No Further Action Request
Site Investigation Report Addendum for the
ECP Parcel 36 Underground Storage Tanks

Fort Monmouth, New Jersey

April 14, 2016 Army Letter to NJDEP

April 2016

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

April 14, 2016

Ms. Linda Range
New Jersey Department of Environmental Protection
Bureau of Case Management
401 East State Street
PO Box 420/Mail Code 401-05F
Trenton, NJ 08625-0028

Subject: **No Further Action Request**
Site Investigation Report Addendum for ECP Parcel 36 Underground Storage Tanks, Fort Monmouth, New Jersey

Attachments:

A. Site Layout Drawings of Parcel 36
B. Summary Table of Parcel 36 Underground Storage Tanks
C. NJDEP Correspondence
D. UST 1203 Report
E. UST 1220K Report

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 36. The purpose of this submittal is to provide comprehensive documentation of the closure status of all USTs identified within this parcel. This information may be useful for future property transfers.

Parcel 36 includes the western portion of the Main Post, and is bounded on the west by Highway 35/Main Street in Eatontown; along the north by the facility boundary just north of North Drive; on the south by the facility boundary just south of Avenue of Memories; and approximately by Mill Creek to the east. The eastern boundary of Parcel 36 is also generally bounded by several Installation Restoration Program (IRP) sites including the FTMM-03 landfill, FTMM-04 landfill, FTMM-59 Building 1122 Auto Hobby Shop, and FTMM-02 landfill (see recent and historical layout drawings presented in Attachment A).

The locations of the USTs within Parcel 36 are presented in Attachment A in the "UST Removal Reference Map" for Grids A3 and B3, which shows the Army's geographical information system (GIS) locations of known USTs as updated immediately prior to installation closure in 2011. Although not clearly shown in the Attachment A figure because of scale, there were 11 USTs located near Building 1220. Also provided in Attachment A is a portion of an historical 1956 map showing the gas and fuel storage tank distribution system at Fort Monmouth; the only USTs within Parcel 36 shown on the 1956 map are located in the immediate vicinity of Building 1220.

A summary table of the 16 USTs within Parcel 36 is provided in Attachment B. All of the USTs identified within Parcel 36 have been removed. While 17 USTs are listed on the Attachment B summary, one (UST 1213B) has been determined to be a duplicate database entry of UST 1213A.

All but two of the former USTs identified within Parcel 36 were previously approved for No Further Action (NFA) by NJDEP; documentation of this approval is provided in Attachment C. 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 reports for USTs where NFA has been approved. However, these reports are available within the FTMM environmental records.

The remaining two USTs currently without NFA determinations are UST 1203 and UST 1220K. Therefore, we are submitting the following documentation for these two USTs that were previously removed from the Parcel 36 Area, and we request a NFA determination for both sites, with consideration of the following additional information:

- A closure report for UST 1203, as provided in Attachment D.
- A closure report for UST 1220K, as provided in Attachment E. Soil zinc concentrations (2601 to 3653 milligrams per kilogram [mg/kg]) were reported in closure samples to exceed the previous NJDEP standards; however, these concentrations are less than the current Residential Direct Contact Soil Remediation Standard (RDCSRS) of 23,000 mg/kg for zinc.

This information supports the conclusion that the USTs identified within Parcel 36 have been adequately addressed by previous environmental activities under the FTMM tank removal and assessment program, and we request No Further Action determinations for UST 1203 and UST 1220K. The technical Point of Contact (POC) for this matter is Kent Friesen at (732) 383-7201 or by email at kent.friesen@parsons.com. Should you have any questions or require additional information, please contact me by phone at (732) 380-7064 or by email at william.r.colvin18.civ@mail.mil.

Sincerely,

William R. Colvin, PMP, CHMM, PG
BRAC Environmental Coordinator

cc: Linda Range, NJDEP (3 hard copies)
Delight Balducci, HQDA ACSIM (CD)
Joseph Pearson, Calibre (CD)
James Moore, USACE (CD)
Jim Kelly, USACE (CD)
Cris Grill, Parsons (CD)

New Jersey Department of Environmental Protection
Site Remediation Program

Report Certifications for RCRA GPRA 2020, CERCLA, and Federal Facility Sites

These certifications are to be used for reports submitted for RCRA GPRA 2020, CERCLA, and Federal Facility Sites. The Department has developed guidance for report certifications for RCRA GPRA 2020, CERCLA, and Federal Facility Sites under traditional oversight. The "Person Responsible for Conducting the Remediation Information and Certification" is required to be submitted with each report. For those sites that are required or opt to use a Licensed Site Remediation Professional (LSRP) the report must also be certified by the LSRP using the "Licensed Site Remediation Professional Information and Statement". For additional guidance regarding the requirement for LSRPs at RCRA GPRA 2020, CERCLA and Federal Facility Sites see http://www.nj.gov/dep/srp/srra/training/matrix/quick_ref/rcra_cercla_fed_facility_sites.pdf.

Documents:

- "No Further Action Request, Site Investigation Report Addendum for the ECP Parcel 36 Underground Storage Tanks, Fort Monmouth, New Jersey" (April 2015)

PERSON RESPONSIBLE FOR CONDUCTING THE REMEDIATION INFORMATION AND CERTIFICATION

Full Legal Name of the Person Responsible for Conducting the Remediation: William R. Colvin
Representative First Name: William Representative Last Name: Colvin
Title: Fort Monmouth BRAC Environmental Coordinator (BEC)
Phone Number: (732) 380-7064 Ext: Fax:
Mailing Address: P.O. Box 148
City/Town: Oceanport State: NJ Zip Code: 07757
Email Address: william.r.colvin18.civ@mail.mil

This certification shall be signed by the person responsible for conducting the remediation who is submitting this notification in accordance with Administrative Requirements for the Remediation of Contaminated Sites rule at N.J.A.C. 7:26C-1.5(a).

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein, including all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, to the best of my knowledge, 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.

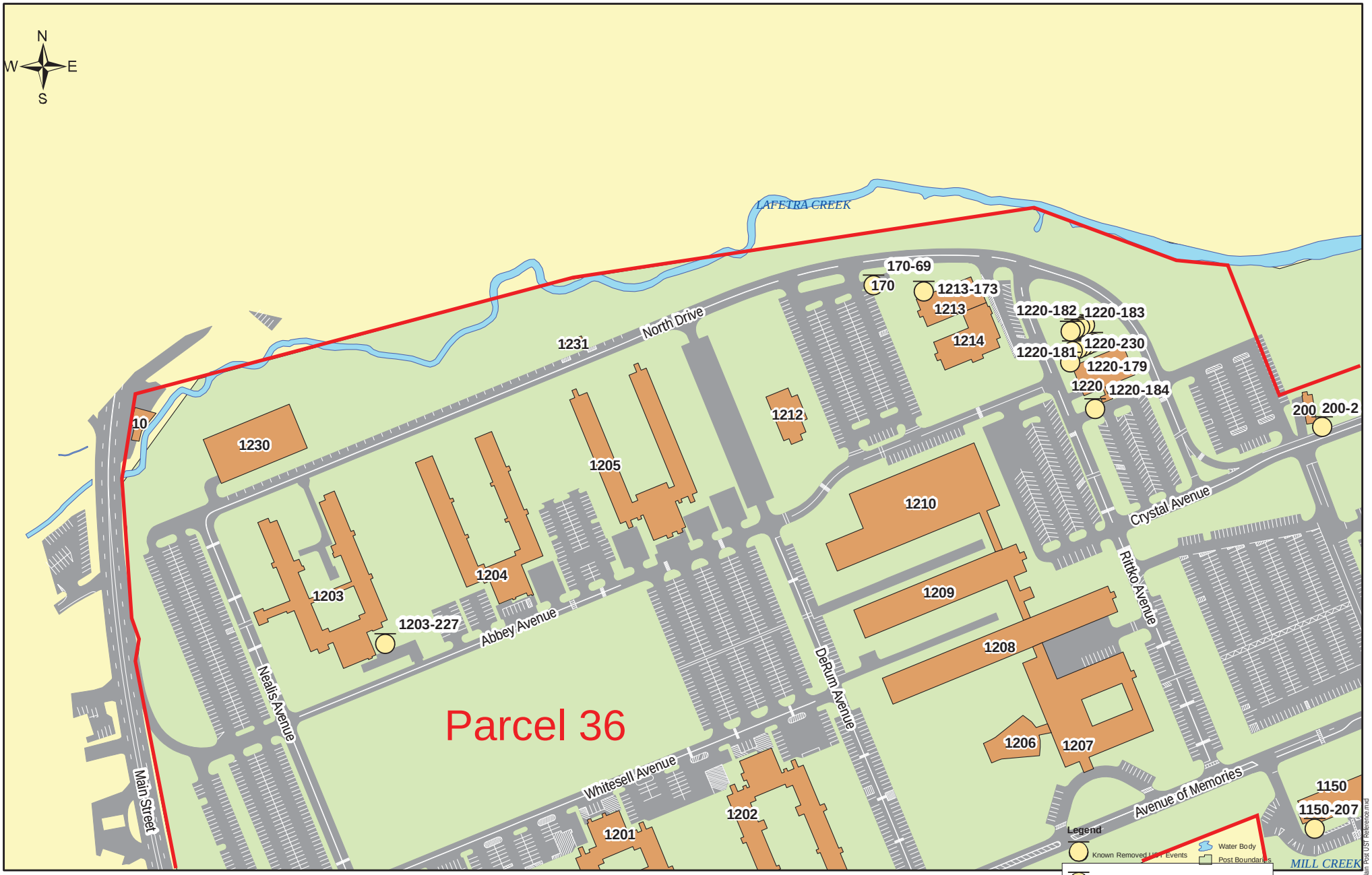
Signature: William R Colvin Date: 4/14/2016

Name/Title: William R. Colvin, PMP, CHMM, PG
BRAC Environmental Coordinator

ATTACHMENT A

Site Layout Drawings of Parcel 36

(Recent and Historical)

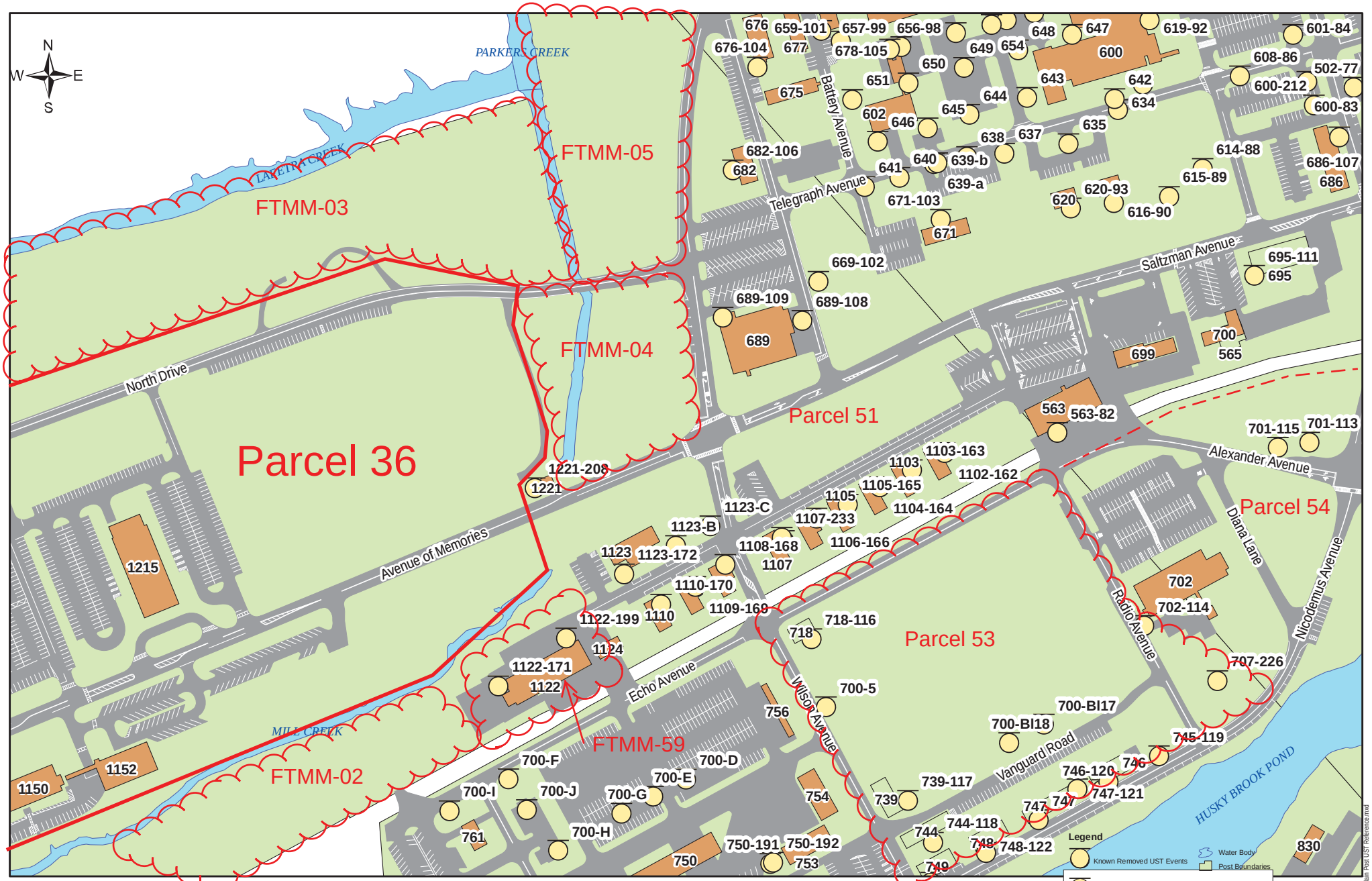


UST Removal Reference Map
Grid A3; Main Post
Fort Monmouth, New Jersey
FOUO

0 150 300 600 Feet

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

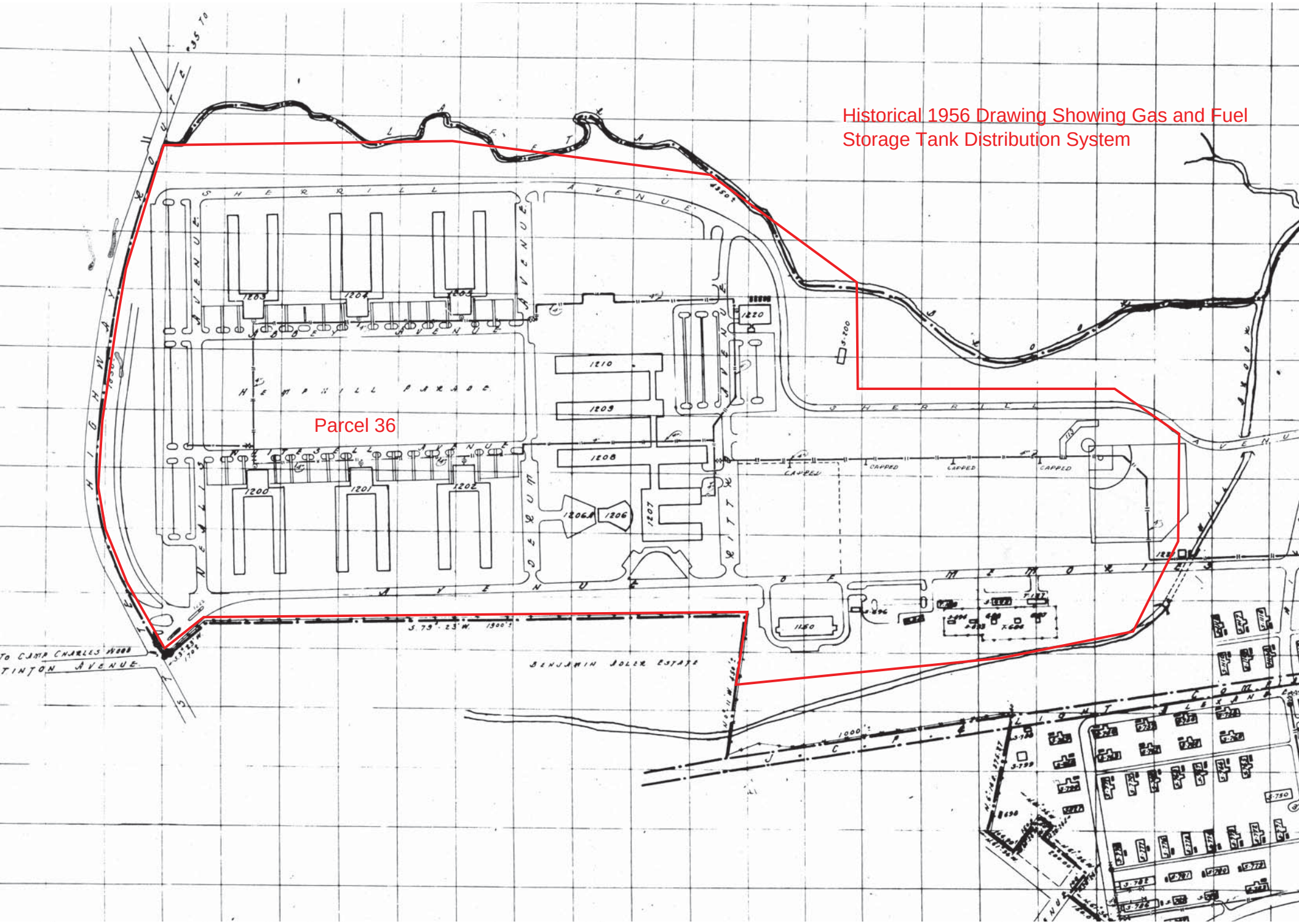
August 10, 2011 H:\GIS\GIS Maps\CH\UST Linked Pdf\Main Post UST Reference.mxd



UST Removal Reference Map
Grid B3; Main Post
Fort Monmouth, New Jersey
FOUO

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

August 10, 2011 H:\GIS\GIS Maps\CHUST Linked\PDF\Main Post UST Reference.mxd


Historical 1956 Drawing Showing Gas and Fuel Storage Tank Distribution System
Parcel 36
SHERRILL AVENUE
HEMPHILL PARADE
1200
1201
1202
1203
1204
1205
1206
1206A
1207
1208
1209
1210
1220
1250
CAPPED
BENJAMIN JOLER ESTATE

ATTACHMENT B

Summary Table of Parcel 36 Underground Storage Tanks

Summary Table of Parcel 36 USTs

Site Name	Residential?	Registration ID	DICAR	Tank Size and Type	Product	Comments on Current or Requested NJDEP Status
170D	NO	90010-69		550 gallon fiberglass	DIESEL	NFA approved per 02/24/2000 NJDEP letter
200	NO	81533-2	96-05-02-0853-33	1,000 gallon steel	#2 FUEL OIL	NFA approved per 01/10/2003 NJDEP letter
1150	NO	81533-207		275 gallon steel	DIESEL	NFA approved per 02/24/2000 NJDEP letter
1203	NO	81533-227		10,000 gallon fiberglass	DIESEL	Submit TVS report; request NFA
1213A	NO	81533-173		2,000 gallon fiberglass	#2 FUEL OIL	NFA approved per 02/24/2000 NJDEP letter
1213B	NA	81533-174		Not applicable	Not applicable	Double entry for 1213A; see Army letter dated 9/21/1998 (Attachment C)
1220A	NO	81533-184	98-06-12-0835-45	1,000 gallon steel	#2 FUEL OIL	NFA approved per 01/10/2003 NJDEP letter
1220B	NO	81533-183	97-12-31-1154-44	30,000 gallon steel	#6 FUEL OIL	NFA approved per 10/23/2000 NJDEP letter
1220C	NO	81533-182	97-12-31-1154-44	30,000 gallon steel	#6 FUEL OIL	NFA approved per 10/23/2000 NJDEP letter
1220D	NO	81533-181	97-12-31-1154-44	30,000 gallon steel	#6 FUEL OIL	NFA approved per 10/23/2000 NJDEP letter
1220E	NO	81533-180	97-12-31-1154-44	30,000 gallon steel	#6 FUEL OIL	NFA approved per 10/23/2000 NJDEP letter
1220F	NO	81533-179	97-12-31-1154-44	30,000 gallon steel	#6 FUEL OIL	NFA approved per 10/23/2000 NJDEP letter
1220G	NO	81533-178	97-12-31-1154-44	30,000 gallon steel	#6 FUEL OIL	NFA approved per 10/23/2000 NJDEP letter
1220H	NO	81533-177	97-12-31-1154-44	30,000 gallon steel	#6 FUEL OIL	NFA approved per 10/23/2000 NJDEP letter
1220I	NO	81533-176	97-12-31-1154-44	30,000 gallon steel	#6 FUEL OIL	NFA approved per 10/23/2000 NJDEP letter
1220J	NO	81533-175	97-12-31-1154-44	30,000 gallon steel	#6 FUEL OIL	NFA approved per 10/23/2000 NJDEP letter
1220K	NO	81533-230	95-08-15-1252-01	250 gallon steel	WASTE OIL	Submit Versar report; request NFA

ATTACHMENT C

NJDEP Correspondence

COPY

220B

U.S. ARMY, Fort Monmouth
Directorate of Public Works
Fort Monmouth, New Jersey 07703

September 21, 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 the status changed:

BLDG. #	NJDEP Reg. #	DEP STATUS	CORRECT STATUS
63B	0090010-002	Empty 12 months	Removed prior to 01/01/91
220B	0081533-014	Removed	**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
657	0081533-99	In-use	**Delist** Is a residential UST, should have been de-listed
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 Forms for the sites below. The following sites needs to have their status' changed to removed:

BLDG. #	NJDEP Reg. #	Date removed	Date SRF Sent
257	0081533-200	04/08/98	04/15/98
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

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

FTMMTH06\IRC.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
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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

FTMMTH062IRC.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

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0090010–69	170D	0081533–155	917
0090010–20	197	0081533–165	1105
0081533–54	270	0081533–169	1109
0081533–60	286	0081533–173	1213A
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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

FTMMTH06\IRC.DOC

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

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

FTMMTH71IRC.DOC

State of New Jersey

James E. McGreevey
Governor

Department of Environmental Protection

Bradley M. Campbell
Commissioner

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

JAN 10 2003

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

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

FTMMTH116IRC.DOC

ATTACHMENT D

UST 1203 Report

U.S. Army Garrison
Fort Monmouth, New Jersey

Underground Storage Tank Report

Main Post West –Bldg. 1203

NJDEP UST Registration No. 81533-227

TMS #: 0-06830
June 2011

UNDERGROUND STORAGE TANK CLOSURE AND REMEDIAL INVESTIGATION REPORT

MAIN POST WEST – BLDG. 1203
NJDEP UST REGISTRATION NO.: 81533-227

JUNE 2011

PREPARED FOR:

U.S. ARMY GARRISON, FORT MONMOUTH, NJ
DIRECTORATE OF PUBLIC WORKS
BUILDING 173
FORT MONMOUTH, NJ 07703

PREPARED BY:

TECOM-VINNELL SERVICES, INC.
P.O. BOX 60
FT. MONMOUTH, NJ 07703

TABLE OF CONTENTS

TABLE OF CONTENTS (CONTINUED)

FIGURES

TABLES

APPENDICES

EXECUTIVE SUMMARY

May 11-15, 2009, one regulated underground storage tank (UST) was closed by removal in accordance with the Directorate of Public Works (DPW) UST Management Plan for the U.S. Army Garrison, Fort Monmouth, New Jersey. The UST was located near Building 1203 in the West Main Post area of Fort Monmouth. UST No. 81533-227 was a 10,000-gallon, double-walled, fiberglass tank and double-walled piping with a leak detection system that contained diesel fuel for emergency generator. Fuel oil from the tank was transferred to other above ground storage tanks and off road diesel powered vehicles; therefore no liquid wastes were generated during the removal of the UST.

