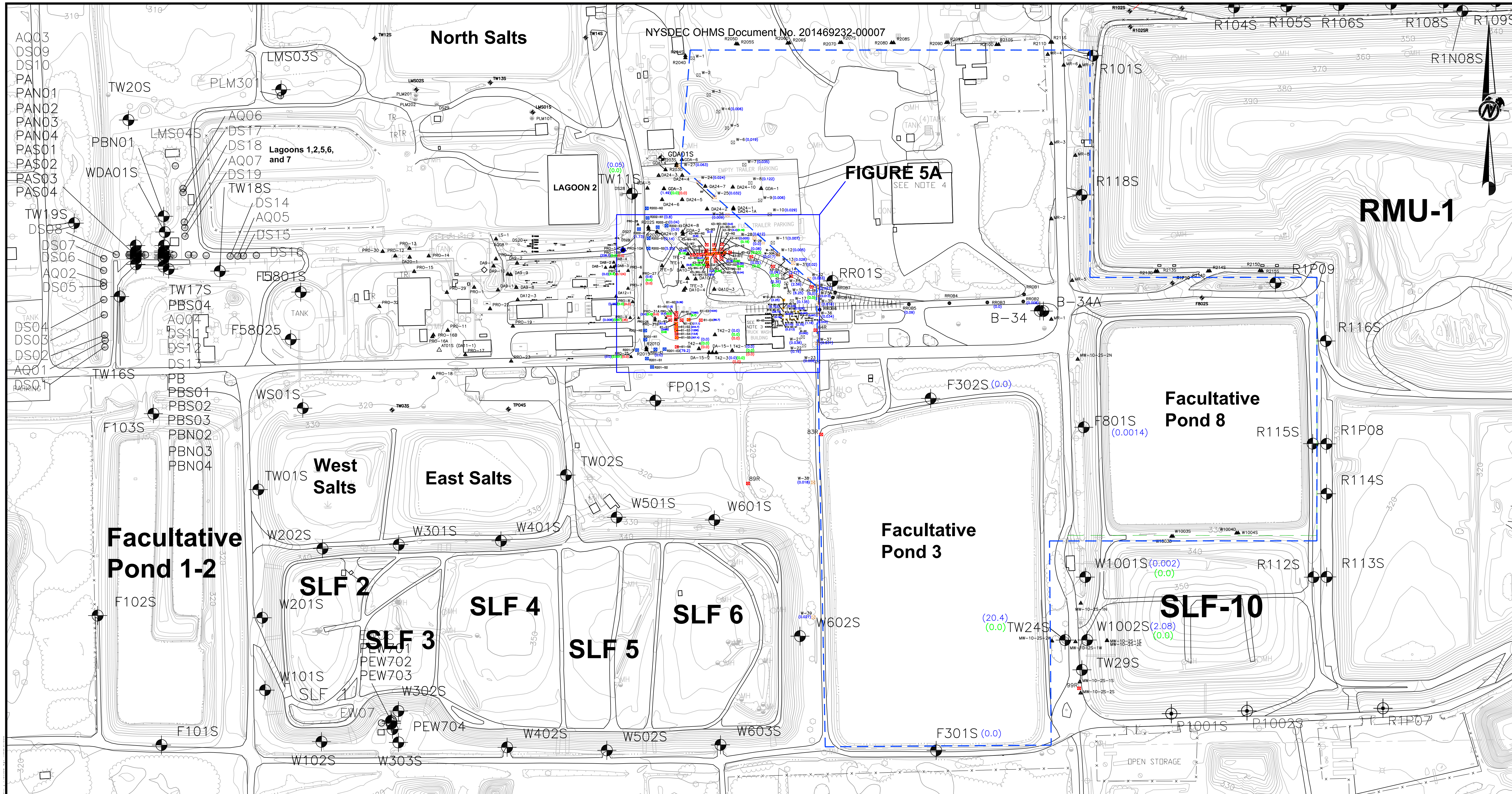
NYSDEC OHMS Document No. 201469232-00007



LEGEND

Symbol	Description
▲	RFI–SOURCED LOCATION – SOIL
△	RFI–SOURCED LOCATION – WELL
●	RR INVESTIGATION LOCATION – SOIL
⊙	RR INVESTIGATION LOCATION – WELL
⊕	GLACIOLACUSTRINE SILT/SAND UNIT MONITORING WELL
○	GROUND WATER EXTRACTION AQUEOUS SUMP, DNAPL SUMP OR EXTRACTION WELL
◬	URS BORING INVESTIGATION SAMPLE LOCATION
☒ R201–N2	R201/R202 INVESTIGATION SAMPLE LOCATION
☒ 43–E1	RMU–2 FOOTPRINT INVESTIGATION SAMPLE LOCATION
☒ W–22	RMU–2 WESTERN BOUNDARY INVESTIGATION SAMPLE LOCATION (PHASE I)
☒ W–31	RMU–2 WESTERN BOUNDARY INVESTIGATION SAMPLE LOCATION (PHASE II)
☒	RMU–2 INVESTIGATION BORINGS WITH NAPL IMPACT AND/OR TOTAL VOLATILE ORGANIC COMPOUNDS (TVOCs) >100 PARTS PER MILLION, (ppm)
☒	RMU–2 WESTERN BOUNDARY W19 TRACKING BORING LOCATION WITH PETROLEUM/OTHER IMPACTS
▲	RFI–SOURCED SOIL BORING LOCATION WITH NAPL IMPACT AND/OR TVOCs >100 ppm
(0.02)	TOTAL VOCs CONCENTRATION (ppm)
(0.02)	TOTAL SEMI–VOLATLILE ORGANIC COMPOUNDS (TSVOCs) CONCENTRATION (ppm)
(0.02)	TOTAL PCBs CONCENTRATION (ppm)
– – – – – –	REVISED PROPOSED ALTERNATIVE RMU–2 FOOTPRINT BOUNDARY

REFERENCES

1.) BASE MAP COMPILED BY PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY DATED MAY 31, 2001 BY AIR SURVEY CORP., DULLES, VIRGINIA.

2.) MONITORING WELLS AND SOIL BORINGS DIGITIZED FROM FIGURE 4, TITLED ABANDONED RR BED SAMPLING LOCATIONS PREPARED BY RUST ENVIRONMENTAL & INFRASTRUCTURE, DATED JANUARY 1995 AND CWM RFI SUMMARY REPORT FIGURES BY GOLDER ASSOCIATES, DATED JANUARY, 1993.

3.) R201/R202–AREA BORINGS AND #43/#61–AREA BORINGS SURVEYED BY WENDEL–DUCHSCHERER ON DECEMBER 17, 2008. RMU–2 WESTERN BOUNDARY BORINGS (PHASE I) SURVEYED BY WENDEL–DUCHSCHERER ON FEBRUARY 13, 2009. PHASE II BORINGS SURVEYED BY WENDEL– DUCHSCHERER ON APRIL 24, 2009.

NOTES

1.) ONLY BORINGS WITH NAPL OR PETROLEUM IMPACTS AND/OR TVOCs >100 ppm USED IN IMPACT ASSESSMENT.

2.) PLACEMENT OF SEVERAL ADDITIONAL W19–AREA BORINGS APPROXIMATED ON FIGURE.

3.) PLACEMENT OF POINT #63 BORING APPROXIMATED ON FIGURE. POINT #63 INVESTIGATION BORINGS INSTALLED FOR RADIATION SCREENING PURPOSES (SAMPLED BY OTHERS) AND LOCATIONS APPROXIMATED ON FIGURE.

4.) FOR ENLARGEMENT OF THE R201 & R202, #43 & #61 AND #W19 INVESTIGATION AREAS, SEE FIGURE 5A.

