3.22 Sanitary Sewer System

3.22.1 Site Description

FTMM currently maintains a sewage collection system that consists of approximately 23 miles of underground distribution lines and 20 sewage pump stations. Five of the pump stations are located at CWA and the remainder of the pump stations are located throughout the MP (33). The sewage collection system ultimately connects to the local sewerage authority (Two Rivers Water Reclamation Authority) at two connection points, one at the MP and one at CWA (43). Analytical sampling conducted in mid-2002 of the sewage discharge at both junction points indicated that FTMM is not a significant industrial user and does not require any treatment of the discharge, nor does FTMM require a significant industrial user permit from the NJDEP.

Prior to the current configuration of the sewage system, FTMM maintained two government-owned STPs (one STP on the MP and the other on CWA). The MP had a pre-1941 STP and a second STP constructed in 1941 when the former was taken offline. The CWA STP was constructed in 1942. Sewage was treated at government-owned plants until 1975 when the FTMM collection system was tied into the regional system. Additional information can be found in Section 5.13.11 of the Phase I ECP (1).

3.22.2 Previous Investigations

The MP STP was investigated as part of the IRP (FTMM-19), and the NJDEP approved the recommendation for NFA in 1996. The CWA STP was investigated as part of the IRP (FTMM-27), and NFA was approved by the NJDEP. A pre-1941 STP operated at the MP has been investigated as part of the IRP (FTMM-20), and an RI report was submitted to the NJDEP in March 2004. No response has been received from the NJDEP.

A USAEHA 1976 Water Quality Engineering Special Study stated that effluents from the Myer Center posed a threat to the acceptability of waste discharged from the CWA of FTMM to the regional sewer authority. Strong acids and bases discharged from the facility were a cause for concern, should the connection to the regional sewer authority occur (20).

Following the initial visits by USAEHA in 1975 and 1976, an extensive effort was undertaken to locate sources of industrial waste in the Myer Center. Various samples from shops were forwarded by the U.S. Army Electronics Command Environmental Office to USAEHA for chemical analysis and walk-through inspections of labs were made. Disposal recommendations were made by USAEHA. The Facilities Engineer also worked with USAEHA on options for use of the CWA STP as a pre-treatment facility. According to FTMM personnel, no chemical wastes have been discharged to the sanitary sewer since the mid-1980s. Activities at Bldg 2700 have since been converted primarily to administrative functions. Current waste management practices prohibit the discharge of any materials, other than water and biodegradable soaps, into the sanitary sewer system.

3.22.3 Site Investigation Sampling

In order to determine the potential release of mercury from former laboratory activities and miscellaneous industrial processes, sampling of the existing sanitary sewer waste stream was conducted at select locations. All samples were collected from the sanitary sewer system at the first available location downgradient of the building or specified former activity to be investigated. Sample locations included manhole access and clean-out locations. Final sample locations were selected utilizing the advice of qualified personnel familiar with the system and were biased towards locations of potential historic sediment deposition.

Sanitary System Investigation

Sanitary aqueous samples were collected at various manhole locations on the MP and one at the CWA in December 2007. A total of nine aqueous samples (including one duplicate sample) were collected from the sanitary sewer lines. A manhole located downgradient of Bldg 285 was concrete capped and abandoned. Therefore, investigation at this location could not be conducted.

The methodology followed during sanitary sampling is presented in **Section 2.3**.

Table 3.22.1 presents a summary of all field activities, and all sample locations are provided on **Figure 3.22-1, Figure 3.22-2,** and **Figure 3.22-3**. A summary of sampling activities, including sample IDs, collection dates, analytical parameters, and methods of analysis, is provided in **Table 3.22-2**.

Table 3.22-1
Sanitary Sewer System Sampling Location, Rationale and Analytical

Sample Location	Sample Media	Sample Location Rationale	Analytical Suite
680SAN-1 (2 samples – includes 1 duplicate sample)	Sanitary waste	A sample was collected downgradient of former Bldg 680 to investigate potential mercury discharge into the sanitary sewer resulting from the former storage and use of mercury bichloride.	Mercury
283SAN-1 (1 sample)	Sanitary waste	A sample was collected downgradient of Bldg 283 to investigate potential mercury discharge into the sanitary sewer resulting from the former use of mercury in various laboratory instruments and physical chemistry measurements using mercury. The sample location will serve to investigate potential discharges due to historic mercury reclamation at former Bldgs S-5 and S-12 and heating of mercury compounds at Bldg 288.	Mercury