The site assessment was performed by TECOM-Vinnell Services (TVS) personnel in accordance with the NJDEP *Technical Requirements for Site Remediation* (TRSR) and the NJDEP *Field Sampling Procedures Manual.* Soil surrounding the tank was screened visually and with a calibrated hand held Mini-Rae Photo-Ionization air monitoring instrument for evidence of contamination. Following removal, the UST was inspected for holes. No holes or evidence of impacted soils were observed after the removal of the tank from the ground.

All soil sampling was performed by a NJDEP Certified Subsurface Evaluator according to the methods described in the NJDEP *Field Sampling Procedures Manual* (August 2005 edition-updated 15 February 2008). Sampling frequency and parameters analyzed complied with the NJDEP TRSR, 7:26E-3.9 (December 17, 2007 and revisions dated June 2, 2008) which was the applicable regulation at the date of the closure.

The post-excavation soil samples collected from the UST excavation associated with former UST No. 81533-227 contained total petroleum hydrocarbon (TPH) concentrations below the NJDEP health-based criterion of 4,800 milligrams per kilogram (mg/kg) for residual #2-home heating oil/diesel fuel (N.J.A.C. 7:26E and revisions dated September 2008). None of the soil samples collected for post remedial confirmation analysis was in excess of the additional analytical threshold of 1,000 mg/kg. The analytical data confirmed that no release had occurred from the excavated UST.

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

Based on the post-excavation soil sampling results, soils present are less than the NJDEP health based standards for residual #2-home heating oil/diesel fuel and there are no detected base/neutral compounds (B/N) that exceed the NJDEP Residential Direct Contact Soil Cleanup Standards (RDCSCS).

No further action is proposed in regard to the closure and site assessment of USTs No. 81533-227.

1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

1.1 OVERVIEW

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No 81533-227, was closed in the area of Bldg. 1203 located at the West Main Post at U.S. Army Garrison, Fort Monmouth, New Jersey on May 11-15, 2009. Refer to site location map on Figure 1. This report presents the results of the implementation of the DPW's UST Management Plan, March, 1996. UST No. 81533-227 was a regulated 10,000 gallon diesel oil tank.

Decommissioning activities for the USTs 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. The closure and subsurface evaluation of the UST was conducted by a NJDEP licensed US ARMY employee.

This UST Closure and Remedial Investigation Report has been prepared by TVS to assist the US Army Garrison Directorate of Public Works (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 (*TRSR*). Section 1 of this UST Closure and Remedial 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 Section 3 of this report.

1.2 SITE DESCRIPTION

Building 1203 is located in the western portion of the Main Post area of Fort Monmouth, as shown on Figure 1. The UST was located to the north of Building 1203. The fill port and appurtenant double walled piping was not encountered in the excavation during the tank removal phase. The piping was removed prior to the excavation of the tank.

1.2.1 Geological/Hydrogeological Setting

The following is a description of the geological/hydrogeological setting of the Bldg. 1203. 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.

Fort Monmouth lies within the Outer Coastal Plain subprovince of the New Jersey section of the Atlantic Coastal Plain physiographic province, which generally consists of a seaward-dipping wedge of unconsolidated sediments including interbedded clay, silt, sand, and gravel. To the northwest is the boundary between the Outer and Inner Coastal Plains, marked by a line of hills extending southwest, from the Atlantic Highlands overlooking Sandy Hook Bay, to a point southeast of Freehold, New Jersey, and then across the state to the Delaware Bay. These formations of clay, silt, sand, and gravel formations were deposited on Precambrian and lower Paleozoic rocks and typically strike northeast-southwest, with a dip that ranges from 10 – 60 feet per mile. Coastal Plain sediments date from the Cretaceous through the Quaternary Periods and are predominantly derived from deltaic, shallow marine, and continental shelf environments.

The fort is located within the outer fringe of the Atlantic Coastal Plain Physiographic Province, of New Jersey, approximately 13 miles south of Raritan Bay. This province is characterized by a wedge-shaped mass of unconsolidated to semi-consolidated marine, marginal marine and non-marine deposits of clay, silt, sand, and gravel. These sediments range in age from Cretaceous to Holocene and lie unconformably on pre-Cretaceous bedrock consisting of metamorphic schists and gneiss, with local occurrences of basalts, sandstone, and shale (Zapecza, 1984). These sediments trend northeast-southwest and dip southeast toward the Atlantic Ocean. These sediments thicken southeastward from the Piedmont-Coastal Plain Province boundary to approximately 4,500 feet near Atlantic City, New Jersey. During the Cretaceous and Tertiary time period, sediments were deposited alternately in flood plains and in marine environments during sea transgression and sea regression periods. The formations record several major transgressive/regressive cycles and contain units that 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 thicknesses of these units vary greatly, ranging from several feet to several hundred feet, and thicken to the southeast. For a visual representation, refer to Figure 2.

The eastern half of the Main Post is underlain by the Red Bank Formation, ranging in thickness from 20-30 feet, while the western half is underlain by the Hornerstown Formation, ranging in thickness from 20-30 feet. The predominant formation underlying the Charles Wood Area is also the Hornerstown, along with small areas of Vincentown Formation intruding in the southwest corner. Sand and gravel deposited in recent geologic times lie above these formations. Interbedded sequences of clay serve as semi-confining units for groundwater. The mineralogy ranges from quartz to glauconite.

Udorthents-Urban land is the primary classification of soils on Fort Monmouth, which have been modified by excavating or filling. Soils at the Main Post include Freehold sandy loam, Downer sandy loam, and Kresson loam. Freehold and Downer are somewhat well drained, while Kresson is a poorly drained soil. The Charles Wood Area has sandy loams of the Freehold, Shrewsbury, and Holmdel types. Shrewsbury is a hydric soil; Kresson and Holmdel are hydric due to inclusions of Shrewsbury. Downer is not generally hydric, but can be.

Local Geology

Fort Monmouth lies in the Atlantic and Eastern Gulf Coastal Plain groundwater region and is underlain by underformed, unconsolidated to semi-consolidated sedimentary deposits. The chemistry of the water near the surface is variable with generally low dissolved solids and high iron concentrations. In areas underlain by glauconitic sediments, the water chemistry is dominated by calcium, magnesium, and iron (*e.g.* Red Bank and Tinton sands). The sediments in the vicinity of Fort Monmouth were deposited in fluvial-deltaic to nearshore environments. The water table is generally from two (2) – twelve (12) feet at the Installation, and, in certain areas fluctuates with the tidal action in Parkers and Oceanport creeks at the Main Post.

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. The Hornerstown Formation acts as an upper boundary of the Red Bank aquifer, but it might yield enough water within its outcrop to supply individual household needs. The Red Bank outcrops along the northern edges of the Installation and contains two members, an upper sand member and a lower clayey sand member. The upper sand member functions as the aquifer, and is probably present on some of the surface of the Main Post and at a shallow depth below the Charles Wood Area. The Hornerstown and Red Bank formations overlay the larger Wenonah-Mount Laurel aquifer. For a visual representation, refer to Figure 3.

The area of Bldg. 1203 is located approximately 500 feet south of Lafetra Creek. Based on the Main Post topography, the groundwater flow in the area of Bldg. 1203 is anticipated to be to the north. The wells in this area are not tidally influenced.

1.3 HEALTH AND SAFETY

Work site health and safety hazards were minimized during all decommissioning activities. All areas that posed a vapor hazard were monitored by a qualified individual utilizing a calibrated photo-ionizer detector (PID): 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 (PELs).

1.4 REMOVAL OF UNDERGROUND STORAGE TANKS

1.4.1 General Procedures

- All underground utilities were marked out by the respective shops and/or utility contractor prior to excavation activities.

- All activities were carried out with great regard to safety and health and the safeguarding of the environment.

- All excavated soils were visually examined and screened with an OVM for evidence of contamination. No impacted soils were encountered during the tank excavation. These soils were used to backfill the excavation upon clearance.

- 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 certified Subsurface Evaluator was present during all UST closure activities.

1.4.2 Underground Storage Tank Excavations

During UST decommissioning activities, surficial soil was removed to expose the USTs. The tank was completely emptied of all liquids prior to removal from the ground.

Approximately 5,000 gallons of fuel was present in the UST prior to excavation. Of the contents of the UST, 2,000 gallons were transferred to the above ground storage tank at building 1203. The remaining material was used as fuel for portable generators, and off road vehicles at the Fort.

After the UST was removed from the excavation, it was staged on polyethylene sheeting, labeled, and examined for holes. No holes in the tank were observed during the inspection by the Subsurface Evaluator. Soils surrounding the UST were screened visually and with an Organic Vapor Monitor (OVM) for evidence of petroleum contamination. No soil staining or odors of fuel were observed. After removal, the tank was transported for storage at the Bldg. 108 pad for subsequent cutting and disposal.

1.5 UNDERGROUND STORAGE TANK DECOMMISSIONING AND DISPOSAL

Subsequent to disposal, the UST was purged with air to remove vapors prior to cutting. The end of the UST was opened using a gasoline powered demolition saw equipped with a fiberglass blade. The UST was cleaned first with rubber squeegees and adsorbent material broomed on the sidewalls and bottom. The adsorbent material were then drummed and then transferred into Ft. Monmouth's 'Oil Spill Debris' roll-off container for proper disposal. The atmosphere in and around the tank was monitored using an OVM and an Oxygen/Lower Explosive Level (LEL) meter to ensure safe working conditions during cutting and cleaning activities.

The tank was transferred to the ID 27 staging area where the fiberglass tank was cut, placed into a 30 cubic yard roll-off container, and shipped off site as non-hazardous bulk solid waste. Refer to Appendix C for UST disposal certificate.

The Subsurface Evaluator labeled the UST with the following information:

- site of origin
- NJDEP UST Facility ID number
- date of removal
- size of tank
- previous contents of tank

Photographic documentation of the UST excavation activities is included in Appendix D.

2.0 REMEDIAL INVESTIGATION ACTIVITIES

2.1 OVERVIEW

The Remedial 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* (August 2005, Updated 15 February 2008). Sampling frequency and parameters analyzed complied with the NJDEP document *Technical Requirements for Site Remediation*, 7:26E-3.9 (December 17, 2007 and revisions dated June 2, 2008) which was the applicable regulation at the date of the closure. All records of the Remedial Investigation activities are maintained by the Fort Monmouth DPW Environmental Office.

The following Parties participated in Closure and Remedial Investigation Activities.

- Ft. Monmouth Directorate of Public Works-Environmental Division
  Contact Person: Joe Fallon
  Phone Number: (732) 532-2692

- Subsurface Evaluator: Charles Appleby
  Employer: US Army, CECOM
  Phone Number: (732) 532-6254
  NJDEP License No.: 9974

- Analytical Laboratory: Fort Monmouth Environmental Testing Laboratory (FTMEL)
  Contact Person: Dean Tardiff
  Phone Number: (732) 532-4359
  NJDEP Laboratory Certification No.: 13461

2.2 FIELD SCREENING/MONITORING

Field screening was performed by a NJDEP certified Subsurface Evaluator using an OVM and visual observations to identify potentially contaminated material. No impacted soils were encountered during the tank removal procedures. Clean overburden soils were stockpiled for later reuse.

2.3 SOIL SAMPLING

May 15, 2009, post-excavation soil samples collected from a total of four (4) locations along the sidewalls of the UST excavations. Groundwater was encountered at approximately eight (8) feet (bgs) during the tank removal operations. Refer to soil sampling location map in Figure 3. All samples were analyzed for residual #2-home heating oil/diesel fuel and if necessary contingent B/N+10 in accordance with the requirements of Technical Requirements for Site Remediation.

Soil samples were collected using a Geoprobe© due to site conditions. The location of an air conditioning unit and the presence of pea gravel made collecting samples by other methodologies impossible. Samples were collected in accordance to the FTMM SOP #: SAM-0202. In accordance with the SOP, the sample was removed from the acetate sleeve and the appropriate six (6) inch interval was submitted for analysis in accordance with the *Field Sampling Procedures Manual (FSPM).*

The site assessment was performed by TVS personnel in accordance with the NJDEP *Technical Requirements for Site Remediation* and the NJDEP *FSPM.* A summary of sampling activities including parameters analyzed is provided on Table 1. The post-excavation soil samples were collected using stainless steel trowels. After collection, the samples were immediately placed on ice in a cooler and delivered to Fort Monmouth Environmental Testing Laboratory (FMETL) for analysis.

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 SOIL SAMPLING RESULTS

The post-excavation soil sample results were compared to the NJDEP health based criterion of 4,800 mg/kg for total organics as diesel fuel (N.J.A.C. 7:26D and revisions dated September 2008). A summary of the analytical results and comparison to the NJDEP soil cleanup standards is provided on Table 2. The analytical data package, including associated quality control data, is provided in Appendix E.

All post-excavation soil samples collected, from the UST remedial excavation contained concentrations of residual diesel fuel below the most stringent NJDEP soil cleanup standards.

3.2 CONCLUSIONS AND RECOMMENDATIONS

The analytical results for all final post-excavation soil samples collected from the UST closure excavation at UST No. 81533-227 were below all applicable NJDEP soil cleanup standards for residual diesel fuel. No further action is proposed in regard to the closure and site assessment of UST 81533-227 at Building 1203.

TABLES

TABLE 1

SUMMARY OF LABORATORY ANALYSIS
FT. MONMOUTH, BUILDING 1203, UST No.0081533-227
May 15, 2009

SAMPLE ID	LABORATORY SAMPLE ID	SAMPLE DATE	SAMPLE MATRIX	ANALYTICAL PARAMETER	ANALYTICAL METHOD
1203A North wall	9019701	15-May-09	SOIL	TPH	OQA-QAM-25
1203B South wall	9019702	15-May-09	SOIL	TPH	OQA-QAM-25
1203C East wall	9019703	15-May-09	SOIL	TPH	OQA-QAM-25
1203D West wall	9019704	15-May-09	SOIL	TPH	OQA-QAM-25

ABBREVIATIONS:
TPH = Total Petroleum Hydrocarbons, Method NJDEP OQA-QAM-25

TABLE 2

SUMMARY OF LABORATORY ANALYTICAL RESULTS
FT. MONMOUTH, BUILDING 1203, UST No.81533-227
May 15, 2009

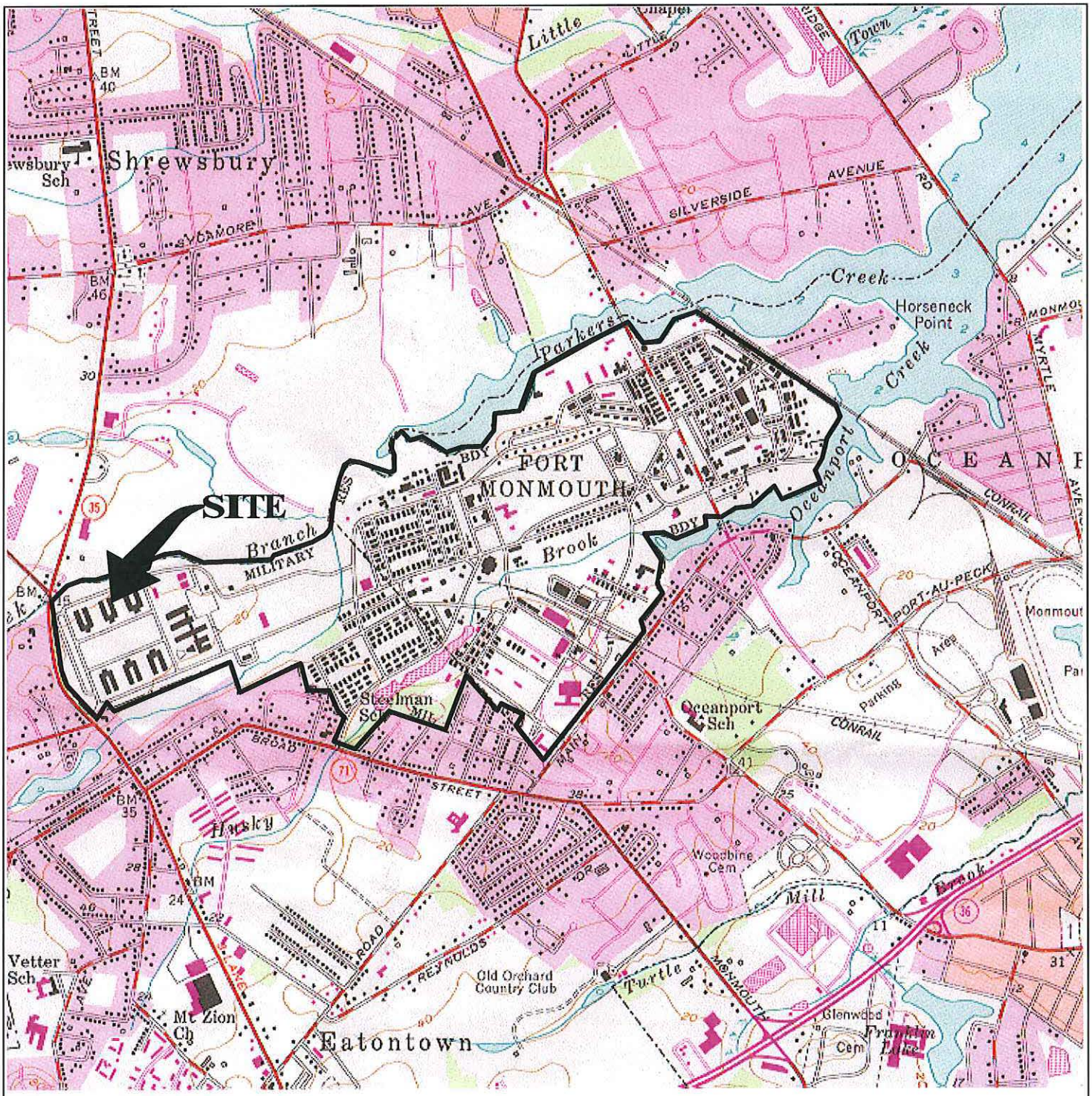
TOTAL PETROLEUM HYDROCARBONS (results in mg/kg)

SAMPLE ID	LABORATORY SAMPLE ID	SAMPLE LOCATION	SAMPLE DEPTH (in feet)	MATRIX	TPH RESULTS
1203A	9019701	North Wall	6-6.5'	Soil	ND
1203B	9019702	South Wall	6-6.5'	Soil	ND
1203C	9019703	East Wall	6-6.5'	Soil	ND
1203D	9019704	West Wall	6-6.5	Soil	ND

ABBREVIATIONS:
mg/kg = Milligrams per Kilogram = parts per million
ND = Compound Not Detected

Notes:
Gray shading indicates exceedance of NJDEP health based standard of 4,800 mg/kg total #2fuel oil/diesel contamination

FIGURES



LONG BRANCH, N. J.

