

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.

Request for No Further Action Determination for Groundwater at FTMM-03

PERSON RESPONSIBLE FOR CONDUCTING THE REMI	EDIATION INFO	DRMATION AND CERTIF	ICATION
Full Legal Name of the Person Responsible for Conducting	the Remediatio	n: William R. Colvin	
Representative First Name: William	Representati	ve Last Name: Colvin	
Title: BRAC Environmental Coordinator	451. 001	73.	
Phone Number: (732) 380-7064	Ext:	Fax:	
Mailing Address: P.O. Box 148	×		
City/Town: Oceanport S	State: NJ	Zip Code:	07757
Email Address: william.r.colvin18.civ@mail.mil			
This certification shall be signed by the person responsible			
in accordance with Administrative Requirements for the Rer	nediation of Co	ntaminated Sites rule at N	I.J.A.C. 7:26C-1.5(a).
I certify under penalty of law that I have personally examine including all attached documents, and that based on my inquitie information, to the best of my knowledge, I believe that to aware that there are significant civil penalties for knowingly am committing a crime of the fourth degree if I make a writte aware that if I knowingly direct or authorize the violation of a Signature: Name/Title: William R. Colvin / BRAC Environmental	uiry of those ind the submitted in submitting false en false stateme	dividuals immediately resp formation is true, accurate , inaccurate or incomplete ent which I do not believe	oonsible for obtaining e and complete. I am e information and that I to be true. I am also
Coordinator			

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

15 May 2017

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: Request for No Further Action Determination for Groundwater at FTMM-03 Fort Monmouth, Oceanport, Monmouth County.
PI G000000032

Attachments:

A. FTMM-03 Location and Layout of FTMM-03

- B. Tables 2 Historical Groundwater Analytical Results from August 2013 Baseline Groundwater Sampling Report and Table 3 Analytical results 2013 and 2014 from Annual Fourth Quarter 2014 Groundwater Sampling Report
- C. Previous Correspondence (see list below)

References (provided in Attachment C):

- 1. NJDEP letter to U.S. Army dated 26 January 2016, re: Approval Annual (Fourth Quarter) 2014 Groundwater Sampling Report dated December 2015
- 2. NJDEP letter to U.S. Army dated 05 February 2015, re: Approval 26 November 2014 Response to Comments on the Final Baseline Groundwater Sampling Report (August 2013)
- 3. U.S. Army letter to the NJDEP dated 26 November 2014; re: NJDEP Comments on the Final Baseline Groundwater Sampling Report (August 2013)
- 4. NJDEP letter to U.S. Army dated 03 July 2014, re: Final Baseline Groundwater Sampling Report (August 2013)
- 5. U.S. Army letter to the NJDEP dated 10 November 2004; re: Reduction of Groundwater Sampling Analyses Main Post and Charles Woods Restoration Sites Throughout Fort Monmouth, New Jersey

Linda S. Range, NJDEP Request for No Further Action Determination for Groundwater at FTMM-03 15 May 2017 Page 2 of 4

Dear Ms. Range:

The Fort Monmouth Team is requesting a No Further Action (NFA) determination by the New Jersey Department of Environmental Protection (NJDEP) for groundwater at FTMM-03. This request is based on the groundwater data results presented in the Final August 2013 Baseline Groundwater Sampling Report (Baseline Report) and the Annual Fourth Quarter 2014 Groundwater Sampling Report (2014 Annual Report). NJDEP agreed with the Baseline Report's recommendations for FTMM-03 (Reference 2) to: 1) perform one additional round of sampling for volatile organic compounds (VOCs) and Target Analyte List (TAL) metals at Monitoring Well M3MW02; 2) discontinue long term monitoring (LTM) of the groundwater at 11 of the 12 wells; and 3) abandon Monitoring Well M3MW07. NJDEP agreed with the 2014 Annual Report recommendations to discontinue all LTM of the groundwater at FTMM-03 (Reference 1). The information provided in the Baseline Report and the 2014 Annual Report that supports this NFA request is summarized below.

Background

FTMM-03 is a landfill (approximately 8.0-acres) located in the central portion of Fort Monmouth's (FTMM's) Main Post (MP) in an area south of Lafetra Creek, north of North Drive, and west of Mill Creek (Attachment A). FTMM-03 was used as a general disposal area for domestic and industrial wastes from 1959 to 1964.

A long-term groundwater monitoring program began in February 1995. Groundwater sampling was conducted quarterly from May 1997 through August 2011 using a network of up to thirteen monitoring wells. Groundwater samples collected from May 1997 to September 2004 were analyzed for TAL metals, VOCs, semi-volatile organic compounds (SVOCs), pesticides and PCBs. As agreed with NJDEP, from December 2004 to August 2011, samples were analyzed only for VOCs (Reference 5). Starting in March 2010, groundwater samples were again analyzed for metals in addition to VOCs.

In August 2013, groundwater sampling was conducted at FTMM-03 to re-establish baseline groundwater conditions following temporary suspension of groundwater sampling in late 2011. Groundwater samples were collected from twelve monitoring wells using low flow purging and sampling (LFPS) methodology and analyzed for VOCs and TAL metals. The results confirmed an exceedance of the NJDEP Ground Water Quality Criteria (GWQC) for vinyl chloride (VC). Since 23 October 1998, VC has been detected only in groundwater samples collected from Monitor Well M3MW07. In 2009, the Army conducted a groundwater investigation to determine the source of VC detected in M3MW07. Groundwater samples were collected from five temporary wells around the perimeter of M3MW07. VC was not detected in any of the five temporary well point groundwater samples. The Army believed the source of the VC was leaching from the polyvinyl chloride (PVC) pipe used to construct M3MW07. To determine if the monitoring well was the source of the VC, a new monitoring well, M3MW07A, was installed adjacent to the existing M3MW07. VC was not detected in the sample collected from M3MW07A. These results were documented in the Baseline Report.

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In 2014, the NJDEP requested (Reference 4) a figure presenting the locations and sampling results from the 2009 temporary well point investigation. The Army submitted the data along with a site map showing the location of the well points to the NJDEP in November 2014 (Reference 3). The NJDEP approved the recommendations from the Baseline Report for FTMM-03 in their February 2015 letter (Reference 2).

At the time of the annual 2014 groundwater sampling event, the sampling recommendations identified in the Baseline Report for FTMM-03 were implemented even though the Army had not yet received approval of the Baseline Report from NJDEP. Groundwater samples were collected from Monitoring Wells M3MW02 and M3MW07 using Low Flow Purging and Sampling (LFPS) on 03 October 2014 for VOC analyses. M3MW02 was also sampled for TAL metals. The only VOC found to be above NJDEP GWQC in M3MW07 was VC, detected at an estimated concentration of 4J μ g/L. Since 1998, VC has only been detected in M3MW07. This confirmed that the previous anomalous 2013 detection of VC in M3MW07 was related to leaching from the PVC pipe used to construct M3MW07 and was not representative of groundwater conditions in the area. Only one metal, aluminum, was detected in M3MW02 at a concentration of 685 μ g/L (above the NJDEP GWQC of 200 μ g/L). The aluminum concentration was attributed to background conditions and not indicative of the overall groundwater quality at FTMM-03. The Army recommended: 1) discontinuing long-term monitoring (LTM) at FTMM-03; and 2) abandonment of M3MW07. NJDEP approved these recommendations (Reference 1).

Groundwater Chemistry

Groundwater data results from March 2008 through August 2011, August 2013, and October 2014 are presented in the tables provided in **Attachment B**.

Only VC was detected above the respective NJDEP GWQC in the groundwater samples collected from M3MW07 during the 2013 and 2014 sampling events. The VC exceedances were attributed to leaching of the PVC pipe used to construct monitoring well M3MW07 and are not representative of groundwater conditions in the area since VC was not detected in the samples collected from the temporary well point investigation or from well M3MW07A installed adjacent to M3MW07.

Aluminum, iron, lead, manganese, and sodium were detected in exceedance of their respective NJDEP GWQC during the 2013 sampling event. In 2014, only one metal (aluminum) was detected above the NJDEP GWQC. As documented in the Baseline Report, the metal concentrations detected in the groundwater are attributed to background conditions and not indicative of historical site use.

Summary

NJDEP has acknowledged that the VC exceedances found in the samples from Monitoring Well M3MW07 were not representative of groundwater conditions at FTMM-03. Metal exceedances above their respective NJDEP GWQCs were attributed to background conditions and not historical site use. Based on the groundwater chemistry and the NJDEP's 2016 approval to discontinue sampling at FTMM-03, the Army requests a NFA determination for groundwater at FTMM-03.

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The technical point of contact for this matter is Cris Grill who can be reached at 617-449-1583 or cris.grill@parsons.com. I can be reached at (732) 380-7064 or by email at william.r.colvin18.civ@mail.mil.

Sincerely,

William R. Colvin, PMP, CHMM, PG

BRAC Environmental Coordinator

OACSIM - U.S. Army Fort Monmouth

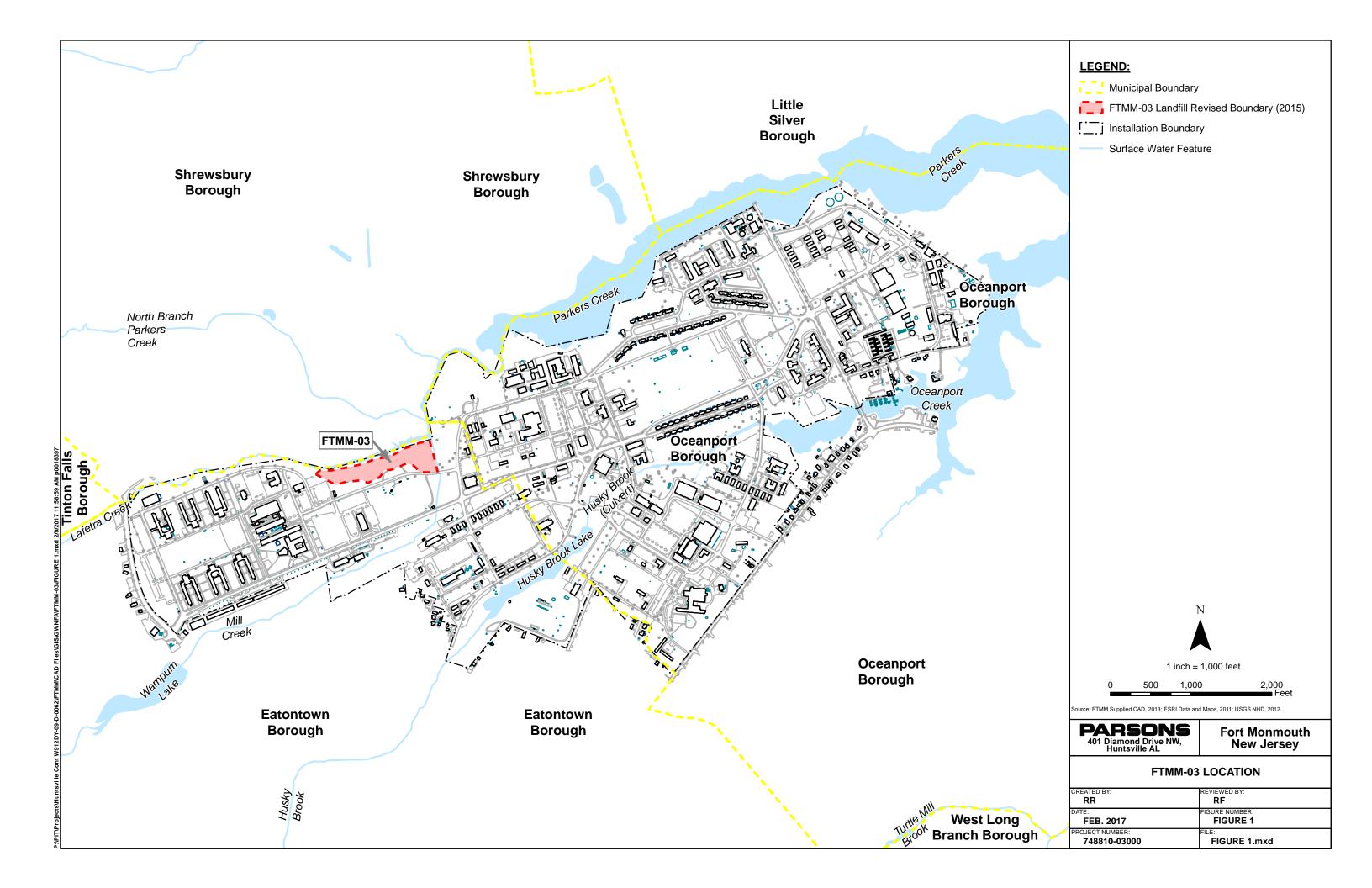
cc: Linda Range, NJDEP (3 hard copies)

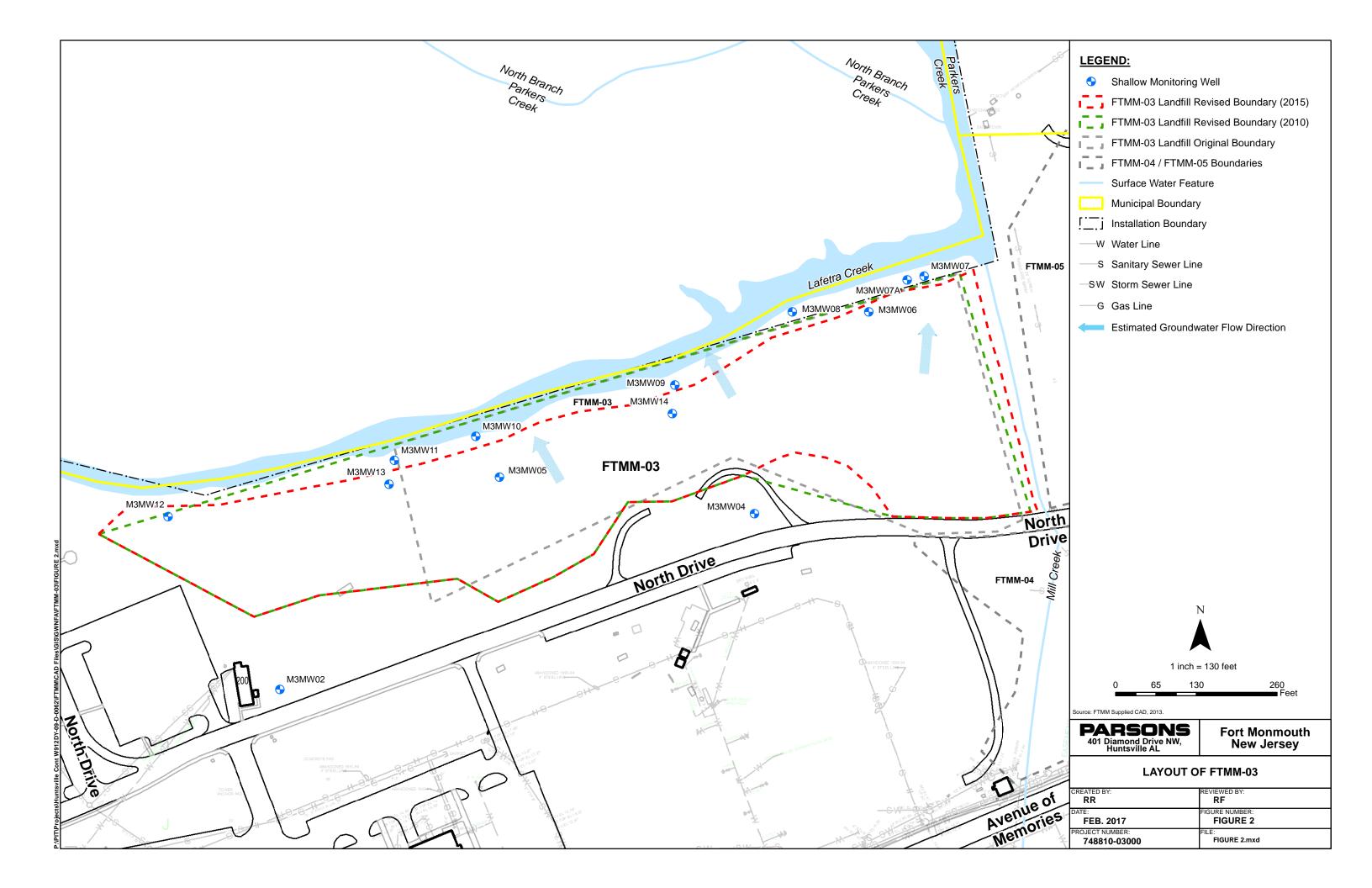
Delight Balducci, HQDA ACSIM (e-mail)

Joseph Pearson, Calibre (e-mail) James Moore, USACE (e-mail) Jim Kelly, USACE (e-mail)

Cris Grill, Parsons (e-mail)

Attachment A
Figure 1 – FTMM-03 Location and
Figure 2 – Layout of FTMM-03





Attachment B

Tables 2 Historical Groundwater Analytical Results from August 2013 Baseline Groundwater Sampling Report and Table 3 Analytical results – 2013 and 2014 from Annual Fourth Quarter 2014 Groundwater Sampling Report

Table 2 **Historical Groundwater Analytical Results** Site FTMM-03 Fort Monmouth, New Jersey

		TIOTED !	Weston 1995			М3	3MW02											M3MW04								
Round No.	NJDEP GWOS	USEPA	Background	1	1 Dup	LF2	LF3	LF4	LF5	44	44 Dup	45	46	46 Dup	47	47 Dup	48	48 Dup	49	49 Dup	50	50 Dup	51	51 Dup	LF52	LF52 Dup
Date Collected	GWQS	MCL	(Main Post)	8/20/2010	8/20/2010	12/18/2010	3/10/2011	5/19/2011	8/4/2011	3/26/2008	3/26/2008	6/24/2008	9/9/2008	9/9/2008	12/31/2008	12/31/2008	2/27/2009	2/27/2009	6/13/2009	6/13/2009	9/9/2009	9/9/2009	12/2/2009	12/2/2009	3/11/2010	3/11/2010
ANALYTE/Lab ID				10355.04	10355.03	10563.02	11099.10	1121512	1132508	80097.04	80097.03	80209.04	80325.04	80325.03	80485.04	80485.03	90080.04	90080.03	90236.04	90236.03	90372.04	90372.03	90466.04	90466.03	10086.04	10086.03
Volatile Organic Compounds (µg/L)																										
1,2-Dichlorobenzene	600	600	-	ND	ND	< 0.13	< 0.13	< 0.13	< 0.18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	600	NLE	-	ND	ND	< 0.16	< 0.16	< 0.16	< 0.29	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	75	75	-	ND	ND	< 0.15	< 0.15	< 0.15	< 0.26	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	NLE	-	ND	ND	< 0.22	< 0.22	< 0.22	<2.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	6000	NLE	-	7.39	8.23	< 0.32	< 0.32	< 0.32	<7.6	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	1	5	-	ND	ND	< 0.12	< 0.12	< 0.12	< 0.22	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	700	NLE	-	3.49	3.31	< 0.12	< 0.12	< 0.12	< 0.18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	50	100	-	ND	ND	< 0.12	< 0.12	< 0.12	< 0.22	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	5	NLE	-	ND	ND	< 0.32	< 0.32	< 0.32	< 0.37	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyclohexane	100	NLE	-	NA	NA	NA	NA	NA	< 0.29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	70	70	-	ND	ND	< 0.12	< 0.12	< 0.12	< 0.22	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	700	NLE	-	NA	NA	NA	NA	NA	< 0.19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m+p -xylenes	100	NLE	-	ND	ND	< 0.3	< 0.3	< 0.3	< 0.32	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylcyclohexane	NLE	NLE	-	NA	NA	NA	NA	NA	< 0.18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o- xylene	100	NLE	-	ND	ND	< 0.14	< 0.14	< 0.14	< 0.17	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
tert-Butyl alcohol	100	NLE	-	ND	ND	<1.64	<1.64	<1.64	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	600	1000	-	ND	ND	< 0.12	< 0.12	< 0.12	< 0.15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	100	100	-	ND	ND	< 0.14	< 0.14	< 0.14	< 0.31	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	1	2	-	ND	ND	< 0.22	< 0.22	< 0.22	< 0.27	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	1000	10,000	-	ND	ND	ND	ND	ND	< 0.17	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	NLE	-	ND	3	ND	ND	ND	0	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals (μg/L)																										
Aluminum	200	NLE	121000	ND	ND	<200	1,350	487	644	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND
Antimony	6	6	20.70	ND	ND	<6.0	<6.0	<6.0	<6.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND
Arsenic	3	10	89.30	0.78 ER	1.01 121	3.7	<3.0	<3.0	<3.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND
Barium	6000	2000	699.00	37.8	36.9	<200	<200	<200	<200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	65.2	64.8
Beryllium	1	4	2.10	0.054 ER	. ND	<1.0	1.80	<1.0	1.40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.181 ER	0.197 ER
Cadmium	4	5	9.50	ND	ND	<3.0	<3.0	<3.0	<3.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.781 ER	. ND
Calcium	NLE	NLE	45400.00	ND	ND	29,300	9,740	5,090	11,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND
Chromium	70	100	191.00	ND	ND	<10	<10	<10	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND
Copper	1300	1300	65.60	24.7	21.7	23.0	<10	<10	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND
Iron	300	NLE	431000	ND	ND	2,290	<100	120.00	490.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND
Lead	5	15	22.70	ND	ND	<3.0	<3.0	<3.0	<3.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND
Magnesium	NLE	NLE	62700	ND	ND	10,600	12,500	7,310	11,200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND
Manganese	50	NLE	331	ND	ND	84.9	52.80	22.70	66.30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND
Mercury	2	2	0.26	ND	ND 26.4	NA 22.2	<0.20	<0.20	< 0.20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND
Nickel	100	NLE	187	25.7	26.4	32.3	77.5	40.6	103.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	22.1	21.6
Potassium	NLE	NLE	137000	ND ND	ND	<10000	<10000	<10000	<10000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA NA	NA NA	ND	ND
Selenium	40	50	29.60	NR	NR	<10	<10	<10	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA NA	NA NA	NR	NR
Silver	40	NLE	ND	ND	ND	<10	<10	<10	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND
Sodium	50000	NLE	21500	ND	ND	12,100	11,400	<10000	11,200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA NA	NA NA	ND	ND
Thallium	2	2	5.50	ND	ND	<2.0	<2.0	<2.0	<2.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND

*TICs - Tentatively identified compounds, cannot exceed 500 μ g/L for VOCs and SVOCs. No individual compound can exceed 100 μ g/L.

NJDEP GWQS = Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 22, 2010) USEPA MCL = U.S.Environmental Protection Agency Maximum Contaminant Level

USEPA MCL = U.S.Environmental Protection Agency Maximum Contaminant Level (2012)

LF = Low flow sampling method used to collect sample

< = Analyte does not exceed the detection limit shown

reporting limit (RL)

NA = Not analyzed

ND = Not detected

NLE = No limit established

ER = Estimated Result

J - Estimated concentration exceeds the MDL and is less than the practical quantitation

DUP = field duplicate sample

Table 2 **Historical Groundwater Analytical Results** Site FTMM-03 Fort Monmouth, New Jersey

				Weston 1995					M3MW	04											M3MW0	5					
March Column Co	Round No.		USEPA		LF53	LF53 Dup	LF54	LF54 Dup	LF55	LF56	LF56 Dup	LF57	LF57 Dup	LF58	44	45	45 Dup	46	47	48	49	50	51	LF52	LF53	LF54	LF55
March Part		GWQS	MCL			1					1		- 1		3/26/2008	6/24/2008	1	9/9/2008	12/31/2008	2/27/2009	6/13/2009	9/9/2009					12/20/2010
Company of the property of t	ANALYTE/Lab ID	1			10273.04				10563.01		11099.03				80097.05	80209.05	80209.03	80325.05	80485.05	90080.05	90236.05	90372.05	90466.05	10091.06	10285.06	10377.09	10565.08
Part	Volatile Organic Compounds (µg/L)																										
Experiment 75 75 75 75 75 75 75 7	1,2-Dichlorobenzene	600	600	-	ND	ND	ND	ND	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.18	ND	0.47 J	0.45 J	ND	ND	ND	ND	0.56	0.39 J	ND	ND	ND	< 0.13
Formulation	1,3-Dichlorobenzene	600	NLE	-	ND	ND	ND	ND	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16	< 0.29	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	< 0.16
Exercise GOOD NIE . NO NIP NIP NO NIP	1,4-Dichlorobenzene	75	75	-	ND	ND	ND	ND	< 0.15	< 0.15	< 0.15	< 0.15	< 0.15	< 0.26	ND	0.88 J	0.93 J	0.41 J	ND	0.63 J	0.4 J	0.97	0.77	ND	0.35 J	0.49 J	< 0.15
Process	2-Butanone	300	NLE	-	ND	ND	ND	ND	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	<2.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	< 0.22
Carbon Designific 700 NLE - ND ND ND ND ND ND ND	Acetone	6000	NLE	-	ND	ND	ND	ND	< 0.32	< 0.32	< 0.32	< 0.32	< 0.32	<7.6	2.29	ND	ND	2.86	ND	ND	ND	ND	ND	ND	ND	ND	< 0.32
Chebroshaner	Benzene	1	5	-	ND	ND	ND	ND	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.22	ND	0.35 J	0.35 J	ND	ND	0.21 J	0.2 J	0.34 J	0.31 J	ND	0.21 J	0.17 J	< 0.12
Chlorecthine	Carbon Disulfide	700	NLE	-	ND	ND	ND	ND	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	< 0.12
Cyclebrane 100	Chlorobenzene	50	100	-	ND	ND	ND	ND	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.22	0.95 J	6.97	7.29	2.29	1.88 J	6.01	3.79	8.1	5.39	0.37 J	3.41	3.85	0.48 J
69-12-behieveshose 790 NTE - NO ND	Chloroethane	5	NLE	-	ND	ND	ND	ND	< 0.32	< 0.32	< 0.32	< 0.32	< 0.32	< 0.37	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	< 0.32
Enging-phosphosphosphosphosphosphosphosphosphos	•	100	NLE	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
## ## ## ## ## ## ## ## ## ## ## ## ##	cis-1,2-Dichloroethene			-						< 0.12	< 0.12												ND				< 0.12
Methyleychekeneare N.LE N.LE - NA NA NA NA NA NA NA	1 17			-																							NA
Page	_ ^ *			-																							<0.3
For Heavy alcohole 100 N.E. N.D. N	, , ,																										NA
Telemen 660 1000 - ND ND ND ND ND ND ND				-																							< 0.14
																											<1.64
Vigotelended				-																							< 0.12
Sylenger (Total) 1000 10000 - ND ND ND ND ND ND ND		100																									< 0.14
TiCs	- J	1		_														1									<0.22
Metals (ng/L)			- /	_																							ND
Aluminum		500	NLE	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	ND	27	27	25	ND	29	15	31	22	ND	8	16	ND
Autimony 6	40 /	200	NI E	121000) I D	110	170				201	1 202			27.4	27.4	NT A	N. A	27.4	27.4	NT A	27.4	27.4	NID	N.T.	NID	200
Arsenic 3 10 89.30 1.53 ER 0.96 ER 0.68 ER 1.09 ER <3.0 <3.0 <3.0 <3.0 <3.0 <3.0 <3.0 <3.0 <3.0 NA NA NA NA NA NA NA N																											<200 <6.0
Barium G000 2000 699.00 224 243 301 302 388 216 221 <200 <200 287 NA NA NA NA NA NA NA N		0					10.0										1				1						
Beryllium		6000																									R <3.0 <200
Cadmium		1								1										1							<1.0
Calcium NLE NLE 45400.00 ND ND ND ND ND ND 140,000 61,200 63,000 23,400 21,900 109,000 NA NA NA NA NA NA NA		1																									R <3.0
Chromium 70 100 191.00 ND ND ND ND ND ND ND		· ·	-																								49,200
Copper 1300 1300 65.60 ND ND 1.16 ER ND C10									- ,		,		,														<10
From 300 NLE 431000 ND ND ND ND ND ND ND																											R <10
Lead 5 15 22.70 ND 3.68 ER ND 3.37 ER <3.0 <3.0 <3.0 <3.0 NA																											8,650
Magnesium NLE NLE 62700 ND ND ND ND 20,600 12,000 12,300 7,240 6,850 18,800 NA									_			- / -	/	,											,		<3.0
Manganese 50 NLE 331 ND ND ND ND 143 66.1 65.1 20.6 18.7 100 NA NA </td <td></td> <td>NLE</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>7 240</td> <td></td> <td></td> <td></td> <td><5000</td>		NLE										7 240															<5000
Mercury 2 2 0.26 0.14 ER 0.15 ER ND ND NA <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 <0.20 NA NA NA NA NA NA NA N									,	,	,		-,	,										,	0,000		265
Nickel 100 NLE 187 77.8 83.3 82.2 82.3 117 66.6 68.7 40.1 37.5 140 NA	-																							7			NA
Potassium NLE NLE 13700 ND ND ND ND 15,100 <10000 <10000 <10000 <10000 <12,400 NA NA <td>·</td> <td>100</td> <td></td> <td>R <10</td>	·	100																									R <10
Selenium 40 50 29.60 NR NR ND ND <10 <10 <10 <10 <10 <10 <10 NA																											<10000
Silver 40 NLE ND ND ND ND ND ND <10 <10 <10 <10 <10 <10 NA									,																- /		<10
																											<10
104,015 11 MA 11	Sodium	50000	NLE	21500	ND	ND	ND	ND	51,900	32,800	33,800	21,900	20,800	48,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	4,510 ER	15,400	ND	<10000
Thallium 2 2 2 5.50 ND									- /	- /	/	, , , , ,	- /	- /													<2.0

*TICs - Tentatively identified compounds, cannot exceed 500 μ g/L for VOCs and SVOCs. No individual compound can exceed 100 μ g/L.

