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

16 June 2017

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

Subject: **No Further Action Request**
Parcel 70 – Building 551 Former Photoprocessing
Fort Monmouth, New Jersey
PI G000000032

Figure:

Figure 1 – Main Post Layout
Figure 2 – Parcel 70 Layout and Sampling Locations
Figure 3 – Parcel 70 Building 551 Soil Results

Tables:

Table 1 – Detected Soil Sampling Results – Comparison to NJDEP Soil Remediation Standards
Table 2 – 2017 Background Soil Sample Results and Comparison to Soil Remediation Standards

Attachments:

A. Regulatory Correspondence
B. Previous Work Plan and Reports
C. Soil Boring Logs
D. Analytical Data Packages
E. Backfill Certificates

Dear Ms. Range:

The U.S. Army Fort Monmouth (FTMM) Team has prepared this Site Investigation (SI) Addendum Report for the Environmental Condition of Property (ECP) Parcel 70 Building 551, Former Photoprocessing (Figure 1). This report describes the results of field work conducted at Parcel 70 in April 2016 as described in the Final ECP Parcel 70 Work Plan (WP) Addendum (Parsons, 2016; provided in Attachment B). This report also describes site restoration activities conducted at Parcel 70 in May 2017. The combined results support a No Further Action (NFA) determination for Parcel 70.

1.0 OBJECTIVES

The objective of this report is to address the occurrence of Aroclor 1260 (a polychlorinated biphenyl [PCB]) in excess of the New Jersey Department of Environmental Protection (NJDEP) Residential Direct Contact Soil Remediation Standards (RDCSRS) in Parcel 70 soil, as reported in the previous SI (U.S. Army BRAC, 2008). The NJDEP agreed that PCBs (in particular Aroclor 1260) were the sole constituent of concern in need of further evaluation at Parcel 70 in a letter dated May 1, 2016 (Attachment A).

2.0 SOIL RESULTS

Six soil borings were installed in April 2016 to address the historical Aroclor 1260 PCB concentration in a surface soil sample at boring P70-SS1 in 2008. Boring PAR-70-SB-01 was installed adjacent to previous SI sample P70-SS1 to assess current PCB concentrations and determine the vertical extent of contamination, and borings PAR-70-SB-02 through -06 were installed to determine horizontal extent (Figure 2). Soil boring logs are provided in Attachment C. In each boring, four soil samples were collected at 0-0.5 (surface), 1-1.5, 2-2.5, and 3-3.5 feet below ground surface (ft bgs) consistent with the work plan, and submitted to the laboratory. The 0-0.5 and 1-1.5 foot intervals from PAR-70-SB-01, -02, -03, and -04 were analyzed for PCBs, and all other samples were held, pending analytical results. Analytical results are provided in Attachment D and are summarized in Table 1.

At surface soil sample PAR-70-SB-01, the Aroclor 1260 concentration (0.33 mg/kg) exceeded the RDCSRS for PCBs of 0.2 mg/kg; however Aroclor 1260 was below the RDCSRS in the underlying 1-1.5 ft bgs sample, and in the surrounding borings PAR-70-SB-02, -03, and -04. The results indicate that the Aroclor 1260 detection in PAR-70-SB-01 is delineated both horizontally and vertically within the area confined by the exterior walls of Building 551.

Additionally, elevated PID readings were encountered at approximately 4 feet bgs in borings PAR-70-SB-04 (76.4 to 99.8 ppm) and -05 (22.6 ppm), and therefore samples were collected and analyzed at these locations in the 4-4.5 foot interval for fractionated Extractable Petroleum Hydrocarbons (EPH). These samples were not anticipated in the work plan; however, they were collected and submitted for laboratory analysis using professional judgement based on field screening data (Table 1). Total EPH was detected in these samples at concentrations of 1,200 and 250 mg/kg for PAR-70-SB-04 and -05, respectively. While the source of the elevated PID readings and EPH is not definitively known, these results are suspected to be a result of downgradient residual contamination from two nearby soil remedial actions associated with two removed underground storage tanks (USTs) that received NFA determinations in 2000 (Attachment A).

The two nearby soil excavations are shown in Figure 2. The first (UST 550) was a 1997 soil removal in response to a release of No. 2 fuel oil from a former UST located upgradient of Parcel 70 at Building 550. Additional soil and groundwater sampling was performed in 1998 and 1999. Visibly stained soils and soils exhibiting elevated PID levels were excavated, including soils along a 24-inch storm water pipe that runs along Todd Avenue (sometimes referred to as Malterer Avenue). The second (UST 5521) was a former fuel oil UST that was excavated west of

Building 551 in 1998; at this location, the excavation footprint remained small based on a lack of evidence of soil and groundwater contamination.

The detected concentrations of soil EPH in the 2015 borings were compared to soil remediation standards for Category 1 releases as required in the NJDEP Protocol for Addressing Extractable Petroleum Hydrocarbons (Version 5.0; August 9, 2010). At PAR-70-SB-04 and PAR-70-SB-05, the EPH samples were less than the RDCSRS for Category 1 releases of 5,100 mg/kg. Based on these results the EPH appears to be residual contamination from the release at the upgradient fuel oil UST at Building 550, which was successfully remediated and approved for NFA. The EPH detected at Parcel 70 is below the EPH RDCSRS, and is evidently not from an on-site source within Parcel 70.

3.0 SITE RESTORATION ACTIVITIES

The FTMM Team completed site restoration activities at Parcel 70 in May 2017 to unearth soils that were not suitable for re-development and to repair property damaged by previous site investigation activities. A 12 ft by 22 ft by 1.5 ft deep volume of soil was unearthed from this location in May 2017 (see Figure 3). The Army is committed to maintaining good stewardship of the environment and therefore all unearthed soils were containerized and characterized for proper disposal. Background sample BKG-551-001 was collected from the bottom of the excavation after site restoration activities to document existing site conditions and analyzed for PCBs and EPH; none of the analytes were detected in the background sample (Table 2 and Attachment D). The excavation was backfilled with crushed stone and covered with topsoil; backfill material certificates are presented in Attachment E.

Documentation of proper disposal for the soil that was unearthed and containerized in May 2017 will be submitted to NJDEP when available.

4.0 CONCLUSIONS AND RECOMMENDATIONS

The data gaps that had remained in the 2008 SI have now been fully investigated in accordance with the NJDEP-approved ECP Phase II SI field work at Parcel 70. Based on the delineation of Aroclor 1260 and TPH/EPH, no further investigation is recommended for soils. In addition, the remaining concentration of Aroclor 1260 was adequately addressed during site restoration.

A NFA determination is requested for Parcel 70, if possible, without the disposal documentation. The technical Point of Contact (POC) is Kent Friesen at (732) 383-7201 or kent.friesen@parsons.com. Should you have any questions or require additional information, please contact me by phone at (732) 380-7064; william.r.colvin18.civ@mail.mil.

Sincerely,

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

cc: Linda Range (2 hard copies)
William Colvin (2 hard copies and e-mail)
Joseph Pearson, Calibre (e-mail)
James Moore, USACE (e-mail)
James Kelly, USACE (e-mail)
Cris Grill, Parsons (e-mail)

REFERENCES CITED:

NJDEP, 2016. *Re: Final ECP Parcel 70 Work Plan Addendum. Fort Monmouth. Oceanport, Monmouth County. PI G000000032.* May 1.

Parsons. 2016. *Final ECP Parcel 70 Work Plan Addendum.* April 18.

U.S. Army BRAC. 2008. *Site Investigation Report Fort Monmouth*. Final. July 21, 2008

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.

Document: "No Further Action Request, Parcel 70 – Building 551 Former Photoprocessing, Fort Monmouth, New Jersey"

PERSON RESPONSIBLE FOR CONDUCTING THE REMEDIATION INFORMATION AND CERTIFICATION

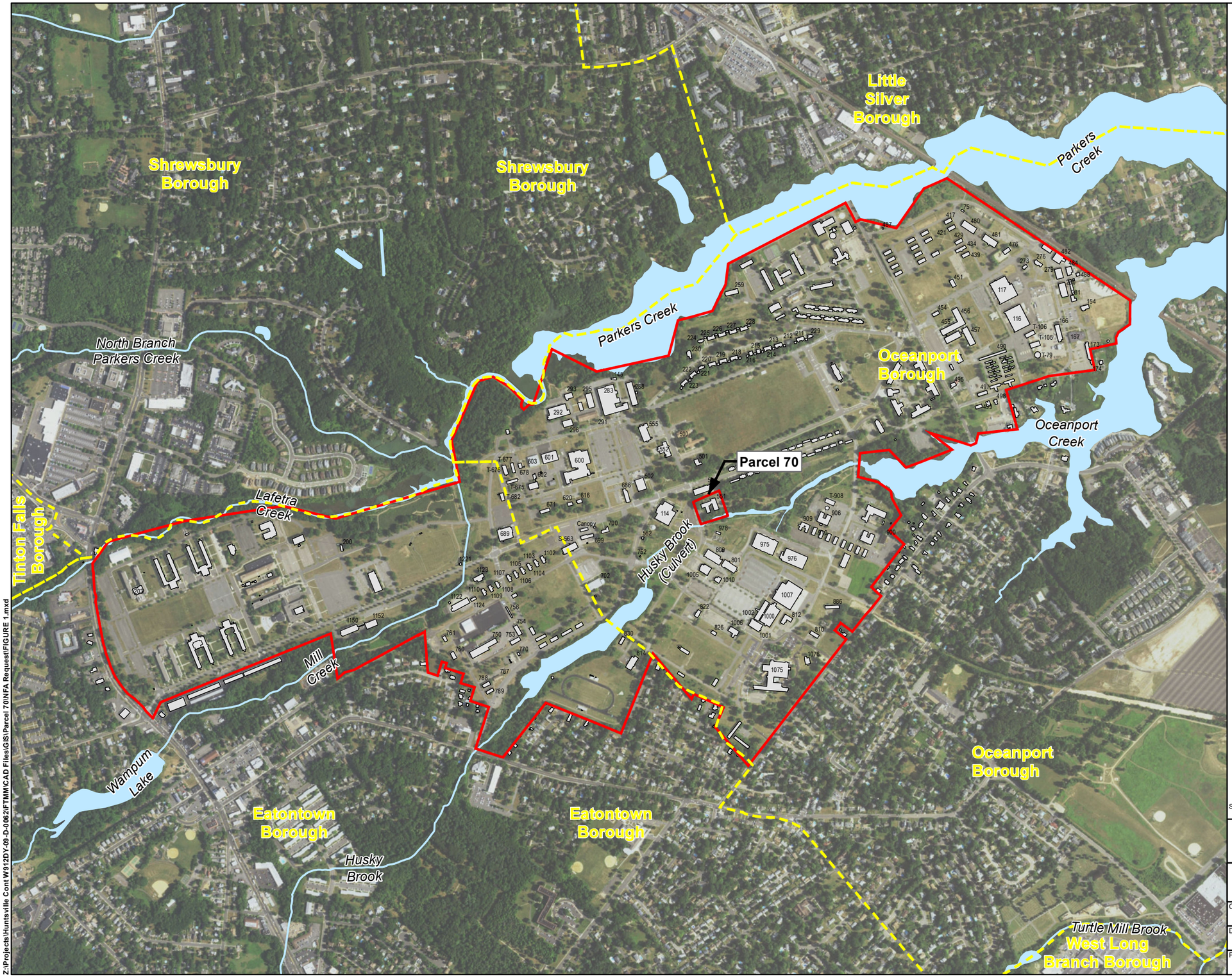
Full Legal Name of the Person Responsible for Conducting the Remediation: William R. Colvin
Representative First Name: William Representative Last Name: Colvin
Title: BRAC Environmental Coordinator
Phone Number: (732) 380-7064 Ext: Fax:
Mailing Address: P.O. Box 148
City/Town: Oceanport State: NJ Zip 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: 06/16/2017

Name/Title: William R. Colvin / BRAC Environmental Coordinator



LEGEND:

- Parcel 70
- Municipal Boundary
- Installation Boundary
- Surface Water Feature

N

1 inch = 1,000 feet

0 500 1,000 2,000 Feet

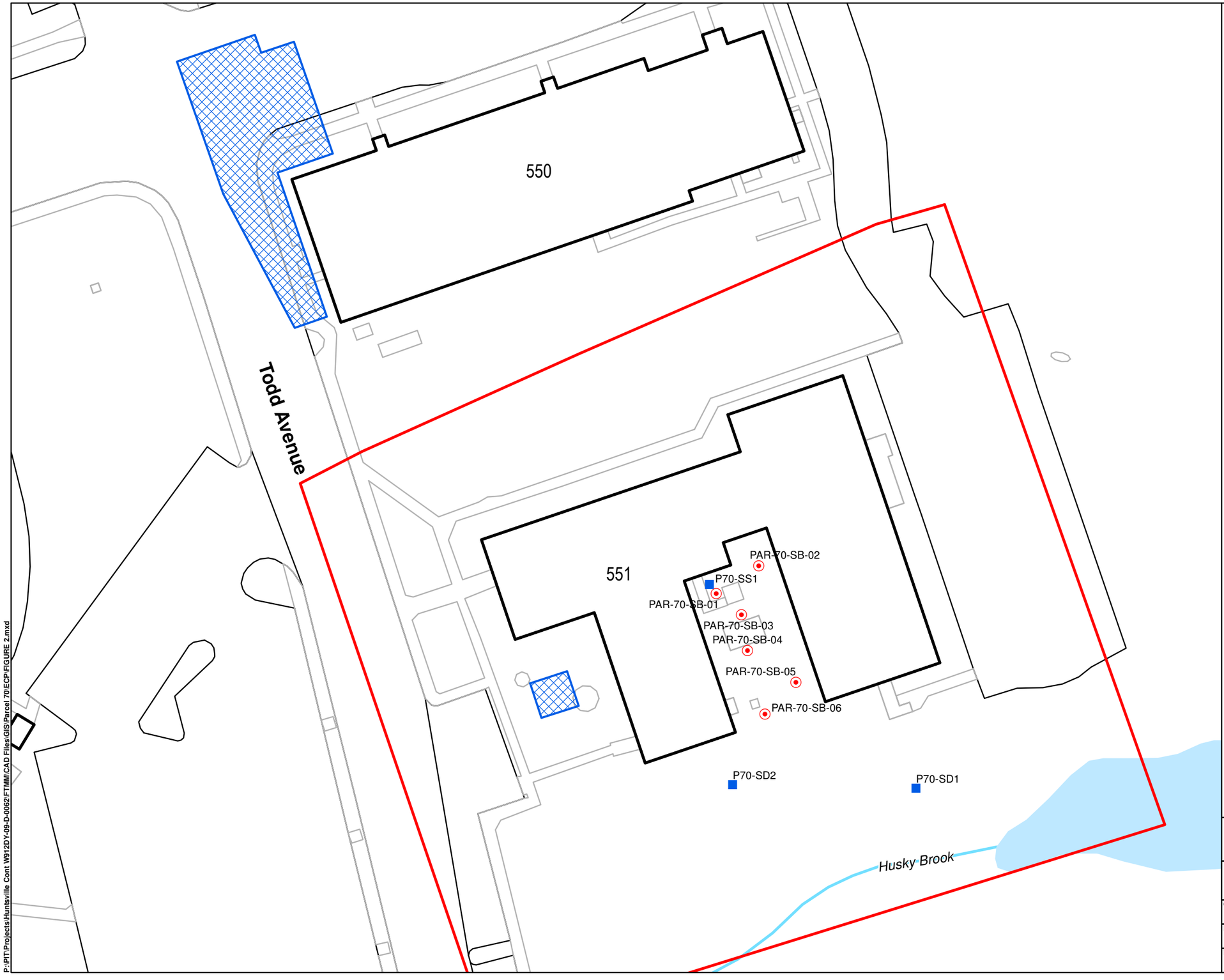
Source: FTMM Supplied CAD, 2013; ESRI Data and Maps, 2011; USGS NHD, 2012.

PARSONS 401 Diamond Drive NW, Huntsville AL	**Fort Monmouth** **New Jersey**

MAIN POST LAYOUT

CREATED BY: RR	REVIEWED BY: KF
DATE: JUN. 2017	FIGURE NUMBER: FIGURE 1
PROJECT NUMBER: 748810-03000	FILE: FIGURE 1.mxd

Z:\Projects\Huntsville Cont\W912DY-09-D-0062\FTMM\CAD Files\GIS\Parcel 70\NFA Request\FIGURE 1.mxd



LEGEND:

- Soil Boring Location
- Historic SI Sample Location
- Shallow Monitoring Well
- UST Limit of Excavation
- Parcel 70 Boundary
- Surface Water Body
- W Water Line
- S Sanitary Sewer Line
- SW Storm Sewer Line
- G Gas Line

N

1 inch = 40 feet

0 20 40 80 Feet

Source: FTMM Supplied CAD, 2013.

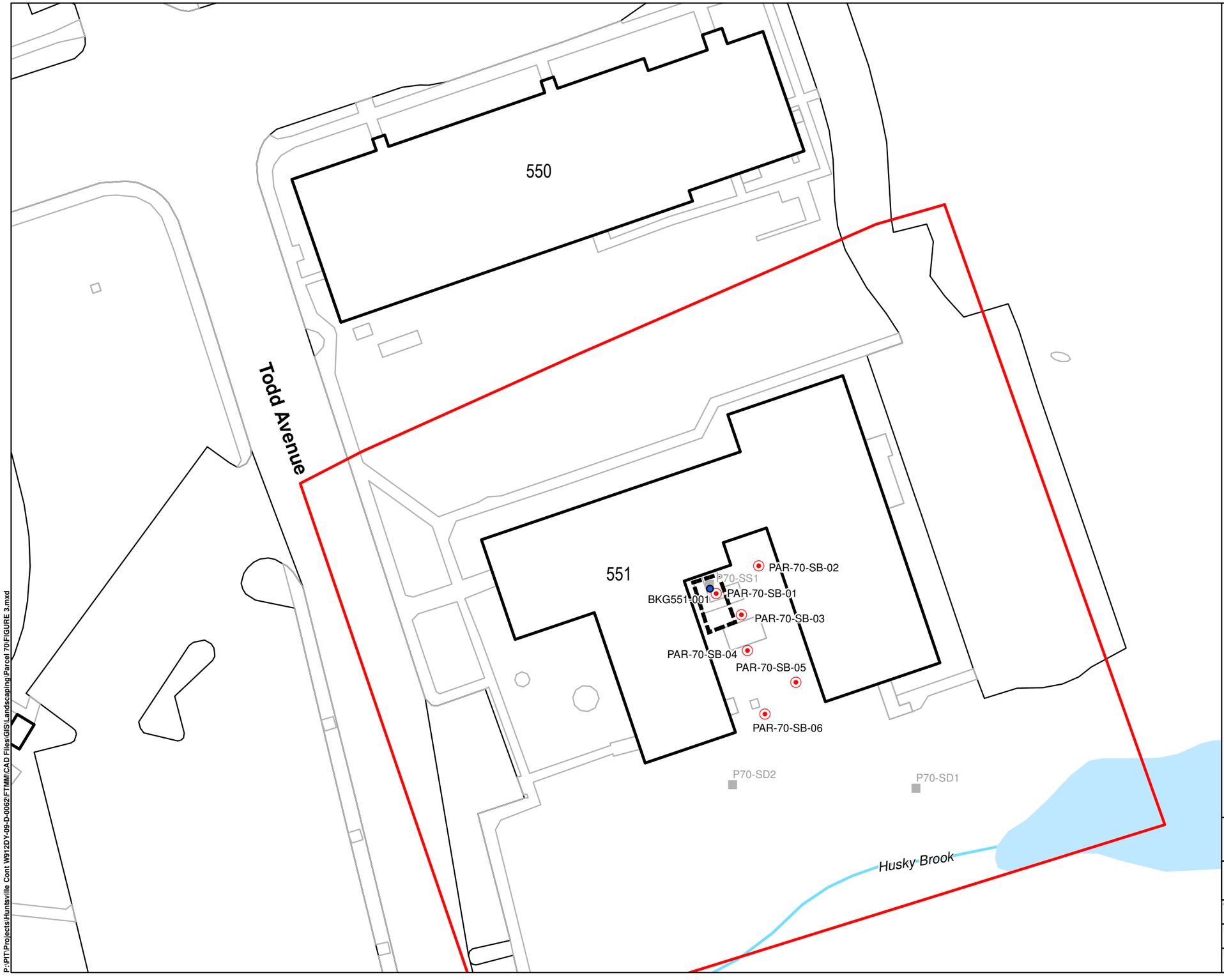
PARSONS
401 Diamond Drive NW,
Huntsville AL

Fort Monmouth
New Jersey

PARCEL 70 LAYOUT AND SAMPLING LOCATIONS

CREATED BY: RR	REVIEWED BY: RF
DATE: OCTOBER, 2016	FIGURE NUMBER: FIGURE 2
PROJECT NUMBER: 748810-06016	FILE: FIGURE 2.mxd

P:\PIT\Projects\Huntsville Cont W912DY-09-D-0062\FTMM\CAD Files\GIS\Parcel 70\ECP\FIGURE 2.mxd



LEGEND:

- Background Sample
- 2016 Soil Boring Location
- 2008 Sample Location
- Parcel 70 Boundary
- Surface Water Body
- W Water Line
- S Sanitary Sewer Line
- SW Storm Sewer Line
- G Gas Line
- Extent of Excavated Soil

N

1 inch = 40 feet

0 20 40 80 Feet

Source: FTMM Supplied CAD, 2013.

PARSONS
401 Diamond Drive NW,
Huntsville AL

Fort Monmouth
New Jersey

PARCEL 70 BUILDING 551
SOIL RESULTS

CREATED BY:	REVIEWED BY:
RR	KF
DATE:	FIGURE NUMBER:
JUNE, 2017	FIGURE 3
PROJECT NUMBER:	FILE:
748810-06016	FIGURE 3.mxd

P:\PIT\Projects\Huntsville Cont W912DY-09-D-0062\FTMM\CAD Files\GIS\Landscaping\Parcel 70\FIGURE 3.mxd

TABLE 1
DETECTED SOIL SAMPLING RESULTS - COMPARISON TO NJDEP SOIL REMEDIATION STANDARDS
PARCEL 70
FORT MONMOUTH, NEW JERSEY

Loc ID	NJ Residential Direct Contact SRS	NJ Non-Residential Direct Contact SRS	NJ Impact to GW Soil Screening Level	SB01			SB02	
Sample ID				PAR-70-SB-01-0-0.5	PAR-70-SB-101-0-0.5	PAR-70-SB-01-1-1.5	PAR-70-SB-02-0-0.5	PAR-70-SB-02-1-1.5
Sample Date				4/25/2016	4/25/2016	4/25/2016	4/25/2016	4/25/2016
Extractable/Volatile Petroleum Hydrocarbons (mg/kg)								
Total EPH	5,100	54,000	NLE	NA	NA	NA	NA	NA
PCBs (mg/kg)								
Aroclor-1260	0.2	1	NLE	**0.33**	**0.24**	**0.056**	< 0.019	< 0.019

Footnotes:

NLE = no limit established.

Chemical detections are bolded.
Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if necessary) during the data validation.

J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain analyte-specific quality control.

U = non-detect, i.e. not detected at or above this value.

The NJ Residential and Non-Residential Direct Contact Soil Remediation Standards refer to the NJDEP's May 7, 2012 Remediation Standards, http://www.nj.gov/dep/rules/rules/njac7_26d.pdf.

The NJ Impact to GW Soil Screening Level criteria refers to the Development of Site Specific Impact to Ground Water Soil Remediation Standards - Nov 2013 revised, http://www.nj.gov/dep/srp/guidance/rs/partition_equation.pdf.

For EPH, the Protocol for Addressing Extractable Petroleum Hydrocarbons, (Version 5.0, August 9, 2010) was used to determine the applicable standards. Based on the protocol, Parcel 70 EPH results are considered category 1, therefore the calculated EPH Human Health values for Residential and Non-Residential soils are provided in the protocol.

Cell Shade values represent a result that is above the NJ Residential and/or Non-Residential Direct Contact Soil Remediation Standard.

Cell Shade values represent a result that is above the NJ Impact to GW Soil Screening Level.

Cell Shade values represent a result that is above both the NJ Residential, Non-Residential, AND NJ Impact to GW Soil Screening Level Direct Contact Soil Remediation Standard.

TABLE 1
DETECTED SOIL SAMPLING RESULTS - COMPARISON TO NJDEP SOIL REMEDIATION STANDARDS
PARCEL 70
FORT MONMOUTH, NEW JERSEY

Loc ID	NJ Residential Direct Contact SRS	NJ Non-Residential Direct Contact SRS	NJ Impact to GW Soil Screening Level	SB03		SB04			SB05
Sample ID				PAR-70-SB-03-0-0.5	PAR-70-SB-03-1-1.5	PAR-70-SB-04-0-0.5	PAR-70-SB-04-1-1.5	PAR-70-SB-04-4.5-5	PAR-70-SB-05-4.5-5
Sample Date				4/25/2016	4/25/2016	4/25/2016	4/25/2016	4/25/2016	4/25/2016
Extractable/Volatile Petroleum Hydrocarbons (mg/kg)									
Total EPH	5,100	54,000	NLE	NA	NA	NA	NA	**1,200**	**250**
PCBs (mg/kg)									
Aroclor-1260	0.2	1	NLE	**0.023 J**	< 0.02	< 0.02	**0.033 J**	NA	NA

Footnotes:

NLE = no limit established.

Chemical detections are bolded.
Chemical result qualifiers are assigned by the laboratory and are evaluated and modified (if necessary) during the data validation.

J = estimated detected value due to a concetration below the reporting limit or due to discrepancies in meeting certain analyte-specific quality control.

U = non-detect, i.e. not detected at or above this value.

The NJ Residential and Non-Residential Direct Contact Soil Remediation Standards refer to the NJDEP's May 7, 2012 Remediation Standards, http://www.nj.gov/dep/rules/rules/njac7_26d.pdf.

The NJ Impact to GW Soil Screening Level criteria refers to the Development of Site Specific Impact to Ground Water Soil Remediation Standards - Nov 2013 revised, http://www.nj.gov/dep/srp/guidance/rs/partition_equation.pdf.

For EPH, the Protocol for Addressing Extractable Petroleum Hydrocarbons, (Version 5.0, August 9, 2010) was used to determine the applicable standards. Based on the protocol, Parcel 70 EPH results are considered category 1, therefore the calculated EPH Human Health values for Residential and Non-Residential soils are provided in the protocol.

Cell Shade values represent a result that is above the NJ Residential and/or Non-Residential Direct Contact Soil Remediation Standard.

Cell Shade values represent a result that is above the NJ Impact to GW Soil Screening Level.

Cell Shade values represent a result that is above both the NJ Residential, Non-Residential, AND NJ Impact to GW Soil Screening Level Direct Contact Soil Remediation Standard.

TABLE 2
2017 BACKGROUND SOIL SAMPLE RESULTS AND COMPARISON TO SOIL REMEDIATION STANDARDS
PARCEL 70
FORT MONMOUTH, NEW JERSEY

						CLIENT ID:	BKG-551-001	
						LAB ID:	AC98118-006	
						COLLECTION DATE:	5/25/2017	
						SAMPLE MATRIX:	Soil	
						SAMPLE UNITS:	mg/Kg	
			NJ Residential Direct Contact SRS	NJ Non-Residential Direct Contact SRS	NJ Impact to GW Soil Screening Level			
TestCode	**CAS#**	**Analyte**	mg/Kg	mg/Kg	mg/Kg		Result	RL
		PCBs						
PCB-8082	1336-36-3	Aroclor (Total)	0.2	1	0.2		ND	0.027
PCB-8082	12674-11-2	Aroclor-1016	0.2	1	0.2		ND	0.027
PCB-8082	11104-28-2	Aroclor-1221	0.2	1	0.2		ND	0.027
PCB-8082	11141-16-5	Aroclor-1232	0.2	1	0.2		ND	0.027
PCB-8082	53469-21-9	Aroclor-1242	0.2	1	0.2		ND	0.027
PCB-8082	12672-29-6	Aroclor-1248	0.2	1	0.2		ND	0.027
PCB-8082	11097-69-1	Aroclor-1254	0.2	1	0.2		ND	0.027
PCB-8082	11096-82-5	Aroclor-1260	0.2	1	0.2		ND	0.027
PCB-8082	37324-23-5	Aroclor-1262	NA	NA	NA		ND	0.027
PCB-8082	11100-14-4	Aroclor-1268	NA	NA	NA		ND	0.027
		TPH						
8015-EPHCAT2	EPHC9C40	C9-C40	NA	NA	NA		ND	64
		Wet Chemistry						
%SOLIDS	PERSOL	% Solids	NA	NA	NA		94(Percent)	

Result exceeds at least one criterion (none for these samples)
Bold Positive result detected below all criteria (none for these sample)

NJ Soil Remediation Standards
Note 1) Residential and Non-residential critieria from the NJDEP June 2, 2008 Soil Remediation Standards
Note 2) Dec 2008 DEP guidance document for the development of site-specific IGW soil remediation standards using the soil-water partition equation.

NA No criterion derived for this contaminant.

ATTACHMENT A

Regulatory Correspondence

1. NJDEP, 2016. *Re: Final ECP Parcel 70 Work Plan Addendum. Fort Monmouth. Oceanport, Monmouth County.* May 1.
2. NJDEP, 2000a. *Re: UST Closure Approval/NFA, Fort Monmouth Main Post, Monmouth County.* October 23.
3. NJDEP, 2000b. *Re: UST Closure Approval/NFA, Fort Monmouth Main Post, Monmouth County.* August 29.

State of New Jersey

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

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

BOB MARTIN
Commissioner

May 1, 2016

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

Re: *Final ECP Parcel 70 Work Plan Addendum*
Fort Monmouth
Oceanport, Monmouth County
PI G000000032

Dear Mr. Colvin:

The New Jersey Department of Environmental Protection (Department) has completed review of the referenced report, received April 19, 2016, prepared by Parsons Government Services Inc. (Parsons), to supplement the soil sampling previously completed at Parcel 70. Based upon further review of the Site Investigation submittal of 2008 and the Department's response letter of October 28, 2008, it is agreed PCBs are the sole constituent of concern in need of further evaluation.

PCBs

The level of PCB 1260 found in 2008 at P70-SS1, although below the then current Non-Residential Direct Contact Soil Cleanup Criteria against which the results were compared in '08, is above both the current Residential Direct Contact Soil Remediation Standard as well as the previous Residential Direct Contact Soil Cleanup Criteria existing at that time.

The soil sampling proposal is acceptable. If PCBs above the Default Impact to Ground Water Soil Screening Level (or a site specific Impact to Ground Water Site Remediation Standard subsequently developed) are found to extend to within 2' of the ground water table, a ground water investigation will be necessary.

Please contact this office with any questions.

Sincerely,

Linda S. Range

Linda S. Range

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

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 2 3 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

Department of Environmental Protection

Christine Todd Whitman
Governor

Robert C. Shinn, Jr.
Commissioner

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

AUG 2 9 2000

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

Dear Mr. Desai:

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

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

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

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

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

Sincerely,

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

ATTACHMENT B

Previous Work Plans and Reports

1. Parsons, 2016. *Final ECP Parcel 70 Work Plan Addendum, Fort Monmouth. Oceanport, Monmouth County, New Jersey*. April 18.
2. U.S. Army, 1999. *Site/Remedial Investigation Report, Building 550, Main Post-West Area*. July.
3. U.S. Army, 1998. *Underground Storage Tank Closure and Site Investigation Report, Building 551, Main Post-West Area*. September.

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 18, 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: ECP Parcel 70 Work Plan Addendum for Fort Monmouth, New Jersey

Dear Ms. Range:

Fort Monmouth and Parsons have prepared the attached *ECP Parcel 70 Work Plan Addendum (WPA)* to provide additional soil sampling at Parcel 70. A brief summary of the results of the previous soil sampling at Parcel 70 is also provided in this WPA. We look forward to your review of the WPA; our intent is to perform the field sampling described in this WPA within the current field sampling event that started on March 28, 2016.

The technical Point of Contact (POC) for this matter is Cris Grill at (617) 449-1583 or by email at Cris.Grill@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, PG, CHMM
BRAC Environmental Coordinator

Attachment:
ECP Parcel 70 Work Plan Addendum

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

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.

Document: "Final ECP Parcel 70 Work Plan Addendum (April 2016)"

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: BRAC Environmental Coordinator
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

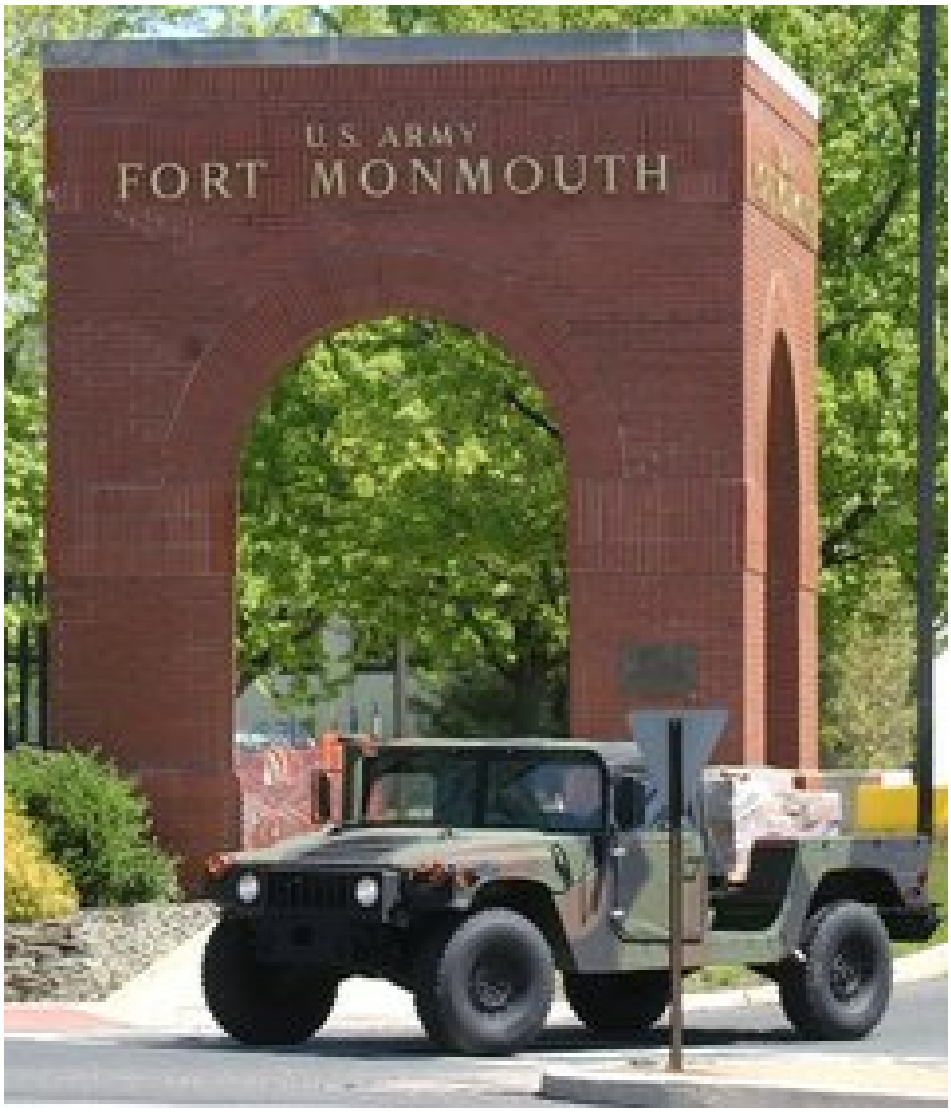
This certification shall be signed by the person responsible for conducting the remediation who is submitting this notification in accordance with Administrative Requirements for the Remediation of Contaminated Sites rule at N.J.A.C. 7:26C-1.5(a).

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: 4/18/2016

Name/Title: William R. Colvin / BRAC Environmental Coordinator

US Army, Engineering & Support Center
Huntsville, AL



FINAL
ECP PARCEL 70 WORK PLAN ADDENDUM

FORT MONMOUTH, OCEANPORT, MONMOUTH COUNTY, NEW JERSEY

BRAC 05 Facility
Contract No. W912DY-09-D-0062
Task Order No. 0012, Project No. 369857

PARSONS

April 2016

ECP Parcel 70 (Building 551 Former Photoprocessing) Work Plan Addendum

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1.0 PURPOSE AND SCOPE

The purpose of this Parcel 70 Work Plan Addendum is to supplement the original Environmental Condition of Property (ECP) Supplemental Phase II Site Investigation (SI) Work Plan (Parsons 2015), submitted under separate cover, with a description of the tasks that will be completed at Fort Monmouth (FTMM) during the implementation of supplemental ECP Phase II SI activities for Parcel 70 (Building 551 Former Photoprocessing). Parcel 70-Building 551 were first identified in the *Environmental Condition of Property (ECP) Report, Fort Monmouth* (U.S. Army Base Realignment and Closure [BRAC], 2007); excerpts concerning Parcel 70 are provided in **Attachment 1**. This Work Plan Addendum document has been prepared to supplement the findings of the *Site Investigation Report, Fort Monmouth* (U.S. Army BRAC, 2008); excerpts concerning Parcel 70 are provided in **Attachment 2**, and as further described in subsequent correspondence (summarized in **Attachment 3**) between NJDEP (2008, 2012a, and 2012b) and the Army (2012a and 2012b).

This objective of the work described in this Parcel 70 Work Plan Addendum is to document the environmental restoration status or requirements for this parcel. Following completion of the field investigation phase described in this Parcel 70 Work Plan Addendum, the findings and recommendations of the SI will be presented in the Supplemental SI Report for Parcel 70, as described in Section 4.0. The overall goal of this process is to obtain stakeholder concurrence on the Supplemental SI Report for Parcel 70, and if appropriate, provide sufficient data to recommend additional measures or no further action (NFA).

2.0 SITE BACKGROUND

2.1 SITE LOCATION

As described in the ECP Report (U.S. Army BRAC, 2007), this parcel is located in the central portion of the Main Post (MP) on Todd Avenue directly north of Oceanport Creek, and includes Building 551. The site location is provided in **Figure 1**.

2.2 SITE HISTORY

The site history at Parcel 70 described below is based on information provided in the ECP Report (U.S. Army BRAC, 2007; **Attachment 1**) and the SI Report (U.S. Army BRAC, 2008; **Attachment 2**). Building 551 is the only building within Parcel 70, and formerly housed a photoprocessing operation, which was located on the western portion of the parcel. Building 551 is currently unoccupied but most recently was utilized for administrative and classroom activities. Photographic chemicals were documented to have been utilized at Building 551 (**Attachment 1**).

2.3 CURRENT AND PROJECTED LAND USE

Building 551 is currently an unoccupied administrative and classroom building. Parcel 70 is projected to be developed for institutional use, which could include educational, institutional and administrative uses (EDAW, 2008).

2.4 PREVIOUS INVESTIGATIONS AND HISTORICAL DATA

To determine if historic uses at Building 551 resulted in the release of photoprocessing chemicals, surface soil and sediment samples were collected during the SI (U.S. Army BRAC, 2008; se**e Attachment 2**). One surface soil sample (from 0 to 0.5 feet below ground surface [ft bgs]) was collected from within the courtyard within Building 551, and soil/sediment samples (one from the 0 to 0.5 ft bgs, and one from 1.0 to 1.5 ft bgs) were collected from two cast-iron drainage pipe outfall locations south of Building 551 and along the north bank of Oceanport Creek. A total of three samples (one from the courtyard, and one from each of the two pipe outfall locations) were collected from in and around Building 551 using a hand auger (**Figure 2**). All samples were analyzed for target compound list (TCL) organic compounds including volatile organic compounds (VOCs) plus 10 tentatively identified VOC compounds (TICs), base/neutral (B/N) compounds plus 20 TICs, and polychlorinated biphenyls (PCBs) (collectively known as TCL+30 without pesticides), and for target analyte list (TAL) metals.

B/Ns, metals, and one Aroclor were detected in the soil/sediment samples (Tables 3.17-3 and 3.17-4 of **Attachment 2**). No contaminants of concern (COCs) were identified in the SI Report based on comparison to then-current non-residential comparison criteria. Arsenic was detected in one soil sample at a drainage outfall at a concentration of 26.3 milligrams per kilogram (mg/kg), which exceed the current NJDEP Residential Direct Contact Soil Remediation Standard (RDCSRS) of 19 mg/kg. The SI Report suggested that the arsenic exceedances could have been influenced by natural factors (such as glauconitic soils with naturally elevated metal concentrations) and/or anthropogenic factors (such as historical application of pesticides or herbicides) that were unrelated to a contaminant release from Building 551. Aroclor 1260 was detected in one soil sample from the Building 551 courtyard area at a concentration of 0.86 mg/kg, which exceed the current PCB RDCSRS of 0.2 mg/kg. The SI Report recommended NFA for soils and sediments at Parcel 70.

Regulatory and Army correspondence related to the SI Report finding for Parcel 70 are provided in **Attachment 3**, and summarized below:

- An October 28, 2008 letter from NJDEP concurred with NFA for Parcel 70.
- The Army's March 16, 2012 letter acknowledged NJDEP's previous approval of NFA for Parcel 70.
- The NJDEP's July 7, 2012 letter recognized the previous NFA concurrence, but requested closure documentation for underground storage tank (UST) 551-80, which was previously removed from Building 551.
- The Army's July 26, 2012 letter provided a copy of the requested August 29, 2000 UST closure letter from NJDEP, which approved NFA for UST 551-80.
- The NJDEP's August 20, 2012 letter acknowledged receipt of the UST 551-80 closure letter, but also identified two additional issues of concern for Parcel 70 based on a review of the SI Report analytical data:
    - Arsenic in soil at a concentration of 26.3 mg/kg in sample P70-SD2, which slightly exceed the current RDCSRS of 19 mg/kg; and

- Aroclor 1260 in soil at a concentration of 0.86 mg/kg in sample P70-SS1, which exceed the current PCB RDCSRS of 0.2 mg/kg.

2.5 SYNTHESIS OF RESULTS, CORRESPONDENCE, AND DATA GAPS

The ECP Report (U.S. Army BRAC, 2007) assigned Parcel 70 to an ECP Category of 7, indicating that it was an area requiring additional evaluation. The SI report (U.S. Army BRAC, 2008) provided initial SI-level sampling at three locations for full-suite analyses.

NJDEP most recently identified Aroclor 1260 in soil at one sample location as an item of concern due to exceedances of the current RDCSRS. Additional sampling is warranted to verify the 2008 sampling result for PCBs (i.e., Aroclor 1260), and if verified, to determine the approximate extent and source of the PCB within the Building 551 courtyard, which are currently unknown.

NJDEP also indicated that arsenic in soil exceeded the RDCSRS at a drain pipe outfall location and was a concern, while acknowledging the Army's position that the source may be natural or unrelated to contaminant releases at Building 551. It is the Army's opinion that additional sampling for arsenic is not warranted since the arsenic in the soil is of a de minimis quantity and at a concentration slightly above the RDCSRS, and likely unrelated to site activities. Therefore, the Army does not propose to further addressing arsenic in the soil.

3.0 FIELD INVESTIGATION PLAN

3.1 CONCEPTUAL SITE MODEL

Parcel 70 comprised of Building 551, which was originally identified in the ECP Report (U.S. Army BRAC, 2007) as a Category 7 parcel requiring additional evaluation due to photoprocessing activities. Building 551 is currently unoccupied and not in use. Parcel 70 is projected to be developed for institutional use (e.g., educational, institutional and administrative uses). Based on the SI report (U.S. Army BRAC, 2008), Aroclor 1260 has been detected in surface soil within the Building 551 courtyard at concentrations that exceeded the NJDEP's current RDCSRS of 0.2 mg/kg. Arsenic has been detected slightly above the current RDCSRS in soils below a pipe drain outfall within the floodplain of Oceanport Creek. This occurrence is unlikely related to site activities and may be related to naturally elevated background concentrations associated with glauconitic soils, or with historical application of pesticides or herbicides. Based on the exceedances of Aroclor 1260, delineation of this PCB in shallow soil at Building 551 is required and remains a data gap. Pending the confirmation and delineation of Aroclor 1260, additional action may be warranted. Potentially complete exposure pathways present at Parcel 70 could result in exposure to residents, intrusive and non-intrusive site workers, site visitors, and recreational users (**Table 1**).

3.2 ECP PHASE II SI SAMPLING PLAN

The detailed field procedures to be used for the activities described in this sampling plan are described in the SAP provided as Appendix E to the original ECP Supplemental Phase II SI Work Plan (Parsons, 2015).