40073-C8-TF-024

1954

PHOTOREVISED 1981

DMA 6164 I SE-SERIES V822

NEW JERSEY

QUADRANGLE LOCATION

Mapped, edited and published by the Geological Survey

Figure 1
Site Location Map
Main Post
Fort Monmouth, New Jersey

U.S. Army Garrison Fort Monmouth Department of Public Works

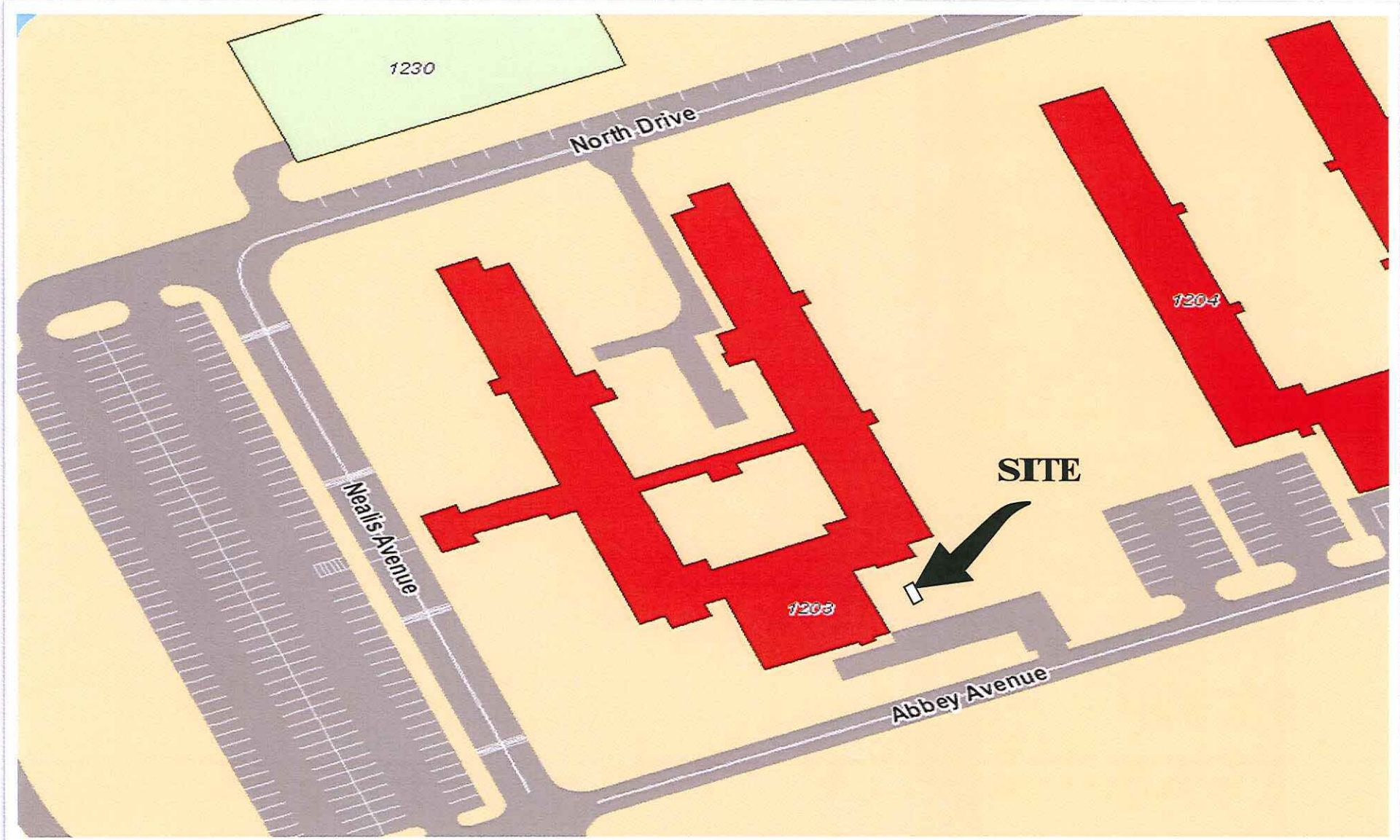


Figure 2
Tank Sampling Location Map
Main Post, Fort Monmouth

U.S. Army Garrison Fort Monmouth Department of Public Works

N

APPENDIX A

CERTIFICATIONS

DEPARTMENT OF THE ARMY
US ARMY INSTALLATION MANAGEMENT COMMAND
HEADQUARTERS, UNITED STATES ARMY GARRISON, FORT MONMOUTH
286 SANGER AVENUE
FORT MONMOUTH, NEW JERSEY 07703-5101

Directorate of Public Works

13 May 2009

NJ Department of Environmental Protection
Division of Remediation Support
UST Program
Registration and Billing Unit
P.O. Box 028
Trenton, New Jersey 08625-0028

Re: Updated UST Facility Certification Questionnaire
Removal of UST, TMS# N09-6830
US Army Garrison, Fort Monmouth, Main Post West
Facility ID: 0081533

Dear Sir/Madam:

Enclosed is a UST Facility Certification Questionnaire which documents the removal of one UST from Fort Monmouth. The removed UST is Tank No. 227. This tank was located at Building 1203 in Fort Monmouth's Main Post West facility.

Note that the NJDEP TMS form, which states the closure approval, states an incorrect Facility ID Number. The correct Facility Identification number is 0081533 not 008153.

Should you have any questions or require any additional information, please contact Mr. Charles Appleby, Environmental Protection Specialist, at 732-532-2692 or email: Charles.Appleby@US.Army.mil

UST Reg. ID # 81553 For Copy

Sincerely,

Joseph Fallon

Joseph Fallon
Chief, Environmental Division

Encl. Completed NJDEP UST Facility Certification Questionnaire
Closure – Notice of Intent, UST, TMS# N09-6830
Email – NJDEP Case Manager Approval to remove UST

cc: Lawrence Quinn, NJDEP Case Manager

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF REMEDIATION SUPPORT
UST Program • Registration and Billing Unit
PO Box 028, Trenton, N.J. 08625-0028
1-609-633-1464 • www.state.nj.us/dep/srp/bust

STATE USE ONLY
Check In ☐ Yes ☐ No

UNDERGROUND STORAGE TANK FACILITY CERTIFICATION QUESTIONNAIRE

FACILITY UST # (PROGRAM INTEREST ID): 0081533

Completion of this Registration Questionnaire will satisfy the registration requirements of the Underground Storage of Hazardous Substances Act, N.J.S.A. 58:10A-21 et seq., and the Underground Storage Tank Rules N.J.A.C. 7:14B et. seq.

Check appropriate box

A. ☐ This is a registration of a proposed or newly installed underground storage tank. (This form must be filed at least 30 days prior to operation)
B. ☐ This is a registration of an existing underground storage tank not presently registered.
C. ☒ This is a correction or amendment to an existing facility registration. (Check type of change below)
D. ☐ There have been no changes to the facility registration since last submittal. (Complete Section A, C & E)

If "C" is checked above, please check the appropriate type of change(s) below

☐ Facility Name and/or Address Change
☐ Owner Name and/or Address Change
☐ Facility Operator and/or Address Change
☐ Owner Contact Person Change
☐ Type of Product(s) Stored
☐ Substantial Modification(s) (see 14B)
☐ Tank(s) and/or Piping Changes
☒ Closure (Complete Section B Questions 1, 4, 5, 12C)
☐ Financial Responsibility Change (Including Policy Renewal)
☐ Sale or Transfer (Complete entire form)
☐ Other *(please specify)*

SECTION A - GENERAL FACILITY INFORMATION

1. **Facility Name**: US Army Garrison Fort Monmouth West
2. **Facility Location**
   Address Line 1:
   Address Line 2:
   City or Municipality: Eatontown Borough
   Monmouth | NJ | 07703- | BLOCK | LOT
   COUNTY | STATE | ZIP CODE
3. **Facility Operator**: Director of Public Works
   ORGANIZATION (If applicable, e.g. Company) or INDIVIDUAL
   Contact Person: John McCarthy | Env Engineer
   PERSON | TITLE
   732 532 6024 | John.mccarthy@us.army.mil
   PHONE NUMBER (INCLUDE AREA CODE & EXT) | E-MAIL ADDRESS
   Operator Address (if different than #2): IMNE-PWE
   173 Riverside Ave
   ADDRESS LINE 1 (NUMBER AND STREET)
   Fort Monmouth | NJ | 07703-
   ADDRESS LINE 2 (e.g. PO BOX, SUITE)
   CITY OR MUNICIPALITY | STATE | ZIP CODE
4. **Tank Owner** (Organization): SAME
   Contact Person:
   PERSON | TITLE
   PHONE NUMBER (INCLUDE AREA CODE & EXT) | E-MAIL ADDRESS
   Tank Owner Address:
   ADDRESS LINE 1 (NUMBER AND STREET)
   ADDRESS LINE 2 (e.g. PO BOX, SUITE)
   CITY OR MUNICIPALITY | STATE | ZIP CODE

5. **Billing Address:** Check one below
☐ Same as Tank Owner address listed in Section A4. ☒ Same as Facility Operator address listed in Section A3. ☐ Other and attach billing address.

6. **Total number of regulated underground storage tanks at facility** ☐☐☐ (Complete Section B for each tank unless there has been no change since last submittal)

7. **Total regulated underground storage capacity at facility (gallons)** ☐☐☐☐☐☐

8. **Facility Type:** A ☐ State B ☐ Commercial/ Industrial C ☐ County/Municipal D ☐ Federal E ☐ Charitable / Public School F ☐ Residential G ☐ Farm (as defined in N.J.S.A. 54:4-23.1 et seq.)

NOTE: The facility site plan must be submitted when registering any underground storage tank pursuant to N.J.A.C. 7:14B 2.2.

SECTION B - SPECIFIC TANK INFORMATION

ALL regulated underground storage tanks, including those taken out of operation (UNLESS THE TANK WAS REMOVED FROM THE GROUND PRIOR TO 9/3/86) must be registered. Report all tank/piping status changes. ***DO NOT MARK SHADED AREAS***

1. **Tank Identification Number**	TANK NO. 027	TANK NO.	TANK NO.	TANK NO.	TANK NO.
2. **CAS Number** (Hazardous substances only)					
3. **Date Tank Installed**					
4. **Tank Size** (gallons) - Please note that each compartment is considered a separate Tank System					
5. **Tank Contents** (Mark one "X" for each tank)					
A. Leaded Gasoline					
B. Unleaded Gasoline					
C. Alcohol Enriched Gasoline					
D. Light Diesel Fuel (No. 1-D)					
E. Medium Diesel Fuel (No. 2-D)					
F. Waste Oil					
G. Kerosene (No. 1)					
H. Heating Oil (No. 2) Complete 13C					
I. Heating Oil (No. 4) Complete 13C					
J. Heating Oil (No. 6) Complete 13C					
K. Aviation Fuel					
L. Motor Oil					
M. Lubricating Oil					
N. Automatic Transmission Fluid					
O. Hazardous Waste **(Specify ID Number)**					
P. Coolant/Antifreeze					
Q. Other **(please specify)**					
6. **Tank & Piping Construction** (Mark at least one each for Tank and Piping)	Tank / Piping	Tank / Piping	Tank / Piping	Tank / Piping	Tank / Piping
A. Bare steel					
B. Cathodically Protected Metal (Mark SA or IC)					
1. Sacrificial Anode (SA) *Date Sacrificial Anode Installed **(TANK ONLY)**	Mo. Day Year	Mo. Day Year	Mo. Day Year	Mo. Day Year	Mo. Day Year
2. Impressed Current (IC) *Date Impressed Current Installed **(TANK ONLY)**	Mo. Day Year	Mo. Day Year	Mo. Day Year	Mo. Day Year	Mo. Day Year
C. Fiberglass-Coated Steel **(TANK ONLY)**					
D. Fiberglass-Reinforced Plastic					
E. Internally Lined **(TANK ONLY)** *Date Internal Lining Installed	Mo. Day Year	Mo. Day Year	Mo. Day Year	Mo. Day Year	Mo. Day Year
F. Other (Please specify) (Include Brand Name)					
7. **Piping Operation** (Mark one for each tank system)					
A. Pressurized Piping **(PIPING ONLY)**					
B. American Suction Piping **(PIPING ONLY)**					
C. European Suction Piping **(PIPING ONLY)**					
D. Supply/Return **(Heating Oil Piping Only)**					
8. **Tank & Piping Structure** (Mark one for each TANK & PIPING)					
A. Single Wall					
B. Double Wall					
C. Secondary Containment (e.g. Externally Lined)					
9. **Type of Monitoring/Detection** (Mark all that apply for TANK & PIPING)					
A. Statistical Inventory Reconciliation Vendor Name & Phone Number					
B. Manual Tank Gauging **(TANK ONLY)**					
C. Inventory Control **(TANK ONLY)**					
D. Interstitial					
E. Tightness Test					
F. Ground Water Observation Wells					
G. Vapor Observation Wells					
H. In-Tank (Auto Monitoring Gauge) **(TANK ONLY)**					
I. In-Line Electronic Pressure Monitor **(PIPING ONLY)** See Definition Page 4					
J. Automatic Line Leak Detector **(PIPING ONLY)** See Definition Page 4					
K. None **(TANK & PIPING)**					

Tank Identification Number	TANK NO. 2 3 7	TANK NO.	TANK NO.	TANK NO.	TANK NO.
10. **Overfill Protection** (Mark one X for each tank)					
A. Yes					
B. No					
11. **Spill Containment Around Fill Pipe** (Mark one X for each tank)					
A. Yes					
B. No					
12. **Tank Status Information** (Mark appropriate choice for each tank)					
A. In-Use					
B. Out of Service (See Definition Page 4)					
Date Taken Out of Service	Mo. Day Year	Mo. Day Year	Mo. Day Year	Mo. Day Year	Mo. Day Year
C. Closed					
1. Removed	✓				
Date Removed	Mo. Day Year 05/12/2009	Mo. Day Year	Mo. Day Year	Mo. Day Year	Mo. Day Year
Case mgr. Email Approval					
Closure #	NJ09-6830				
2. Abandoned-In-Place					
Date Abandoned-In-Place	Mo. Day Year	Mo. Day Year	Mo. Day Year	Mo. Day Year	Mo. Day Year
Closure #					
13. **Tank Use Information** (Mark if applicable)					
A. Emergency Back-up Generator					
B. Sump (See Definition Page 4)					
C. Heating Oil Tanks If you checked H, I or J under item B5 on Page 2, check one of the following					
1. Product for on-site consumption use					
2. Product for sale or distribution					
14. **Other Information** (Mark if applicable)					
A. Date of Sale or Transfer	Mo. Day Year	Mo. Day Year	Mo. Day Year	Mo. Day Year	Mo. Day Year
B. Substantial Modification #					
C. ISRA #					
15. Is the tank within a wellhead protection area as defined on Page 4 (Mark for each tank)					
A. Yes					
B. No					

SECTION C - FINANCIAL RESPONSIBILITY

Please note: In addition to new submittals, any change in the Financial Responsibility Assurance Mechanism as per N.J.A.C. 7:14B 2.2 (including policy renewal date) for an existing facility shall be listed below.

Type of Mechanism (i.e. Insurance) _____ Carrier/Issuing Agency _____

____/____/____ Effective Date ____/____/____ Expiration Date _____ Policy Number S_____ Amount of Aggregate Coverage

SECTION D - GENERAL GUIDANCE

FEE:	(If applicable) Please make check payable to: "Treasurer, State of New Jersey". Registration and Billing Fee Schedule can be found in N.J.A.C. 7:14B-3.
PENALTY:	Failure by owner or operator of a regulated underground storage tank to comply with any requirement of 7:14B et. seq. may result in penalties set forth in N.J.S.A. 58:10A-12.
EMERGENCY:	If a discharge or spill occurs, the NJDEP Hotline at (877) 927-6337 must be called **IMMEDIATELY** - 24 hours a day.
EXEMPTION:	Residential heating oil underground storage tanks are exempt from the rules as per by N.J.S.A. 58:10A-21 et. seq. Please see N.J.A.C. 7:14B.-1.4(b) for other exemptions.
PUBLICATIONS:	Operation and maintenance / record keeping / compliance publications are available on line at **www.state.nj.us/dep/srp/bust** Suggested Publications: "Underground and Storage Tank Owner's Self-inspection Checklist" and "Tank Care".
QUESTIONNAIRE:	Initial facility registrations can be submitted online at www.njdeponline.com (Renewal and modifications need prior DEP pin code approval to submit online).
MAILING:	UST Registration Certificates are mailed directly to the facility to be displayed prominently as per N.J.A.C. 7:14B-2.6

SECTION E - CERTIFICATION

Must be signed as follows:

- For a corporation, by a person authorized by resolution of the Board of Directors to sign the document.
- For a partnership or sole proprietorship, by a general partner or the proprietor, respectively.
- For a municipality, State, Federal or other public agency, by either a principal executive officer or ranking elected official.
- For persons other than indicated above, by the person with legal responsibility for the site.

"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.

Ms. Barbara Folk
(Typed / Printed Name)

Barbara Folk
(Signature)

Director
(Title)

12 May 2009
(Date)

008153
Facility UST #

SECTION F - DEFINITIONS

Section B7 C. **"European" Suction Piping** - Suction piping which has enough slope so that the product in the pipe can drain back into the tank when the suction is released, and which has only one check valve, located directly beneath the pump in the dispensing unit. Any underground storage tank equipped with "European" Suction Piping has no monitoring detection requirements for piping.

Section B9 I. **In-Line Electronic Pressure Monitor** - (Used with pressurized piping only) A monitor which checks for loss of pressure within piping when no product is dispensed. This method may be used once every 30 days or every time the dispenser turns off.

Section B9 J. **Automatic Line Leak Detectors** - (Used with pressurized piping - Must be able to detect a 3 gph leak within 1 hour of its occurrence). Types of detectors are:

1. Flow restrictors and flow shut offs which monitor pressure within piping. When a suspected leak is detected, either restricts the flow of product through the piping well below the 3 gph leak rate it detects, or completely cuts off product flow and shuts down the pump.
2. Continuous alarm systems which constantly monitor piping conditions and trigger an audible or visual alarm if a leak is suspected.

Section B12 B. **Out of Service Storage Tank** - Any underground storage tank system in which hazardous substances are contained or have been contained, but from which hazardous substances are not or have not been introduced or dispensed pending a decision to close the system or begin reuse of the system.

Please Note: Underground storage tank systems which are out of service shall comply with the provisions of N.J.A.C. 7:14B-9-1. The owner or operator of an underground storage tank system which is out of service for a period greater than three months shall follow the guidelines in the current American Petroleum Institute Bulletin #1604. The owner or operator may request that the underground storage tank system remain out of service for a period of more than 12 months without having to permanently close the tank system by complying with the provisions of N.J.A.C. 7:14B-9.1(b) by submitting a Site Investigation (SI) Report at least 30 days before expiration of the 12 month period.

Section B13 B. **Sump** - Any underground storage tank used to collect or contain a hazardous substance for no more than 48 hours.

Section B15 **Wellhead Protection Area** -

1. The area within a 2,000 ft. radius surrounding a public community or public non-community water system well when there is an underground storage tank containing gasoline or non-petroleum hazardous substances located within that area.

2. The area within a 750 ft. radius surrounding a public community or public non-community water system well when there is an underground storage tank containing petroleum products other than gasoline located within that area.

New Jersey Department of Environmental Protection

Division of Remediation Support
Bureau of Risk Management, Initial Notice and Case Assignment
PO Box 435
Trenton, NJ 08625-0435
(609) 633-0708

CLOSURE - Notice of Intent
Underground Storage Tank System

DEP Received Date: 04/30/2009
Earliest Start of Work Date: 05/14/2009
Expiration Date: 05/05/2010

TMS #: N09-6830 **Facility ID #:** 008153
Activity #: UCL090001

Facility Name:
US ARMY GARRISON FORT MONMOUTH WEST

Facility Address:
MAIN POST W
BLDG 1203
Eatontown Boro
Monmouth County

Decommission, close and conduct a site investigation for the UST(s) and all associated piping specified in this approval in accordance with the Technical Requirements for Site Remediation, N.J.A.C. 7:26E.

The management of any excavated soils must follow the requirements listed in N.J.A.C. 7:14B-8.2.

Note: The UNDERGROUND STORAGE TANK SERVICES CERTIFICATION ACT, N.J.S.A. 58:10A-24, requires all services performed on an UST system for the purpose of complying with P.L.1986, c.102 to be performed by or under the immediate on-site supervision of a person certified by the Department for that service. The certified person providing that service must be employed by a business that is also certified by the Department for that service.

Contact Person: BARBARA FOLK **Telephone #:** (732)427-1523

This Permit must be displayed at the Site during the Approved Activity and must be made available for inspections at all times.

The above listed facility is hereby granted approval to perform the attached activities in accordance with N.J.A.C. 7:14B-1 et. seq..

Rafael Rivera

Rafael Rivera, Supervisor
Bureau of Risk Management, Initial Notice and Case Assignment

This Permit consists of 2 pages.

APPENDIX B

WASTE MANIFEST

APPENDIX C

UST DISPOSAL CERTIFICATE

B.1203 - 10,000 GAL. UST
(FIBERGLASS) SCRAP RECIEPT

MAZZA
FACILITY ID# 195599
DEP# 1336001136
3230 SHAFTO RD, TINTON FALLS, NJ

Weighed: JIM WEIMER
Deposit: BOB ALBANESE
BILL TO: 558
CHENEGA TECH SERVICES CORP.