Sample Location	Sample Media	Sample Location Rationale	Analytical Suite
292SAN-1 (1 sample)	Sanitary waste	A sample was collected downgradient of Bldg 292 to investigate potential mercury discharge into the sanitary sewer resulting from the former storage and use of mercury in various instruments and manufacture of mercury electrodes. The selected sampling location also serves to investigate potential mercury discharges from former mercury use at Bldg 293 in battery testing and former Bldg 294 in the development of plastics and rubber.	Mercury
814SAN-1 (1 sample)	Sanitary waste	A sample was collected downgradient of Bldg 814 to investigate potential mercury discharge into the sanitary sewer resulting from the former use of mercury related to routine dental work.	Mercury
834SAN-1 (1 sample)	Sanitary waste	A sample was collected downgradient of former Bldgs 834 and 835 to investigate potential mercury discharge into the sanitary sewer resulting from the former use of mercury related to routine dental work.	Mercury
1075SAN-1 (1 sample)	Sanitary waste	A sample was collected downgradient of Bldg 1075 to investigate potential mercury discharge into the sanitary sewer resulting from the use of mercury in the development of x-rays and other medical imaging.	Mercury
209SAN-1 (1 sample)	Sanitary waste	A sample was collected downgradient of Bldg 209 to investigate potential mercury discharge into the sanitary sewer resulting from the former use of mercury containing equipment during the time the building served as a hospital.	Mercury
285SAN-1	Sanitary waste	Manhole was sealed and concrete capped. Therefore, no sample was taken.	Not collected
2700SAN-1 (1 sample)	Sanitary waste	A sample was collected downgradient of Bldg 2700 to investigate potential mercury discharges into the sanitary sewer resulting from the former storage and use of mercury in various laboratories, including the Photographic Branch, Electrochemical Research, ETD&L, and mercuric chloride use and disposal from the Printed Circuit Manufacturing Shop. The sample location was selected encompassing all sanitary sewer connections from Bldg 2700, including the former acid neutralization tank connections.	Mercury

3.22.4 Site Investigation Results

Mercury was not detected in any of the collected sanitary aqueous samples.

3.22.5 Summary and Conclusions

Mercury was not identified in any samples. NFA is recommended.

Table 3.22-2
Sanitary System Sample and Analytical Summary

Media	Type	Building	Field Sample #	Sample Date	Sample Time	Begin Depth	End Depth	TPHC	VO+15	B\N+15	PCBs	TAL Metals	Cyanide	Mercury	Ammonia/ Nitrate/ Nitrite	COMMENTS/VARIANCES
SD	SANITARY	2700	2700SAN-1	12/12/07	9:25	--	--							X		
SD	SANITARY	1075	1075SAN-1	12/12/07	10:20	--	--							X		
SD	SANITARY	834	834SAN-1	12/12/07	10:35	--	--							X		
SD	SANITARY	814	814SAN-1	12/12/07	10:50	--	--							X		
SD	SANITARY	292	292SAN-1	12/12/07	11:25	--	--							X		
SD	SANITARY	680	680SAN-1	12/12/07	11:40	--	--							X		
SD	SANITARY	680	680SAN-1 DUPLICATE	12/12/07	11:40	--	--							X		
BLANK	FIELD	ALL SAN	FIELD BLANK	12/12/07	11:40	--	--							X		
SD	SANITARY	283	283SAN-1	12/12/07	11:55	--	--							X		
SD	SANITARY	285	285SAN-1	--	--	--	--									Manhole was sealed and capped. No sample collected.
SD	SANITARY	209	209SAN-1	12/12/07	13:15	--	--							X		

X = Sample analyzed for the indicated analytical parameter suite

LEGEND

- Sanitary Water Sample Location
- Building
- Installation Boundary

N

SCALE:

0 125 250 500 Feet

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

Shaw® Shaw Environmental, Inc.

FIGURE 3.22-1

FORT MONMOUTH ECP
SITE INVESTIGATION

SANITARY SEWER SAMPLE LOCATIONS
BUILDINGS 814, 1075, AND FORMER
BUILDING 834

MAIN POST
FORT MONMOUTH
NEW JERSEY

ArcGIS File: MP_Fig3_22-1_SI_B814_B1075_FB834_Sanitary_SampLoc.mxd (7/14/2008 4:26:52 PM)

LEGEND

- Sanitary Water Sample Location
- Building
- Installation Boundary

N

SCALE:

0 130 260 520 Feet

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

Shaw® Shaw Environmental, Inc.