The objective of the supplemental Phase II SI field work at Parcel 70 is to characterize the Aroclor 1260 PCB in surface and subsurface soil within the Building 551 courtyard. Additional

soil sampling will be performed from in the courtyard as described in the following paragraphs and on (**Tables 2 and 3**).

A total of six soil borings will be installed within the Building 551 courtyard (**Figure 2**) for collection of soil samples for characterization and delineation of Aroclor 1260. Four primary soil borings will be drilled and samples will be collected for analysis of Aroclor 1260, which NJDEP noted was above the PCB RDCSRS of 0.2 mg/kg. Specifically, soil samples will be collected from the following four depth intervals at each of the borings PAR-70-SS-01, PAR-70-SS-02, PAR-70-SS-03, and PAR-70-SS-04:

- 0 to 0.5 ft bgs (analyze for Aroclor 1260),
- 1.0 to 1.5 ft bgs (analyze for Aroclor 1260),
- 2.0 to 2.5 ft bgs (hold for contingency analysis of Aroclor 1260), and
- 3.0 to 3.5 ft bgs (fold for contingency analysis of Aroclor 1260).

Two additional contingency soil borings PAR-70-SS-08 and PAR-70-SS-09 will also be performed and soil samples collected and analyzed as needed to delineate Aroclor 1260 in soils in excess of the RDCSRS of 0.2 mg/kg. The depth intervals noted above will also be sampled for the contingency borings; however, all samples for each of these two contingency borings will be held by the laboratory, and analyzed if needed.

4.0 REPORTING

Reporting of the site history, work conducted under this delivery order, sampling results, and conclusions and recommendations will be performed as part of the Supplemental SI Report Addendum for Parcel 70.

5.0 REFERENCES

EDAW. 2008. *Fort Monmouth Reuse and Redevelopment Plan*. Prepared for Fort Monmouth Economic Revitalization Planning Authority. August 22.

New Jersey Department of Environmental Protection (NJDEP), 2008. *Re: Draft Site Investigation, Fort Monmouth, NJ.* October 28.

NJDEP, 2012a. March 2012 Army Response to NJDEP Correspondence Letter Dated October 28, 2008, Fort Monmouth, NJ. July 10.

NJDEP, 2012b. Parcel 70 – UST #551-80 at Building 551 August 28, 2000 Closure Approval Letter; PCBs at Sample Location P70-SS1; Arsenic at Sample Location P70-SD2 Fort Monmouth, NJ. August 20.

Parsons, 2015, Environmental Condition of Property (ECP) Supplemental Phase II Site Investigation (SI) Work Plan for Parcels 28,38,39,49,57,61, and 69; Fort Monmouth, Oceanport, Monmouth, New Jerse. Final Revision 1, November 2015

United States (U.S.) Army Base Realignment and Closure (BRAC), 2007. *Environmental Condition of Property Report – Fort Monmouth, Monmouth County, New Jersey*. Final. January 29, 2007.

U.S. Army BRAC, 2008. *Site Investigation Report Fort Monmouth*. Final. July 21, 2008

U.S. Army BRAC, 2012a. Army's Response to NJDEP Correspondence (Dated October 28, 2008), Draft Site Investigation, Fort Monmouth, NJ. Prepared by Office of Assistant Chief of Staff for Installation Management (OACSIM), U.S. Army Fort Monmouth, New Jersey. March 16.

U.S. Army BRAC, 2012b. August 29, 2000 Closure Approval Letter for UST #551-80 at Building 551 (Parcel 70) – Former Photoprocessing – Main Post, Fort Monmouth, N.J. July 26.

TABLES

Table 1
Preliminary Conceptual Site Model - Parcel 70
Fort Monmouth, New Jersey

Site Details		Known or Suspected Contamination Source(s)	Location and Extent of Contamination	Source or Exposure Medium: COCs (U.S. Army BRAC, 2008)	Current and Future Receptors	Potentially Complete Exposure Pathways
Name:	Parcel 70, Building 551 Former Photoprocessing	Aroclor 1260 from unknown source located near the rear door in courtyard.	Aroclor 1260 have been detected in one surface soil sample in the central courtyard of Building 551.	Soil: Aroclor 1260 Groundwater: None	Residents, intrusive workers, non-intrusive workers, and occasional visitors or recreational users	Incidental ingestion of soil, dust inhalation, dermal contact with subsurface soil by intrusive workers.
Historical Land Use:	Classroom, photoprocessing					
Current Land Use:	Building 511 is currently unoccupied/not in use					
Future Land Use:	Institutional					

Table 2
Sampling Summary for Parcel 70
Fort Monmouth, New Jersey

Parcel	Location	Field Meter Readings [a/]	Aroclor 1260 by Method 8081B
Soil			
70	Previous sample P70-SS1 (Figure 2) 6 soil borings (4 primary and 2 contingency) with 4 samples from each boring	6	16 primary samples 8 contingency samples (only analyzed if needed)
QA/QC samples (see SAP for additional details) [b/]			
Field Duplicates (5% Sampling Frequency per media)		NA	1
Matrix Spike (5% Sampling Frequency per media)		NA	1
Matrix Spike Duplicate (5% Sampling Frequency per media)		NA	1
Trip Blank (1 per cooler of VOCs per media)		NA	0
QA Split (5% per media)		NA	1
Equipment Blank (5% Sampling Frequency per media)		NA	1
	TOTAL	**NA**	**29**

Notes:

NA = not applicable.

TBD = to be determined.

[a/] Field meter readings include, in soil samples: photoionization detector (PID) readings along entire soil column; and in groundwater: PID headspace, pH, temperature, electrical conductivity, dissolved oxygen (DO), oxidation-reduction potential (ORP), and turbidity.

[b/] QA/QC = quality assurance/quality control; SAP = Sampling and Analysis Plan. The requirement for QA/QC samples may be fulfilled with samples from other parcels.

Table 3
Data Quality Objectives for Parcel 70
Fort Monmouth, New Jersey

	INTENDED DATA USE(S)	DATA NEED REQUIREMENTS						SAMPLING AND ANALYTICAL METHODS	
Site ID	Project Objective(s) Satisfied	Data User Perspective (s)	Contaminant or Characteristic of Interest Identified	Media of Interest	Required Sampling Areas or Locations and Depths Identified	Amount of Sampling/ Number of Samples Required	Reference Concentration of Interest or Other Performance Criteria	Sampling Method Identified	Analytical Method Identified
Parcel 70	To obtain the data necessary to delineate Aroclor 1260 in soils.	SI	Aroclor 1260	Soil	4 primary plus 2 contingency boring locations within courtyard (up to 4 feet bgs).	Up to 24 samples for Aroclor 1260	NJDEP RDCSRS	6 soil borings by Geoprobe within Building 551 courtyard.	Aroclor 1260 PCB only reported by Method 8081B.

FIGURES

Little Silver Borough

Shrewsbury Borough

Tinton Falls Borough

Eatontown Borough

Oceanport Borough

West Long Branch Borough

Parkers Creek

North Branch Parkers Creek

Lafetra Creek

Mill Creek

Husky Brook (Culvert)

Oceanport Creek

Wampum Lake

Wampum Brook

Husky Brook

Turtle Mill Brook

Parcel 70

LEGEND:

- Parcel Boundary
- Installation Boundary
- Municipal Boundary
- Surface Water Feature

N

1 inch = 1,000 feet

0 500 1,000 2,000 Feet

Source: FTMM Supplied CAD, 2013; ESRI Data and Maps, 2011; USGS NHD, 2012.

PARSONS 401 Diamond Drive NW, Huntsville AL	**Fort Monmouth** **New Jersey**

PARCEL 70 LOCATION

CREATED BY: RR	REVIEWED BY: KF
DATE: FEB. 2016	FIGURE NUMBER: FIGURE 1
PROJECT NUMBER: 748810-01000	FILE: Figure1_Parcel_70.mxd

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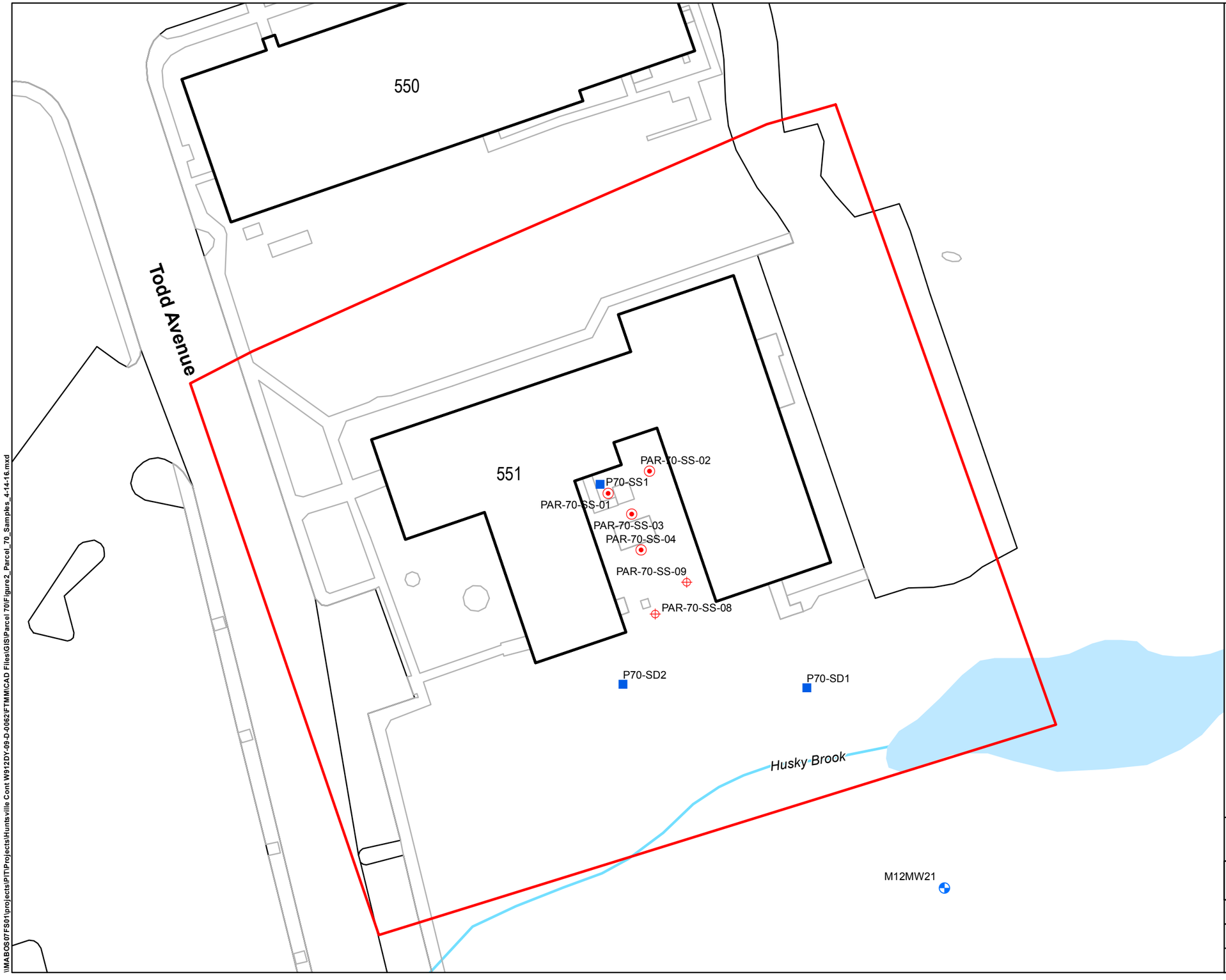

LEGEND:

- Proposed Aroclor 1260 PCB Soil Sample Location
- Proposed Aroclor 1260 PCB Contingency Soil Sample Location
- Historic SI Sample Location
- Shallow Monitoring Well
- Parcel 70 Boundary
- Surface Water Body
- W Water Line
- S Sanitary Sewer Line
- SW Storm Sewer Line
- G Gas Line

N

1 inch = 40 feet

0 20 40 80 Feet

Source: FTMM Supplied CAD, 2013.

PARSONS 401 Diamond Drive NW, Huntsville AL	**Fort Monmouth** **New Jersey**

PARCEL 70 PROPOSED SAMPLING LOCATIONS

CREATED BY: RR	REVIEWED BY: KF
DATE: APRIL, 2016	FIGURE NUMBER: FIGURE 2
PROJECT NUMBER: 748810-06031 (Revised)	FILE: Figure2_Parcel_70_Samples_4-14-16.mxd

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ATTACHMENTS

ATTACHMENT 1

PARCEL 70 EXCERPTS FROM 2007 ECP REPORT

group conducted similar testing on capacitors for temperature extremes of -60 to -135 degrees Fahrenheit (°F). Room 107 was used to conduct electrical testing and intermittent use of mercury was employed in various types of instruments (32,33,34). By 1954, room 101 was used for analyses of phosphors and room 107 was used for making mercury electrodes (34). The 1954 report noted a closet 6' x 4' x 2' with shelves was used to store bulk mercury, instruments in glass, metal containers and pans, many of which were open. Mercury globules were present on the shelving and floor. Room 202 tested the life of selenium rectifiers under normal operating conditions and charging of lead acid plastic batteries was done. Climatic testing of motors, batteries and other equipment continued. In 1955, charging and discharging of batteries continued using sulfuric acid and potassium hydroxide (154). During the 2006 VSI, part of Building 292 was being used for Museum and Directorate of Logistics storage. The other part of Building 292 is currently utilized by the High Frequency Radio program. A former pigeon coop is located above the High Frequency Radio offices. Personnel reported during the VSI, that Building 292 had previously been used for medical storage, and that the space occupied by the High Frequency Radio program had been used as an electronics testing laboratory prior to 2000 (59).

Building 293 is currently used for the environmental conditions testing of various types of batteries. Testing of batteries in this building has been reported since 1952 (33). In 1954, the mixing of electrolytes and testing of batteries was being performed (34). In 1955, charging and discharging of batteries continued using sulfuric acid and potassium hydroxide (35). A fire occurred at Building 293 in the mid-1980s and the facility was reconstructed. During the 2006 VSI, a floor drain was noted in a utility room adjacent to the satellite accumulation areas (used batteries) for exempt, universal, and non-hazardous waste and a former foundation was observed adjacent to the existing building where the former building may have been located prior to the fire in the mid-1980s. Floor plans indicate that the drains are connected to the sanitary sewer (72). No evidence of the ground stain observed in the 1969 and 1974 aerial photographs was visible at the time of the 2006 VSI.

Operations conducted at Building 294 included spray painting, development of rubber and plastic, and the use of organic solvents and compound resins (33,34). Building 294 was used to test equipment for shock and vibration resilience. Three electrodynamic and two reaction type shakers tested components under simulated vibration conditions. These operations moved from Building 294 to Bay OA411 of the Myer Center (Building 2700) in 1956 (35). Building 294 was demolished in 2000 (53).

Building 295 was used for fabrication of reinforced plastics in 1954. Acetone and styrene were both used in the labs. One enclosed oven was present (34). This testing activity no longer takes place in Building 295. Building 295 has been renovated and is currently used for administrative space.

A Quonset hut housed the ceramics laboratory where plastics were used for experiments. An additional Quonset hut adjacent to Building 551, was used for analytical work on photographic chemicals including acids, carbon tetrachloride, benzol, and other photographic chemicals. By 1954, the hut was being used for recovering

silver and other products with exchange resins. Other uses included darkroom photography with developer and fixer solutions and synthesizing phosphors using silver nitrate, copper chloride, and nickel chloride (32,34). This Quonset hut has been demolished.

Operations in Buildings S-5, S-9, S-10, S-11, and S-12 used various laboratory chemicals in hoods for the manufacture and testing of dry cell batteries (32). By 1954, S-5 and S-12 were being used for chemical analyses of battery materials, degreasing using TCE and carbon tetrachloride, polarographic analysis, and mercury reclamation (34). Building S-6 housed the refrigeration section where carbon tetrachloride was used for cleaning and repair of laboratory equipment. The S-6 annex was used for testing power units (32). An open area near Building S-15 was used for testing diesel generators and gasoline engines (33). DPW records indicate that Building S-6 was demolished in 1980 or 1981, and Building S-5 was demolished at an unspecified date. None of the remaining buildings were identified during the 2006 VSI and it is likely that all have been demolished. Building L-3 was used for paint experimentation. Various types of paint and other surface coatings were made and tested in this building. Various used solvents, including acetates, alcohols, benzol, petroleum solvent, and others were placed into a large tank located against one wall of the building. No information was provided in the report as to how the contents of the tank were later handled (32). In 1954, spraying of paints, lacquers, and enamels was done in a paint spray booth (34). The 1954 IH survey was the last to reference Building L-3. This building has been demolished.

Building T-45 was used for experimental manufacturing of storage batteries. Approximately 10 workers were located in this area. Two laboratory hoods had been provided for use when charging batteries. Lead, cadmium, zinc, and other metallic oxide dusts, along with benzol, carbon tetrachloride, ethylene dichloride, and various organic solvents were used (32). Building T-45 was not present at the time of the 2006 VSIs.

Building X-9 and the X-9 Ramp were used in 1954 for examination of engine generator sets and testing gasoline engines, both in and outdoors (34). Building X-7 was used for mixing acid, namely sulfuric acids (35). These buildings have been demolished.

Environmental concerns associated with the Squier Laboratory complex are discussed in **Section 5.13.6** of this ECP report.

DPW Laboratory Facilities. Buildings 173 and 174 house the DPW administrative offices and in-house environmental laboratory. Chemical reagents for use in the laboratory and satellite accumulation areas for hazardous waste were noted during the 2006 VSI. This is a modern laboratory operation with waste handling procedures that are actively managed by the FTMM DPW. No evidence of an environmental release associated with this operation was identified as part of this ECP.

Former Building 680 – Water Quality Laboratory. A 1976 IH Survey noted chemical analyses for water quality using standard laboratory chemicals being performed at

Parcel Number	ECP Category	ECP Label	Building No. / Site Name	Design Use Description	References	ECP Section Reference	Size of Parcel (Acres)	Basis/Remarks
61	(7)	HS/HR(P)/PS/PR	810, 1075, 1076	Medical Facility Veterinary Clinic	7, 51, 53, 54, 55, 56, 57, 58, 59, 61, 62, 63, 64, 66, 68, 69, 97, 114, 131	Section 4.3.2.1.3 Section 4.3.2.1.4 Section 4.4.4.2 Table 4-3 Section 4.4.4.3 Table 4-4 Section 5.1.1.2.1 Section 5.1.9.1 Section 5.12 Section 5.13.5	14.66	This parcel includes the veterinary clinic (Bldg 810), Patterson Army Health Clinic (Bldg 1075), and former Patterson Boiler Plant (former Bldg 1076). Former X-ray operations were conducted with film development at 1075; over the counter medicines stored on site; medical waste disposed through 1075. Based on extensive previous medical activities within this parcel, potential for historic release of developing chemicals and other waste associated with medical operations exists.
62	(4)	HR	FTMM-13	Former Pathogenic Waste Incinerator	124	Section 5.2.1.2 Table 5-10	0.13	This parcel was investigated under the Fort Monmouth Installation Restoration Program as FTMM-13 (M-13 Pathogenic Waste Incinerator). The pathogenic waste incinerator formerly located on the west side of former Building 1076 was constructed in 1975. The pathogenic waste incinerator was taken out of service in December 1992. Site reconnaissance work revealed no ash or debris in or around the incinerator unit and the incinerator was dismantled in November 1993. An NFA determination was approved by the NJDEP in 1994.
63	(2)	PS/PR	UST-810-131	Former #2 fuel oil UST	9	Section 5.4 Appendix G	0.12	A former #2 fuel oil UST was removed in 1998. Visible petroleum contamination of soil was observed during the removal of the UST, and potentially contaminated soil was removed. No detections in groundwater or soil samples were above NJDEP criteria. A closure report was submitted to the NJDEP requesting a No Further Action determination in 2000, and a NFA approval letter was received from the NJDEP on 8/29/2000.
64	(5)	HR/PS/PR	FTMM-64 (Building 812)	former gasoline distribution area	124, 149	Section 5.2.1.1 Table 5-9 Section 5.3.2	3.18	This parcel was investigated under the Fort Monmouth Installation Restoration Program as FTMM-64 (Bldg 812). This parcel is a former gasoline distribution area. Volatile organic compounds and metals are present in groundwater above the NJDEP GW Quality criteria; no contaminants identified in soil above criteria. Treatment of groundwater is underway via enhanced bioremediation (HRC/ORC injection) through FY 08. A CEA was submitted with the NJDEP, awaiting response. Long Term Monitoring of groundwater continues on a quarterly basis. The identification of volatile organic compounds in the groundwater in excess of criteria indicates vapor intrusion is a potential recognized environmental concern in this area.
65	(2)	PS/PR	FTMM-66 (Building 886)	former fuel oil storage area	124, 149	Section 5.2.1.1 Table 5-9 Section 5.3.2	3.15	This parcel was investigated under the Fort Monmouth Installation Restoration Program as FTMM-66 (Bldg 886). Based upon historical records, Site FTMM-66 was identified as a former fuel oil storage area. Aerial photos indicate a former aboveground storage tank (AST) was located adjacent to Building 886, located off Murphy Drive on the Main Post. The AST had a storage capacity of 250,000 gallons and stored # 2 fuel oil. The AST was removed in the 1970s. Soil contamination was identified at the site during the removal of a 1,000-gallon steel, fuel oil UST located on the west side of Building 886. Soils contained petroleum contamination exceeding NJDEP residential direct contact soil cleanup criteria, and free product was observed in groundwater. 4,000 tons of soil were removed in Feb 2003. A CEA was filed with the NJDEP and monitored natural attenuation, including groundwater monitoring, was selected as the remedial approach. Long term groundwater monitoring continues on a quarterly basis.
66	(1)	HS/PS	900 Building Area	Electrical Substation General Storage Police Station	9, 97	Section 4.4.4.2 Section 4.4.4.3 Section 5.4	28.92	This parcel includes general storage (Bldgs 908, 975 and 976), the police station (977), and an electrical substation (Bldg 978). The electrical substation (Bldg 978) houses 18 lead acid batteries and non-PCB transformers, all contained within secondary containment. Building 977 houses lead acid batteries associated with an emergency generator. Building 901, currently used in an administrative capacity, formerly housed radar training. Chemicals utilized in this operation included alcohols and freon 113. No release or disposal of hazardous substances or petroleum products has occurred, and there has been no migration of such substances from adjacent areas.
67	(2)	PS/PR	UST-949-203	Former #2 fuel oil UST	9	Section 5.4 Appendix G	0.12	A former diesel UST and potentially contaminated soil were removed in 1998. One volatile organic compound was detected above the NJ GW Quality Criteria during the initial round of GW sampling. Subsequent quarterly samples collected in 9/2000, 10/2000, 1/2001, and 4/2001 showed no compounds above New Jersey GWQC. Closure Report requesting No Further Action submitted to NJDEP on 07/17/2001. NJDEP Closure Approval Letter received on 01/10/2003.
68	(2)	HS/PS/PR	900 Building Area former USTs	Former #2 fuel oil USTs	9	Section 5.4 Appendix G	4.74	This parcel includes 12 former USTs. Petroleum discharges were identified at five of the USTs and associated petroleum-contaminated soil was remediated. No Further Action approval letters were received in 2000 (UST-909-147, UST-914-152, UST-977-204, and UST-979-205) and 2003 (UST-905-145). Lead acid batteries associated with an emergency generator are present at Building 979.
69	(7)	HS(P)/HR(P)/PS/PR	900	Former vehicle repair/motor pool	9, 88	Section 4.3.2.1.7 Section 5.4 Section 5.4.2 Appendix G	0.31	This facility is a former vehicle repair/motor pool facility where solvent-based parts cleaners were previously utilized as part of routine vehicle maintenance activities. This building has been used as general storage for the past ten years.
** 70	(7)	HS/HR(P)	551	Classroom, former (early 1950s) photoprocessing	32, 34	Section 4.3.2.1.6 Section 5.13.6	1.73	Former industrial processes included the use of carbon tetrachloride, benzol, acids, and photographic chemicals in an adjacent Quonset hut in the early 1950s. This facility is currently used for administrative and classroom activities.

ATTACHMENT 2

PARCEL 70 EXCERPTS FROM 2008 SI REPORT

3.17 Parcel 70 – Bldg 551 – Former Photoprocessing

3.17.1 Site Description

Parcel 70, Bldg 551, is located in the central portion of the MP on Todd Avenue, directly north of Oceanport Creek. The building formerly housed a classroom and photoprocessing operation, which was located in the western portion of the building (22). Bldg 551 is currently utilized for administrative and classroom activities. Chemicals documented to have been utilized included carbon tetrachloride and photographic chemicals. Additional information pertaining to this parcel can be found in Section 4.3.2.1.6 and Section 5.13.6 of the Phase I ECP (1).

3.17.2 Previous Investigations

One former UST associated with Bldg 551 was removed under the FTMM UST Management Program and is summarized within the FTMM Phase I ECP Report (1). No previous investigations have been conducted in relation to former operations in Bldg 551.

3.17.3 Site Investigation Sampling

A review of historical site plans, sanitary plans, and stormwater management plans was conducted to evaluate potential discharge locations throughout the parcel, and a site reconnaissance was conducted in spring 2007 to evaluate potential discharge locations. Two cast-iron pipe outfalls were identified south of Bldg 551 along the north bank of Oceanport Creek during the 2007 site reconnaissance. In order to determine the absence/presence of contamination from potential releases to the environment, the following surface soil and sediment sampling was conducted in Parcel 70.

Surface Soil Investigation

Surface soil sampling was conducted in December 2007 and January 2008 within Parcel 70. One surface soil sample was collected from one hand augered location outside the exterior door to the former photoprocessing facility in the courtyard of Bldg 551 (**Figure 3.17-1**). This sample was collected to determine if any contamination exists from former photoprocessing operations. The surface soil sample for non-VO analysis was collected from the 0- to 6-inch interval bgs. The surface soil sample collected for VO analysis was collected from the 18- to 24-inch bgs interval. No visual or olfactory evidence of soil contamination was noted.

Sediment Investigation

Sediment samples were collected in December 2007 and January 2008 in Parcel 70. A total of four sediment samples were collected from two distinct hand augered borings located along the north bank of Oceanport Creek adjacent to Bldg 551 (**Figure 3.17-1**). Samples were collected at potential outfall locations to investigate any potential historic discharges from Bldg 551. Sediment samples for non-VO and VO analysis were

collected from the 0- to 6-inch interval bgs and the 18- to 24-inch interval bgs, respectively. No visual or olfactory evidence of sediment contamination was noted.

Table 3.17-1 presents a summary of all field activities, and all sample locations are provided on **Figure 3.17-1**. A summary of sampling activities, including sample IDs, collection dates, and analytical parameters, is provided in **Table 3.17-2.**

Table 3.17-1
Parcel 70 Sampling Location, Rationale and Analytical

Sample Location	Sample Media	Sample Location Rationale	Analytical Suite
70SS-1, 70SD-1, 70SD-1D (3 sample)	Surface soil	A soil sample was collected from the 0- to 6-inch bgs interval to investigate potential discharges associated with former photoprocessing operations at Bldg 551. The sample was located at the exterior door to the former photoprocessing facility in the courtyard of the building.	TCL+30 (w/o pesticides), TAL Metals
70SD-1 and 2 (1 samples)	Sediment	Sediment samples were collected from the 0- to 6-inch bgs interval to investigate potential discharges from Bldg 551. Samples are located at the outfalls of 4-inch cast iron pipes present along the north bank of Oceanport Creek.	TCL+30 (w/o pesticides), TAL Metals
70SD-1D and 2D (1 samples)	Sediment	Sediment samples were collected from the 18- to 24-inch interval bgs to investigate potential discharges from Bldg 551.	TCL+30 (w/o pesticides), TAL Metals

3.17.4 Site Investigation Results

Soil Investigation Results

The soil sample was analyzed for TCL+30 (minus pesticides) and TAL metals. In addition to surface soil sample P70-SS1, samples P70-SD2 and P70-SD2D, which were originally intended to be sediment samples, were characterized as soil samples due to the lack of surface water at the sample location, the low moisture content of the samples, and the lack of recent depositional characteristics at the sample location. These two samples were also analyzed for TCL+30 (without pesticides) and TAL metals. As presented in **Table 3.17-3**, eight B/Ns, 17 metals, and one Aroclor were detected in the three samples.

B/Ns and Aroclor 1260 were not detected at concentrations above the NJDEP NRDCSCC. Of the 17 metals detected, arsenic was detected above the NRDCSCC of 20 mg/kg at a concentration of 26.3 mg/kg in sample P70-SD2. Sample P70-SD2 was collected from the 0- to 6-inch interval. The deeper sample P70-SD2D, collected from the 12- to 18-inch interval had an arsenic concentration below the NRDCSCC.

There are several factors both natural and anthropogenic that can have an influence on arsenic levels in the soil at FTMM. The primary natural influence on the chemical concentrations in the soil at FTMM is parent material. The parent material at FTMM is glauconitic soil of the Tinton and Red Bank sands and their fluvially- and tidally-reworked equivalents (47). Total arsenic levels in glauconite-bearing soils in New Jersey have been reported to range up to 131 mg/kg, with a median of 30 mg/kg (21). Anthropogenic influences on arsenic levels in the soil include the use of pesticides and herbicides. Arsenic was a common constituent of herbicides and pesticides in the past. As a result of these natural and anthropogenic influences, arsenic is not considered a COC in the soil. No COCs were identified in soil at Parcel 70.

Sediment Investigation Results

Sediment samples were analyzed for TCL+30 (without pesticides) and TAL metals. Oceanport Creek is a tidally influenced water body in this portion of the facility; therefore, sediment analytical results were evaluated in relation to the Marine/Estuarine Sediment Screening Guidelines-ER-L.

As presented in **Table 3.17-4**, a total of six B/Ns and 17 metals were detected in Parcel 70 sediment samples. The six B/Ns and 17 metals were detected at concentrations below the ER-L.

No COCs have been identified in sediment at Parcel 70.

3.17.5 Summary and Conclusions

No COCs were identified above applicable NJDEP criteria in surface soil. NFA is recommended for soil within Parcel 70.

No COCs were detected in sediment at concentrations greater than the NJDEP Marine/Estuarine Sediment Screening Guidelines-ER-L. NFA is recommended for sediment within Parcel 70.

Table 3.17-2
Parcel 70 Sample and Analytical Summary

Media	Type	Field Sample #	Sample Date	Sample Time	Begin Depth	End Depth	TPHC	VO+15	B\N+15	PCBs	TAL Metals	Cyanide	Mercury	Ammonia/ Nitrate/ Nitrite	COMMENTS/VARIANCES
SD	HAND AUGER	DUPLICATE-SD	12/20/07	11:10	1.0	1.5									Cancelled by lab. Recollected 01/08/08.
SOIL	HAND AUGER	P70-SS1	12/20/07	10:50	0.0	0.5									Cancelled by lab. Recollected 01/08/08.
SD	HAND AUGER	P70-SD1	12/20/07	11:00	0.0	0.5									Cancelled by lab. Recollected 01/08/08.
SD	HAND AUGER	P70-SD1D	12/20/07	11:10	1.0	1.5									Cancelled by lab. Recollected 01/08/08.
SD	HAND AUGER	P70-SD2	12/20/07	11:30	0.0	0.5									Cancelled by lab. Recollected 01/08/08.
SD	HAND AUGER	P70-SD2D	12/20/07	11:40	1.0	1.5									Cancelled by lab. Recollected 01/08/08.
SOIL	HAND AUGER	P70SS-1	12/27/07	11:50	1.5	2		X							Associated trip blank collected with Parcel 27. No field blank or duplicate collected 12/27/07.
SOIL	HAND AUGER	P70SS-1	01/08/08	15:30	0.0	0.5		X	X	X	X				VOCs not needed. 12/27 VOCs collected at correct depth. Associated field and trip blanks collected with Parcel 27.
SD	HAND AUGER	P70-SD1	01/08/08	14:45	0.0	0.5		X	X	X	X				Associated field and trip blanks collected with Parcel 27.
SD	HAND AUGER	P70-SD1D	01/08/08	15:00	1.0	1.5		X	X	X	X				Associated field and trip blanks collected with Parcel 27.
SOIL	HAND AUGER	P70-SD2	01/08/08	15:10	0.0	0.5		X	X	X	X				Associated field and trip blanks collected with Parcel 27. Sample determined to be classified as soil, not sediment.
SOIL	HAND AUGER	P70-SD2D	01/08/08	15:30	1.0	1.5		X	X	X	X				Associated field and trip blanks collected with Parcel 27. Sample determined to be classified as soil, not sediment.

X = Sample analyzed for the indicated analytical parameter suite

Table 3.17-3
Fort Monmouth Phase II Site Investigation, Parcel 70
Summary of Analytical Parameters Detected in Soil (mg/kg)

			Analytical Results		
		Sample ID:	P70-SS1	P70-SD2	P70-SD2D
		Lab ID:	8000905	8000903	8000904
		Date Sampled:	01/08/2008	01/08/2008	01/08/2008
		Depth (ft. bgs):	0.0-0.5	0.0-0.5	1.0-1.5
Chemical	NRDCSCC[2]	IGWSCC[3]	Result	Result	Result
Semi-Volatiles					
Benzo[a]anthracene	4	500	1.100 U	**0.400 J**	4.500 U
Benzo[b]fluoranthene	4	50	1.100 U	**0.760 J**	4.500 U
Benzoic acid	NLE	NLE	1.100 U	3.200 U	4.500 U
bis(2-Ethylhexyl)phthalate	210	100	**0.300 J**	3.200 U	4.500 U
Chrysene	40	500	1.100 U	**0.620 J**	4.500 U
Di-n-butylphthalate	10000	100	**1.100 B**	**1.200 JB**	**6.000 B**
Fluoranthene	10000	100	1.100 U	**0.840 J**	4.500 U
Phenanthrene	NLE	NLE	1.100 U	**0.440 J**	4.500 U
Pyrene	10000	100	1.100 U	**1.200 J**	4.500 U
Aroclor 1260	2	50	**0.86**	0.0041 U	0.0041 U
Aluminum	NLE	NLE	**9420 B**	**44500 B**	**20400 B**
Arsenic	20	NLE	**4.13**	**26.3**	**11.0**
Barium	47000	NLE	**39.7 B**	**218 B**	**93.4 B**
Beryllium	140	NLE	**0.315**	**5.10**	**2.22**
Cadmium	100	NLE	**1.28**	**3.19**	**0.742**
Calcium	NLE	NLE	**917 B**	**3510 B**	**7440 B**
Chromium (Total)	NLE	NLE	**21.7**	**232**	**114**
Cobalt	NLE	NLE	**1.97**	**10.0**	**1.99**
Copper	45000	NLE	**87.9 B**	**54.2 B**	**22.1 B**
Iron	NLE	NLE	**17300**	**62000**	**25200**
Lead	800	NLE	**40.8**	**115**	**10.6**
Magnesium	NLE	NLE	**951**	**7670**	**3400**
Manganese	NLE	NLE	**84.9**	**107**	**87.7**
Nickel (Soluble Salts)	2400	NLE	**9.39**	**48.8**	**26.7**
Potassium	NLE	NLE	**1610**	**12200**	**6160**
Vanadium	7100	NLE	**30.5**	**162**	**79.4**
Zinc	1500	NLE	**136 B**	**328 B**	**180 B**

[1] NJDEP Residential Direct Contact Soil Cleanup Criteria per NJAC 7:26D, 1999. Beryllium, Copper and Lead criteria per NJAC 7:26D, 2008.

[2] NJDEP Non-Residential Direct Contact Soil Cleanup Criteria per NJAC 7:26D, 1999. Beryllium, Copper and Lead criteria per NJAC 7:26D, 2008.

[3] NJDEP Impact to Groundwater Soil Cleanup Criteria per NJAC 7:26D, 1999.

DUP = Duplicate Sample.

ft. bgs = Feet below ground surface.

B = The compound was found in the associated method blank as well as in the sample.

D = Sample was diluted.

E = The compound's concentration exceeds the calibration range of the instrument for that specific analysis.

J = Mass spec and retention time data indicate the presence of a compound however the result is less than the MDL but greater than zero.

U = The compound was analyzed for but not detected.

NT = Not tested.

NLE = No limit established.

mg/kg = milligram per kilogram.

Bold = Analyte was detected.

Shaded = Concentration exceeds level of concern.
(Surface soil compared to NRDCSCC. Subsurface soil compared to IGWSCC when available, otherwise compared to NRDCSCC).

Table 3.17-4
Fort Monmouth Phase II Site Investigation, Parcel 70
Summary of Analytical Parameters Detected in Sediment (mg/kg)

			Analytical Results	
		Sample ID:	P70-SD1	P70-SD1D
		Lab ID:	8000901	8000902
		Date Sampled:	01/08/2008	01/08/2008
		Depth (ft. bgs):	0.0-0.5	1.0-1.5
Chemical	ER-L[1]	ER-M[2]	Result	Result
Semi-Volatiles				
Benzoic acid	NLE	NLE	**3.100**	1.400 U
bis(2-Ethylhexyl)phthalate	NLE	NLE	**0.170 J**	1.400 U
Chrysene	0.384	2.8	**0.120 J**	1.400 U
Di-n-butylphthalate	NLE	NLE	**1.500 B**	**1.600 B**
Fluoranthene	0.600	5.1	**0.120 J**	1.400 U
Pyrene	0.665	2.6	**0.170 J**	1.400 U
Metals				
Aluminum	NLE	NLE	**4140 B**	**6640 B**
Arsenic	8.2	70	**3.43**	**3.17**
Barium	NLE	NLE	**12.4 B**	**28.2 B**
Beryllium	NLE	NLE	**0.432**	**0.591**
Cadmium	1.2	9.6	**0.197**	**0.184**
Calcium	NLE	NLE	**861 B**	**1110 B**
Chromium (Total)	81	370	**43.9**	**51.2**
Cobalt	NLE	NLE	**0.472**	0.394 U
Copper	34	270	**15.9 B**	**11.3 B**
Iron	NLE	NLE	**13200**	**11000**
Lead	47	218	**14.8**	**8.92**
Magnesium	NLE	NLE	**1460**	**1590**
Manganese	NLE	NLE	**33.5**	**24.2**
Nickel (Soluble Salts)	21	52	**4.26**	**4.25**
Potassium	NLE	NLE	**3000**	**3170**
Vanadium	NLE	NLE	**29.0**	**31.4**
Zinc	150	410	**76.4 B**	**100 B**

[1] NJDEP Marine/Estuarine Sediment Screening Guidelines, Effects Range - Low, 1998.

[2] NJDEP Marine/Estuarine Sediment Screening Guidelines, Effects Range - Medium, 1998.

DUP = Duplicate Sample.

ft. bgs = Feet below ground surface.

B = The compound was found in the associated method blank as well as in the sample.

D = Sample was diluted.

E = The compound's concentration exceeds the calibration range of the instrument for that specific analysis.

J = Mass spec and retention time data indicate the presence of a compound however the result is less than the MDL but greater than zero.

U = The compound was analyzed for but not detected.

NT = Not tested.

NLE = No limit established.

mg/kg = milligram per kilogram.

Bold = Analyte detected.

Shaded = Concentration exceeds ER-L.

LEGEND

- Surface and Subsurface Soil Sample Location
- Direction of Generalized Groundwater Flow derived from qualitative evaluation of surface topography, surface water features, and pre-existing IRP site groundwater potentiometric maps where available.
- Building
- IRP Site Boundary
- Installation Boundary

ECP PARCEL CATEGORY DEFINITIONS

7 Areas that are not evaluated or require additional evaluation.

BRAC PARCEL LABEL DEFINITIONS

8(2)PS
- CONTAMINATION DESCRIPTION
  - HS - Hazardous Substance Storage
  - HR - Hazardous Substance Release
  - PS - Petroleum Storage
  - PR - Petroleum Release
  - (P) - Possible Release or Disposal
- CATEGORY NUMBER
- PARCEL NUMBER

N

SCALE:

0 25 50 100 Feet

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

Shaw® Shaw Environmental, Inc.

FIGURE 3.17-1

FORT MONMOUTH ECP SITE INVESTIGATION

PARCEL 70 SAMPLE LOCATIONS

MAIN POST
FORT MONMOUTH
NEW JERSEY

ArcGIS File: MP_Fig3_17-1_SI_P70_SampleLocations.mxd (7/14/2008 4:22:11 PM)

ATTACHMENT 3

NJDEP AND ARMY CORRESPONDENCE ON PARCEL 70

Combined excerpts of NJDEP and Army correspondence on Parcel 70

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION
PUBLICLY FUNDED REMEDIATION ELEMENT
P.O. BOX 413
TRENTON, NJ 08625-0413

JON S. CORZINE
Governor

LISA P. JACKSON
Commissioner

October 28, 2008

Mr. Joseph Fallon, CHMM
Directorate of Public Works
ATTN: IMNE-MON-PWE
167 Riverside Ave.
Fort Monmouth, NJ 07703

RE: Draft Site Investigation Report
Fort Monmouth, NJ

Dear Mr. Fallon:

The NJDEP Division of Remediation Management & Response (DRMR) has reviewed the Draft Site Investigation Report dated July 21, 2008 by Shaw Environmental, Inc., which was prepared under Phase II of the Environmental Condition of Property (ECP) assessment of Fort Monmouth. Our comments are attached.

You or your staff may contact me at 609-633-0766 with any questions on the enclosed comments, or any other site remediation matters at Fort Monmouth.

Sincerely,

Larry Quinn

Larry Quinn, P.E., CHMM, Site Manager
Bureau of Design and Construction

Attachment

Parcel 69 - Building 900 Former Vehicle Repair/Motor Pool

1. The proposed NFA for soil is not acceptable. Sample analysis at this AOC should have included analysis for PCBs, due to the former waste oil tank, as stated in previous NJDEP comments. Soil samples must be re-collected and analyzed for PCBs.

2. All sediment samples collected adjacent to Parcel 69 must include PCB analysis.

3. NJDEP concurs with the recommendations to further evaluate ground water. Pursuant to N.J.A.C. 7:26E-4.4, a remedial investigation of ground water is required. An investigation workplan must be submitted for NJDEP review and approval.

Parcel 70 – Building 551 – Former Photoprocessing

1. NJDEP concurs with the recommendations for no further action (NFA).

Parcel 76 – 200 Area, 300 Area – Former Barracks

1. See General Comment #1 above.

Parcel 79 – 400 Area Former Barracks

1. See General Comment #1 above.

Parcel 80 – Former Buildings 105 and 106 – Photoprocessing

1. The footprint of the former building 105 and 106 should be shown on Figure 3.20-1. On the current Figure, it cannot be determined where the former buildings were located in relation to the Geoprobe borings, so NFA for soil can't be approved.

2. The NJDEP concurs with the recommendation for further evaluation of ground water. Pursuant to N.J.A.C. 7:26E-4.4, a remedial investigation of ground water is required. An RI workplan must be submitted for NJDEP review and approval.

Parcel 83 - Northeast MP

1. Former structures, buildings and other areas of concern are discussed in the text and in the tables but are not indicated on the Figure 3.21-1. All areas of concern, whether existing or former structures, must be depicted on the site figures.

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

March 16, 2012

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

Re: Army's Response to NJDEP correspondence (Dated October 28, 2008), Draft Site Investigation
Fort Monmouth, NJ

Attachments:

A. Letter from NJDEP dated October 28, 2008, regarding the Draft Site Investigation Report.
B. Letter from Army dated April 28, 2009, regarding the initial response to the NJDEP letter dated October 28, 2008.
C. Letter from the Army dated November 16, 2011, regarding the Army's response to NJDEP's comments for Parcel 15.
D. Unregulated Heat Oil Tank Brief Summary and Closure Reports for Parcels 14, 28, 51, 76, and 79.
E. Letters from NJDEP, regarding UST Closure Approval/NFA, dated July 23, 1993; September 21, 1995; July 10, 1998; February 24, 2000; August 20, 2000; April 20, 2001; and January 10, 2003.
F. Parcel 28 Map – Septic Tank
G. Site Plan depicting from buildings 105 and 106 off of Riverside Drive.
H. Parcel 83 former Structures Map.

Dear Ms. Range:

The U.S. Army Fort Monmouth has reviewed the subject comments as submitted by the NJDEP on 28 October 2008, in regards to the Draft Site Investigation Report dated July 21, 2008 by Shaw Environmental Inc. Referenced below is a line by line response in bold print, to each comment and request for an "No Further Action" (NFA) determination where appropriate.