Vehicle ID: 1496
Reference: C0703815

Origin: FORT MONMOUTH, MONMOUTH
DATE IN: 05/13/2009 TIME IN: 10:24:20
DATE OUT: 05/13/2009 TIME OUT: 10:35

INBOUND TICKET Number: 02-367388

SCALE 2 GROSS WT.	35400	LB
SCALE 3 TARE WT.	32800	LB
NET WEIGHT	2600	LB

Qty	Description	Amount
1.30	INCOMING BULKY WAST	122.20
	RE TAX	3.90
	NET CHARGE AMOUNT:	126.10

X_____

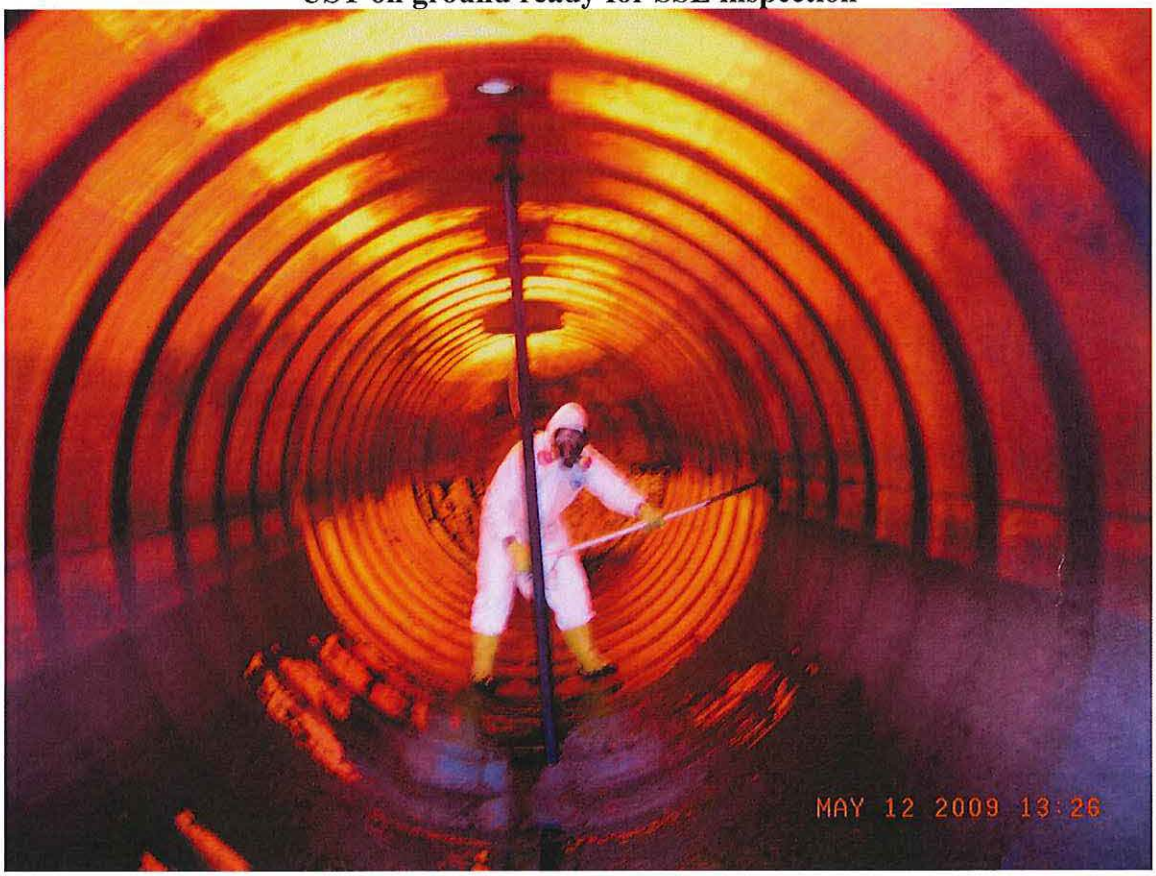
APPENDIX D

PHOTO DOCUMENTATION

Removed and labeled fiberglass USTs

Fiberglass UST being removed from excavation

UST on ground ready for SSE inspection



UST being cleaned

Exposing top of UST prior to removal

Tank excavation w/tank out of ground

APPENDIX E

SOIL 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: 08-155522

Bldg. 1203 (FBI)/UST # 81533-227

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
1203A, North Wall	9019701	Soil	15-May-09 09:20	05/15/09
1203B, South Wall	9019702	Soil	15-May-09 11:30	05/15/09
1203C, East Wall	9019703	Soil	15-May-09 10:00	05/15/09
1203D, West Wall	9019704	Soil	15-May-09 10:30	05/15/09
1203-Duplicate	9019705	Soil	15-May-09 10:00	05/15/09

ANALYSIS:
FORT MONMOUTH ENVIRONMENTAL LAB
TPHC, % SOLIDS

ENCLOSURE:
CHAIN OF CUSTODY
RESULTS

Jacqueline Hamer/Date
QA/QC Supervisor

Table of Contents

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:jacqueline.hamer@us.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: CHUCK APPLEBY | **Project No:** 08-155522
Phone #: X26292 | **Location:** BLDG. 1203 (FBI)
( )DERA ( )OMA (X)Other:_____ | UST # 81533-227

Samplers Name / Company: FRANK ACCORSI / TVS

LIMS/Work Order #	Sample Location	Date	Time	Sample Type	# bottles	Analysis Parameters: *	TPH	% SOLIDS					PID (PPM)	DEPTH (FT)	Comments: Remarks / Preservation Method
40177 01	1203A-NORTH WALL	5-15-09	0920	SOIL	1		X	X					0	8.5-9	ICE
02	1203B-SOUTH WALL		1130		1		X	X					0	8.5-9	
03	1203C-EAST WALL		1000		1		X	X					0	8.5-9	
04	1203D-WEST WALL		1030		1		X	X					0	8.5-9	
05	1203-DUPLICATE		1000		1		X	X					0	8.5-9	

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Frank Accorsi	5-15-09 1210	Alan Sandberg			
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
Turnaround time: ( )Standard 3 wks, (X)Rush 1 Wk., ( )ASAP Verbal ____Hrs.

Remarks: * CONTINGENT BNHS IF TPH > 1,000 PPM

200000

print legibly

new coc..XLS4/10/2009

GPS

COORDINATES

U.S. ARMY - FT. MONMOUTH, NJ

BUILDING 1203 - UST #81533-227

SOIL SAMPLE GPS POSITIONS & COORDINATES

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

(IN US SURVEY FEET)

SAMPLE POINTS

POSITION/DESCRIPTION	Y COORDINATE (NORTHING)	X COORDINATE (EASTING)
1203A NORTH WALL UST	538355.702	614177.199
1203B SOUTH WALL UST	538321.554	614191.323
1203C EAST WALL UST	538347.476	614192.563
1203D WEST WALL UST	538332.874	614175.602

METHOD SUMMARY

Method Summary

NJDEP Method OQA-QAM-025 02/08
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.

CONFORMANCE/ NON-CONFORMANCE SUMMARY

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: Jacquelyn Hartman Date: 05/21/09

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 #: 08-155522
Location: BLDG. 1203 (FBI)
ECP:
Work Order:

Analysis: OQA-QAM-025
Matrix: Soil
Inst. ID: GC TPHC INST. #1
Column Type: RTX-5, 0.32mm ID, 30 m
Injection Volum 1 uL
Blank Conc.: 0.00

Date Received: 15-May-09
Date Extracted: 18-May-09
Extraction Method: Shake
Analysis Complete: 19-May-09
Analyst: Robert Szot

Lab ID	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	RL (mg/kg)	TPHC Result (mg/kg)	Qualifiers
MB05180901	MB05180901	1.00	15.11	100.00	7	100	0.00	
LCS05180901	LCS05180901	1.00	15.10	100.00	7	100	1040.81	
9019701	1203-A NORTH WALL	1.00	15.02	76.16	9	131	0.00	
9019702	1203-B SOUTH WALL	1.00	15.05	77.30	9	129	0.00	
9019703	1203-C EAST WALL	1.00	15.00	78.70	9	127	0.00	
9019704	1203-D WEST WALL	1.00	15.11	76.77	9	129	0.00	
9019705	1203 DUPLICATE	1.00	15.01	80.16	9	125	0.00	

Qualifiers:
MDL = Method Detection Limit
RL = Reporting Limit
E = Exceeds calibration limit
J = Estimated value, concentration is between MDL and RL
D = Concentration from dilution

600009

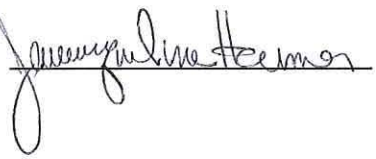
LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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 <u>and</u> in the main body of the report.

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

Laboratory Manager or Environmental Consultant's Signature 

Date: 05/21/09

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.

Jacqueline Hamer
QA/QC Supervisor

ATTACHMENT E

UST 1220K Report

United States Army
Fort Monmouth, New Jersey

Underground Storage Tank Closure and Site/Remedial Investigation Report

Building 1220K
Main Post-West Area

NJDEP UST Registration No. 0081533-230
DICAR No. 95-8-15-1252-01

September 2001

SITE/REMEDIAL INVESTIGATION REPORT

BUILDING 1220K

MAIN POST-WEST AREA
NJDEP UST REGISTRATION NO. 0081533-230

SEPTEMBER 2001

PREPARED FOR:

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

PREPARED BY:

VERSAR
2558 PEARL BUCK ROAD
SUITE 1
BRISTOL, PA 19007

PROJECT NO. 4936-127

TABLE OF CONTENTS (CONTINUED)

FIGURES

APPENDICES

EXECUTIVE SUMMARY

UST Closure

On December 16, 1997, an underground storage tank (UST) was closed by removal in accordance with the New Jersey Department of Environmental Protection (NJDEP) at the Main Post-West area of the U.S. Army Fort Monmouth, Fort Monmouth, New Jersey. The UST, NJDEP Registration No. 0081533-230 (Fort Monmouth ID No. 1220K) was located north of Building 1220. UST No. 0081533-230 was a 250-gallon No. 2 fuel oil UST. The fill port was located directly above the UST.

Site Assessment

The site assessment was performed by U.S. Army personnel in accordance with the NJDEP *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E) and the NJDEP *Field Sampling Procedures Manual.* The sampling and laboratory analysis conducted during the site assessment were performed in accordance with Section 7:26E-2.1 of the *Technical Requirements for Site Remediation.* Soils surrounding the tank were screened visually and with air monitoring equipment for evidence of contamination. Following removal, the UST was inspected for corrosion holes. Numerous holes were noted in the UST. Soils at the location of the holes were dark in color and appeared to be contaminated. Based on the inspection of the UST, Directorate of Public Works (DPW) concluded that a discharge of petroleum products was associated with this UST. The NJDEP hotline was notified and the case was assigned DICAR No. 95-8-15-1252-01. Groundwater was not encountered.

Site/Remedial Investigation and Post-Excavation Soil Sampling

Versar was retained by the U.S. Army DPW to implement a site/remedial investigation adjacent to a former No 2 fuel oil UST. The UST was associated with Building 1220K at the Main Post-West area of the U.S. Army Fort Monmouth Base. The objective of the site/remedial investigation activities were to remove from the ground all soil potentially impacted as the result of the past operation of the former UST. The site/remedial investigation was performed by Versar personnel in accordance with the NJDEP *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E) and the NJDEP *Field Sampling Procedures Manual.*

Visibly stained soils and soils exhibiting elevated PID levels (greater than 5 ppm) of VOCs were excavated. Excavation activities continued until potentially impacted soil had been removed. To confirm the PID readings and verify the effectiveness of the soil excavation activities, 6 post-excavation soil samples were collected from within the UST and associated piping December 16, 1997. All samples were analyzed for TPH and total solids. The two soil samples, collected from the UST excavation, were also analyzed for VOC, SVOC, PCB, and metals. The samples exceeded the NJDEP soil cleanup criteria for zinc. These results are contributed to background levels of zinc

commonly found around the site. TPH was detected at concentrations below the NJDEP soil cleanup criteria. There were no other compounds detected at the site.

Management of Excavated Soils

All contaminated soil characterization and disposal was handled directly by the U.S. Army Fort Monmouth DPW.

Site Restoration

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

Conclusions and Recommendations

All post excavation soil samples collected from the UST excavation at Building 1220K contained either no detectable levels of TPH or 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). Zinc was detected at levels exceeding the NJDEP Soil Cleanup Criteria but at concentrations considered normal relative to background levels.

Two (2) groundwater samples were collected at Building 1220K. On November 6, 1998 and December 3, 1998, groundwater from Building 1220K was sampled for volatile organic compounds calibrated for xylene plus 15 tentatively identified compounds (VOC's), and semivolatile organic compounds plus 15 tentatively identified compounds (SVOC's).

All groundwater analytical results were below the detection limit and in compliance with the New Jersey Ground Water Quality Criteria (GWQC).

No further action is proposed in regard to the closure and site assessment of UST No. 81533-184 at Building 1220K.

1.0 BACKGROUND INFORMATION

1.1 OVERVIEW

Versar was retained by the United States Army Directorate of Public Works (DPW) to implement a site/remedial investigation adjacent to a former No 2 fuel oil underground storage tank (UST). The UST, New Jersey Department of Environmental Protection (NJDEP) Registration No. 81533-184, was associated with Building 1220K at the Main Post-West area of the U.S. Army Fort Monmouth Base, Fort Monmouth, New Jersey. Refer to site location map on Figure 1.

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

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

1.2 SITE DESCRIPTION

Building 1220K is located in the Main Post-West area of the Fort Monmouth Army Base. UST No. 0081533-230 was located south of Building 1220. A Site Map is provided as Figure 2.

1.2.1 GEOLOGICAL/HYDROGEOLOGICAL SETTING

The following is a description of the geological/hydrogeological setting of the area surrounding Building 1220. Included is a description of the regional geology of the area surrounding Fort Monmouth as well as descriptions of the local geology and hydrogeology of the Main Post area.

Regional Geology

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

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

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

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

Local Geology

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

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

Hydrogeology

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

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

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

Therefore, the direction of shallow groundwater should be determined on a case-by-case basis.

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

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

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

Building 1220 was located approximately 1400 feet north of an unnamed stream, the nearest water body. Based on the Main Post topography, the groundwater flow in the area of Building 1220 is anticipated to be to the south.

1.3 HEALTH AND SAFETY

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

1.4 REMOVAL OF UNDERGROUND STORAGE TANK

1.4.1 General Procedures

- All underground obstructions (utilities, etc.) were identified 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 hole was made in the UST to allow for proper cleaning. Approximately 200 gallons of liquid from the UST and its associated piping were transported to an NJDEP-approved petroleum recycling and disposal company.

The UST was cleaned prior to removal from the excavation in accordance with the NJDEP regulations. After the UST was removed from the excavation, it was staged on polyethylene sheeting and examined for holes. A hole was observed during the inspection by the Sub-Surface Evaluator. Soils at the location of the holes were dark in color and appeared to be contaminated. An unknown amount of soil exhibiting OVA results >5 PPM were removed from the excavation. Groundwater was not encountered.

1.5 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The UST was transported to Mazza & Sons, Inc., Recycling Division. The transportation of the UST was in compliance with all applicable regulations and laws. Please refer to Appendix D for the UST disposal certificate.

2.3 POST-EXCAVATION SOIL SAMPLING AND RESULTS

To confirm the PID readings and verify the effectiveness of the soil excavation activities, 6 post-excavation soil samples were collected from within the UST and associated piping excavation on December 6, 1997. Four of the soil samples, 1220K-C through 1220K-F, were collected along the former piping. Two soil samples, 1220K-A and 1220K-B, were collected from the bottom of the excavation.

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

All samples were analyzed for total petroleum hydrocarbons (TPH) and total solids. Two samples, 1220K-A and 1220K-B, were also analyzed for VOC, SVOC, PCB, and metals. The TPH 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). There were no VOCs, SVOCs, or PCBs detected in the soil. Zinc was detected in both samples at concentrations slightly above the NJDEP Soil Cleanup Criteria. Zinc and other metals have been detected at elevated levels in the area. The zinc detected at the site is in accordance with background levels. The analytical data packages are provided in Appendix E.

2.4 GROUNDWATER SAMPLING

On November 6, 1998 and December 3, 1998, groundwater from Building 1220K was sampled for volatile organic compounds calibrated for xylene plus 15 tentatively identified compounds (VOC's), and semivolatile organic compounds plus 15 tentatively identified compounds (SVOC's). Sampling and analysis were performed in accordance with the NJDEP *Field Sampling Procedures Manual* and the *Technical Requirements For Site Remediation.*

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 SOIL SAMPLING RESULTS

Versar was retained by the U.S. Army DPW to implement a site/remedial investigation adjacent to a former No 2 fuel oil UST. The UST was associated with Building 1220K at the Main Post-West area of the U.S. Army Fort Monmouth Base. The objective of the site/remedial investigation activities were to remove from the ground all soil potentially impacted as the result of the past operation of the former UST.

Visibly stained soils and soils exhibiting elevated PID levels (greater than 5 ppm) of VOCs were excavated. Excavation activities continued until potentially impacted soil had been removed. All contaminated soil characterization and disposal was handled directly by the U.S. Army Fort Monmouth DPW.

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

3.2 GROUNDWATER SAMPLING RESULTS

The samples collected from Building 1220K on November 6, 1998 and December 3, 1998 contained no detectable compounds and were therefore in compliance with the New Jersey Ground Water Quality Criteria (GWQC). The analytical data package is provided in Appendix F. The full data package, including quality control, is on file at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey.

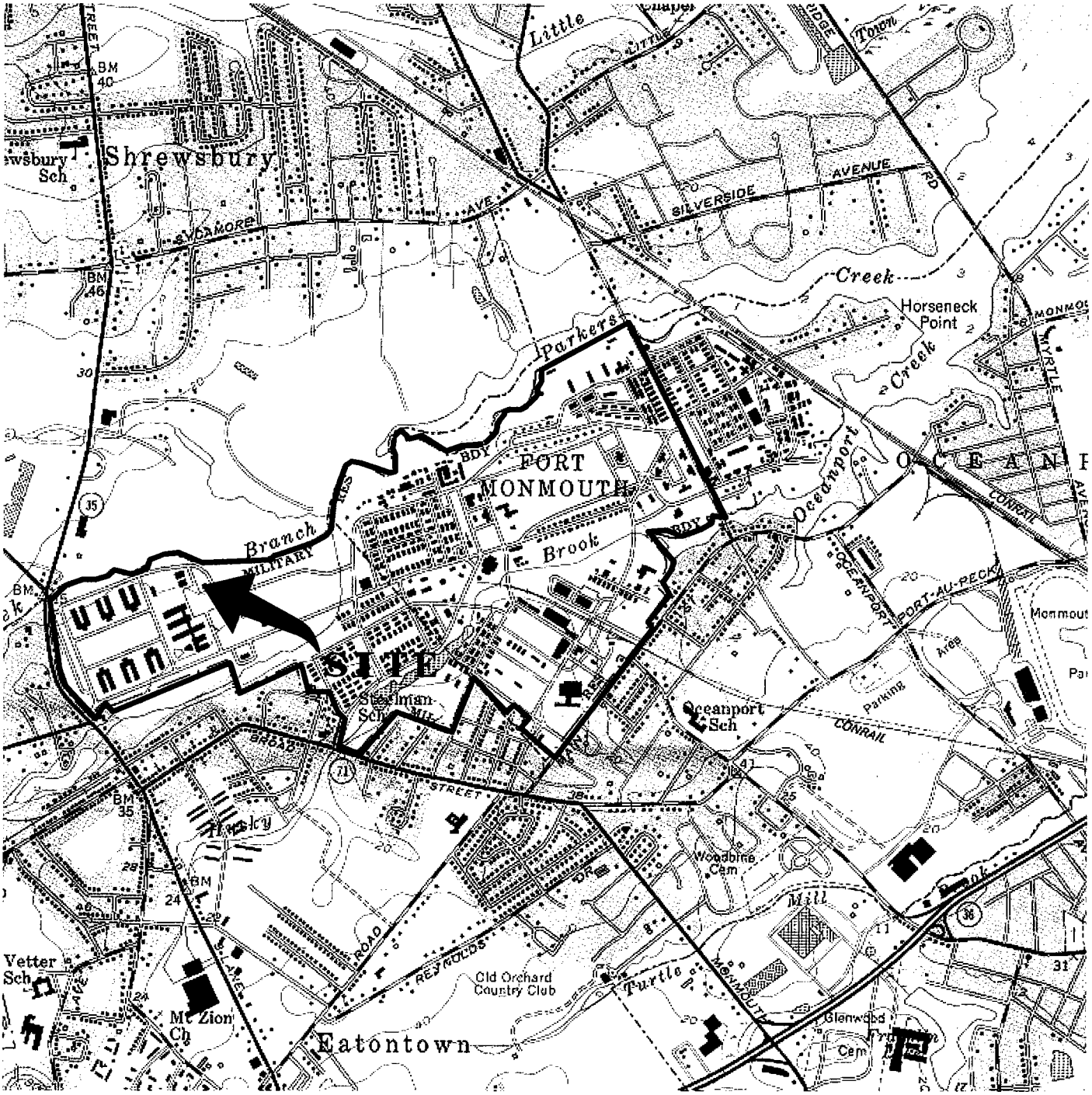
3.3 CONCLUSION AND RECOMMENDATIONS

The analytical results for all post-excavation soil samples collected from the UST closure excavation at Building 1220K were below the NJDEP soil cleanup criteria for total organic contaminants. Zinc levels were above NJDEP soil cleanup criteria but were normal relative to background metals concentrations.