NJDEP GWQS = Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 22, 2010) USEPA MCL = U.S.Environmental Protection Agency Maximum Contaminant Level

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< = Analyte does not exceed the detection limit shown

reporting limit (RL)

NA = Not analyzed

ND = Not detected

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DUP = field duplicate sample

Table 2 **Historical Groundwater Analytical Results** Site FTMM-03 Fort Monmouth, New Jersey

			Weston 1995		M3MW05									M3MW06										M3MW07		
Round No.	NJDEP	USEPA	Background	LF56	LF57	LF58	44	45	46	47	48	49	50	51	LF52	LF53	LF54	LF55	LF56	LF57	LF58	40	41	42	43	44
Date Collected	GWQS	MCL	(Main Post)	3/10/2011	5/16/2011	8/4/2011	3/26/2008	6/24/2008	9/9/2008	12/31/2008	2/27/2009	6/13/2009	9/9/2009	12/2/2009	3/11/2010	6/18/2010	9/7/2010	12/20/2010	3/10/2011	5/19/2011	8/5/2011	3/26/2008	6/24/2008	9/9/2008	12/31/2008	2/27/2009
ANALYTE/Lab ID				11099.09	1121105	1132507	80097.06	80209.06	80325.06	80485.06	90080.06	90236.06	90372.06	90466.06	10086.06	10273.06	10377.06	10565.05	11099.07	1121506	1132605	80097.07	80209.07	80325.07	80485.07	90080.07
Volatile Organic Compounds (µg/L)																										
1,2-Dichlorobenzene	600	600	-	< 0.13	< 0.13	0.43 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	< 0.13	< 0.13	< 0.13	< 0.18	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	600	NLE	-	< 0.16	< 0.16	< 0.29	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	< 0.16	< 0.16	< 0.16	< 0.29	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	75	75	-	< 0.15	< 0.15	0.97 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	< 0.15	< 0.15	< 0.15	< 0.26	ND	ND	ND	ND	ND
2-Butanone	300	NLE	-	< 0.22	< 0.22	<2.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	< 0.22	< 0.22	< 0.22	<2.9	ND	ND	ND	ND	ND
Acetone	6000	NLE	-	< 0.32	< 0.32	<7.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	< 0.32	< 0.32	< 0.32	<7.6	ND	ND	ND	ND	ND
Benzene	1	5	-	< 0.12	< 0.12	0.3 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	< 0.12	< 0.12	< 0.12	< 0.22	ND	0.19 J	0.22 J	ND	0.35 J
Carbon Disulfide	700	NLE	-	< 0.12	< 0.12	< 0.18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	< 0.12	< 0.12	< 0.12	< 0.18	ND	ND	ND	ND	ND
Chlorobenzene	50	100	-	0.75	0.46 J	6.4	0.29 J	0.59 J	0.9 J	ND	0.8 J	ND	1.12	0.63	ND	ND	ND	< 0.12	< 0.12	< 0.12	0.33 J	ND	ND	ND	ND	ND
Chloroethane	5	NLE	-	< 0.32	< 0.32	< 0.37	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	< 0.32	< 0.32	< 0.32	< 0.37	ND	ND	ND	ND	ND
Cyclohexane	100	NLE	-	NA	NA	< 0.29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.29	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	70	70	-	< 0.12	< 0.12	< 0.22	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	< 0.12	< 0.12	< 0.12	< 0.22	33.77	21.9 3	28.31	47.87	72.51
Isopropylbenzene	700	NLE	-	NA	NA	< 0.19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.19	NA	NA	NA	NA	NA
m+p-xylenes	100	NLE	-	< 0.3	< 0.3	< 0.32	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	< 0.3	< 0.3	< 0.3	< 0.32	ND	ND	ND	ND	ND
Methylcyclohexane	NLE	NLE	-	NA	NA	<0.18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.18	NA	NA	NA	NA	NA
o- xylene	100	NLE	-	< 0.14	< 0.14	< 0.17	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	< 0.14	< 0.14	< 0.14	< 0.17	ND	ND	ND	ND	ND
tert -Butyl alcohol	100	NLE	-	<1.64	<1.64	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.64	<1.64	<1.64	NA	ND	6.16 J	14.19	ND	ND
Toluene	600	1000	-	< 0.12	< 0.12	< 0.15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	< 0.12	< 0.12	< 0.12	< 0.15	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	100	100	-	< 0.14	< 0.14	< 0.31	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	< 0.14	< 0.14	< 0.14	< 0.31	0.34 J	0.32 J	0.53 J	ND	0.7 J
Vinyl chloride	1	2	-	< 0.22	< 0.22	< 0.27	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	< 0.22	< 0.22	< 0.22	< 0.27	10.69	6.45	10.92	29.6	35.77
Xylenes (Total)	1000	10,000	-	ND	ND	< 0.17	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	< 0.17	ND	ND	ND	ND	ND
TICs*	500	NLE	-	ND	ND	29.1 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	ND	ND	ND	ND	ND
Metals (μg/L)	1			# C #						1						T I										111
Aluminum	200	NLE	121000	567	568	<200	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	<200	<200	472	1,150	NA	NA	NA	NA	NA
Antimony	6	6	20.70	<6.0	<6.0	<6.0	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	10.9	<6.0	<6.0	8.6	<6.0	NA	NA	NA	NA	NA
Arsenic	3	10	89.30	<3.0	<3.0	<3.0	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	2.17 ER	<3.0	<3.0	<3.0	4	NA	NA	NA	NA	NA
Barium	6000	2000	699.00	<200	<200	440	NA	NA	NA	NA	NA	NA	NA	NA	11.8	11.9	10.6	<200	<200	<200	<200	NA	NA	NA	NA	NA
Beryllium	1	4	2.10	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA
Cadmium	4 NLE	5 NLE	9.50	<3.0	<3.0	<3.0	NA NA	NA NA	NA	NA	NA NA	NA	NA	NA	ND	ND	0.575 ER	<3.0	<3.0	<3.0	<3.0	NA	NA	NA	NA	NA
Calcium	NLE 70	NLE 100	45400.00	30,200	36,500	92,800	NA NA	NA NA	NA	NA	NA NA	NA	NA	NA	ND 2.71 ED	8,670	ND	86,900	19,800	63,100	32,500	NA	NA	NA	NA	NA
Chromium	70	100	191.00	<10	<10	<10	NA NA	NA NA	NA	NA NA	NA NA	NA NA	NA NA	NA NA	2.71 ER	1.5 ER	ND	<10	<10	<10	17.8	NA NA	NA NA	NA NA	NA	NA NA
Copper	1300 300	1300	65.60	<10 15,900	<10	<10 62,300	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	ND 620 ED	1 ER 1 130 ER	1.88 ER ND	<10 369	<10	<10	<10 28,800	NA NA	NA NA	NA NA	NA NA	NA NA
Iron Lead	5	NLE 15	431000 22.70	<3.0	31,700	<3.0	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	639 ER ND	ND ER	3.66 ER	<3.0	792 <3.0	4,290	6.5	NA NA	NA NA	NA NA	NA NA	
	NLE	NLE	62700	<5000	6.3 <5000	<3.0 11,900	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	2,620	ND 2,440	3.00 ER ND	7,930	<5000	4 8,430	7,110	NA NA	NA NA	NA NA	NA NA	NA NA
Magnesium Manganese	50	NLE NLE	331	<5000 127	183	432	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	36.2	36.6	ND ND	42.8	68.9	222	259	NA NA	NA NA	NA NA	NA NA	NA NA
Manganese Mercury	30	nle 2	0.26	<0.20	<0.20	<0.20	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	36.2 ND	0.14 ER	ND ND	42.8 NA	<0.20	<0.20	<0.20	NA NA	NA NA	NA NA	NA NA	NA NA
Nickel	100	NLE	187	<0.20	<0.20	<0.20	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	2.44 ER	0.14 ER 2.22 ER	4.58 ER	15.8	<0.20	15.1	<10	NA NA	NA NA	NA NA	NA NA	NA NA
Potassium	NLE	NLE	137000	<10000	<10000	<10000	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	4,970	4.400	4.38 ER ND	<10000	<10000	<10000	<10000	NA NA	NA NA	NA NA	NA NA	NA NA
Selenium	40	50	29.60	<10000	<10000	<10000	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	4,970 NR	4,400 NR	ND ND	<10000	<10000	<10000	<10000	NA NA	NA NA	NA NA	NA NA	NA NA
Silver	40	NLE	29.00 ND	<10	<10	<10	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	1.08 ER	0.558 ER	ND	<10	<10	<10	<10	NA NA	NA NA	NA NA	NA NA	NA NA
Sodium	50000	NLE	21500	<10000	<10000	21,900	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	11.000 EK	11.900	ND	64,700	24.900	39,100	31,300	NA NA	NA NA	NA NA	NA NA	NA NA
Thallium	30000	NLE 2	5.50	<2.0	<2.0	<2.0	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	ND	ND	ND ND	<2.0	<2.0	<2.0	<2.0	NA NA	NA NA	NA NA	NA NA	NA NA
1 1141114111	4	4	3.30	<2.0	<2.U	<2.U	INA	INA	INA	INA	INA	INA	INA	INA	ND	ND	ND	<2.0	<2.0	<2.0	<2.U	INA	INA	INA	INA	INA

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Table 2 **Historical Groundwater Analytical Results** Site FTMM-03 Fort Monmouth, New Jersey

			Weston 1995					M3N	IW07							M3MW	07A						M3N	1W08		
Round No.	NJDEP	USEPA	Background	45	46	47	LF48	LF49	LF50	LF51	LF52	LF53	LF54	1	LF2	LF2	LF3	LF4	LF5	39	40	41	42	43	44	45
Date Collected	GWQS	MCL	(Main Post)	6/13/2009	9/9/2009	12/2/2009	3/16/2010	6/18/2010	9/7/2010	12/21/2010	3/10/2011	5/19/2011	8/5/2011	8/20/2010	12/21/2010	12/21/2010	3/10/2011	5/19/2011	8/5/2011	3/26/2008	6/24/2008	9/9/2008	12/31/2008	2/27/2009	6/13/2009	9/9/2009
ANALYTE/Lab ID				90236.07	90372.07	90466.07	10091.08	10273.07	10377.11	10571.06	11099.05	1121511	1132611	10355.05	10571.04	10571.03	11099.06	1121510	1132608	80097.08	80209.08	80325.08	80485.08	90080.08	90236.08	90372.08
Volatile Organic Compounds (µg/L)																										
1,2-Dichlorobenzene	600	600	-	ND	ND	ND	ND	ND	ND	< 0.13	< 0.13	< 0.13	< 0.18	ND	< 0.13	< 0.13	< 0.13	< 0.13	< 0.18	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	600	NLE	-	ND	ND	ND	ND	ND	ND	< 0.16	< 0.16	< 0.16	< 0.29	ND	< 0.16	< 0.16	< 0.16	< 0.16	< 0.29	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	75	75	-	ND	ND	ND	ND	ND	ND	< 0.15	< 0.15	< 0.15	< 0.26	ND	< 0.15	< 0.15	0.2 J	0.27 J	< 0.26	ND	ND	ND	0.63 J	0.38 J	0.54 J	J 0.26 J
2-Butanone	300	NLE	-	ND	ND	ND	ND	ND	ND	< 0.22	< 0.22	< 0.22	<2.9	ND	< 0.22	< 0.22	< 0.22	< 0.22	<2.9	ND	ND	ND	ND	ND	ND	ND
Acetone	6000	NLE	-	ND	ND	ND	ND	ND	ND	< 0.32	< 0.32	< 0.32	<7.6	ND	< 0.32	< 0.32	< 0.32	< 0.32	<7.6	ND	ND	ND	ND	ND	ND	ND
Benzene	1	5	-	0.21 J	0.19	J ND	ND	ND	ND	< 0.12	< 0.12	< 0.12	0.35 J	ND	< 0.12	< 0.12	< 0.12	< 0.12	< 0.22	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	700	NLE	-	ND	ND	ND	ND	ND	ND	< 0.12	< 0.12	< 0.12	< 0.18	ND	< 0.12	< 0.12	< 0.12	< 0.12	< 0.18	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	50	100	-	ND	ND	ND	ND	ND	ND	< 0.12	< 0.12	< 0.12	< 0.22	ND	0.5 J	0.52	0.62	0.72	0.31 J	0.25 J	0.22 J	0.4 J	0.97 J	1.08 J	1.06 J	J 0.5 J
Chloroethane	5	NLE	-	ND	ND	ND	ND	ND	ND	< 0.32	< 0.32	< 0.32	< 0.37	ND	< 0.32	< 0.32	< 0.32	< 0.32	< 0.37	ND	ND	ND	ND	ND	ND	ND
Cyclohexane	100	NLE	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.29	NA	NA	NA	NA	NA	<0.29	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	70	70	-	36.09	22.28	5.98	15.35	11.18	8.82	5.10	< 0.12	2.12	45.1	ND	<0.12	<0.12	<0.12	<0.12	<0.22	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	700	NLE	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.19	NA	NA	NA	NA	NA	<0.19	NA	NA	NA	NA	NA	NA	NA
m+p-xylenes	100	NLE	-	ND	ND	ND	ND	ND	ND	<0.3	<0.3	<0.3	< 0.32	ND	<0.3	<0.3	<0.3	<0.3	<0.32	ND	ND	ND	ND	ND	ND	ND
Methylcyclohexane	NLE	NLE	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.18	NA	NA	NA	NA	NA	<0.18	NA	NA	NA	NA	NA	NA	NA
o- xylene	100	NLE	-	ND	ND	ND	ND	ND	ND	<0.14	< 0.14	<0.14	<0.17	ND	<0.14	< 0.14	<0.14	<0.14	<0.17	ND	ND	ND	ND	ND	ND	ND
tert -Butyl alcohol	100	NLE	-	ND	ND	ND	ND	ND	ND	<1.64	<1.64	<1.64	NA 0.15	ND	<1.64	<1.64	<1.64	<1.64	NA 0.15	ND	ND	ND	ND	ND	ND	ND
Toluene	600	1000	-	ND	ND	ND	ND	ND	ND	<0.12	<0.12	<0.12	<0.15	ND	<0.12	<0.12	<0.12	<0.12	<0.15	ND	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	100	100	-	0.34 J	0.34 J	I ND	0.23 J	ND	ND	<0.14	<0.14	<0.14	0.64 J	ND	<0.14	<0.14	<0.14	<0.14	<0.31	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	1000	2	-	15.04	11.57	1.98	11.52	10.21	7.98	2.19	<0.22	1.45	24.3	ND ND	<0.22	<0.22	<0.22	<0.22	<0.27	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total) TICs*	1000 500	10,000 NLE	-	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND	ND	ND ND	<0.17	ND ND	ND 4	ND 3	ND	ND ND	<0.17	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND
Metals (µg/L)	300	NLE	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	ND	4	3	ND	ND	0	ND	ND	ND	ND	ND	ND	ND
Aluminum	200	NLE	121000	NA	NA	NA	ND	ND	ND	<200	<200	<200	<200	ND	<200	<200	<200	<200	<200	NA	NA	NA	NA	NA	NA	NA
Antimony	6	6	20.70	NA NA	NA NA	NA NA	10.5 ER		17.8	<6.0	<6.0	<6.0	<6.0	12.9	<6.0	<6.0	<6.0	<6.0	<6.0	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA
Arsenic	3	10	89.30	NA NA	NA NA	NA NA	ND ER	ND ER	0.72 ER	<3.0	<3.0	<3.0	<3.0	1.82 ER	<3.0	3.1	<3.0	<3.0	<3.0	NA NA	NA	NA	NA	NA NA	NA NA	NA NA
Barium	6000	2000	699.00	NA NA	NA	NA	116	145	150	441	<200	<200	<200	96.3	555	564	310	231	<200	NA NA	NA	NA	NA	NA NA	NA NA	NA NA
Beryllium	1	4	2.10	NA NA	NA NA	NA NA	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	ND	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA NA	NA	NA	NA NA	NA NA	NA NA
Cadmium	4	5	9.50	NA	NA	NA	ND	0.616 ER	ND	3.9	<3.0	<3.0	11.2	0.595 ER	<3.0	<3.0	<3.0	<3.0	<3.0	NA	NA	NA	NA	NA	NA	NA
Calcium	NLE	NLE	45400.00	NA	NA	NA	ND	ND ER	ND	346,000	172,000	142,000	106,000	ND ER	354,000	358,000	207,000	160,000	121,000	NA	NA	NA	NA	NA	NA	NA
Chromium	70	100	191.00	NA	NA	NA	ND	ND	ND	<10	<10	<10	<10	ND	<10	<10	<10	<10	<10	NA	NA	NA	NA	NA	NA	NA
Copper	1300	1300	65.60	NA	NA	NA	ND	2.38 ER	1.19 ER	<10	10.7	<10	35.8	1.89 ER	<10	<10	<10	<10	<10	NA	NA	NA	NA	NA	NA	NA
Iron	300	NLE	431000	NA	NA	NA	ND	ND	ND	10,200	4,820	8,250	12,900	ND	45,000	48.900	42,300	32,200	35,200	NA	NA	NA	NA	NA	NA	NA
Lead	5	15	22.70	NA	NA	NA	ND	3.34 ER	ND	<3.0	<3.0	<3.0	<3.0	ND	<3.0	<3.0	<3.0	<3.0	<3.0	NA	NA	NA	NA	NA	NA	NA
Magnesium	NLE	NLE	62700	NA	NA	NA	ND	ND	ND	122,000	50,100	47,100	37,600	ND	66,400	70,700	36,100	24,100	22,100	NA	NA	NA	NA	NA	NA	NA
Manganese	50	NLE	331	NA	NA	NA	ND	ND	ND	2,290	1,740	1,300	950	ND	1,900	1,880	1,400	1,120	826	NA	NA	NA	NA	NA	NA	NA
Mercury	2	2	0.26	NA	NA	NA	ND	0.13 ER	0.07 ER	NA	< 0.20	< 0.20	0.78	ND	NA	NA	< 0.20	< 0.20	< 0.20	NA	NA	NA	NA	NA	NA	NA
Nickel	100	NLE	187	NA	NA	NA	1.24 ER	2.26 ER	1.52 ER	<10	26.6	<10	16.3	1.26 ER	<10	<10	<10	<10	<10	NA	NA	NA	NA	NA	NA	NA
Potassium	NLE	NLE	137000	NA	NA	NA	ND	ND	ND	34,600	16,800	19,900	19,900	ND	19,900	20,600	13,600	10,400	11,500	NA	NA	NA	NA	NA	NA	NA
Selenium	40	50	29.60	NA	NA	NA	NR	NR	ND	<10	<10	<10	<10	NR	<10	<10	<10	<10	<10	NA	NA	NA	NA	NA	NA	NA
Silver	40	NLE	ND	NA	NA	NA	ND	ND	ND	<10	<10	<10	<10	ND	<10	<10	<10	<10	<10	NA	NA	NA	NA	NA	NA	NA
Sodium	50000	NLE	21500	NA	NA	NA	ND	ND	ND	900,000	278,000	298,000	235,000	ND	426,000	42,900	160,000	9,100	86,600	NA	NA	NA	NA	NA	NA	NA
Thallium	2	2	5.50	NA	NA	NA	ND	ND	ND	<2.0	<2.0	<2.0	<2.0	ND	<2.0	<2.0	<2.0	<2.0	<2.0	NA	NA	NA	NA	NA	NA	NA

*TICs - Tentatively identified compounds, cannot exceed 500 μ g/L for VOCs and SVOCs. No individual compound can exceed 100 μ g/L.

NJDEP GWQS = Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 22, 2010) USEPA MCL = U.S.Environmental Protection Agency Maximum Contaminant Level

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DUP = field duplicate sample

Table 2 **Historical Groundwater Analytical Results** Site FTMM-03 Fort Monmouth, New Jersey

			Weston 1995						мзму	V08											M3MW09						
Round No.	NJDEP	USEPA	Background	46	LF47	LF48	LF49	LF50	LF50 Dup	LF51	LF52	LF52 Dup	LF53	LF53 Dup	39	40	41	42	43	44	45	46	LF47	LF48	LF49	LF50	LF51
Date Collected	GWQS	MCL	(Main Post)	12/2/2009	3/11/2010	6/18/2010	9/7/2010	12/20/2010	12/20/2010	3/14/2011	5/19/2011	5/19/2011	8/5/2011	8/5/2011	3/26/2008	6/24/2008	9/9/2008	12/31/2008	2/27/2009	6/13/2009	9/9/2009	12/2/2009	3/16/2010	6/24/2010	9/7/2010	12/20/2010	3/14/2011
ANALYTE/Lab ID				90466.08	10086.05	10273.05	10377.05	10565.04	10565.03	11105.04	1121504	1121503	1132604		80097.09	80209.09	80325.09	80485.09	90080.09	90236.09	90372.09	90466.09	10091.07	10285.07	10377.1	10565.09	11105.05
Volatile Organic Compounds (µg/L)															,												
1,2-Dichlorobenzene	600	600	-	ND	ND	ND	ND	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.18	< 0.18	0.64 J	0.72	J 0.46 J	0.45 J	0.47 J	0.59 J	0.71	0.71	0.54	0.7	0.51	0.61	0.4 J
1,3-Dichlorobenzene	600	NLE	-	ND	ND	ND	ND	< 0.16	< 0.16	< 0.16	< 0.16	< 0.16	< 0.29	< 0.29	ND	0.26	J ND	ND	ND	ND	ND	ND	ND	ND	ND	< 0.16	0.16 J
1,4-Dichlorobenzene	75	75	-	0.65	0.66	0.57	ND	0.47 J	< 0.15	0.49 J	0.54	0.55	< 0.26	< 0.26	ND	0.26	J ND	ND	ND	ND	0.2 J	ND	ND	ND	ND	1.42	1.2
2-Butanone	300	NLE	-	ND	ND	ND	ND	< 0.22	< 0.22	< 0.22	< 0.22	< 0.22	<2.9	<2.9	1.47 J	1.83	J 1.28 J	1.02 J	0.74 J	1.23 J	1.53	1.86	1.59	1.9	1.24	< 0.22	< 0.22
Acetone	6000	NLE	-	ND	ND	ND	ND	< 0.32	< 0.32	< 0.32	< 0.32	< 0.32	<7.6	<7.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	< 0.32	< 0.32
Benzene	1	5	-	ND	ND	ND	ND	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.22	< 0.22	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	< 0.12	< 0.12
Carbon Disulfide	700	NLE	-	ND	ND	ND	ND	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.18	< 0.18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	< 0.12	< 0.12
Chlorobenzene	50	100	-	0.82	1.4	1.31	ND	0.82	< 0.12	0.92	0.96	0.97	0.51 J	0.49 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	10.79	7.89
Chloroethane	5	NLE	-	ND	ND	ND	ND	< 0.32	< 0.32	< 0.32	< 0.32	< 0.32	< 0.37	< 0.37	11.88	11.81	11.25	10.82	10.05	10.01	12.38	10.78	9.08	11.62	8.04	< 0.32	< 0.32
Cyclohexane	100	NLE	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.29	< 0.29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	70	70	-	ND	ND	ND	ND	<0.12	<0.12	<0.12	< 0.12	<0.12	<0.22	< 0.22	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.12	<0.12
Isopropylbenzene	700	NLE	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.19	< 0.19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m+p-xylenes	100	NLE	-	ND	ND	ND	ND	<0.3	<0.3	<0.3	<0.3	<0.3	<0.32	< 0.32	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.3	<0.3
Methylcyclohexane	NLE	NLE	-	NA	NA	NA	NA	NA 0.14	NA 0.14	NA 0.14	NA 0.14	NA O 14	<0.18	<0.18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA 0.14
o-xylene	100	NLE	-	ND	ND	ND	ND	<0.14	<0.14	<0.14	<0.14	<0.14	<0.17	<0.17	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.14	<0.14
tert -Butyl alcohol	100	NLE	-	ND	ND	ND	ND	<1.64	<1.64	<1.64	<1.64	<1.64	NA O 15	NA O 15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND 0.20 I	ND ND	<1.64	<1.64
Toluene trans - 1,2-Dichloroethene	600	1000	-	ND	ND	ND	ND	<0.12	<0.12	<0.12	<0.12	<0.12	<0.15	<0.15	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.38 J	ND ND	<0.12	<0.12
	100	100	-	ND ND	ND ND	ND ND	ND ND	<0.14	<0.14	<0.14	<0.14	<0.14	<0.31	<0.31	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	<0.14	<0.14
Vinyl chloride Xylenes (Total)	1000	10,000	-	ND ND	ND ND	ND ND	ND ND	ND	<0.22 ND	ND	<0.22 ND	<0.22 ND	<0.27	<0.27	ND ND	ND ND	0.18 J	ND ND	ND ND	ND ND	ND	ND ND	ND ND	ND	ND ND	<0.22 ND	ND
TICs*	500	NLE	-	ND ND	ND ND	ND ND	ND	ND ND	ND ND	ND	ND ND	ND ND	0.17	0.17	4	A A	69	ND	ND	/ND	4	A ND	1ND	ND	ND 4	ND 6	3
Metals (µg/L)	300	NEE	-	ND	ND	ND	ND	ND	ND	ND	ND	ND		0	4	-	0,7	ND	ND	7	7	4	4	0	7		
Aluminum	200	NLE	121000	NA	ND	ND	ND	<200	<200	<200	301	205	<200	<200	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	324	864
Antimony	6	6	20.70	NA	ND	13.8	16.9	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	NA	NA	NA	NA	NA	NA	NA	NA	ND	9.34	10.6	<6.0	<6.0
Arsenic	3	10	89.30	NA	ND	ND	4.31 ER	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	0.67 ER	<3.0	<3.0
Barium	6000	2000	699.00	NA	185	210	485	608	592	210	310	286	252	252	NA	NA	NA	NA	NA	NA	NA	NA	281	280	307	317	236
Bervllium	1	4	2.10	NA	ND	0.042 ER	ND	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	ND	0.134 ER	ND	<1.0	<1.0
Cadmium	4	5	9.50	NA	0.588 ER	1.51 ER	3.68	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	NA	NA	NA	NA	NA	NA	NA	NA	1.54 ER	4.28	1.9 ER	<3.0	<3.0
Calcium	NLE	NLE	45400.00	NA	ND	ND	ND	155,000	151,000	63,600	61,500	62,100	64,200	63,400	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	51,700	37,200
Chromium	70	100	191.00	NA	ND	ND	ND	<10	<10	<10	<10	<10	<10	<10	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	<10	<10
Copper	1300	1300	65.60	NA	ND	2.69 ER	2.64 ER	<10	<10	<10	<10	<10	<10	<10	NA	NA	NA	NA	NA	NA	NA	NA	11	9.77	3.25 ER	27.0	21.4
Iron	300	NLE	431000	NA	ND	ND	ND	83,400	81,200	40,400	73,600	64,100	60,300	62,800	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	61,500	51,300
Lead	5	15	22.70	NA	ND	4.43 ER	8.37	<3.0	<3.0	<3.0	4.5	<3.0	<3.0	<3.0	NA	NA	NA	NA	NA	NA	NA	NA	2.56 ER	4.08 ER	3.29 ER	<3.0	4.4
Magnesium	NLE	NLE	62700	NA	ND	ND	ND	73,900	72,200	19,800	19,400	20,100	17,600	17,800	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	8,920	7,000
Manganese	50	NLE	331	NA	ND	ND	ND	1,650	1,600	682	763	758	813	825	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	700	464
Mercury	2	2	0.26	NA	ND	0.14 ER	ND	NA	NA	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	NA	< 0.20
Nickel	100	NLE	187	NA	1.55 ER	ND	3.08 ER	<10	<10	<10	<10	<10	<10	<10	NA	NA	NA	NA	NA	NA	NA	NA	4.66 ER	0.889 ER	1.42 ER	10.7	<10
Potassium	NLE	NLE	137000	NA	ND	ND	ND	19,100	19,000	<10000	<10000	<10000	<10000	<10000	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	<10000	<10000
Selenium	40	50	29.60	NA	NR	NR	ND	<10	<10	<10	<10	<10	<10	<10	NA	NA	NA	NA	NA	NA	NA	NA	NR	NR	ND	<10	<10
Silver	40	NLE	ND	NA	ND	ND	ND	<10	<10	<10	<10	<10	<10	<10	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	<10	<10
Sodium	50000	NLE	21500	NA	ND	ND	ND	530,000	526,000	84500	78,600	82,900	44800	45,200	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	17,300	19,800
Thallium	2	2	5.50	NA	ND	ND	ND	<2.0	<2.0	<2.0	< 2.0	<2.0	<2.0	<2.0	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	<2.0	<2.0

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Table 2 **Historical Groundwater Analytical Results** Site FTMM-03 Fort Monmouth, New Jersey

		riann i	Weston 1995		M3MW09	ı								M3MW10)									M3MW11		
Round No.	NJDEP GWOS	USEPA	Background	LF51 Dup	LF52	LF53	39	40	41	42	43	44	45	46	LF47	LF48	LF49	LF50	LF51	LF52	LF53	39	40	41	42	43
Date Collected	GWQS	MCL	(Main Post)	3/14/2011	5/19/2011	8/5/2011	3/26/2008	6/24/2008	9/9/2008	12/31/2008	2/27/2009	6/13/2009	9/9/2009	12/2/2009	3/16/2010	6/24/2010	9/7/2010	12/20/2010	3/14/2011	5/19/2011	8/5/2011	3/26/2008	6/24/2008	9/9/2008	12/31/2008	2/27/2009
ANALYTE/Lab ID				11105.03	1121507	1132610	80097.10	80209.10	80325.10	80485.10	90080.10	90236.10	90372.10	90466.10	10091.05	10285.05	10377.08	10565.07	11105.06	1121507.00	1132609	80097.11	80209.11	80325.11	80485.11	90080.11
Volatile Organic Compounds (µg/L)																										
1,2-Dichlorobenzene	600	600	-	0.36 J	< 0.13	0.65 J	0.4 J	ND	0.45 J	0.42 J	0.42 J	ND	0.35 J	0.43 J	0.43 J	0.46 J	0.41 J	0.48 J	0.41 J	0.32 J	0.38	J ND	ND	ND	ND	ND
1,3-Dichlorobenzene	600	NLE	-	< 0.16	< 0.16	< 0.29	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	< 0.16	< 0.16	< 0.16	< 0.29	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	75	75	-	1.07	< 0.15	1.7	1.14 J	0.88 J	1.08 J	1.29 J	1 J	0.72 J	0.98	1.29	1.25	1.28	1.23	1.15	1.06	0.88	1.1	0.61 J	1.17 J	1.34 J	0.67 J	J 0.72 J
2-Butanone	300	NLE	-	< 0.22	< 0.22	<2.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	< 0.22	< 0.22	< 0.22	<2.9	ND	ND	ND	ND	ND
Acetone	6000	NLE	-	< 0.32	< 0.32	<7.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	< 0.32	< 0.32	< 0.32	<7.6	ND	ND	ND	ND	ND
Benzene	1	5	-	< 0.12	< 0.12	< 0.22	0.19 J	ND	ND	ND	ND	ND	ND	ND	0.21 J	ND	ND	< 0.12	< 0.12	< 0.12	< 0.22	ND	ND	ND	ND	ND
Carbon Disulfide	700	NLE	-	< 0.12	< 0.12	< 0.18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	< 0.12	< 0.12	< 0.12	< 0.18	ND	ND	ND	ND	ND
Chlorobenzene	50	100	-	7.27	0.89	10.7	10.62	7.98	6.7	12	10.98	6.11	9.25	11.03	10.62	11.1	10.37	11.66	10.34	8.2	9.8	2.03	3.09	3.73	1.34 J	J 2.24
Chloroethane	5	NLE	-	< 0.32	< 0.32	< 0.37	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	< 0.32	< 0.32	< 0.32	< 0.37	ND	ND	ND	ND	ND
Cyclohexane	100	NLE	-	NA	NA	< 0.29	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.61	J NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	70	70	-	< 0.12	< 0.12	< 0.22	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	< 0.12	< 0.12	< 0.12	< 0.22	ND	ND	ND	ND	ND
Isopropylbenzene	700	NLE	-	NA	NA	< 0.19	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.19	NA	NA	NA	NA	NA
m+p-xylenes	100	NLE	-	< 0.3	< 0.3	< 0.32	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	< 0.3	< 0.3	< 0.3	< 0.32	ND	ND	ND	ND	ND
Methylcyclohexane	NLE	NLE	-	NA	NA	< 0.18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.18	NA	NA	NA	NA	NA
o-xylene	100	NLE	-	< 0.14	< 0.14	< 0.17	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	< 0.14	< 0.14	< 0.14	< 0.17	ND	ND	ND	ND	ND
tert -Butyl alcohol	100	NLE	-	<1.64	<1.64	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<1.64	<1.64	<1.64	NA	ND	ND	ND	ND	ND
Toluene	600	1000	-	< 0.12	< 0.12	< 0.15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	< 0.12	< 0.12	< 0.12	< 0.15	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	100	100	-	< 0.14	< 0.14	< 0.31	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	< 0.14	< 0.14	< 0.14	< 0.31	ND	ND	ND	ND	ND
Vinyl chloride	1	2	-	< 0.22	< 0.22	< 0.27	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	< 0.22	< 0.22	< 0.22	< 0.27	ND	ND	ND	ND	ND
Xylenes (Total)	1000	10,000	-	ND	ND	< 0.17	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.16 J	0.2 J	ND	ND	ND	< 0.17	ND	ND	ND	ND	ND
TICs*	500	NLE	-	ND	ND	5.1 J	38	14	6	18	24	15	22	23	24	42	ND	44	26	14	22.4	4	4	40	ND	ND
Metals (μg/L)																										
Aluminum	200	NLE	121000	742	940	<200	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	<200	<200	2,080	1,050	NA	NA	NA	NA	NA
Antimony	6	6	20.70	<6.0	< 6.0	<6.0	NA	NA	NA	NA	NA	NA	NA	NA	ND	13.7	16.9	<6.0	<6.0	<6.0	<6.0	NA	NA	NA	NA	NA
Arsenic	3	10	89.30	<3.0	<3.0	<3.0	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	1.04 ER	<3.0	<3.0	6.5	3.3	NA	NA	NA	NA	NA
Barium	6000	2000	699.00	237	305	336	NA	NA	NA	NA	NA	NA	NA	NA	242	527	626	769	660	736	681	NA	NA	NA	NA	NA
Beryllium	1	4	2.10	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	ND	0.125 ER	ND	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA
Cadmium	4	5	9.50	<3.0	<3.0	<3.0	NA	NA	NA	NA	NA	NA	NA	NA	ND	3.56	2.01	<3.0	<3.0	<3.0	<3.0	NA	NA	NA	NA	NA
Calcium	NLE	NLE	45400.00	37,800	41,700	50,600	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	126,000	103,000	104,000	99,600	NA	NA	NA	NA	NA
Chromium	70	100	191.00	<10	<10	<10	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	<10	<10	13.9	10.9	NA	NA	NA	NA	NA
Copper	1300	1300	65.60	17.4	53.4	12.3	NA	NA	NA	NA	NA	NA	NA	NA	ND	4.49 ER	2.18 ER	<10	<10	19.1	<10	NA	NA	NA	NA	NA
Iron	300	NLE	431000	51,400	59,300	62,300	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	85,200	93,300	105,000	82,000	NA	NA	NA	NA	NA
Lead	5	15	22.70	3.6	8.4	3.4	NA	NA	NA	NA	NA	NA	NA	NA	ND	6.17	6.2	<3.0	<3.0	10.5	5.4	NA	NA	NA	NA	NA
Magnesium	NLE	NLE	62700	7,050	8,580	9,040	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	15,700	15,000	15,400	14,200	NA	NA	NA	NA	NA
Manganese	50	NLE	331	469	865	666	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	819	884	873	706	NA	NA	NA	NA	NA
Mercury	2	2	0.26	< 0.20	< 0.20	< 0.20	NA	NA	NA	NA	NA	NA	NA	NA	0.07 EF		ND	NA	< 0.20	< 0.20	< 0.20	NA	NA	NA	NA	NA
Nickel	100	NLE	187	<10	20.2	14.3	NA	NA	NA	NA	NA	NA	NA	NA	1.35 EF	R ND	0.952 ER	<10	<10	<10	<10	NA	NA	NA	NA	NA
Potassium	NLE	NLE	137000	<10000	<10000	<10000	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	11,200	<10000	10,500	10,800	NA	NA	NA	NA	NA
Selenium	40	50	29.60	<10	<10	<10	NA	NA	NA	NA	NA	NA	NA	NA	NR	NR	ND	<10	<10	<10	<10	NA	NA	NA	NA	NA
Silver	40	NLE	ND	<10	<10	<10	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	<10	<10	<10	<10	NA	NA	NA	NA	NA
Sodium	50000	NLE	21500	17,900	25,700	14,200	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	26,400	22,000	20,300	20,100	NA	NA	NA	NA	NA
Thallium	2	2	5.50	<2.0	<2.0	<2.0	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	<2.0	<2.0	<2.0	<2.0	NA	NA	NA	NA	NA

*TICs - Tentatively identified compounds, cannot exceed 500 μ g/L for VOCs and SVOCs. No individual compound can exceed 100 μ g/L.