120 0 120 240
SCALE FEET

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

PROJECT
CWM CHEMICAL SERVICES, L.L.C.
RMU-2 FOOTPRINT RELOCATION
MODEL CITY, NEW YORK

TITLE
HISTORIC & RECENT GROUNDWATER SAMPLE LOCATIONS AND TVOCs, TSVOCs & PCBs CONCENTRATION MAP

NJ Authorization #24GA28029100
Golder Associates
Mt. Laurel, New Jersey

PROJECT No.		083–89111
DESIGN	RJM	1/15/09
CADD	AM/RJM	8/31/09
CHECK	RJM	8/31/09
REVIEW	DCW	8/31/09

FILE No. 08389111A324
SCALE AS SHOWN REV. 0

FIGURE 5

FULL TRAILER PARKING

ABANDONED RAILROAD TRACKS

SEE NOTE 3

TRUCK WASH BUILDING

LEGEND

- RFI–SOURCED LOCATION – SOIL
- RFI–SOURCED LOCATION – WELL
- RR INVESTIGATION LOCATION – SOIL
- RR INVESTIGATION LOCATION – WELL
- GLACIOLACUSTRINE SILT/SAND UNIT MONITORING WELL
- GROUND WATER EXTRACTION AQUEOUS SUMP, DNAPL SUMP OR EXTRACTION WELL
- URS BORING INVESTIGATION SAMPLE LOCATION
- R201/R202 INVESTIGATION SAMPLE LOCATION
- RMU–2 FOOTPRINT INVESTIGATION SAMPLE LOCATION
- RMU–2 WESTERN BOUNDARY INVESTIGATION SAMPLE LOCATION (PHASE I)
- RMU–2 WESTERN BOUNDARY INVESTIGATION SAMPLE LOCATION (PHASE II)
- RMU–2 INVESTIGATION BORING WITH NAPL IMPACT AND/OR GROUNDWATER TOTAL VOLATILE ORGANIC COMPOUNDS (TVOCs) >100 PARTS PER MILLION (ppm)
- RFI–SOURCED SOIL BORING LOCATION WITH NAPL IMPACT AND/OR TVOCs >100 ppm
- RMU–2 WESTERN BOUNDARY W19 TRACKING BORING LOCATION WITH PETROLEUM/OTHER IMPACTS
- (0.02) TOTAL VOCs CONCENTRATION (ppm)
- (0.02) TOTAL SEMI–VOLATLILE ORGANIC COMPOUNDS (TSVOCs) CONCENTRATION (ppm)
- (0.02) TOTAL PCBs CONCENTRATION (ppm)
- REVISED PROPOSED ALTERNATIVE RMU–2 FOOTPRINT BOUNDARY

NOTES

1.) ONLY BORINGS WITH NAPL OR PETROLEUM IMPACTS AND/OR TVOCs >100 ppm USED IN IMPACT ASSESSMENT.

2.) PLACEMENT OF SEVERAL ADDITIONAL W19–AREA BORINGS ESTIMATED ON FIGURE.

3.) PLACEMENT OF POINT #63 BORING APPROXIMATED ON FIGURE. POINT #63 INVESTIGATION BORINGS INSTALLED FOR RADIATION SCREENING PURPOSES (SAMPLED BY OTHERS) AND LOCATIONS APPROXIMATED ON FIGURE.

REFERENCES

1.) BASE MAP COMPILED BY PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY DATED MAY 31, 2001 BY AIR SURVEY CORP., DULLES, VIRGINIA.

2.) MONITORING WELLS AND SOIL BORINGS DIGITIZED FROM FIGURE 4, TITLED ABANDONED RR BED SAMPLING LOCATIONS PREPARED BY RUST ENVIRONMENTAL & INFRASTRUCTURE, DATED JANUARY 1995 AND CWM RFI SUMMARY REPORT FIGURES BY GOLDER ASSOCIATES, DATED JANUARY, 1993.

3.) R201/R202–AREA BORINGS AND #43/#61–AREA BORINGS SURVEYED BY WENDEL–DUCHSCHERER ON DECEMBER 17, 2008. RMU–2 WESTERN BOUNDARY BORINGS (PHASE I) SURVEYED BY WENDEL–DUCHSCHERER ON FEBRUARY 13, 2009. PHASE II BORINGS SURVEYED BY WENDEL–DUCHSCHERER ON APRIL 24, 2009.

50 0 50

SCALE FEET

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

PROJECT

CWM CHEMICAL SERVICES, L.L.C.
RMU-2 FOOTPRINT RELOCATION
MODEL CITY, NEW YORK

TITLE

HISTORIC & RECENT GROUNDATER SAMPLE LOCATIONS - POINTS #43 & #61, R201 & R202 AND POINT #W19 INVESTIGATION AREAS-TVOCs,TSVOCs & PCBs CONCENTRATION MAP

NJ Authorization #24GA28029100
Golder Associates
Mt. Laurel, New Jersey

PROJECT No.	083–89111		FILE No.	08389111A325	
DESIGN	RJM	1/15/09	SCALE AS SHOWN	REV.	0
CADD	AM/RJM	8/31/09			
CHECK	RJM	8/31/09			
REVIEW	DCW	8/31/09			

FIGURE 5A

APPENDIX A

CONFIRMATORY BOREHOLE INVESTIGATION BORING LOGS

FIELD BORING LOG

DEPTH HOLE 11.0' JOB NO. 083-89101 PROJECT CWM/RMU-2 FOOTPRINT INVESTIGATION/NY BORING NO. 15R
DEPTH SOIL DRILL 11.0' GA INSP. AJN DRILLING METHOD DIRECT PUSH SHEET 1 of 1
DEPTH ROCK CORE N/A WEATHER OVERCAST DRILLING CO. ZEBRA ENVIRONMENTAL DRILLING SURFACE EL. N/A
NO. DIST. N/A US. N/A TEMP. 55°F DRILL RIG BOBCAT MT52 DRILLER P. ORSI DATUM SITE
DEPTH WL. N/A HRS. PROD. N/A WT. SAMPLER HAMMER N/A DROP N/A STARTED 0900/11-03-08
TIME WL. N/A HRS. DELAYED N/A WT. CASING HAMMER N/A DROP N/A COMPLETED 0940/11-03-08

SAMPLE TYPES

A.S.	AUGER SAMPLE
C.S.	CHUNK SAMPLE
D.O.	DRIVE OPEN
D.S.	DENISON SAMPLE
P.S.	PITCHER SAMPLE
R.C.	ROCK CORE
S.T.	SLOTTED TUBE
T.O.	THIN-WALLED, OPEN
T.P.	THIN-WALLED, PISTON
W.S.	WASH SAMPLE

ABBREVIATIONS

BL	BLACK	M	MEDIUM	SA	SAMPLE
BR	BROWN	MIC	MICACEOUS	SAT	SATURATED
C	COARSE	MOT	MOTTLED	SD	SAND
CA	CASING	NP	NON-PLASTIC	SI	SILT
CL	CLAY	OG	ORANGE	SIY	SILTY
CLY	CLAYEY	ORG	ORGANIC	SM	SOME
F	FINE	PH	PRESSURE-HYDRAULIC	TR	TRACE
FRAG	FRAGMENTS	PM	PRESSURE-MANUAL	WL	WATER LEVEL
GL	GRAVEL	R	RED	WH	WEIGHT OF HAMMER
LYD	LAYERED	RES	RESIDUAL	WR	WEIGHT OF RODS
LI	LITTLE	RX	ROCK	Y	YELLOW

SOIL DESCRIPTION – RANGE OF PROPORTION

"TRACE" – 0–5%
"LITTLE" – 5–12%
"SOME" – 12–30%
"AND" – 30–50%

CONSISTENCY

LS	LOOSE	S	SOFT
CP	COMPACT	FM	FIRM
DN	DENSE	ST	STIFF
V	VERY	H	HARD

ELEV. DEPTH	DESCRIPTION	BLOWS/FT.	SAMPLES NO.	TYPE	REC/ATTEMPT	PID (ppm)	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
	FILL 0.0–0.5'					0.0		SA–1 0-4.0 Ft. Loose, brown-gray fine SAND and GRAVEL, some silt, moist, to approx. 0.5 ft. bgs., then firm, dark brown SILTY CLAY,little to some coarse gravel, trace fine sand, moist. (GM-CL)
2		NA	1	DO	3.0/4.0	0.0		
						0.0		
4	UPPER CLAY TILL					0.0		SA–2 4.0-8.0 Ft. As above, then very soft, brown SILTY CLAY, little fine to coarse gravel, trace fine sand, saturated. (CL)
6		NA	2	DO	4.0/4.0	0.0		
						0.0		
8						0.0		SA–3 8.0-11.0 Ft. As above to approx. 8.5 ft. bgs., then firm to stiff, brown-red SILTY CLAY to CLAYEY SILT, little fine to coarse gravel, trace fine sand, moist. (CL)
		NA	3	DO	N/A	0.0		
10						0.0		
								No indication of contamination detected.
12	END OF BORING 11.0' bgs.							0945 - Collect soil sample 8.0-9.0 ft. bgs. for VOCs. No groundwater samples collected.
								NOTE: Since the Direct Push drilling method does not provide blow counts, soil consistency was determined in the field by physical (hand) observation.