General Comments

1. USTs at Parcels 14, 28, 51, 76, and 79. The recommendation of no further action (NFA) for the suspected underground storage tanks (USTs) is not acceptable to the NJDEP. The suspected USTs are subject to New Jersey regulations N.J.A.C. 7:26E *Technical*

Parcel 69 - Building 900 Former Vehicle Repair/Motor Pool

1. The proposed NFA for soil is not acceptable. Sample analysis at this AOC should have included analysis for PCBs, due to the former waste oil tank, as stated in previous NJDEP comments. Soil samples must be re-collected and analyzed for PCBs.

Historical operations at Building 900 (tactical motor pool/vehicle repair) did not involve usage of PCB-containing products and PCBs are not suspected to have been disposed of in the former waste oil above-ground storage tank (AST) at Building 900. Thus, the Army did not analyze for PCBs in the soil samples that were collected. In addition, there is no evidence that a historical release occurred from the waste oil AST at Building 900. Thus, the Army does not plan to collect additional soil samples for PCB analysis.

2. All sediment samples collected adjacent to Parcel 69 must include PCB analysis.

The nearest surface water body to Parcel 69 is Oceanport Creek, which is 250 feet to the north of Building 900. As part of the Baseline Ecological Evaluation (BEE) report prepared by Shaw Environmental, Inc. and submitted to NJDEP on May 2011, one surface water sample was collected from Oceanport Creek and analyzed for PCBs, plus additional parameters. PCB concentrations were non-detect in the surface water sample. The findings of the BEE indicated that PCBs were not a Contaminant of Potential Ecological Concern (COPEC) at Parcel 69/Building 900. Historical operations at Building 900 did not involve usage of PCB-containing products and PCBs are not suspected to have been disposed of in the former waste oil AST at Building 900. Thus, the Army does not plan to collect additional sediment samples from Oceanport Creek for PCB analysis.

3. NJDEP concurs with the recommendations to further evaluate ground water. Pursuant to N.J.A.C. 7:26E-4.4, a remedial investigation of ground water is required. An investigation work plan must be submitted for NJDEP review and approval.

Based on PCE concentrations detected in excess of the NJDEP GWQS (1.0 µg/L) in ground water samples collected from temporary well point P69GW-1 (1.02 µg/L) during the Shaw SI, the Army plans re-sample ground water at the location of temporary well point P69GW-1. Results of the temporary well point re-sampling will be provided to the NJDEP in a future letter report.

Parcel 70 – Building 551 - Former Photoprocessing

1. NJDEP concurs with the recommendations for no further action (NFA).

The Army acknowledges the NJDEP's approval of NFA for Parcel 70 (Building 551).

Parcel 76 - 200 Area, 300 Area - Former Barracks

1. See General Comment #1 above.

State of New Jersey

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

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

BOB MARTIN
Commissioner

July 10, 2012

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

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

Dear Ms. Green:

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

Parcel 13 – Former Barracks (Buildings 2004-2016)
Geophysical surveys were performed, and sampling was conducted throughout that area at which USTs were known to or may have been present. No USTs were found; all soils analytical results were below cleanup criteria applicable to the site; no additional action for the parcel is necessary.

Parcel 14 – Former Buildings and Housing Area Northwest Portion of CWA
As indicated in the Department's correspondence of May 30, 2012, the geophysical surveys performed and sampling conducted throughout that area at which USTs were or may have been present were sufficient to adequately characterize the area. No USTs were found; all soils analytical results collected were below cleanup criteria applicable to the site. The parcel was re-categorized from Category 2 to Category 1.

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

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

Parcel 70 – Building 551 – Former Photoprocessing
The October 28, 2008 Departmental correspondence concurred with the recommendation for no further action. As a note however, we do not have a copy of the Appendix G referenced 8/29/00 Closure Approval Letter for UST 551-80

Parcel 76 – 200 Area, 300 Area – Former Barracks
A geophysical survey was performed throughout Parcel 76, with suspect USTs noted in the western portion of the parcel. Although sampling conducted within that western portion of the parcel indicated no exceedences of the applicable cleanup criteria, additional investigation was required regarding the possible USTs.

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

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

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

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

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

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

July 26, 2012

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

Re: August 29, 2000 Closure Approval Letter for UST #551-80 at Building 551 (Parcel 70) – Former Photoprocessing - Main Post, Fort Monmouth, N.J.

Attachments:

A. Correspondence Letter from NJDEP dated July 10, 2012
B. Closure Approval Letter for UST #551-80 from NJDEP dated August 29, 2000

Dear Ms. Range:

In accordance with the NJDEP's July 10, 2012 correspondence letter (provided in Attachment A), enclosed in Attachment B is a copy of the UST Closure Approval/NFA letter for UST #551-80, dated August 29, 2000.

Should you have any questions or require additional information, please contact me at (732) 380-7064 or by email at wanda.s.green2.civ@mail.mil.

Sincerely,

Wanda Green

Wanda Green
BRAC Environmental Coordinator

Enclosures

State of New Jersey

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

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

BOB MARTIN
Commissioner

August 20, 2012

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

Re: Parcel 70 – UST #551-80 at Building 551 August 28, 2000 Closure Approval Letter;
PCBs at Sample Location P70-SS1; Arsenic at Sample Location P70-SD2
Fort Monmouth, New Jersey
PI G000000032

Dear Ms. Green:

The New Jersey Department of Environmental Protection (Department) acknowledges receipt of the referenced Closure Approval Letter, which confirms no additional action is necessary for the former tank at Building 551.

As I indicated in a recent phone conversation with Calibre's Joe Pearson, however, a review of the analytical data previously generated for Parcel 70 indicates the presence of constituents above criteria in soil at two locations, which require additional information, characterization, and/or action. Arsenic was reported at 26.3 ppm at sample location P70-SD2 (characterized as a soil sample, rather than sediment, per page 3-255 of the July 2008 Site Investigation Report). It is understood the Army may contend the arsenic is representative of background conditions, however, that determination has not yet been agreed upon. Please submit additional information in support of same, if the Army choses to pursue this position regarding the arsenic.

Additionally, PCBs of 0.86 ppm were reported at sample location P70-SS1, which is above the current Residential Direct Contact Soil Remediation Standard (0.2 ppm), as well as the Residential Direct Contact Soil Cleanup Criteria (0.49 ppm) applicable at the time of sampling. Remedial efforts to address same are required.

Please contact this office if you have any questions.

Sincerely,

Linda S. Range
Bureau of Case Management

United States Army

Fort Monmouth, New Jersey

Site/Remedial Investigation Report

Building 550
Main Post-West Area

July 1999

SITE/REMEDIAL INVESTIGATION REPORT

BUILDING 550

MAIN POST-WEST AREA

JULY 1999

PREPARED FOR:

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

PREPARED BY:

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

PROJECT NO. 2429-308

550.DOC

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EXECUTIVE SUMMARY

Site/Remedial Investigation and Post-Excavation Soil Sampling

SMC was retained by the U.S. Army DPW to implement a site/remedial investigation adjacent to a former No. 2 fuel oil UST. The UST was associated with Building 550 at the Main Post-West area of the U.S. Army Fort Monmouth Base. The objective of the site/remedial investigation activities was to remove potentially impacted soil resulting from the past operation of the former UST. The site/remedial investigation was performed by SMC personnel in accordance with the NJDEP *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E) and the NJDEP *Field Sampling Procedures Manual.*

Visibly stained soils and soils exhibiting elevated PID levels (greater than 5 ppm) of VOCs, were excavated. Excavation activities continued until potentially impacted soil had been removed. To confirm PID readings and verify the effectiveness of the soil excavation activities, 30 post-excavation soil samples were collected from within the excavation between June 16 and July 28, 1997. All samples were initially analyzed for TPHC and total solids. Samples revealing TPHC results above 1,000 mg/kg were additionally analyzed for volatile organic compounds. The post-excavation soil samples collected from the excavation contained concentrations of TPHC and volatile organic compounds below the NJDEP soil cleanup criteria.

Management of Excavated Soils

A total of approximately 1000 cubic yards of contaminated soil was excavated from around the former UST location and placed on and covered with tarps. All contaminated soil characterization and disposal was handled directly by the U.S. Army Fort Monmouth DPW.

Site Restoration

Upon receiving analytical results and confirming the effectiveness of the excavation activities completed at the site, the excavation was backfilled to grade with certified clean crushed stone and sand.

Conclusions and Recommendations

All post excavation soil samples collected from the UST excavation at Building 550 contained concentrations of TPHC and volatile organic compounds below the NJDEP residential soil cleanup criteria.

In response to the observation of potentially contaminated soil near the water table, two (2) groundwater samples were collected at Building 550. On December 10, 1998, and January 13, 1999, Building 550 was sampled for volatile organic compounds calibrated

for xylene plus 15 tentatively identified compounds (VOC's), and semivolatile organic compounds plus 15 tentatively identified compounds (SVOC's).

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

No further action is proposed in regard to the closure and site assessment at Building 550.

1.0 BACKGROUND INFORMATION

1.1 OVERVIEW

SMC Environmental Services Group (SMC) was retained by the United States Army Directorate of Public Works (DPW) to implement a site/remedial investigation adjacent to a former No. 2 fuel oil underground storage tank (UST). The New Jersey Department of Environmental Protection (NJDEP) UST Registration No. 81533-79, was associated with Building 550 at the Main Post-West area of the U.S. Army Fort Monmouth Base, Fort Monmouth, New Jersey. Refer to site location map in 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 was to remove all potentially impacted soil resulting from the past operation of the former UST.

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

1.2 SITE DESCRIPTION

Building 550 is located in the Main Post-West area of the Fort Monmouth Army Base. The former UST was located a few feet west of the northwest corner of Building 550. A site map is provided in Figure 2.

1.3 GEOLOGICAL/HYDROGEOLOGICAL SETTING

The following is a description of the geological/hydrogeological setting of the area surrounding Building 550. 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 550 is located approximately 300 feet north of Husky Brook, the nearest water body. Based on Main Post topography, groundwater flow in the area of Building 550 is anticipated to be to the south.

1.4 HEALTH AND SAFETY

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

2.0 SITE/REMEDIAL INVESTIGATION ACTIVITIES

2.1 OVERVIEW

The Site/Remedial Investigation was managed and carried out by SMC personnel. All analyses were performed and reported by U.S. Army Fort Monmouth Environmental Laboratory, an NJDEP-certified testing laboratory. All sampling was performed under the direct supervision of a NJDEP Certified Sub-Surface Evaluator according to the methods described in the NJDEP *Field Sampling Procedures Manual.* Sampling frequency and parameters analyzed complied with the NJDEP *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E).

The following Parties participated in Site/Remedial Investigation Activities:

- Subsurface Evaluator: David H. Daniels
  Employer: SMC Environmental Services Group
  Phone Number: (215) 788-7844
  NJDEP Certification No.: 10279

- Project Manager: Charles Appleby
  Employer: DPW U.S. Army, Fort Monmouth
  Phone Number: (732) 532-6224
  NJDEP Certification No.: 2056

- Analytical Laboratory: U.S. Army Fort Monmouth Environmental Laboratory
  Contact Person: Daniel K. Wright
  Phone Number: (732) 532-4359
  NJDEP Company Certification No.: 13461

2.2 FIELD SCREENING/MONITORING

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

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

2.3 MANAGEMENT OF EXCAVATED SOILS

A total of approximately 1,200 cubic yards of material was excavated during the remediation activities. Of this amount, approximately 200 cubic yards of clean overburden soil (soil displaying PID readings below 5 ppm) was removed and stockpiled separate of the contaminated soil. There was approximately 1000 cubic yards of contaminated soil (soil displaying PID readings above 5 ppm) excavated, placed on and covered with tarps.

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

2.4 POST-EXCAVATION SOIL SAMPLING AND RESULTS

The excavation of the impacted soil proceeded laterally north, south and west until non-detectable field screening readings (i.e., less than 5 ppm) were obtained with the PID. Along the eastern portion of the excavation, the removal of all potentially impacted soil was not feasible due to the presence of the adjacent Building 550. The excavation extended vertically to a depth of 9 feet below ground surface (bgs). Groundwater was encountered at a depth of 7 feet bgs.

To confirm the PID readings and verify the effectiveness of soil excavation activities, 30 post-excavation soil samples were collected from within the excavation between June 16 and July 28, 1997. Of these, 16 soil samples were collected from the excavation sidewalls at a depth of 6-½ feet bgs. The sidewall samples were designated 550-S1 through 550-S24, whereas samples 550-S2 through 550-S6 and 550-S11 through 550-S13 were further remediated and resampled. The remaining 14 post-excavation soil samples were collected from the bottom of the excavation at a depth of 9 feet bgs. The bottom samples were designated 550-B1 through 550-B14 and 550-P1 through 550-P5. Samples 550-B3, 550-B7, 550-B12 and 550-P5 were duplicates and sample 550-B9 was further remediated and resampled. The locations of the 30 post-excavation soil samples are shown in Figure 3.

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

All samples were initially analyzed for total petroleum hydrocarbons (TPHC) and total solids. Samples revealing TPHC results above 1,000 mg/kg were additionally analyzed for volatile organic compounds. The TPHC post-excavation sampling results were compared to the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 mg/kg (N.J.A.C. 7:26D and revisions dated February 3, 1994).

A summary of the TPHC analytical results and comparison to the NJDEP soil cleanup criteria is provided in Table 2. A summary of the results of the volatile organic compounds and comparison to the NJDEP soil cleanup criteria is provided in Table 3. The analytical data packages are provided in Appendix A.

The post-excavation soil samples collected from the excavation contained concentrations of TPHC and volatile organic compounds below the NJDEP soil cleanup criteria.

Upon receiving analytical results and confirming the effectiveness of the excavation activities completed at the site, the excavation was backfilled to grade with certified clean crushed stone and sand. Appendix C provides photographs of the site/remedial investigations.

2.5 GROUNDWATER SAMPLING

On December 10,1998, and January 13, 1999, Building 550 was sampled for volatile organic compounds calibrated for xylene plus 15 tentatively identified compounds (VOC's), and semivolatile organic compounds plus 15 tentatively identified compounds (SVOC's). Sampling and analysis were performed in accordance with the NJDEP *Field Sampling Procedures Manual* and the *Technical Requirements For Site Remediation.* Refer to Appendix B for the field sampling documentation.

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 SOIL SAMPLING RESULTS

SMC was retained by the U.S. Army DPW to implement a site/remedial investigation adjacent to a former No. 2 fuel oil UST. The UST was associated with Building 550 at the Main Post-West area of the U.S. Army Fort Monmouth Base. The objective of the site/remedial investigation activities was to remove all potentially impacted soil resulting from the result of the past operation of the former UST.

Visibly stained soils and soils exhibiting elevated PID levels (greater than 5 ppm) of VOCs were excavated. Excavation activities continued until potentially impacted soil had been removed. In all, a total of approximately 1,000 cubic yards of contaminated soil was excavated from around the former UST location. All contaminated soil characterization and disposal was handled directly by the U.S. Army Fort Monmouth DPW.

To confirm the PID readings and verify the effectiveness of the soil excavation activities, 30 post-excavation soil samples were collected from within the excavation between June 16 and July 28, 1997. All samples were initially analyzed for TPHC and total solids. Samples revealing TPHC results above 1,000 mg/kg were additionally analyzed for volatile organic compounds. The post-excavation soil samples collected from the excavation contained concentrations of TPHC and volatile organic compounds below the NJDEP soil cleanup criteria.

Upon receiving analytical results and confirming the effectiveness of the excavation activities completed at the site, the excavation was backfilled to grade with certified clean crushed stone and sand.

3.2 GROUNDWATER SAMPLING RESULTS

No compounds were detected in the sample collected from Building 550 on December 10, 1998.

The sample collected from Building 550 on January 13, 1999, contained naphthalene at a concentration of 42.80 ug/L, 2-methylnaphthalene at 53.52 ug/l, acenaphthene at 5.26 ug/l, dibenzofuran at 3.01 ug/l, flourene at 7.02 ug/l, and phenanthrene at 10.62 ug/l. No other compounds were detected. Trichloroethene was detected in the trip blank at a concentration of 5.72 ug/l. The trichloroethene concentration exceeds the GWQS on account of laboratory contamination. No other compounds were detected in the trip blank. The field dup contained naphthalene at a concentration of 37.53 ug/L, 2-methylnaphthalene at 48.65 ug/l, acenaphthene at 4.24 ug/l, dibenzofuran at 2.56 ug/l, flourene at 5.52 ug/l, and phenanthrene at 7.74 ug/. No other compounds were detected in the field dup.

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

Groundwater samples collected on December 10, 1998, and January 13,1999, were either below the detection limit or in compliance with the New Jersey Ground Water Quality Criteria (GWQC).

3.3 CONCLUSION AND RECOMMENDATIONS

All post excavation soil samples collected from the UST excavation at Building 550 contained concentrations of TPHC and volatile organic compounds below the NJDEP residential soil cleanup criteria.

Based on the analytical results of the groundwater samples collected at Building 550 on December 10, 1998, and January 13, 1999, groundwater quality at Building 550 was either below the detection limit or in compliance with the New Jersey Ground Water Quality Criteria (GWQC).

No further action is proposed in regard to the closure and site assessment at Building 550.

TABLES

TABLE 1

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
AREA 550, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
550-B1	6/16/97	6/19/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-B2	6/16/97	6/19/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-B3	6/16/97	6/19/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-S1	6/16/97	6/19/97	Soil	Post-Excavation	TPHC	OQA-QAM-025

Note:
* TPHC Total Petroleum Hydrocarbons

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
AREA 550, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
**550-S2	6/19/97	6/19/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
**550-S3	6/19/97	6/19/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
**550-S4	6/19/97	6/19/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
**550-S5	6/19/97	6/19/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
**550-S6	6/19/97	6/19/97	Soil	Post-Excavation	TPHC	OQA-QAM-025

Note:
* TPHC Total Petroleum Hydrocarbons
** Sample area was further remediated and resampled

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
AREA 550, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
550-S7	6/24/97	6/25/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-S8	6/24/97	6/25/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-S9	6/24/97	6/25/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-B4	6/24/97	6/25/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-B5	6/24/97	6/25/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-S10	6/24/97	6/25/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
**550-S11	6/24/97	6/25/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-B6	6/24/97	6/25/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-B7	6/24/97	6/25/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
**550-S12	6/25/97	6/25/97	Soil	Post-Excavation	TPHC	OQA-QAM-025

Note:
* TPHC Total Petroleum Hydrocarbons
** Sample area was further remediated and resampled

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
AREA 550, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
**550-S13	6/26/97	6/27/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-S14	6/26/97	6/27/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-S15	6/26/97	6/27/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-B8	6/26/97	6/27/97	Soil	Post-Excavation	TPHC	OQA-QAM-025

Note:
* TPHC Total Petroleum Hydrocarbons
** Sample area was further remediated and resampled

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
AREA 550, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
550-S16	7/1/97	7/2/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-S17	7/1/97	7/2/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
**550-B9	7/1/97	7/2/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-S18	7/1/97	7/2/97	Soil	Post-Excavation	TPHC	OQA-QAM-025

Note:
* TPHC Total Petroleum Hydrocarbons
** Sample area was further remediated and resampled

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
AREA 550, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
550-P1	7/15/97	7/16/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-P2	7/15/97	7/16/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-P3	7/15/97	7/16/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-P4	7/15/97	7/16/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-P5	7/15/97	7/16/97	Soil	Post-Excavation	TPHC	OQA-QAM-025

Note:
* TPHC Total Petroleum Hydrocarbons

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
AREA 550, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
550-B10	7/28/97	7/28/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-B11	7/28/97	7/28/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-B12	7/28/97	7/28/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-B13	7/28/97	7/28/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-B14	7/28/97	7/28/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-S19	7/28/97	7/28/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-S20	7/28/97	7/28/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-S21	7/28/97	7/28/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-S22	7/28/97	7/28/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-S23	7/2897	7/28/97	Soil	Post-Excavation	TPHC	OQA-QAM-025
550-S24	7/28/97	7/28/97	Soil	Post-Excavation	TPHC	OQA-QAM-025

Note:
* TPHC Total Petroleum Hydrocarbons

TABLE 1

SUMMARY OF SAMPLING ACTIVITIES
BUILDING 550, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Sampling Method**
4136.01	12/10/98	12/15/98	Aqueous	Groundwater	VOCs, SVOCs	PPNDP
4136.02	12/10/98	12/15/98	Aqueous	Groundwater	VOCs, SVOCs	PPNDP
4136.01	12/10/98	12/15/98	Aqueous	Groundwater	VOCs, SVOCs	PPNDP
4136.02	12/10/98	12/15/98	Aqueous	Groundwater	VOCs, SVOCs	PPNDP
4187.01	1/13/99	1/22/99	Aqueous	Groundwater	VOCs, SVOCs	PPNDP
4187.02	1/13/99	1/22/99	Aqueous	Groundwater	VOCs, SVOCs	PPNDP
4187.03	1/13/99	1/22/99	Aqueous	Groundwater	VOCs, SVOCs	PPNDP
4187.04	1/13/99	1/22/99	Aqueous	Groundwater	VOCs, SVOCs	PPNDP
4187.05	1/13/99	1/22/99	Aqueous	Groundwater	VOCs, SVOCs	PPNDP

Note:
*VOCs: Volatile Organic Compounds plus 15 tentatively identified compounds
*SVOCs: Semivolatile organic compounds plus 15 tentatively identified compounds
**PPNDP: Passively Placed Narrow Diameter Point

TABLE 2

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
AREA 550, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Method Used	Method Detection Limit (mg/kg)	Compound of Concern	Result (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
550-B1=	2699.01	6/16/97	6/19/97	Total Solid	--	--	81.75	--	--
				TPHC	187	Yes	ND	10,000	No
550-B2=	2699.02	6/16/97	6/19/97	Total Solid	--	--	76.54	--	--
				TPHC	201	Yes	ND	10,000	No
550-B3=	2699.03	6/16/97	6/19/97	Total Solid	--	--	77.28	--	--
				TPHC	196	Yes	ND	10,000	No
550-S1=	2699.04	6/16/97	6/19/97	Total Solid	--	--	84.61	--	--
				TPHC	174	Yes	ND	10,000	No

Note:

* Total Solid results are expressed as a percentage.

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

-- Not detected above stated sample quantitation limit

TPHC Total Petroleum Hydrocarbons

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
AREA 550, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Method Used	Method Detection Limit (mg/kg)	Compound of Concern	Result (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
***550-S2=	2709.01	6/19/97	6/19/97	Total Solid	--	--	81.92	--	--
				TPHC	183	Yes	6135.65	10,000	No
***550-S3=	2709.02	6/19/97	6/19/97	Total Solid	--	--	85.19	--	--
				TPHC	182	Yes	4366.19	10,000	No
***550-S4=	2709.03	6/19/97	6/19/97	Total Solid	--	--	80.52	--	--
				TPHC	181	Yes	9136.31	10,000	No
***550-S5=	2709.04	6/19/97	6/19/97	Total Solid	--	--	80.62	--	--
				TPHC	195	Yes	3708.27	10,000	No
***550-S6=	2709.05	6/19/97	6/19/97	Total Solid	--	--	81.38	--	--
				TPHC	174	Yes	11887.77	10,000	Yes

Note:
* Total Solid results are expressed as a percentage.
** NJDEP Residential Direct Contact soil cleanup criteria for total organics
*** Sample area was further remediated and resampled
-- Not detected above stated sample quantitation limit
TPHC Total Petroleum Hydrocarbons

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
AREA 550, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Method Used	Method Detection Limit (mg/kg)	Compound of Concern	Result (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
550-S7=	2735.01	6/24/97	6/25/97	Total Solid	--	--	78.52	--	--
				TPHC	196	Yes	ND	10,000	No
550-S8=	2735.02	6/24/97	6/25/97	Total Solid	--	--	74.14	--	--
				TPHC	194	Yes	666.74	10,000	No
550-S9=	2735.03	6/24/97	6/25/97	Total Solid	--	--	72.85	--	--
				TPHC	211	Yes	ND	10,000	No
550-B4=	2735.04	6/24/97	6/25/97	Total Solid	--	--	75.49	--	--
				TPHC	195	Yes	ND	10,000	No
550-B5=	2735.05	6/24/97	6/25/97	Total Solid	--	--	75.17	--	--
				TPHC	199	Yes	ND	10,000	No
550-S10=	2735.06	6/24/97	6/25/97	Total Solid	--	--	81.38	--	--
				TPHC	184	Yes	ND	10,000	No
***550-S11=	2735.07	6/24/97	6/25/97	Total Solid	--	--	80.13	--	--
				TPHC	194	Yes	ND	10,000	No
550-B6=	2735.08	6/24/97	6/25/97	Total Solid	--	--	79.95	--	--
				TPHC	191	Yes	ND	10,000	No
550-B7=	2735.09	6/24/97	6/25/97	Total Solid	--	--	82.95	--	--
				TPHC	181	Yes	ND	10,000	No
***550-S12=	2735.10	6/25/97	6/25/97	Total Solid	--	--	84.79	--	--
				TPHC	167	Yes	3344.46	10,000	No

Note:

* Total Solid results are expressed as a percentage.

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

*** Sample area was further remediated and resampled

-- Not detected above stated sample quantitation limit

TPHC Total Petroleum Hydrocarbons

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
AREA 550, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Method Used	Method Detection Limit (mg/kg)	Compound of Concern	Result (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
***550-S13=	2748.01	6/26/97	6/27/98	Total Solid	--	--	83.96	--	--
				TPHC	165	Yes	5662.78	10,000	No
550-S14=	2748.02	6/26/97	6/27/98	Total Solid	--	--	84.07	--	--
				TPHC	182	Yes	ND	10,000	No
550-S15=	2748.03	6/26/97	6/27/98	Total Solid	--	--	85.80	--	--
				TPHC	163	Yes	6553.80	10,000	No
550-B8=	2748.04	6/26/97	6/27/98	Total Solid	--	--	81.80	--	--
				TPHC	191	Yes	ND	10,000	No

Note:

*	Total Solid results are expressed as a percentage.
**	NJDEP Residential Direct Contact soil cleanup criteria for total organics
***	Sample area was further remediated and resampled
--	Not detected above stated sample quantitation limit
TPHC	Total Petroleum Hydrocarbons

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
AREA 550, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Method Used	Method Detection Limit (mg/kg)	Compound of Concern	Result (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
550-S16=	2763.07	7/1/97	7/2/97	Total Solid	--	--	80.98	--	--
				TPHC	189	Yes	3311.90	10,000	No
550-S17=	2763.08	7/1/97	7/2/97	Total Solid	--	--	85.49	--	--
				TPHC	181	Yes	ND	10,000	No
***550-B9=	2763.09	7/1/97	7/2/97	Total Solid	--	--	74.58	--	--
				TPHC	201	Yes	20565.24	10,000	Yes
550-S18=	2763.10	7/1/97	7/2/97	Total Solid	--	--	84.10	--	--
				TPHC	186	Yes	ND	10,000	No

Note:

*	Total Solid results are expressed as a percentage.
**	NJDEP Residential Direct Contact soil cleanup criteria for total organics
***	Sample area was further remediated and resampled
--	Not detected above stated sample quantitation limit
TPHC	Total Petroleum Hydrocarbons

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
AREA 550, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Method Used	Method Detection Limit (mg/kg)	Compound of Concern	Result (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
550-P1=	2799.01	7/15/97	7/16/97	Total Solid	--	--	83.33	--	--
				TPHC	183	Yes	ND	10,000	No
550-P2=	2799.02	7/15/97	7/16/97	Total Solid	--	--	83.63	--	--
				TPHC	187	Yes	ND	10,000	No
550-P3=	2799.03	7/15/97	7/16/97	Total Solid	--	--	83.60	--	--
				TPHC	189	Yes	ND	10,000	No
550-P4=	2799.04	7/15/97	7/16/97	Total Solid	--	--	82.42	--	--
				TPHC	191	Yes	ND	10,000	No
550-P5=	2799.05	7/15/97	7/16/97	Total Solid	--	--	78.88	--	--
				TPHC	193	Yes	ND	10,000	No

Note:
* Total Solid results are expressed as a percentage.
** NJDEP Residential Direct Contact soil cleanup criteria for total organics
-- Not detected above stated sample quantitation limit
TPHC Total Petroleum Hydrocarbons

TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
AREA 550, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Method Used	Method Detection Limit (mg/kg)	Compound of Concern	Result (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
550-B10=	2838.01	7/28/97	7/28/97	Total Solid	--	--	82.42	--	--
				TPHC	181	Yes	302.72	10,000	No
550-B11=	2838.02	7/28/97	7/28/97	Total Solid	--	--	81.14	--	--
				TPHC	186	Yes	ND	10,000	No
550-B12=	2838.03	7/28/97	7/28/97	Total Solid	--	--	85.50	--	--
				TPHC	182	Yes	ND	10,000	No
550-B13=	2838.04	7/28/97	7/28/97	Total Solid	--	--	82.17	--	--
				TPHC	178	Yes	ND	10,000	No
550-B14=	2838.05	7/28/97	7/28/97	Total Solid	--	--	80.15	--	--
				TPHC	187	Yes	ND	10,000	No
550-S19=	2838.06	7/28/97	7/28/97	Total Solid	--	--	87.54	--	--
				TPHC	167	Yes	ND	10,000	No
550-S20=	2838.07	7/28/97	7/28/97	Total Solid	--	--	82.72	--	--
				TPHC	179	Yes	ND	10,000	No
550-S21=	2838.08	7/28/97	7/28/97	Total Solid	--	--	81.31	--	--
				TPHC	185	Yes	269.29	10,000	No
550-S22=	2838.09	7/28/97	7/28/97	Total Solid	--	--	89.25	--	--
				TPHC	173	Yes	ND	10,000	No
550-S23=	2838.10	7/28/97	7/28/97	Total Solid	--	--	92.11	--	--
				TPHC	164	Yes	ND	10,000	No
550-S24=	2838.11	7/28/97	7/28/97	Total Solid	--	--	89.96	--	--
				TPHC	171	Yes	ND	10,000	No

Note:

* Total Solid results are expressed as a percentage.

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

-- Not detected above stated sample quantitation limit

TPHC Total Petroleum Hydrocarbons

TABLE 3

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

Table 3
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Project: 961226

Case No.: 2748 Location: AREA 550 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 2748.03

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

CAS NO.	PARAMETER	RESULTS	QUALIFIER	RESIDENTIAL	NON-RESIDENTIAL
107028	Acrolein	580	U	NA	NA
107131	Acrylonitrile	580	U	1000	5000
75650	tert-Butyl alcohol	580	U	NA	NA
1634044	Methyl-tert-Butyl ether	580	U	NA	NA
108203	Di-isopropyl ether	580	U	NA	NA
	Dichlorodifluoromethane	58	U	NA	NA
74-87-3	Chloromethane	58	U	520000	1000000(d)
75-01-4	Vinyl Chloride	58	U	2000	7000
74-83-9	Bromomethane	58	U	79000	1000000(d)
75-00-3	Chloroethane	58	U	NA	NA
75-69-4	Trichlorofluoromethane	58	U	NA	NA
75-35-4	1, 1-Dichloroethene	58	U	8000	150000
67-64-1	Acetone	58	U	1000000(d)	1000000(d)
75-15-0	Carbon Disulfide	58	U	NA	NA
75-09-2	Methylene Chloride	58	U	49000	210000
156-60-5	trans-1,2-Dichloroethene	58	U	1000000(d)	1000000(d)
75-35-3	1,1-Dichloroethane	58	U	570000	1000000(d)
108-05-4	Vinyl Acetate	58	U	NA	NA
78-93-3	2-Butanone	58	U	1000000(d)	1000000(d)
156-59-2	cis-1,2-Dichloroethene	58	U	79000	1000000(d)
67-66-3	Chloroform	58	U	19000(k)	28000(k)

Table 3
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Project: 961226

Case No.: 2748 Location: AREA 550 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 2748.03

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

CAS NO.	PARAMETER	RESULTS	QUALIFIER	RESIDENTIAL	NON-RESIDENTIAL
75-55-6	1,1,1-Trichloroethane	58	U	NA	NA
56-23-5	Carbon Tetrachloride	58	U	2000(k)	4000(k)
71-43-2	Benzeze	58	U	3000	13000
107-06-2	1,2-Dichloroethane	58	U	6000	24000
79-01-6	Trichloroethene	58	U	23000	54000(k)
78-87-5	1, 2-Dichloropropane	58	U	10000	43000
75-27-4	Bromodichloromethane	58	U	11000(g)	46000(g)
110-75-8	2-Chloroethyl vinyl ether	58	U	NA	NA
10061-01-5	cis-1,3-Dichloropropene	58	U	NA	NA
108-10-1	4-Methyl-2-Pentanone	58	U	1000000(d)	1000000(d)
108-88-3	Toluene	58	U	1000000(d)	1000000(d)
10061-02-6	trans-1,3-Dichloropropene	58	U	NA	NA
79-00-5	1,1,2-Trichloroethane	58	U	22000	420000
127-18-4	Tetrachloroethene	58	U	4000(k)	6000(k)
591-78-6	2-Hexanone	58	U	NA	NA
126-48-1	Dibromochloromethane	58	U	NA	NA
108-90-7	Chlorobenzene	58	U	37000	680000
100-41-4	Ethylbenzene	45	JD	1000000(d)	1000000(d)
1330-20-7	m+p-Xylenes	58	U	NA	NA

Table 3
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Project: 961226

Case No.: 2748 Location: AREA 550 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 2748.03

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

CAS NO.	PARAMETER.	RESULTS	QUALIFIER	RESIDENTIAL	NON-RESIDENTIAL
1330-20-7	o-Xylene	58	U	NA	NA
100-42-5	Styrene	58	U	23000	97000
75-25-2	Bromoform	58	U	86000	370000
79-34-5	1,1,2,2-Tetrachloroethane	58	U	34000	70000(k)
541-73-1	1,3-Dichlorobenzene	58	U	5100000	10000000(c)
106-46-7	1,4-Dichlorobenzene	58	U	570000	10000000(c)
95-50-1	1,2-Dichlorobenzene	58	U	5100000	10000000(c)

Table 3
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Project: 961226

Case No.: 2763 Location: AREA 550 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 2763.07

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

CAS NO.	PARAMETER	RESULTS	QUALIFIER	RESIDENTIAL	NON-RESIDENTIAL
107028	Acrolein	7200	U	NA	NA
107131	Acrylonitrile	7200	U	1000	5000
75650	tert-Butyl alcohol	7200	U	NA	NA
1634044	Methyl-tert-Butyl ether	7200	U	NA	NA
108203	Di-isopropyl ether	7200	U	NA	NA
	Dichlorodifluoromethane	720	U	NA	NA
74-87-3	Chloromethane	720	U	520000	1000000(d)
75-01-4	Vinyl Chloride	720	U	2000	7000
74-83-9	Bromomethane	720	U	79000	1000000(d)
75-00-3	Chloroethane	720	U	NA	NA
75-69-4	Trichlorofluoromethane	720	U	NA	NA
75-35-4	1, 1-Dichloroethene	720	U	8000	150000
67-64-1	Acetone	720	U	1000000(d)	1000000(d)
75-15-0	Carbon Disulfide	720	U	NA	NA
75-09-2	Methylene Chloride	720	U	49000	210000
156-60-5	trans-1,2-Dichloroethene	720	U	1000000(d)	1000000(d)
75-35-3	1,1-Dichloroethane	720	U	570000	1000000(d)
108-05-4	Vinyl Acetate	720	U	NA	NA
78-93-3	2-Butanone	720	U	1000000(d)	1000000(d)
156-59-2	cis-1,2-Dichloroethene	720	U	79000	1000000(d)
67-66-3	Chloroform	720	U	19000(k)	28000(k)

Table 3
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Project: 961226

Case No.: 2763 Location: AREA 550 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 2763.07

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

CAS NO.	PARAMETER	RESULTS	QUALIFIER	RESIDENTIAL	NON-RESIDENTIAL
75-55-6	1,1,1-Trichloroethane	720	U	NA	NA
56-23-5	Carbon Tetrachloride	720	U	2000(k)	4000(k)
71-43-2	Benzeze	720	U	3000	13000
107-06-2	1,2-Dichloroethane	720	U	6000	24000
79-01-6	Trichloroethene	720	U	23000	54000(k)
78-87-5	1, 2-Dichloropropane	720	U	10000	43000
75-27-4	Bromodichloromethane	720	U	11000(g)	46000(g)
110-75-8	2-Chloroethyl vinyl ether	720	U	NA	NA
10061-01-5	cis-1,3-Dichloropropene	720	U	NA	NA
108-10-1	4-Methyl-2-Pentanone	720	U	1000000(d)	1000000(d)
108-88-3	Toluene	720	U	1000000(d)	1000000(d)
10061-02-6	trans-1,3-Dichloropropene	720	U	NA	NA
79-00-5	1,1,2-Trichloroethane	720	U	22000	420000
127-18-4	Tetrachloroethene	720	U	4000(k)	6000(k)
591-78-6	2-Hexanone	720	U	NA	NA
126-48-1	Dibromochloromethane	720	U	NA	NA
108-90-7	Chlorobenzene	720	U	37000	680000
100-41-4	Ethylbenzene	720	U	1000000(d)	1000000(d)
1330-20-7	m+p-Xylenes	720	U	NA	NA

Table 3
VOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: FMETL NJDEP # 13461 Project: 961226

Case No.: 2763 Location: AREA 550 SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 2763.07

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

CAS NO.	PARAMETER.	RESULTS	QUALIFIER	RESIDENTIAL	NON-RESIDENTIAL
1330-20-7	o-Xylene	720	U	NA	NA
100-42-5	Styrene	720	U	23000	97000
75-25-2	Bromoform	720	U	86000	370000
79-34-5	1,1,2,2-Tetrachloroethane	720	U	34000	70000(k)
541-73-1	1,3-Dichlorobenzene	720	U	5100000	10000000(c)
106-46-7	1,4-Dichlorobenzene	720	U	570000	10000000(c)
95-50-1	1,2-Dichlorobenzene	720	U	5100000	10000000(c)

SOIL CLEANUP CRITERIA (MG/KG)

(LAST REVISED-7/11/96)

(A) CRITERIA ARE HEALTH BASED USING AN INCIDENTAL INGESTION EXPOSURE PATHWAY EXCEPT WHERE NOTED BELOW.

(B) CRITERIA ARE SUBJECT TO CHANGE BASED ON SITE SPECIFIC FACTORS (E.G., AQUIFER CLASSIFICATION, SOIL TYPE, NATURAL BACKGROUND, ENVIRONMENTAL IMPACTS, ETC.)

(C) HEALTH BASED CRITERION EXCEEDS THE 10,000 MG/KG MAXIMUM FOR TOTAL ORGANIC CONTAMINANTS.

(D) HEALTH BASED CRITERION EXCEEDS THE 1000 MG/KG MAXIMUM FOR TOTAL VOLATILE ORGANIC CONTAMINANTS

(E) CLEANUP STANDARD PROPOSAL WAS BASED ON NATURAL BACKGROUND.

(F) HEALTH BASED CRITERION IS LOWER THAN ANALYTICAL LIMITS; CLEANUP CRITERION BASED ON PRACTICAL QUANTITATION LEVEL.

(G) CRITERION HAS BEEN RECALCULATED BASED ON NEW TOXICOLOGICAL DATA.

(H) THE IMPACT TO GROUND WATER VALUES FOR INORGANIC CONSTITUENTS WILL BE DEVELOPED BASED UPON SITE SPECIFIC CHEMICAL AND PHYSICAL PARAMETERS.

(I) ORIGINAL CRITERION WAS INCORRECTLY CALCULATED AND HAS BEEN RECALCULATED.

(J) TYPOGRAPHICAL ERROR.

(K) CRITERIA BASED ON INHALATION EXPOSURE PATHWAY, WHICH YIELDED A MORE STRINGENT CRITERION THAN THE INCIDENTAL INGESTION EXPOSURE PATHWAY.

(L) NEW CRITERION DERIVED USING METHODOLOGY IN THE BASIS AND BACKGROUND DOCUMENT.

(M) CRITERION BASED ON ECOLOGICAL (PHYTOTOXICITY) EFFECTS.

(N) LEVEL OF THE HUMAN HEALTH BASED CRITERION IS SUCH THAT EVALUATION FOR POTENTIAL ENVIRONMENTAL IMPACTS ON A SITE BY SITE BASIS IS RECOMMENDED.

(O) LEVEL OF THE CRITERION IS SUCH THAT EVALUATION FOR POTENTIAL ACUTE EXPOSURE HAZARD IS RECOMMENDED.

(P) CRITERION BASED ON THE USEPA INTEGRATED EXPOSURE UPTAKE BIOKINETIC (IEUBK) MODEL UTILIZING THE DEFAULT PARAMETERS. THE CONCENTRATION IS CONSIDERED TO PROTECT 95% OF TARGET POPULATION (CHILDREN) AT A BLOOD LEVEL OF 10 UG/DL.

(Q) CRITERIA WAS DERIVED FROM A MODEL DEVELOPED BY THE SOCIETY FOR ENVIRONMENTAL GEOCHEMISTRY AND HEALTH (SEGH) AND WAS DESIGNED TO BE PROTECTIVE FOR ADULTS IN THE WORKPLACE.

(R) INSUFFICIENT INFORMATION AVAILABLE TO CALCULATE IMPACT TO GROUND WATER CRITERIA.