NJDEP GWQS = Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 22, 2010) USEPA MCL = U.S.Environmental Protection Agency Maximum Contaminant Level

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reporting limit (RL)

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DUP = field duplicate sample

Table 2 **Historical Groundwater Analytical Results** Site FTMM-03 Fort Monmouth, New Jersey

			Weston 1995						M	3MW11									M3MW	12					M3MW13	
Round No.	NJDEP	USEPA	Background	44	45	46	LF47	LF47 Dup	LF48	LF48 Dup	LF49	LF50	LF51	LF52	LF53	LF1	LF1 Dup	LF2	LF 2 Dup	LF3	LF4	LF5	LF6	LF1	LF2	LF3
Date Collected	GWQS	MCL	(Main Post)	6/13/2009	9/9/2009	12/2/2009	3/16/2010	3/16/2010	6/24/2010	6/24/2010	9/7/2010	12/20/2010	3/14/2011	5/19/2011	8/5/2011	10/7/2010	10/7/2010	10/21/2010	10/21/2010	12/21/2010	3/14/2011	5/19/2011	8/5/2011	10/7/2010	10/21/2010	12/21/2010
ANALYTE/Lab ID				90236.11	90372.11	90466.11	10091.04	10091.03	10285.04	10285.03	10377.07	10565.06	11105.07	1121505	1132606	10432.04	10432.03	10452.04	10452.03	10571.05	11105.08	1121509	1132607	10432.06	10452.06	10571.08
Volatile Organic Compounds (µg/L)																										
1,2-Dichlorobenzene	600	600	-	ND	0.27 J	ND	ND	ND	ND	ND	ND	< 0.13	0.22 J	0.18 J	0.33 J	ND	ND	ND	ND	< 0.13	< 0.13	< 0.13	< 0.18	ND	0.41 J	0.48 J
1,3-Dichlorobenzene	600	NLE	-	ND	ND	ND	ND	ND	ND	ND	ND	< 0.16	< 0.16	< 0.16	< 0.29	ND	ND	ND	ND	< 0.16	< 0.16	< 0.16	< 0.29	ND	ND	< 0.16
1,4-Dichlorobenzene	75	75	-	0.39	J 0.86	1.31	0.54	0.54	0.67	0.6	0.78	0.70	0.65	0.5 J	1.5	ND	ND	ND	ND	< 0.15	< 0.15	< 0.15	< 0.26	1.73	1.82	2.06
2-Butanone	300	NLE	-	ND	ND	ND	ND	ND	ND	ND	ND	< 0.22	< 0.22	< 0.22	<2.9	ND	ND	ND	ND	< 0.22	< 0.22	< 0.22	<2.9	ND	ND	< 0.22
Acetone	6000	NLE	-	ND	ND	ND	ND	ND	ND	ND	ND	< 0.32	< 0.32	< 0.32	<7.6	ND	ND	ND	ND	< 0.32	< 0.32	< 0.32	<7.6	ND	ND	< 0.32
Benzene	1	5	-	ND	ND	ND	ND	ND	ND	ND	ND	< 0.12	< 0.12	< 0.12	< 0.22	ND	ND	ND	ND	< 0.12	< 0.12	< 0.12	< 0.22	ND	ND	< 0.12
Carbon Disulfide	700	NLE	-	ND	ND	ND	ND	ND	ND	ND	ND	< 0.12	< 0.12	< 0.12	< 0.18	ND	ND	ND	ND	< 0.12	< 0.12	< 0.12	< 0.18	ND	ND	< 0.12
Chlorobenzene	50	100	-	1.18	J 3.99	3.38	1.76	1.79	3.19	2.96	4.11	2.32	2.26	1.75	3.7	ND	ND	ND	ND	< 0.12	< 0.12	< 0.12	< 0.22	3.97	3.93	3.57
Chloroethane	5	NLE	-	ND	ND	ND	ND	ND	ND	ND	ND	< 0.32	< 0.32	< 0.32	< 0.37	ND	ND	ND	ND	< 0.32	< 0.32	< 0.32	< 0.37	ND	ND	< 0.32
Cyclohexane	100	NLE	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.29	NA	NA	NA	NA	NA	NA	NA	< 0.29	NA	NA	NA
cis-1,2-Dichloroethene	70	70	-	ND	ND	ND	ND	ND	ND	ND	ND	< 0.12	< 0.12	< 0.12	< 0.22	ND	ND	ND	ND	< 0.12	< 0.12	< 0.12	< 0.22	ND	ND	< 0.12
Isopropylbenzene	700	NLE	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.25 J	NA	NA	NA	NA	NA	NA	NA	< 0.19	NA	NA	NA
m+p-xylenes	100	NLE	-	ND	ND	ND	ND	ND	ND	ND	ND	< 0.3	< 0.3	< 0.3	< 0.32	ND	ND	ND	ND	< 0.3	< 0.3	< 0.3	< 0.32	ND	ND	< 0.3
Methylcyclohexane	NLE	NLE	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.18	NA	NA	NA	NA	NA	NA	NA	< 0.18	NA	NA	NA
o-xylene	100	NLE	-	ND	ND	ND	ND	ND	ND	ND	ND	< 0.14	< 0.14	< 0.14	< 0.17	ND	ND	ND	ND	< 0.14	< 0.14	< 0.14	< 0.17	ND	ND	< 0.14
tert -Butyl alcohol	100	NLE	-	ND	ND	ND	ND	ND	ND	ND	ND	<1.64	<1.64	<1.64	NA	ND	ND	ND	ND	<1.64	<1.64	<1.64	NA	ND	ND	<1.64
Toluene	600	1000	-	ND	0.21 J	ND	ND	ND	ND	ND	ND	< 0.12	< 0.12	< 0.12	< 0.15	ND	ND	ND	ND	< 0.12	< 0.12	< 0.12	< 0.15	ND	ND	< 0.12
trans-1,2-Dichloroethene	100	100	-	ND	ND	ND	ND	ND	ND	ND	ND	< 0.14	< 0.14	< 0.14	< 0.31	ND	ND	ND	ND	< 0.14	< 0.14	< 0.14	< 0.31	ND	ND	< 0.14
Vinyl chloride	1	2	-	ND	ND	ND	ND	ND	ND	ND	ND	< 0.22	< 0.22	< 0.22	< 0.27	ND	ND	ND	ND	< 0.22	< 0.22	< 0.22	< 0.27	ND	ND	< 0.22
Xylenes (Total)	1000	10,000	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	< 0.17	ND	ND	ND	ND	ND	ND	ND	< 0.17	ND	ND	ND
TICs*	500	NLE	-	ND	19	13	3	3	14	10	30	4	5	ND	6.7 J	ND	ND	ND	ND	ND	ND	ND	0	9	7	13
Metals (μg/L)	T	,				1		T									_		1	T						
Aluminum	200	NLE	121000	NA	NA	NA	ND	ND	ND	ND	ND	<200	<200	435	460	ND	ND	ND	ND	<200	<200	332	<200	ND	ND	<200
Antimony	6	6	20.70	NA	NA	NA	ND	ND	9.9 ER		16.4	<6.0	<6.0	<6.0	<6.0	ND	13.7	ND	ND	<6.0	<6.0	<6.0	<6.0	ND	7.23	<6.0
Arsenic	3	10	89.30	NA	NA	NA	ND	ND	ND	0.72 ER	0.87 ER	<3.0	<3.0	<3.0	<3.0	3.4	2.35 ER	2.25 ER	2.37 ER	<3.0	<3.0	<3.0	3.9	3.4	0.73 ER	<3.0
Barium	6000	2000	699.00	NA	NA	NA	169	141	189	184	201	338	312	276	352	75.6	73.2	74.7	74.4	<200	<200	<200	<200	620	593	673
Beryllium	1	4	2.10	NA	NA	NA	ND	ND	0.143 ER	0.117 EIG	ND	<1.0	<1.0	<1.0	<1.0	ND	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	ND	ND	<1.0
Cadmium	4	5	9.50	NA	NA	NA	ND	ND	2.32	2.78	0.752 ER	<3.0	<3.0	<3.0	5.3	0.797 El	10.500 ER	1.35 ER		<3.0	<3.0	<3.0	<3.0	1.37 ER	3.24	<3.0
Calcium	NLE 70	NLE 100	45400.00	NA	NA	NA	ND	ND	ND	ND	ND	162,000	123,000	112,000	114,000	ND ND	ND	ND	ND	25,100	23,900	23,600	23,100	ND	ND	93,300
Chromium	70	100	191.00	NA	NA	NA	ND	ND	ND	ND 4.21 ED	ND	<10	<10	<10	<10	ND ND	ND	ND	ND	<10	<10	<10	<10	ND	1.91 ER	<10
Copper	1300 300	1300	65.60	NA NA	NA NA	NA NA	6.73	8.25	4.58 ER	4.31 ER	1.3 ER	11.8	12.5	37.8	29.3	ND ND	ND	1.86 ER	1.65 ER	<10	<10	<10	<10	ND	5.16	<10
Iron		NLE 15	431000	NA NA	NA NA	NA NA	ND	ND ND	ND 3.41 FR	ND	ND ND	51,200	60,200	69,300	67,500	ND ND	ND	ND	ND	34,300	42,300	43,600	31,800	ND	ND	67,100 <3.0
Lead Magnesium	5 NLE	15 NLE	22.70 62700	NA NA	NA NA	NA NA	ND ND	ND ND	3.41 ER	3.08 ER ND	ND ND	<3.0 12.300	<3.0	10.000	10.900	ND ND	ND ND	ND ND	ND ND	<3.0 <5000	<3.0 <5000	3.5 <5000	<3.0 <5000	4.43 ER ND	ND ND	<3.0 10.500
Manganese	50				NA NA	NA NA	ND ND		ND ND	ND ND	ND ND	1,340	1,010	1,010	802	ND ND	ND ND	ND ND	ND ND	<3000	<5000 138	<5000	<5000 218	ND ND	ND ND	665
Manganese Mercury	2	NLE 2	331	NA NA	NA NA	NA NA	0.07 ER	ND ND	ND ND	ND ND	ND ND	1,340 NA	<0.20	0.36	0.33	ND ND	ND ND	ND ND	ND ND	NA	<0.20	0.29	<0.20	ND ND	ND ND	NA
Mercury Nickel	100	NLE	0.26 187	NA NA	NA NA	NA NA	79.5	64.1	4.1 ER	4.61 ER	2.23 ER	64.2	17.3	65.4	82.3	1.25 El	R 1.17 ER	ND ND	ND ND	NA <10	<0.20	<10	<0.20	3.23 ER	ND ND	<10
	NLE	NLE NLE	137000	NA NA	NA NA	NA NA	79.5 ND	04.1 ND	ND ER	ND EK	ND ER	<10000	<10000	<10000	<10000	ND EI	ND ND	ND ND	ND ND	<10000	10,100	<10000	<10000	ND ER	ND ND	<10000
Potassium Selenium	40	50	29.60	NA NA	NA NA	NA NA	NR	NR NR	NR NR	NR NR	ND	<10000	<10000	<10000	<10000	ND ND	ND	ND	ND ND	<10000	<10,100	<10000	<10000	ND ND	ND ND	<10000
Silver	40	NLE	29.60 ND	NA NA	NA NA	NA NA	ND ND	NR ND	ND ND	ND ND	ND	<10	<10	<10	<10	ND ND	ND	ND	ND ND	<10	<10	<10	<10	ND ND	ND ND	<10
Sodium	50000	NLE	21500	NA NA	NA NA	NA NA	ND ND	ND ND	ND ND	ND ND	ND ND	27,800	16.800	14.200	15,300	ND ND	ND ND	ND ND	ND ND	<10000	<10000	<10000	<10000	ND ND	ND ND	12,700
Thallium	2	2	5.50	NA NA	NA NA	NA NA	ND	ND ND	ND	0.79 ER		<2.0	<2.0	<2.0	<2.0	ND ND	0.73 ER	0.72 ER		<2.0	<2.0	<2.0	<2.0	ND	ND ND	<2.0
1 Hallium			3.30	INA	INA	INA	ND	ND	ND	0.79 EK	ND	<2.0	<2.0	<2.U	<2.0	ND	0.75 EK	U./2 ER	1.04 EK	₹2.0	<2.0	₹2.0	<2.U	ND	ND	<2.U

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Table 2 **Historical Groundwater Analytical Results** Site FTMM-03 Fort Monmouth, New Jersey

Date Collected MCL (Main Post) 3/14/2011 5/19/2011 8/4/2011 8/4/2011 10/7/2010 10/21/2010 12/21/2010 3/10/2011 5/16/2011	1106 1132505 4 0.56 J 5 J 0.42 J 3 2.2
ANALYTE/Lab IID S/19/2011 S/19/2011 S/19/2011 S/14/2011 S/19/2010 10/21/2010 10/21/2010 3/10/2011 S/16/2011 S/19/2011 S/19/201	11106 1132505 4 0.56 J 5 J 0.42 J 3 2.2 22 <2.9 22 <7.6 J 0.29 J 2 <0.18 11 12.30 12 <0.37 <0.29 <0.29 <0.20 <0.21 <0.21 <0.29 <0.22 <0.32 <0.29 <0.23 <0.29 <0.22 <0.32 <0.33 <0.33 <0.33 <0.33
Notatile Organic Compounds (µg/L) 1,2-Dichlorobenzene 600 600 - 0.46 J 0.54 0.5 J 0.53 J 0.44 J 0.58 0.6 0.7 0.54 1,3-Dichlorobenzene 600 NLE - 0.2 J 0.17 J <0.29 <0.29 ND 0.32 J 0.44 J 0.4 J 0.58 1,4-Dichlorobenzene 75 75 - 1.86 2.33 3 2.9 1.47 2.09 1.82 2.03 2.03 2-Butanone 300 NLE - <0.22 <0.22 <2.9 <2.9 ND ND ND <0.22 <0.22 <0.22 Acetone 6000 NLE - <0.32 <0.32 <7.6 <7.6 ND ND ND <0.32 <0.32 <0.32 Acetone 1 5 - <0.12 <0.12 <0.12 <0.22 <0.22 <0.23 J 0.3 J 0.28 J 0.32 J 0.3 Benzene 1 5 - <0.12 <0.12 <0.12 <0.12 <0.12 <0.12 <0.12 <0.12 <0.15 Carbon Disulfide 700 NLE - <0.32 <0.32 <0.32 <0.37 <0.18 ND ND <0.12 <0.12 <0.12 <0.15 Chlorobenzene 50 100 - 3 2.97 3.8 3.80 8.63 10.54 9.78 10.22 13.3 Chloroethane 5 NLE - <0.32 <0.32 <0.32 <0.37 <0.37 ND ND <0.32 <0.32 <0.32 <0.32 <0.32 <0.32 <0.32 <0.32 <0.32 <0.32 <0.32 <0.32 <0.32 <0.32 <0.32 <0.32 <0.33 <0.34 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35 <0.35	4 0.56 J 5 J 0.42 J 3 2.2 <2.9 22 <7.6 J 0.29 J 2 <0.18 1 12.30 2 <0.37 4 <0.29 5 <0.29 5 <0.29 6 <0.29 7 <0.29 7 <0.29 7 <0.29 7 <0.29 7 <0.29 7 <0.29 7 <0.29 7 <0.29 7 <0.29 7 <0.29 7 <0.29 7 <0.29 7 <0.29 7 <0.29 7 <0.29
1,2-Dichlorobenzene 600 600 - 0.46 J 0.54 0.5 J 0.53 J 0.44 J 0.58 0.6 0.7 0.54 1,3-Dichlorobenzene 600 NLE - 0.2 J 0.17 J <0.29 <0.29 ND 0.32 J 0.44 J 0.4 J 0.35 1,4-Dichlorobenzene 75 75 - 1.86 2.33 3 2.9 1.47 2.09 1.82 2.03 2	55 J 0.42 J 3 2.2 22 <2.9 22 <7.6 J 0.29 J 2 <0.18 1 12.30 22 <0.37 4 <0.29 2 <0.22 4 <0.19 3 <0.32
1,3-Dichlorobenzene 600 NLE - 0.2 J 0.17 J <0.29 <0.29 ND 0.32 J 0.44 J 0.4 J 0.35 1,4-Dichlorobenzene 75 75 - 1.86 2.33 3 2.9 1.47 2.09 1.82 2.03 2.03 2-Butanone 300 NLE - <0.22 <0.22 <2.9 <2.9 ND ND <0.22 <0.22 <0.22 <0.22 Acetone 6000 NLE - <0.32 <0.32 <7.6 <7.6 ND ND <0.32 <0.32 <0.32 <0.32 Carbon Disulfide 700 NLE - <0.12 <0.12 <0.12 <0.12 <0.18 <0.18 ND ND <0.12 <0.12 <0.12 <0.12 Chlorobenzene 50 100 - 3 2.97 3.8 3.80 8.63 10.54 9.78 10.22 13.3 Chloroethane 55 NLE - <0.32 <0.32 <0.32 <0.37 <0.37 ND ND <0.32 <0.32 <0.32 <0.32 Cyclohexane 100 NLE - NA NA <0.29 <0.29 NA NA NA NA NA 100 NLE - NA NA <0.19 <0.19 NA NA NA NA NA 100 NLE - NA NA <0.19 <0.19 ND <0.12 <0.12 <0.12 <0.12 100 100 NLE - NA NA <0.18 ND ND <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 100 NLE - NA NA <0.19 <0.19 NA NA NA NA NA NA 100 NLE - NA NA <0.19 <0.19 ND ND <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <0.3 <	55 J 0.42 J 3 2.2 22 <2.9 22 <7.6 J 0.29 J 2 <0.18 1 12.30 22 <0.37 4 <0.29 2 <0.22 4 <0.19 3 <0.32
1,4-Dichlorobenzene	3 2.2 2.2 2.9 2.2 2.9 2.2 2.5 2.6 J 0.29 J 2 2 3.18 1.1 12.30 2.2 4.0.29 2 4.0.29 4.0.22 4.0.29 3 4.0.32
2-Butanone 300	22
Acetone G000	2
Benzene	J 0.29 J 2 <0.18 1 12.30 2 <0.37 4 <0.29 2 <0.22 4 <0.19 3 <0.32
Carbon Disulfide 700 NLE - <0.12 <0.12 <0.18 <0.18 ND ND <0.12 <0.12 <0.12 Chlorobenzene 50 100 - 3 2.97 3.8 3.80 8.63 10.54 9.78 10.22 13.31 Chloroethane 5 NLE - <0.32 <0.32 <0.37 ND ND <0.32 <0.32 <0.32 Cyclohexane 100 NLE - NA NA <0.29 NA NA NA NA cis - 1,2-Dichloroethene 70 70 - <0.12 <0.12 <0.29 NA NA NA NA Isoproylbenzene 700 NLE - NA NA <0.12 <0.12 <0.12 <0.12 <0.12 <0.12 <0.12 <0.12 <0.12 <0.12 <0.12 <0.12 <0.12 <0.12 <0.12 <0.12 <0.12	2 <0.18 1 12.30 2 <0.37 4 <0.29 2 <0.22 4 <0.19 3 <0.32
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	1 12.30 2 <0.37 4 <0.29 2 <0.22 4 <0.19 3 <0.32
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	2 <0.37 <0.29 2 <0.22 <0.19 3 <0.32
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	 <0.29 <0.22 <0.19 <0.32
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	2 <0.22 4 <0.19 3 <0.32
Isopropylbenzene 700 NLE - NA NA $0.19 $ $0.19 $ NA	<0.19 3 <0.32
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	3 <0.32
Methylcyclohexane NLE NLE - NA NA <0.18 <0.18 NA ND <0.14 <0.14 <0.14 <0.12 <0.12 <0.15 <0.15 ND ND <0.12 <0.12 <0.12 Toluene 600 1000 - <0.12	
o-xylene 100 NLE - <0.14 <0.14 <0.17 <0.17 ND ND <0.14 <0.14 <0.14 terr-Butyl alcohol 100 NLE - <1.64	0.47 I
tert-Butyl alcohol 100 NLE - <1.64 <1.64 NA NA ND ND <1.64 <1.64 <1.64 Toluene 600 1000 - <0.12	
Toluene 600 1000 - <0.12 <0.12 <0.15 <0.15 ND ND <0.12 <0.12 <0.12	4 <0.17
	4 NA
trans-1,2-Dichloroethene 100 100 - <0.14 <0.14 <0.31 <0.31 ND ND <0.14 <0.14 <0.14 <0.15	2 <0.15
	4 <0.31
Vinyl chloride 1 2 - <0.22 <0.22 <0.27 <0.27 ND ND <0.22 <0.22 <0.25	2 <0.27
Xylenes (Total) 1000 10,000 - ND ND <0.17 <0.17 ND	< 0.17
TICs* 500 NLE - 5 4 5.5 J 5.9 J 18 50 54 46 51	13 J
Metals (µg/L)	
Aluminum 200 NLE 121000 <200 370 790 1,820 ND ND <200 <200 254	<200
Antimony 6 6 6 20.70 <6.0 <6.0 <6.0 <6.0 ND 6.84 <6.0 <6.0 <6.0 <6.0	<6.0
Arsenic 3 10 89.30 <3.0 <3.0 <3.0 3.2 2.38 ER 1.35 ER <3.0 <3.0 <3.0	0 <3.0
Barium 6000 2000 699.00 656 535 599 652 191 226 255 243 223	3 <200
Beryllium 1 4 2.10 <1.0 <1.0 <1.0 <1.0 ND ND <1.0 <1.0 <1.0 <1.0	
Cadmium 4 5 9.50 <3.0 <3.0 <3.0 <3.0 1.01 ER 3.39 <3.0 <3.0 <3.0	0 <3.0
Calcium NLE NLE 45400.00 121,000 75,900 77,300 81,100 ND ND 64,400 59,100 52,70	
Chromium 70 100 191.00 <10 <10 <10 13.4 ND 1.32 ER <10 <10 <10	
Copper 1300 1300 65.60 <10 <10 <10 ND 5.1 <10 <10 <10	
Iron 300 NLE 431000 88,300 76,100 74,900 82,300 ND ND 75,000 77,800 73,30	
Lead 5 15 22.70 <3.0 5 8.7 18.2 ND 2.99 ER <3.0 <3.0 4.6	
Magnesium NLE NLE 62700 14,900 11,700 11,300 12,200 ND ND 12,000 12,700 11,200	,
Manganese 50 NLE 331 1,120 827 705 745 ND ND 603 602 578	
Mercury 2 2 0.26 <0.20 <0.20 <0.20 0.21 0.60 ND NA <0.20 <0.20 <0.20	
Nickel 100 NLE 187 <10 <10 <10 <10 4.15 ER ND <10 <10 <10 <10	
Potassium NLE NLE 137000 <10000 <10000 <10000 <10000 ND ND <10000 <10000 <10000	
Selenium 40 50 29.60 <10 <10 <10 <10 ND ND <10 <10 <10 <10	
Silver 40 NLE ND <10 <10 <10 <10 ND ND <10 <10 <10 <10 <10 <10 <10 <10 <10 <10	
Sodium 50000 NLE 21500 14,700 13,900 12,600 12,900 ND ND 10,700 10,200 <1000	
Thallium 2 2 5.50 <2.0 <2.0 <2.0 <2.0 ND ND <2.0 <2.0 <2.0 <2.0	0 <2.0

*TICs - Tentatively identified compounds, cannot exceed 500 μ g/L for VOCs and SVOCs. No individual compound can exceed 100 μ g/L.

NJDEP GWQS = Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 22, 2010) USEPA MCL = U.S.Environmental Protection Agency Maximum Contaminant Level

USEPA MCL = U.S.Environmental Protection Agency Maximum Contaminant Level (2012)

LF = Low flow sampling method used to collect sample

< = Analyte does not exceed the detection limit shown

reporting limit (RL)

NA = Not analyzed

ND = Not detected NLE = No limit established

ER = Estimated Result

J - Estimated concentration exceeds the MDL and is less than the practical quantitation

DUP = field duplicate sample

TICs - Tentatively identified compounds, cannot exceed 500 μ g/L for VOCs and SVOCs. No individual compound can exceed 100 μ g/L.

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Table 3
Groundwater Analytical Results - 2013 and 2014
Site FTMM-03 Closed Solid Waste Landfill
Annual (Fourth Quarter) 2014 Groundwater Sampling Report
Fort Monmouth, New Jersey

Loc ID	NJ Ground		Weston 1995	M3N	MW02	M3MW04	M3MW05	M3MW06	N	13MW07	МЗМ	W07A	M3MW08	M3MW09	M3MW10	M3MW11
Sample ID	Water Quality	2014-05 USEPA MCL	Background	FTMM-3-GW-M3MW02-21	FTMM-3-GW-M3MW102-21	FTMM-3-GW-M3MW04	FTMM-3-GW-M3MW05	FTMM-3-GW-M3MW06	FTMM-3-GW-M3MW07	FTMM-3-GW-M3MW07-13.85	FTMM-3-GW-M3MW07A	FTMM-3-GW-M3MW17A	FTMM-3-GW-M3MW08	FTMM-3-GW-M3MW09	FTMM-3-GW-M3MW10	FTMM-3-GW-M3MW11
Sample Date	Criteria	USEFA MCL	(Main Post)	10/3/2014	10/3/2014	8/23/2013	8/23/2013	8/23/2013	8/23/2013	10/2/2014	8/23/2013	8/23/2013	8/23/2013	8/23/2013	8/23/2013	8/23/2013
QA/QC	_			SA	DU	SA	SA	SA	SA	SA	SA	DU	SA	SA	SA	SA
Sample Method	100			Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow
Volatile Organic Compounds (μg/l 1,1,1,2-Tetrachloroethane	1)	NLE	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 1	<1	<1	<1
1,1,1-Trichloroethane	30	200	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	1	NLE	-	<1	<1	<1	<1	<1	<1	< 1	<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	3	5	-	< 1	<1	<1	< 1	<1	<1	< 1	< 1	<1	< 1	< 1	< 1	< 1
1,1-Dichloroethane	50	NLE	-	< 1	<1	<1	< 1	< 1	<1	<1	< 1	<1	< 1	< 1	< 1	< 1
1,1-Dichloroethene	1	7	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 1
1,1-Dichloropropene 1,2,3-Trichlorobenzene	100	NLE NLE	-	<1	< 1 < 1	< 1 < 1	< 1 < 1	<1 <1	<1 <1	<1	< 1 < 1	<1 <1	< 1 < 1	<1 <1	<1 <1	<1 <1
1,2,3-Trichloropropane	0.03	NLE	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	9	70	-	<1	<1	<1	< 1	<1	<1	< 1	<1	< 1	< 1	< 1	< 1	< 1
1,2,4-Trimethylbenzene	100	NLE	-	<1	<1	<1	<1	<1	<1	< 1	<1	<1	< 1	< 1	< 1	<1
1,2-Dibromo-3-chloropropane	0.02	0.2	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 1
1,2-Dibromoethane 1,2-Dichlorobenzene	0.03 600	0.05 600	-	<1	<1 <1	<1 <1	< 1 < 1	<1 <1	<1 <1	<1	< 1 < 1	<1 <1	< 1	< 1 0.46 J	< 1 0.4 J	< 1 0.24 J
1,2-Dichloroethane	2	5	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.46 J < 1	0.4 J < 1	0.24 J < 1
1,2-Dichloropropane	1	5	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	100	NLE	-	<1	<1	<1	< 1	<1	<1	<1	<1	<1	< 1	<1	<1	< 1
1,3-Dichlorobenzene	600	NLE	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	100	NLE 75	-	<1	<1	<1	<1	<1	<1	<1	< 1	< 1	< 1	<1	<1 14 T	< 1 0.76 T
1,4-Dichlorobenzene 2,2-Dichloropropane	75 100	75 NLE	-	<1 <1	<1 <1	<1 <1	< 1 < 1	<1 <1	<1 <1	<1	0.38 J < 1	0.39 J < 1	0.96 J < 1	1.5 J < 1	1.4 J < 1	0.76 J < 1
2-Chlorotoluene	100	NLE	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Acetone	6,000	NLE	-	< 5	2 J	< 5	6.7	< 5	3 J	2.4 J	2.9 J	2.2 J	2.8 J	2.3 J	4.6 J	2.2 J
Benzene	1	5	-	<1	<1	<1	<1	< 1	<1	< 1	<1	<1	< 1	< 1	< 1	<1
Bromobenzene	100	NLE	-	<1	<1	<1	<1	<1	<1	< 1	<1	<1	<1	< 1	<1	<1
Bromochloromethane Bromodichloromethane	100	NLE 80	-	<1 <1	<1 <1	<1 <1	< 1 < 1	<1 <1	<1 <1	<1	< 1 < 1	<1 <1	< 1 < 1	< 1 < 1	< 1 < 1	<1 <1
Bromoform	4	80	_	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	1	5	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chlorobenzene	50	100	-	< 1	<1	<1	0.59 J	<1	<1	<1	0.84 J	0.83 J	1.7 J	8.9	11	2.4 J
Chlorodibromomethane	1	80	-	< 1	<1	<1	< 1	< 1	< 1	<1	<1	<1	< 1	< 1	< 1	<1
Chloroethane Chloroform	70	NLE 80	-	<1 <1	< 1 < 1	< 1 < 1	< 1 < 1	<1 <1	<1 <1	<1	< 1 < 1	<1 <1	< 1 < 1	<1 <1	< 1 < 1	<1
Cis-1,2-Dichloroethene	70	70	_	<1	<1	<1	<1	<1	0.81 J	3 J	<1	<1	<1	<1	<1	<1
Cis-1,3-Dichloropropene	1	NLE	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 1	<1	<1
Cymene	100	NLE	-	<1	<1	<1	<1	<1	<1	< 1	<1	<1	<1	<1	<1	<1
Dichlorodifluoromethane	1,000	NLE	-	<1	<1	<1	< 1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Ethyl benzene Hexachlorobutadiene	700	700 NLE	-	<1	<1	<1 <1	<1	<1 <1	<1	<1	<1	<1 <1	<1	<1	<1	<1
Isopropylbenzene	700	NLE	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.31 J	0.52 J
Meta & Para Xylenes	1,000	NLE	-	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Methyl bromide	10	NLE	-	<1	<1	< 1	< 1	<1	<1	<1	0.33 J	<1	< 1	<1	<1	< 1
Methyl butyl ketone	300	NLE	-	< 5	< 5	< 5	< 5	< 5	< 5	<5	< 5	< 5	< 5	< 5	< 5	< 5
Methyl chloride Methyl ethyl ketone	100 300	NLE NLE	-	<1	< 1 < 1	<1 <1	< 1 < 1	<1 <1	<1	<1	<1 <1	<1 <1	<1 <1	<1 <1	<1 <1	<1 <1
Methyl isobutyl ketone	100	NLE	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Methyl Tertbutyl Ether	70	NLE	-	<1	<1	< 1	<1	<1	<1	<1	<1	<1	< 1	<1	<1	< 1
Methylene chloride	3	5	-	<1	<1	< 1	<1	<1	<1	< 1	<1	<1	< 1	< 1	<1	< 1
Naphthalene n Butulbangana	300	NLE	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.2 J 0.38 J	<1
n-Butylbenzene Ortho Xylene	1,000	NLE NLE	-	<1	<1 <1	<1 <1	< 1 < 1	<1 <1	<1 <1	<1	< 1 < 1	<1 <1	<1 <1	<1 <1	0.38 J 0.21 J	< 1 < 1
p-Chlorotoluene	100	NLE	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 1	< 1
Propylbenzene	100	NLE	-	<1	<1	< 1	< 1	<1	<1	<1	<1	<1	< 1	< 1	0.26 J	< 1
sec-Butylbenzene	100	NLE	-	<1	<1	< 1	< 1	< 1	<1	< 1	<1	<1	< 1	0.3 J	0.66 J	< 1
Styrene	100	100	-	< 1	< 1	< 1 NA	< 1 NA	< 1 NA	< 1 NA	< 1	< 1 NA	< 1 NA	< 1 NA	< 1 NA	< 1 NA	< 1 NA
Tert Butyl Alcohol tert-Butylbenzene	100 100	NLE NLE	-	< 20 < 1	< 20 < 1	NA < 1	NA < 1	NA < 1	NA < 1	< 20 < 1	NA 0.31 J	NA 0.35 J	0.32 J	NA 0.47 J	NA 0.49 J	NA < 1
Tetrachloroethene	1	5	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 1	<1	<1	<1
Toluene	600	1,000	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 1	<1	<1	<1
Total Xylenes	1,000	10,000	-	NA	NA	< 3	< 3	< 3	<3	NA	<3	<3	< 3	<3	0.21 J	< 3
Trans-1,2-Dichloroethene	100	100	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trans-1,3-Dichloropropene Trichloroethene	1	NLE 5	-	<1 <1	<1 <1	<1 <1	< 1 < 1	<1	< 1 < 1	<1	<1 <1	< 1 < 1	<1 <1	<1 <1	< 1 < 1	<1 <1
Trichlorofluoromethane	2,000	NLE	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl chloride	1	2	-	<1	<1	<1	<1	<1	2.9 J	4 J	<1	<1	<1	<1	<1	<1
TIC VOCs (mg/l)															<u> </u>	
Total TIC, Volatile	500	NLE	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.7 JN	ND
				-	-							· · · · · · · · · · · · · · · · · · ·				

Appendix B

Table 3
Groundwater Analytical Results - 2013 and 2014
Site FTMM-03 Closed Solid Waste Landfill
Annual (Fourth Quarter) 2014 Groundwater Sampling Report
Fort Monmouth, New Jersey