Groundwater quality at Building 1220K complies with the New Jersey Ground Water Quality Criteria (GWQC).

No further action is proposed in regard to the closure and site assessment of UST No. 81533-184 at Building 1220K.

FIGURES



LONG BRANCH, N. J.

40073-C8-TF-024

1954

PHOTOREVISED 1981

DMA 6164 I SE-SERIES V822

NEW JERSEY

QUADRANGLE LOCATION

Mapped, edited and published by the Geological Survey

FIGURE 1

LOCATION MAP
Building 1220
Main-Post West
Fort Monmouth Army Base
Monmouth County, NJ

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

Scale: 1" = 2000'

Date: Dec. 1997

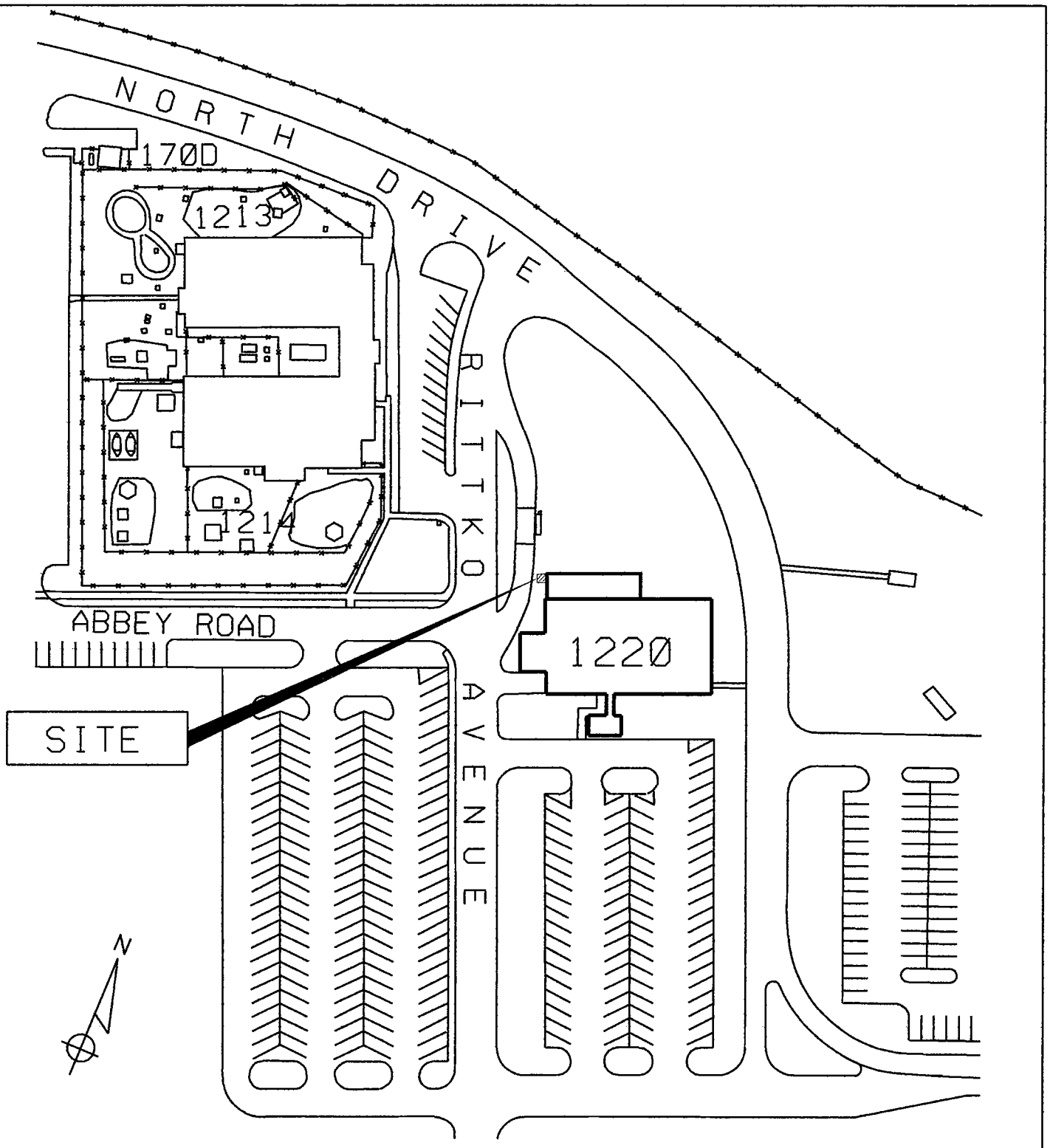
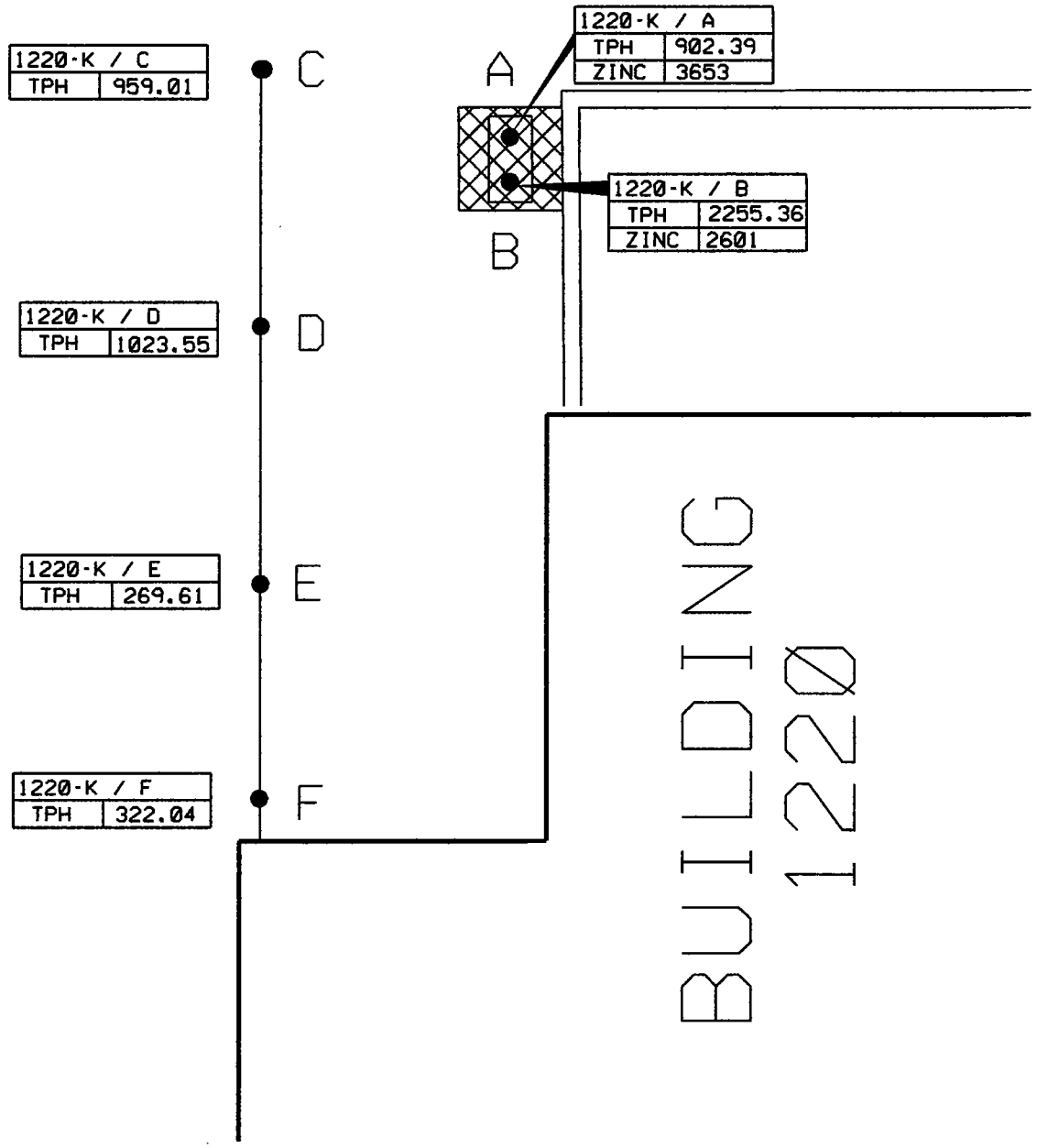


FIGURE 2
SITE MAP
BUILDING 1220
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

VERSAR
ENGINEERS, SCIENTISTS & PLANNERS
BRISTOL, PA.

SCALE: 1"=100' | DATE: DEC 1997

1220 FIG2



LEGEND

- SOIL SAMPLE LOCATION (12/16/97)
- LIMIT OF EXCAVATION (12/16/97)

NOTES:

1. ALL RESULTS IN MG/KG.
2. BGS - BELOW GROUND SURFACE

FIGURE 3
SOIL SAMPLING LOCATION MAP
BUILDING 1220-K
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

VERSAR
ENGINEERS, SCIENTISTS & PLANNERS
BRISTOL, PA.

SCALE: 1"=10' | DATE: AUG 2001

1220 F164

APPENDIX A

NJDEP UST CERTIFICATION FORM

(12/97) **New Jersey Department of Environmental Protection**

Site Remediation Program

UST Site/Remedial Investigation Report Certification Form

A. Facility Name : U.S. Army Fort Monmouth New Jersey
Facility Street Address : Directorate of Public Works Building 173
Municipality: Oceanport County: Monmouth

Block: _____ Lot(s): _____ Telephone Number : 732-532-6224

B. Owner (RP)'s Name: _____

Street Address: _____ City : _____

State: _____ Zip: _____ Telephone Number : _____

C. (Check as appropriate)

- ☐ Site Investigation Report (SIR) $500 Fee
- ☐ Remedial Investigation Report (RIR) $1000 Fee

D. (Complete all that apply)

- Assigned Case Manager: Ian Curtis, Federal Case Manager
- UST Registration Number : 0081533-230
- Incident Report Number : 95-8-15-1252-01
- Tank Closure Number: _____

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: Dinker Desai Signature: _____ UST Cert. No.: _____

Firm: U.S. Army Fort Monmouth Firm's UST Cert. Number: N/A – U.S. Army

Firm Address: Directorate of Public Works Buildings 173 City: Fort Monmouth

State:NJ Zip:07703 Telephone Number : 732-532-6224

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

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

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

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

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

Name (Print or Type): James Ott Title: Directorate of Public Works

Signature: _____

Company Name: U.S. Army Fort Monmouth Date: _____

APPENDIX B

WASTE MANIFEST

APPENDIX NOT AVAILABLE

AS OF THE DATE OF THIS REPORT

APPENDIX C

UST DISPOSAL CERTIFICATE

THIS CHECK IS DELIVERED FOR PAYMENT ON THE FOLLOWING ACCOUNTS.

DATE		AMOUNT	
TOTAL OF INVOICES			
LESS ____ % DISCOUNT			
LESS FREIGHT			
LESS			
TOTAL DEDUCTIONS			
AMOUNT OF CHECK			

1768

MAZZA & SONS, INC.
RECYCLING DIVISION
P.O. BOX 246
OAKHURST, NJ 07755

55-7233/2212

DATE 4/9/98

PAY TO THE ORDER OF Tecom Vinnell $ 97.80

Ninety Seven & 80/100 DOLLARS

Sovereign Bank

⑈001768⑈ ⑆221272332⑆000 109099286⑈

MAZZA & SONS, INC.

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

NO. 397

DATE. 9 APRIL 98

AST-REMOVED FROM B.430 of SMALL TANK from 1220

Customer's Name Tecom Vinnell

Address

	Weight	Price
Cast Iron		
Steel	1920	
Lt. Iron		
Copper #1		
Copper #2		

22360 LB

22220 LB

140

	Weight	Price
Lt. Copper		
Brass		
Alum Clean		
Lead		
Stainless		
Battery		

19.20

TOTAL AMOUNT:

APR - 9 1998

Ck# 1768

Weigher

Customer

APPENDIX D

SOIL ANALYTICAL DATA PACKAGE

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

REPORT OF ANALYSIS

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

Project: Total Petroleum Hydrocarbons
98-0001
Bldg. 1220

Project # 3224
Date Rec. 12/16/97
Date Compl. 12/18/97
Released by:

Daniel K. Wright
Laboratory Director

Table of Contents

Method Summary

NJDEP Method OQA-QAM-025-10/97

Gas Chromatographic Determination of Total Petroleum Hydrocarbons in Soil

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

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

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

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

PHC Conformance/Non-conformance Summary Report

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

Additional Comments:_____

Laboratory Authentication Statement

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

Daniel K. Wright
Laboratory Manager

Fort Monmouth Environmental Testing Laboratory

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

Chain of Custody Record

Customer: DPW-ENV
Phone #:
( )DERA (X)OMA ( )Other:_____

Project No: ~~1220~~ 930 98-0001
Location: 1220

Samplers Name / Company : GARY DiMARTINIS-TUS

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	TPHC	% SOLIDS	MUNSELL	VOA'S	BNA'S	PCB'S	PP. METALS	Remarks / Preservation Method
3224.01	1220-A	12-16-97	1134	SOIL	2	X	X	X	X	X	X	X	CENTER LINE @ 5.5' *
02	B		1124			↓	↓	↓	↓	↓	↓	↓	
03	DUP		—	↓	↓	↓	↓	↓		↓	↓	↓	FIELD DUPLICATE
04	TB		—	METHANOL	1				↓				TRIP BLANK
05	C		1154	SOIL		X	X	X					PIPING RUN @ 0.5'
06	D		1156			↓	↓	↓					
07	E		1158										
08	F	↓	1200	↓	↓	↓	↓	↓					↓ *

NOTE: OVA (#AS2114) CALIBRATED W/ 95ppm CH4 + ZERO (0) AIR @ 1180 HRS ON 12-16-97 BY G. DiMARTINIS.

Comments: * = SAMPLES KEPT BELOW 4°C.

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
[signature]	12-16-97 1517	[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
Turnaround time: (X)Standard 4 wks, ( )Rush ____ Days, ( )ASAP Verbal ____ Hrs.

Remarks: DEDICATED SAMPLING TOOLS USED.

print legibly

Custody.xls7/10/97

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

Client :	U.S. Army	**Lab. ID # :**	3224
	DPW. SELFM-PW-EV	**Date Rec'd:**	16-Dec-97
	Bldg. 173	**Analysis Start:**	17-Dec-97
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	18-Dec-97
Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	D. Deinhardt	**DICAR #:**	
Ext. Meth:	Shake	**Location #:**	1220

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3224.01	1220-A	**1.00**	14.98	82.89	189	**902.39**
3224.02	1220-B	**1.00**	15.10	79.62	195	**2255.36**
3224.03	1220-DUP	**1.00**	15.05	81.47	192	**3132.23**
3224.05	1220-C	**1.00**	15.24	89.76	172	**959.01**
3224.06	1220-D	**1.00**	15.35	90.38	169	**1023.55**
3224.07	1220-E	**1.00**	15.37	81.84	187	**269.61**
3224.08	1220-F	**1.00**	15.41	90.64	168	**322.04**
METHOD BLANK	17-Dec-97	**1.00**	15.00	100.00	157	**ND**

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright
Laboratory Director

LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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

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

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

1. Cover page, Title Page listing Lab Certification #, facility name and address, & date of report submitted _____
2. Table of Contents submitted _____
3. Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted _____
4. Document 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 ___/___/___

Laboratory Certification #13461

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

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 #: 3224.01
Sample Received: 12/16/97
Sample Matrix: Soil

Site: Bldg. 1220
Ft. Monmouth, New Jersey

Field ID#: 1220-A

METALS RESULTS SUMMARY (mg/Kg)

Element	Date of Analysis	Result (mg/Kg)	MDL (mg/Kg)
Antimony	02/05/98	1.02	0.24
Arsenic	02/05/98	13.51	0.24
Beryllium	02/05/98	0.49	0.06
Cadmium	02/05/98	ND	0.06
Chromium	02/05/98	61.82	0.06
Copper	02/05/98	7.12	0.35
Lead	02/05/98	20.02	0.24
Mercury	12/30/97	0.06	0.02
Nickel	02/05/98	4.17	0.06
Selenium	02/05/98	0.67	0.35
Silver	02/05/98	ND	0.35
Thallium	02/05/98	ND	0.35
Zinc	02/05/98	3653.00	0.12

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Daniel K. Wright
Lab 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 #: 3224.02
Sample Received: 12/16/97
Sample Matrix: Soil

Site: Bldg. 1220
Ft. Monmouth, New Jersey

Field ID#: 1220-B

METALS RESULTS SUMMARY (mg/Kg)

Element	Date of Analysis	Result (mg/Kg)	MDL (mg/Kg)
Antimony	02/05/98	0.68	0.23
Arsenic	02/05/98	12.72	0.23
Beryllium	02/05/98	0.54	0.06
Cadmium	02/05/98	ND	0.06
Chromium	02/05/98	65.80	0.06
Copper	02/05/98	8.58	0.34
Lead	02/05/98	13.25	0.23
Mercury	12/30/97	0.08	0.03
Nickel	02/05/98	5.68	0.06
Selenium	02/05/98	ND	0.34
Silver	02/05/98	ND	0.34
Thallium	02/05/98	ND	0.34
Zinc	02/05/98	2601.00	0.11

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Daniel K. Wright
Lab 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 #: Method Blank
Sample Received: NA
Sample Matrix: Aqueous

Site: Bldg. 1220
Ft. Monmouth, New Jersey

Field ID#: NA

METALS RESULTS SUMMARY (mg/Kg)

Element	Date of Analysis	Result (mg/Kg)	MDL (mg/Kg)
Antimony	02/05/98	ND	0.25
Arsenic	02/05/98	ND	0.25
Beryllium	02/05/98	ND	0.06
Cadmium	02/05/98	ND	0.06
Chromium	02/05/98	ND	0.06
Copper	02/05/98	ND	0.37
Lead	02/05/98	ND	0.25
Mercury	12/30/97	0.04	0.03
Nickel	02/05/98	ND	0.06
Selenium	02/05/98	ND	0.37
Silver	02/05/98	ND	0.37
Thallium	02/05/98	ND	0.37
Zinc	02/05/98	ND	0.12

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Daniel K. Wright
Lab 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 #: 3224.03
Sample Received: 12/16/97
Sample Matrix: Soil

Site: Bldg. 1220
Ft. Monmouth, New Jersey

Field ID#: Dup.