FIGURE 3.22-2

FORT MONMOUTH ECP SITE INVESTIGATION

SANITARY SEWER SAMPLE LOCATIONS
BUILDINGS 209, 283, 292, AND
FORMER BUILDING 680

MAIN POST
FORT MONMOUTH
NEW JERSEY

ArcGIS File: MP_Fig3_22-2_SI_B209_B283_etc_Sanitary_SampLoc.mxd (7/14/2008 1:06:31 PM)

LEGEND

- Sanitary Water Sample Location
- Building
- IRP Site Boundary
- Installation Boundary

N

SCALE:

0 62.5 125 250 Feet

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

Shaw® Shaw Environmental, Inc.

FIGURE 3.22-3

FORT MONMOUTH ECP
SITE INVESTIGATION

SANITARY SEWER SAMPLE LOCATIONS
BUILDING 2700

CHARLES WOOD AREA
FORT MONMOUTH
NEW JERSEY

ArcGIS File: CWA_Fig3_22-3_SI_B2700_Sanitary_SampLoc.mxd (7/14/2008 4:28:05 PM)

3.23 Electrical Substations

3.23.1 Site Description

Presently, five electrical substations are maintained and operated by the DPW. Three substations are located on the MP and two substations are located in the CWA. Secondary containment is provided at all five substations, and each site is managed under the DPW's Spill Prevention, Control and Countermeasures program (28).

MP – Bldg 288. This facility is a modern electrical substation, constructed following discontinuation of PCB-contaminated electrical equipment, located northeast of Bldg 288. The substation consists of a 34,500-volt, 3,000 kilovolt-amperes (kVA) transformer and a 4,160-volt air switch. The transformer contains 520 gallons of non-PCB oil. The air switch is a dry unit and contains no oil.

MP – Bldg 978. This facility is an electrical substation located adjacent to Bldg 978 and also serves as the delivery point for metering of electrical power to the MP. The substation consists of three 34,500-volt, 5,000 kVA transformers, and six voltage regulators. The first 5,000 kVA transformer, manufactured by General Electric, contains 2,155 gallons of non-PCB oil. The second 5,000 kVA transformer, also manufactured by General Electric, contains 1,540 gallons of non-PCB oil. The third 5,000 kVA transformer, manufactured by Allis Chalmers, contains 1,313 gallons of non-PCB oil. The six voltage regulators each contain 546 gallons of non-PCB oil.

MP – Bldg 1231. This facility is an electrical substation located adjacent to Bldg 1231. The substation consists of two 34,500-volt, 5,000 kVA transformers, one large circuit breaker, and one pole mounted type transformer (50 kVA). One 5,000 kVA transformer contains 2,704 gallons of non-PCB oil. The second 5,000 kVA transformer contains 3,100 gallons of non-PCB oil. The circuit breaker contains 220 gallons of non-PCB oil. The 50 kVA transformer contains approximately 40 gallons of non-PCB oil.

CWA – Bldg 2700. This facility is a modern electrical substation that supports the Myer Center (Bldg 2700) facility. The substation consists of two 12,500-volt, 7,500 kVA transformers. Each transformer contains 1,523 gallons of non-PCB oil. The current electrical substation at Bldg 2700, constructed following discontinuation of PCB-contaminated electrical equipment, replaced a pre-existing electrical substation located to the southeast.

CWA – Bldg 2716. This facility is an electrical substation located adjacent to Bldg 2704. The substation consists of two 34,500-volt, 10,000 kVA transformers that both contain 2,142 gallons of non-PCB oil. Additional information pertaining to this parcel can be found in Section 4.4.4 of the Phase I ECP (1).

3.23.2 Previous Investigations

No previous investigative activities have been conducted at the electrical substations.

3.23.3 Site Investigation Sampling

Based on the period of operation of electrical substations located adjacent to Bldgs 978, 1231, 2716 and the former substation east of the Myer Center (southeast of the current substation serving this facility), it is likely that previous operations included the use of PCB-containing equipment. In order to determine if historic use of potential PCB-containing equipment has resulted in the release of PCBs from electrical substations at FTMM, soil samples were collected from substation transformer yards adjacent to Bldgs 978, 1231, 2716, and the former Myer Center substation. Substations adjacent to Bldgs 288 and 2700 were constructed following discontinuation of PCB-containing electrical equipment; therefore, no sampling of these facilities was required.

Surface Soil Investigation

Surface soil samples were collected in December 2007 at electrical transformer substations located throughout FTMM.

MP – Bldg 978. A total of ten surface soil samples were collected (including one duplicate sample) from nine distinct hand auger sample locations in and around Bldg 978 substation (**Figure 3.23-1**). Surface soil samples for PCB analysis were collected from the 0- to 6-inch interval bgs. If sample locations were within gravel-covered areas, samples were collected from the 0- to 6-inch interval below the gravel sub-base.