Loc ID				M3.	MW02	M3MW04	M3MW05	M3MW06	N	43MW07	МЗМ	W07A	M3MW08	M3MW09	M3MW10	M3MW11
Sample ID	NJ Ground Water Quality	2014-05	Weston 1995 Background		FTMM-3-GW-M3MW102-21	FTMM-3-GW-M3MW04	FTMM-3-GW-M3MW05	FTMM-3-GW-M3MW06	FTMM-3-GW-M3MW07	FTMM-3-GW-M3MW07-13.85	FTMM-3-GW-M3MW07A	FTMM-3-GW-M3MW17A	FTMM-3-GW-M3MW08	FTMM-3-GW-M3MW09	FTMM-3-GW-M3MW10	FTMM-3-GW-M3MW11
Sample Date	Criteria	USEPA MCL	(Main Post)	10/3/2014	10/3/2014	8/23/2013	8/23/2013	8/23/2013	8/23/2013	10/2/2014	8/23/2013	8/23/2013	8/23/2013	8/23/2013	8/23/2013	8/23/2013
QA/QC	-			SA	DU	SA	SA	SA	SA	SA SA	SA	DU	SA	SA	SA	SA
Sample Method	-			Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow	Low Flow
Inorganics (µg/l)			l													
Aluminum	200	NLE	121,000	685	660	288	258	63.1 J	< 25	NA	< 25	< 25	40.4 J	224	< 25	< 25
Antimony	200	14LE	20.7	< 30	3.8 J	< 4	2.7 J	3.3 J	< 4	NA NA	< 4	< 4	<4	< 4	<4	< 4
Arsenic	3	10	89.3	<5	<5	<5	<5	<5	<5	NA NA	<5	<5	<5	< 5	<5	< 5
Barium	6.000	2.000	699	48.6 B	47.7 B	104	151	15.9 J	455	NA NA	369	358	383	377	862	429
Beryllium	1	4	2.1	0,905 J	0.837 J	0.256 J	< 0.3	< 0.3	< 0.3	NA NA	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Cadmium	4	5	9.5	0.483 J	0.203 J	2.6	< 0.4	0,278 J	< 0.4	NA	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
Calcium	NLE	NLE	45,400	4,930	4,620	35,300	43,100	12,600	532,000	NA	247,000	237,000	76,400	49,900	128,000	161,000
Chromium	70	100	191	< 5	< 5	1.7	2.4	1.5	1	NA	0.561 J	0.613 J	0.47 J	1.2	0.532 J	0.605 J
Cobalt	100	NLE	18.3	5.5 J	4.9 J	15.7	< 1	<1	<1	NA	<1	<1	<1	<1	<1	< 1
Copper	1,300	1,300	65.6	< 10	< 10	< 4	4.1 J	3.2 J	4.7 J	NA	1.6 J	1.1 J	1.7 J	25	< 4	3.3 J
Iron	300	NLE	431,000	101	97.8 J	1,110	28,700	897	43,900	NA	58,600	57,300	45,100	64,700	86,000	76,400
Lead	5	15	22.7	< 2.5	< 2.5	< 2	0.952 J	< 2	< 2	NA	< 2	< 2	< 2	7.8	< 2	< 2
Magnesium	NLE	NLE	62,700	10,200	9,910	8,300	5,360	4,100	68,200	NA	46,000	45,000	16,600	12,400	23,000	23,400
Manganese	50	NLE	331	32.4	31	32.9	180	57.2	2,600	NA	1,810	1,770	664	769	669	1,140
Mercury	2	2	0.26	< 0.1	< 0.1	< 0.08	< 0.08	< 0.08	< 0.08	NA	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08
Nickel	100	NLE	187	55.3	50.5	61.2	< 5	2.3 J	0.86 J	NA	< 5	< 5	< 5	3.5 J	< 5	35.5
Potassium	NLE	NLE	137,000	3,090	2,990	8,170	4,390	4,830	24,100	NA	14,800	14,700	7,290	8,350	11,900	10,400
Selenium	40	50	29.6	< 10	< 10	< 5	3.2 J	2.8 J	4.5 J	NA	4.1 J	2 J	3.8 J	4.2 J	< 5	< 5
Silver	40	NLE	ND	< 5	< 5	0.785 J	0.664 J	0.464 J	1 J	NA	0.875 J	0.408 J	0.556 J	< 2	< 2	< 2
Sodium	50,000	NLE	21,500	12,300	12,200	32,600	16,300	31,800	1,020,000	NA	338,000	331,000	157,000	53,200	129,000	278,000
Thallium	2	2	5.5	< 10	< 10	< 10	< 10	< 10	< 10	NA	< 10	< 10	< 10	< 10	< 10	< 10
Vanadium	NLE	NLE	108	< 25	< 25	0.711 J	2.5 J	0.6 J	< 0.6	NA	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	0.368 J
Zinc	2,000	NLE	233	102	96.8	117	16.5 J	76.7	135	NA	0.575 J	0.915 J	4.5 J	72.2	0.92 J	40.7

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Final Annual (Fourth Quarter) 2014 Groundwater Sampling Report

1 (Fourth Quarter) 2014 Groundwater Sampling Report

Table 3
Groundwater Analytical Results - 2013 and 2014
Site FTMM-03 Closed Solid Waste Landfill
Annual (Fourth Quarter) 2014 Groundwater Sampling Report
Fort Monmouth, New Jersey

Loc ID				M3MW12	M3MW13	M3MW14
	NJ Ground	2014-05	Weston 1995	TTO DATA CONTRACTOR	TTT D. C. CW. MON CO.	
Sample ID	Water Quality Criteria	USEPA MCL	Background (Main Post)	FTMM-3-GW-M3MW12	FTMM-3-GW-M3MW13	FTMM-3-GW-M3MW14
Sample Date	Cinena		(Maiii Fost)	8/23/2013	8/23/2013	8/23/2013
QA/QC				SA Low Flow	SA Low Flow	SA Low Flow
Sample Method				LOW FIOW	LOW FIOW	LOW FlOW
Volatile Organic Compounds (µg/l) 1,1,1,2-Tetrachloroethane	1	NLE	1	<1	<1	<1
1,1,1-Trichloroethane	30	200	-	<1	<1	<1
1,1,2,2-Tetrachloroethane	1	NLE	-	<1	<1	<1
1,1,2-Trichloroethane	3	5		<1	<1	<1
1,1-Dichloroethane	50	NLE	-	<1	<1	<1
1,1-Dichloroethene	1	7	_	<1	<1	<1
1,1-Dichloropropene	100	NLE	-	<1	<1	<1
1,2,3-Trichlorobenzene	100	NLE	_	<1	<1	<1
1,2,3-Trichloropropane	0.03	NLE	-	<1	<1	<1
1,2,4-Trichlorobenzene	9	70	-	<1	<1	<1
1,2,4-Trimethylbenzene	100	NLE	_	<1	<1	<1
1,2-Dibromo-3-chloropropane	0.02	0.2	-	<1	< 1	< 1
1,2-Dibromoethane	0.03	0.05	-	<1	<1	<1
1,2-Dichlorobenzene	600	600	-	< 1	0.47 J	0.61 J
1,2-Dichloroethane	2	5	-	< 1	<1	<1
1,2-Dichloropropane	1	5	-	< 1	< 1	<1
1,3,5-Trimethylbenzene	100	NLE	-	< 1	<1	<1
1,3-Dichlorobenzene	600	NLE	-	< 1	0.26 J	0.39 J
1,3-Dichloropropane	100	NLE	-	< 1	<1	<1
1,4-Dichlorobenzene	75	75	-	< 1	2.5 J	2.3 J
2,2-Dichloropropane	100	NLE	-	< 1	<1	< 1
2-Chlorotoluene	100	NLE	-	<1	< 1	< 1
Acetone	6,000	NLE	-	< 5	2.2 J	2 J
Benzene	1	5	-	<1	<1	0.24 J
Bromobenzene	100	NLE	-	<1	< 1	<1
Bromochloromethane	100	NLE	-	<1	< 1	<1
Bromodichloromethane	1	80	-	<1	< 1	< 1
Bromoform	4	80	-	<1	< 1	< 1
Carbon tetrachloride	1	5	-	<1	< 1	<1
Chlorobenzene	50	100		<1	3.4 J	9.9
Chlorodibromomethane	1	80	-	<1	<1	< 1
Chloroethane	5	NLE	-	<1	<1	< 1
Chloroform	70	80	-	<1	<1	<1
Cis-1,2-Dichloroethene	70	70	-	<1	<1	<1
Cis-1,3-Dichloropropene	1	NLE	-	<1	<1	<1
Cymene	100	NLE	-	<1	<1	<1
Dichlorodifluoromethane	1,000	NLE	-	<1	< 1	<1
Ethyl benzene Hexachlorobutadiene	700	700	-	<1	< 1	<1
Isopropylbenzene	700	NLE NLE	-	<1 <1	< 1 < 1	< 1 < 1
			-			
Meta & Para Xylenes Methyl bromide	1,000	NLE NLE	-	< 2 < 1	< 2 < 1	< 2 < 1
Methyl butyl ketone	300	NLE		< 5	<5	<5
Methyl chloride	100	NLE NLE	-	<1	<1	<1
Methyl ethyl ketone	300	NLE	-	<1	<1	<1
Methyl isobutyl ketone	100	NLE	-	<1	<1	<1
Methyl Tertbutyl Ether	70	NLE		<1	<1	<1
Methylene chloride	3	5	-	<1	<1	<1
Naphthalene	300	NLE	-	<1	<1	<1
n-Butylbenzene	100	NLE	-	<1	<1	0.39 J
Ortho Xylene	1,000	NLE	-	<1	<1	<1
p-Chlorotoluene	100	NLE	-	<1	<1	<1
Propylbenzene	100	NLE	-	<1	<1	<1
sec-Butylbenzene	100	NLE	-	<1	0.3 J	1.2 J
Styrene	100	100	-	<1	<1	<1
Tert Butyl Alcohol	100	NLE	-	NA	NA	NA
tert-Butylbenzene	100	NLE	-	<1	0.5 J	0.81 J
Tetrachloroethene	1	5	-	<1	<1	<1
Toluene	600	1,000	-	< 1	<1	<1
Total Xylenes	1,000	10,000	-	< 3	< 3	< 3
Trans-1,2-Dichloroethene	100	100	-	< 1	<1	<1
Trans-1,3-Dichloropropene	1	NLE	-	< 1	< 1	<1
Trichloroethene	1	5	-	<1	<1	<1
Trichlorofluoromethane	2,000	NLE	-	< 1	< 1	<1
Vinyl chloride	1	2	-	< 1	< 1	<1
TIC VOCs (mg/l)						
Total TIC, Volatile	500	NLE	-	ND	ND	20.6 JN

Monmouth, BRAC 05 Facility B-Tables-12 December 2015

Table 3
Groundwater Analytical Results - 2013 and 2014
Site FTMM-03 Closed Solid Waste Landfill
Annual (Fourth Quarter) 2014 Groundwater Sampling Report
Fort Monmouth, New Jersey

Loc ID	NJ Ground		Weston 1995	M3MW12	M3MW13	M3MW14
Sample ID	Water Quality Criteria	2014-05 USEPA MCL	Background (Main Post)	FTMM-3-GW-M3MW12	FTMM-3-GW-M3MW13	FTMM-3-GW-M3MW14
Sample Date				8/23/2013	8/23/2013	8/23/2013
QA/QC				SA	SA	SA
Sample Method				Low Flow	Low Flow	Low Flow
Inorganics (μg/l)	•					
Aluminum	200	NLE	121,000	< 25	70.3 J	< 25
Antimony	6	6	20.7	< 4	< 4	2.1 J
Arsenic	3	10	89.3	2.3 J	< 5	2.1 J
Barium	6,000	2,000	699	96.6	575	241
Beryllium	1	4	2.1	< 0.3	< 0.3	< 0.3
Cadmium	4	5	9.5	< 0.4	< 0.4	< 0.4
Calcium	NLE	NLE	45,400	23,300	79,300	50,600
Chromium	70	100	191	<1	0.223 J	0.399 J
Cobalt	100	NLE	18.3	< 1	<1	< 1
Copper	1,300	1,300	65.6	< 4	< 4	< 4
Iron	300	NLE	431,000	43,000	43,600	71,400
Lead	5	15	22.7	< 2	< 2	< 2
Magnesium	NLE	NLE	62,700	4,640	21,100	11,400
Manganese	50	NLE	331	114	401	628
Mercury	2	2	0.26	< 0.08	< 0.08	< 0.08
Nickel	100	NLE	187	< 5	< 5	< 5
Potassium	NLE	NLE	137,000	9,960	12,100	7,400
Selenium	40	50	29.6	< 5	< 5	< 5
Silver	40	NLE	ND	0.277 J	< 2	< 2
Sodium	50,000	NLE	21,500	7,900	212,000	13,100
Thallium	2	2	5.5	< 10	< 10	< 10
Vanadium	NLE	NLE	108	< 0.6	< 0.6	< 0.6
Zinc	2,000	NLE	233	3.8 J	5.8 J	< 4

B-Tables-13 December 2015

Attachment C

- NJDEP letter to U.S. Army dated 26 January 2016, re: Approval Annual (Fourth Quarter) 2014 Groundwater Sampling Report dated December 2015
- NJDEP letter to U.S. Army dated 5 February 2015, re: Approval 26 November 2014 Response to Comments on Final Baseline Groundwater Sampling Report (August 2013)
- U.S. Army letter to the NJDEP dated 26 November 2014; re: NJDEP Comments on the Final Baseline Groundwater Sampling Report (August 2013)
- NJDEP letter to U.S. Army dated 3 July 2014, re: Final Baseline Groundwater Sampling Report (August 2013)
- U.S. Army letter to the NJDEP dated 10 November 2004; re: Reduction of Groundwater Sampling Analyses Main Post and Charles Woods Restoration Sites Throughout Fort Monmouth, New Jersey



State of New Jersey

CHRIS CHRISTIE Governor

KIM GUADAGNO Lt. Governor DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Case Management
401 East State Street
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Frenton, NJ 08625-0028 Phone #: 609-633-1455 Fax #: 609-633-1439 BOB MARTIN Commissioner

January 26, 2016

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

Approval

Re:

Annual (Fourth Quarter) 2014 Groundwater Sampling Report dated December 2015

Fort Monmouth

Oceanport, Monmouth County

PI G000000032

Dear Mr. Colvin:

The New Jersey Department of Environmental Protection (NJDEP) has completed review of the referenced report, received December 7, 2015, prepared by Parsons to support the Remedial Investigation (RI), Feasibility Study (FS), and Decision Documents project at Fort Monmouth. An annual ground water sampling event was conducted at fourteen (14) FTMM sites between September 29, 2014 and December 19, 2014. Sampling methodologies used included low-flow and passive diffusion bag samplers (PDBS). Comments on each FTMM site are as follows:

FTMM-02 Landfill

Historic sampling at this parcel has revealed Ground Water Quality Standard (GWQS) exceedances of VOCs. Results from the annual sampling event confirmed the exceedance of the GWQS for benzene. The report recommends one additional sampling round for wells M2MW11, M2MW21, M2MW22 and M2MW24. The report recommends continued annual VOC monitoring for M2MW03 and M2MW10. The NJDEP finds the recommendations acceptable. As indicated in the submittal, and as previously requested, as this round may be a final sampling round for select monitoring wells at FTMM-02, sampling will be conducted using low-flow purging (LFPS).

FTMM-03 Landfill

Historic sampling at this parcel revealed GWQS exceedances of vinyl chloride. Results from the annual sampling event for well 3MW02 were below GWQS. The GWQS for vinyl chloride was exceeded in well

3MW07. The presence of vinyl chloride is attributed to leaching of PVC piping from well 3MW07 and does not represent ground water conditions at the parcel. The report recommends the abandonment of 3MW07 and discontinuing ground water sampling at FTMM-03. The NJDEP finds the recommendations acceptable.

FTMM-05 Landfill

Historic sampling at this parcel revealed GWQS exceedances of PCE, TCE and vinyl chloride. Results from the annual sampling event exceeded GWQS for PCE and TCE. The report recommends continued annual VOC sampling of wells M5MW11, M5MW16, M5MW20 and M5MW23. The NJDEP finds the recommendations acceptable. At any point where a decision is made to terminate ground water sampling at this parcel, the NJDEP will require confirmatory sampling using low-flow due to PDBS results at this parcel biased low compared to the low-flow results.

FTMM-08 Landfill

Historic sampling at this parcel revealed GWQS exceedances of pesticides, benzene, PCE and lead. Results from the annual sampling event exceeded the GWQS for PCE and pesticides. The report recommends continued annual ground water sampling of well M8MW11 for VOCs and lead, M8MW12 for VOCs and 697MW01 for pesticides and VOCs. The report recommends discontinuing the sampling of M8MW15, M8MW16, M8MW17, M8MW21 and RM8MW24. The NJDEP finds the recommendations acceptable.

FTMM-18 Landfill

Historic sampling at this parcel revealed GWQS exceedances of benzene and 1,2-DCA. Results from the annual sampling event exceeded the GWQS for benzene and 1,2-DCA. The report recommends continued annual ground water sampling of wells M18MW22, M18MW23, 296MW04 and 296MW06 for VOCs using PDBS methodology. The NJDEP finds the recommendations acceptable.

FTMM-22 Former Wastewater Treatment Lime Pit

Historic sampling at this parcel revealed GWQS exceedances of TCE. Results from the annual sampling event exceeded the GWQS for TCE and vinyl chloride. The report recommends continued quarterly VOC sampling of wells CW1MW27, CW1MW28, CW1MW29, CW1MW31, CW1MW37 and CW1MW281. The NJDEP finds the recommendation acceptable. However, due to the increase of VOC concentrations in deep well CW1MW281, the NJDEP requires the quarterly sampling of deep well CW1MW40, which is located hydraulically downgradient of CW1MW281. At any point where a decision is made to terminate ground water sampling at this parcel, the NJDEP will require confirmatory sampling using low-flow methodology due to PDBS results biasing low compared to low-flow results at the Fort Monmouth site.

FTMM-53 Former Gas Station at Building 699

Historic sampling at this parcel revealed GWQS exceedances of benzene, PCE, TCE, TBA, VOC TICs and lead. Results from the annual sampling event exceeded the GWQS for benzene, PCE, 1,2,4-Trimethylbenzene, and VOC TICs. The report recommends continued quarterly VOC sampling of wells 699MW01, 699MW04, 699MW06, 699MW09, 699MW16, 699RW03, 699RW05 and 699RW11

using PDBS. The NJDEP finds the recommendation acceptable. At any point where a decision is made to terminate ground water sampling at this parcel, the NJDEP will require confirmatory sampling using low-flow due to PDBS biasing low compared to low-flow at the Fort Monmouth site.

FTMM-57 Building 108 UST Gasoline Release

Historic sampling at this parcel revealed GWQS exceedances of lead. Results from the annual sampling event were below the GWQS for lead. The report recommends one additional annual sampling of well 108MW04 for lead. The NJDEP finds the recommendation acceptable.

FTMM-58 Building 2567 UST Gasoline

Historic sampling at this parcel revealed GWQS exceedances of TBA. Results from the annual sampling event exceeded the GWQS for TBA. The report recommends continued annual sampling events of wells 2567MW01 and 2567MW03 for TBA. The NJDEP finds the recommendation acceptable.

FTMM-59 Building 1122 Unknown Discharge

Historic sampling at this parcel revealed no GWQS exceedances for VOCs. Results from the annual sampling event were below GWQS for VOCs. The report recommends evaluating the ground water results as part of the approved RI/FS for this parcel. The NJDEP finds the recommendation acceptable.

FTMM-61 Building 283 Gasoline Storage

Historic sampling revealed GWQS exceedances of benzene and VOC TICs. Results from the 2013 and 2014 annual sampling events were below GWQS for VOCs. The report recommends discontinuing the monitoring program at this parcel. The NJDEP finds the recommendation acceptable.

FTMM-64 Building 812 UST Gasoline

Historic sampling at this parcel revealed GWQS exceedances of benzene, vinyl chloride and metals. Results from the 2014 annual sampling event exceeded the GWQS for vinyl chloride. The report recommends continued annual VOC sampling of well 812MW04. The NJDEP finds the recommendation acceptable. If a decision is made to terminate ground water sampling at this parcel, the NJDEP will require confirmatory sampling using low-flow due to PDBS biasing low compared to low-flow at the Fort Monmouth site.

FTMM-66 Building 886 Former AST

Historic sampling revealed GWQS exceedances of benzene, VOC TICs, arsenic and lead. The August 2013 sampling results from wells at this parcel showed exceedances of the GWQS for SVOC TICs. Results from the 2014 annual sampling event did not exceed the GWQS for SVOC TICs. The report recommends one additional sampling round from wells 886RW01, 886RW06 and 886RW08 to confirm that ground water is in compliance with the GWQS. The NJDEP finds the recommendation acceptable.

FTMM-68 Building 700 Former Dry Cleaners

Historic sampling results from August 2013 showed exceedances of the GWQS for PCE, TCE, cis-1,2-DCE and vinyl chloride in wells 565MW01 and 565MW01D. Results from the 2014 annual sampling event confirmed that chlorinated VOCs exceed GWQS in ground water. The report recommends continued quarterly ground water sampling for VOCs. The report also references the RI proposed for implementation in 2015 (the March '15 Revision 1 RIFS WP was approved April 27, 2015), to fully characterize the nature and extent of contamination at this parcel. The NJDEP finds the recommendation of continued quarterly sampling acceptable, and looks forward to receipt of the RI findings.

Miscellaneous

Ground water sample contaminant concentrations (exceedances) should be plotted on future submittal maps as required by the Technical Regulations for Site Remediation and guidance documents.

Finally, please ensure all reports submitted to this office are accompanied by a properly completed certification form, a copy of which is attached.

Please contact this office if you have any questions.

Sincerely,

Linda S. Range

C: James Moore, USACE
Cris Grill, Parsons
Joe Pearson, Calibre
Rick Harrison, FMERA
Joe Fallon, FMERA
Frank Barricelli, RAB
Daryl Clark, BGWPA



State of New Jersey

CHRIS CHRISTIE

Governor

KIM GUADAGNO Lt. Governor DEPARTMENT OF ENVIRONMENTAL PROTECTION
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BOB MARTIN Commissioner

February 5, 2015

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

Approval

Re:

November 26, 2014 Response to Comments -on the Final Baseline Ground Water

Sampling Report (August 2013)

Fort Monmouth Monmouth County PI # G00000032

Activity Number: RPC000001

Dear Ms. Green:

The New Jersey Department of Environmental Protection (Department) has completed a review of the referenced Response to Comments dated November 26, 2014, submitted in response to the Department's comment letter dated July 3, 2014 regarding the Final Baseline Ground Water Sampling Report.

The *Response to Comments* agrees with or acknowledges the Department's comments for areas FTMM-03, FTMM-04, FTMM-05, FTMM-08, FTMM-12, FTMM-14, FTMM-22, FTMM-25, FTMM-53, FTMM-54, FTMM-55, FTMM-56, FTMM-57, FTMM-58, FTMM-59, FTMM-61, FTMM-64, and FTMM-66.

FTMM-18

The Department had indicated low-flow sampling must also be performed if Passive Diffusion Bag Sampling (PDBS) is conducted, for comparison purposes. The *Response to Comments* submittal contends as low-flow sampling has been historically conducted at this area, PDBS sampling only is appropriate. Based upon this reasoning, the Department agrees the performance via PDBS only is acceptable for the ensuing round of ground water sampling. The PDBS results are to be compared to the previous low-flow sampling results and presented in the forthcoming sampling report.

FTMM-68

The Department had expressed concern regarding the use of PDBS for long-term monitoring. FTMM-68 has not been fully characterized, and the use of PDBS for longer term monitoring is acceptable only for well characterized sites, as per the DEP's Field Sampling Procedures

Manual. As per information provided in the *Response to Comments* submittal, a Remedial Investigation to fully characterize the area is to be conducted in the near future using low-flow sampling methodology, and request approval for the use of PDBS to characterize contaminant concentrations in the interim. This is acceptable based on the stipulation that a full remedial investigation is to be performed. The November '14 *Response to Comments* (Section V), however, indicated the Remedial Investigation Workplan for FTMM-68 was awaiting DEP approval. Although some clarification was requested, the proposed remedial activities, soil and ground water, were approved for the FTMM-68 area via letter dated *January 8, 2014*, which addressed the RI/FS Workplan for FTMM-22, FTMM-53, FTMM-59 & FTMM-68.

If you have any questions, please contact me at (609)984-6606, or via email at Linda.Range@dep.nj.gov.

Sincerely,

Linda Range

Bureau of Case Management

cc:

Joe Pearson, Calibre Rick Harrison, FMERA Joe Fallon, FMERA Frank Barricelli, RAB

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

November 26, 2014

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

Subject:

State of New Jersey Department of Environmental Protection Comments on the Final Baseline Groundwater Sampling Report (August 2013) Fort Monmouth, Oceanport, Monmouth County. PI G000000032

Attachments: A. 2009 Temporary Well Points and Analytical Data

B. Revised Table 7

Dear Ms. Range:

Fort Monmouth (FTMM) and Parsons have reviewed the New Jersey Department of Environmental Protection (NJDEP) comments on the Final Baseline Groundwater Sampling Report (August 2013) as documented in your letter dated July 3, 2014. Response to your comments are provided below in the order in which they were presented in the comment letter.

A. GENERAL COMMENT/STATEMENT:

The New Jersey Department of Environmental Protection (Department) has completed review of the referenced report, dated March 2014, received on April 7, 2014. The report was prepared by Parsons Government Services Inc. (Parsons), in support of the Remedial Investigation (RI), Feasibility Study (FS), and Decision Documents project at Fort Monmouth.

A baseline ground water sampling event was conducted at 21 "sites" at the Fort Monmouth property in August 2013. The purpose of the sampling event was to re-establish baseline conditions following suspension of ground water sampling in late 2011, as well as to evaluate Fort Monmouth's long-term ground water sampling program, and the current analytical conditions of the ground water at each site. Sampling methodologies used included low-flow and passive diffusion bag samplers (PDBS). At four sites (FTMM-14, 18, 59, 68), only PDBS sampling was conducted. At three sites (FTMM-05, 22, 58) both low-flow and PDBS samples were obtained for comparison purposes. Fourteen (14) sites were only sampled using low-flow. The report states that PDBS concentrations were consistently biased somewhat low compared to the low-flow

concentrations. The report concludes, however, that the PDBS results were still similar to the low-flow results and are considered representative of ground water conditions at the sites. Based on this conclusion, the report states that for future ground water sampling, PDBS will be used for all sites where volatile organic compounds (VOCs) are the sole contaminants of concern. Comments are presented below.

Section 3.1; Table 6; Appendices & associated Tables - The "background concentrations" submitted in the 1995 Weston report were not accepted by the Department as representative of background conditions for Fort Monmouth. The study was not performed in accordance with Departmental protocol and is not a consideration in our evaluations/determinations. As indicated in Section 3.1, background concentrations are evaluated on a site by site basis.

A. RESPONSE: Acknowledged,

B. FTMM-02 Landfill

B. COMMENT: Historic sampling at this parcel indicated levels of VOCs above the Ground Water Quality Standard (GWQS); metals were previously determined to be reflective of naturally occurring conditions. The August 2013 sampling of wells using low-flow confirmed the continued exceedance of the GWQS for VOCs. The report recommends VOC sampling of wells M2MW03, M2MW11, M2MW21, M2MW22 and M2MW24 for two additional rounds using PDBS. Well M2MW10 will be monitored as a down gradient sentinel well. Although the proposal is acceptable, for wells in which the saturated screen length exceeds 10 feet, the deployment of multiple PDBS will be required. At any point where a decision is made to terminate ground water sampling at this site, confirmatory sampling using low-flow due to PDBS biasing low as compared to low-flow results at the Fort Monmouth site will be required.

B1. RESPONSE: Agreed.

C. FTMM-03 Landfill

- C. COMMENT: Historic sampling at this parcel revealed GWQS exceedances of vinyl chloride and metals. The August 2013 sampling of wells using low-flow confirmed the continued exceedance of the GWQS for vinyl chloride in well 3MW07. Well 3MW02 was not sampled due to low water column and silty conditions; however, Table 4 of Appendix B recommends sampling of 3MW02 for VOCs and metals. The report attributes the presence of vinyl chloride to leaching of PVC piping from well 3MW07. A temporary well point investigation was conducted in 2009 to delineate the vinyl chloride, the results were non-detect, and abandonment of 3MW07 is recommended. The recommendations are acceptable. However, a figure presenting the locations and sampling results from the 2009 temporary well point investigation must be provided to the Department.
- **C. RESPONSE:** A figure showing the location of 2009 temporary well points and the associated groundwater analytical data are provided in **Attachment A**. Therefore, FTMM will abandon 3MW07 in accordance with NJDEP well abandonment procedures.

D. FTMM-04 Landfill

D. COMMENT: Historic sampling at this parcel revealed GWQS exceedances of various metals. The August 2013 sampling of wells using low-flow confirmed the continued exceedance of the GWQS for metals. The metals are attributed to background conditions, and cessation of ground water sampling is recommended. The recommendation is acceptable. Monitoring wells at this

parcel shall be properly abandoned if they are no longer subject to sampling or gaging for water elevation data.

D. RESPONSE: Agreed.

E. FTMM-05 Landfill

- E. COMMENT: Historic sampling at this parcel revealed GWQS exceedances of PCE, TCE and vinyl chloride, which the August 2013 sampling, using low-flow and PDBS, confirmed. The report recommends annual VOC sampling of wells M5MW11, M5MW16, M5MW20 and M5MW23 using PDBS. The Department finds the proposal to be acceptable. At any point where a decision is made to terminate ground water sampling at this parcel, the Department will require confirmatory sampling using low-flow due to PDBS results at this parcel biased low compared to the low-flow results.
- E. RESPONSE: Agreed.

F. FTMM-08 Landfill

- F. COMMENT: Historic sampling at this parcel revealed GWQS exceedances of pesticides, benzene, PCE and lead. The August 2013 sampling of wells using low-flow confirmed the exceedance of the GWQS for PCE and lead. The well with historic pesticide exceedances (697MW01) could not be located and was not sampled. The report recommends annual ground water sampling of well M8MW11 for VOCs and lead, M8MW12, 15, 16 and 24 for VOCs and M8MW17 and 21 for lead only. Monitoring well 697MW01 will be located and sampled for pesticides, lead and VOCs. The recommendation is acceptable.
- F. RESPONSE: Agreed.

G. FTMM-12 Landfill

- G. COMMENT: Historic sampling at this parcel revealed GWQS exceedances of various metals, including arsenic and lead. Historic exceedances of metals except for lead are attributed to background quality. The August 2013 sampling was conducted for lead analysis only. Lead was not detected. The report recommends discontinuing ground water sampling at this parcel. The Department finds the recommendation to be acceptable. Monitoring wells at this parcel shall be properly abandoned if they are no longer subject to sampling or gauging for water elevation data.
- G. RESPONSE: Agreed.

H. FTMM-14 Landfill

- H. COMMENT: Historic sampling at this parcel revealed no GWQS exceedances of VOCs. The August 2013 sampling of wells using PDBS confirmed that there was no exceedance of the GWQS. The report recommends discontinuing ground water sampling at this parcel. The Department finds the recommendation to be acceptable. Monitoring wells at this parcel shall be properly abandoned if they are no longer subject to sampling or gaging for water elevation data. The Department also notes that on Table 1, well M14MW19 is listed as having 10 feet of total screen length. However, the table also lists the saturated screen length as 13.35 feet. This discrepancy should be clarified.
- **H. RESPONSE:** Agreed. The saturated screen thickness for M14MW19 is 10 feet.

I. FTMM-18 Landfill

- I. COMMENT: Historic sampling at this parcel revealed GWQS exceedances of benzene and 1,2-DCA. The August 2013 sampling results of wells using PDBS showed the exceedance of the GWQS for 1,2-DCA in well M18MW22. Well M18MW23 could not be located and was not sampled. The report recommends annual ground water sampling using PDBS for M18MW22 and M18MW23 if it can be located. Every reasonable effort, such as reviewing the NJ State Plane Coordinates of the well, must be made to locate M18MW23. The use of M18MW22 as the sole monitoring well at this parcel will not be acceptable due to the vast difference in historical concentrations between M18MW22 and M18MW23. Historic 2011 benzene concentrations for M18MW23 were 775 ppb and 664 ppb while 2011 concentrations for M18MW22 were 1.81 ppb and 1.65 ppb. The Department cannot approve the use of PDBS sampling only for this parcel. Once M18MW23 is located, the Department can approve the use of both PDBS and low-flow sampling for comparison purposes.
- I. RESPONSE: M18MW23 has been located and will be sampled using PDB methodology during the 2014 annual sampling event, as the historical concentrations of benzene are appropriate for the use of PDBs. FTMM believes that there is enough low flow data (four sampling events over two years) to characterize the concentrations of the volatile constituents in M18MW23 and that a low-flow PDB comparison is not needed for this well. FTMM will vertically profile this well using PDBs should the saturated screen be greater than 10 feet. In addition to the sampling of M18MW23, M18MW22 will also be sampled using PDB methodology and analyzed for VOCs.

J. FTMM-22 Former Wastewater Treatment Lime Pit

- J. COMMENT: Historic sampling at this parcel revealed GWQS exceedances of TCE. The August 2013 sampling of wells using low-flow and PDBS confirmed the continued exceedance of the GWQS for TCE in ground water. The report recommends quarterly VOC sampling of wells CWIMW27, CWIMW29, CWIMW31 and CWIMW281 using PDBS. The Department finds the proposal to be acceptable. At any point where a decision is made to terminate ground water sampling at this parcel, the Department will require confirmatory sampling using low-flow due to PDBS results biasing low compared to low-flow results at the Fort Monmouth site.
- J. RESPONSE: Agreed.

K. FTMM-25 Landfill

- K. COMMENT: Historic sampling at this parcel revealed GWQS exceedances of various metals. The August 2013 sampling of wells using low-flow confirmed the continued exceedance of the GWQS for metals. The metals are attributed to background conditions. The report recommends discontinuing ground water sampling at this parcel. The Department finds the recommendation to be acceptable. Monitoring wells at this parcel shall be properly abandoned if they are no longer subject to sampling or gauging for water elevation data.
- K. RESPONSE: Agreed.

L. FTMM-53 Building 699

L. COMMENT: Historic sampling at this parcel revealed GWQS exceedances of benzene, PCE, TCE, TBA, VOC TICs and lead. The August 2013 sampling of wells using low-flow showed the exceedance of the GWQS for benzene, xylenes, PCE, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene and VOC TICs. The report recommends quarterly VOC sampling of wells

699MW01, 699MW04, 699MW06, 699MW09, 699MW16, 699RW03, 699RW05 and 699RW11 using PDBS. The Department finds the proposal to be acceptable. For wells in which the saturated screen length exceeds 10 feet, the deployment of multiple PDBS will be required. At any point where a decision is made to terminate ground water sampling at this parcel, the Department will require confirmatory sampling using low-flow due to PDBS biasing low compared to low-flow at the Fort Monmouth site.

