane	290	U
156605	Trans-1,2-Dichloroethene	740	U	108883	Toluene	740	U
67663	Chloroform	740	U	108907	Chlorobenzene	590	U
107062	1,2-Dichloroethane	290	U	100414	Ethylbenzene	740	U
78933	2-Butanone	3700	U	100425	Styrene	740	U
71556	1,1,1-Trichloroethane	740	U	108383	m,p-Xylenes	740	U
56235	Carbon Tetrachloride	290	U	95476	o-Xylene	740	U
108054	Vinyl Acetate	1500	U	541731	1,3-Dichlorobenzene	740	U
75274	Bromodichloromethane	150	U	95501	1,2-Dichlorobenzene	740	U
78275	1,2-Dichloropropane	150	U	106467	1,4-Dichlorobenzene	740	U
10061015	cis-1,3-Dichloropropene	740	U	1634044	Methyl-t-butyl ether	740	U
79016	Trichloroethene	150	U	108203	Di-isopropyl-ether	740	U
				75650	t-Butyl Alcohol	15000	U

TARGET COMPOUND SUMMARY: 0

DATA REPORTING QUALIFIERS

- U - Indicates the compound was analyzed for but not detected.
- J - Indicates an estimated value used when a compound is detected at less than the specified detection limit.
- B - Indicates the analyte was found in the blank as well as in the sample.
- E - Indicates the analyte concentration exceeds the calibration range of the GC/MS instrument for that specific analyte.



HAMPTON-CLARKE/VERITECH  
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client ID : 2163.3 SOIL  
 Date Recd/Extd: 10/03/96-NYA  
 Sample Matrix : Soil  
 Percent Solid : 84  
 Column : J&W DB-624 75M .53mm ID Column

Lab Sample No. : AA40782  
 Lab File ID : JE9362  
 Date Analyzed : 10/03/96  
 Dilution Factor: 125  
 Sample Wt/Vol : 5.0ml

CONCENTRATION UNITS: UG/KG (PPB)

CAS No.	COMPOUND	PQL	CONC	CAS NO.	COMPOUND	PQL	CONC
74873	Chloromethane	1500	U	124481	Dibromochloromethane	740	U
74839	Bromomethane	1500	U	79005	1,1,2-Trichloroethane	450	U
75014	Vinyl Chloride	740	U	71432	Benzene	150	U
75003	Chloroethane	1500	U	10061026	Trans-1,3-Dichloropropene	740	U
75092	Methylene Chloride	2200	U	110758	2-Chloroethylvinylether	1500	U
67641	Acetone	3000	U	75252	Bromoform	600	U
75150	Carbon Disulfide	740	U	108101	4-Methyl-2-Pentanone	3700	U
75694	Trichlorofluoromethane	740	U	591786	2-Hexanone	3000	U
75354	1,1-Dichloroethene	300	U	127184	Tetrachloroethene	150	U
75343	1,1-Dichloroethane	740	U	79345	1,1,2,2-Tetrachloroethane	300	U
156605	Trans-1,2-Dichloroethene	740	U	108883	Toluene	740	U
67663	Chloroform	740	U	108907	Chlorobenzene	600	U
107062	1,2-Dichloroethane	300	U	100414	Ethylbenzene	740	U
78933	2-Butanone	3700	U	100425	Styrene	740	U
71556	1,1,1-Trichloroethane	740	U	108383	m,p-Xylenes	740	U
56235	Carbon Tetrachloride	300	U	95476	o-Xylene	740	U
108054	Vinyl Acetate	1500	U	541731	1,3-Dichlorobenzene	740	U
75274	Bromodichloromethane	150	U	95501	1,2-Dichlorobenzene	740	U
78875	1,2-Dichloropropane	150	U	106467	1,4-Dichlorobenzene	740	U
10061015	cis-1,3-Dichloropropene	740	U	1634044	Methyl-t-butyl ether	740	U
79016	Trichloroethene	150	U	108263	Di-isopropyl-ether	740	U
				75650	t-Butyl Alcohol	15000	U

TARGET COMPOUND SUMMARY: 0

DATA REPORTING QUALIFIERS

- U - Indicates the compound was analyzed for but not detected.
- J - Indicates an estimated value used when a compound is detected at less than the specified detection limit.
- B - Indicates the analyte was found in the blank as well as in the sample.
- E - Indicates the analyte concentration exceeds the calibration range of the GC/MS instrument for that specific analyte.



HAMPTON-CLARKE/VERITECH  
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client ID : 2143.4 SNIL  
 Date Recd/Extd: 10/03/96-N/A  
 Sample Matrix : Soil  
 Percent Solid : 84  
 Column : J&W DB-624 75M .53mm ID Column

Lab Sample No. : AA40783  
 Lab File ID : >E9388  
 Date Analyzed : 10/04/96  
 Dilution Factor: 5  
 Sample Wt/Vol : 1.0g

CONCENTRATION UNITS: UG/KG (PPB)

CAS No.	COMPOUND	PQL	CONC	CAS NO.	COMPOUND	PQL	CONC
74873	Chloromethane	60	U	124491	Dibromochloromethane	30	U
74839	Bromomethane	60	U	79005	1,1,2-Trichloroethane	18	U
75014	Vinyl Chloride	30	U	71432	Benzene	6	U
75003	Chloroethane	60	U	10061026	Trans-1,3-Dichloropropene	30	U
75092	Methylene Chloride	89	U	110758	2-Chloroethylvinylether	60	U
67641	Acetone	120	U	75252	Bromoform	24	U
75150	Carbon Disulfide	30	U	109101	4-Methyl-2-Pentanone	150	U
75694	Trichlorofluoromethane	30	U	591786	2-Hexanone	120	U
75354	1,1-Dichloroethene	12	U	127184	Tetrachloroethene	6	U
75343	1,1-Dichloroethane	30	U	79345	1,1,2,2-Tetrachloroethane	12	U
156605	Trans-1,2-Dichloroethene	30	U	109993	Toluene	30	U
67663	Chloroform	30	U	109907	Chlorobenzene	24	U
107062	1,2-Dichloroethane	12	U	100414	Ethylbenzene	30	U
78933	2-Butanone	150	U	100425	Styrene	30	U
71556	1,1,1-Trichloroethane	30	U	108383	m&p-Xylenes	30	U
56235	Carbon Tetrachloride	12	U	95476	o-Xylene	30	U
108054	Vinyl Acetate	60	U	541731	1,3-Dichlorobenzene	30	U
75274	Bromodichloromethane	6	U	95501	1,2-Dichlorobenzene	30	U
78875	1,2-Dichloropropane	6	U	106467	1,4-Dichlorobenzene	30	U
10041015	cis-1,3-Dichloropropene	30	U	1634044	Methyl-t-butyl ether	30	U
79016	Trichloroethene	6	U	108203	Di-isopropyl-ether	30	U
				75650	t-Butyl Alcohol	600	U

TARGET COMPOUND SUMMARY: 0

DATA REPORTING QUALIFIERS

- U - Indicates the compound was analyzed for but not detected.
- J - Indicates an estimated value used when a compound is detected at less than the specified detection limit.
- B - Indicates the analyte was found in the blank as well as in the sample.
- E - Indicates the analyte concentration exceeds the calibration range of the GC/MS instrument for that specific analyte.



HAMPTON-CLARKE/VERITECH  
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client ID : 2163.5 FIELD BLANK  
 Date Rcvd/Extd: 10/03/96-N/A  
 Sample Matrix : Water  
 Percent Solid : 0  
 Column : J&W DB-624 75M .53mm ID Column

Lab Sample No. : AA40784  
 Lab File ID : >E9359  
 Date Analyzed : 10/03/96  
 Dilution Factor: 1  
 Sample Wt/Vol : 5.0ml

CONCENTRATION UNITS: UG/L (PPB)

CAS No.	COMPOUND	PQL	CONC	CAS NO.	COMPOUND	PQL	CONC
74873	Chloromethane	10	U	124481	Dibromochloromethane	5	U
74839	Bromomethane	10	U	79005	1,1,2-Trichloroethane	3	U
75014	Vinyl Chloride	5	U	71432	Benzene	1	U
75003	Chloroethane	10	U	10061026	Trans-1,3-Dichloropropene	5	U
75092	Methylene Chloride	15	U	110758	2-Chloroethylvinylether	10	U
67641	Acetone	20	U	75252	Bromoform	4	U
75150	Carbon Disulfide	5	U	108101	4-Methyl-2-Pentanone	25	U
75694	Trichlorofluoromethane	5	U	591786	2-Hexanone	20	U
75354	1,1-Dichloroethene	2	U	127194	Tetrachloroethene	1	U
75343	1,1-Dichloroethane	5	U	79345	1,1,2,2-Tetrachloroethane	2	U
156605	Trans-1,2-Dichloroethene	5	U	108883	Toluene	5	U
67663	Chloroform	5	U	108907	Chlorobenzene	4	U
107062	1,2-Dichloroethane	2	U	100414	Ethylbenzene	5	U
78933	2-Butanone	25	U	100425	Styrene	5	U
71556	1,1,1-Trichloroethane	5	U	108383	m&p-Xylenes	5	U
56235	Carbon Tetrachloride	2	U	95476	o-Xylene	5	U
108054	Vinyl Acetate	10	U	541731	1,3-Dichlorobenzene	5	U
75274	Bromodichloromethane	1	U	95501	1,2-Dichlorobenzene	5	U
78875	1,2-Dichloropropane	1	U	106467	1,4-Dichlorobenzene	5	U
10061015	cis-1,3-Dichloropropene	5	U	1634044	Methyl-t-butyl ether	5	U
79016	Trichloroethene	1	U	108203	Di-isopropyl-ether	5	U
				75650	t-Butyl Alcohol	100	U

TARGET COMPOUND SUMMARY: 0

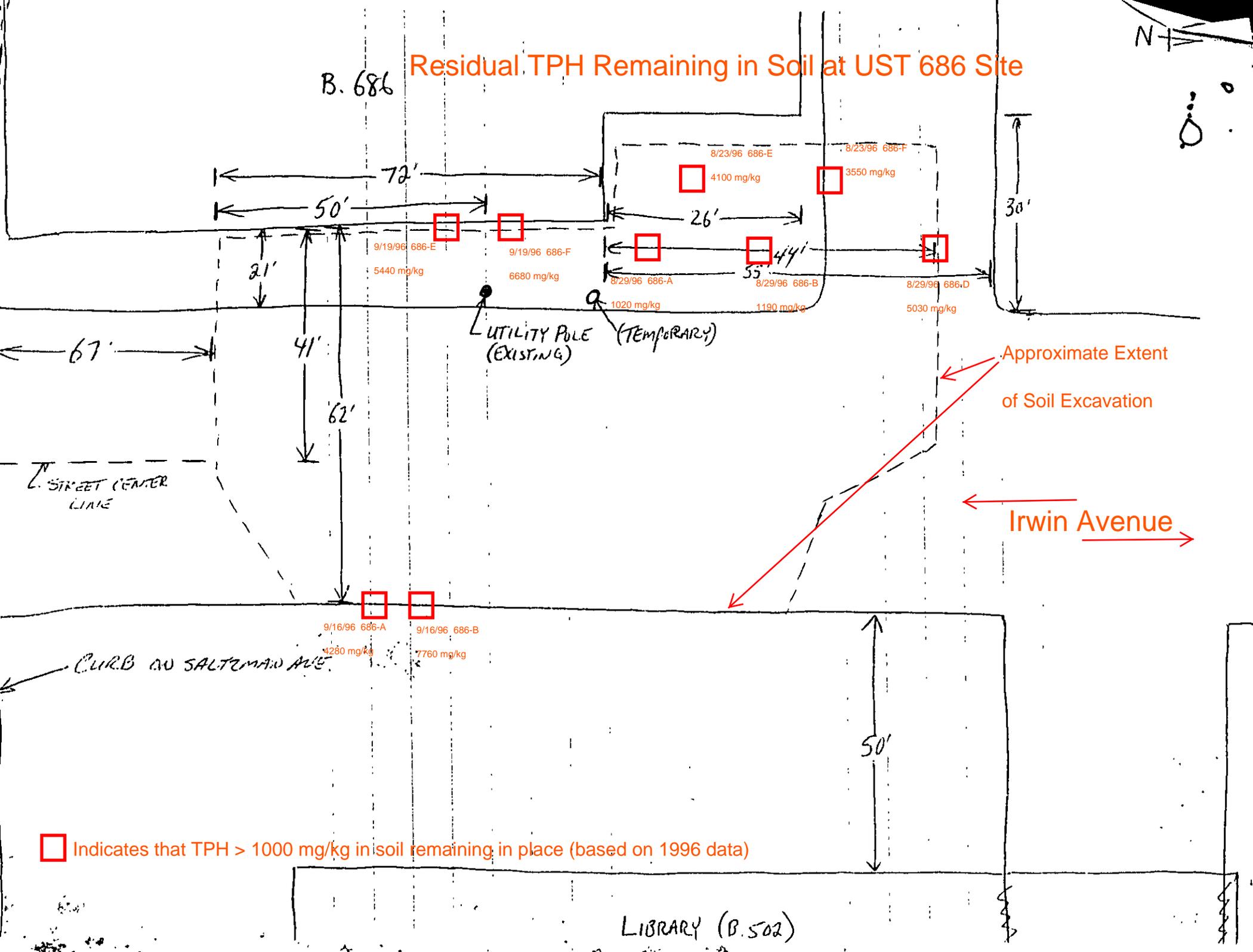
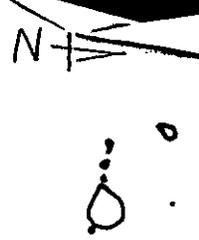
DATA REPORTING QUALIFIERS

- U - Indicates the compound was analyzed for but not detected.
- J - Indicates an estimated value used when a compound is detected at less than the specified detection limit.
- B - Indicates the analyte was found in the blank as well as in the sample.
- E - Indicates the analyte concentration exceeds the calibration range of the GC/MS instrument for that specific analyte.



# Residual TPH Remaining in Soil at UST 686 Site

B. 686



□ Indicates that TPH > 1000 mg/kg in soil remaining in place (based on 1996 data)

Enclosure 2

UST 686 – Excerpts from “Closure and Site Investigation Report for Underground Storage Tanks in the 600 Area” (Versar, 2002)



**United States Army**  
Fort Monmouth, New Jersey

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**Closure and Site Investigation  
Report for Underground Storage  
Tanks In the 600 Area**

***Main Post-West Area***

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Excerpts pertaining to UST 686 provided herein

**February 2002**

**CLOSURE AND SITE INVESTIGATION REPORT  
FOR UNDERGROUND STORAGE TANKS IN THE 600 AREA**

**USTs IN THE 600 AREA:**

**600A, 600B, 611, 615, 618, 619, 621, 634  
638, 639-2, 640, 641, 644, 664, 666, AND 686**

**MAIN POST-WEST AREA**

**FEBRUARY 2002**

**PREPARED FOR:**

**UNITED STATES ARMY, FORT MONMOUTH, NEW JERSEY  
DIRECTORATE OF PUBLIC WORKS  
BUILDING 167  
FORT MONMOUTH, NJ 07703**

**PREPARED BY:**

**VERSAR, INC.  
2558 PEARL BUCK ROAD, SUITE 1  
BRISTOL, PA 19007-6894**

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Appendix A	Soil Sampling Results (sorted by Building)

## 1.0 INTRODUCTION

Versar, Inc. (Versar) was contracted by the United States (U.S.) Army Fort Monmouth (Fort Monmouth), Directorate of Public Works (DPW), Fort Monmouth, New Jersey to prepare UST closure reports at sixty (60) sites at Fort Monmouth, New Jersey. Sixteen (16) of the sites, 600A, 600B, 611, 615, 618, 619, 621, 634, 638, 639-2, 640, 641, 644, 664, 666, and 686, are in the vicinity of Building 600 on the Main Post West Area. These sites cover a relatively small area surrounding Building 600, which has a high level of security. This report summarizes the combined investigation results for these 16 sites. This investigation was conducted in accordance with the Workplan for the 600 Area, which was verbally approved by the NJDEP during a meeting at Fort Monmouth in August 2001.

### 1.1 Background

Fort Monmouth is located in the central-eastern portion of New Jersey in Monmouth County, approximately 45 miles south of New York City and 70 miles northeast of Philadelphia. In addition to the Main Post, the installation includes two subposts, the Charles Wood Area and the Evans Area. The Main Post (Figure 1) encompasses approximately 630 acres and is generally bounded by State Highway 35, Parkers Creek, Lafetra Brook, the New Jersey Transit Railroad, and a residential area to the south. The post was established during WW I, in 1918, as an Army Signal Corps training center. The Main Post currently provides supporting administrative, training, and housing functions, as well as many of the community facilities for Fort Monmouth. The primary mission of Fort Monmouth is to provide command, administrative, and logistical support for Headquarters, U.S. Army Communications and Electronics Command (CECOM). CECOM is a major subordinate command of the U.S. Army Materiel Command (AMC) and is the host tenant at Fort Monmouth. The sites in the vicinity of Building 600 encompass an area of approximately 20 acres. Figure 2 shows the layout of the area and the location of the individual sites in relation to each other.

### 1.2 Objective

The objective of this report is to summarize the work previously performed in the 600 Area and present the results of the new investigations. The purpose of the investigations was to close the remaining 16 UST sites in the 600 Area.

This report includes:

- A description of soil and groundwater sampling activities conducted during the closure investigation;
- The presentation and summary of the results of previously and newly collected soil samples collected from UST sites in the 600 Area; and

- The presentation and summary of the results of previously and newly collected groundwater samples collected from existing monitoring wells and new geoprobe locations in the 600 Area.

exceeded the guidance concentration. Results of the second round of soil sampling conducted September 9, 1994 ranged from 45.1 to 543 mg/kg, which is below the 1,000 mg/kg guidance concentration.

Soil samples were collected from the walls of the UST excavation at former building 621 on August 26, 1994. The highest concentration of TPH detected was 174.3 mg/kg. Most of the samples contained non-detectable concentrations of TPH.

UST 686

On January 18, 1995, six soil samples were collected from the area of the former UST at the former Building 686. The concentrations of TPH detected in these samples ranged from 79.6 to 14,700 mg/kg. Following additional excavation activities on January 27, 1994, soil samples were collected from four locations that exceeded the cleanup criteria. The concentration of TPH was still above cleanup criteria at one location. No additional excavation activities were performed. (Note: additional soil was excavated July-September 1996)

### 3.2 Previous Groundwater Sampling Summary

Six monitoring wells were installed in the vicinity of the 600 area in association with unrelated investigations. Three of the wells, M5-MW15, M5-MW16, and M5-MW25, are located in the northwest corner of the 600 area. Three wells, 699-MW2, 699-MW15, and 616-MW1 are located in the southeast corner of the area. Quarterly samples have been collected from these wells since the time of their installation. Samples were analyzed for volatile and semi-volatile compounds. Because groundwater generally flows away from the center of the 600 area, analytical data collected from these wells located at the edge of the area may be indicative of any impact the former USTs may have had on groundwater quality in the area. The groundwater data is summarized in Table 3-3. This section discusses the data in detail.

Quarterly samples collected from 616-MW1 between April 1997 and December 2001 contained small concentrations of xylenes below NJDEP groundwater quality criteria (GWQC) of 40 ug/L. No other volatile or semi-volatile compounds were detected in this well. Two of the quarterly samples collected from 699-MW15 between November 1995 and December 2001 contained concentrations of methylene chloride below the GWQC of 2 ug/L. Benzene was detected during the June 19, 2001 sample round at a concentrations of 1.33, which exceeds the GWQC. However, benzene was not detected in the two subsequent quarterly sampling rounds. Toluene was also detected in the June 19, 2001 sample at a concentration of 1.82 ug/L, which is below the GWQC.

The first sample collected from 699-MW2 in May 1995 contained several compounds including benzene at a concentration of 3.7 ug/L, which is above the GWQC of 0.2 ug/L. Benzene was detected in only one subsequent sample collected June 19, 2001 and was not detected in the two most recent rounds. Acetone, t-butyl alcohol, methylene chloride, methyl ethyl ketone, toluene, ethyl benzene, and total xylenes were each detected, at low concentrations, during one or more sample rounds. Acetone and methylene chloride are common laboratory contaminants and are not believed to be indicative of site conditions.

On August 25, 1994, soil samples were collected at 621 when the UST was removed. The sample concentrations ranged from undetectable to 174.30 mg/kg TPH. No additional investigation was necessary at this site.

Soil samples were collected at the former location of the UST at 634 on November 19, 2001. The results ranged from undetectable to 1,079.28 mg/kg TPH, just barely above the guidance criteria. Therefore, the samples were also analyzed for VOCs. The only compound detected was methylene chloride.

Five samples collected from the excavation of former UST 640 on November 8, 2001, contained TPH concentrations ranging from 262.25 to 2,922.48 mg/kg except for location 640-1, which contained 10,757.05 mg/kg. The samples were analyzed for VOCs and only contained low levels of the laboratory contaminant, methylene chloride, found in all other samples.

Soil samples were collected at 641 on October 26, 2001. Only two of the samples contained detectable levels of TPH. The sample locations, 641-2 and 641-5, contained 1,585.49 and 347.79 mg/kg TPH. The two samples were analyzed for VOCs and contained no detectable compounds.

Soil samples were collected at 644 on January 3, 2002. Samples contained between 4,616.22 and 8,903.10 mg/kg TPH. One of the sample locations, 644-1, was analyzed for VOCs and contained no volatile compounds.

#### UST 686

Six post-excavation soil samples were collected from 686 at the time of UST removal. Results ranged from 79.60 to 14,700 mg/kg TPH. Following additional soil removal four of the locations were resampled and contained TPH concentrations ranging from 236 at 686-E to 1,400 mg/kg at 686-F. The location 686-F was resampled on November 15, 2001 for TPH and VOC analyses. Soil sample F contained 337.76 mg/kg TPH and no detectable VOCs.

## 5.2 Groundwater Sample Results

The results of the long term monitoring are summarized in section 3.2: Previous Groundwater Sampling Summary. Five of the six wells contain no compounds above GWQC. MW5-MW16 has exceeded the GWQC for tetrachloroethylene in every round collected between April 1999 and September 2001. No other compounds have been detected in groundwater from that well.

Geoprobe groundwater samples were collected at five locations, 600GW-1 through 600GW-5, throughout the 600 area on January 3, 2002 and February 5, 2002. Samples collected at 600GW-1 contained no compounds above method detection limits. The first sample collected at 600GW-2 contained three compounds, naphthalene, 2-methylnaphthalene, and dibenzofuran at concentrations of 89.36 ug/L, 35.38ug/L, and 1.37 ug/L, respectively. The second round collected at 600GW-2 contained acenaphthene

at 1.03 ug/L. Groundwater collected at 600GW-3 contained no detectable compounds during the first sample round and four compounds, 3.58 ug/L of naphthalene, 29.64 ug/L of 2-methylnaphthalene, 1.11 ug/L of acenaphthene, and 2.19 ug/L of phenanthrene, during the second round. There were no compounds detected in the first round collected at 600GW-4. The second round collected from 600GW-4 contained 1.11 ug/L 1,4-dichlorobenzene and 1.92 ug/L 1,2-dichlorobenzene. Several compounds were detected at 600GW-5 during the first round of sample collection, but no compounds were detected at that location during the second round. None of the compounds detected in the geoprobe groundwater samples during either round of sampling exceeded GWQC. The sample results are summarized in Table 3-3.

### **5.3 Recommendations**

Based on soil sampling results, there was only one soil sample collected in the 600 Area that exceeds NJDEP soil cleanup criteria. Sample location 640-1 contained 10,757.05 mg/kg TPH. However, this sample was analyzed for VOCs and contained only one volatile compound, methylene chloride, at very low concentrations that did not exceed the soil cleanup criteria. Methylene chloride is a common laboratory contaminant that is not considered indicative of site conditions. Given that the concentration of TPH detected at 640-1 only slightly exceeded the soil cleanup criteria and the given absence of VOCs in the sample, we respectfully recommend that further action is not necessary at this location. Therefore, no further action is recommended at the 16 individual UST sites in the 600 Area.

Based on groundwater sample results, groundwater collected at the five Geoprobe sample locations has not been impacted by the presence of the former USTs in the 600 Area. Groundwater at one well, MW5-MW16, contains one compound of concern that exceeds the NJDEP GWQC. However, this well is being continuously monitored in association with the investigation at Area M5. Therefore, no further action is recommended for the former USTs in the 600 Area.

**Table 3-1**  
**Summary of Soil Sampling Results for TPH Analysis**

Sample Site ID	Sample Date	Sample ID	TPH Concentration (mg/kg)
644	10/12/01	1	1,297.72
	10/12/01	2	3,203.55
	10/12/01	3	308.93
	10/12/01	4	5,166.71
	10/12/01	5	ND
	01/03/02	1	8,903.10
	01/03/02	2	6,921.76
	01/03/02	3	7,243.03
	01/03/02	4	7,616.32
	01/03/02	5	4,616.22
664	11/14/01	1	ND
	11/14/01	2	ND
	11/14/01	3	ND
	11/14/01	4	ND
	11/14/01	5	ND
	11/14/01	DUP	ND
666	11/14/01	1	ND
	11/14/01	2	ND
	11/14/01	3	ND
	11/14/01	4	ND
	11/14/01	5	ND
	11/14/01	DUP	ND
686	01/18/95	A	79.60
	01/18/95	B	14,700.00
	01/18/95	C	174.00
	01/18/95	D	4,400.00
	01/18/95	E	2,900.00
	01/18/95	F	3,200.00
	01/18/95	G (dup of F)	1,600.00
	01/27/95	B	667.00
	01/27/95	D	342.00
	01/27/95	E	236.00
	01/27/95	F	1,400.00
	11/15/01	piping	256.62
	11/15/01	686/8'	337.76

ND = Not detected above method detection limits.

**Table 3-2  
Summary of Soil Sampling Results for VOCs**

Sample Site ID	Sample Date	Sample ID	Acetone	Chloroform	Ethyl-benzene	Methylene Chloride	Total Xylenes
RDCSCC			1000	19	1000	49	410
600B	11/15/93	A2	<b>0.28</b>	ND	<b>4.50</b>	ND	<b>17.40</b>
	11/15/93	F2	ND	ND	ND	<b>0.20</b>	<b>0.41</b>
	11/15/01	1	ND	ND	ND	<b>1.20</b>	ND
	11/15/01	2	ND	ND	ND	<b>0.66</b>	ND
	11/15/01	3	ND	ND	ND	<b>0.36</b>	ND
	11/15/01	4	ND	ND	ND	<b>0.34</b>	ND
	11/15/01	5	ND	ND	ND	ND	ND
619	10/12/01	E	ND	<b>0.87</b>	ND	ND	ND
	10/12/01	F	ND	<b>6.8</b>	ND	ND	ND
634	11/19/01	1	ND	ND	ND	ND	ND
	11/19/01	2	ND	ND	ND	<b>0.28</b>	ND
	11/19/01	3	ND	ND	ND	<b>0.29</b>	ND
	11/19/01	4	ND	ND	ND	<b>0.33</b>	ND
	11/19/01	5	ND	ND	ND	<b>0.40</b>	ND
640	11/08/01	1	ND	ND	ND	<b>1.50</b>	ND
	11/08/01	2	ND	ND	ND	<b>0.69</b>	ND
	11/08/01	3	ND	ND	ND	<b>0.49</b>	ND
	11/08/01	4	ND	ND	ND	<b>0.40</b>	ND
	11/08/01	5	ND	ND	ND	<b>0.33</b>	ND
641	10/26/01	2	ND	ND	ND	ND	ND
	10/26/01	5	ND	ND	ND	ND	ND
644	10/26/01	1	ND	ND	ND	ND	ND
	10/26/01	2	ND	ND	ND	ND	ND
	10/26/01	3	ND	ND	ND	ND	ND
	10/26/01	4	ND	ND	ND	ND	ND
	10/26/01	5	ND	ND	ND	ND	ND
686	11/15/01	686	ND	ND	ND	ND	ND

All results reported in mg/kg.

RDCSCC =NJDEP Residential Direct Contact Soil Celanup Criteria (mg/kg)

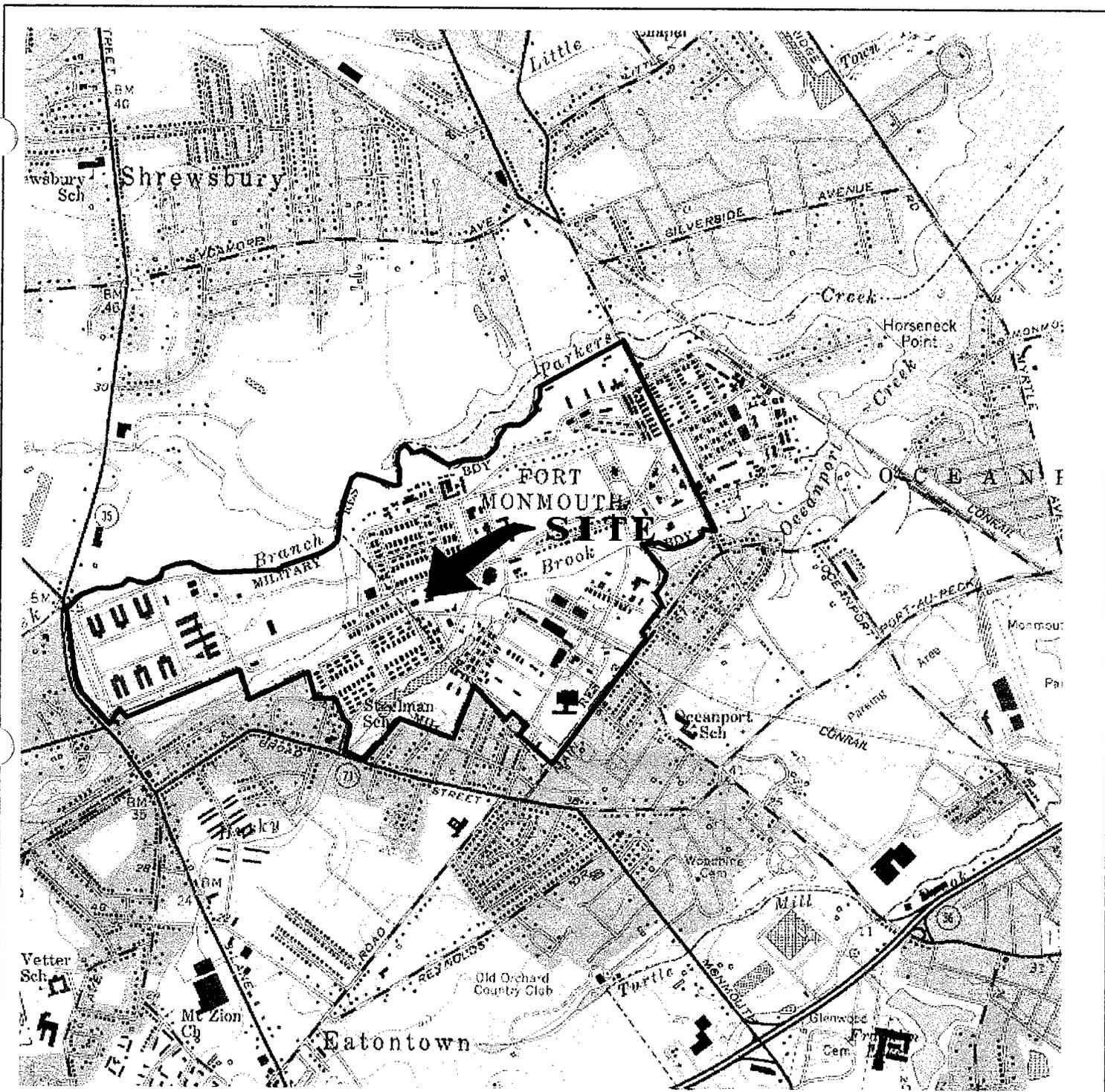
**Table 3-3**  
**Summary of Groundwater Data in the 600 Area**

Monitoring Well	Sample Date	t-butyl alcohol	acetone	methylene chloride	MEK	benzene	toluene	ethyl-benze	total xylenes
616-MW1	04/02/97	ND	ND	ND	ND	ND	ND	ND	ND
	04/02/97	ND	ND	ND	ND	ND	ND	ND	ND
	07/16/97	ND	ND	ND	ND	ND	ND	ND	ND
	07/16/97	ND	ND	ND	ND	ND	ND	ND	ND
	10/07/97	ND	ND	ND	ND	ND	ND	ND	ND
	10/07/97	ND	ND	ND	ND	ND	ND	ND	ND
	01/09/98	ND	ND	ND	ND	ND	ND	ND	ND
	01/09/98	ND	ND	ND	ND	ND	ND	ND	ND
	06/09/98	ND	ND	ND	ND	ND	ND	ND	ND
	06/09/98	ND	ND	ND	ND	ND	ND	ND	ND
	07/29/98	ND	ND	ND	ND	ND	ND	ND	ND
	07/29/98	ND	ND	ND	ND	ND	ND	ND	ND
	12/30/98	ND	ND	ND	ND	ND	ND	ND	ND
	12/30/98	ND	ND	ND	ND	ND	ND	ND	ND
	03/09/99	ND	ND	ND	ND	ND	ND	ND	ND
	06/28/99	ND	ND	ND	ND	ND	ND	ND	3.91
	09/24/99	ND	ND	ND	ND	ND	ND	ND	19.8
	11/30/99	ND	ND	ND	ND	ND	ND	ND	6.95
	03/29/00	ND	ND	ND	ND	ND	ND	ND	ND
	06/16/00	ND	ND	ND	ND	ND	ND	ND	2.27
09/07/00	ND	ND	ND	ND	ND	ND	ND	3.00	
12/28/00	ND	ND	ND	ND	ND	ND	ND	4.35	
03/21/01	ND	ND	ND	ND	ND	ND	ND	ND	
06/19/01	ND	ND	ND	ND	ND	ND	ND	ND	
08/30/01	ND	ND	ND	ND	ND	ND	ND	1.17	
12/13/01	ND	ND	ND	ND	ND	ND	ND	ND	
699-MW15	11/21/95	ND	ND	0.8	ND	ND	ND	ND	ND
	11/21/95	ND	ND	0.8	ND	ND	ND	ND	ND
	02/20/96	ND	ND	0.7	ND	ND	ND	ND	ND
	02/20/96	ND	ND	0.7	ND	ND	ND	ND	ND
	05/22/96	ND	ND	NA	ND	ND	NA	ND	ND
	05/22/96	ND	ND	NA	ND	ND	NA	ND	ND
	10/01/96	ND	ND	NA	ND	ND	NA	ND	ND
	10/01/96	ND	ND	NA	ND	ND	NA	ND	ND
	01/13/97	ND	ND	NA	ND	ND	NA	ND	ND
	01/13/97	ND	ND	NA	ND	ND	NA	ND	ND
	04/02/97	ND	ND	ND	ND	ND	ND	ND	ND
	04/02/97	ND	ND	ND	ND	ND	ND	ND	ND
	07/16/97	ND	ND	ND	ND	ND	ND	ND	ND
	07/16/97	ND	ND	ND	ND	ND	ND	ND	ND
	10/07/97	ND	ND	ND	ND	ND	ND	ND	ND
	10/07/97	ND	ND	ND	ND	ND	ND	ND	ND
	01/09/98	ND	ND	ND	ND	ND	ND	ND	ND
	01/09/98	ND	ND	ND	ND	ND	ND	ND	ND
	06/09/98	ND	ND	ND	ND	ND	ND	ND	ND
	06/09/98	ND	ND	ND	ND	ND	ND	ND	ND
	07/29/98	ND	ND	ND	ND	ND	ND	ND	ND
	07/29/98	ND	ND	ND	ND	ND	ND	ND	ND
	12/30/98	ND	ND	ND	ND	ND	ND	ND	ND
	12/30/98	ND	ND	ND	ND	ND	ND	ND	ND
	03/09/99	ND	ND	ND	ND	ND	ND	ND	ND
	06/28/99	ND	ND	ND	ND	ND	ND	ND	ND
	09/24/99	ND	ND	ND	ND	ND	ND	ND	ND
	11/30/99	ND	ND	ND	ND	ND	ND	ND	ND
	03/29/00	ND	ND	ND	ND	ND	ND	ND	ND
	06/16/00	ND	ND	ND	ND	ND	ND	ND	ND
09/07/00	ND	ND	ND	ND	ND	ND	ND	ND	
12/28/00	ND	ND	ND	ND	ND	ND	ND	ND	
03/12/01	ND	ND	ND	ND	ND	ND	ND	ND	
06/19/01	ND	ND	ND	ND	ND	1.33	1.82	ND	ND
08/30/01	ND	ND	ND	ND	ND	ND	ND	ND	ND
12/13/01	ND	ND	ND	ND	ND	ND	ND	ND	ND
Standards:		5	700	2	300	0.2	1000	700	40

**Table 3-3**  
**Summary of Groundwater Data in the 600 Area**

Monitoring Well	Sample Date	t-butyl alcohol	acetone	methylene chloride	MEK	benzene	toluene	ethyl-benze	total xylenes
699-MW2	05/24/95	2.0	NA	1.0	ND	3.7	16	4.3	24
	05/24/95	2.0	NA	1.0	ND	3.7	16	4.3	24
	08/16/95	ND	NA	1.7	ND	ND	ND	ND	ND
	08/16/95	ND	NA	1.7	ND	ND	ND	ND	ND
	11/20/95	ND	NA	0.8	ND	ND	ND	ND	ND
	11/20/95	ND	NA	0.8	ND	ND	ND	ND	ND
	02/21/96	ND	NA	0.8	ND	ND	ND	ND	ND
	02/21/96	ND	NA	0.8	ND	ND	ND	ND	ND
	05/22/96	NA	NA	NA	ND	NA	NA	NA	NA
	05/22/96	NA	NA	NA	ND	NA	NA	NA	NA
	10/01/96	NA	NA	NA	ND	NA	NA	NA	NA
	10/01/96	NA	NA	NA	ND	NA	NA	NA	NA
	01/13/97	NA	NA	NA	ND	NA	NA	NA	NA
	01/13/97	NA	NA	NA	ND	NA	NA	NA	NA
	04/02/97	ND	ND	ND	ND	ND	ND	ND	ND
	04/02/97	ND	ND	ND	ND	ND	ND	ND	ND
	07/16/97	ND	ND	ND	ND	ND	ND	ND	ND
	07/16/97	ND	ND	ND	ND	ND	ND	ND	ND
	10/07/97	ND	ND	ND	ND	ND	ND	ND	ND
	10/07/97	ND	ND	ND	ND	ND	ND	ND	ND
	01/09/98	ND	ND	ND	ND	ND	ND	ND	ND
	01/09/98	ND	ND	ND	ND	ND	ND	ND	ND
	06/08/98	ND	8.40	ND	ND	ND	ND	ND	ND
	06/08/98	ND	8.40	ND	ND	ND	ND	ND	ND
	07/29/98	ND	ND	ND	3.72	ND	ND	ND	ND
	07/29/98	ND	ND	ND	3.72	ND	ND	ND	ND
	12/30/98	ND	ND	ND	ND	ND	ND	ND	ND
	12/30/98	ND	ND	ND	ND	ND	ND	ND	ND
	03/10/99	ND	ND	ND	ND	ND	ND	ND	ND
	06/28/99	ND	ND	ND	ND	ND	ND	ND	ND
	09/25/99	ND	ND	ND	ND	ND	ND	ND	ND
	11/30/99	ND	ND	ND	ND	ND	ND	ND	ND
03/29/00	ND	ND	ND	ND	ND	ND	ND	ND	
06/16/00	ND	ND	ND	ND	ND	ND	ND	ND	
09/07/00	ND	ND	ND	ND	ND	ND	ND	ND	
12/28/00	ND	ND	ND	ND	ND	ND	ND	ND	
03/12/01	ND	ND	ND	ND	ND	ND	ND	ND	
06/19/01	ND	ND	ND	ND	4.77	24.25	4.29	18.31	
08/30/01	ND	ND	1.84	ND	ND	ND	ND	ND	
12/13/01	ND	ND	ND	ND	ND	ND	ND	ND	
Standards:		5	700	2	300	0.2	1000	700	40

## **Figures**



**FIGURE 1**

LOCATION MAP  
 Building 600 Area  
 Main-Post West  
 Fort Monmouth Army Base  
 Monmouth County, NJ

**VERSAR**  
 Engineers, Managers, Scientists, & Planners  
 Bristol, PA

Scale: 1" = 2000'

Date: FEB 2002

LONG BRANCH, N. J.

40073-C8-TF-024

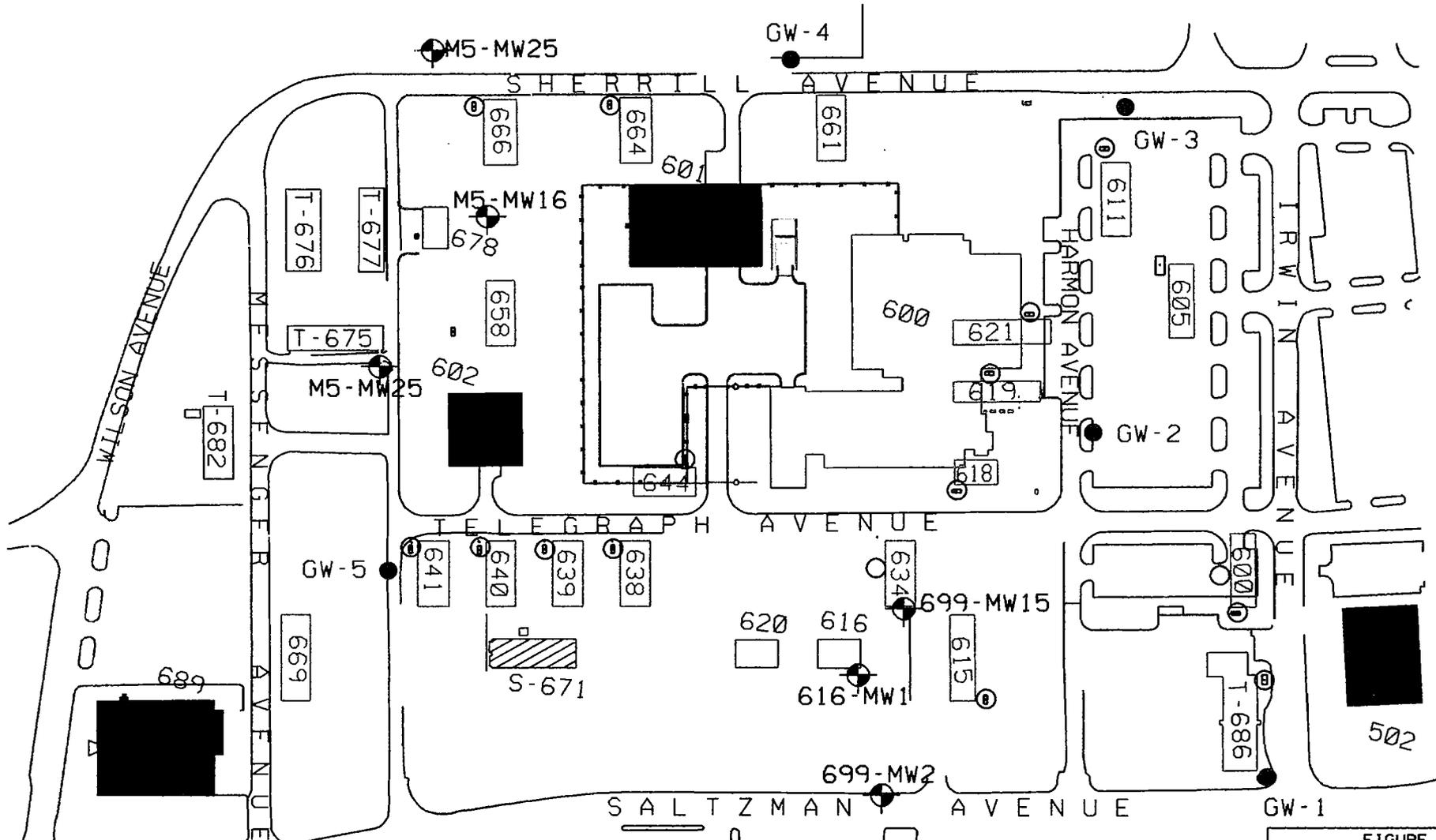
1954

PHOTOREVISED 1981

DMA 6164 I SE-SERIES V822



QUADRANGLE LOCATION



**LEGEND**

- GEOPROBE SOIL SAMPLE(S)
- GEOPROBE GROUNDWATER SAMPLES
- ⊕ MONITORING WELL

644 FORMER BUILDING

**FIGURE 2**  
**SITE LOCATION MAP**  
**600 AREA**  
**FORT MONMOUTH ARMY BASE**  
**MONMOUTH COUNTY, NJ**

**VERSAR**  
 ENGINEERS, MANAGERS, SCIENTISTS & PLANNERS  
 BRISTOL, PA.

SCALE: 1"=200'

DATE: FEB 2002



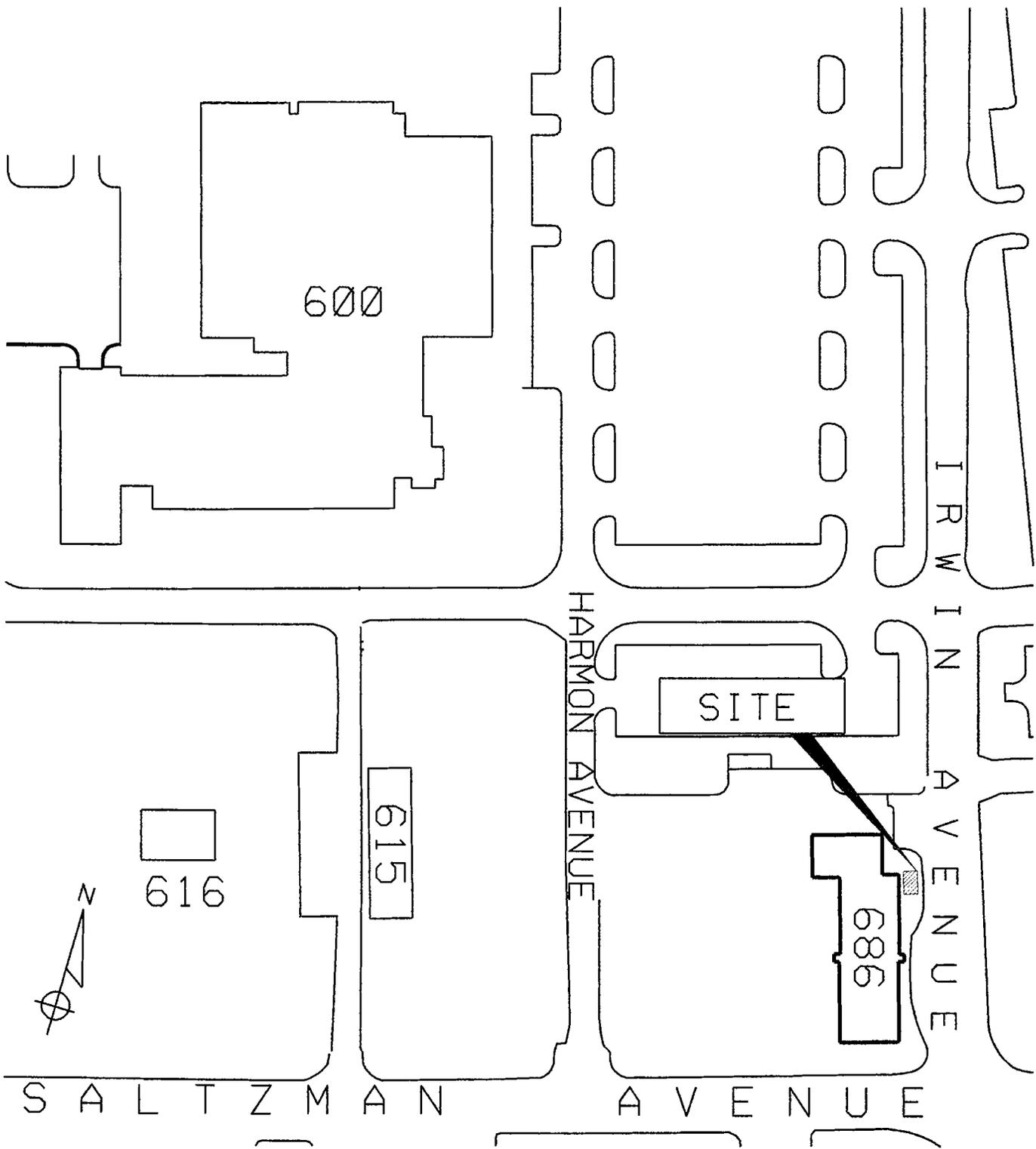
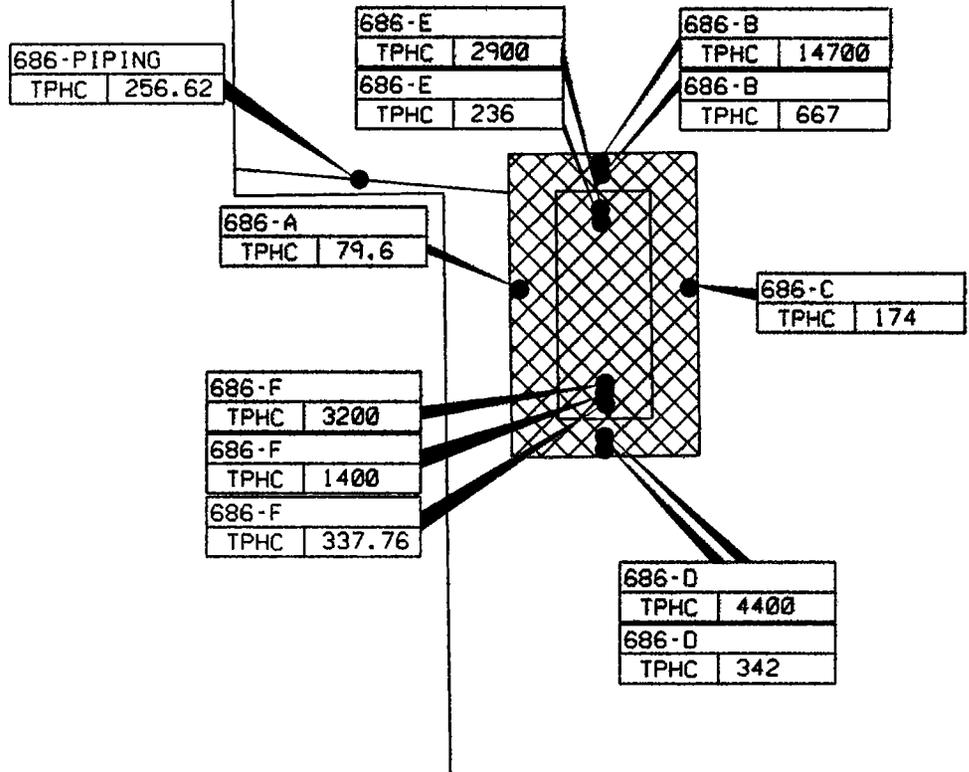


FIGURE 3-16  
 SITE MAP  
 BUILDING 686  
 FORT MONMOUTH ARMY BASE  
 MONMOUTH COUNTY, NJ

VERSAR  
 ENGINEERS, SCIENTISTS & PLANNERS  
 BRISTOL, PA.

SCALE: 1" = 100'

DATE: FEB 2002



**LEGEND**

- SOIL SAMPLE LOCATION (JANUARY 18, 1995)
- SOIL SAMPLE LOCATION (JANUARY 27, 1995)
- SOIL SAMPLE LOCATION (NOVEMBER 15, 2001)

▨ LIMIT OF EXCAVATION

**NOTES:**

1. ALL RESULTS IN MG/KG.
2. SEE TABLE 2 FOR NJDEP SOIL CLEANUP CRITERIA
3. BGS = BELOW GROUND SURFACE



FIGURE 4-16  
SOIL SAMPLING LOCATION MAP  
BUILDING 686  
FORT MONMOUTH ARMY BASE  
MONMOUTH COUNTY, NJ

VERSAR  
ENGINEERS, MANAGERS, SCIENTISTS & PLANNERS  
BRISTOL, PA.

SCALE: 1" = 10'

DATE: FEB 2001

# FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS

PHONE: (732) 532-6224 FAX: (732) 532-6263

WET-CHEM - METALS - ORGANICS - FIELD SAMPLING

CERTIFICATIONS: NJDEP #13461, NYSDOH #11699



ANALYTICAL DATA REPORT  
Fort Monmouth Environmental Laboratory  
ENVIRONMENTAL DIVISION  
Fort Monmouth, New Jersey  
PROJECT: UST Program

## Bldg. 686

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time Of Collection	Date Received
686 Piping/2'	1658601	Soil	15-Nov-01 09:20	11/15/01
686/8'	1658602	Soil	15-Nov-01 09:45	11/15/01
FD/8'	1658603	Soil	15-Nov-01	11/15/01
T. B.	1658604	Methanol	15-Nov-01	11/15/01

ANALYSIS:  
FORT MONMOUTH ENVIRONMENTAL LAB  
VOA+15, TPHC, %SOLIDS

ENCLOSURE:  
CHAIN OF CUSTODY  
RESULTS

  
12-6-01  
Daniel Wright/Date  
Laboratory Director

1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

686

Lab Name: FMETL NJDEP # 13461  
 Project: UST Case No.: 16586 Location: 686 SDG No.: \_\_\_\_\_  
 Matrix: (soil/water) SOIL Lab Sample ID: 1658602  
 Sample wt/vol: 9.9 (g/ml) G Lab File ID: VC007454.D  
 Level: (low/med) MED Date Received: 11/15/01  
 % Moisture: not dec. 13.98 Date Analyzed: 11/20/01  
 GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 125 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/KG	Q
107028	Acrolein		820	U
107131	Acrylonitrile		820	U
75650	tert-Butyl alcohol		1500	U
1634044	Methyl-tert-Butyl ether		350	U
108203	Di-isopropyl ether		230	U
75718	Dichlorodifluoromethane		470	U
74-87-3	Chloromethane		120	U
75-01-4	Vinyl Chloride		350	U
74-83-9	Bromomethane		230	U
75-00-3	Chloroethane		350	U
75-69-4	Trichlorofluoromethane		230	U
75-35-4	1,1-Dichloroethene		120	U
67-64-1	Acetone		230	U
75-15-0	Carbon Disulfide		120	U
75-09-2	Methylene Chloride		170	J
156-60-5	trans-1,2-Dichloroethene		230	U
75-35-3	1,1-Dichloroethane		120	U
108-05-4	Vinyl Acetate		350	U
78-93-3	2-Butanone		350	U
	cis-1,2-Dichloroethene		120	U
67-66-3	Chloroform		120	U
75-55-6	1,1,1-Trichloroethane		120	U
56-23-5	Carbon Tetrachloride		230	U
71-43-2	Benzene		120	U
107-06-2	1,2-Dichloroethane		230	U
79-01-6	Trichloroethene		120	U
78-87-5	1,2-Dichloropropane		120	U
75-27-4	Bromodichloromethane		120	U
110-75-8	2-Chloroethyl vinyl ether		230	U
10061-01-5	cis-1,3-Dichloropropene		120	U
108-10-1	4-Methyl-2-Pentanone		230	U
108-88-3	Toluene		120	U
10061-02-6	trans-1,3-Dichloropropene		230	U
79-00-5	1,1,2-Trichloroethane		230	U
127-18-4	Tetrachloroethene		120	U
591-78-6	2-Hexanone		230	U
126-48-1	Dibromochloromethane		230	U
108-90-7	Chlorobenzene		120	U
100-41-4	Ethylbenzene		230	U

1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

<b>686</b>
------------

Lab Name: FMETL NJDEP # 13461

Project: UST Case No.: 16586 Location: 686 SDG No.: \_\_\_\_\_

Matrix: (soil/water) SOIL Lab Sample ID: 1658602

Sample wt/vol: 9.9 (g/ml) G Lab File ID: VC007454.D

Level: (low/med) MED Date Received: 11/15/01

% Moisture: not dec. 13.98 Date Analyzed: 11/20/01

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 125 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	<u>UG/KG</u>	Q
1330-20-7	m+p-Xylenes		350	U
1330-20-7	o-Xylene		33	J
100-42-5	Styrene		28	J
75-25-2	Bromoform		230	U
79-34-5	1,1,2,2-Tetrachloroethane		230	U
541-73-1	1,3-Dichlorobenzene		350	U
106-46-7	1,4-Dichlorobenzene		350	U
95-50-1	1,2-Dichlorobenzene		350	U

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

<b>686</b>
------------

Lab Name: FMETL NJDEP # 13461

Project: UST Case No.: 16586 Location: 686 SDG No.: \_\_\_\_\_

Matrix: (soil/water) SOIL Lab Sample ID: 1658602

Sample wt/vol: 9.9 (g/ml) G Lab File ID: VC007454.D

Level: (low/med) MED Date Received: 11/15/01

% Moisture: not dec. 13.98 Date Analyzed: 11/20/01

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 125 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 15

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	25.95	8400	J
2.	unknown	30.06	7300	J
3.	unknown	30.64	6800	J
4. 002847-72-5	Decane, 4-methyl-	30.89	8500	JN
5.	unknown	31.93	7200	J
6.	unknown	32.03	7500	J
7. 001678-93-9	Cyclohexane, butyl-	32.17	10000	JN
8.	unknown	32.80	7000	J
9.	unknown	33.65	8400	J
10.	unknown	33.77	8500	J
11.	unknown	33.87	9100	J
12.	unknown	34.43	11000	J
13. 029949-27-7	n-Amylcyclohexane	34.85	12000	JN
14.	unknown	34.95	14000	J
15.	unknown	35.27	7200	J

1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

686 DI

Lab Name: FMETL NJDEP # 13461  
 Project: UST Case No.: 16586 Location: 686 SDG No.: \_\_\_\_\_  
 Matrix: (soil/water) SOIL Lab Sample ID: 1658602  
 Sample wt/vol: 9.9 (g/ml) G Lab File ID: VC007467.D  
 Level: (low/med) MED Date Received: 11/15/01  
 % Moisture: not dec. 13.98 Date Analyzed: 11/26/01  
 GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 25 (uL)

CONCENTRATION UNITS:

CAS NO.            COMPOUND            (ug/L or ug/Kg)    UG/KG            Q

107028	Acrolein	4100	U
107131	Acrylonitrile	4100	U
75650	tert-Butyl alcohol	7600	U
1634044	Methyl-tert-Butyl ether	1800	U
108203	Di-isopropyl ether	1200	U
75718	Dichlorodifluoromethane	2300	U
74-87-3	Chloromethane	590	U
75-01-4	Vinyl Chloride	1800	U
74-83-9	Bromomethane	1200	U
75-00-3	Chloroethane	1800	U
75-69-4	Trichlorofluoromethane	1200	U
75-35-4	1,1-Dichloroethene	590	U
67-64-1	Acetone	1200	U
75-15-0	Carbon Disulfide	590	U
75-09-2	Methylene Chloride	1200	U
156-60-5	trans-1,2-Dichloroethene	1200	U
75-35-3	1,1-Dichloroethane	590	U
108-05-4	Vinyl Acetate	1800	U
78-93-3	2-Butanone	1800	U
	cis-1,2-Dichloroethene	590	U
67-66-3	Chloroform	590	U
75-55-6	1,1,1-Trichloroethane	590	U
56-23-5	Carbon Tetrachloride	1200	U
71-43-2	Benzene	590	U
107-06-2	1,2-Dichloroethane	1200	U
79-01-6	Trichloroethene	590	U
78-87-5	1,2-Dichloropropane	590	U
75-27-4	Bromodichloromethane	590	U
110-75-8	2-Chloroethyl vinyl ether	1200	U
10061-01-5	cis-1,3-Dichloropropene	590	U
108-10-1	4-Methyl-2-Pentanone	1200	U
108-88-3	Toluene	590	U
10061-02-6	trans-1,3-Dichloropropene	1200	U
79-00-5	1,1,2-Trichloroethane	1200	U
127-18-4	Tetrachloroethene	590	U
591-78-6	2-Hexanone	1200	U
126-48-1	Dibromochloromethane	1200	U
108-90-7	Chlorobenzene	590	U
100-41-4	Ethylbenzene	220	J

1A  
VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

<b>686 DI</b>
---------------

Lab Name: FMETL NJDEP # 13461

Project: UST Case No.: 16586 Location: 686 SDG No.: \_\_\_\_\_

Matrix: (soil/water) SOIL Lab Sample ID: 1658602

Sample wt/vol: 9.9 (g/ml) G Lab File ID: VC007467.D

Level: (low/med) MED Date Received: 11/15/01

% Moisture: not dec. 13.98 Date Analyzed: 11/26/01

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 25 (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg)	UG/KG	Q
1330-20-7	m+p-Xylenes		1800	U
1330-20-7	o-Xylene		120	J
100-42-5	Styrene		1200	U
75-25-2	Bromoform		1200	U
79-34-5	1,1,2,2-Tetrachloroethane		1200	U
541-73-1	1,3-Dichlorobenzene		1800	U
106-46-7	1,4-Dichlorobenzene		1800	U
95-50-1	1,2-Dichlorobenzene		1800	U

**TPHC**





Enclosure 3

UST 686 – January 2010 Soil and Groundwater Sampling



Scope of Work for Parcel 51

Background

A Geoprobe rig will be utilized for the installation of one (1) temporary groundwater monitoring point (51-TMP-1) west of Building 502 at former hydropunch location designated P51-G12 (see Figure 3.12-1 prepared by Shaw Environmental, Inc. entitled "Parcel 51 Sample Locations and Constituents of Concern" for location).

Purpose

To confirm the concentration of 2-methylnaphthalene (40.51 µg/L) reported in the water sample collected from P51-g12. The GWQS for 2-methylnaphthalene is 30 µg/L.

Scope of Work

Install a 2-inch diameter, PVC temporary monitoring point (0.010-inch factory slotted screen) at P51-G12. The temporary monitoring point will be installed using a sufficient length of screen to ensure it's screened across the groundwater table. The temporary monitoring point will be purged with a peristaltic pump until the purge water is free of suspended sediments. Following purging, a water sample will be collected from the pump for 2-methylnaphthalene analysis. After the groundwater sample is collected, the temporary monitoring point will be removed from the borehole and the borehole grouted/backfilled to grade surface.

The groundwater sample will be analyzed for 2-methylnaphthalene only using U.S. EPA approved test method.