MP – Bldg 1231. A total of nine surface soil samples were collected from nine distinct hand augered sample locations in and around the Bldg 1231 substation (**Figure 3.23-2**). Surface soil samples for PCB analysis were collected from the 0- to 6-inch interval bgs. If sample locations were within gravel-covered areas, samples were collected from the 0- to 6-inch interval below the gravel sub-base.

CWA – Bldg 2700. A total of 14 surface soil samples were collected (including one duplicate sample) from 13 distinct hand auger boring locations in an open field east of Bldg 2700 and Laboratory Road. Samples were spaced within a 50-ft sample grid configuration (**Figure 3.23-3**). Surface soil samples for PCB analysis were collected from the 0- to 6-inch interval bgs.

CWA – Bldg 2716. A total of nine surface soil samples were collected from nine distinct hand auger boring locations in and around the Bldg 2716 substation (**Figure 3.23-4**). Surface soil samples for PCB analysis were collected from the 0- to 6-inch interval bgs. If sample locations were within gravel-covered areas, samples were collected from the 0- to 6-inch interval below the gravel sub-base.

Table 3.23-1 presents a summary of all field activities, and all sample locations are provided on **Figures 3.23-1 through 3.23-4**. A summary of sampling activities, including sample IDs, collection dates, analytical parameters, and methods of analysis, is provided in **Table 3.23-2**.

Table 3.23-1
Electrical Substations Sampling Location, Rationale and Analytical

Sample Location	Sample Media	Sample Location Rationale	Analytical Suite
978SS-1:9 (10 samples – includes 1 duplicate sample)	Surface soil	Soil samples were collected from the 0- to 6-inch bgs interval to investigate potential discharges associated with former PCB-containing electrical equipment. Samples were located on the perimeter of the substation yard and one sample at the outfall of the yard drain. If samples were located over gravel, the sample was collected from the 0- to 6-inch interval below the gravel sub-base.	PCBs
1231SS-1:9 (9 samples)	Surface soil	Soil samples were collected from the 0- to 6-inch bgs interval to investigate potential discharges associated with former PCB-containing electrical equipment. Samples were located around the perimeter of the substation yard and one sample at the outfall of the yard drain. If samples were located over gravel, then the sample was collected from the 0- to 6-inch interval below the gravel sub-base.	PCBs
2700SS-A1:D4 (14 samples – includes 1 duplicate sample)	Surface soil	Soil samples were collected from the 0- to 6-inch bgs interval from a sampling grid (on 50-ft centers) to investigate potential discharges associated with former PCB-containing electrical equipment.	PCBs
2716SS-1:9 (9 samples)	Surface soil	Soil samples were collected from the 0- to 6-inch bgs interval to investigate potential discharges associated with former PCB-containing electrical equipment. Two samples were located on each side of the substation yard and one sample at the outfall of the yard drain. If samples were located over gravel, then the sample was collected from the 0- to 6-inch interval below the gravel sub-base.	PCBs

Soil Investigation Results

As summarized in **Table 3.23-3**, PCBs were not detected above the NJDEP NRDCSCC. Two samples contained Aroclor 1260 at concentrations above the RDCSCC of 0.49 mg/kg. Samples 978SS-2 and 2700SS-D2 contained the PCB Aroclor 1260 at concentrations of 0.84 mg/kg and 0.65 mg/kg, respectively. No other samples contained PCBs at concentrations greater than the RDCSCC.

3.23.4 Summary and Conclusions

No constituents were identified above the NRDCSCC in soil at any of the four substations. NFA is recommended.