L. RESPONSE: Agreed.

M. FTMM-54 Building 296

M. COMMENT: Historic sampling at this parcel revealed GWQS exceedances of benzene, lead and arsenic. The metals are attributed to background conditions. The August 2013 sampling of wells using low-flow showed an exceedance of the GWQS for benzene. The report recommends annual VOC sampling of wells 269MW04 and 296MW06 using PDBS. The Department finds the proposal to be acceptable. For wells in which the saturated screen length exceeds 10 feet, the deployment of multiple PDBS will be required. At any point where a decision is made to terminate ground water sampling at this parcel, the Department will require confirmatory sampling using low-flow due to PDBS biasing low compared to low-flow at the Fort Monmouth site.

M. RESPONSE: Agreed.

N. FTMM-55 Building 290

- N. COMMENT: Historic sampling at this parcel revealed GWQS exceedances of arsenic and lead. The August 2013 sampling of wells using low-flow confirmed the continued exceedance of the GWQS for lead. The metals are attributed to background conditions. The report recommends discontinuing ground water sampling at this parcel. The Department finds the recommendation to be acceptable. Monitoring wells at this parcel shall be properly abandoned if they are no longer subject to sampling or gauging for water elevation data.
- N. RESPONSE: Agreed.

O. FTMM-56 Building 80

- O. COMMENT: Historic sampling at this parcel revealed GWQS exceedances of chlordane, arsenic, lead and cadmium. The August 2013 sampling of wells was conducted for lead only using low-flow. There were no exceedances of lead. The report recommends one additional sampling round of well 80MW02 for chlordane and 80MW05 for lead. The Department finds the recommendation for well 80MW02 to be acceptable. The Department disagrees with the recommendation to sample well 80MW05 for lead only. The last low-flow sampling event in August 2011 had lead, arsenic and cadmium exceeding both the GWQS and background concentrations. Well 80MW05 shall be sampled during the next round for TAL metals.
- **O. RESPONSE:** Acknowledged. FTMM will modify the analysis method from lead only to lead, arsenic and cadmium at well 80MW05.

P. FTMM-57 Building 108

P. COMMENT: Historic sampling at this parcel revealed GWQS exceedances of lead. In the August 2013 sampling event, there were no exceedances of lead in ground water. The report recommends two additional sampling rounds of well 108MW04 for lead. The Department finds the recommendation acceptable.

P. RESPONSE: Agreed.

Q. FTMM-58 Building 2567

- **Q. COMMENT:** Historic sampling at this parcel revealed GWQS exceedances of TBA in wells 2567MW01 and 2567MW03. The August 2013 sampling results using low-flow and PDBS were below the GWQS for TBA. The report recommends two annual sampling events for TBA analyses of wells 2567MW01 and 2567MW03 using low-flow. The Department finds the proposal to be acceptable.
- Q. RESPONSE: Agreed.

R. FTMM-59 Building 1122

- R. COMMENT: Historic sampling at this parcel revealed no GWQS exceedances for VOCs. The August 2013 sampling results of wells using PDBS showed no exceedance of VOCs. The text of the report recommends VOC sampling of well 1122MW07 for one additional sampling round to confirm the 2013 results because August 2013 was the first time this well was sampled. The Department finds the proposal to be acceptable. The Department also notes that there is a discrepancy between the recommendation in the text and the recommendation in Table 7. Table 7 recommends that sampling at this parcel be discontinued. Table 7 shall be amended to indicate well 1122MW07 will be sampled for VOCs using PDBS methodology.
- **R. RESPONSE:** Monitoring well 1122MW07 will be sampled for one additional round during the 2014 annual sampling event using PDB methods. The sample will be analyzed for VOCs. Table 7 has been amended and provided as **Attachment B**.

S. FTMM-61 Building 283

- S. COMMENT: Historic sampling at this parcel revealed GWQS exceedances of metals, benzene and VOC TICs in 283MW02. The August 2013 sampling of wells using low-flow for VOCs and lead showed no exceedances. The report recommends VOC sampling of well 283MW02 for one additional sampling round using PDBS methodology to confirm the 2013 results. The Department finds the proposal to be conditionally acceptable. If the saturated screen length exceeds 10 feet, the deployment of multiple PDBS will be required. If a decision is made to terminate ground water sampling at this parcel based on PDBS results, the Department will require confirmatory sampling using low-flow due to PDBS biasing low compared to low-flow at the Fort Monmouth site.
- **S. RESPONSE:** Acknowledged. Because the next annual sampling round is intended to be the last round, FTMM will sample 283MW02 using LFPS method.

T. FTMM-64 Building 812

T. COMMENT: Historic sampling at this parcel revealed GWQS exceedances of benzene, vinyl chloride and metals. The August 2013 sampling of wells using low-flow for VOCs and lead showed no exceedances. The report recommends VOC sampling of well 812MW04 for one additional sampling round using PDBS methodology to confirm the 2013 results (however Section 5.0 recommends sampling be continued on an annual basis). The Department finds the proposal to be conditionally acceptable. If the saturated screen length exceeds 10 feet, the deployment of multiple PDBS will be required. If a decision is made to terminate ground water sampling at this parcel based on PDBS results, the Department will require confirmatory sampling using low-flow due to PDBS biasing low compared to low-flow at the Fort Monmouth site.

T. RESPONSE: Acknowledged. Because the next annual sampling round is intended to be the last round, FTMM will sample 812MW04 using LFPS method.

U. FTMM-66 Building 886

- U. COMMENT: Historic sampling at this parcel revealed GWQS exceedances of benzene, VOC TICs, arsenic and lead. The August 2013 sampling results from wells using low-flow showed the exceedance of the GWQS for SVOC TICs. The report recommends that sampling at this parcel be discontinued. The Department finds the recommendation unacceptable. Total SVOC TICs exceeded the GWQS of 500 ppb in wells 886RW01 and 886RW06. Ground water monitoring of wells 886RW01, 886RW06 and 886RW08 shall continue for SVOC+TICs using low-flow methodology.
- U. RESPONSE: Agreed. FTMM will continue to monitor 886RW01, 886RW06 and 886RW08 at FTMM-66 for SVOC+TICs using the LFPS method for two additional annual rounds.

V. FTMM-68 Building 700

- V. COMMENT: There are no historic sampling results for this parcel. The August 2013 sampling results of wells using PDBS showed the exceedance of the GWQS for PCE, TCE, cis-l,2-DCE and vinyl chloride in wells 565MW01 and 565MW01D. The report recommends quarterly ground water sampling for VOC+TICs using PDBS for these 2 wells. The Department agrees with the recommendation of quarterly sampling, however, has concerns regarding the use of PDBS for long-term monitoring at this parcel. Unlike the other Fort Monmouth parcels, there are no historical ground water sampling data for comparison with the PDBS results. The DEP's Field Sampling Procedures Manual states that "the intended application of Passive Diffusion Bag Samplers (PDBS) is for long-term monitoring of volatile organic compounds (VOCs) in ground water at well-characterized sites." The Department would find long-term sampling of the wells using PDBS acceptable if low-flow sampling is conducted concurrently once or twice for comparison.
- V. RESPONSE: Fort Monmouth agrees that FTMM-68 has not been fully characterized, however a remedial investigation (RI) is proposed for this site in the near future and the sampling of existing and proposed wells using the LFPS method is proposed in the RI. In the meantime Fort Monmouth proposes to continue to use PDBs to characterize the concentrations. The two existing wells are located in the potential source area and the detected VOCs have a high enough concentration that PDBs, while they tend to bias low, can effectively capture the nature of the VOC concentrations. A work plan for the RI has been submitted to NJDEP and is awaiting approval. During the RI the two existing wells along with new wells will be sampled using LFPS methods and a PDB/LFPS comparison will be made at that time. Additionally, once the RI is complete, a revised long-term monitoring plan will be submitted.

W. GENERAL COMMENT/STATEMENT:

Finally, each of the above comments speak only to the ground water findings and recommendations included in the referenced submittal, rather than to the ground water at the entire site.

W. RESPONSE: Acknowledged.

Please contact me if you have any questions.

Sincerely,

Wanda Green

BRAC Environmental Coordinator

OACSIM – U.S. Army Fort Monmouth

Cc:

Parsons

USACE

Encl

ATTACHMENT A

M-3 Landfill Temporary Well Points (February 8, 2011) and Analytical Data Report (November 2, 2009)

Feet

Fort Monmouth, New Jersey

Date: February 8, 2011
New Jersey State Plane Feet, NAD83
All drawings must be field verified.

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS

PHONE: (732) 532-6224 FAX: (732) 532-6263

WET-CHEM - METALS - ORGANICS - FIELD SAMPLING

CERTIFICATIONS: NJDEP #13461



ANALYTICAL DATA REPORT
Fort Monmouth Environmental Laboratory
ENVIRONMENTAL DIVISION
Fort Monmouth, New Jersey
PROJECT: M3 Landfill

M3/Landfill

		T	1	T
Field Sample Location	Laboratory	Matrix	Date and Time	Date Received
	Sample ID#		of Collection	
M3-TMP-01A	9043301	Aqueous	02-Nov-09 10:14	11/02/09
M3-TMP-01B	9043302	Aqueous	02-Nov-09 10:44	11/02/09
M3-TMP-02A	9043303	Aqueous	02-Nov-09 11:15	11/02/09
M3-TMP-02B	9043304	Aqueous	02-Nov-09 11:35	11/02/09
M3-TMP-03A	9043305	Aqueous	02-Nov-09 13:33	11/02/09
M3-TMP-03B	9043306	Aqueous	02-Nov-09 13:50	11/02/09
M3-TMP-04A	9043307	Aqueous	02-Nov-09 14:15	11/02/09
M3-TMP-04B	9043308	Aqueous	02-Nov-09 14:30	11/02/09
M3-FB	9043309	Aqueous	02-Nov-09 14:40	11/02/09
M3-TMP-05A	9043310	Aqueous	02-Nov-09 15:15	11/02/09
Trip Blank	9043311	Aqueous	02-Nov-09 08:25	11/02/09
M3-TMP-05B	9043312	Aqueous	02-Nov-09 13:40	11/02/09

ANALYSIS: FORT MONMOUTH ENVIRONMENTAL LAB VOA+15

Jacqueline Hamer/Date:

QA/QC Supervisor

The enclosed report relates only to the items tested. The report may not be reproduced, except in full, without written approval of the U.S. Army Fort Monmouth Directorate of Public Works.

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CHAIN OF CUSTODY

Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703

Tel (732)532-4359 Fax (732)532-6263 EMail:jacqueline.hamer@us.army.mil

NJDEP Certification #13461

Chain of Custody Record

Customer: Joe Fa	Mon	Project No:	······································					Anal	ysis P	aramo	eters			Comments:
hone#: 732-532		Location: $ u$	3			\n								
)DERA ()OMA ()Other:/BLAC		•			V0+15								
Samplers Name / Con	npany: John Monta	omeny .	Sample	#	07									
LIMS/Work Order #	Sample Location	Date	Time	Туре	bottles									Remarks / Preservation Method
40 433 01	M3-TMP-01A	11-2-09	1014	AQ	2	×								
	M3-TMP-01B	11-2-09	1044	AQ	a	Х								
43	M3-TMP-02A	11-2-09	1115	AQ	2	Х								
U.S.	M3-TMP-OZB	11-2-09	1135	AO	2	Х								
	M3-TMP-03A	11-2-09	13 33	Aq	2	X				·				
	M3-TMP-03B	11-2-09	1350	Ag	2	Х								
	M3-TMP-04A	11-2-09	1415	AQ	2	X								
	M3-TMP-04B	11-2-09	1430	Ag	2	X								
4	M3- FB	11-2-09	1440	AQ	2	X								
10	M3-TMP-05A	11-2-09	1515	AQ	2	×								
//_	Trip Blank	11-2-09	825	AQ	2	X								
i i	M3-TMU- Q5B	11-2-09	1.340	PHA	-2	X								
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Report Type: ()Full, ()	eport Type: ()Full, ()Reduced, ()Standard, ()Screen / non-certified, ()EDD Full X Comments: unaround time: ()Standard 3 wks, (()Rush Wk., ()ASAP VerbalHrs.													

print legibly

Page ____ of _____

new coc._1.XLS10/9/2009

SAMPLE RECEIPT FORM

Date Received:	//-	2-09	Work Order	ID#: _	10433	
Site/Proj. Name:	m	ali AAII	Cooler Temp	(°C):	ICE	
Received By: _ (Print name)	V. C	Lenguera	Sign:	U	you	
(, , , , , , , , , , , , , , , , , , ,		Check the app	ropriate box	- (/	
1. Did the sample	es come			☑ yes	ˈ☐ no □ n/a	
		n good condition?		包 yes	□ no	
		ody filled out correct	ly and legibly?	⊘ yes	□ no	
		ody signed in the ap		🛮 yes	□ no	
		with the chain of cust		Ø yes	□ no	
6. Were the corre	ct cont	tainers/preservatives	used? · ·	☑ yes	□ no	
		unt of sample supplie		☑ yes	no	
		sent in VOA vials?		□ yeş,	⊿no □ n/a	
9. Were samples				🛮 yes	□ no	
10. Were analyze	-imme	diately tests perform	within 15 minutes [□ yes[□ no □ n/a	
		•	-			
Fill out the fo	llowi	ng table for eac	th sample bottl	е		
Lims ID	рН	Preservative	Sample ID	рН	Preservative	•
Lims ID	рН	Preservative	Sample ID	рН	Preservative	<u>_</u>
Lims ID	pH	Preservative	Sample ID	рН	Preservative	<u></u>
Lims ID	рĦ	Preservative	Sample ID	рН	Preservative	<u></u>
Lims ID	pН	Preservative	Sample ID	рН	Preservative	
Lims ID	рН	Preservative	Sample ID	рН	Preservative	
Lims ID	pН	Preservative	Sample ID	рН	Preservative	
Lims ID	рН	Preservative	Sample ID	pH	Preservative	
Lims ID	pH	Preservative	Sample ID	pH	Preservative	
Lims ID	pH	Preservative	Sample ID	pH	Preservative	
Lims ID	pH	Preservative	Sample ID	pH	Preservative	
Lims ID	pH	Preservative	Sample ID	рН	Preservative	
Lims ID	pH	Preservative	Sample ID	pH	Preservative	
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Lims ID Comments:	pH	Preservative	Sample ID	pH	Preservative	
	pH	Preservative	Sample ID	pH	Preservative	
	pH	Preservative	Sample ID	рн	Preservative	

METHOD SUMMARY

Method Summary

EPA Method 624–Aqueous Gas Chromatographic Determination of Volatiles in Water

A 5-ml volume of sample is added to 5-ml aliquot of water. Surrogates and internal standards are added and the sample is placed on a purge and trap concentrator. The sample is purged and desorbed into a GC/MS system. Volatiles are then identified and quantitated.

LABORATORY CHRONICLE

Laboratory Chronicle

Lab ID: 90433

Site: M3/LANDFILL

DateHold TimeDate Sampled11/02/09NAReceipt/Refrigeration11/02/09NA

Analyses

1. Volatile Organics

11/03/09

14 Days



CONFORMANCE/ NON-CONFORMANCE SUMMARY

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

			Indicate Yes, No, N/A
1.	Chromatograms lab	eled/Compounds identified	
		and method blanks)	425
2.	Retention times for	chromatograms provided	yes
3.	GC/MS Tune Specif	fications	
	a.	BFB Meet Criteria	<u>ues</u>
	b.	DFTPP Meet Criteria	_NA_
4.	GC/MS Tuning Free	quency – Performed every 24 hours for 600	
	series and 12 hours	for 8000 series	yes
5.	GC/MS Calibration	- Initial Calibration performed before sample	
		ing calibration performed within 24 hours of	l ai
	sample analysis for	600 series and 12 hours for 8000 series	yes
6.	GC/MS Calibration	requirements	
	a.	Calibration Check Compounds Meet Criteria	155
	b.	System Performance Check Compounds Meet Criteria	yrs
7.	Blank Contamination	n – If yes, List compounds and concentrations in each blank:	_NO_
	a.	VOA Fraction	
	ь.	B/N Fraction VA	
	c.	Acid Fraction NA	
8.	Surrogate Recoverie	s Meet Criteria	<u> Yes</u>
	If not met, list the outside the acce	nose compounds and their recoveries, which fall ptable range:	
	a.	VOA Fraction	
	b.	B/N Fraction NA	
	c.	Acid Fraction NH	
	If not met, were as "estimated"?	the calculations checked and the results qualified	
9.	Matrix Spike/Matrix	Spike Duplicate Recoveries Meet Criteria	_NO_
-		e compounds and their recoveries, which fall	
	outside the acceptab		•
	a.	VOA Fraction Some Compounds aled with high T	400veries
	b.	B/N Fraction	
	C.	Acid Fraction NA	

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

		Indicate Yes, No, N/A
10.	Internal Standard Area/Retention Time Shift Meet Criteria (If not met, list those compounds, which fall outside the acceptable range)	
	a. VOA Fraction	
	b. B/N Fraction いん	
11.	Extraction Holding Time Met	<u> </u>
	If not met, list the number of days exceeded for each sample:	
12.	Analysis Holding Time Met	yes.
	If not met, list the number of days exceeded for each sample:	
Add	itional Comments:	
Lab	pratory Manager: \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	

VOLATILE ORGANICS

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY NJDEP CERTIFICATION # 13461

Definition of Qualifiers

- U: The compound was analyzed for but not detected.
- B: Indicates that the compound was found in the associated method blank as well as in the sample.
- J: Indicates an estimated value. This flag is used:
 - (1) When the mass spec and retention time data indicate the presence of a compound however the result is less than the reporting limit but greater than the MDL.
 - (2) When estimating the concentration of a tentatively identified compound (TIC), where a 1:1 response is assumed.
- D: This flag is used to identify all compounds (target or TIC) that required a dilution.
- E: Indicates the compound's concentration exceeds the calibration range of the instrument for that specific analysis.
- N: This flag is only used for TICs. It indicates the presumptive evidence of a compound. For a generic characterization of a TIC, such as unknown hydrocarbon, the flag is not used.

Data File Operator

Date Acquired

VA4808,D

ROBERTS

3 Nov 2009 3:24 pm

Sample Name

MB11030901

Field ID

METHOD 624 11/3/09

Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Result		Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein		1		detected	5	2.09 ug/L	5,00 ug/L	
107131	Acrylonitrile	*			detected	2	1.64 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol				detected	100	1.89 ug/L	5,00 ug/L	
1634044	Methyl-tert-Butyl ether				detected	70	0.18 ug/L	0,50 ug/L	
108203	Di-isopropyl ether				detected	20000	0,12 ug/L	0.50 ug/L	
75718	Dichlorodifluoromethane	·			detected	1000	0,22 ug/L	1.00 ug/L	
74-87-3	Chloromethane				detected	nle	0.10 ug/L	1.00 ug/L	
75-01-4	Vinyl Chloride				detected	1	0.22 ug/L	1.00 ug/L	
	Bromomethane				detected	to	0.25 ug/L	1.00 ug/L	
74-83-9			 		detected	nle	0.22 ug/L	1.00 ug/L	
75-00-3	Chloroethane	 -			detected	2000	0.18 ug/L	1,00 ug/L	
75-69-4	Trichloroftuoromethane		 -		detected	1	0,20 ug/L	. 0,50 ug/L	
75-35-4	1,1-Dichloroethene		 		detected	6000	0.18 ug/L	0.50 ug/L	114
67-64-1	Acetone				detected	700	0.18 ug/L	0,50 ug/L	
75-15-0	Carbon Disulfide				detected	3	0.16 ug/L	0.50 ug/L	
75-09-2	Methylene Chloride		 		detected	100	0.20 ug/L	0,50 ug/L	
156-60-5	trans-1,2-Dichloroethene				detected	50	0.19 ug/L	0,50 ug/L	
75-35-3	1,1-Dichloroethane		-		detected	7000	0.20 ug/L	0.50 ug/L	
108-05-4	Vinyl Acetate		<u> </u>			300	0.16 ug/L	1,00 ug/L	
78 - 93-3	2-Butanone		ļ- 		detected	70	0.10 ug/L	0.50 ug/L	
156-59-2	cis-1,2-Dichloroethene		l		detected		0.14 ug/L 0.21 ug/L	0.50 ug/L	
67-66-3	Chloroform				detected	70	0.21 ug/L 0.17 ug/L	0.50 ug/L	
75-55-6	1,1,1-Trichloroethane				detected	30	0,17 ug/L 0,27 ug/L	0.50 ug/L	
56-23-5	Carbon Tetrachloride		ļ-		detected		0.27 ug/L 0.16 ug/L	0.50 ug/L	•
71-43-2	Benzene		<u> </u>		detected		0.10 ug/L 0.19 ug/L	0.50 ug/L	
107-06-2	1,2-Dichloroethane				detected	2	0.19 ug/L	0.50 ug/L	***************************************
79-01-6	Trichloroethene				detected	11		0.50 ug/L	
78-87-5	1,2-Dichloropropane		L		detected		0.16 ug/L 0.14 ug/L	0.50 ug/L	
75-27-4	Bromodichloromethane				detected	1		1.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether				detected	nle	0.25 ug/L	0.50 ug/L	
10061-01-5	cis-1,3-Dichloropropene				detected	1	0.16 ug/L		
108-10-1	4-Methyl-2-Pentanone				detected	nte	0.26 ug/L	1.00 ug/L	
108-88-3	Toluene				detected	1000	0.15 ug/L	0.50 ug/L	
10061-02-6	trans-1,3-Dichloropropene				detected	1	0.12 ug/L	0,50 ug/L	
79-00-5	1,1,2-Trichloroethane				detected	3	0.14 ug/L	0.50 ug/L	
127-18-4	Tetrachloroethene				detected_		0.18 ug/L	0.50 ug/L	
591-78-6	2-Hexanone				detected	nle	0.20 ug/L	0.50 ug/L	
126-48-1	Dibromochloromethane			not	detected	1	0.14 ug/L	0.50 ug/L	
108-90-7	Chlorobenzene				detected	50	0.15 ug/L	0.50 ug/L	
100-41-4	Ethylbenzene				detected	700	0.16 ug/L	0,50 ug/L	
630-20-6	1,1,1,2-tetrachloroethane				detected	11	0.15 ug/L	0,50 ug/L	
1330-20-7	m+p-Xylenes	~			detected	nle	0.27 ug/L	1.00 ug/L	
1330-20-7	o-Xylene			not	detected	nle	0.14 ug/L	0.50 ug/L	
100-42-5	Styrene				detected	100	0.12 ug/L	0,50 ug/L	
75-25-2	Bromoform			пот	detected	4	0.14 ug/L	1.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane		·	not	detected	1	0.12 ug/L	0.50 ug/L	
541-73-1	1,3-Dichlorobenzene			not	detected	600	0.12 ug/L	0.50 ug/L	
106-46-7	1.4-Dichlorobenzene			not	detected	75	0.12 ug/L	0.50 ug/L	
95-50-1	1,2-Dichlorobenzene		 		detected	600	0.12 ug/L	0.50 ug/L	

*Results between MDL and RL are estimated values

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9C 07Nov2005

Qualifiers

B = Compound found in related blank

E = Value above linear range

D = Value from dilution

PQL = Practical Quantitation Limit

J= Estimated concentration, value falls between R.L. and M.D.L.

MDL = Method Detection Limit

NLE = No Limit Established

R.T. = Retention Time

R.L. = Reporting Limit

11/4/2009 8:32 AM

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

		TENTATIVEL IDENT	THE COM CONDO	MB11030901
Lab Name:	FMETL		Contract:	
Lab Code:	13461	Case No.: MW	SAS No.: S	DG No.: 90433
Matrix: (soil/v	water)	WATER	Lab Sample ID:	MB11030901
Sample wt/vo	ol:	5.0 (g/ml) ML	Lab File ID:	VA4808.D
Level: (low/n	ned)	LOW	Date Received:	11/2/2009
% Moisture:	not dec.		Date Analyzed:	11/3/2009
GC Column:	RTX-V	<u>/M</u> ID: <u>0.25</u> (mm)	Dilution Factor:	1.0
Soil Extract \	/olume:	(uL)	Soil Aliquot Volu	me: (uL)
Number TICs	s found:	00	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	·
CAS NO		COMPOUND NAME	RT ES	ST. CONC. Q

A-17

Data File

VA4820.D

Sample Name

9043311

Operator Date Acquired ROBERTS 3 Nov 2009 9:35 pm Field 1D

M-3 TRIP BLANK Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	· Result		Regulatory Level (ug/l)	MDL		Qualifiers
107028	Acrolein			not	detected	5	2.09 ug/L	5.00 ug/L	
107131	Acrylonitrile			not	detected	2	1.64 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not	detected	100	1.89 ug/L	5.00 ug/L	
1634044	Methyl-tert-Butyl ether			not	detected	70	0.18 ug/L	0.50 ug/L	
108203	Di-isopropyl ether			not	detected	20000	0.12 ug/L	0.50 ug/L	
75718	Dichlorodifluoromethane			not	detected	1000	0.22 ug/L	1.00 ug/L	
74-87-3	Chloromethane			not	detected	nle	0.10 ug/L	1.00 ug/L	
75-01-4	Vinyl Chloride		•	not	detected		0.22 ug/L	1.00 ug/L	
74-83-9	Bromomethane			not	detected	10	0.25 ug/L	1,00 ug/L	
75-00-3	Chloroethane			not	detected	nle	0.22 ug/L	1.00 ug/L	
75-69-4	Trichlorofluoromethane			not	detected	2000	0.18 ug/L	1.00 ug/L	
75-35-4	1,1-Dichloroethene		•	not	detected	1	0.20 ug/L	0.50 ug/L	
67-64-1	Acetone			not	detected	6000	0.18 ug/L	0.50 ug/L	
75-15-0	Carbon Disulfide			not	detected	700	0.18 ug/L	0.50 ug/L	
75-09-2	Methylene Chloride			not	detected	3	0.16 ug/L	0,50 ug/L	
156-60-5	trans-1,2-Dichloroethene			not	detected	100	0.20 ug/L	0.50 ug/L	
75-35-3	1,1-Dichloroethane			not	detected	50	0.19 ug/L	0.50 ug/L	
108-05-4	Vinyl Acetate			not	detected	7000	0.20 ug/L	0.50 ug/L	
78-93-3	2-Butanone			not	detected	300	0.16 ug/L	1,00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not	detected	70	0.14 ug/L	0.50 ug/L	
67-66-3	Chloroform			not	detected	70	0.21 ug/L	0.50 ug/L	
75-55-6	1,1,1-Trichloroethane			not	detected	30	0,17 ug/L	0.50 ug/L	
56-23-5	Carbon Tetrachloride			not	detected	11	0.27 ug/L	0,50 ug/L	
71-43-2	Benzene			not	detected	1	0.16 ug/L	0,50 ug/L	
107-06-2	I,2-Dichloroethane			not	detected	2	0,19 ug/L	0.50 ug/L	
79-01-6	Trichloroethene			not	detected	1	0.18 ug/L	0.50 ug/L	
78-87-5	1,2-Dichloropropane			not	detected		0.16 ug/L	0.50 ug/L	
75-27-4	Bromodichloromethane				detected	1	0.14 ug/L	0.50 ug/L	
110-75-8	2-Chloroethyl vinyl ether				detected	nie	0.25 ug/L	1,00 ug/L	
10061-01-5	cis-1,3-Dichloropropene				detected	1	0.16 ug/L	0.50 ug/L	
108-10-1	4-Methyl-2-Pentanone				detected	nle	0.26 ug/L	1.00 ug/L	
108-88-3	Toluene				detected	1000	0.15 ug/L	0.50 ug/L	
10061-02-6	trans-1,3-Dichloropropene				detected	1	0.12 ug/L	0.50 ug/L	
79-00-5	1,1,2-Trichloroethane				detected	3	0.14 ug/L	0.50 ug/L	
127-18-4	Tetrachloroethene				detected	1	0.18 ug/L	0,50 ug/L	
591-78-6	2-Hexanone				detected	nle	0.20 ug/L	0.50 ug/L	
126-48-1	Dibromochloromethane			not	detected	1 1	0.14 ug/L	0.50 ug/L	
108-90-7	Chlorobenzene			not	detected	50	0.15 ug/L	0.50 ug/L	
100-41-4	Ethylbenzene				detected	700	0.16 ug/L	0.50 ug/L	
630-20-6	1,1,1,2-tetrachloroethane			not	detected	1	0.15 ug/L	0.50 ug/L	
1330-20-7	m+p-Xylenes				detected	nle	0.27 ug/L	1,00 ug/L	
1330-20-7	o-Xylene				detected	nle	0.14 ug/L	0.50 ug/L	
100-42-5	Styrene				detected	100	0.12 ug/L	0.50 ug/L	
75-25-2	Bromoform				detected	4	0.14 ug/L	1.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane				detected	1	0.12 ug/L	0.50 ug/L	
541-73-1	1,3-Dichlorobenzene				detected	600	0.12 ug/L	0.50 ug/L	
106-46-7	1,4-Dichlorobenzene				detected	75	0.12 ug/L	0.50 ug/L	
95-50-1	1,2-Dichlorobenzene			not	detected	600	0,12 ug/L	0.50 ug/L	

^{*}Results between MDL and RL are estimated values

Qualifiers

B = Compound found in related blank

E = Value above linear range

D = Value from dilution

PQL = Practical Quautitation Limit

J= Estimated concentration, value falls between R.L. and M.D.L.

MDL = Method Detection Limit

NLE = No Limit Established

R.T. = Retention Time

 $R_LL_. = Reporting Limit$

^{*}Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9C 07Nov2005

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Lab Name:	FMETL		·	Contra	act:		. WISTRIF BLANK		
Lab Code:	13461	Ca	se No.: MV	V SAS	No.: _	S	DG No.: <u>904</u>	33	
Matrix: (soil/v	vater)	WATER			Lab Sa	ample ID:	9043311	·	
Sample wt/vo	ol:	5.0	(g/ml) M	<u>.</u>	Lab Fi	le ID:	VA4820.D		
Level: (low/n	ned)	LOW	_		Date F	Received:	11/2/2009		
% Moisture: r	not dec.				Date A	nalyzed:	11/3/2009		
GC Column:	RTX-V	<u>'M</u> ID: <u>0.</u>	25 (mm)		Dilution	n Factor:	1.0		
Soil Extract V	olume:		_ (uL)		Soil Ali	iquot Volu	me:	(uL)	
				CONCENT	RATION	N UNITS:			
Number TICs	found:	0		(ug/L or ug/	Kg)	UG/L	··········		
CAS NO.		COMPOL	IND NAME		R'	T ES	ST. CONC.	Q	

A-19

Data File

VA4818.D ROBERTS Sample Name

9043309 M-3 FB

Operator

Date Acquired

3 Nov 2009 8:33 pm

Field ID Sample Multiplier

CAS#	Compound Name	R.T.	Response	Result	:	Regulatory Level (ng/l)*	MDL	RL	Qualifiers
107028	Acrolein .			not	detected	5	2.09 ug/L	5.00 ug/L	
107131	Acrylonitrile			not	detected	2	1.64 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol				detected	100	1.89 ug/L	5.00 ug/L	
1634044	Methyl-tert-Butyl ether			not	detected	70	0.18 ug/L	0.50 ug/L	
108203	Di-isopropyl ether			not	detected	20000	0.12 ug/L	0.50 ug/L	
75718	Dichlorodifluoromethane			not	detected	1000	0.22 ug/L	1,00 ug/L	
74-87-3	Chloromethane			not	detected	nle	0.10 ug/L	1,00 ug/L	-
75-01-4	Vinyl Chloride			not	detected	1	0,22 ug/L	1.00 ug/L	,,
74-83-9	Bromomethane			not	detected	10	0.25 ug/L	1.00 ug/L	
75-00-3	Chloroethane			not	detected	nle	0.22 ug/L	1,00 ug/L	
75-69-4	Trichlorofluoromethane			not	detected	2000	0.18 ug/L	1.00 ug/L	
75-35-4	I,1-Dichloroethene	- 1			detected	1	0.20 ug/L	0.50 ug/L	
67-64-1	Acetone				detected	6000	0.18 ug/L	0.50 ug/L	
75-15-0	Carbon Disulfide		···		detected.	700	0.18 ug/L	0.50 ug/L	
75-09-2	Methylene Chloride				detected	3	0.16 ug/L	0.50 ug/L	
156-60-5	trans-1,2-Dichloroethene		***		detected	100	0.20 ug/L	0.50 ug/L	
75-35-3	1,1-Dichloroethane	****	4-57-7-		detected	50	0.19 ug/L	0.50 ug/L	
108-05-4	Vinyl Acetate				detected	7000	0.20 ug/L	0.50 ug/L	
78-93-3	2-Butanone	Ì			detected	300	0.16 ug/L	1.00 ug/L	
156-59-2	cis-1,2-Dichloroethene				detected	70	0.14 ug/L	0.50 ug/L	
67-66-3	Chloroform				detected	70	0.21 ug/L	0.50 ug/L	
75-55-6	1,1,1-Trichloroethane				detected	30	0.17 ug/L	0.50 ug/L	
56-23-5	Carbon Tetrachloride			not	detected	I I	0,27 ug/L	0.50 ug/L	
71-43-2	Benzene	•	11,1-12	4-4-01	detected	1	0.16 ug/L	0.50 ug/L	
107-06-2	1,2-Dichloroethane				detected	2	0.19 ug/L	0.50 ug/L	
79-01-6	Trichloroethene				detected	1	0.18 ug/L	0.50 ug/L	-
78-87-5	1,2-Dichloropropane	~-			detected	1	0.16 ug/L	0.50 ug/L	
75-27-4	Bromodichloromethane				detected	1	0.14 ug/L	0.50 ug/L	
110-75-8	2-Chloroethyl vinyl ether	İ			detected	nle	0.25 ug/L	1.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene	**		not	detected	1	0.16 ug/L	0.50 ug/L	-
108-10-1	4-Methyl-2-Pentanone	<u> </u>			detected	nle	0.26 ug/L	1.00 ug/L	
108-88-3	Toluene				detected	1000	0.15 ug/L	0.50 ug/L	
10061-02-6	trans-1,3-Dichloropropene				detected	1	0.12 ug/L	0.50 ug/L	
79-00-5	1,1,2-Trichloroethane				detected	3	0.14 ug/L	0,50 ug/L	
127-18-4	Tetrachloroethene				detected	1	0.18 ug/L	0.50 ug/L	
591-78-6	2-Hexanone				detected	nle	0.20 ug/L	0.50 ug/L	
126-48-1	Dibromochloromethane				detected	1 1	0.14 ug/L	0.50 ug/L	
108-90-7	Chlorobenzene	-			detected	50	0.15 ug/L	0.50 ug/L	
100-41-4	Ethylbenzene		-		detected	700	0.16 ug/L	0.50 ug/L	
630-20-6	1,1,1,2-tetrachloroethane		-		detected	1	0.15 ug/L	0.50 ug/L	
1330-20-7	m+p-Xylenes				detected	nle	0,27 ug/L	1.00 ug/L	
1330-20-7	o-Xylene				detected	nle	0.14 ug/L	0.50 ug/L	
100-42-5	Styrene	-			detected	100	0.12 ug/L	0.50 ug/L	
75-25-2	Bromoform				detected	4	0.14 ug/L	1.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane	1			detected	1	0.12 ug/L	0.50 ug/L	·
541-73-1	1,3-Dichlorobenzene		-		detected	600	0.12 ug/L	0.50 ug/L	
106-46-7	1,4-Dichlorobenzene		-		detected	75	0.12 ug/L	0,50 ug/L	
95-50-1	1,4-Dichlorobenzene		-		detected	600	0.12 ug/L	0.50 ug/L	-

^{*}Results between MDL and RL are estimated values

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9C 07Nov2005

Qualifiers

B = Compound found in related blank

MDL = Method Detection Limit

E = Value above linear rauge

NLE = No Limit Established

D = Value from dilution

R.T. = Retention Time

PQL = Practical Quantitation Limit

R.L. = Reporting Limit

J=Estimated concentration, value falls between R.L. and M.D.L.