FIELD BORING LOG

DEPTH HOLE 16.0' | JOB NO. 083-89101 | PROJECT CWM/RMU-2 FOOTPRINT INVESTIGATION/NY | BORING NO. 64R
DEPTH SOIL DRILL 16.0' | GA INSP. RJM | DRILLING METHOD DIRECT PUSH | SHEET 1 of 1
DEPTH ROCK CORE N/A | WEATHER OVERCAST | DRILLING CO. ZEBRA ENVIRONMENTAL DRILLING | SURFACE EL. N/A
NO. DIST. N/A | US. N/A | TEMP. 40°F/WINDY | DRILL RIG BOBCAT MT52 | DRILLER P. ORSI | DATUM SITE
DEPTH WL. N/A | HRS. PROD. N/A | WT. SAMPLER HAMMER N/A | DROP N/A | STARTED 0820/10-28-08
TIME WL. N/A | HRS. DELAYED N/A | WT. CASING HAMMER N/A | DROP N/A | COMPLETED 0915/10-28-08

SAMPLE TYPES

A.S.	AUGER SAMPLE
C.S.	CHUNK SAMPLE
D.O.	DRIVE OPEN
D.S.	DENISON SAMPLE
P.S.	PITCHER SAMPLE
R.C.	ROCK CORE
S.T.	SLOTTED TUBE
T.O.	THIN-WALLED, OPEN
T.P.	THIN-WALLED, PISTON
W.S.	WASH SAMPLE

ABBREVIATIONS

BL	BLACK	M	MEDIUM	SA	SAMPLE
BR	BROWN	MIC	MICACEOUS	SAT	SATURATED
C	COARSE	MOT	MOTTLED	SD	SAND
CA	CASING	NP	NON-PLASTIC	SI	SILT
CL	CLAY	OG	ORANGE	SIY	SILTY
CLY	CLAYEY	ORG	ORGANIC	SM	SOME
F	FINE	PH	PRESSURE-HYDRAULIC	TR	TRACE
FRAG	FRAGMENTS	PM	PRESSURE-MANUAL	WL	WATER LEVEL
GL	GRAVEL	R	RED	WH	WEIGHT OF HAMMER
LYD	LAYERED	RES	RESIDUAL	WR	WEIGHT OF RODS
LI	LITTLE	RX	ROCK	Y	YELLOW

SOIL DESCRIPTION – RANGE OF PROPORTION

"TRACE" – 0–5%
"LITTLE" – 5–12%
"SOME" – 12–30%
"AND" – 30–50%

CONSISTENCY

LS	LOOSE	S	SOFT
CP	COMPACT	FM	FIRM
DN	DENSE	ST	STIFF
V	VERY	H	HARD

ELEV. DEPTH	DESCRIPTION	BLOWS/FT.	SAMPLES NO.	TYPE	REC/ATTEMPT	PID* (ppm)	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
	FILL 0.0–1.0'							SA–1 0.0-4.0 Ft. Asphalt and coarse gravel to approx. 1.0 ft. bgs., then stiff, gray-brown SILTY CLAY, some coarse gravel, moist, to 3.0 ft. bgs., then stiff, brown to gray brown, SILTY CLAY, little tan brown silt, some fine to coarse gravel, moist. (CL)
2		NA	1	DO	2.6/4.0	0.0		
4						4.0		SA–2 4.0-8.0 Ft. As above, soft to firm, occassional gray silt lenses, moist to very moist, to approx. 6.0 ft. bgs., then brown to red-brown, stiff SILTY CLAY, moist. (CL)
6		NA	2	DO	4.0/4.0	5.2		
8	UPPER CLAY TILL					0.0		SA–3 8.0-12.0 Ft. Firm, red-brown SILTY CLAY, little coarse gravel, occassional rock fragments, moist to very moist. (CL)
10		NA	3	DO	4.0/4.0	132		
12						0.0		SA–4 12.0-15.4 Ft. Soft, red-brown SILTY CLAY to CLAYEY SILT, with increasing silt content towards bottom, wet to saturated, to approx. 15.4 ft. bgs., (CL to ML), then becoming compact, red-brown SILT, saturated. (ML)
14		NA	4	DO	4.0/4.0	0.0		
16	END OF BORING 16.0' bgs.					0.0		Water at approx. 9.8 ft. bgs. at end of drilling. 0915 - Collect soil sample 8.0-10.0 ft. bgs. for VOCs. No groundwater samples collected. *PID readings may have been affected by ambiant climate conditions during drilling activities. NOTE: Since the Direct Push drilling method does not provide blow counts, soil consistency was determined in the field by physical (hand) observation.

FIELD BORING LOG

DEPTH HOLE 14.0' JOB NO. 083-89101 PROJECT CWM/RMU-2 FOOTPRINT INVESTIGATION/NY BORING NO. 83R
DEPTH SOIL DRILL 14.0' GA INSP. AJN DRILLING METHOD DIRECT PUSH SHEET 1 of 1
DEPTH ROCK CORE N/A WEATHER OVERCAST DRILLING CO. ZEBRA ENVIRONMENTAL DRILLING SURFACE EL. N/A
NO. DIST. N/A US. N/A TEMP. N/A DRILL RIG BOBCAT MT52 DRILLER P. ORSI DATUM SITE
DEPTH WL. N/A HRS. PROD. N/A WT. SAMPLER HAMMER N/A DROP N/A STARTED 0920/10-31-08
TIME WL. N/A HRS. DELAYED N/A WT. CASING HAMMER N/A DROP N/A COMPLETED 0955/10-31-08

SAMPLE TYPES

A.S.	AUGER SAMPLE
C.S.	CHUNK SAMPLE
D.O.	DRIVE OPEN
D.S.	DENISON SAMPLE
P.S.	PITCHER SAMPLE
R.C.	ROCK CORE
S.T.	SLOTTED TUBE
T.O.	THIN-WALLED, OPEN
T.P.	THIN-WALLED, PISTON
W.S.	WASH SAMPLE

ABBREVIATIONS

BL	BLACK	M	MEDIUM	SA	SAMPLE
BR	BROWN	MIC	MICACEOUS	SAT	SATURATED
C	COARSE	MOT	MOTTLED	SD	SAND
CA	CASING	NP	NON-PLASTIC	SI	SILT
CL	CLAY	OG	ORANGE	SIY	SILTY
CLY	CLAYEY	ORG	ORGANIC	SM	SOME
F	FINE	PH	PRESSURE-HYDRAULIC	TR	TRACE
FRAG	FRAGMENTS	PM	PRESSURE-MANUAL	WL	WATER LEVEL
GL	GRAVEL	R	RED	WH	WEIGHT OF HAMMER
LYD	LAYERED	RES	RESIDUAL	WR	WEIGHT OF RODS
LI	LITTLE	RX	ROCK	Y	YELLOW

SOIL DESCRIPTION – RANGE OF PROPORTION

"TRACE" – 0–5%
"LITTLE" – 5–12%
"SOME" – 12–30%
"AND" – 30–50%

CONSISTENCY

LS	LOOSE	S	SOFT
CP	COMPACT	FM	FIRM
DN	DENSE	ST	STIFF
V	VERY	H	HARD

ELEV. DEPTH	DESCRIPTION	BLOWS/FT.	SAMPLES NO.	TYPE	REC/ATTEMPT	PID (ppm)	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
	FILL 0.0–0.8'							SA–1 0-4.0 ft. Compact, brown-gray SAND and GRAVEL, trace clay, slightly moist to approx. 0.8' bgs, then stiff, brown CLAYEY SILT, little fine to coarse gravel, trace fine to medium sand, some organic matter, slightly moist. (GP to ML)
2	UPPER CLAY TILL	NA	1	DO	3.0/4.0	0.0		
4						0.0		
6		NA	2	DO	4.0/4.0	0.0		SA–2 4.0-8.0 ft. Stiff, brown-red CLAYEY SILT to SILTY CLAY, little fine gravel, trace fine to medium sand, slightly moist. (ML to CL)
8						0.0		SA–3 8.0-11.0 Ft. As above, CLAYEY SILT, to approx. 10.0 ft. bgs., then soft, brown SILTY CLAY, little fine sand, trace fine gravel, moist. (ML to CL)
10		NA	3	DO	3.0/3.0	0.0		
11	GLACIOLACUSTRINE CLAY							SA–4 11.0-14.0 ft. Soft, brown SILTY CLAY, little fine gravel to coarse sand, trace coarse gravel, moist. (CL)
12		NA	4	DO	3.0/3.0	0.0		
14	END OF BORING 14.0' bgs.							No indication of contamination detected. 0955 - Collect soil sample for VOCs. No groundwater samples collected. NOTE: Since the Direct Push drilling method does not provide blow counts, soil consistency was determined in the field by physical (hand) observation.