Table 3.23-2
Electrical Substation Sample and Analytical Summary

Media	Type	Building	Field Sample #	Sample Date	Sample Time	Begin Depth	End Depth	TPHC	VO+15	BN+15	PCBs	TAL Metals	Cyanide	Mercury	Ammonia/ Nitrate/ Nitrite	COMMENTS/VARIANCES
SOIL	HAND AUGER	978	978SS-1	12/26/07	11:20	0.0	0.5				X					
SOIL	HAND AUGER	978	978SS-2	12/26/07	11:23	0.0	0.5				X					
SOIL	HAND AUGER	978	978SS-3	12/26/07	11:25	0.0	0.5				X					
SOIL	HAND AUGER	978	978SS-4	12/26/07	11:30	0.0	0.5				X					
SOIL	HAND AUGER	978	978SS-5	12/26/07	11:35	0.0	0.5				X					
SOIL	HAND AUGER	978	978SS-6	12/26/07	11:40	0.0	0.5				X					
SOIL	HAND AUGER	978	978SS-6 DUPLICATE	12/26/07	11:40	0.0	0.5				X					
SOIL	HAND AUGER	978	978SS-7	12/26/07	11:45	0.0	0.5				X					
SOIL	HAND AUGER	978	978SS-8	12/26/07	11:55	0.0	0.5				X					
SOIL	HAND AUGER	978	978SS-9	12/26/07	12:00	0.0	0.5				X					
SOIL	HAND AUGER	1231	1231SS-1	12/26/07	12:55	0.0	0.5				X					
SOIL	HAND AUGER	1231	1231SS-2	12/26/07	13:05	0.0	0.5				X					
SOIL	HAND AUGER	1231	1231SS-3	12/26/07	13:10	0.0	0.5				X					
SOIL	HAND AUGER	1231	1231SS-4	12/26/07	13:25	0.0	0.5				X					
SOIL	HAND AUGER	1231	1231SS-5	12/26/07	13:30	0.0	0.5				X					
SOIL	HAND AUGER	1231	1231SS-6	12/26/07	13:40	0.0	0.5				X					
SOIL	HAND AUGER	1231	1231SS-7	12/26/07	13:50	0.0	0.5				X					
SOIL	HAND AUGER	1231	1231SS-8	12/26/07	14:00	0.0	0.5				X					
SOIL	HAND AUGER	1231	1231SS-9	12/26/07	14:05	0.0	0.5				X					
SOIL	HAND AUGER	2700	2700SS-D1	12/27/07	9:45	0.0	0.5				X					
SOIL	HAND AUGER	2700	2700SS-D2	12/27/07	9:50	0.0	0.5				X					
SOIL	HAND AUGER	2700	2700SS-D3	12/27/07	9:55	0.0	0.5				X					
SOIL	HAND AUGER	2700	2700SS-D3 DUPLICATE	12/27/07	9:55	0.0	0.5				X					
SOIL	HAND AUGER	2700	2700SS-D4	12/27/07	10:00	0.0	0.5				X					
SOIL	HAND AUGER	2700	2700SS-C1	12/27/07	10:05	0.0	0.5				X					
SOIL	HAND AUGER	2700	2700SS-C2	12/27/07	10:10	0.0	0.5				X					
SOIL	HAND AUGER	2700	2700SS-C3	12/27/07	10:12	0.0	0.5				X					
SOIL	HAND AUGER	2700	2700SS-C4	12/27/07	10:15	0.0	0.5				X					
SOIL	HAND AUGER	2700	2700SS-B1	12/27/07	10:20	0.0	0.5				X					
SOIL	HAND AUGER	2700	2700SS-B2	12/27/07	10:25	0.0	0.5				X					

Table 3.23-2
Electrical Substation Sample and Analytical Summary

Media	Type	Building	Field Sample #	Sample Date	Sample Time	Begin Depth	End Depth	TPHC	VO+15	BN+15	PCBs	TAL Metals	Cyanide	Mercury	Ammonia/ Nitrate/ Nitrite	COMMENTS/VARIANCES
SOIL	HAND AUGER	2700	2700SS-B3	12/27/07	10:30	0.0	0.5				X					
SOIL	HAND AUGER	2700	2700SS-B4	12/27/07	10:32	0.0	0.5				X					
SOIL	HAND AUGER	2700	2700SS-A2	12/27/07	10:35	0.0	0.5				X					
BLANK	FIELD	2700	FIELD BLANK	12/27/07	11:10	--	--				X					
SOIL	HAND AUGER	2716	2716SS-1	12/26/07	14:55	0.0	0.5				X					
SOIL	HAND AUGER	2716	2716SS-2	12/26/07	15:00	0.0	0.5				X					
SOIL	HAND AUGER	2716	2716SS-3	12/26/07	15:05	0.0	0.5				X					
SOIL	HAND AUGER	2716	2716SS-4	12/26/07	15:15	0.0	0.5				X					
SOIL	HAND AUGER	2716	2716SS-5	12/26/07	15:20	0.0	0.5				X					
SOIL	HAND AUGER	2716	2716SS-6	12/26/07	15:25	0.0	0.5				X					
SOIL	HAND AUGER	2716	2716SS-7	12/26/07	15:30	0.0	0.5				X					
SOIL	HAND AUGER	2716	2716SS-8	12/26/07	15:35	0.0	0.5				X					
SOIL	HAND AUGER	2716	2716SS-9	12/26/07	15:40	0.0	0.5				X					
BLANK	FIELD	2716	FIELD BLANK	12/26/07	15:50	--	--				X					