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Lab Name:	FMETL			M3	-FB			
Lab Code:	13461	Ca	se No.: MW	' (SAS No.	:	 SDG No.: <u>9</u> 0	0433
Matrix: (soil/v	vater)	WATER	_		Lab	Sample ID:	9043309	
Sample wt/vo	ol:	5.0	(g/ml) ML		Lab	File ID:	VA4818.D	
Level: (low/n	ned)	LOW	_		Dat	e Received:	11/2/2009	
% Moisture: I	not dec.				Date	e Analyzed:	11/3/2009	
GC Column:	RTX-V	/M ID: 0.	25 (mm)		Dilu	tion Factor:	1.0	
Soil Extract \	/olume:		(uL)		Soil	Aliquot Volu	ıme:	(uL)
				CONCE	NTRAT	ION UNITS:		
Number TICs	s found:	0		(ug/L or	ug/Kg)	UG/L		12.
CAS NO.		COMPOL	JND NAME			RT E	ST. CONC.	Q

Data File

VA4810.D ROBERTS Sample Name Field ID 9043301 M-3 TMP-01A

Operator Date Acquired

3 Nov 2009 4:26 pm

Sample Multiplier

CAS#	Compound Name	R.T.	Response	Result		Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not	detected	5	2.09 ug/L	5.00 ug/L	
107131	Acrylonitrile			not	detected	2	1.64 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not	detected	100	1.89 ug/L	5.00 ug/L	
1634044	Methyl-tert-Butyl ether			not	detected	70	0.18 ug/L	0.50 ug/L	
108203	Di-isopropyl ether			not	detected	20000	0.12 ug/L	0.50 ug/L	· · · · · · · · · · · · · · · · · · ·
75718	Dichlorodifluoromethane			not	detected	1000	0.22 ug/L	1.00 ug/L	
74-87-3	Chloromethane			not	detected	nle	0.10 ug/L	1.00 ug/L	
75-01-4	Vinyl Chloride			not	detected	ı	0.22 ug/L	1.00 ug/L	
74-83-9	Bromomethane			not	detected	10	0.25 ug/L	1.00 ug/L	
75-00-3	Chloroethane			not	detected	nle	0,22 ug/L	1.00 ug/L	
75-69-4	Trichlorofluoromethane		,	not	detected	2000	0.18 ug/L	1.00 ug/L	
75-35-4	1.1-Dichloroethene			not	detected	1	0.20 ug/L	0.50 ug/L	
67-64-I	Acetone			not	detected	6000	0.18 ug/L	0.50 ug/L	
75-15-0	Carbon Disulfide			not	detected	700	0.18 ug/L	0.50 ug/L	
75-09-2	Methylene Chloride				detected	3	0.16 ug/L	0.50 ug/L	
156-60-5	trans-1,2-Dichloroethene				detected	100	0.20 ug/L	0.50 ug/L	
75-35-3	1.I-Dichloroethane			not	detected	50	0.19 ug/L	0.50 ug/L	
108-05-4	Vínyl Acetate			not	detected	7000	0,20 ug/L	0.50 ug/L	
78-93-3	2-Butanone			not	detected	300	0.16 ug/L	1.00 ug/L	
156-59-2	cis-1,2-Dichloroethene				detected	70	0.14 ug/L	0.50 ug/L	
67-66-3	Chloroform		i	not	detected	70	0.21 ug/L	0,50 ug/L	
75-55-6	1.1.1-Trichloroethane				detected	30	0.17 ug/L	0,50 ug/L	
56-23-5	Carbon Tetrachloride				detected	I I	0.27 ug/L	0.50 ug/L	
71-43-2	Benzene			not	detected	1	0.16 ug/L	0.50 ug/L	
107-06-2	1,2-Dichloroethane			not	detected	2	0.19 ug/L	0.50 ug/L	
79-01-6	Trichloroethene			not	detected	1 .	0.18 ug/L	0.50 ug/L	
78-87-5	1,2-Dichloropropane			not	detected	11	0.16 ug/L	0.50 ug/L	
75-27-4	Bromodichloromethane			not	detected	1	0.14 ug/L	0.50 ug/L	
110-75-8	2-Chloroethyl yinyl ether			not	detected	nle	0.25 ug/L	1.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene	***		not	detected	1	0.16 ug/L	0.50 ug/L	
108-10-1	4-Methyl-2-Pentanone			not	detected	nle	0.26 ug/L	1.00 ug/L	
108-88-3	Toluene			not	detected	1000	0.15 ug/L	0.50 ug/L	
10061-02-6	trans-1,3-Dichloropropene		-	not	detected	1.	0.12 ug/£	0.50 ug/L	
79-00-5	1.1.2-Trichloroethane			not	detected	3	0.14 ug/L	0.50 ug/L	
127-18-4	Tetrachloroethene			not	detected	ı	0.18 ug/L	0.50 ug/L	
591-78-6	2-Hexanone			not	detected	nle	0.20 ug/L	0.50 ug/L	
126-48-1	Dibromochloromethane			not	detected	1	0.14 ug/L	0.50 ug/L	
108-90-7	Chlorobenzene			not	detected	50	0.15 ug/L	0.50 ug/L	
100-41-4	Ethylbenzene			not	detected	700	0,16 ug/L	0.50 ug/L	
630-20-6	1,1,1,2-tetrachloroethane			not	detected	1	0,15 ug/L	0.50 ug/L	
1330-20-7	m+p-Xylenes			not	detected	nle	0.27 ug/L	1.00 ug/L	
1330-20-7	o-Xylene	T		not	detected	nle	0.14 ug/L	0.50 ug/L	
100-42-5	Styrene			not	detected	100	0.12 ug/L	0,50 ug/L	
75-25-2	Bromoform			not	detected	4	0.14 ug/L	1.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not	detected	111	0.12 ug/L	0.50 ug/L	
541-73-1	1,3-Dichlorobenzene				detected	600	0.12 ug/L	0.50 ug/L	
106-46-7	1,4-Dichlorobenzene			not	detected	75	0.12 ug/L	0.50 ug/L	
95-50-1	1.2-Dichlorobenzene				detected	600	0.12 ug/L	0.50 ug/L	

^{*}Results between MDL and RL are estimated values

Qualifiers

B = Compound found in related blank

E = Value above linear range

D ≈ Value from dilution

PQL = Practical Quantitation Limit

J=Estimated concentration, value falls between R.L. and M.D.L.

MDL = Method Detection Limit

NLE = No Limit Established

R.T. = Retention Time

R.L. = Reporting Limit

000019 1 November 2014

^{*}Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9C 07Nov2005

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Lab Name:	FMETL			Coi	ntract:		INIO-1 INIC-	-UIA
Lab Code:	13461	Cas	se No.: M	w s	SAS No.:	_ s	SDG No.: 90433	
Matrix: (soil/w	/ater)	WATER	_		Lab Sample	ID:	9043301	<u> </u>
Sample wt/vo	ıl:	5.0	(g/ml) <u>N</u>	1L	Lab File ID:		VA4810.D	
Level: (low/m	ned)	LOW	_		Date Receiv	/ed:	11/2/2009	
% Moisture: n	ot dec.				Date Analyz	ed:	11/3/2009	
GC Column:	RTX-V	/M ID: 0.2	. <u>5</u> (mm)	Dilution Fac	tor:	1.0	<u> </u>
Soil Extract V	olume:	-	(uL)		Soil Aliquot	Volu	me:	(uL)
				CONCE	NTRATION UNI	TS:		
Number TICs	found:	0	-	(ug/L or	ug/Kg) UG/	<u>'L</u>		
CAS NO.		COMPOU	ND NAME	<u> </u>	RT	ES	ST. CONC.	Q

Data File

VA4811.D

Sample Name

9043302 M-3 TMP-01B

Operator Date Acquired ROBERTS 3 Nov 2009 4:57 pm Field ID Sample Multiplier 1

						Regulatory Level (ag/l)	•		
CAS#	Compound Name	R.T.	Response	Result			MDL	RL	Qualifiers
107028	Acrolein			not	detected	5	2.09 ug/L	5.00 ug/L	
107131	Acrylonitrile	I		not	detected	2	1.64 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not	detected	100	1.89 ug/L	5.00 ug/L	
1634044	Methyl-tert-Butyl ether			not	detected	70	0.18 ug/L	0.50 ug/L	
108203	Di-isopropyl ether			not	detected	20000	0.12 ug/L	0.50 ug/L	
75718	Dichlorodifluoromethane			not	detected	1000	0.22 ug/L	1.00 ug/L	
74-87-3	Chloromethane			not	detected	nle	0.10 ug/L	1,00 ug/L	
75-01-4	Vinyl Chloride			not	detected	1	0.22 ug/L	1.00 ug/L	
74-83-9	Bromomethane			not	detected	10	0.25 ug/L	1.00 ug/L	
75-00-3	Chloroethane			not	detected	nle	0.22 ug/L	1.00 ug/L	
75-69-4	Trichlorofluoromethane				detected	2000	0.18 ug/L	1.00 ug/L	
75-35-4	1,1-Dichloroethene			not	detected	1	0,20 ug/L	0.50 ug/L	
67-64-I	Acetone			not	detected	6000	0.18 ug/L	0.50 ug/L	
75-15-0	Carbon Disulfide			not	detected	700	0.18 ug/L	0.50 ug/L	
75-09-2	Methylene Chloride			not	detected	3	0.16 ug/L	0.50 ug/L	
156-60-5	trans-1,2-Dichloroethene	- "	~ -	not	detected	100	0.20 ug/L	0.50 ug/L	
75-35-3	1,1-Dichloroethane	- "		not	detected	50	0.19 ug/L	0.50 ug/L	
108-05-4	Vinyl Acetate			not	detected	7000	0.20 ug/L	0.50 ug/L	
78-93-3	2-Butanone			not	detected	300	0.16 ug/L	1.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not	detected	70	0.14 ug/L	0.50 ug/L	
67-66-3	Chloroform			not	detected	70	0.21 ug/L	0.50 ug/L	
75-55-6	1,1,1-Trichloroethane			not	detected	30	0.17 ug/L	0.50 ug/L	
56-23-5	Carbon Tetrachloride	"-		not	detected	1	0.27 ug/L	0.50 ug/L	
71-43-2	Benzene			not	detected	1	0.16 ug/L	0.50 ug/L	
107-06-2	1,2-Dichloroethane			not	detected	2 .	0.19 ug/L	0.50 ug/L	
79-01-6	Trichloroethene			not	detected	1	0.18 ug/L	0,50 ug/L	
78-87-5	1,2-Dichloropropane			not	detected	1	0.16 ug/L	0.50 ug/L	
75-27-4	Bromodichloromethane			not	detected	1	0.14 ug/L	0.50 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not	detected	nle	0.25 ug/L	1.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not	detected	1	0.16 ug/L	0.50 ug/L	
108-10-1	4-Methyl-2-Pentanone			not	detected	nle	0.26 ug/L	1.00 ug/L	
108-88-3	Toluene			not	detected	1000	0.15 ug/L	0.50 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not	detected	11	0.12 ug/L	0.50 ug/L	·
79-00-5	1,1,2-Trichloroethane			not	detected	3	0.14 ug/L	0.50 ug/L	
127-18-4	Tetrachloroethene			not	detected	11	0.18 ug/L	0.50 ug/L	
591-78-6	2-Hexanone			not	detected	nle	0.20 ug/L	0.50 ug/L	
126-48-1	Dibromochloromethane			not	detected	11	0.14 ug/L	0.50 ug/L	
108-90-7	Chlorobenzene		***	not	detected	50	0.15 ug/L	0.50 ug/L	
100-41-4	Ethylbenzene			not	detected	700	0.16 ug/L	0.50 ug/L	*
630-20-6	1,1,2-tetrachloroethane			not	detected	1	0.15 ug/L	0.50 ug/L	
1330-20-7	m+p-Xylenes			not	detected	nle	0.27 ug/L	1.00 ug/L	
1330-20-7	o-Xylene			not	detected	nle	0.14 ug/L	0.50 ug/L	
100-42-5	Styrene			not	detected	100	0.12 ug/L	0.50 ug/L	
75-25-2	Bromoform	*****		not	detected	4	0.14 ug/L	1.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not	detected	1	0.12 ug/L	0.50 ug/L	
541-73-1	1,3-Dichlorobenzene			not	detected	600	0,12 ug/L	0.50 ug/L	
106-46-7	I,4-Dichlorobenzene			not	detected	75	0.12 ug/L	0.50 ug/L	
95-50-1	1,2-Dichlorobenzene			not	detected	600	0.12 ug/L	0.50 ug/L	

^{*}Results between MDL and RL are estimated values

Qualifiers

B = Compound found in related blank

E = Value above linear range

D = Value from dilution

PQL = Practical Quantitation Limit

MDL = Method Detection Limit

NLE = No Limit Established

R.T. = Retention Time

R.L. = Reporting Limit

J=Estimated concentration, value falls between R.L. and M.D.L.

Page 1 of 1

^{*}Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9C 07Nov2005

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Lab Name:	FMETL		Contract:	WI3-1 WIP-01	В
Lab Code:	13461	Case No.: MW	SAS No.:	SDG No.: 90433	
Matrix: (soil/v	vater)	WATER	Lab Sample ID:	9043302	
Sample wt/vo	ol:	5.0 (g/ml) ML	Lab File ID:	VA4811.D	
Level: (low/n	ned)	LOW	Date Received:	11/2/2009	
% Moisture:	not dec.		Date Analyzed:	11/3/2009	
GC Column:	RTX-V	/M ID: 0.25 (mm)	Dilution Factor:	1.0	
Soil Extract V	/olume:	(uL)	Soil Aliquot Vol	ume:	(uL)
			CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		
Number TICs	s found:	0	(dg/2 or dg/11g/		
CAS NO.		COMPOUND NAME	RT E	ST. CONC.	Q

Data File

VA4812.D

Sample Name

9043303 M-3 TMP-02A

Operator Date Acquired ROBERTS 3 Nov 2009 5:27 pm

Field ID Sample Multiplier

CAS#	Compound Name	R.T.	Response	Result		Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not	detected	5	2.09 ug/L	5.00 ug/L	
107131	Acrylonitrile		<u> </u>	not	detected	2	1.64 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not	detected	100	1.89 ug/L	5.00 ug/L	
1634044	Methyl-tert-Butyl ether			not	detected	70	0.18 ug/L	0.50 ug/L	
108203	Di-isopropyl ether			not	detected	20000	0.12 ug/L	0.50 ug/L	
75718	Dichlorodifluoromethane			not	detected	1000	0.22 ug/L	1.00 ug/L	
74-87-3	Chloromethane			not	detected	nle	0,10 ug/L	1.00 ug/L	
75-01-4	Vinyl Chloride			not	detected	1	0.22 ug/L	1.00 ug/L	
74-83-9	Bromornethane	-	-	not	detected	10	0,25 ug/L	1,00 ug/L	
75-00-3	Chloroethane			not	detected	nle	0.22 ug/L	1.00 ug/L	
75-69-4	Trichlorofluoromethane			not	detected	2000	0.18 ug/L	1.00 ug/L	
75-35-4	1,1-Dichloroethene				detected	t	0.20 ug/L	0,50 ug/L	
67-64-1	Acetone			not	detected	6000	0.18 ug/L	0.50 ug/L	
75-15-0	Carbon Disulfide		†	<u> </u>	detected	700	0,18 ug/L	0.50 ug/L	
75-09-2	Methylene Chloride				detected	3	0.16 ug/L	0.50 ug/L	
156-60-5	trans-1,2-Dichloroethene				detected	. 100	0.20 ug/L	0.50 ug/L	
75-35-3	1.1-Dichloroethane			not	detected	50	0.19 ug/L	0.50 ug/L	
108-05-4	Vinyl Acetate		<u> </u>		detected	7000	0.20 ug/L	0.50 ug/L	
78-93-3	2-Butanone			not	detected	300	0.16 ug/L	1.00 ug/L	
156-59-2	cis-1,2-Dichloroethene				detected	70	0.14 ug/L	0.50 ug/L	
67-66-3	Chloroform		i	not	detected	70	0.21 ug/L	0.50 ug/L	
75-55-6	1.1.1-Trichloroethane				detected	30	0.17 ug/L	0,50 ug/L	
56-23-5	Carbon Tetrachloride			not	detected	i	0,27 ug/L	0.50 ug/L	
71-43-2	Benzene				detected	1	0.16 ug/L	0.50 ug/L	
107-06-2	1,2-Dichloroethane			not	detected	2	0.19 ug/L	0.50 ug/L	
79-01-6	Trichloroethene	~		not	detected	1	0.18 ug/L	0,50 ug/L	
78-87-5	1,2-Dichloropropane				detected	1	0.16 ug/L	0.50 ug/L	
75-27-4	Bromodichloromethane	*****			detected	1	0.14 ug/L	0.50 ug/L	
110-75-8	2-Chloroethyl vinyl ether	4		лот	detected	nle	0,25 ug/L	1.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene				detected	ī	0.16 ug/L	0,50 ug/L	
108-10-1	4-Methyl-2-Pentanone		 		detected	nle	0.26 ug/L	1.00 ug/L	
108-88-3	Toluene		1		detected	1000	0.15 ug/L	0.50 ug/L	
10061-02-6	trans-1,3-Dichloropropene				detected	1	0.12 ug/L	0.50 ug/L	
79-00-5	1.1.2-Trichloroethane				detected	3	0.14 ug/L	0.50 ug/L	
127-18-4	Tetrachioroethene				detected	1	0.18 ug/L	0.50 ug/L	
591-78-6	2-Hexanone				detected	nle	0.20 ug/L	0.50 ug/L	
126-48-1	Dibromochloromethane				detected	1	0.14 ug/L	0.50 ug/L	
108-90-7	Chlorobenzene	·	 -		detected	50	0.15 ug/L	0,50 ug/L	
100-41-4	Ethylbenzene				detected	700	0.16 ug/L	0.50 ug/L	
	1.1.1.2-tetrachloroethane				detected	1	0.15 ug/L	0.50 ug/L	
630-20-6	- / / due		 		detected	nle	0.27 ug/L	1,00 ug/L	
1330-20-7	m+p-Xylenes				detected	nle	0.14 ug/L	0.50 ug/L	
1330-20-7	o-Xylene Styrene				detected	100	0.12 ug/L	0.50 ug/L	
100-42-5			 		detected	4	0.14 ug/L	1.00 ug/L	
75-25-2	Bromoform		 		detected	i	0.12 ug/L	0.50 ug/L	
79-34-5	I,1,2,2-Tetrachloroethane		 		detected	600	0.12 ug/L	0.50 ug/L	•
541-73-1	1,3-Dichlorobenzene				detected	75	0.12 ug/L	0.50 ug/L	
106-46-7 95-50-1	1,4-Dichlorobenzene				detected	600	0.12 ug/L	0,50 ug/L	

^{*}Results between MDL and RL are estimated values

Qualifiers

B = Compound found in related blank

E = Value above linear range

D = Value from dilution

PQL = Practical Quantitation Limit

J= Estimated concentration, value falls between R.L. and M.D.L.

MDL = Method Detection Limit

NLE = No Limit Established

R.T. = Retention Time

 $R_L = Reporting Limit$

-000023

^{*}Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9C 07Nov2005

1E VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

		1 = 111711		125 55 5	0.100		BAS TAAD	024
Lab Name:	FMETL			Contract:			M3-TMP	-02A
Lab Code:	13461	Ca	se No.: MW	SAS N	o.:	SD	G No.: 9043	33
Matrix: (soil/w	vater)	WATER		La	ab Sample	ID: 9	9043303	
Sample wt/vo	ol:	5.0	(g/ml) ML	La	ab File ID:	<u>`</u>	VA4812.D	
Level: (low/m	ned)	LOW	_	D	ate Receive	ed: _́	11/2/2009	
% Moisture: r	not dec.			D	ate Analyze	ed: _1	11/3/2009	
GC Column:	RTX-V	<u>'M</u> ID: <u>0.</u>	25_ (mm)	Di	lution Fact	or: _1	1.0	
Soil Extract V	'olume:		(uL)	So	oil Aliquot V	olum/	ne:	(uL)
			•	CONCENTRA	TION UNIT	S:		
Number TICs	found:	0		(ug/L or ug/Kg) <u>UG/</u> l	- 	VALUE OF THE PROPERTY OF THE P	
CAS NO.		COMPOL	JND NAME		RT	EST	CONC.	Q

Data File Operator

VA4813.D

ROBERTS

Sample Name

9043304

Field ID

M-3 TMP-02B

Date Acquired

3 Nov 2009 5:58 pm

Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Result	ŧ.	Regulatory Level (ug/l)*	MDL	RL Qualifiers
107028	Acrolein	ж. х.	Ксаронас		detected	5	2.09 ug/L	5.00 ug/L
107028	Acrolonitrile				detected	2	1.64 ug/L	5.00 ug/L
75650	tert-Butyl alcohol				detected	100	1.89 ug/L	5.00 ug/L
1634044	Methyl-tert-Butyl ether				detected	70	0.18 ug/L	0.50 ug/L
108203	Di-isopropyl ether				detected	20000	0.12 ug/L	0.50 ug/L
75718	Dichlorodifluoromethane				detected	1000	0,22 ug/L	1.00 ug/L
74-87-3	Chloromethane		,		detected	nle	0.10 ug/L	1.00 ug/L
75-01-4	Vinyl Chloride				detected	1	0.22 ug/L	1.00 ug/L
74-83-9	Bromomethane				detected	10	0.25 ug/L	1.00 ug/L
75-00-3	Chloroethane				detected	nle	0.22 ug/L	1,00 ug/L
75-69-4	Trichlorofluoromethane				detected	2000	0.18 ug/L	1.00 ug/L
75-35-4	1,1-Dichloroethene				detected	1	0.20 ug/L	0.50 ug/L
67-64-1	 ' 				detected	6000	0.18 ug/L	0.50 ug/L
	Acetone Control Districted				detected	700	0.18 ug/L	0.50 ug/L
75-15-0 75-09-2	Carbon Disulfide Methylene Chloride			· · · · · · · · · · · · · · · · · · ·	detected	3	0.16 ug/L	0.50 ug/L
					detected	100	0.20 ug/L	0.50 ug/L
156-60-5	trans-1,2-Dichloroethene				detected	50	0.19 ug/L	0.50 ug/L
75-35-3	1,1-Dichloroethane				detected	7000	0.20 ug/L	0,50 ug/L
108-05-4	Vinyl Acetate				detected	300	0.16 ug/L	1,00 ug/L
78-93-3	2-Butanone				detected	70	0.14 ug/L	0.50 ug/L
156-59-2	cis-1,2-Dichloroethene				detected	70	0.14 ug/L	0.50 ug/L
67-66-3	Chloroform			***************************************	detected	30	0,17 ug/L	0.50 ug/L
75-55-6	1,1,1-Trichloroethane				detected	1	0.27 ug/L	0.50 ug/L
56-23-5	Carbon Tetrachloride				detected	1.	0.16 ug/L	0.50 ug/L
71-43-2	Benzene				detected	1 2	0.19 ug/L	0.50 ug/L
107-06-2	1,2-Dichloroethane		±		detected	1	0.18 ug/L	0,50 ug/L
79-01-6	Trichloroethene		4		detected	1	0.16 ug/L	0.50 ug/L
78-87-5	1,2-Dichloropropane		***				0.14 ug/L	0.50 ug/L
75-27-4	Bromodichloromethane			- AVILAND	detected detected	1	0.14 ug/L	1.00 ug/L
110-75-8	2-Chloroethyl vinyl ether				detected	nle	0.25 ug/L	0.50 ug/L
10061-01-5	cis-1,3-Dichloropropene				+	1 1	0.16 ug/L	1.00 ug/L
108-10-1	4-Methyl-2-Pentanone				detected	nle	0.25 ug/L	0.50 ug/L
108-88-3	Toluene				detected	1000	0.13 ug/L	0.50 ug/L
10061-02-6	trans-1,3-Dichloropropene				detected	1	0.12 ug/L	0.50 ug/L
79-00-5	1,1,2-Trichloroethane				detected	3	0.14 ug/L	0.50 ug/L
127-18-4	Tetrachloroethene				detected		0.18 ug/L	0.50 ug/L
591-78-6	2-Hexanone				detected	nle	0.20 ug/L	0.50 ug/L
126-48-1	Dibromochloromethane				detected	1		0.50 ug/L
108-90-7	Chlorobenzene				detected	50	0.15 ug/L 0.16 ug/L	
100-41-4	Ethylbenzene				detected	700		0.50 ug/L 0.50 ug/L
630-20-6	1,1,1,2-tetrachloroethane				detected		0.15 ug/L	
1330-20-7	m+p-Xylenes				detected	nle	0.27 ug/L	1.00 ug/L
1330-20-7	o-Xylene				detected	nle	0.14 ug/L	0.50 ug/L
100-42-5	Styrene				detected	100	0.12 ug/L	0.50 ug/L
75-25-2	Bromoform				detected	4	0.14 ug/L	1,00 ug/L
79-34-5	1,1,2,2-Tetrachloroethane				detected	1	0.12 ug/L	0.50 ug/L
541-73-1	1,3-Dichlorobenzene				detected	600	0.12 ug/L	0.50 ug/L
106-46-7	1,4-Dichlorobenzene				detected	75	0.12 ug/L	0,50 ug/L
95-50-1	1.2-Dichlorobenzene			not	detected	600	0.12 ug/L	0,50 ug/L

^{*}Results between MDL and RL are estimated values

Qualifiers

 $\mathbf{B} = \mathbf{Compound}$ found in related blank

E = Value above linear range

D = Value from dilution

PQL = Practical Quantitation Limit

J= Estimated concentration, value falls between R.L. and M.D.L.

MDL = Method Detection Limit

NLE = No Limit Established

R.T. = Retention Time

R.L. = Reporting Limit

11/4/2009 8:33 AM

^{*}Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9C 07Nov2005

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

M3-TMP-02B FMETL Contract: Lab Name: SAS No.: SDG No.: 90433 Lab Code: 13461 Case No.: MW Lab Sample ID: 9043304 Matrix: (soil/water) WATER (g/ml) ML Lab File ID: VA4813.D Sample wt/vol: 5.0 Date Received: 11/2/2009 Level: (low/med) LOW Date Analyzed: 11/3/2009 % Moisture: not dec. Dilution Factor: 1.0 GC Column: RTX-VM ID: 0.25 (mm) Soil Aliquot Volume: (uL) Soil Extract Volume: **CONCENTRATION UNITS:** (ug/L or ug/Kg) Number TICs found: EST. CONC. Q RT COMPOUND NAME CAS NO.

Data File

VA4814.D

ROBERTS

Sample Name Field ID

9043305 M-3 TMP-03A

Operator Date Acquired

3 Nov 2009 6:29 pm

Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Resul	t	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein		1100,0000	T	detected	5	2,09 ug/L	5,00 ug/L	
107131	Acrylonitrile	-			detected	2	1.64 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			no	detected	100	1,89 ug/L	5.00 ug/L	
1634044	Methyl-tert-Butyl ether				detected	70	0.18 ug/L	0.50 ug/L	
108203	Di-isopropyl ether			no	detected	20000	0.12 ug/L	0.50 ug/L	
75718	Dichlorodifluoromethane			not	detected	1000	0.22 ug/L	1.00 ug/L	
74-87-3	Chloromethane	-		not	detected	nle	0,10 ug/L	1.00 ug/L	
75-01-4	Vinyl Chloride			not	detected	1	0.22 ug/L	1.00 ug/L	
74-83-9	Bromomethane			กอ	detected	10	0,25 ug/L	1.00 ug/L	
75-00-3	Chloroethane				detected	nle	0.22 ug/L	1.00 ug/L	
75-69-4	Trichlorofluoromethane				detected	2000	0.18 ug/L	1.00 ug/L	- ^
75-35-4	1.1-Dichloroethene				detected	1	0.20 ug/L	0.50 ug/L	
67-64-1	Acetone		-		detected	6000	0.18 ug/L	0.50 ug/L	
75-15-0	Carbon Disulfide	 			detected	700	0.18 ug/L	0.50 ug/L	
75-09-2	Methylene Chloride				detected	3	0.16 ug/L	0.50 ug/L	
156-60-5	trans-1,2-Dichloroethene				detected	100	0.20 ug/L	0.50 ug/L	
75-35-3	1.1-Dichloroethane				detected	50	0.19 ug/L	0.50 ug/L	*
108-05-4	Vinyl Acetate				detected	7000	0,20 ug/L	0.50 ug/L	
78-93-3	2-Butanone				detected	300	0.16 ug/L	1.00 ug/L	
156-59-2	cis-1,2-Dichloroethene				detected	70	0.14 ug/L	0.50 ug/L	
67-66-3	Chloroform				detected	70	0.21 ug/L	0.50 ug/L	
75-55-6	1.1.1-Trichloroethane				detected	30	0.17 ug/L	0,50 ug/L	
56-23-5	Carbon Tetrachloride				detected	1	0.27 ug/L	0.50 ug/L	
71-43-2	Benzene				detected	1	0.16 ug/L	0.50 ug/L	
107-06-2	1,2-Dichloroethane				detected	2	0.19 ug/L	0.50 ug/L	·
79-01-6	Trichloroethene				detected	1	0.18 ug/L	0,50 ug/L	
78-87-5	1,2-Dichloropropane				detected	1	0.16 ug/L	0.50 ug/L	
75-27-4	Bromodichloromethane		-		detected	i	0.14 ug/L	0.50 ug/L	
110-75-8	2-Chloroethyl vinyl ether				detected	nle	0.25 ug/L	1.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene				detected	1	0.16 ug/L	0.50 ug/L	
108-10-1	4-Methyl-2-Pentanone				detected	nle	0,26 ug/L	1.00 ug/L	
108-88-3	Toluene				detected	1000	0.15 ug/L	0.50 ug/L	
10061-02-6	trans-1,3-Dichloropropene				detected	1	0.12 ug/L	0,50 ug/L	
79-00-5	1,1,2-Trichloroethane				detected	3	0.14 ug/L	0.50 ug/L	
127-18-4	Tetrachloroethene				detected	1	0.18 ug/L	0.50 ug/L	
591-78-6	2-Hexanone				detected	nle	0,20 ug/L	0.50 ug/L	
126-48-1	Dibromochloromethane				detected	1	0.14 ug/L	0.50 ug/L	
108-90-7	Chlorobenzene	15.75	7105		ug/L	50	0,15 ug/L	0.50 ug/L	J
100-41-4	Ethylbenzene	15.75	7,100		detected	700	0,16 ug/L	0.50 ug/L	
630-20-6	1.1.1.2-tetrachloroethane				detected	1	0.15 ug/L	0,50 ug/L	
1330-20-7	m+p-Xylenes				detected	nle	0.27 ug/L	1.00 ug/L	
1330-20-7	o-Xylene				detected	nle	0.14 ug/L	0.50 ug/L	, <u>,, , , , , , , , , , , , , , , , , ,</u>
1330-20-7	Styrene	16.89	10649		ug/L	100	0.12 ug/L	0.50 ug/L	J
75-25-2	Bromoform	10.05	10032		detected	4	0.14 ug/L	1.00 ug/L	
73-23-2 79-34-5	1,1,2,2-Tetrachloroethane				detected	i	0.12 ug/L	0.50 ug/L	
79-34-3 541-73-1	1,1,2,2-1 etrachioroethane				detected	600	0.12 ug/L	0.50 ug/L	**
	1,3-Dichlorobenzene				detected	75	0.12 ug/L	0,50 ug/L	*
106-46-7	1,4-Dichlorobenzene				detected	600	0.12 ug/L	0.50 ug/L	

^{*}Results between MDL and RL are estimated values

Qualifiers

B = Compound found in related blank

E = Value above linear range

D = Value from dilution

PQL = Practical Quantitation Limit

J= Estimated concentration, value falls between R.L. and M.D.L.