FIELD BORING LOG

DEPTH HOLE 8.0' JOB NO. 083-89101 PROJECT CWM/RMU-2 FOOTPRINT INVESTIGATION/NY BORING NO. 89R
DEPTH SOIL DRILL 8.0' GA INSP. AJN DRILLING METHOD DIRECT PUSH SHEET 1 of 1
DEPTH ROCK CORE N/A WEATHER CLEAR DRILLING CO. ZEBRA ENVIRONMENTAL DRILLING SURFACE EL. N/A
NO. DIST. N/A US. N/A TEMP. 55°F DRILL RIG BOBCAT MT52 DRILLER P. ORSI DATUM SITE
DEPTH WL. N/A HRS. PROD. N/A WT. SAMPLER HAMMER N/A DROP N/A STARTED 1015/10-31-08
TIME WL. N/A HRS. DELAYED N/A WT. CASING HAMMER N/A DROP N/A COMPLETED 1030/10-31-08

SAMPLE TYPES

A.S.	AUGER SAMPLE
C.S.	CHUNK SAMPLE
D.O.	DRIVE OPEN
D.S.	DENISON SAMPLE
P.S.	PITCHER SAMPLE
R.C.	ROCK CORE
S.T.	SLOTTED TUBE
T.O.	THIN-WALLED, OPEN
T.P.	THIN-WALLED, PISTON
W.S.	WASH SAMPLE

ABBREVIATIONS

BL	BLACK	M	MEDIUM	SA	SAMPLE
BR	BROWN	MIC	MICACEOUS	SAT	SATURATED
C	COARSE	MOT	MOTTLED	SD	SAND
CA	CASING	NP	NON-PLASTIC	SI	SILT
CL	CLAY	OG	ORANGE	SIY	SILTY
CLY	CLAYEY	ORG	ORGANIC	SM	SOME
F	FINE	PH	PRESSURE-HYDRAULIC	TR	TRACE
FRAG	FRAGMENTS	PM	PRESSURE-MANUAL	WL	WATER LEVEL
GL	GRAVEL	R	RED	WH	WEIGHT OF HAMMER
LYD	LAYERED	RES	RESIDUAL	WR	WEIGHT OF RODS
LI	LITTLE	RX	ROCK	Y	YELLOW

SOIL DESCRIPTION – RANGE OF PROPORTION

"TRACE" – 0–5%
"LITTLE" – 5–12%
"SOME" – 12–30%
"AND" – 30–50%

CONSISTENCY

LS	LOOSE	S	SOFT
CP	COMPACT	FM	FIRM
DN	DENSE	ST	STIFF
V	VERY	H	HARD

ELEV. DEPTH	DESCRIPTION	BLOWS/FT.	SAMPLES NO.	SAMPLES TYPE	SAMPLES REC/ATTEMPT	SAMPLES PID (ppm)	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
	FILL 0.0–0.6'					0.0		SA–1 0.0-0.4 ft. Soft, black organic clay to approx. 0.6' bgs, then soft to stiff, red-brown CLAYEY SILT to SILTY CLAY, little fine to coarse gravel, trace fine to medium sand, moist. (ML to CL)
2		NA	1	DO	4.0/4.0	0.0		
						0.0		
						0.0		
4	UPPER CLAY TILL					0.0		SA–2 4.0-8.0 ft. As above. (ML-CL)
		NA	2	DO	4.0/4.0	0.0		
6						0.0		
						0.0		
8								No indication of contamination detected.
	END OF BORING 8.0' bgs.							1035 - Collect soil sample for VOCs.
								No groundwater samples collected.
								NOTE: Since the Direct Push drilling method does not provide blow counts, soil consistency was determined in the field by physical (hand) observation.

FIELD BORING LOG

DEPTH HOLE 16.0' JOB NO. 083-89101 PROJECT CWM/RMU-2 FOOTPRINT INVESTIGATION/NY BORING NO. 99R
DEPTH SOIL DRILL 16.0' GA INSP. AJN DRILLING METHOD DIRECT PUSH SHEET 1 of 1
DEPTH ROCK CORE N/A WEATHER CLEAR DRILLING CO. ZEBRA ENVIRONMENTAL DRILLING SURFACE EL. N/A
NO. DIST. N/A US. N/A TEMP. 55°F DRILL RIG BOBCAT MT52 DRILLER P. ORSI DATUM SITE
DEPTH WL. N/A HRS. PROD. N/A WT. SAMPLER HAMMER N/A DROP N/A STARTED 1105/10-31-08
TIME WL. N/A HRS. DELAYED N/A WT. CASING HAMMER N/A DROP N/A COMPLETED 1155/10-31-08

SAMPLE TYPES

A.S.	AUGER SAMPLE
C.S.	CHUNK SAMPLE
D.O.	DRIVE OPEN
D.S.	DENISON SAMPLE
P.S.	PITCHER SAMPLE
R.C.	ROCK CORE
S.T.	SLOTTED TUBE
T.O.	THIN-WALLED, OPEN
T.P.	THIN-WALLED, PISTON
W.S.	WASH SAMPLE

ABBREVIATIONS

BL	BLACK	M	MEDIUM	SA	SAMPLE
BR	BROWN	MIC	MICACEOUS	SAT	SATURATED
C	COARSE	MOT	MOTTLED	SD	SAND
CA	CASING	NP	NON-PLASTIC	SI	SILT
CL	CLAY	OG	ORANGE	SIY	SILTY
CLY	CLAYEY	ORG	ORGANIC	SM	SOME
F	FINE	PH	PRESSURE-HYDRAULIC	TR	TRACE
FRAG	FRAGMENTS	PM	PRESSURE-MANUAL	WL	WATER LEVEL
GL	GRAVEL	R	RED	WH	WEIGHT OF HAMMER
LYD	LAYERED	RES	RESIDUAL	WR	WEIGHT OF RODS
LI	LITTLE	RX	ROCK	Y	YELLOW

SOIL DESCRIPTION - RANGE OF PROPORTION

"TRACE" - 0-5%
"LITTLE" - 5-12%
"SOME" - 12-30%
"AND" - 30-50%

CONSISTENCY

LS	LOOSE	S	SOFT
CP	COMPACT	FM	FIRM
DN	DENSE	ST	STIFF
V	VERY	H	HARD

ELEV. DEPTH	DESCRIPTION	BLOWS/FT.	SAMPLES NO.	TYPE	REC/ATTEMPT	PID (ppm)	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
0	FILL 0.0-0.2'							SA-1 0.0-4.0 ft. Thin layer of gravelly topsoil, then very stiff to firm, brown to dark brown CLAYEY SILT to SILTY CLAY, little coarse gravel, some fine sand, slightly moist to moist. (ML-CL)
2	UPPER CLAY TILL	NA	1	DO	4.0/4.0	0.0		
4						0.0		SA-2 4.0-8.0 ft. Dense, red-brown to brown silty fine SAND, trace clay, moist. (SM)
6		NA	2	DO	4.0/4.0	0.0		
8	UPPER SILT TILL					0.0		SA-3 8.0-12.0 ft. Compact to dense, brown silty fine SAND, trace clay, very moist to slightly moist. (SM)
10		NA	3	DO	3.0/4.0	0.0		
12						0.0		SA-4 12.0-16.0 ft. Compact, brown sandy SILT, some clay, trace fine gravel, wet to saturated. (ML)
14		NA	4	DO	1.5/4.0	0.0		
16	END OF BORING 16.0' bgs.					0.0		No indication of contamination detected. 1150 - Collect soil sample for VOCs. No groundwater samples collected. NOTE: Since the Direct Push drilling method does not provide blow counts, soil consistency was determined in the field by physical (hand) observation.