METALS RESULTS SUMMARY (mg/Kg)

Element	Date of Analysis	Result (mg/Kg)	MDL (mg/Kg)
Antimony	02/05/98	0.76	0.25
Arsenic	02/05/98	11.93	0.25
Beryllium	02/05/98	0.42	0.06
Cadmium	02/05/98	ND	0.06
Chromium	02/05/98	46.90	0.06
Copper	02/05/98	7.22	0.37
Lead	02/05/98	24.08	0.25
Mercury	12/30/97	0.08	0.03
Nickel	02/05/98	4.79	0.06
Selenium	02/05/98	0.63	0.37
Silver	02/05/98	ND	0.37
Thallium	02/05/98	ND	0.37
Zinc	02/05/98	1896.00	0.12

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established

Daniel K. Wright
Lab Manager

APPENDIX E

GROUNDWATER ANALYTICAL DATA PACKAGE

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

REPORT OF ANALYSIS

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

Project: Semi-Volatiles - EPA Method 625
OMA
1220

Project # 3224
Date Rec. 12/16/98
Date Compl. 01/27/98
Released by:

Daniel K. Wright
Laboratory Director

PROJECT Dec 23 1997

Notebook No. 68

Continued From Page

Sample ID	WG (gm)	IV	FV	Solvent	Surr sound Acid/BN	Mis
S BLK 14	—	160 mL	10mL	DCM		1mL
3231.13 MSD	20.45					
3223.01	20.67					
↓ .02	20.19					
↓ .03	20.74					
3224.01	20.28					
↓ .02	20.71					
↓ .03	20.87					
3229.01	20.77					
3234.01	20.22					
3234.03	20.55					

DCM LOT # L30252

BN SV0102797.02

Acid SV0102797.01

Surr SV0120497.01

Continued on Page

Read and Understood By

Signed

12/23/97

Date

Signed

Date

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Sample ID: **SBLK 14**

Lab Name: FMETL Lab Code 13461

Project 930445 Case No.: 3224 SDG No _____ Location B1220

Matrix: (soil/water) SOIL Lab Sample ID: SBLK 14

Sample wt/vol: 20 (g/ml) G Lab File ID: BN0864.D

Level: (low/med) LOW Date Received: 12/16/98

% Moisture: 0 decanted:(Y/N) N Date Extracted: 12/23/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/04/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	500	U
62-75-9	N-nitroso-dimethylamine	500	U
62-53-3	Aniline	500	U
111-44-4	bis(2-Chloroethyl)ether	500	U
541-73-1	1,3-Dichlorobenzene	500	U
106-46-7	1,4-Dichlorobenzene	500	U
100-51-6	Benzyl alcohol	500	U
95-50-1	1,2-Dichlorobenzene	500	U
108-60-1	bis(2-chloroisopropyl)ether	500	U
621-64-7	n-Nitroso-di-n-propylamine	500	U
67-72-1	Hexachloroethane	500	U
98-95-3	Nitrobenzene	500	U
78-59-1	Isophorone	500	U
111-91-1	bis(2-Chloroethoxy)methane	500	U
120-82-1	1,2,4-Trichlorobenzene	500	U
91-20-3	Naphthalene	500	U
106-47-8	4-Chloroaniline	500	U
87-68-3	Hexachlorobutadiene	500	U
91-57-6	2-Methylnaphthalene	500	U
77-47-4	Hexachlorocyclopentadiene	500	U
91-58-7	2-Chloronaphthalene	500	U
88-74-4	2-Nitroaniline	500	U
131-11-3	Dimethylphthalate	500	U
208-96-8	Acenaphthylene	500	U
606-20-2	2,6-Dinitrotoluene	500	U
99-09-2	3-Nitroaniline	500	U
83-32-9	Acenaphthene	500	U
132-64-9	Dibenzofuran	500	U
121-14-2	2,4-Dinitrotoluene	500	U
84-66-2	Diethylphthalate	500	U
86-73-7	Fluorene	500	U
7005-72-3	4-Chlorophenyl-phenylether	500	U
100-01-6	4-Nitroaniline	500	U
86-30-6	n-Nitrosodiphenylamine	500	U
103-33-3	Azobenzene	500	U
101-55-3	4-Bromophenyl-phenylether	500	U
118-74-1	Hexachlorobenzene	500	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Sample ID: **SBLK 14**

Lab Name: FMETL Lab Code 13461

Project 930445 Case No.: 3224 SDG No _____ Location B1220

Matrix: (soil/water) SOIL Lab Sample ID: SBLK 14

Sample wt/vol: 20 (g/ml) G Lab File ID: BN0864.D

Level: (low/med) LOW Date Received: 12/16/98

% Moisture: 0 decanted:(Y/N) N Date Extracted: 12/23/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/04/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
85-01-8	Phenanthrene	500	U
120-12-7	Anthracene	500	U
84-74-2	Di-n-butylphthalate	500	U
206-44-0	Fluoranthene	500	U
92-87-5	Benzidine	500	U
129-00-0	Pyrene	500	U
85-68-7	Butylbenzylphthalate	500	U
56-55-3	Benzo[a]anthracene	500	U
91-94-1	3,3'-Dichlorobenzidine	500	U
218-01-9	Chrysene	500	U
117-81-7	bis(2-Ethylhexyl)phthalate	500	U
117-84-0	Di-n-octylphthalate	500	U
205-99-2	Benzo[b]fluoranthene	500	U
207-08-9	Benzo[k]fluoranthene	500	U
50-32-8	Benzo[a]pyrene	500	U
193-39-5	Indeno[1,2,3-cd]pyrene	500	U
53-70-3	Dibenz[a,h]anthracene	500	U
191-24-2	Benzo[g,h,i]perylene	500	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Sample ID: **1220-A**

Lab Name: FMETL Lab Code 13461

Project 930445 Case No.: 3224 SDG No _____ Location B1220

Matrix: (soil/water) SOIL Lab Sample ID: 3224-01

Sample wt/vol: 20.28 (g/ml) G Lab File ID: BN0913.D

Level: (low/med) LOW Date Received: 12/16/98

% Moisture: 17.11 decanted:(Y/N) N Date Extracted: 12/23/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/27/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	590	U
62-75-9	N-nitroso-dimethylamine	590	U
62-53-3	Aniline	590	U
111-44-4	bis(2-Chloroethyl)ether	590	U
541-73-1	1,3-Dichlorobenzene	590	U
106-46-7	1,4-Dichlorobenzene	590	U
100-51-6	Benzyl alcohol	590	U
95-50-1	1,2-Dichlorobenzene	590	U
108-60-1	bis(2-chloroisopropyl)ether	590	U
621-64-7	n-Nitroso-di-n-propylamine	590	U
67-72-1	Hexachloroethane	590	U
98-95-3	Nitrobenzene	590	U
78-59-1	Isophorone	590	U
111-91-1	bis(2-Chloroethoxy)methane	590	U
120-82-1	1,2,4-Trichlorobenzene	590	U
91-20-3	Naphthalene	590	U
106-47-8	4-Chloroaniline	590	U
87-68-3	Hexachlorobutadiene	590	U
91-57-6	2-Methylnaphthalene	590	U
77-47-4	Hexachlorocyclopentadiene	590	U
91-58-7	2-Chloronaphthalene	590	U
88-74-4	2-Nitroaniline	590	U
131-11-3	Dimethylphthalate	590	U
208-96-8	Acenaphthylene	590	U
606-20-2	2,6-Dinitrotoluene	590	U
99-09-2	3-Nitroaniline	590	U
83-32-9	Acenaphthene	590	U
132-64-9	Dibenzofuran	590	U
121-14-2	2,4-Dinitrotoluene	590	U
84-66-2	Diethylphthalate	590	U
86-73-7	Fluorene	590	U
7005-72-3	4-Chlorophenyl-phenylether	590	U
100-01-6	4-Nitroaniline	590	U
86-30-6	n-Nitrosodiphenylamine	590	U
103-33-3	Azobenzene	590	U
101-55-3	4-Bromophenyl-phenylether	590	U
118-74-1	Hexachlorobenzene	590	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

1220-A

Lab Name: FMETL Contract:

Cert. No. 13461 Case No.: 3224 Project N 98-000 SDG No.

Matrix: (soil/water) SOIL Lab Sample ID: 3224-1

Sample wt/vol: 20.28 (g/ml) G Lab File ID: BN0913.D

Level: (low/med) LOW Date Received: 12/16/97

% Moisture: 17.11 decanted: (Y/N) N Date Analyzed: 01/27/98

Concentrated Extract Volume: 10000 (uL) Dilution Factor: 1.0

Injection Volume: 1.0 (uL) Soil Aliquot Volume: 1 (uL)

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

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Sample ID: **1220-B**

Lab Name: FMETL Lab Code 13461

Project 930445 Case No.: 3224 SDG No _____ Location B1220

Matrix: (soil/water) SOIL Lab Sample ID: 3224-02

Sample wt/vol: 20.71 (g/ml) G Lab File ID: BN0914.D

Level: (low/med) LOW Date Received: 12/16/98

% Moisture: 20.38 decanted:(Y/N) N Date Extracted: 12/23/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/27/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	610	U
62-75-9	N-nitroso-dimethylamine	610	U
62-53-3	Aniline	610	U
111-44-4	bis(2-Chloroethyl)ether	610	U
541-73-1	1,3-Dichlorobenzene	610	U
106-46-7	1,4-Dichlorobenzene	610	U
100-51-6	Benzyl alcohol	610	U
95-50-1	1,2-Dichlorobenzene	610	U
108-60-1	bis(2-chloroisopropyl)ether	610	U
621-64-7	n-Nitroso-di-n-propylamine	610	U
67-72-1	Hexachloroethane	610	U
98-95-3	Nitrobenzene	610	U
78-59-1	Isophorone	610	U
111-91-1	bis(2-Chloroethoxy)methane	610	U
120-82-1	1,2,4-Trichlorobenzene	610	U
91-20-3	Naphthalene	610	U
106-47-8	4-Chloroaniline	610	U
87-68-3	Hexachlorobutadiene	610	U
91-57-6	2-Methylnaphthalene	610	U
77-47-4	Hexachlorocyclopentadiene	610	U
91-58-7	2-Chloronaphthalene	610	U
88-74-4	2-Nitroaniline	610	U
131-11-3	Dimethylphthalate	610	U
208-96-8	Acenaphthylene	610	U
606-20-2	2,6-Dinitrotoluene	610	U
99-09-2	3-Nitroaniline	610	U
83-32-9	Acenaphthene	610	U
132-64-9	Dibenzofuran	610	U
121-14-2	2,4-Dinitrotoluene	610	U
84-66-2	Diethylphthalate	610	U
86-73-7	Fluorene	610	U
7005-72-3	4-Chlorophenyl-phenylether	610	U
100-01-6	4-Nitroaniline	610	U
86-30-6	n-Nitrosodiphenylamine	610	U
103-33-3	Azobenzene	610	U
101-55-3	4-Bromophenyl-phenylether	610	U
118-74-1	Hexachlorobenzene	610	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Sample ID: **1220-B**

Lab Name: FMETL Lab Code 13461

Project 930445 Case No.: 3224 SDG No _____ Location B1220

Matrix: (soil/water) SOIL Lab Sample ID: 3224-02

Sample wt/vol: 20.71 (g/ml) G Lab File ID: BN0914.D

Level: (low/med) LOW Date Received: 12/16/98

% Moisture: 20.38 decanted:(Y/N) N Date Extracted: 12/23/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/27/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
85-01-8	Phenanthrene	610	U
120-12-7	Anthracene	610	U
84-74-2	Di-n-butylphthalate	79	J
206-44-0	Fluoranthene	610	U
92-87-5	Benzidine	610	U
129-00-0	Pyrene	610	U
85-68-7	Butylbenzylphthalate	610	U
56-55-3	Benzo[a]anthracene	610	U
91-94-1	3,3'-Dichlorobenzidine	610	U
218-01-9	Chrysene	610	U
117-81-7	bis(2-Ethylhexyl)phthalate	610	U
117-84-0	Di-n-octylphthalate	610	U
205-99-2	Benzo[b]fluoranthene	610	U
207-08-9	Benzo[k]fluoranthene	610	U
50-32-8	Benzo[a]pyrene	610	U
193-39-5	Indeno[1,2,3-cd]pyrene	610	U
53-70-3	Dibenz[a,h]anthracene	610	U
191-24-2	Benzo[g,h,i]perylene	610	U

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

1220-B

Lab Name: FMETL Contract:

Cert. No. 13461 Case No.: 3224 Project N 98-000 SDG No.

Matrix: (soil/water) SOIL Lab Sample ID: 3224-2

Sample wt/vol: 20.71 (g/ml) G Lab File ID: BN0914.D

Level: (low/med) LOW Date Received: 12/16/97

% Moisture: 20.38 decanted: (Y/N) N Date Analyzed: 01/27/98

Concentrated Extract Volume: 10000 (uL) Dilution Factor: 1.0

Injection Volume: 1.0 (uL) Soil Aliquot Volume: 1 (uL)

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

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000504-44-9	Hexadecane, 2,6,11,15-tetrameth	17.52	5200	JN

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID.

TENTATIVELY IDENTIFIED COMPOUNDS

1220-DUP

Lab Name: FMETL Contract:

Cert. No. 13461 Case No.: 3224 Project N 98-000 SDG No.

Matrix: (soil/water) SOIL Lab Sample ID: 3224-3

Sample wt/vol: 20.87 (g/ml) G Lab File ID: BN0915.D

Level: (low/med) LOW Date Received: 12/16/97

% Moisture: 0 decanted: (Y/N) N Date Analyzed: 01/27/98

Concentrated Extract Volume: 10000 (uL) Dilution Factor: 1.0

Injection Volume: 1.0 (uL) Soil Aliquot Volume: 1 (uL)

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

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Sample ID: **1220-DUP**

Lab Name: FMETL Lab Code 13461

Project 930445 Case No.: 3224 SDG No _____ Location B1220

Matrix: (soil/water) SOIL Lab Sample ID: 3224-03

Sample wt/vol: 20.87 (g/ml) G Lab File ID: BN0915.D

Level: (low/med) LOW Date Received: 12/16/98

% Moisture: 18.53 decanted:(Y/N) N Date Extracted: 12/23/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/27/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
110-86-1	Pyridine	590	U
62-75-9	N-nitroso-dimethylamine	590	U
62-53-3	Aniline	590	U
111-44-4	bis(2-Chloroethyl)ether	590	U
541-73-1	1,3-Dichlorobenzene	590	U
106-46-7	1,4-Dichlorobenzene	590	U
100-51-6	Benzyl alcohol	590	U
95-50-1	1,2-Dichlorobenzene	590	U
108-60-1	bis(2-chloroisopropyl)ether	590	U
621-64-7	n-Nitroso-di-n-propylamine	590	U
67-72-1	Hexachloroethane	590	U
98-95-3	Nitrobenzene	590	U
78-59-1	Isophorone	590	U
111-91-1	bis(2-Chloroethoxy)methane	590	U
120-82-1	1,2,4-Trichlorobenzene	590	U
91-20-3	Naphthalene	590	U
106-47-8	4-Chloroaniline	590	U
87-68-3	Hexachlorobutadiene	590	U
91-57-6	2-Methylnaphthalene	590	U
77-47-4	Hexachlorocyclopentadiene	590	U
91-58-7	2-Chloronaphthalene	590	U
88-74-4	2-Nitroaniline	590	U
131-11-3	Dimethylphthalate	590	U
208-96-8	Acenaphthylene	590	U
606-20-2	2,6-Dinitrotoluene	590	U
99-09-2	3-Nitroaniline	590	U
83-32-9	Acenaphthene	590	U
132-64-9	Dibenzofuran	590	U
121-14-2	2,4-Dinitrotoluene	590	U
84-66-2	Diethylphthalate	590	U
86-73-7	Fluorene	590	U
7005-72-3	4-Chlorophenyl-phenylether	590	U
100-01-6	4-Nitroaniline	590	U
86-30-6	n-Nitrosodiphenylamine	590	U
103-33-3	Azobenzene	590	U
101-55-3	4-Bromophenyl-phenylether	590	U
118-74-1	Hexachlorobenzene	590	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Sample ID: **1220-DUP**

Lab Name: FMETL Lab Code 13461

Project 930445 Case No.: 3224 SDG No _____ Location B1220

Matrix: (soil/water) SOIL Lab Sample ID: 3224-03

Sample wt/vol: 20.87 (g/ml) G Lab File ID: BN0915.D

Level: (low/med) LOW Date Received: 12/16/98

% Moisture: 18.53 decanted:(Y/N) N Date Extracted: 12/23/97

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 01/27/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
85-01-8	Phenanthrene	590	U
120-12-7	Anthracene	590	U
84-74-2	Di-n-butylphthalate	85	J
206-44-0	Fluoranthene	590	U
92-87-5	Benzidine	590	U
129-00-0	Pyrene	590	U
85-68-7	Butylbenzylphthalate	590	U
56-55-3	Benzo[a]anthracene	590	U
91-94-1	3,3'-Dichlorobenzidine	590	U
218-01-9	Chrysene	590	U
117-81-7	bis(2-Ethylhexyl)phthalate	590	U
117-84-0	Di-n-octylphthalate	590	U
205-99-2	Benzo[b]fluoranthene	590	U
207-08-9	Benzo[k]fluoranthene	590	U
50-32-8	Benzo[a]pyrene	590	U
193-39-5	Indeno[1,2,3-cd]pyrene	590	U
53-70-3	Dibenz[a,h]anthracene	590	U
191-24-2	Benzo[g,h,i]perylene	590	U

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

REPORT OF ANALYSIS

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

Project: Volatiles - EPA Method 8260
B.1220
98-0001

Project # 3224
Date Rec. 12/16/97
Date Compl. 12/22/97
Released by:

Daniel K. Wright
Laboratory Director

Fort Monmouth Environmental Testing Laboratory

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

Chain of Custody Record

Customer: DPW-ENV
Phone #:
( )DERA (X)OMA ( )Other:
Project No: ~~1220~~ 210 98-0220.1
Location: 1220
Samplers Name / Company : GARY DiMARTINIS-TUS

Analysis Parameters: TPHC; % SOLIDS; MUNSELL; VOA'S; BNA'S; PCB'S; PP METALS

Comments: * - SAMPLES KEPT BELOW 4°C.

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	Remarks / Preservation Method
322A1 . 01	1220-A	12-16-97	1134	SOIL	2	CENTER LINE @ 5.5' *
02	B		1124			
03	DUP		—			FIELD DUPLICATE
04	TB		—	METHANOL	1	TRIP BLANK
05	C		1154	SOIL		PIPING RUN @ 0.5'
06	D		1156			
07	E		1158			
08	F		1200			

NOTE: OVA (HNU 2114) CALIBRATED W/ 95ppm CH4 + ZERO (0) AIR @ 1180 HRS ON 12-16-97 BY G. DiMARTINIS.

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
[signature]	12-16-97 1577	[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
Turnaround time: (X)Standard 4 wks, ( )Rush ____ Days, ( )ASAP Verbal ____ Hrs.

Remarks: DEDICATED SAMPLING TOOLS USED.

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

VBLK10

Lab Name: FMETL NJDEP # 13461

Project: 980001 Case No.: 3224 Location: 1220 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: VBLK10

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V02665.D

Level: (low/med) MED Date Received: 12/16/97

% Moisture: not dec. 0 Date Analyzed: 12/22/97

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

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

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1800	U
107131	Acrylonitrile	1800	U
75650	tert-Butyl alcohol	3200	U
1634044	Methyl-tert-Butyl ether	750	U
108203	Di-isopropyl ether	500	U
	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	750	U
74-83-9	Bromomethane	500	U
75-00-3	Chloroethane	750	U
75-69-4	Trichlorofluoromethane	500	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	500	U
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	500	U
156-60-5	trans-1,2-Dichloroethene	500	U
75-35-3	1,1-Dichloroethane	250	U
108-05-4	Vinyl Acetate	750	U
78-93-3	2-Butanone	750	U
	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
75-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	500	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	500	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
110-75-8	2-Chloroethyl vinyl ether	500	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	500	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	500	U
79-00-5	1,1,2-Trichloroethane	500	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	500	U
126-48-1	Dibromochloromethane	500	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	500	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

VBLK10

Lab Name: FMETL NJDEP # 13461

Project: 980001 Case No.: 3224 Location: 1220 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: VBLK10

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V02665.D

Level: (low/med) MED Date Received: 12/16/97

% Moisture: not dec. 0 Date Analyzed: 12/22/97

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	750	U
1330-20-7	o-Xylene	500	U
100-42-5	Styrene	500	U
75-25-2	Bromoform	500	U
79-34-5	1,1,2,2-Tetrachloroethane	500	U
541-73-1	1,3-Dichlorobenzene	750	U
106-46-7	1,4-Dichlorobenzene	750	U
95-50-1	1,2-Dichlorobenzene	750	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

VBLK10

Lab Name: FMETL NJDEP # 13461

Project: 980001 Case No.: 3224 Location: 1220 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: VBLK10

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V02665.D

Level: (low/med) MED Date Received: 12/16/97

% Moisture: not dec. 0 Date Analyzed: 12/22/97

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

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

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

Number TICs found: 1

CAS NO.	COMPOUND	RT	EST. CONC.	Q
1.	unknown hydrocarbon	12.17	4000	J

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

1220-A

Lab Name: FMETL NJDEP # 13461

Project: 980001 Case No.: 3224 Location: 1220 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3224.01

Sample wt/vol: 8.7 (g/ml) G Lab File ID: V02672.D

Level: (low/med) MED Date Received: 12/16/97

% Moisture: not dec. 17.11 Date Analyzed: 12/22/97

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

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

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2400	U
107131	Acrylonitrile	2400	U
75650	tert-Butyl alcohol	4500	U
1634044	Methyl-tert-Butyl ether	1000	U
108203	Di-isopropyl ether	700	U
	Dichlorodifluoromethane	1400	U
74-87-3	Chloromethane	350	U
75-01-4	Vinyl Chloride	1000	U
74-83-9	Bromomethane	700	U
75-00-3	Chloroethane	1000	U
75-69-4	Trichlorofluoromethane	700	U
75-35-4	1,1-Dichloroethene	350	U
67-64-1	Acetone	700	U
75-15-0	Carbon Disulfide	350	U
75-09-2	Methylene Chloride	700	U
156-60-5	trans-1,2-Dichloroethene	700	U
75-35-3	1,1-Dichloroethane	350	U
108-05-4	Vinyl Acetate	1000	U
78-93-3	2-Butanone	1000	U
	cis-1,2-Dichloroethene	350	U
67-66-3	Chloroform	350	U
75-55-6	1,1,1-Trichloroethane	350	U
56-23-5	Carbon Tetrachloride	700	U
71-43-2	Benzene	350	U
107-06-2	1,2-Dichloroethane	700	U
79-01-6	Trichloroethene	350	U
78-87-5	1,2-Dichloropropane	350	U
75-27-4	Bromodichloromethane	350	U
110-75-8	2-Chloroethyl vinyl ether	700	U
10061-01-5	cis-1,3-Dichloropropene	350	U
108-10-1	4-Methyl-2-Pentanone	700	U
108-88-3	Toluene	350	U
10061-02-6	trans-1,3-Dichloropropene	700	U
79-00-5	1,1,2-Trichloroethane	700	U
127-18-4	Tetrachloroethene	350	U
591-78-6	2-Hexanone	700	U
126-48-1	Dibromochloromethane	700	U
108-90-7	Chlorobenzene	350	U
100-41-4	Ethylbenzene	700	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

1220-A

Lab Name: FMETL NJDEP # 13461

Project: 980001 Case No.: 3224 Location: 1220 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3224.01

Sample wt/vol: 8.7 (g/ml) G Lab File ID: V02672.D

Level: (low/med) MED Date Received: 12/16/97

% Moisture: not dec. 17.11 Date Analyzed: 12/22/97

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	1000	U
1330-20-7	o-Xylene	700	U
100-42-5	Styrene	700	U
75-25-2	Bromoform	700	U
79-34-5	1,1,2,2-Tetrachloroethane	700	U
541-73-1	1,3-Dichlorobenzene	1000	U
106-46-7	1,4-Dichlorobenzene	1000	U
95-50-1	1,2-Dichlorobenzene	1000	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

1220-A

Lab Name: FMETL NJDEP # 13461

Project: 980001 Case No.: 3224 Location: 1220 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3224.01