X = Sample analyzed for the indicated analytical parameter suite

Table 3.23-3
Fort Monmouth Phase II Site Investigation, Substations
Summary of Analytical Parameters Detected in Soil (mg/kg)

				Analytical Results								
			Sample ID:	978SS-1	978SS-2	978SS-3	978SS-4	978SS-5	978SS-6	978SS-6 DUP	978SS-8	2700SS-A2
			Lab ID:	7056101	7056102	7056103	7056104	7056105	7056106	7056110	7056108	7056201
			Date Sampled	12/26/2007	12/26/2007	12/26/2007	12/26/2007	12/26/2007	12/26/2007	12/26/2007	12/26/2007	12/27/2007
			Depth (ft. bgs):	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
Chemical	RDCSCC[1]	NRDCSCC[2]	IGWSCC[3]	Result	Result	Result	Result	Result	Result	Result	Result	Result
PCBs												
Aroclor 1260	0.49	2	50	**0.07**	**0.84**	**0.32**	**0.15**	**0.04**	**0.06**	**0.04**	**0.05**	**0.05**

				Analytical Results								
			Sample ID:	2700SS-B2	2700SS-B3	2700SS-B4	2700SS-C1	2700SS-D2	2716SS-1	2716SS-6	2716SS-7	2716SS-8
			Lab ID:	7056204	7056205	7056206	7056207	7056212	7056120	7056125	7056126	7056127
			Date Sampled	12/27/2007	12/27/2007	12/27/2007	12/27/2007	12/27/2007	12/26/2007	12/26/2007	12/26/2007	12/26/2007
			Depth (ft. bgs):	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5	0.0-0.5
Chemical	RDCSCC[1]	NRDCSCC[2]	IGWSCC[3]	Result	Result	Result	Result	Result	Result	Result	Result	Result
PCBs												
Aroclor 1260	0.49	2	50	**0.04**	**0.07**	**0.12**	**0.04**	**0.65**	**0.07**	**0.04**	**0.09**	**0.07**

[1] NJDEP Residential Direct Contact Soil Cleanup Criteria per NJAC 7:26D, 1999.

[2] NJDEP Non-Residential Direct Contact Soil Cleanup Criteria per NJAC 7:26D, 1999.

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

DUP = Duplicate Sample.

ft. bgs = Feet below ground surface.

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

D = Sample was diluted.

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

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

U = The compound was analyzed for but not detected.

NT = Not tested.

NLE = No limit established.

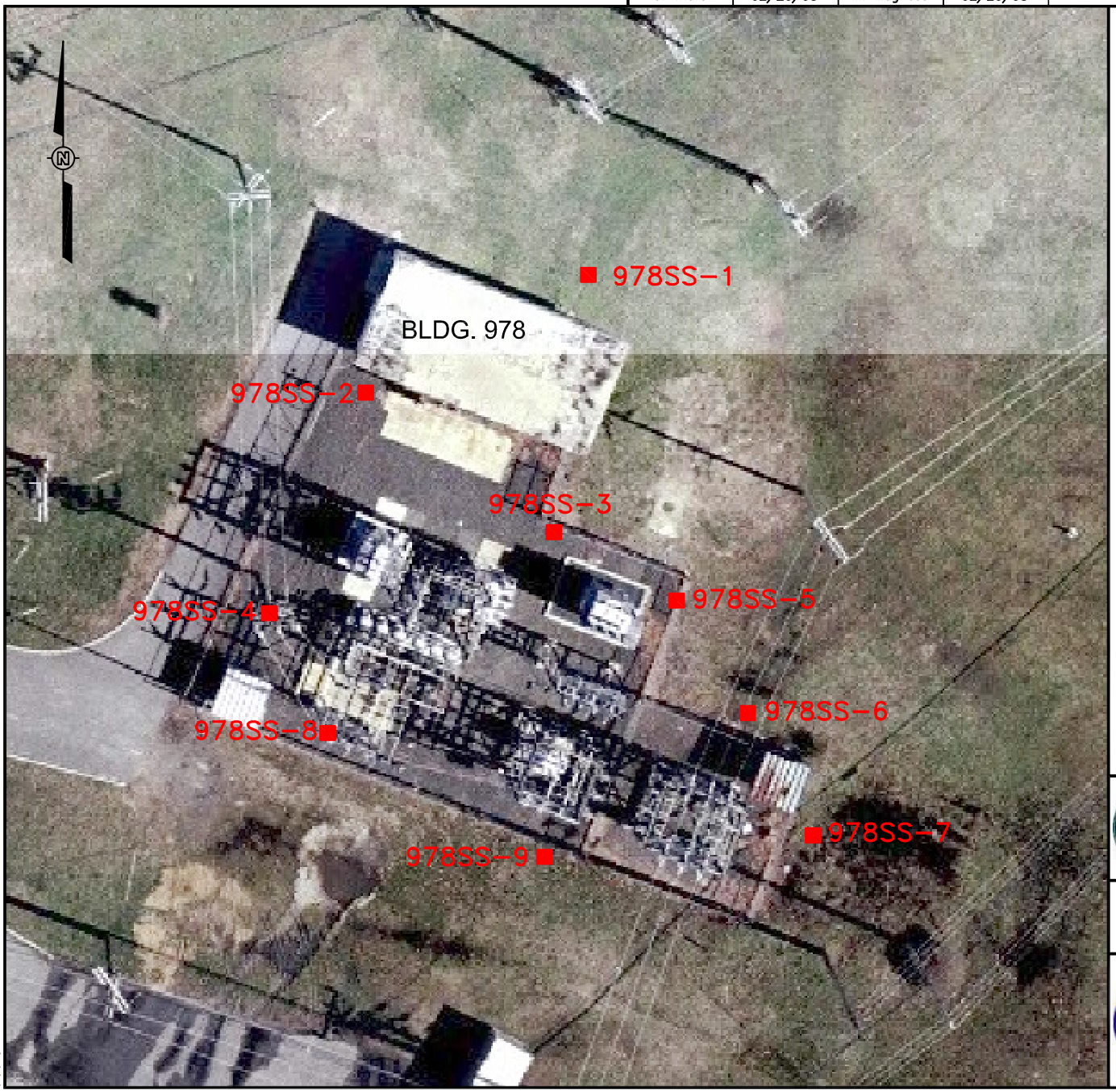
mg/kg = milligram per kilogram.