MDL = Method Detection Limit

NLE = No Limit Established

R.T. = Retention Time

R.L. = Reporting Limit

^{*}Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9C 07Nov2005

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

M3-TMP-03A

Lab Name:	FMETL			Contract	••	M3-1MP-03	3A
Lab Code:	13461	Ca	se No.: MW	SAS N	lo.: S	DG No.: 90433	
Matrix: (soil/v	vater)	WATER	-	L	ab Sample ID:	9043305	
Sample wt/vo	ol:	5.0	(g/ml) ML	L	ab File ID:	VA4814.D	
Level: (low/n	ned)	LOW		D	ate Received:	11/2/2009	
% Moisture: r	not dec.	-		D	ate Analyzed:	11/3/2009	
GC Column:	RTX-V	<u>M</u> ID: 0.1	25_ (mm)	D	ilution Factor:	1.0	
Soil Extract V	/olume: _		_ (uL)	S	oil Aliquot Volu	me:	(uL)
Number TICs	s found:	3		CONCENTRA (ug/L or ug/Kg	ATION UNITS: g) <u>UG/L</u>		
Trainber 110c							

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1.	Alkene: Branched	11.47	5	J
2.	Alkane: Cyclic	12.84	4	J
3.	Alkane: Cyclic	13.41	3	J

Data File

VA4815.D ROBERTS Sample Name

9043306

M-3 TMP-03B

Operator Date Acquired

3 Nov 2009 7:00 pm

Field ID M
Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Result	İ	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein		:	not	detected	5	2.09 ug/L	5.00 ug/L	
107131	Acrylonitrile			not	detected	2	1.64 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not	detected	100	1,89 ug/L	5.00 ug/L	
1634044	Methyl-tert-Butyl ether			not	detected	70	0.18 ug/L	0.50 ug/L	
108203	Di-isopropyl ether			not	detected	20000	0.12 ug/L	0.50 ug/L	
75718	Dichlorodifluoromethane			not	detected	1000	0.22 ug/L	1.00 ug/L	
74-87-3	Chloromethane			not	detected	nle	0,10 ug/L	1.00 ug/L	
75-01-4	Vinyl Chloride			not	detected	1	0.22 ug/L	1.00 ug/L	
74-83-9	Bromomethane			not	detected	10	0.25 ug/L	1.00 ug/L	
75-00-3	Chloroethane	1		not	detected	пle	0,22 ug/L	1.00 ug/L	
75-69-4	Trichlorofluoromethane			not	detected	2000	0.18 ug/L	1.00 ug/L	
75-35-4	1,I-Dichloroethene			not	detected	1	0.20 ug/L	0,50 ug/L	
67-64-1	Acetone			not	detected	6000	0.18 ug/L	0.50 ug/L	
75-15-0	Carbon Disulfide			not	detected	700	0.18 ug/L	0.50 ug/L	
75-09-2	Methylene Chloride			not	detected	3	0.16 ug/L	0.50 ug/L	
156-60-5	trans-1,2-Dichloroethene			not	detected	100	0.20 ug/L	0.50 ug/L	
75-35-3	1,1-Dichloroethane			not	detected	50	0.19 ug/L	0.50 ug/L	
108-05-4	Vinyl Acetate			not	detected	7000	0.20 ug/L	0.50 ug/L	
78-93-3	2-Butanone			not	detected	300	0.16 ug/L	1.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not	detected	70	0.14 ug/L	0.50 ug/L	
67-66-3	Chloroform			not	detected	70	0.21 ug/L	0.50 ug/L	
75-55-6	1,1,1-Trichloroethane			not	detected	30	0.17 ug/L	0.50 ug/L	
56-23-5	Carbon Tetrachloride			not	detected	1	0,27 ug/L	0.50 ug/L	
71-43-2	Benzene			not	detected	1	0.16 ug/L	0.50 ug/L	
107-06-2	1,2-Dichloroethane			not	detected	2	0.19 ug/L	0,50 ug/L	
79-01-6	Trichloroethene			not	detected	I	0.18 ug/L	0,50 ug/L	
78-87-5	1,2-Dichloropropane			not	detected	111	0.16 ug/L	0.50 ug/L	
75-27-4	Bromodichloromethane			not	detected	1	0.14 ug/L	0.50 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not	detected	nle	0.25 ug/L	1.00 ug/L	,
10061-01-5	cis-1,3-Dichloropropene			not	detected	1	0.16 ug/L	0.50 ug/L	
108-10-1	4-Methyl-2-Pentanone			not	detected	nle	0.26 ug/L	1.00 ug/L	
108-88-3	Toluene			not	detected	1000	0.15 ug/L	0.50 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not	detected	I	0.12 ug/L	0.50 ug/L	
79-00-5	1,1,2-Trichloroethane			not	detected	3	0.14 ug/L	0.50 ug/L	V-2/2-00-00-00-00-00-00-00-00-00-00-00-00-00
127-18-4	Tetrachloroethene	-		not	detected	1	0.18 ug/L	0.50 ug/L	
. 591-78-6	2-Нехапопе			not	detected	nle	0.20 ug/L	0.50 ug/L	
126-48-1	Dibromochloromethane			not	detected	1	0.14 ug/L	0.50 ug/L	
108-90-7	Chlorobenzene	15.75	18444		ug/L	50	0,15 ug/L	0.50 tig/L	
100-41-4	Ethylbenzene				detected	700	0.16 ug/L	0.50 ug/L	
630-20-6	I,1,1,2-tetrachloroethane				detected	1	0.15 ug/L	0.50 ug/L	
1330-20-7	m+p-Xylenes				detected	nle	0.27 ug/L	1,00 ug/L	
1330-20-7	o-Xylene				detected	nle	0.14 ug/L	0.50 ug/L	<u> </u>
100-42-5	Styrene	16.89	16127		ug/L	100	0,12 ug/L	0.50 ug/L	J
75-25-2	Bromoform				detected	4	0.14 ug/L	1.00 ug/L	·
79-34-5	1,1,2,2-Tetrachloroethane				detected	1	0.12 ug/L	0.50 ug/L	
541-73-1	1,3-Dichlorobenzene				detected	600	0.12 ug/L	0.50 ug/L	
106-46-7	1,4-Dichlorobenzene			not	detected	75	0.12 ug/L	0,50 ug/L	
95-50-1	1.2-Dichlorobenzene			not	detected	600	0.12 ug/L	0.50 ug/L	

^{*}Results between MDL and RL are estimated values

Qualifiers

B = Compound found in related blank

E = Value above linear range

D = Value from dilution

PQL = Practical Quantitation Limit

J= Estimated concentration, value falls between R.L. and M.D.L.

MDL = Method Detection Limit

NLE = No Limit Established

R.T. = Retention Time

R.L. = Reporting Limit

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11/4/2009 8:34 AM

^{*}Higher of PQL's and Ground Water Quality Criteria as per NJ.A.C. 7:9C 07Nov2005

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

M3-TMP-03B

Lab Name:	FMETL		<u></u>		Contract:				
Lab Code:	13461	Ca	ase No.:	MW	SAS No.:	SDO	SDG No.: 90433		
Matrix: (soil/v	vater)	WATER			Lab Sample I): <u>9</u>	043306		
Sample wt/vo	ol:	5.0	_ (g/ml)	ML	Lab File ID:	V	/A4815.D		
Level: (low/n	ned)	LOW			Date Received	i: <u>1</u>	1/2/2009	-	
% Moisture: r	not dec.		·		Date Analyzed	i: <u>1</u>	1/3/2009		
GC Column:	RTX-V	<u>/М</u> ID: <u>0</u>	.25 (m	ım)	Dilution Factor	: <u>1</u>	.0		
Soil Extract V	/olume:		(uL)		Soil Aliquot Vo	lum	e:	(uL	
				CON	ICENTRATION LINITS	ş.			

(ug/L or ug/Kg)

UG/L

Number TICs found: 13

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1.	Alkane: Cyclic	9.14	11	J
2.	unknown hydrocarbon	10.24	4	J
3.	Alkane: Cyclic	10.39	8	J
4.	Alkane: Cyclic	10.47	9	J
5.	Alkane: Cyclic	10.55	14	J
6.	Alkane: Cyclic	11.47	32	J
7.	Alkane: Cyclic	11.78	3	J
8.	Alkane: Cyclic	11.99	4	J
9.	Alkane: Cyclic	12.83	18	J
10.	Alkane: Cyclic	13.15	6	J
11,	Alkane: Cyclic	13.41	14	J
12.	Alkane: Cyclic	13.55	7	J
13.	Alkane: Cyclic	14.24	8	J

Data File Operator

Date Acquired

VA4816.D

ROBERTS

Sample Name

9043307

3 Nov 2009 7:31 pm

Field ID M-3 TMP-04A

Sample Multiplier

CAS#	Compound Name	R.T.	Response	Result	t	Regulatory Level (ng/l)*	MDL	RL	Qualifiers
107028	Acrolein			not	detected	5	2.09 ug/L	5.00 ug/L	
107131	Acrylonitrile	1		not	detected	2	1.64 ug/L	5,00 ug/L	
75650	tert-Butyl alcohol			not	detected	100	1.89 ug/L	5.00 ug/L	
1634044	Methyl-tert-Butyl ether		-	not	detected	70	0.18 ug/L	0,50 ug/L	
108203	Di-isopropyl ether			пот	detected	20000	0.12 ug/L	0.50 ug/L	
75718	Dichlorodifluoromethane			not	detected	1000	0.22 ug/L	1.00 ug/L	
74-87-3	Chloromethane			not	detected	nle	0.10 ug/L	1.00 ug/L	
75-01-4	Vinyl Chloride	· · · · · · · · · · · · · · · · · · ·	·	not	detected		0.22 ug/L	1.00 ug/L	
74-83-9	Bromomethane			not	detected	10	0.25 ug/L	1.00 ug/L	
75-00-3	Chloroethane			not	detected	nle	0.22 ug/L	1.00 ug/L	
75-69-4	Trichlorofluoromethane				detected	2000	0.18 ug/L	1.00 ug/L	
75-35-4	1,1-Dichloroethene				detected	1	0.20 ug/L	0.50 ug/L	
67-64-1	Acetone			лот	detected	6000	0.18 ug/L	0,50 ug/L	
75-15-0	Carbon Disulfide			not	detected	700	0.18 ug/L	0.50 ug/L	
75-09-2	Methylene Chloride				detected	3	0.16 ug/L	0.50 ug/L	
156-60-5	trans-1.2-Dichloroethene				detected	100	0.20 ug/L	0.50 ug/L	
75-35-3	1,1-Dichloroethane	,			detected	50	0,19 ug/L	0.50 ug/L	
108-05-4	Vinyl Acetate				detected	7000	0.20 ug/L	0.50 ug/L	
78-93-3	2-Butanone				detected	300	0.16 ug/L	1,00 ug/L	
156-59-2	cis-1,2-Dichloroethene				detected	70	0.14 ug/L	0.50 ug/L	
67-66-3	Chloroform				detected	70	0.21 ug/L	0.50 ug/L	
75-55-6	1,1,1-Trichloroethane				detected	30	0.17 ug/L	0.50 ug/L	
56-23-5	Carbon Tetrachloride		<u>, , , , , , , , , , , , , , , , , , , </u>		detected	1	0.27 ug/L	0.50 ug/L	
71-43-2	Benzene	77-77			detected	i i	0.16 ug/L	0.50 ug/L	
107-06-2	1.2-Dichloroethane				detected	2	0.19 ug/L	0.50 ug/L	
79-01-6	Trichloroethene				detected	1	0.18 ug/L	0.50 ug/L	
78-87-5	1,2-Dichloropropane				detected	1	0.16 ug/L	0.50 ug/L	
75-27-4	Bromodichloromethane				detected	1	0.14 ug/L	0.50 ug/L	
110-75-8	2-Chloroethyl vinyl ether				detected	nle	0.25 ug/L	1,00 ug/L	
10061-01-5	cis-1,3-Dichleropropene				detected	1	0.16 ug/L	0.50 ug/L	
108-10-1	4-Methyl-2-Pentanone				detected	nle	0.26 ug/L	1.00 ug/L	
108-88-3	Toluene				detected	1000	0.15 ug/L	0.50 ug/L	
10061-02-6	trans-1,3-Dichloropropene			*****	detected	1	0.12 ug/L	· 0.50 ug/L	
79-00-5	1,1,2-Trichloroethane				detected	3	0.14 ug/L	0,50 ug/L	····
127-18-4	Tetrachloroethene				detected	1	0.18 ug/L	0.50 ug/L	
591-78-6	2-Hexanone				detected	nle	0.20 ug/L	0.50 ug/L	
126-48-1	Dibromochloromethane				detected	1	0.14 ug/L	0,50 ug/L	
108-90-7	Chlorobenzene	15.75	13791		ug/L	50	0.15 ug/L	0.50 ug/L	J
100-41-4	Ethylbenzene	13.13	10,71		detected	700	0.16 ug/L	0.50 ug/L	
630-20-6	1,1,1,2-tetrachloroethane				detected	i	0.15 ug/L	0.50 ug/L	
1330-20-7	m+p-Xylenes				detected	nle	0.27 ug/L	1.00 ug/L	
1330-20-7	o-Xylene				detected	nle	0.14 ug/L	0.50 ug/L	
100-42-5	Styrene				detected	100	0.12 ug/L	0.50 ug/L	
					detected	4	0.14 ug/L	1.00 ug/L	
75-25-2	Bromoformi	-			detected		0.12 ug/L	0.50 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane				detected	600	0.12 ug/L	0.50 ug/L	
541-73-1	1,3-Dichlorobenzene				detected	75	0.12 ug/L	0.50 ug/L	
106-46-7 95-50-1	1,4-Dichlorobenzene 1,2-Dichlorobenzene				detected	600	0.12 ug/L	0.50 ug/L	

^{*}Results between MDL and RL are estimated values

Qualifiers

B = Compound found in related blank

E = Value above linear range

D = Value from dilution

PQL = Practical Quantitation Limit

J= Estimated concentration, value falls between R.L. and M.D.L.

MDL = Method Detection Limit

NLE = No Limit Established

R.T. = Retention Time

R.L. = Reporting Limit

^{*}Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9C 07Nov2005

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA	SAMPI	LE NO.
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Lab Name: FMETL			Contract:				VI3-1 VIP-04A		
Lab Code:	13461	Cas	e No.: M	N SA	S No.:	_ s	DG No.: 9043	33	
Matrix: (soil/v	vater)	WATER			Lab Sample	e ID:	9043307	•	
Sample wt/vo	ol:	5.0	(g/mi) <u>M</u>	L	Lab File ID:		VA4816.D		
Level: (low/n	ned)	LOW			Date Recei	ved:	11/2/2009		
% Moisture: 1	not dec.				Date Analy	zed:	11/3/2009		
GC Column:	RTX-V	<u>'M</u> ID: <u>0.2</u>	5 (mm)	Dilution Fac	ctor:	1.0		
Soil Extract V	/olume:	<u>-</u>	_ (uL)		Soil Aliquot	Volu	me:	(uL)	
		·		CONCENT	ration un	ITS:			
Number TICs	s found:	0	_	(ug/L or ug	ı/Kg) <u>UG</u>	/L		v	
CAS NO.		COMPOU	ND NAME		RT	ES	T. CONC.	Q	

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

Data File

VA4817.D

ROBERTS

Sample Name Field ID

9043308

M-3 TMP-04B

Operator Date Acquired

3 Nov 2009 8:02 pm

Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Result		Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not	detected	5	2.09 ug/L	5.00 ug/L	
107131	Acrylonitrile		-	not	detected	2	1.64 ug/L	5.00 ug/L	
75650	tert-Butyl aicohol			not	detected	100	1.89 ug/L	5,00 ug/L	
1634044	Methyl-tert-Butyl ether			not	detected	70	0.18 ug/L	0.50 ug/L	
108203	Di-isopropyl ether				detected	20000	0.12 ug/L	0.50 ug/L	
75718	Dichlorodifluoromethane			not	detected	1000	0.22 ug/L	1.00 ug/L	
74-87-3	Chloromethane			not	detected	nle	0.10 ug/L	1.00 ug/L	
75-01-4	Vinyl Chloride			not	detected	1	0.22 ug/L	1.00 ug/L	
74-83-9	Bromomethane			not	detected	10	0.25 ug/L	1.00 ug/L	
75-00-3	Chloroethane			not	detected	nle	0.22 ug/L	1.00 ug/L	
75-69-4	Trichlorofluoromethane			not	detected	2000	0.18 ug/L	1.00 ug/L	
75-35-4	1.1-Dichloroethene			not	detected		0.20 ug/L	0.50 ug/L	
67-64-1	Acetone			not	detected	6000	0.18 ug/L	0.50 ug/L	
75-15-0	Carbon Disulfide	-		not	detected	700	0.18 ug/L	0.50 ug/L	
75-09-2	Methylene Chloride				detected	3	0.16 ug/L	0.50 ug/L	
156-60-5	trans-1,2-Dichloroethene				detected	100	0.20 ug/L	0.50 ug/L	
75-35-3	I.1-Dichioroethane			not	detected	50	0.19 ug/L	0.50 ug/L	
108-05-4	Vinyl Acetate			not	detected	7000	0.20 ug/L	0.50 ug/L	
78-93-3	2-Butanone			not	detected	300	0.16 ug/L	1.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not	detected	70	0.14 ug/L	0.50 ug/L	
67-66-3	Chloroform			not	detected	70	0.21 ug/L	0.50 ug/L	
75-55-6	1.1.1-Trichloroethane			not	detected	30	0.17 ug/L	0.50 ug/L	
56-23-5	Carbon Tetrachloride			not	detected	1	0.27 ug/L	0.50 ug/L	
71-43-2	Benzene	***		not	detected	i	0.16 ug/L	0.50 ug/L	
107-06-2	1,2-Dichloroethane			not	detected	2	0.19 ug/L	. 0.50 ug/L	
79-01-6	Trichloroethene	11.42	8647	0.63	ug/L	1	0.18 ug/L	0.50 ug/L	
78-87-5	1,2-Dichloropropane			not	detected	1	0.16 ug/L	0.50 ug/L	
75-27-4	Bromodichloromethane			not	detected	1	0.14 ug/L	0.50 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not	detected	nle	0.25 ug/L	1.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not	detected	ı	0.16 ug/L	0.50 ug/L	
108-10-1	4-Methyl-2-Pentanone			not	detected	nle	0.26 ug/L	1.00 ug/L	
108-88-3	Toluene			not	detected	1000	0.15 ug/L	0,50 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not	detected	1	0.12 ug/L	0.50 ug/L	
79-00-5	1_1_2-Trichloroethane			not	detected	3	0.14 ug/L	0.50 ug/L	
127-18-4	Tetrachloroethene			not	detected	1	0.18 ug/L	0.50 ug/L	
591-78-6	2-Hexanone			not	detected	nle	0.20 ug/L	0.50 ug/L	-
126-48-1	Dibromochloromethane			not	detected	i	0.14 ug/L	0.50 ug/L	
108-90-7	Chlorobenzene			not	detected	50	0.15 ug/L	0.50 ug/L	
100-41-4	Ethylbenzene			not	detected	700	0.16 ug/L	0.50 ug/L	
630-20-6	1.1.1,2-tetrachloroethane				detected	1	0.15 ug/L	0.50 ug/L	
1330-20-7	m+p-Xylenes				detected	nle	0.27 ug/L	1.00 ug/L	
1330-20-7	o-Xylene				detected	nle	0.14 ug/L	0.50 ug/L	
100-42-5	Styrene	-			detected	100	0.12 ug/L	0.50 ug/L	
75-25-2	Bromoform				detected	4	0.14 ug/L	1.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane				detected	1	0.12 ug/L	0.50 ug/L	
541-73-1	1,1,2,2-1 etrachioroettiane		<u> </u>		detected	600	0.12 ug/L	0.50 ug/L	
106-46-7	1.4-Dichlorobenzene		-		detected	75	0.12 ug/L	0.50 ug/L	
95-50-1	1,4-Dichlorobenzene				detected	600	0.12 ug/L	0.50 ug/L	

^{*}Results between MDL and RL are estimated values

Qualifiers

B = Compound found in related blank E = Value above linear range

MDL = Method Detection Limit NLE = No Limit Established

D = Value from dilution

R.T. = Retention Time

PQL = Practical Quantitation Limit

R.L. = Reporting Limit

J = Estimated concentration, value falls between R.L. and M.D.L.

^{*}Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9C 07Nov2005

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Lab Name:	FMETL			Contract:		IVIS-TIVIP-	V4D
Lab Code:	13461	Cas	e No.: MV	SAS No.:	8	SDG No.: <u>9043</u>	3
Matrix: (soil/v	vater)	WATER	-	Lab	Sample ID:	9043308	
Sample wt/vo	ol:	5.0	(g/ml) ML	Lab	File ID:	VA4817.D	
Level: (low/n	ned)	LOW		Date	Received:	11/2/2009	
% Moisture: r	not dec.		 	Date	Analyzed:	11/3/2009	
GC Column:	RTX-V	M ID: <u>0.2</u>	5 (mm)	Diluti	ion Factor:	1.0	
Soil Extract V	/olume:		_ (uL)	Soil	Aliquot Volu	ime:	(uL)
Number TICs	s found:	0	_	CONCENTRATION (ug/L or ug/Kg)	ON UNITS: UG/L		
CAS NO		COMPOU	ND NAME		RT ES	ST. CONC.	Q

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

Data File

VA4819.D

ROBERTS

Sample Name

9043310

Operator 3 Nov 2009 9:04 pm Date Acquired

M-3 TMP-05A Field ID Sample Multiplier 1

CAS#	Compound Name	R.T.	Response	Result		Regulatory Level (ng/l)	MDL	RL Qualifiers
107028	Acrolein				detected	5	2.09 ug/L	5.00 ug/L
107131	Acrylonitrile				detected	2	1,64 ug/L	5.00 ug/L
75650	tert-Butyl alcohol			not	detected	100	1.89 ug/L	5.00 ug/L
1634044	Methyl-tert-Butyl ether			not	detected	70 ·	0.18 ug/L	0.50 ug/L
108203	Di-isopropyl ether			not	detected	20000	0.12 ug/L	0.50 ug/L
75718	Dichlorodifluoromethane			not	detected	1000	0,22 ug/L	1.00 ug/L
74-87-3	Chloromethane	-		not	detected	nle	0.10 ug/L	1.00 ug/L
75-01-4	Vinyl Chloride			not	detected	1	0.22 ug/L	1.00 ug/L
74-83-9	Bromomethane			not	detected	10	0.25 ug/L	1,00 ug/L
75-00-3	Chloroethane			not	detected	nle	0.22 ug/L	1.00 ug/L
75-69-4	Trichlorofluoromethane			not	detected	2000	0.18 ug/L	1.00 ug/L
75-35-4	1,1-Dichloroethene	-		not	detected	1	0.20 ug/L	0.50 ug/L
67-64-1	Acetone	•	[T	not	detected	6000	0.18 ug/L	0.50 ug/L
75-15-0	Carbon Disulfide			not	detected	700	0.18 ug/L	0.50 ug/L
75-09-2	Methylene Chloride				detected	3	0.16 ug/L	0.50 ug/L
156-60-5	trans-1,2-Dichloroethene			not	detected	100	0.20 ug/L	0.50 ug/L
75-35-3	1.1-Dichloroethane			not	detected	50	0.19 ug/L	0.50 ug/L
108-05-4	Vinyl Acetate			not	detected	7000	0.20 ug/L	0.50 ug/L
78-93-3	2-Butanone	****		not	detected	300	0.16 ug/L	1,00 ug/L
156-59-2	cis-1,2-Dichloroethene				detected	70	0.14 ug/L	0,50 ug/L
67-66-3	Chloroform	***			detected	70	0.21 ug/L	0.50 ug/L
75-55-6	1,1,1-Trichloroethane				detected	30	0.17 ug/L	0.50 ug/L
56-23-5	Carbon Tetrachloride				detected	1	0.27 ug/L	0.50 ug/L
71-43-2	Benzene				detected	1	0.16 ug/L	0.50 ug/L
107-06-2	I,2-Dichloroethane				detected	2	0.19 ug/L	0.50 ug/L
79-01-6	Trichloroethene				detected	1	0.18 ug/L	0.50 ug/L
78-87-5	1,2-Dichloropropane				detected	1	0.16 ug/L	0.50 ug/L
75-27-4	Bromodichloromethane				detected	1	0.14 ug/L	0.50 ug/L
110-75-8	2-Chloroethyl vinyl ether	-2-0			detected	nle	0.25 ug/L	1.00 ug/L
	cis-1,3-Dichloropropene				detected]	0.16 ug/L	0.50 ug/L
10061-01-5	4-Methyl-2-Pentanone				detected	nle	0.26 ug/L	1.00 ug/L
108-10-1					detected	1000	0.15 ug/L	0.50 ug/L
108-88-3	Toluene				detected	I	0.12 ug/L	0.50 ug/L
10061-02-6	trans-1,3-Dichloropropene				detected	3	0.14 ug/L	0.50 ug/L
79-00-5	1,1,2-Trichloroethane		 		detected	I	0.18 ug/L	0.50 ug/L
127-18-4	Tetrachloroethene				detected	nle	0,20 ug/L	0,50 ug/L
591-78-6	2-Hexanone				detected	1	0.14 ug/L	0.50 ug/L
126-48-1	Dibromochloromethane				detected	50	0.15 ug/L	0,50 ug/L
108-90-7	Chlorobenzene		<u> </u>		detected	700	0.16 ug/L	0.50 ug/L
100-41-4	Ethylbenzene		·		detected	1	0.15 ug/L	0.50 ug/L
630-20-6	1,1,1,2-tetrachloroethane				detected	nle	0.27 ug/L	1.00 ug/L
1330-20-7	m+p-Xylenes				detected	nle	0.14 ug/L	0.50 ug/L
1330-20-7	o-Xylene				detected	100	0.14 ug/L	0.50 ug/L
100-42-5	Styrene					100	0.12 ug/L 0.14 ug/L	1.00 ug/L
75-25-2	Bromoform				detected	1	0.12 ug/L	0.50 ug/L
79-34-5	1,1,2,2-Tetrachloroethane				detected		0.12 ug/L	0.50 ug/L
541-73-1	1,3-Dichlorobenzene				detected	600		0.50 ug/L
106-46-7	1,4-Dichlorobenzene				detected	75	0.12 ug/L 0.12 ug/L	0.30 ug/L 0.50 ug/L
~	Independent i			not	Idetected	600	0.12149/1. 1	V.3V 11971. I

^{*}Results between MDL and RL are estimated values

Qualifiers

B = Compound found in related blank

1,2-Dichlorobenzene

E = Value above linear range

D = Value from dilution

PQL = Practical Quantitation Limit

J= Estimated concentration, value falls between R.L. and M.D.L.

MDL = Method Detection Limit

NLE = No Limit Established

R.T. = Retention Time

not detected

R.L. = Reporting Limit

0.50 ug/L

11/4/2009 8:35 AM

0.12 ug/L

95-50-1

^{*}Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9C 07Nov2005

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Lab Name:	FMETL			Cont	ract:		M3-TM	P-05A
Lab Code:	13461	Ca	se No.: MV	/ SA	S No.:		 SDG No.: <u>90</u>	433
Matrix: (soil/v	vater)	WATER	_		Lab S	Sample ID:	9043310	
Sample wt/vo	ol:	5.0	(g/ml) ML		Lab F	ile ID:	VA4819.D	<u>-</u>
Level: (low/n	ned)	LOW	_		Date	Received:	11/2/2009	•
% Moisture: r	not dec.				Date .	Analyzed:	11/3/2009	
GC Column:	RTX-V	<u>'M</u> ID: <u>0.2</u>	25 (mm)		Dilutio	on Factor:	1.0	
Soil Extract V	olume:		_ (uL)		Soil A	liquot Volu	ıme:	(uL)
				CONCENT	ΓRAΤΙΟ	N UNITS:		
Number TICs	found:	0	_	(ug/L or ug	ı/Kg)	UG/L		
CAS NO.	•	COMPOU	ND NAME		F	RT ES	ST. CONC.	Q

A-39

November 2014

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

Data File

VA4821.D ROBERTS Sample Name Field ID

9043312 M-3 TMP-05B

Operator Date Acquired

3 Nov 2009 10:05 pm

Sample Multiplier 1

CAS#	Compound Name	R.T,	Response	Result	<u>t</u>	Regulatury Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not	detected	5	2.09 ug/L	5,00 ug/L	
107131	Acrylonitrile			not	detected	2	1.64 ug/L	5.00 ug/L	
75650	tert-Butyl alcohol			not	detected	100	1,89 ug/L	5.00 ug/L	
1634044	Methyl-tert-Butyl ether	1		not	detected	70	0.18 ug/L	0.50 ug/L	
108203	Di-isopropyl ether			not	detected	20000	0.12 ug/L	0.50 ug/L	
75718	Dichlorodifluoromethane			not	detected	1000	0.22 ug/L	1.00 ug/L	
74-87-3	Chloromethane			not	detected	nle	0.10 ug/L	1.00 ug/L	
75-01-4	Vinyl Chloride			not	detected	1	0.22 ug/L	1.00 ug/L	
74-83-9	Bromomethane			not	detected	10	0.25 ug/L	1.00 ug/L	
75-00-3	Chloroethane			not	detected	nle	0.22 ug/L	1.00 ug/L	
75-69-4	Trichloro fluoromethane			not	detected	2000	0.18 ug/L	1.00 ug/L	
75-35-4	I,I-Dichloroethene			not	detected	1	0.20 ug/L	0.50 ug/L	
67-64-1	Acetone			not	detected	6000	0.18 ug/L	0.50 ug/L	
75-15-0	Carbon Disulfide				detected	700	0.18 ug/L	0.50 ug/L	
75-09-2	Methylene Chloride			not	detected	3	0.16 ug/L	0.50 ug/L	
156-60-5	trans-1,2-Dichloroethene			not	detected	100	0.20 ug/L	0.50 ug/L	
75-35-3	1,1-Dichloroethane			not	detected	50	0.19 ug/L	0.50 ug/L	
108-05-4	Vinyl Acetate	1		not	detected	7000	0.20 ug/L	0.50 ug/L	
78-93-3	2-Butanone	•		not	detected	300	0.16 ug/L	1.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	9.66	13115	0.94	ug/L	70	0.14 ug/L	0.50 ug/L	
67-66-3	Chloroform			not	detected	70	0.21 ug/L	0.50 ug/L	
75-55-6	1,1,1-Trichloroethane			not	detected	30	0.17 ug/L	0.50 ug/L	
56-23-5	Carbon Tetrachloride			not	detected	1	0.27 ug/L	0.50 ug/L	
71-43-2	Benzene			not	detected	1	0.16 ug/L	0,50 ug/L	
107-06-2	1,2-Dichloroethane			not	detected ·	2	0.19 ug/L	0.50 ug/L	
79-01-6	Trichloroethene			not	detected	<u> </u>	0.18 ug/L	0.50 ug/L	
78-87-5	1,2-Dichloropropane			not	detected	1	0.16 ug/L	0,50 ug/L	
75-27-4	Bromodichloromethane			not	detected	1	0.14 ug/L	0,50 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not	detected	nle	0.25 ug/L	1.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			пот	detected	1 1	0.16 ug/L	0,50 ug/L	·
108-10-1	4-Methyl-2-Pentanone			not	detected	nle	0.26 ug/L	1.00 ug/L	
108-88-3	Toluene	13.37	22984	0.46	ug/L	1000	0.15 ug/L	0.50 սց/L	J
10061-02-6	trans-1,3-Dichloropropene			not	detected	1	0.12 ug/L	0.50 ug/L	
79-00-5	1,1,2-Trichloroethane			not	detected	3	0.14 ug/L	0,50 ug/L	
127-18-4	Tetrachloroethene			not	detected	11	0.18 ug/L	0.50 ug/L	
591-78-6	2-Hexanone			not	detected	nle	0.20 ug/L	0.50 ug/L	·
126-48-1	Dibromochloromethane			not	detected	1	0.14 ug/L	0.50 ug/L	
108-90-7	Chlorobenzene	15.75	10326	0,30	ug/L	50	0.15 ug/L	0,50 ug/L	J
100-41-4	Ethylbenzene			not	detected	700	0.16 ug/L	0.50 ug/L	
630-20-6	1,1,1,2-tetrachloroethane			not	detected	t	0.15 ug/L	0.50 ug/L	
1330-20-7	m+p-Xylenes			not	detected	nle	0.27 ug/L	1.00 ug/L	
1330-20-7	o-Xylene			not	detected	nle	0.14 ug/L	0.50 ug/L	
100-42-5	Styrene			not	detected	100	0.12 ug/L	0.50 ug/L	
75-25-2	Bromoform			not	detected	4	0.14 ug/L	1.00 ug/L	
79-34-5	1,1,2,2-Tetrachioroethane				detected	į.	0.12 ug/L	0.50 ug/L	
541-73-1	1,3-Dichlorobenzene			not	detected	600	0.12 ug/L	0.50 ug/L	
106-46-7	1,4-Dichlorobenzene			not	detected	75	0.12 ug/L	0.50 ug/L	
95-50-1	1,2-Dichlorobenzene			not	detected	600	0.12 ug/L	0.50 ug/L	

^{*}Results between MDL and RL are estimated values

Qualifiers

B = Compound found in related blank

MDL = Method Detection Limit NLE = No Limit Established

A-40

E = Value above linear range

R.T. = Retention Time

D = Value from dilution PQL = Practical Quantitation Limit

R.L. = Reporting Limit

J= Estimated concentration, value falls between R.L. and M.D.L.