FIELD BORING LOG

DEPTH HOLE 16.0' | JOB NO. 083-89101 | PROJECT CWM/RMU-2 FOOTPRINT INVESTIGATION/NY | BORING NO. 108R
DEPTH SOIL DRILL 16.0' | GA INSP. AJN | DRILLING METHOD DIRECT PUSH | SHEET 1 of 1
DEPTH ROCK CORE N/A | WEATHER SUNNY | DRILLING CO. ZEBRA ENVIRONMENTAL DRILLING | SURFACE EL. N/A
NO. DIST. N/A US. N/A | TEMP. 56°F | DRILL RIG BOBCAT MT52 | DRILLER P. ORSI | DATUM SITE
DEPTH WL. N/A | HRS. PROD. N/A | WT. SAMPLER HAMMER N/A | DROP N/A | STARTED 1000/11-03-08
TIME WL. N/A | HRS. DELAYED N/A | WT. CASING HAMMER N/A | DROP N/A | COMPLETED 1020/11-03-08

SAMPLE TYPES

A.S.	AUGER SAMPLE
C.S.	CHUNK SAMPLE
D.O.	DRIVE OPEN
D.S.	DENISON SAMPLE
P.S.	PITCHER SAMPLE
R.C.	ROCK CORE
S.T.	SLOTTED TUBE
T.O.	THIN-WALLED, OPEN
T.P.	THIN-WALLED, PISTON
W.S.	WASH SAMPLE

ABBREVIATIONS

BL	BLACK	M	MEDIUM	SA	SAMPLE
BR	BROWN	MIC	MICACEOUS	SAT	SATURATED
C	COARSE	MOT	MOTTLED	SD	SAND
CA	CASING	NP	NON-PLASTIC	SI	SILT
CL	CLAY	OG	ORANGE	SIY	SILTY
CLY	CLAYEY	ORG	ORGANIC	SM	SOME
F	FINE	PH	PRESSURE-HYDRAULIC	TR	TRACE
FRAG	FRAGMENTS	PM	PRESSURE-MANUAL	WL	WATER LEVEL
GL	GRAVEL	R	RED	WH	WEIGHT OF HAMMER
LYD	LAYERED	RES	RESIDUAL	WR	WEIGHT OF RODS
LI	LITTLE	RX	ROCK	Y	YELLOW

SOIL DESCRIPTION – RANGE OF PROPORTION

"TRACE" – 0–5%
"LITTLE" – 5–12%
"SOME" – 12–30%
"AND" – 30–50%

CONSISTENCY

LS	LOOSE	S	SOFT
CP	COMPACT	FM	FIRM
DN	DENSE	ST	STIFF
V	VERY	H	HARD

ELEV. DEPTH	DESCRIPTION	BLOWS/FT.	SAMPLES NO.	TYPE	REC/ATTEMPT	PID (ppm)	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
0	FILL 0.0–0.2'							SA–1 0.0-4.0 ft. Thin layer of gravelly topsoil, then dense, brown SILTY CLAY, little fine to coarse gravel, trace fine sand, moist. (ML)
2		NA	1	DO	4.0/4.0	0.0		
4		NA	2	DO	4.0/4.0	0.0		SA–2 4.0-8.0 ft. Dense, brown SILTY CLAY, little coarse gravel, little fine sand, moist. (ML)
6	UPPER CLAY TILL							
8		NA	3	DO	4.0/4.0	0.0		SA–3 8.0-12.0 ft. Dense, brown SILTY CLAY to CLAYEY SILT and fine SAND, trace fine gravel, moist, to approx. 9.5 ft. bgs., (ML to SW), then soft, brown SILTY CLAY, some fine sand, trace fine to coarse gravel, moist. (CL)
10								
12		NA	4	DO	3.0/4.0	0.0		SA–4 12.0-16.0 ft. As above to approx. 12.7 ft. bgs., then firm to very soft, brown SILTY CLAY, some fine sand, trace fine gravel, moist. (CL)
14	GLACIOLACUSTRINE CLAY							
16	END OF BORING 16.0' bgs.							No indication of contamination detected. 1020 - Collect soil sample for VOCs. No groundwater samples collected. NOTE: Since the Direct Push drilling method does not provide blow counts, soil consistency was determined in the field by physical (hand) observation.

APPENDIX B
INVESTIGATION RADIATION SCREENING
(PROVIDED BY OTHERS)

GEO-PROBE — SMART PRYCE — ENSOL — ZEBRA/GOLDER GEOP

10/28/08

INSTRUMENTATION:

Ludlum model - 2221
w/ 44-10 probe
SN# 218587
cal due: 5/19/09

model # 2221
1 MIN BKGD - 4119 cpm
1 MIN SOURCE CHECK - 7746 cpm

Ludlum model - 2
~~w/ 44~~ 260-HP probe
SN# 40811
cal due: 5/6/09
BKGD - 45 cpm Cutoff - 90

GEO-PROBES:

#64 (1)
0800

BKGD @ LOCATION - 4361 cpm
COUNT RANGE FOR ALL CORES → 4211 - 6649 cpm

43 (2) (43-E2)
2-EAST
0940

BKGD @ LOCATION - 3668 cpm
COUNT RANGE - 3362 - 4857 cpm

43 (3) (43-E1)
1-EAST
1100

BKGD @ LOCATION - 3602 cpm
COUNT RANGE - 3187 - 5290 cpm

43 (4) (43-S2)
2-SOUTH
1300

BKGD @ LOCATION - 3884 cpm
COUNT RANGE - 3056 - 4906 cpm

43 (5) (43-W2)
1-~~2~~ WEST
1530

BKGD @ LOCATION - 4058 cpm
COUNT RANGE - 3174 - 5440 cpm

(6)
43 (43-W3)
2-WEST
1600

BKGD @ LOCATION 3745 cpm
COUNT RANGE
3554 - 5117 cpm

Model-2
* All COUNTS BELOW CUTOFF OF 90 cpm
ON All CORES

STUART PRYCE EA
ZEBRA/GOLDER
GEOPROBE
(2)

10/29/08

INSTRUMENTATION – Ludlum m-2221 w/44-10 probe
SN# 218587
cal due: 8/4/09
1 MIN BKGD – 4047cpm
1 MIN SOURCE – 7624cpm

Ludlom m-2 w/HP-260probe
SN# 40811
cal due: 5/6/09
BKGD - 45 cpm
CUTOFF - 90cpm

LOCATION – 43 (1)
3-WEST (43-W4)
BKGD @ LOCATION 3864 cpm
COUNT RANGE 3237 – 5086 cpm

0800

43 (2)
4-WEST (43-W5)
BKGD @ LOCATION 3689 cpm
COUNT RANGE – 3184 – 4896 cpm

1015

43 (3)
5-WEST (43-W6)
BKGD @ LOCAT- 3783 cpm
COUNT RANGE – 3485 – 5371 cpm

1100

43 (4)
6-WEST (43-W7)
BKGD @ LOCATION – 3555 cpm
COUNT RANGE – 3297 – 4705 cpm

1300

43 (5)
W (43-W8)
BKGD @ LOCATION – 3859 cpm
COUNT RANGE – 3312 – 4508 cpm

1400

43 (6)
(43-W1)
BKGD @ LOCATION – 3663 cpm
COUNT RANGE – 3583 – 4644 cpm

1500

* Model -2 All counts below cutoff of 90 cpm on all cokes.

S. Pryce 16Lee

10/30/08

STUART PRYCE
GEO-PROBE - ZEBRA/GOL

INSTRUMENTATION →

Ludlum
M-2221 w/44-10 probe
SN# 218587
cal due: 8/9/09

1 MIN BKGD → 3893 cpm
Source check → 7581 cpm

Ludlum
model-2 w/HP260 probe
SN# 40811
cal due: 5/6/09

BKGD → 45 cpm
CUTOFF - 90 cpm

0820 (1)
#43-1-N
(43-N1)

m-2221 - BKGD @ LOCATION - 4251 cpm
RANGE → 3419 - 5386 cpm

m-2 ALL COUNTS BELOW CUTOFF OF 90 cpm

0930 (2)
43-S
(43-S1)

m-2221 - BKGD @ LOCATION - 3867 cpm
RANGE → 3137 - 4689 cpm

m-2 ALL COUNTS Below CUTOFF - 90 cpm

1030 (3)
43-S
(43-N2)

m-2221 - BKGD @ LOCATION - 4216 cpm
RANGE - 3910 - 5279 cpm

m-2 ALL COUNTS BELOW CUTOFF OF 90 cpm

1310 (4)
#61
RESAMPLE
(61R)

m-2221 - BKGD @ LOCATION - 3246 cpm
RANGE - 3155 - 5428 cpm

m-2 ALL COUNTS BELOW CUTOFF OF 90 cpm

1430
#61-W
(61-S1)

m-2221 - BKGD @ Hole LOCATION - 3766 cpm
RANGE - 3181 - 4257

m-2 - ALL COUNTS BELOW CUTOFF OF 90 cpm

INSTRUMENTATION

LUDLUM - MODEL 2221
W/4410 probe
SN# 218587
cal due: 8/9/09
BKGD - 5137 cpm
Source count - 8071 cpm

Ludlum - MODEL -2 WITH HP-260 probe
SN# 40811 Cal due: 5/6/09
BKGD - 45 cpm
CUTOFF - 90 cpm