TABLE 4

Table 4
VOLATILE ORGANICS ANALYSIS DATA SHEET

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

Date Sampled: 12/10/98 Location: 550 Lab Sample ID: 4136.01(Trip Blank)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
107028	Acrolein	1.85	Not Detected	--	50	no
107131	Acrylonitrile	2.78	Not Detected	--	50	no
75650	tert-Butyl alcohol	8.52	Not Detected	--	nle	no
1634044	Methyl-tert-Butyl ether	0.16	Not Detected	--	nle	no
108203	Di-isopropyl ether	0.25	Not Detected	--	nle	no
	Dichlorodifluoromethane	1.68	Not Detected	--	nle	no
74-87-3	Chloromethane	1.16	Not Detected	--	30	no
75-01-4	Vinyl Chloride	1.06	Not Detected	--	5	no
74-83-9	Bromomethane	1.10	Not Detected	--	10	no
75-00-3	Chloroethane	1.01	Not Detected	--	nle	no
75-69-4	Trichlorofluoromethane	0.50	Not Detected	--	nle	no
75-35-4	1, 1-Dichloroethene	0.24	Not Detected	--	2	no
67-64-1	Acetone	1.36	Not Detected	--	700	no
75-15-0	Carbon Disulfide	0.46	Not Detected	--	nle	no
75-09-2	Methylene Chloride	0.24	Not Detected	--	2	no
156-60-5	trans-1,2-Dichloroethene	0.16	Not Detected	--	100	no
75-35-3	1,1-Dichloroethane	0.12	Not Detected	--	70	no
108-05-4	Vinyl Acetate	0.78	Not Detected	--	nle	no
78-93-3	2-Butanone	0.62	Not Detected	--	300	no
156-59-2	cis-1,2-Dichloroethene	0.17	Not Detected	--	10	no
67-66-3	Chloroform	0.30	Not Detected	--	6	no
75-55-6	1,1,1-Trichloroethane	0.23	Not Detected	--	30	no
56-23-5	Carbon Tetrachloride	0.47	Not Detected	--	2	no
71-43-2	Benzeze	0.23	Not Detected	--	1	no
107-06-2	1,2-Dichloroethane	0.18	Not Detected	--	2	no
79-01-6	Trichloroethene	0.23	Not Detected	--	1	no
78-87-5	1, 2-Dichloropropane	0.40	Not Detected	--	1	no
75-27-4	Bromodichloromethane	0.55	Not Detected	--	1	no
110-75-8	2-Chloroethyl vinyl ether	0.65	Not Detected	--	nle	no
10061-01-5	cis-1,3-Dichloropropene	0.69	Not Detected	--	nle	no

Table 4
VOLATILE ORGANICS ANALYSIS DATA SHEET

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

Date Sampled: 12/10/98 Location: 550 Lab Sample ID: 4136.01(Trip Blank)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
108-10-1	4-Methyl-2-Pentanone	0.59	Not Detected	--	400	no
108-88-3	Toluene	0.37	Not Detected	--	1000	no
10061-02-6	trans-1,3-Dichloropropene	0.87	Not Detected	--	nle	no
79-00-5	1,1,2-Trichloroethane	0.48	Not Detected	--	3	no
127-18-4	Tetrachloroethene	0.32	Not Detected	--	1	no
591-78-6	2-Hexanone	0.71	Not Detected	--	nle	no
126-48-1	Dibromochloromethane	0.86	Not Detected	--	10	no
108-90-7	Chlorobenzene	0.39	Not Detected	--	4	no
100-41-4	Ethylbenzene	0.65	Not Detected	--	700	no
1330-20-7	m+p-Xylenes	1.14	Not Detected	--	nle	no
1330-20-7	o-Xylene	0.62	Not Detected	--	nle	no
100-42-5	Styrene	0.56	Not Detected	--	100	no
75-25-2	Bromoform	0.70	Not Detected	--	4	no
79-34-5	1,1,2,2-Tetrachloroethane	0.47	Not Detected	--	2	no
541-73-1	1,3-Dichlorobenzene	0.55	Not Detected	--	600	no
106-46-7	1,4-Dichlorobenzene	0.57	Not Detected	--	75	no
95-50-1	1,2-Dichlorobenzene	0.64	Not Detected	--	600	no

Table 4
VOLATILE ORGANICS ANALYSIS DATA SHEET

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

Date Sampled: 12/10/98 Location: 550 Lab Sample ID: 4136.02(Field Blank)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
107028	Acrolein	1.85	Not Detected	--	50	no
107131	Acrylonitrile	2.78	Not Detected	--	50	no
75650	tert-Butyl alcohol	8.52	Not Detected	--	nle	no
1634044	Methyl-tert-Butyl ether	0.16	Not Detected	--	nle	no
108203	Di-isopropyl ether	0.25	Not Detected	--	nle	no
	Dichlorodifluoromethane	1.68	Not Detected	--	nle	no
74-87-3	Chloromethane	1.16	Not Detected	--	30	no
75-01-4	Vinyl Chloride	1.06	Not Detected	--	5	no
74-83-9	Bromomethane	1.10	Not Detected	--	10	no
75-00-3	Chloroethane	1.01	Not Detected	--	nle	no
75-69-4	Trichlorofluoromethane	0.50	Not Detected	--	nle	no
75-35-4	1, 1-Dichloroethene	0.24	Not Detected	--	2	no
67-64-1	Acetone	1.36	Not Detected	--	700	no
75-15-0	Carbon Disulfide	0.46	Not Detected	--	nle	no
75-09-2	Methylene Chloride	0.24	Not Detected	--	2	no
156-60-5	trans-1,2-Dichloroethene	0.16	Not Detected	--	100	no
75-35-3	1,1-Dichloroethane	0.12	Not Detected	--	70	no
108-05-4	Vinyl Acetate	0.78	Not Detected	--	nle	no
78-93-3	2-Butanone	0.62	Not Detected	--	300	no
156-59-2	cis-1,2-Dichloroethene	0.17	Not Detected	--	10	no
67-66-3	Chloroform	0.30	Not Detected	--	6	no
75-55-6	1,1,1-Trichloroethane	0.23	Not Detected	--	30	no
56-23-5	Carbon Tetrachloride	0.47	Not Detected	--	2	no
71-43-2	Benzeze	0.23	Not Detected	--	1	no
107-06-2	1,2-Dichloroethane	0.18	Not Detected	--	2	no
79-01-6	Trichloroethene	0.23	Not Detected	--	1	no
78-87-5	1, 2-Dichloropropane	0.40	Not Detected	--	1	no
75-27-4	Bromodichloromethane	0.55	Not Detected	--	1	no
110-75-8	2-Chloroethyl vinyl ether	0.65	Not Detected	--	nle	no
10061-01-5	cis-1,3-Dichloropropene	0.69	Not Detected	--	nle	no

Table 4
VOLATILE ORGANICS ANALYSIS DATA SHEET

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

Date Sampled: 12/10/98 Location: 550 Lab Sample ID: 4136.02(Field Blank)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
108-10-1	4-Methyl-2-Pentanone	0.59	Not Detected	--	400	no
108-88-3	Toluene	0.37	Not Detected	--	1000	no
10061-02-6	trans-1,3-Dichloropropene	0.87	Not Detected	--	nle	no
79-00-5	1,1,2-Trichloroethane	0.48	Not Detected	--	3	no
127-18-4	Tetrachloroethene	0.32	Not Detected	--	1	no
591-78-6	2-Hexanone	0.71	Not Detected	--	nle	no
126-48-1	Dibromochloromethane	0.86	Not Detected	--	10	no
108-90-7	Chlorobenzene	0.39	Not Detected	--	4	no
100-41-4	Ethylbenzene	0.65	Not Detected	--	700	no
1330-20-7	m+p-Xylenes	1.14	Not Detected	--	nle	no
1330-20-7	o-Xylene	0.62	Not Detected	--	nle	no
100-42-5	Styrene	0.56	Not Detected	--	100	no
75-25-2	Bromoform	0.70	Not Detected	--	4	no
79-34-5	1,1,2,2-Tetrachloroethane	0.47	Not Detected	--	2	no
541-73-1	1,3-Dichlorobenzene	0.55	Not Detected	--	600	no
106-46-7	1,4-Dichlorobenzene	0.57	Not Detected	--	75	no
95-50-1	1,2-Dichlorobenzene	0.64	Not Detected	--	600	no

Table 4
VOLATILE ORGANICS ANALYSIS DATA SHEET

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

Date Sampled: 12/10/98 Location: 550 Lab Sample ID: 4137.01(Bldg 550)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
107028	Acrolein	1.85	Not Detected	--	50	no
107131	Acrylonitrile	2.78	Not Detected	--	50	no
75650	tert-Butyl alcohol	8.52	Not Detected	--	nle	no
1634044	Methyl-tert-Butyl ether	0.16	Not Detected	--	nle	no
108203	Di-isopropyl ether	0.25	Not Detected	--	nle	no
	Dichlorodifluoromethane	1.68	Not Detected	--	nle	no
74-87-3	Chloromethane	1.16	Not Detected	--	30	no
75-01-4	Vinyl Chloride	1.06	Not Detected	--	5	no
74-83-9	Bromomethane	1.10	Not Detected	--	10	no
75-00-3	Chloroethane	1.01	Not Detected	--	nle	no
75-69-4	Trichlorofluoromethane	0.50	Not Detected	--	nle	no
75-35-4	1, 1-Dichloroethene	0.24	Not Detected	--	2	no
67-64-1	Acetone	1.36	Not Detected	--	700	no
75-15-0	Carbon Disulfide	0.46	Not Detected	--	nle	no
75-09-2	Methylene Chloride	0.24	Not Detected	--	2	no
156-60-5	trans-1,2-Dichloroethene	0.16	Not Detected	--	100	no
75-35-3	1,1-Dichloroethane	0.12	Not Detected	--	70	no
108-05-4	Vinyl Acetate	0.78	Not Detected	--	nle	no
78-93-3	2-Butanone	0.62	Not Detected	--	300	no
156-59-2	cis-1,2-Dichloroethene	0.17	Not Detected	--	10	no
67-66-3	Chloroform	0.30	Not Detected	--	6	no
75-55-6	1,1,1-Trichloroethane	0.23	Not Detected	--	30	no
56-23-5	Carbon Tetrachloride	0.47	Not Detected	--	2	no
71-43-2	Benzeze	0.23	Not Detected	--	1	no
107-06-2	1,2-Dichloroethane	0.18	Not Detected	--	2	no
79-01-6	Trichloroethene	0.23	Not Detected	--	1	no
78-87-5	1, 2-Dichloropropane	0.40	Not Detected	--	1	no
75-27-4	Bromodichloromethane	0.55	Not Detected	--	1	no
110-75-8	2-Chloroethyl vinyl ether	0.65	Not Detected	--	nle	no
10061-01-5	cis-1,3-Dichloropropene	0.69	Not Detected	--	nle	no

Table 4
VOLATILE ORGANICS ANALYSIS DATA SHEET

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

Date Sampled: 12/10/98 Location: 550 Lab Sample ID: 4137.01(Bldg 550)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
108-10-1	4-Methyl-2-Pentanone	0.59	Not Detected	--	400	no
108-88-3	Toluene	0.37	Not Detected	--	1000	no
10061-02-6	trans-1,3-Dichloropropene	0.87	Not Detected	--	nle	no
79-00-5	1,1,2-Trichloroethane	0.48	Not Detected	--	3	no
127-18-4	Tetrachloroethene	0.32	Not Detected	--	1	no
591-78-6	2-Hexanone	0.71	Not Detected	--	nle	no
126-48-1	Dibromochloromethane	0.86	Not Detected	--	10	no
108-90-7	Chlorobenzene	0.39	Not Detected	--	4	no
100-41-4	Ethylbenzene	0.65	Not Detected	--	700	no
1330-20-7	m+p-Xylenes	1.14	Not Detected	--	nle	no
1330-20-7	o-Xylene	0.62	Not Detected	--	nle	no
100-42-5	Styrene	0.56	Not Detected	--	100	no
75-25-2	Bromoform	0.70	Not Detected	--	4	no
79-34-5	1,1,2,2-Tetrachloroethane	0.47	Not Detected	--	2	no
541-73-1	1,3-Dichlorobenzene	0.55	Not Detected	--	600	no
106-46-7	1,4-Dichlorobenzene	0.57	Not Detected	--	75	no
95-50-1	1,2-Dichlorobenzene	0.64	Not Detected	--	600	no

Table 4
SEMI-VOLATILE ANALYSIS DATA SHEET

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

Date Sampled: 12/10/98 Location: 550 Lab Sample ID: 4136.02(Field Blank)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
110-86-1	Pyridine	5.00	Not Detected	--	nle	no
62-75-9	N-nitroso-dimethylamine	0.94	Not Detected	--	20	no
62-53-3	Aniline	0.15	Not Detected	--	nle	no
111-44-4	bis(2-Chloroethyl)ether	0.48	Not Detected	--	10	no
541-73-1	1,3-Dichlorobenzene	0.23	Not Detected	--	600	no
106-46-7	1,4-Dichlorobenzene	0.23	Not Detected	--	75	no
100-51-6	Benzyl alcohol	0.18	Not Detected	--	nle	no
95-50-1	1,2-Dichlorobenzene	0.16	Not Detected	--	600	no
108-60-1	bis(2-chloroisopropyl)ether	0.61	Not Detected	--	300	no
621-64-7	n-Nitroso-di-n-propylamine	0.33	Not Detected	--	20	no
67-72-1	Hexachloroethane	0.46	Not Detected	--	10	no
98-95-3	Nitrobenzene	0.35	Not Detected	--	10	no
78-59-1	Isophorone	0.46	Not Detected	--	100	no
111-91-1	bis(2-Chloroethoxy)methane	0.26	Not Detected	--	nle	no
120-82-1	1,2,4-Trichlorobenzene	0.25	Not Detected	--	9	no
91-20-3	Naphthalene	0.25	Not Detected	--	nle	no
106-47-8	4-Chloroaniline	0.19	Not Detected	--	nle	no
87-68-3	Hexachlorobutadiene	0.38	Not Detected	--	1	no
91-57-6	2-Methylnaphthalene	0.16	Not Detected	--	nle	no
77-47-4	Hexachlorocyclopentadiene	1.50	Not Detected	--	50	no
91-58-7	2-Chloronaphthalene	0.32	Not Detected	--	nle	no
88-74-4	2-Nitroaniline	0.21	Not Detected	--	nle	no
131-11-3	Dimethylphthalate	0.18	Not Detected	--	7000	no
208-96-8	Acenaphthylene	0.19	Not Detected	--	nle	no

Table 4
SEMI-VOLATILE ANALYSIS DATA SHEET

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

Date Sampled: 12/10/98 Location: 550 Lab Sample ID: 4136.02(Field Blank)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
606-20-2	2,6-Dinitrotoluene	0.31	Not Detected	--	nle	no
99-09-2	3-Nitroaniline	0.26	Not Detected	--	nle	no
83-32-9	Acenaphthene	0.26	Not Detected	--	400	no
132-64-9	Dibenzofuran	0.32	Not Detected	--	nle	no
121-14-2	2,4-Dinitrotoluene	0.36	Not Detected	--	10	no
84-66-2	Diethylphthalate	0.82	Not Detected	--	5000	no
86-73-7	Fluorene	0.29	Not Detected	--	300	no
7005-72-3	4-Chlorophenyl-phenylether	0.31	Not Detected	--	nle	no
100-01-6	4-Nitroaniline	0.90	Not Detected	--	nle	no
86-30-6	n-Nitrosodiphenylamine	0.23	Not Detected	--	20	no
103-33-3	Azobenzene	0.80	Not Detected	--	nle	no
101-55-3	4-Bromophenyl-phenylether	0.55	Not Detected	--	nle	no
118-74-1	Hexachlorobenzene	0.82	Not Detected	--	10	no
85-01-8	Phenanthrene	0.18	Not Detected	--	nle	no
120-12-7	Anthracene	0.19	Not Detected	--	2000	no
84-74-2	Di-n-butylphthalate	0.23	Not Detected	--	900	no
206-44-0	Fluoranthene	0.41	Not Detected	--	300	no
92-87-5	Benzidine	1.45	Not Detected	--	50	no
129-00-0	Pyrene	0.32	Not Detected	--	200	no
85-68-7	Butylbenzylphthalate	0.47	Not Detected	--	100	no
56-55-3	Benzo[a]anthracene	0.22	Not Detected	--	10	no
91-94-1	3,3'-Dichlorobenzidine	0.46	Not Detected	--	60	no
218-01-9	Chrysene	0.20	Not Detected	--	20	no
117-81-7	bis(2-Ethylhexyl)phthalate	0.51	Not Detected	--	30	no
117-84-0	Di-n-octylphthalate	0.82	Not Detected	--	100	no
205-99-2	Benzo[b]fluoranthene	0.37	Not Detected	--	10	no
207-08-9	Benzo[k]fluoranthene	0.32	Not Detected	--	2	no
50-32-8	Benzo[a]pyrene	0.31	Not Detected	--	20	no
193-39-5	Indeno[1,2,3-cd]pyrene	0.79	Not Detected	--	20	no
53-70-3	Dibenz[a,h]anthracene	0.28	Not Detected	--	20	no
191-24-2	Benzo[g,h,i]perylene	0.40	Not Detected	--	nle	no

Table 4
SEMI-VOLATILE ANALYSIS DATA SHEET

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

Date Sampled: 12/10/98 Location: 550 Lab Sample ID: 4137.02(Bldg 550)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
110-86-1	Pyridine	5.00	Not Detected	--	nle	no
62-75-9	N-nitroso-dimethylamine	0.94	Not Detected	--	20	no
62-53-3	Aniline	0.15	Not Detected	--	nle	no
111-44-4	bis(2-Chloroethyl)ether	0.48	Not Detected	--	10	no
541-73-1	1,3-Dichlorobenzene	0.23	Not Detected	--	600	no
106-46-7	1,4-Dichlorobenzene	0.23	Not Detected	--	75	no
100-51-6	Benzyl alcohol	0.18	Not Detected	--	nle	no
95-50-1	1,2-Dichlorobenzene	0.16	Not Detected	--	600	no
108-60-1	bis(2-chloroisopropyl)ether	0.61	Not Detected	--	300	no
621-64-7	n-Nitroso-di-n-propylamine	0.33	Not Detected	--	20	no
67-72-1	Hexachloroethane	0.46	Not Detected	--	10	no
98-95-3	Nitrobenzene	0.35	Not Detected	--	10	no
78-59-1	Isophorone	0.46	Not Detected	--	100	no
111-91-1	bis(2-Chloroethoxy)methane	0.26	Not Detected	--	nle	no
120-82-1	1,2,4-Trichlorobenzene	0.25	Not Detected	--	9	no
91-20-3	Naphthalene	0.25	Not Detected	--	nle	no
106-47-8	4-Chloroaniline	0.19	Not Detected	--	nle	no
87-68-3	Hexachlorobutadiene	0.38	Not Detected	--	1	no
91-57-6	2-Methylnaphthalene	0.16	Not Detected	--	nle	no
77-47-4	Hexachlorocyclopentadiene	1.50	Not Detected	--	50	no
91-58-7	2-Chloronaphthalene	0.32	Not Detected	--	nle	no
88-74-4	2-Nitroaniline	0.21	Not Detected	--	nle	no
131-11-3	Dimethylphthalate	0.18	Not Detected	--	7000	no
208-96-8	Acenaphthylene	0.19	Not Detected	--	nle	no

Table 4
SEMI-VOLATILE ANALYSIS DATA SHEET

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

Date Sampled: 12/10/98 Location: 550 Lab Sample ID: 4137.02(Bldg 550)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
606-20-2	2,6-Dinitrotoluene	0.31	Not Detected	--	nle	no
99-09-2	3-Nitroaniline	0.26	Not Detected	--	nle	no
83-32-9	Acenaphthene	0.26	Not Detected	--	400	no
132-64-9	Dibenzofuran	0.32	Not Detected	--	nle	no
121-14-2	2,4-Dinitrotoluene	0.36	Not Detected	--	10	no
84-66-2	Diethylphthalate	0.82	Not Detected	--	5000	no
86-73-7	Fluorene	0.29	Not Detected	--	300	no
7005-72-3	4-Chlorophenyl-phenylether	0.31	Not Detected	--	nle	no
100-01-6	4-Nitroaniline	0.90	Not Detected	--	nle	no
86-30-6	n-Nitrosodiphenylamine	0.23	Not Detected	--	20	no
103-33-3	Azobenzene	0.80	Not Detected	--	nle	no
101-55-3	4-Bromophenyl-phenylether	0.55	Not Detected	--	nle	no
118-74-1	Hexachlorobenzene	0.82	Not Detected	--	10	no
85-01-8	Phenanthrene	0.18	Not Detected	--	nle	no
120-12-7	Anthracene	0.19	Not Detected	--	2000	no
84-74-2	Di-n-butylphthalate	0.23	Not Detected	--	900	no
206-44-0	Fluoranthene	0.41	Not Detected	--	300	no
92-87-5	Benzidine	1.45	Not Detected	--	50	no
129-00-0	Pyrene	0.32	Not Detected	--	200	no
85-68-7	Butylbenzylphthalate	0.47	Not Detected	--	100	no
56-55-3	Benzo[a]anthracene	0.22	Not Detected	--	10	no
91-94-1	3,3'-Dichlorobenzidine	0.46	Not Detected	--	60	no
218-01-9	Chrysene	0.20	Not Detected	--	20	no
117-81-7	bis(2-Ethylhexyl)phthalate	0.51	Not Detected	--	30	no
117-84-0	Di-n-octylphthalate	0.82	Not Detected	--	100	no
205-99-2	Benzo[b]fluoranthene	0.37	Not Detected	--	10	no
207-08-9	Benzo[k]fluoranthene	0.32	Not Detected	--	2	no
50-32-8	Benzo[a]pyrene	0.31	Not Detected	--	20	no
193-39-5	Indeno[1,2,3-cd]pyrene	0.79	Not Detected	--	20	no
53-70-3	Dibenz[a,h]anthracene	0.28	Not Detected	--	20	no
191-24-2	Benzo[g,h,i]perylene	0.40	Not Detected	--	nle	no

Table 3
VOLATILE ORGANICS ANALYSIS DATA SHEET

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

Date Sampled: 1/13/99 Location: 550 Lab Sample ID: 4187.01(Trip Blank)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
107028	Acrolein	1.85	Not Detected	--	50	no
107131	Acrylonitrile	2.78	Not Detected	--	50	no
75650	tert-Butyl alcohol	8.52	Not Detected	--	nle	no
1634044	Methyl-tert-Butyl ether	0.16	Not Detected	--	nle	no
108203	Di-isopropyl ether	0.25	Not Detected	--	nle	no
	Dichlorodifluoromethane	1.68	Not Detected	--	nle	no
74-87-3	Chloromethane	1.16	Not Detected	--	30	no
75-01-4	Vinyl Chloride	1.06	Not Detected	--	5	no
74-83-9	Bromomethane	1.10	Not Detected	--	10	no
75-00-3	Chloroethane	1.01	Not Detected	--	nle	no
75-69-4	Trichlorofluoromethane	0.50	Not Detected	--	nle	no
75-35-4	1, 1-Dichloroethene	0.24	Not Detected	--	2	no
67-64-1	Acetone	1.36	Not Detected	--	700	no
75-15-0	Carbon Disulfide	0.46	Not Detected	--	nle	no
75-09-2	Methylene Chloride	0.24	Not Detected	--	2	no
156-60-5	trans-1,2-Dichloroethene	0.16	Not Detected	--	100	no
75-35-3	1,1-Dichloroethane	0.12	Not Detected	--	70	no
108-05-4	Vinyl Acetate	0.78	Not Detected	--	nle	no
78-93-3	2-Butanone	0.62	Not Detected	--	300	no
156-59-2	cis-1,2-Dichloroethene	0.17	Not Detected	--	10	no
67-66-3	Chloroform	0.30	Not Detected	--	6	no
75-55-6	1,1,1-Trichloroethane	0.23	Not Detected	--	30	no
56-23-5	Carbon Tetrachloride	0.47	Not Detected	--	2	no
71-43-2	Benzeze	0.23	Not Detected	--	1	no
107-06-2	1,2-Dichloroethane	0.18	Not Detected	--	2	no
79-01-6	*Trichloroethene	0.23	5.72 ug/L	--	1	yes
78-87-5	1, 2-Dichloropropane	0.40	Not Detected	--	1	no
75-27-4	Bromodichloromethane	0.55	Not Detected	--	1	no
110-75-8	2-Chloroethyl vinyl ether	0.65	Not Detected	--	nle	no
10061-01-5	cis-1,3-Dichloropropene	0.69	Not Detected	--	nle	no

Note:
* Compound exceeds criteria due to laboratory contamination

Table 4
VOLATILE ORGANICS ANALYSIS DATA SHEET

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

Date Sampled: 1/13/99 Location: 550 Lab Sample ID: 4187.01(Trip Blank)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
108-10-1	4-Methyl-2-Pentanone	0.59	Not Detected	--	400	no
108-88-3	Toluene	0.37	Not Detected	--	1000	no
10061-02-6	trans-1,3-Dichloropropene	0.87	Not Detected	--	nle	no
79-00-5	1,1,2-Trichloroethane	0.48	Not Detected	--	3	no
127-18-4	Tetrachloroethene	0.32	Not Detected	--	1	no
591-78-6	2-Hexanone	0.71	Not Detected	--	nle	no
126-48-1	Dibromochloromethane	0.86	Not Detected	--	10	no
108-90-7	Chlorobenzene	0.39	Not Detected	--	4	no
100-41-4	Ethylbenzene	0.65	Not Detected	--	700	no
1330-20-7	m+p-Xylenes	1.14	Not Detected	--	nle	no
1330-20-7	o-Xylene	0.62	Not Detected	--	nle	no
100-42-5	Styrene	0.56	Not Detected	--	100	no
75-25-2	Bromoform	0.70	Not Detected	--	4	no
79-34-5	1,1,2,2-Tetrachloroethane	0.47	Not Detected	--	2	no
541-73-1	1,3-Dichlorobenzene	0.55	Not Detected	--	600	no
106-46-7	1,4-Dichlorobenzene	0.57	Not Detected	--	75	no
95-50-1	1,2-Dichlorobenzene	0.64	Not Detected	--	600	no

Table 4
VOLATILE ORGANICS ANALYSIS DATA SHEET

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

Date Sampled: 1/13/99 Location: 550 Lab Sample ID: 4187.02(Field Blank)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
107028	Acrolein	1.85	Not Detected	--	50	no
107131	Acrylonitrile	2.78	Not Detected	--	50	no
75650	tert-Butyl alcohol	8.52	Not Detected	--	nle	no
1634044	Methyl-tert-Butyl ether	0.16	Not Detected	--	nle	no
108203	Di-isopropyl ether	0.25	Not Detected	--	nle	no
	Dichlorodifluoromethane	1.68	Not Detected	--	nle	no
74-87-3	Chloromethane	1.16	Not Detected	--	30	no
75-01-4	Vinyl Chloride	1.06	Not Detected	--	5	no
74-83-9	Bromomethane	1.10	Not Detected	--	10	no
75-00-3	Chloroethane	1.01	Not Detected	--	nle	no
75-69-4	Trichlorofluoromethane	0.50	Not Detected	--	nle	no
75-35-4	1, 1-Dichloroethene	0.24	Not Detected	--	2	no
67-64-1	Acetone	1.36	Not Detected	--	700	no
75-15-0	Carbon Disulfide	0.46	Not Detected	--	nle	no
75-09-2	Methylene Chloride	0.24	Not Detected	--	2	no
156-60-5	trans-1,2-Dichloroethene	0.16	Not Detected	--	100	no
75-35-3	1,1-Dichloroethane	0.12	Not Detected	--	70	no
108-05-4	Vinyl Acetate	0.78	Not Detected	--	nle	no
78-93-3	2-Butanone	0.62	Not Detected	--	300	no
156-59-2	cis-1,2-Dichloroethene	0.17	Not Detected	--	10	no
67-66-3	Chloroform	0.30	Not Detected	--	6	no
75-55-6	1,1,1-Trichloroethane	0.23	Not Detected	--	30	no
56-23-5	Carbon Tetrachloride	0.47	Not Detected	--	2	no
71-43-2	Benzeze	0.23	Not Detected	--	1	no
107-06-2	1,2-Dichloroethane	0.18	Not Detected	--	2	no
79-01-6	Trichloroethene	0.23	Not Detected	--	1	no
78-87-5	1, 2-Dichloropropane	0.40	Not Detected	--	1	no
75-27-4	Bromodichloromethane	0.55	Not Detected	--	1	no
110-75-8	2-Chloroethyl vinyl ether	0.65	Not Detected	--	nle	no
10061-01-5	cis-1,3-Dichloropropene	0.69	Not Detected	--	nle	no

Table 4
VOLATILE ORGANICS ANALYSIS DATA SHEET

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

Date Sampled: 1/13/99 Location: 550 Lab Sample ID: 4187.02(Field Blank)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
108-10-1	4-Methyl-2-Pentanone	0.59	Not Detected	--	400	no
108-88-3	Toluene	0.37	Not Detected	--	1000	no
10061-02-6	trans-1,3-Dichloropropene	0.87	Not Detected	--	nle	no
79-00-5	1,1,2-Trichloroethane	0.48	Not Detected	--	3	no
127-18-4	Tetrachloroethene	0.32	Not Detected	--	1	no
591-78-6	2-Hexanone	0.71	Not Detected	--	nle	no
126-48-1	Dibromochloromethane	0.86	Not Detected	--	10	no
108-90-7	Chlorobenzene	0.39	Not Detected	--	4	no
100-41-4	Ethylbenzene	0.65	Not Detected	--	700	no
1330-20-7	m+p-Xylenes	1.14	Not Detected	--	nle	no
1330-20-7	o-Xylene	0.62	Not Detected	--	nle	no
100-42-5	Styrene	0.56	Not Detected	--	100	no
75-25-2	Bromoform	0.70	Not Detected	--	4	no
79-34-5	1,1,2,2-Tetrachloroethane	0.47	Not Detected	--	2	no
541-73-1	1,3-Dichlorobenzene	0.55	Not Detected	--	600	no
106-46-7	1,4-Dichlorobenzene	0.57	Not Detected	--	75	no
95-50-1	1,2-Dichlorobenzene	0.64	Not Detected	--	600	no

Table 4
VOLATILE ORGANICS ANALYSIS DATA SHEET

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

Date Sampled: 1/13/99 Location: 550 Lab Sample ID: 4187.03(Bldg 550)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
107028	Acrolein	1.85	Not Detected	--	50	no
107131	Acrylonitrile	2.78	Not Detected	--	50	no
75650	tert-Butyl alcohol	8.52	Not Detected	--	nle	no
1634044	Methyl-tert-Butyl ether	0.16	Not Detected	--	nle	no
108203	Di-isopropyl ether	0.25	Not Detected	--	nle	no
	Dichlorodifluoromethane	1.68	Not Detected	--	nle	no
74-87-3	Chloromethane	1.16	Not Detected	--	30	no
75-01-4	Vinyl Chloride	1.06	Not Detected	--	5	no
74-83-9	Bromomethane	1.10	Not Detected	--	10	no
75-00-3	Chloroethane	1.01	Not Detected	--	nle	no
75-69-4	Trichlorofluoromethane	0.50	Not Detected	--	nle	no
75-35-4	1, 1-Dichloroethene	0.24	Not Detected	--	2	no
67-64-1	Acetone	1.36	Not Detected	--	700	no
75-15-0	Carbon Disulfide	0.46	Not Detected	--	nle	no
75-09-2	Methylene Chloride	0.24	Not Detected	--	2	no
156-60-5	trans-1,2-Dichloroethene	0.16	Not Detected	--	100	no
75-35-3	1,1-Dichloroethane	0.12	Not Detected	--	70	no
108-05-4	Vinyl Acetate	0.78	Not Detected	--	nle	no
78-93-3	2-Butanone	0.62	Not Detected	--	300	no
156-59-2	cis-1,2-Dichloroethene	0.17	Not Detected	--	10	no
67-66-3	Chloroform	0.30	Not Detected	--	6	no
75-55-6	1,1,1-Trichloroethane	0.23	Not Detected	--	30	no
56-23-5	Carbon Tetrachloride	0.47	Not Detected	--	2	no
71-43-2	Benzeze	0.23	Not Detected	--	1	no
107-06-2	1,2-Dichloroethane	0.18	Not Detected	--	2	no
79-01-6	Trichloroethene	0.23	Not Detected	--	1	no
78-87-5	1, 2-Dichloropropane	0.40	Not Detected	--	1	no
75-27-4	Bromodichloromethane	0.55	Not Detected	--	1	no
110-75-8	2-Chloroethyl vinyl ether	0.65	Not Detected	--	nle	no
10061-01-5	cis-1,3-Dichloropropene	0.69	Not Detected	--	nle	no

Table 4
VOLATILE ORGANICS ANALYSIS DATA SHEET

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

Date Sampled: 1/13/99 Location: 550 Lab Sample ID: 4187.03(Bldg 550)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
108-10-1	4-Methyl-2-Pentanone	0.59	Not Detected	--	400	no
108-88-3	Toluene	0.37	Not Detected	--	1000	no
10061-02-6	trans-1,3-Dichloropropene	0.87	Not Detected	--	nle	no
79-00-5	1,1,2-Trichloroethane	0.48	Not Detected	--	3	no
127-18-4	Tetrachloroethene	0.32	Not Detected	--	1	no
591-78-6	2-Hexanone	0.71	Not Detected	--	nle	no
126-48-1	Dibromochloromethane	0.86	Not Detected	--	10	no
108-90-7	Chlorobenzene	0.39	Not Detected	--	4	no
100-41-4	Ethylbenzene	0.65	Not Detected	--	700	no
1330-20-7	m+p-Xylenes	1.14	Not Detected	--	nle	no
1330-20-7	o-Xylene	0.62	Not Detected	--	nle	no
100-42-5	Styrene	0.56	Not Detected	--	100	no
75-25-2	Bromoform	0.70	Not Detected	--	4	no
79-34-5	1,1,2,2-Tetrachloroethane	0.47	Not Detected	--	2	no
541-73-1	1,3-Dichlorobenzene	0.55	Not Detected	--	600	no
106-46-7	1,4-Dichlorobenzene	0.57	Not Detected	--	75	no
95-50-1	1,2-Dichlorobenzene	0.64	Not Detected	--	600	no

Table 4
VOLATILE ORGANICS ANALYSIS DATA SHEET

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

Date Sampled: 1/13/99 Location: 550 Lab Sample ID: 4187.05(Dup 550)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
107028	Acrolein	1.85	Not Detected	--	50	no
107131	Acrylonitrile	2.78	Not Detected	--	50	no
75650	tert-Butyl alcohol	8.52	Not Detected	--	nle	no
1634044	Methyl-tert-Butyl ether	0.16	Not Detected	--	nle	no
108203	Di-isopropyl ether	0.25	Not Detected	--	nle	no
	Dichlorodifluoromethane	1.68	Not Detected	--	nle	no
74-87-3	Chloromethane	1.16	Not Detected	--	30	no
75-01-4	Vinyl Chloride	1.06	Not Detected	--	5	no
74-83-9	Bromomethane	1.10	Not Detected	--	10	no
75-00-3	Chloroethane	1.01	Not Detected	--	nle	no
75-69-4	Trichlorofluoromethane	0.50	Not Detected	--	nle	no
75-35-4	1, 1-Dichloroethene	0.24	Not Detected	--	2	no
67-64-1	Acetone	1.36	Not Detected	--	700	no
75-15-0	Carbon Disulfide	0.46	Not Detected	--	nle	no
75-09-2	Methylene Chloride	0.24	Not Detected	--	2	no
156-60-5	trans-1,2-Dichloroethene	0.16	Not Detected	--	100	no
75-35-3	1,1-Dichloroethane	0.12	Not Detected	--	70	no
108-05-4	Vinyl Acetate	0.78	Not Detected	--	nle	no
78-93-3	2-Butanone	0.62	Not Detected	--	300	no
156-59-2	cis-1,2-Dichloroethene	0.17	Not Detected	--	10	no
67-66-3	Chloroform	0.30	Not Detected	--	6	no
75-55-6	1,1,1-Trichloroethane	0.23	Not Detected	--	30	no
56-23-5	Carbon Tetrachloride	0.47	Not Detected	--	2	no
71-43-2	Benzeze	0.23	Not Detected	--	1	no
107-06-2	1,2-Dichloroethane	0.18	Not Detected	--	2	no
79-01-6	Trichloroethene	0.23	Not Detected	--	1	no
78-87-5	1, 2-Dichloropropane	0.40	Not Detected	--	1	no
75-27-4	Bromodichloromethane	0.55	Not Detected	--	1	no
110-75-8	2-Chloroethyl vinyl ether	0.65	Not Detected	--	nle	no
10061-01-5	cis-1,3-Dichloropropene	0.69	Not Detected	--	nle	no

Table 4
VOLATILE ORGANICS ANALYSIS DATA SHEET

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

Date Sampled: 1/13/99 Location: 550 Lab Sample ID: 4187.05(Dup 550)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
108-10-1	4-Methyl-2-Pentanone	0.59	Not Detected	--	400	no
108-88-3	Toluene	0.37	Not Detected	--	1000	no
10061-02-6	trans-1,3-Dichloropropene	0.87	Not Detected	--	nle	no
79-00-5	1,1,2-Trichloroethane	0.48	Not Detected	--	3	no
127-18-4	Tetrachloroethene	0.32	Not Detected	--	1	no
591-78-6	2-Hexanone	0.71	Not Detected	--	nle	no
126-48-1	Dibromochloromethane	0.86	Not Detected	--	10	no
108-90-7	Chlorobenzene	0.39	Not Detected	--	4	no
100-41-4	Ethylbenzene	0.65	Not Detected	--	700	no
1330-20-7	m+p-Xylenes	1.14	Not Detected	--	nle	no
1330-20-7	o-Xylene	0.62	Not Detected	--	nle	no
100-42-5	Styrene	0.56	Not Detected	--	100	no
75-25-2	Bromoform	0.70	Not Detected	--	4	no
79-34-5	1,1,2,2-Tetrachloroethane	0.47	Not Detected	--	2	no
541-73-1	1,3-Dichlorobenzene	0.55	Not Detected	--	600	no
106-46-7	1,4-Dichlorobenzene	0.57	Not Detected	--	75	no
95-50-1	1,2-Dichlorobenzene	0.64	Not Detected	--	600	no

Table 4
SEMI-VOLATILE ANALYSIS DATA SHEET

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

Date Sampled: 1/13/99 Location: 550 Lab Sample ID: 4187.02(Field Blank)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
110-86-1	Pyridine	5.00	Not Detected	--	nle	no
62-75-9	N-nitroso-dimethylamine	0.94	Not Detected	--	20	no
62-53-3	Aniline	0.15	Not Detected	--	nle	no
111-44-4	bis(2-Chloroethyl)ether	0.48	Not Detected	--	10	no
541-73-1	1,3-Dichlorobenzene	0.23	Not Detected	--	600	no
106-46-7	1,4-Dichlorobenzene	0.23	Not Detected	--	75	no
100-51-6	Benzyl alcohol	0.18	Not Detected	--	nle	no
95-50-1	1,2-Dichlorobenzene	0.16	Not Detected	--	600	no
108-60-1	bis(2-chloroisopropyl)ether	0.61	Not Detected	--	300	no
621-64-7	n-Nitroso-di-n-propylamine	0.33	Not Detected	--	20	no
67-72-1	Hexachloroethane	0.46	Not Detected	--	10	no
98-95-3	Nitrobenzene	0.35	Not Detected	--	10	no
78-59-1	Isophorone	0.46	Not Detected	--	100	no
111-91-1	bis(2-Chloroethoxy)methane	0.26	Not Detected	--	nle	no
120-82-1	1,2,4-Trichlorobenzene	0.25	Not Detected	--	9	no
91-20-3	Naphthalene	0.25	Not Detected	--	nle	no
106-47-8	4-Chloroaniline	0.19	Not Detected	--	nle	no
87-68-3	Hexachlorobutadiene	0.38	Not Detected	--	1	no
91-57-6	2-Methylnaphthalene	0.16	Not Detected	--	nle	no
77-47-4	Hexachlorocyclopentadiene	1.50	Not Detected	--	50	no
91-58-7	2-Chloronaphthalene	0.32	Not Detected	--	nle	no
88-74-4	2-Nitroaniline	0.21	Not Detected	--	nle	no
131-11-3	Dimethylphthalate	0.18	Not Detected	--	7000	no
208-96-8	Acenaphthylene	0.19	Not Detected	--	nle	no

Table 4
SEMI-VOLATILE ANALYSIS DATA SHEET

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

Date Sampled: 1/13/99 Location: 550 Lab Sample ID: 4187.02(Field Blank)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
606-20-2	2,6-Dinitrotoluene	0.31	Not Detected	--	nle	no
99-09-2	3-Nitroaniline	0.26	Not Detected	--	nle	no
83-32-9	Acenaphthene	0.26	Not Detected	--	400	no
132-64-9	Dibenzofuran	0.32	Not Detected	--	nle	no
121-14-2	2,4-Dinitrotoluene	0.36	Not Detected	--	10	no
84-66-2	Diethylphthalate	0.82	Not Detected	--	5000	no
86-73-7	Fluorene	0.29	Not Detected	--	300	no
7005-72-3	4-Chlorophenyl-phenylether	0.31	Not Detected	--	nle	no
100-01-6	4-Nitroaniline	0.90	Not Detected	--	nle	no
86-30-6	n-Nitrosodiphenylamine	0.23	Not Detected	--	20	no
103-33-3	Azobenzene	0.80	Not Detected	--	nle	no
101-55-3	4-Bromophenyl-phenylether	0.55	Not Detected	--	nle	no
118-74-1	Hexachlorobenzene	0.82	Not Detected	--	10	no
85-01-8	Phenanthrene	0.18	Not Detected	--	nle	no
120-12-7	Anthracene	0.19	Not Detected	--	2000	no
84-74-2	Di-n-butylphthalate	0.23	Not Detected	--	900	no
206-44-0	Fluoranthene	0.41	Not Detected	--	300	no
92-87-5	Benzidine	1.45	Not Detected	--	50	no
129-00-0	Pyrene	0.32	Not Detected	--	200	no
85-68-7	Butylbenzylphthalate	0.47	Not Detected	--	100	no
56-55-3	Benzo[a]anthracene	0.22	Not Detected	--	10	no
91-94-1	3,3'-Dichlorobenzidine	0.46	Not Detected	--	60	no
218-01-9	Chrysene	0.20	Not Detected	--	20	no
117-81-7	bis(2-Ethylhexyl)phthalate	0.51	Not Detected	--	30	no
117-84-0	Di-n-octylphthalate	0.82	Not Detected	--	100	no
205-99-2	Benzo[b]fluoranthene	0.37	Not Detected	--	10	no
207-08-9	Benzo[k]fluoranthene	0.32	Not Detected	--	2	no
50-32-8	Benzo[a]pyrene	0.31	Not Detected	--	20	no
193-39-5	Indeno[1,2,3-cd]pyrene	0.79	Not Detected	--	20	no
53-70-3	Dibenz[a,h]anthracene	0.28	Not Detected	--	20	no
191-24-2	Benzo[g,h,i]perylene	0.40	Not Detected	--	nle	no

Table 4
SEMI-VOLATILE ANALYSIS DATA SHEET

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

Date Sampled: 1/13/99 Location: 550 Lab Sample ID: 4187.04(Bldg 550)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
110-86-1	Pyridine	5.00	Not Detected	--	nle	no
62-75-9	N-nitroso-dimethylamine	0.94	Not Detected	--	20	no
62-53-3	Aniline	0.15	Not Detected	--	nle	no
111-44-4	bis(2-Chloroethyl)ether	0.48	Not Detected	--	10	no
541-73-1	1,3-Dichlorobenzene	0.23	Not Detected	--	600	no
106-46-7	1,4-Dichlorobenzene	0.23	Not Detected	--	75	no
100-51-6	Benzyl alcohol	0.18	Not Detected	--	nle	no
95-50-1	1,2-Dichlorobenzene	0.16	Not Detected	--	600	no
108-60-1	bis(2-chloroisopropyl)ether	0.61	Not Detected	--	300	no
621-64-7	n-Nitroso-di-n-propylamine	0.33	Not Detected	--	20	no
67-72-1	Hexachloroethane	0.46	Not Detected	--	10	no
98-95-3	Nitrobenzene	0.35	Not Detected	--	10	no
78-59-1	Isophorone	0.46	Not Detected	--	100	no
111-91-1	bis(2-Chloroethoxy)methane	0.26	Not Detected	--	nle	no
120-82-1	1,2,4-Trichlorobenzene	0.25	Not Detected	--	9	no
91-20-3	Naphthalene	0.25	42.80 ug/L	--	nle	no
106-47-8	4-Chloroaniline	0.19	Not Detected	--	nle	no
87-68-3	Hexachlorobutadiene	0.38	Not Detected	--	1	no
91-57-6	2-Methylnaphthalene	0.16	53.52 ug/L	--	nle	no
77-47-4	Hexachlorocyclopentadiene	1.50	Not Detected	--	50	no
91-58-7	2-Chloronaphthalene	0.32	Not Detected	--	nle	no
88-74-4	2-Nitroaniline	0.21	Not Detected	--	nle	no
131-11-3	Dimethylphthalate	0.18	Not Detected	--	7000	no
208-96-8	Acenaphthylene	0.19	Not Detected	--	nle	no

Table 4
SEMI-VOLATILE ANALYSIS DATA SHEET

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

Date Sampled: 1/13/99 Location: 550 Lab Sample ID: 4187.04(Bldg 550)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
606-20-2	2,6-Dinitrotoluene	0.31	Not Detected	--	nle	no
99-09-2	3-Nitroaniline	0.26	Not Detected	--	nle	no
83-32-9	Acenaphthene	0.26	5.26 ug/L	--	400	no
132-64-9	Dibenzofuran	0.32	3.01 ug/L	--	nle	no
121-14-2	2,4-Dinitrotoluene	0.36	Not Detected	--	10	no
84-66-2	Diethylphthalate	0.82	Not Detected	--	5000	no
86-73-7	Fluorene	0.29	7.02 ug/L	--	300	no
7005-72-3	4-Chlorophenyl-phenylether	0.31	Not Detected	--	nle	no
100-01-6	4-Nitroaniline	0.90	Not Detected	--	nle	no
86-30-6	n-Nitrosodiphenylamine	0.23	Not Detected	--	20	no
103-33-3	Azobenzene	0.80	Not Detected	--	nle	no
101-55-3	4-Bromophenyl-phenylether	0.55	Not Detected	--	nle	no
118-74-1	Hexachlorobenzene	0.82	Not Detected	--	10	no
85-01-8	Phenanthrene	0.18	10.62 ug/L	--	nle	no
120-12-7	Anthracene	0.19	Not Detected	--	2000	no
84-74-2	Di-n-butylphthalate	0.23	Not Detected	--	900	no
206-44-0	Fluoranthene	0.41	Not Detected	--	300	no
92-87-5	Benzidine	1.45	Not Detected	--	50	no
129-00-0	Pyrene	0.32	Not Detected	--	200	no
85-68-7	Butylbenzylphthalate	0.47	Not Detected	--	100	no
56-55-3	Benzo[a]anthracene	0.22	Not Detected	--	10	no
91-94-1	3,3'-Dichlorobenzidine	0.46	Not Detected	--	60	no
218-01-9	Chrysene	0.20	Not Detected	--	20	no
117-81-7	bis(2-Ethylhexyl)phthalate	0.51	Not Detected	--	30	no
117-84-0	Di-n-octylphthalate	0.82	Not Detected	--	100	no
205-99-2	Benzo[b]fluoranthene	0.37	Not Detected	--	10	no
207-08-9	Benzo[k]fluoranthene	0.32	Not Detected	--	2	no
50-32-8	Benzo[a]pyrene	0.31	Not Detected	--	20	no
193-39-5	Indeno[1,2,3-cd]pyrene	0.79	Not Detected	--	20	no
53-70-3	Dibenz[a,h]anthracene	0.28	Not Detected	--	20	no
191-24-2	Benzo[g,h,i]perylene	0.40	Not Detected	--	nle	no