11/4/2009 8:36 AM

^{*}Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9C 07Nov2005

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Lab Name:	FMETL				Contra	ct:		_ [V13-1	MP-U	5B
Lab Code:	13461	Cas	se No.:	MW	SAS	No.:	s	DG No.:	90433	
Matrix: (soil/w	vater)	WATER	. •			Lab Sample	ID:	9043312		
Sample wt/vo	ol:	5.0	(g/ml)	ML		Lab File ID:		VA4821.I)	_
Level: (low/m	ned)	LOW				Date Receiv	ed:	11/2/2009)	_
% Moisture: r	not dec.					Date Analyz	ed:	11/3/2009	}	
GC Column:	RTX-\	<u>/M</u> ID: <u>0.2</u>	.5 (m	nm)		Dilution Fact	tor:	1.0		_
Soil Extract V	olume:		_ (uL)			Soil Aliquot \	√olu	me:		_ (uL)
					CONCENTE	RATION UNI	TS:			
Number TICs	found:	1	-		(ug/L or ug/l	(g) UG/	L			
CAS NO.		COMPOU	ND NAI	ΜE		RT	ES	T. CONC.		Q
1. 000496	5-11-7	Indane				20.42		3		JN

ATTACHMENT B

Table 7 Summary of Long Term Monitoring Recommendations August 2013 Baseline Groundwater Sampling Report

Table 7 **Summary of Long Term Monitoring Recommendations** August 2013 Baseline Groundwater Sampling Report Fort Monmouth, New Jersey

	Historical E	xceedances	August 2013	3 Exceedances ¹		Aug	gust 2013 Sampling				Recommended Sampling in 2014 ²		Fre	quency	
Site	Monitoring Wells (MWs) Exhibiting Exceedances	Analytes	MWs Exhibiting Exceedances	Analytes	Number of MWs sampled	Monitoring wells sampled	Analysis	Sampling methodology	Number of MWs to be sampled	MWs to be sampled	Analysis	Sampling Methodology	Performance Work Statement (PWS)	August 2013 recommendation	Comments
M2	M2MW02 to M2MW13, M2MW21 to M2MW24	Metals, benzene, chlorobenzene, TBA	M2MW03	Benzene, chlorobenzene	16	M2MW02 to M2MW13, M2MW21 to M2MW24	VOCs & TICS-EPA Method 8260C Pesticides-EPA Method 8081B	LFPS	6	M2MW03, M2MW10, M2MW11, M2MW21, M2MW22, M2MW24	VOCs-EPA Method 8260C	PDB	Two rounds	Two additional rounds of sampling - PDB	Metals sampling discontinued due to background sources. Pesticides sampling is not recommended due to no detection in August 2013. Well to be retained for downgradient monitoring of benzene.
M3	M3MW02, M3MW04 to M3MW14, M3MW07A,	Metals, VC	M3MW07	VC	12	M3MW04 to M3MW14, M3MW07A,	VOCs & TICs-EPA Method 8260C Metals-EPA Method 6010C/7470A	LFPS	1	M3MW02	VOCs-EPA Method 8260C Metals-EPA Method 6010C/7470A (M3MW02)	LFPS	Annual	One additional round - LFPS	Metals sampling discontinued due to background sources. M3MW02 not sampled due to low water column and silt. Sample for VOCs and metals in next round.
M4	M4MW07 to M4MW10	Metals	None	N/A	6	M4MW05 to M4MW10	VOCs & TICs-EPA Method 8260C Metals-EPA Method 6010C/7470A	LFPS	0	N/A	N/A	N/A	Two rounds	Discontinued	Metals sampling discontinued due to background sources. No exceedances, discontinue sampling.
M5	M5MW11, M5MW16, M5MW20, M5MW23	PCE, TCE, VC	M5MW11, M5MW16, M5MW20, M5MW23	PCE, TCE, VC	10	M5MW10 to M5MW16, M5WM18 to M5MW20, M5MW23	VOCs & TICs-EPA Method 8260C	PDB	4	M5MW11, M5MW16, M5MW20, M5MW23	VOCs-EPA Method 8260C	PDB	Annual	Annual - PDB	
М8	M8MW11 to M8MW23, RM8MW24, 697MW01	Metals, benzene	M8MW12, M8MW14	Pb, PCE	13	M8MW12 to M8MW23, RM8MW24	VOCs & TICs-EPA Method 8260C Pesticides-EPA Method 8081B Lead-EPA Method 6010C	LFPS	8	M8MW11, M8MW12, M8MW15, M8MW16, M8MW17, M8MW21, M8MW24, 697MW01	Pb-EPA Method 6010C (M8MW11, M8MW17, M8MW21, and 697MW01), VOCs-EPA Method 8260C (M8MW11, M8MW12, M8MW15, and 697MW01) Pesticides-EPA Method 8081B (697MW01)	LFPS	Annual	Annual - LFPS	Metals sampling discontinued due to background sources at the exception of Pb (M8MW11, M8MW17, and M8MW21) and Mn (M8MW14). PCE was the only VOCs exceedance in August 2013. M8MW11 was not part of the Aug 2013 baseline sampling. Due to historical exceedances for Pb, reintroduced in long term monitoring sampling program. 697MW01 not sampled in August 2013. Must locate and sample for VOC, Pb, and pesticides.
M12	M12MW11 to M12MW26	Metals	None	N/A	16	M12MW11 to M12MW26	Lead-EPA Method 6010C	LFPS	0	N/A	N/A	N/A	Two rounds	Discontinued	Metals sampling discontinued due to background sources. No Pb exceedance in August 2013, discontinue sampling
M14	M14MW19 to M14MW24	Metals	None	N/A	6	M14MW19 to M14MW24	VOCs & TICs-EPA Method 8260C	PDB	0	N/A	N/A	N/A	Annual	Discontinued	Metals sampling discontinued due to background sources. No VOCs exceedance in August 2013, discontinue sampling.
M18	M18MW22, M18MW23, MP18MW24, MP18MW25	Benzene, 1,2-DCA, carbon tetrachloride, metals	M18MW22	1,2-DCA	3	M18MW22, MP18MW24, MP18MW25	VOCs & TICs-EPA Method 8260C	PDB	2	M18MW22 M18MW23	VOCs-EPA Method 8260C	PDB	Annual	Annual - PDB	Metals sampling discontinued due to background sources. M18MW23 not sampled in August 2013. Must locate M18MW23 and sample for VOCs.
M22	CW1MW25 to CW1MW33, CW1MW35 to CW1MW40, CW1MW281, CW1MW282, CW1MW291	Metals, TCE	CW1MW29	TCE	16	CW1MW26 to CW1MW40, CW1MW282, CW1MW291	VOCs & TICs-EPA Method 8260C	PDB	4	CW1MW27, CW1MW31, CW1MW29 CW1MW281	VOCs-EPA Method 8260C	PDB	Quarterly	Quarterly - PDB	Metals sampling discontinued due to background sources. CW1MW281 not sampled in August 2013 due to obstruction in the well. Obstruction removed in January 2014.
M25	CW3AMW01 to CW3AMW04	Metals	None	N/A	4	CW3AMW01 to CW3AMW04	VOCs & TICs-EPA Method 8260C Pesticides-EPA Method 8081B Metals-EPA Method 6010C/7470A	LFPS	0	N/A	N/A	N/A	Not on PWS List	Discontinued	Metals sampling discontinued due to background sources.
M53	616MW01, 699MW01, 699MW02, 699MW04 to 699MW06, 699MW08, 699MW09, 699MW12, 699MW15, 699MW16, 699RW03, 699RW05, 699RW11	Metals, benzene, PCE, 1,2,4- TMB, 1,3,5-TMB, xylenes,TBA, TCE, TICs	699MW06, 699MW16, 699RW03, 699RW05, 699RW11	Benzene, PCE, 1,2,4-TMB, 1,3,5- TMB, xylenes	14	616MW01, 699MW01, 699MW02, 699MW04 to 699MW06, 699MW08, 699MW09, 699MW12, 699MW15, 699MW05, 699RW03, 699RW05, 699RW11	VOCs & TICs-EPA Method 8260C	LFPS	8	699MW01, 699MW04, 699MW06, 699MW09, 699MW16, 699RW03, 699RW05, 699RW11	VOCs-EPA Method 8260C	PDB	Quarterly	Quarterly - PDB	Metals sampling discontinued due to background sources. List of MWs based on historical and August 2013 analytical results.
M54	296MW01 to 296MW04, 296MW06 to 296MW08	Metals, benzene	296MW06	Benzene	7	296MW01 to 296MW04, 296MW06 to 296MW08	VOCs & TICs-EPA Method 8260C Lead-EPA Method 6010C/7470A	LFPS	2	296MW04, 296MW06	VOC-EPA Method 8260C (296MW06)	PDB	Annual	Annual - PDB	Metals sampling discontinued due to background sources. 296MW04 used as delineation point for 296MW06
M55	290MW01	As, Pb	None	N/A	1	290MW01	Lead-EPA Method 6010C/7470A	LFPS	0	N/A	N/A	N/A	Annual	Discontinued	Metals sampling discontinued due to background sources.
M56	80MW01 to 80MW05, 166MW01	Metals, chlordane	None	N/A	6	80MW01 to 80MW05, 166MW01	Lead-EPA Method 6010C/7470A	LFPS	2	80MW05, 80MW02	Pb-EPA Method 6010C/7470A (80MW05), Pesticides-EPA Method 8081B (80MW02)	LFPS	Annual	one additional round - LFPS	Continue Pb sampling at 80MW05. Other metals considered background concentrations. 80MW02 will be analyzed for pesticides. Monitoring wells will be sampled for one additional round.
M57	108MW01 to 108MW04	Metals	108MW01, 108MW02, 108MW03	Metals	4	108MW01 to 108MW04	VOCs & TICs-EPA Method 8260C Pesticides-EPA Method 8081B Metals-EPA Method 6010C/7470A	LFPS	1	108MW04	Pb-EPA Method 6010C/7470A	LFPS	Not on PWS List	two additional rounds - LFPS	Pb will be analyzed at 108MW04 for two more rounds.
M58	2567MW01, 2567MW03	ТВА	None	N/A	7	2567MW01 to 2567MW07	VOCs & TICs-EPA Method 8260C	PDB	2	2567MW01, 2567MW03	VOC-EPA Method 8260C - TBA Only	LFPS	Annual		Wells will be analyzed for TBA only for two rounds to confirm presence or lack of contaminant.
M59	1122MW01 to 1122MW06 1122MW07 - not available	Metals	None	N/A	7	1122MW01 to 1122MW07	VOCs & TICs-EPA Method 8260C	PDB	1	1122MW07	VOC-EPA Method 8260C	PDB	Quarterly		One additonal round to confirm results.
M61	283MW01 to 283MW04	Metals, benzene, TICs	None	N/A	4	283MW01 to 283MW04	VOCs & TICs-EPA Method 8260C Lead-EPA Method 6010C/7470A	LFPS	1	283MW02	VOCs-EPA Method 8260C	PDB	Annual	one additional round - PDB	Continue sampling at 283MW03 because of historical benzene exceedances.
M64	812MW01, 812MW02, 812MW04 to 812MW08, 812MW14	Metals, benzene, VC	None	N/A	8	812MW01, 812MW02, 812MW04 to 812MW08, 812MW14	VOCs & TICs-EPA Method 8260C Lead-EPA Method 6010C/7470A	LFPS	1	812MW04	VOC-EPA Method 8260C	PDB	Annual	Annual - PDB	Metals analysis discontinued due to background. VOCs analyzed an annually in 812MW04.
M66	886MW01, 886MW03, 886MW05, 886RW01 to 886RW08	Metals, bis(2-ethylhexyl)phthalate	None	N/A	13	886MW01 to 886MW05, 886RW01 to 886RW08	VOCs & TICs-EPA Method 8260C SVOCs-EPA Method 8270D Lead-EPA Method 6010C/7470A	LFPS	0	N/A	N/A	N/A	Quarterly	Discontinued	Bis(2-ethylhexyl)phthalate result is anomalous. Metals sampling discontinued due to background sources.
M68	N/A	N/A	565MW01, 565MW01D	PCE, TCE, cis-1,2- DCE, VC	2	565MW01, 565MW01D	VOCs & TICs-EPA Method 8260C	PDB	2	565MW01, 565MW01D	VOC-EPA Method 8260C	PDB	Quarterly	Quarterly - PDB	No historical data available, continue sampling.
Notes:															

MWs - monitoring wells N/A - not applicable 1,2-DCA - 1,2-dichloroethane 1.1.1-TCA - 1.1.1-trichloroethane VOCs - volatile organics compounds 1,2,4-TMB - 1,2,4-trimethylbenzene SVOCs - semivolatiles organic compounds TMB - trimethhylbenzene 1,3,5-TMB - 1,3,5-trimethylbenzene

TICs - tentatively identified compounds TBA - tert-butyl-alcohol VC - vinyl chloride TCE - tetrachloroethene LFPS - low flow purging and sampling

PCE - tetrachloroethene 1,1-DCA - 1,1-dichloroethane

PDB - passive diffusion bags

^{1.} Exceedance is defined as a parameter that was greater than NJDEP GWQS.

^{2.} The recommendations are for sampling in 2014 to allow for the continued monitoring of groundwater conditions. Remedial investigations are ongoing at many of the sites and these recommendations may be modified based on analysis of new information and evaluation of risk.



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 3, 2014

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

Re:

Final Baseline Groundwater Sampling Report (August 2013) Remedial Investigation/Feasibility Study/Decision Documents Fort Monmouth Oceanport, Monmouth County PI G00000032

Dear Ms. Green:

The New Jersey Department of Environmental Protection (Department) has completed review of the referenced report, dated March 2014, received on April 7, 2014. The report was prepared by Parsons Government Services Inc. (Parsons), in support of the Remedial Investigation (RI), Feasibility Study (FS), and Decision Documents project at Fort Monmouth.

A baseline ground water sampling event was conducted at 21 "sites" at the Fort Monmouth property in August 2013. The purpose of the sampling event was to re-establish baseline conditions following suspension of ground water sampling in late 2011, as well as to evaluate Fort Monmouth's long-term ground water sampling program, and the current analytical conditions of the ground water at each site. Sampling methodologies used included low-flow and passive diffusion bag samplers (PDBS). At four sites (FTMM-14, 18, 59, 68), only PDBS sampling was conducted. At three sites (FTMM-05, 22, 58) both low-flow and PDBS samples were obtained for comparison purposes. Fourteen (14) sites were only sampled using low-flow. The report states that PDBS concentrations were consistently biased somewhat low compared to the low-flow concentrations. The report concludes, however, that the PDBS results were still similar to the low-flow results and are considered representative of ground water conditions at the sites. Based on this conclusion, the report states that for future ground water sampling, PDBS will be used for all sites where volatile organic compounds (VOCs) are the sole contaminants of concern. Comments are presented below.

Section 3.1; Table 6; Appendices & associated Tables - The "background concentrations" submitted in the 1995 Weston report were not accepted by the Department as representative of background conditions for Fort Monmouth. The study was not performed in accordance with Departmental protocol and is not a consideration in our evaluations/determinations. As indicated in Section 3.1, background concentrations are evaluated on a site by site basis.

FTMM-02 Landfill

Historic sampling at this parcel indicated levels of VOCs above the Ground Water Quality Standard (GWQS); metals were previously determined to be reflective of naturally occurring conditions. The August 2013 sampling of wells using low-flow confirmed the continued exceedance of the GWQS for VOCs. The report recommends VOC sampling of wells M2MW03, M2MW11, M2MW21, M2MW22 and M2MW24 for two additional rounds using PDBS. Well M2MW10 will be monitored as a downgradient sentinel well. Although the proposal is acceptable, for wells in which the saturated screen length exceeds 10 feet, the deployment of multiple PDBS will be required. At any point where a decision is made to terminate ground water sampling at this site, confirmatory sampling using low-flow due to PDBS biasing low as compared to low-flow results at the Fort Monmouth site will be required.

FTMM-03 Landfill

Historic sampling at this parcel revealed GWQS exceedances of vinyl chloride and metals. The August 2013 sampling of wells using low-flow confirmed the continued exceedance of the GWQS for vinyl chloride in well 3MW07. Well 3MW02 was not sampled due to low water column and silty conditions, however, Table 4 of Appendix B recommends sampling of 3MW02 for VOCs and metals. The report attributes the presence of vinyl chloride to leaching of PVC piping from well 3MW07. A temporary well point investigation was conducted in 2009 to delineate the vinyl chloride, the results were non-detect, and abandonment of 3MW07 is recommended. The recommendations are acceptable. However, a figure presenting the locations and sampling results from the 2009 temporary well point investigation must be provided to the Department.

FTMM-04 Landfill

Historic sampling at this parcel revealed GWQS exceedances of various metals. The August 2013 sampling of wells using low-flow confirmed the continued exceedance of the GWQS for metals. The metals are attributed to background conditions, and cessation of ground water sampling is recommended. The recommendation is acceptable. Monitoring wells at this parcel shall be properly abandoned if they are no longer subject to sampling or gaging for water elevation data.

FTMM-05 Landfill

Historic sampling at this parcel revealed GWQS exceedances of PCE, TCE and vinyl chloride, which the August 2013 sampling, using low-flow and PDBS, confirmed. The report recommends annual VOC sampling of wells M5MW11, M5MW16, M5MW20 and M5MW23 using PDBS. The Department finds the proposal to be acceptable. At any point where a decision is made to terminate ground water sampling at this parcel, the Department will require confirmatory sampling using low-flow due to PDBS results at this parcel biased low compared to the low-flow results.

FTMM-08 Landfill

Historic sampling at this parcel revealed GWQS exceedances of pesticides, benzene, PCE and lead. The August 2013 sampling of wells using low-flow confirmed the exceedance of the GWQS for PCE and lead. The well with historic pesticide exceedances (697MW01) could not be located and was not sampled. The report recommends annual ground water sampling of well M8MW11 for VOCs and lead, M8MW12, 15, 16 and 24 for VOCs and M8MW17 and 21 for lead only. Monitoring well 697MW01 will be located and sampled for pesticides, lead and VOCs. The recommendation is acceptable.

FTMM-12 Landfill

Historic sampling at this parcel revealed GWQS exceedances of various metals, including arsenic and lead. Historic exceedances of metals except for lead are attributed to background quality. The August 2013 sampling was conducted for lead analysis only. Lead was not detected. The report recommends discontinuing ground water sampling at this parcel. The Department finds the recommendation to be acceptable. Monitoring wells at this parcel shall be properly abandoned if they are no longer subject to sampling or gaging for water elevation data.

FTMM-14 Landfill

Historic sampling at this parcel revealed no GWQS exceedances of VOCs. The August 2013 sampling of wells using PDBS confirmed that there was no exceedance of the GWQS. The report recommends discontinuing ground water sampling at this parcel. The Department finds the recommendation to be acceptable. Monitoring wells at this parcel shall be properly abandoned if they are no longer subject to sampling or gaging for water elevation data. The Department also notes that on Table 1, well M14MW19 is listed as having 10 feet of total screen length. However, the table also lists the saturated screen length as 13.35 feet. This discrepancy should be clarified.

FTMM-18 Landfill

Historic sampling at this parcel revealed GWQS exceedances of benzene and 1,2-DCA. The August 2013 sampling results of wells using PDBS showed the exceedance of the GWQS for 1,2-DCA in well M18MW22. Well M18MW23 could not be located and was not sampled. The report recommends annual ground water sampling using PDBS for M18MW22 and M18MW23 if it can be located. Every reasonable effort, such as reviewing the NJ State Plane Coordinates of the well, must be made to locate M18MW23. The use of M18MW22 as the sole monitoring well at this parcel will not be acceptable due to the vast difference in historical concentrations between M18MW22 and M18MW23. Historic 2011 benzene concentrations for M18MW23 were 775 ppb and 664 ppb while 2011 concentrations for M18MW22 were 1.81 ppb and 1.65 ppb. The Department cannot approve the use of PDBS sampling only for this parcel. Once M18MW23 is located, the Department can approve the use of both PDBS and low-flow sampling for comparison purposes.

FTMM-22 Former Wastewater Treatment Lime Pit

Historic sampling at this parcel revealed GWQS exceedances of TCE. The August 2013 sampling of wells using low-flow and PDBS confirmed the continued exceedance of the GWQS for TCE in ground water. The report recommends quarterly VOC sampling of wells CW1MW27, CW1MW29, CW1MW31 and CW1MW281 using PDBS. The Department finds the proposal to be acceptable. At any point where a decision is made to terminate ground water sampling at this parcel, the Department will require confirmatory sampling using low-flow due to PDBS results biasing low compared to low-flow results at the Fort Monmouth site.

FTMM-25 Landfill

Historic sampling at this parcel revealed GWQS exceedances of various metals. The August 2013 sampling of wells using low-flow confirmed the continued exceedance of the GWQS for metals. The metals are attributed to background conditions. The report recommends discontinuing ground water sampling at this parcel. The Department finds the recommendation to be acceptable. Monitoring wells at this parcel shall be properly abandoned if they are no longer subject to sampling or gaging for water elevation data.

FTMM-53 Building 699

Historic sampling at this parcel revealed GWQS exceedances of benzene, PCE, TCE, TBA, VOC TICs and lead. The August 2013 sampling of wells using low-flow showed the exceedance of the GWQS for benzene, xylenes, PCE, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene and VOC TICs. The report recommends quarterly VOC sampling of wells 699MW01, 699MW04, 699MW06, 699MW09, 699MW16, 699RW03, 699RW05 and 699RW11 using PDBS. The Department finds the proposal to be acceptable. For wells in which the saturated screen length exceeds 10 feet, the deployment of multiple PDBS will be required. At any point where a

decision is made to terminate ground water sampling at this parcel, the Department will require confirmatory sampling using low-flow due to PDBS biasing low compared to low-flow at the Fort Monmouth site.

FTMM-54 Building 296

Historic sampling at this parcel revealed GWQS exceedances of benzene, lead and arsenic. The metals are attributed to background conditions. The August 2013 sampling of wells using low-flow showed an exceedance of the GWQS for benzene. The report recommends annual VOC sampling of wells 269MW04 and 296MW06 using PDBS. The Department finds the proposal to be acceptable. For wells in which the saturated screen length exceeds 10 feet, the deployment of multiple PDBS will be required. At any point where a decision is made to terminate ground water sampling at this parcel, the Department will require confirmatory sampling using low-flow due to PDBS biasing low compared to low-flow at the Fort Monmouth site.

FTMM-55 Building 290

Historic sampling at this parcel revealed GWQS exceedances of arsenic and lead. The August 2013 sampling of wells using low-flow confirmed the continued exceedance of the GWQS for lead. The metals are attributed to background conditions. The report recommends discontinuing ground water sampling at this parcel. The Department finds the recommendation to be acceptable. Monitoring wells at this parcel shall be properly abandoned if they are no longer subject to sampling or gaging for water elevation data.

FTMM-56 Building 80

Historic sampling at this parcel revealed GWQS exceedances of chlordane, arsenic, lead and cadmium. The August 2013 sampling of wells was conducted for lead only using low-flow. There were no exceedances of lead. The report recommends one additional sampling round of well 80MW02 for chlordane and 80MW05 for lead. The Department finds the recommendation for well 80MW02 to be acceptable. The Department disagrees with the recommendation to sample well 80MW05 for lead only. The last low-flow sampling event in August 2011 had lead, arsenic and cadmium exceeding both the GWQS and background concentrations. Well 80MW05 shall be sampled during the next round for TAL metals.

FTMM-57 Building 108

Historic sampling at this parcel revealed GWQS exceedances of lead. In the August 2013 sampling event, there were no exceedances of lead in ground water. The report recommends two additional sampling rounds of well 108MW04 for lead. The Department finds the recommendation acceptable.

FTMM-58 Building 2567

Historic sampling at this parcel revealed GWQS exceedances of TBA in wells 2567MW01 and 2567MW03. The August 2013 sampling results using low-flow and PDBS were below the GWQS for TBA. The report recommends two annual sampling events for TBA analyses of wells 2567MW01 and 2567MW03 using low-flow. The Department finds the proposal to be acceptable.

FTMM-59 Building 1122

Historic sampling at this parcel revealed no GWQS exceedances for VOCs. The August 2013 sampling results of wells using PDBS showed no exceedance of VOCs. The text of the report recommends VOC sampling of well 1122MW07 for one additional sampling round to confirm the 2013 results because August 2013 was the first time this well was sampled. The Department finds the proposal to be acceptable. The Department also notes that there is a discrepancy between the recommendation in the text and the recommendation in Table 7. Table 7 recommends that sampling at this parcel be discontinued. Table 7 shall be amended to indicate well 1122MW07 will be sampled for VOCs using PDBS methodology.

FTMM-61 Building 283

Historic sampling at this parcel revealed GWQS exceedances of metals, benzene and VOC TICs in 283MW02. The August 2013 sampling of wells using low-flow for VOCs and lead showed no exceedances. The report recommends VOC sampling of well 283MW02 for one additional sampling round using PDBS methodology to confirm the 2013 results. The Department finds the proposal to be conditionally acceptable. If the saturated screen length exceeds 10 feet, the deployment of multiple PDBS will be required. If a decision is made to terminate ground water sampling at this parcel based on PDBS results, the Department will require confirmatory sampling using low-flow due to PDBS biasing low compared to low-flow at the Fort Monmouth site.

FTMM-64 Building 812

Historic sampling at this parcel revealed GWQS exceedances of benzene, vinyl chloride and metals. The August 2013 sampling of wells using low-flow for VOCs and lead showed no exceedances. The report recommends VOC sampling of well 812MW04 for one additional sampling round using PDBS methodology to confirm the 2013 results (however Section 5.0 recommends sampling be continued on an annual basis). The Department finds the proposal to be conditionally acceptable. If the saturated screen length exceeds 10 feet, the deployment of multiple PDBS will be required. If a decision is made to terminate ground water sampling at this

parcel based on PDBS results, the Department will require confirmatory sampling using low-flow due to PDBS biasing low compared to low-flow at the Fort Monmouth site.

FTMM-66 Building 886

Historic sampling at this parcel revealed GWQS exceedances of benzene, VOC TICs, arsenic and lead. The August 2013 sampling results from wells using low-flow showed the exceedance of the GWQS for SVOC TICs. The report recommends that sampling at this parcel be discontinued. The Department finds the recommendation unacceptable. Total SVOC TICs exceeded the GWQS of 500 ppb in wells 886RW01 and 886RW06. Ground water monitoring of wells 886RW01, 886RW06 and 886RW08 shall continue for SVOC+TICs using low-flow methodology.

FTMM-68 Building 700

There are no historic sampling results for this parcel. The August 2013 sampling results of wells using PDBS showed the exceedance of the GWQS for PCE, TCE, cis-1,2-DCE and vinyl chloride in wells 565MW01 and 565MW01D. The report recommends quarterly ground water sampling for VOC+TICs using PDBS for these 2 wells. The Department agrees with the recommendation of quarterly sampling, however, has concerns regarding the use of PDBS for long-term monitoring at this parcel. Unlike the other Fort Monmouth parcels, there are no historical ground water sampling data for comparison with the PDBS results. The DEP's Field Sampling Procedures Manual states that "the intended application of Passive Diffusion Bag Samplers (PDBS) is for long-term monitoring of volatile organic compounds (VOCs) in ground water at well-characterized sites." The Department would find long-term sampling of the wells using PDBS acceptable if low-flow sampling is conducted concurrently once or twice for comparison.

Finally, each of the above comments speak only to the ground water findings and recommendations included in the referenced submittal, rather than to the ground water at the entire site.

Please contact this office if you have any questions.

Sincerely,

Linda S. Range

C: Joe Pearson, Calibre
Rick Harrison, FMERA
Julie Carver, Matrix
Frank Barricelli
Daryl Clark, BGWPA

Guenther, Douglas C MONMOUTH USAG

From: Sent: Greg Zalaskus [Greg.Zalaskus@dep.state.nj.us]

Friday, November 12, 2004 2:03 PM

To:

Douglas.Guenther@mail1.monmouth.army.mil

Cc:

John Prendergast; Ken Petrone; Joseph.Fallon@mail1.monmouth.army.mil

Subject:

Re: GROUNDWATER ANALYSES REDUCTION

Doug: The Department has completed a review of your November 10, 04 letter request to reduce the groundwater sampling analysis for the seven site listed in the November 10, 04 letter. The Department hereby approves your request as submitted. Additionally, the updated "Restoration Program Site Report Status Table" you e-mailed is most appreciated. If you have any questions please contact me.

Sincerely, greg

Gregory Zalaskus, Case Manager NJDEP/DRMR/BCM Greg.Zalaskus@dep.state.nj.us 609-984-2065 (direct) 609-633-1439 (fax) 609-633-1455 (main)

>>> "Guenther, Douglas C MONMOUTH USAG"
<Douglas.Guenther@mail1.monmouth.army.mil> 11/10/04 01:28PM >>> Greg,

As discussed, attached is the letter identifying analyses reduction at restoration sites and a summary of submitted site reports pending NJDEP review. A hard copy is on the way. Any questions let me know.

Sincerely,

Douglas C. Guenther

Environmental Protection Specialist

U.S. Army, Directorate of Public Works

Attn: SELFM-PW-EV, Bldg. 173

Fort Monmouth, NJ 07703

Phone: 732-532-0986; Fax: 732-532-6263; DSN: 992-0986

E-mail: Douglas.Guenther@Mail1.Monmouth.Army.mil



DEPARTMENT OF THE ARMY

HEADQUARTERS, U.S. ARMY GARRISON FORT MONMOUTH FORT MONMOUTH, NEW JERSEY 07703-5101



REPLY TO ATTENTION OF

Directorate of Public Works

November 10, 2004

ATTN: Mr. Greg Zalaskus
State of New Jersey
Department of Environmental Protection
Division of Responsible Party Site Remediation
Bureau of Case Management
401 East State Street, 5th Fl., West Wing
PO Box 028
Trenton, New Jersey 08625-0028

RE: REDUCTION OF GROUNDWATER SAMPLING ANALYSES-MAIN POST&CHARLES WOODS

Restoration Sites throughout Fort Monmouth, New Jersey

Dear Mr. Zalaskus:

As discussed during our telephone conversation on November 9, 2004, this letter summarizes groundwater sampling revisions at seven active restoration sites on Fort Monmouth property. The Directorate of Public Works (DPW) and TECOM-Vinnell Services (TVS) personnel currently conduct quarterly groundwater monitoring at each of these sites.

The DPW has submitted Remedial Investigation Reports (RIRs), prepared by VERSAR, Inc., requesting no further action (NFA) at four sites including Landfill M-12 (FTMM-12), Landfill M-18/290/296 (FTMM-18/55/54), Landfill M-3 (FTMM-03), and Site 108 (FTMM-57). Two RIRs requesting NFA are pending submittal including Site 80/166 (FTMM-56) and Landfill CW3A (FTMM-25), and one Remedial Action Report for Site 886 (FTMM-66) recommending natural attenuation is also pending submittal.

Initial groundwater sampling at each site consisted of a comprehensive analytical program including volatile organic compounds (VOCs); semi-volatile organic compounds (SVOCs); pesticides/polychlorinated biphenyls (PCBs); and TAL metals. Analytical results were then examined to establish potential contaminants of concern (COCs). Each site report presents the identified potential COCs based on the comparison of groundwater analytical results to the higher of the Practical Quantitation Limits (PQLs) and the NJDEP Groundwater Quality Criteria (GWQC) for Class II-A aquifers (NJAC 7:9-6, Table 1). Further evaluation of the potential COCs was then performed to assess contaminant occurrence/magnitude, transport (modeling), and risk to receptors, the environment and human health to determine if remedial action was warranted.

Based on report conclusions, Fort Monmouth DPW proposes the following revisions to the current groundwater sampling program at these sites to maintain a compliant and cost effective program. As discussed, proposed changes will be implemented immediately unless otherwise directed by the NJDEP.

The following table summarizes the revised sampling program at these sites:

Submitted No Further Action Requests

Site	Was Analyzed:	Revised Analysis:	Potential Contaminants of Concern		
Landfill M-12 (FTMM-12)	Quarterly for VOCs, SVOCs, pesticides/PCBs, Metals	Quarterly for TAL Metals.	Arsenic and lead		
Landfill M-18/290/296 (FTMM-18/55/54)	Quarterly for VOCs, SVOCs, pesticides/PCBs, Metals	Quarterly for VOCs and TAL Metals.	Benzene, arsenic, cadmium, chromium and lead		
Landfill M-3 (FTMM-03)	Quarterly for VOCs, SVOCs, pesticides/PCBs, Metals	Quarterly for VOCs.	Chlorobenzene		
Site 108 (FTMM-57)	Quarterly for VOCs, SVOCs, pesticides/PCBs, Metals	Quarterly for TAL Metals.	Arsenic		
No Further Acti	on Requests - Submitta	l Pending	•		
Site 80/166 (FTMM-56)	Quarterly for VOCs, SVOCs, pesticides/PCBs, Metals	Quarterly for Pesticides and TAL Metals.	a-chlordane, g-chlordane, arsenic and lead		
Landfill CW3A (FTMM-25)	Quarterly for VOCs, SVOCs, pesticides/PCBs, Metals	Quarterly for TAL Metals.	Non-Native Metals		
Natural Attenua	ition Request - Submitt	al Pending			
Site 886 (FTMM-66)	Quarterly for VOCs, SVOCs, pesticides/PCBs, Metals	Quarterly for VOCs and SVOCs	Benzene and 2-butanone		

Groundwater sampling and monitoring will continue at these sites as indicated above, in accordance with NJDEP *Technical Requirements for Site Remediation* (July 1999), NJAC 7:26E, et seq. and *Fort Monmouth Standard Sampling Operating Procedure* (1997), pending NJDEP review of these site documents. I have attached an updated summary table of site reports previously submitted to NJDEP which are pending review.

If you should have any questions or comments, please contact me at (732) 532-0986.

Sincerely,

Douglas C. Guenther

Environmental Protection Specialist

Directorate of Public Works

Attachment: Restoration Program Report Status Table

cc: File