0900 (1)
#83

BKGD @ LOCATION - 4587 cpm
M-2221 -
COUNT RANGE - 3785 - 5447 cpm
0-12'
M-2 - ALL COUNTS BELOW CUTOFF OF 90 cpm

#89
(2)
1015

BKGD @ LOCATION 8685 cpm
M-2221 -
COUNT RANGE - 6955 - 9045 cpm
0-10'
M-2 - ALL COUNTS BELOW CUTOFF OF 90 cpm

#99
(3)
1100

BKGD @ LOC. - 4367 cpm
M-2221 -
COUNT RANGE - 3871 - 5285 cpm
0-16'
M-2 - ALL COUNTS BELOW CUTOFF 90 cpm

#61
(4)
1300
(61-52)

BKGD @ LOCATION - 3722 cpm
M-2221 -
COUNT RANGE - 3400 - 4655 cpm
M-2 ALL COUNTS BELOW CUTOFF OF 90 cpm

(5)
#61
1340
(61-53)

BKGD @ LOCATION - 3874 cpm
M-2221 -
COUNT RANGE - 3466 - 5109 cpm
M-2 ALL COUNTS BELOW CUTOFF 90 cpm

677 →

11/03/08 GEOPROBE/DPT/ZEBRA

START PRYCE/ENSOL -(531-8907)

INSTRUMENTATION= LUDLUM M-2221 w/44-10 probe SN# 218587 cal due: 8/9/08 BKGD: 4694 cpm Source CK: 7726 cpm

LUDLUM M-2 w/H.P 260 probe SN# 40811 cal due: 5/6/09 BKGD - 45 cpm CUTOFF - 90 cpm

(1) #15 0830 BKGD @ LOCATION = 4962 cpm COUNT RANGE: 3761 - 5513 cpm

: model #2 — All counts below cutoff 90 cpm

(2) #108 0945 BKGD @ LOCATION: 8862 cpm RANGE : 5440 - 7184 cpm

M-2 All counts below cutoff of 90 cpm

(3) #61-W-1 1030. BKGD @ HOLE LOCATION - 4244 cpm COUNT RANGE: 3947 - 6008 cpm

M-2 All counts below 90 cpm cutoff

(4) #61 N-1 1145 BKGD @ LOCATION - 4324 cpm COUNT RANGE - 3864 - 4906 cpm

M-2 — All counts below 90 cpm cutoff

(5) #61 N-2 1220 BKGD @ LOCATION - 4355 cpm COUNT RANGE - 3666 - 4797 cpm

M-2 - All counts - Cutoff below 90 cpm

(6) #61 E-1 BKGD @ LOCATION - 4451 cpm Count Range - 3716 - 5295 cpm

APPENDIX C

PHASE I WESTERN BOUNDARY INVESTIGATION BORING LOGS

FIELD BORING LOG

DEPTH HOLE 12.0' JOB NO. 083-89111 PROJECT CWM/RMU-2 FOOTPRINT RELOCATION/NY BORING NO. RMU2-W1
DEPTH SOIL DRILL 12.0' GA INSP. RJM DRILLING METHOD DIRECT PUSH SHEET 1 of 1
DEPTH ROCK CORE N/A WEATHER OVERCAST DRILLING CO. ZEBRA ENVIRONMENTAL DRILLING SURFACE EL. 316.12
NO. DIST. N/A US. N/A TEMP. 35°F/WINDY DRILL RIG BOBCAT MT52 DRILLER P. ORSI DATUM SITE
DEPTH WL. N/A HRS. PROD. N/A WT. SAMPLER HAMMER N/A DROP N/A STARTED 1024/2-9-09
TIME WL. N/A HRS. DELAYED N/A WT. CASING HAMMER N/A DROP N/A COMPLETED 1050/2-9-09

SAMPLE TYPES

A.S.	AUGER SAMPLE
C.S.	CHUNK SAMPLE
D.O.	DRIVE OPEN
D.S.	DENISON SAMPLE
P.S.	PITCHER SAMPLE
R.C.	ROCK CORE
S.T.	SLOTTED TUBE
T.O.	THIN-WALLED, OPEN
T.P.	THIN-WALLED, PISTON
W.S.	WASH SAMPLE

ABBREVIATIONS

BL	BLACK	M	MEDIUM	SA	SAMPLE
BR	BROWN	MIC	MICACEOUS	SAT	SATURATED
C	COARSE	MOT	MOTTLED	SD	SAND
CA	CASING	NP	NON-PLASTIC	SI	SILT
CL	CLAY	OG	ORANGE	SIY	SILTY
CLY	CLAYEY	ORG	ORGANIC	SM	SOME
F	FINE	PH	PRESSURE-HYDRAULIC	TR	TRACE
FRAG	FRAGMENTS	PM	PRESSURE-MANUAL	WL	WATER LEVEL
GL	GRAVEL	R	RED	WH	WEIGHT OF HAMMER
LYD	LAYERED	RES	RESIDUAL	WR	WEIGHT OF RODS
LI	LITTLE	RX	ROCK	Y	YELLOW

SOIL DESCRIPTION – RANGE OF PROPORTION

"TRACE" – 0–5%
"LITTLE" – 5–12%
"SOME" – 12–30%
"AND" – 30–50%

CONSISTENCY

LS	LOOSE	S	SOFT
CP	COMPACT	FM	FIRM
DN	DENSE	ST	STIFF
V	VERY	H	HARD

ELEV. DEPTH	DESCRIPTION	BLOWS/FT.	SAMPLES NO.	TYPE	REC/ATTEMPT	PID* (ppm)	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
	FILL 0.0–0.2'					0.0		SA–1 0.0-4.0 Ft. Thin layer of gravelly topsoil, then firm, brown SILTY CLAY to CLAYEY SILT, some to little coarse gravel, trace fine gravel, moist to very moist. (CL-ML)
2		NA	1	DO	4.0/4.0	0.0		
						0.0		
						0.0		
4	UPPER CLAY TILL					0.0		SA–2 4.0-8.0 Ft. As above to approx. 6.1 ft. bgs., some silt content, little to trace coarse gravel, very moist. (CL-ML), then firm, gray-brown SILTY CLAY to CLAY, occasional coarse gravel, slightly plastic, moist to very moist. (CL)
6		NA	2	DO	4.0/4.0	0.0		
						0.0		
						0.0		
8						0.0		SA–3 8.0-12.0 Ft. As above, some silt content, occasional coarse gravel, very moist, to approx. 9.5 ft. bgs., then firm to soft, gray-brown to brown SILTY CLAY, some silt, little fine gravel, very moist (CL), becoming gray, with increasing softness from approx. 10.2 ft. bgs., wet to very moist. (CL)
10	GLACIOLACUSTRINE CLAY	NA	3	DO	4.0/4.0	0.0		Glaciolacustrine clay (*GC*) beginning at approx. 10.2 ft. bgs.
						0.0		
12	END OF BORING 12.0' bgs.							1053 - Collect soil sample 8.0-10.0 ft. bgs. for VOCs. No groundwater sample collected; borehole dry.
								NOTE: Since the Direct Push drilling method does not provide blow counts, soil consistency was determined in the field by physical (hand) observation.

FIELD BORING LOG

DEPTH HOLE 16.0' JOB NO. 083-89111 PROJECT CWM/RMU-2 FOOTPRINT RELOCATION/NY BORING NO. RMU2-W2
DEPTH SOIL DRILL 16.0' GA INSP. RJM DRILLING METHOD DIRECT PUSH SHEET 1 of 1
DEPTH ROCK CORE N/A WEATHER P.SUNNY DRILLING CO. ZEBRA ENVIRONMENTAL DRILLING SURFACE EL. 316.9
NO. DIST. N/A US. N/A TEMP. 25°F DRILL RIG BOBCAT MT52 DRILLER P. ORSI DATUM SITE
DEPTH WL. N/A HRS. PROD. N/A WT. SAMPLER HAMMER N/A DROP N/A STARTED 1100/2-9-09
TIME WL. N/A HRS. DELAYED N/A WT. CASING HAMMER N/A DROP N/A COMPLETED 1130/2-9-09

SAMPLE TYPES

A.S.	AUGER SAMPLE
C.S.	CHUNK SAMPLE
D.O.	DRIVE OPEN
D.S.	DENISON SAMPLE
P.S.	PITCHER SAMPLE
R.C.	ROCK CORE
S.T.	SLOTTED TUBE
T.O.	THIN-WALLED, OPEN
T.P.	THIN-WALLED, PISTON
W.S.	WASH SAMPLE