Table 4
SEMI-VOLATILE ANALYSIS DATA SHEET

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

Date Sampled: 1/13/99 Location: 550 Lab Sample ID: 4187.05(Dup 550)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
110-86-1	Pyridine	5.00	Not Detected	--	nle	no
62-75-9	N-nitroso-dimethylamine	0.94	Not Detected	--	20	no
62-53-3	Aniline	0.15	Not Detected	--	nle	no
111-44-4	bis(2-Chloroethyl)ether	0.48	Not Detected	--	10	no
541-73-1	1,3-Dichlorobenzene	0.23	Not Detected	--	600	no
106-46-7	1,4-Dichlorobenzene	0.23	Not Detected	--	75	no
100-51-6	Benzyl alcohol	0.18	Not Detected	--	nle	no
95-50-1	1,2-Dichlorobenzene	0.16	Not Detected	--	600	no
108-60-1	bis(2-chloroisopropyl)ether	0.61	Not Detected	--	300	no
621-64-7	n-Nitroso-di-n-propylamine	0.33	Not Detected	--	20	no
67-72-1	Hexachloroethane	0.46	Not Detected	--	10	no
98-95-3	Nitrobenzene	0.35	Not Detected	--	10	no
78-59-1	Isophorone	0.46	Not Detected	--	100	no
111-91-1	bis(2-Chloroethoxy)methane	0.26	Not Detected	--	nle	no
120-82-1	1,2,4-Trichlorobenzene	0.25	Not Detected	--	9	no
91-20-3	Naphthalene	0.25	37.53 ug/L	--	nle	no
106-47-8	4-Chloroaniline	0.19	Not Detected	--	nle	no
87-68-3	Hexachlorobutadiene	0.38	Not Detected	--	1	no
91-57-6	2-Methylnaphthalene	0.16	48.65 ug/L	--	nle	no
77-47-4	Hexachlorocyclopentadiene	1.50	Not Detected	--	50	no
91-58-7	2-Chloronaphthalene	0.32	Not Detected	--	nle	no
88-74-4	2-Nitroaniline	0.21	Not Detected	--	nle	no
131-11-3	Dimethylphthalate	0.18	Not Detected	--	7000	no
208-96-8	Acenaphthylene	0.19	Not Detected	--	nle	no

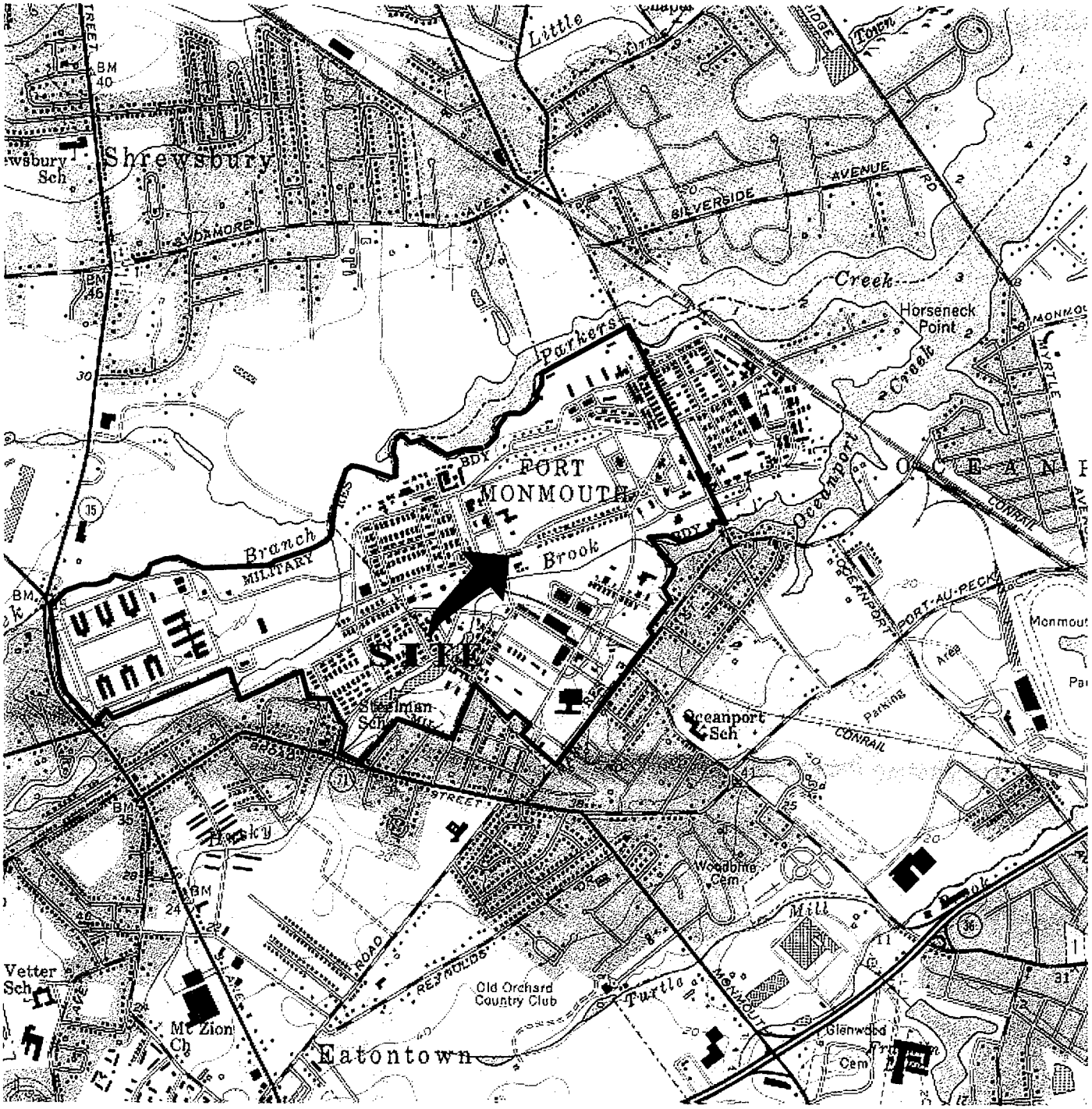
Table 4
SEMI-VOLATILE ANALYSIS DATA SHEET

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

Date Sampled: 1/13/99 Location: 550 Lab Sample ID: 4187.05(Dup 550)

CAS NO.	COMPOUND NAME	MDL (ug/L)	RESULTS	QUALIFIER	REGULATORY LEVEL(ug/L)	EXCEEDS CRITERIA
606-20-2	2,6-Dinitrotoluene	0.31	Not Detected	--	nle	no
99-09-2	3-Nitroaniline	0.26	Not Detected	--	nle	no
83-32-9	Acenaphthene	0.26	4.24 ug/L	--	400	no
132-64-9	Dibenzofuran	0.32	2.56 ug/L	--	nle	no
121-14-2	2,4-Dinitrotoluene	0.36	Not Detected	--	10	no
84-66-2	Diethylphthalate	0.82	Not Detected	--	5000	no
86-73-7	Fluorene	0.29	5.52 ug/L	--	300	no
7005-72-3	4-Chlorophenyl-phenylether	0.31	Not Detected	--	nle	no
100-01-6	4-Nitroaniline	0.90	Not Detected	--	nle	no
86-30-6	n-Nitrosodiphenylamine	0.23	Not Detected	--	20	no
103-33-3	Azobenzene	0.80	Not Detected	--	nle	no
101-55-3	4-Bromophenyl-phenylether	0.55	Not Detected	--	nle	no
118-74-1	Hexachlorobenzene	0.82	Not Detected	--	10	no
85-01-8	Phenanthrene	0.18	7.74 ug/L	--	nle	no
120-12-7	Anthracene	0.19	Not Detected	--	2000	no
84-74-2	Di-n-butylphthalate	0.23	Not Detected	--	900	no
206-44-0	Fluoranthene	0.41	Not Detected	--	300	no
92-87-5	Benzidine	1.45	Not Detected	--	50	no
129-00-0	Pyrene	0.32	Not Detected	--	200	no
85-68-7	Butylbenzylphthalate	0.47	Not Detected	--	100	no
56-55-3	Benzo[a]anthracene	0.22	Not Detected	--	10	no
91-94-1	3,3'-Dichlorobenzidine	0.46	Not Detected	--	60	no
218-01-9	Chrysene	0.20	Not Detected	--	20	no
117-81-7	bis(2-Ethylhexyl)phthalate	0.51	Not Detected	--	30	no
117-84-0	Di-n-octylphthalate	0.82	Not Detected	--	100	no
205-99-2	Benzo[b]fluoranthene	0.37	Not Detected	--	10	no
207-08-9	Benzo[k]fluoranthene	0.32	Not Detected	--	2	no
50-32-8	Benzo[a]pyrene	0.31	Not Detected	--	20	no
193-39-5	Indeno[1,2,3-cd]pyrene	0.79	Not Detected	--	20	no
53-70-3	Dibenz[a,h]anthracene	0.28	Not Detected	--	20	no
191-24-2	Benzo[g,h,i]perylene	0.40	Not Detected	--	nle	no

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
Building 550
Main Post-West
Fort Monmouth Army Base
Monmouth County, NJ

SMC Environmental Services Group

Engineers, Managers, Scientists & Planners

Valley Forge, PA.

SCALE: 1"= 2000'

DATE: JUNE 1997

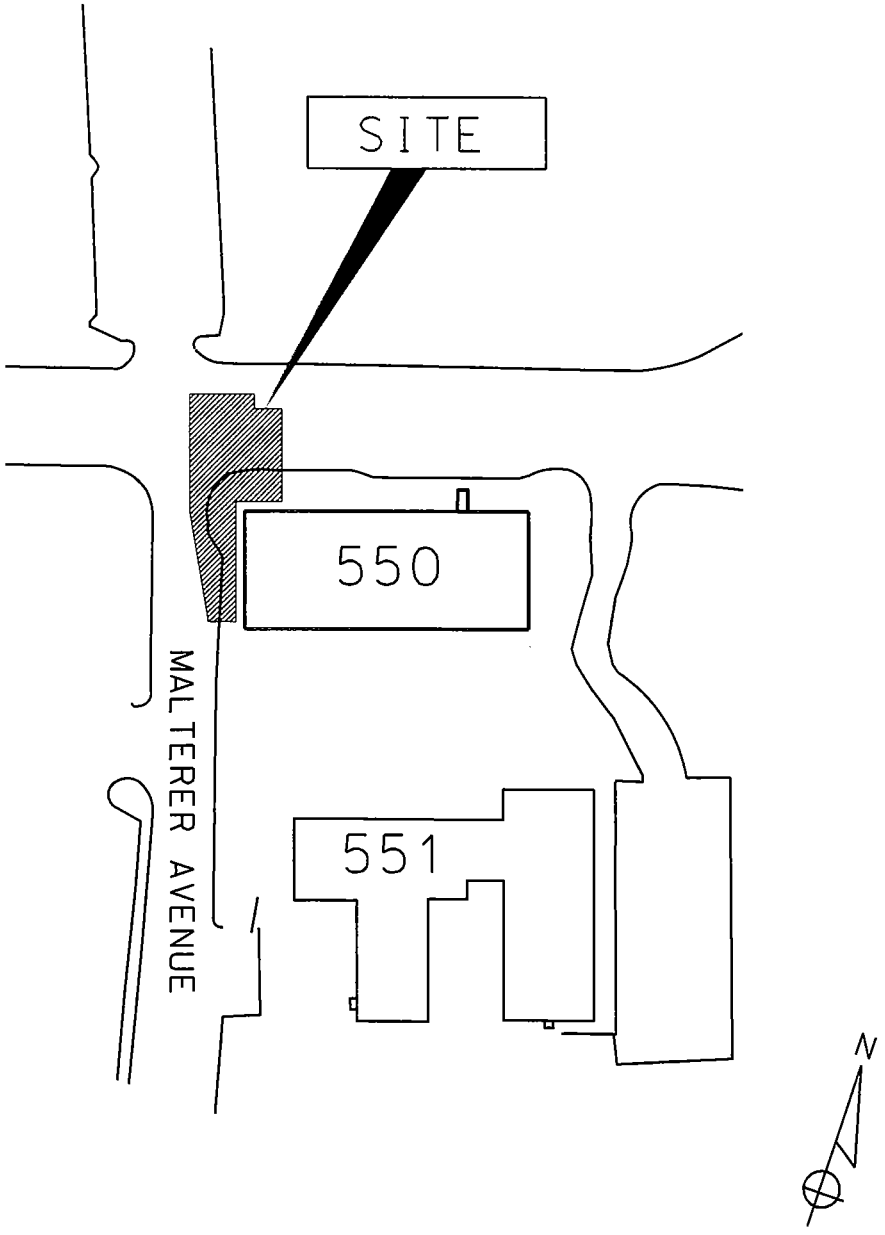


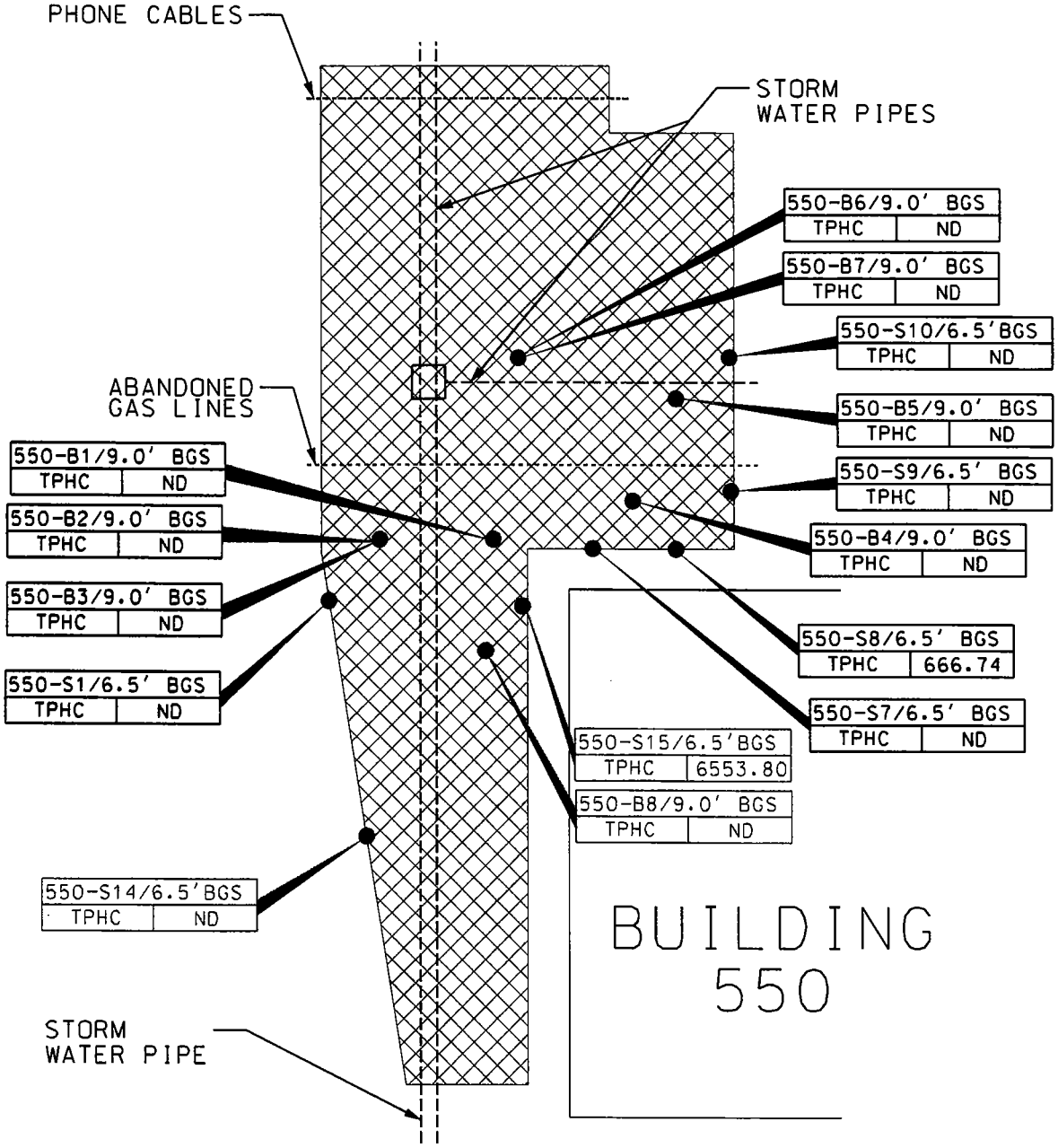
FIGURE 2
SITE MAP
BUILDING 550
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

SMC ENVIRONMENTAL
SERVICES GROUP
Engineers, Managers, Scientists & Planners
VALLEY FORGE, PA.

SCALE: 1"=100'

DATE: JUNE 1997

550 2429 FIG2



LEGEND

- SOIL SAMPLE LOCATION (JUNE 16, 1997)
- SOIL SAMPLE LOCATION (JUNE 24-25, 1997)
- SOIL SAMPLE LOCATION (JUNE 28, 1997)
- LIMIT OF EXCAVATION (JULY 28, 1997)

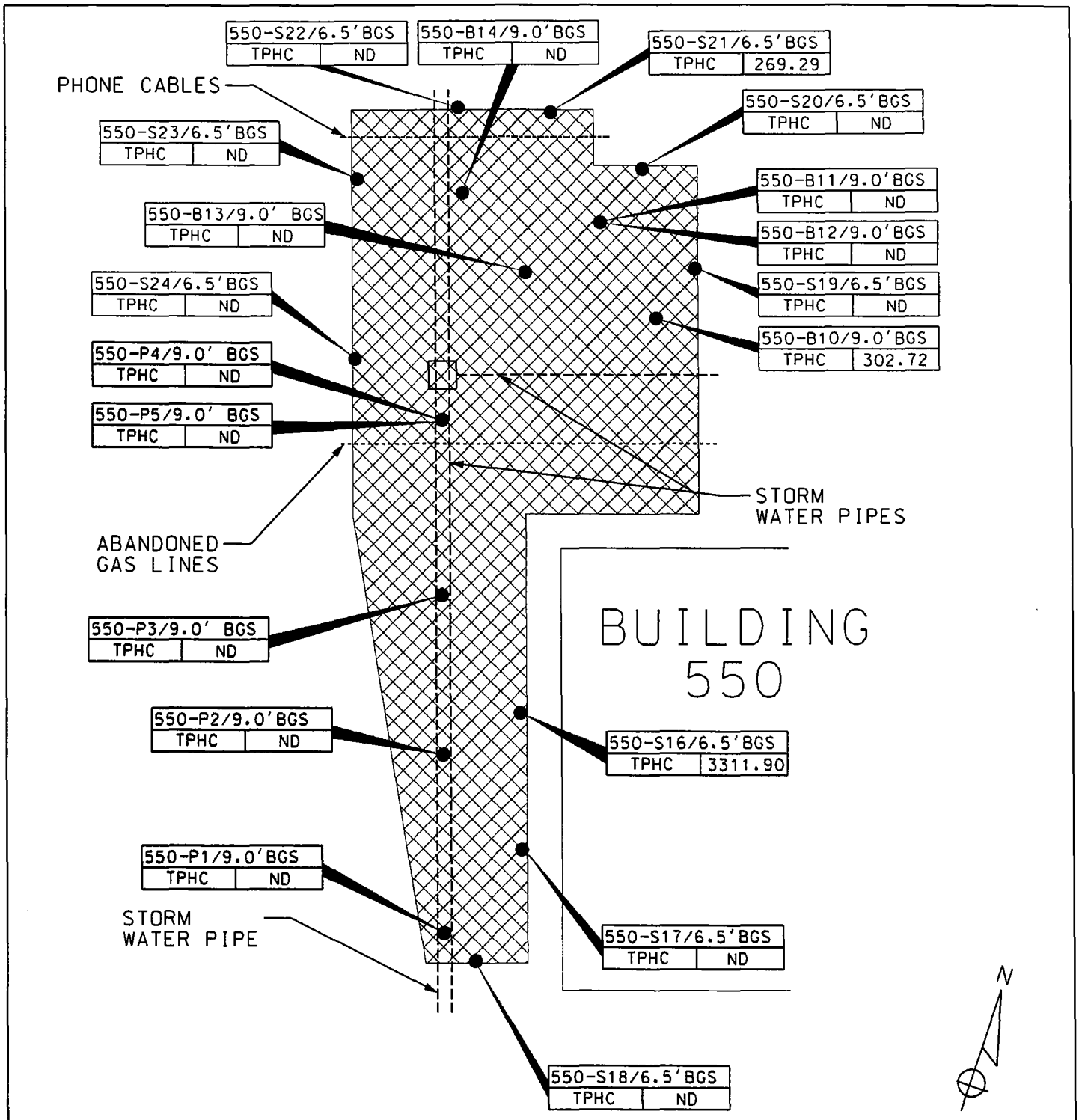
NOTES:
1. ALL RESULTS IN MG/KG.
2. SEE TABLE 2 FOR NJDEP SOIL CLEANUP CRITERIA
3. BGS = BELOW GROUND SURFACE

FIGURE 3
SOIL SAMPLING LOCATION MAP
BUILDING 550
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

SMC ENVIRONMENTAL SERVICES GROUP
Engineers, Managers, Scientists & Planners
VALLEY FORGE, PA.

SCALE: 1"=20' | DATE: JUNE 1997

550 2429 FIG3



LEGEND

- SOIL SAMPLE LOCATION (JULY 1, 1997)
- SOIL SAMPLE LOCATION (JULY 15, 1997)
- SOIL SAMPLE LOCATION (JULY 28, 1997)
- LIMIT OF EXCAVATION (JULY 28, 1997)

NOTES:
1. ALL RESULTS IN MG/KG.
2. SEE TABLE 2 FOR NJDEP SOIL CLEANUP CRITERIA
3. BGS = BELOW GROUND SURFACE

FIGURE 3
SOIL SAMPLING LOCATION MAP
BUILDING 550
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

SMC ENVIRONMENTAL SERVICES GROUP
Engineers, Managers, Scientists & Planners
VALLEY FORGE, PA.

SCALE: 1"=20'

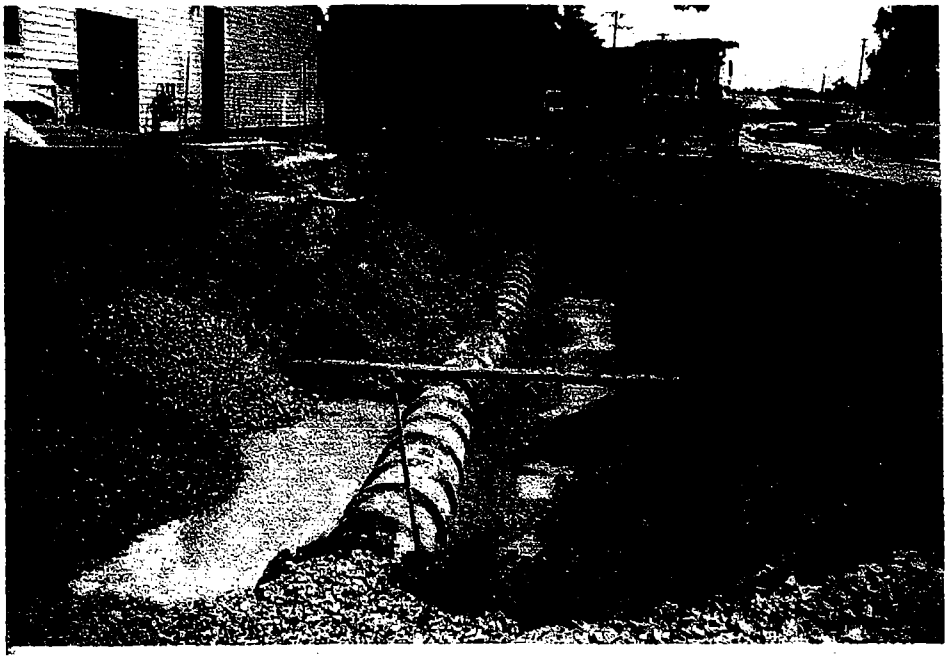
DATE: JUNE 1997

550 2429 FIG3

APPENDIX A
SOIL ANALYTICAL DATA PACKAGE

APPENDIX C
PHOTOGRAPHS

REMEDIATION ALONG 24" STORM WATER PIPE



REMEDIATED AREA AROUND STORM WATER PIPE BENEATH MALTERER AVENUE

SMC ENVIRONMENTAL SERVICES GROUP
Engineers, Managers, Scientists & Planners
VALLEY FORGE, PA.

REMEDIATION BENEATH ABANDONED GAS LINES IN FRONT OF BUILDING 550

REMEDIATION BENEATH SALTZMAN AVENUE

SMC ENVIRONMENTAL SERVICES GROUP
Engineers, Managers, Scientists & Planners
VALLEY FORGE, PA.

GPS SAMPLE LOCATION MAP(BLDG.550)

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

(IN US SURVEY FEET)

	SAMPLE POINT	
POSITION/DESC.	**Y COORD.(NORTHING)**	**X COORD.(EASTING)**
16-Jun		
B1	539449.488	619787.052
B2	539446.760	619775.664
B3	539446.760	619775.664
S1	539438.408	619770.692
19-Jun		
S2	539465.220	619786.088
S3	539469.556	619799.404
S4	539466.984	619806.620
S5	539458.636	619802.288
S6	539458.636	619802.288
24-Jun		
S7	539453.096	619800.204
S8	539455.664	619807.744
S9	539467.532	619811.112
B4	539463.844	619800.844
B5	539471.544	619805.016
S10	539476.996	619807.904
S11	539479.576	619762.832
B6	539469.620	619786.248
B7	539469.620	619786.248
S12	539460.788	619769.244
26-Jun		
S13	539423.628	619796.196
S14	539408.328	619782.560
S15	539443.868	619792.824
B8	539435.360	619792.024

GPS SAMPLE LOCATION MAP(BLDG.550)

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

(IN US SURVEY FEET)

SAMPLE POINT

POSITION/DESC.	Y COORD.(NORTHING)	X COORD.(EASTING)
1-Jul		
S16	539421.988	619799.996
S17	539403.104	619806.520
B9	539411.516	619798.624
S18	539385.592	619801.540
15-Jul		
P1	539389.712	619798.452
P2	539413.248	619790.384
P3	539436.964	619782.484
P4	539460.456	619773.388
P5	539460.456	619773.388
28-Jul		
B10	539481.804	619801.028
B11	539491.084	619787.808
B12	539491.084	619787.808
B13	539482.320	619781.800
B14	539491.256	619770.812
S19	539490.912	619802.916
S20	539502.600	619792.444
S21	539503.800	619776.476
S22	539499.848	619765.148
S23	539485.412	619754.332
S24	539461.868	619762.572

BLDG. 550 UST GROUND WATER SAMPLE GPS POSITION & COORIDINATES

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

(IN US SURVEY FEET)

SAMPLE POINTS

POSITION / DESC.	Y COORD. (NORTHING)	X COORD. (EASTING)
550 GW (GW denotes Ground Water)	539445.384	619792.374

REFERENCE POINTS

POSITION / DESC.	Y COORD. (NORTHING)	X COORD. (EASTING)
550 BLDG CRNR	539386.472	619812.239
550 BLDG CRNR	539448.701	619798.719

United States Army
Fort Monmouth, New Jersey

Underground Storage Tank Closure and Site Investigation Report

Building 551
Main Post-West Area

NJDEP UST Registration No. 0081533-80

September 1998

UNDERGROUND STORAGE TANK
CLOSURE AND SITE INVESTIGATION REPORT

BUILDING 551

MAIN POST-WEST AREA
NJDEP UST REGISTRATION NO. 0081533-80

SEPTEMBER 1998

PREPARED FOR:

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

PREPARED BY:

SMC ENVIRONMENTAL SERVICES GROUP
501 ALLENDALE ROAD
KING OF PRUSSIA, PA 19406

PROJECT NO. 2491-308

551.DOC

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EXECUTIVE SUMMARY

UST Closure

On April 14, 1998, a tar-coated steel underground storage tank (UST) was closed by removal in accordance with the New Jersey Department of Environmental Protection (NJDEP) underground storage tank procedures at the Main Post-West area of the U.S. Army Fort Monmouth, Fort Monmouth, New Jersey. The UST, NJDEP Registration No. 0081533-80 (Fort Monmouth ID No. 551), was located southwest of Building 551. UST No. 0081533-80 was a 2,000-gallon No. 2 fuel oil 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 or punctures. No holes or punctures were noted in the UST. Groundwater was encountered at a depth of 4.5 feet bgs. No evidence of potentially contaminated soil or groundwater was observed surrounding the tank. Soil samples contained TPHC concentrations ranging from non-detect to 310.04 mg/kg.

Site Restoration

Following receipt of all post-excavation soil sampling results, the excavation was backfilled to grade with crushed stone, sand, and native backfill and restored to its original condition.

Conclusions and Recommendations

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

No further action is proposed in regard to the closure and site assessment of UST No. 0081533-80 at Building 551.

1.0 UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

1.1 OVERVIEW

One underground storage tank (UST), New Jersey Department of Environmental Protection (NJDEP) Registration No. 0081533-80, was closed at Building 551 at the Main Post-West area of U.S. Army Fort Monmouth, Fort Monmouth, New Jersey on April 14, 1998. Refer to site location map on Figure 1. This report presents the results of the Department of Public Works= (DPW) implementation of the UST Decommissioning/Closure Plan approved by the NJDEP. The UST was a tar-coated steel 2,000-gallon tank containing No. 2 fuel oil.

Decommissioning activities for UST No. 0081533-80 complied with all applicable Federal, State and Local laws and ordinances in effect at the date of decommissioning. These laws included but were not limited to N.J.A.C. 7:14B-1 et seq., N.J.A.C. 5:23-1 et seq., and Occupational Safety and Health Administration (OSHA) 1910.146 & 1910.120. All permits including but not limited to the NJDEP-approved Decommissioning/Closure Plan were posted onsite for inspection. The decommissioning activities were conducted by DPW personnel who are registered and certified by the NJDEP for performing UST closure activities. Closure of UST No. 0081533-80 proceeded under the approval of the NJDEP Bureau of Underground Storage Tanks (NJDEP-BUST). The Standard Reporting Form and signed Site Assessment Summary form for UST No. 0081533-80 are included in Appendices A and B, respectively.

Based on inspecting the UST, field screening of subsurface soils and groundwater, and reviewing analytical results of collected soil samples, the DPW has concluded that no significant historical discharges are associated with the UST or associated piping.

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

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

1.2 SITE DESCRIPTION

Building 551 is located in the Main Post-West area of the Fort Monmouth Army Base. UST No. 0081533-80 was located southwest of Building 551 and appurtenant copper piping ran approximately nineteen (19) feet northeast from the excavation to Building 551. A site map is provided on Figure 2.

1.2.1 Geological/Hydrogeological Setting

The following is a description of the geological/hydrogeological setting of the area surrounding Building 551. Included is a description of the regional geology of the area surrounding Fort Monmouth as well as descriptions of the local geology and hydrogeology of the Main Post area.

Regional Geology

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

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

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

Local Geology

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

X tidal influence (based on proximity to the Atlantic Ocean, rivers, and tributaries)
X topography
X nature of the fill material within the Main Post area
X presence of clay and silt lenses in the natural overburden deposits
X 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 551 located approximately 100 feet north of Husky Brook, the nearest water body. Based on the Main Post topography, the groundwater flow in the area of Building 551 is anticipated to be to the south.

1.3 HEALTH AND SAFETY

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

1.4 REMOVAL OF UNDERGROUND STORAGE TANK

1.4.1 General Procedures

- X All underground obstructions (utilities, etc.) were identified by the contractor performing the closure prior to excavation activities.

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

- X 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.

- X 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.

- X A Sub-Surface Evaluator from the DPW was present during all site assessment activities.

1.4.2 Underground Storage Tank Excavation and Cleaning

Prior to UST decommissioning activities, surficial soil was removed to expose the UST and associated piping. All free product present in the piping was drained into the UST, and the UST was purged to remove vapors prior to cutting and removal of the piping. After removal of the associated piping, a manway was made in the UST to allow for proper cleaning. The UST was completely emptied of all liquids prior to removal from the ground. Approximately 50 gallons of liquid from the UST and its associated piping were transported by Casie Protank to Casie Ecology Oil Salvage, Inc. facility, a NJDEP-approved petroleum recycling and disposal company located in Vineland, New Jersey. Refer to Appendix C for the waste manifest.

The UST was cleaned prior to removal from the excavation in accordance with the NJDEP-BUST regulations. After the UST was removed from the excavation, it was staged on polyethylene sheeting and examined for holes. No holes or punctures were observed during the inspection by the Sub-Surface Evaluator. Soils surrounding the UST were screened visually and with an OVA for evidence of contamination. No evidence of contamination was observed. Soil screening was also performed along the piping run associated with the UST closure. No contamination was noted anywhere along the piping length. Groundwater was encountered at a depth of 4.5 feet bgs and no sheen was observed. See Figure 3 for a cross-sectional view of the excavated area.

1.5 UNDERGROUND STORAGE TANK TRANSPORTATION AND DISPOSAL

The tank was transported to Mazza and Sons, Inc., Metal Recyclers. See Appendix D for a copy of the UST disposal certificate and Appendix F for photographs of the UST. The transportation of the UST was in compliance with all applicable regulations and laws.

The UST was labeled prior to transport with the following information:

- X Site of origin
- X Contact person
- X NJDEP UST Facility ID number
- X Former contents

1.6 MANAGEMENT OF EXCAVATED SOILS

Based on OVA air monitoring and TPHC analysis results from the post-excavation soil samples, no soils exhibited signs of contamination. Therefore, the excavated soils were used as backfill following removal of the UST.

2.0 SITE INVESTIGATION ACTIVITIES

2.1 OVERVIEW

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

The following Parties participated in Closure and Site Investigation Activities:

- X Subsurface Evaluator: Charles Appleby
  Employer: U.S. Army, Fort Monmouth
  Phone Number: (732) 532-6224
  NJDEP Certification No.: 2056

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

- X Hazardous Waste Hauler: Casie Protank Environmental Services
  Contact Person: Bob Corsiglia
  Phone Number: (609) 696-4401
  NJDEP Company Certification No.: 16931

2.2 FIELD SCREENING/MONITORING

Field screening was performed by a NJDEP Certified Sub-Surface Evaluator using an OVA and visual observations to identify potentially contaminated material. Soil excavated from around the tank and appurtenant piping, as well as the UST excavation sidewalls and bottom, did not exhibit any evidence of potential contamination. Groundwater was encountered at a depth of 4.5 feet bgs and no sheen was observed.

2.3 SOIL SAMPLING

On April 15, 1998, following the removal of the UST, post-excavation soil samples A, B, C, D, E, F, and DUP E were collected from a total of six (6) locations of the UST excavation. Sample A was collected along the excavation floor at a depth of 9.0 feet bgs. Sidewall samples B, C, D, E and DUP E were collected at a depth of 4.0 feet bgs. Piping sample F was collected at a depth of 2.0 feet bgs. All samples were analyzed for total petroleum hydrocarbons (TPHC) and total solids.

U.S. Army personnel in accordance with the NJDEP Technical Requirements and the NJDEP Field Sampling Procedures Manual performed the site assessment. A summary of sampling activities including parameters analyzed is provided in Table 1. The post-excavation soil samples were collected using NJDEP *Field Sampling Procedures Manual* (1992) standard sampling procedures. Following soil sampling activities, the samples were chilled and delivered to U.S. Army Fort Monmouth Environmental Laboratory located in Fort Monmouth, New Jersey, for analysis.

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 SOIL SAMPLING RESULTS

To evaluate soil conditions following removal of the UST, post-excavation soil samples were collected on April 15, 1998, from a total of six (6) locations. All samples were analyzed for TPHC and total solids. The post-excavation sampling results were compared to the NJDEP residential direct contact total organic contaminants soil cleanup criteria of 10,000 mg/kg (N.J.A.C. 7:26D and revisions dated February 3, 1994). A summary of the analytical results and comparison to the NJDEP soil cleanup criteria is provided in Table 2 and the soil sampling locations are shown on Figure 4. The analytical data package is provided in Appendix E.

All post-excavation soil samples collected on April 15, 1998, from the UST excavation and from below piping associated with the UST contained concentrations of TPHC below the NJDEP soil cleanup criteria. Samples contained levels of TPHC ranging in concentration from non-detect to 310.04 mg/kg.

3.2 CONCLUSIONS AND RECOMMENDATIONS

The analytical results for all post-excavation soil samples collected from the UST closure excavation at Building 551 were below the NJDEP soil cleanup criteria for total organic contaminants.

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

No further action is proposed in regard to the closure and site assessment of UST No. 0081533-80 at Building 551.

TABLES

TABLE 1

SUMMARY OF POST-EXCAVATION SAMPLING ACTIVITIES
BUILDING 551, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID	Date of Collection	Date Analysis Started	Matrix	Sample Type	Analytical Parameters*	Analysis Method
A	4/15/98	4/16/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
B	4/15/98	4/16/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
C	4/15/98	4/16/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
D	4/15/98	4/16/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
E	4/15/98	4/16/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
F	4/15/98	4/16/98	Soil	Post-Excavation	TPHC	OQA-QAM-025
DUP E	4/15/98	4/16/98	Soil	Post-Excavation	TPHC	OQA-QAM-025

Note:
* TPHC Total Petroleum Hydrocarbons

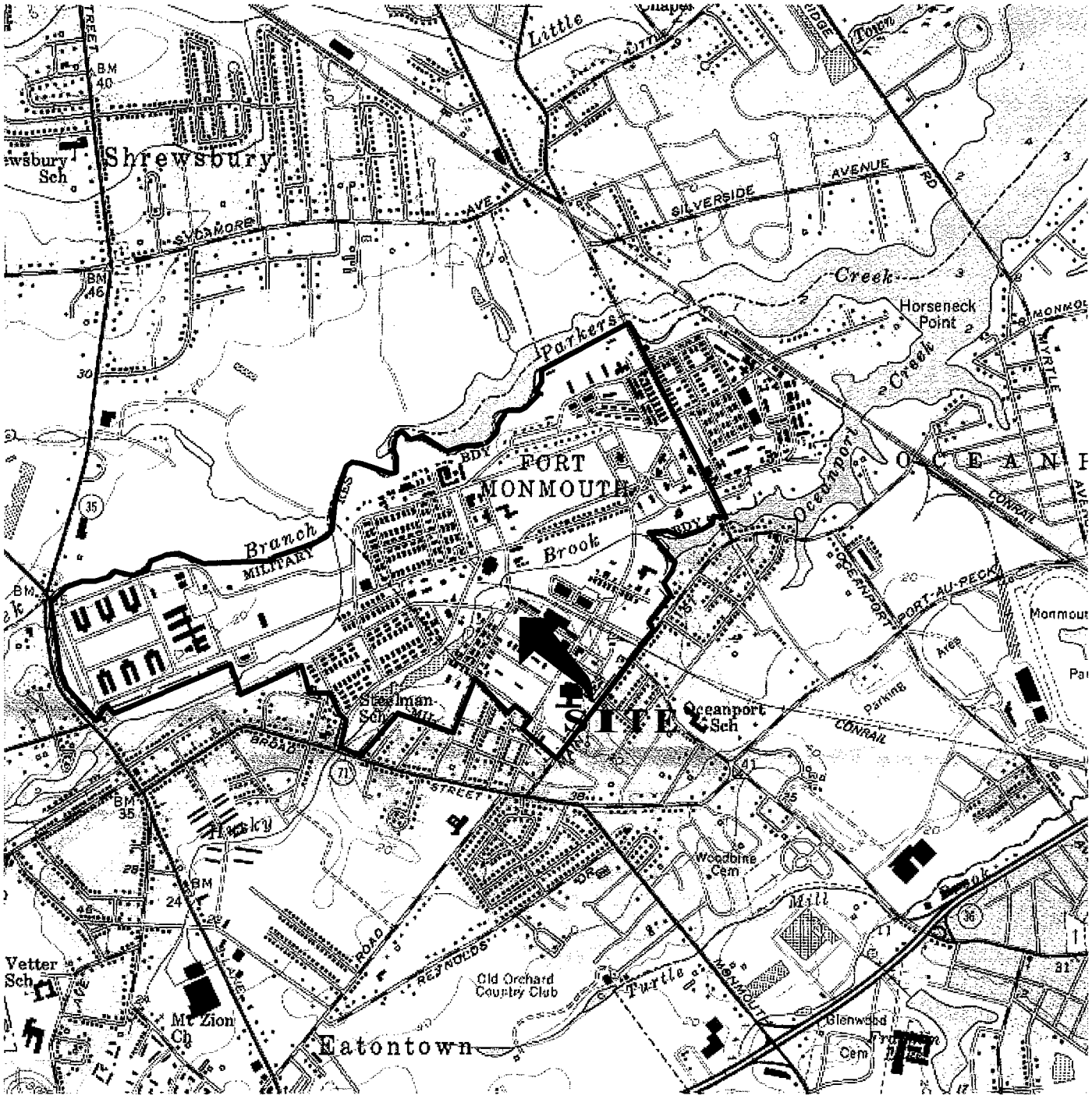
TABLE 2

POST-EXCAVATION SOIL SAMPLING RESULTS
BUILDING 551, MAIN POST-WEST AREA
FORT MONMOUTH, NEW JERSEY

Sample ID/ Depth	Sample Laboratory ID	Sample Date	Analysis Date	Analytical Method Used	Method Detection Limit (mg/kg)	Compound of Concern	Result (mg/kg) *	NJDEP Soil Cleanup Criteria ** (mg/kg)	Exceeds Cleanup Criteria
A/9.0=	3486.01	4/15/98	4/16/98	Total Solid	--	--	79.75	--	--
				TPHC	192	yes	ND	10,000	No
B/4.0=	3486.02	4/15/98	4/16/98	Total Solid	--	--	89.75	--	--
				TPHC	169	yes	ND	10,000	No
C/4.0=	3486.03	4/15/98	4/16/98	Total Solid	--	--	86.93	--	--
				TPHC	175	yes	310.04	10,000	No
D/4.0=	3486.04	4/15/98	4/16/98	Total Solid	--	--	84.16	--	--
				TPHC	176	yes	ND	10,000	No
E/4.0=	3486.05	4/15/98	4/16/98	Total Solid	--	--	86.18	--	--
				TPHC	179	yes	ND	10,000	No
F/2.0=	3486.06	4/15/98	4/16/98	Total Solid	--	--	88.99	--	--
				TPHC	174	yes	ND	10,000	No
DUP E/4.0=	3486.07	4/15/98	4/16/98	Total Solid	--	--	87.00	--	--
				TPHC	176	yes	ND	10,000	No

Note:
* Total Solid results are expressed as a percentage.
** NJDEP Residential Direct Contact soil cleanup criteria for total organics
-- Not detected above stated sample quantitation limit
TPHC Total Petroleum Hydrocarbons

FIGURES



LONG BRANCH, N. J.

40073-C8-TF-024

1954

PHOTOREVISED 1981

DMA 6164 I SE-SERIES V822

QUADRANGLE LOCATION

Mapped, edited and published by the Geological Survey

FIGURE 1

SITE LOCATION MAP
Building 551
Main Post-West
Fort Monmouth Army Base
Monmouth County, NJ

SMC Environmental
Services Group
Engineers, Managers, Scientists & Planners
Valley Forge, PA.