1 - amber liter

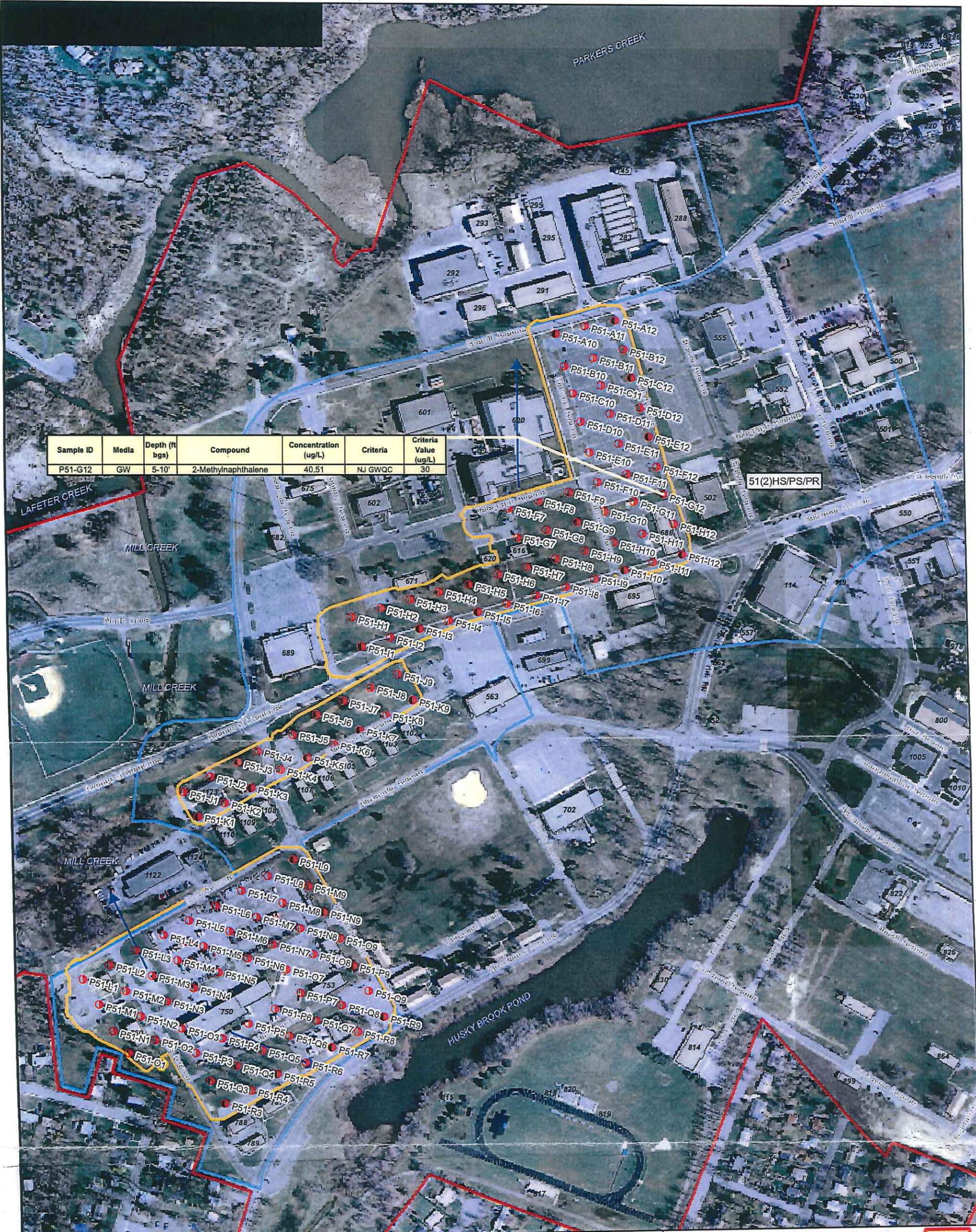
9:00 - 12:00

Bore hole 10'

Screen 5' - 10' BGS

Soil sample 7.0 - 7.5 screen plus odor OVM + 100 ppm

Service Order #  
1055460

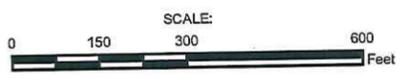


Sample ID	Media	Depth (ft bgs)	Compound	Concentration (ug/L)	Criteria	Criteria Value (ug/L)
P51-G12	GW	5-10'	2-Methylnaphthalene	40.51	NJ GWQC	30

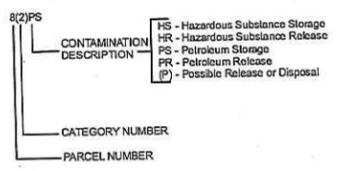
**LEGEND**

- Geoprobe Soil Sample Location
- Geoprobe Soil & Groundwater Sample Location
- Generalized Groundwater Flow Direction. Direction of Generalized Groundwater Flow derived from qualitative evaluation of surface topography, surface water features, and pre-existing IRP site groundwater potentiometric maps where available.
- Geophysical Investigation Area - Electromagnetic (EM) and Ground Penetrating Radar (GPR)
- Building
- Installation Boundary

- ECP PARCEL CATEGORY DEFINITIONS**
- 2 Areas where only release or disposal of petroleum products has occurred.



**BRAC PARCEL LABEL DEFINITIONS**



Base Realignment and Closure 2005

**Shaw** Shaw Environmental, Inc.

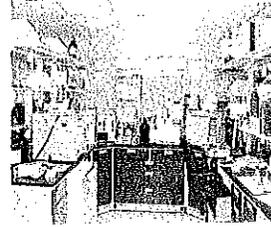
**FIGURE 3.12-1**  
**FORT MONMOUTH ECP**  
**SITE INVESTIGATION**  
**PARCEL 51 SAMPLE LOCATIONS**  
**AND CONSTITUENTS OF CONCERN**  
 MAIN POST  
 FORT MONMOUTH  
 NEW JERSEY





# FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS  
PHONE: (732) 532-6224 FAX: (732) 532-6263  
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING  
CERTIFICATIONS: NJDEP #13461

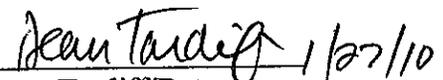


ANALYTICAL DATA REPORT  
Fort Monmouth Environmental Laboratory  
ENVIRONMENTAL DIVISION  
Fort Monmouth, New Jersey  
PROJECT: Parcel 51

### Parcel/51

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
Field Blank	1001101	Aqueous	07-Jan-10 11:15	01/07/10
51-TMP 1	1001102	Aqueous	07-Jan-10 11:30	01/07/10

ANALYSIS:  
ACCUTEST LABORATORIES  
BN+15

  
Dean Tardiff/Date:  
Laboratory Manager



## Report of Analysis

Client Sample ID:	1001102 51 TMP 1	Date Sampled:	01/07/10
Lab Sample ID:	JA37201-2	Date Received:	01/11/10
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	Parcel 51		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	P47284.D	1	01/14/10	KLS	01/12/10	OP41775	EP2018
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

## BN TCL42 List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	5.6	1.0	0.37	ug/l	
98-86-2	Acetophenone	ND	5.0	0.40	ug/l	
1912-24-9	Atrazine	ND	5.0	0.39	ug/l	
100-52-7	Benzaldehyde	ND	5.0	0.40	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	2.0	0.35	ug/l	
85-68-7	Butyl benzyl phthalate	ND	2.0	0.25	ug/l	
92-52-4	1,1'-Biphenyl	7.3	2.0	0.42	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.42	ug/l	
106-47-8	4-Chloroaniline	ND	5.0	0.25	ug/l	
86-74-8	Carbazole	2.3	2.0	0.17	ug/l	
105-60-2	Caprolactam	ND	2.0	0.20	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	2.0	0.25	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	2.0	0.31	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	2.0	0.39	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	2.0	0.35	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	2.0	0.22	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	2.0	0.33	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	0.30	ug/l	
132-64-9	Dibenzofuran	5.6	5.0	0.30	ug/l	
84-74-2	Di-n-butyl phthalate	ND	2.0	0.19	ug/l	
117-84-0	Di-n-octyl phthalate	ND	2.0	0.40	ug/l	
84-66-2	Diethyl phthalate	ND	2.0	0.17	ug/l	
131-11-3	Dimethyl phthalate	ND	2.0	0.23	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.33	ug/l	
86-73-7	Fluorene	10.2	1.0	0.27	ug/l	
87-68-3	Hexachlorobutadiene	ND	1.0	0.37	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	20	0.67	ug/l	
67-72-1	Hexachloroethane	ND	5.0	0.26	ug/l	
78-59-1	Isophorone	ND	2.0	0.25	ug/l	
91-57-6	2-Methylnaphthalene	85.6	2.0	0.66	ug/l	
88-74-4	2-Nitroaniline	ND	5.0	0.24	ug/l	
99-09-2	3-Nitroaniline	ND	5.0	0.29	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

000011

## Report of Analysis

Client Sample ID:	1001102 51 TMP 1	Date Sampled:	01/07/10
Lab Sample ID:	JA37201-2	Date Received:	01/11/10
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	Parcel 51		

## BN TCL42 List

CAS No.	Compound	Result	RL	MDL	Units	Q
100-01-6	4-Nitroaniline	ND	5.0	0.18	ug/l	
91-20-3	Naphthalene	48.3	1.0	0.43	ug/l	
98-95-3	Nitrobenzene	ND	2.0	0.25	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	2.0	0.44	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.22	ug/l	
85-01-8	Phenanthrene	13.2	1.0	0.21	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	62%		25-112%
321-60-8	2-Fluorobiphenyl	60%		31-106%
1718-51-0	Terphenyl-d14	30%		14-122%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	C3 alkyl benzene	5.37	32	ug/l	J
	C4 alkyl benzene	7.40	39	ug/l	J
	alkane	8.76	40	ug/l	J
91-57-6	Naphthalene, 1-methyl-	9.38	73	ug/l	JN
	Naphthalene tetrahydro	10.25	29	ug/l	J
	Naphthalene dimethyl	10.41	53	ug/l	J
	Naphthalene dimethyl	10.57	65	ug/l	J
	Naphthalene dimethyl	10.62	34	ug/l	J
	alkane	10.86	53	ug/l	J
	Naphthalene dimethyl	10.96	38	ug/l	J
	unknown	11.04	32	ug/l	J
	Naphthalene trimethyl	11.68	31	ug/l	J
	Naphthalene trimethyl	11.90	56	ug/l	J
	alkane	12.72	52	ug/l	J
	alkane	13.25	94	ug/l	J
	Total TIC, Semi-Volatile		721	ug/l	J

ND = Not detected MDL - Method Detection Limit  
 RL = Reporting Limit  
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J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

000012

## Report of Analysis

Client Sample ID: 1001102 51 TMP 1

Lab Sample ID: JA37201-2

Date Sampled: 01/07/10

Matrix: AQ - Ground Water

Date Received: 01/11/10

Method: SW846 8270C BY SIM SW846 3510C

Percent Solids: n/a

Project: Parcel 51

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4M14649.D	1	01/13/10	KLS	01/12/10	OP41775A	E4M661
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
208-96-8	Acenaphthylene	ND	0.10	0.039	ug/l	
120-12-7	Anthracene	0.412	0.10	0.026	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.10	0.024	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.031	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.10	0.036	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.029	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.028	ug/l	
218-01-9	Chrysene	ND	0.10	0.022	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.023	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.024	ug/l	
118-74-1	Hexachlorobenzene	ND	0.020	0.0099	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.029	ug/l	
129-00-0	Pyrene	0.742	0.10	0.022	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	45%		18-119%
321-60-8	2-Fluorobiphenyl	42%		18-104%
1718-51-0	Terphenyl-d14	28%		13-109%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
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J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

000013

## LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

THIS FORM MUST BE COMPLETED BY THE LABORATORY OR ENVIRONMENTAL CONSULTANT AND ACCOMPANY ALL DATA SUBMISSIONS

The following Laboratory Deliverables Checklist and Non-Conformance Summary shall be included in the data submission. All deviations from the accepted methodology and procedures, of performance values outside acceptable ranges shall be summarized in the Non-Conformance Summary. The Technical Requirements for Site Remediation, effective June 7, 1993, provides further details. The document shall be bound and paginated, contain a table of contents, and all pages shall be legible. Incomplete data packages will be returned or held without review until the data package is completed.

It is recommended that the analytical results summary sheets listing all targeted and non-targeted compounds with the method detection limits, practical quantitation limits, and the laboratory and/or sample numbers be included in one section of the data package and in the main body of the report.

- |     |  |                                     |
|-----|--|-------------------------------------|
| 1.  | Cover Page, Title Page listing Lab Certification #, facility name and address, & date of report submitted. | <input checked="" type="checkbox"/> |
| 2.  | Table of Contents submitted.   | <input checked="" type="checkbox"/> |
| 3.  | Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted.           | <input checked="" type="checkbox"/> |
| 4.  | Document paginated and legible.  | <input checked="" type="checkbox"/> |
| 5.  | Chain of Custody submitted.  | <input checked="" type="checkbox"/> |
| 6.  | Samples submitted to lab within 48 hours of sample collection.   | <input checked="" type="checkbox"/> |
| 7.  | Methodology Summary submitted.   | <input checked="" type="checkbox"/> |
| 8.  | Laboratory Chronicle and Holding Time Check submitted.   | <input checked="" type="checkbox"/> |
| 9.  | Results submitted on a dry weight basis.   | <input checked="" type="checkbox"/> |
| 10. | Method Detection Limits submitted.   | <input checked="" type="checkbox"/> |
| 11. | Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP.  | <input checked="" type="checkbox"/> |

Laboratory Manager or Environmental Consultant's Signature \_\_\_\_\_

Date: 1/27/10

*Sean Tandy*

Laboratory Certification # 13461

\*Refer to NJAC 7:26E -- Appendix A, Section IV -- Reduced Data Deliverables -- Non-USEPA/CLP Methods for further guidance.

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## Laboratory Authentication Statement

I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N.J.A.C. 7:18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW-846 for Solid Waste Analysis. I have personally examined the information contained in this report and to the best of my knowledge, I believe that the submitted information is true, accurate, complete and meets the above referenced standards where applicable. I am aware that there are significant penalties for purposefully submitting falsified information, including the possibility of a fine and imprisonment.

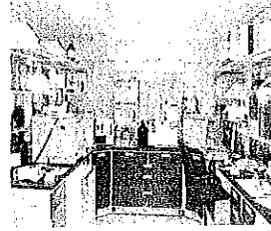
  
\_\_\_\_\_  
Dean Tardiff  
Laboratory Manager

000123



# FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS  
PHONE: (732) 532-6224 FAX: (732) 532-6263  
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING  
CERTIFICATIONS: NJDEP #13461



ANALYTICAL DATA REPORT  
Fort Monmouth Environmental Laboratory  
ENVIRONMENTAL DIVISION  
Fort Monmouth, New Jersey  
PROJECT: Parcel 51

**Parcel/51**

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
51-TMP1 7.0-7.5'	1001201	Soil	08-Jan-10 08:30	01/08/10

ANALYSIS:  
ACCUTEST LABORATORIES  
BN+15, %SOLIDS

*Dean Tardiff* 1/27/10  
\_\_\_\_\_  
Dean Tardiff/Date:  
Laboratory Manager



## Report of Analysis

Client Sample ID:	1001201 51-TMPA(7.0-6.5)	Date Sampled:	01/08/10
Lab Sample ID:	JA37202-1	Date Received:	01/11/10
Matrix:	SO - Soil	Percent Solids:	80.2
Method:	SW846 8270C SW846 3550B		
Project:	Parcel 51		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3M16671.D	1	01/13/10	KLS	01/12/10	OP41765	E3M731
Run #2	3M16726.D	10	01/14/10	KLS	01/12/10	OP41765	E3M732
Run #3	3M16727.D	100	01/14/10	KLS	01/12/10	OP41765	E3M732

Run #	Initial Weight	Final Volume
Run #1	35.0 g	1.0 ml
Run #2	35.0 g	1.0 ml
Run #3	35.0 g	1.0 ml

## BN TCL List (CLP4.2 list)

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	617	36	10	ug/kg	
208-96-8	Acenaphthylene	ND	36	11	ug/kg	
98-86-2	Acetophenone	ND	180	6.3	ug/kg	
120-12-7	Anthracene	ND	36	12	ug/kg	
1912-24-9	Atrazine	ND	180	7.0	ug/kg	
50-32-8	Benzo(a)pyrene	ND	36	11	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	36	12	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	36	13	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	36	13	ug/kg	
101-55-3	4-Bromophenyl phenyl ether	ND	71	13	ug/kg	
85-68-7	Butyl benzyl phthalate	ND	71	21	ug/kg	
92-52-4	1,1'-Biphenyl	3160 <sup>a</sup>	710	41	ug/kg	
100-52-7	Benzaldehyde	ND	180	8.2	ug/kg	
91-58-7	2-Chloronaphthalene	ND	71	11	ug/kg	
106-47-8	4-Chloroaniline	ND	180	11	ug/kg	
86-74-8	Carbazole	ND	71	16	ug/kg	
105-60-2	Caprolactam	ND	71	11	ug/kg	
111-91-1	bis(2-Chloroethoxy)methane	ND	71	14	ug/kg	
111-44-4	bis(2-Chloroethyl)ether	ND	71	11	ug/kg	
108-60-1	bis(2-Chloroisopropyl)ether	ND	71	11	ug/kg	
7005-72-3	4-Chlorophenyl phenyl ether	ND	71	11	ug/kg	
121-14-2	2,4-Dinitrotoluene	ND	71	16	ug/kg	
606-20-2	2,6-Dinitrotoluene	ND	71	14	ug/kg	
91-94-1	3,3'-Dichlorobenzidine	ND	180	9.0	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	36	12	ug/kg	
132-64-9	Dibenzofuran	1240	71	11	ug/kg	
84-74-2	Di-n-butyl phthalate	ND	71	7.9	ug/kg	
117-84-0	Di-n-octyl phthalate	ND	71	17	ug/kg	
84-66-2	Diethyl phthalate	ND	71	12	ug/kg	
131-11-3	Dimethyl phthalate	ND	71	13	ug/kg	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

000009

## Report of Analysis

Client Sample ID:	1001201 51-TMPA(7.0-6.5)	Date Sampled:	01/08/10
Lab Sample ID:	JA37202-1	Date Received:	01/11/10
Matrix:	SO - Soil	Percent Solids:	80.2
Method:	SW846 8270C SW846 3550B		
Project:	Parcel 51		

## BN TCL List (CLP4.2 list)

CAS No.	Compound	Result	RL	MDL	Units	Q
117-81-7	bis(2-Ethylhexyl)phthalate	ND	71	31	ug/kg	
206-44-0	Fluoranthene	ND	36	16	ug/kg	
86-73-7	Fluorene	2700	36	12	ug/kg	
118-74-1	Hexachlorobenzene	ND	71	12	ug/kg	
87-68-3	Hexachlorobutadiene	ND	36	9.9	ug/kg	
77-47-4	Hexachlorocyclopentadiene	ND	710	36	ug/kg	
67-72-1	Hexachloroethane	ND	180	9.9	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	36	12	ug/kg	
78-59-1	Isophorone	ND	71	9.6	ug/kg	
91-57-6	2-Methylnaphthalene	34100 <sup>b</sup>	7100	2000	ug/kg	
88-74-4	2-Nitroaniline	ND	180	16	ug/kg	
99-09-2	3-Nitroaniline	ND	180	14	ug/kg	
100-01-6	4-Nitroaniline	ND	180	14	ug/kg	
91-20-3	Naphthalene	11300 <sup>a</sup>	360	97	ug/kg	
98-95-3	Nitrobenzene	ND	71	10	ug/kg	
621-64-7	N-Nitroso-di-n-propylamine	ND	71	8.7	ug/kg	
86-30-6	N-Nitrosodiphenylamine	ND	180	21	ug/kg	
85-01-8	Phenanthrene	10500 <sup>a</sup>	360	160	ug/kg	
129-00-0	Pyrene	1730	36	14	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Run# 3	Limits
4165-60-0	Nitrobenzene-d5	73%	81%	0% <sup>c</sup>	28-113%
321-60-8	2-Fluorobiphenyl	96%	85%	0% <sup>c</sup>	38-107%
1718-51-0	Terphenyl-d14	142% <sup>d</sup>	87%	0% <sup>c</sup>	31-116%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	alkane	3.95	1400	ug/kg	J
	C4 alkyl benzene	4.11	1300	ug/kg	J
	Naphthalene decahydro	4.16	1200	ug/kg	J
	C4 alkyl benzene	4.39	1300	ug/kg	J
	C4 alkyl benzene	4.47	4600	ug/kg	J
	unknown	4.89	1800	ug/kg	J
	C4 alkyl benzene	5.17	1500	ug/kg	J
	alkane	6.35	2200	ug/kg	J
	Naphthalene trimethyl	8.92	1400	ug/kg	J
	Phenanthrene dimethyl	12.26	1200	ug/kg	J
	unknown	12.55	4800	ug/kg	J
	unknown	12.61	3000	ug/kg	J

ND = Not detected MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

000010

Report of Analysis

Client Sample ID: 1001201 51-TMPA(7.0-6.5)	Date Sampled: 01/08/10
Lab Sample ID: JA37202-1	Date Received: 01/11/10
Matrix: SO - Soil	Percent Solids: 80.2
Method: SW846 8270C SW846 3550B	
Project: Parcel 51	

BN TCL List (CLP4.2 list)

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	unknown	12.82	5800	ug/kg	J
	unknown	12.87	5600	ug/kg	J
	alkane	13.05	1700	ug/kg	J
	Total TIC, Semi-Volatile		38800	ug/kg	J

- (a) Result is from Run# 2
- (b) Result is from Run# 3
- (c) Outside control limits due to dilution.
- (d) Outside control limits due to matrix interference.

ND = Not detected MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

000011

Report of Analysis

Client Sample ID:	1001201 51-TMPA(7.0-6.5)	Date Sampled:	01/08/10
Lab Sample ID:	JA37202-1	Date Received:	01/11/10
Matrix:	SO - Soil	Percent Solids:	80.2
Method:	SW846 8270C BY SIM SW846 3550B		
Project:	Parcel 51		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4M14664.D	1	01/14/10	KLS	01/12/10	OP41765A	E4M662
Run #2							

Run #	Initial Weight	Final Volume
Run #1	35.0 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
208-96-8	Acenaphthylene	ND	3.6	1.0	ug/kg	
120-12-7	Anthracene	137	3.6	0.36	ug/kg	
56-55-3	Benzo(a)anthracene	42.9	3.6	0.47	ug/kg	
50-32-8	Benzo(a)pyrene	9.04	3.6	0.53	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	3.6	1.8	ug/kg	
191-24-2	Benzo(g,h,i)perylene	6.93	3.6	1.3	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	3.6	0.85	ug/kg	
218-01-9	Chrysene	84.7	3.6	0.48	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	5.73	3.6	1.0	ug/kg	
206-44-0	Fluoranthene	119	3.6	0.35	ug/kg	
118-74-1	Hexachlorobenzene	ND	3.6	0.53	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	9.10	3.6	1.4	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	72%		17-113%
321-60-8	2-Fluorobiphenyl	68%		21-100%
1718-51-0	Terphenyl-d14	72%		15-111%

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000012

## LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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It is recommended that the analytical results summary sheets listing all targeted and non-targeted compounds with the method detection limits, practical quantitation limits, and the laboratory and/or sample numbers be included in one section of the data package and in the main body of the report.

- |     |  |   |
|-----|--|---|
| 1.  | Cover Page, Title Page listing Lab Certification #, facility name and address, & date of report submitted. | ✓ |
| 2.  | Table of Contents submitted.   | ✓ |
| 3.  | Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted.           | ✓ |
| 4.  | Document paginated and legible.  | ✓ |
| 5.  | Chain of Custody submitted.  | ✓ |
| 6.  | Samples submitted to lab within 48 hours of sample collection.   | ✓ |
| 7.  | Methodology Summary submitted.   | ✓ |
| 8.  | Laboratory Chronicle and Holding Time Check submitted.   | ✓ |
| 9.  | Results submitted on a dry weight basis.   | ✓ |
| 10. | Method Detection Limits submitted.   | ✓ |
| 11. | Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP.  | ✓ |

Laboratory Manager or Environmental Consultant's Signature

Date: 1/27/10

*Dean Tarant*

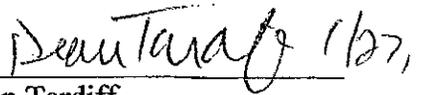
Laboratory Certification # 13461

\*Refer to NJAC 7:26E – Appendix A, Section IV – Reduced Data Deliverables – Non-USEPA/CLP Methods for further guidance.

000122

## 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.

  
\_\_\_\_\_  
Dean Tardiff  
Laboratory Manager

000123

Enclosure 4

UST 686 – November 2010 Soil and Groundwater Sampling



## Scope of Work for Parcel 51 (Revised 10/05/10)

### Background

On January 7, 2010, TECOM-Vinnell Services (TVS) installed temporary groundwater monitoring point 51-TMP-1 to confirm the concentration of 2-methylnaphthalene (40.51 µg/L) detected in groundwater samples collected from temporary groundwater monitoring point P51-G12 installed on November 8, 2007 by Shaw Environmental. The concentration of 2-methylnaphthalene detected in groundwater samples collected from temporary well point 51-TMP-1 were as follows:

Compound	Concentration	GWQS
	µg/L	
2-Methylnaphthalene	85.6	30

During the installation of 51-TMP-1, the TVS Geoprobe operator detected a petroleum-like odor in the soil. Consequently, he obtained an acetate sleeve of soil from the 4.0-8.0 foot depth interval. He capped both ends of the core and brought it back to the DPW Environmental Laboratory, storing the core outside where the temperature was <32 degrees Fahrenheit.

On January 8, 2010, the Geoprobe operator and the hydrogeologist present screened the core with a calibrated OVM. OVM results are as follows:

Depth	OVM Reading (ppm)
4.0-6.0	0.0
6.0	21.7
6.5	39.8
7.0	>100
7.5	45
8.0	36.1

Based on these readings, a biased soil sample was collected at the 7.0-7.5 depth interval and submitted to the DPW Environmental Laboratory for BN+15 analysis. Compounds that were determined to exceed NJDEP soil remediation standards were as follows:

Compound	Concentration	Residential SRS	Non-residential RSRS	IGW SRS
	milligrams/kilogram (dry weight)			
2-Methylnaphthalene	34.1	230	2,400	5
Naphthalene	11.3	6	17	16

### Purpose

To delineate concentrations of 2-methylnaphthalene detected in soil and groundwater at 51-TMP-1.

### Scope of Work

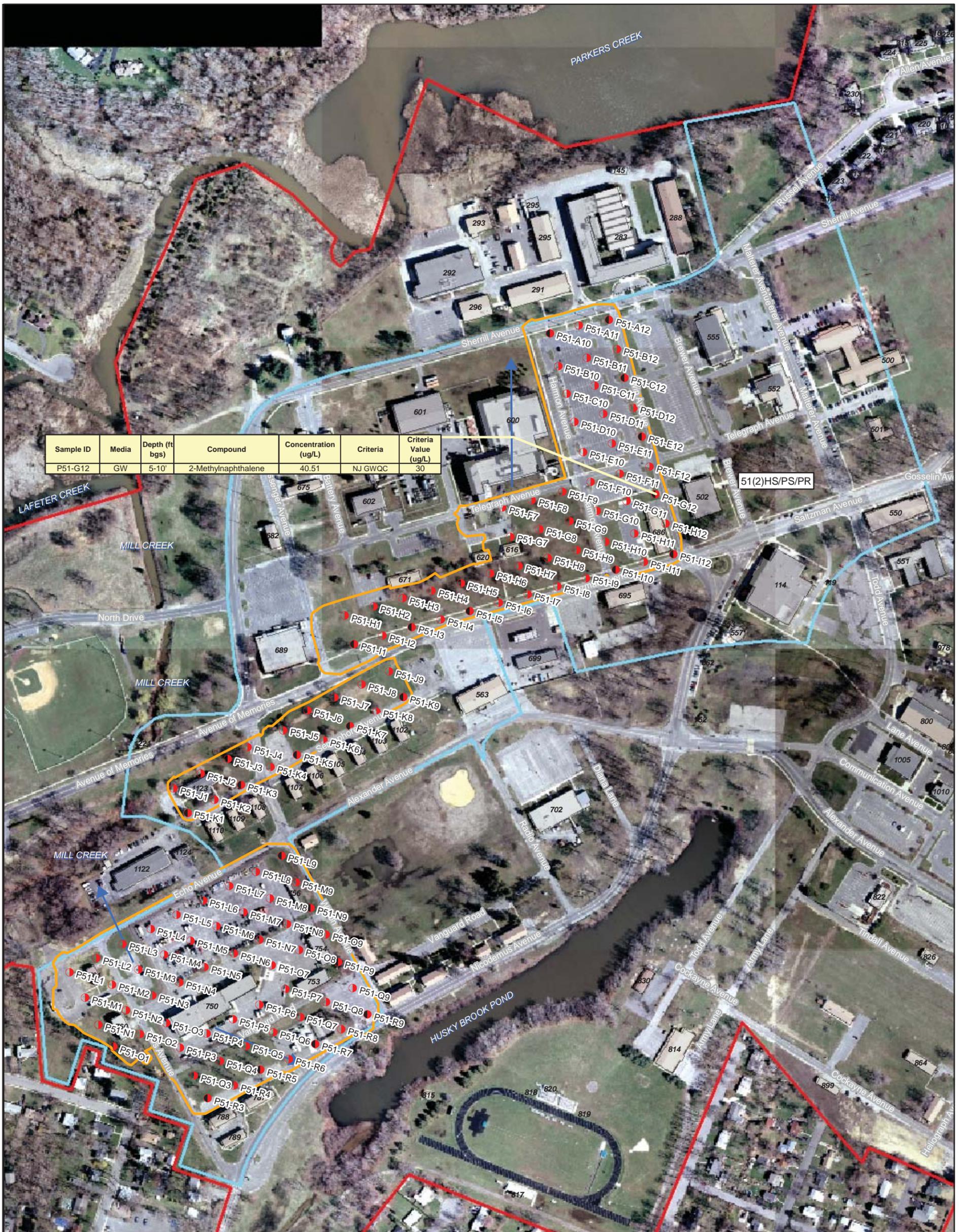
Advance four soil borings (P51SB-1, P51SB-2, P51SB-3, and P51SB-4) to the groundwater table. Scan the soil column collected in each acetate sleeve with a photoionization detector (PID). Collect a single soil sample at the 7.0-7.5 depth interval from each soil boring, biased to the highest PID reading and/or area of observed staining. Submit soil samples to Fort Monmouth laboratory for BN+15 and VO+10 analysis.

Install one, 2-inch diameter, PVC temporary monitoring point in the borehole of soil boring P51SB-2. Ensure that the temporary well point is screened across the groundwater table and purge the temporary well point with a peristaltic

pump until the purge water is free of suspended sediments. Following purging, collect a groundwater sample using a dedicated bailer and submit it to the DPW Environmental Laboratory for BN+15 and VO+10 analyses. After groundwater sample is collected, remove the temporary monitoring point from the borehole and backfill it to grade.

Collect a groundwater sample from monitoring well 600MW01 and analyze it for BN+15 and VO+10. Note that this monitoring well is not part of the current groundwater sampling schedule. Neither electronic nor hard copies of historical groundwater analytical data could be located for 600MW01. The well record indicates that 600MW01 was installed on July 11, 1994.

#### **Results/Recommendations**



Sample ID	Media	Depth (ft bgs)	Compound	Concentration (ug/L)	Criteria	Criteria Value (ug/L)
P51-G12	GW	5-10'	2-Methylnaphthalene	40.51	NJ GWQC	30

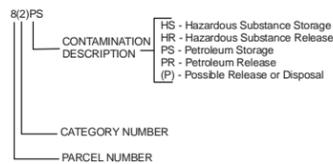
51(2)HS/PS/PR

- LEGEND**
- Geoprobe Soil Sample Location
  - Geoprobe Soil & Groundwater Sample Location
  - ➔ Generalized Groundwater Flow Direction. Direction of Generalized Groundwater Flow derived from qualitative evaluation of surface topography, surface water features, and pre-existing IRP site groundwater potentiometric maps where available.
  - ▭ Geophysical Investigation Area - Electromagnetic (EM) and Ground Penetrating Radar (GPR)
  - ▭ Building
  - ▭ Installation Boundary

**ECP PARCEL CATEGORY DEFINITIONS**

2 Areas where only release or disposal of petroleum products has occurred.

**BRAC PARCEL LABEL DEFINITIONS**



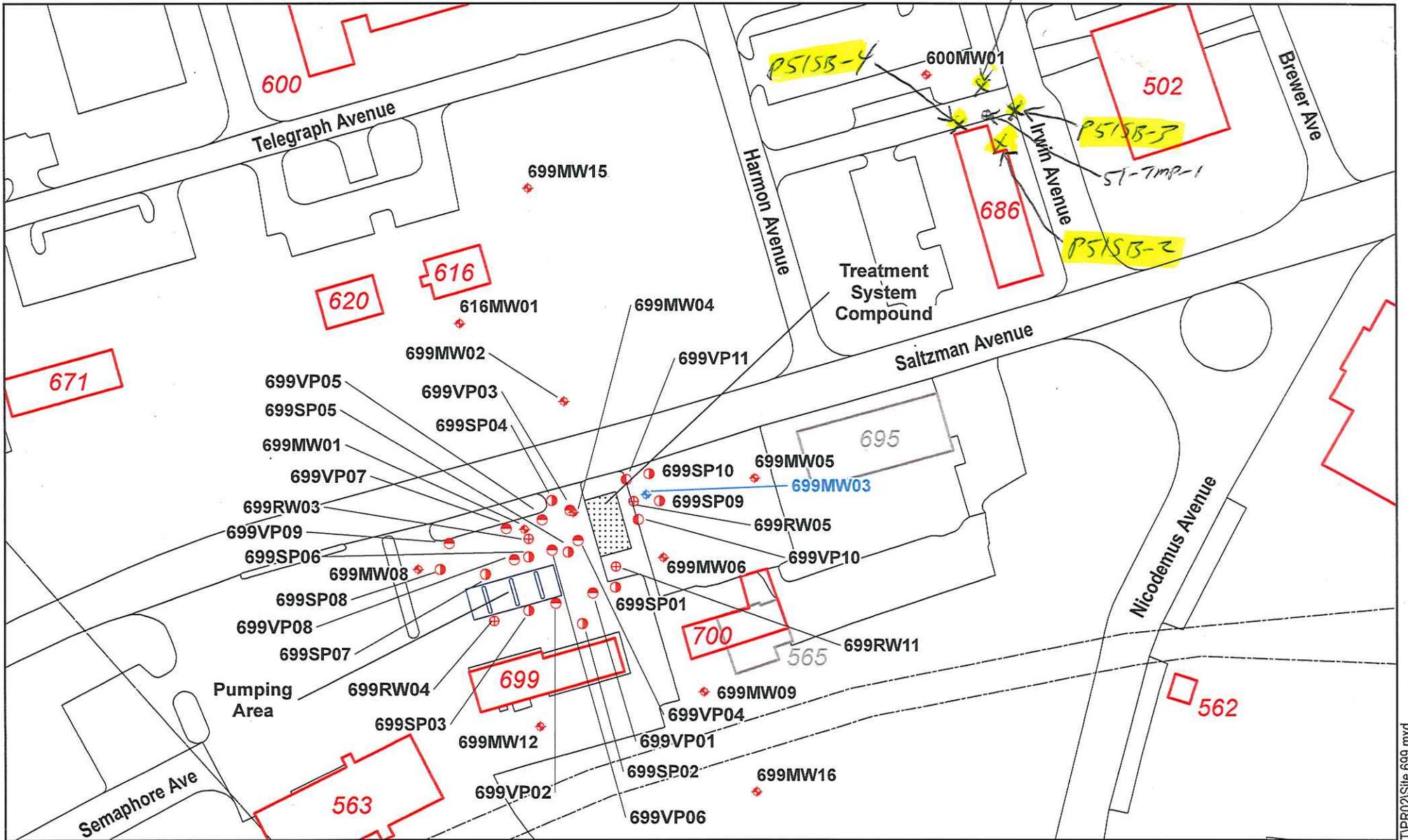
Base Realignment and Closure 2005



**FIGURE 3.12-1  
FORT MONMOUTH ECP  
SITE INVESTIGATION**

**PARCEL 51 SAMPLE LOCATIONS  
AND CONSTITUENTS OF CONCERN**

MAIN POST  
FORT MONMOUTH  
NEW JERSEY







## FTMM-53 Main Post

### Fort Monmouth, New Jersey

Map Created by:  
Fort Monmouth Installation GIO, Environmental Division  
Fort Monmouth, New Jersey  
Date: July 26, 2010

**Legend**

Monitoring Well - Abandoned	Sparge Point	Pumping Area
Monitoring Well - Active	Vapor Point	Treatment System Compound
Recovery Well	Irrigation Well	Roadway & Parking
Soil Vapor Extraction Point	Existing Building	Landfill Area
	Demolished Building	Water Body
		Post Boundary



NAD 83, NJ State Plane Feet

# FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS  
PHONE: (732) 532-6224 FAX: (732) 532-6263  
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING  
CERTIFICATIONS: NJDEP #13461

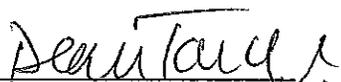


ANALYTICAL DATA REPORT  
Fort Monmouth Environmental Laboratory  
ENVIRONMENTAL DIVISION  
Fort Monmouth, New Jersey  
PROJECT: 11-16998

## Bldg. 686

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
Trip Blank	1049101	Soil	16-Nov-10 09:30	11/16/10
P51 SB1 7.0-7.5	1049102	Soil	16-Nov-10 10:05	11/16/10
P51 SB2 7.0-7.5	1049103	Soil	16-Nov-10 11:05	11/16/10
P51 SB3 7.0-7.5	1049104	Soil	16-Nov-10 11:40	11/16/10
P51 SB4 7.0-7.5	1049105	Soil	16-Nov-10 13:35	11/16/10

**ANALYSIS:**  
FORT MONMOUTH ENVIRONMENTAL LAB.  
VOA+15, BN+15

  
Dean Tardiff/Date: 11/17/11  
Laboratory Manager



# **VOLATILE ORGANICS**

000013

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY  
NJDEP CERTIFICATION # 13461

Definition of Qualifiers

- U:** The compound was analyzed for but not detected.
- B:** Indicates that the compound was found in the associated method blank as well as in the sample.
- J:** Indicates an estimated value. This flag is used:
- (1) When the mass spec and retention time data indicate the presence of a compound however the result is less than the reporting limit but greater than the MDL.
  - (2) When estimating the concentration of a tentatively identified compound (TIC), where a 1:1 response is assumed.
- D:** This flag is used to identify all compounds (target or TIC) that required a dilution.
- E:** Indicates the compound's concentration exceeds the calibration range of the instrument for that specific analysis.
- N:** This flag is only used for TICs. It indicates the presumptive evidence of a compound. For a generic characterization of a TIC, such as unknown hydrocarbon, the flag is not used.

**Volatile Analysis Report**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13461**

Data File VA8151.D  
 Operator ROBERTS  
 Date Acquired 30 Nov 2010 5:51 pm

Sample Name MB11301001  
 Field ID METHOD 8260 11/30/10  
 Sample Multiplier 0.100

Sample Weight 10.00 g  
 Percent Solids 100.0 %  
 Methanol extract volume 25 ml  
 Methanol aliquot volume 1.25 ml

CAS#	Compound Name	R.T.	Response	Result	Regulatory			Qualifiers
					Level (mg/kg)*	MDL	RL	
107028	Acrolein			not detected	0.5	0.436 mg/kg	1.000 mg/kg	
107131	Acrylonitrile			not detected	0.9	0.215 mg/kg	1.000 mg/kg	
75650	tert-Butyl alcohol			not detected	1400	0.411 mg/kg	1.000 mg/kg	
1634044	Methyl-tert-Butyl ether			not detected	110	0.032 mg/kg	0.100 mg/kg	
108203	Di-isopropyl ether			not detected	NLE	0.038 mg/kg	0.100 mg/kg	
75718	Dichlorodifluoromethane			not detected	490	0.104 mg/kg	0.104 mg/kg	
74-87-3	Chloromethane			not detected	4	0.043 mg/kg	0.100 mg/kg	
75-01-4	Vinyl Chloride			not detected	0.7	0.050 mg/kg	0.100 mg/kg	
74-83-9	Bromomethane			not detected	25	0.052 mg/kg	0.100 mg/kg	
75-00-3	Chloroethane			not detected	220	0.044 mg/kg	0.100 mg/kg	
75-69-4	Trichlorofluoromethane			not detected	23000	0.085 mg/kg	0.100 mg/kg	
75-35-4	1,1-Dichloroethene			not detected	11	0.077 mg/kg	0.100 mg/kg	
67-64-1	Acetone			not detected	70000	0.082 mg/kg	0.200 mg/kg	
75-15-0	Carbon Disulfide			not detected	7800	0.068 mg/kg	0.100 mg/kg	
75-09-2	Methylene Chloride			not detected	34	0.065 mg/kg	0.100 mg/kg	
156-60-5	trans-1,2-Dichloroethene			not detected	300	0.059 mg/kg	0.100 mg/kg	
75-35-3	1,1-Dichloroethane			not detected	8	0.058 mg/kg	0.100 mg/kg	
108-05-4	Vinyl Acetate			not detected	NLE	0.033 mg/kg	0.200 mg/kg	
78-93-3	2-Butanone			not detected	3100	0.071 mg/kg	0.100 mg/kg	
156-59-2	cis-1,2-Dichloroethene			not detected	230	0.058 mg/kg	0.100 mg/kg	
67-66-3	Chloroform			not detected	0.6	0.074 mg/kg	0.100 mg/kg	
75-55-6	1,1,1-Trichloroethane			not detected	290	0.063 mg/kg	0.100 mg/kg	
56-23-5	Carbon Tetrachloride			not detected	0.6	0.062 mg/kg	0.100 mg/kg	
71-43-2	Benzene			not detected	2	0.057 mg/kg	0.100 mg/kg	
107-06-2	1,2-Dichloroethane			not detected	0.9	0.045 mg/kg	0.100 mg/kg	
79-01-6	Trichloroethene			not detected	7	0.054 mg/kg	0.100 mg/kg	
78-87-5	1,2-Dichloropropane			not detected	2	0.058 mg/kg	0.100 mg/kg	
75-27-4	Bromodichloromethane			not detected	1	0.048 mg/kg	0.100 mg/kg	
110-75-8	2-Chloroethyl vinyl ether			not detected	NLE	0.061 mg/kg	0.200 mg/kg	
10061-01-5	cis-1,3-Dichloropropene			not detected	2	0.038 mg/kg	0.100 mg/kg	
108-10-1	4-Methyl-2-Pentanone			not detected	NLE	0.054 mg/kg	0.100 mg/kg	
108-88-3	Toluene			not detected	6300	0.071 mg/kg	0.100 mg/kg	
10061-02-6	trans-1,3-Dichloropropene			not detected	2	0.045 mg/kg	0.100 mg/kg	
79-00-5	1,1,2-Trichloroethane			not detected	2	0.051 mg/kg	0.100 mg/kg	
127-18-4	Tetrachloroethane			not detected	2	0.066 mg/kg	0.100 mg/kg	
591-78-6	2-Hexanone			not detected	NLE	0.047 mg/kg	0.100 mg/kg	
126-48-1	Dibromochloromethane			not detected	3	0.046 mg/kg	0.100 mg/kg	
108-90-7	Chlorobenzene			not detected	510	0.065 mg/kg	0.100 mg/kg	
100-41-4	Ethylbenzene			not detected	7800	0.069 mg/kg	0.100 mg/kg	
630-20-6	1,1,1,2-tetrachloroethane			not detected	NLE	0.070 mg/kg	0.100 mg/kg	
1330-20-7	m+p-Xylenes			not detected	1200	0.131 mg/kg	0.200 mg/kg	
1330-20-7	o-Xylene			not detected	1200	0.062 mg/kg	0.100 mg/kg	
100-42-5	Styrene			not detected	90	0.054 mg/kg	0.100 mg/kg	
75-25-2	Bromoform			not detected	81	0.040 mg/kg	0.100 mg/kg	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.054 mg/kg	0.100 mg/kg	
541-73-1	1,3-Dichlorobenzene			not detected	5300	0.058 mg/kg	0.100 mg/kg	
106-46-7	1,4-Dichlorobenzene			not detected	5	0.056 mg/kg	0.100 mg/kg	
95-50-1	1,2-Dichlorobenzene			not detected	5300	0.059 mg/kg	0.100 mg/kg	
91-20-3	Naphthalene			not detected	6	0.062 mg/kg	0.100 mg/kg	

\*Higher value of PQLs and Soil Quality Criteria as per N.J.A.C. 7:9C

**Qualifiers**

B = Compound found in related blank  
 E = Value above linear range  
 D = Value from dilution  
 PQL = Practical Quantitation Limit  
 J = Estimated value, concentration lies between R.L. and M.D.L.

MDL = Method Detection Limit  
 NLE = No Limit Established  
 R.T. = Retention Time  
 R.L. = Reporting Limit

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

**MB11301001**

Lab Name: FMETL NJDEP# 13461  
Project: \_\_\_\_\_ Case No: \_\_\_\_\_ Location: \_\_\_\_\_ SDG No.: 10491  
Matrix: (soil/water) SOIL Lab Sample ID: MB11301001  
Sample wt/vol: 10.0 (g/ml) G Lab File ID: VA8151.D  
Level: (low/med) MED Date Received: 11/16/2010  
% Moisture: not dec. 0 Date Analyzed: 11/30/2010  
GC Column: RTX-VM ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 125 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
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**Volatile Analysis Report**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13461**

Data File VA8153.D  
 Operator ROBERTS  
 Date Acquired 30 Nov 2010 6:57 pm

Sample Name 1049101  
 Field ID TRIP BLANK  
 Sample Multiplier 0.100

Sample Weight 10.00 g  
 Percent Solids 100.0 %  
 Methanol extract volume 25 ml  
 Methanol aliquot volume 1.25 ml

CAS#	Compound Name	R.T.	Response	Result	Regulatory		MDL	RL		Qualifiers
					Level (mg/kg)*					
107028	Acrolein			not detected	0.5	0.436	mg/kg	1.000	mg/kg	
107131	Acrylonitrile			not detected	0.9	0.215	mg/kg	1.000	mg/kg	
75650	tert-Butyl alcohol			not detected	1400	0.411	mg/kg	1.000	mg/kg	
1634044	Methyl-tert-Butyl ether			not detected	110	0.032	mg/kg	0.100	mg/kg	
108203	Di-isopropyl ether			not detected	NLE	0.038	mg/kg	0.100	mg/kg	
75718	Dichlorodifluoromethane			not detected	490	0.104	mg/kg	0.104	mg/kg	
74-87-3	Chloromethane			not detected	4	0.043	mg/kg	0.100	mg/kg	
75-01-4	Vinyl Chloride			not detected	0.7	0.050	mg/kg	0.100	mg/kg	
74-83-9	Bromomethane			not detected	25	0.052	mg/kg	0.100	mg/kg	
75-00-3	Chloroethane			not detected	220	0.044	mg/kg	0.100	mg/kg	
75-69-4	Trichlorofluoromethane			not detected	23000	0.085	mg/kg	0.100	mg/kg	
75-35-4	1,1-Dichloroethene			not detected	11	0.077	mg/kg	0.100	mg/kg	
67-64-1	Acetone			not detected	70000	0.082	mg/kg	0.200	mg/kg	
75-15-0	Carbon Disulfide			not detected	7800	0.068	mg/kg	0.100	mg/kg	
75-09-2	Methylene Chloride			not detected	34	0.065	mg/kg	0.100	mg/kg	
156-60-5	trans-1,2-Dichloroethene			not detected	300	0.059	mg/kg	0.100	mg/kg	
75-35-3	1,1-Dichloroethane			not detected	8	0.058	mg/kg	0.100	mg/kg	
108-05-4	Vinyl Acetate			not detected	NLE	0.033	mg/kg	0.200	mg/kg	
78-93-3	2-Butanone			not detected	3100	0.071	mg/kg	0.100	mg/kg	
156-59-2	cis-1,2-Dichloroethene			not detected	230	0.058	mg/kg	0.100	mg/kg	
67-66-3	Chloroform			not detected	0.6	0.074	mg/kg	0.100	mg/kg	
75-55-6	1,1,1-Trichloroethane			not detected	290	0.063	mg/kg	0.100	mg/kg	
56-23-5	Carbon Tetrachloride			not detected	0.6	0.062	mg/kg	0.100	mg/kg	
71-43-2	Benzene			not detected	2	0.057	mg/kg	0.100	mg/kg	
107-06-2	1,2-Dichloroethane			not detected	0.9	0.045	mg/kg	0.100	mg/kg	
79-01-6	Trichloroethene			not detected	7	0.054	mg/kg	0.100	mg/kg	
78-87-5	1,2-Dichloropropane			not detected	2	0.058	mg/kg	0.100	mg/kg	
75-27-4	Bromodichloromethane			not detected	1	0.048	mg/kg	0.100	mg/kg	
110-75-8	2-Chloroethyl vinyl ether			not detected	NLE	0.061	mg/kg	0.200	mg/kg	
10061-01-5	cis-1,3-Dichloropropene			not detected	2	0.038	mg/kg	0.100	mg/kg	
108-10-1	4-Methyl-2-Pentanone			not detected	NLE	0.054	mg/kg	0.100	mg/kg	
108-88-3	Toluene			not detected	6300	0.071	mg/kg	0.100	mg/kg	
10061-02-6	trans-1,3-Dichloropropene			not detected	2	0.045	mg/kg	0.100	mg/kg	
79-00-5	1,1,2-Trichloroethane			not detected	2	0.051	mg/kg	0.100	mg/kg	
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126-48-1	Dibromochloromethane			not detected	3	0.046	mg/kg	0.100	mg/kg	
108-90-7	Chlorobenzene			not detected	510	0.065	mg/kg	0.100	mg/kg	
100-41-4	Ethylbenzene			not detected	7800	0.069	mg/kg	0.100	mg/kg	
630-20-6	1,1,1,2-tetrachloroethane			not detected	NLE	0.070	mg/kg	0.100	mg/kg	
1330-20-7	m-tp-Xylenes			not detected	1200	0.131	mg/kg	0.200	mg/kg	
1330-20-7	o-Xylene			not detected	1200	0.062	mg/kg	0.100	mg/kg	
100-42-5	Styrene			not detected	90	0.054	mg/kg	0.100	mg/kg	
75-25-2	Bromoform			not detected	81	0.040	mg/kg	0.100	mg/kg	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.054	mg/kg	0.100	mg/kg	
541-73-1	1,3-Dichlorobenzene			not detected	5300	0.058	mg/kg	0.100	mg/kg	
106-46-7	1,4-Dichlorobenzene			not detected	5	0.056	mg/kg	0.100	mg/kg	
95-50-1	1,2-Dichlorobenzene			not detected	5300	0.059	mg/kg	0.100	mg/kg	
91-20-3	Naphthalene			not detected	6	0.062	mg/kg	0.100	mg/kg	

\*Higher value of PQLs and Soil Quality Criteria as per N.J.A.C. 7:9C

**Qualifiers**

B = Compound found in related blank  
 E = Value above linear range  
 D = Value from dilution  
 PQL = Practical Quantitation Limit  
 J = Estimated value, concentration lies between R.L. and M.D.L.

MDL = Method Detection Limit  
 NLE = No Limit Established  
 R.T. = Retention Time  
 R.L. = Reporting Limit

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

**TRIP BLANK**

Lab Name: FMETL NJDEP# 13461  
Project: \_\_\_\_\_ Case No: \_\_\_\_\_ Location: \_\_\_\_\_ SDG No.: 10491  
Matrix: (soil/water) SOIL Lab Sample ID: 1049101  
Sample wt/vol: 10.0 (g/ml) G Lab File ID: VA8153.D  
Level: (low/med) MED Date Received: 11/16/2010  
% Moisture: not dec. 0 Date Analyzed: 11/30/2010  
GC Column: RTX-VM ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 125 (uL)

CONCENTRATION UNITS:

Number TICs found: 0 (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
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**Volatile Analysis Report**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13461**

Data File VA8160.D  
 Operator ROBERTS  
 Date Acquired 30 Nov 2010 10:49 pm

Sample Name 1049102  
 Field ID P51 SBI 7.0-7.5  
 Sample Multiplier 0.123

Sample Weight 10.19 g  
 Percent Solids 79.7 %  
 Methanol extract volume 25 ml  
 Methanol aliquot volume 1.25 ml

CAS#	Compound Name	R.T.	Response	Result	Regulatory			Qualifiers
					Level (mg/kg)*	MDL	RL	
107028	Acrolein			not detected	0.5	0.537 mg/kg	1.231 mg/kg	
107131	Acrylonitrile			not detected	0.9	0.265 mg/kg	1.231 mg/kg	
75650	tert-Butyl alcohol			not detected	1400	0.506 mg/kg	1.231 mg/kg	
1634044	Methyl-tert-Butyl ether			not detected	110	0.039 mg/kg	0.123 mg/kg	
108203	Di-isopropyl ether			not detected	NLE	0.047 mg/kg	0.123 mg/kg	
75718	Dichlorodifluoromethane			not detected	490	0.128 mg/kg	0.128 mg/kg	
74-87-3	Chloromethane			not detected	4	0.053 mg/kg	0.123 mg/kg	
75-01-4	Vinyl Chloride			not detected	0.7	0.062 mg/kg	0.123 mg/kg	
74-83-9	Bromomethane			not detected	25	0.064 mg/kg	0.123 mg/kg	
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75-69-4	Trichlorofluoromethane			not detected	23000	0.105 mg/kg	0.123 mg/kg	
75-35-4	1,1-Dichloroethene			not detected	11	0.095 mg/kg	0.123 mg/kg	
67-64-1	Acetone			not detected	70000	0.101 mg/kg	0.246 mg/kg	
75-15-0	Carbon Disulfide			not detected	7800	0.084 mg/kg	0.123 mg/kg	
75-09-2	Methylene Chloride			not detected	34	0.080 mg/kg	0.123 mg/kg	
156-60-5	trans-1,2-Dichloroethene			not detected	300	0.073 mg/kg	0.123 mg/kg	
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156-59-2	cis-1,2-Dichloroethene			not detected	230	0.071 mg/kg	0.123 mg/kg	
67-66-3	Chloroform			not detected	0.6	0.091 mg/kg	0.123 mg/kg	
75-55-6	1,1,1-Trichloroethane			not detected	290	0.078 mg/kg	0.123 mg/kg	
56-23-5	Carbon Tetrachloride			not detected	0.6	0.076 mg/kg	0.123 mg/kg	
71-43-2	Benzene			not detected	2	0.070 mg/kg	0.123 mg/kg	
107-06-2	1,2-Dichloroethane			not detected	0.9	0.055 mg/kg	0.123 mg/kg	
79-01-6	Trichloroethene			not detected	7	0.066 mg/kg	0.123 mg/kg	
78-87-5	1,2-Dichloropropane			not detected	2	0.071 mg/kg	0.123 mg/kg	
75-27-4	Bromodichloromethane			not detected	1	0.059 mg/kg	0.123 mg/kg	
110-75-8	2-Chloroethyl vinyl ether			not detected	NLE	0.075 mg/kg	0.246 mg/kg	
10061-01-5	cis-1,3-Dichloropropene			not detected	2	0.047 mg/kg	0.123 mg/kg	
108-10-1	4-Methyl-2-Pentanone			not detected	NLE	0.066 mg/kg	0.123 mg/kg	
108-88-3	Toluene			not detected	6300	0.087 mg/kg	0.123 mg/kg	
10061-02-6	trans-1,3-Dichloropropene			not detected	2	0.055 mg/kg	0.123 mg/kg	
79-00-5	1,1,2-Trichloroethane			not detected	2	0.063 mg/kg	0.123 mg/kg	
127-18-4	Tetrachloroethene			not detected	2	0.081 mg/kg	0.123 mg/kg	
591-78-6	2-Hexanone			not detected	NLE	0.058 mg/kg	0.123 mg/kg	
126-48-1	Dibromochloromethane			not detected	3	0.057 mg/kg	0.123 mg/kg	
108-90-7	Chlorobenzene			not detected	510	0.080 mg/kg	0.123 mg/kg	
100-41-4	Ethylbenzene	15.80	1018469	1.26 mg/kg	7800	0.085 mg/kg	0.123 mg/kg	
630-20-6	1,1,1,2-tetrachloroethane			not detected	NLE	0.086 mg/kg	0.123 mg/kg	
1330-20-7	m+p-Xylenes	16.01	249217	0.74 mg/kg	1200	0.161 mg/kg	0.246 mg/kg	
1330-20-7	o-Xylene			not detected	1200	0.076 mg/kg	0.123 mg/kg	
100-42-5	Styrene			not detected	90	0.066 mg/kg	0.123 mg/kg	
75-25-2	Bromoform			not detected	81	0.049 mg/kg	0.123 mg/kg	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.066 mg/kg	0.123 mg/kg	
541-73-1	1,3-Dichlorobenzene			not detected	5300	0.071 mg/kg	0.123 mg/kg	
106-46-7	1,4-Dichlorobenzene			not detected	5	0.069 mg/kg	0.123 mg/kg	
95-50-1	1,2-Dichlorobenzene			not detected	5300	0.073 mg/kg	0.123 mg/kg	
91-20-3	Naphthalene	24.55	8216813	14.97 mg/kg	6	0.076 mg/kg	0.123 mg/kg	E

\*Higher value of PQLs and Soil Quality Criteria as per N.J.A.C. 7:9C

**Qualifiers**

B = Compound found in related blank  
 E = Value above linear range  
 D = Value from dilution  
 PQL = Practical Quantitation Limit  
 J = Estimated value, concentration lies between R.L. and M.D.L.