Bold = Analyte was detected.

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

File: N:\cad\CAD drawings\USAEC\Ft.Monmouth\2008-REVISIONS_FT.MON\Proposed_Soil-Samples.dwg
Plot Date/Time: Jul 14, 2008 - 4:21pm
Plotted By: stephen.Wiafe

DRAWN BY		CHECKED BY		APPROVED BY		DRAWING NUMBER	Soil-Sample-1.dwg
S. Wiafe	02/20/08	M. Magness	02/20/08	--	--		



LEGEND

- SURFACE SOIL SAMPLE LOCATION- SAMPLES COLLECTED AT 0-6" BGS
- ROAD
- BUILDING

SCALE

0 30 60 FEET

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

Shaw Environmental, Inc.

FIGURE 3-23-1

BLDG 978 SAMPLE LOCATIONS

MAIN POST
FORT MONMOUTH
NEW JERSEY

File: N:\cad\CAD drawings\USAEC\Ft.Monmouth\2008-REVISIONS_FT.MON\Proposed_Soil-Sample.dwg
Plot Date/Time: Jul 14, 2008 - 4:22pm
Plotted By: stephen.Wiafe

DRAWN BY		CHECKED BY		APPROVED BY		DRAWING NUMBER
S. Wiafe	02/20/08	M. Magness	02/20/08	--	--	Soil-Sample-1.dwg

LEGEND

- SURFACE SOIL SAMPLE LOCATION
  SAMPLES COLLECTED AT 0-6" BGS
- ROAD
- BUILDING

SCALE

0 20 40 FEET

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

Shaw Environmental, Inc.