SCALE: 1"= 2000'

DATE: APRIL 1998

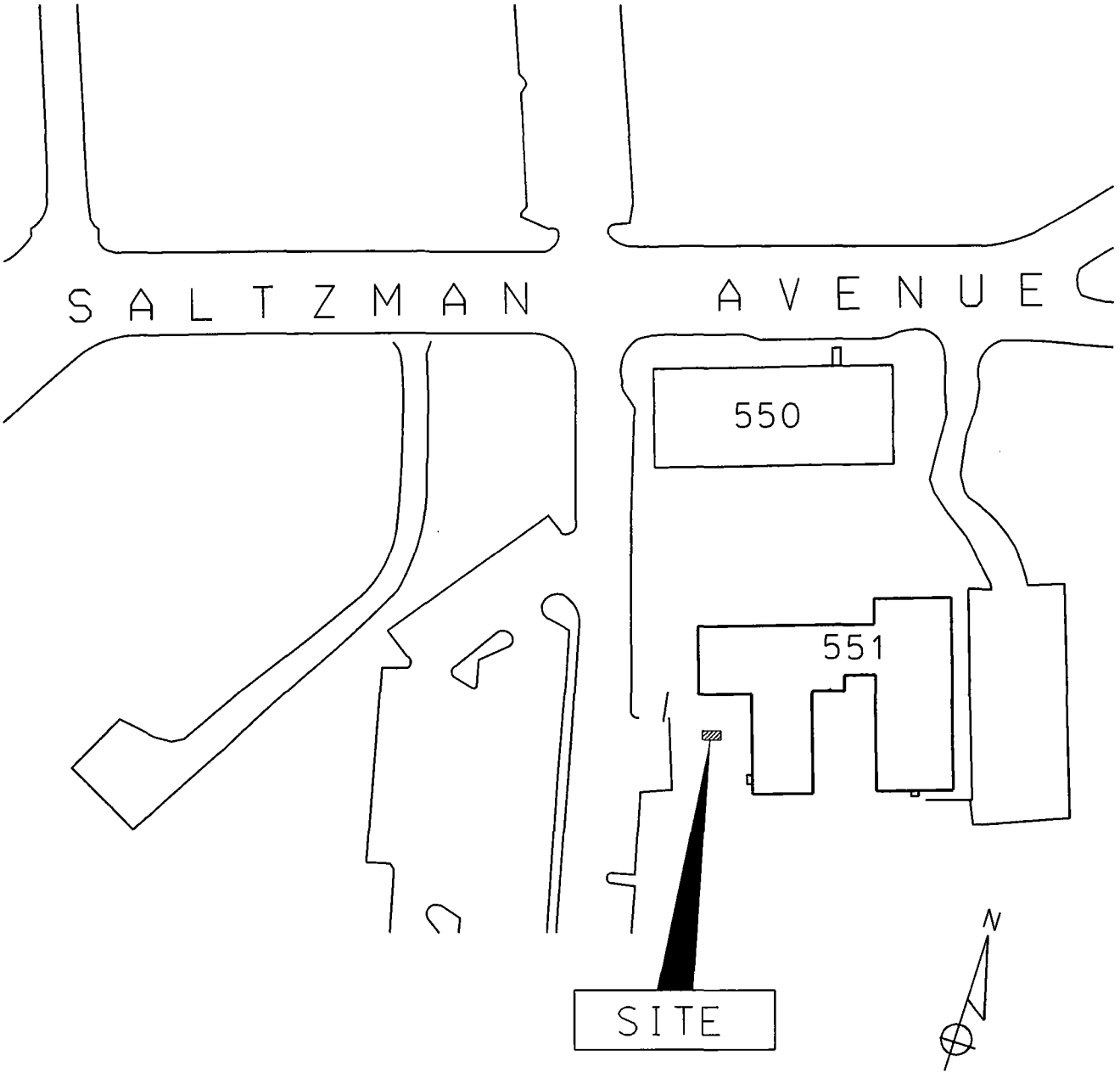


FIGURE 2
SITE MAP
BUILDING 551
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

SMC ENVIRONMENTAL
SERVICES GROUP
Engineers, Managers, Scientists & Planners
VALLEY FORGE, PA.

SCALE: 1"=100'

DATE: APRIL 1998

551 2429 FIG2

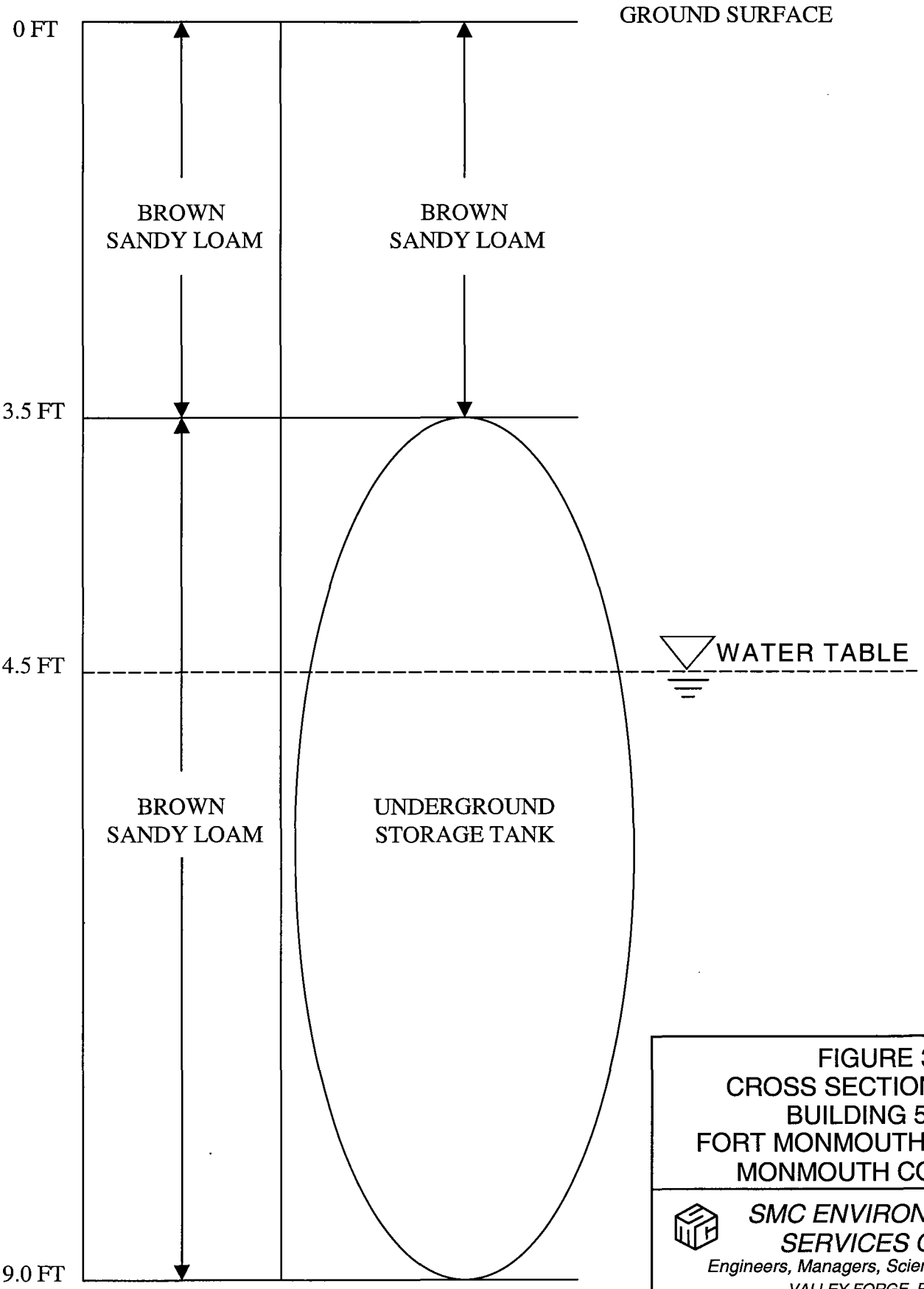
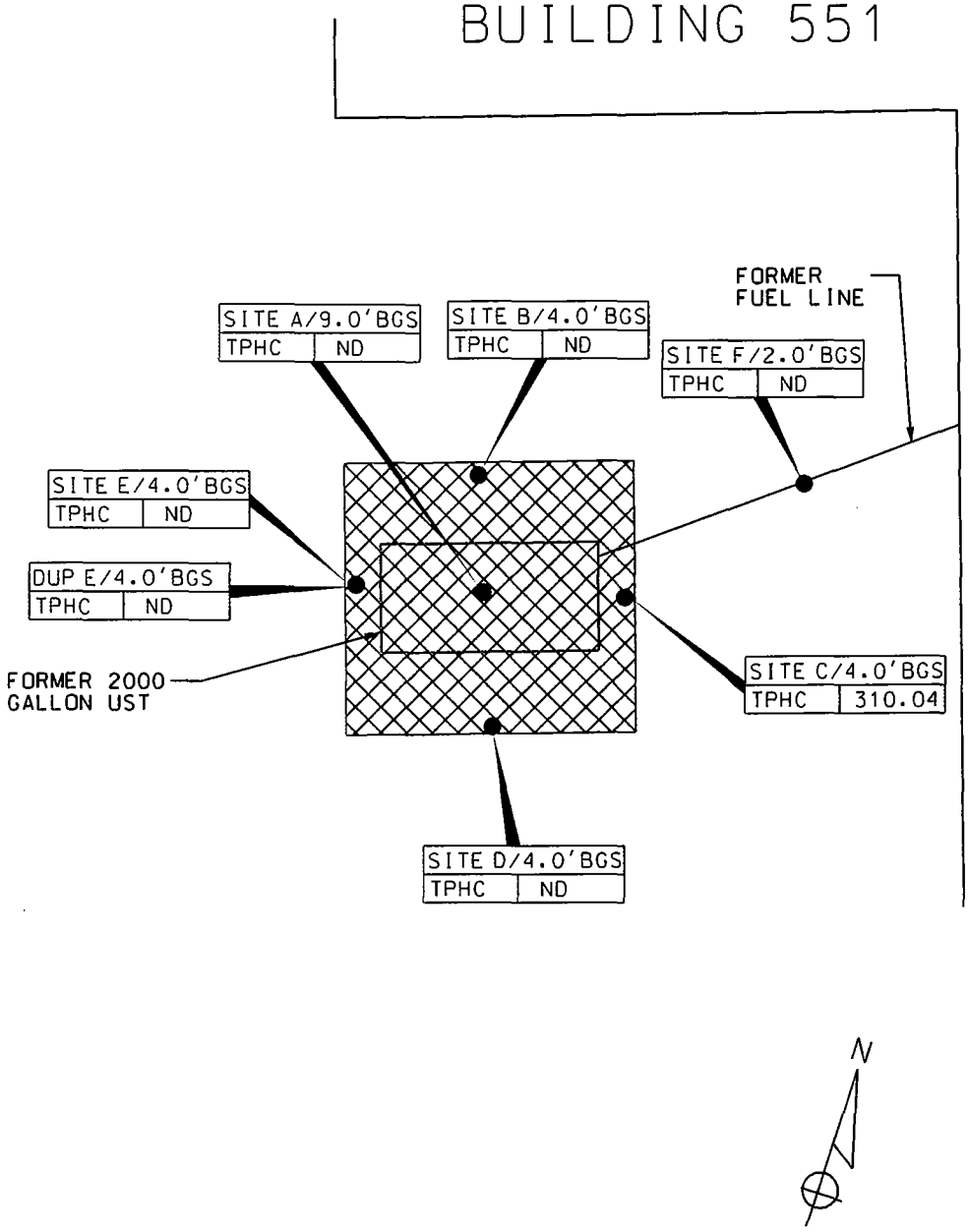


FIGURE 3
CROSS SECTIONAL VIEW
BUILDING 551
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

SMC ENVIRONMENTAL SERVICES GROUP
Engineers, Managers, Scientists & Planners
VALLEY FORGE, PA.

SCALE: NTS | DATE: APRIL 1998



LEGEND

- SOIL SAMPLE LOCATION (APRIL 15, 1998)
- LIMIT OF EXCAVATION (APRIL 14, 1998)

NOTES:

1. ALL RESULTS IN MG/KG.
2. SEE TABLE 2 FOR NJDEP SOIL CLEANUP CRITERIA
3. BGS = BELOW GROUND SURFACE

FIGURE 4
SOIL SAMPLING LOCATION MAP
BUILDING 551
FORT MONMOUTH ARMY BASE
MONMOUTH COUNTY, NJ

SMC ENVIRONMENTAL SERVICES GROUP
Engineers, Managers, Scientists & Planners
VALLEY FORGE, PA.

SCALE: 1"=10'

DATE: APRIL 1998

551 2429 FIG4

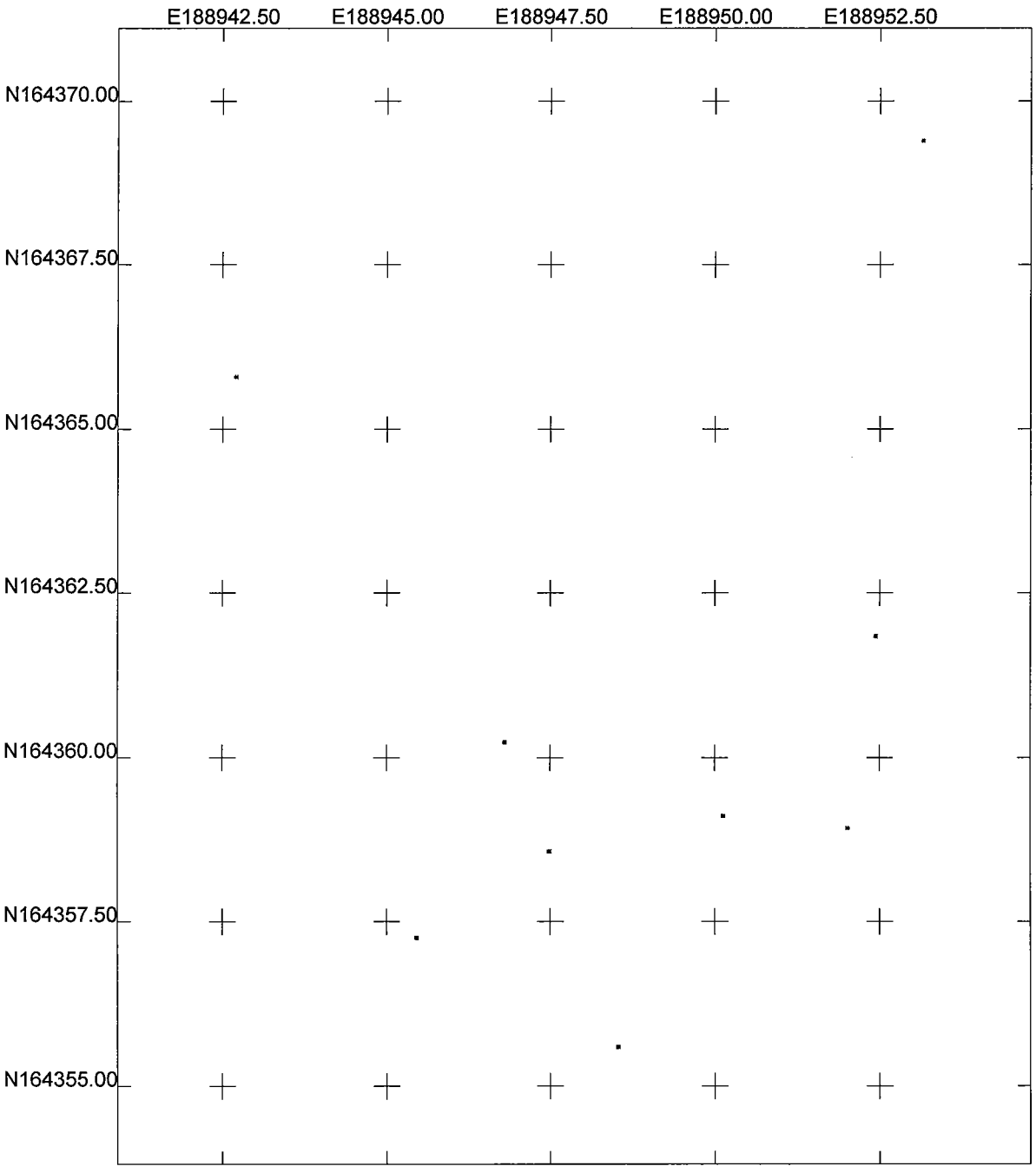


Figure 4 GPS Sampling Locations Map

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

N

Scale 1:100
0 3.000
Meters

r112416a.cor
12/7/1998
Pathfinder Office
Trimble

Figure 4 GPS Sampling Location Point Data

US State Plane 1983 NJ (NY East) 2900 Nad 1983 (Conus)

Reference Points

Locations	Y Coord. (Northing)	X Coord. (Easting)
BLDG 551 SW CORNER	164365.805	188942.693
BLDG 551 INSIDE CORNER	164369.41	188953.145
DISH POLE	164358.936	188952.007

Sample Points

Locations	Y Coord. (Northing)	X Coord. (Easting)
551 A	164358.579	188947.477
551 B	164360.247	188946.793
551 C	164359.121	188950.119
551 D	164355.609	188948.522
551 E	164357.265	188945.447
551 F	164361.859	188952.426

APPENDIX A

NJDEP-STANDARD REPORTING FORM

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF RESPONSIBLE PARTY SITE REMEDIATION
BUREAU OF APPLICABILITY AND COMPLIANCE
Registration and Billing Unit
CN 028, Trenton, N.J. 08625-0028
1-609-984-3156

FOR STATE USE ONLY

Check In ☐ Yes ☐

STATUS		COMCODE
Active	Inactive	
☐	☐	☐☐☐☐

UNDERGROUND STORAGE TANK FACILITY QUESTIONNAIRE

FACILITY UST # 81533 Bldg 551

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, and the Registration and Billing Regulations N.J.A.C. 7:14B-2.

[Check appropriate box(es)]

A. ☐ Is this a registration of a proposed or newly installed underground storage tank? (This form must be filed at least 30 days prior to operation)
B. ☐ Is this a registration of an existing underground storage tank not presently registered?
C. ☒ Is this a correction or amendment to an existing facility registration? UST # 0081533
D. ☐ There have been no changes to the facility registration since last submittal. UST # _____ (Go to certification page for signatures)

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

☐ Facility Name and/or Address Change	☐ Type of Product(s) Stored	☐ Financial Responsibility Change
☐ Owner Name and/or Address Change	☐ Spills, Leaks, Releases	☐ Substantial Modification(s)
☐ Facility Operator and/or Address Change	☐ Tank(s) and/or Piping Changes	☐ Sale or Transfer (Complete Questions 4,5,6 & 13)
☐ Owner Contact Person Change	☒ Closure (Complete Question #13)	☐ Other *(please specify)*

SECTION A - GENERAL FACILITY INFORMATION

1. Facility Name: Ft Monmouth
2. Facility Location: Main Post West
   NUMBER AND STREET
   CITY OR MUNICIPALITY
   COUNTY | STATE: NJ | ZIP CODE | BLOCK | LOT
3. Facility Operator: PERSON OR TITLE — Contact Tele. No: (Area Code) (Extension)
   Operator Address (if different than #2): NUMBER AND STREET
   CITY OR MUNICIPALITY
   STATE | ZIP CODE
4. Tank Owner
5. Tank Owner Address: NUMBER AND STREET
   CITY OR MUNICIPALITY
   STATE | ZIP CODE
   Contact Person (Tank Owner) — Contact Tele. No. (Area Code) (Extension)
7. EPA ID # ☐☐☐☐☐☐☐☐☐☐☐☐
8. Total number of regulated underground storage tanks at facility ☐☐☐☐ *(Complete Section B for each tank)*

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

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

11. Is a copy of the facility site plan submitted with this registration pursuant to N.J.A.C. 7:14B-2? ☐ YES ☐ NO

SECTION B - SPECIFIC TANK INFORMATION

ALL underground 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 unless previously submitted.

	TANK NO.	TANK NO.	TANK NO.	TANK NO.	TANK NO.
1. Tank Identification Number	☐☐☐☐	☐☐☐☐	☐☐☐☐	☐☐☐☐	☐☐☐☐
2. CAS Number (hazardous substances only)	☐☐☐☐☐☐☐☐☐	☐☐☐☐☐☐☐☐☐	☐☐☐☐☐☐☐☐☐	☐☐☐☐☐☐☐☐☐	☐☐☐☐☐☐☐☐☐
3. Date Tank Installed (Month/Day/Year)	Mo. Day Year	Mo. Day Year	Mo. Day Year	Mo. Day Year	Mo. Day Year
4. Tank Size (gallons)	☐☐☐☐☐☐☐	☐☐☐☐☐☐☐	☐☐☐☐☐☐☐	☐☐☐☐☐☐☐	☐☐☐☐☐☐☐
5. Tank Contents (Mark one "X" for each tank)					
A. Leaded gasoline	☐	☐	☐	☐	☐
B. Unleaded gasoline	☐	☐	☐	☐	☐
C. Alcohol endriched gasoline	☐	☐	☐	☐	☐
D. Light diesel fuel (No. 1-D)	☐	☐	☐	☐	☐
E. Medium diesel fuel (No. 2-D)	☐	☐	☐	☐	☐
F. Waste Oil	☐	☐	☐	☐	☐
G. Kerosene (No. 1)	☐	☐	☐	☐	☐
H. Home heating oil (No. 2)	☐	☐	☐	☐	☐
J. Heating oil (No. 4)	☐	☐	☐	☐	☐
K. Heavy heating oil (No. 6)	☐	☐	☐	☐	☐
L. Aviation fuel	☐	☐	☐	☐	☐
M. Motor oil	☐	☐	☐	☐	☐
N. Lubricating oil	☐	☐	☐	☐	☐
P. Sewage	☐	☐	☐	☐	☐
Q. Sewage sludge	☐	☐	☐	☐	☐
R. Other hazardous substances (specify)					
S. Hazardous waste (specify ID number)					
T. Mixtures (please specify)					
U. Emergency spill tank (specify substance)					
V. Other petroleum products (please specify)					
W. Other (please specify)					
6. Tank & Piping Construction (Mark one each for both tank & piping)	Tank Piping	Tank Piping	Tank Piping	Tank Piping	Tank Piping
A. Bare Steel	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
B. Cathodically protected steel	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
C. Fiberglass-coated steel	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
D. Fiberglass-reinforced plastic	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
E. Internally lined	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
F. Other (please specify)					
7. Tank & Piping Structure (Mark one each for both tank & piping)	Tank Piping	Tank Piping	Tank Piping	Tank Piping	Tank Piping
A. Single wall	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
B. Double wall	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
C. Other (please specify)					
8. Type of Monitoring/Detection System (Mark all that apply for both tank & piping)	Tank Piping	Tank Piping	Tank Piping	Tank Piping	Tank Piping
A. Statistical Inventory Reconciliation	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
B. Manual Tank Gauging	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
C. Inventory Control	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
D. Interstitial	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
E. Precision Test	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
F. Ground water observation wells	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
G. Vapor observation wells	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
H. In-tank (automatic) monitoring gauge	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐
J. Periodic Tank Test	☐ ☐	☐ ☐	☐ ☐	☐ ☐	☐ ☐

Tank Identification Number	TANK NO.	TANK NO.	T. .K NO.	TANK NO.	TANK NO.
8. Type of Monitoring/Detection System	Tank Piping	Tank Piping	Tank Piping	Tank Piping	Tank Piping
K. None					
L. Other (please specify)					
9. Overfill Protection (tank only) (Mark one X for each tank)					
A. Yes					
B. No					
10. Spill Containment Around Fill Pipe (Mark one X for each tank)					
A. Yes					
B. No					
11. Tank Status (Mark one X for each tank)	Tank Piping	Tank Piping	Tank Piping	Tank Piping	Tank Piping
A. In-use					
B. Empty less than 12 months					
C. Empty 12 months or more					
D. Emergency spill tank (sump)					
E. Emergency backup generator tank					
F. Abandoned in Place					
G. Removed					
H. Other (please specify)					
12. If box 11B, C, or D above has been marked, indicate the estimated date last used (month/day/year)	Mo. Day Year	Mo. Day Year	Mo. Day Year	Mo. Day Year	Mo. Day Year
13. Closure Information - Tank ID No. B4g 551	TANK NO. 8	TANK NO.	TANK NO.	TANK NO.	TANK NO.
	Mo. Day Year	Mo. Day Year	Mo. Day Year	Mo. Day Year	Mo. Day Year
A. Date abandoned in place					
B. Date taken temporarily out of service					
C. Date removed	04/14/1998				
D. Date of Sale or Transfer					
E. TMS # (if applicable)					
F. ISRA # (if applicable)					

SECTION C - FINANCIAL RESPONSIBILITY

Does this facility have a Financial Responsibility Assurance Mechanism as required in 40 CFR 280? ☐ YES ☐ NO
Please list the appropriate financial information below:

Type _____ Carrier / Issuing Agency _____

____/____/____ Effective Date ____/____/____ Expiration Date _____ Policy Number $_____ Amount

SECTION D - MONITORING SYSTEMS

Does this facility have a release detection monitoring system which is in compliance with N.J.A.C. 7:14B-6? ☐ YES ☐ NO
If "No", please be aware that the facility must meet the appropriate deadline. (See "Dates to Know" on Page 4)

SECTION E - RECORDKEEPING/COMPLIANCE

Please answer all the questions in this section on a facility basis. Any one tank not in compliance requires a "NO" answer for the entire facility.

1. Does this facility have cathodic protection systems for all steel tanks and piping? ☐ YES ☐ NO
   If "Yes", are the systems properly operated and maintained pursuant to N.J.A.C. 7:14B-5? ☐ YES ☐ NO
2. Are the performance claims and documentation of monitoring systems maintained by the owner or operator pursuant to N.J.A.C. 7:14B-5? ☐ YES ☐ NO
3. Are the proper monitoring, testing, sampling, repair and inventory records kept on-site pursuant to N.J.A.C. 7:14B-5 and 6? ☐ YES ☐ NO
4. Is the proper Release Response Plan kept on-site pursuant to N.J.A.C. 7:14B-5? ☐ YES ☐ NO
5. Does the facility have spill and over fill protection systems pursuant to N.J.A.C. 7:14B-4? ☐ YES ☐ NO
6. Have all Fill Ports been permanently marked as per API #1637 pursuant to N.J.A.C. 7:14B-5? ☐ YES ☐ NO

IMPORTANT INFORMATION

FEE:	Please make checks payble to: **"Treasurer, State of New Jersey"**. Use of the enclosed return envelope will expedite processing. Registration and Billing Schedule can be found in N.J.A.C. 7:14B. All Initial Registration fees are $100 per facility.
PENALTY:	Failure by owner or operator of a regulated underground storage tank to comply with any requirement of the State UST Act or regulations may result in the penalties set forth in NJ..S.A. 58:10A-10.
EMERGENCY:	If a discharge or spill occurs, the NJDEP Hotline at (609) 292-7172 must be called IMMEDIATELY - 24 hours a day.
UPGRADE EXEMPTION:	Residential heating oil underground storage tanks are exempt from all upgrade requirements.

DATES TO KNOW (critical deadlines)

December 22, 1988	—	All new federally regulated tank systems must have cathodic protection and spill/overfill protection.
September 4, 1990	—	All new State-only regulated tank systems must have cathodic protection and spill/overfill protection.
December 22, 1990	—	All federally regulated piping must have begun leak detection.
February 19, 1993	—	All federally regulated tank systems must maintain financial responsibility assurance.
December 22, 1993	—	All federally regulated tank systems must have begun leak detection.
December 22, 1998	—	All regulated tanks shall install cathodic protection and spill/overfill protection.

CERTIFICATIONS

NOTE: IF THE PERSON SIGNING CERTIFICATION NO. 2 IS THE SAME AS THE PERSON SIGNING CERTIFICATION NO. 1, THEN CERTIFICATION NO. 2 NEED NOT BE SIGNED. (If different persons are required to sign No. 1 and No. 2, then they must do so.)

CERTIFICATION NO. 1:

Must be signed by the highest ranking individual at the facility with overall responsibility

"I certify under penalty of law that the information provided in this document is true, accurate and complete to the best of my knowledge, information and belief. I am aware that there are significant civil and criminal 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."

MR. James OTT — (Typed / Printed Name)

(Signature)

Director of Public Works — (Title)

6/11/98 — (Date)

CERTIFICATION NO. 2:

Must be signed as follows:

- For a corporation, by a principal executive officer of at least the level of vice president
- 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 herein and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information. I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil and criminal 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."

(Typed / Printed Name)

(Signature)

(Title)

(Date)

CERTIFICATION NO. 3:

If applicable, must be signed by the individual who is certified to perform services.

"I certify under penalty of law that the information provided in this document is true, accurate and complete to the best of my knowledge, information and belief. I am aware that there are significant civil and criminal 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."

MR. Charles Appleby — (Typed / Printed Name)

Environ. Prof. Spec. — (Title)

5/28/98 — (Date)

U.S. Army — (Name of Firm, if applicable)

2056 — (N.J. Certification Number)

APPENDIX B

SITE ASSESSMENT SUMMARY

(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

_X_ NA – Federal Agreement

D. (Complete all that apply)

- Assigned Case Manager : Ian Curtis, Federal Case Manager
- UST Registration Number : 81533-80 (7 digits)
- Incident Report Number ___•___•___•_____•___ (10 or 12 digits)
  ___•___•___•_____•___
- Tank Closure Number : Federal Case Manager

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: Charles Appleby Signature: UST Cert. No.: 2056

Firm: U.S. Army Fort Monmouth Firm's UST Cert. Number: NA - U.S. Army

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

State: New Jersey 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: James Ott

Company Name: U.S. Army Fort Monmouth Date: 7/31/00

US ARMY, SELFM-PW-EV

DAILY UST SUBSURFACE REMOVAL LOG

BLDG.#: 551 REG.#: 0081533 -80 CLOSURE#:
DATE: 4/14/98 TOA: 1130 TOD: 1630
GOV. SSE: Charles Appleby NJDEP CERT.#: 2056
REMOVAL CONTRACTOR: TVS
CLOSURE SUPERVISOR: Gary Demarsh NJDEP CERT.#:
WEATHER: Sunny Cool ~ 70°

ACTIVITY	YES / NO
THE SUPERVISOR (CLOSURE CERT.) WAS ON-SITE DURING ALL CLOSURE RELATED ACTIVITIES	yes
THE SSE WAS ON-SITE DURING UST REMOVAL AND SITE SCREENING AND SAMPLING ACTIVITIES	yes
ALL ON-SITE PERSONNEL HAD TRAINING IAW ALL SAFETY REQUIREMENTS (E.G. 29CFR)	yes
A CONFINED ENTRY PERMIT WAS COMPLETED AND POSTED ON-SITE BY THE CONTRACTOR Cleaned Prior.	NA
THE UST WAS PLACED ONTO PLASTIC, SCRAPED OFF, INSPECTED FOR HOLES AND PHOTOGRAPHED	yes
A DISCHARGE WAS REPORTED TO THE NJDEP (609-292-7172), CASE# Clean Visuals	NA
PHOTOS HAVE UST#, BLDG. #, DATE, TIME, NAME OF SSE AND DESCR. WRITTEN ON BACK	yes
GROUNDWATER WAS ENCOUNTERED AT 5 FEET BG, A SHEEN (WAS/~~WAS NOT~~) OBSERVED ON GW	
IF OVA/Hnu WAS USED: WAS IT CAL. AND FOUND TO BE OPERATIONAL (cal. data on COC)	~~NA~~
IF SAMPLES WERE TAKEN: COC, SCALED SITE MAP (VERT. SOIL HORIZONS AND PLOT PLAN)	NA
ALL SAMPLE COLLECTION ACTIVITIES WERE AS DESCRIBED IN THE NJDEP FSPM, 1992	NA
ALL SAMPLING WAS BIASED TOWARD HIGHEST OVA/FID RECORDED SITES IAW 7:26E-3.6 et seq.	NA
ALL PETROL. CONT. SOILS WERE SECURED FROM THE WEATHER BY CLOSE OF BUSINESS TODAY	NA
THE SSE AUTHORIZED BACKFILLING THE EXCAVATION (STONE TO 1" ABOVE GROUNDWATER) *	Partial
ADDITIONAL NOTES WERE TAKEN AND ARE RECORDED ON THE BACK OF THIS FORM	Both
THE FOLLOWING DOCUMENTS WERE ADDED TO THE PROJECT FOLDER TODAY: (CIRCLE EACH) SCRAP TICKET, CSE PERMIT, ACCIDENT REPORT, HAZ. WASTE MANIFEST, DAILY UST CLOSURE LOG, SCALED SITE MAP (SAMPLING), SRF-CLOSURE, CHAIN OF CUSTODY, SOIL ANALYTICAL RESULTS, CLEAN FILL TICKETS(IN YDS^3), PHOTOGRAPHS (UST, EXCAVATION, SAMPLING POINTS)	SSE

CHECK ALL BOXES, LEAVE NO BLANKS

I certify under penalty of law that tank decommissioning activities were performed in compliance with N.J.A.C. 7:14B-9.2(b)3 and 7:26 et seq.. I am aware that there are significant penalties for submitting false, inaccurate, or incomplete information, including fines and/or imprisonment.

SIGNATURE: _____ DATE: 4/14/98

ca\ms\ust\removal\sitessls.doc

* Backfill South East Corner to Prevent further Sidewall Collapse (Satellite dish needs Protection from falling).

APPENDIX C

WASTE MANIFEST

CASIE / PROTANK
ENVIRONMENTAL SERVICES

551

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

NON-HAZARDOUS MANIFEST

1. Generator's US EPA ID No. NJ3210020597 Document No. 12322
2. Page 1 of 1

3. Generator's Name and Mailing Address U.S. Army Com. Elec.Command
Main Post Bldg 173/Attn:
Fort Monmouth NJ 07703

4. Generator's Phone (732) 532-6223

A. Non-hazardous Manifest Document Number NHZ020 16448

B. State Generator's ID c/o ~~Isaac Shirghio~~, Joe Fallon

5. Transporter 1 Company Name: Casie Ecology Oil Salvage, Inc. 6. US EPA ID Number: NJD045995693

C. State Trans. ID 16931

6. Transporter 2 Company Name 8. US EPA ID Number

D. Transporter's Phone (609) 696-4401

E. State Trans. ID

9. Designated Facility Name and Site Address
Casie Ecology Oil Salvage, Inc. T/A
3209 N. Mill Rd / Casie Protank
Vineland NJ 08360
10. US EPA ID Number: NJD045995693

F. Transporter's Phone ( )

G. State Facility's 0614D1HP05

H. Facility's Phone (609) 696-4401

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	L Waste No.
a. Combustible liquid, n.o.s.(Fuel Oil) NA1993, PGIII	001	TT	X3370 00001	G	ID72
b.					
c.					
d.					

J. Additional Descriptions for Materials Listed Above
L,T %oil/sed. %wtr.

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
a.24 Hr. Emergency Response #609 696-4401 K. Ambrosia NAERG# 127

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

I hereby certify that the above-named material is not hazardous waste as defined by 40 CFR Part 261, 264 and 279 or any applicable state law.

GENERATOR

Printed/Typed Name	Signature	Month Day Year
Charles Appleby SELFM-PW-EV		04/01/98

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
BOB CORSICLIA		04/01/98

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year

FACILITY

19. Discrepancy Indication Space

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

Printed/Typed Name	Signature	Month Day Year

1-GENERATOR COPY

SIGNATURE AND INFORMATION *MUST* BE LEGIBLE ON ALL COPI

CASIE / PROTANK ENVIRONMENTAL SERVICES

551

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

NON-HAZARDOUS MANIFEST JF

1. Generator's US EPA ID No. NJ3211002005971 Document No. 13017 3

2. Page 1 of 1

3. Generator's Name and Mailing Address U.S. Army Com. Elec. Command
Main Post
c/o Joe Fallon/Bldg
Attn: SELFM-PW-EV
Fort Monmouth NJ 07703

4. Generator's Phone (732) 532-6223

A. Non-hazardous Manifest Document Number NHZ020 17382

B. State Generator's ID SAME

5. Transporter 1 Company Name: Casie Ecology Oil Salvage, Inc.

6. US EPA ID Number: NJD045995693

C. State Trans. ID 16931

D. Transporter's Phone (609) 696-4401

7. Transporter 2 Company Name:

8. US EPA ID Number:

E. State Trans. ID X015976

9. Designated Facility Name and Site Address
Casie Ecology Oil Salvage, Inc. T/A
3209 N. MIll Rd / Casie Protank
Vineland NJ 08360

10. US EPA ID Number: NJD045995693

F. Transporter's Phone ( )

G. State Facility's ID 0614D1HP05

H. Facility's Phone (609) 696-4401

	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.	Combustible liquid, n.o.s.(Fuel Oil) NA1993, PGIII	001	TT	~~000001~~ 1990 JF	G	ID72
b.						
c.						
d.						

J. Additional Descriptions for Materials Listed Above
a. L 90%oil/sed. 10%wtr.
b.
c.
d.

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

15. Special Handling Instructions and Additional Information

a.24 Hr. Emergency Response #609 696-4401 K. Ambrosia ERG# 128

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

I hereby certify that the above-named material is not hazardous waste as defined by 40 CFR Part 261, 264 and 279 or any applicable state law.

Printed/Typed Name: Joseph M. Fallon — Signature: Joseph M. Fallon — Month Day Year: 04 30 98

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Don Scoleri — Signature: Don Scol— — Month Day Year: 04 30 98

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name — Signature — Month Day Year

1-GENERATOR COPY

SIGNATURE AND INFORMATION *MUST* BE LEGIBLE ON ALL COPIES

APPENDIX D

UST DISPOSAL CERTIFICATE

B551

MAZZA & SONS, INC.

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

NO. ____________

DATE. 23 April 98

Customer's Name Terry Vincent

Address ____________

	Weight	Price
Cast Iron		
Steel		
Tin		95.40
Lt. Iron		
Copper #1		
Copper #2		

26020 LB

22840 LB

3,180

PAID

23

Ck# 1806

	Weight	Price
Lt. Copper		
Brass		
Alum Clean		
Lead		
Stainless		
Battery		

$ 95.40

TOTAL AMOUNT:

Weigher ____________ Customer [signature]

APPENDIX E

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. 551

Project # 3486
Date Rec. 04/15/98
Date Compl. 04/28/98
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

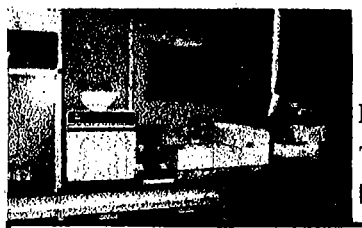
	No	Yes
1. Method Detection Limits provided.	__	✓
2. Method Blank Contamination - If yes, list the sample and the corresponding concentrations in each blank.	✓	__
3. Matrix Spike Results Summary Meet Criteria. (If not met, list the sample and corresponding recovery which falls outside the acceptable range).	__	✓
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 (732)532-4359 Fax (732)532-3484 EMail:appleby@doim6.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: C. Appleby - DPW
Phone #: 26224
( )DERA (X)OMA ( )Other:_____

Project No: 98-0001
Location: B. 551

Samplers Name / Company : GARY DiMARTINIS - TVS

Lab Sample I.D.	Sample Location	Date	Time	Sample Type	# bottles	TPHC	% Solids	Munsell					OVA	Remarks / Preservation Method
3486.01	551-A	4-15-98	0904	SOIL	1	X	X	X					ND	EXC. FLOOR @ 9.0' *
02	B	↓	0923	↓	↓	↓	↓	↓					ND	SIDEWALL @ 4.0'
03	C		0915										ND	↓
04	D		0909										ND	
05	E		0912										ND	
06	F		1430										ND	Piping Run @ 2.0'
07	DUP	↓	—	↓	↓	↓	↓	↓					—	FIELD DUPLICATE

NOTE: OVA (#AS2114) CALIBRATED 61/95 ppm CH4 + ZERO(0) AIR @ 0845 HRS. ON 4-15-98 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):
	4-15-98 1530				
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

coc.XLS3/10/98

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

Client :	U.S. Army	**Lab. ID # :**	3486
	DPW. SELFM-PW-EV	**Date Rec'd:**	15-Apr-98
	Bldg. 173	**Analysis Start:**	16-Apr-98
	Ft. Monmouth, NJ 07703	**Analysis Complete:**	28-Apr-98
Analysis:	OQA-QAM-025	**UST Reg. #:**	
Matrix:	Soil	**Closure #:**	
Analyst:	D.DEINHARDT	**DICAR #:**	
Ext. Meth:	Shake	**Location #:**	B. 551

Sample	Field ID	Dilution Factor	Weight (g)	% Solid	MDL (mg/kg)	TPHC Result (mg/kg)
3486.01	551-A	1.00	15.32	79.75	192	ND
3486.02	551-B	1.00	15.53	89.75	169	ND
3486.03	551-C	1.00	15.42	86.93	175	310.04
3486.04	551-D	1.00	15.89	84.16	176	ND
3486.05	551-E	1.00	15.21	86.18	179	ND
3486.06	551-F	1.00	15.18	88.99	174	ND
3486.07	551-DUP	1.00	15.36	87.00	176	ND
METHOD BLANK	26-Mar-98	1.00	15.00	100.00	157	ND

ND = Not Detected

MDL = Method Detection Limit

Daniel K. Wright
Laboratory Director

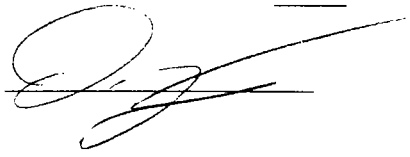
LABORATORY DELIVERABLES CHECKLIST AND NON-CONFORMANCE SUMMARY

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 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 6/16/15

Laboratory Certification #13461

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

APPENDIX F

PHOTOGRAPHS

April 14, 1998

PHOTOGRAPHIC LOG

UST NO. 81533-80

Building 551
Main Post-West
Fort Monmouth

SMC ENVIRONMENTAL SERVICES GROUP
Engineers, Managers, Scientists & Planners
VALLEY FORGE, PA.