MDL = Method Detection Limit  
 NLE = No Limit Established  
 R.T. = Retention Time  
 R.L. = Reporting Limit

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

P51 SB1 7.0-75

Lab Name: FMETL NJDEP# 13461

Project: \_\_\_\_\_ Case No: \_\_\_\_\_ Location: \_\_\_\_\_ SDG No.: 10491

Matrix: (soil/water) SOIL Lab Sample ID: 1049102

Sample wt/vol: 10.2 (g/ml) G Lab File ID: VA8160.D

Level: (low/med) MED Date Received: 11/16/2010

% Moisture: not dec. 20.3 Date Analyzed: 11/30/2010

GC Column: RTX-VM ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 125 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 15

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1.	C3 alkyl benzene	18.67	17000	J
2.	C3 alkyl benzene	19.43	33000	J
3.	C3 alkyl benzene	20.26	12000	J
4.	C4 alkyl benzene	20.69	22000	J
5. 000091-17-8	Naphthalene, decahydro-	20.85	17000	JN
6.	C4 alkyl benzene	21.43	14000	J
7.	C5 alkyl benzene	21.69	18000	J
8.	unknown hydrocarbon	22.07	19000	J
9.	C4 alkyl benzene	22.37	16000	J
10.	Naphthalene, decahydro-methyl-	22.51	28000	J
11.	1H-Indene-dihydro-methyl-	23.00	13000	J
12.	C4 alkyl benzene	23.27	16000	J
13.	1H-Indene-dihydro-methyl-	23.35	13000	J
14.	C5 alkyl benzene	23.89	14000	J
15.	Naphthalene, tetrahydro-methyl-	24.63	14000	J

**Volatile Analysis Report**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13461**

Data File VA8156.D  
 Operator ROBERTS  
 Date Acquired 30 Nov 2010 8:36 pm

Sample Name 1049102 5x  
 Field ID P51 SB1 7.0-7.5  
 Sample Multiplier 0.616

Sample Weight 10.19 g  
 Percent Solids 79.7 %  
 Methanol extract volume 25 ml  
 Methanol aliquot volume 0.25 ml

CAS#	Compound Name	R.T.	Response	Result	Regulatory			Qualifiers
					Level (mg/kg)*	MDL	RL	
107028	Acrolein			not detected	0.5	2.684 mg/kg	6.157 mg/kg	
107131	Acrylonitrile			not detected	0.9	1.324 mg/kg	6.157 mg/kg	
75650	tert-Butyl alcohol			not detected	1400	2.530 mg/kg	6.157 mg/kg	
1634044	Methyl-tert-Butyl ether			not detected	110	0.197 mg/kg	0.616 mg/kg	
108203	Di-isopropyl ether			not detected	NLE	0.234 mg/kg	0.616 mg/kg	
75718	Dichlorodifluoromethane			not detected	490	0.640 mg/kg	0.640 mg/kg	
74-87-3	Chloromethane			not detected	4	0.265 mg/kg	0.616 mg/kg	
75-01-4	Vinyl Chloride			not detected	0.7	0.308 mg/kg	0.616 mg/kg	
74-83-9	Bromomethane			not detected	25	0.320 mg/kg	0.616 mg/kg	
75-00-3	Chloroethane			not detected	220	0.271 mg/kg	0.616 mg/kg	
75-69-4	Trichlorofluoromethane			not detected	23000	0.523 mg/kg	0.616 mg/kg	
75-35-4	1,1-Dichloroethene			not detected	11	0.474 mg/kg	0.616 mg/kg	
67-64-1	Acetone			not detected	70000	0.505 mg/kg	1.231 mg/kg	
75-15-0	Carbon Disulfide			not detected	7800	0.419 mg/kg	0.616 mg/kg	
75-09-2	Methylene Chloride			not detected	34	0.400 mg/kg	0.616 mg/kg	
156-60-5	trans-1,2-Dichloroethene			not detected	300	0.363 mg/kg	0.616 mg/kg	
75-35-3	1,1-Dichloroethane			not detected	8	0.357 mg/kg	0.616 mg/kg	
108-05-4	Vinyl Acetate			not detected	NLE	0.203 mg/kg	1.231 mg/kg	
78-93-3	2-Butanone			not detected	3100	0.437 mg/kg	0.616 mg/kg	
156-59-2	cis-1,2-Dichloroethene			not detected	230	0.357 mg/kg	0.616 mg/kg	
67-66-3	Chloroform			not detected	0.6	0.456 mg/kg	0.616 mg/kg	
75-55-6	1,1,1-Trichloroethane			not detected	290	0.388 mg/kg	0.616 mg/kg	
56-23-5	Carbon Tetrachloride			not detected	0.6	0.382 mg/kg	0.616 mg/kg	
71-43-2	Benzene			not detected	2	0.351 mg/kg	0.616 mg/kg	
107-06-2	1,2-Dichloroethane			not detected	0.9	0.277 mg/kg	0.616 mg/kg	
79-01-6	Trichloroethene			not detected	7	0.332 mg/kg	0.616 mg/kg	
78-87-5	1,2-Dichloropropane			not detected	2	0.357 mg/kg	0.616 mg/kg	
75-27-4	Bromodichloromethane			not detected	1	0.296 mg/kg	0.616 mg/kg	
110-75-8	2-Chloroethyl vinyl ether			not detected	NLE	0.376 mg/kg	1.231 mg/kg	
10061-01-5	cis-1,3-Dichloropropene			not detected	2	0.234 mg/kg	0.616 mg/kg	
108-10-1	4-Methyl-2-Pentanone			not detected	NLE	0.332 mg/kg	0.616 mg/kg	
108-88-3	Toluene			not detected	6300	0.437 mg/kg	0.616 mg/kg	
10061-02-6	trans-1,3-Dichloropropene			not detected	2	0.277 mg/kg	0.616 mg/kg	
79-00-5	1,1,2-Trichloroethane			not detected	2	0.314 mg/kg	0.616 mg/kg	
127-18-4	Tetrachloroethene			not detected	2	0.406 mg/kg	0.616 mg/kg	
591-78-6	2-Hexanone			not detected	NLE	0.289 mg/kg	0.616 mg/kg	
126-48-1	Dibromochloromethane			not detected	3	0.283 mg/kg	0.616 mg/kg	
108-90-7	Chlorobenzene			not detected	510	0.400 mg/kg	0.616 mg/kg	
100-41-4	Ethylbenzene	15.80	194484	1.41 mg/kg	7800	0.425 mg/kg	0.616 mg/kg	D
630-20-6	1,1,1,2-tetrachloroethane			not detected	NLE	0.431 mg/kg	0.616 mg/kg	
1330-20-7	m+p-Xylenes	16.01	46013	0.80 mg/kg	1200	0.807 mg/kg	1.231 mg/kg	D J
1330-20-7	o-Xylene			not detected	1200	0.382 mg/kg	0.616 mg/kg	
100-42-5	Styrene			not detected	90	0.332 mg/kg	0.616 mg/kg	
75-25-2	Bromoform			not detected	81	0.246 mg/kg	0.616 mg/kg	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.332 mg/kg	0.616 mg/kg	
541-73-1	1,3-Dichlorobenzene			not detected	5300	0.357 mg/kg	0.616 mg/kg	
106-46-7	1,4-Dichlorobenzene			not detected	5	0.345 mg/kg	0.616 mg/kg	
95-50-1	1,2-Dichlorobenzene			not detected	5300	0.363 mg/kg	0.616 mg/kg	
91-20-3	Naphthalene	24.55	1805236	19.28 mg/kg	6	0.382 mg/kg	0.616 mg/kg	D

\*Higher value of PQLs and Soil Quality Criteria as per N.J.A.C. 7:9C

**Qualifiers**

- |   |                              |
|---|------------------------------|
| B = Compound found in related blank                             | MDL = Method Detection Limit |
| E = Value above linear range                                    | NLE = No Limit Established   |
| D = Value from dilution   | R.T. = Retention Time        |
| PQL = Practical Quantitation Limit                              | R.L. = Reporting Limit       |
| J = Estimated value, concentration lies between R.L. and M.D.L. |                              |

**Volatile Analysis Report**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13461**

Data File VA8162.D  
 Operator ROBERTS  
 Date Acquired 30 Nov 2010 11:56 pm

Sample Name 10491 03  
 Field ID P51 SB2 7.0-7.5  
 Sample Multiplier 0.104

Sample Weight 11.57 g  
 Percent Solids 83.0 %  
 Methanol extract volume 25 ml  
 Methanol aliquot volume 1.25 ml

CAS#	Compound Name	R.T.	Response	Result	Regulatory			Qualifiers
					Level (mg/kg)*	MDL	RL	
107028	Acrolein			not detected	0.5	0.454 mg/kg	1.041 mg/kg	
107131	Acrylonitrile			not detected	0.9	0.224 mg/kg	1.041 mg/kg	
75650	tert-Butyl alcohol			not detected	1400	0.428 mg/kg	1.041 mg/kg	
1634044	Methyl-tert-Butyl ether			not detected	110	0.033 mg/kg	0.104 mg/kg	
108203	Di-isopropyl ether			not detected	NLE	0.040 mg/kg	0.104 mg/kg	
75718	Dichlorodifluoromethane			not detected	490	0.108 mg/kg	0.108 mg/kg	
74-87-3	Chloromethane			not detected	4	0.045 mg/kg	0.104 mg/kg	
75-01-4	Vinyl Chloride			not detected	0.7	0.052 mg/kg	0.104 mg/kg	
74-83-9	Bromomethane			not detected	25	0.054 mg/kg	0.104 mg/kg	
75-00-3	Chloroethane			not detected	220	0.046 mg/kg	0.104 mg/kg	
75-69-4	Trichlorofluoromethane			not detected	23000	0.089 mg/kg	0.104 mg/kg	
75-35-4	1,1-Dichloroethene			not detected	11	0.080 mg/kg	0.104 mg/kg	
67-64-1	Acetone			not detected	70000	0.085 mg/kg	0.208 mg/kg	
75-15-0	Carbon Disulfide			not detected	7800	0.071 mg/kg	0.104 mg/kg	
75-09-2	Methylene Chloride			not detected	34	0.068 mg/kg	0.104 mg/kg	
156-60-5	trans-1,2-Dichloroethene			not detected	300	0.061 mg/kg	0.104 mg/kg	
75-35-3	1,1-Dichloroethane			not detected	8	0.060 mg/kg	0.104 mg/kg	
108-05-4	Vinyl Acetate			not detected	NLE	0.034 mg/kg	0.208 mg/kg	
78-93-3	2-Butanone			not detected	3100	0.074 mg/kg	0.104 mg/kg	
156-59-2	cis-1,2-Dichloroethene			not detected	230	0.060 mg/kg	0.104 mg/kg	
67-66-3	Chloroform			not detected	0.6	0.077 mg/kg	0.104 mg/kg	
75-55-6	1,1,1-Trichloroethane			not detected	290	0.066 mg/kg	0.104 mg/kg	
56-23-5	Carbon Tetrachloride			not detected	0.6	0.065 mg/kg	0.104 mg/kg	
71-43-2	Benzene			not detected	2	0.059 mg/kg	0.104 mg/kg	
107-06-2	1,2-Dichloroethane			not detected	0.9	0.047 mg/kg	0.104 mg/kg	
79-01-6	Trichloroethene			not detected	7	0.056 mg/kg	0.104 mg/kg	
78-87-5	1,2-Dichloropropane			not detected	2	0.060 mg/kg	0.104 mg/kg	
75-27-4	Bromodichloromethane			not detected	1	0.050 mg/kg	0.104 mg/kg	
110-75-8	2-Chloroethyl vinyl ether			not detected	NLE	0.064 mg/kg	0.208 mg/kg	
10061-01-5	cis-1,3-Dichloropropene			not detected	2	0.040 mg/kg	0.104 mg/kg	
108-10-1	4-Methyl-2-Pentanone			not detected	NLE	0.056 mg/kg	0.104 mg/kg	
108-88-3	Toluene			not detected	6300	0.074 mg/kg	0.104 mg/kg	
10061-02-6	trans-1,3-Dichloropropene			not detected	2	0.047 mg/kg	0.104 mg/kg	
79-00-5	1,1,2-Trichloroethane			not detected	2	0.053 mg/kg	0.104 mg/kg	
127-18-4	Tetrachloroethene			not detected	2	0.069 mg/kg	0.104 mg/kg	
591-78-6	2-Hexanone			not detected	NLE	0.049 mg/kg	0.104 mg/kg	
126-48-1	Dibromochloromethane			not detected	3	0.048 mg/kg	0.104 mg/kg	
108-90-7	Chlorobenzene			not detected	510	0.068 mg/kg	0.104 mg/kg	
100-41-4	Ethylbenzene			not detected	7800	0.072 mg/kg	0.104 mg/kg	
630-20-6	1,1,1,2-tetrachloroethane			not detected	NLE	0.073 mg/kg	0.104 mg/kg	
1330-20-7	m+p-Xylenes			not detected	1200	0.136 mg/kg	0.208 mg/kg	
1330-20-7	o-Xylene			not detected	1200	0.065 mg/kg	0.104 mg/kg	
100-42-5	Styrene			not detected	90	0.056 mg/kg	0.104 mg/kg	
75-25-2	Bromoform			not detected	81	0.042 mg/kg	0.104 mg/kg	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.056 mg/kg	0.104 mg/kg	
541-73-1	1,3-Dichlorobenzene			not detected	5300	0.060 mg/kg	0.104 mg/kg	
106-46-7	1,4-Dichlorobenzene			not detected	5	0.058 mg/kg	0.104 mg/kg	
95-50-1	1,2-Dichlorobenzene			not detected	5300	0.061 mg/kg	0.104 mg/kg	
91-20-3	Naphthalene	24.55	4060358	6.29 mg/kg	6	0.065 mg/kg	0.104 mg/kg	

\*Higher value of PQLs and Soil Quality Criteria as per N.J.A.C. 7:9C

**Qualifiers**

B = Compound found in related blank  
 E = Value above linear range  
 D = Value from dilution  
 PQL = Practical Quantitation Limit  
 J = Estimated value, concentration lies between R.L. and M.D.L.

MDL = Method Detection Limit  
 NLE = No Limit Established  
 R.T. = Retention Time  
 R.L. = Reporting Limit

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

P51 SB2 7.0-7.5

Lab Name: FMETL NJDEP# 13461  
 Project: \_\_\_\_\_ Case No: \_\_\_\_\_ Location: \_\_\_\_\_ SDG No.: 10491  
 Matrix: (soil/water) SOIL Lab Sample ID: 1049103  
 Sample wt/vol: 11.6 (g/ml) G Lab File ID: VA8162.D  
 Level: (low/med) MED Date Received: 11/16/2010  
 % Moisture: not dec. 17 Date Analyzed: 11/30/2010  
 GC Column: RTX-VM ID: 0.25 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 125 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 15

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1.	C4 alkyl benzene	20.70	25000	J
2.	C4 alkyl benzene	21.24	25000	J
3.	C4 alkyl benzene	21.44	31000	J
4.	C4 alkyl benzene	22.08	23000	J
5.	C4 alkyl benzene	22.38	34000	J
6.	1H-Indene-dihydro-methyl-	23.00	34000	J
7.	C5 alkyl benzene	23.10	26000	J
8.	C5 alkyl benzene	23.22	27000	J
9.	C4 alkyl benzene	23.28	35000	J
10.	1H-Indene-dihydro-methyl-	23.35	44000	J
11.	C5 alkyl benzene	23.89	48000	J
12.	1H-Indene-dihydro-dimethyl-	23.99	24000	J
13.	C5 alkyl benzene	24.12	29000	J
14.	1H-Indene-dihydro-dimethyl-	24.17	28000	J
15.	Naphthalene, tetrahydro-methyl-	24.63	22000	J

**Volatile Analysis Report**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13461**

Data File VA8155.D  
 Operator ROBERTS  
 Date Acquired 30 Nov 2010 8:03 pm

Sample Name 1049104  
 Field ID PS1 SB3 7.0-7.5  
 Sample Multiplier 0.111

Sample Weight 10.51 g  
 Percent Solids 86.1 %  
 Methanol extract volume 25 ml  
 Methanol aliquot volume 1.25 ml

CASH	Compound Name	R.T.	Response	Result	Regulatory			Qualifiers
					Level (mg/kg)*	MDL	RL	
107028	Acrolein			not detected	0.5	0.482 mg/kg	1.105 mg/kg	
107131	Acrylonitrile			not detected	0.9	0.238 mg/kg	1.105 mg/kg	
75650	tert-Butyl alcohol			not detected	1400	0.454 mg/kg	1.105 mg/kg	
1634044	Methyl-tert-Butyl ether			not detected	110	0.035 mg/kg	0.111 mg/kg	
108203	Di-isopropyl ether			not detected	NLE	0.042 mg/kg	0.111 mg/kg	
75718	Dichlorodifluoromethane			not detected	490	0.115 mg/kg	0.115 mg/kg	
74-87-3	Chloromethane			not detected	4	0.048 mg/kg	0.111 mg/kg	
75-01-4	Vinyl Chloride			not detected	0.7	0.055 mg/kg	0.111 mg/kg	
74-83-9	Bromomethane			not detected	25	0.057 mg/kg	0.111 mg/kg	
75-00-3	Chloroethane			not detected	220	0.049 mg/kg	0.111 mg/kg	
75-69-4	Trichlorofluoromethane			not detected	23000	0.094 mg/kg	0.111 mg/kg	
75-35-4	1,1-Dichloroethene			not detected	11	0.085 mg/kg	0.111 mg/kg	
67-64-1	Acetone			not detected	70000	0.091 mg/kg	0.221 mg/kg	
75-15-0	Carbon Disulfide			not detected	7800	0.075 mg/kg	0.111 mg/kg	
75-09-2	Methylene Chloride			not detected	34	0.072 mg/kg	0.111 mg/kg	
156-60-5	trans-1,2-Dichloroethene			not detected	300	0.065 mg/kg	0.111 mg/kg	
75-35-3	1,1-Dichloroethane			not detected	8	0.064 mg/kg	0.111 mg/kg	
108-05-4	Vinyl Acetate			not detected	NLE	0.036 mg/kg	0.221 mg/kg	
78-93-3	2-Butanone			not detected	3100	0.078 mg/kg	0.111 mg/kg	
156-59-2	cis-1,2-Dichloroethene			not detected	230	0.064 mg/kg	0.111 mg/kg	
67-66-3	Chloroform			not detected	0.6	0.082 mg/kg	0.111 mg/kg	
75-55-6	1,1,1-Trichloroethane			not detected	290	0.070 mg/kg	0.111 mg/kg	
56-23-5	Carbon Tetrachloride			not detected	0.6	0.069 mg/kg	0.111 mg/kg	
71-43-2	Benzene			not detected	2	0.063 mg/kg	0.111 mg/kg	
107-06-2	1,2-Dichloroethane			not detected	0.9	0.050 mg/kg	0.111 mg/kg	
79-01-6	Trichloroethene			not detected	7	0.060 mg/kg	0.111 mg/kg	
78-87-5	1,2-Dichloropropane			not detected	2	0.064 mg/kg	0.111 mg/kg	
75-27-4	Bromodichloromethane			not detected	1	0.053 mg/kg	0.111 mg/kg	
110-75-8	2-Chloroethyl vinyl ether			not detected	NLE	0.067 mg/kg	0.221 mg/kg	
10061-01-5	cis-1,3-Dichloropropene			not detected	2	0.042 mg/kg	0.111 mg/kg	
108-10-1	4-Methyl-2-Pentanone			not detected	NLE	0.060 mg/kg	0.111 mg/kg	
108-88-3	Toluene			not detected	6300	0.078 mg/kg	0.111 mg/kg	
10061-02-6	trans-1,3-Dichloropropene			not detected	2	0.050 mg/kg	0.111 mg/kg	
79-00-5	1,1,2-Trichloroethane			not detected	2	0.056 mg/kg	0.111 mg/kg	
127-18-4	Tetrachloroethene			not detected	2	0.073 mg/kg	0.111 mg/kg	
591-78-6	2-Hexanone			not detected	NLE	0.052 mg/kg	0.111 mg/kg	
126-48-1	Dibromochloromethane			not detected	3	0.051 mg/kg	0.111 mg/kg	
108-90-7	Chlorobenzene			not detected	510	0.072 mg/kg	0.111 mg/kg	
100-41-4	Ethylbenzene			not detected	7800	0.076 mg/kg	0.111 mg/kg	
630-20-6	1,1,1,2-tetrachloroethane			not detected	NLE	0.077 mg/kg	0.111 mg/kg	
1330-20-7	m+p-Xylenes			not detected	1200	0.145 mg/kg	0.221 mg/kg	
1330-20-7	o-Xylene			not detected	1200	0.069 mg/kg	0.111 mg/kg	
100-42-5	Styrene			not detected	90	0.060 mg/kg	0.111 mg/kg	
75-25-2	Bromoform			not detected	81	0.044 mg/kg	0.111 mg/kg	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.060 mg/kg	0.111 mg/kg	
541-73-1	1,3-Dichlorobenzene			not detected	5300	0.064 mg/kg	0.111 mg/kg	
106-46-7	1,4-Dichlorobenzene			not detected	5	0.062 mg/kg	0.111 mg/kg	
95-50-1	1,2-Dichlorobenzene			not detected	5300	0.065 mg/kg	0.111 mg/kg	
91-20-3	Naphthalene			not detected	6	0.069 mg/kg	0.111 mg/kg	

\*Higher value of PQLs and Soil Quality Criteria as per N.J.A.C. 7:9C

**Qualifiers**

B = Compound found in related blank  
 B = Value above linear range  
 D = Value from dilution  
 PQL = Practical Quantitation Limit  
 J = Estimated value, concentration lies between R.L. and M.D.L.

MDL = Method Detection Limit  
 NLE = No Limit Established  
 R.T. = Retention Time  
 R.L. = Reporting Limit

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

**P51 SB3 7.0-7.5**

Lab Name: FMETL NJDEP# 13461

Project: \_\_\_\_\_ Case No: \_\_\_\_\_ Location: \_\_\_\_\_ SDG No.: 10491

Matrix: (soil/water) SOIL Lab Sample ID: 1049104

Sample wt/vol: 10.5 (g/ml) G Lab File ID: VA8155.D

Level: (low/med) MED Date Received: 11/16/2010

% Moisture: not dec. 13.9 Date Analyzed: 11/30/2010

GC Column: RTX-VM ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 125 (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
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**Volatile Analysis Report**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13461**

Data File VA8154.D  
 Operator ROBERTS  
 Date Acquired 30 Nov 2010 7:30 pm

Sample Name 1049105  
 Field ID P51 SB4 7.0-7.5  
 Sample Multiplier 0.098

Sample Weight 12.60 g  
 Percent Solids 81.3 %  
 Methanol extract volume 25 ml  
 Methanol aliquot volume 1.25 ml

CAS#	Compound Name	R.T.	Response	Result	Regulatory			Qualifiers
					Level (mg/kg)*	MDL	RL	
107028	Acrolein			not detected	0.5	0.426 mg/kg	0.976 mg/kg	
107131	Acrylonitrile			not detected	0.9	0.210 mg/kg	0.976 mg/kg	
75650	tert-Butyl alcohol			not detected	1400	0.401 mg/kg	0.976 mg/kg	
1634044	Methyl-tert-Butyl ether			not detected	110	0.031 mg/kg	0.098 mg/kg	
108203	Di-isopropyl ether			not detected	NLE	0.037 mg/kg	0.098 mg/kg	
75718	Dichlorodifluoromethane			not detected	490	0.102 mg/kg	0.102 mg/kg	
74-87-3	Chloromethane			not detected	4	0.042 mg/kg	0.098 mg/kg	
75-01-4	Vinyl Chloride			not detected	0.7	0.049 mg/kg	0.098 mg/kg	
74-83-9	Bromomethane			not detected	25	0.051 mg/kg	0.098 mg/kg	
75-00-3	Chloroethane			not detected	220	0.043 mg/kg	0.098 mg/kg	
75-69-4	Trichlorofluoromethane			not detected	23000	0.083 mg/kg	0.098 mg/kg	
75-35-4	1,1-Dichloroethene			not detected	11	0.075 mg/kg	0.098 mg/kg	
67-64-1	Acetone			not detected	70000	0.080 mg/kg	0.195 mg/kg	
75-15-0	Carbon Disulfide			not detected	7800	0.066 mg/kg	0.098 mg/kg	
75-09-2	Methylene Chloride			not detected	34	0.063 mg/kg	0.098 mg/kg	
156-60-5	trans-1,2-Dichloroethene			not detected	300	0.058 mg/kg	0.098 mg/kg	
75-35-3	1,1-Dichloroethane			not detected	8	0.057 mg/kg	0.098 mg/kg	
108-05-4	Vinyl Acetate			not detected	NLE	0.032 mg/kg	0.195 mg/kg	
78-93-3	2-Butanone			not detected	3100	0.069 mg/kg	0.098 mg/kg	
156-59-2	cis-1,2-Dichloroethene			not detected	230	0.057 mg/kg	0.098 mg/kg	
67-66-3	Chloroform			not detected	0.6	0.072 mg/kg	0.098 mg/kg	
75-55-6	1,1,1-Trichloroethane			not detected	290	0.062 mg/kg	0.098 mg/kg	
56-23-5	Carbon Tetrachloride			not detected	0.6	0.061 mg/kg	0.098 mg/kg	
71-43-2	Benzene			not detected	2	0.056 mg/kg	0.098 mg/kg	
107-06-2	1,2-Dichloroethane			not detected	0.9	0.044 mg/kg	0.098 mg/kg	
79-01-6	Trichloroethene			not detected	7	0.053 mg/kg	0.098 mg/kg	
78-87-5	1,2-Dichloropropane			not detected	2	0.057 mg/kg	0.098 mg/kg	
75-27-4	Bromodichloromethane			not detected	1	0.047 mg/kg	0.098 mg/kg	
110-75-8	2-Chloroethyl vinyl ether			not detected	NLE	0.060 mg/kg	0.195 mg/kg	
10061-01-5	cis-1,3-Dichloropropene			not detected	2	0.037 mg/kg	0.098 mg/kg	
108-10-1	4-Methyl-2-Pentanone			not detected	NLE	0.053 mg/kg	0.098 mg/kg	
108-88-3	Toluene			not detected	6300	0.069 mg/kg	0.098 mg/kg	
10061-02-6	trans-1,3-Dichloropropene			not detected	2	0.044 mg/kg	0.098 mg/kg	
79-00-5	1,1,1-Trichloroethane			not detected	2	0.050 mg/kg	0.098 mg/kg	
127-18-4	Tetrachloroethene			not detected	2	0.064 mg/kg	0.098 mg/kg	
591-78-6	2-Hexanone			not detected	NLE	0.046 mg/kg	0.098 mg/kg	
126-48-1	Dibromochloromethane			not detected	3	0.045 mg/kg	0.098 mg/kg	
108-90-7	Chlorobenzene			not detected	510	0.063 mg/kg	0.098 mg/kg	
100-41-4	Ethylbenzene			not detected	7800	0.067 mg/kg	0.098 mg/kg	
630-20-6	1,1,1,2-tetrachloroethane			not detected	NLE	0.068 mg/kg	0.098 mg/kg	
1330-20-7	m+p-Xylenes			not detected	1200	0.128 mg/kg	0.195 mg/kg	
1330-20-7	o-Xylene			not detected	1200	0.061 mg/kg	0.098 mg/kg	
100-42-5	Styrene			not detected	90	0.053 mg/kg	0.098 mg/kg	
75-25-2	Bromoform			not detected	81	0.039 mg/kg	0.098 mg/kg	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.053 mg/kg	0.098 mg/kg	
541-73-1	1,3-Dichlorobenzene			not detected	5300	0.057 mg/kg	0.098 mg/kg	
106-46-7	1,4-Dichlorobenzene			not detected	5	0.055 mg/kg	0.098 mg/kg	
95-50-1	1,2-Dichlorobenzene			not detected	5300	0.058 mg/kg	0.098 mg/kg	
91-20-3	Naphthalene			not detected	6	0.061 mg/kg	0.098 mg/kg	

\*Higher value of PQLs and Soil Quality Criteria as per N.J.A.C. 7:9C

**Qualifiers**

B = Compound found in related blank  
 E = Value above linear range  
 D = Value from dilution  
 PQL = Practical Quantitation Limit  
 J = Estimated value, concentration lies between R.L. and M.D.L.

MDL = Method Detection Limit  
 NLE = No Limit Established  
 R.T. = Retention Time  
 R.L. = Reporting Limit

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

P51 SB4 7.0-7.5

Lab Name: FMETL NJDEP# 13461  
 Project: \_\_\_\_\_ Case No: \_\_\_\_\_ Location: \_\_\_\_\_ SDG No.: 10491  
 Matrix: (soil/water) SOIL Lab Sample ID: 1049105  
 Sample wt/vol: 12.6 (g/ml) G Lab File ID: VA8154.D  
 Level: (low/med) MED Date Received: 11/16/2010  
 % Moisture: not dec. 18.7 Date Analyzed: 11/30/2010  
 GC Column: RTX-VM ID: 0.25 (mm) Dilution Factor: 1.0  
 Soil Extract Volume: 25000 (uL) Soil Aliquot Volume: 125 (uL)

CONCENTRATION UNITS:

Number TICs found: 2 (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1.	Alkane: Branched	24.24	330	J
2.	unknown hydrocarbon	25.10	340	J

# **SEMI-VOLATILE ORGANICS**

000045

## Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	E537.D	Misc Info	METHOD 8270 11/30/10	Sample Weight	10.00 g
Operator	ROBERTS	Dilution factor	1	Percent Solids	100.0 %
Date Acquired	30-Nov-10	Sample Multiplier	0.100		
Sample Name	MB11221001	<i>Sample multiplier = (0.001 * Dilution factor) / ([sample weight(kg)] * [percent solids/100])</i> <i>Multiplied by 0.001 to convert ug/kg to mg/kg.</i>			

CAS#	Name	R.T.	Response	Result	Regulatory Level (mg/kg)*	MDL	RL	Qualifiers
110-86-1	pyridine			not detected	NLE	0.099	0.50	mg/kg
62-75-9	N-nitroso-dimethylamine			not detected	0.7	0.168	0.50	mg/kg
62-53-3	Aniline			not detected	NLE	0.267	0.50	mg/kg
111-44-4	bis(2-chloroethyl ether			not detected	0.4	0.193	0.50	mg/kg
541-73-1	1,3-dichlorobenzene			not detected	5300	0.167	0.50	mg/kg
106-46-7	1,4-dichlorobenzene			not detected	5	0.174	0.50	mg/kg
100-51-6	Benzyl alcohol			not detected	NLE	0.258	0.50	mg/kg
95-50-1	1,2-dichlorobenzene			not detected	5300	0.194	0.50	mg/kg
39638-32-9	bis(2-chloroisopropyl)ether			not detected	23	0.224	0.50	mg/kg
621-64-7	N-nitroso-di-n-propylamine			not detected	0.2	0.253	0.50	mg/kg
67-72-1	Hexachloroethane			not detected	35	0.189	0.50	mg/kg
98-95-3	Nitrobenzene			not detected	31	0.226	0.50	mg/kg
78-59-1	Isophorone			not detected	510	0.240	0.50	mg/kg
111-91-1	bis(2-chloroethoxy)methane			not detected	NLE	0.198	0.50	mg/kg
120-82-1	1,2,4-trichlorobenzene			not detected	73	0.219	0.50	mg/kg
91-20-3	Naphthalene			not detected	6	0.242	0.50	mg/kg
106-47-8	4-chloroaniline			not detected	9	0.370	0.50	mg/kg
87-68-3	Hexachlorobutadiene			not detected	6	0.216	0.50	mg/kg
91-57-6	2-methylnaphthalene			not detected	230	0.260	0.50	mg/kg
77-47-4	Hexachlorocyclopentadiene			not detected	45	0.146	0.50	mg/kg
91-58-7	2-chloronaphthalene			not detected	NLE	0.251	0.50	mg/kg
88-74-4	2-nitroaniline			not detected	39	0.307	0.50	mg/kg
131-11-3	Dimethylphthalate			not detected	NLE	0.264	0.50	mg/kg
208-96-8	Acenaphthylene			not detected	NLE	0.272	0.50	mg/kg
606-20-2	2,6-dinitrotoluene			not detected	0.7	0.261	0.50	mg/kg
99-09-2	3-nitroaniline			not detected	NLE	0.221	1.00	mg/kg
83-32-9	Acenaphthene			not detected	3400	0.271	0.50	mg/kg
132-64-9	Dibenzofuran			not detected	NLE	0.319	0.50	mg/kg
121-14-2	2,4-dinitrotoluene			not detected	0.7	0.261	0.50	mg/kg
84-66-2	Diethylphthalate			not detected	49000	0.250	0.50	mg/kg
86-73-7	Fluorene			not detected	2300	0.283	0.50	mg/kg
7005-72-3	4-chlorophenyl-phenylether			not detected	NLE	0.278	0.50	mg/kg
100-01-6	4-nitroaniline			not detected	NLE	0.273	0.50	mg/kg
86-30-6	N-nitrosodiphenylamine			not detected	99	0.271	0.50	mg/kg
103-33-3	Azobenzene			not detected	NLE	0.287	0.50	mg/kg
101-55-3	4-bromophenyl-phenylether			not detected	NLE	0.288	0.50	mg/kg
118-74-1	Hexachlorobenzene			not detected	0.3	0.300	0.50	mg/kg
85-01-8	Phenanthrene			not detected	NLE	0.297	0.50	mg/kg
120-12-7	Anthracene			not detected	17000	0.299	0.50	mg/kg
84-74-2	Di-n-butylphthalate			not detected	6100	0.286	0.50	mg/kg
206-44-0	Fluoranthene			not detected	2300	0.297	0.50	mg/kg

000046

**Semi-Volatile Analysis Report**  
Page 2

Data File Name	E537.D	Misc Info	METHOD 8270 11/30/10	Sample Weight	10.00 g
Operator	ROBERTS	Dilution factor	1	Percent Solids	100.0 %
Date Acquired	30-Nov-10	Sample Multiplier	0.100		
Sample Name	MB11221001	<i>Sample multiplier = (0.001*Dilution factor)/([sample weight(kg)]*[percent solids/100]), Multiplied by 0.001 to convert ug/kg to mg/kg.</i>			

CAS#	Name	R.T.	Response	Result	Regulatory Level (mg/kg)*	RL	Qualifiers
92-87-5	Benizidine			not detected	0.7	0.269	1.00 mg/kg
129-00-0	Pyrene			not detected	1700	0.317	0.50 mg/kg
85-68-7	Butylbenzylphthalate			not detected	1200	0.263	0.50 mg/kg
56-55-3	Benzo[a]anthracene			not detected	0.6	0.298	0.50 mg/kg
91-94-1	3,3'-dichlorobenzidine			not detected	1	0.272	0.50 mg/kg
218-01-9	Chrysene			not detected	62	0.281	0.50 mg/kg
117-81-7	bis(2-ethylhexyl)phthalate			not detected	35	0.316	0.50 mg/kg
117-84-0	Di-n-octylphthalate			not detected	2400	0.265	0.50 mg/kg
205-99-2	Benzo[b]fluoranthene			not detected	0.6	0.214	0.50 mg/kg
207-08-9	Benzo[k]fluoranthene			not detected	6	0.257	0.50 mg/kg
50-32-8	Benzo[a]pyrene			not detected	0.2	0.230	0.50 mg/kg
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	0.6	0.195	0.50 mg/kg
53-70-3	Dibenz[a,h]anthracene			not detected	0.2	0.182	0.50 mg/kg
191-24-2	Benzo[g,h,i]perylene			not detected	380000	0.185	0.50 mg/kg

\* Higher of PQL's and Interim Criteria as per NJAC 7:9-6.9(c).

**Qualifiers**

E= Value Exceeds Linear Range	MDL= Method Detection Limit
D= Value from dilution	NLE= No Limit Established
B= Compound in Related Blank	R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.	
J= Estimated concentration, value lies between RL and MDL	

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id:

MB11221001

Lab Name: FMETL Lab Code 13461  
Project: \_\_\_\_\_ Case No.: \_\_\_\_\_ Location: 686 SDG No.: 10491  
Matrix: (soil/water) SOIL Lab Sample ID: MB11221001  
Sample wt/vol: 10 (g/ml) G Lab File ID: E537.D  
Level: (low/med) LOW Date Received: 11/16/2010  
% Moisture: 0 decanted: (Y/N) N Date Extracted: 11/22/2010  
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/30/2010  
Injection Volume: 1.0 (uL) Dilution Factor: 1.0  
GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

CONCENTRATION UNITS:

Number TICs found: 1 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	extraction by-product	6.79	140000	J

## Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	E543.D	Misc Info	P51 SB1 7.0-7.5	Sample Weight	10.20 g
Operator	ROBERTS	Dilution factor	1	Percent Solids	79.7 %
Date Acquired	1-Dec-10	Sample Multiplier	0.123		
Sample Name	1049102	<i>Sample multiplier = (0.001 * Dilution factor) / ([sample weight(kg)] * [percent solids/100])</i> <i>Multiplied by 0.001 to convert ug/kg to mg/kg.</i>			

CAS#	Name	R.T.	Response	Result	Regulatory Level (mg/kg)*		MDL	RL	Qualifiers
					not detected	detected			
110-86-1	pyridine			not detected	NLE	0.122	0.62	mg/kg	
62-75-9	N-nitroso-dimethylamine			not detected	0.7	0.207	0.62	mg/kg	
62-53-3	Aniline			not detected	NLE	0.328	0.62	mg/kg	
111-44-4	bis-2-chloroethyl ether			not detected	0.4	0.237	0.62	mg/kg	
541-73-1	1,3-dichlorobenzene			not detected	5300	0.205	0.62	mg/kg	
106-46-7	1,4-dichlorobenzene			not detected	5	0.214	0.62	mg/kg	
100-51-6	Benzyl alcohol			not detected	NLE	0.317	0.62	mg/kg	
95-50-1	1,2-dichlorobenzene			not detected	5300	0.239	0.62	mg/kg	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	23	0.276	0.62	mg/kg	
621-64-7	N-nitroso-di-n-propylamine			not detected	0.2	0.311	0.62	mg/kg	
67-72-1	Hexachloroethane			not detected	35	0.232	0.62	mg/kg	
98-95-3	Nitrobenzene			not detected	31	0.278	0.62	mg/kg	
78-59-1	Isophorone			not detected	510	0.295	0.62	mg/kg	
111-91-1	bis(2-chloroethoxy)methane			not detected	NLE	0.244	0.62	mg/kg	
120-82-1	1,2,4-trichlorobenzene			not detected	73	0.269	0.62	mg/kg	
91-20-3	Naphthalene	10.77	20092470	11.95 detected	6	0.298	0.62	mg/kg	
106-47-8	4-chloroaniline			not detected	9	0.455	0.62	mg/kg	
87-68-3	Hexachlorobutadiene			not detected	6	0.266	0.62	mg/kg	
91-57-6	2-methylnaphthalene	11.80	42343609	38.60 detected	230	0.320	0.62	mg/kg	E
77-47-4	Hexachlorocyclopentadiene			not detected	45	0.180	0.62	mg/kg	
91-58-7	2-chloronaphthalene			not detected	NLE	0.309	0.62	mg/kg	
88-74-4	2-nitroaniline			not detected	39	0.378	0.62	mg/kg	
131-11-3	Dimethylphthalate			not detected	NLE	0.325	0.62	mg/kg	
208-96-8	Acenaphthylene			not detected	NLE	0.335	0.62	mg/kg	
606-20-2	2,6-dinitrotoluene			not detected	0.7	0.321	0.62	mg/kg	
99-09-2	3-nitroaniline			not detected	NLE	0.272	1.23	mg/kg	
83-32-9	Acenaphthene			not detected	3400	0.333	0.62	mg/kg	
132-64-9	Dibenzofuran			not detected	NLE	0.392	0.62	mg/kg	
121-14-2	2,4-dinitrotoluene			not detected	0.7	0.321	0.62	mg/kg	
84-66-2	Diethylphthalate			not detected	49000	0.308	0.62	mg/kg	
86-73-7	Fluorene			not detected	2300	0.348	0.62	mg/kg	
7005-72-3	4-chlorophenyl-phenylether			not detected	NLE	0.342	0.62	mg/kg	
100-01-6	4-nitroaniline			not detected	NLE	0.336	0.62	mg/kg	
86-30-6	N-nitrosodiphenylamine			not detected	99	0.333	0.62	mg/kg	
103-33-3	Azobenzene			not detected	NLE	0.353	0.62	mg/kg	
101-55-3	4-bromophenyl-phenylether			not detected	NLE	0.354	0.62	mg/kg	
118-74-1	Hexachlorobenzene			not detected	0.3	0.369	0.62	mg/kg	
85-01-8	Phenanthrene			not detected	NLE	0.365	0.62	mg/kg	
120-12-7	Anthracene	15.55	10073264	9.41 detected	17000	0.368	0.62	mg/kg	
84-74-2	Di-n-butylphthalate			not detected	6100	0.352	0.62	mg/kg	
206-44-0	Fluoranthene			not detected	2300	0.365	0.62	mg/kg	

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**Semi-Volatile Analysis Report**  
Page 2

Data File Name	E543.D	Misc Info	P51 SB1 7.0-7.5	Sample Weight	10.20 g
Operator	ROBERTS	Dilution factor	1	Percent Solids	79.7 %
Date Acquired	1-Dec-10	Sample Multiplier	0.123		
Sample Name	1049102	Sample multiplier = (0.001 * Dilution factor) / ([sample weight(kg)] * [percent solids/100]), Multiplied by 0.001 to convert ug/kg to mg/kg.			

CAS#	Name	R.T.	Response	Result	Regulatory Level (mg/kg)*	RL	Qualifiers
92-87-5	Benzdine			not detected	0.7	0.331	1.23 mg/kg
129-00-0	Pyrene			not detected	1700	0.390	0.62 mg/kg
85-68-7	Butylbenzylphthalate			not detected	1200	0.324	0.62 mg/kg
56-55-3	Benzo[a]anthracene			not detected	0.6	0.367	0.62 mg/kg
91-94-1	3,3'-dichlorobenzidine			not detected	1	0.335	0.62 mg/kg
218-01-9	Chrysene			not detected	62	0.346	0.62 mg/kg
117-81-7	bis(2-ethylhexyl)phthalate			not detected	35	0.389	0.62 mg/kg
117-84-0	Di-n-octylphthalate			not detected	2400	0.326	0.62 mg/kg
205-99-2	Benzo[b]fluoranthene			not detected	0.6	0.263	0.62 mg/kg
207-08-9	Benzo[k]fluoranthene			not detected	6	0.316	0.62 mg/kg
50-32-8	Benzo[a]pyrene			not detected	0.2	0.283	0.62 mg/kg
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	0.6	0.240	0.62 mg/kg
53-70-3	Dibenz[a,h]anthracene			not detected	0.2	0.224	0.62 mg/kg
191-24-2	Benzo[g,h,i]perylene			not detected	380000	0.228	0.62 mg/kg

\* Higher of PQL's and Interim Criteria as per NJAC 7:9-6.9(c).

**Qualifiers**

E= Value Exceeds Linear Range

D= Value from dilution

B= Compound in Related Blank

RL= Reporting Limit. The values between the MDL and RL are considered estimated.

J= Estimated concentration, value lies between RL and MDL

MDL= Method Detection Limit

NLE= No Limit Established

R.T.=Retention Time

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id:

P51 SB1 7.0-7.5

Lab Name: FMETL Lab Code 13461

Project: \_\_\_\_\_ Case No.: \_\_\_\_\_ Location: 686 SDG No.: 10491

Matrix: (soil/water) SOIL Lab Sample ID: 1049102

Sample wt/vol: 10.2 (g/ml) G Lab File ID: E543.D

Level: (low/med) LOW Date Received: 11/16/2010

% Moisture: 20.3 decanted: (Y/N) N Date Extracted: 11/22/2010

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/1/2010

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

## CONCENTRATION UNITS:

Number TICs found: 25 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000090-12-0	Naphthalene, 1-methyl-	11.96	6600	JN
2.	Alkane: Cyclic	12.08	6100	J
3.	Alkane: Branched	12.26	9600	J
4.	Naphthalene, dimethyl-	12.74	5700	J
5.	Alkane: Branched	12.94	5700	J
6.	Naphthalene, trimethyl-	13.86	6000	J
7.	Alkane: Branched	14.28	5800	J
8.	Alkane: Branched	14.69	14000	J
9.	Naphthalene, tetramethyl-	14.78	7900	J
10.	Alkane: Branched	14.97	7800	J
11.	unknown hydrocarbon	15.15	9000	J
12.	Alkane: Branched	15.23	5800	J
13.	Alkane: Branched	15.34	10000	J
14.	unknown PAH	15.68	5900	J
15.	Alkane: Branched	15.84	9700	J
16.	unknown hydrocarbon	15.99	9200	J
17.	unknown hydrocarbon	16.71	6400	J
18.	unknown PAH	17.52	7900	J
19.	unknown PAH	17.62	11000	J
20.	unknown PAH	17.68	8300	J
21.	Alkane: Branched	17.90	10000	J
22.	unknown hydrocarbon	18.07	8500	J
23.	Alkane: Branched	18.15	7100	J
24.	unknown hydrocarbon	18.27	7400	J
25.	Alkane: Branched	18.87	5800	J

## Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	E560.D	Misc Info	P51 SB1 7.0-7.5	Sample Weight	10.20 g
Operator	ROBERTS	Dilution factor	25	Percent Solids	79.7 %
Date Acquired	10-Dec-10	Sample Multiplier	3.075		
Sample Name	1049102 25x	<i>Sample multiplier = (0.001 * Dilution factor) / ([sample weight(kg)] * [percent solids/100])</i> <i>Multiplied by 0.001 to convert ug/kg to mg/kg.</i>			

CAS#	Name	R.T.	Response	Result	Regulatory Level (mg/kg)*	MDL	RL	Qualifiers
110-86-1	pyridine			not detected	NLE	3.045	15.38	mg/kg
62-75-9	N-nitroso-dimethylamine			not detected	0.7	5.166	15.38	mg/kg
62-53-3	Aniline			not detected	NLE	8.211	15.38	mg/kg
111-44-4	bis-2-chloroethyl ether			not detected	0.4	5.935	15.38	mg/kg
541-73-1	1,3-dichlorobenzene			not detected	5300	5.136	15.38	mg/kg
106-46-7	1,4-dichlorobenzene			not detected	5	5.351	15.38	mg/kg
100-51-6	Benzyl alcohol			not detected	NLE	7.934	15.38	mg/kg
95-50-1	1,2-dichlorobenzene			not detected	5300	5.966	15.38	mg/kg
39638-32-9	bis(2-chloroisopropyl)ether			not detected	23	6.889	15.38	mg/kg
621-64-7	N-nitroso-di-n-propylamine			not detected	0.2	7.780	15.38	mg/kg
67-72-1	Hexachloroethane			not detected	35	5.812	15.38	mg/kg
98-95-3	Nitrobenzene			not detected	31	6.950	15.38	mg/kg
78-59-1	Isophorone			not detected	510	7.381	15.38	mg/kg
111-91-1	bis(2-chloroethoxy)methane			not detected	NLE	6.089	15.38	mg/kg
120-82-1	1,2,4-trichlorobenzene			not detected	73	6.735	15.38	mg/kg
91-20-3	Naphthalene			not detected	6	7.442	15.38	mg/kg
106-47-8	4-chloroaniline			not detected	9	11.378	15.38	mg/kg
87-68-3	Hexachlorobutadiene			not detected	6	6.643	15.38	mg/kg
91-57-6	2-methylnaphthalene	11.71	1774305	44.97 detected	230	7.996	15.38	mg/kg D
77-47-4	Hexachlorocyclopentadiene			not detected	45	4.490	15.38	mg/kg
91-58-7	2-chloronaphthalene			not detected	NLE	7.719	15.38	mg/kg
88-74-4	2-nitroaniline			not detected	39	9.441	15.38	mg/kg
131-11-3	Dimethylphthalate			not detected	NLE	8.119	15.38	mg/kg
208-96-8	Acenaphthylene			not detected	NLE	8.365	15.38	mg/kg
606-20-2	2,6-dinitrotoluene			not detected	0.7	8.026	15.38	mg/kg
99-09-2	3-nitroaniline			not detected	NLE	6.796	30.75	mg/kg
83-32-9	Acenaphthene			not detected	3400	8.334	15.38	mg/kg
132-64-9	Dibenzofuran			not detected	NLE	9.810	15.38	mg/kg
121-14-2	2,4-dinitrotoluene			not detected	0.7	8.026	15.38	mg/kg
84-66-2	Diethylphthalate			not detected	49000	7.688	15.38	mg/kg
86-73-7	Fluorene			not detected	2300	8.703	15.38	mg/kg
7005-72-3	4-chlorophenyl-phenylether			not detected	NLE	8.549	15.38	mg/kg
100-01-6	4-nitroaniline			not detected	NLE	8.395	15.38	mg/kg
86-30-6	N-nitrosodiphenylamine			not detected	99	8.334	15.38	mg/kg
103-33-3	Azobenzene			not detected	NLE	8.826	15.38	mg/kg
101-55-3	4-bromophenyl-phenylether			not detected	NLE	8.857	15.38	mg/kg
118-74-1	Hexachlorobenzene			not detected	0.3	9.226	15.38	mg/kg
85-01-8	Phenanthrene			not detected	NLE	9.134	15.38	mg/kg
120-12-7	Anthracene			not detected	17000	9.195	15.38	mg/kg
84-74-2	Di-n-butylphthalate			not detected	6100	8.795	15.38	mg/kg
206-44-0	Fluoranthene			not detected	2300	9.134	15.38	mg/kg

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**Semi-Volatile Analysis Report**  
**Page 2**

Data File Name **E560.D**  
Operator **ROBERTS**  
Date Acquired **10-Dec-10**  
Sample Name **1049102 25x**

Misc Info **P51 SBI 7.0-7.5** Sample Weight **10.20 g**  
Dilution factor **25** Percent Solids **79.7 %**  
Sample Multiplier **3.075**  
*Sample multiplier = (0.001\*Dilution factor)/([sample weight(kg)]\*[percent solids/100]),  
Multiplied by 0.001 to convert ug/kg to mg/kg.*

CAS#	Name	R.T.	Response	Result	Regulatory Level (mg/kg)*		RL	Qualifiers
					not detected	detected		
92-87-5	Benzidine			not detected	0.7	8.272	30.75 mg/kg	
129-00-0	Pyrene			not detected	1700	9.749	15.38 mg/kg	
85-68-7	Butylbenzylphthalate			not detected	1200	8.088	15.38 mg/kg	
56-55-3	Benzo[a]anthracene			not detected	0.6	9.164	15.38 mg/kg	
91-94-1	3,3'-dichlorobenzidine			not detected	1	8.365	15.38 mg/kg	
218-01-9	Chrysene			not detected	62	8.641	15.38 mg/kg	
117-81-7	bis(2-ethylhexyl)phthalate			not detected	35	9.718	15.38 mg/kg	
117-84-0	Di-n-octylphthalate			not detected	2400	8.149	15.38 mg/kg	
205-99-2	Benzo[b]fluoranthene			not detected	0.6	6.581	15.38 mg/kg	
207-08-9	Benzo[k]fluoranthene			not detected	6	7.903	15.38 mg/kg	
50-32-8	Benzo[a]pyrene			not detected	0.2	7.073	15.38 mg/kg	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	0.6	5.997	15.38 mg/kg	
53-70-3	Dibenz[a,h]anthracene			not detected	0.2	5.597	15.38 mg/kg	
191-24-2	Benzo[g,h,i]perylene			not detected	380000	5.689	15.38 mg/kg	

\* Higher of PQL's and Interim Criteria as per NJAC 7:9-6.9(c).

**Qualifiers**

E= Value Exceeds Linear Range

D= Value from dilution

B= Compound in Related Blank

RL= Reporting Limit. The values between the MDL and RL are considered estimated.

J= Estimated concentration, value lies between RL and MDL

MDL= Method Detection Limit

NLE= No Limit Established

R.T.=Retention Time

**Semi-Volatile Analysis Report**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13461**

Data File Name	E547.D	Misc Info	P51 SB2 7.0-7.5	Sample Weight	10.33 g
Operator	ROBERTS	Dilution factor	1	Percent Solids	83.0 %
Date Acquired	1-Dec-10	Sample Multiplier	0.117		
Sample Name	1049103	Sample multiplier = (0.001 * Dilution factor) / (sample weight(kg)) * (percent solids/100)			

*Multiplied by 0.001 to convert ug/kg to mg/kg.*

CAS#	Name	R.T.	Response	Result	Regulatory Level (mg/kg)*	MDL	RL	mg/kg	Qualifiers
110-86-1	pyridine			not detected	NLE	0.115	0.58	mg/kg	
62-75-9	N-nitroso-dimethylamine			not detected	0.7	0.196	0.58	mg/kg	
62-53-3	Aniline			not detected	NLE	0.311	0.58	mg/kg	
111-44-4	bis-2-chloroethyl ether			not detected	0.4	0.225	0.58	mg/kg	
541-73-1	1,3-dichlorobenzene			not detected	5300	0.195	0.58	mg/kg	
106-46-7	1,4-dichlorobenzene			not detected	5	0.203	0.58	mg/kg	
100-51-6	Benzyl alcohol			not detected	NLE	0.301	0.58	mg/kg	
95-50-1	1,2-dichlorobenzene			not detected	5300	0.226	0.58	mg/kg	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	23	0.261	0.58	mg/kg	
621-64-7	N-nitroso-di-n-propylamine			not detected	0.2	0.295	0.58	mg/kg	
67-72-1	Hexachloroethane			not detected	35	0.220	0.58	mg/kg	
98-95-3	Nitrobenzene			not detected	31	0.264	0.58	mg/kg	
78-59-1	Isophorone			not detected	510	0.280	0.58	mg/kg	
111-91-1	bis(2-chloroethoxy)methane			not detected	NLE	0.231	0.58	mg/kg	
120-82-1	1,2,4-trichlorobenzene			not detected	73	0.255	0.58	mg/kg	
91-20-3	Naphthalene			not detected	6	0.282	0.58	mg/kg	
106-47-8	4-chloroaniline			not detected	9	0.432	0.58	mg/kg	
87-68-3	Hexachlorobutadiene			not detected	6	0.252	0.58	mg/kg	
91-57-6	2-methylnaphthalene	11.79	24079726	21.09 detected	230	0.303	0.58	mg/kg	E
77-47-4	Hexachlorocyclopentadiene			not detected	45	0.170	0.58	mg/kg	
91-58-7	2-chloronaphthalene			not detected	NLE	0.293	0.58	mg/kg	
88-74-4	2-nitroaniline			not detected	39	0.358	0.58	mg/kg	
131-11-3	Dimethylphthalate			not detected	NLE	0.308	0.58	mg/kg	
208-96-8	Acenaphthylene			not detected	NLE	0.317	0.58	mg/kg	
606-20-2	2,6-dinitrotoluene			not detected	0.7	0.304	0.58	mg/kg	
99-09-2	3-nitroaniline			not detected	NLE	0.258	1.17	mg/kg	
83-32-9	Acenaphthene			not detected	3400	0.316	0.58	mg/kg	
132-64-9	Dibenzofuran			not detected	NLE	0.372	0.58	mg/kg	
121-14-2	2,4-dinitrotoluene			not detected	0.7	0.304	0.58	mg/kg	
84-66-2	Diethylphthalate			not detected	49000	0.292	0.58	mg/kg	
86-73-7	Fluorene			not detected	2300	0.330	0.58	mg/kg	
7005-72-3	4-chlorophenyl-phenylether			not detected	NLE	0.324	0.58	mg/kg	
100-01-6	4-nitroaniline			not detected	NLE	0.318	0.58	mg/kg	
86-30-6	N-nitrosodiphenylamine			not detected	99	0.316	0.58	mg/kg	
103-33-3	Azobenzene			not detected	NLE	0.335	0.58	mg/kg	
101-55-3	4-bromophenyl-phenylether			not detected	NLE	0.336	0.58	mg/kg	
118-74-1	Hexachlorobenzene			not detected	0.3	0.350	0.58	mg/kg	
85-01-8	Phenanthrene			not detected	NLE	0.346	0.58	mg/kg	
120-12-7	Anthracene	15.56	14311656	13.13 detected	17000	0.349	0.58	mg/kg	E
84-74-2	Di-n-butylphthalate			not detected	6100	0.334	0.58	mg/kg	
206-44-0	Fluoranthene			not detected	2300	0.346	0.58	mg/kg	

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**Semi-Volatile Analysis Report**  
Page 2

Data File Name	E547.D	Misc Info	P51 SB2 7.0-7.5	Sample Weight	10.33 g
Operator	ROBERTS	Dilution factor	1	Percent Solids	83.0 %
Date Acquired	1-Dec-10	Sample Multiplier	0.117		
Sample Name	1049103	Sample multiplier = (0.001*Dilution factor)/([sample weight(kg)]*[percent solids/100], Multiplied by 0.001 to convert ug/kg to mg/kg.			

CAS#	Name	R.T.	Response	Result	Regulatory Level (mg/kg)*			Qualifiers
					RL			
92-87-5	Benzidine			not detected	0.7	0.314	1.17 mg/kg	
129-00-0	Pyrene			not detected	1700	0.370	0.58 mg/kg	
85-68-7	Butylbenzylphthalate			not detected	1200	0.307	0.58 mg/kg	
56-55-3	Benzo[a]anthracene			not detected	0.6	0.348	0.58 mg/kg	
91-94-1	3,3'-dichlorobenzidine			not detected	1	0.317	0.58 mg/kg	
218-01-9	Chrysene			not detected	62	0.328	0.58 mg/kg	
117-81-7	bis(2-ethylhexyl)phthalate			not detected	35	0.369	0.58 mg/kg	
117-84-0	Di-n-octylphthalate			not detected	2400	0.309	0.58 mg/kg	
205-99-2	Benzo[b]fluoranthene			not detected	0.6	0.250	0.58 mg/kg	
207-08-9	Benzo[k]fluoranthene			not detected	6	0.300	0.58 mg/kg	
50-32-8	Benzo[a]pyrene			not detected	0.2	0.268	0.58 mg/kg	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	0.6	0.227	0.58 mg/kg	
53-70-3	Dibenz[a,h]anthracene			not detected	0.2	0.212	0.58 mg/kg	
191-24-2	Benzo[g,h,i]perylene			not detected	380000	0.216	0.58 mg/kg	

\* Higher of PQL's and Interim Criteria as per NJAC 7:9-6.9(c).

**Qualifiers**

E= Value Exceeds Linear Range	MDL= Method Detection Limit
D= Value from dilution	NLE= No Limit Established
B= Compound in Related Blank	R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.	
J= Estimated concentration, value lies between RL and MDL	

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id:

P51 SB2 7.0-7.5

Lab Name: FMETL Lab Code 13461

Project: \_\_\_\_\_ Case No.: \_\_\_\_\_ Location: 686 SDG No.: 10491

Matrix: (soil/water) SOIL Lab Sample ID: 1049103

Sample wt/vol: 10.33 (g/ml) G Lab File ID: E547.D

Level: (low/med) LOW Date Received: 11/16/2010

% Moisture: 17 decanted: (Y/N) N Date Extracted: 11/22/2010

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/1/2010

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

## CONCENTRATION UNITS:

Number TICs found: 25 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Alkane: Cyclic	9.29	3800	J
2.	C4 alkyl benzene	9.59	3500	J
3.	Alkane: Cyclic	9.82	4100	J
4.	C4 alkyl benzene	10.04	4100	J
5.	Alkane: Branched	10.82	7300	J
6.	Alkane: Cyclic	11.16	6600	J
7.	Alkane: Branched	11.36	7800	J
8.	Naphthalene, tetrahydro-methyl-	11.47	6500	J
9.	Alkane: Branched	11.71	9200	J
10. 000090-12-0	Naphthalene, 1-methyl-	11.94	11000	JN
11.	Alkane: Branched	12.25	4900	J
12.	1H-Indene-dihydro-trimethyl	12.55	3900	J
13.	Naphthalene, trimethyl-	13.86	3500	J
14.	Alkane: Branched	14.29	3500	J
15.	Alkane: Branched	14.70	4400	J
16.	Alkane: Branched	15.35	4400	J
17.	unknown hydrocarbon	17.49	4900	J
18.	unknown hydrocarbon	17.53	7400	J
19.	unknown PAH	17.62	11000	J
20.	unknown PAH	17.68	6600	J
21.	unknown hydrocarbon	17.89	9900	J
22.	unknown hydrocarbon	18.06	5600	J
23.	Alkane: Branched	18.13	4200	J
24.	Alkane: Branched	18.26	3900	J
25.	unknown hydrocarbon	18.43	3500	J

## Semi-Volatile Analysis Report

## U.S. Army, Fort Monmouth Environmental Laboratory

## NJDEP Certification #13461

Data File Name E559.D Misc Info P51 SB2 7.0-7.5 Sample Weight 10.33 g  
 Operator ROBERTS Dilution factor 10 Percent Solids 83.0 %  
 Date Acquired 10-Dec-10 Sample Multiplier 1.166  
 Sample Name 1049103 10x

Sample multiplier = (0.001 \* Dilution factor) / ([sample weight(kg)] \* [percent solids/100])

Multiplied by 0.001 to convert ug/kg to mg/kg.

CAS#	Name	R.T.	Response	Result	Regulatory Level (mg/kg)*	MDL	RL	Qualifiers
110-86-1	pyridine			not detected	NLE	1.155	5.83	mg/kg
62-75-9	N-nitroso-dimethylamine			not detected	0.7	1.959	5.83	mg/kg
62-53-3	Aniline			not detected	NLE	3.114	5.83	mg/kg
111-44-4	bis-2-chloroethyl ether			not detected	0.4	2.251	5.83	mg/kg
541-73-1	1,3-dichlorobenzene			not detected	5300	1.948	5.83	mg/kg
106-46-7	1,4-dichlorobenzene			not detected	5	2.029	5.83	mg/kg
100-51-6	Benzyl alcohol			not detected	NLE	3.009	5.83	mg/kg
95-50-1	1,2-dichlorobenzene			not detected	5300	2.263	5.83	mg/kg
39638-32-9	bis(2-chloroisopropyl)ether			not detected	23	2.613	5.83	mg/kg
621-64-7	N-nitroso-di-n-propylamine			not detected	0.2	2.951	5.83	mg/kg
67-72-1	Hexachloroethane			not detected	35	2.204	5.83	mg/kg
98-95-3	Nitrobenzene			not detected	31	2.636	5.83	mg/kg
78-59-1	Isophorone			not detected	510	2.799	5.83	mg/kg
111-91-1	bis(2-chloroethoxy)methane			not detected	NLE	2.309	5.83	mg/kg
120-82-1	1,2,4-trichlorobenzene			not detected	73	2.554	5.83	mg/kg
91-20-3	Naphthalene			not detected	6	2.823	5.83	mg/kg
106-47-8	4-chloroaniline			not detected	9	4.315	5.83	mg/kg
87-68-3	Hexachlorobutadiene			not detected	6	2.519	5.83	mg/kg
91-57-6	2-methylnaphthalene	11.71	2517150	24.54 detected	230	3.032	5.83	mg/kg D
77-47-4	Hexachlorocyclopentadiene			not detected	45	1.703	5.83	mg/kg
91-58-7	2-chloronaphthalene			not detected	NLE	2.927	5.83	mg/kg
88-74-4	2-nitroaniline			not detected	39	3.581	5.83	mg/kg
131-11-3	Dimethylphthalate			not detected	NLE	3.079	5.83	mg/kg
208-96-8	Acenaphthylene			not detected	NLE	3.172	5.83	mg/kg
606-20-2	2,6-dinitrotoluene			not detected	0.7	3.044	5.83	mg/kg
99-09-2	3-nitroaniline			not detected	NLE	2.578	11.66	mg/kg
83-32-9	Acenaphthene			not detected	3400	3.161	5.83	mg/kg
132-64-9	Dibenzofuran			not detected	NLE	3.721	5.83	mg/kg
121-14-2	2,4-dinitrotoluene			not detected	0.7	3.044	5.83	mg/kg
84-66-2	Diethylphthalate			not detected	49000	2.916	5.83	mg/kg
86-73-7	Fluorene			not detected	2300	3.301	5.83	mg/kg
7005-72-3	4-chlorophenyl-phenylether			not detected	NLE	3.242	5.83	mg/kg
100-01-6	4-nitroaniline			not detected	NLE	3.184	5.83	mg/kg
86-30-6	N-nitrosodiphenylamine			not detected	99	3.161	5.83	mg/kg
103-33-3	Azobenzene			not detected	NLE	3.347	5.83	mg/kg
101-55-3	4-bromophenyl-phenylether			not detected	NLE	3.359	5.83	mg/kg
118-74-1	Hexachlorobenzene			not detected	0.3	3.499	5.83	mg/kg
85-01-8	Phenanthrene			not detected	NLE	3.464	5.83	mg/kg
120-12-7	Anthracene	15.45	1412108	12.67 detected	17000	3.487	5.83	mg/kg D
84-74-2	Di-n-butylphthalate			not detected	6100	3.336	5.83	mg/kg
206-44-0	Fluoranthene			not detected	2300	3.464	5.83	mg/kg

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## Semi-Volatile Analysis Report

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Data File Name	E559.D	Misc Info	P51 SB2 7.0-7.5	Sample Weight	10.33 g
Operator	ROBERTS	Dilution factor	10	Percent Solids	83.0 %
Date Acquired	10-Dec-10	Sample Multiplier	1.166		
Sample Name	1049103 10x	<i>Sample multiplier = (0.001 * Dilution factor) / ([sample weight (kg)] * [percent solids / 100]),                  Multiplied by 0.001 to convert ug/kg to mg/kg.</i>			

CAS#	Name	R.T.	Response	Result	Regulatory Level (mg/kg)*	RL	Qualifiers
92-87-5	Benzidine			not detected	0.7	3.137	11.66 mg/kg
129-00-0	Pyrene			not detected	1700	3.697	5.83 mg/kg
85-68-7	Butylbenzylphthalate			not detected	1200	3.067	5.83 mg/kg
56-55-3	Benzo[a]anthracene			not detected	0.6	3.476	5.83 mg/kg
91-94-1	3,3'-dichlorobenzidine			not detected	1	3.172	5.83 mg/kg
218-01-9	Chrysene			not detected	62	3.277	5.83 mg/kg
117-81-7	bis(2-ethylhexyl)phthalate			not detected	35	3.686	5.83 mg/kg
117-84-0	Di-n-octylphthalate			not detected	2400	3.091	5.83 mg/kg
205-99-2	Benzo[b]fluoranthene			not detected	0.6	2.496	5.83 mg/kg
207-08-9	Benzo[k]fluoranthene			not detected	6	2.997	5.83 mg/kg
50-32-8	Benzo[a]pyrene			not detected	0.2	2.683	5.83 mg/kg
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	0.6	2.274	5.83 mg/kg
53-70-3	Dibenz[a,h]anthracene			not detected	0.2	2.123	5.83 mg/kg
191-24-2	Benzo[g,h,i]perylene			not detected	380000	2.158	5.83 mg/kg

\* Higher of PQL's and Interim Criteria as per NJAC 7:9-6.9(c).