Sample wt/vol: 8.7 (g/ml) G Lab File ID: V02672.D

Level: (low/med) MED Date Received: 12/16/97

% Moisture: not dec. 17.11 Date Analyzed: 12/22/97

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

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

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

1220-B

Lab Name: FMETL NJDEP # 13461

Project: 980001 Case No.: 3224 Location: 1220 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3224.02

Sample wt/vol: 9.1 (g/ml) G Lab File ID: V02673.D

Level: (low/med) MED Date Received: 12/16/97

% Moisture: not dec. 20.38 Date Analyzed: 12/22/97

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2400	U
107131	Acrylonitrile	2400	U
75650	tert-Butyl alcohol	4500	U
1634044	Methyl-tert-Butyl ether	1000	U
108203	Di-isopropyl ether	690	U
	Dichlorodifluoromethane	1400	U
74-87-3	Chloromethane	350	U
75-01-4	Vinyl Chloride	1000	U
74-83-9	Bromomethane	690	U
75-00-3	Chloroethane	1000	U
75-69-4	Trichlorofluoromethane	690	U
75-35-4	1,1-Dichloroethene	350	U
67-64-1	Acetone	690	U
75-15-0	Carbon Disulfide	350	U
75-09-2	Methylene Chloride	690	U
156-60-5	trans-1,2-Dichloroethene	690	U
75-35-3	1,1-Dichloroethane	350	U
108-05-4	Vinyl Acetate	1000	U
78-93-3	2-Butanone	1000	U
	cis-1,2-Dichloroethene	350	U
67-66-3	Chloroform	350	U
75-55-6	1,1,1-Trichloroethane	350	U
56-23-5	Carbon Tetrachloride	690	U
71-43-2	Benzene	350	U
107-06-2	1,2-Dichloroethane	690	U
79-01-6	Trichloroethene	350	U
78-87-5	1,2-Dichloropropane	350	U
75-27-4	Bromodichloromethane	350	U
110-75-8	2-Chloroethyl vinyl ether	690	U
10061-01-5	cis-1,3-Dichloropropene	350	U
108-10-1	4-Methyl-2-Pentanone	690	U
108-88-3	Toluene	350	U
10061-02-6	trans-1,3-Dichloropropene	690	U
79-00-5	1,1,2-Trichloroethane	690	U
127-18-4	Tetrachloroethene	350	U
591-78-6	2-Hexanone	690	U
126-48-1	Dibromochloromethane	690	U
108-90-7	Chlorobenzene	350	U
100-41-4	Ethylbenzene	690	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

1220-B

Lab Name: FMETL NJDEP # 13461

Project: 980001 Case No.: 3224 Location: 1220 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3224.02

Sample wt/vol: 9.1 (g/ml) G Lab File ID: V02673.D

Level: (low/med) MED Date Received: 12/16/97

% Moisture: not dec. 20.38 Date Analyzed: 12/22/97

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

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

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	1000	U
1330-20-7	o-Xylene	690	U
100-42-5	Styrene	690	U
75-25-2	Bromoform	690	U
79-34-5	1,1,2,2-Tetrachloroethane	690	U
541-73-1	1,3-Dichlorobenzene	1000	U
106-46-7	1,4-Dichlorobenzene	1000	U
95-50-1	1,2-Dichlorobenzene	1000	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

1220-B

Lab Name: FMETL NJDEP # 13461

Project: 980001 Case No.: 3224 Location: 1220 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3224.02

Sample wt/vol: 9.1 (g/ml) G Lab File ID: V02673.D

Level: (low/med) MED Date Received: 12/16/97

% Moisture: not dec. 20.38 Date Analyzed: 12/22/97

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

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

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

1220-DUP

Lab Name: FMETL NJDEP # 13461

Project: 980001 Case No.: 3224 Location: 1220 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3224.03

Sample wt/vol: 9.4 (g/ml) G Lab File ID: V02674.D

Level: (low/med) MED Date Received: 12/16/97

% Moisture: not dec. 18.53 Date Analyzed: 12/22/97

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

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

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	2300	U
107131	Acrylonitrile	2300	U
75650	tert-Butyl alcohol	4300	U
1634044	Methyl-tert-Butyl ether	980	U
108203	Di-isopropyl ether	660	U
	Dichlorodifluoromethane	1300	U
74-87-3	Chloromethane	330	U
75-01-4	Vinyl Chloride	980	U
74-83-9	Bromomethane	660	U
75-00-3	Chloroethane	980	U
75-69-4	Trichlorofluoromethane	660	U
75-35-4	1,1-Dichloroethene	330	U
67-64-1	Acetone	660	U
75-15-0	Carbon Disulfide	330	U
75-09-2	Methylene Chloride	660	U
156-60-5	trans-1,2-Dichloroethene	660	U
75-35-3	1,1-Dichloroethane	330	U
108-05-4	Vinyl Acetate	980	U
78-93-3	2-Butanone	980	U
	cis-1,2-Dichloroethene	330	U
67-66-3	Chloroform	330	U
75-55-6	1,1,1-Trichloroethane	330	U
56-23-5	Carbon Tetrachloride	660	U
71-43-2	Benzene	330	U
107-06-2	1,2-Dichloroethane	660	U
79-01-6	Trichloroethene	330	U
78-87-5	1,2-Dichloropropane	330	U
75-27-4	Bromodichloromethane	330	U
110-75-8	2-Chloroethyl vinyl ether	660	U
10061-01-5	cis-1,3-Dichloropropene	330	U
108-10-1	4-Methyl-2-Pentanone	660	U
108-88-3	Toluene	330	U
10061-02-6	trans-1,3-Dichloropropene	660	U
79-00-5	1,1,2-Trichloroethane	660	U
127-18-4	Tetrachloroethene	330	U
591-78-6	2-Hexanone	660	U
126-48-1	Dibromochloromethane	660	U
108-90-7	Chlorobenzene	330	U
100-41-4	Ethylbenzene	660	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

1220-DUP

Lab Name: FMETL NJDEP # 13461

Project: 980001 Case No.: 3224 Location: 1220 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3224.03

Sample wt/vol: 9.4 (g/ml) G Lab File ID: V02674.D

Level: (low/med) MED Date Received: 12/16/97

% Moisture: not dec. 18.53 Date Analyzed: 12/22/97

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

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

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	980	U
1330-20-7	o-Xylene	660	U
100-42-5	Styrene	660	U
75-25-2	Bromoform	660	U
79-34-5	1,1,2,2-Tetrachloroethane	660	U
541-73-1	1,3-Dichlorobenzene	980	U
106-46-7	1,4-Dichlorobenzene	980	U
95-50-1	1,2-Dichlorobenzene	980	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

1220-DUP

Lab Name: FMETL NJDEP # 13461

Project: 980001 Case No.: 3224 Location: 1220 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3224.03

Sample wt/vol: 9.4 (g/ml) G Lab File ID: V02674.D

Level: (low/med) MED Date Received: 12/16/97

% Moisture: not dec. 18.53 Date Analyzed: 12/22/97

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

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

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

1220-TB

Lab Name: FMETL NJDEP # 13461

Project: 980001 Case No.: 3224 Location: 1220 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3224.04

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V02675.D

Level: (low/med) MED Date Received: 12/16/97

% Moisture: not dec. 0 Date Analyzed: 12/22/97

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

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

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
107028	Acrolein	1800	U
107131	Acrylonitrile	1800	U
75650	tert-Butyl alcohol	3200	U
1634044	Methyl-tert-Butyl ether	750	U
108203	Di-isopropyl ether	500	U
	Dichlorodifluoromethane	1000	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	750	U
74-83-9	Bromomethane	500	U
75-00-3	Chloroethane	750	U
75-69-4	Trichlorofluoromethane	500	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	500	U
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	500	U
156-60-5	trans-1,2-Dichloroethene	500	U
75-35-3	1,1-Dichloroethane	250	U
108-05-4	Vinyl Acetate	750	U
78-93-3	2-Butanone	750	U
	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
75-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	500	U
71-43-2	Benzene	250	U
107-06-2	1,2-Dichloroethane	500	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
110-75-8	2-Chloroethyl vinyl ether	500	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-Pentanone	500	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	500	U
79-00-5	1,1,2-Trichloroethane	500	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	500	U
126-48-1	Dibromochloromethane	500	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	500	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

FIELD ID.

1220-TB

Lab Name: FMETL NJDEP # 13461

Project: 980001 Case No.: 3224 Location: 1220 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3224.04

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V02675.D

Level: (low/med) MED Date Received: 12/16/97

% Moisture: not dec. 0 Date Analyzed: 12/22/97

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

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

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/KG	Q
1330-20-7	m+p-Xylenes	750	U
1330-20-7	o-Xylene	500	U
100-42-5	Styrene	500	U
75-25-2	Bromoform	500	U
79-34-5	1,1,2,2-Tetrachloroethane	500	U
541-73-1	1,3-Dichlorobenzene	750	U
106-46-7	1,4-Dichlorobenzene	750	U
95-50-1	1,2-Dichlorobenzene	750	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID.

1220-TB

Lab Name: FMETL NJDEP # 13461

Project: 980001 Case No.: 3224 Location: 1220 SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 3224.04

Sample wt/vol: 10.0 (g/ml) G Lab File ID: V02675.D

Level: (low/med) MED Date Received: 12/16/97

% Moisture: not dec. 0 Date Analyzed: 12/22/97

GC Column: Rtx502.2 ID: 0.25 (mm) Dilution Factor: 1.0

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

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

Number TICs found: 0

CAS NO.	COMPOUND	RT	EST. CONC.	Q

APPENDIX F

GROUNDWATER ANALYTICAL DATA PACKAGE

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS
PHONE: (732)532-6224 FAX: (732)532-3484
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING
NJDEP LABORATORY CERTIFICATION # 13461

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

BLDG. 1220

Field Location No. & Location	Laboratory Sample ID#	Matrix	Date and Time Of Collection	Date Received
Trip Blank	4107.01	Aqueous	03-Dec-98	12/03/98
Field Blank	4107.02	Aqueous	03-Dec-98 10:56	12/03/98
Bldg. 1220 B-1	4107.03	Aqueous	03-Dec-98 13:40	12/03/98
Bldg. 1220 B-1	4107.04	Aqueous	03-Dec-98 14:16	12/03/98
Bldg. 1220 B-2	4107.05	Aqueous	03-Dec-98 14:54	12/03/98
Bldg. 1220 B-2	4107.06	Aqueous	03-Dec-98 15:12	12/03/98
Field Dup.	4107.07	Aqueous	03-Dec-98	12/03/98

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

2-7-99
Daniel Wright/Date
Laboratory Director

Table of Contents

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

FOR BLDG. # 1220- [B-2]

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

Objective:

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

1. Methods

A. A solid push - rod (bull point) is used to create a narrow diameter hole to a depth below the water table. A piece of schedule 40 PVC screen with 0.010-inch slots and an end cap is placed to the bottom of the hole. Glues or adhesives are not used for joining the casing. Threaded PVC casing is used. No filter or gravel pack is used.

2. Installation

A. Using a Geoprobe, a borehole was advanced with a pre-probe with a diameter slightly larger than the casing. The hole was made to a depth of 22 feet. The water table was at 18 feet below ground surface.

B. The screened section of PVC was placed into the borehole so the screened section was across the ground water table from 17 - 22 feet. Riser casing from 17 - +3 feet.

3. Purging

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

4. Sampling

A. Sampling methods, sample preservation requirements, sample handling times, decontamination procedure for field equipment, and frequency for field blanks, field duplicates and trip blanks conform to applicable industry methods such as those specified in the NJDEP "Field Sampling Procedures Manual" in effect as of the date on which sampling is performed. Any deviations from the methods in the "Field Sampling Procedures Manual" pursuant to N.J.A.C. 7:26E-1.6(c) has been approved by the person responsible for conducting the remediation.

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

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

5. Quality Assurance/Quality Control

A. Decontamination

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

1. Remove all adherent soil material.
2. Wash with a laboratory grade glassware detergent.
3. Rinsed with potable water.
4. Rinse with distilled and deionized ASTM Type II water.

B. Field Blanks

1 Field blank was shared with bldg. 2700 CW-1 taken same day.

C. Sample bottles: Supplied by Environmental Sampling Supply, Oakland, Calif. The sample bottles are certified clean and are sealed upon delivery.

D. P.V.C. Screens: Supplied by Bedrock Enterprises, Forked River N.J.

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

Mark Laura 12-2-98
Mark Laura / Date

METHODOLOGY SUMMARY

CONFORMANCE/ NON-CONFORMANCE SUMMARY

LABORATORY CHRONICLE

Laboratory Chronicle

Lab ID: 4107 **Site:** Bldg 1220

	Date	Hold Time
Date Sampled	12/03/98	NA
Receipt/Refrigeration	12/03/98	NA
Extractions		
1. Base Neutrals	12/08/98	14 days
Analyses		
1. Volatile Organics	12/08,09/98	14 days
2. Base Neutrals	12/18,19/98	40 days

VOLATILE ORGANICS

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

Definition of Qualifiers

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

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

Data File Nam	**vb02291.d**	Sample Name	**Vblk70**
Operator	**Skelton**	Field ID	**Vblk70**
Date Acquired	**8 Dec 98 7:00 pm**	Sample Multiplier	**1**

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

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

Qualifiers

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Vblk70**

Lab Name: FMETL Project 980932

NJDEP# 13461 Case No.: 4107 SDG No _____ Location UST

Matrix: (soil/water) WATER Lab Sample ID: Vblk70

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB02291.D

Level: (low/med) LOW Date Received: 12/03/98

% Moisture: not dec. _____ Date Analyzed: 12/08/98

GC Column: HP5MS 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

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

Data File Nam	**vb02304.d**	Sample Name	**4107.01**
Operator	**Skelton**	Field ID	**Trip Blank**
Date Acquired	**9 Dec 98 4:41 am**	Sample Multiplier	**1**

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

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

Qualifiers

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID

TENTATIVELY IDENTIFIED COMPOUNDS

Trip Blank

Lab Name: FMETL Project 980932

NJDEP# 13461 Case No.: 4107 SDG No _____ Location UST

Matrix: (soil/water) WATER Lab Sample ID: 4107.01

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB02304.D

Level: (low/med) LOW Date Received: 12/03/98

% Moisture: not dec. _____ Date Analyzed: 12/09/98

GC Column: HP5MS 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

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

Data File Nam	**vb02305.d**	Sample Name	**4107.02**
Operator	**Skelton**	Field ID	**Field Blank**
Date Acquired	**9 Dec 98 5:25 am**	Sample Multiplier	**1**

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

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

Qualifiers

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID

TENTATIVELY IDENTIFIED COMPOUNDS

Field Blank

Lab Name: FMETL Project 980932

NJDEP# 13461 Case No.: 4107 SDG No _____ Location UST

Matrix: (soil/water) WATER Lab Sample ID: 4107.02

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB02305.D

Level: (low/med) LOW Date Received: 12/03/98

% Moisture: not dec. _____ Date Analyzed: 12/09/98

GC Column: HP5MS 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

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

Data File Nam	**vb02306.d**	Sample Name	**4107.03**
Operator	**Skelton**	Field ID	**Bldg1220B-1**
Date Acquired	**9 Dec 98 6:10 am**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
	Dichlorodifluoromethan			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone	10.50	121721	11.39 ug/L	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ethe			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloroprope			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethan			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

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

Qualifiers

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Bldg. 1220B-1**

Lab Name: FMETL Project 980932

NJDEP# 13461 Case No.: 4107 SDG No _____ Location UST

Matrix: (soil/water) WATER Lab Sample ID: 4107.03

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB02306.D

Level: (low/med) LOW Date Received: 12/03/98

% Moisture: not dec. _____ Date Analyzed: 12/09/98

GC Column: HP5MS 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

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

Data File Nam	**vb02307.d**	Sample Name	**4107.05**
Operator	**Skelton**	Field ID	**Bldg1220B-2**
Date Acquired	**9 Dec 98 6:55 am**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
	Dichlorodifluoromethan			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane	8.55	3953481	39.87 ug/L	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ethe			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloroprope			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethan			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

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

Qualifiers

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Bldg. 1220B-2**

Lab Name: FMETL Project 980932

NJDEP# 13461 Case No.: 4107 SDG No _____ Location UST

Matrix: (soil/water) WATER Lab Sample ID: 4107.05

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB02307.D

Level: (low/med) LOW Date Received: 12/03/98

% Moisture: not dec. _____ Date Analyzed: 12/09/98

GC Column: HP5MS 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

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

Data File Nam	**VB02308.D**	Sample Name	**4107.07**
Operator	**Skelton**	Field ID	**Field Dup**
Date Acquired	**9 Dec 98 7:39 am**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
	Dichlorodifluoromethan			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone	10.51	110013	10.80 ug/L	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ethe			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloroprope			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethan			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

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

Qualifiers

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID

TENTATIVELY IDENTIFIED COMPOUNDS

Field Dup

Lab Name: FMETL Project 980932

NJDEP# 13461 Case No.: 4107 SDG No _____ Location UST

Matrix: (soil/water) WATER Lab Sample ID: 4107.07

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB02308.D

Level: (low/med) LOW Date Received: 12/03/98

% Moisture: not dec. _____ Date Analyzed: 12/09/98

GC Column: HP5MS 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

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field ID: **1220B-2**

Lab Name: FMETL Lab Cod 13461

Project: 98-0932 Case No.: 4107 Location: UST SDG No:

Matrix: (soil/water) WATER Lab Sample ID: 4107.06

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN02405.D

Level: (low/med) LOW Date Received: 12/3/98

% Moisture: decanted: (Y/N) N Date Extracted: 12/8/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/18/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000301-02-0	9-Octadecenamide, (Z)-	26.54	9	JN

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BN02406.D**	Sample Name	**4107.07**
Operator	**Skelton**	Misc Info	**Field Dup**
Date Acquired	**18-Dec-98**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	5.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.94	ug/L	
62-53-3	Aniline			not detected	NLE	0.15	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.48	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.23	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.18	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.16	ug/L	
108-60-1	bis(2-chloroisopropyl)ether			not detected	300	0.61	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.33	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.46	ug/L	
78-59-1	Isophorone			not detected	100	0.35	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.46	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.26	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.25	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.25	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	0.19	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.38	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.16	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	1.50	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.32	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.21	ug/L	
131-11-3	Dimethylphthalate	14.64	14268	1.63 ug/L	7000	0.18	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.19	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.31	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.26	ug/L	
83-32-9	Acenaphthene			not detected	400	0.26	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.32	ug/L	
121-14-2	2,4-Dinitrotoluene			not detected	10	0.36	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.82	ug/L	
86-73-7	Fluorene			not detected	300	0.29	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.31	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	0.90	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.23	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.80	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.55	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.82	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.18	ug/L	
120-12-7	Anthracene			not detected	2000	0.19	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.23	ug/L	
206-44-0	Fluoranthene			not detected	300	0.41	ug/L	
92-87-5	Benzidine			not detected	50	1.45	ug/L	
129-00-0	Pyrene			not detected	200	0.32	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.47	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.22	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	0.46	ug/L	
218-01-9	Chrysene			not detected	20	0.20	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	0.51	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	0.82	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.37	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	0.32	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.31	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	0.79	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.28	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.40	ug/L	

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

Qualifiers

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

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

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field ID: **Field Dup**

Lab Name: FMETL Lab Cod 13461

Project: 98-0932 Case No.: 4107 Location: UST SDG No:

Matrix: (soil/water) WATER Lab Sample ID: 4107.07

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN02406.D

Level: (low/med) LOW Date Received: 12/3/98

% Moisture: decanted: (Y/N) N Date Extracted: 12/8/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 12/18/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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

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

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

1. Cover page, Title Page listing Lab Certification #, facility name and address, & date of report submitted ✓
2. Table of Contents submitted ✓
3. Summary Sheets listing analytical results for all targeted and non-targeted compounds submitted ✓
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 _____

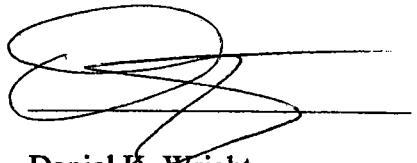
Date 2/7/99

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

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS
PHONE: (732)532-6224 FAX: (732)532-3484
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING
NJDEP LABORATORY CERTIFICATION # 13461

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

BLDG. 1220

Field Location No. & Location	Laboratory Sample ID#	Matrix	Date and Time Of Collection	Date Received
Trip Blank	4035.01	Aqueous	06-Nov-98	11/06/98
Field Blank	4035.02	Aqueous	06-Nov-98 09:29	11/06/98
Bldg. 1220 B-1 16'-19'	4035.05	Aqueous	06-Nov-98 13:30	11/06/98
Bldg. 1220 B-1 16'-19'	4035.06	Aqueous	06-Nov-98 14:15	11/06/98
Bldg. 1220 B-2 18'-21'	4035.07	Aqueous	06-Nov-98 13:50	11/06/98
Bldg. 1220 B-2 18'-21'	4035.08	Aqueous	06-Nov-98 14:30	11/06/98

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

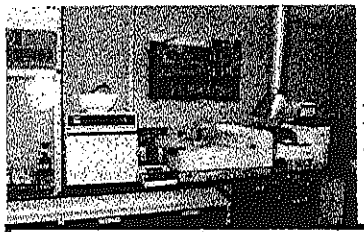
12-8-98
Daniel Wright/Date
Laboratory Director

ENCLOSURE:
CHAIN OF CUSTODY
FIELD DOCUMENTATION
RESULTS

Table of Contents

CHAIN OF CUSTODY

000001



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-3484 EMail:appleby@doim6.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: CHRIS APPLEBY / URSAL
Phone #: 126224
( )DERA (✓)OMA ( )Other: TMAP

Project No:
Location: BLDG. 2700-CW-1-PIT, BLDG. 2504 + BLDG. 1220

Samplers Name / Company : MARK LAURIA TVS

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	VOA + 15	BN + 15							Remarks / Preservation Method
4035. 1	TRIP BLANK	11-6-98	—	AQ.	2	X								HCL
2	FIELD BLANK	"	0929	"	3	X	X							HCL/<4°C
3	2700-CW-1-PIT - 8.5'/11.5'	"	0953	"	2	X								SAMPLES FOR CHRIS APPLEBY (HCL) + JOSEPH FALLON
4	BLDG. 2504 - 8.9'-11.9'	"	1100	"	3	X	X							HCL/<4°C
5	BLDG. 1220-B-1 - 16-19'	"	1330	"	2	X								HCL
6	" 4-B-1 - "	"	1415	"	1		X							<4°C
7	BLDG. 1220-B-2 - ~~16-19'~~ 18-21'	"	1350	"	2	X								HCL
8	BLDG. 1220-B-2- "	"	1430	"	1		X							<4°C
9	FIELD DUP.	"	—	"	3	X	X							HCL/<4°C

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
	11-6-98 1515				
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: (_)Full, (✓)Reduced, (_)Standard, (_)Screen / non-certified
Turnaround time: (✓)Standard 4 wks, (_)Rush ____ Days, (_)ASAP Verbal ____Hrs.