ATTACHMENT C
Soil Boring Logs

PARSONS

Page 1 of 1

Soil Boring Log

CLIENT: USACE
PROJECT NAME: FTMM - ECP
PROJECT LOCATION: FTMM Parcel
PROJECT NUMBER: 748810-

GROUNDWATER OBSERVATIONS
WATER LEVEL: 4 2.5
DATE:
TIME:
MEAS. FROM:

INSPECTOR: LW
DRILLER: JB
WEATHER: 55°F
CONTRACTOR: East Coast Drilling, Inc. (ECDI)
RIG TYPE: Geoprobe(R) 7822DT
DATE/TIME START: 0920
DATE/TIME FINISH: 0930
WEIGHT OF HAMMER: N/A
DROP OF HAMMER: N/A
TYPE OF HAMMER: N/A

BORING/WELL ID: PAR-70-SB-01
LOCATION DESCRIPTION: Parcel 70
LOCATION PLAN: Oceanport, New Jersey

DEPTH (feet)	SAMPLE I.D.	BLOWS per 6"	ADV/ REC.	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL	STRATA	COMMENTS
0	0-0.5		6/54	0	0-10" Moist, Brown, mf SAND, little silt	I	
1	SB 1-1.5				10"-48" moist, light Brown, MC SAND, trace silt. saturated @ 32"		▽
2	2-2.5						
3	3-3.5				48"-54" wet, Brown/gray/orange-brown mf MOTTLED, SAND, little silt, trace f gravel	II	
4							
5					end of boring		
6							
7							
8							
9							
10							

0950 0955 0955 0959

Remarks:

Sample Types
S – Split-Spoon
U – Undisturbed Tube
C – Rock Core
A – Auger Cuttings

Consistency vs. Blowcount / Foot

Granular (Sand & Gravel)		Fine Grained (Silt & Clay)	
V. Loose: 0-4	Dense: 30-50	V. Soft: <2	Stiff: 8-15
Loose: 4-10	V. Dense: >50	Soft: 2-4	V. Stiff: 15-30
M. Dense: 10-30		M. Stiff: 4-8	Hard: > 30

and - 35-50%
some - 20-35%
little - 10-20%
trace - <10%
moisture, density, color, gradation

PARSONS

Soil Boring Log

CLIENT: USACE
PROJECT NAME: FTMM - ECP
PROJECT LOCATION: FTMM Parcel
PROJECT NUMBER: 748810-

GROUNDWATER OBSERVATIONS
WATER LEVEL: ~2
DATE: 4/25/16
TIME: 0910
MEAS. FROM: BGS

INSPECTOR: CW
DRILLER: JB
WEATHER: 55°F clear
CONTRACTOR: East Coast Drilling, Inc. (ECDI)
RIG TYPE: Geoprobe(R) 7822DT
DATE/TIME START: 4/25/16 0900
DATE/TIME FINISH: 4/25/16 0910
WEIGHT OF HAMMER: N/A
DROP OF HAMMER: N/A
TYPE OF HAMMER: N/A

BORING/WELL ID: PAR-70-SB-02
LOCATION DESCRIPTION: Parcel 70
LOCATION PLAN: Oceanport, New Jersey

DEPTH (feet)	SAMPLE I.D.	BLOWS per 6"	ADV/ REC.	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL	STRATA	COMMENTS
0	0-0.5		6/51	0	0-15" Dry, Brown, MF SAND, little silt	I	
1	1-1.5				15"-26" Moist, light Brown, MF SAND, trace silt		▽
2	2-2.5				26"-51" Saturated, light brown and grey MF SAND, trace silt, trace f gravel	II	
3	3-3.5						
4							
5					end of Boring 25'		
6							
7							
8							
9							
10							

0915 MS/MSD
0918
0920
0923

Remarks:

Sample Types
S – Split-Spoon
U – Undisturbed Tube
C – Rock Core
A – Auger Cuttings

Consistency vs. Blowcount / Foot

Granular (Sand & Gravel)			Fine Grained (Silt & Clay)	
V. Loose: 0-4	Dense: 30-50		V. Soft: <2	Stiff: 8-15
Loose: 4-10	V. Dense: >50		Soft: 2-4	V. Stiff: 15-30
M. Dense: 10-30			M. Stiff: 4-8	Hard: > 30

and - 35-50%
some - 20-35%
little - 10-20%
trace - <10%
moisture, density, color, gradation

PARSONS

Soil Boring Log

CLIENT: USACE
PROJECT NAME: FTMM - ECP
PROJECT LOCATION: FTMM Parcel
PROJECT NUMBER: 748810-

GROUNDWATER OBSERVATIONS
WATER LEVEL: -2.5
DATE:
TIME:
MEAS. FROM:

INSPECTOR: CW
DRILLER: JB
WEATHER: 60°F clear
CONTRACTOR: East Coast Drilling, Inc. (ECDI)
RIG TYPE: Geoprobe(R) 7822DT
DATE/TIME START: 4/25/16
DATE/TIME FINISH: 4/25/16
WEIGHT OF HAMMER: N/A
DROP OF HAMMER: N/A
TYPE OF HAMMER: N/A

BORING/WELL ID: PAR-70-SB-03
LOCATION DESCRIPTION:
LOCATION PLAN: Oceanport, New Jersey

DEPTH (feet)	SAMPLE I.D.	BLOWS per 6"	ADV/ REC.	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL	STRATA	COMMENTS
1020 0	0-0.5		60/58	0	0-15" Dry, Brown, mf SAND little silt	I	
1023 1	1-1.5				15"-38" Moist, light brown, MC SAND, saturated @ 30"		
1026 2	2-2.5				38"-58" saturated, orange-brown/brown/grey Mottled mf SAND, little silt	II	▽
1029 3	3-3.5						
4							
5					end of Boring		
6							
7							
8							
9							
10							

Remarks:

Sample Types
S – Split-Spoon
U – Undisturbed Tube
C – Rock Core
A – Auger Cuttings

Consistency vs. Blowcount / Foot

Granular (Sand & Gravel)		Fine Grained (Silt & Clay)	
V. Loose: 0-4	Dense: 30-50	V. Soft: <2	Stiff: 8-15
Loose: 4-10	V. Dense: >50	Soft: 2-4	V. Stiff: 15-30
M. Dense: 10-30		M. Stiff: 4-8	Hard: > 30

and - 35-50%
some - 20-35%
little - 10-20%
trace - <10%
moisture, density, color, gradation

PARSONS Page 1 of 1

Soil Boring Log

CLIENT: USACE
PROJECT NAME: FTMM - ECP
PROJECT LOCATION: FTMM Parcel
PROJECT NUMBER: 748810-

GROUNDWATER OBSERVATIONS
WATER LEVEL: 3
DATE:
TIME:
MEAS. FROM:

INSPECTOR: CW
DRILLER: JB
WEATHER: 60°F Clear
CONTRACTOR: East Coast Drilling, Inc. (ECDI)
RIG TYPE: Geoprobe(R) 7822DT
DATE/TIME START: 4/25/16
DATE/TIME FINISH: 4/25/16
WEIGHT OF HAMMER: N/A
DROP OF HAMMER: N/A
TYPE OF HAMMER: N/A

BORING/WELL ID: PIAR-70-763-04
LOCATION DESCRIPTION:
LOCATION PLAN: Oceanport, New Jersey

DEPTH (feet)	SAMPLE I.D.	BLOWS per 6"	ADV/ REC.	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL	STRATA	COMMENTS
0	0-0.5		60/40	0	0-26" Dry, Brown, MF SAND little silt	I	
				0			
1	1-1.5			0	26"-49" moist, light brown, MC SAND, trace silt saturated @ 35"		
				0			
2	2-2.5			0			
				0	49-60" wet, Brown/orange/grey, mottled mf SAND, little silt	II	▽
3	3-3.5			0			
				0			
4	4-4.5			0 / 76.4			odor
	4.5-5			99.8			
5					end of Boring		
6							
7							
8							
9							
10							

Remarks:

Sample Types	Consistency vs. Blowcount / Foot				
S – Split-Spoon	Granular (Sand & Gravel)		Fine Grained (Silt & Clay)		
U – Undisturbed Tube	V. Loose: 0-4	Dense: 30-50	V. Soft: <2	Stiff: 8-15	and - 35-50%
C – Rock Core	Loose: 4-10	V. Dense: >50	Soft: 2-4	V. Stiff: 15-30	some - 20-35%
A – Auger Cuttings	M. Dense: 10-30		M. Stiff: 4-8	Hard: > 30	little - 10-20%
					trace - <10%
					moisture, density, color, gradation

PARSONS

Page 1 of 1

Soil Boring Log

CLIENT: USACE
PROJECT NAME: FTMM - ECP
PROJECT LOCATION: FTMM Parcel
PROJECT NUMBER: 748810-

GROUNDWATER OBSERVATIONS
WATER LEVEL: ~3.75
DATE:
TIME:
MEAS. FROM:

INSPECTOR: CW
DRILLER: JB
WEATHER: 66°F clear
CONTRACTOR: East Coast Drilling, Inc. (ECDI)
RIG TYPE: Geoprobe(R) 7822DT
DATE/TIME START: 4/25/16
DATE/TIME FINISH: 4/25/16
WEIGHT OF HAMMER: N/A
DROP OF HAMMER: N/A
TYPE OF HAMMER: N/A

BORING/WELL ID: PAP-70-SB-05
LOCATION DESCRIPTION:
LOCATION PLAN: Oceanport, New Jersey

DEPTH (feet)	SAMPLE I.D.	BLOWS per 6"	ADV/ REC.	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL	STRATA	COMMENTS
1120 0	0-0.5		60/59	0	0-11" Brown, mf SAND, little silt	I	
1123 1	1-1.5				11"-47" moist, Brown, MC SAND, trace silt, saturated @ 43"		
1126 2	2-2.5						
1129 3	3-3.5				47"-68" Wet, Brown/orange/gray mf mottled SAND, little silt,	II	Slight odor
1130 4	4.5-5			22.6			
5					end of Boring		
6							
7							
8							
9							
10							

Remarks:

Sample Types
S – Split-Spoon
U – Undisturbed Tube
C – Rock Core
A – Auger Cuttings

Consistency vs. Blowcount / Foot

Granular (Sand & Gravel)			Fine Grained (Silt & Clay)	
V. Loose: 0-4	Dense: 30-50		V. Soft: <2	Stiff: 8-15
Loose: 4-10	V. Dense: >50		Soft: 2-4	V. Stiff: 15-30
M. Dense: 10-30			M. Stiff: 4-8	Hard: > 30

and - 35-50%
some - 20-35%
little - 10-20%
trace - <10%
moisture, density, color, gradation

PARSONS

Page 1 of 1

Soil Boring Log

CLIENT: USACE
PROJECT NAME: FTMM - ECP
PROJECT LOCATION: FTMM Parcel
PROJECT NUMBER: 748810-

GROUNDWATER OBSERVATIONS
WATER LEVEL: ~3
DATE:
TIME:
MEAS. FROM:

INSPECTOR: CW
DRILLER: JTB
WEATHER: 60°F
CONTRACTOR: East Coast Drilling, Inc. (ECDI)
RIG TYPE: Geoprobe(R) 7822DT
DATE/TIME START: 4/25/16
DATE/TIME FINISH: 4/25/16
WEIGHT OF HAMMER: N/A
DROP OF HAMMER: N/A
TYPE OF HAMMER: N/A

BORING/WELL ID: PAR-70-SB-06
LOCATION DESCRIPTION: Parcel 70
LOCATION PLAN: Oceanport, New Jersey

DEPTH (feet)	SAMPLE I.D.	BLOWS per 6"	ADV/ REC.	PID (ppm)	FIELD IDENTIFICATION OF MATERIAL	STRATA	COMMENTS
1148 0	0-0.5		60/60	0	0-13" Brown, mf SAND, little silt		
1					13"-38" Light Brown, moist, mc SAND, trace F gravel	I	
1150 1	1-1.5						
2							
1153 2	2-2.5				38"-56" Saturated, gray, MC SAND, little roots		
3						II	
1158 3	3-3.5				56"-60" saturated, green-gray, mf SAND, little silt		
4							
5					End of Boring		
6							
7							
8							
9							
10							

Remarks:

Sample Types	Consistency vs. Blowcount / Foot				
S -- Split-Spoon	Granular (Sand & Gravel)		Fine Grained (Silt & Clay)		and - 35-50%
U -- Undisturbed Tube	V. Loose: 0-4	Dense: 30-50	V. Soft: <2	Stiff: 8-15	some - 20-35%
C -- Rock Core	Loose: 4-10	V. Dense: >50	Soft: 2-4	V. Stiff: 15-30	little - 10-20%
A -- Auger Cuttings	M. Dense: 10-30		M. Stiff: 4-8	Hard: > 30	trace - <10%
					moisture, density, color, gradation

ATTACHMENT D
Analytical Data Packages

ALS Environmental
ALS Group USA, Corp
1565 Jefferson Rd, Building 300, Suite 360
Rochester, NY 14623
T: 585-288-5380
F: 585-288-8475
www.alsglobal.com

June 07, 2016

Analytical Report for Service Request No: R1604153

Mr. Cory Mahony
Parsons Engineering Science
100 High St. 4th Floor
Boston, MA 02110

Laboratory Results for: FTMM Baseline/748810-03000

Dear Mr. Mahony:

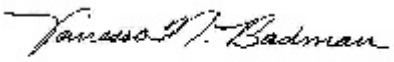
Enclosed are the results of the sample(s) submitted to our laboratory on April 27, 2016. For your reference, these analyses have been assigned our service request number **R1604153**.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s) for analysis of these samples, and represented by Laboratory Control Sample control limits. Any events, such as QC failures, which may add to the uncertainty are explained in the report narrative.

Please contact me if you have any questions. My extension is 7478. You may also contact me via email at Vanessa.Badman@alsglobal.com.

Respectfully submitted,

ALS Group USA Corp. dba ALS Environmental



Vanessa Badman
Customer Service Manager

SDG NARRATIVE

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Bldg. 300, Suite 360
Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

ALS Environmental

Client:	Parsons
Service Request No:	R1604153
Project:	FTMM Baseline
Date Received:	April 27, 2016
Sample Matrix:	Soil

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses.

Sample Receipt

Samples were received for analysis at ALS Environmental on 04/27/16. The samples were received in good condition and consistent with the accompanying chain of custody form. All sampling activities performed by ALS personnel have been in accordance with "ALS Field Procedures and Measurements Manual" or by client specifications. The samples were stored in a refrigerator between 1ºC and 6°C upon receipt at the laboratory.

Inorganics

Samples were analyzed for a site specific list of inorganics. Please see attached report pages for method numbers.

All LCS recoveries were within limits.

All Method blanks were free of contamination.

All samples related QC were within limits.

No other analytical or QC problems were encountered.

PCB's

Samples were analyzed for PCB's by Method 8082A from SW-846.

All the initial and continuing calibration criteria were met for all analytes.

All surrogate standard recoveries were acceptable.

All Laboratory Control Sample/ Laboratory Control Sample Duplicate (LCS/LCSD) recoveries were within limits.

The Method Blanks associated with these samples were free of contamination.

No other analytical or QC problems were encountered.

ALS ASP/CLP Batching Form/Login Sheet

Client Proj #:	748810-03000	Batch Complete:	Yes	Date Revised:	
Submission:	R1604153	Diskette Requested:	No	Date Due:	5/11/16
Client:	Parsons Engineering Science	Date: 6/7/16		Protocol: CAS/SOP/Misc	
Client Rep:	VBADMAN	Custody Seal: Present/Absent:		Shipping No.:	
Project:	FTMM Baseline	Chain of Custody: Present/Absent:		SDG #:	

CAS Job #	Client/EPA ID	Matrix	Requested Parameters	Date Sampled	Date Received	pH (Solids)	% Solids	Remarks Sample Condition
R1604153-001QC	PAR-70-SB-02-0-0.5	Soil	ALS SOP, 8082A	4/25/16	4/27/16			
R1604153-002	PAR-70-SB-02-1-1.5	Soil	8082A, ALS SOP	4/25/16	4/27/16			
R1604153-003	PAR-70-SB-01-0-0.5	Soil	8082A, ALS SOP	4/25/16	4/27/16			
R1604153-004	PAR-70-SB-101-0-0.5	Soil	ALS SOP, 8082A	4/25/16	4/27/16			
R1604153-005	PAR-70-SB-01-1-1.5	Soil	8082A, ALS SOP	4/25/16	4/27/16			
R1604153-006	PAR-70-SB-03-0-0.5	Soil	8082A, ALS SOP	4/25/16	4/27/16			
R1604153-007	PAR-70-SB-03-1-1.5	Soil	8082A, ALS SOP	4/25/16	4/27/16			
R1604153-008	PAR-70-SB-04-0-0.5	Soil	8082A, ALS SOP	4/25/16	4/27/16			
R1604153-009	PAR-70-SB-04-1-1.5	Soil	ALS SOP, 8082A	4/25/16	4/27/16			

Folder Comments: DoD reporting ERPTOOLS LOD

REPORT QUALIFIERS AND DEFINITIONS

U Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.

J Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).

B Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.

E Inorganics- Concentration is estimated due to the serial dilution was outside control limits.

E Organics- Concentration has exceeded the calibration range for that specific analysis.

D Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.

* Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.

H Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.

Spike was diluted out.

\+ Correlation coefficient for MSA is <0.995.

N Inorganics- Matrix spike recovery was outside laboratory limits.

N Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.

S Concentration has been determined using Method of Standard Additions (MSA).

W Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.

P Concentration >40% (25% for CLP) difference between the two GC columns.

C Confirmed by GC/MS

Q DoD reports: indicates a pesticide/Aroclor is not confirmed (≥100% Difference between two GC columns).

X See Case Narrative for discussion.

MRL Method Reporting Limit. Also known as:
LOQ Limit of Quantitation (LOQ)
The lowest concentration at which the method analyte may be reliably quantified under the method conditions.

MDL Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).

LOD Limit of Detection. A value at or above the MDL which has been verified to be detectable.

ND Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.

Rochester Lab ID # for State Certifications[1]

NELAP Accredited	Maine ID #NY0032	New Hampshire ID # 294100 A/B
Connecticut ID # PH0556	Nebraska Accredited	
Delaware Accredited	Nevada ID # NY-00032	North Carolina #676
DoD ELAP #65817	New Jersey ID # NY004	Pennsylvania ID# 68-786
Florida ID # E87674	New York ID # 10145	Rhode Island ID # 158
Illinois ID #200047		Virginia #460167

[1] Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the laboratory case narrative provided. For a specific list of accredited analytes, refer to http://www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads/North-America-Downloads

CHAINS OF CUSTODY

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Bldg. 300, Suite 360
Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

ALS Environmental

1565 Jefferson Road
Building 300, Suite 360
Rochester, NY 14623
(585)288-5380

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

COC #:

ALS Quote #:

1 of 1

Client Name: Parsons Government Services

Address: 100 High St. 4th Floor
Boston, MA 02110

Contact: Christina Grill / Cory Mahony

Phone#: 617-449-1570

Project Name/#: FTMM Soils-Parcel- -748810-0

Bill To: Parsons Government Services

TAT [X] Normal-Standard TAT is 10-12 business days.
[ ] Rush-Subject to ALS approval and surcharges.

Date Required: **Approved?**

Email? [X] -Y cory.mahony@parsons.com

Fax? [ ] -Y No.:

Container Type	CG	CG	TCK	CG	CG	CG				
Container Size	4oz	4oz	40mL	4oz	4oz	4oz				
Preservative	None	None	MeOH/DI	None	None	None				

ANALYSES/METHOD REQUESTED

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	*G or C	**Matrix	NJDEP EPH Fractionated	PCBs (8082A) Aroclor 1260 only	VOC (8260C)+TICs	TAL Metals (6010C)	PAH (8270D)	SVOC (8270D): 2-Methylnaphthalene, Naphthalene Only				
					Enter Number of Containers Per Sample or Field Results Below.									
1 PAR- 70-SB-02-0-0.5	4/25/16	0915	G	SO		1								
2 PAR- 70-SB-02-0-0.5-MS/MSD		0915	G	SO		1								
3 PAR- 70-SB-02-1-1.5		0918	G	SO		1								
4 PAR- 70-SB-01-0-0.5		0950	G	SO		1								
5 PAR- 70-SB-101-0-0.5		1200	G	SO		1								
6 PAR- 70-SB-01-1-1.5		0953	G	SO		1								
7 PAR- 70-SB-03-0-0.5		1026	G	SO		1								
8 PAR- 70-SB-03-1-1.5		1023	G	SO		1								
9 PAR- 70-SB-04-0-0.5		1055	G	SO		1								
10 PAR- 70-SB-04-1-1.5		1058	G	SO		1								

Receipt Information (completed by Receiving Lab)

Cooler Temp: ____ Therm ID: ____

No. of Coolers: ____

	Y	N	Initial
Custody Seals Present?			
(if present) Seals Intact?			
Received on Ice?			
COC/Labels Complete/Accurate?			
Cont. in Good Cond.?			
Correct Containers?			
Correct Sample Volumes?			
Correct Preservation?			
Headspace/Volatiles?			

Courier/Tracking #:

Sample/COC Comments

ALS Field Services: __Pickup __Labor
__Composite Sampling __Rental Equipment
__Other:

Project Comments:

LOGGED BY(signature): [signature] DATE: 4/26 TIME:

REVIEWED BY(signature): [signature] DATE: 4-26-16 TIME:

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 [signature]	4/26		2 [signature] ALS	4/27/16	0915
3			4		
5			6		
7			8		
9			10		

Data Deliverables: [ ] Standard [X] CLP-like [ ] USACE [ ]

Special Processing: USACE [ ] Navy [ ]

State Samples Collected In: [ ] NY [X] NJ [ ] PA

Reportable to PADEP? Yes [ ]

Sample Disposal

PWSID # ____

EDDS: Format Type

R1604153
Parsons Engineering Science
FTMM Baseline

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* G=Grab; C=Composite **Matrix - AI=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW

ALS ENVIRONMENTAL SHIPPING ADDRESS: 1565 Jefferson Road, Building 300, Suite 360 Rochester, NY 14623 USA

Cooler Receipt and Preservation Check Form

Project/Client Parsons Folder Number .

Cooler received on 4-27-16 by: KE

COURIER: ALS UPS (FEDEX) VELOCITY CLIENT

1	Were **Custody seals** on outside of cooler?	Y	(N)
2	**Custody papers** properly completed (ink, signed)?	(Y)	N
3	Did all bottles arrive in good **condition** (unbroken)?	(Y)	N
4	Circle: (**Wet Ice**) **Dry Ice** **Gel packs** present?	(Y)	N

5a	**Perchlorate** samples have required headspace?	Y N	(NA)
5b	Did VOA vials, Alk,or Sulfide have sig* **bubbles**?	Y N	(NA)
6	Where did the bottles originate?	(ALS/ROC)	CLIENT
7	Soil VOA received as: Bulk Encore 5035set		(NA)

8. Temperature Readings Date: 4-27-16 Time: 10:12 ID: (IR#3) IR#5 From: (Temp Blank) Sample Bottle

Observed Temp (°C)	3.4	5.1					
Correction Factor (°C)	0	0					
Corrected Temp (°C)	3.4	5.1					
Within 0-6°C?	(Y) N	(Y) N	Y N	Y N	Y N	Y N	Y N
If <0°C, were samples frozen?	Y N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: Ice melted Poorly Packed Same Day Rule

&Client Approval to Run Samples: Standing Approval Client aware at drop-off Client notified by:

All samples held in storage location: R-002 by KE on 4-27-16 at 10:25
5035 samples placed in storage location: by on at

PC Secondary Review:

Cooler Breakdown: Date: 4/27/16 Time: 1935 by:

1. Were all bottle labels complete (*i.e.* analysis, preservation, etc.)? (YES) NO
2. Did all bottle labels and tags agree with custody papers? (YES) NO
3. Were correct containers used for the tests indicated? (YES) NO
4. Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated (N/A)

Explain any discrepancies:

pH	Reagent	Yes	No	Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH
≥12	NaOH								
≤2	HNO_3								
≤2	H_2SO_4								
<4	$NaHSO_4$								
Residual Chlorine (-)	For CN Phenol and 522			If +, contact PM to add $Na_2S_2O_3$ (CN), ascorbic (phenol).					
	$Na_2S_2O_3$	-	-						
	ZnAcetate	-	-						
	HCl	**	**						

**Not to be tested before analysis – pH tested and recorded by VOAs on a separate worksheet

Yes=All samples OK

No=Samples were preserved at The lab as listed

PM OK to Adjust:

Bottle lot numbers: 070615-18NS
Other Comments:

PC Secondary Review:

*significant air bubbles: VOA > 5-6 mm : WC >1 in. diameter

ALS ENVIRONMENTAL

Chain of Custody Report

Client: Parsons Engineering Science **Service Request:** R1604153
Project: FTMM Baseline/748810-03000

Bottle ID	Tests	Date	Time	Sample Location / User	Disposed On
R1604153-001.01					
	ALS SOP, 8082A				
		4/27/16	1140	SMO / GLAFORCE	
		4/27/16	1935	R-002 / DWARD	
		4/29/16	0704	In Lab / DMURPHY	
		4/29/16	0916	R-002 / DMURPHY	
R1604153-001.02					
		4/27/16	1958	SMO / DWARD	
R1604153-002.01					
	ALS SOP, 8082A				
		4/27/16	1935	SMO / DWARD	
		4/27/16	1935	R-002 / DWARD	
		4/29/16	0704	In Lab / DMURPHY	
		4/29/16	0916	R-002 / DMURPHY	
R1604153-003.01					
	8082A, ALS SOP				
		4/27/16	1935	SMO / DWARD	
		4/27/16	1935	R-002 / DWARD	
		4/29/16	0704	In Lab / DMURPHY	
		4/29/16	0916	R-002 / DMURPHY	
R1604153-004.01					
	ALS SOP, 8082A				
		4/27/16	1935	SMO / DWARD	
		4/27/16	1935	R-002 / DWARD	
		4/29/16	0704	In Lab / DMURPHY	
		4/29/16	0916	R-002 / DMURPHY	
R1604153-005.01					
	ALS SOP, 8082A				
		4/27/16	1935	SMO / DWARD	
		4/27/16	1935	R-002 / DWARD	
		4/29/16	0705	In Lab / DMURPHY	
		4/29/16	0916	R-002 / DMURPHY	
R1604153-006.01					
	ALS SOP, 8082A				
		4/27/16	1935	SMO / DWARD	
		4/27/16	1935	R-002 / DWARD	
		4/29/16	0705	In Lab / DMURPHY	
		4/29/16	0916	R-002 / DMURPHY	
R1604153-007.01					
	ALS SOP, 8082A				
		4/27/16	1935	SMO / DWARD	
		4/27/16	1935	R-002 / DWARD	
		4/29/16	0705	In Lab / DMURPHY	

ALS ENVIRONMENTAL

Chain of Custody Report

Client: Parsons Engineering Science **Service Request:** R1604153
Project: FTMM Baseline/748810-03000

Bottle ID	Tests	Date	Time	Sample Location / User	Disposed On
		4/29/16	0916	R-002 / DMURPHY	
R1604153-008.01					
	8082A, ALS SOP				
		4/27/16	1935	SMO / DWARD	
		4/27/16	1935	R-002 / DWARD	
		4/29/16	0705	In Lab / DMURPHY	
		4/29/16	0916	R-002 / DMURPHY	
R1604153-009.01					
	8082A, ALS SOP				
		4/27/16	1935	SMO / DWARD	
		4/27/16	1935	R-002 / DWARD	
		4/29/16	0705	In Lab / DMURPHY	
		4/29/16	0916	R-002 / DMURPHY	

SAMPLE RESULTS

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Bldg. 300, Suite 360
Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Parsons Engineering Science	**Service Request:**	R1604153
Project:	FTMM Baseline/748810-03000	**Date Collected:**	4/25/16 0915
Sample Matrix:	Soil	**Date Received:**	4/27/16
Sample Name:	PAR-70-SB-02-0-0.5	**Units:**	µg/Kg
Lab Code:	R1604153-001	**Basis:**	Dry
		Percent Solids:	89.7

Polychlorinated Biphenyls (PCBs) by GC

Analytical Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Aroclor 1260	ND	U	37	19	19	1	4/29/16	5/2/16 18:35	260438	494599	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	95	60-125	5/2/16 18:35	
Tetrachloro-m-xylene	59	27-134	5/2/16 18:35	

Client:	Parsons Engineering Science	**Service Request:**	R1604153
Project:	FTMM Baseline/748810-03000	**Date Collected:**	4/25/16 0918
Sample Matrix:	Soil	**Date Received:**	4/27/16
Sample Name:	PAR-70-SB-02-1-1.5	**Units:**	µg/Kg
Lab Code:	R1604153-002	**Basis:**	Dry
		Percent Solids:	93.6

Polychlorinated Biphenyls (PCBs) by GC

Analytical Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Aroclor 1260	ND	U	35	19	19	1	4/29/16	5/2/16 20:15	260438	494599	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	71	60-125	5/2/16 20:15	
Tetrachloro-m-xylene	36	27-134	5/2/16 20:15	

Client:	Parsons Engineering Science	**Service Request:**	R1604153
Project:	FTMM Baseline/748810-03000	**Date Collected:**	4/25/16 0950
Sample Matrix:	Soil	**Date Received:**	4/27/16
Sample Name:	PAR-70-SB-01-0-0.5	**Units:**	µg/Kg
Lab Code:	R1604153-003	**Basis:**	Dry
		Percent Solids:	86.7

Polychlorinated Biphenyls (PCBs) by GC

Analytical Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Aroclor 1260	**330**		38	20	20	1	4/29/16	5/2/16 20:40	260438	494599	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	87	60-125	5/2/16 20:40	
Tetrachloro-m-xylene	74	27-134	5/2/16 20:40	

Client:	Parsons Engineering Science	**Service Request:**	R1604153
Project:	FTMM Baseline/748810-03000	**Date Collected:**	4/25/16 1200
Sample Matrix:	Soil	**Date Received:**	4/27/16
Sample Name:	PAR-70-SB-101-0-0.5	**Units:**	µg/Kg
Lab Code:	R1604153-004	**Basis:**	Dry
		Percent Solids:	88.2

Polychlorinated Biphenyls (PCBs) by GC

Analytical Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Aroclor 1260	**240**		37	20	20	1	4/29/16	5/2/16 21:05	260438	494599	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	102	60-125	5/2/16 21:05	
Tetrachloro-m-xylene	83	27-134	5/2/16 21:05	

Client:	Parsons Engineering Science	**Service Request:**	R1604153
Project:	FTMM Baseline/748810-03000	**Date Collected:**	4/25/16 0953
Sample Matrix:	Soil	**Date Received:**	4/27/16
Sample Name:	PAR-70-SB-01-1-1.5	**Units:**	µg/Kg
Lab Code:	R1604153-005	**Basis:**	Dry
		Percent Solids:	88.4

Polychlorinated Biphenyls (PCBs) by GC

Analytical Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Aroclor 1260	**56**		37	20	20	1	4/29/16	5/2/16 21:30	260438	494599	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	90	60-125	5/2/16 21:30	
Tetrachloro-m-xylene	73	27-134	5/2/16 21:30	

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Analytical Report

Client:	Parsons Engineering Science	**Service Request:**	R1604153
Project:	FTMM Baseline/748810-03000	**Date Collected:**	4/25/16 1020
Sample Matrix:	Soil	**Date Received:**	4/27/16
Sample Name:	PAR-70-SB-03-0-0.5	**Units:**	µg/Kg
Lab Code:	R1604153-006	**Basis:**	Dry
		Percent Solids:	84.1

Polychlorinated Biphenyls (PCBs) by GC

Analytical Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Aroclor 1260	**23**	J	39	21	21	1	4/29/16	5/2/16 21:55	260438	494599	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	69	60-125	5/2/16 21:55	
Tetrachloro-m-xylene	54	27-134	5/2/16 21:55	

Client:	Parsons Engineering Science	**Service Request:**	R1604153
Project:	FTMM Baseline/748810-03000	**Date Collected:**	4/25/16 1023
Sample Matrix:	Soil	**Date Received:**	4/27/16
Sample Name:	PAR-70-SB-03-1-1.5	**Units:**	µg/Kg
Lab Code:	R1604153-007	**Basis:**	Dry
		Percent Solids:	86.7

Polychlorinated Biphenyls (PCBs) by GC

Analytical Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Aroclor 1260	ND	U	38	20	20	1	4/29/16	5/2/16 22:21	260438	494599	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	70	60-125	5/2/16 22:21	
Tetrachloro-m-xylene	36	27-134	5/2/16 22:21	

Client:	Parsons Engineering Science	**Service Request:**	R1604153
Project:	FTMM Baseline/748810-03000	**Date Collected:**	4/25/16 1055
Sample Matrix:	Soil	**Date Received:**	4/27/16
Sample Name:	PAR-70-SB-04-0-0.5	**Units:**	µg/Kg
Lab Code:	R1604153-008	**Basis:**	Dry
		Percent Solids:	87.4

Polychlorinated Biphenyls (PCBs) by GC

Analytical Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Aroclor 1260	ND	U	38	20	20	1	4/29/16	5/2/16 22:46	260438	494599	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	61	60-125	5/2/16 22:46	
Tetrachloro-m-xylene	41	27-134	5/2/16 22:46	

Client:	Parsons Engineering Science	**Service Request:**	R1604153
Project:	FTMM Baseline/748810-03000	**Date Collected:**	4/25/16 1058
Sample Matrix:	Soil	**Date Received:**	4/27/16
Sample Name:	PAR-70-SB-04-1-1.5	**Units:**	µg/Kg
Lab Code:	R1604153-009	**Basis:**	Dry
		Percent Solids:	90.5

Polychlorinated Biphenyls (PCBs) by GC

Analytical Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Aroclor 1260	**33**	J	36	19	19	1	4/29/16	5/2/16 23:11	260438	494599	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	69	60-125	5/2/16 23:11	
Tetrachloro-m-xylene	58	27-134	5/2/16 23:11	

Client:	Parsons Engineering Science	**Service Request:**	R1604153
Project:	FTMM Baseline/748810-03000	**Date Collected:**	4/25/16 0915
Sample Matrix:	Soil	**Date Received:**	4/27/16
Sample Name:	PAR-70-SB-02-0-0.5		
Lab Code:	R1604153-001	**Basis:**	As Received

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Total Solids	ALS SOP	89.7		Percent				1	NA	5/5/16 19:55	

Client:	Parsons Engineering Science	**Service Request:**	R1604153
Project:	FTMM Baseline/748810-03000	**Date Collected:**	4/25/16 0918
Sample Matrix:	Soil	**Date Received:**	4/27/16
Sample Name:	PAR-70-SB-02-1-1.5		
Lab Code:	R1604153-002	**Basis:**	As Received

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Total Solids	ALS SOP	93.6		Percent				1	NA	5/5/16 19:55	

Client:	Parsons Engineering Science	**Service Request:**	R1604153
Project:	FTMM Baseline/748810-03000	**Date Collected:**	4/25/16 0950
Sample Matrix:	Soil	**Date Received:**	4/27/16
Sample Name:	PAR-70-SB-01-0-0.5		
Lab Code:	R1604153-003	**Basis:**	As Received

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Total Solids	ALS SOP	86.7		Percent				1	NA	5/5/16 19:55	

Client:	Parsons Engineering Science	**Service Request:**	R1604153
Project:	FTMM Baseline/748810-03000	**Date Collected:**	4/25/16 1200
Sample Matrix:	Soil	**Date Received:**	4/27/16
Sample Name:	PAR-70-SB-101-0-0.5		
Lab Code:	R1604153-004	**Basis:**	As Received

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Total Solids	ALS SOP	88.2		Percent				1	NA	5/5/16 19:55	

Client:	Parsons Engineering Science	**Service Request:**	R1604153
Project:	FTMM Baseline/748810-03000	**Date Collected:**	4/25/16 0953
Sample Matrix:	Soil	**Date Received:**	4/27/16
Sample Name:	PAR-70-SB-01-1-1.5		
Lab Code:	R1604153-005	**Basis:**	As Received

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Total Solids	ALS SOP	88.4		Percent				1	NA	5/5/16 19:55	

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Analytical Report

Client:	Parsons Engineering Science	**Service Request:**	R1604153
Project:	FTMM Baseline/748810-03000	**Date Collected:**	4/25/16 1020
Sample Matrix:	Soil	**Date Received:**	4/27/16
Sample Name:	PAR-70-SB-03-0-0.5		
Lab Code:	R1604153-006	**Basis:**	As Received

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Total Solids	ALS SOP	84.1		Percent				1	NA	5/5/16 19:55	

Client:	Parsons Engineering Science	**Service Request:**	R1604153
Project:	FTMM Baseline/748810-03000	**Date Collected:**	4/25/16 1023
Sample Matrix:	Soil	**Date Received:**	4/27/16
Sample Name:	PAR-70-SB-03-1-1.5		
Lab Code:	R1604153-007	**Basis:**	As Received

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Total Solids	ALS SOP	86.7		Percent				1	NA	5/5/16 19:55	

Client:	Parsons Engineering Science	**Service Request:**	R1604153
Project:	FTMM Baseline/748810-03000	**Date Collected:**	4/25/16 1055
Sample Matrix:	Soil	**Date Received:**	4/27/16
Sample Name:	PAR-70-SB-04-0-0.5		
Lab Code:	R1604153-008	**Basis:**	As Received

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Total Solids	ALS SOP	87.4		Percent				1	NA	5/5/16 19:55	

Client:	Parsons Engineering Science	**Service Request:**	R1604153
Project:	FTMM Baseline/748810-03000	**Date Collected:**	4/25/16 1058
Sample Matrix:	Soil	**Date Received:**	4/27/16
Sample Name:	PAR-70-SB-04-1-1.5		
Lab Code:	R1604153-009	**Basis:**	As Received

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Total Solids	ALS SOP	90.5		Percent				1	NA	5/5/16 19:55	

QC SUMMARY FORMS

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Bldg. 300, Suite 360
Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

PCB's

ALS Environmental - Rochester, NY
1565 Jefferson Rd, Bldg. 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client:	Parsons Engineering Science	**Service Request:**	R1604153
Project:	FTMM Baseline/748810-03000	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	µg/Kg
Lab Code:	RQ1604711-01	**Basis:**	Dry

Polychlorinated Biphenyls (PCBs) by GC

Analytical Method: 8082A
Prep Method: EPA 3541

Analyte Name	Result	Q	LOQ	LOD	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Aroclor 1260	ND	U	33	17	17	1	4/29/16	5/2/16 15:39	260438	494599	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	82	60-125	5/2/16 15:39	
Tetrachloro-m-xylene	77	27-134	5/2/16 15:39	

Client:	Parsons Engineering Science	**Service Request:**	R1604153
Project:	FTMM Baseline/748810-03000	**Date Analyzed:**	5/2/16 15:39
Sample Matrix:	Soil	**Date Extracted:**	4/29/16

Method Blank Summary
Polychlorinated Biphenyls (PCBs) by GC

Sample Name:	Method Blank	**Instrument ID:**	R-GC-58
Lab Code:	RQ1604711-01	**File ID:**	I:\ACQUDATA\6890G\DATA\050216\BD474.D\
Analytical Method:	8082A		
Prep Method:	EPA 3541		

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	RQ1604711-10	I:\ACQUDATA\6890G\DATA\050216\BD475.D\	5/2/16 16:04
Duplicate Lab Control Sample	RQ1604711-11	I:\ACQUDATA\6890G\DATA\050216\BD476.D\	5/2/16 16:29
PAR-70-SB-02-0-0.5	R1604153-001	I:\ACQUDATA\6890G\DATA\050216\BD481.D\	5/2/16 18:35
PAR-70-SB-02-0-0.5MS	RQ1604711-04	I:\ACQUDATA\6890G\DATA\050216\BD482.D\	5/2/16 19:00
PAR-70-SB-02-0-0.5DMS	RQ1604711-05	I:\ACQUDATA\6890G\DATA\050216\BD483.D\	5/2/16 19:25
PAR-70-SB-02-1-1.5	R1604153-002	I:\ACQUDATA\6890G\DATA\050216\BD485.D\	5/2/16 20:15
PAR-70-SB-01-0-0.5	R1604153-003	I:\ACQUDATA\6890G\DATA\050216\BD486.D\	5/2/16 20:40
PAR-70-SB-101-0-0.5	R1604153-004	I:\ACQUDATA\6890G\DATA\050216\BD487.D\	5/2/16 21:05
PAR-70-SB-01-1-1.5	R1604153-005	I:\ACQUDATA\6890G\DATA\050216\BD488.D\	5/2/16 21:30
PAR-70-SB-03-0-0.5	R1604153-006	I:\ACQUDATA\6890G\DATA\050216\BD489.D\	5/2/16 21:55
PAR-70-SB-03-1-1.5	R1604153-007	I:\ACQUDATA\6890G\DATA\050216\BD490.D\	5/2/16 22:21
PAR-70-SB-04-0-0.5	R1604153-008	I:\ACQUDATA\6890G\DATA\050216\BD491.D\	5/2/16 22:46
PAR-70-SB-04-1-1.5	R1604153-009	I:\ACQUDATA\6890G\DATA\050216\BD492.D\	5/2/16 23:11

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Parsons Engineering Science	**Service Request:**	R1604153
Project:	FTMM Baseline/748810-03000	**Date Collected:**	4/25/16
Sample Matrix:	Soil	**Date Received:**	4/27/16
		Date Analyzed:	5/ 2/16

Matrix Spike Summary
Polychlorinated Biphenyls (PCBs) by GC

Sample Name:	PAR-70-SB-02-0-0.5	**Units:**	µg/Kg
Lab Code:	R1604153-001	**Basis:**	Dry

Analytical Method: 8082A
Prep Method: EPA 3541

		PAR-70-SB-02-0-0.5MS			PAR-70-SB-02-0-0.5DMS					
		Matrix Spike			**Duplicate Matrix Spike**					
		RQ1604711-04			RQ1604711-05					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Aroclor 1260	ND	180	186	97	170	186	91	60 - 130	6	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client:	Parsons Engineering Science	**Service Request:**	R1604153
Project:	FTMM Baseline/748810-03000	**Date Analyzed:**	5/ 2/16
Sample Matrix:	Soil		

Lab Control Sample Summary
Polychlorinated Biphenyls (PCBs) by GC

Analytical Method:	8082A	**Units:**	µg/Kg
Prep Method:	EPA 3541	**Basis:**	Dry
		Extraction Lot:	260438

	Lab Control Sample RQ1604711-10			Duplicate Lab Control Sample RQ1604711-11					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Aroclor 1260	138	167	83	159	167	96	60 - 130	14	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

GENERAL CHEMISTRY

ALS Environmental - Rochester, NY
1565 Jefferson Rd, Bldg. 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client:	Parsons Engineering Science	**Service Request:**	R1604153
Project:	FTMM Baseline/748810-03000	**Date Collected:**	4/25/16
Sample Matrix:	Soil	**Date Received:**	4/27/16
		Date Analyzed:	5/ 5/16

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	PAR-70-SB-02-0-0.5	**Units:**	Percent
Lab Code:	R1604153-001	**Basis:**	As Received

Analyte Name	Method	LOQ	MDL	Sample Result	PAR-70-SB-02-0-0.5 DUP Duplicate Sample R1604153-001DUP Result	Average	RPD	RPD Limit
Total Solids	ALS SOP	-	-	89.7	88.7	89.2	1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

May 23, 2016 Service Request No:R1604156

Mr. Cory Mahony
Parsons Engineering Science
100 High St. 4th Floor
Boston, MA 02110

Laboratory Results for: FTMM Baseline

Dear Mr.Mahony,

Enclosed are the results of the sample(s) submitted to our laboratory April 27, 2016
For your reference, these analyses have been assigned our service request number **R1604156.**

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s) for analysis of these samples, and represented by Laboratory Control Sample control limits. Any events, such as QC failures, which may add to the uncertainty are explained in the report narrative.

Please contact me if you have any questions. My extension is 7478. You may also contact me via email at Vanessa.Badman@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Vanessa Badman
Customer Service
Manager

ADDRESS 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
PHONE +1 585 288 5380 | FAX +1 585 288 8475
ALS Group USA, Corp.
dba ALS Environmental

CASE NARRATIVE

This report contains analytical results for the following samples:

Service Request Number: R1604156

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
R1604156-001	PAR-70-SB-02-2-2.5	4/25/2016	0920
R1604156-002	PAR-70-SB-02-3-3.5	4/25/2016	0923
R1604156-003	PAR-70-SB-01-2-2.5	4/25/2016	0956
R1604156-004	PAR-70-SB-01-3-3.5	4/25/2016	0959
R1604156-005	PAR-70-SB-03-2-2.5	4/25/2016	1026
R1604156-006	PAR-70-SB-03-3-3.5	4/25/2016	1029
R1604156-007	PAR-70-SB-04-2-2.5	4/25/2016	1100
R1604156-008	PAR-70-SB-04-3-3.5	4/25/2016	1103
R1604156-009	PAR-70-SB-05-0-0.5	4/25/2016	1120
R1604156-010	PAR-70-SB-05-1-1.5	4/25/2016	1123
R1604156-011	PAR-70-SB-05-2-2.5	4/25/2016	1126
R1604156-012	PAR-70-SB-05-3-3.5	4/25/2016	1129
R1604156-013	PAR-70-SB-06-0-0.5	4/25/2016	1148
R1604156-014	PAR-70-SB-06-1-1.5	4/25/2016	1150
R1604156-015	PAR-70-SB-06-2-2.5	4/25/2016	1153
R1604156-016	PAR-70-SB-06-3-3.5	4/25/2016	1156
R1604156-017	PAR70-EB-04252016	4/25/2016	1400

All samples were received in good condition unless otherwise noted on the cooler receipt and preservation check form located at the end of this report.

All samples were preserved in accordance with approved analytical methods.

All samples have been analyzed by the approved methods cited on the analytical results pages.

All holding times and associated QC were within limits.

No analytical or QC problems were encountered.

All sampling activities performed by ALS personnel have been in accordance with “ALS Field Procedures and Measurements Manual” or by client specifications.

Client: Parsons Engineering Science **Service Request:**R1604156

Project: FTMM Baseline/748810-03000

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
R1604156-001	PAR-70-SB-02-2-2.5	4/25/2016	0920
R1604156-002	PAR-70-SB-02-3-3.5	4/25/2016	0923
R1604156-003	PAR-70-SB-01-2-2.5	4/25/2016	0956
R1604156-004	PAR-70-SB-01-3-3.5	4/25/2016	0959
R1604156-005	PAR-70-SB-03-2-2.5	4/25/2016	1026
R1604156-006	PAR-70-SB-03-3-3.5	4/25/2016	1029
R1604156-007	PAR-70-SB-04-2-2.5	4/25/2016	1100
R1604156-008	PAR-70-SB-04-3-3.5	4/25/2016	1103
R1604156-009	PAR-70-SB-05-0-0.5	4/25/2016	1120
R1604156-010	PAR-70-SB-05-1-1.5	4/25/2016	1123
R1604156-011	PAR-70-SB-05-2-2.5	4/25/2016	1126
R1604156-012	PAR-70-SB-05-3-3.5	4/25/2016	1129
R1604156-013	PAR-70-SB-06-0-0.5	4/25/2016	1148
R1604156-014	PAR-70-SB-06-1-1.5	4/25/2016	1150
R1604156-015	PAR-70-SB-06-2-2.5	4/25/2016	1153
R1604156-016	PAR-70-SB-06-3-3.5	4/25/2016	1156
R1604156-017	PAR70-EB-04252016	4/25/2016	1400

REPORT QUALIFIERS AND DEFINITIONS

U	Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.
J	Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).
B	Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.
E	Inorganics- Concentration is estimated due to the serial dilution was outside control limits.
E	Organics- Concentration has exceeded the calibration range for that specific analysis.
D	Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.
*	Indicates that a quality control parameter has exceeded laboratory limits. Under the ñNotesò column of the Form I, this qualifier denotes analysis was performed out of Holding Time.
H	Analysis was performed out of hold time for tests that have an ñimmediateò hold time criteria.
#	Spike was diluted out.
+	Correlation coefficient for MSA is <0.995.
N	Inorganics- Matrix spike recovery was outside laboratory limits.
N	Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
S	Concentration has been determined using Method of Standard Additions (MSA).
W	Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
P	Concentration >40% (25% for CLP) difference between the two GC columns.
C	Confirmed by GC/MS
Q	DoD reports: indicates a pesticide/Aroclor is not confirmed (Ó100% Difference between two GC columns).
X	See Case Narrative for discussion.
MRL LOQ	Method Reporting Limit. Also known as: Limit of Quantitation (LOQ) The lowest concentration at which the method analyte may be reliably quantified under the method conditions.
MDL	Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).
LOD	Limit of Detection. A value at or above the MDL which has been verified to be detectable.
ND	Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.