### Qualifiers

E= Value Exceeds Linear Range	MDL= Method Detection Limit
D= Value from dilution	NLE= No Limit Established
B= Compound in Related Blank	R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.	
J= Estimated concentration, value lies between RL and MDL	

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## Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	E546.D	Misc Info	P51 SB3 7.0-7.5	Sample Weight	10.31 g
Operator	ROBERTS	Dilution factor	1	Percent Solids	86.1 %
Date Acquired	1-Dec-10	Sample Multiplier	0.113		
Sample Name	1049104	Sample multiplier = (0.001 * Dilution factor) / ([sample weight(kg)] * [percent solids/100])			

*Multiplied by 0.001 to convert ug/kg to mg/kg.*

CAS#	Name	R.T.	Response	Result	Regulatory Level (mg/kg)*	MDL	RL	Qualifiers
110-86-1	pyridine			not detected	NLE	0.112	0.56	mg/kg
62-75-9	N-nitroso-dimethylamine			not detected	0.7	0.189	0.56	mg/kg
62-53-3	Aniline			not detected	NLE	0.301	0.56	mg/kg
111-44-4	bis-2-chloroethyl ether			not detected	0.4	0.217	0.56	mg/kg
541-73-1	1,3-dichlorobenzene			not detected	5300	0.188	0.56	mg/kg
106-46-7	1,4-dichlorobenzene			not detected	5	0.196	0.56	mg/kg
100-51-6	Benzyl alcohol			not detected	NLE	0.291	0.56	mg/kg
95-50-1	1,2-dichlorobenzene			not detected	5300	0.219	0.56	mg/kg
39638-32-9	bis(2-chloroisopropyl)ether			not detected	23	0.252	0.56	mg/kg
621-64-7	N-nitroso-di-n-propylamine			not detected	0.2	0.285	0.56	mg/kg
67-72-1	Hexachloroethane			not detected	35	0.213	0.56	mg/kg
98-95-3	Nitrobenzene			not detected	31	0.255	0.56	mg/kg
78-59-1	Isophorone			not detected	510	0.270	0.56	mg/kg
111-91-1	bis(2-chloroethoxy)methane			not detected	NLE	0.223	0.56	mg/kg
120-82-1	1,2,4-trichlorobenzene			not detected	73	0.247	0.56	mg/kg
91-20-3	Naphthalene			not detected	6	0.273	0.56	mg/kg
106-47-8	4-chloroaniline			not detected	9	0.417	0.56	mg/kg
87-68-3	Hexachlorobutadiene			not detected	6	0.243	0.56	mg/kg
91-57-6	2-methylnaphthalene			not detected	230	0.293	0.56	mg/kg
77-47-4	Hexachlorocyclopentadiene			not detected	45	0.164	0.56	mg/kg
91-58-7	2-chloronaphthalene			not detected	NLE	0.283	0.56	mg/kg
88-74-4	2-nitroaniline			not detected	39	0.346	0.56	mg/kg
131-11-3	Dimethylphthalate			not detected	NLE	0.297	0.56	mg/kg
208-96-8	Acenaphthylene			not detected	NLE	0.306	0.56	mg/kg
606-20-2	2,6-dinitrotoluene			not detected	0.7	0.294	0.56	mg/kg
99-09-2	3-nitroaniline			not detected	NLE	0.249	1.13	mg/kg
83-32-9	Acenaphthene			not detected	3400	0.305	0.56	mg/kg
132-64-9	Dibenzofuran			not detected	NLE	0.359	0.56	mg/kg
121-14-2	2,4-dinitrotoluene			not detected	0.7	0.294	0.56	mg/kg
84-66-2	Diethylphthalate			not detected	49000	0.282	0.56	mg/kg
86-73-7	Fluorene			not detected	2300	0.319	0.56	mg/kg
7005-72-3	4-chlorophenyl-phenylether			not detected	NLE	0.313	0.56	mg/kg
100-01-6	4-nitroaniline			not detected	NLE	0.308	0.56	mg/kg
86-30-6	N-nitrosodiphenylamine			not detected	99	0.305	0.56	mg/kg
103-33-3	Azobenzene			not detected	NLE	0.323	0.56	mg/kg
101-55-3	4-bromophenyl-phenylether			not detected	NLE	0.324	0.56	mg/kg
118-74-1	Hexachlorobenzene			not detected	0.3	0.338	0.56	mg/kg
85-01-8	Phenanthrene			not detected	NLE	0.335	0.56	mg/kg
120-12-7	Anthracene			not detected	17000	0.337	0.56	mg/kg
84-74-2	Di-n-butylphthalate			not detected	6100	0.322	0.56	mg/kg
206-44-0	Fluoranthene			not detected	2300	0.335	0.56	mg/kg

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**Semi-Volatile Analysis Report**  
**Page 2**

Data File Name <b>E546.D</b>	Misc Info <b>P51 SB3 7.0-7.5</b>	Sample Weight <b>10.31 g</b>
Operator <b>ROBERTS</b>	Dilution factor <b>1</b>	Percent Solids <b>86.1 %</b>
Date Acquired <b>1-Dec-10</b>	Sample Multiplier <b>0.113</b>	
Sample Name <b>1049104</b>	<i>Sample multiplier = (0.001*Dilution factor)/([sample weight(kg)]*[percent solids/100]), Multiplied by 0.001 to convert ug/kg to mg/kg.</i>	

CAS#	Name	R.T.	Response	Result	Regulatory Level (mg/kg)*	RL	Qualifiers
92-87-5	Benzidine			not detected	0.7	0.303	1.13 mg/kg
129-00-0	Pyrene			not detected	1700	0.357	0.56 mg/kg
85-68-7	Butylbenzylphthalate			not detected	1200	0.296	0.56 mg/kg
56-55-3	Benzo[a]anthracene			not detected	0.6	0.336	0.56 mg/kg
91-94-1	3,3'-dichlorobenzidine			not detected	1	0.306	0.56 mg/kg
218-01-9	Chrysene			not detected	62	0.317	0.56 mg/kg
117-81-7	bis(2-ethylhexyl)phthalate			not detected	35	0.356	0.56 mg/kg
117-84-0	Di-n-octylphthalate			not detected	2400	0.299	0.56 mg/kg
205-99-2	Benzo[b]fluoranthene			not detected	0.6	0.241	0.56 mg/kg
207-08-9	Benzo[k]fluoranthene			not detected	6	0.290	0.56 mg/kg
50-32-8	Benzo[a]pyrene			not detected	0.2	0.259	0.56 mg/kg
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	0.6	0.220	0.56 mg/kg
53-70-3	Dibenz[a,h]anthracene			not detected	0.2	0.205	0.56 mg/kg
191-24-2	Benzo[g,h,i]perylene			not detected	380000	0.208	0.56 mg/kg

\* Higher of PQL's and Interim Criteria as per NJAC 7:9-6.9(c).

**Qualifiers**

E= Value Exceeds Linear Range

D= Value from dilution

B= Compound in Related Blank

RL= Reporting Limit. The values between the MDL and RL are considered estimated.

J= Estimated concentration, value lies between RL and MDL

MDL= Method Detection Limit

NLE= No Limit Established

R.T.=Retention Time

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id:

P51 SB3 7.0-7.5

Lab Name: FMETL Lab Code 13461

Project: \_\_\_\_\_ Case No.: \_\_\_\_\_ Location: 686 SDG No.: 10491

Matrix: (soil/water) SOIL Lab Sample ID: 1049104

Sample wt/vol: 10.31 (g/ml) G Lab File ID: E546.D

Level: (low/med) LOW Date Received: 11/16/2010

% Moisture: 13.9 decanted: (Y/N) N Date Extracted: 11/22/2010

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/1/2010

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

## CONCENTRATION UNITS:

Number TICs found: 2 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	extraction by-product	6.78	130000	J
2.	extraction by-product	11.78	1500	J

## Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	E542.D	Misc Info	P51 SB4 7.0-7.5	Sample Weight	10.37 g
Operator	ROBERTS	Dilution factor	1	Percent Solids	81.3 %
Date Acquired	30-Nov-10	Sample Multiplier	0.119		
Sample Name	1049105				

*Sample multiplier = (0.001 \* Dilution factor) / ((sample weight (kg)) \* (percent solids / 100))*

*Multiplied by 0.001 to convert ug/kg to mg/kg.*

CAS#	Name	R.T.	Response	Result	Regulatory Level (mg/kg)*	MDL	RL	Qualifiers
110-86-1	pyridine			not detected	NLE	0.117	0.59	mg/kg
62-75-9	N-nitroso-dimethylamine			not detected	0.7	0.199	0.59	mg/kg
62-53-3	Aniline			not detected	NLE	0.317	0.59	mg/kg
111-44-4	bis-2-chloroethyl ether			not detected	0.4	0.229	0.59	mg/kg
541-73-1	1,3-dichlorobenzene			not detected	5300	0.198	0.59	mg/kg
106-46-7	1,4-dichlorobenzene			not detected	5	0.206	0.59	mg/kg
100-51-6	Benzyl alcohol			not detected	NLE	0.306	0.59	mg/kg
95-50-1	1,2-dichlorobenzene			not detected	5300	0.230	0.59	mg/kg
39638-32-9	bis(2-chloroisopropyl)ether			not detected	23	0.266	0.59	mg/kg
621-64-7	N-nitroso-di-n-propylamine			not detected	0.2	0.300	0.59	mg/kg
67-72-1	Hexachloroethane			not detected	35	0.224	0.59	mg/kg
98-95-3	Nitrobenzene			not detected	31	0.268	0.59	mg/kg
78-59-1	Isophorone			not detected	510	0.285	0.59	mg/kg
111-91-1	bis(2-chloroethoxy)methane			not detected	NLE	0.235	0.59	mg/kg
120-82-1	1,2,4-trichlorobenzene			not detected	73	0.260	0.59	mg/kg
91-20-3	Naphthalene			not detected	6	0.287	0.59	mg/kg
106-47-8	4-chloroaniline			not detected	9	0.439	0.59	mg/kg
87-68-3	Hexachlorobutadiene			not detected	6	0.256	0.59	mg/kg
91-57-6	2-methylnaphthalene			not detected	230	0.308	0.59	mg/kg
77-47-4	Hexachlorocyclopentadiene			not detected	45	0.173	0.59	mg/kg
91-58-7	2-chloronaphthalene			not detected	NLE	0.298	0.59	mg/kg
88-74-4	2-nitroaniline			not detected	39	0.364	0.59	mg/kg
131-11-3	Dimethylphthalate			not detected	NLE	0.313	0.59	mg/kg
208-96-8	Acenaphthylene			not detected	NLE	0.323	0.59	mg/kg
606-20-2	2,6-dinitrotoluene			not detected	0.7	0.310	0.59	mg/kg
99-09-2	3-nitroaniline			not detected	NLE	0.262	1.19	mg/kg
83-32-9	Acenaphthene			not detected	3400	0.321	0.59	mg/kg
132-64-9	Dibenzofuran			not detected	NLE	0.378	0.59	mg/kg
121-14-2	2,4-dinitrotoluene			not detected	0.7	0.310	0.59	mg/kg
84-66-2	Diethylphthalate			not detected	49000	0.297	0.59	mg/kg
86-73-7	Fluorene			not detected	2300	0.336	0.59	mg/kg
7005-72-3	4-chlorophenyl-phenylether			not detected	NLE	0.330	0.59	mg/kg
100-01-6	4-nitroaniline			not detected	NLE	0.324	0.59	mg/kg
86-30-6	N-nitrosodiphenylamine			not detected	99	0.321	0.59	mg/kg
103-33-3	Azobenzene			not detected	NLE	0.340	0.59	mg/kg
101-55-3	4-bromophenyl-phenylether			not detected	NLE	0.342	0.59	mg/kg
118-74-1	Hexachlorobenzene			not detected	0.3	0.356	0.59	mg/kg
85-01-8	Phenanthrene			not detected	NLE	0.352	0.59	mg/kg
120-12-7	Anthracene			not detected	17000	0.355	0.59	mg/kg
84-74-2	Di-n-butylphthalate			not detected	6100	0.339	0.59	mg/kg
206-44-0	Fluoranthene			not detected	2300	0.352	0.59	mg/kg

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## Semi-Volatile Analysis Report

### Page 2

Data File Name	E542.D	Misc Info	P51 SB4 7.0-7.5	Sample Weight	10.37 g
Operator	ROBERTS	Dilution factor	1	Percent Solids	81.3 %
Date Acquired	30-Nov-10	Sample Multiplier	0.119		
Sample Name	1049105	<i>Sample multiplier = (0.001 * Dilution factor) / ([sample weight(kg)] * [percent solids/100]),                  Multiplied by 0.001 to convert ug/kg to mg/kg.</i>			

CAS#	Name	R.T.	Response	Result	Regulatory Level (mg/kg)*		RL	Qualifiers
					not detected	detected		
92-87-5	Benzidine			not detected	0.7	0.319	1.19 mg/kg	
129-00-0	Pyrene			not detected	1700	0.376	0.59 mg/kg	
85-68-7	Butylbenzylphthalate			not detected	1200	0.312	0.59 mg/kg	
56-55-3	Benzo[a]anthracene			not detected	0.6	0.353	0.59 mg/kg	
91-94-1	3,3'-dichlorobenzidine			not detected	1	0.323	0.59 mg/kg	
218-01-9	Chrysene			not detected	62	0.333	0.59 mg/kg	
117-81-7	bis(2-ethylhexyl)phthalate			not detected	35	0.375	0.59 mg/kg	
117-84-0	Di-n-octylphthalate			not detected	2400	0.314	0.59 mg/kg	
205-99-2	Benzo[b]fluoranthene			not detected	0.6	0.254	0.59 mg/kg	
207-08-9	Benzo[k]fluoranthene			not detected	6	0.305	0.59 mg/kg	
50-32-8	Benzo[a]pyrene			not detected	0.2	0.273	0.59 mg/kg	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	0.6	0.231	0.59 mg/kg	
53-70-3	Dibenz[a,h]anthracene			not detected	0.2	0.216	0.59 mg/kg	
191-24-2	Benzo[g,h,i]perylene			not detected	380000	0.219	0.59 mg/kg	

\* Higher of PQL's and Interim Criteria as per NJAC 7:9-6.9(c).

#### Qualifiers

E= Value Exceeds Linear Range	MDL= Method Detection Limit
D= Value from dilution	NLE= No Limit Established
B= Compound in Related Blank	R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.	
J= Estimated concentration, value lies between RL and MDL	

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id:

P51 SB4 7.0-7.5

Lab Name: FMETL Lab Code 13461

Project: \_\_\_\_\_ Case No.: \_\_\_\_\_ Location: 686 SDG No.: 10491

Matrix: (soil/water) SOIL Lab Sample ID: 1049105

Sample wt/vol: 10.37 (g/ml) G Lab File ID: E542.D

Level: (low/med) LOW Date Received: 11/16/2010

% Moisture: 18.7 decanted: (Y/N) N Date Extracted: 11/22/2010

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/30/2010

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

## CONCENTRATION UNITS:

Number TICs found: 23 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	extraction by-product	6.79	160000	J
2.	extraction by-product	11.78	4000	J
3.	Alkane: Branched	12.84	750	J
4.	Alkane: Branched	13.53	910	J
5.	Alkane: Branched	13.63	820	J
6.	Alkane: Branched	13.80	790	J
7.	unknown hydrocarbon	13.84	860	J
8.	Alkane: Branched	14.20	810	J
9.	C3 alkyl benzene	14.59	2000	J
10.	unknown hydrocarbon	14.69	780	J
11.	Alkane: Branched	14.90	700	J
12.	unknown hydrocarbon	15.01	770	J
13.	unknown hydrocarbon	15.06	810	J
14.	Alkane: Branched	15.27	1000	J
15.	unknown hydrocarbon	15.49	1000	J
16.	unknown hydrocarbon	15.78	910	J
17.	unknown hydrocarbon	15.84	710	J
18.	unknown hydrocarbon	15.94	740	J
19.	unknown hydrocarbon	16.31	940	J
20.	unknown hydrocarbon	16.40	780	J
21.	unknown hydrocarbon	16.53	730	J
22.	unknown hydrocarbon	16.66	750	J
23.	unknown hydrocarbon	16.85	780	J

# LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

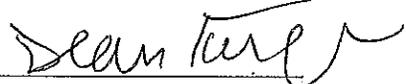
THIS FORM MUST BE COMPLETED BY THE LABORATORY OR ENVIRONMENTAL CONSULTANT AND ACCOMPANY ALL DATA SUBMISSIONS

The following Laboratory Deliverables Checklist and Non-Conformance Summary shall be included in the data submission. All deviations from the accepted methodology and procedures, of performance values outside acceptable ranges shall be summarized in the Non-Conformance Summary. The Technical Requirements for Site Remediation, effective June 7, 1993, provides further details. The document shall be bound and paginated, contain a table of contents, and all pages shall be legible. Incomplete data packages will be returned or held without review until the data package is completed.

It is recommended that the analytical results summary sheets listing all targeted and non-targeted compounds with the method detection limits, practical quantitation limits, and the laboratory and/or sample numbers be included in one section of the data package and in the main body of the report.

- |     |  |                                     |
|-----|--|-------------------------------------|
| 1.  | Cover Page, Title Page listing Lab Certification #, facility name and address, & date of report submitted. | <input checked="" type="checkbox"/> |
| 2.  | Table of Contents submitted.   | <input checked="" type="checkbox"/> |
| 3.  | Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted.           | <input checked="" type="checkbox"/> |
| 4.  | Document paginated and legible.  | <input checked="" type="checkbox"/> |
| 5.  | Chain of Custody submitted.  | <input checked="" type="checkbox"/> |
| 6.  | Samples submitted to lab within 48 hours of sample collection.   | <input checked="" type="checkbox"/> |
| 7.  | Methodology Summary submitted.   | <input checked="" type="checkbox"/> |
| 8.  | Laboratory Chronicle and Holding Time Check submitted.   | <input checked="" type="checkbox"/> |
| 9.  | Results submitted on a dry weight basis.   | <input checked="" type="checkbox"/> |
| 10. | Method Detection Limits submitted.   | <input checked="" type="checkbox"/> |
| 11. | Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP.  | <input checked="" type="checkbox"/> |

Laboratory Manager or Environmental Consultant's Signature



Date: 1/5/11

Laboratory Certification # 13461

\*Refer to NJAC 7:26E - Appendix A, Section IV - Reduced Data Deliverables - Non-USEPA/CLP Methods for further guidance.

## Laboratory Authentication Statement

I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N.J.A.C. 7:18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW-846 for Solid Waste Analysis. I have personally examined the information contained in this report and to the best of my knowledge, I believe that the submitted information is true, accurate, complete and meets the above referenced standards where applicable. I am aware that there are significant penalties for purposefully submitting falsified information, including the possibility of a fine and imprisonment.

  
Dean Tardiff  
Laboratory Manager 11/5/11

000094

# FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS  
PHONE: (732) 532-6224 FAX: (732) 532-6263  
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING  
CERTIFICATIONS: NJDEP #13461



ANALYTICAL DATA REPORT  
Fort Monmouth Environmental Laboratory  
ENVIRONMENTAL DIVISION  
Fort Monmouth, New Jersey  
PROJECT: 11-16998

## Bldg. 686

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
Trip Blank	1050401	Aqueous	22-Nov-10 07:30	11/22/10
Field Blank	1050402	Aqueous	22-Nov-10 08:45	11/22/10
PS51 SB2	1050403	Aqueous	22-Nov-10 15:40	11/22/10
600MW01	1050404	Aqueous	22-Nov-10 09:30	11/22/10

ANALYSIS:  
FORT MONMOUTH ENVIRONMENTAL LAB.  
VOA+15, BN+15

  
Dean Tardiff/Date: 11/5/11  
Laboratory Manager

# Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703

Tel (732)532-4359 Fax (732)532-6263 EMail:dean.tardiff@us.army.mil

NJDEP Certification #13461

## Chain of Custody Record

Customer: <u>Robert Youhas</u>		Project No: <u>11-16998</u>		Analysis Parameters		Comments:								
Phone #: <u>25037</u>		Location: <u>Bldg 686</u>		<table border="1"> <tr> <td>WATG</td> <td>BLKTS</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>		WATG	BLKTS							Remarks / Preservation Method
WATG	BLKTS													
Samplers Name / Company: <u>George Boyce (TVS)</u>		Sample #	Type											
LIMS/Work Order #	Sample Location	Date	Time	# bottles										
<u>0504</u>	<u>01 Trip</u>	<u>11/22/10</u>	<u>0730</u>	<u>2</u>										
<u>03</u>	<u>02 Field Blank</u>		<u>0845</u>	<u>3</u>										
<u>03</u>	<u>03 PSS1SB2</u>		<u>1540</u>	<u>3</u>				<u>SCREEN</u>						
<u>04</u>	<u>04 600 MW1</u>		<u>0930</u>	<u>3</u>				<u>6-11</u>						
Relinquished by (signature):		Date/Time:	Received by (signature):	Relinquished by (signature):		Date/Time:	Received by (signature):							
<u>George Boyce</u>		<u>11/22/10 1555</u>	<u>[Signature]</u>											
Relinquished by (signature):		Date/Time:	Received by (signature):	Relinquished by (signature):		Date/Time:	Received by (signature):							
Report Type: <input type="checkbox"/> Full, <input checked="" type="checkbox"/> Reduced, <input type="checkbox"/> Standard, <input type="checkbox"/> Screen / non-certified, <input type="checkbox"/> EDD		Comments: <u>600 MW1 Static 6.5</u>												
Turnaround time: <input checked="" type="checkbox"/> Standard 3 wks, <input type="checkbox"/> Rush Wk., <input type="checkbox"/> ASAP Verbal _____ Hrs.														

000002

# **VOLATILE ORGANICS**

**000011**

**US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY  
NJDEP CERTIFICATION # 13461**

**Definition of Qualifiers**

- U:** The compound was analyzed for but not detected.
- B:** Indicates that the compound was found in the associated method blank as well as in the sample.
- J:** Indicates an estimated value. This flag is used:
- (1) When the mass spec and retention time data indicate the presence of a compound however the result is less than the reporting limit but greater than the MDL.
  - (2) When estimating the concentration of a tentatively identified compound (TIC), where a 1:1 response is assumed.
- D:** This flag is used to identify all compounds (target or TIC) that required a dilution.
- E:** Indicates the compound's concentration exceeds the calibration range of the instrument for that specific analysis.
- N:** This flag is only used for TICs. It indicates the presumptive evidence of a compound. For a generic characterization of a TIC, such as unknown hydrocarbon, the flag is not used.

**000012**

**Volatile Analysis Report**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13461**

Data File VA8179.D  
 Operator ROBERTS  
 Date Acquired 6 Dec 2010 4:57 pm

Sample Name MB12061001  
 Field ID METHOD 624 12/6/10  
 Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level		MDL	RL	Qualifiers
					(ug/l)*				
107028	Acrolein			not detected	5	3.21	ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	2	0.98	ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	1.64	ug/L	5.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.11	ug/L	0.50 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.17	ug/L	0.50 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.17	ug/L	0.50 ug/L	
74-87-3	Chloromethane			not detected	nle	0.27	ug/L	0.50 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.22	ug/L	0.50 ug/L	
74-83-9	Bromomethane			not detected	10	0.37	ug/L	0.50 ug/L	
75-00-3	Chloroethane			not detected	nle	0.32	ug/L	0.50 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.15	ug/L	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.15	ug/L	0.50 ug/L	
67-64-1	Acetone			not detected	6000	0.32	ug/L	0.50 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.12	ug/L	0.50 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.26	ug/L	0.50 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.14	ug/L	0.50 ug/L	
75-35-3	1,1-Dichloroethane			not detected	50	0.12	ug/L	0.50 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20	ug/L	1.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.22	ug/L	0.50 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.12	ug/L	0.50 ug/L	
67-66-3	Chloroform			not detected	70	0.35	ug/L	0.50 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.12	ug/L	0.50 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.12	ug/L	0.50 ug/L	
71-43-2	Benzene			not detected	1	0.12	ug/L	0.50 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.11	ug/L	0.50 ug/L	
79-01-6	Trichloroethene			not detected	1	0.11	ug/L	0.50 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.12	ug/L	0.50 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.12	ug/L	0.50 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.24	ug/L	0.50 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1**	0.13	ug/L	0.50 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.15	ug/L	0.50 ug/L	
108-88-3	Toluene			not detected	1000	0.12	ug/L	0.50 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1**	0.13	ug/L	0.50 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.14	ug/L	0.50 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.14	ug/L	0.50 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.17	ug/L	1.00 ug/L	
126-48-1	Dibromochloromethane			not detected	1	0.12	ug/L	0.50 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.12	ug/L	0.50 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.12	ug/L	0.50 ug/L	
630-20-6	1,1,1,2-tetrachloroethane			not detected	1	0.13	ug/L	0.50 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	0.30	ug/L	1.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.14	ug/L	0.50 ug/L	
100-42-5	Styrene			not detected	100	0.14	ug/L	0.50 ug/L	
75-25-2	Bromoform			not detected	4	0.14	ug/L	0.50 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.14	ug/L	0.50 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.16	ug/L	0.50 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.15	ug/L	0.50 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.13	ug/L	0.50 ug/L	

\*Higher of PQLs and Ground Water Quality Criteria as per N.J.A.C. 7:9C

\*\*The regulatory level applies to 1,3-dichloropropene, i.e. the sum of the cis-1,3-dichloropropene and trans-1,3-dichloropropene isomers

**Qualifiers**

B = Compound found in related blank  
 E = Value above linear range  
 D = Value from dilution  
 PQL = Practical Quantitation Limit  
 J = Estimated concentration, value falls between R.L. and M.D.L.

MDL = Method Detection Limit  
 NLE = No Limit Established  
 R.T. = Retention Time  
 R.L. = Reporting Limit

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

**MB12061001**

Lab Name: FMETL NJDEP# 13461  
Project: \_\_\_\_\_ Case No: \_\_\_\_\_ Location: \_\_\_\_\_ SDG No.: 10504  
Matrix: (soil/water) WATER Lab Sample ID: MB12061001  
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VA8179.D  
Level: (low/med) LOW Date Received: 11/22/2010  
% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 12/6/2010  
GC Column: RTX-VM ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

Number TICs found: 0 (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
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**Volatile Analysis Report**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13461**

Data File      VA8181.D  
 Operator        ROBERTS  
 Date Acquired   6 Dec 2010 6:11 pm

Sample Name    1050401  
 Field ID        686 TRIP BLANK  
 Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	3.21 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	2	0.98 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	1.64 ug/L	5.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.11 ug/L	0.50 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.17 ug/L	0.50 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.17 ug/L	0.50 ug/L	
74-87-3	Chloromethane			not detected	nle	0.27 ug/L	0.50 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.22 ug/L	0.50 ug/L	
74-83-9	Bromomethane			not detected	10	0.37 ug/L	0.50 ug/L	
75-00-3	Chloroethane			not detected	nle	0.32 ug/L	0.50 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.15 ug/L	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.15 ug/L	0.50 ug/L	
67-64-1	Acetone			not detected	6000	0.32 ug/L	0.50 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.12 ug/L	0.50 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.26 ug/L	0.50 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.14 ug/L	0.50 ug/L	
75-35-3	1,1-Dichloroethane			not detected	50	0.12 ug/L	0.50 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	1.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.22 ug/L	0.50 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.12 ug/L	0.50 ug/L	
67-66-3	Chloroform			not detected	70	0.35 ug/L	0.50 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.12 ug/L	0.50 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.12 ug/L	0.50 ug/L	
71-43-2	Benzene			not detected	1	0.12 ug/L	0.50 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.11 ug/L	0.50 ug/L	
79-01-6	Trichloroethene			not detected	1	0.11 ug/L	0.50 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.12 ug/L	0.50 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.12 ug/L	0.50 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.24 ug/L	0.50 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1**	0.13 ug/L	0.50 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.15 ug/L	0.50 ug/L	
108-88-3	Toluene			not detected	1000	0.12 ug/L	0.50 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1**	0.13 ug/L	0.50 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.14 ug/L	0.50 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.14 ug/L	0.50 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.17 ug/L	1.00 ug/L	
126-48-1	Dibromochloromethane			not detected	1	0.12 ug/L	0.50 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.12 ug/L	0.50 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.12 ug/L	0.50 ug/L	
630-20-6	1,1,1,2-tetrachloroethane			not detected	1	0.13 ug/L	0.50 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	0.30 ug/L	1.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.14 ug/L	0.50 ug/L	
100-42-5	Styrene			not detected	100	0.14 ug/L	0.50 ug/L	
75-25-2	Bromoform			not detected	4	0.14 ug/L	0.50 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.14 ug/L	0.50 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.16 ug/L	0.50 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.15 ug/L	0.50 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.13 ug/L	0.50 ug/L	

\*Higher of PQLs and Ground Water Quality Criteria as per N.J.A.C. 7:9C

\*\*The regulatory level applies to 1,3-dichloropropene, i.e. the sum of the cis-1,3-dichloropropene and trans-1,3-dichloropropene isomers

**Qualifiers**

B = Compound found in related blank  
 E = Value above linear range  
 D = Value from dilution  
 PQL = Practical Quantitation Limit  
 J = Estimated concentration, value falls between R.L. and M.D.L.

MDL = Method Detection Limit  
 NLE = No Limit Established  
 R.T. = Retention Time  
 R.L. = Reporting Limit

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

686 TRIP BLANK

Lab Name: FMETL NJDEP# 13461  
Project: \_\_\_\_\_ Case No: \_\_\_\_\_ Location: \_\_\_\_\_ SDG No.: 10504  
Matrix: (soil/water) WATER Lab Sample ID: 1050401  
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VA8181.D  
Level: (low/med) LOW Date Received: 11/22/2010  
% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 12/6/2010  
GC Column: RTX-VM ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
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**Volatile Analysis Report**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13461**

Data File VA8182.D  
 Operator ROBERTS  
 Date Acquired 6 Dec 2010 6:49 pm

Sample Name 1050402  
 Field ID 686 FIELD BLANK  
 Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level		Qualifiers
					(ug/l)*	MDL	
107028	Aerolein			not detected	5	3.21 ug/L	5.00 ug/L
107131	Acrylonitrile			not detected	2	0.98 ug/L	5.00 ug/L
75650	tert-Butyl alcohol			not detected	100	1.64 ug/L	5.00 ug/L
1634044	Methyl-tert-Butyl ether			not detected	70	0.11 ug/L	0.50 ug/L
108203	Di-isopropyl ether			not detected	20000	0.17 ug/L	0.50 ug/L
75718	Dichlorodifluoromethane			not detected	1000	0.17 ug/L	0.50 ug/L
74-87-3	Chloromethane			not detected	nle	0.27 ug/L	0.50 ug/L
75-01-4	Vinyl Chloride			not detected	1	0.22 ug/L	0.50 ug/L
74-83-9	Bromomethane			not detected	10	0.37 ug/L	0.50 ug/L
75-00-3	Chloroethane			not detected	nle	0.32 ug/L	0.50 ug/L
75-69-4	Trichlorofluoromethane			not detected	2000	0.15 ug/L	0.50 ug/L
75-35-4	1,1-Dichloroethene			not detected	1	0.15 ug/L	0.50 ug/L
67-64-1	Acetone			not detected	6000	0.32 ug/L	0.50 ug/L
75-15-0	Carbon Disulfide			not detected	700	0.12 ug/L	0.50 ug/L
75-09-2	Methylene Chloride			not detected	3	0.26 ug/L	0.50 ug/L
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.14 ug/L	0.50 ug/L
75-35-3	1,1-Dichloroethane			not detected	50	0.12 ug/L	0.50 ug/L
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	1.00 ug/L
78-93-3	2-Butanone			not detected	300	0.22 ug/L	0.50 ug/L
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.12 ug/L	0.50 ug/L
67-66-3	Chloroform			not detected	70	0.35 ug/L	0.50 ug/L
75-55-6	1,1,1-Trichloroethane			not detected	30	0.12 ug/L	0.50 ug/L
56-23-5	Carbon Tetrachloride			not detected	1	0.12 ug/L	0.50 ug/L
71-43-2	Benzene			not detected	1	0.12 ug/L	0.50 ug/L
107-06-2	1,2-Dichloroethane			not detected	2	0.11 ug/L	0.50 ug/L
79-01-6	Trichloroethene			not detected	1	0.11 ug/L	0.50 ug/L
78-87-5	1,2-Dichloropropane			not detected	1	0.12 ug/L	0.50 ug/L
75-27-4	Bromodichloromethane			not detected	1	0.12 ug/L	0.50 ug/L
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.24 ug/L	0.50 ug/L
10061-01-5	cis-1,3-Dichloropropene			not detected	1**	0.13 ug/L	0.50 ug/L
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.15 ug/L	0.50 ug/L
108-88-3	Toluene			not detected	1000	0.12 ug/L	0.50 ug/L
10061-02-6	trans-1,3-Dichloropropene			not detected	1**	0.13 ug/L	0.50 ug/L
79-00-5	1,1,2-Trichloroethane			not detected	3	0.14 ug/L	0.50 ug/L
127-18-4	Tetrachloroethene			not detected	1	0.14 ug/L	0.50 ug/L
591-78-6	2-Hexanone			not detected	nle	0.17 ug/L	1.00 ug/L
126-48-1	Dibromochloromethane			not detected	1	0.12 ug/L	0.50 ug/L
108-90-7	Chlorobenzene			not detected	50	0.12 ug/L	0.50 ug/L
100-41-4	Ethylbenzene			not detected	700	0.12 ug/L	0.50 ug/L
630-20-6	1,1,1,2-tetrachloroethane			not detected	1	0.13 ug/L	0.50 ug/L
1330-20-7	m+p-Xylenes			not detected	nle	0.30 ug/L	1.00 ug/L
1330-20-7	o-Xylene			not detected	nle	0.14 ug/L	0.50 ug/L
100-42-5	Styrene			not detected	100	0.14 ug/L	0.50 ug/L
75-25-2	Bromoform			not detected	4	0.14 ug/L	0.50 ug/L
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.14 ug/L	0.50 ug/L
541-73-1	1,3-Dichlorobenzene			not detected	600	0.16 ug/L	0.50 ug/L
106-46-7	1,4-Dichlorobenzene			not detected	75	0.15 ug/L	0.50 ug/L
95-50-1	1,2-Dichlorobenzene			not detected	600	0.13 ug/L	0.50 ug/L

\*Higher of PQLs and Ground Water Quality Criteria as per N.J.A.C. 7:9C

\*\*The regulatory level applies to 1,3-dichloropropene, i.e. the sum of the cis-1,3-dichloropropene and trans-1,3-dichloropropene isomers

**Qualifiers**

B = Compound found in related blank  
 E = Value above linear range  
 D = Value from dilution  
 PQL = Practical Quantitation Limit  
 J = Estimated concentration, value falls between R.L. and M.D.L.

MDL = Method Detection Limit  
 NLE = No Limit Established  
 R.T. = Retention Time  
 R.L. = Reporting Limit

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

686 FIELD BLANK

Lab Name: FMETL NJDEP# 13461  
Project: \_\_\_\_\_ Case No: \_\_\_\_\_ Location: \_\_\_\_\_ SDG No.: 10504  
Matrix: (soil/water) WATER Lab Sample ID: 1050402  
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VA8182.D  
Level: (low/med) LOW Date Received: 11/22/2010  
% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 12/6/2010  
GC Column: RTX-VM ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

Number TICs found: 0 (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
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**Volatile Analysis Report**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13461**

Data File VA8183.D  
 Operator ROBERTS  
 Date Acquired 6 Dec 2010 7:26 pm

Sample Name 1050403  
 Field ID 686 PS51SB2  
 Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level		Qualifiers
					(ug/l)*		
					MDL	RL	
107028	Acrolein			not detected	5	3.21 ug/L	5.00 ug/L
107131	Acrylonitrile			not detected	2	0.98 ug/L	5.00 ug/L
75650	tert-Butyl alcohol			not detected	100	1.64 ug/L	5.00 ug/L
1634044	Methyl-tert-Butyl ether			not detected	70	0.11 ug/L	0.50 ug/L
108203	Di-isopropyl ether			not detected	20000	0.17 ug/L	0.50 ug/L
75718	Dichlorodifluoromethane			not detected	1000	0.17 ug/L	0.50 ug/L
74-87-3	Chloromethane			not detected	nle	0.27 ug/L	0.50 ug/L
75-01-4	Vinyl Chloride			not detected	1	0.22 ug/L	0.50 ug/L
74-83-9	Bromomethane			not detected	10	0.37 ug/L	0.50 ug/L
75-00-3	Chloroethane			not detected	nle	0.32 ug/L	0.50 ug/L
75-69-4	Trichlorofluoromethane			not detected	2000	0.15 ug/L	0.50 ug/L
75-35-4	1,1-Dichloroethene			not detected	1	0.15 ug/L	0.50 ug/L
67-64-1	Acetone			not detected	6000	0.32 ug/L	0.50 ug/L
75-15-0	Carbon Disulfide			not detected	700	0.12 ug/L	0.50 ug/L
75-09-2	Methylene Chloride			not detected	3	0.26 ug/L	0.50 ug/L
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.14 ug/L	0.50 ug/L
75-35-3	1,1-Dichloroethane			not detected	50	0.12 ug/L	0.50 ug/L
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	1.00 ug/L
78-93-3	2-Butanone			not detected	300	0.22 ug/L	0.50 ug/L
156-59-2	cis-1,2-Dichloroethene	15.13	103518	10.94 ug/L	70	0.12 ug/L	0.50 ug/L
67-66-3	Chloroform			not detected	70	0.35 ug/L	0.50 ug/L
75-55-6	1,1,1-Trichloroethane			not detected	30	0.12 ug/L	0.50 ug/L
56-23-5	Carbon Tetrachloride			not detected	1	0.12 ug/L	0.50 ug/L
71-43-2	Benzene	17.14	6560	0.23 ug/L	1	0.12 ug/L	0.50 ug/L J
107-06-2	1,2-Dichloroethane			not detected	2	0.11 ug/L	0.50 ug/L
79-01-6	Trichloroethene			not detected	1	0.11 ug/L	0.50 ug/L
78-87-5	1,2-Dichloropropane			not detected	1	0.12 ug/L	0.50 ug/L
75-27-4	Bromodichloromethane			not detected	1	0.12 ug/L	0.50 ug/L
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.24 ug/L	0.50 ug/L
10061-01-5	cis-1,3-Dichloropropene			not detected	1**	0.13 ug/L	0.50 ug/L
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.15 ug/L	0.50 ug/L
108-88-3	Toluene			not detected	1000	0.12 ug/L	0.50 ug/L
10061-02-6	trans-1,3-Dichloropropene			not detected	1**	0.13 ug/L	0.50 ug/L
79-00-5	1,1,2-Trichloroethane			not detected	3	0.14 ug/L	0.50 ug/L
127-18-4	Tetrachloroethene			not detected	1	0.14 ug/L	0.50 ug/L
591-78-6	2-Hexanone			not detected	nle	0.17 ug/L	1.00 ug/L
126-48-1	Dibromochloromethane			not detected	1	0.12 ug/L	0.50 ug/L
108-90-7	Chlorobenzene			not detected	50	0.12 ug/L	0.50 ug/L
100-41-4	Ethylbenzene	23.70	36353	1.02 ug/L	700	0.12 ug/L	0.50 ug/L
630-20-6	1,1,1,2-tetrachloroethane			not detected	1	0.13 ug/L	0.50 ug/L
1330-20-7	m-tp-Xylenes	23.88	50729	3.45 ug/L	nle	0.30 ug/L	1.00 ug/L
1330-20-7	o-Xylene			not detected	nle	0.14 ug/L	0.50 ug/L
100-42-5	Styrene			not detected	100	0.14 ug/L	0.50 ug/L
75-25-2	Bromoform			not detected	4	0.14 ug/L	0.50 ug/L
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.14 ug/L	0.50 ug/L
541-73-1	1,3-Dichlorobenzene			not detected	600	0.16 ug/L	0.50 ug/L
106-46-7	1,4-Dichlorobenzene			not detected	75	0.15 ug/L	0.50 ug/L
95-50-1	1,2-Dichlorobenzene			not detected	600	0.13 ug/L	0.50 ug/L

\*Higher of PQLs and Ground Water Quality Criteria as per N.J.A.C. 7:9C

\*\*The regulatory level applies to 1,3-dichloropropene, i.e. the sum of the cis-1,3-dichloropropene and trans-1,3-dichloropropene isomers

**Qualifiers**

B = Compound found in related blank  
 E = Value above linear range  
 D = Value from dilution  
 PQL = Practical Quantitation Limit  
 J = Estimated concentration, value falls between R.L. and M.D.L.

MDL = Method Detection Limit  
 NLE = No Limit Established  
 R.T. = Retention Time  
 R.L. = Reporting Limit

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

686 PS51 SB2

Lab Name: FMETL NJDEP# 13461

Project: \_\_\_\_\_ Case No: \_\_\_\_\_ Location: \_\_\_\_\_ SDG No.: 10504

Matrix: (soil/water) WATER Lab Sample ID: 1050403

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VA8183.D

Level: (low/med) LOW Date Received: 11/22/2010

% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 12/6/2010

GC Column: RTX-VM ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

Number TICs found: 15

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1.	C3 alkyl benzene	26.52	19	J
2. 000496-11-7	Indane	27.43	38	JN
3.	C4 alkyl benzene	27.89	26	J
4.	1H-Indene-dihydro-methyl-	28.12	31	J
5.	C4 alkyl benzene	28.40	21	J
6.	C4 alkyl benzene	28.47	31	J
7.	1H-Indene-dihydro-methyl-	28.87	33	J
8.	C4 alkyl benzene	29.03	37	J
9.	1H-Indene-dihydro-methyl-	29.09	54	J
10.	1H-Indene-dihydro-dimethyl-	29.45	28	J
11.	1H-Indene-dihydro-dimethyl-	29.67	24	J
12. 000091-20-3	Naphthalene	30.03	28	JN
13.	1H-Indene-dihydro-ethyl-	30.22	22	J
14.	1H-Indene-dihydro-dimethyl-	30.39	19	J
15.	1H-Indene-dihydro-dimethyl-	30.68	19	J

**Volatile Analysis Report**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13461**

Data File      **VA8184.D**  
 Operator       **ROBERTS**  
 Date Acquired   **6 Dec 2010 8:03 pm**

Sample Name     **1050404**  
 Field ID        **600 MW#1**  
 Sample Multiplier   **1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	3.21 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	2	0.98 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	1.64 ug/L	5.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.11 ug/L	0.50 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.17 ug/L	0.50 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.17 ug/L	0.50 ug/L	
74-87-3	Chloromethane			not detected	nle	0.27 ug/L	0.50 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.22 ug/L	0.50 ug/L	
74-83-9	Bromomethane			not detected	10	0.37 ug/L	0.50 ug/L	
75-00-3	Chloroethane			not detected	nle	0.32 ug/L	0.50 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.15 ug/L	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.15 ug/L	0.50 ug/L	
67-64-1	Acetone			not detected	6000	0.32 ug/L	0.50 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.12 ug/L	0.50 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.26 ug/L	0.50 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.14 ug/L	0.50 ug/L	
75-35-3	1,1-Dichloroethane			not detected	50	0.12 ug/L	0.50 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	1.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.22 ug/L	0.50 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.12 ug/L	0.50 ug/L	
67-66-3	Chloroform			not detected	70	0.35 ug/L	0.50 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.12 ug/L	0.50 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.12 ug/L	0.50 ug/L	
71-43-2	Benzene			not detected	1	0.12 ug/L	0.50 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.11 ug/L	0.50 ug/L	
79-01-6	Trichloroethene			not detected	1	0.11 ug/L	0.50 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.12 ug/L	0.50 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.12 ug/L	0.50 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.24 ug/L	0.50 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1**	0.13 ug/L	0.50 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.15 ug/L	0.50 ug/L	
108-88-3	Toluene			not detected	1000	0.12 ug/L	0.50 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1**	0.13 ug/L	0.50 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.14 ug/L	0.50 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.14 ug/L	0.50 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.17 ug/L	1.00 ug/L	
126-48-1	Dibromochloromethane			not detected	1	0.12 ug/L	0.50 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.12 ug/L	0.50 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.12 ug/L	0.50 ug/L	
630-20-6	1,1,1,2-tetrachloroethane			not detected	1	0.13 ug/L	0.50 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	0.30 ug/L	1.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.14 ug/L	0.50 ug/L	
100-42-5	Styrene			not detected	100	0.14 ug/L	0.50 ug/L	
75-25-2	Bromoform			not detected	4	0.14 ug/L	0.50 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.14 ug/L	0.50 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.16 ug/L	0.50 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.15 ug/L	0.50 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.13 ug/L	0.50 ug/L	

\*Higher of PQLs and Ground Water Quality Criteria as per N.J.A.C. 7:9C

\*\*The regulatory level applies to 1,3-dichloropropene, i.e. the sum of the cis-1,3-dichloropropene and trans-1,3-dichloropropene isomers

**Qualifiers**

B = Compound found in related blank  
 E = Value above linear range  
 D = Value from dilution  
 PQL = Practical Quantitation Limit  
 J = Estimated concentration, value falls between R.L. and M.D.L.

MDL = Method Detection Limit  
 NLE = No Limit Established  
 R.T. = Retention Time  
 R.L. = Reporting Limit

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

600 MW#1

Lab Name: FMETL NJDEP# 13461  
Project: \_\_\_\_\_ Case No: \_\_\_\_\_ Location: \_\_\_\_\_ SDG No.: 10504  
Matrix: (soil/water) WATER Lab Sample ID: 1050404  
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VA8184.D  
Level: (low/med) LOW Date Received: 11/22/2010  
% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 12/6/2010  
GC Column: RTX-VM ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

Number TICs found: 0 (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
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# **SEMI-VOLATILE ORGANICS**

000037

Accutest Laboratories

## Report of Analysis

Page 1 of 2

Client Sample ID:	1050402 FIELD BLANK	Date Sampled:	11/22/10
Lab Sample ID:	JA62479-1	Date Received:	11/24/10
Matrix:	AQ - Field Blank Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	Building 686		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R84012.D	1	12/02/10	LP	11/29/10	OP46979	ER3169
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

## BN TCL42 List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-86-2	Acetophenone	ND	2.0	0.40	ug/l	
1912-24-9	Atrazine	ND	5.0	0.39	ug/l	
100-52-7	Benzaldehyde	ND	5.0	0.40	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	2.0	0.35	ug/l	
85-68-7	Butyl benzyl phthalate	ND	2.0	0.25	ug/l	
92-52-4	1,1'-Biphenyl	ND	1.0	0.42	ug/l	
91-58-7	2-Chloronaphthalene	ND	2.0	0.42	ug/l	
106-47-8	4-Chloroaniline	ND	5.0	0.25	ug/l	
86-74-8	Carbazole	ND	1.0	0.17	ug/l	
105-60-2	Caprolactam	ND	2.0	0.20	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	2.0	0.25	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	2.0	0.31	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	2.0	0.39	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	2.0	0.35	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	2.0	0.22	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	2.0	0.33	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	0.30	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.30	ug/l	
84-74-2	Di-n-butyl phthalate	ND	2.0	0.19	ug/l	
117-84-0	Di-n-octyl phthalate	ND	2.0	0.40	ug/l	
84-66-2	Diethyl phthalate	ND	2.0	0.17	ug/l	
131-11-3	Dimethyl phthalate	ND	2.0	0.23	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.33	ug/l	
87-68-3	Hexachlorobutadiene	ND	1.0	0.13	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	2.0	0.24	ug/l	
67-72-1	Hexachloroethane	ND	2.0	0.21	ug/l	
78-59-1	Isophorone	ND	2.0	0.25	ug/l	
91-57-6	2-Methylnaphthalene	ND	1.0	0.66	ug/l	
88-74-4	2-Nitroaniline	ND	5.0	0.24	ug/l	
99-09-2	3-Nitroaniline	ND	5.0	0.29	ug/l	
100-01-6	4-Nitroaniline	ND	5.0	0.18	ug/l	
98-95-3	Nitrobenzene	ND	2.0	0.25	ug/l	

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	1050402 FIELD BLANK	Date Sampled:	11/22/10
Lab Sample ID:	JA62479-1	Date Received:	11/24/10
Matrix:	AQ - Field Blank Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	Building 686		

BN TCL42 List

CAS No.	Compound	Result	RL	MDL	Units	Q
621-64-7	N-Nitroso-di-n-propylamine	ND	2.0	0.44	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	86%		25-112%
321-60-8	2-Fluorobiphenyl	78%		31-106%
1718-51-0	Terphenyl-d14	67%		14-122%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact/aldol-condensation	4.70	4.6	ug/l	J
	Total TIC, Semi-Volatile		0	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

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Accutest Laboratories

Report of Analysis

Client Sample ID:	1050402 FIELD BLANK	Date Sampled:	11/22/10
Lab Sample ID:	JAG2479-1	Date Received:	11/24/10
Matrix:	AQ - Field Blank Water	Percent Solids:	n/a
Method:	SW846 8270C BY SIM SW846 3510C		
Project:	Building 686		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3M22829.D	1	12/02/10	KLS	11/29/10	OP46979A	E3M987
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	0.10	0.011	ug/l	
208-96-8	Acenaphthylene	ND	0.10	0.011	ug/l	
120-12-7	Anthracene	ND	0.10	0.0084	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.10	0.0098	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.016	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.10	0.0095	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.010	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.013	ug/l	
218-01-9	Chrysene	ND	0.10	0.011	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.019	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.0081	ug/l	
86-73-7	Fluorene	ND	0.10	0.0090	ug/l	
118-74-1	Hexachlorobenzene	ND	0.020	0.010	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.016	ug/l	
91-20-3	Naphthalene	ND	0.10	0.012	ug/l	
85-01-8	Phenanthrene	ND	0.10	0.0094	ug/l	
129-00-0	Pyrene	ND	0.10	0.012	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	89%		18-119%
321-60-8	2-Fluorobiphenyl	72%		18-104%
1718-51-0	Terphenyl-d14	58%		13-109%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

000040

Accutest Laboratories

Report of Analysis

3.2

Client Sample ID:	1050403 PS51SB2	Date Sampled:	11/22/10
Lab Sample ID:	JA62479-2	Date Received:	11/24/10
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	Building 686		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	R84053.D	1	12/03/10	LP	11/29/10	OP46979	ER3171
Run #2	R84069.D	5	12/03/10	KP	11/29/10	OP46979	ER3172

Run #	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2	1000 ml	1.0 ml

BN TCL42 List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	13.9	1.0	0.37	ug/l	
98-86-2	Acetophenone	ND	2.0	0.40	ug/l	
1912-24-9	Atrazine	ND	5.0	0.39	ug/l	
100-52-7	Benzaldehyde	ND	5.0	0.40	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	2.0	0.35	ug/l	
85-68-7	Butyl benzyl phthalate	ND	2.0	0.25	ug/l	
92-52-4	1,1'-Biphenyl	ND	1.0	0.42	ug/l	
91-58-7	2-Chloronaphthalene	ND	2.0	0.42	ug/l	
106-47-8	4-Chloroaniline	ND	5.0	0.25	ug/l	
86-74-8	Carbazole	6.3	1.0	0.17	ug/l	
105-60-2	Caprolactam	ND	2.0	0.20	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	2.0	0.25	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	2.0	0.31	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	2.0	0.39	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	2.0	0.35	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	2.0	0.22	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	2.0	0.33	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	0.30	ug/l	
132-64-9	Dibenzofuran	11.1	5.0	0.30	ug/l	
84-74-2	Di-n-butyl phthalate	ND	2.0	0.19	ug/l	
117-84-0	Di-n-octyl phthalate	1.2	2.0	0.40	ug/l	J
84-66-2	Diethyl phthalate	3.8	2.0	0.17	ug/l	
131-11-3	Dimethyl phthalate	ND	2.0	0.23	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	1.2	2.0	0.33	ug/l	J
86-73-7	Fluorene	28.6	1.0	0.27	ug/l	
87-68-3	Hexachlorobutadiene	ND	1.0	0.13	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	2.0	0.24	ug/l	
67-72-1	Hexachloroethane	ND	2.0	0.21	ug/l	
78-59-1	Isophorone	ND	2.0	0.25	ug/l	
91-57-6	2-Methylnaphthalene	139 <sup>a</sup>	5.0	3.3	ug/l	
88-74-4	2-Nitroaniline	ND	5.0	0.24	ug/l	
99-09-2	3-Nitroaniline	ND	5.0	0.29	ug/l	

ND = Not detected MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	1050403 PS51SB2	Date Sampled:	11/22/10
Lab Sample ID:	JA62479-2	Date Received:	11/24/10
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	Building 686		

## BN TCL42 List

CAS No.	Compound	Result	RL	MDL	Units	Q
100-01-6	4-Nitroaniline	ND	5.0	0.18	ug/l	
98-95-3	Nitrobenzene	ND	2.0	0.25	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	2.0	0.44	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.22	ug/l	
85-01-8	Phenanthrene	47.4	1.0	0.21	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	88%	96%	25-112%
321-60-8	2-Fluorobiphenyl	61%	68%	31-106%
1718-51-0	Terphenyl-d14	34%	39%	14-122%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
496-11-7	cycloalkane/alkene	7.94	32	ug/l	J
	Indane	8.02	35	ug/l	JN
	unknown	8.33	53	ug/l	J
	C4 alkyl benzene	8.68	40	ug/l	J
	unknown	9.86	32	ug/l	J
	1H-Indene-dihydro-dimethyl	10.59	38	ug/l	J
	alkane	10.78	41	ug/l	J
	cycloalkane/alkene	10.97	44	ug/l	J
	unknown	12.37	44	ug/l	J
	cycloalkane/alkene	12.64	56	ug/l	J
	alkane	13.08	62	ug/l	J
	Naphthalene dimethyl	13.79	150	ug/l	J
	Naphthalene dimethyl	14.03	40	ug/l	J
	unknown	16.81	40	ug/l	J
	Phenanthrene dimethyl	20.18	35	ug/l	J
	Total TIC, Semi-Volatile		742	ug/l	J

(a) Result is from Run# 2

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

000042

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## Report of Analysis

Page 1 of 1

Client Sample ID:	1050403 PS51SB2	Date Sampled:	11/22/10
Lab Sample ID:	JA62479-2	Date Received:	11/24/10
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8270C BY SIM SW846 3510C		
Project:	Building 686		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3M22837.D	1	12/02/10	KLS	11/29/10	OP46979A	E3M987
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
208-96-8	Acenaphthylene	ND	0.10	0.011	ug/l	
120-12-7	Anthracene	2.78	0.10	0.0084	ug/l	
56-55-3	Benzo(a)anthracene	0.152	0.10	0.0098	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.016	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.10	0.0095	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.010	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.013	ug/l	
218-01-9	Chrysene	0.105	0.10	0.011	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.019	ug/l	
206-44-0	Fluoranthene	0.689	0.10	0.0081	ug/l	
118-74-1	Hexachlorobenzene	ND	0.020	0.010	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.016	ug/l	
91-20-3	Naphthalene	4.97	0.10	0.012	ug/l	
129-00-0	Pyrene	1.80	0.10	0.012	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	52%		18-119%
321-60-8	2-Fluorobiphenyl	27%		18-104%
1718-51-0	Terphenyl-d14	19%		13-109%

ND = Not detected    MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

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Accutest Laboratories

## Report of Analysis

Page 1 of 2

Client Sample ID:	1050404 600MW01	Date Sampled:	11/22/10
Lab Sample ID:	JA62479-3	Date Received:	11/24/10
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	Building 686		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	R84049.D	1	12/03/10	LP	11/29/10	OP46979	ER3171

Run #1	Initial Volume	Final Volume
Run #2	1000 ml	1.0 ml

## BN TCL42 List

CAS No.	Compound	Result	RL	MDL	Units	Q
98-86-2	Acetophenone	ND	2.0	0.40	ug/l	
1912-24-9	Atrazine	ND	5.0	0.39	ug/l	
100-52-7	Benzaldehyde	ND	5.0	0.40	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	2.0	0.35	ug/l	
85-68-7	Butyl benzyl phthalate	ND	2.0	0.25	ug/l	
92-52-4	1,1'-Biphenyl	ND	1.0	0.42	ug/l	
91-58-7	2-Chloronaphthalene	ND	2.0	0.42	ug/l	
106-47-8	4-Chloroaniline	ND	5.0	0.25	ug/l	
86-74-8	Carbazole	ND	1.0	0.17	ug/l	
105-60-2	Caprolactam	ND	2.0	0.20	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	2.0	0.25	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	2.0	0.31	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	2.0	0.39	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	2.0	0.35	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	2.0	0.22	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	2.0	0.33	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	0.30	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.30	ug/l	
84-74-2	Di-n-butyl phthalate	ND	2.0	0.19	ug/l	
117-84-0	Di-n-octyl phthalate	ND	2.0	0.40	ug/l	
84-66-2	Diethyl phthalate	ND	2.0	0.17	ug/l	
131-11-3	Dimethyl phthalate	ND	2.0	0.23	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.33	ug/l	
87-68-3	Hexachlorobutadiene	ND	1.0	0.13	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	20	0.24	ug/l	
67-72-1	Hexachloroethane	ND	2.0	0.21	ug/l	
78-59-1	Isophorone	ND	2.0	0.25	ug/l	
91-57-6	2-Methylnaphthalene	ND	1.0	0.66	ug/l	
88-74-4	2-Nitroaniline	ND	5.0	0.24	ug/l	
99-09-2	3-Nitroaniline	ND	5.0	0.29	ug/l	
100-01-6	4-Nitroaniline	ND	5.0	0.18	ug/l	
98-95-3	Nitrobenzene	ND	2.0	0.25	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

000044

Report of Analysis

Client Sample ID:	1050404 600MW01	Date Sampled:	11/22/10
Lab Sample ID:	JA62479-3	Date Received:	11/24/10
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	Building 686		

BN TCL42 List

CAS No.	Compound	Result	RL	MDL	Units	Q
621-64-7	N-Nitroso-di-n-propylamine	ND	2.0	0.44	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.22	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	88%		25-112%
321-60-8	2-Fluorobiphenyl	81%		31-106%
1718-51-0	Terphenyl-d14	63%		14-122%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	system artifact/aldol-condensation	4.69	4.6	ug/l	J
	Total TIC, Semi-Volatile		0	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

000045

Accutest Laboratories

**Report of Analysis**

Client Sample ID:	1050404 600MW01	Date Sampled:	11/22/10
Lab Sample ID:	JA62479-3	Date Received:	11/24/10
Matrix:	AQ - Water	Percent Solids:	n/a
Method:	SW846 8270C BY SIM SW846 3510C		
Project:	Building 686		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3M22830.D	1	12/02/10	KLS	11/29/10	OP46979A	E3M987
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	0.147	0.10	0.011	ug/l	
208-96-8	Acenaphthylene	ND	0.10	0.011	ug/l	
120-12-7	Anthracene	ND	0.10	0.0084	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.10	0.0098	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.10	0.016	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.10	0.0095	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	0.10	0.010	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.10	0.013	ug/l	
218-01-9	Chrysene	ND	0.10	0.011	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.10	0.019	ug/l	
206-44-0	Fluoranthene	ND	0.10	0.0081	ug/l	
86-73-7	Fluorene	0.475	0.10	0.0090	ug/l	
118-74-1	Hexachlorobenzene	ND	0.020	0.010	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.10	0.016	ug/l	
91-20-3	Naphthalene	ND	0.10	0.012	ug/l	
85-01-8	Phenanthrene	ND	0.10	0.0094	ug/l	
129-00-0	Pyrene	ND	0.10	0.012	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	101%		18-119%
321-60-8	2-Fluorobiphenyl	76%		18-104%
1718-51-0	Terphenyl-d14	55%		13-109%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

**000046**

# LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

THIS FORM MUST BE COMPLETED BY THE LABORATORY OR ENVIRONMENTAL CONSULTANT AND ACCOMPANY ALL DATA SUBMISSIONS

The following Laboratory Deliverables Checklist and Non-Conformance Summary shall be included in the data submission. All deviations from the accepted methodology and procedures, of performance values outside acceptable ranges shall be summarized in the Non-Conformance Summary. The Technical Requirements for Site Remediation, effective June 7, 1993, provides further details. The document shall be bound and paginated, contain a table of contents, and all pages shall be legible. Incomplete data packages will be returned or held without review until the data package is completed.

It is recommended that the analytical results summary sheets listing all targeted and non-targeted compounds with the method detection limits, practical quantitation limits, and the laboratory and/or sample numbers be included in one section of the data package and in the main body of the report.

1. Cover Page, Title Page listing Lab Certification #, facility name and address, & date of report submitted.
2. Table of Contents submitted.
3. Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted.
4. Document paginated and legible.
5. Chain of Custody submitted.
6. Samples submitted to lab within 48 hours of sample collection.
7. Methodology Summary submitted.
8. Laboratory Chronicle and Holding Time Check submitted.
9. Results submitted on a dry weight basis.
10. Method Detection Limits submitted.
11. Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP.