Remarks:

20000

FIELD DOCUMENTATION

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

FOR BLDG. # 1220- [B-1]

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

Objective:

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

1. Methods

A. A solid push - rod (bull point) is used to create a narrow diameter hole to a depth below the water table. A piece of schedule 40 PVC screen with 0.010-inch slots and an end cap is placed to the bottom of the hole. Glues or adhesives are not used for joining the casing. Threaded PVC casing is used. No filter or gravel pack is used.

2. Installation

A. Using a Geoprobe, a borehole was advanced with a pre-probe with a diameter slightly larger than the casing. The hole was made to a depth of 20 feet. The water table was at 16 feet below ground surface.

B. The screened section of PVC was placed into the borehole so the screened section was across the ground water table from 14 - 19 feet. Riser casing from 14 -+1 feet.

3. Purging

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

4. Sampling

A. Sampling methods, sample preservation requirements, sample handling times, decontamination procedure for field equipment, and frequency for field blanks, field duplicates and trip blanks conform to applicable industry methods such as those specified in the NJDEP "Field Sampling Procedures Manual" in effect as of the date on which sampling is performed. Any deviations from the methods in the "Field Sampling Procedures Manual" pursuant to N.J.A.C. 7:26E-1.6(c) has been approved by the person responsible for conducting the remediation.

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

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

5. Quality Assurance/Quality Control

A. Decontamination

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

1. Remove all adherent soil material.
2. Wash with a laboratory grade glassware detergent.
3. Rinsed with potable water.
4. Rinse with distilled and deionized ASTM Type II water.

B. Field Blanks

1 Field blank was shared with bldg. 2700 CW-1 taken same day.

C. Sample bottles: Supplied by Environmental Sampling Supply, Oakland, Calif. The sample bottles are certified clean and are sealed upon delivery.

D. P.V.C. Screens: Supplied by Bedrock Enterprises, Forked River N.J.

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

Mark Laura 12-2-98
Mark Laura / Date

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

FOR BLDG. # 1220- [B-2]

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

Objective:

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

1. Methods

A. A solid push - rod (bull point) is used to create a narrow diameter hole to a depth below the water table. A piece of schedule 40 PVC screen with 0.010-inch slots and an end cap is placed to the bottom of the hole. Glues or adhesives are not used for joining the casing. Threaded PVC casing is used. No filter or gravel pack is used.

2. Installation

A. Using a Geoprobe, a borehole was advanced with a pre-probe with a diameter slightly larger than the casing. The hole was made to a depth of 22 feet. The water table was at 18 feet below ground surface.

B. The screened section of PVC was placed into the borehole so the screened section was across the ground water table from 17 - 22 feet. Riser casing from 17 - +3 feet.

3. Purging

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

4. Sampling

A. Sampling methods, sample preservation requirements, sample handling times, decontamination procedure for field equipment, and frequency for field blanks, field duplicates and trip blanks conform to applicable industry methods such as those specified in the NJDEP "Field Sampling Procedures Manual" in effect as of the date on which sampling is performed. Any deviations from the methods in the "Field Sampling Procedures Manual" pursuant to N.J.A.C. 7:26E-1.6(c) has been approved by the person responsible for conducting the remediation.

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

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

5. Quality Assurance/Quality Control

A. Decontamination

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

1. Remove all adherent soil material.
2. Wash with a laboratory grade glassware detergent.
3. Rinsed with potable water.
4. Rinse with distilled and deionized ASTM Type II water.

B. Field Blanks

1 Field blank was shared with bldg. 2700 CW-1 taken same day.

C. Sample bottles: Supplied by Environmental Sampling Supply, Oakland, Calif. The sample bottles are certified clean and are sealed upon delivery.

D. P.V.C. Screens: Supplied by Bedrock Enterprises, Forked River N.J.

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

Mark Laura 12-2-98
Mark Laura / Date

METHODOLOGY SUMMARY

Methodology Summary

EPA Method 624
Gas Chromatographic Determination of Volatiles in Water

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

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

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

CONFORMANCE/ NON-CONFORMANCE SUMMARY

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

Indicate Yes, No, N/A

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

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

Indicate
Yes, No, N/A

10. Internal Standard Area/Retention Time Shift Meet Criteria — YES
(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 — 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:
Field dup performed on 4035.04 Bldg 650' 8.9-11.9'

Laboratory Manager:_____ Date: 12-8-94

000012

LABORATORY CHRONICLE

Laboratory Chronicle

Lab ID: 4035 **Site:** Bldg. 1220

	Date	Hold Time
Date Sampled	11/06/98	NA
Receipt/Refrigeration	11/06/98	NA
Extractions		
1. Base Neutrals	11/10/98	14 days
Analyses		
1. Volatile Organics	11/10,11/98	14 days
2. Base Neutrals	11/18,19/98	40 days

VOLATILE ORGANICS

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEPE # 13461

Definition of Qualifiers

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

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

Data File Nam	VB02067.D	Sample Name	VBLK64
Operator	Skelton	Field ID	VBLK64
Date Acquired	10 Nov 98 3:32 pm	Sample Multiplier	1

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

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

Qualifiers

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID

TENTATIVELY IDENTIFIED COMPOUNDS

Vblk64

Lab Name: FMETL Project 980932

NJDEP# 13461 Case No.: 4035 SDG No _____ Location UST

Matrix: (soil/water) WATER Lab Sample ID: VBLK64

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB02067.D

Level: (low/med) LOW Date Received: 11/06/98

% Moisture: not dec. _____ Date Analyzed: 11/10/98

GC Column: HP5MS 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

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

Data File Nam	vh02079.d	Sample Name	4035.01
Operator	Skelton	Field ID	Trip Blank
Date Acquired	11 Nov 98 12:38 am	Sample Multiplier	1

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

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

Qualifiers

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Trip Blank**

Lab Name: FMETL Project 980932

NJDEP# 13461 Case No.: 4035 SDG No _____ Location UST

Matrix: (soil/water) WATER Lab Sample ID: 4035.01

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB02079.D

Level: (low/med) LOW Date Received: 11/06/98

% Moisture: not dec. _____ Date Analyzed: 11/11/98

GC Column: HP5MS 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

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

Data File Nam	vb02080.d	Sample Name	4035.02
Operator	Skelton	Field ID	Field Blank
Date Acquired	11 Nov 98 1:23 am	Sample Multiplier	1

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

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

Qualifiers

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID

TENTATIVELY IDENTIFIED COMPOUNDS

Field Blank

Lab Name: FMETL Project 980932

NJDEP# 13461 Case No.: 4035 SDG No _____ Location UST

Matrix: (soil/water) WATER Lab Sample ID: 4035.02

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB02080.D

Level: (low/med) LOW Date Received: 11/06/98

% Moisture: not dec. _____ Date Analyzed: 11/11/98

GC Column: HP5MS 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

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

Data File Nam	vb02083.d	Sample Name	4035.05
Operator	Skelton	Field ID	Bldg 1220-B-1
Date Acquired	11 Nov 98 3:39 am	Sample Multiplier	1

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

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

Qualifiers

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID

TENTATIVELY IDENTIFIED COMPOUNDS

Bldg1220-B-1

Lab Name: FMETL Project 980932

NJDEP# 13461 Case No.: 4035 SDG No _____ Location UST

Matrix: (soil/water) WATER Lab Sample ID: 4035.05

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB02083.D

Level: (low/med) LOW Date Received: 11/06/98

% Moisture: not dec. _____ Date Analyzed: 11/11/98

GC Column: HP5MS 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

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

Data File Nam	vb02084.d	Sample Name	4035.07
Operator	Skelton	Field ID	Bldg 1220-B-2
Date Acquired	11 Nov 98 4:25 am	Sample Multiplier	1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
	Dichlorodifluoromethan			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane	8.54	590725	8.51 ug/L	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone	10.51	54498	7.47 ug/L	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ethe			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloroprope			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethan			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

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

Qualifiers

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

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

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Bldg1220-B-2**

Lab Name: FMETL Project 980932

NJDEP# 13461 Case No.: 4035 SDG No _____ Location UST

Matrix: (soil/water) WATER Lab Sample ID: 4035.07

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB02084.D

Level: (low/med) LOW Date Received: 11/06/98

% Moisture: not dec. _____ Date Analyzed: 11/11/98

GC Column: HP5MS 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

BASE NEUTRALS

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

Data File Name	**bna01289.d**	Sample Name	**Sblk162**
Operator	**Skelton**	Misc Info	**Sblk162 A 981110**
Date Acquired	**18 Nov 1998 10:48 pm**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	GW Criteria	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	2.52	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	2.64	ug/L	
62-53-3	Aniline			not detected	NLE	2.90	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	2.45	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	2.65	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	2.50	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	2.09	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	2.44	ug/L	
108-60-1	bis(2-chloroisopropyl)ether			not detected	300	2.96	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	2.22	ug/L	
67-72-1	Hexachloroethane			not detected	10	2.59	ug/L	
98-95-3	Nitrobenzene			not detected	10	2.45	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	2.54	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	2.58	ug/L	
91-20-3	Naphthalene			not detected	NLE	3.03	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	2.55	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.64	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	2.49	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	1.59	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	2.15	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.62	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	2.74	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	2.35	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	1.54	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	1.62	ug/L	
83-32-9	Acenaphthene			not detected	400	1.98	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	2.13	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**bna01289.d**	Sample Name	**Sblk162**
Operator	**Skelton**	Misc Info	**Sblk162 A 981110**
Date Acquired	**18 Nov 1998 10:48 pm**	Sample Multiplier	**1**

121-14-2	2,4-Dinitrotoluene			not detected	10	1.22	ug/L	
84-66-2	Diethylphthalate			not detected	5000	1.68	ug/L	
86-73-7	Fluorene			not detected	300	1.93	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	1.53	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	2.70	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	1.73	ug/L	
103-33-3	Azobenzene			not detected	NLE	1.92	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	1.54	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	1.88	ug/L	
85-01-8	Phenanthrene			not detected	NLE	1.67	ug/L	
120-12-7	Anthracene			not detected	2000	1.79	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	1.83	ug/L	
206-44-0	Fluoranthene			not detected	300	1.85	ug/L	
92-87-5	Benzidine			not detected	50	4.11	ug/L	
129-00-0	Pyrene			not detected	200	1.02	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	1.15	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	1.57	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	2.28	ug/L	
218-01-9	Chrysene			not detected	20	2.32	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.29	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.30	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	1.31	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.57	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	1.36	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	1.22	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	3.12	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	1.13	ug/L	

Qualifiers

E = Value exceded linear range

D = Value from dilution

B = Compound in related blank

MDL = Method Detection Limit

NLE = No Limit Established

R.T. = Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID

TENTATIVELY IDENTIFIED COMPOUNDS

Sblk162

Lab Name: FMETL Lab Code 13461

Project 980932 Case No.: 4035 Location UST SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: Sblk162

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA01289.D

Level: (low/med) LOW Date Received: 11/06/98

% Moisture: decanted: (Y/N) N Date Extracted: 11/10/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/18/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

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

Number TICs found: 2 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000301-02-0	9-Octadecenamide, (Z)-	23.23	23	JN
2.	unknown	26.39	48	J

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

Data File Name	**bna01291.d**	Sample Name	**4035.02**
Operator	**Skelton**	Misc Info	**Field Blank**
Date Acquired	**19 Nov 1998 12:11 am**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	GW Criteria	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	2.52	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	2.64	ug/L	
62-53-3	Aniline			not detected	NLE	2.90	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	2.45	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	2.65	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	2.50	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	2.09	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	2.44	ug/L	
108-60-1	bis(2-chloroisopropyl)ether			not detected	300	2.96	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	2.22	ug/L	
67-72-1	Hexachloroethane			not detected	10	2.59	ug/L	
98-95-3	Nitrobenzene			not detected	10	2.45	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	2.54	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	2.58	ug/L	
91-20-3	Naphthalene			not detected	NLE	3.03	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	2.55	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.64	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	2.49	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	1.59	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	2.15	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.62	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	2.74	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	2.35	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	1.54	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	1.62	ug/L	
83-32-9	Acenaphthene			not detected	400	1.98	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	2.13	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**bna01291.d**	Sample Name	**4035.02**
Operator	**Skelton**	Misc Info	**Field Blank**
Date Acquired	**19 Nov 1998 12:11 am**	Sample Multiplier	**1**

121-14-2	2,4-Dinitrotoluene			not detected	10	1.22	ug/L	
84-66-2	Diethylphthalate			not detected	5000	1.68	ug/L	
86-73-7	Fluorene			not detected	300	1.93	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	1.53	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	2.70	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	1.73	ug/L	
103-33-3	Azobenzene			not detected	NLE	1.92	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	1.54	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	1.88	ug/L	
85-01-8	Phenanthrene			not detected	NLE	1.67	ug/L	
120-12-7	Anthracene			not detected	2000	1.79	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	1.83	ug/L	
206-44-0	Fluoranthene			not detected	300	1.85	ug/L	
92-87-5	Benzidine			not detected	50	4.11	ug/L	
129-00-0	Pyrene			not detected	200	1.02	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	1.15	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	1.57	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	2.28	ug/L	
218-01-9	Chrysene			not detected	20	2.32	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.29	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.30	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	1.31	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.57	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	1.36	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	1.22	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	3.12	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	1.13	ug/L	

Qualifiers

E = Value exceeded linear range

D = Value from dilution

B = Compound in related blank

MDL = Method Detection Limit

NLE = No Limit Established

R.T. = Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID

TENTATIVELY IDENTIFIED COMPOUNDS

Field Blank

Lab Name: FMETL Lab Code 13461

Project 980932 Case No.: 4035 Location UST SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 4035.02

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA01291.D

Level: (low/med) LOW Date Received: 11/06/98

% Moisture: decanted: (Y/N) N Date Extracted: 11/10/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/19/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

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

Number TICs found: 2 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000301-02-0	9-Octadecenamide, (Z)-	23.24	27	JN
2.	unknown	26.40	62	J

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

Data File Name	**bna01293.d**	Sample Name	**4035.06**
Operator	**Skelton**	Misc Info	**Bldg 1220 B-1**
Date Acquired	**19 Nov 1998 1:35 am**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	GW Criteria	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	2.52	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	2.64	ug/L	
62-53-3	Aniline			not detected	NLE	2.90	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	2.45	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	2.65	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	2.50	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	2.09	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	2.44	ug/L	
108-60-1	bis(2-chloroisopropyl)ether			not detected	300	2.96	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	2.22	ug/L	
67-72-1	Hexachloroethane			not detected	10	2.59	ug/L	
98-95-3	Nitrobenzene			not detected	10	2.45	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	2.54	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	2.58	ug/L	
91-20-3	Naphthalene			not detected	NLE	3.03	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	2.55	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.64	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	2.49	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	1.59	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	2.15	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.62	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	2.74	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	2.35	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	1.54	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	1.62	ug/L	
83-32-9	Acenaphthene			not detected	400	1.98	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	2.13	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**bna01293.d**	Sample Name	**4035.06**
Operator	**Skelton**	Misc Info	**Bldg 1220 B-1**
Date Acquired	**19 Nov 1998 1:35 am**	Sample Multiplier	**1**

121-14-2	2,4-Dinitrotoluene			not detected	10	1.22	ug/L	
84-66-2	Diethylphthalate			not detected	5000	1.68	ug/L	
86-73-7	Fluorene			not detected	300	1.93	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	1.53	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	2.70	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	1.73	ug/L	
103-33-3	Azobenzene			not detected	NLE	1.92	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	1.54	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	1.88	ug/L	
85-01-8	Phenanthrene			not detected	NLE	1.67	ug/L	
120-12-7	Anthracene			not detected	2000	1.79	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	1.83	ug/L	
206-44-0	Fluoranthene			not detected	300	1.85	ug/L	
92-87-5	Benzidine			not detected	50	4.11	ug/L	
129-00-0	Pyrene			not detected	200	1.02	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	1.15	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	1.57	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	2.28	ug/L	
218-01-9	Chrysene			not detected	20	2.32	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.29	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.30	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	1.31	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.57	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	1.36	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	1.22	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	3.12	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	1.13	ug/L	

Qualifiers

E = Value exceeded linear range

D = Value from dilution

B = Compound in related blank

MDL = Method Detection Limit

NLE = No Limit Established

R.T. = Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID

TENTATIVELY IDENTIFIED COMPOUNDS

Bldg1220B-1

Lab Name: FMETL Lab Code 13461

Project 980932 Case No.: 4035 Location UST SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 4035.06

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA01293.D

Level: (low/med) LOW Date Received: 11/06/98

% Moisture: decanted: (Y/N) N Date Extracted: 11/10/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/19/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

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

Number TICs found: 2 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	23.23	19	J
2.	unknown	26.39	47	J

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

Data File Name	**bna01294.d**	Sample Name	**4035.08**
Operator	**Skelton**	Misc Info	**Bldg 1220 B-2**
Date Acquired	**19 Nov 1998 2:16 am**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	GW Criteria	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	2.52	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	2.64	ug/L	
62-53-3	Aniline			not detected	NLE	2.90	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	2.45	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	2.65	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	2.50	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	2.09	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	2.44	ug/L	
108-60-1	bis(2-chloroisopropyl)ether			not detected	300	2.96	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	2.22	ug/L	
67-72-1	Hexachloroethane			not detected	10	2.59	ug/L	
98-95-3	Nitrobenzene			not detected	10	2.45	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	2.54	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	2.58	ug/L	
91-20-3	Naphthalene			not detected	NLE	3.03	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	2.55	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.64	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	2.49	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	1.59	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	2.15	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.62	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	2.74	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	2.35	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	1.54	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	1.62	ug/L	
83-32-9	Acenaphthene			not detected	400	1.98	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	2.13	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**bna01294.d**	Sample Name	**4035.08**
Operator	**Skelton**	Misc Info	**Bldg 1220 B-2**
Date Acquired	**19 Nov 1998 2:16 am**	Sample Multiplier	**1**

121-14-2	2,4-Dinitrotoluene			not detected	10	1.22	ug/L	
84-66-2	Diethylphthalate			not detected	5000	1.68	ug/L	
86-73-7	Fluorene			not detected	300	1.93	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	1.53	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	2.70	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	1.73	ug/L	
103-33-3	Azobenzene			not detected	NLE	1.92	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	1.54	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	1.88	ug/L	
85-01-8	Phenanthrene			not detected	NLE	1.67	ug/L	
120-12-7	Anthracene			not detected	2000	1.79	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	1.83	ug/L	
206-44-0	Fluoranthene			not detected	300	1.85	ug/L	
92-87-5	Benzidine			not detected	50	4.11	ug/L	
129-00-0	Pyrene			not detected	200	1.02	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	1.15	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	1.57	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	2.28	ug/L	
218-01-9	Chrysene			not detected	20	2.32	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.29	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.30	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	1.31	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.57	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	1.36	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	1.22	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	3.12	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	1.13	ug/L	

Qualifiers

E = Value exceeded linear range

D = Value from dilution

B = Compound in related blank

MDL = Method Detection Limit

NLE = No Limit Established

R.T. = Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET FIELD ID

TENTATIVELY IDENTIFIED COMPOUNDS

Bldg1220B-2

Lab Name: FMETL Lab Code 13461

Project 980932 Case No.: 4035 Location UST SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 4035.08

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA01294.D

Level: (low/med) LOW Date Received: 11/06/98

% Moisture: decanted: (Y/N) N Date Extracted: 11/10/98

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 11/19/98

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

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

Number TICs found: 2 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000301-02-0	9-Octadecenamide, (Z)-	23.23	20	JN
2.	unknown	26.39	41	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 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 _____

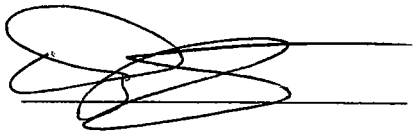
Date 12/8/94

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