Rochester Lab ID # for State Certifications[1]

Connecticut ID # PH0556	Maine ID #NY0032	New Hampshire ID # 294100 A/B
Delaware Accredited	Nebraska Accredited	
DoD ELAP #65817	New Jersey ID # NY004	Pennsylvania ID# 68-786
Florida ID # E87674	New York ID # 10145	Rhode Island ID # 158
Illinois ID #200047	North Carolina #676	Virginia #460167

[1] Analyses were performed according to our laboratoryôs NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory or go to http://www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads/North-America-Downloads

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Parsons Engineering Science	**Service Request:**	R1604156
Project:	FTMM Baseline/748810-03000	**Date Collected:**	04/25/16 14:00
Sample Matrix:	Water	**Date Received:**	04/27/16 09:45
Sample Name:	PAR70-EB-04252016	**Units:**	ug/L
Lab Code:	R1604156-017	**Basis:**	NA

Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1260	0.94 U	0.94	1	05/04/16 12:08	4/29/16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	46	10 - 149	05/04/16 12:08	
Tetrachloro-m-xylene	72	15 - 131	05/04/16 12:08	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Parsons Engineering Science	**Service Request:**	R1604156
Project:	FTMM Baseline/748810-03000	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1604724-01	**Basis:**	NA

Polychlorinated Biphenyls (PCBs) by GC

Analysis Method: 8082A
Prep Method: EPA 3510C

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1260	1.0 U	1.0	1	05/04/16 10:52	4/29/16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	62	10 - 149	05/04/16 10:52	
Tetrachloro-m-xylene	66	15 - 131	05/04/16 10:52	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Parsons Engineering Science
Project: FTMM Baseline/748810-03000
Sample Matrix: Water

Service Request: R1604156
Date Analyzed: 05/04/16

Duplicate Lab Control Sample Summary
Polychlorinated Biphenyls (PCBs) by GC

Units:ug/L
Basis:NA

		Lab Control Sample			Duplicate Lab Control Sample					
		RQ1604724-02			RQ1604724-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Aroclor 1260	8082A	3.49	5.00	70	3.39	5.00	68	45-134	3	30

ALS Environmental

34 Dogwood Lane ■ Middletown, PA 17057 ■ Phone: 717-944-5541 ■ Fax: 717-944-1430 ■ www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

June 6, 2016

Ms. Carla Rodman
Parsons
301 Plainfield Rd
Suite 350
Syracuse, NY 13212

Certificate of Analysis

Revised Report - 6/6/2016 7:12:20 PM - See workorder comment section for explanation

Project Name:	**Parsons**	Workorder:	**2140072**
Purchase Order:	**58R1604154**	Workorder ID:	**R1604154**

Dear Ms. Rodman:

Enclosed are the analytical results for samples received by the laboratory on Friday, April 29, 2016.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Mr. Brad W Kintzer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Ms. Maryanne Kosciewicz , Mr. Cory Mahony , Ms. Vanessa Badman

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Brad W. Kintzer

Mr. Brad W Kintzer
Project Coordinator

ALS Environmental

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

SAMPLE SUMMARY

Workorder: 2140072 R1604154

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2140072001	PAR-70-SB-04-4.5-5	Solid	4/25/2016 11:05	4/29/2016 08:52	Collected by Client
2140072002	PAR-70-SB-05-4.5-5	Solid	4/25/2016 11:50	4/29/2016 08:52	Collected by Client

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

SAMPLE SUMMARY

Workorder: 2140072 R1604154

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
-- For microbiological analyses, the "Prepared" value is the date/time into the incurbator and the "Analyzed" value is the date/time out the incubator.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

ALS Environmental

34 Dogwood Lane ■ Middletown, PA 17057 ■ Phone: 717-944-5541 ■ Fax: 717-944-1430 ■ www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

PROJECT SUMMARY

Workorder: 2140072 R1604154

Workorder Comments

This report was modified to add the LOQ, LOD, and DL to Total EPH Aromatic, Total EPH Aliphatic, and Total EPH (Aromatic+Aliphatic). JSL 05/19/16
This report was modified on 5/24/16 to add QC.

Sample Comments

Lab ID: 2140072001 **Sample ID:** PAR-70-SB-04-4.5-5 **Sample Type:** SAMPLE

The QC sample type LCS in the NJEPH aliphatic analysis recovered outside of method control limits for the following compounds: n-Nonane (recovery was 29.5% and the limits are 40%-140%) and n-Dodecane (recovery was 37.6% and the limits are 40%-140%). The QC sample type LCSD in the NJEPH aliphatic analysis recovered outside of method control limits for n-Nonane. The recovery was 37.1% and the limits are 40%-140%.

Lab ID: 2140072002 **Sample ID:** PAR-70-SB-05-4.5-5 **Sample Type:** SAMPLE

The QC sample type LCS in the NJEPH aliphatic analysis recovered outside of method control limits for the following compounds: n-Nonane (recovery was 29.5% and the limits are 40%-140%) and n-Dodecane (recovery was 37.6% and the limits are 40%-140%). The QC sample type LCSD in the NJEPH aliphatic analysis recovered outside of method control limits for n-Nonane. The recovery was 37.1% and the limits are 40%-140%.

ALS Environmental

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2140072 R1604154

Lab ID: **2140072001** Date Collected: 4/25/2016 11:05 Matrix: Solid

Sample ID: **PAR-70-SB-04-4.5-5** Date Received: 4/29/2016 08:52

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared	By	Analyzed	By	Cntr
AROMATIC PETROLEUM HC's												
C10 TO C12	8.5		mg/kg	1.3	1.3	0.57	NJEPH	5/4/16	LEH	5/6/16 17:56	KJH	B
C12 TO C16	136		mg/kg	12.6	12.6	2.3	NJEPH	5/4/16	LEH	5/6/16 21:49	KJH	B
C16 TO C21	278		mg/kg	12.6	12.6	2.1	NJEPH	5/4/16	LEH	5/6/16 21:49	KJH	B
C21 TO C36	50.5		mg/kg	1.3	1.3	0.30	NJEPH	5/4/16	LEH	5/6/16 17:56	KJH	B
Total EPH Aromatic	473		mg/kg	5.0	5.0	1.3	NJEPH	5/4/16	LEH	5/6/16 17:56	KJH	B
Total EPH (Aliphatic+Aromatic)	1200		mg/kg	10.0	10.0	3.1	NJEPH	5/4/16	LEH	5/6/16 17:56	KJH	B
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*			*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
2-Bromonaphthalene (S)	77		%	40 - 140			NJEPH	5/4/16	LEH	5/6/16 17:56	KJH	B
2-Bromonaphthalene (S)	85.3		%	40 - 140			NJEPH	5/4/16	LEH	5/6/16 21:49	KJH	B
2-Fluorobiphenyl (S)	91.9		%	40 - 140			NJEPH	5/4/16	LEH	5/6/16 17:56	KJH	B
2-Fluorobiphenyl (S)	106		%	40 - 140			NJEPH	5/4/16	LEH	5/6/16 21:49	KJH	B
o-Terphenyl (S)	117		%	40 - 140			NJEPH	5/4/16	LEH	5/6/16 21:49	KJH	B
o-Terphenyl (S)	79		%	40 - 140			NJEPH	5/4/16	LEH	5/6/16 17:56	KJH	B
ALIPHATIC PETROLEUM HC's												
C9 TO C12	84.6		mg/kg	12.6	12.6	1.5	NJEPH	5/4/16	LEH	5/11/16 05:25	KJH	B
C12 TO C16	323		mg/kg	62.8	62.8	27.0	NJEPH	5/4/16	LEH	5/11/16 09:16	KJH	B
C16 TO C21	264		mg/kg	62.8	62.8	26.4	NJEPH	5/4/16	LEH	5/11/16 09:16	KJH	B
C21 TO C40	58.3		mg/kg	1.3	1.3	0.62	NJEPH	5/4/16	LEH	5/11/16 01:32	KJH	B
Total EPH Aliphatic	730		mg/kg	5.0	5.0	1.8	NJEPH	5/4/16	LEH	5/11/16 01:32	KJH	B
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*			*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1-Chlorooctadecane (S)	42.3		%	40 - 140			NJEPH	5/4/16	LEH	5/11/16 01:32	KJH	B
WET CHEMISTRY												
Moisture	22.4		%	0.1	0.1	0.01	S2540G-11			4/30/16 09:23	SLC	B
Total Solids	77.6		%	0.1	0.1	0.01	S2540G-11			4/30/16 09:23	SLC	B

Mr. Brad W Kintzer
Project Coordinator

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2140072 R1604154

Lab ID: **2140072002** Date Collected: 4/25/2016 11:50 Matrix: Solid

Sample ID: **PAR-70-SB-05-4.5-5** Date Received: 4/29/2016 08:52

Parameters	Results	Flag	Units	LOQ	LOD	DL	Method	Prepared	By	Analyzed	By	Cntr
AROMATIC PETROLEUM HC's												
C10 TO C12	1.2U	U4	mg/kg	1.2	1.2	0.56	NJEPH	5/4/16	LEH	5/6/16 19:53	KJH	B
C12 TO C16	14.0	5	mg/kg	1.2	1.2	0.22	NJEPH	5/4/16	LEH	5/6/16 19:53	KJH	B
C16 TO C21	45.8	6	mg/kg	1.2	1.2	0.21	NJEPH	5/4/16	LEH	5/6/16 19:53	KJH	B
C21 TO C36	12.4	7	mg/kg	1.2	1.2	0.30	NJEPH	5/4/16	LEH	5/6/16 19:53	KJH	B
Total EPH Aromatic	72.7		mg/kg	5.0	5.0	1.3	NJEPH	5/4/16	LEH	5/6/16 19:53	KJH	B
Total EPH (Aliphatic+Aromatic)	250		mg/kg	10	10	3.1	NJEPH	5/4/16	LEH	5/6/16 19:53	KJH	B
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*			*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
2-Bromonaphthalene (S)	100		%	40 - 140			NJEPH	5/4/16	LEH	5/6/16 19:53	KJH	B
2-Fluorobiphenyl (S)	95.7		%	40 - 140			NJEPH	5/4/16	LEH	5/6/16 19:53	KJH	B
o-Terphenyl (S)	54.2		%	40 - 140			NJEPH	5/4/16	LEH	5/6/16 19:53	KJH	B
ALIPHATIC PETROLEUM HC's												
C9 TO C12	13.0	3	mg/kg	1.2	1.2	0.15	NJEPH	5/4/16	LEH	5/11/16 03:28	KJH	B
C12 TO C16	81.1		mg/kg	12.5	12.5	5.4	NJEPH	5/4/16	LEH	5/11/16 06:22	KJH	B
C16 TO C21	68.7		mg/kg	12.5	12.5	5.2	NJEPH	5/4/16	LEH	5/11/16 06:22	KJH	B
C21 TO C40	14.2	1	mg/kg	1.2	1.2	0.61	NJEPH	5/4/16	LEH	5/11/16 03:28	KJH	B
Total EPH Aliphatic	177	2	mg/kg	5.0	5.0	1.8	NJEPH	5/4/16	LEH	5/11/16 03:28	KJH	B
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*			*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1-Chlorooctadecane (S)	42.4		%	40 - 140			NJEPH	5/4/16	LEH	5/11/16 03:28	KJH	B
1-Chlorooctadecane (S)	34.1		%	40 - 140			NJEPH	5/4/16	LEH	5/11/16 06:22	KJH	B
WET CHEMISTRY												
Moisture	23.8		%	0.1	0.1	0.01	S2540G-11			4/30/16 09:23	SLC	B
Total Solids	76.2		%	0.1	0.1	0.01	S2540G-11			4/30/16 09:23	SLC	B

Mr. Brad W Kintzer
Project Coordinator

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
2140072002	1	PAR-70-SB-05-4.5-5	NJEPH	C21 TO C40
The QC sample type DUP for method NJEPH was outside the control limits for the analyte C21 TO C40. The RPD was reported as 63.3 and the upper control limit is 40.				
2140072002	2	PAR-70-SB-05-4.5-5	NJEPH	Total EPH Aliphatic
The QC sample type DUP for method NJEPH was outside the control limits for the analyte Total EPH Aliphatic. The RPD was reported as 49.2 and the upper control limit is .				
2140072002	3	PAR-70-SB-05-4.5-5	NJEPH	C9 TO C12
The QC sample type DUP for method NJEPH was outside the control limits for the analyte C9 TO C12. The RPD was reported as 57.7 and the upper control limit is 40.				
2140072002	4	PAR-70-SB-05-4.5-5	NJEPH	C10 TO C12
The QC sample type DUP for method NJEPH was outside the control limits for the analyte C10 TO C12. The RPD was reported as 73.6 and the upper control limit is 40.				
2140072002	5	PAR-70-SB-05-4.5-5	NJEPH	C12 TO C16
The QC sample type DUP for method NJEPH was outside the control limits for the analyte C12 TO C16. The RPD was reported as 90.5 and the upper control limit is 40.				
2140072002	6	PAR-70-SB-05-4.5-5	NJEPH	C16 TO C21
The QC sample type DUP for method NJEPH was outside the control limits for the analyte C16 TO C21. The RPD was reported as 87.3 and the upper control limit is 40.				
2140072002	7	PAR-70-SB-05-4.5-5	NJEPH	C21 TO C36
The QC sample type DUP for method NJEPH was outside the control limits for the analyte C21 TO C36. The RPD was reported as 79.5 and the upper control limit is 40.				

QUALITY CONTROL DATA

Workorder: 2140072 R1604154

QC Batch: EXTR/43259 **Analysis Method:** NJEPH

QC Batch Method: SW846 3546

Associated Lab Samples: 2140072001, 2140072002

METHOD BLANK: 2335629

Parameter	Blank Result	Units	Reporting Limit
C9 TO C12	0.25J	mg/kg	1.0
C12 TO C16	1.0U	mg/kg	1.0
C16 TO C21	1.0U	mg/kg	1.0
C21 TO C40	0.78J	mg/kg	1.0
Total EPH Aliphatic	1.5J	mg/kg	4.0
1-Chlorooctadecane (S)	20.3	%	40 - 140

LABORATORY CONTROL SAMPLE: 2335630 DUPLICATE: 2335631

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	LCSD Result	LCSD % Rec	% Rec Limit	RPD	Max
1-Chlorooctadecane (S)	26.2*	%			26.2		40 - 140		

SAMPLE DUPLICATE: 2335633 ORIGINAL: 2140072002

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
C9 TO C12	9.90742	mg/kg	17.9393	57.7*	40
C12 TO C16	61.8062	mg/kg	98.2807	45.6*	40
C16 TO C21	52.3806	mg/kg	85.8759	48.5*	40
C21 TO C40	10.7967	mg/kg	20.8015	63.3*	40
Total EPH Aliphatic	134.89092	mg/kg	222.8974	49.2	

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QUALITY CONTROL DATA

Workorder: 2140072 R1604154

QC Batch: EXTR/43260 **Analysis Method:** NJEPH

QC Batch Method: SW846 3546

Associated Lab Samples: 2140072001, 2140072002

METHOD BLANK: 2335634

Parameter	Blank Result	Units	Reporting Limit
C10 TO C12	0.70J	mg/kg	1.0
C12 TO C16	0.54J	mg/kg	1.0
C16 TO C21	0.23J	mg/kg	1.0
C21 TO C36	1.0U	mg/kg	1.0
Total EPH Aromatic	1.7J	mg/kg	4.0
Total EPH (Aliphatic+Aromatic)	3.2J	mg/kg	8.0
2-Bromonaphthalene (S)	95.2	%	40 - 140
2-Fluorobiphenyl (S)	95.9	%	40 - 140
o-Terphenyl (S)	61.4	%	40 - 140

LABORATORY CONTROL SAMPLE: 2335635 DUPLICATE: 2335636

Parameter	LCS % Rec	Units	Spike Conc.	LCS Result	LCSD Result	LCSD % Rec	% Rec Limit	RPD	Max
2-Bromonaphthalene (S)	98.9	%			98.9		40 - 140		
2-Fluorobiphenyl (S)	98.3	%			98.3		40 - 140		
o-Terphenyl (S)	73.9	%			73.9		40 - 140		

SAMPLE DUPLICATE: 2335638 ORIGINAL: 2140072002

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
C10 TO C12	.35452	mg/kg	.76707	73.6*	40
C12 TO C16	10.7106	mg/kg	25.7005	82.3*	40
C16 TO C21	34.881	mg/kg	87.2715	85.8*	40
C21 TO C36	9.44883	mg/kg	21.908	79.5*	40
Total EPH Aromatic	55.39495	mg/kg	135.64707	84	
Total EPH (Aliphatic+Aromatic)	190.28587	mg/kg	358.54447	61.3	

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QUALITY CONTROL DATA

Workorder: 2140072 R1604154

QC Batch: WETC/169494 **Analysis Method:** S2540G-11

QC Batch Method: S2540G-11

Associated Lab Samples: 2140072001, 2140072002

SAMPLE DUPLICATE: 2333873 ORIGINAL: 2139892001

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Moisture	99.3471	%	99.3581	.01	10
Total Solids	.6528	%	.6418	1.7	5

SAMPLE DUPLICATE: 2333874 ORIGINAL: 2139892011

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Moisture	99.1452	%	99.1329	.01	10
Total Solids	.8547	%	.867	1.43	5

SAMPLE DUPLICATE: 2333875 ORIGINAL: 2139950004

Parameter	Original Result	Units	DUP Result	RPD	Max RPD
Moisture	34.2287	%	30.9347	10.1*	10
Total Solids	65.7712	%	69.0652	4.89	5

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 2140072 R1604154

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
2140072001	PAR-70-SB-04-4.5-5			S2540G-11	WETC/169494
2140072002	PAR-70-SB-05-4.5-5			S2540G-11	WETC/169494
2140072001	PAR-70-SB-04-4.5-5	SW846 3546	EXTR/43259	NJEPH	SVGC/41779
2140072002	PAR-70-SB-05-4.5-5	SW846 3546	EXTR/43259	NJEPH	SVGC/41779
2140072001	PAR-70-SB-04-4.5-5	SW846 3546	EXTR/43260	NJEPH	SVGC/41780
2140072002	PAR-70-SB-05-4.5-5	SW846 3546	EXTR/43260	NJEPH	SVGC/41780

ALS Environmental Chain of Custody

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ALS Con

* 2 1 4 0 0 7 2 *

Project Number: R1604154
Project Manager: Vanessa Badman
QAP: LAB QAP

05 4/24/16
4 oz Jar

Lab Code	Sample ID	# of Cont.	Matrix	Sample Date	Sample Time	Lab ID	Misc Out 1 None
[redacted]	PAR-70-SB-04-4.5-5	1	Soil	4/25/16	1105	Middletown ALS	X
[redacted]	PAR-70-SB-05-4.5-5	1	Soil	4/25/16	1150	Middletown ALS	X

	Y	N	Initials
Custody Seals Present?			
(if present) Seals Intact?			
Received on Ice?			
COC/Lbls Complete			
Cont in Good Cond?			
Correct Containers?			
Correct Samp Vol?			
Correct Preservation?			
Headspace/Volatiles?			

Cooler Temp: 1 °C
Cooler #:
Therm ID: TH-352
Ship Carrier: FedEx UPS DHL
Tracking #: 6914 7717 6508

Test Comments
Misc Out 1 - None R1604154-001,2 NJEPH

Folder Comments:
DoD reporting ERPTOOLS LOD

AS 4/29/16

Special Instructions/Comments	Turnaround Requirements	Report Requirements	Invoice Information
H - Test is On Hold P - Test is Authorized for Prep Only	____RUSH (Surcharges Apply) PLEASE CIRCLE WORK DAYS 1 2 3 4 5 ____ STANDARD Requested FAX Date: _____ Requested Report Date: 05/06/16	____ I. Results Only ____ II. Results + QC Summaries ____ III. Results + QC and Calibration Summaries ____ IV. Data Validation Report with Raw Data PQL/MDL/J Y EDD Y	PO# 58R1604154 Bill to

Relinquished By: Scott Seay 4/28/16 1555 Received By: AS 4/29/16 0852 Airbill Number: _____

ALS Environmental Chain of Custody

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ALS Contact: Vanessa Badman

Project Number: R1604154
Project Manager: Vanessa Badman
QAP: LAB QAP

R1604154

____ **Ship To: Middletown ALS**
ALS Laboratory Group
34 Dogwood Lane
Middletown, PA 17057

PC _____ Date _____

SMO _____ Date _____

Instructions:

Ice _____

Dry Ice _____

No Ice _____

Shipping:

Overnight _____

2nd Day _____

Ground _____

Bill to Client Account _____

Comments:

Hampton-Clarke Report Of Analysis

Client: Tetra Tech Inc.
HC Project #: 7052611
Project: Fort Monmouth

Sample ID: BKG-283-002-001
Lab#: AC98118-001
Matrix: Soil
Collection Date: 5/24/2017
Receipt Date: 5/26/2017

% Solids SM2540G

Analyte	DF	Units	RL	Result
%Solids	**1**	**percent**		**84**

NJ EPH Category 2

Analyte	DF	Units	RL	Result
C9-C40	1	mg/kg	71	ND

Surrogate	Conc.	Spike	Low Limit	High Limit	Recovery	Flags
O-Terphenyl	74.39	100	40	140	74	
1-Chlorooctadecane	71.94	100	40	140	72	

PAH Compounds 8270

Analyte	DF	Units	RL	Result
2-Methylnaphthalene	1	mg/kg	0.040	ND
Acenaphthene	1	mg/kg	0.040	ND
Acenaphthylene	1	mg/kg	0.040	ND
Anthracene	**1**	**mg/kg**	**0.040**	**0.049**
Benzo[a]anthracene	**1**	**mg/kg**	**0.040**	**0.11**
Benzo[a]pyrene	**1**	**mg/kg**	**0.040**	**0.14**
Benzo[b]fluoranthene	**1**	**mg/kg**	**0.040**	**0.23**
Benzo[g,h,i]perylene	**1**	**mg/kg**	**0.040**	**0.12**
Benzo[k]fluoranthene	**1**	**mg/kg**	**0.040**	**0.053**
Chrysene	**1**	**mg/kg**	**0.040**	**0.12**
Dibenzo[a,h]anthracene	1	mg/kg	0.040	ND
Fluoranthene	**1**	**mg/kg**	**0.040**	**0.17**
Fluorene	1	mg/kg	0.040	ND
Indeno[1,2,3-cd]pyrene	**1**	**mg/kg**	**0.040**	**0.10**
Naphthalene	1	mg/kg	0.0099	ND
Phenanthrene	1	mg/kg	0.040	ND
Pyrene	**1**	**mg/kg**	**0.040**	**0.15**

Surrogate	Conc.	Spike	Low Limit	High Limit	Recovery	Flags
Terphenyl-d14	56.70	50	58	148	113	
Phenol-d5	105.28	100	49	129	105	
Nitrobenzene-d5	46.33	50	52	129	93	
2-Fluorophenol	99.97	100	43	128	100	
2-Fluorobiphenyl	42.42	50	58	125	85	
2,4,6-Tribromophenol	103.78	100	54	145	104	

PCB 8082

Analyte	DF	Units	RL	Result
Aroclor (Total)	1	mg/kg	0.030	ND
Aroclor-1016	1	mg/kg	0.030	ND
Aroclor-1221	1	mg/kg	0.030	ND
Aroclor-1232	1	mg/kg	0.030	ND
Aroclor-1242	1	mg/kg	0.030	ND
Aroclor-1248	1	mg/kg	0.030	ND
Aroclor-1254	1	mg/kg	0.030	ND
Aroclor-1260	1	mg/kg	0.030	ND
Aroclor-1262	1	mg/kg	0.030	ND
Aroclor-1268	1	mg/kg	0.030	ND

Surrogate	Conc.	Spike	Low Limit	High Limit	Recovery	Flags
TCMX-Surrogate	128.35	100	37	141	128	
TCMX-Surrogate	125.49	100	37	141	125	
DCB-Surrogate	129.62	100	34	146	130	
DCB-Surrogate	123.35	100	34	146	123	

Sample ID: BKG-283-001-001 | **Collection Date: 5/24/2017**
Lab#: AC98118-002 | **Receipt Date: 5/26/2017**
Matrix: Soil

% Solids SM2540G

Analyte	DF	Units	RL	Result
% Solids	1	percent		80

NJ EPH Category 2

Analyte	DF	Units	RL	Result
C9-C40	1	mg/kg	75	ND

Surrogate	Conc.	Spike	Low Limit	High Limit	Recovery	Flags
O-Terphenyl	74.51	100	40	140	75	
1-Chlorooctadecane	71.69	100	40	140	72	

PAH Compounds 8270

Analyte	DF	Units	RL	Result
2-Methylnaphthalene	1	mg/kg	0.042	ND
Acenaphthene	1	mg/kg	0.042	ND
Acenaphthylene	1	mg/kg	0.042	ND
Anthracene	1	mg/kg	0.042	ND
Benzo[a]anthracene	1	mg/kg	0.042	ND
Benzo[a]pyrene	1	mg/kg	0.042	ND
Benzo[b]fluoranthene	1	mg/kg	0.042	ND
Benzo[g,h,i]perylene	1	mg/kg	0.010	ND
Benzo[k]fluoranthene	1	mg/kg	0.042	ND
Chrysene	1	mg/kg	0.042	ND
Dibenzo[a,h]anthracene	1	mg/kg	0.010	ND
Fluoranthene	1	mg/kg	0.042	ND
Fluorene	1	mg/kg	0.042	ND
Indeno[1,2,3-cd]pyrene	1	mg/kg	0.042	ND
Naphthalene	1	mg/kg	0.010	ND
Phenanthrene	1	mg/kg	0.042	ND
Pyrene	1	mg/kg	0.042	ND

Surrogate	Conc.	Spike	Low Limit	High Limit	Recovery	Flags
Terphenyl-d14	50.72	50	58	148	101	
Phenol-d5	74.47	100	49	129	74	
Nitrobenzene-d5	34.59	50	52	129	69	
2-Fluorophenol	80.31	100	43	128	80	
2-Fluorobiphenyl	38.60	50	58	125	77	
2,4,6-Tribromophenol	107.06	100	54	145	107	

PCB 8082

Analyte	DF	Units	RL	Result
Aroclor (Total)	1	mg/kg	0.031	ND
Aroclor-1016	1	mg/kg	0.031	ND
Aroclor-1221	1	mg/kg	0.031	ND
Aroclor-1232	1	mg/kg	0.031	ND
Aroclor-1242	1	mg/kg	0.031	ND
Aroclor-1248	1	mg/kg	0.031	ND
Aroclor-1254	1	mg/kg	0.031	ND
Aroclor-1260	1	mg/kg	0.031	ND
Aroclor-1262	1	mg/kg	0.031	ND
Aroclor-1268	1	mg/kg	0.031	ND

Surrogate	Conc.	Spike	Low Limit	High Limit	Recovery	Flags
TCMX-Surrogate	116.20	100	37	141	116	
TCMX-Surrogate	112.52	100	37	141	113	
DCB-Surrogate	123.96	100	34	146	124	
DCB-Surrogate	116.17	100	34	146	116	

Sample ID: BKG-283-003-001 **Collection Date:** 5/24/2017
Lab#: AC98118-003 **Receipt Date:** 5/26/2017
Matrix: Soil

% Solids SM2540G

Analyte	DF	Units	RL	Result
% Solids	1	percent		79

NJ EPH Category 2

Analyte	DF	Units	RL	Result
C9-C40	1	mg/kg	76	ND

Surrogate	Conc.	Spike	Low Limit	High Limit	Recovery	Flags
O-Terphenyl	84.12	100	40	140	84	
1-Chlorooctadecane	82.79	100	40	140	83	

PAH Compounds 8270

Analyte	DF	Units	RL	Result
2-Methylnaphthalene	1	mg/kg	0.042	ND
Acenaphthene	1	mg/kg	0.042	ND
Acenaphthylene	1	mg/kg	0.042	ND
Anthracene	1	mg/kg	0.042	ND
Benzo[a]anthracene	1	mg/kg	0.042	ND
Benzo[a]pyrene	1	mg/kg	0.042	ND
Benzo[b]fluoranthene	1	mg/kg	0.042	ND
Benzo[g,h,i]perylene	1	mg/kg	0.011	ND
Benzo[k]fluoranthene	1	mg/kg	0.042	ND
Chrysene	1	mg/kg	0.042	ND
Dibenzo[a,h]anthracene	1	mg/kg	0.011	ND
Fluoranthene	1	mg/kg	0.042	ND
Fluorene	1	mg/kg	0.042	ND
Indeno[1,2,3-cd]pyrene	1	mg/kg	0.042	ND
Naphthalene	1	mg/kg	0.011	ND
Phenanthrene	1	mg/kg	0.042	ND
Pyrene	1	mg/kg	0.042	ND

Surrogate	Conc.	Spike	Low Limit	High Limit	Recovery	Flags
Terphenyl-d14	47.32	50	58	148	95	
Phenol-d5	91.96	100	49	129	92	
Nitrobenzene-d5	41.12	50	52	129	82	
2-Fluorophenol	97.02	100	43	128	97	
2-Fluorobiphenyl	45.53	50	58	125	91	
2,4,6-Tribromophenol	121.07	100	54	145	121	

PCB 8082

Analyte	DF	Units	RL	Result
Aroclor (Total)	1	mg/kg	0.032	ND
Aroclor-1016	1	mg/kg	0.032	ND
Aroclor-1221	1	mg/kg	0.032	ND
Aroclor-1232	1	mg/kg	0.032	ND
Aroclor-1242	1	mg/kg	0.032	ND
Aroclor-1248	1	mg/kg	0.032	ND
Aroclor-1254	1	mg/kg	0.032	ND
Aroclor-1260	1	mg/kg	0.032	ND
Aroclor-1262	1	mg/kg	0.032	ND
Aroclor-1268	1	mg/kg	0.032	ND

Surrogate	Conc.	Spike	Low Limit	High Limit	Recovery	Flags
TCMX-Surrogate	121.42	100	37	141	121	
TCMX-Surrogate	119.50	100	37	141	120	
DCB-Surrogate	143.36	100	34	146	143	
DCB-Surrogate	129.70	100	34	146	130	

Sample ID: BKG-283-004-001 **Collection Date:** 5/25/2017
Lab#: AC98118-004 **Receipt Date:** 5/26/2017
Matrix: Soil

% Solids SM2540G

Analyte	DF	Units	RL	Result
% Solids	1	percent		81

NJ EPH Category 2

Analyte	DF	Units	RL	Result
C9-C40	1	mg/kg	74	ND

Surrogate	Conc.	Spike	Low Limit	High Limit	Recovery	Flags
O-Terphenyl	75.25	100	40	140	75	
1-Chlorooctadecane	72.72	100	40	140	73	

PAH Compounds 8270

Analyte	DF	Units	RL	Result
2-Methylnaphthalene	1	mg/kg	0.041	ND
Acenaphthene	1	mg/kg	0.041	ND
Acenaphthylene	1	mg/kg	0.041	ND
Anthracene	1	mg/kg	0.041	ND
Benzo[a]anthracene	1	mg/kg	0.041	ND
Benzo[a]pyrene	1	mg/kg	0.041	ND
Benzo[b]fluoranthene	1	mg/kg	0.041	ND
Benzo[g,h,i]perylene	1	mg/kg	0.010	ND
Benzo[k]fluoranthene	1	mg/kg	0.041	ND
Chrysene	1	mg/kg	0.041	ND
Dibenzo[a,h]anthracene	1	mg/kg	0.010	ND
Fluoranthene	1	mg/kg	0.041	ND
Fluorene	1	mg/kg	0.041	ND
Indeno[1,2,3-cd]pyrene	1	mg/kg	0.041	ND
Naphthalene	1	mg/kg	0.010	ND
Phenanthrene	1	mg/kg	0.041	ND
Pyrene	1	mg/kg	0.041	ND

Surrogate	Conc.	Spike	Low Limit	High Limit	Recovery	Flags
Terphenyl-d14	51.79	50	58	148	104	
Phenol-d5	93.58	100	49	129	94	
Nitrobenzene-d5	41.60	50	52	129	83	
2-Fluorophenol	97.84	100	43	128	98	
2-Fluorobiphenyl	45.67	50	58	125	91	
2,4,6-Tribromophenol	124.54	100	54	145	125	

PCB 8082

Analyte	DF	Units	RL	Result
Aroclor (Total)	1	mg/kg	0.031	ND
Aroclor-1016	1	mg/kg	0.031	ND
Aroclor-1221	1	mg/kg	0.031	ND
Aroclor-1232	1	mg/kg	0.031	ND
Aroclor-1242	1	mg/kg	0.031	ND
Aroclor-1248	1	mg/kg	0.031	ND
Aroclor-1254	1	mg/kg	0.031	ND
Aroclor-1260	1	mg/kg	0.031	ND
Aroclor-1262	1	mg/kg	0.031	ND
Aroclor-1268	1	mg/kg	0.031	ND

Surrogate	Conc.	Spike	Low Limit	High Limit	Recovery	Flags
TCMX-Surrogate	99.78	100	37	141	100	
TCMX-Surrogate	96.75	100	37	141	97	
DCB-Surrogate	110.22	100	34	146	110	
DCB-Surrogate	100.71	100	34	146	101	

Sample ID: BKG-283-004-001-FD | **Collection Date: 5/25/2017**
Lab#: AC98118-005 | **Receipt Date: 5/26/2017**
Matrix: Soil

% Solids SM2540G

Analyte	DF	Units	RL	Result
% Solids	**1**	**percent**		**80**

NJ EPH Category 2

Analyte	DF	Units	RL	Result
C9-C40	1	mg/kg	75	ND

Surrogate	Conc.	Spike	Low Limit	High Limit	Recovery	Flags
O-Terphenyl	75.37	100	40	140	75	
1-Chlorooctadecane	77.49	100	40	140	77	

PAH Compounds 8270

Analyte	DF	Units	RL	Result
2-Methylnaphthalene	1	mg/kg	0.042	ND
Acenaphthene	1	mg/kg	0.042	ND
Acenaphthylene	1	mg/kg	0.042	ND
Anthracene	1	mg/kg	0.042	ND
Benzo[a]anthracene	1	mg/kg	0.042	ND
Benzo[a]pyrene	1	mg/kg	0.042	ND
Benzo[b]fluoranthene	1	mg/kg	0.042	ND
Benzo[g,h,i]perylene	1	mg/kg	0.010	ND
Benzo[k]fluoranthene	1	mg/kg	0.042	ND
Chrysene	1	mg/kg	0.042	ND
Dibenzo[a,h]anthracene	1	mg/kg	0.010	ND
Fluoranthene	1	mg/kg	0.042	ND
Fluorene	1	mg/kg	0.042	ND
Indeno[1,2,3-cd]pyrene	1	mg/kg	0.042	ND
Naphthalene	1	mg/kg	0.010	ND
Phenanthrene	1	mg/kg	0.042	ND
Pyrene	1	mg/kg	0.042	ND

Surrogate	Conc.	Spike	Low Limit	High Limit	Recovery	Flags
Terphenyl-d14	52.26	50	58	148	105	
Phenol-d5	88.39	100	49	129	88	
Nitrobenzene-d5	40.71	50	52	129	81	
2-Fluorophenol	94.30	100	43	128	94	
2-Fluorobiphenyl	45.98	50	58	125	92	
2,4,6-Tribromophenol	129.87	100	54	145	130	

PCB 8082

Analyte	DF	Units	RL	Result
Aroclor (Total)	1	mg/kg	0.031	ND
Aroclor-1016	1	mg/kg	0.031	ND
Aroclor-1221	1	mg/kg	0.031	ND
Aroclor-1232	1	mg/kg	0.031	ND
Aroclor-1242	1	mg/kg	0.031	ND
Aroclor-1248	1	mg/kg	0.031	ND
Aroclor-1254	1	mg/kg	0.031	ND
Aroclor-1260	1	mg/kg	0.031	ND
Aroclor-1262	1	mg/kg	0.031	ND
Aroclor-1268	1	mg/kg	0.031	ND

Surrogate	Conc.	Spike	Low Limit	High Limit	Recovery	Flags
TCMX-Surrogate	95.93	100	37	141	96	
TCMX-Surrogate	91.80	100	37	141	92	
DCB-Surrogate	100.72	100	34	146	101	
DCB-Surrogate	92.95	100	34	146	93	

Sample ID: BKG-551-001
Lab#: AC98118-006
Matrix: Soil

Collection Date: 5/25/2017
Receipt Date: 5/26/2017

% Solids SM2540G

Analyte	DF	Units	RL	Result
% Solids	1	percent		94

NJ EPH Category 2

Analyte	DF	Units	RL	Result
C9-C40	1	mg/kg	64	ND

Surrogate	Conc.	Spike	Low Limit	High Limit	Recovery	Flags
O-Terphenyl	91.21	100	40	140	91	
1-Chlorooctadecane	86.70	100	40	140	87	

PCB 8082

Analyte	DF	Units	RL	Result
Aroclor (Total)	1	mg/kg	0.027	ND
Aroclor-1016	1	mg/kg	0.027	ND
Aroclor-1221	1	mg/kg	0.027	ND
Aroclor-1232	1	mg/kg	0.027	ND
Aroclor-1242	1	mg/kg	0.027	ND
Aroclor-1248	1	mg/kg	0.027	ND
Aroclor-1254	1	mg/kg	0.027	ND
Aroclor-1260	1	mg/kg	0.027	ND
Aroclor-1262	1	mg/kg	0.027	ND
Aroclor-1268	1	mg/kg	0.027	ND

Surrogate	Conc.	Spike	Low Limit	High Limit	Recovery	Flags
TCMX-Surrogate	146.66	100	37	141	147	S8
TCMX-Surrogate	144.30	100	37	141	144	S8
DCB-Surrogate	164.85	100	34	146	165	S8
DCB-Surrogate	153.71	100	34	146	154	S8

Hampton-Clarke, Inc. (WBE/DBE/SBE)

175 Route 46 West and 2 Madison Road, Fairfield, New Jersey 07004
Ph: 800-426-9992 | 973-244-9770 Fax: 973-244-9787 | 973-439-1458
Service Center: 137-D Gaither Drive, Mount Laurel, New Jersey 08054
Ph (Service Center): 856-780-6057 Fax: 856-780-6056

Hampton-Clarke WBE/DBE/SBE 800-426-9992

A Women-Owned, Disadvantaged, Small Business Enterprise

NELAC/NJ #07071 | PA #68-00463 | NY #11408 | CT #PH-0671 | KY #90124 | DE HSCA Approved

CHAIN OF CUSTODY RECORD

Project # (Lab Use Only): 7052611

Page 1 of 1

3) Reporting Requirements (Please Circle)

Turnaround	Report Type	Electronic Data Deliv.
When Available:	Summary	NJ Hazsite
1 Business Day (100%)*	Results + QC (Waste)	Excel Reg. NJ / NY / PA
2 Business Days (75%)*	Reduced	EnviroData
3 Business Days (50%)*	[X] NJ [ ] NY	EQuIS:
4 Business Days (35%)*	[ ] PA [ ] Other___	[ ] 4-File [ ] EZ
5 Business Days (25%)	NJ Full / NY ASP CatB	[ ] NYDEC
8 Business Days (Stand.)	NY ASP CatA	[ ] Region 2 or 5
Other:		Other:

* Expedited TAT Not Always Available. Please Check with Lab.

Customer Information

1a) Customer: Tetra Tech
Address: 1093 Commerce Park Dr. Ste 100
Oak Ridge, TN 37830
1b) Email/Cell/Fax/Ph: Bryn Howze (865) 308-0043
1c) Send Invoice to: Maureen McMyler (865) 220-4762
1d) Send Report to: " "

Project Information

2a) Project: Fort Monmouth
2b) Project Mgr: Mike Spangberg
2c) Project Location (City/State): Fort Monmouth NJ
2d) Quote/PO # (If Applicable):

FOR LAB USE ONLY ↓

Batch #

===> Check If Contingent ===>

<=== Check If Contingent <===

Matrix Codes

DW - Drinking Water S - Soil A - Air
GW - Ground Water SL - Sludge
WW - Waste Water OL - Oil
OT - Other (please specify under item 9, Comments)

Lab Sample #	4) Customer Sample ID	5) Matrix	6) Sample Date	6) Sample Time	Sample Type: Composite (C)	Sample Type: Grab (G)	7) Analysis: PCB 8082	PAH 8270	NJ EPH CAT2	PAH	8) # of Bottles: None	MeOH	En Core	NaOH	HCl	H2SO4	HNO3	Other:	9) Comments
001	BKG-283-002-001	S	5/24/17	1420		✓	✓	✓	✓		1								3 day TAT
002	BKG-283-001-001	S	5/24/17	1515		✓	✓	✓	✓		1								"
003	BKG-283-003-001	S	5/24/17	1645		✓	✓	✓	✓		1								"
004	BKG-283-004-001	S	5/25/17	0917		✓	✓	✓	✓		1								"
005	BKG-283-004-001-FD	S	5/25/17	0917		✓	✓	✓	✓		1								"
006	BKG-551-001	S	5/25/17	1025		✓	✓	⊘	✓	X	1								Hold PAH, 3 day TAT

10) Relinquished by:	Accepted by:	Date	Time
[signature]	[signature]	5/25/17	17:00
[signature]	[signature]	5/26/17	1015
[signature]	[signature]	5/26/17	1205

11) Sampler (print name): Date:

Additional Notes

Comments, Notes, Special Requirements, HAZARDS

Indicate if low-level methods required to meet current groundwater standards (SPLP for soil):
- [ ] BN or BNA (8270D SIM)
- [ ] VOC (8260C SIM or 8011)
- [ ] SPLP (BN, BNA, Metals)
- [ ] 1,4 Dioxane

For NJ LSRP projects, indicate which standards need to be met:
- [ ] NJDEP GWQS
- [ ] NJDEP SRS
- [ ] NJDEP SPLP
- [ ] Other (specify):

Check if applicable:
- [ ] Project-Specific Reporting Limits
- [ ] High Contaminant Concentrations
- [ ] NJ LSRP Project (also check boxes above/right)

Cooler Temperature: 2.0°

Please note NUMBERED items. If not completed your analytical work may be delayed.
A fee of $5/sample will be assessed for storage should sample not be activated for any analysis.

Internal use: sampling plan (check box) HC [ ] or client [ ] FSP#

ATTACHMENT E
Backfill Certificates

Maddox Materials, LLC
Quality Aggregates & Construction Soils

May 24, 2017

AWT Environmental
PO Box 128
Sayreville, NJ 08871

Attn: Mario Postorino
Phone: 732-613-1660
Fax: 732-613-1536

Project: Rt. 35
Fort Monmouth
PO# 15252MP

To whom it may concern:

Please be advised that the DGA Maddox proposes to deliver to the above referenced project originates from Trap Rock Industries Kingston, NJ. Somerset County tax map Block 1 Lots 1,2,3,38,39. The crushed stones are produced from virgin, hard, durable, diabase trap rock stone. This site has been tested by Accredited Analytical Resources, LLC work order# 1700016 and found to be acceptable for residential development.

If you need any additional information, please contact me at 732-251-0054.

Respectfully Submitted,

William Maddox
Member

Maddox Materials, LLC
Quality Aggregates & Construction Soils

May 24, 2017

AWT Environmental
PO Box 128
Sayreville, NJ 08871

Attn: Mario Postorino
Phone: 732-613-1660
Fax: 732-613-1536

Project: Rt. 35
Fort Monmouth
PO# 15252MP

To whom it may concern:

Please be advised that the topsoil Maddox proposes to deliver to the above referenced project originates from Dun-Rite Sand & Gravel located on Broad St., Vineland, NJ, Cumberland County tax map Blocks 7301, 7801 & 7906; Lots 39, 18, 35.19. It is a NJ state permitted registered mine permit# 004336. It is free of any hazardous materials or contamination and is considered to be clean virgin material.

If you need any additional information please contact me at 732-251-0054.

Respectfully Submitted,

Darane Bognar
VP of Operations