✓  
✓  
✓  
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✓

Laboratory Manager or Environmental Consultant's Signature *Sean Tard*  
Date: 1/5/11

Laboratory Certification # 13461

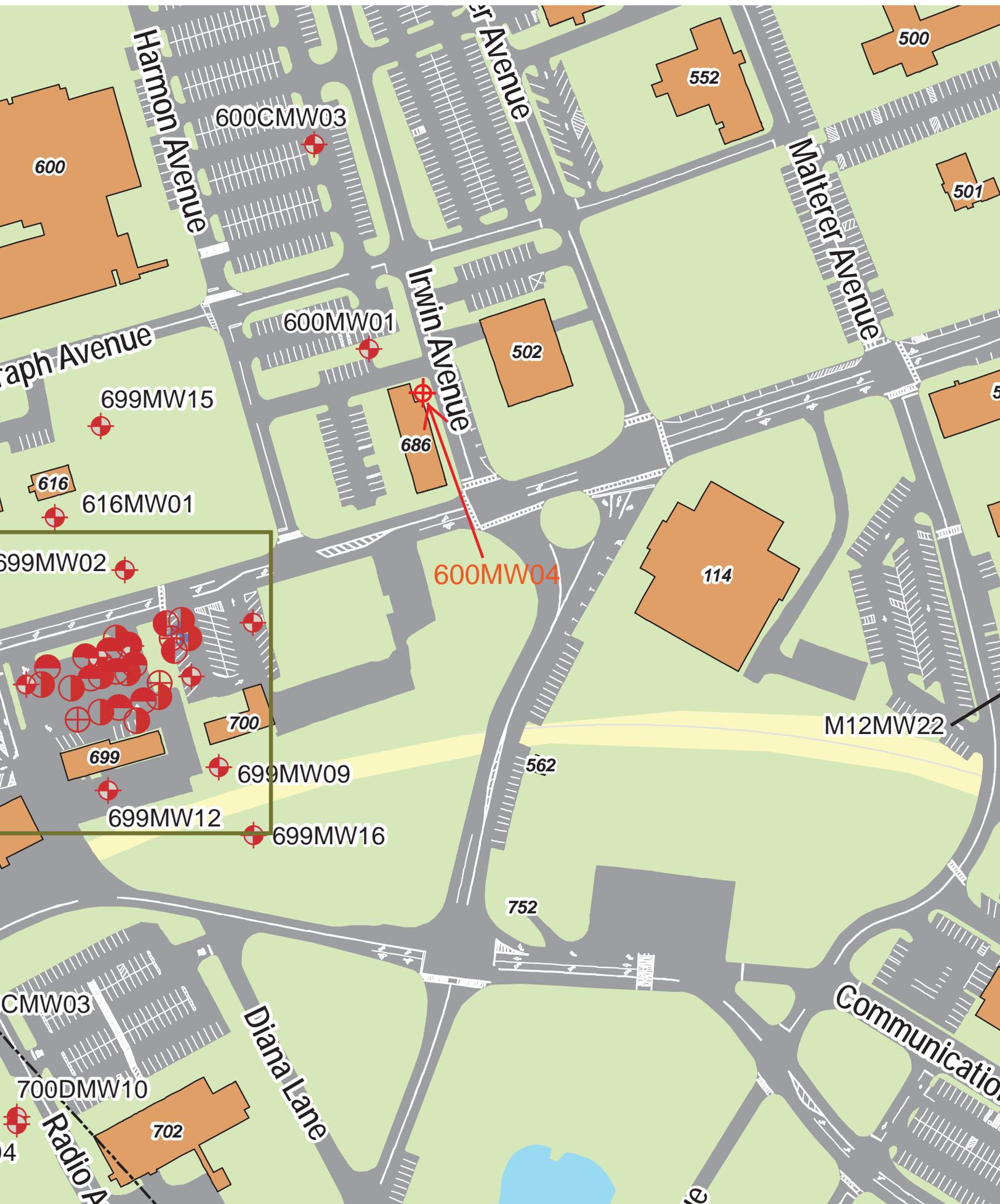
\*Refer to NJAC 7:26E - Appendix A, Section IV - Reduced Data Deliverables - Non-USEPA/CLP Methods for further guidance.

## Laboratory Authentication Statement

I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N.J.A.C. 7:18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW-846 for Solid Waste Analysis. I have personally examined the information contained in this report and to the best of my knowledge, I believe that the submitted information is true, accurate, complete and meets the above referenced standards where applicable. I am aware that there are significant penalties for purposefully submitting falsified information, including the possibility of a fine and imprisonment.

  
Dean Tardiff  
Laboratory Manager 1/5/11

000104



ATTACHMENT OO

UST 789 Report



**United States Army**  
Fort Monmouth, New Jersey

---

**Underground Storage Tank  
Closure and Site Investigation  
Report**

*Building 789  
Main Post Area*

---

**NJDEP UST Registration No. 081533-126  
NJDEP Closure Approval No. C-93-3612**

February 1996

**SMITH**  
ENVIRONMENTAL TECHNOLOGIES CORPORATION

**UNDERGROUND STORAGE TANK  
CLOSURE AND SITE INVESTIGATION REPORT**

**BUILDING 789**

**MAIN POST AREA  
NJDEP UST REGISTRATION NO. 081533-126  
NJDEP CLOSURE APPROVAL NO. C-93-3612**

**FEBRUARY 1996**

**PROJECT NO.: 09-5004-06  
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**

789.DOC

**SMITH**  
ENVIRONMENTAL TECHNOLOGIES CORPORATION



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### APPENDICES

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Appendix B	Certifications
Appendix C	Waste Manifest
Appendix D	UST Disposal Certificate
Appendix E	Soil Analytical Data Package



## EXECUTIVE SUMMARY

### UST Closure

On May 9, 1994, a steel underground storage tank (UST) was closed by removal in accordance with New Jersey Department of Environmental Protection (NJDEP) Closure Approval No. C-93-3612 at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey. The UST, NJDEP Registration No. 081533-126, was located immediately adjacent to Building 789 in the Main Post area of U.S. Army, Fort Monmouth. UST No. 081533-126 was a 550-gallon No. 2 diesel 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

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). Soils surrounding the tank were screened visually and with air monitoring instruments for evidence of contamination. Following removal, the UST was inspected for holes. No holes were noted in the UST and no evidence of potentially contaminated soils was observed surrounding the tank.

On May 9, 1994, following removal of the UST, post-excavation soil samples A, B, C, and D, were collected from a total of four (4) locations along the sidewalls of the excavation at a depth of 3.0 feet below ground surface (bgs). Sample E was collected along the base of the excavation at a depth of 4.5 feet bgs. All samples were analyzed for total petroleum hydrocarbons (TPHC). The piping length was less than 15 feet, therefore no piping samples were collected.

### Findings

All post-excavation soil samples collected from the UST excavation at Building 789 contained TPHC concentrations below the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 milligrams per kilogram (mg/kg) (N.J.A.C. 7:26D and revisions dated February 3, 1994). Samples A, D, and E, contained levels of TPHC ranging in concentration from 4.14 mg/kg to 60.1 mg/kg. All other samples contained non-detectable concentrations of TPHC.

### Site Restoration

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.



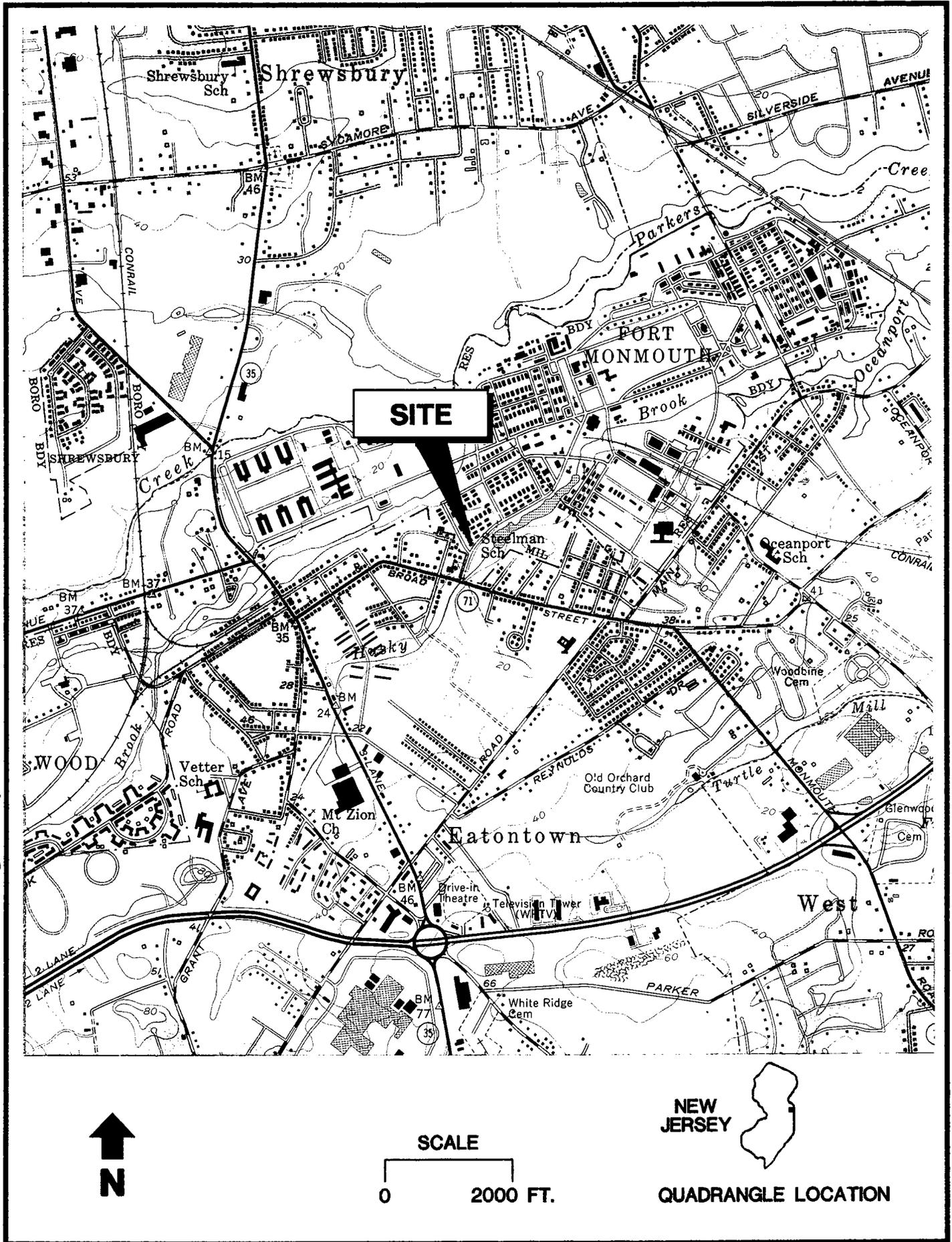
### Site Assessment Quality Assurance

The sampling and laboratory analysis conducted during the site assessment were performed in accordance with Section 7:26E-2.1 of the *Technical Requirements*.

### Conclusions and Recommendations

Based on OVA readings and the post-excavation soil sampling results, soils with TPHC concentrations exceeding the NJDEP soil cleanup criteria for total organic contaminants of 10,000 mg/kg do not exist in the former location of the UST or associated piping.

No further action is proposed in regard to the closure and site assessment of UST No. 081533-126 at Building 789.





## 1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

### 1.1 OVERVIEW

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 081533-126, was closed at Building 789 at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey on May 9, 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 August 2, 1993. The plan was approved on September 7, 1993 and assigned TMS No. C-93-3612. The UST was a steel, 550-gallon tank containing No. 2 diesel oil.

Decommissioning activities for UST No. 081533-126 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. 081533-126 proceeded under the approval of the NJDEP Bureau of Underground Storage Tanks (NJDEP-BUST). The NJDEP-BUST closure approval and signed certifications for UST No. 081533-126 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 no significant historical discharges are associated with the UST or associated piping.

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.

## 1.2 SITE DESCRIPTION

Building 789 is located in the southwestern portion of the Main Post area of Fort Monmouth as shown on Figure 1. UST No. 081533-126 was located northwest of Building 789 and appurtenant piping ran less than 15 feet southeast from the fill port area to Building 789. The fill port area was located directly above the UST. 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 789. Included is a description of the regional geology of the area surrounding Fort Monmouth as well as descriptions of the local geology and hydrogeology of the Main Post area.

#### Regional Geology

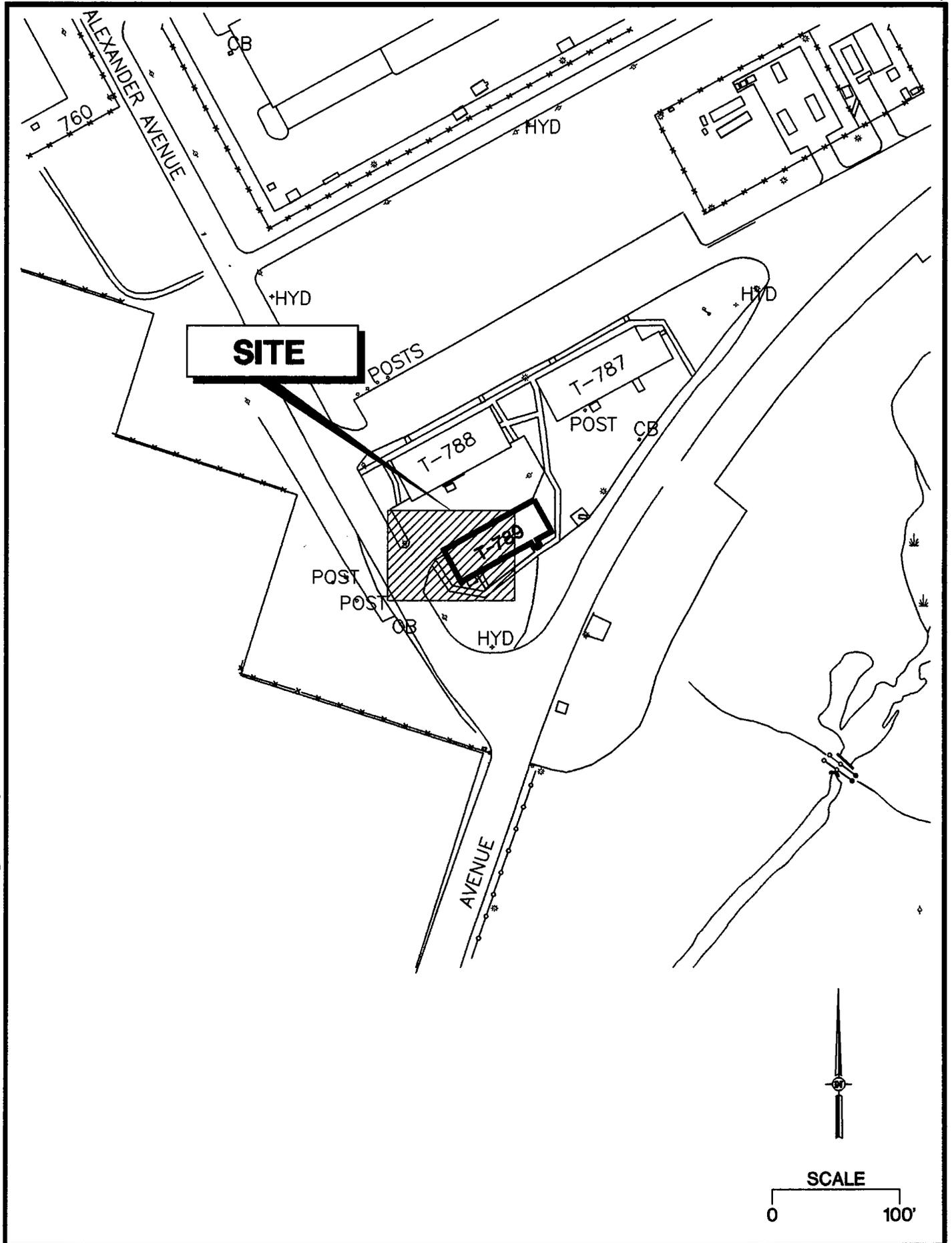
Monmouth County lies within the New Jersey Section of the Atlantic Coastal Plain physiographic province. The Main Post, Charles Wood, and the Evans areas are located in what may be referred to as the Outer Coastal Plain subprovince, or the Outer Lowlands.

In general, New Jersey Coastal Plain formations consist of a seaward-dipping wedge of unconsolidated deposits of clay, silt, and gravel. These formations typically strike northeast-southwest with a dip ranging from 10 to 60 feet per mile and were deposited on Precambrian and lower Paleozoic rocks (Zapeczka, 1989). These sediments, predominantly derived from deltaic, shallow marine, and continental shelf environments, date from Cretaceous through the Quaternary Periods. The mineralogy ranges from quartz to glauconite.

The formations record several major transgressive/regressive cycles and contain units which are generally thicker to the southeast and reflect a deeper water environment. 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 Zapeczka, 1990).

#### Local Geology

Based on the regional geologic map (Jablonski, 1968), the Cretaceous age Red Bank and Tinton Sands outcrop at the Main Post area. The Red Bank sand conformably overlies the Navesink Formation and dips to the southeast at 35 feet per mile. The upper member (Shrewsbury) of the Red Bank sand is a yellowish-gray to reddish brown clayey, medium-to-



Source: BCM/Smith Environmental Technologies Corporation (072)

Project No. 09-5004-06

Figure 2  
**Building 789  
Site Map**



coarse-grained sand that contains abundant rock fragments, minor mica and glauconite (Jablonski). The lower member (Sandy Hook) is a dark gray to black, medium-to-fine grained sand with abundant clay, mica, and glauconite.

The Tinton sand conformably overlies the Red Bank Sand and ranges from a clayey medium to very coarse grained feldspathic quartz and glauconite sand to a glauconitic coarse sand. The color varies from dark yellowish orange or light brown to moderate brown and from light olive to grayish olive. Glauconite may constitute 60 to 80 percent of the sand fraction in the upper part of the unit (Minard, 1969). The upper part of the Tinton is often highly oxidized and iron oxide encrusted (Minard).

### Hydrogeology

The water table aquifer in the Main Post area is identified as part of the "composite confining units," or minor aquifers. The minor aquifers include the Navesink formation, Red Bank Sand, Tinton Sand, Hornerstown Sand, Vincentown Formation, Manasquan Formation, Shark River Formation, Piney Point Formation, and the basal clay of the Kirkwood Formation.

Based on records of wells drilled in the Main Post area, water is typically encountered at depths of 2 to 9 feet below ground surface (bgs). According to Jablonski, wells drilled in the Red Bank and Tinton Sands may produce 2 to 25 gallons per minute (gpm). Some well owners have reported acidic water that requires treatment to remove iron.

Due to the proximity of the Atlantic Ocean to Fort Monmouth, shallow groundwater may be tidally influenced and may flow toward creeks and brooks as the tide goes out, and away from creeks and brooks as the tide comes in. However, an abundance of clay lenses and sand deposits were noted in borings installed throughout Fort Monmouth. Therefore the direction of shallow groundwater should be determined on a case by case basis.

## **1.3 HEALTH AND SAFETY**

Before, during, and after all decommissioning activities, hazards at the work site which may have posed a threat to the Health and Safety of all personnel who were involve with, or were affected by, the decommissioning of the UST system were minimized. All areas which posed, or may have been suspected to pose a vapor hazard were monitored by a qualified individual utilizing an organic vapor analyzer (OVA). The individual ascertained if the area was properly vented to render the area safe, as defined by OSHA.

## 1.4 REMOVAL OF UNDERGROUND STORAGE TANKS

### 1.4.1 General Procedures

- All underground obstructions (utilities, etc.) were marked out by the contractor performing the closure prior to excavation activities.
- All activities were carried out with the greatest regard to safety and health and the safeguarding of the environment.
- All excavated soils were visually examined and screened with an OVA for evidence of contamination. Potentially contaminated soils were identified and logged during closure activities.
- Surface materials (i.e., asphalt, concrete, etc.) were excavated and staged separately from all soil and recycled in accordance with all applicable regulations and laws.
- A Sub-Surface Evaluator from the DPW was present during all closure activities.

### 1.4.2 Underground Storage Tank Excavation and Cleaning

Prior to UST decommissioning activities, surficial soil was removed to expose the UST and associated piping. All free product present in the piping was drained into the UST, and the UST was purged to remove vapors prior to cutting and removal of the piping. After removal of the associated piping, a manway was made in the UST to allow for proper cleaning. The UST was completely emptied of all liquids prior to removal from the ground. Approximately 428 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 (No. NJA-1603245).

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 holes. No holes or punctures were observed during the inspection by the Sub-Surface Evaluator. Soils surrounding the UST were screened visually and with an OVA for evidence of contamination. No evidence of contamination was observed.

Soil screening was also performed along the piping associated with the UST. No contamination was observed anywhere along the piping length.



## 1.5 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The tank was transported by CUTE Inc., to Mazza and Sons Inc. for disposal in compliance with all applicable regulations and laws. See 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 OVA air monitoring and TPHC analysis results from the post-excavation soil samples, no soils exhibited signs of contamination. Therefore, the excavated soils were used as backfill following removal of the UST.



## 2.0 SITE INVESTIGATION ACTIVITIES

### 2.1 OVERVIEW

The Site Investigation was managed and carried out by U.S. Army DPW personnel. All analyses were performed and reported by U.S. Army, Fort Monmouth Environmental Laboratory, a NJDEP-certified testing laboratory. All sampling was performed under the direct supervision of a NJDEP Certified Sub-Surface Evaluator according to the methods described in the NJDEP *Field Sampling Procedures Manual* (1992). Sampling frequency and parameters analyzed complied with the NJDEP-BUST document *Interim Closure Requirements for Underground Storage Tank Systems* (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
- Hazardous Waste Hauler: Freehold Cartage Inc.  
Contact Person: Barry Olsen  
Phone Number: (908) 462-1001  
NJDEP Hazardous Waste Hauler No.: 2265

### 2.2 FIELD SCREENING/MONITORING

Field screening was performed by a NJDEP certified Sub-Surface Evaluator using an OVA and visual observations to identify potentially contaminated material. Soil excavated from around the tank and appurtenant piping, as well as the UST excavation sidewalls and bottom did not exhibit any evidence of potential contamination.



### 2.3 SOIL SAMPLING

On May 9, 1994, post-excavation soil samples A, B, C, and D, were collected from a total of four (4) locations along the sidewalls of the UST excavation at a depth of 3.0 feet below ground surface (bgs). Sample E was collected along the base of the UST excavation at a depth of 4.5 feet bgs. The piping length was less than 15 feet, therefore no piping samples were collected. Refer to soil sampling location map on Figure 3. All samples were analyzed for total petroleum hydrocarbons (TPHC). Because none of the post-excavation soil samples exhibited a TPHC concentration exceeding 1,000 milligrams per kilogram (mg/kg), none were analyzed for volatile organic compounds with a forward library search for 10 tentatively identified compounds (VOCs).

The site assessment was performed by U.S. Army personnel in accordance with the NJDEP *Technical Requirements* and the NJDEP *Field Sampling Procedures Manual*. A summary of sampling activities including parameters analyzed is provided in Table 1. The post-excavation soil samples were collected using decontaminated polystyrene scoops. Actual soil TPHC values may be higher than reported, due to sample utensil absorbency. If absorbency resulted in reducing the actual soil TPHC concentration by 50%, the highest soil contaminant would have been 120.2 mg/kg, still below the applicable NJDEP soil cleanup standard for total organic contaminants of 10,000 mg/kg. Following soil sampling activities, the samples were chilled and delivered to U.S. Army Fort Monmouth Environmental Laboratory located in Fort Monmouth, New Jersey, for analysis.

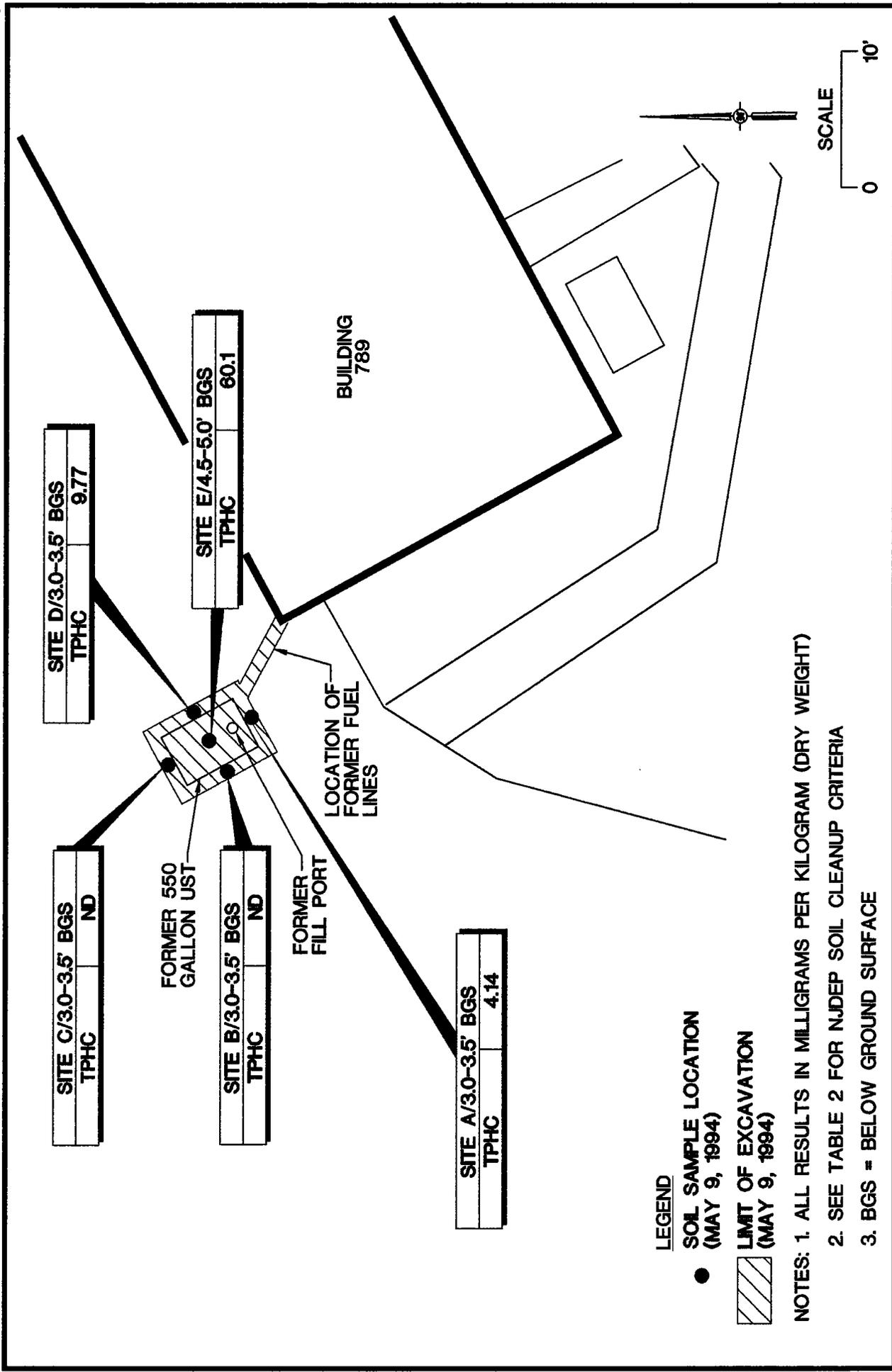


TABLE 1

SUMMARY OF SAMPLING ACTIVITIES  
 BUILDING 789, MAIN POST  
 FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Matrix	Sample Type	Analytical Parameters (and USEPA Methods) *	Sampling Method
A	05-09-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
B	05-09-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
C	05-09-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
D	05-09-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
E	05-09-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop

\*Note: TPHC Total Petroleum Hydrocarbons (Method 418.1 / soil and aqueous)



### 3.0 CONCLUSIONS AND RECOMMENDATIONS

#### 3.1 SOIL SAMPLING RESULTS

To evaluate soil conditions following removal of the UST and associated piping, post-excavation soil samples were collected from a total of five (5) locations on May 9, 1994. All samples were analyzed for TPHC. The post-excavation soil sample results were compared to the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 mg/kg (N.J.A.C. 7:26D and revisions dated February 3, 1994). A summary of the analytical results and comparison to the NJDEP soil cleanup criteria is provided in Table 2 and the soil sampling results are shown on Figure 3. The soil analytical data package is provided in Appendix E.

All post-excavation soil samples collected on May 9, 1994, from the UST excavation contained either non-detectable concentrations of TPHC or concentrations below the NJDEP soil cleanup criteria. Samples A, D, and E contained levels of TPHC ranging in concentration from 4.14 mg/kg to 60.1 mg/kg. All other samples contained a non-detectable concentration of TPHC.

#### 3.2 CONCLUSIONS AND RECOMMENDATIONS

The analytical results for all post-excavation soil samples collected from the UST closure excavation at Building 789 were below the NJDEP soil cleanup criteria for total organic contaminants.

Based on OVA readings and the post-excavation soil sampling results, soils with TPHC concentrations exceeding the NJDEP soil cleanup criteria of 10,000 mg/kg do not exist in the former location of the UST or associated piping.

No further action is proposed in regard to the closure and site assessment of UST No. 081533-126 at Building 789.

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS  
 BUILDING 789  
 FT. MONMOUTH, NEW JERSEY

PAGE 1 OF 1

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/3.0-3.5'	1485.1	05-09-94	05-10-94	Total Solid TPHC	-- 3.3	-- yes	95 % 4.14	-- 10,000	-- --
B/3.0-3.5'	1485.2	05-09-94	05-10-94	Total Solid TPHC	-- 3.3	-- yes	93 % ND	-- 10,000	-- --
C/3.0-3.5'	1485.3	05-09-94	05-10-94	Total Solid TPHC	-- 3.3	-- yes	96 % ND	-- 10,000	-- --
D/3.0-3.5'	1485.4	05-09-94	05-10-94	Total Solid TPHC	-- 3.3	-- yes	94 % 9.77	-- 10,000	-- --
E/4.5-5.0'	1485.5	05-09-94	05-10-94	Total Solid TPHC	-- 3.3	-- yes	96 % 60.1	-- 10,000	-- --

## Notes:

- \* Cleanup criteria for total organics
- Not applicable / does not exceed criteria
- TPHC Total Petroleum Hydrocarbons

Smith Environmental Technologies Corporation (Project No. 09-5004-06)

soil789.doc



## 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-93-3612

UST #

0081533

US Army  
BLDG. 789  
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 25% of the  
samples will be analyzed for VO+10.

ON-SITE MANAGER:

C. Appleby

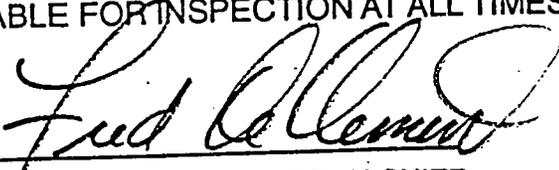
908-532-1475  
TELEPHONE:

OWNER:

TELEPHONE:

EFFECTIVE DATE: **SEP 07 1993**

THIS FORM MUST BE DISPLAYED AT THE SITE DURING THE APPROVED  
ACTIVITY AND MUST BE MADE AVAILABLE FOR INSPECTION AT ALL TIMES.

  
KEVIN F. KRATINA, BUREAU CHIEF  
BUREAU OF UNDERGROUND STORAGE TANKS



**APPENDIX B**  
**CERTIFICATIONS**



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. 789*

081533-126  
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 07703      County Monmouth  
Telephone No. (908) 532-

OWNER'S NAME AND ADDRESS, if different from above

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Telephone No. \_\_\_\_\_

II. DISCHARGE REPORTING REQUIREMENTS

- A. Was contamination found? \_\_\_ Yes  No  If Yes, Case No. \_\_\_\_\_  
(Note: All discharges must be reported to the Environmental Action Hotline (609) 292-7172)
- B. The substance(s) discharged was(were) N/A
- C. Have any vapor hazards been mitigated? \_\_\_ Yes \_\_\_ No  N/A.

III. DECOMMISSIONING OF TANK SYSTEMS

Closure Approval No. C-93-3612

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:

- North arrow and scale
- The locations of the ground water monitoring wells
- Location and depth of each soil sample and boring
- All major surface and sub-surface structures and utilities
- Approximate property boundaries
- All existing or closed underground storage tank systems, including appurtenant piping
- A cross-sectional view indicating depth of tank, stratigraphy and location of water table
- Locations of surface water bodies

C. Soil samples and borings (check appropriate answer)

- Were soil samples taken from the excavation as prescribed?  Yes \_\_\_ No \_\_\_ N/A
- Were soil borings taken at the tank system closure site as prescribed? \_\_\_ Yes \_\_\_ No  N/A
- Attach the analytical results in tabular form and include the following information about each sample:
  - Customer sample number (keyed to the site map)
  - The depth of the soil sample
  - Soil boring logs
  - Method detection limit of the method used
  - QA/QC Information as required

D. Ground Water Monitoring

1. Number of ground water monitoring wells installed 0
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?  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. N/A ppb total BTEX, N/A ppb total non-targeted VOC
  2. N/A ppb total B/N, N/A ppb total non-targeted B/N
  3. 60.0 ppm TPHC
  4. N/A ppb \_\_\_\_\_ (for non-petroleum substance)

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  No
2. Free product contaminated soils are suspected to exist below the water table  Yes  No
3. Free product contaminated soils are suspected to exist off the property boundaries.  Yes  No

D. Was the vertical and horizontal extent of contamination determined?  Yes  No  N/A

E. Does soil contamination intersect ground water?  Yes  No  N/A

VI. GROUND WATER CONTAMINATION N/A

- A. Was ground water contamination found?  Yes  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:

1. \_\_\_\_\_ ppb total BTEX, \_\_\_\_\_ ppb total non-targeted VOC
2. \_\_\_\_\_ ppb total B/N, \_\_\_\_\_ ppb total non-targeted B/N
3. \_\_\_\_\_ ppb total MTBE, \_\_\_\_\_ ppb total TBA
4. \_\_\_\_\_ ppb \_\_\_\_\_ (for non-petroleum substance)
5. greatest thickness of separate phase product found \_\_\_\_\_
6. separate phase product has been delineated  Yes  No  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  N/A
2. The number of these wells identified is \_\_\_\_\_.

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 \_\_\_\_\_ 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 \_\_\_\_\_ feet from the source and its screening begins at a depth of \_\_\_\_\_ 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 \_\_\_\_\_ feet below grade. This well is located \_\_\_\_\_ 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 \_\_\_\_\_ feet from the source. This well is \_\_\_\_\_ feet deep and screening begins at a depth of \_\_\_\_\_ feet.

E. A plan for separate phase product recovery has been included.  Yes  No  N/A

F. A ground water contour map has been submitted which includes the ground water elevations for each well.  Yes  No  N/A

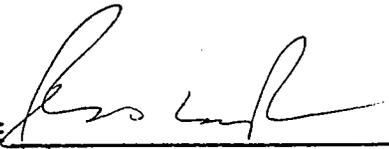
G. Delineation of contamination

1. The ground water contaminants have been delineated to MCLs or lower values at the property boundaries.  Yes  No
2. The plume is suspected to continue off the property at concentrations greater than MCLs.  Yes  No
3. Off property access (circle one):  is being sought  has been approved  has been denied

VII. SITE ASSESSMENT CERTIFICATION [preparer of site assessment plan - N.J.A.C. 7:14B-6.3(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 2/14/95  
(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)1].

*"I certify under penalty of law that the information provided in this document is true, accurate, and complete. I am aware that there are significant 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)2]:

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 \_\_\_\_\_

GENERATOR CERTIFICATION

I hereby certify that the waste described on Hazardous Waste Manifest No. NSA/160324S dated 4-21-94, is generated by one or more of the following processes, and does not contain more than 2 ppm polychlorinated biphenyls (P.C.B.'s) and does not display any characteristic or contain any hazardous constituents other than for which waste oils are listed in New Jersey.

X721: Waste automotive crankcase and lubricating oils from automotive service and gasoline stations, truck terminals, and garages.

X722: Waste oil and bottom sludge generated from tank cleanouts from residential/commercial fuel oil tanks.

X723: Waste oil and bottom sludge generated by gasoline stations when gasoline and oil tanks are tested, cleaned or replaced.

X724: Waste petroleum oil generated when tank trucks or other vehicles or mobile vessels are cleaned, including, but not limited to, oil ballast water from product transport units of boats, barges, ships or other vessels.

X725: Oil spill cleanup residue which: A. is contaminated beyond saturation; or B. the generator fails to demonstrate that the spill material was not one of the listed hazardous waste oils.

X726: The following used and unused waste oils: metal working oils; turbine lubricating oils; diesel lubricating oils; and quenching oils.

X728: Bottom sludge generated from the processing, blending, and treatment of waste oil in waste oil processing facilities.

I am duly authorized to sign said certification.

Generator US Army Communications & Electronics Command 2

Generator's EPA ID No. NJ3210020577

Address MAIN POST Fort Monmouth 07703

Print Name Charles M. Appleby Signature [Signature]

Title Enviro Prot. Spec.

Date 4-21-94



**APPENDIX C**  
**WASTE MANIFEST**



State of New Jersey  
 Department of Environmental Protection and Energy  
 Hazardous Waste Regulation Program  
 Manifest Section  
 CN 028, Trenton, NJ 08625-0028

Form Approved. OMB No. 2050-0039. Expires 9-30-94

Please type or print in block letters. (Form designed for use on elite (12-pitch) typewriter.)

029 43

**UNIFORM HAZARDOUS WASTE MANIFEST**

2. Page 1 of 1  
 Information in the shaded areas is not required by Federal law.

1. Generator's US EPA ID No. **ND13ZL16102105717**  
 3. Generator's Name and Mailing Address **US Army Communications Electronics C/o James Shirghio, Bldg 2504, ATTN: SELFM-DL-EM-MS, Fort Monmouth, NJ 07703**  
 4. Generator's Phone (908) 532-6224  
 5. Transporter 1 Company Name **Freehold Cartage, Inc.**

A. State Manifest Document Number **NJA 1603245**

6. US EPA ID Number **1 N J D 10 15 14 11 12 16 11 16 14**

B. State Generator's ID **a) 13121 789**  
**b) 13121 745**

7. Transporter 2 Company Name

C. State Trans. ID **ND13ZL16102105717**

8. US EPA ID Number

D. Transporter's Phone (908) 462-1001

9. Designated Facility Name and Site Address **Lionetti Oil Recovery Co., Inc. Runyon & Cheesequake Rds. Old Bridge, NJ 08857**

E. State Trans. ID

F. Transporter's Phone  
 G. State Facility's ID  
 H. Facility's Phone (908) 721-0900

10. US EPA ID Number **1 N J D 10 18 14 10 14 14 10 16 14**

12. Containers No. Type 13. Total Quantity 14. Unit Wt/Vol 15. Waste No.

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)  
 a.  Petroleum oil, N.O.S. Class 3 (Petroleum Oil) Combustible Liquid UN 1270 PG III

01 01 1 T T C 04 28 G X 1 7 12 12

b.  Petroleum oil, nos class 3 (Petroleum oil) Combustible liquid UN 1270 PG III

01 01 1 T T C 03 06 G X 1 7 12 12

c.  Petroleum oil, nos class 3 (Petroleum oil) Combustible liquid UN 1270 PG III

01 01 1 T T C 05 32 G X 1 7 12 12

d.  Petroleum oil nos class 3 (Petroleum oil) Combustible liquid UN 1270 P

01 01 1 T T C 05 06 G X 1 7 12 12

J. Additional Descriptions for Materials Listed Above  
 T, L Petroleum Oil 70%  
 Water 30%

K. Handling Codes for Wastes Listed Above  
 #04= Filtration

a. T, L Petroleum Oil 70%  
 Water 30%

b. Total Filtration

b. T, L Petroleum Oil 70%  
 Water 30%

c. Total Filtration

15. Special Handling Instructions and Additional Information  
 NOT REGULATED BY EPA. REGULATED AS HAZARDOUS WASTE IN NJ  
 24 HOUR EMERGENCY# 201-427-2881  
 NJ DECAL# 55462

a) 81533126  
 b) 81533119  
 c- 81533-114  
 D- 81533-UK

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name **Charles M. Appleby SELFM-RW-EU** Signature **[Signature]** Month Day Year **04 12 12**

17. Transporter 1 Acknowledgement of Receipt of Materials  
 Printed/Typed Name **David S. Smith** Signature **[Signature]** Month Day Year **10 12 12**

18. Transporter 2 Acknowledgement of Receipt of Materials  
 Printed/Typed Name \_\_\_\_\_ Signature \_\_\_\_\_ Month Day Year \_\_\_\_\_

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.  
 Printed/Typed Name \_\_\_\_\_ Signature \_\_\_\_\_ Month Day Year \_\_\_\_\_

SIGNATURE AND INFORMATION MUST BE LEGIBLE ON ALL COPIES



## APPENDIX D

### UST DISPOSAL CERTIFICATE

Fort Monmouth Tanks  
 Bldg # 101 Unit #  
 745 / 0081533-119  
 702 / 0081533-114  
 789 / 0081533-126  
 707 - No closures

**MAZZA & SONS, INC.**

Metal Recyclers  
 Auto and Truck  
 3230 Shafto Rd.  
 Tinton Falls, NJ  
 (908) 922-8282

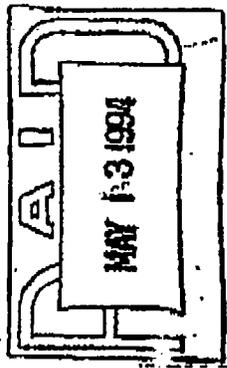
NO. \_\_\_\_\_  
 DATE May 94

Customer's Name Cuts, Inc.

Address \_\_\_\_\_

Motor of Fort Monmouth  
 Autote Tanks  
0121945ADDP 0081533-119 39360 LB S  
762 ADNEP 0081533-114  
789 ADNEP 0081533-126 35720 LB S  
707 No closures 3640

Case (Lb)	Weight	Price
Steel	<u>72.80</u>	
Li Iron		
Dipper #1		
Dipper #2		
Li Dipper		
Brass		
Alum Clean		
Lead		
Stainless		
Restainers		
Runway		
TOTAL AMOUNT:		



Weighter \_\_\_\_\_ Customer Don Ellis

**SMITH**

**APPENDIX E**

**SOIL ANALYTICAL DATA PACKAGE**

Report of Analysis  
 U.S. Army, Fort Monmouth Environmental Laboratory  
 NJDEPE Certification # 13461

Client: U.S. Army  
 DPW, SELFM-PW-EV  
 Bldg. 167  
 Ft. Monmouth, NJ 07703

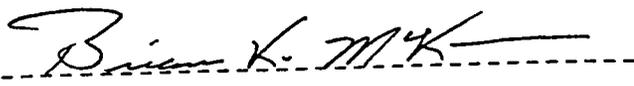
Lab. ID #: 1485.1-.5  
 Sample Rec'd: 05/09/94  
 Analysis Start: 05/10/94  
 Analysis Comp: 05/10/94

Analysis: 418.1 (TPH)  
 Matrix: Soil  
 Analyst: B. McKee  
 Ext. Meth: Sonc.

NJDEPE UST Reg.#: 0081533-126  
 Closure #: C-93-3612  
 DICAR #:  
 Location #: Bldg. 789

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1485.1	Site A, S. Sidewall 3' OVA= ND	95	4.14	3.3
1485.2	Site B, W. Sidewall 3' OVA= ND	93	ND	3.3
1485.3	Site C, N. Sidewall 3' OVA= ND	96	ND	3.3
1485.4	Site D, E. Sidewall 3' OVA= ND	94	9.77	3.3
1485.5	Site E, Bottom 4.5' OVA= ND	96	60.1	3.3
M. Bl.	Method Blank	100	ND	3.3

Notes: ND = Not Detected, MDL = Method Detection Limit  
 \* = Silica Gel Added, NA = Not Applicable  
 1485.3dup= 100% 1485.3spike= 126% 1485.3spike dup= 119% RPD= 3.6%

  
 Brian K. McKee  
 Laboratory Director



An E-SYSTEMS Company

Chain of Custody

P.O. #: PWS-007

Start: \_\_\_\_\_  
Finish: \_\_\_\_\_

Analysis Parameters

TPHC  
% Solids  
Russock

Date / Time  
5/9/94 11:20

Sampler: C. Appleby

Site Name: Bldg. 789  
UST# 0081533-126  
Closure # C. 93-3612

Project #: C. 93-3612  
Customer: C. Appleby

Sample Number	Date/Time	Customer Sample Location/ID Number	Sample Matrix	# of Bottles	Remarks	Preservation Method
1485.1	5/9/94 1001	Site A - S-Side Wall - 3'	Soil	1	ND	Samples kept 24°C
.2	1002	B - W-Side Wall - 3'	Soil	1	ND	
.3	1003	C - N-Side Wall - 3'	Soil	1	ND	
.4	1005	D - E-Side Wall - 3'	Soil	1	ND	
.5	1006	E Pit Bottoms - 4.5'	Soil	1	ND	over-sally - Collected w/ 700 ml - 95 ppm metals at Gas Filter 300 - Anal 8/11/94 OK - C. Appleby 11:50 am - 5-9-94

Shipped By:

Received By (signature)

Date / Time

Relinquished By (signature)

Date / Time

Received For Lab by (signature)

Date / Time

Relinquished By (signature)

5/9/94 1410

X [Signature]

5/9/94 1410

[Signature]

Note: A drawing depicting sample location should be attached or drawn on the reverse side of this chain of custody.

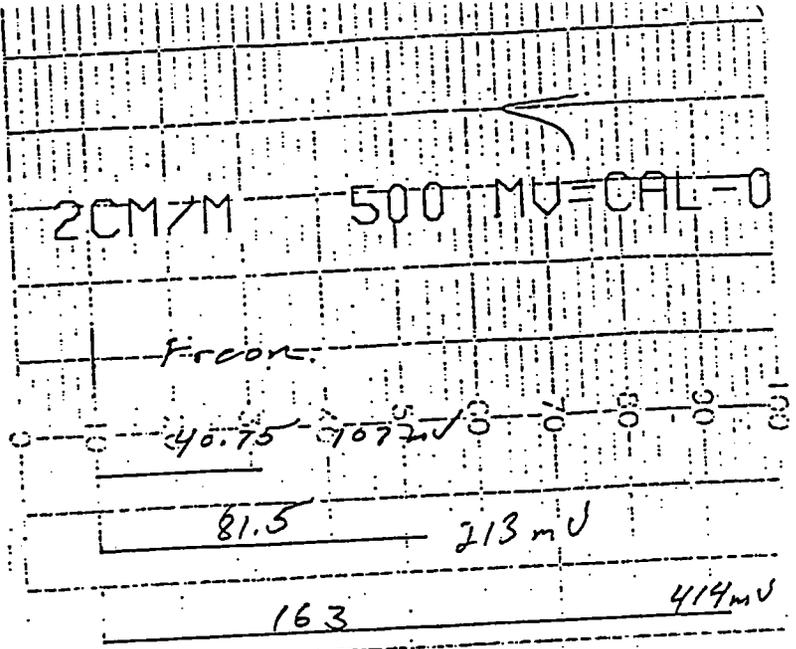
Attached

Page --- of --- Pages Rev. A Date: 02 Apr 93

EPI-ENV COC form 01



195-6970-00



Rinse

- 1485.1 5mV
- 1485.2 2mV
- 1485.3 1mV
- 1485.4 10mV
- 1485.5 47mV

Blank

- 1486.1 4mV
- 1486.2 3mV
- 1486.3 15mV
- 1488.4 62mV
- 1488.5 33mV

- 1485.3 DSP 3mV
- 1485.3 spike = 95mV
- 1485.3 s DSP = 89mV

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.

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  
Brian K. McKee  
Laboratory Manager

ATTACHMENT PP

UST 1103 Report



**U.S. Army Garrison**  
Fort Monmouth, New Jersey

---

**Underground Storage Tank  
Closure Report**

*Ft. Monmouth  
Main Post – Building 1103  
Semaphore Ave.*

---

**NJDEP UST Registration No. 81533-163**

**January 2010**

**UNDERGROUND STORAGE TANK REPORT**

**MAIN POST – BUILDING 1103  
NJDEP UST REGISTRATION NO. 81533-163**

**JANUARY 2010**

**PREPARED FOR:**

**U.S. ARMY GARRISON, FORT MONMOUTH, NJ  
DIRECTORATE OF PUBLIC WORKS  
BUILDING 167  
FORT MONMOUTH, NJ 07703**

**PROJECT NO. 06-34950**

**PREPARED BY:**

**TECOM-VINNELL SERVICES, INC.  
P.O. BOX 60  
FT. MONMOUTH, NJ 07703**

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## EXECUTIVE SUMMARY

### UST Closure

A single wall fiberglass underground storage tank (UST) was closed by removal in accordance with the New Jersey Department of Environmental Protection (NJDEP) guidelines on June 26, 1990. The UST was located on the northeast side of Building 1103 in the Main Post area of Fort Monmouth. UST No. 81533-163 was a 1,000-gallon tank containing No. 2 heating oil.

### Site Assessment

This site assessment was performed by TECOM-Vinnell Service (TVS) personnel in accordance with the NJDEP *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E) and the NJDEP *Field Sampling Procedures Manual*.

During the time of UST removal, no closure soil samples were collected. Soil sampling was not required at the time. However, in order to confirm that the tank did not leak, this subsurface investigation was conducted. On January 5, 2006, a Geoprobe was utilized to collect soil samples 1103C, 1103E, 1103W, and 1003C (groundwater) from a total of three (3) locations along the tank centerline bottom. All soil samples were analyzed for total petroleum hydrocarbons (TPH). Groundwater was encountered at approximately five (5.0) feet below surface grade in the borings. A sample of it was collected and analyzed for volatile organic analysis (VOA) and semi-volatile organic analysis (SVOA).

### Findings

The closure soil samples collected from the location associated with UST No. 81533-163, contained TPH concentrations below the NJDEP health based criterion of 5,100 milligrams per kilogram (mg/kg) for total organic contaminants (N.J.A.C. 7:26E and revisions dated February 3, 1994). Soil samples 1103C, 1103E, 1103W, contained TPH concentrations below the analytical method detection limits.

### Conclusions and Recommendations

Based on the closure soil sampling results, soils with TPH concentrations exceeding the NJDEP health based criterion of 5,100 mg/kg for total organic contaminants are not present in the location of the UST. A groundwater sample, analyzed for volatile organic analysis and semi-volatile organic analysis, contained no compounds above the analytical method detection limits.

**No Further Action** is proposed in regard to the closure and site assessment of UST No. 81533-163 at Building 1103.

## **1.0 UNDERGROUND STORAGE TANK CLOSURE SOIL SAMPLING ACTIVITIES**

### **1.1 OVERVIEW**

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 81533-163, was closed at Building 1103, Semaphore Ave., located on the Main Post at the U.S. Army Garrison, Fort Monmouth, New Jersey. Refer to site location map on Figure 1. This report presents the results of soil and groundwater sampling analysis. These samples were collected to confirm that the tank did not leak. The UST was a 1,000-gallon, single-wall fiberglass tank containing No. 2 heating oil. The UST was installed in 1984 and the removal was done on June 26, 1990. Archived documents including Removal Procedures, Site Assessment Compliance Statement, NJDEP Standard Reporting Form along with the current NJDEP UST Site Investigation Report Form are included in Appendix A.

This UST Closure Report has been prepared by TVS to assist the U.S. Army Garrison DPW in complying with the NJDEP - Underground Storage Tanks regulations. The applicable NJDEP regulations at the date of closure were the *Closure of Underground Storage Tank Systems* (N.J.A.C. 7:14B-9 et seq. December, 1987 and revisions dated April 20, 2003).

This report was prepared using information required by the *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E) (*Technical Requirements*). Section 1 of this UST Closure Report provides a summary of the UST site. Section 2 of this report describes the site investigation activities. Conclusions and recommendations, including the results of the soil sampling investigation, are presented in Section 3 of this report.

### **1.2 SITE DESCRIPTION**

Building 1103, Semaphore Ave., was located in the central portion (1100 Area) of the Main Post of Fort Monmouth, as shown on Figure 1. UST No. 81533-163 was located on the northeast side of Building 1103, just outside the mechanical room.

#### **1.2.1 Geological/Hydrogeological Setting**

The following is a description of the geological/hydrogeological setting of the 1100 Area. Included is a description of the regional geology of the area surrounding Fort Monmouth as well as descriptions of the local geology and hydrogeology of the Main Post area.

##### Regional Geology

Monmouth County lies within the New Jersey Section of the Atlantic Coastal Plain physiographic province. The Main Post, Charles Wood and the Evans areas are located in what may be referred to as the Outer Coastal Plain subprovince, or the Outer Lowlands.

In general, New Jersey Coastal Plain formations consist of a seaward-dipping wedge of unconsolidated deposits of clay, silt, sand and gravel. These formations typically strike northeast-southwest with a dip ranging from 10 to 60 feet per mile and were deposited on Precambrian and lower Paleozoic rocks (Zapeczka, 1989). These sediments, predominantly derived from deltaic, shallow marine, and continental shelf environments, date from Cretaceous through the Quaternary Periods. The mineralogy ranges from quartz to glauconite.

The formations record several major transgressive/regressive cycles and contain units which are generally thicker to the southeast and reflect a deeper water environment. 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 Zapeczka, 1990).

### Local Geology

Based on the regional geologic map (Jablonski, 1968), the Cretaceous age Red Bank and Tinton Sands outcrop at the Main Post area. The Red Bank sand conformably overlies the Navesink Formation and dips to the southeast at 35 feet per mile. The upper member (Shrewsbury) of the Red Bank sand is a yellowish-gray to reddish brown clayey, medium- to coarse-grained sand that contains abundant rock fragments, minor mica and glauconite (Jablonski). The lower member (Sandy Hook) is a dark gray to black, medium-to-fine grained sand with abundant clay, mica, and glauconite.

The Tinton sand conformably overlies the Red Bank Sand and ranges from a clayey medium to very coarse grained feldspathic quartz and glauconite sand to a glauconitic coarse sand. The color varies from dark yellowish orange or light brown to moderate brown and from light olive to grayish olive. Glauconite may constitute 60 to 80 percent of the sand fraction in the upper part of the unit (Minard, 1969). The upper part of the Tinton is often highly oxidized and iron oxide encrusted (Minard).

### Hydrogeology

The water table aquifer in the Main Post area is identified as part of the "composite confining units", or minor aquifers. The minor aquifers include the Navesink formation, Red Bank Sand, Tinton Sand, Hornerstown Sand, Vincentown Formation, Manasquan Formation, Shark River Formation, Piney Point Formation, and the basal clay of the Kirkwood Formation.

Based on records of wells drilled in the Main Post area, water is typically encountered at depths of 2 to 9 feet below ground surface (bgs). According to Jablonski, wells drilled in the Red Bank and Tinton Sands may produce 2 to 25 gallons per minute (gpm). Some well owners have reported acidic water that requires treatment to remove iron.

Due to the proximity of the Atlantic Ocean to Fort Monmouth, shallow groundwater may be tidally influenced and may flow toward creeks and brooks as the tide goes out, and away from creeks and brooks as the tide comes in. However, an abundance of clay lenses and sand deposits were noted in borings installed throughout Fort Monmouth. Therefore, the direction of shallow groundwater should be determined on a case by case basis.

Shallow groundwater is locally influenced within the Main Post area by the following factors:

- tidal influence (based on proximity to the Atlantic Ocean, rivers and tributaries)
- topography
- nature of the fill material within the Main Post area
- presence of clay and silt lenses in the natural overburden deposits
- local groundwater recharge areas (e.g., streams, lakes)

Due to the fluvial nature of the overburden deposits (e.g., sand and clay lenses), shallow groundwater flow direction is best determined on a case-by-case basis. This is consistent with lithologies observed in borings installed within the Main Post area, which primarily consisted of fine-to-medium grained sands, with occasional lenses or laminations of gravel silt and/or clay.

Building 1103 is located approximately 750 feet southeast of Mill Creek, the nearest water body, which flows into Parkers Creek and then into the Shrewsbury River. Based on the Main Post topography, the groundwater flow in the area of Building 1103 is anticipated to be to the northwest.

### **1.3 HEALTH AND SAFETY**

Work site health and safety hazards were minimized during all site investigation activities. All areas which posed a vapor hazard were monitored by a qualified individual utilizing a calibrated photo-ionizer detector : Thermo Instruments Organic Vapor Monitor (OVM) – Model #580-B. All work areas were properly vented to insure that there were no contaminants present in the breathing zone above OSHA's permissible exposure limits (PEL's).

## 2.0 SITE INVESTIGATION ACTIVITIES

### 2.1 OVERVIEW

The Site Investigation was managed and carried out by U.S. Army DPW personnel. All analyses were performed and reported by Fort Monmouth Environmental Testing Laboratory, a NJDEP-certified testing laboratory. All sampling was performed by a NJDEP Certified Subsurface Evaluator according to the methods described in the NJDEP Field Sampling Procedures Manual (1992). Sampling frequency and parameters analyzed complied with the NJDEP document *Technical Requirements for Site Remediation, 7:26E-3.9* (December 17, 2002 and revisions dated February 3, 2003) which was the applicable regulation at the date of the investigation. All records of the Site Investigation activities are maintained by the Fort Monmouth DPW Environmental Office.

The following Parties participated in Site Assessment Activities.

- Ft. Monmouth Directorate of Public Works-Environmental Division  
Contact Person: Joseph Fallon  
Phone Number: (732) 532-6223
- Subsurface Evaluator: Frank Accorsi  
Employer: TECOM-Vinnell Services, Inc. (TVS)  
Phone Number: (732) 532-5241  
NJDEP License No.: 0010042  
TVS - NJDEP License No.: US252302
- Analytical Laboratory: Fort Monmouth Environmental Testing Laboratory  
Contact Person: Jacqueline Hamer  
Phone Number: (732) 532-4359  
NJDEP Laboratory Certification No.: 13461

### 2.2 FIELD SCREENING/MONITORING

Field screening of the soils was performed by a NJDEP certified Subsurface Evaluator. The Subsurface Evaluator used an OVM and visual observations to identify potentially contaminated material. No potentially contaminated material was found during the investigation.

### **2.3 SOIL SAMPLING**

On January 5, 2006, closure soil samples 1103C, 1103E and 1103W were collected from a total of three (3) locations along the tank centerline bottom of the UST. Groundwater was encountered at approximately five (5.0) feet below surface grade in the borings. All soil samples were analyzed for TPH. A soil sample location map is provided in Figure 2.

The site assessment was performed by TVS personnel in accordance with the NJDEP *Technical Requirements for Site Remediation* and the NJDEP *Field Sampling Procedures Manual*. A summary of sampling activities including parameters analyzed is provided on Table 1. The soil samples were collected into laboratory prepared glassware using properly decontaminated stainless steel trowels. After collection, the samples were immediately placed on ice in a cooler and delivered to Fort Monmouth Environmental Testing Laboratory for analysis.

### **2.4 GROUNDWATER SAMPLING**

On January 5, 2006, groundwater sample 1103C-GW was collected from soil borehole 1103C to assess the groundwater quality in the location of the tank. A temporary PVC piezometer was installed in the borehole for sample collection. The sample was collected into laboratory prepared glassware using a disposable teflon bailer. The sample was analyzed for volatile organic analysis (VOA) and semi-volatile organic analysis (SVOA).

## **3.0 CONCLUSIONS AND RECOMMENDATIONS**

### **3.1 SOIL SAMPLING RESULTS**

Soil samples were collected from a total of three locations on January 5, 2006 to evaluate soil conditions in the location of the UST. All samples were analyzed for TPH. The closure soil sample results were compared to the NJDEP health based criterion of 5,100 mg/kg for total organic contaminants (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. The analytical data package, including associated quality control data, is provided in Appendix B.

Soil samples collected on January 5, 2006 from UST 81533-163 contained no concentrations of TPH above the NJDEP health based criterion of 5,100 mg/kg total organic contaminants. Soil samples 1103C, 1103E and 1103W contained TPH concentrations below the analytical method detection limits.

### **3.2 GROUNDWATER SAMPLING RESULTS**

One groundwater sample was collected via temporary PVC piezometer installed in soil borehole 1103C. There were no compounds detected above the method detection limits for the volatile organic analysis. For the semi-volatile organic analysis, there were no compounds detected above the method detection limits.

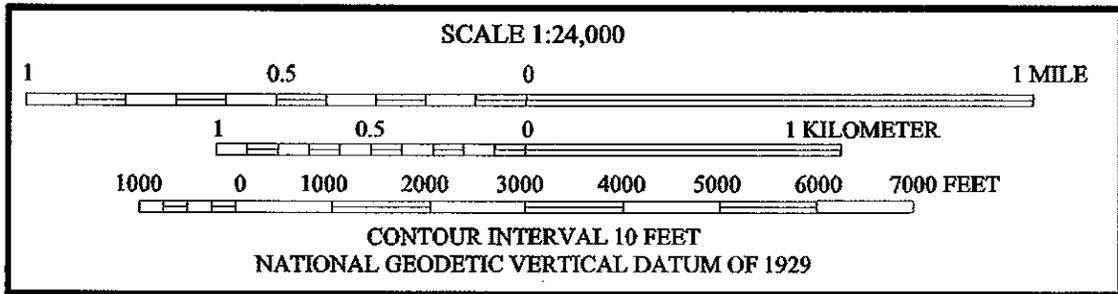
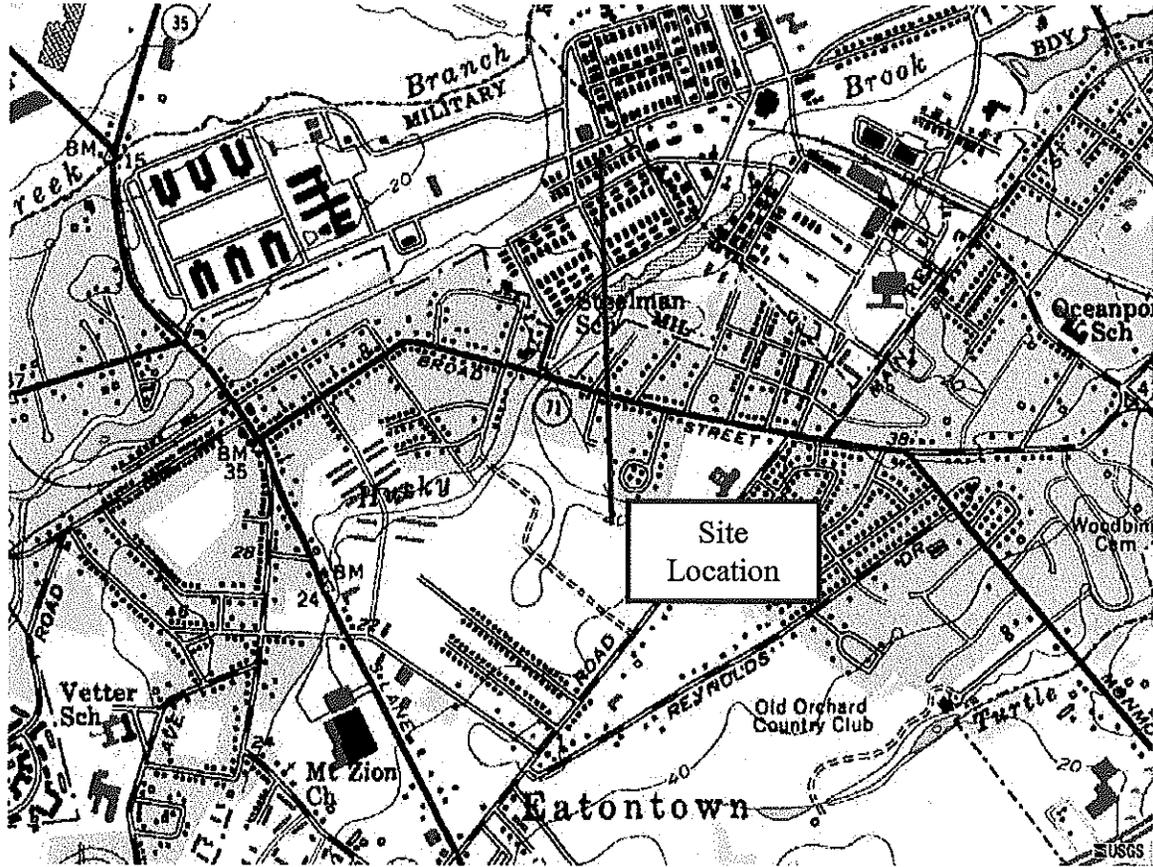
### **3.3 CONCLUSIONS AND RECOMMENDATIONS**

The analytical results for all soil and groundwater samples collected from the UST closure assessment at UST No. 81533-163 were below the regulatory limits.