ABBREVIATIONS

BL	BLACK	M	MEDIUM	SA	SAMPLE
BR	BROWN	MIC	MICACEOUS	SAT	SATURATED
C	COARSE	MOT	MOTTLED	SD	SAND
CA	CASING	NP	NON-PLASTIC	SI	SILT
CL	CLAY	OG	ORANGE	SIY	SILTY
CLY	CLAYEY	ORG	ORGANIC	SM	SOME
F	FINE	PH	PRESSURE-HYDRAULIC	TR	TRACE
FRAG	FRAGMENTS	PM	PRESSURE-MANUAL	WL	WATER LEVEL
GL	GRAVEL	R	RED	WH	WEIGHT OF HAMMER
LYD	LAYERED	RES	RESIDUAL	WR	WEIGHT OF RODS
LI	LITTLE	RX	ROCK	Y	YELLOW

SOIL DESCRIPTION – RANGE OF PROPORTION

"TRACE" – 0–5%
"LITTLE" – 5–12%
"SOME" – 12–30%
"AND" – 30–50%

CONSISTENCY

LS	LOOSE	S	SOFT
CP	COMPACT	FM	FIRM
DN	DENSE	ST	STIFF
V	VERY	H	HARD

ELEV. DEPTH	DESCRIPTION	BLOWS/FT.	SAMPLES NO.	TYPE	REC/ATTEMPT	PID (ppm)	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
	FILL 0.0–0.2'							SA–1 0.0-2.0 Ft. Thin layer of gravelly topsoil, then firm, brown SILTY CLAY to CLAYEY SILT, trace fine gravel, some silt content, plant roots near top, very moist to wet. (CL-ML)
2	UPPER CLAY TILL	NA	1	DO	4.0/4.0	0.0 0.0 0.0 0.0		2.0-4.0 Ft. As above, very moist. (CL-ML)
4								SA–2 4.0-6.0 Ft. Firm, brown-gray to tan-brown CLAYEY SILT, to approx. 4.5 ft, with thin zone of decomposed woody material from 4.3-4.4 ft., then dense, tan-brown SILTY SAND and SILT, some clay content, occasional coarse gravel, little fine gravel, very moist. (SM-ML)
6	UPPER SILT TILL	NA	2	DO	3.2/4.0	0.0 0.0 0.0 0.0		6.0-8.0 Ft. As above, to approx. 7.6 ft. bgs., then firm, brown CLAYEY SILT, little fine gravel, increasing clay content towards bottom, very moist to moist. (SM-ML)
8								SA–3 8.0-10.0 Ft. As above, very moist. (SM-ML)
10		NA	3	DO	4.0/4.0	0.0 0.0 0.0 0.0		10.0-12.0 Ft. As above to approx. 10.9 ft. bgs., very moist, then firm to soft, brown-gray SILTY CLAY, little fine gravel, trace fine sand, very moist. (CL) Glaciolacustrine clay (*GC*) beginning at approx. 10.9 ft. bgs.
12	GLACIOLACUSTRINE CLAY							SA–4 12.0-14.0 Ft. Soft, brown SILTY CLAY to CLAY, trace fine gravel, occasional thin coarse sand lense, slightly plastic, very moist. (CL)
14		NA	4	DO	4.0/4.0	0.0 0.0 0.0 0.0		14.0-16.0 Ft. As above to approx. 14.8 ft., then very soft, gray-brown CLAY, very plastic, slightly wet. (CL)
16	END OF BORING 16.0' bgs.							1130 - Collect soil sample 9.0-11.0 ft. bgs. for VOCs. No groundwater sample collected; borehole dry.
								NOTE: Since the Direct Push drilling method does not provide blow counts, soil consistency was determined in the field by physical (hand) observation.

FIELD BORING LOG

DEPTH HOLE 12.0' | JOB NO. 083-89111 | PROJECT CWM/RMU-2 FOOTPRINT RELOCATION/NY | BORING NO. RMU2-W3
DEPTH SOIL DRILL 12.0' | GA INSP. RJM | DRILLING METHOD DIRECT PUSH | SHEET 1 of 1
DEPTH ROCK CORE N/A | WEATHER P.SUNNY | DRILLING CO. ZEBRA ENVIRONMENTAL DRILLING | SURFACE EL. 316.54
NO. DIST. N/A US. N/A | TEMP. 32°F | DRILL RIG BOBCAT MT52 | DRILLER P. ORSI | DATUM SITE
DEPTH WL. N/A | HRS. PROD. N/A | WT. SAMPLER HAMMER N/A | DROP N/A | STARTED 1325/2-9-09
TIME WL. N/A | HRS. DELAYED N/A | WT. CASING HAMMER N/A | DROP N/A | COMPLETED 1350/2-9-09

SAMPLE TYPES

A.S.	AUGER SAMPLE
C.S.	CHUNK SAMPLE
D.O.	DRIVE OPEN
D.S.	DENISON SAMPLE
P.S.	PITCHER SAMPLE
R.C.	ROCK CORE
S.T.	SLOTTED TUBE
T.O.	THIN-WALLED, OPEN
T.P.	THIN-WALLED, PISTON
W.S.	WASH SAMPLE

ABBREVIATIONS

BL	BLACK	M	MEDIUM	SA	SAMPLE
BR	BROWN	MIC	MICACEOUS	SAT	SATURATED
C	COARSE	MOT	MOTTLED	SD	SAND
CA	CASING	NP	NON-PLASTIC	SI	SILT
CL	CLAY	OG	ORANGE	SIY	SILTY
CLY	CLAYEY	ORG	ORGANIC	SM	SOME
F	FINE	PH	PRESSURE-HYDRAULIC	TR	TRACE
FRAG	FRAGMENTS	PM	PRESSURE-MANUAL	WL	WATER LEVEL
GL	GRAVEL	R	RED	WH	WEIGHT OF HAMMER
LYD	LAYERED	RES	RESIDUAL	WR	WEIGHT OF RODS
LI	LITTLE	RX	ROCK	Y	YELLOW

SOIL DESCRIPTION – RANGE OF PROPORTION

"TRACE" – 0–5%
"LITTLE" – 5–12%
"SOME" – 12–30%
"AND" – 30–50%

CONSISTENCY

LS	LOOSE	S	SOFT
CP	COMPACT	FM	FIRM
DN	DENSE	ST	STIFF
V	VERY	H	HARD

ELEV. DEPTH	DESCRIPTION	BLOWS/FT.	SAMPLES NO.	TYPE	REC/ATTEMPT	PID (ppm)	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
	FILL 0.0–0.2'					0.0		SA–1 0.0-4.0 Ft. Thin layer of gravelly topsoil, then firm to stiff, brown SILTY CLAY to CLAYEY SILT, trace fine gravel, occasional reddish-brown silt, increasing clay content towards bottom, moist to very moist. (CL-ML)
2		NA	1	DO	4.0/4.0	0.0		
						0.0		
	UPPER CLAY TILL							
4						0.0		SA–2 4.0-8.0 Ft. Firm to stiff, brown SILTY CLAY, little to some fine gravel, little fine sand, moist to very moist, to approx. 6.0 ft. bgs. (CL), then firm, brown SILTY CLAY, trace coarse gravel, trace fine sand, very moist. (CL)
						0.0		
6		NA	2	DO	4.0/4.0	0.0		
						0.0		
8						0.0		SA–3 8.0-12.0 Ft. As above, some silt content, occasional coarse gravel, very moist, to approx. 9.5 ft. bgs., then firm to soft, gray-brown to brown SILTY CLAY, some silt, little fine gravel, very moist (CL), becoming soft, gray-brown SILTY CLAY to CLAY, little fine gravel, occasional silt seams, very moist, from approx. 8.8 ft. bgs. (CL) Glaciolacustrine clay (*GC*) beginning at approx. 8.8 ft. bgs.
						0.0		
10	GLACIOLACUSTRINE CLAY	NA	3	DO	4.0/4.0	0.0		
						0.0		
12	END OF BORING 12.0' bgs.							1345 - Collect soil sample 6.0-8.0 ft. bgs. for VOCs. No groundwater sample collected; surface water (ice meltwater) drained from ground surface into borehole during drilling. NOTE: Since the Direct Push drilling method does not provide blow counts, soil consistency was determined in the field by physical (hand) observation.