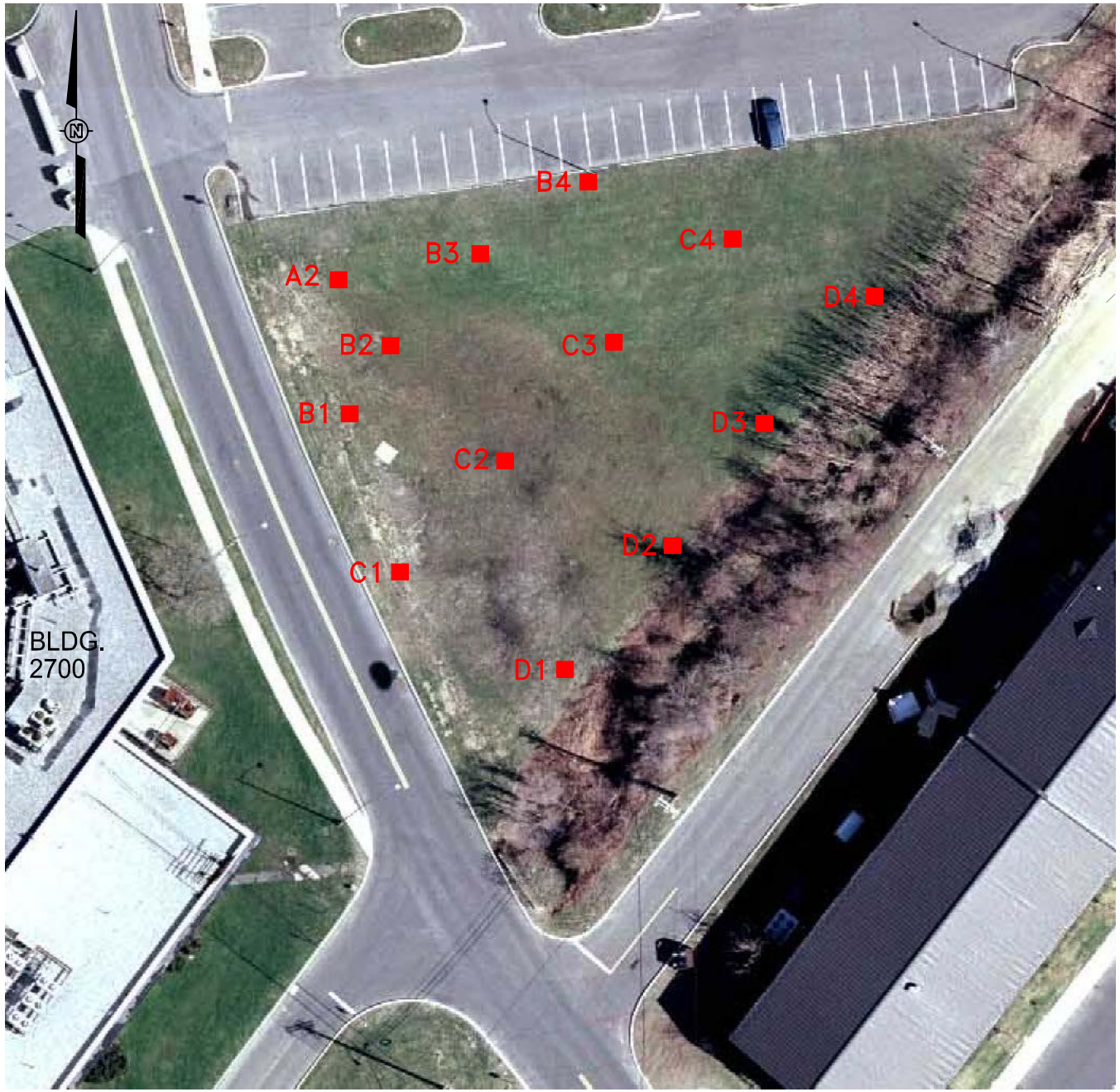
FIGURE 3-23-2

BLDG 1231 SAMPLE LOCATIONS

MAIN POST
FORT MONMOUTH
NEW JERSEY

File: N:\cad\CAD drawings\USAEC\Ft.Monmouth\2008-REVISIONS_FT.MON\Photomap3.dwg
Plot Date/Time: Jul 14, 2008 - 4:43pm
Plotted By: stephen.Wiafe

DRAWN BY		CHECKED BY		APPROVED BY		DRAWING NUMBER	Soil-Sample-1.dwg
S. Wiafe	02/20/08	M. Magness	02/20/08	--	--		



LEGEND

- SURFACE SOIL SAMPLE LOCATION- SAMPLES COLLECTED AT 0-6" BGS
- STREAM
- ROAD
- BUILDING

SCALE

0 50 100 FEET

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

Shaw Environmental, Inc.

FIGURE 3-23-3

BLDG 2700 SAMPLE LOCATIONS

CHARLES WOOD AREA
FORT MONMOUTH
NEW JERSEY

File: N:\cad\CAD drawings\USAEC\Ft.Monmouth\2008-REVISIONS_FT.MON\Photomap3.dwg
Plot Date/Time: Jul 14, 2008 - 4:50pm
Plotted By: stephen.Wiafe

DRAWN BY		CHECKED BY		APPROVED BY		DRAWING NUMBER
S. Wiafe	02/20/08	M. Magness	02/20/08	--	--	Soil-Sample-1.dwg

LEGEND

- SURFACE SOIL SAMPLE LOCATION- SAMPLES COLLECTED AT 0-6" BGS
- STREAM
- ROAD
- BUILDING

SCALE

0 20 40 FEET

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

Shaw Environmental, Inc.

FIGURE 3-23-4

BLDG 2716 SAMPLE LOCATIONS

CHARLES WOOD AREA
FORT MONMOUTH
NEW JERSEY