Based on the closure soil sampling results, soils with TPH concentrations exceeding the NJDEP health based criterion for total organic contaminants of 5,100 mg/kg are not present at the location of UST No. 81533-163.

**No Further Action** is proposed in regard to the closure and site assessment of UST No. 81533-163 at Building 1103.

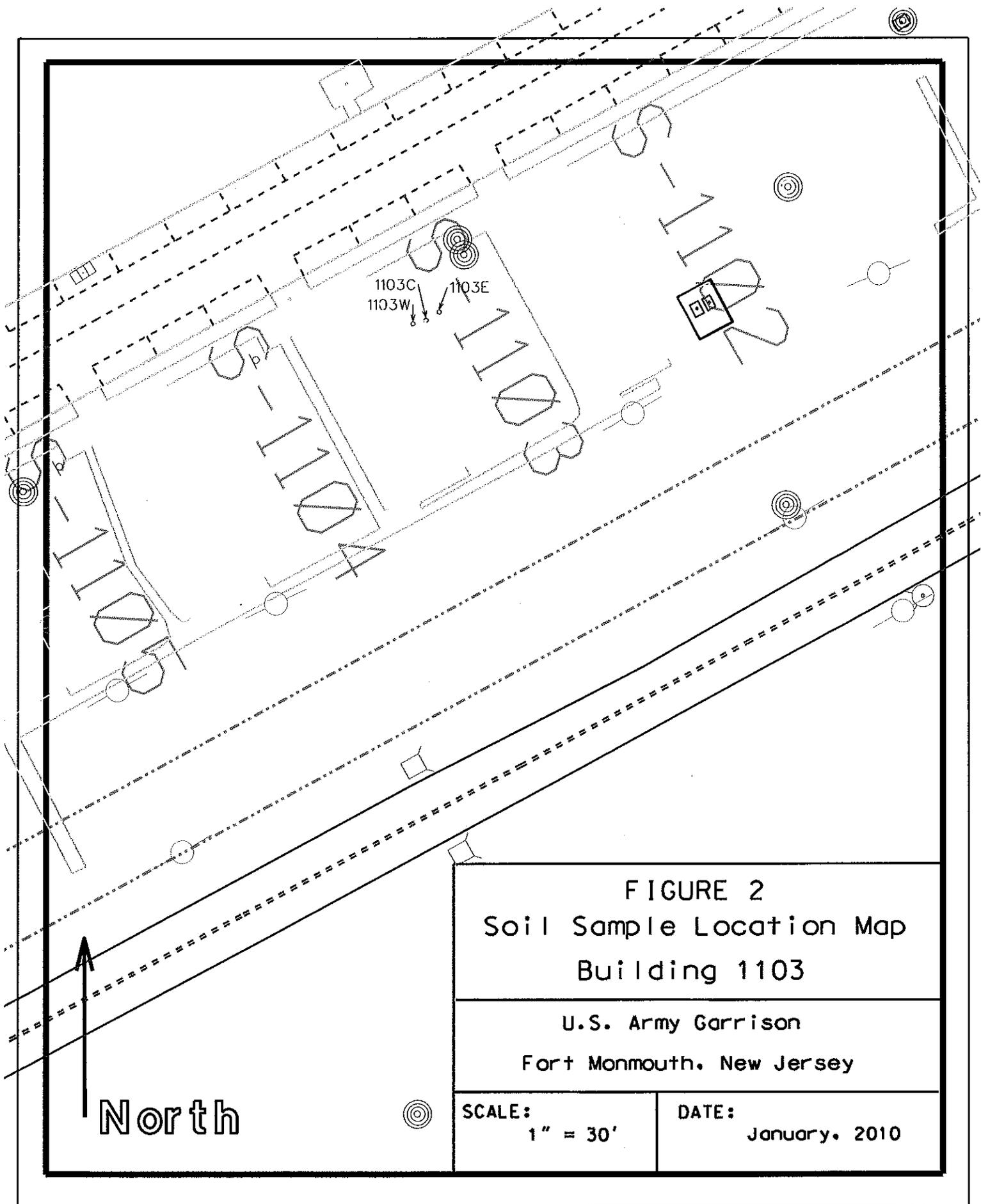
# FIGURES



**FIGURE 1**

SITE LOCATION MAP  
**BUILDING 1103**  
 UST NO. 81533-163  
 FT. MONMOUTH, NJ

SOURCE: USGS 7½-MINUTE SERIES (TOPOGRAPHIC)  
 LONG BRANCH QUADRANGLE, NEW JERSEY, 1981.



# **TABLES**

# TABLE 1

## SUMMARY OF LABORATORY ANALYSIS

FT. MONMOUTH, Building 1103, UST No. 81533-163  
5 January 2006

SAMPLE ID	LABORATORY SAMPLE ID	SAMPLE DATE	SAMPLE MATRIX	ANALYTICAL PARAMETER	ANALYTICAL METHOD
1103C	6000901	5-Jan-06	SOIL	TPH	OQA-QAM-25
1103E	6000902	5-Jan-06	SOIL	TPH	OQA-QAM-25
1103W	6000903	5-Jan-06	SOIL	TPH	OQA-QAM-25
1103C- Groundwater	6000904	5-Jan-06	AQUEOUS	VOA, SVOA	SW-846, EPA 625

**ABBREVIATIONS:**

TPH = Total Petroleum Hydrocarbons, Method NJDEP OQA-QAM-25

VOA = Volatile Organic Analysis, EPA SW-846 Method 8260

SVOA = Semi-Volatile Organic Analysis in Water, EPA Method 625

# TABLE 2

## SUMMARY OF LABORATORY ANALYTICAL RESULTS-SOIL

FT. MONMOUTH, Building 1103, UST No. 81533-163  
5 January 2006

### TOTAL PETROLEUM HYDROCARBONS

SAMPLE ID	LABORATORY SAMPLE ID	SAMPLE LOCATION	SAMPLE DEPTH (in feet)	MATRIX	TPH RESULTS mg/kg
1103C	6000901	CENTER UST	4.5 - 5.0	Soil	ND
1103E	6000902	EAST END UST	4.5 - 5.0	Soil	ND
1103W	6000903	WEST END UST	4.5 - 5.0	Soil	ND

**ABBREVIATIONS:**

mg/kg = milligrams per kilogram = parts per million

ND = Compound Not Detected

NA = Compound Not Analyzed

\*= Further Analyzed for Volatile Organic Compounds

**Notes:**

Gray shading indicates exceedance of NJDEP

health based criterion of 5,100 ppm total organic contaminants

# TABLE 3

## SUMMARY OF LABORATORY ANALYTICAL RESULTS- GROUNDWATER

FT. MONMOUTH, Building 1103, UST No. 81533-163

5 January 2006

### VOLATILE ORGANIC COMPOUNDS

SAMPLE ID	LAB SAMPLE ID	Benzene	Ethyl- benzene	Toluene	Total Xylenes
	UNITS	ug/L	ug/L	ug/L	ug/L
1103C- Groundwater	6000904	ND	ND	ND	ND
<b>NJDEP Criteria</b>	Ground Water Quality Crireria	1	700	600	1,000

### SEMI-VOLATILE ORGANIC COMPOUNDS

SAMPLE ID	LAB SAMPLE ID	Naphthalene	2-Methyl- naphthanene	Methyl-tert-butyl-ether (MTBE)
UNITS		ug/L	ug/L	ug/L
1103C- Groundwater	6000904	ND	ND	ND
<b>NJDEP Criteria</b>	Ground Water Quality Crireria	6	230	110

#### ABBREVIATIONS:

ug/L = Micrograms Per Liter = parts per billion

ND = Compound Not Detected

NA = Compound Not Analyzed

NLE= No Limit Established

#### Notes:

Gray shading indicates exceedance of NJDEP  
Class II Ground Water Quality Criteria

**APPENDIX A**  
**CERTIFICATIONS**

**Site Remediation Program**  
**UST Site Remedial Investigation Report**

**A. Facility Name:** U.S. Army Garrison  
Facility Street Address: Building 1103, Semaphore Ave.  
Municipality: Oceanport County: Monmouth  
Block: NA Lot(s): NA Telephone Number: \_\_\_\_\_

**B. Owner (RP)'s Name:** U.S. Army Garrison  
Street Address: 173 Riverside Ave. City: Ft. Monmouth  
State: NJ Zip: 07703 Telephone Number: 732-532-2692

**C. (Check as appropriate)**  
 Site Investigation Report (SIR) \$500 Fee  
 Remedial Investigation Report (RIR) \$1000 Fee

**D. (Complete all that apply)**  
Assigned Case Manager: \_\_\_\_\_  
UST Registration Number: 81533-163 (7 digits)  
• Incident Report Number: \_\_\_\_\_ (10 or 12 digits)  
• Tank Closure Number C(N)9 -    C 9 -    C9 -    (7 characters)

**E. Certification by the Subsurface Evaluator:**  
The attached report conforms to the specific reporting requirements of N.J.A.C. 7:26E..... Yes No  
Name: Frank Accorsi Signature: *Frank Accorsi* UST Cert. No.: 0010042  
Firm: TECOM-Vinnell Services, Inc. Firm's UST Cert. Number: US252302  
Firm Address: P.O. Box 60 City: Ft. Monmouth  
State: NJ Zip: 07703 Telephone Number: 732-532-2577

(NOTE: Certification numbers required only if work was conducted on USTs regulated per N.J.S.A. 5 8: 10A-2 1 et seq.)

**F. Certification by the Responsible Party(ies) of the Facility:**  
The following certification shall be signed [according to the requirements of N.J.A.C. 7: 14B-1.7(b)]as follows:  
1. For a Corporation by a person authorized by a resolution of the board of directors to sign the document. A copy of the resolution, certified as a true copy by the secretary of the corporation, shall be submitted along with the certification; or  
2. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or  
3. For a municipality, State, federal or other public agency by either a principal executive officer or ranking elected Official.

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attached documents, and that based on my inquiry of those individuals responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate, or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties."

Name (Print or Type): \_\_\_\_\_ Title: \_\_\_\_\_

Signature: \_\_\_\_\_

Company Name: \_\_\_\_\_ Date: \_\_\_\_\_



**DEPARTMENT OF THE ARMY**  
Headquarters, U.S. Army Garrison Fort Monmouth  
Fort Monmouth, New Jersey 07703-5000



REPLY TO  
ATTENTION OF

Directorate of Engineering  
and Housing

22 NOV 1991

SUBJECT: Removal Procedure:

U.S. Army Fort Monmouth  
Main Post West  
Site Registration #0081533  
Tank #58, 88, 95, 104, 110, 113, 146, 148, 158, 163  
POC: Joseph M. Fallon (908) 532-6223

The remaining product inside each tank was removed for disposal by Lionetti Oil Recovery Co., Inc. Lionetti is a licensed hazardous waste transporter and treatment, storage, and disposal facility (USEPA ID #NJ084044064).

The top of each tank was excavated and cut open across the entire length of the tank. In addition, the inside of each tank was hand cleaned and thoroughly wiped down. The soil from the top of each excavation was visually inspected and analyzed using a HNU Model PI-101 photoionizer. No contamination was detected.

After each tank was cleaned, a visual inspection was made inside the tanks for signs of leakage. No corrosion was found inside the tanks.

Each tank was then removed from the ground and disposed of through a metal recycler. No contamination was discovered at the sites upon removing the tanks.

Each site was then backfilled with the excavated soil to close out the project.



Bldg. 1004

For State Use Only

Date Rec'd.	_____
Auth.	_____
Routing	_____
UST NO.	_____

**State of New Jersey**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION**  
**DIVISION OF WATER RESOURCES**  
 CN 628  
 TRENTON, NEW JERSEY 08625  
 ATTN: BUST Program  
 (609) 984-3156

**STANDARD REPORTING FORM**

for the:

**Installation/Abandon/Remove/Sale-Transfer/Substantial Modification**

**Circle Only One - Use One Form Per Activity**

**(More than one tank can be listed per tank activity)**

Answer questions 1 through 5 and others as applicable.

1. Company name and address: (as it appears on registration questionnaire)

U.S. Army  
DEH Bldg. #167  
Attn: SEREM-EH  
Fort Monmouth, NJ 07703

2. Facility name and location: (if different from above)

U.S. Army Fort Monmouth  
Main Post West

3. Contact person for this activity:

Mr. Joseph M. Fallon

Telephone Number: (908) 532-6223

4. The identification number of the affected tank as it appears in Question Number 12 on the Registration Questionnaire:

Tank No. 58, 88, 95, 104, 110, 113, 146, 148, 158, + 163  
Bdgs. 283A, 614, 622, 676, 692, 701A, 906, 910, 1004, 1103

5. Registration Number (if known): UST -

# 0081533

(OVER)

6. For TRANSFER OF OWNERSHIP:

New Company Name \_\_\_\_\_

New Facility Name \_\_\_\_\_

Address \_\_\_\_\_

New owner/operator (print) \_\_\_\_\_

Signature \_\_\_\_\_

7. For ABANDONMENT or REMOVAL

a. Describe the proposed procedure in detail on an attached sheet.

b. Specify the product last stored in the tank: #2 Heating Oil

c. Date abandoned or removed: May and June of 1990

d. Is Site Assessment Compliance Statement being completed? (YES) or NO Form MUST be completed and returned within 90 days of tank closure. (per 40 CFR 280.72)

8. For SUBSTANTIAL MODIFICATIONS:

a. Describe the reason for the modification and, in detail, the proposed procedure to be used on an attached sheet.

b. Specify the product presently stored in the tank: \_\_\_\_\_

c. Specify the product to be stored in the tank: \_\_\_\_\_

9. For NEW OR REPLACEMENT INSTALLATIONS:

a. Attach the specifications as required by the attached instructions.

b. Specify the product (s) to be stored in the tank: \_\_\_\_\_

NOTE: All appropriate and applicable permits, licenses and certificates from any local, state and/or federal agency must be obtained separately from this notification as required by the above stated activity. CERTIFICATION

\*\*\* This registration form shall be signed by the highest ranking individual at the facility with overall responsibility for that facility. (7:14B-2.3 (a) 1). \*\*\*

"I certify under penalty of law that the information provided in this document is true, accurate and complete. I am aware that there are significant civil and criminal penalties for submitting false, inaccurate or incomplete information, including fines and/or imprisonment."

Signature: James Ott

Name (print or type): JAMES OTT  
Acting Director

Title: Dir, Engineering and Housing Date: 22 NOV 1991



STATE OF NEW JERSEY  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
Bureau of Underground Storage Tanks  
CN-029, Trenton, NJ 08625

Date Rec'd	_____
Auth	_____
Routing	_____
UST NO.	_____

**SITE ASSESSMENT COMPLIANCE STATEMENT**

Supplement to the New Jersey Standard Reporting Form  
(Complete for ALL regulated UST abandonments or removals)

Within ninety (90) days of completing the UST closure of any State or Federally-regulated tank, the owner or operator must submit this completed form to the NJDEP Bureau of Underground Storage Tanks. If the facility is located in one of the counties listed on the back, a copy of this form must also be sent to the Health Agency indicated.

The owner or operator of any Federally-regulated tank must also comply with the following:

**40 CFR Part 280.72 Assessing the site at closure or change-in-service**

"(a) Before permanent closure or a change-in-service is completed, owners and operators must measure for the presence of a release where contamination is most likely to be present at the UST site. In selecting sample types, sample locations, and measurement methods, owners and operators must consider the method of closure, the nature of the stored substance, the type of backfill, the depth to ground water, and other factors appropriate for identifying the presence of a release."

FACILITY U.S. Army Fort Monmouth UST # 0081533 Tank No. \_\_\_\_\_

Check off the following items as appropriate for the site.

58, 88, 95;

The UST facility is only regulated by State law, therefore a site assessment is not mandatory.

104, 110, 113;

The UST facility is regulated by Federal law and a site assessment was conducted.

146, 148, 158;

163.

The results of the site assessment indicate:

There was NO release from the UST system.

There was a release from the UST system and it was reported to the DEP Environmental Hotline (609-292-7172).

NOTE: The results of the site assessment are not to be submitted to the DEP or Health Agency unless requested to do so. The results are to be available for inspection at the UST facility.

Questions can be directed to the Bureau at (609) 984-3156.

\*\*\* This registration form shall be signed by the highest ranking individual at the facility with overall responsibility for that facility (7:14B-2.3 (a) 1). \*\*\*

"I certify under penalty of law that the information provided in this document is true, accurate and complete. I am aware that there are significant civil and criminal penalties for submitting false, inaccurate or incomplete information, including fines and/or imprisonment.

SACS-2,1/89

22 NOV 1991  
Date / /

*James Ott*  
SIGNATURE

JAMES OTT  
Acting Director  
Dir, Engineering and Housing

(Title)

## **APPENDIX B**

# **SOIL AND GROUNDWATER ANALYTICAL DATA PACKAGE**

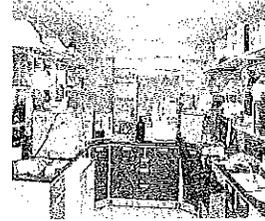
# FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS

PHONE: (732) 532-4359 FAX: (732) 532-6263

WET-CHEM - METALS - ORGANICS - FIELD SAMPLING

CERTIFICATIONS: NJDEP #13461, NYSDOH #11699



ANALYTICAL DATA REPORT  
Fort Monmouth Environmental Laboratory  
ENVIRONMENTAL DIVISION  
Fort Monmouth, New Jersey  
PROJECT: BLDG. 1103

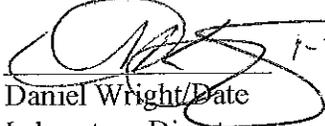
Bldg. 1103

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
1103 C 4.5-5.0'	6000901	Soil	05-Jan-06 13:15	01/05/06
1103 E 4.5-5.0'	6000902	Soil	05-Jan-06 14:01	01/05/06
1103 W 4.5-5.0'	6000903	Soil	05-Jan-06 14:23	01/05/06
1103 C GW	6000904	Aqueous	05-Jan-06 15:15	01/05/06

ANALYSIS:

FORT MONMOUTH ENVIRONMENTAL LAB  
VOA+15, BN+15, TPHC, % SOLIDS

ENCLOSURE:  
CHAIN OF CUSTODY  
RESULTS

  
1-24-06  
Daniel Wright/Date  
Laboratory Director

The enclosed report relates only to the items tested. The report may not be reproduced, except in full, without written approval of the U.S. Army Fort Monmouth Directorate of Public Works.

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**CHAIN  
OF  
CUSTODY**



## SAMPLE RECEIPT FORM

60009

Date Received: 1-5-06

Work Order ID#: 1-5-06-01

Site/Proj. Name: Bldg. 1103/UST

Cooler Temp (°C): 3.0°

Received By: J. U...  
(Print name)

Sign: [Signature]

**Check the appropriate box**

- |   |   |                             |   |
|---|---|-----------------------------|---|
| 1. Did the samples come in a cooler?                          | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no | <input type="checkbox"/> n/a            |
| 2. Were samples rec'd in good condition?                      | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no |   |
| 3. Was the chain of custody filled out correctly and legibly? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no |   |
| 4. Was the chain of custody signed in the appropriate place?  | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no |   |
| 5. Did the labels agree with the chain of custody?            | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no |   |
| 6. Were the correct containers/preservatives used?            | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no |   |
| 7. Was a sufficient amount of sample supplied?                | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no |   |
| 8. Were air bubbles present in VOA vials?                     | <input type="checkbox"/> yes            | <input type="checkbox"/> no | <input type="checkbox"/> n/a            |
| 9. Were samples received on ice?                              | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no |   |
| 10. Were analyze-immediately tests perform within 15 minutes  | <input type="checkbox"/> yes            | <input type="checkbox"/> no | <input checked="" type="checkbox"/> n/a |

**Fill out the following table for each sample bottle**

Lims ID	pH	Preservative	Sample ID	pH	Preservative

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Former UST 1103 Sample Location GPS Positions**

US State Plane 1983 New Jersey ( NY East ) 2900  
NAD 1983 ( Conus)  
Geoid 96 ( Conus)

( In US Survey Feet)

<b>Position</b>	<b>Northing ( Y Coord.)</b>	<b>Easting ( X Coord.)</b>
1103 E	538718.518	618206.123
1103 C	538715.662	618201.570
1103 W	538714.441	618196.975

# **METHOD SUMMARY**

## **Methodology Summary**

### **EPA Method 624**

#### **Gas Chromatographic Determination of Volatiles in Water**

Surrogates and internal standards are added to a 5-ml aliquot of sample. The sample is then purged and desorbed into a GC/MS system. The organic compounds are separated by the gas chromatograph and detected using the mass spectrometer. Volatiles are identified and quantitated.

### **EPA SW-846 Method 8260**

#### **Gas Chromatographic Determination of Volatiles in Methanol**

A 10-gram volume of soil is combined with 25-ml of Methanol and surrogates in the field. Internal standards are added and the sample is placed on a purge and trap concentrator. The sample is purged and desorbed into a GC/MS system. Volatiles are identified and quantitated. The final concentration is calculated using soil weight, percent moisture and concentration.

### **EPA Method 625**

#### **Gas Chromatographic Determination of Semi-volatiles in Water**

Surrogates are added to a measured volume of sample, usually 1 liter, at a specified pH. The sample is serially extracted with Methylene Chloride using a separatory funnel. The extract is concentrated and internal standards are added. The sample is injected into a GC/MS system. Semi-volatiles are identified and quantitated.

**NJDEP Method OQA-QAM-025 10/97**  
**Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil**

Fifteen grams (15g) of soil is added to a 125-ml acid cleaned and solvent rinsed capped Erlenmeyer flask. 15g anhydrous Sodium Sulfate is added to dry the sample. Surrogate standard spiking solution is then added to the flask.

Twenty-five ml of Methylene Chloride is added to the flask and it is secured on an orbital shaker table. The agitation rate is set to 400 rpm and the sample is shaken for 30 minutes. The flask is removed from the table and the particulate matter is allowed to settle. The extract is transferred to a Teflon capped vial. A second 25-ml of Methylene Chloride is added to the flask and shaken for an additional 30 minutes. The flask is again removed and allowed to settle. The extracts are combined in the vial then transferred to a 1-ml auto-sampler vial.

The extract is then injected directly into a GC-FID for analysis. The sample is analyzed for Petroleum Hydrocarbons covering a range of C8-C42, including Pristane and Phytane. Total Petroleum Hydrocarbon concentration is determined by integrating between 5 minutes and 22 minutes. The baseline is established by starting the integration after the end of the solvent peak and stopping after the last peak. The final concentration of Total Petroleum Hydrocarbons is calculated using percent moisture, sample weight and concentration.

# **LABORATORY CHRONICLE**

000008

# Laboratory Chronicle

Lab ID: 60009

Site: UST  
Bldg. 1103

	Date	Hold Time
<b>Date Sampled</b>	01/05/06	NA
<b>Receipt/Refrigeration</b>	01/05/06	NA
<b>Extractions</b>		
1. BN	01/09/06	7 days
2. TPHC	01/06/06	14 days
<b>Analyses</b>		
1. VOA	01/11,12/06	14 days
2. BN	01/17/06	40 days
3. TPHC	01/07/06	40 days

000009

**CONFORMANCE/  
NON-  
CONFORMANCE  
SUMMARY**

**GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT**

- Indicate  
Yes, No, N/A
1. Chromatograms labeled/Compounds identified  
(Field samples and method blanks) yes
  2. Retention times for chromatograms provided yes
  3. GC/MS Tune Specifications
    - a. BFB Meet Criteria yes
    - b. DFTPP Meet Criteria yes
  4. GC/MS Tuning Frequency – Performed every 24 hours for 600 series and 12 hours for 8000 series yes
  5. GC/MS Calibration – Initial Calibration performed before sample analysis and continuing calibration performed within 24 hours of sample analysis for 600 series and 12 hours for 8000 series yes
  6. GC/MS Calibration requirements
    - a. Calibration Check Compounds Meet Criteria yes
    - b. System Performance Check Compounds Meet Criteria yes
  7. Blank Contamination – If yes, List compounds and concentrations in each blank: NO
    - a. VOA Fraction \_\_\_\_\_
    - b. B/N Fraction \_\_\_\_\_
    - c. Acid Fraction \_\_\_\_\_
  8. Surrogate Recoveries Meet Criteria yes

If not met, list those compounds and their recoveries, which fall outside the acceptable range:

    - a. VOA Fraction \_\_\_\_\_
    - b. B/N Fraction \_\_\_\_\_
    - c. Acid Fraction \_\_\_\_\_

If not met, were the calculations checked and the results qualified as "estimated"?

\_\_\_\_\_
  9. Matrix Spike/Matrix Spike Duplicate Recoveries Meet Criteria NO

(If not met, list those compounds and their recoveries, which fall outside the acceptable range)

    - a. VOA Fraction Naphthalene MS + MSD low
    - b. B/N Fraction Benzidine MSD low RPD high
    - c. Acid Fraction \_\_\_\_\_

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT (cont.)

Indicate  
Yes, No, N/A

10. Internal Standard Area/Retention Time Shift Meet Criteria  
(If not met, list those compounds, which fall outside the acceptable range)

yes

- a. VOA Fraction \_\_\_\_\_
- b. B/N Fraction \_\_\_\_\_
- c. Acid Fraction \_\_\_\_\_

11. Extraction Holding Time Met

yes

If not met, list the number of days exceeded for each sample: \_\_\_\_\_

12. Analysis Holding Time Met

yes

If not met, list the number of days exceeded for each sample: \_\_\_\_\_

Additional Comments:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Laboratory Manager: \_\_\_\_\_

Date: 1-24-06

# TPHC CONFORMANCE/NON-CONFORMANCE SUMMARY REPORT

Indicate  
Yes, No, N/A

- |    |   |            |
|----|---|------------|
| 1. | Method Detection Limits Provided  | <u>yes</u> |
| 2. | Method Blank Contamination – If yes, list the sample and the corresponding concentrations in each blank<br>_____<br>_____   | <u>NO</u>  |
| 3. | Matrix Spike Results Summary Meet Criteria<br>(If not met, list the sample and corresponding recovery which falls outside the acceptable range)<br>_____<br>_____ | <u>yes</u> |
| 4. | Duplicate Results Summary Meet Criteria<br>_____<br>_____   | <u>yes</u> |
| 5. | IR Spectra submitted for standards, blanks and samples  | <u>NA</u>  |
| 6. | Chromatograms submitted for standards, blanks and samples if GC fingerprinting was conducted  | <u>yes</u> |
| 7. | Analysis holding time met<br>(If not met, list number of days exceeded for each sample)<br>_____<br>_____   | <u>yes</u> |

Additional comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Laboratory Manager:  Date: 1-24-06

**VOLATILE  
ORGANICS  
(AQUEOUS)**

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY  
NJDEP CERTIFICATION # 13461

Definition of Qualifiers

- U:** The compound was analyzed for but not detected.
- B:** Indicates that the compound was found in the associated method blank as well as in the sample.
- J:** Indicates an estimated value. This flag is used:
- (1) When the mass spec and retention time data indicate the presence of a compound however the result is less than the MDL but greater than zero.
  - (2) When estimating the concentration of a tentatively identified compound (TIC), where a 1:1 response is assumed.
- D:** This flag is used to identify all compounds (target or TIC) that required a dilution.
- E:** Indicates the compound's concentration exceeds the calibration range of the instrument for that specific analysis.
- N:** This flag is only used for TICs. It indicates the presumptive evidence of a compound. For a generic characterization of a TIC, such as unknown hydrocarbon, the flag is not used.

**Volatile Analysis Report**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13461**

Data File      **VB021318.D**  
 Operator       **Skelton**  
 Date Acquired   **11 Jan 2006 8:48 pm**

Sample Name     **MB 11Jan2006**  
 Field ID        **MB 11Jan2006**  
 Sample Multiplier   **1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.01 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	5	1.23 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	5.70 ug/L	10.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.21 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.26 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.20 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	nle	0.24 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.23 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	0.26 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	0.29 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.23 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.19 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	6000	0.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.24 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.21 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.24 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	50	0.24 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.26 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.20 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	70	0.22 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.20 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.24 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.24 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.23 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.26 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.24 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.23 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.22 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.35 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.26 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.25 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.28 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.20 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.43 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.28 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.27 ug/L	2.00 ug/L	
1330-20-7	m-p-Xylenes			not detected	nle	0.43 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.21 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.21 ug/L	2.00 ug/L	
75-25-2	Bromoforn			not detected	4	0.27 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.45 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.36 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.35 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.45 ug/L	2.00 ug/L	

\*Results between MDL and RL are estimated values  
 \*Higher of PQL's and Interim Criteria as per N.J.A.C. 7:9C 07Nov2005

**Qualifiers**

B = Compound found in related blank  
 E = Value above linear range  
 D = Value from dilution  
 PQL = Practical Quantitation Limit

MDL = Method Detection Limit  
 NLE = No Limit Established  
 R.T. = Retention Time  
 R.L. = Reporting Limit

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

**MB 11Jan2006**

Lab Name: FMETL NJDEP#: 13461  
Project: 0634880 Case No.: 60009 Location: 1103 SDG No.: UST  
Matrix: (soil/water) WATER Lab Sample ID: MB 11Jan2006  
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB021318.D  
Level: (low/med) LOW Date Received: 1/4/2006  
% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 1/11/2006  
GC Column: RTX502 ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

Number TICs found: 1

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 000079-20-9	Acetic acid, methyl ester	12.47	4	JN

**Volatile Analysis Report**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13461**

Data File VB021324.D  
 Operator Skelton  
 Date Acquired 12 Jan 2006 12:54 am

Sample Name 6001006  
 Field ID Trip Blank  
 Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.01 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	5	1.23 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	5.70 ug/L	10.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.21 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.26 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.20 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	nle	0.24 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.23 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	0.26 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	0.29 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.23 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.19 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	6000	0.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.24 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.21 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.24 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	50	0.24 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	2000	0.20 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.26 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.20 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	70	0.22 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.20 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.24 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.24 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.23 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.26 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.24 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.23 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.22 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.35 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.26 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.25 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.28 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.20 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.43 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.28 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.27 ug/L	2.00 ug/L	
1330-20-7	m-p-Xylenes			not detected	nle	0.43 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.21 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.21 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.27 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.45 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.36 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.35 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.45 ug/L	2.00 ug/L	

\*Results between MDL and RL are estimated values  
 \*Higher of PQL's and Interim Criteria as per N.J.A.C. 7:9C 07Nov2005

**Qualifiers**

B = Compound found in related blank  
 E = Value above linear range  
 D = Value from dilution  
 PQL = Practical Quantitation Limit

MDL = Method Detection Limit  
 NLE = No Limit Established  
 R.T. = Retention Time  
 R.L. = Reporting Limit

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

**Trip Blank**

Lab Name: FMETL NJDEP#: 13461  
Project: 0634880 Case No.: 60006 Location: 637 SDG No.: UST  
Matrix: (soil/water) WATER Lab Sample ID: 6001006  
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB021324.D  
Level: (low/med) LOW Date Received: 1/4/2006  
% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 1/12/2006  
GC Column: RTX502 ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

Number TICs found: 1

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 000079-20-9	Acetic acid, methyl ester	12.47	4	JN

**Volatile Analysis Report**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13461**

Data File VB021322.D  
 Operator Skelton  
 Date Acquired 11 Jan 2006 11:32 pm

Sample Name 6000904  
 Field ID 1103C  
 Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.01 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	5	1.23 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	5.70 ug/L	10.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.21 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.26 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.20 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	nle	0.24 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.23 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	0.26 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	0.29 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.23 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.19 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	6000	0.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.24 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.21 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.24 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	50	0.24 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.26 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.20 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	70	0.22 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.20 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.24 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.24 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.23 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.26 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.24 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.23 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.22 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.35 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.26 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.25 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.28 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.20 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.43 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	1	0.22 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.28 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.27 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	0.43 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.21 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.21 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.27 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.45 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.36 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.35 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.45 ug/L	2.00 ug/L	

\*Results between MDL and RL are estimated values  
 \*Higher of PQL's and Interim Criteria as per N.J.A.C. 7:9C 07Nov2005

**Qualifiers**

B = Compound found in related blank  
 E = Value above linear range  
 D = Value from dilution  
 PQL = Practical Quantitation Limit

MDL = Method Detection Limit  
 NLE = No Limit Established  
 R.T. = Retention Time  
 R.L. = Reporting Limit

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID:

1103C
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Lab Name: FMETL NJDEP#: 13461

Project: 0634880 Case No.: 60006 Location: 637 SDG No.: UST

Matrix: (soil/water) WATER Lab Sample ID: 6000904

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB021322.D

Level: (low/med) LOW Date Received: 1/4/2006

% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 1/11/2006

GC Column: RTX502 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

Number TICs found: 2

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 000079-20-9	Acetic acid, methyl ester	12.48	3	JN
2.	unknown	16.61	6	J

# **SEMI-VOLATILE ORGANICS**

000039

**Semi-Volatile Analysis Report**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13461**

Data File Name **BNA11446.D**  
 Operator **Skelton**  
 Date Acquired **17-Jan-06**

Sample Name **MB 01090601**  
 Misc Info **MB 01090601**  
 Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifiers
110-86-1	Pyridine			not detected	NLE	1.13	10.00	ug/L
62-75-9	N-nitroso-dimethylamine			not detected	20	0.60	10.00	ug/L
62-53-3	Aniline			not detected	NLE	2.38	10.00	ug/L
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.71	10.00	ug/L
541-73-1	1,3-Dichlorobenzene			not detected	600	1.02	10.00	ug/L
106-46-7	1,4-Dichlorobenzene			not detected	75	0.99	10.00	ug/L
100-51-6	Benzyl alcohol			not detected	NLE	0.66	10.00	ug/L
95-50-1	1,2-Dichlorobenzene			not detected	600	0.96	10.00	ug/L
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.88	10.00	ug/L
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.76	10.00	ug/L
67-72-1	Hexachloroethane			not detected	10	0.96	10.00	ug/L
98-95-3	Nitrobenzene			not detected	10	0.86	10.00	ug/L
78-59-1	Isophorone			not detected	100	0.76	10.00	ug/L
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.79	10.00	ug/L
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.89	10.00	ug/L
91-20-3	Naphthalene			not detected	NLE	0.76	10.00	ug/L
106-47-8	4-Chloroaniline			not detected	NLE	1.37	10.00	ug/L
87-68-3	Hexachlorobutadiene			not detected	1	0.99	10.00	ug/L
91-57-6	2-Methylnaphthalene			not detected	NLE	1.01	10.00	ug/L
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.92	10.00	ug/L
91-58-7	2-Chloronaphthalene			not detected	NLE	0.72	10.00	ug/L
88-74-4	2-Nitroaniline			not detected	NLE	0.77	10.00	ug/L
131-11-3	Dimethylphthalate			not detected	7000	0.78	10.00	ug/L
208-96-8	Acenaphthylene			not detected	NLE	0.67	10.00	ug/L
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.71	10.00	ug/L
99-09-2	3-Nitroaniline			not detected	NLE	1.18	10.00	ug/L
83-32-9	Acenaphthene			not detected	400	0.73	10.00	ug/L
132-64-9	Dibenzofuran			not detected	NLE	0.69	10.00	ug/L
121-14-2	2,4-Dinitrotoluene			not detected	10	0.81	10.00	ug/L
84-66-2	Diethylphthalate			not detected	5000	0.96	10.00	ug/L
86-73-7	Fluorene			not detected	300	0.71	10.00	ug/L
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.73	10.00	ug/L
100-01-6	4-Nitroaniline			not detected	NLE	1.11	10.00	ug/L
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.62	10.00	ug/L
103-33-3	Azobenzene			not detected	NLE	0.72	10.00	ug/L
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.92	10.00	ug/L
118-74-1	Hexachlorobenzene			not detected	10	0.95	10.00	ug/L
85-01-8	Phenanthrene			not detected	NLE	0.81	10.00	ug/L
120-12-7	Anthracene			not detected	2000	0.76	10.00	ug/L
84-74-2	Di-n-butylphthalate			not detected	900	0.92	10.00	ug/L
206-44-0	Fluoranthene			not detected	300	0.82	10.00	ug/L

**Semi-Volatile Analysis Report**  
**Page 2**

Data File Name BNA11446.D  
 Operator Skelton  
 Date Acquired 17-Jan-06

Sample Name MB 01090601  
 Misc Info MB 01090601  
 Sample Multiplier 1

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifiers
92-87-5	Benzidine			not detected	50	0.98	10.00	ug/L
129-00-0	Pyrene			not detected	200	0.79	10.00	ug/L
85-68-7	Butylbenzylphthalate			not detected	100	0.86	10.00	ug/L
56-55-3	Benzo[a]anthracene			not detected	10	0.82	10.00	ug/L
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.31	10.00	ug/L
218-01-9	Chrysene			not detected	20	0.77	10.00	ug/L
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.28	10.00	ug/L
117-84-0	Di-n-octylphthalate			not detected	100	1.02	10.00	ug/L
205-99-2	Benzo[b]fluoranthene			not detected	10	0.98	10.00	ug/L
207-08-9	Benzo[k]fluoranthene			not detected	2	0.92	10.00	ug/L
50-32-8	Benzo[a]pyrene			not detected	20	0.71	10.00	ug/L
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	0.76	10.00	ug/L
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.76	10.00	ug/L
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.80	10.00	ug/L

\* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

**Qualifiers**

E= Value Exceeds Linear Range  
 D= Value from dilution  
 B= Compound in Related Blank  
 RL= Reporting Limit. The values between the MDL and RL are considered estimated.

MDL= Method Detection Limit  
 NLE= No Limit Established  
 R.T.=Retention Time

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MB-010906-01

Lab Name: FMETL Lab Code 13461

Project: 06-34880 Case No.: 60009 Location: UST SDG No.: \_\_\_\_\_

Matrix: (soil/water) WATER Lab Sample ID: MB 01090601

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA11446.D

Level: (low/med) LOW Date Received: 1/5/2006

% Moisture: \_\_\_\_\_ decanted: (Y/N) N Date Extracted: 1/9/2006

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/17/2006

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

## CONCENTRATION UNITS:

Number TICs found: 1 (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown hydrocarbon	6.82	7	J

**Semi-Volatile Analysis Report**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13461**

Data File Name **BNA11452.D**  
 Operator **Skelton**  
 Date Acquired **17-Jan-06**

Sample Name **6000904**  
 Misc Info **1103C-GW**  
 Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifiers
110-86-1	Pyridine			not detected	NLE	1.13	10.00	ug/L
62-75-9	N-nitroso-dimethylamine			not detected	20	0.60	10.00	ug/L
62-53-3	Aniline			not detected	NLE	2.38	10.00	ug/L
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.71	10.00	ug/L
541-73-1	1,3-Dichlorobenzene			not detected	600	1.02	10.00	ug/L
106-46-7	1,4-Dichlorobenzene			not detected	75	0.99	10.00	ug/L
100-51-6	Benzyl alcohol			not detected	NLE	0.66	10.00	ug/L
95-50-1	1,2-Dichlorobenzene			not detected	600	0.96	10.00	ug/L
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.88	10.00	ug/L
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.76	10.00	ug/L
67-72-1	Hexachloroethane			not detected	10	0.96	10.00	ug/L
98-95-3	Nitrobenzene			not detected	10	0.86	10.00	ug/L
78-59-1	Isophorone			not detected	100	0.76	10.00	ug/L
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.79	10.00	ug/L
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.89	10.00	ug/L
91-20-3	Naphthalene			not detected	NLE	0.76	10.00	ug/L
106-47-8	4-Chloroaniline			not detected	NLE	1.37	10.00	ug/L
87-68-3	Hexachlorobutadiene			not detected	1	0.99	10.00	ug/L
91-57-6	2-Methylnaphthalene			not detected	NLE	1.01	10.00	ug/L
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.92	10.00	ug/L
91-58-7	2-Chloronaphthalene			not detected	NLE	0.72	10.00	ug/L
88-74-4	2-Nitroaniline			not detected	NLE	0.77	10.00	ug/L
131-11-3	Dimethylphthalate			not detected	7000	0.78	10.00	ug/L
208-96-8	Acenaphthylene			not detected	NLE	0.67	10.00	ug/L
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.71	10.00	ug/L
99-09-2	3-Nitroaniline			not detected	NLE	1.18	10.00	ug/L
83-32-9	Acenaphthene			not detected	400	0.73	10.00	ug/L
132-64-9	Dibenzofuran			not detected	NLE	0.69	10.00	ug/L
121-14-2	2,4-Dinitrotoluene			not detected	10	0.81	10.00	ug/L
84-66-2	Diethylphthalate			not detected	5000	0.96	10.00	ug/L
86-73-7	Fluorene			not detected	300	0.71	10.00	ug/L
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.73	10.00	ug/L
100-01-6	4-Nitroaniline			not detected	NLE	1.11	10.00	ug/L
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.62	10.00	ug/L
103-33-3	Azobenzene			not detected	NLE	0.72	10.00	ug/L
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.92	10.00	ug/L
118-74-1	Hexachlorobenzene			not detected	10	0.95	10.00	ug/L
85-01-8	Phenanthrene			not detected	NLE	0.81	10.00	ug/L
120-12-7	Anthracene			not detected	2000	0.76	10.00	ug/L
84-74-2	Di-n-butylphthalate			not detected	900	0.92	10.00	ug/L
206-44-0	Fluoranthene			not detected	300	0.82	10.00	ug/L

**Semi-Volatile Analysis Report**  
**Page 2**

Data File Name **BNA11452.D**  
Operator **Skelton**  
Date Acquired **17-Jan-06**

Sample Name **6000904**  
Misc Info **1103C-GW**  
Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifiers
92-87-5	Benzidine			not detected	50	0.98	10.00	ug/L
129-00-0	Pyrene			not detected	200	0.79	10.00	ug/L
85-68-7	Butylbenzylphthalate			not detected	100	0.86	10.00	ug/L
56-55-3	Benzo[a]anthracene			not detected	10	0.82	10.00	ug/L
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.31	10.00	ug/L
218-01-9	Chrysene			not detected	20	0.77	10.00	ug/L
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.28	10.00	ug/L
117-84-0	Di-n-octylphthalate			not detected	100	1.02	10.00	ug/L
205-99-2	Benzo[b]fluoranthene			not detected	10	0.98	10.00	ug/L
207-08-9	Benzo[k]fluoranthene			not detected	2	0.92	10.00	ug/L
50-32-8	Benzo[a]pyrene			not detected	20	0.71	10.00	ug/L
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	0.76	10.00	ug/L
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.76	10.00	ug/L
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.80	10.00	ug/L

\* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

**Qualifiers**

E= Value Exceeds Linear Range

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RL= Reporting Limit. The values between the MDL and RL are considered estimated.

MDL= Method Detection Limit

NLE= No Limit Established

R.T.=Retention Time

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

1103C-GW

Lab Name: FMETL Lab Code 13461  
Project: 06-34880 Case No.: 60009 Location: UST SDG No.: \_\_\_\_\_  
Matrix: (soil/water) WATER Lab Sample ID: 6000904  
Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA11452.D  
Level: (low/med) LOW Date Received: 1/5/2006  
% Moisture: \_\_\_\_\_ decanted: (Y/N) N Date Extracted: 1/9/2006  
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/17/2006  
Injection Volume: 1.0 (uL) Dilution Factor: 1.0  
GPC Cleanup: (Y/N) N pH: \_\_\_\_\_

CONCENTRATION UNITS:

Number TICs found: 1 (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown hydrocarbon	6.81	7	J

**TPHC**



## LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

THIS FORM MUST BE COMPLETED BY THE LABORATORY OR ENVIRONMENTAL CONSULTANT AND ACCOMPANY ALL DATA SUBMISSIONS

The following Laboratory Deliverables Checklist and Non-Conformance Summary shall be included in the data submission. All deviations from the accepted methodology and procedures, of performance values outside acceptable ranges shall be summarized in the Non-Conformance Summary. The Technical Requirements for Site Remediation, effective June 7, 1993, provides further details. The document shall be bound and paginated, contain a table of contents, and all pages shall be legible. Incomplete data packages will be returned or held without review until the data package is completed.

It is recommended that the analytical results summary sheets listing all targeted and non-targeted compounds with the method detection limits, practical quantitation limits, and the laboratory and/or sample numbers be included in one section of the data package and in the main body of the report.

- |     |  |                                     |
|-----|--|-------------------------------------|
| 1.  | Cover Page, Title Page listing Lab Certification #, facility name and address, & date of report submitted. | <input checked="" type="checkbox"/> |
| 2.  | Table of Contents submitted.   | <input checked="" type="checkbox"/> |
| 3.  | Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted.           | <input checked="" type="checkbox"/> |
| 4.  | Document paginated and legible.  | <input checked="" type="checkbox"/> |
| 5.  | Chain of Custody submitted.  | <input checked="" type="checkbox"/> |
| 6.  | Samples submitted to lab within 48 hours of sample collection.   | <input checked="" type="checkbox"/> |
| 7.  | Methodology Summary submitted.   | <input checked="" type="checkbox"/> |
| 8.  | Laboratory Chronicle and Holding Time Check submitted.   | <input checked="" type="checkbox"/> |
| 9.  | Results submitted on a dry weight basis.   | <input checked="" type="checkbox"/> |
| 10. | Method Detection Limits submitted.   | <input checked="" type="checkbox"/> |
| 11. | Lab certified by NJDEP for parameters of appropriate category of parameters or a member of the USEPA CLP.  | <input checked="" type="checkbox"/> |

Laboratory Manager or Environmental Consultant's Signature

Date: 1/24/06

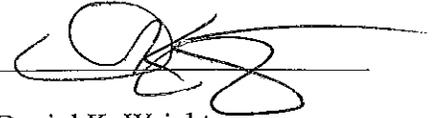
Laboratory Certification # 13461

\*Refer to NJAC 7:26E – Appendix A, Section IV – Reduced Data Deliverables – Non-USEPA/CLP Methods for further guidance.

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## Laboratory Authentication Statement

I certify under penalty of law, where applicable, that this laboratory meets the Laboratory Performance Standards and Quality Control requirements specified in N.J.A.C. 7:18 and 40 CFR Part 136 for Water and Wastewater Analyses and SW-846 for Solid Waste Analysis. I have personally examined the information contained in this report and to the best of my knowledge, I believe that the submitted information is true, accurate, complete and meets the above referenced standards where applicable. I am aware that there are significant penalties for purposefully submitting falsified information, including the possibility of a fine and imprisonment.



Daniel K. Wright  
Laboratory Manager



ATTACHMENT QQ

UST 1106 Report



**United States Army**

Fort Monmouth, New Jersey

---

**Underground Storage Tank  
Closure and Site Investigation  
Report**

***Building 1106  
Main Post Area***

---

**NJDEP UST Registration No. 081533-166  
NJDEP Closure Approval No. C-93-3564**

February 1996

**SMITH**  
ENVIRONMENTAL TECHNOLOGIES CORPORATION

**UNDERGROUND STORAGE TANK  
CLOSURE AND SITE INVESTIGATION REPORT**

**BUILDING 1106**

**MAIN POST AREA  
NJDEP UST REGISTRATION NO. 081533-166  
NJDEP CLOSURE APPROVAL NO. C-93-3564**

**FEBRUARY 1996**

**PROJECT NO.: 09-5004-07  
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**

1106.DOC





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### APPENDICES

Appendix A	Certifications
Appendix B	Waste Manifest
Appendix C	UST Disposal Certificate
Appendix D	Soil Analytical Data Package



## EXECUTIVE SUMMARY

### UST Closure

On September 15, 1994, a fiberglass underground storage tank (UST) was closed by removal in accordance with the New Jersey Department of Environmental Protection (NJDEP) Closure Approval No. C-93-3564 at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey. The UST, NJDEP Registration No. 081533-166, was located immediately adjacent to Building 1106 in the Main Post area of U.S. Army, Fort Monmouth. UST No. 081533-166 was a 1,000-gallon No. 2 diesel 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

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). Soils surrounding the tank were screened visually and with air monitoring instruments for evidence of contamination. Following removal, the UST was inspected for holes. No holes were noted in the UST and no potentially contaminated soils were observed surrounding the tank.

On September 21, 1994, six days after the UST was pulled, post-excavation soil samples A, B, C, D, E, F, and DUP F were collected from a total of six (6) locations along the sidewalls of the excavation. Sample H was also collected immediately below the former location of the piping, which ran approximately 15 feet. All samples were analyzed for total petroleum hydrocarbons (TPHC).

### Findings

All post-excavation soil samples collected from the UST excavation and from below piping associated with the former UST at Building 1106 contained TPHC concentrations below the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 milligrams per kilogram (mg/kg) (N.J.A.C. 7:26D and revisions dated February 3, 1994). All samples contained levels of TPHC ranging in concentration from 27.1 mg/kg to 445.0 mg/kg.

### Site Restoration

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 Quality Assurance

The sampling and laboratory analysis conducted during the site assessment 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 TPHC concentrations exceeding the NJDEP soil cleanup criteria for total organic contaminants of 10,000 mg/kg do not remain in the former location of the UST or associated piping.

No further action is proposed in regard to the closure and site assessment of UST No. 081533-166 at Building 1106.



## 1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

### 1.1 OVERVIEW

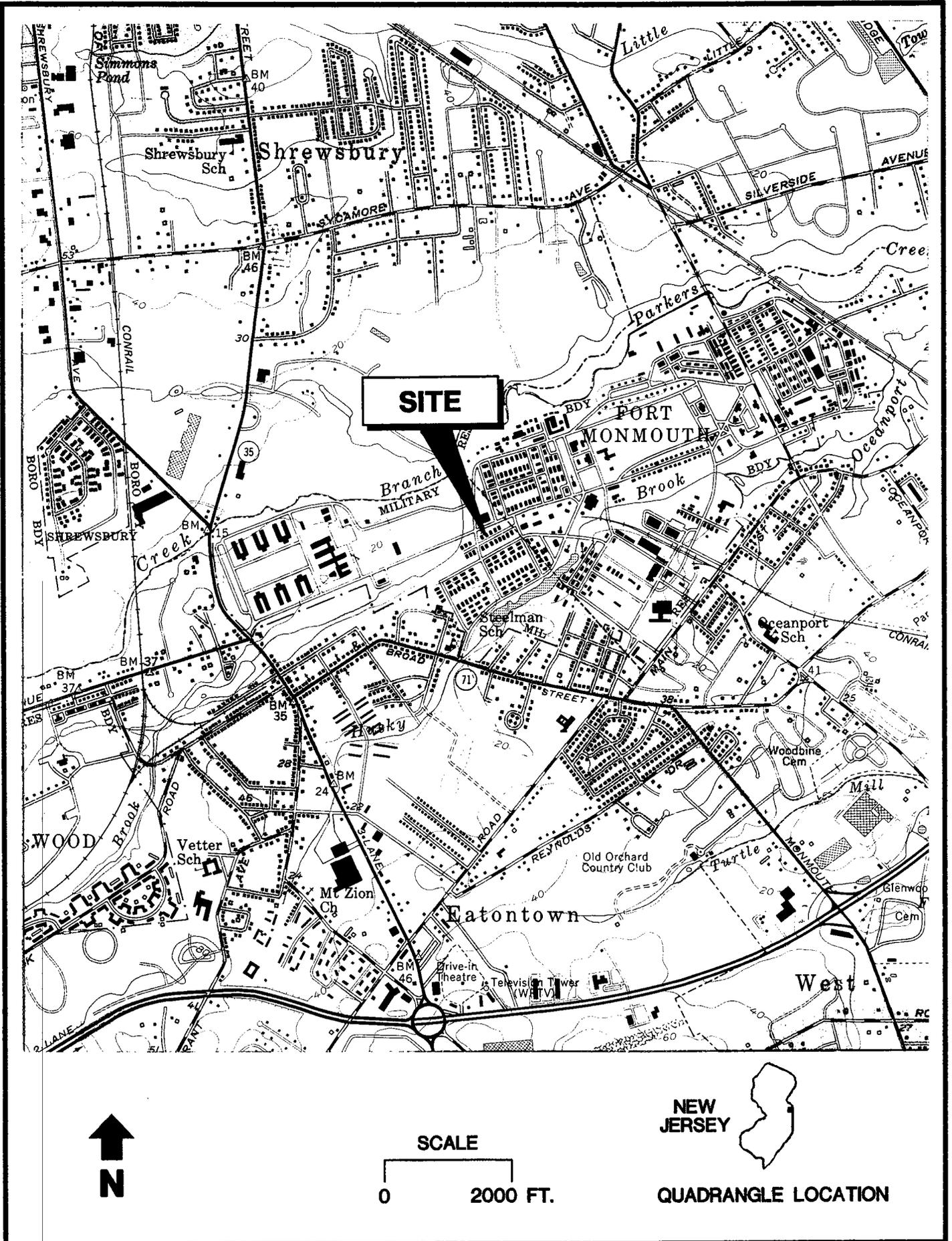
One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 081533-166, was closed at Building 1106 at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey on September 15, 1994. Refer to site location map on Figure 1. This report presents the results of the DPW's implementation of the UST Decommissioning/Closure Plan submitted to the NJDEP, and assigned TMS No. C-93-3564. The UST was a single-walled, fiberglass, 1,000-gallon tank containing No. 2 diesel oil.

Decommissioning activities for UST No. 081533-166 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. 081533-166 proceeded under the approval of the NJDEP Bureau of Underground Storage Tanks (NJDEP-BUST). The signed certifications for UST No. 081533-166 are included in Appendix A.

Based on an inspection of the UST, field screening of subsurface soils and analytical results of collected soil samples, the DPW has concluded that no significant historical discharges are associated with the UST or associated piping.

This UST Closure and Site Investigation Report has been prepared by 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.



Source: BCM/Smith Environmental Technologies Corporation (028)

Project No. 09-5004-07

Figure 1  
Site Location Map

## 1.2 SITE DESCRIPTION

Building 1106 is located in the southwestern portion of the Main Post area of Fort Monmouth as shown on Figure 1. UST No. 081533-166 was located east of Building 1106 and appurtenant piping ran approximately 15 feet north from Building 1106 to the fill port area. A site map is provided on Figure 2. The fill port area was located directly above the UST.

### 1.2.1 Geological/Hydrogeological Setting

The following is a description of the geological/hydrogeological setting of the area surrounding Building 1106. Included is a description of the regional geology of the area surrounding Fort Monmouth as well as descriptions of the local geology and hydrogeology of the Main Post area.

#### Regional Geology

Monmouth County lies within the New Jersey Section of the Atlantic Coastal Plain physiographic province. The Main Post, Charles Wood, and the Evans areas are located in what may be referred to as the Outer Coastal Plain subprovince, or the Outer Lowlands.

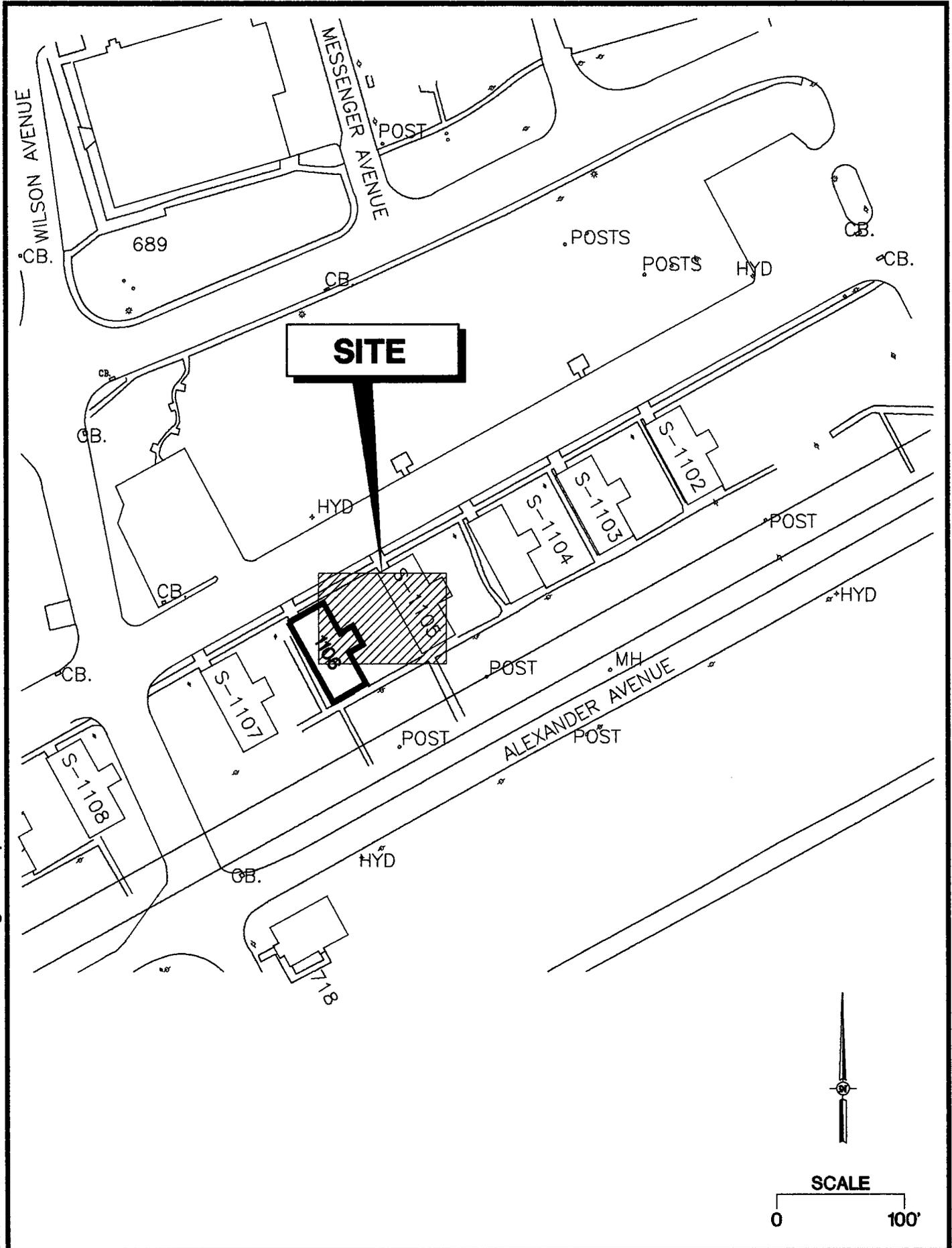
In general, New Jersey Coastal Plain formations consist of a seaward-dipping wedge of unconsolidated deposits of clay, silt, and gravel. These formations typically strike northeast-southwest with a dip ranging from 10 to 60 feet per mile and were deposited on Precambrian and lower Paleozoic rocks (Zapczka, 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 Zapczka, 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-

Source: Smith Environmental Technologies Corporation (056)



Project No. 09-5004-07

Figure 2  
**Building 1106  
Site Map**



coarse-grained sand that contains abundant rock fragments, minor mica and glauconite (Jablonski). The lower member (Sandy Hook) is a dark gray to black, medium-to-fine grained sand with abundant clay, mica, and glauconite.

The Tinton sand conformably overlies the Red Bank Sand and ranges from a clayey medium to very coarse grained feldspathic quartz and glauconite sand to a glauconitic coarse sand. The color varies from dark yellowish orange or light brown to moderate brown and from light olive to grayish olive. Glauconite may constitute 60 to 80 percent of the sand fraction in the upper part of the unit (Minard, 1969). The upper part of the Tinton is often highly oxidized and iron oxide encrusted (Minard).

### Hydrogeology

The water table aquifer in the Main Post area is identified as part of the "composite confining units," or minor aquifers. The minor aquifers include the Navesink formation, Red Bank Sand, Tinton Sand, Hornerstown Sand, Vincentown Formation, Manasquan Formation, Shark River Formation, Piney Point Formation, and the basal clay of the Kirkwood Formation.

Based on records of wells drilled in the Main Post area, water is typically encountered at depths of 2 to 9 feet below ground surface (BGS). According to Jablonski, wells drilled in the Red Bank and Tinton Sands may produce 2 to 25 gallons per minute (gpm). Some well owners have reported acidic water that requires treatment to remove iron.

Due to the proximity of the Atlantic Ocean to Fort Monmouth, shallow groundwater may be tidally influenced and may flow toward creeks and brooks as the tide goes out, and away from creeks and brooks as the tide comes in. However, an abundance of clay lenses and sand deposits were noted in borings installed throughout Fort Monmouth. Therefore the direction of shallow groundwater should be determined on a case by case basis.

## **1.3 HEALTH AND SAFETY**

Before, during, and after all decommissioning activities, hazards at the work site which may have posed a threat to the Health and Safety of all personnel who were involve with, or were affected by, the decommissioning of the UST system were minimized. All areas which posed, or may have been suspected to pose a vapor hazard were monitored by a qualified individual utilizing an organic vapor analyzer (OVA). The individual ascertained if the area was properly vented to render the area safe, as defined by OSHA.



## 1.4 REMOVAL OF UNDERGROUND STORAGE TANKS

### 1.4.1 General Procedures

- All underground obstructions (utilities, etc.) were marked out by the contractor performing the closure prior to excavation activities.
- All activities were carried out with the greatest regard to safety and health and the safeguarding of the environment.
- All excavated soils were visually examined and screened with an OVA for evidence of contamination. Potentially contaminated soils were identified and logged during closure activities.
- Surface materials (i.e., asphalt, concrete, etc.) were excavated and staged separately from all soil and recycled in accordance with all applicable regulations and laws.
- A Sub-Surface Evaluator from the DPW was present during all closure activities.

### 1.4.2 Underground Storage Tank Excavation and Cleaning

Prior to UST decommissioning activities, surficial soil was removed to expose the UST and associated piping. All free product present in the piping was drained into the UST, and the UST was purged to remove vapors prior to cutting and removal of the piping. After removal of the associated piping, a manway was made in the UST to allow for proper cleaning. The UST was completely emptied of all liquids prior to removal from the ground. On April 21, 1994 a total of 480 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 B for waste manifest No. NJA-1603246. On September 15, 1994 a total of 20 gallons of liquid were transported by Freehold Cartage Inc. to Lionetti Oil Recovery Co. Inc. for disposal. Refer to Appendix B for waste manifest No. NJA-1907296.

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 holes. No cracks or punctures were observed during the inspection by the Sub-Surface Evaluator. Soils surrounding the UST were screened visually and with an OVA for evidence of contamination. No evidence of contamination was noted.

Soil screening was also performed along the piping associated with the UST. No contamination was noted anywhere along the piping length.



## **1.5 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL**

The tank was transported by CUTE Inc., to Monmouth County Reclamation Center for disposal in compliance with all applicable regulations and laws. See Appendix C 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 OVA air monitoring and TPHC analysis results from the post-excavation soil samples, no soils exhibited signs of contamination. Therefore, the excavated soils were used as backfill following removal of the UST.



## 2.0 SITE INVESTIGATION ACTIVITIES

### 2.1 OVERVIEW

The Site Investigation was managed and carried out by U.S. Army DPW personnel. All analyses were performed and reported by U.S. Army, Fort Monmouth Environmental Laboratory, a NJDEP-certified testing laboratory. All sampling was performed under the direct supervision of a NJDEP Certified Sub-Surface Evaluator according to the methods described in the NJDEP *Field Sampling Procedures Manual* (1992). Sampling frequency and parameters analyzed complied with the NJDEP-BUST document *Interim Closure Requirements for Underground Storage Tank Systems* (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
- Hazardous Waste Hauler: Freehold Cartage Inc.  
Contact Person: Barry Olsen  
Phone Number: (908) 462-1001  
NJDEP Hazardous Waste Hauler No.: 2265

### 2.2 FIELD SCREENING/MONITORING

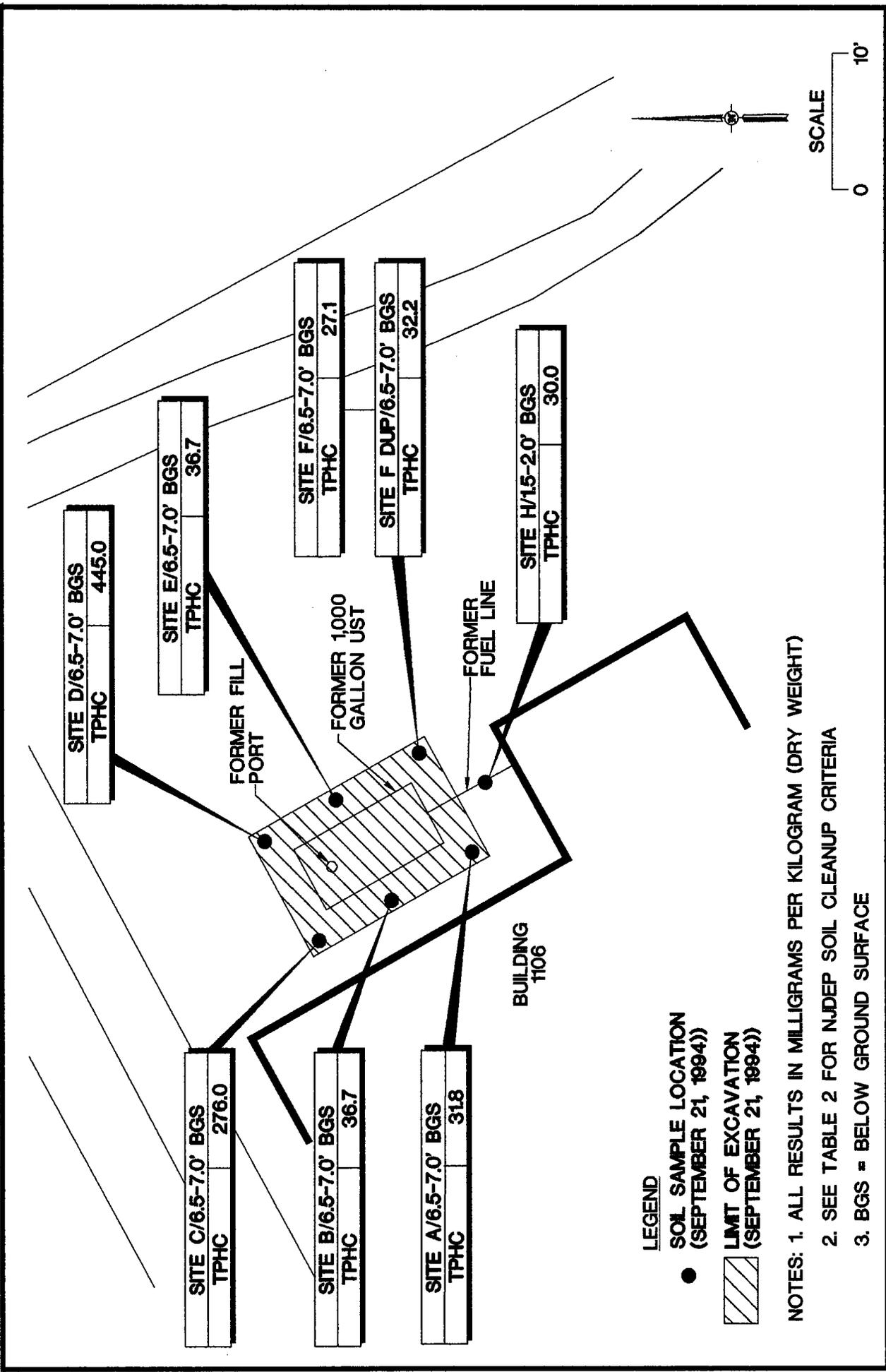
Field screening was performed by a NJDEP certified Sub-Surface Evaluator using an OVA and visual observations to identify potentially contaminated material. Soil excavated from around the tank and appurtenant piping, as well as the UST excavation sidewalls and bottom, were found to be free of potential contamination.



## 2.3 SOIL SAMPLING

On September 21, 1994, post-excavation soil samples A, B, C, D, E, F, and DUP F were collected from a total of six (6) locations along the sidewalls of the UST excavation. Post-excavation soil sample H was collected immediately below the former location of piping associated with the UST. Refer to soil sampling location map on Figure 3. All samples were analyzed for total petroleum hydrocarbons (TPHC). Because none of the post-excavation soil samples exhibited a TPHC concentration exceeding 1,000 milligrams per kilogram (mg/kg), none were analyzed for volatile organic compounds with a forward library search for 10 tentatively identified compounds (VOCs).

The site assessment was performed by U.S. Army personnel in accordance with the NJDEP *Technical Requirements* and the NJDEP *Field Sampling Procedures Manual*. A summary of sampling activities including parameters analyzed is provided in Table 1. The post-excavation soil samples were collected using polystyrene scoops. Actual soil TPHC values may be higher than reported, due to sample utensil absorbency. If absorbency resulted in reducing the actual soil TPHC concentration by 50 %, the highest soil contaminant would have been 890.0 mg/kg, still below the applicable NJDEP soil cleanup standard for total organic contaminants of 10,000 mg/kg. Following soil sampling activities, the samples were chilled and delivered to U.S. Army Fort Monmouth Environmental Laboratory located in Fort Monmouth, New Jersey, for analysis.



Source: BCM/Smith Environmental Technologies Corporation (057)

TABLE I

SUMMARY OF SAMPLING ACTIVITIES  
 BUILDING 1106, MAIN POST  
 FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Matrix	Sample Type	Analytical Parameters (and USEPA Methods) *	Sampling Method
A	09-21-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
B	09-21-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
C	09-21-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
D	09-21-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
E	09-21-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
F	09-21-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
DUP F	09-21-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
H	09-21-94	Soil	Post-Excavation	TPHC	Polystyrene Scoop
*Note: TPHC Total Petroleum Hydrocarbons (Method 418.1 / soil and aqueous)					



## 3.0 CONCLUSIONS AND RECOMMENDATIONS

### 3.1 SOIL SAMPLING RESULTS

To evaluate soil conditions following removal of the UST and associated piping, post-excavation soil samples were collected from a total of seven (7) locations on September 21, 1994. All samples were analyzed for TPHC. The post-excavation soil sample results were compared to the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 mg/kg (N.J.A.C. 7:26D and revisions dated February 3, 1994). A summary of the analytical results and comparison to the NJDEP soil cleanup criteria is provided in Table 2 and the soil sampling results are shown on Figure 3. The soil analytical data package is provided in Appendix D.

All post-excavation soil samples collected on September 21, 1994, from the UST excavation and from below piping associated with the UST contained concentrations of TPHC below the NJDEP soil cleanup criteria. All samples contained levels of TPHC ranging in concentration from 27.1 mg/kg to 445.0 mg/kg.

### 3.2 CONCLUSIONS AND RECOMMENDATIONS

The analytical results for all post-excavation soil samples collected from the UST closure excavation at Building 1106 were below the NJDEP soil cleanup criteria for total organic contaminants.

Based on the post-excavation soil sampling results, soils with TPHC concentrations exceeding the NJDEP soil cleanup criteria of 10,000 mg/kg do not remain in the former location of the UST or associated piping.

No further action is proposed in regard to the closure and site assessment of UST No. 081533-166 at Building 1106.

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS  
 BUILDING 1106  
 FT. MONMOUTH, NEW JERSEY

PAGE 1 OF 1

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/6.5-7.0'	1646.1	09-21-94	09-23-94	Total Solid TPHC	--	--	84 %	--	--
B/6.5-7.0'	1646.2	09-21-94	09-23-94	Total Solid TPHC	6.6	yes	31.8	10,000	--
C/6.5-7.0'	1646.3	09-21-94	09-23-94	Total Solid TPHC	6.6	yes	85 %	10,000	--
D/6.5-7.0'	1646.4	09-21-94	09-23-94	Total Solid TPHC	6.6	yes	36.7	10,000	--
E/6.5-7.0'	1646.5	09-21-94	09-23-94	Total Solid TPHC	6.6	yes	88 %	10,000	--
F/6.5-7.0'	1646.6	09-21-94	09-23-94	Total Solid TPHC	6.6	yes	276.0	10,000	--
DUP F/6.5-7.0'	1646.7	09-21-94	09-23-94	Total Solid TPHC	6.6	yes	84 %	10,000	--
H/1.5-2.0'	1646.8	09-21-94	09-23-94	Total Solid TPHC	6.6	yes	445.0	10,000	--
							85 %	10,000	--
							36.7	10,000	--
							82 %	10,000	--
							27.1	10,000	--
							83 %	10,000	--
							32.2	10,000	--
							89 %	10,000	--
							30.0	10,000	--

## Notes:

- \* Cleanup criteria for total organics
- Not applicable / does not exceed criteria
- TPHC Total Petroleum Hydrocarbons

Smith Environmental Technologies Corporation. (Project No. 09-5004-07)

soil1106.doc

**SMITH**

**APPENDIX A  
CERTIFICATIONS**

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. Welner  
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. 1106

081533-166  
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?  Yes  No If Yes, Case No. \_\_\_\_\_  
(Note: All discharges must be reported to the Environmental Action Hotline (609) 292-7172)
- B. The substance(s) discharged was(were) N/A
- C. Have any vapor hazards been mitigated?  Yes  No  N/A

III. DECOMMISSIONING OF TANK SYSTEMS

Closure Approval No. C-93-3564

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:

- North arrow and scale
- The locations of the ground water monitoring wells
- Location and depth of each soil sample and boring
- All major surface and sub-surface structures and utilities
- Approximate property boundaries
- All existing or closed underground storage tank systems, including appurtenant piping
- A cross-sectional view indicating depth of tank, stratigraphy and location of water table
- Locations of surface water bodies

C. Soil samples and borings (check appropriate answer)

- Were soil samples taken from the excavation as prescribed?  Yes  No  N/A
- Were soil borings taken at the tank system closure site as prescribed?  Yes  No  N/A
- Attach the analytical results in tabular form and include the following information about each sample:
  - Customer sample number (keyed to the site map)
  - The depth of the soil sample
  - Soil boring logs
  - Method detection limit of the method used
  - QA/QC information as required

D. Ground Water Monitoring

1. Number of ground water monitoring wells installed 0
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?  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. N/A ppb total BTEX, N/A ppb total non-targeted VOC
  2. N/A ppb total B/N, N/A ppb total non-targeted B/N
  3. 445.0 ppm TPHC
  4. N/A ppb \_\_\_\_\_ (for non-petroleum substance)

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  No
2. Free product contaminated soils are suspected to exist below the water table  Yes  No
3. Free product contaminated soils are suspected to exist off the property boundaries.  Yes  No

- D. Was the vertical and horizontal extent of contamination determined?  Yes  No  N/A

- E. Does soil contamination intersect ground water?  Yes  No  N/A

VI. GROUND WATER CONTAMINATION N/A

- A. Was ground water contamination found?  Yes  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:

1. \_\_\_\_\_ ppb total BTEX, \_\_\_\_\_ ppb total non-targeted VOC
2. \_\_\_\_\_ ppb total B/N, \_\_\_\_\_ ppb total non-targeted B/N
3. \_\_\_\_\_ ppb total MTBE, \_\_\_\_\_ ppb total TBA
4. \_\_\_\_\_ ppb \_\_\_\_\_ (for non-petroleum substance)
5. greatest thickness of separate phase product found \_\_\_\_\_
6. separate phase product has been delineated  Yes  No  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  N/A
2. The number of these wells identified is \_\_\_\_\_.

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 \_\_\_\_\_ 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 \_\_\_\_\_ feet from the source and its screening begins at a depth of \_\_\_\_\_ 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 \_\_\_\_\_ feet below grade. This well is located \_\_\_\_\_ 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 \_\_\_\_\_ feet from the source. This well is \_\_\_\_\_ feet deep and screening begins at a depth of \_\_\_\_\_ feet.

E. A plan for separate phase product recovery has been included.  Yes  No  N/A

F. A ground water contour map has been submitted which includes the ground water elevations for each well.  Yes  No  N/A

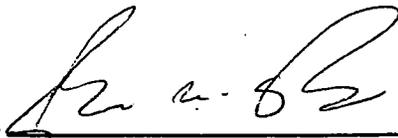
G. Delineation of contamination

- 1. The ground water contaminants have been delineated to MCLs or lower values at the property boundaries.  Yes  No
- 2. The plume is suspected to continue off the property at concentrations greater than MCLs.  Yes  No
- 3. Off property access (circle one):  is being sought  has been approved  has been denied

VII. SITE ASSESSMENT CERTIFICATION [preparer of site assessment plan - N.J.A.C. 7:14B-6.3(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)1].

*"I certify under penalty of law that the information provided in this document is true, accurate, and complete. I am aware that there are significant 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)2]:

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 \_\_\_\_\_

### GENERATOR CERTIFICATION

I hereby certify that the waste described on Hazardous Waste Manifest No. NJA 1663246 dated 4-21-94 is generated by one or more of the following processes, and does not contain more than 2 ppm polychlorinated biphenyls (P.C.B.'s) and does not display any characteristic or contain any hazardous constituents other than for which waste oils are listed in New Jersey.

X721: Waste automotive crankcase and lubricating oils from automotive service and gasoline stations, truck terminals, and garages.

X722: Waste oil and bottom sludge generated from tank cleanouts from residential/commercial fuel oil tanks.

X723: Waste oil and bottom sludge generated by gasoline stations when gasoline and oil tanks are tested, cleaned or replaced.

X724: Waste petroleum oil generated when tank trucks or other vehicles or mobile vessels are cleaned, including, but not limited to, oil ballast water from product transport units of boats, barges, ships or other vessels.

X725: Oil spill cleanup residue which: A. is contaminated beyond saturation; or B. the generator fails to demonstrate that the spill material was not one of the listed hazardous waste oils.

X726: The following used and unused waste oils: metal working oils; turbine lubricating oils; diesel lubricating oils; and quenching oils.

X728: Bottom sludge generated from the processing, blending, and treatment of waste oil in waste oil processing facilities.

I am duly authorized to sign said certification.

Generator US Army/Communications Electronics Command

Generator's EPA ID No. NT32160205717

Address Fort Monmouth, NJ MAIN Post 07703

Print Name Charles M. Appleby Signature [Signature]

Title Enviro Prot. Spec.

Date 4-21-94

**SMITH**

**APPENDIX B**  
**WASTE MANIFEST**



State of New Jersey  
Department of Environmental Protection and Energy  
Hazardous Waste Regulation Program  
Manifest Section  
CN 421, Trenton, NJ 08625-0421

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.

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No. NJ1321101021059170172916		Manifest Document No. 0172916		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 Main Post, c/o James Shirghio, Bldg 2504, ATTN: SECFM-DL-EM-MS Fort Monmouth, NJ 07703		4. Generator's Phone (908) 532-6223		5. Transporter 1 Company Name Freehold Cartage, Inc.		6. US EPA ID Number NJ1D1054112611614		7. Transporter 2 Company Name	
9. Designated Facility Name and Site Address Lionetti Oil Recovery co., Inc. Cheesequake & Runyon Rds. Old Bridge, NJ 08857		10. US EPA ID Number NJ1D108141044101614		12. Containers No. Type		13. Total Quantity		14. Unit Wt/Vol	
11. US DOT Description (Including Proper Shipping Name, Hazard Class or Division, HM)		a. X Petroleum Oil, N.O.S. Class 3 (Petroleum Oil) Combustible Liquid UN 1270 PG III		0101 T T 001020		6		X 7 2 2	
b. X Petroleum Oil, N.O.S. Class 3 (Petroleum Oil) Combustible Liquid UN1270 PG III		0101 T T 00279		6		X 7 2 2			
c. X Petroleum Oil, N.O.S. Class 3 (Petroleum Oil) Combustible Liquid UN 1270 PG III		0101 T T 01618		6		X 7 2 2			
d. X Petroleum Oil, N.O.S. Class 3 (Petroleum Oil) Combustible Liquid UN 1270 PG III		0101 T T 00100		6		X 7 2 2			
Petroleum Oil 60% Water 40% T,L		Petroleum Oil 60% Water 40% T,L		T04= Filtration		T04= Filtration			
Petroleum Oil 60% Water 40% T,L		Petroleum Oil 60% Water 40% T,L		T04= Filtration		T04= Filtration			
15. Special Handling Instructions and Additional Information NOT EPA REGULATED BY EPA. REGULATED AS HAZARDOUS WASTE IN NJ 24 HOUR EMERGENCY PHONE: 201-427-2881 NJ DECAL# - 55404		a) 0081533-166 b) 0081533-82 c) 0081535-81 11a,b,c,d ERG# 27 d) 0081533-129							
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.		Printed/Typed Name DINKER. M. DESAI		Signature [Signature]		Month Day Year 10/11/94			
17. Transporter 1 Acknowledgement of Receipt of Materials		Printed/Typed Name David S. Smith		Signature [Signature]		Month Day Year 10/11/94			
18. Transporter 2 Acknowledgement of Receipt of Materials		Printed/Typed Name		Signature		Month Day Year			
19. Discrepancy Indication Space									
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.		Printed/Typed Name		Signature		Month Day Year			

If an emergency occurs, call the State Emergency Response Team (SERT) at 201-427-2881. If an emergency occurs in and the N.J. Dept. of Environmental Protection and Energy, (908) 202-7174



State of New Jersey  
 Department of Environmental Protection and Energy  
 Hazardous Waste Regulation Program  
 Manifest Section  
 CN 028, Trenton, NJ 08625-0028

Form Approved. OMB No. 2050-0039. Expires 9-30-94

Please type or print in block letters. (Form designed for use on elite (12-pitch) typewriter.)

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No. <b>AD321610205917032416</b>	Manifest Document No. <b>17032416</b>	2. Page 1 of 1	Information in the shaded areas is not required by Federal law.	
3. Generator's Name and Mailing Address <b>US Army Communications Electronics Command c/o James Shirghio, Bldg 2504, ATTN: SELFM-DL-EM-MS, Fort Monmouth, NJ 07703 MAIN Post</b>			A. State Manifest Document Number <b>NJA 1603246</b>		B. State Generator's ID <b>a) 812g 1106 b) 812j 1108</b>	
4. Generator's Phone ( 908 ) 532-6224		6. US EPA ID Number <b>INLJD101514112611614</b>		C. State Trans. ID <b>NJDEPES2265</b>		
5. Transporter 1 Company Name <b>Freehold Cartage, Inc.</b>		8. US EPA ID Number <b>INLJD101814104401614</b>		D. Transporter's Phone ( 908 ) 462-1001		
7. Transporter 2 Company Name		10. US EPA ID Number		E. State Trans. ID		
9. Originated Facility Name and Site Address <b>Lionetti Oil Recovery Co., Inc. Runyan &amp; Cheesequake Rds. Old Bridge, NJ 08857</b>			F. Transporter's Phone ( )		G. State Facility's ID	
11. US DOT Labeling (including Proper Shipping Name, Hazard Class, and ID Number)			12. Containers		14. Unit Waste No.	
X Petroleum Oil, N.O.S. Class 3 (Petroleum Oil) Combustible Liquid UN 1270 PG III			0101TT004810G		X17212	
X Petroleum oil, NOS class 3 (Petroleum oil) Combustible liquid UN 1270 PG III			061TT00906G		X1722	
J. Additional Descriptions for Materials Listed Above			K. Handling Codes for Wastes Listed Above			
T,L Petroleum 70% Water 30%			F04= Filtration			
T,L Petroleum 70% Water 30%			T04= Filtration			
15. Special Handling Instructions and Additional Information NOT REGULATED BY EPA. REGULATED AS HAZARDOUS WASTE IN NJ a.) 81533-166 24 HOUR EMERGENCY# 201-427-2881 b.) 81533-168 NJ DECAL# 55462						
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.						
Printed/Typed Name <b>Charles M. Appleby SELFM-PW-EV</b>			Signature <i>[Signature]</i>		Month Day Year <b>10/21/91</b>	
17. Transporter 1 Acknowledgement of Receipt of Materials Printed/Typed Name <b>David S. Smith</b>			Signature <i>[Signature]</i>		Month Day Year <b>04/21/91</b>	
18. Transporter 2 Acknowledgement of Receipt of Materials Printed/Typed Name			Signature		Month Day Year	
19. Discrepancy Indication Space						
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19. Signature						

In an emergency or from immediately call the state the emergency occurred in and the U.S. Dept. of Environmental Protection

GENERATOR  
TRANSPORTER  
FACILITY

# CALCULATION SHEET

Building No. 1106

NJDEPE Reg. No. 0081533-166

Tank Size 1000 gal

Tank Void 7.5 tons

## CLEAN FILL

ITEM NO.	DESCRIPTION	QUANTITY	TICKET #
	Fill	7.5	18982

TOTAL

## STONE

ITEM NO.	DESCRIPTION	QUANTITY	TICKET #
		<del>0</del>	

TOTAL

ID#27 soil to stockpile ( 7.5 + ~~0~~ ) - 7.5 = ~~0~~ tons

Chargeable clean fill ~~0~~

Chargeable stone ~~0~~



1453 W. Park Ave., Wayside  
Asbury Park, N.J. 07712  
908-493-3333

18982

Order Date

Feb 18 1995

Deliver Date

1 / 1

Delivered

C.O.D.

F.O.B./P.U.

Charge

Name

Big A

Address

fill

Item(s)	Quantity / Measure (tons, lbs., yds., ea.)	Unit Price	Total
	G 68250	21.63 tons	
	T 25000		
	N 43250		
Sub Total			
Delivery			
N.J. Tax			
Total			

Driver

*Barbely*

Received

\* Company not responsible for damage done off public roads. Color not guaranteed!

Have gravel with gravel  
since 1925

Bldg 1106 7.5 tons  
Bldg 616 14.13 tons

**SMITH**

**APPENDIX C**

**UST DISPOSAL CERTIFICATE**



RECLAMATION CENTER

TINTC ILLS, NJ  
MAILING: 15000 ASBURY AVE.  
ADDRESS: NEPTUNE, NJ 07753

FACILITY ID NO: 1336F1SP01

RECEIPT DOCUMENT NUMBER

MARP508937  
MARPAL COMPANY  
PO BOX 188

LINCROFT

NJ 07738

TARE WEIGHT 01413600  
GROSS WEIGHT 18.1000 ( 36200 )  
20.4900 ( 40980 )

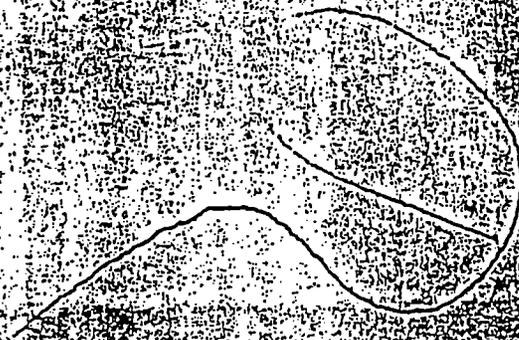
58523

3400.00

DATE: 10/24/94 CORE: JJJ ENTRY TIME: 09:21 DEP NO: 2065ZZ PLATE NO: XX77PH 09:38

*Sewain (166)*  
Normal

QUANTITY	CLASS	DESCRIPTION/VEHICLE	UNITS	UNIT PRICE	TOTAL
253900	13	Bulky Waste MONMOUTH COUNTY EATONTOWN BOROUGH	Tons	95.70	228.72



\*\*\* Prepayment Balance Remaining: 68740.04 \*\*\*  
TRANSPORTER'S SIGNATURE

DOCUMENT TOTAL 228.72

CUSTOMER COPY

1,000 GAL FIBER GLASS TANK FROM BLDG 1106  
3,000 GAL FIBER GLASS TANK FROM BLDG 290  
4,000 GAL FIBERGLASS TANK FROM BLDG 166



**APPENDIX D**

**SOIL ANALYTICAL DATA PACKAGE**

Report of Analysis  
 U.S. Army, Fort Monmouth Environmental Laboratory  
 NJDEPE Certification # 13461

Client: U.S. Army  
 DPW, SELFM-PW-EV  
 Bldg. 167  
 Ft. Monmouth, NJ 07703

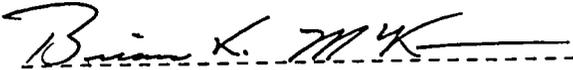
Lab. ID #: 1646.1-.8  
 Sample Rec'd: 09/21/94  
 Analysis Start: 09/23/94  
 Analysis Comp: 09/23/94

Analysis: 418.1 (TPH)  
 Matrix: Soil  
 Analyst: S. Hubbard  
 Ext. Meth: Sonc.

NJDEPE UST Reg. #: 0081533-166  
 Closure #: C93-3564  
 DICAR #:  
 Location #: Bldg. 1106

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1646.1	Site A, Sidewall SE OVA= ND	84	31.8	6.6
1646.2	Site B, Sidewall W OVA= ND	85	36.7	6.6
1646.3	Site C, Sidewall NE OVA= ND	88	276.	6.6
1646.4	Site D, Sidewall NW OVA= ND	84	445.	6.6
1646.5	Site E, Sidewall E OVA= ND	85	36.7	6.6
1646.6	Site F, Sidewall SW OVA= ND	82	27.1	6.6
1646.7	Site G, DUP	83	32.2	6.6
1646.8	Site H, feedline	89	30.0	6.6
M. Bl.	Method Blank	100	ND	3.3

Notes: ND = Not Detected, MDL = Method Detection Limit  
 \* = Silica Gel Added, NA = Not Applicable  
 1646.6dup= 80% 1646.6s= 84% 1646.6sd= 82% RPD= 2.4%  
 Cal Chk = 97%

  
 Brian K. McKee  
 Laboratory Director



# U.S. ARMY FORT MONMOUTH

Chain of Custody

P.O. #: AS 7 TPE

C93-3564

Project #: 81533-166		Sampler: <u>Comp/cute</u>		Date / Time: <u>9/2/94 1:40</u>		Analysis Parameters		Start:	
Customer: <u>DAW Enviro.</u>		Site Name: <u>BAG 1105</u>		Date / Time: <u>9/2/94 1:40</u>		Analysis Parameters		Finish:	
Phone: <u>(908) 532-4167</u>		Customer Sample Location/ID Number: <u>C93-3564</u>		Date / Time: <u>9/2/94 1:40</u>		Analysis Parameters		Preservation Method	
Lab Sample ID Number	Date/Time	Customer Sample Location/ID Number	Sample Matrix	# of Bottles	Remarks	Remarks	Remarks	Remarks	Remarks
11646.1	9/2	Side A - Row 1 (SE)	Soil	1		NO	NO	NO	NO
12	"	" B - " (NW)	"	1		NO	NO	NO	NO
13	4	" C - " (NE)	"	1		NO	NO	NO	NO
14	"	" D - " (NW)	"	1		NO	NO	NO	NO
15	"	" E - " (East)	"	1		NO	NO	NO	NO
16	"	" F - " (SW)	"	1		NO	NO	NO	NO
17	"	G (DUP)	"	1		NO	NO	NO	NO
18	"	H (Feedline)	"	1		NO	NO	NO	NO
Relinquished By (signature)		Date / Time		Received By (signature)		Date / Time		Shipped By:	
Dinker Desai		9/2		Sarah J. Hubbard		9-21-94 2:30		Hand	
Note: A drawing depicting sample location should be attached or drawn on the reverse side of this chain of custody. <u>Map attached to C-0-C</u>									

SRI-ENV COC form 01

Page 1 of 2 Pages

Rev. A Date: 02 Apr 93

Environmental Laboratory

Certification Number 13461

40.75 65 MV

81.5 121 MV

163 242 MV

Method Blank Bldg. 1106 0 MV

1646.1 8 MV

1646.2 9 MV

1646.3 56 MV

1646.4 85 MV

1646.5 9 MV

1646.6 7 MV

1646.6 6 MV Dup.

1646.6 90 MV Spk.

1646.6 88 MV Dup. Spk.

1646.7 8 MV

1646.8 8 MV

40.75 Cal Check 63 MV

1647.1 dil 7 135 MV

1647.2 dil 7 98 MV

1647.3 dil 13 162 MV

Method Blank Bldg. 618

1648.1 dil 7 102 MV

1648.2 42 MV

1648.3 34 MV

1648.4 dil 7 75 MV

1648.5 5 MV

1648.6 8 MV

40.75 Cal Check 65 MV

SA  
195-6010 (6)

PRINTED IN U.S.A.

PHC Conformance/Non-conformance Summary Report

No Yes

1. Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank

\_\_\_\_\_  
\_\_\_\_\_

2. Matrix Spike/Matrix Sp Dup. Recoveries Meet Criteria (If not met, list the sample and corresponding recovery which falls outside the acceptable range)

\_\_\_\_\_  
\_\_\_\_\_

3. IR Spectra submitted for standards, blanks, & samples

4. Chromatograms submitted for standards, blanks, and samples if GC fingerprinting was conducted.

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.

Project #1646

  
Brian K. McKee  
Laboratory Manager



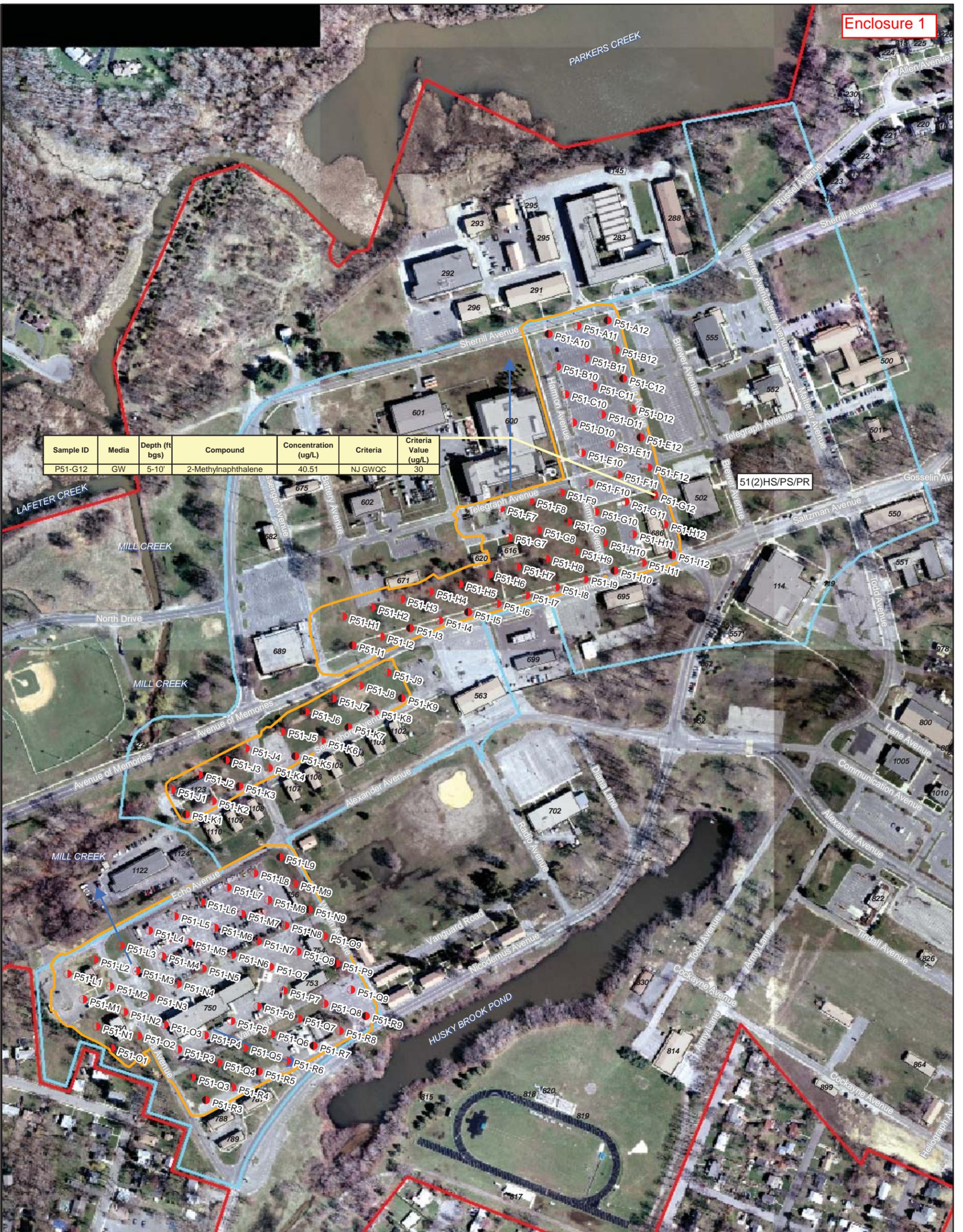
## ATTACHMENT RR

### Parcel 51 Groundwater Monitoring Assessment

#### Contents:

- Enclosure 1 – Figure 3.12-1 “Parcel 51 Sample Locations and Constituents of Concern” from Shaw, 2008 ECP Site Investigation Report
- Enclosure 2 – Map showing monitoring wells within “Building 600 Area” and vicinity
- Enclosure 3 – Table with monitor well construction for wells near the 600 Area
- Enclosure 4 – Shallow Groundwater Elevation Map from the Brinkerhoff (2010) Modflow Groundwater Modeling Report
- Enclosure 5 – Monitor Well Records for:
  1. 600A MW-01
  2. 600B MW-02
  3. 600C MW-03
  4. 600MW04
  5. M5MW15
  6. 699-MW15
- Enclosure 6 – Analytical Data Reports 10009, 10028





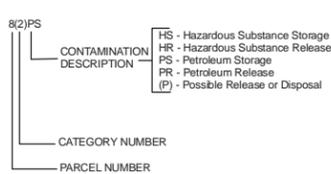
Sample ID	Media	Depth (ft bgs)	Compound	Concentration (ug/L)	Criteria	Criteria Value (ug/L)
P51-G12	GW	5-10'	2-Methylnaphthalene	40.51	NJ GWQC	30

51(2)HS/PS/PR

- LEGEND**
- Geoprobe Soil Sample Location
  - Geoprobe Soil & Groundwater Sample Location
  - ➔ Generalized Groundwater Flow Direction. Direction of Generalized Groundwater Flow derived from qualitative evaluation of surface topography, surface water features, and pre-existing IRP site groundwater potentiometric maps where available.
  - ▭ Geophysical Investigation Area - Electromagnetic (EM) and Ground Penetrating Radar (GPR)
  - ▭ Building
  - ▭ Installation Boundary

- ECP PARCEL CATEGORY DEFINITIONS**
- ▭ Areas where only release or disposal of petroleum products has occurred.

**BRAC PARCEL LABEL DEFINITIONS**



Base Realignment and Closure 2005



FIGURE 3.12-1  
FORT MONMOUTH ECP  
SITE INVESTIGATION

PARCEL 51 SAMPLE LOCATIONS  
AND CONSTITUENTS OF CONCERN

MAIN POST  
FORT MONMOUTH  
NEW JERSEY

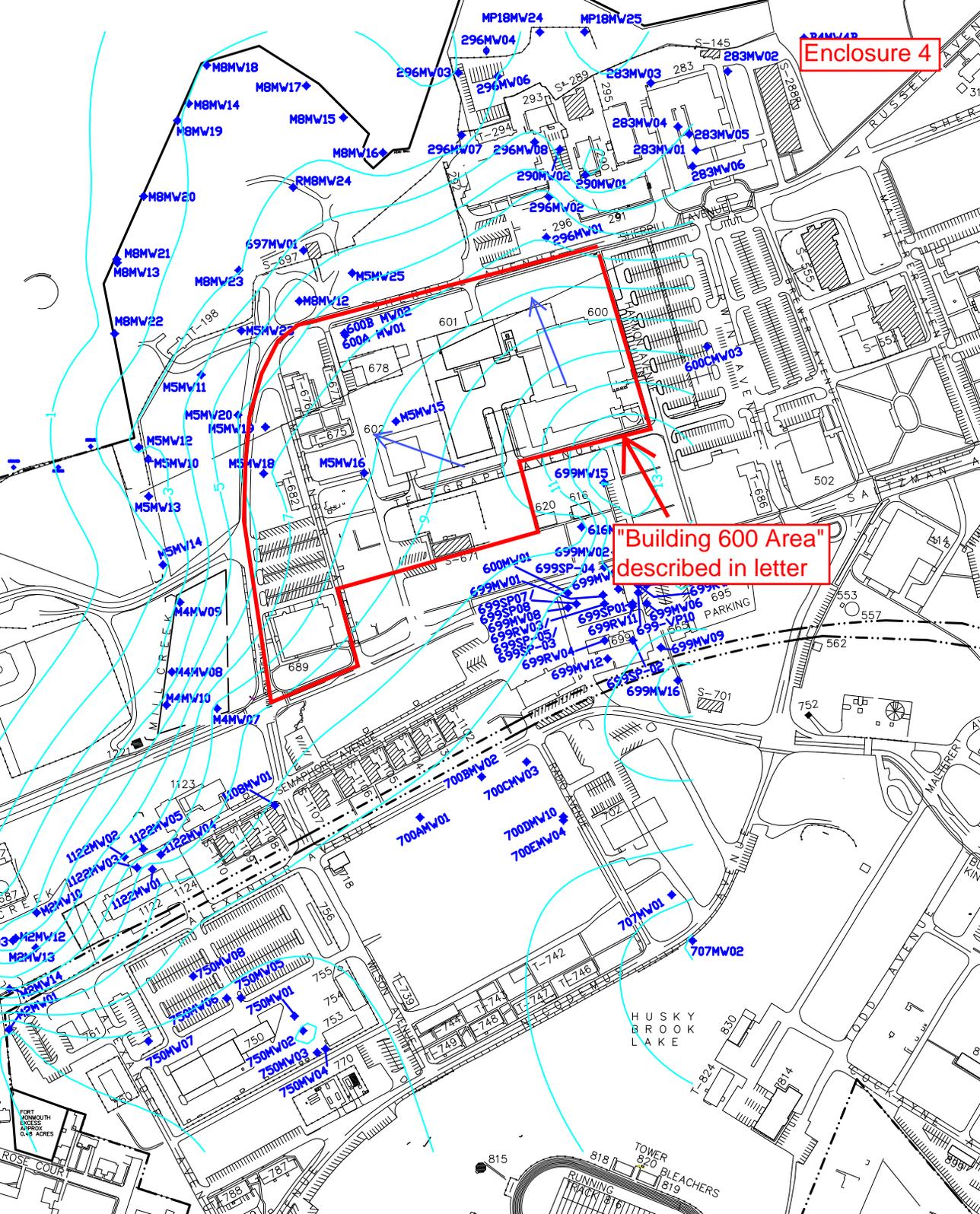


Installation Restoration Program (IRP, Near 600 Area)  
Main Post

Site	Well Permit #	Y Coord. (North)	X Coord. (East)	Installation Date	Depth	feet			Slot Size	Comments
						Casing Length	Screen Length	Top of Casing		
<b>M-5 Landfill</b>										
M5MW15	29-40120	539573.944	618119.388	3/24/1999	18.00	5.00	13.00	17.40	0.01	IRP SITE, CLOSED LANDFILL Under permanent trailer, inaccessible  Surveyed 1/19/10
M5MW16	29-40121	539431.444	618031.862	3/24/1999	16.00	3.00	13.00	14.08	0.01	
M5MW18	29-40123	539430.125	617754.747	3/26/1999	18.00	3.00	15.00	13.35	0.01	
M5MW19	29-40124	539558.480	617759.521	3/26/1999	18.00	3.00	15.00	12.93	0.01	
<b>Bldg. 699</b>										
600MW01	29-30968	539100.480	618593.011	7/8/1994	15.00	2.00	13.00	15.27	0.02	IRP SITE, Active UST Site  Surveyed 1/19/10 Surveyed 7/23/09 Surveyed 7/23/09
616MW01	29-33760	539282.814	618630.807	8/17/1995	14.00	4.00	10.00	17.64	0.02	
699MW02	29-23678-9	539212.459	618724.121	11/2/1989	17.00	2.00	15.00	15.13	0.02	
699MW15	29-33753	539404.555	618692.152	8/17/1995	13.50	3.50	10.00	15.70	0.02	

Non-Installation Restoration Program (Non-IRP, Near 600 Area)  
Main Post

Site	Well Permit #	Y Coord. (North)	X Coord. (East)	Installation Date	Depth	feet			Slot Size	Comments
						Casing Length	Screen Length	Top of Casing		
<b>600 Area</b>										
600AMW01	200913462	617979.762	539811.742	12/17/2009	70.00	55.00	15.00	15.82	0.01	Surveyed 2/15/10 Surveyed 2/15/10 Surveyed 2/15/10 No well tag
600AMW02	200913463	617977.407	539817.801	12/21/2009	20.00	5.00	15.00	15.67	0.01	
600AMW03	200913464	618976.826	539780.415	12/22/2009	20.00	5.00	15.00	13.80	0.01	
600MW04				8/17/2011	20.00	5.00	15.00		0.01	
<b>Bldg. 689</b>										Non-IRP, Former UST Site
689A+BMW1	29-30966	539034.230	2172209.214	7/11/1994	12.50	1.00	11.50	15.63	0.02	NFA received 8/29/00, well closed 6/23/03 NFA received 8/29/00, well closed 6/23/03
689A+BMW2	29-30967	5399324.255	2172033.313	7/15/1994	12.50	1.00	11.50	14.23	0.02	
<b>Bldg. 1104</b>										
1104MW01	E201007329	538690.000	618130.000	7/26/2010	20.00	5.00	15.00	19.58	0.01	Surveyed 8/10/10
<b>Bldg. 1108</b>										Non-IRP, Former UST Site
1108MW01	29-31785	538514.388	617785.660	9/12/1994	15.00	5.00	10.00	16.55	0.02	Sealed 6/19/03



"Building 600 Area" described in letter

New Jersey State Department of Environmental Protection  
Bureau of Water Systems and Well Permitting  
PO BOX 426 Trenton, NJ 08625-0426 Tel: 609-984-6831

Well Permit Number  
**E200913462**

**MONITORING WELL RECORD**

PROPERTY OWNER: JOSEPH FALLON

Company/Organization: United States Army

Address: 173 Riverside Avenue Fort Monmouth, New Jersey 07703

WELL LOCATION: US Army - 600 Area

Address: Sherril Avenue

County: Monmouth Municipality: Oceanport Boro Lot: N/A Block: N/A

Easting (X): 617979 Northing (Y): 539811  
Coordinate System: NJ State Plane (NAD83) - USFEET

DATE WELL STARTED: December 15, 2009  
DATE WELL COMPLETED: December 17, 2009

WELL USE: MONITORING

Other Use(s): \_\_\_\_\_

Local ID: **600A MW-01** **Deep well**

**WELL CONSTRUCTION**

Total Depth Drilled (ft.): 70 Finished Well Depth (ft.): 70 Well Surface: Above Grade

	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt/Rating/Screen # Used (lbs/ch no.)
Borehole	0	70	10		
Casing	0	50	4	PVC	sch 40
Screen	50	70	4	pvc	.010

	Depth to Top (ft.)	Depth to Bottom (ft.)	Outer Diameter (in.)	Inner Diameter (in)	Material		
					Bentonite (lbs.)	Neat Cement (lbs.)	Water (gal.)
Grout	0	48	10	4	50	945	80
Gravel Pack	48	70	10	4	#1 Well Gravel		

Grouting Method: Pressure method (Tremie Pipe) Drilling Method: Hollow Stem Augers

**ADDITIONAL INFORMATION**

Protective Casing: Yes

Static Water Level: 15 ft. below land surface

Water Level Measure Tool: M-scope

Well Development Period: 1 hrs.

Method of Development: submersible pump

Pump Type: \_\_\_\_\_

Pump Capacity:    gpm

Total Design Head:    ft.

Drilling Fluid: N/A

Drill Rig: Diedrich 120

Health and Safety Plan Submitted? Yes

**ATTACHMENTS:**

**GEOLOGIC LOG**

0 - 4: brown GW - Well-graded gravels and gravel-sand mixtures, little or no fines top soil & fine brown sand

4 - 70: black, brown SC - Clayey sands, sand-clay mixtures black clay with silts & very fine sand water 15'

**ADDITIONAL INFORMATION:**

Driller of Record: William Lightner,  
MONITORING LICENSE # 215733

Company: TABASCO DRILLING CORP

4607

**MONITORING WELL RECORD**

PROPERTY OWNER: JOSEPH FALLON

Company/Organization: United States Army

Address: 173 Riverside Avenue Fort Monmouth, New Jersey 07703

WELL LOCATION: US Army - 600 Area

Address: Sherril Avenue

County: Monmouth

Municipality: Oceanport Boro

Lot: N/A

Block: N/A

Easting (X): 617977 Northing (Y): 539817  
Coordinate System: NJ State Plane (NAD83) - USFEET

DATE WELL STARTED: December 18, 2009

DATE WELL COMPLETED: December 21, 2009

WELL USE: MONITORING

Other Use(s): \_\_\_\_\_

Local ID: **600B MW-02**

**WELL CONSTRUCTION**

Total Depth Drilled (ft.): 20

Finished Well Depth (ft.): 20

Well Surface: Above Grade

	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt/Rating/Screen # Used (lbs/ch no.)
Borehole	0	20	10		
Casing	2.5	5	4	PVC	sch 40
Screen	5	20	4	pvc	.010

	Depth to Top (ft.)	Depth to Bottom (ft.)	Outer Diameter (in.)	Inner Diameter (in.)	Material		
					Bentonite (lbs.)	Neat Cement (lbs.)	Water (gal.)
Grout	0	3	10	4	5	94.5	8
Gravel Pack	3	20	10	4	#1 Well Gravel		

Grouting Method: Pressure method (Tremie Pipe)

Drilling Method: Hollow Stem Augers

**ADDITIONAL INFORMATION**

Protective Casing: Yes

Static Water Level: 2 ft. below land surface

Water Level Measure Tool: M-scope

Well Development Period: 1 hrs.

Method of Development: submersible pump

Pump Type: \_\_\_\_\_

Pump Capacity:    gpm

Total Design Head:    ft.

Drilling Fluid: N/A

Drill Rig: Diedrich D-120

Health and Safety Plan Submitted? Yes

**ATTACHMENTS:**

**GEOLOGIC LOG**

0 - 4: brown GW - Well-graded gravels and gravel-sand mixtures, little or no fines top soil, fine brown sand

4 - 20: black, brown GC - Clayey gravels, gravel-sand-clay mixtures black clay with silts and very fine sand

**ADDITIONAL INFORMATION:**

Driller of Record: William Lightner,  
MONITORING LICENSE # 215733

Company: TABASCO DRILLING CORP

ID 43920

4607

**MONITORING WELL RECORD**

PROPERTY OWNER: JOSEPH FALLON

Company/Organization: United States Army

Address: 173 Riverside Avenue Fort Monmouth, New Jersey 07703

WELL LOCATION: US Army - 600 Area

Address: Sherril Avenue

County: Monmouth

Municipality: Oceanport Boro

Lot: N/A

Block: N/A

Easting (X): 618976 Northing (Y): 539780

Coordinate System: NJ State Plane (NAD83) - USFEET

DATE WELL STARTED: December 21, 2009

DATE WELL COMPLETED: December 22, 2009

WELL USE: MONITORING

Other Use(s):

Local ID: 600C MW-03

**WELL CONSTRUCTION**

Total Depth Drilled (ft.): 20

Finished Well Depth (ft.): 20

Well Surface: Above Grade

	Depth to Top (ft.)	Depth to Bottom (ft.)	Diameter (inches)	Material	Wgt/Rating/Screen # Used (lbs/ch no.)
Borehole	0	20	10		
Casing	2.5	5	4	PVC	sch 40
Screen	5	20	4	pvc	.010

	Depth to Top (ft.)	Depth to Bottom (ft.)	Outer Diameter (in.)	Inner Diameter (in.)	Material		
					Bentonite (lbs.)	Neat Cement (lbs.)	Water (gal.)
Grout	0	3	10	4	5	94.5	8
Gravel Pack	3	20	10	4	#1 well gravel		

Grouting Method: Pressure method (Tremie Pipe)

Drilling Method: Hollow Stem Augers

**ADDITIONAL INFORMATION**

Protective Casing: Yes

Static Water Level: 9 ft. below land surface

Water Level Measure Tool: M-scope

Well Development Period: 1 hrs.

Method of Development: submersible pump

Pump Type:

Pump Capacity: \_ gpm

Total Design Head: \_ ft.

Drilling Fluid: N/A

Drill Rig: Diedrich D-120

Health and Safety Plan Submitted? Yes

**ATTACHMENTS:**

**GEOLOGIC LOG**

0 - 4: brown GW - Well-graded gravels and gravel-sand mixtures, little or no fines top soil, fine brown sand

4 - 20: black, brown SC - Clayey sands, sand-clay mixtures black clay with silts and very fine sand, water 15

**ADDITIONAL INFORMATION:**

Driller of Record: William Lightner,  
MONITORING LICENSE # 215733

Company: TABASCO DRILLING CORP

ID 43927



**U.S. ARMY  
FORT MONMOUTH  
SELFM-PW-EV**

**LOG OF BORING 600AMW03**

(Page 1 of 1)

U.S. Army  
SELFM-PW-EV  
JOSEPH FALLON  
600 AREA  
GROUNDWATER INVESTIGATION

NJDEP Permit # : 200913464  
NJDEP Case # : -  
Start Date : 12/21/09  
Completion Date : 12/22/09

Northing : N 618976  
Easting : E 539780  
Logged By : Tabasco Drilling Corp.  
Driller : William Lightner

Depth in Feet	Well: MW03 Elevation: 13.80	DESCRIPTION	USCS	GRAPHIC	Samples	Blow Count	Well Construction Information
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20		<p>Topsoil</p> <hr/> <p>Green/brown medium to fine SAND/silts with some pebbles</p> <hr/> <p>Green/brown medium to fine SAND/silts with few pebbles</p> <hr/> <p>Fine silt with highly plastic CLAY starting at 11.5 feet</p> <hr/> <p>Dark green highly plastic CLAY</p>	<p></p> <p>SW</p> <p>SW</p> <p>CL</p> <p>CL</p>				<p>Well Construction</p> <p>Hole Diameter : 10 inch Drill Method : Hollow Stem Auger Sampling Method : -</p> <p>Well Casing</p> <p>Material : PVC Diameter : 4 inch Joints : - Length : 5 feet</p> <p>Well Screen</p> <p>Material : PVC Diameter : 4 inch Joints : - Opening : 0.01 inch Length : 15 feet</p> <p>Sand Pack : #1 Well Gravel Annulus Seal : -</p> <hr/> <p>Stick up: 2.5 feet Water level: 9 feet</p>





**U. S. ARMY  
FORT MONMOUTH  
SELFM-PW-EV**

# LOG OF BORING M5MW15

(Page 1 of 1)

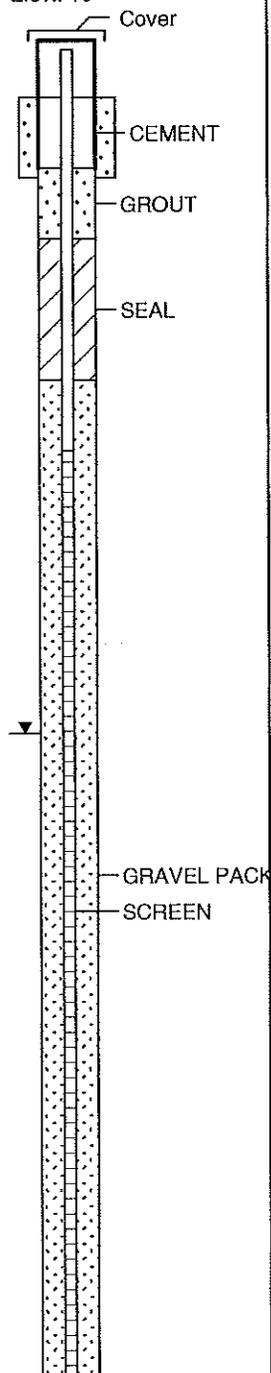
U.S. ARMY  
FT. MONMOUTH N.J.  
SELFM-PW-EV  
JOSEPH FALLON  
M-5 LANDFILL INVESTIGATION

DATE COMPLETED : 3-24-99  
HOLE DIAMETER : 11"  
DRILLING METHOD : HOLLOW STEM AUGER  
SAMPLING METHOD : 2" SPLIT SPOON  
DRILLING COMPANY : LUTZ ENVIRONMENTAL

OPERATOR : TIM A. WESTOVER  
GEOLOGIST : PETER NICULESCU  
NJDEP PERMIT NO. : 29 40 120  
NJDEP COORD. : 29.14.4.45

Depth in FOOT	Samples	Blow Count	HNU	DESCRIPTION	USCS	TIME	Well Construction Information
0		3		Dark gray silty SAND, some clay and root fragments			<b>WELL CASING:</b> MATERIAL : PVC DIAMETER : 4 inch JOINTS : Threaded LENGTH : 7 feet  <b>WELL SCREEN:</b> MATERIAL : PVC DIAMETER : 4 inch JOINTS : Threaded LENGTH : 13 feet  SAND PACK : morie gravel #1  ANNULUS SEAL : bentonite  STICK UP : steel MATERIAL : steel DIAMETER : 6 inch
1	1	6	0 PPM	Yellowish brown, fine to medium silty SAND. Some gravel.		10:05	
2		5					<b>NOTES</b> Development of the monitor well was performed using a submersible pump until ground water was visibly free of sediments (approximately one hour and 25 minutes)
3	2	3	0 PPM	Green and yellowish brown to gray, fine to medium silty SAND, trace of gravel and clay.		10:08	
4		4					
5	3	6	0 PPM			10:10	
6		8					
7	4	3	0 PPM			10:15	
8		9					
9	5	9	0 PPM			10:20	
10		8					
11	6	1	0 PPM	Moist at 10.5 feet. Saturated at 11 feet.		10:30	
12		1					
13	7	5	0 PPM			10:40	
14		7					
15	8	2	0 PPM	Greenish gray, very fine to fine silty SAND, some clay. Saturated.		10:50	
16		5					
17	9	13	0 PPM			11:00	
18		19					

Well: M5MW15  
Elev.: 10





U.S. ARMY  
FORT MONMOUTH  
SEL:FM PW KV

# LOG OF BORING 699-MW15

(Page 1 of 1)

Produced for Chuck Appleby

Project Name : BLDG. 699  
NJDEP Case # : 89-10-19-1329  
Logged By : Shore Drilling  
Start Date : 8/17/95

Completion Date : 8/17/95  
Northing : N 539685.549  
Easting : E 2172905.342  
Driller : R. Barnes

Depth in Feet	29-33753 ELEV: 17.04	DESCRIPTION	GRAPHIC	USCS	Samples	Blows/Ft	Well Construction Information
0		Topsoil and roots, dry					<b>Well Construction</b> Date Completed : 8/17/95 Hole Diameter : 8 in Drill Method : HSA Company Rep : R. Barnes <b>Well Casing</b> Material : PVC Diameter : 4 in Joints : Threaded <b>Well Screen</b> Material : PVC Diameter : 4 in Joints : Threaded Opening : 20 Slot Sand Pack : # 2 Morie Sand Annulus Seal : Bentonite/Portland : Tremmie <b>Well Screen</b> Material : PVC Diameter : 4 in
.5		Fill, brown-green clayey, dry			1	9	
2		Black-green clayey moist, mottled			2	13	
2.5							
3.5							
4							
				SM	3	10	
6					4	13	<b>NOTES</b> Well #1 is 699 MW15
8		Green-black clay and silt			5	18	
10					6	15	
12				CL			
14	14						

2-28-1996 C:\699\GEO\699 mw15.gp3



# FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS

PHONE: (732) 532-6224 FAX: (732) 532-6263

WET-CHEM - METALS - ORGANICS - FIELD SAMPLING  
CERTIFICATIONS NJDEP #13461



ANALYTICAL DATA REPORT  
Fort Monmouth Environmental Laboratory  
ENVIRONMENTAL DIVISION  
Fort Monmouth, New Jersey  
PROJECT: 600 Area  
New Wells 1<sup>st</sup> Round

## 600 Area/New Wells

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
Trip Blank	1000901	Aqueous	07-Jan-09 11 30	01/07/10
Field Blank	1000902	Aqueous	07-Jan-09 12 45	01/07/10
Duplicate	1000903	Aqueous	07-Jan-09 12 50	01/07/10
600/MW#A	1000904	Aqueous	07-Jan-09 14 00	01/07/10
600/MW#B	1000905*	Aqueous	07-Jan-09 12 50	01/07/10
600/MW#C	1000906	Aqueous	07-Jan-09 13 00	01/07/10

\*DUP Sample is 1000905

**ANALYSIS:**  
FORT MONMOUTH ENVIRONMENTAL LAB  
VOA+15

*Dean Tardiff* 1/25/10  
Dean Tardiff/Date  
Laboratory Manager

# Fort Monmouth Environmental Testing Laboratory

Bldg 173, SELFM-PW-EV, Fort Monmouth, NJ 07703

Tel (732)532-4359 Fax (732)532-6263 EMail jacqueline.hamer@us.army.mil

NJDEP Certification #13461

## Chain of Custody Record

Customer: <b>JOE FALLON</b>		Project No.		Analysis Parameters						Comments:	
Phone #: <b>732-532-6223</b>		Location <b>600 AREA</b>		VOATS							
( ) DERA ( ) OMA ( ) Other: _____		<b>NEW MONITORING WELLS</b>									
Samplers Name / Company: <b>WALTER FUNKE / TJS</b>				Sample #							
LIMS/Work Order #	Sample Location	Date	Time	Type	bottles						Remarks / Preservation Method
<b>10064.01</b>	<b>600 TRIP BLANK</b>	<b>1-7-10</b>	<b>11:30</b>	<b>AQ</b>	<b>2</b>	<b>X</b>					
<b>.02</b>	<b>600 FIELD BLANK</b>	<b>1-7-10</b>	<b>12:45</b>	<b>AQ</b>	<b>2</b>	<b>X</b>					
<b>.03</b>	<b>600 DUP.</b>	<b>1-7-10</b>	<b>—</b>	<b>AQ</b>	<b>2</b>	<b>X</b>					
<b>.04</b>	<b>600 MW-A</b>	<b>1-7-10</b>	<b>14:00</b>	<b>AQ</b>	<b>2</b>	<b>X</b>					
<b>.05</b>	<b>600 MW-B*</b>	<b>1-7-10</b>	<b>12:50</b>	<b>AQ</b>	<b>2</b>	<b>X</b>					
<b>.06</b>	<b>600 MW-C</b>	<b>1-7-10</b>	<b>13:00</b>	<b>AQ</b>	<b>2</b>	<b>X</b>					
Relinquished by (signature)		Date/Time		Received by (signature)		Relinquished by (signature)		Date/Time		Received by (signature)	
<i>[Signature]</i>		1/7/10 15:00		<i>[Signature]</i>							
Relinquished by (signature)		Date/Time		Received by (signature)		Relinquished by (signature)		Date/Time		Received by (signature)	
Report Type <input type="checkbox"/> Full, <input type="checkbox"/> Reduced, <input checked="" type="checkbox"/> Standard, <input type="checkbox"/> Screen / non-certified, <input type="checkbox"/> EDD						Comments					
Turnaround time <input checked="" type="checkbox"/> Standard 3 wks, <input type="checkbox"/> Rush Wk, <input type="checkbox"/> ASAP Verbal ___ Hrs											

000002

**Volatile Analysis Report**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13461**

Data File      VA5284 D  
 Operator        ROBERTS  
 Date Acquired   7 Jan 2010 10:48 pm

Sample Name    1000903  
 Field ID        600 DUP  
 Sample Multiplier   1

CAS#	Compound Name	RT	Response	Result	Regulatory Level (ug/l)	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.09 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	2	1.64 ug/L	5.00 ug/L	
75650	tert Butyl alcohol			not detected	100	1.89 ug/L	5.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.18 ug/L	0.50 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.12 ug/L	0.50 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.22 ug/L	0.50 ug/L	
74-87-3	Chloromethane			not detected	nle	0.10 ug/L	0.50 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.22 ug/L	0.50 ug/L	
74-83-9	Bromomethane			not detected	10	0.25 ug/L	0.50 ug/L	
75-00-3	Chloroethane			not detected	nle	0.22 ug/L	0.50 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.18 ug/L	0.50 ug/L	
75-35-4	1,1 Dichloroethene			not detected	1	0.20 ug/L	0.50 ug/L	
67-64-1	Acetone			not detected	6000	0.18 ug/L	0.50 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.18 ug/L	0.50 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.16 ug/L	0.50 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.20 ug/L	0.50 ug/L	
75-35-3	1,1 Dichloroethane			not detected	50	0.19 ug/L	0.50 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	0.50 ug/L	
78-93-3	2-Butanone			not detected	300	0.16 ug/L	0.50 ug/L	
156-59-2	cis 1,2 Dichloroethene			not detected	70	0.14 ug/L	0.50 ug/L	
67-66-3	Chloroform			not detected	70	0.21 ug/L	0.50 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.17 ug/L	0.50 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.27 ug/L	0.50 ug/L	
71-43-2	Benzene			not detected	1	0.16 ug/L	0.50 ug/L	
107-06-2	1,2 Dichloroethane			not detected	2	0.19 ug/L	0.50 ug/L	
79-01-6	Trichloroethene			not detected	1	0.18 ug/L	0.50 ug/L	
78-87-5	1,2 Dichloropropane			not detected	1	0.16 ug/L	0.50 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.14 ug/L	0.50 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.25 ug/L	0.50 ug/L	
10061-01-5	cis 1,3 Dichloropropene			not detected	1	0.16 ug/L	0.50 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.26 ug/L	0.50 ug/L	
108-88-3	Toluene			not detected	1000	0.15 ug/L	0.50 ug/L	
10061-02-6	trans 1,3 Dichloropropene			not detected	1	0.12 ug/L	0.50 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.14 ug/L	0.50 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.18 ug/L	0.50 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.20 ug/L	0.50 ug/L	
126-48-1	Dibromochloromethane			not detected	1	0.14 ug/L	0.50 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.15 ug/L	0.50 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.16 ug/L	0.50 ug/L	
630-20-6	1,1,1,2-tetrachloroethane			not detected	1	0.15 ug/L	0.50 ug/L	
1330-20-7	m-p-Xylenes			not detected	nle	0.27 ug/L	1.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.14 ug/L	0.50 ug/L	
100-42-5	Styrene			not detected	100	0.12 ug/L	0.50 ug/L	
75-25-2	Bromoform			not detected	4	0.14 ug/L	0.50 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.12 ug/L	0.50 ug/L	
541-73-1	1,3 Dichlorobenzene			not detected	600	0.12 ug/L	0.50 ug/L	
106-46-7	1,4 Dichlorobenzene			not detected	75	0.12 ug/L	0.50 ug/L	
95-50-1	1,2 Dichlorobenzene			not detected	600	0.12 ug/L	0.50 ug/L	

\*Results between MDL and RL are estimated values  
 \*Higher of PQLs and Ground Water Quality Criteria as per N.J.A.C. 7:9C 07Nov2005

**Qualifiers**

- |  |                              |
|--|------------------------------|
| B = Compound found in related blank                              | MDL = Method Detection Limit |
| E = Value above linear range                                     | NLE = No Limit Established   |
| D = Value from dilution  | RT = Retention Time          |
| PQL = Practical Quantitation Limit                               | R.L. = Reporting Limit       |
| J = Estimated concentration, value falls between R.L. and M.D.L. |                              |

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO

600 DUP

Lab Name FMETL Contract \_\_\_\_\_  
Lab Code 13461 Case No      MW      SAS No      SDG No 10009  
Matrix (soil/water) WATER Lab Sample ID 1000903  
Sample wt/vol 5.0 (g/ml) ML Lab File ID VA5284 D  
Level (low/med) LOW Date Received 1/7/2010  
% Moisture not dec \_\_\_\_\_ Date Analyzed 1/7/2010  
GC Column RTX-VM ID 0.25 (mm) Dilution Factor 1.0  
Soil Extract Volume \_\_\_\_\_ (uL) Soil Aliquot Volume \_\_\_\_\_ (uL)

CONCENTRATION UNITS

Number TICs found 0 (ug/L or ug/Kg) UG/L

CAS NO	COMPOUND NAME	RT	EST CONC	Q
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**Volatile Analysis Report**  
**U S Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13461**

Data File      VA5285 D  
 Operator        ROBERTS  
 Date Acquired   7 Jan 2010 11 19 pm

Sample Name    1000904  
 Field ID        600 MW-A  
 Sample Multiplier 1

CAS#	Compound Name	R.T	Response	Result	Regulatory Level (ug/l)	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.09 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	2	1.64 ug/L	5.00 ug/L	
75650	tert Butyl alcohol			not detected	100	1.89 ug/L	5.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.18 ug/L	0.50 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.12 ug/L	0.50 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.22 ug/L	0.50 ug/L	
74-87-3	Chloromethane			not detected	nle	0.10 ug/L	0.50 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.22 ug/L	0.50 ug/L	
74-83-9	Bromomethane			not detected	10	0.25 ug/L	0.50 ug/L	
75-00-3	Chloroethane			not detected	nle	0.22 ug/L	0.50 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.18 ug/L	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.20 ug/L	0.50 ug/L	
67-64-1	Acetone			not detected	6000	0.18 ug/L	0.50 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.18 ug/L	0.50 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.16 ug/L	0.50 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.20 ug/L	0.50 ug/L	
75-35-3	1,1-Dichloroethane			not detected	50	0.19 ug/L	0.50 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	0.50 ug/L	
78-93-3	2-Butanone			not detected	300	0.16 ug/L	0.50 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.14 ug/L	0.50 ug/L	
67-66-3	Chloroform			not detected	70	0.21 ug/L	0.50 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.17 ug/L	0.50 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.27 ug/L	0.50 ug/L	
71-43-2	Benzene			not detected	1	0.16 ug/L	0.50 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.19 ug/L	0.50 ug/L	
79-01-6	Trichloroethene			not detected	1	0.18 ug/L	0.50 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.16 ug/L	0.50 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.14 ug/L	0.50 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.25 ug/L	0.50 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.16 ug/L	0.50 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.26 ug/L	0.50 ug/L	
108-88-3	Toluene			not detected	1000	0.15 ug/L	0.50 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.12 ug/L	0.50 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.14 ug/L	0.50 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.18 ug/L	0.50 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.20 ug/L	0.50 ug/L	
126-48-1	Dibromochloromethane			not detected	1	0.14 ug/L	0.50 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.15 ug/L	0.50 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.16 ug/L	0.50 ug/L	
630-20-6	1,1,1,2-tetrachloroethane			not detected	1	0.15 ug/L	0.50 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	0.27 ug/L	1.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.14 ug/L	0.50 ug/L	
100-42-5	Styrene			not detected	100	0.12 ug/L	0.50 ug/L	
75-25-2	Bromoform			not detected	4	0.14 ug/L	0.50 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.12 ug/L	0.50 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.12 ug/L	0.50 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.12 ug/L	0.50 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.12 ug/L	0.50 ug/L	

\*Results between MDL and RL are estimated values

\*Higher of PQLs and Ground Water Quality Criteria as per N J A C 7 9C 07Nov2005

**Qualifiers**

B = Compound found in related blank

E = Value above linear range

D = Value from dilution

PQL = Practical Quantitation Limit

J = Estimated concentration value falls between R L and M D L

MDL = Method Detection Limit

NLE = No Limit Established

R.T = Retention Time

R.L = Reporting Limit

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO

600 MW-A

Lab Name FMETL Contract \_\_\_\_\_  
Lab Code 13461 Case No MW SAS No \_\_\_\_\_ SDG No 10009  
Matrix (soil/water) WATER Lab Sample ID 1000904  
Sample wt/vol 5.0 (g/ml) ML Lab File ID VA5285 D  
Level (low/med) LOW Date Received 1/7/2010  
% Moisture not dec \_\_\_\_\_ Date Analyzed 1/7/2010  
GC Column RTX-VM ID 0.25 (mm) Dilution Factor 1.0  
Soil Extract Volume \_\_\_\_\_ (uL) Soil Aliquot Volume \_\_\_\_\_ (uL)

CONCENTRATION UNITS

(ug/L or ug/Kg) UG/L

Number TICs found 0

CAS NO	COMPOUND NAME	RT	EST CONC	Q
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**Volatile Analysis Report**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13461**

Data File VA5286 D  
 Operator ROBERTS  
 Date Acquired 7 Jan 2010 11 50 pm

Sample Name 1000905  
 Field ID 600 MW-B  
 Sample Multiplier 1

CAS#	Compound Name	R.T	Response	Result	Regulatory Level (ug/l)	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.09 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	2	1.64 ug/L	5.00 ug/L	
75650	tert Butyl alcohol			not detected	100	1.89 ug/L	5.00 ug/L	
1634044	Methyl-tert Butyl ether			not detected	70	0.18 ug/L	0.50 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.12 ug/L	0.50 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.22 ug/L	0.50 ug/L	
74-87-3	Chloromethane			not detected	nle	0.10 ug/L	0.50 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.22 ug/L	0.50 ug/L	
74-83-9	Bromomethane			not detected	10	0.25 ug/L	0.50 ug/L	
75-00-3	Chloroethane			not detected	nle	0.22 ug/L	0.50 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.18 ug/L	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.20 ug/L	0.50 ug/L	
67-64-1	Acetone			not detected	6000	0.18 ug/L	0.50 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.18 ug/L	0.50 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.16 ug/L	0.50 ug/L	
156-60-5	trans 1,2-Dichloroethene			not detected	100	0.20 ug/L	0.50 ug/L	
75-35-3	1,1-Dichloroethane			not detected	50	0.19 ug/L	0.50 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	0.50 ug/L	
78-93-3	2-Butanone			not detected	300	0.16 ug/L	0.50 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.14 ug/L	0.50 ug/L	
67-66-3	Chloroform			not detected	70	0.21 ug/L	0.50 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.17 ug/L	0.50 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.27 ug/L	0.50 ug/L	
71-43-2	Benzene			not detected	1	0.16 ug/L	0.50 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.19 ug/L	0.50 ug/L	
79-01-6	Trichloroethene			not detected	1	0.18 ug/L	0.50 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.16 ug/L	0.50 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.14 ug/L	0.50 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.25 ug/L	0.50 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.16 ug/L	0.50 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.26 ug/L	0.50 ug/L	
108-88-3	Toluene			not detected	1000	0.15 ug/L	0.50 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.12 ug/L	0.50 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.14 ug/L	0.50 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.18 ug/L	0.50 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.20 ug/L	0.50 ug/L	
126-48-1	Dibromochloromethane			not detected	1	0.14 ug/L	0.50 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.15 ug/L	0.50 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.16 ug/L	0.50 ug/L	
630-20-6	1,1,1,2-tetrachloroethane			not detected	1	0.15 ug/L	0.50 ug/L	
1330-20-7	m,p-Xylenes			not detected	nle	0.27 ug/L	1.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.14 ug/L	0.50 ug/L	
100-42-5	Styrene			not detected	100	0.12 ug/L	0.50 ug/L	
75-25-2	Bromoform			not detected	4	0.14 ug/L	0.50 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.12 ug/L	0.50 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.12 ug/L	0.50 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.12 ug/L	0.50 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.12 ug/L	0.50 ug/L	

\*Results between MDL and RL are estimated values

\*Higher of PQLs and Ground Water Quality Criteria as per N.J.A.C. 7:9C 07/Nov/2005

**Qualifiers**

B = Compound found in related blank  
 E = Value above linear range  
 D = Value from dilution  
 PQL = Practical Quantitation Limit  
 J = Estimated concentration, value falls between R.L. and M.D.L.

MDL = Method Detection Limit  
 NLE = No Limit Established  
 R.T = Retention Time  
 R.L. = Reporting Limit

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO

600 MW-B

Lab Name FMETL Contract \_\_\_\_\_

Lab Code 13461 Case No MW SAS No \_\_\_\_\_ SDG No 10009

Matrix (soil/water) WATER Lab Sample ID 1000905

Sample wt/vol 5.0 (g/ml) ML Lab File ID VA5286 D

Level (low/med) LOW Date Received 1/7/2010

% Moisture not dec \_\_\_\_\_ Date Analyzed 1/7/2010

GC Column RTX-VM ID 0.25 (mm) Dilution Factor 1.0

Soil Extract Volume \_\_\_\_\_ (uL) Soil Aliquot Volume \_\_\_\_\_ (uL)

CONCENTRATION UNITS

(ug/L or ug/Kg) UG/L

Number TICs found 1

CAS NO	COMPOUND NAME	RT	EST CONC	Q
1	unknown	10.16	4	J

**Volatile Analysis Report**  
**U S Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13-461**

Data File      VA5287 D  
 Operator        ROBERTS  
 Date Acquired   8 Jan 2010 12 21 am

Sample Name    1000906  
 Field ID        600 MW-C  
 Sample Multiplier 1

CAS#	Compound Name	R.T	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.09 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	2	1.64 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	1.89 ug/L	5.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.18 ug/L	0.50 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.12 ug/L	0.50 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.22 ug/L	0.50 ug/L	
74-87-3	Chloromethane			not detected	nle	0.10 ug/L	0.50 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.22 ug/L	0.50 ug/L	
74-83-9	Bromomethane			not detected	10	0.25 ug/L	0.50 ug/L	
75-00-3	Chloroethane			not detected	nle	0.22 ug/L	0.50 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.18 ug/L	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.20 ug/L	0.50 ug/L	
67-64-1	Acetone			not detected	6000	0.18 ug/L	0.50 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.18 ug/L	0.50 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.16 ug/L	0.50 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.20 ug/L	0.50 ug/L	
75-35-3	1,1-Dichloroethane			not detected	50	0.19 ug/L	0.50 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	0.50 ug/L	
78-93-3	2-Butanone			not detected	300	0.16 ug/L	0.50 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.14 ug/L	0.50 ug/L	
67-66-3	Chloroform			not detected	70	0.21 ug/L	0.50 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.17 ug/L	0.50 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.27 ug/L	0.50 ug/L	
71-43-2	Benzene			not detected	1	0.16 ug/L	0.50 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.19 ug/L	0.50 ug/L	
79-01-6	Trichloroethene			not detected	1	0.18 ug/L	0.50 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.16 ug/L	0.50 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.14 ug/L	0.50 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.25 ug/L	0.50 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.16 ug/L	0.50 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.26 ug/L	0.50 ug/L	
108-88-3	Toluene			not detected	1000	0.15 ug/L	0.50 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.12 ug/L	0.50 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.14 ug/L	0.50 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.18 ug/L	0.50 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.20 ug/L	0.50 ug/L	
126-48-1	Dibromochloromethane			not detected	1	0.14 ug/L	0.50 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.15 ug/L	0.50 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.16 ug/L	0.50 ug/L	
630-20-6	1,1,1,2-tetrachloroethane			not detected	1	0.15 ug/L	0.50 ug/L	
1330-20-7	m-p-Xylenes			not detected	nle	0.27 ug/L	1.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.14 ug/L	0.50 ug/L	
100-42-5	Styrene			not detected	100	0.12 ug/L	0.50 ug/L	
75-25-2	Bromoform			not detected	4	0.14 ug/L	0.50 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.12 ug/L	0.50 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.12 ug/L	0.50 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.12 ug/L	0.50 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.12 ug/L	0.50 ug/L	

Results between MDL and RL are estimated values

\*Higher of PQLs and Ground Water Quality Criteria as per NJAC 7:9C 07/Nov2005

**Qualifiers**

B = Compound found in related blank  
 E = Value above linear range  
 D = Value from dilution  
 PQL = Practical Quantitation Limit  
 J = Estimated concentration value falls between R.L. and M.D.L.

MDL = Method Detection Limit  
 NLE = No Limit Established  
 R.T. = Retention Time  
 R.L. = Reporting Limit

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO

600 MW-C

Lab Name FMETL Contract \_\_\_\_\_

Lab Code 13461 Case No MW SAS No \_\_\_\_\_ SDG No 10009

Matrix (soil/water) WATER Lab Sample ID 1000906

Sample wt/vol 5.0 (g/ml) ML Lab File ID VA5287 D

Level (low/med) LOW Date Received 1/7/2010

% Moisture not dec \_\_\_\_\_ Date Analyzed 1/8/2010

GC Column RTX-VM ID 0.25 (mm) Dilution Factor 1.0

Soil Extract Volume \_\_\_\_\_ (uL) Soil Aliquot Volume \_\_\_\_\_ (uL)

CONCENTRATION UNITS

(ug/L or ug/Kg) UG/L

Number TICs found 0

CAS NO	COMPOUND NAME	RT	EST CONC	Q
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## 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.

  
Dean Tardiff  
Laboratory Manager

000084

# FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS

PHONE: (732) 532-6224 FAX: (732) 532-6263

WET-CHEM - METALS - ORGANICS - FIELD SAMPLING  
CERTIFICATIONS: NJDEP #13461



ANALYTICAL DATA REPORT  
Fort Monmouth Environmental Laboratory  
ENVIRONMENTAL DIVISION  
Fort Monmouth, New Jersey  
PROJECT: 600 Area  
New Wells 2<sup>nd</sup> Round

## 600 Area/New Wells

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
Trip Blank	1002801	Aqueous	21-Jan-10 08:00	01/21/10
Field Blank	1002802	Aqueous	21- Jan-10 13:20	01/21/10
Duplicate	1002803	Aqueous	21- Jan-10 15:20	01/21/10
600/MW#A	1002804	Aqueous	21- Jan-10 13:30	01/21/10
600/MW#B	1002805	Aqueous	21- Jan-10 15:00	01/21/10
600/MW#C	1002806*	Aqueous	21- Jan-10 15:20	01/21/10

\*DUP. Sample is 1002806

**ANALYSIS:**  
FORT MONMOUTH ENVIRONMENTAL LAB  
VOA+15

*Dean Tardiff* 2/4/10  
Dean Tardiff/Date:  
Laboratory Manager

# Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703

Tel (732)532-4359 Fax (732)532-6263 EMail:jacqueline.hamer@us.army.mil

NJDEP Certification #13461

## Chain of Custody Record

Customer: <b>JOE FALLON</b>		Project No:		Analysis Parameters							Comments:		
Phone #: <b>732-532-6223</b>		Location: <b>600 AREA</b>		VOC+15									
( ) DERA ( ) OMA ( ) Other: _____		<b>NEW WELLS/SECOND ROUND</b>											
Samplers Name/Company: <b>WALTER FUNK/TVS</b>				Sample #									
LIMS/Work Order #	Sample Location	Date	Time	Type	bottles	VOC+15							Remarks / Preservation Method
<b>10028.01</b>	<b>600 TRIP BLANK</b>	<b>1-21-10</b>	<b>8:00</b>	<b>AQ</b>	<b>2</b>	<b>X</b>							
<b>.02</b>	<b>600 FIELD BLANK</b>	<b>1-21-10</b>	<b>13:20</b>	<b>AQ</b>	<b>2</b>	<b>X</b>							
<b>.03</b>	<b>600 DUP.</b>	<b>1-21-10</b>	<b>—</b>	<b>AQ</b>	<b>2</b>	<b>X</b>							
<b>.04</b>	<b>600 MW-A</b>	<b>1-21-10</b>	<b>13:30</b>	<b>AQ</b>	<b>2</b>	<b>X</b>							
<b>.05</b>	<b>600 MW-B</b>	<b>1-21-10</b>	<b>15:00</b>	<b>AQ</b>	<b>2</b>	<b>X</b>							
<b>.06</b>	<b>600 MW-C*</b>	<b>1-21-10</b>	<b>15:20</b>	<b>AQ</b>	<b>2</b>	<b>X</b>							
Relinquished by (signature): <i>[Signature]</i>		Date/Time: <b>1/21/10 15:50</b>	Received by (signature): <i>[Signature]</i>		Relinquished by (signature):		Date/Time:	Received by (signature):					
Relinquished by (signature):		Date/Time:	Received by (signature):		Relinquished by (signature):		Date/Time:	Received by (signature):					
Report Type: ( ) Full, ( ) Reduced, (X) Standard, ( ) Screen / non-certified, ( ) EDD					Comments:								
Turnaround time: (X) Standard 3 wks, ( ) Rush Wk., ( ) ASAP Verbal ___ Hrs.													

000002

**Volatile Analysis Report**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13461**

Data File      VA5432.D  
 Operator        ROBERTS  
 Date Acquired   29 Jan 2010 7:12 pm

Sample Name     1002803  
 Field ID        600 DUP  
 Sample Multiplier   1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.09 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	2	1.64 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	1.89 ug/L	5.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.18 ug/L	0.50 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.12 ug/L	0.50 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.22 ug/L	0.50 ug/L	
74-87-3	Chloromethane			not detected	nle	0.10 ug/L	0.50 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.22 ug/L	0.50 ug/L	
74-83-9	Bromomethane			not detected	10	0.25 ug/L	0.50 ug/L	
75-00-3	Chloroethane			not detected	nle	0.22 ug/L	0.50 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.18 ug/L	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.20 ug/L	0.50 ug/L	
67-64-1	Acetone			not detected	6000	0.18 ug/L	0.50 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.18 ug/L	0.50 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.16 ug/L	0.50 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.20 ug/L	0.50 ug/L	
75-35-3	1,1-Dichloroethane			not detected	50	0.19 ug/L	0.50 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	1.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.16 ug/L	0.50 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.14 ug/L	0.50 ug/L	
67-66-3	Chloroform			not detected	70	0.21 ug/L	0.50 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.17 ug/L	0.50 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.27 ug/L	0.50 ug/L	
71-43-2	Benzene			not detected	1	0.16 ug/L	0.50 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.19 ug/L	0.50 ug/L	
79-01-6	Trichloroethene			not detected	1	0.18 ug/L	0.50 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.16 ug/L	0.50 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.14 ug/L	0.50 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.25 ug/L	1.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.16 ug/L	0.50 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.26 ug/L	0.50 ug/L	
108-88-3	Toluene			not detected	1000	0.15 ug/L	0.50 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.12 ug/L	0.50 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.14 ug/L	0.50 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.18 ug/L	0.50 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.20 ug/L	0.50 ug/L	
126-48-1	Dibromochloromethane			not detected	1	0.14 ug/L	0.50 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.15 ug/L	0.50 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.16 ug/L	0.50 ug/L	
630-20-6	1,1,1,2-tetrachloroethane			not detected	1	0.15 ug/L	0.50 ug/L	
1330-20-7	m-p-Xylenes			not detected	nle	0.27 ug/L	1.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.14 ug/L	0.50 ug/L	
100-42-5	Styrene			not detected	100	0.12 ug/L	0.50 ug/L	
75-25-2	Bromoform			not detected	4	0.14 ug/L	0.50 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.12 ug/L	0.50 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.12 ug/L	0.50 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.12 ug/L	0.50 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.12 ug/L	0.50 ug/L	

\*Results between MDL and RL are estimated values

\*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9C 07Nov2005

**Qualifiers**

B = Compound found in related blank

E = Value above linear range

D = Value from dilution

PQL = Practical Quantitation Limit

J = Estimated concentration, value falls between R.L. and M.D.L.

MDL = Method Detection Limit

NLE = No Limit Established

R.T. = Retention Time

R.L. = Reporting Limit

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

**600 DUP**

Lab Name: FMETL Contract: \_\_\_\_\_

Lab Code: 13461 Case No.: MW SAS No.: \_\_\_\_\_ SDG No.: 10028

Matrix: (soil/water) WATER Lab Sample ID: 1002803

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VA5432.D

Level: (low/med) LOW Date Received: 1/21/2010

% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 1/29/2010

GC Column: RTX-VM ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
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**Volatile Analysis Report**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13461**

Data File VA5433.D  
 Operator ROBERTS  
 Date Acquired 29 Jan 2010 7:43 pm

Sample Name 1002804  
 Field ID 600 MW-A  
 Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.09 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	2	1.64 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	1.89 ug/L	5.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.18 ug/L	0.50 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.12 ug/L	0.50 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.22 ug/L	0.50 ug/L	
74-87-3	Chloromethane			not detected	nle	0.10 ug/L	0.50 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.22 ug/L	0.50 ug/L	
74-83-9	Bromomethane			not detected	10	0.25 ug/L	0.50 ug/L	
75-00-3	Chloroethane			not detected	nle	0.22 ug/L	0.50 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.18 ug/L	0.50 ug/L	
75-35-4	1,1-Dichloroethane			not detected	1	0.20 ug/L	0.50 ug/L	
67-64-1	Acetone			not detected	6000	0.18 ug/L	0.50 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.18 ug/L	0.50 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.16 ug/L	0.50 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.20 ug/L	0.50 ug/L	
75-35-3	1,1-Dichloroethane			not detected	50	0.19 ug/L	0.50 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	1.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.16 ug/L	0.50 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.14 ug/L	0.50 ug/L	
67-66-3	Chloroform			not detected	70	0.21 ug/L	0.50 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.17 ug/L	0.50 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.27 ug/L	0.50 ug/L	
71-43-2	Benzene			not detected	1	0.16 ug/L	0.50 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.19 ug/L	0.50 ug/L	
79-01-6	Trichloroethene			not detected	1	0.18 ug/L	0.50 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.16 ug/L	0.50 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.14 ug/L	0.50 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.25 ug/L	1.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.16 ug/L	0.50 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.26 ug/L	0.50 ug/L	
108-88-3	Toluene			not detected	1000	0.15 ug/L	0.50 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.12 ug/L	0.50 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.14 ug/L	0.50 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.18 ug/L	0.50 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.20 ug/L	0.50 ug/L	
126-48-1	Dibromochloromethane			not detected	1	0.14 ug/L	0.50 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.15 ug/L	0.50 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.16 ug/L	0.50 ug/L	
630-20-6	1,1,1,2-tetrachloroethane			not detected	1	0.15 ug/L	0.50 ug/L	
1330-20-7	m-p-Xylenes			not detected	nle	0.27 ug/L	1.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.14 ug/L	0.50 ug/L	
100-42-5	Styrene			not detected	100	0.12 ug/L	0.50 ug/L	
75-25-2	Bromoform			not detected	3	0.14 ug/L	0.50 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.12 ug/L	0.50 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.12 ug/L	0.50 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.12 ug/L	0.50 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.12 ug/L	0.50 ug/L	

\*Results between MDL and RL are estimated values

\*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9C 07Nov2005

**Qualifiers**

B = Compound found in related blank

E = Value above linear range

D = Value from dilution

PQL = Practical Quantitation Limit

J= Estimated concentration, value falls between R.L. and M.D.L.

MDL = Method Detection Limit

NLE = No Limit Established

R.T. = Retention Time

R.L. = Reporting Limit

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

600 MW-A

Lab Name: FMETL Contract: \_\_\_\_\_  
Lab Code: 13461 Case No.: MW SAS No.: \_\_\_\_\_ SDG No.: 10028  
Matrix: (soil/water) WATER Lab Sample ID: 1002804  
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VA5433.D  
Level: (low/med) LOW Date Received: 1/21/2010  
% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 1/29/2010  
GC Column: RTX-VM ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
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**Volatile Analysis Report**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13461**

Data File VA5434.D  
 Operator ROBERTS  
 Date Acquired 29 Jan 2010 8:14 pm

Sample Name 1002805  
 Field ID 600 MW-B  
 Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.09 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	2	1.64 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	1.89 ug/L	5.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.18 ug/L	0.50 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.12 ug/L	0.50 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.22 ug/L	0.50 ug/L	
74-87-3	Chloromethane			not detected	nle	0.10 ug/L	0.50 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.22 ug/L	0.50 ug/L	
74-83-9	Bromomethane			not detected	10	0.25 ug/L	0.50 ug/L	
75-00-3	Chloroethane			not detected	nle	0.22 ug/L	0.50 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.18 ug/L	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.20 ug/L	0.50 ug/L	
67-64-1	Acetone			not detected	6000	0.18 ug/L	0.50 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.18 ug/L	0.50 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.16 ug/L	0.50 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.20 ug/L	0.50 ug/L	
75-35-3	1,1-Dichloroethane			not detected	50	0.19 ug/L	0.50 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	1.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.16 ug/L	0.50 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.14 ug/L	0.50 ug/L	
67-66-3	Chloroform			not detected	70	0.21 ug/L	0.50 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.17 ug/L	0.50 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.27 ug/L	0.50 ug/L	
71-43-2	Benzene			not detected	1	0.16 ug/L	0.50 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.19 ug/L	0.50 ug/L	
79-01-6	Trichloroethene			not detected	1	0.18 ug/L	0.50 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.16 ug/L	0.50 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.14 ug/L	0.50 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.25 ug/L	1.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.16 ug/L	0.50 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.26 ug/L	0.50 ug/L	
108-88-3	Toluene			not detected	1000	0.15 ug/L	0.50 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.12 ug/L	0.50 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.14 ug/L	0.50 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.18 ug/L	0.50 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.20 ug/L	0.50 ug/L	
126-48-1	Dibromochloromethane			not detected	1	0.14 ug/L	0.50 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.15 ug/L	0.50 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.16 ug/L	0.50 ug/L	
630-20-6	1,1,1,2-tetrachloroethane			not detected	1	0.15 ug/L	0.50 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	0.27 ug/L	1.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.14 ug/L	0.50 ug/L	
100-42-5	Styrene			not detected	100	0.12 ug/L	0.50 ug/L	
75-25-2	Bromoform			not detected	4	0.14 ug/L	0.50 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.12 ug/L	0.50 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.12 ug/L	0.50 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.12 ug/L	0.50 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.12 ug/L	0.50 ug/L	

\*Results between MDL and RL are estimated values

\*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9C 07Nov2005

**Qualifiers**

B = Compound found in related blank

E = Value above linear range

D = Value from dilution

PQL = Practical Quantitation Limit

J= Estimated concentration, value falls between R.L. and M.D.L.

MDL = Method Detection Limit

NLE = No Limit Established

R.T. = Retention Time

R.L. = Reporting Limit

1E  
VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

600 MW-B

Lab Name: FMETL Contract: \_\_\_\_\_  
Lab Code: 13461 Case No.: MW SAS No.: \_\_\_\_\_ SDG No.: 10028  
Matrix: (soil/water) WATER Lab Sample ID: 1002805  
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VA5434.D  
Level: (low/med) LOW Date Received: 1/21/2010  
% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 1/29/2010  
GC Column: RTX-VM ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
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**Volatile Analysis Report**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13461**

Data File      VA5435.D  
 Operator        ROBERTS  
 Date Acquired   29 Jan 2010 8:46 pm

Sample Name    1002806  
 Field ID        600 MW-C  
 Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.09 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	2	1.64 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	1.89 ug/L	5.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.18 ug/L	0.50 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.12 ug/L	0.50 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.22 ug/L	0.50 ug/L	
74-87-3	Chloromethane			not detected	nle	0.10 ug/L	0.50 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.22 ug/L	0.50 ug/L	
74-83-9	Bromomethane			not detected	10	0.25 ug/L	0.50 ug/L	
75-00-3	Chloroethane			not detected	nle	0.22 ug/L	0.50 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.18 ug/L	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.20 ug/L	0.50 ug/L	
67-64-1	Acetone			not detected	6000	0.18 ug/L	0.50 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.18 ug/L	0.50 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.16 ug/L	0.50 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.20 ug/L	0.50 ug/L	
75-35-3	1,1-Dichloroethane			not detected	50	0.19 ug/L	0.50 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	1.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.16 ug/L	0.50 ug/L	
156-39-2	cis-1,2-Dichloroethene			not detected	70	0.14 ug/L	0.50 ug/L	
67-66-3	Chloroform			not detected	70	0.21 ug/L	0.50 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.17 ug/L	0.50 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.27 ug/L	0.50 ug/L	
71-43-2	Benzene			not detected	1	0.16 ug/L	0.50 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.19 ug/L	0.50 ug/L	
79-01-6	Trichloroethene			not detected	1	0.18 ug/L	0.50 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.16 ug/L	0.50 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.14 ug/L	0.50 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.25 ug/L	1.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.16 ug/L	0.50 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.26 ug/L	0.50 ug/L	
108-88-3	Toluene			not detected	1000	0.15 ug/L	0.50 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.12 ug/L	0.50 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.14 ug/L	0.50 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.18 ug/L	0.50 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.20 ug/L	0.50 ug/L	
126-48-1	Dibromochloromethane			not detected	1	0.14 ug/L	0.50 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.15 ug/L	0.50 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.16 ug/L	0.50 ug/L	
630-20-6	1,1,1,2-tetrachloroethane			not detected	1	0.15 ug/L	0.50 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	0.27 ug/L	1.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.14 ug/L	0.50 ug/L	
100-42-5	Styrene			not detected	100	0.12 ug/L	0.50 ug/L	
75-25-2	Bromoform			not detected	4	0.14 ug/L	0.50 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.12 ug/L	0.50 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.12 ug/L	0.50 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.12 ug/L	0.50 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.12 ug/L	0.50 ug/L	

\*Results between MDL and RL are estimated values  
 \*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9C 07Nov2005

**Qualifiers**

B = Compound found in related blank E = Value above linear range D = Value from dilution PQL = Practical Quantitation Limit J = Estimated concentration, value falls between R.L. and M.D.L.	MDL = Method Detection Limit NLE = No Limit Established R.T. = Retention Time R.L. = Reporting Limit
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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

600 MW-C

Lab Name: FMETL Contract: \_\_\_\_\_  
Lab Code: 13461 Case No.: MW SAS No.: \_\_\_\_\_ SDG No.: 10028  
Matrix: (soil/water) WATER Lab Sample ID: 1002806  
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VA5435.D  
Level: (low/med) LOW Date Received: 1/21/2010  
% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 1/29/2010  
GC Column: RTX-VM ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
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## 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.

  
Dean Tardiff 2/4/10  
Laboratory Manager

000068

# FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS  
PHONE: (732) 532-6224 FAX: (732) 532-6263  
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING  
CERTIFICATIONS: NJDEP #13461

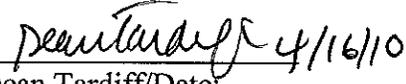


ANALYTICAL DATA REPORT  
Fort Monmouth Environmental Laboratory  
ENVIRONMENTAL DIVISION  
Fort Monmouth, New Jersey  
PROJECT: 600 Area

### 600 Area/New Wells

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
Trip Blank	1011201	Aqueous	30-Mar-10 06:00	03/30/10
Field Blank	1011202	Aqueous	30-Mar-10 13:00	03/30/10
Duplicate	1011203	Aqueous	30-Mar-10 14:20	03/30/10
600/A	1011204	Aqueous	30-Mar-10 14:20	03/30/10
600/B	1011205	Aqueous	30-Mar-10 14:00	03/30/10

ANALYSIS:  
FORT MONMOUTH ENVIRONMENTAL LAB  
VOA+15, TAL METALS

  
\_\_\_\_\_  
Dean Tardiff/Date:  
Laboratory Manager



**Volatile Analysis Report**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13461**

Data File      **VA5959.D**  
 Operator       **ROBERTS**  
 Date Acquired   **7 Apr 2010 2:44 pm**

Sample Name     **1011201**  
 Field ID        **600 TRIP BLANK**  
 Sample Multiplier   **1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.09 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	2	1.64 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	1.89 ug/L	5.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.18 ug/L	0.50 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.12 ug/L	0.50 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.22 ug/L	0.50 ug/L	
74-87-3	Chloromethane			not detected	nle	0.10 ug/L	0.50 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.22 ug/L	0.50 ug/L	
74-83-9	Bromomethane			not detected	10	0.25 ug/L	0.50 ug/L	
75-00-3	Chloroethane			not detected	nle	0.22 ug/L	0.50 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.18 ug/L	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.20 ug/L	0.50 ug/L	
67-64-1	Acetone			not detected	6000	0.18 ug/L	0.50 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.18 ug/L	0.50 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.16 ug/L	0.50 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.20 ug/L	0.50 ug/L	
75-35-3	1,1-Dichloroethane			not detected	50	0.19 ug/L	0.50 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	0.50 ug/L	
78-93-3	2-Butanone			not detected	300	0.16 ug/L	0.50 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.14 ug/L	0.50 ug/L	
67-66-3	Chloroform			not detected	70	0.21 ug/L	0.50 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.17 ug/L	0.50 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.27 ug/L	0.50 ug/L	
71-43-2	Benzene			not detected	1	0.16 ug/L	0.50 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.19 ug/L	0.50 ug/L	
79-01-6	Trichloroethene			not detected	1	0.18 ug/L	0.50 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.16 ug/L	0.50 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.14 ug/L	0.50 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.25 ug/L	0.50 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.16 ug/L	0.50 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.26 ug/L	0.50 ug/L	
108-88-3	Toluene			not detected	1000	0.15 ug/L	0.50 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.12 ug/L	0.50 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.14 ug/L	0.50 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.18 ug/L	0.50 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.20 ug/L	0.50 ug/L	
126-48-1	Dibromochloromethane			not detected	1	0.14 ug/L	0.50 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.15 ug/L	0.50 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.16 ug/L	0.50 ug/L	
630-20-6	1,1,1,2-tetrachloroethane			not detected	1	0.15 ug/L	0.50 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	0.27 ug/L	1.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.14 ug/L	0.50 ug/L	
100-42-5	Styrene			not detected	100	0.12 ug/L	0.50 ug/L	
75-25-2	Bromoform			not detected	4	0.14 ug/L	0.50 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.12 ug/L	0.50 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.12 ug/L	0.50 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.12 ug/L	0.50 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.12 ug/L	0.50 ug/L	

\*Results between MDL and RL are estimated values  
 \*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9C 07Nov2005

**Qualifiers**

B = Compound found in related blank	MDL = Method Detection Limit
E = Value above linear range	NLE = No Limit Established
D = Value from dilution	R.T. = Retention Time
PQL = Practical Quantitation Limit	R.L. = Reporting Limit
J = Estimated concentration, value falls between R.L. and M.D.L.	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

**600 TRIP BLANK**

Lab Name: FMETL Contract: \_\_\_\_\_  
Lab Code: 13461 Case No.: MW SAS No.: \_\_\_\_\_ SDG No.: 10112  
Matrix: (soil/water) WATER Lab Sample ID: 1011201  
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VA5959.D  
Level: (low/med) LOW Date Received: 3/30/2010  
% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 4/7/2010  
GC Column: RTX-VM ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
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**Volatile Analysis Report**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13461**

Data File      VA5960.D  
 Operator       ROBERTS  
 Date Acquired   7 Apr 2010 3:14 pm

Sample Name    1011202  
 Field ID       600 FIELD BLANK  
 Sample Multiplier   1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.09 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	2	1.64 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	1.89 ug/L	5.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.18 ug/L	0.50 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.12 ug/L	0.50 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.22 ug/L	0.50 ug/L	
74-87-3	Chloromethane			not detected	nle	0.10 ug/L	0.50 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.22 ug/L	0.50 ug/L	
74-83-9	Bromomethane			not detected	10	0.25 ug/L	0.50 ug/L	
75-00-3	Chloroethane			not detected	nle	0.22 ug/L	0.50 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.18 ug/L	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.20 ug/L	0.50 ug/L	
67-64-1	Acetone			not detected	6000	0.18 ug/L	0.50 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.18 ug/L	0.50 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.16 ug/L	0.50 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.20 ug/L	0.50 ug/L	
75-35-3	1,1-Dichloroethane			not detected	50	0.19 ug/L	0.50 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	0.50 ug/L	
78-93-3	2-Butanone			not detected	300	0.16 ug/L	0.50 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.14 ug/L	0.50 ug/L	
67-66-3	Chloroform			not detected	70	0.21 ug/L	0.50 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.17 ug/L	0.50 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.27 ug/L	0.50 ug/L	
71-43-2	Benzene			not detected	1	0.16 ug/L	0.50 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.19 ug/L	0.50 ug/L	
79-01-6	Trichloroethene			not detected	1	0.18 ug/L	0.50 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.16 ug/L	0.50 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.14 ug/L	0.50 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.25 ug/L	0.50 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.16 ug/L	0.50 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.26 ug/L	0.50 ug/L	
108-88-3	Toluene			not detected	1000	0.15 ug/L	0.50 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.12 ug/L	0.50 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.14 ug/L	0.50 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.18 ug/L	0.50 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.20 ug/L	0.50 ug/L	
126-48-1	Dibromochloromethane			not detected	1	0.14 ug/L	0.50 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.15 ug/L	0.50 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.16 ug/L	0.50 ug/L	
630-20-6	1,1,1,2-tetrachloroethane			not detected	1	0.15 ug/L	0.50 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	0.27 ug/L	1.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.14 ug/L	0.50 ug/L	
100-42-5	Styrene			not detected	100	0.12 ug/L	0.50 ug/L	
75-25-2	Bromoform			not detected	4	0.14 ug/L	0.50 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.12 ug/L	0.50 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.12 ug/L	0.50 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.12 ug/L	0.50 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.12 ug/L	0.50 ug/L	

\*Results between MDL and RL are estimated values

\*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9C 07Nov2005

**Qualifiers**

B = Compound found in related blank

E = Value above linear range

D = Value from dilution

PQL = Practical Quantitation Limit

J= Estimated concentration, value falls between R.L. and M.D.L.

MDL = Method Detection Limit

NLE = No Limit Established

R.T. = Retention Time

RL = Reporting Limit

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

600 FIELD BLANK

Lab Name: FMETL Contract: \_\_\_\_\_  
Lab Code: 13461 Case No.: MW SAS No.: \_\_\_\_\_ SDG No.: 10112  
Matrix: (soil/water) WATER Lab Sample ID: 1011202  
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VA5960.D  
Level: (low/med) LOW Date Received: 3/30/2010  
% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 4/7/2010  
GC Column: RTX-VM ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
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**Volatile Analysis Report**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13461**

Data File      VA5961.D  
 Operator       ROBERTS  
 Date Acquired   7 Apr 2010 3:46 pm

Sample Name    1011203  
 Field ID        600 DUP  
 Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.09 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	2	1.64 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	1.89 ug/L	5.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.18 ug/L	0.50 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.12 ug/L	0.50 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.22 ug/L	0.50 ug/L	
74-87-3	Chloromethane			not detected	nle	0.10 ug/L	0.50 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.22 ug/L	0.50 ug/L	
74-83-9	Bromomethane			not detected	10	0.25 ug/L	0.50 ug/L	
75-00-3	Chloroethane			not detected	nle	0.22 ug/L	0.50 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.18 ug/L	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.20 ug/L	0.50 ug/L	
67-64-1	Acetone			not detected	6000	0.18 ug/L	0.50 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.18 ug/L	0.50 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.16 ug/L	0.50 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.20 ug/L	0.50 ug/L	
75-35-3	1,1-Dichloroethane			not detected	50	0.19 ug/L	0.50 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	0.50 ug/L	
78-93-3	2-Butanone			not detected	300	0.16 ug/L	0.50 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.14 ug/L	0.50 ug/L	
67-66-3	Chloroform			not detected	70	0.21 ug/L	0.50 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.17 ug/L	0.50 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.27 ug/L	0.50 ug/L	
71-43-2	Benzene			not detected	1	0.16 ug/L	0.50 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.19 ug/L	0.50 ug/L	
79-01-6	Trichloroethene			not detected	1	0.18 ug/L	0.50 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.16 ug/L	0.50 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.14 ug/L	0.50 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.25 ug/L	0.50 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.16 ug/L	0.50 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.26 ug/L	0.50 ug/L	
108-88-3	Toluene			not detected	1000	0.15 ug/L	0.50 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.12 ug/L	0.50 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.14 ug/L	0.50 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.18 ug/L	0.50 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.20 ug/L	0.50 ug/L	
126-48-1	Dibromochloromethane			not detected	1	0.14 ug/L	0.50 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.15 ug/L	0.50 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.16 ug/L	0.50 ug/L	
630-20-6	1,1,1,2-tetrachloroethane			not detected	1	0.15 ug/L	0.50 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	0.27 ug/L	1.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.14 ug/L	0.50 ug/L	
100-42-5	Styrene			not detected	100	0.12 ug/L	0.50 ug/L	
75-25-2	Bromoform			not detected	4	0.14 ug/L	0.50 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.12 ug/L	0.50 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.12 ug/L	0.50 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.12 ug/L	0.50 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.12 ug/L	0.50 ug/L	

\*Results between MDL and RL are estimated values

\*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7-9C 07Nov2005

**Qualifiers**

B = Compound found in related blank

E = Value above linear range

D = Value from dilution

PQL = Practical Quantitation Limit

J= Estimated concentration, value falls between R.L. and M.D.L.

MDL = Method Detection Limit

NLE = No Limit Established

R.T. = Retention Time

R.L. = Reporting Limit

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

**600 DUP**

Lab Name: FMETL Contract: \_\_\_\_\_  
Lab Code: 13461 Case No.: MW SAS No.: \_\_\_\_\_ SDG No.: 10112  
Matrix: (soil/water) WATER Lab Sample ID: 1011203  
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VA5961.D  
Level: (low/med) LOW Date Received: 3/30/2010  
% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 4/7/2010  
GC Column: RTX-VM ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
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**Volatile Analysis Report**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13461**

Data File      **VA5962.D**  
 Operator       **ROBERTS**  
 Date Acquired   **7 Apr 2010 4:17 pm**

Sample Name     **1011204**  
 Field ID        **600 A**  
 Sample Multiplier   **1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.09 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	2	1.64 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	1.89 ug/L	5.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.18 ug/L	0.50 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.12 ug/L	0.50 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.22 ug/L	0.50 ug/L	
74-87-3	Chloromethane			not detected	nle	0.10 ug/L	0.50 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.22 ug/L	0.50 ug/L	
74-83-9	Bromomethane			not detected	10	0.25 ug/L	0.50 ug/L	
75-00-3	Chloroethane			not detected	nle	0.22 ug/L	0.50 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.18 ug/L	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.20 ug/L	0.50 ug/L	
67-64-1	Acetone			not detected	6000	0.18 ug/L	0.50 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.18 ug/L	0.50 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.16 ug/L	0.50 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.20 ug/L	0.50 ug/L	
75-35-3	1,1-Dichloroethane			not detected	50	0.19 ug/L	0.50 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	0.50 ug/L	
78-93-3	2-Butanone			not detected	300	0.16 ug/L	0.50 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.14 ug/L	0.50 ug/L	
67-66-3	Chloroform			not detected	70	0.21 ug/L	0.50 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.17 ug/L	0.50 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.27 ug/L	0.50 ug/L	
71-43-2	Benzene			not detected	1	0.16 ug/L	0.50 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.19 ug/L	0.50 ug/L	
79-01-6	Trichloroethene			not detected	1	0.18 ug/L	0.50 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.16 ug/L	0.50 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.14 ug/L	0.50 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.25 ug/L	0.50 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.16 ug/L	0.50 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.26 ug/L	0.50 ug/L	
108-88-3	Toluene			not detected	1000	0.15 ug/L	0.50 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.12 ug/L	0.50 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.14 ug/L	0.50 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.18 ug/L	0.50 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.20 ug/L	0.50 ug/L	
126-48-1	Dibromochloromethane			not detected	1	0.14 ug/L	0.50 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.15 ug/L	0.50 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.16 ug/L	0.50 ug/L	
630-20-6	1,1,1,2-tetrachloroethane			not detected	1	0.15 ug/L	0.50 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	0.27 ug/L	1.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.14 ug/L	0.50 ug/L	
100-42-5	Styrene			not detected	100	0.12 ug/L	0.50 ug/L	
75-25-2	Bromoform			not detected	4	0.14 ug/L	0.50 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.12 ug/L	0.50 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.12 ug/L	0.50 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.12 ug/L	0.50 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.12 ug/L	0.50 ug/L	

\*Results between MDL and RL are estimated values

\*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7-9C 07Nov2005

**Qualifiers**

B = Compound found in related blank

E = Value above linear range

D = Value from dilution

PQL = Practical Quantitation Limit

J = Estimated concentration, value falls between R.L. and M.D.L.

MDL = Method Detection Limit

NLE = No Limit Established

R.T. = Retention Time

R.L. = Reporting Limit

VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

600 A

Lab Name: FMETL Contract: \_\_\_\_\_

Lab Code: 13461 Case No.: MW SAS No.: \_\_\_\_\_ SDG No.: 10112

Matrix: (soil/water) WATER Lab Sample ID: 1011204

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VA5962.D

Level: (low/med) LOW Date Received: 3/30/2010

% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 4/7/2010

GC Column: RTX-VM ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
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**Volatile Analysis Report**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification #13461**

Data File      **VA5963.D**  
 Operator       **ROBERTS**  
 Date Acquired   **7 Apr 2010 4:47 pm**

Sample Name     **1011205**  
 Field ID        **600 B**  
 Sample Multiplier   **1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ng/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	5	2.09 ug/L	5.00 ug/L	
107131	Acrylonitrile			not detected	2	1.64 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not detected	100	1.89 ug/L	5.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.18 ug/L	0.50 ug/L	
108203	Di-isopropyl ether			not detected	20000	0.12 ug/L	0.50 ug/L	
75718	Dichlorodifluoromethane			not detected	1000	0.22 ug/L	0.50 ug/L	
74-87-3	Chloromethane			not detected	nle	0.10 ug/L	0.50 ug/L	
75-01-4	Vinyl Chloride			not detected	1	0.22 ug/L	0.50 ug/L	
74-83-9	Bromomethane			not detected	10	0.25 ug/L	0.50 ug/L	
75-00-3	Chloroethane			not detected	nle	0.22 ug/L	0.50 ug/L	
75-69-4	Trichlorofluoromethane			not detected	2000	0.18 ug/L	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	1	0.20 ug/L	0.50 ug/L	
67-64-1	Acetone			not detected	6000	0.18 ug/L	0.50 ug/L	
75-15-0	Carbon Disulfide			not detected	700	0.18 ug/L	0.50 ug/L	
75-09-2	Methylene Chloride			not detected	3	0.16 ug/L	0.50 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.20 ug/L	0.50 ug/L	
75-35-3	1,1-Dichloroethane			not detected	50	0.19 ug/L	0.50 ug/L	
108-05-4	Vinyl Acetate			not detected	7000	0.20 ug/L	0.50 ug/L	
78-93-3	2-Butanone			not detected	300	0.16 ug/L	0.50 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	70	0.14 ug/L	0.50 ug/L	
67-66-3	Chloroform			not detected	70	0.21 ug/L	0.50 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.17 ug/L	0.50 ug/L	
56-23-5	Carbon Tetrachloride			not detected	1	0.27 ug/L	0.50 ug/L	
71-43-2	Benzene			not detected	1	0.16 ug/L	0.50 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.19 ug/L	0.50 ug/L	
79-01-6	Trichloroethene			not detected	1	0.18 ug/L	0.50 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.16 ug/L	0.50 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.14 ug/L	0.50 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.25 ug/L	0.50 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	1	0.16 ug/L	0.50 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.26 ug/L	0.50 ug/L	
108-88-3	Toluene			not detected	1000	0.15 ug/L	0.50 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1	0.12 ug/L	0.50 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.14 ug/L	0.50 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.18 ug/L	0.50 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.20 ug/L	0.50 ug/L	
126-48-1	Dibromochloromethane			not detected	1	0.14 ug/L	0.50 ug/L	
108-90-7	Chlorobenzene			not detected	50	0.15 ug/L	0.50 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.16 ug/L	0.50 ug/L	
630-20-6	1,1,1,2-tetrachloroethane			not detected	1	0.15 ug/L	0.50 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	0.27 ug/L	1.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.14 ug/L	0.50 ug/L	
100-42-5	Styrene			not detected	100	0.12 ug/L	0.50 ug/L	
75-25-2	Bromoform			not detected	4	0.14 ug/L	0.50 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1	0.12 ug/L	0.50 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.12 ug/L	0.50 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.12 ug/L	0.50 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.12 ug/L	0.50 ug/L	

\*Results between MDL and RL are estimated values  
 \*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9C 07Nov2005

**Qualifiers**

B = Compound found in related blank	MDL = Method Detection Limit
E = Value above linear range	NLE = No Limit Established
D = Value from dilution	R.T. = Retention Time
PQL = Practical Quantitation Limit	R.L. = Reporting Limit
J = Estimated concentration, value falls between R.L. and M.D.L.	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

600 B

Lab Name: FMETL Contract: \_\_\_\_\_  
Lab Code: 13461 Case No.: MW SAS No.: \_\_\_\_\_ SDG No.: 10112  
Matrix: (soil/water) WATER Lab Sample ID: 1011205  
Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VA5963.D  
Level: (low/med) LOW Date Received: 3/30/2010  
% Moisture: not dec. \_\_\_\_\_ Date Analyzed: 4/7/2010  
GC Column: RTX-VM ID: 0.25 (mm) Dilution Factor: 1.0  
Soil Extract Volume: \_\_\_\_\_ (uL) Soil Aliquot Volume: \_\_\_\_\_ (uL)

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
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**Report of Analysis**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification # 13461**

Client: U.S. Army  
 DPW, SELFM-PW-EV  
 Bldg. 173  
 Ft. Monmouth, NJ 07703

Lab ID #: 10112  
 Date Prepared: 03/31/10  
 Sample Matrix: Aqueous

Site: M12

Field ID#: Method Blank-1

Method of Analysis: Std. Methods 18th, Method 3120B, 3113B & 3112B  
 EPA Method 279.2

**TAL-METALS RESULTS SUMMARY (ug/L)**

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	04/01/10	ND	200	100	7.60
Antimony	04/01/10	ND	6	10.00	4.80
Arsenic	04/06/10	ND	3	5.00	0.62
Barium	04/01/10	ND	2000	5.00	1.00
Beryllium	04/01/10	ND	1	0.500	0.04
Cadmium	04/01/10	ND	4	2.00	0.500
Calcium	04/01/10	85.5	NLE	1000	21.0
Chromium	04/01/10	ND	70	5.00	1.00
Cobalt	04/01/10	ND	NLE	2.00	0.400
Copper	04/01/10	ND	1300	5.00	1.00
Iron	04/01/10	ND	300	500	43.0
Lead	04/01/10	ND	5	5.00	2.40
Magnesium	04/01/10	ND	NLE	1000	19.0
Manganese	04/01/10	0.509	50	5.00	0.300
Mercury	04/06/10	ND	2	0.500	0.050
Nickel	04/01/10	ND	100	5.00	0.400
Potassium	04/01/10	1310	NLE	1000	32.0
Selenium	04/01/10	23.8	40	20.0	7.00
Silver	04/01/10	0.700	40	5.00	0.500
Sodium	04/01/10	659	50000	5000	530
Thallium	04/07/10	ND	2	5.00	0.53
Vanadium	04/01/10	ND	NLE	5.00	0.600
Zinc	04/01/10	1.98	2000	50.00	1.20

ND = Not Detected NLE = No Limit Established, MDL = Method Detection Limit

\* Higher of PQL's and Interim Criteria as per N.J.A.C. 7:9C 11/07/05

R.L. = Reporting limit, Estimated results between MDL and R.L.

**000059**

**Report of Analysis**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification # 13461**

Client: U.S. Army  
 DPW, SELFM-PW-EV  
 Bldg. 173  
 Ft. Monmouth, NJ 07703

Lab ID #: 1011202  
 Sample Received: 03/30/10  
 Sample Matrix: Aqueous

Site: 600 Area

Field ID#: Field Blank

Method of Analysis: Std. Methods 18th, Method 3120B, 3113B & 3112B  
 EPA Method 279.2

**TAL-METALS RESULTS SUMMARY (ug/L)**

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	04/01/10	ND	200	100	7.60
Antimony	04/01/10	ND	6	10.00	4.80
Arsenic	04/06/10	ND	3	5.00	0.62
Barium	04/01/10	ND	2000	5.00	1.00
Beryllium	04/01/10	ND	1	0.500	0.04
Cadmium	04/01/10	ND	4	2.00	0.500
Calcium	04/01/10	68.0	NLE	1000	21.0
Chromium	04/01/10	ND	70	5.00	1.00
Cobalt	04/01/10	ND	NLE	2.00	0.400
Copper	04/01/10	ND	1300	5.00	1.00
Iron	04/01/10	ND	300	500	43.0
Lead	04/01/10	ND	5	5.00	2.40
Magnesium	04/01/10	ND	NLE	1000	19.0
Manganese	04/01/10	0.773	50	5.00	0.300
Mercury	04/06/10	ND	2	0.500	0.050
Nickel	04/01/10	0.498	100	5.00	0.400
Potassium	04/01/10	579	NLE	1000	32.0
Selenium	04/01/10	ND	40	20.0	7.00
Silver	04/01/10	ND	40	5.00	0.500
Sodium	04/01/10	554	50000	5000	530
Thallium	04/07/10	ND	2	5.00	0.53
Vanadium	04/01/10	ND	NLE	5.00	0.600
Zinc	04/01/10	ND	2000	50.00	1.20

ND = Not Detected NLE = No Limit Established, MDL = Method Detection Limit

\* Higher of PQL's and Interim Criteria as per N.J.A.C. 7:9C 11/07/05

R.L. = Reporting limit, Estimated results between MDL and R.L.

**000060**

**Report of Analysis**  
**Monmouth Environmental Laboratory**  
**NJDEP Certification # 13461**

Client: U.S. Army  
 DPW, SELFM-PW-EV  
 Bldg. 173  
 Ft. Monmouth, NJ 07703

Lab ID #: 1011203  
 Sample Received: 03/30/10  
 Sample Matrix: Aqueous

Site: 600 Area

Field ID#: Duplicate

Method of Analysis: Std. Methods 18th, Method 3120B, 3113B & 3112B  
 EPA Method 279.2

**TAL-METALS RESULTS SUMMARY (ug/L)**

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	04/01/10	44.7	200	100	7.60
Antimony	04/01/10	ND	6	10.00	4.80
Arsenic	04/06/10	1.24	3	5.00	0.62
Barium	04/01/10	43.9	2000	5.00	1.00
Beryllium	04/01/10	ND	1	0.500	0.04
Cadmium	04/01/10	ND	4	2.00	0.500
Calcium	04/01/10	42600	NLE	1000	21.0
Chromium	04/01/10	ND	70	5.00	1.00
Cobalt	04/01/10	ND	NLE	2.00	0.400
Copper	04/01/10	ND	1300	5.00	1.00
Iron	04/01/10	410	300	500	43.0
Lead	04/01/10	ND	5	5.00	2.40
Magnesium	04/01/10	4240	NLE	1000	19.0
Manganese	04/01/10	4.69	50	5.00	0.300
Mercury	04/06/10	ND	2	0.500	0.050
Nickel	04/01/10	ND	100	5.00	0.400
Potassium	04/01/10	9960	NLE	1000	32.0
Selenium	04/01/10	41.1	40	20.0	7.00
Silver	04/01/10	2.01	40	5.00	0.500
Sodium	04/01/10	6230	50000	5000	530
Thallium	04/07/10	ND	2	5.00	0.53
Vanadium	04/01/10	1.09	NLE	5.00	0.600
Zinc	04/01/10	2.10	2000	50.00	1.20

ND = Not Detected NLE = No Limit Established, MDL = Method Detection Limit

\* Higher of PQL's and Interim Criteria as per N.J.A.C. 7:9C 11/07/05

R.L. = Reporting limit, Estimated results between MDL and R.L.

**000061**

**Report of Analysis**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification # 13461**

Client: U.S. Army  
 DPW, SELFM-PW-EV  
 Bldg. 173  
 Ft. Monmouth, NJ 07703

Lab ID #: 1011204  
 Sample Received: 03/30/10  
 Sample Matrix: Aqueous

Site: 600 Area

Field ID#: 600/A

Method of Analysis: Std. Methods 18th, Method 3120B, 3113B & 3112B  
 EPA Method 279.2

**TAL-METALS RESULTS SUMMARY (ug/L)**

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	04/01/10	21.4	200	100	7.60
Antimony	04/01/10	8.18	6	10.00	4.80
Arsenic	04/06/10	1.41	3	5.00	0.62
Barium	04/01/10	43.0	2000	5.00	1.00
Beryllium	04/01/10	ND	1	0.500	0.04
Cadmium	04/01/10	ND	4	2.00	0.500
Calcium	04/01/10	41600	NLE	1000	21.0
Chromium	04/01/10	ND	70	5.00	1.00
Cobalt	04/01/10	ND	NLE	2.00	0.400
Copper	04/01/10	ND	1300	5.00	1.00
Iron	04/01/10	285	300	500	43.0
Lead	04/01/10	ND	5	5.00	2.40
Magnesium	04/01/10	4200	NLE	1000	19.0
Manganese	04/01/10	4.47	50	5.00	0.300
Mercury	04/06/10	ND	2	0.500	0.050
Nickel	04/01/10	0.467	100	5.00	0.400
Potassium	04/01/10	9640	NLE	1000	32.0
Selenium	04/01/10	42.0	40	20.0	7.00
Silver	04/01/10	1.68	40	5.00	0.500
Sodium	04/01/10	6240	50000	5000	530
Thallium	04/07/10	ND	2	5.00	0.53
Vanadium	04/01/10	1.17	NLE	5.00	0.600
Zinc	04/01/10	2.19	2000	50.00	1.20

ND = Not Detected NLE = No Limit Established, MDL = Method Detection Limit

\* Higher of PQL's and Interim Criteria as per N.J.A.C. 7:9C 11/07/05

R.L. = Reporting limit, Estimated results between MDL and R.L.

**000062**

**Report of Analysis**  
**U.S. Army, Fort Monmouth Environmental Laboratory**  
**NJDEP Certification # 13461**

Client: U.S. Army  
 DPW, SELFM-PW-EV  
 Bldg. 173  
 Ft. Monmouth, NJ 07703

Lab ID #: 1011205  
 Sample Received: 03/30/10  
 Sample Matrix: Aqueous

Site: M12

Field ID#: 600/B

Method of Analysis: Std. Methods 18th, Method 3120B, 3113B & 3112B  
 EPA Method 279.2

**TAL-METALS RESULTS SUMMARY (ug/L)**

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	04/01/10	283	200	100	7.60
Antimony	04/01/10	7.90	6	10.00	4.80
Arsenic	04/06/10	ND	3	5.00	0.62
Barium	04/01/10	23.4	2000	5.00	1.00
Beryllium	04/01/10	ND	1	0.500	0.04
Cadmium	04/01/10	ND	4	2.00	0.500
Calcium	04/01/10	39800	NLE	1000	21.0
Chromium	04/01/10	ND	70	5.00	1.00
Cobalt	04/01/10	0.430	NLE	2.00	0.400
Copper	04/01/10	ND	1300	5.00	1.00
Iron	04/01/10	341	300	500	43.0
Lead	04/01/10	ND	5	5.00	2.40
Magnesium	04/01/10	3780	NLE	1000	19.0
Manganese	04/01/10	9.54	50	5.00	0.300
Mercury	04/06/10	ND	2	0.500	0.050
Nickel	04/01/10	2.87	100	5.00	0.400
Potassium	04/01/10	9230	NLE	1000	32.0
Selenium	04/01/10	39.6	40	20.0	7.00
Silver	04/01/10	2.19	40	5.00	0.500
Sodium	04/01/10	26500	50000	5000	530
Thallium	04/07/10	ND	2	5.00	0.53
Vanadium	04/01/10	1.22	NLE	5.00	0.600
Zinc	04/01/10	20.0	2000	50.00	1.20

ND = Not Detected NLE = No Limit Established, MDL = Method Detection Limit

\* Higher of PQL's and Interim Criteria as per N.J.A.C. 7:9C 11/07/05

R.L. = Reporting limit, Estimated results between MDL and R.L.

**000063**

## 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.

  
\_\_\_\_\_  
Dean Tardiff  
Laboratory Manager

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