FIELD BORING LOG

DEPTH HOLE 16.0' JOB NO. 083-89111 PROJECT CWM/RMU-2 FOOTPRINT RELOCATION/NY BORING NO. RMU2-W4
DEPTH SOIL DRILL 16.0' GA INSP. RJM DRILLING METHOD DIRECT PUSH SHEET 1 of 1
DEPTH ROCK CORE N/A WEATHER P.SUNNY DRILLING CO. ZEBRA ENVIRONMENTAL DRILLING SURFACE EL. 317.16
NO. DIST. N/A US. N/A TEMP. 32°F DRILL RIG BOBCAT MT52 DRILLER P. ORSI DATUM SITE
DEPTH WL. N/A HRS. PROD. N/A WT. SAMPLER HAMMER N/A DROP N/A STARTED 1355/2-9-09
TIME WL. N/A HRS. DELAYED N/A WT. CASING HAMMER N/A DROP N/A COMPLETED 1425/2-9-09

SAMPLE TYPES

A.S.	AUGER SAMPLE
C.S.	CHUNK SAMPLE
D.O.	DRIVE OPEN
D.S.	DENISON SAMPLE
P.S.	PITCHER SAMPLE
R.C.	ROCK CORE
S.T.	SLOTTED TUBE
T.O.	THIN-WALLED, OPEN
T.P.	THIN-WALLED, PISTON
W.S.	WASH SAMPLE

ABBREVIATIONS

BL	BLACK	M	MEDIUM	SA	SAMPLE
BR	BROWN	MIC	MICACEOUS	SAT	SATURATED
C	COARSE	MOT	MOTTLED	SD	SAND
CA	CASING	NP	NON-PLASTIC	SI	SILT
CL	CLAY	OG	ORANGE	SIY	SILTY
CLY	CLAYEY	ORG	ORGANIC	SM	SOME
F	FINE	PH	PRESSURE-HYDRAULIC	TR	TRACE
FRAG	FRAGMENTS	PM	PRESSURE-MANUAL	WL	WATER LEVEL
GL	GRAVEL	R	RED	WH	WEIGHT OF HAMMER
LYD	LAYERED	RES	RESIDUAL	WR	WEIGHT OF RODS
LI	LITTLE	RX	ROCK	Y	YELLOW

SOIL DESCRIPTION – RANGE OF PROPORTION

"TRACE" – 0–5%
"LITTLE" – 5–12%
"SOME" – 12–30%
"AND" – 30–50%

CONSISTENCY

LS	LOOSE	S	SOFT
CP	COMPACT	FM	FIRM
DN	DENSE	ST	STIFF
V	VERY	H	HARD

ELEV. DEPTH	DESCRIPTION	BLOWS/FT.	SAMPLES NO.	TYPE	REC/ATTEMPT	PID (ppm)	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
0	FILL 0.0–0.2'							SA–1 0.0-4.0 Ft. Thin layer of gravelly topsoil, then firm to stiff, brown to reddish-brown CLAYEY SILT, little fine gravel, occasional coarse gravel, trace to little fine sand, occasional plant roots, moist. (CL-ML)
2		NA	1	DO	4.0/4.0	0.0, 0.0, 0.0, 0.0		
4								SA–2 4.0-8.0 Ft. As above, firm, little fine gravel, trace fine sand, some blackish, ash-like staining from 5.0-6.0 ft. bgs., no staining, increasing clay content towards bottom, moist. (CL-ML)
6		NA	2	DO	4.0/4.0	0.0, 0.0, 0.0, 0.0		
8	UPPER CLAY TILL							SA–3 8.0-12.0 Ft. As above, no staining, moist. (CL-ML)
10		NA	3	DO	4.0/4.0	0.0, 0.0, 0.0, 0.0		
12								SA–4 12.0-16.0 Ft. As above to approx. 12.4 ft., moist, then firm to soft, brown SILTY CLAY, trace fine gravel, occasional coarse gravel, slightly plastic, slightly plastic, becoming CLAY from approx. 14.2 ft. bgs., moist. (CL)
14	GLACIOLACUSTRINE CLAY	NA	4	DO	4.0/4.0	0.0, 0.0, 0.0, 0.0		Glaciolacustrine clay (*GC*) beginning at approx. 12.4 ft. bgs.
16	END OF BORING 16.0' bgs.							1410 - Collect soil sample 5.0-6.0 ft. bgs. for VOCs. 2/10/09- Collect groundwater sample for VOCs. NOTE: Since the Direct Push drilling method does not provide blow counts, soil consistency was determined in the field by physical (hand) observation.

FIELD BORING LOG

DEPTH HOLE 12.0' JOB NO. 083-89111 PROJECT CWM/RMU-2 FOOTPRINT RELOCATION/NY BORING NO. RMU2-W5
DEPTH SOIL DRILL 12.0' GA INSP. RJM DRILLING METHOD DIRECT PUSH SHEET 1 of 1
DEPTH ROCK CORE N/A WEATHER P.SUNNY DRILLING CO. ZEBRA ENVIRONMENTAL DRILLING SURFACE EL. 317.84
NO. DIST. N/A US. N/A TEMP. 35°F DRILL RIG BOBCAT MT52 DRILLER P. ORSI DATUM SITE
DEPTH WL. N/A HRS. PROD. N/A WT. SAMPLER HAMMER N/A DROP N/A STARTED 1435/2-9-09
TIME WL. N/A HRS. DELAYED N/A WT. CASING HAMMER N/A DROP N/A COMPLETED 1505/2-9-09

SAMPLE TYPES

A.S.	AUGER SAMPLE
C.S.	CHUNK SAMPLE
D.O.	DRIVE OPEN
D.S.	DENISON SAMPLE
P.S.	PITCHER SAMPLE
R.C.	ROCK CORE
S.T.	SLOTTED TUBE
T.O.	THIN-WALLED, OPEN
T.P.	THIN-WALLED, PISTON
W.S.	WASH SAMPLE

ABBREVIATIONS

BL	BLACK	M	MEDIUM	SA	SAMPLE
BR	BROWN	MIC	MICACEOUS	SAT	SATURATED
C	COARSE	MOT	MOTTLED	SD	SAND
CA	CASING	NP	NON-PLASTIC	SI	SILT
CL	CLAY	OG	ORANGE	SIY	SILTY
CLY	CLAYEY	ORG	ORGANIC	SM	SOME
F	FINE	PH	PRESSURE-HYDRAULIC	TR	TRACE
FRAG	FRAGMENTS	PM	PRESSURE-MANUAL	WL	WATER LEVEL
GL	GRAVEL	R	RED	WH	WEIGHT OF HAMMER
LYD	LAYERED	RES	RESIDUAL	WR	WEIGHT OF RODS
LI	LITTLE	RX	ROCK	Y	YELLOW

SOIL DESCRIPTION – RANGE OF PROPORTION

"TRACE" – 0–5%
"LITTLE" – 5–12%
"SOME" – 12–30%
"AND" – 30–50%

CONSISTENCY

LS	LOOSE	S	SOFT
CP	COMPACT	FM	FIRM
DN	DENSE	ST	STIFF
V	VERY	H	HARD

ELEV. DEPTH	DESCRIPTION	BLOWS/FT.	SAMPLES NO.	TYPE	REC/ATTEMPT	PID (ppm)	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
	FILL 0.0–0.2'					0.0		SA–1 0.0-4.0 Ft. Thin layer of gravelly topsoil, then firm, brown CLAYEY SILT to SILTY CLAY, little fine gravel, trace to little fine sand, moist. (ML-CL)
2		NA	1	DO	4.0/4.0	0.0		
						0.0		
	UPPER CLAY TILL					0.0		
4								SA–2 4.0-8.0 Ft. As above to approx. 4.4 ft. bgs., then firm, brown CLAYEY SILT, little to some, brown, fine to medium sand, with some dark gray-black, ash-like staining from approx. 7.2-7.6 ft. bgs., moist to very moist. (ML)
						0.0		
6		NA	2	DO	4.0/4.0	0.0		
						0.0		
8								SA–3 8.0-12.0 Ft. Dense, brown CLAYEY SILT, very moist, to approx. 9.2 ft. bgs., then firm, brown SILTY CLAY, occasional coarse gravel, very moist (ML to CL), becoming soft, gray-brown SILTY CLAY from approx. 11.1 ft. bgs., occasional coarse gravel, trace fine gravel, slightly plastic, moist to very moist. (CL)
						0.0		
10		NA	3	DO	4.0/4.0	0.0		
						0.0		Glaciolacustrine clay (*GC*) beginning at approx. 11.1 ft. bgs.
	GLACIOLACUSTRINE CLAY							
12	END OF BORING 12.0' bgs.							1500 - Collect soil sample 6.0-8.0 ft. bgs. for VOCs. No groundwater sample collected; borehole dry.
								NOTE: Since the Direct Push drilling method does not provide blow counts, soil consistency was determined in the field by physical (hand) observation.

FIELD BORING LOG

DEPTH HOLE 12.0' JOB NO. 083-89111 PROJECT CWM/RMU-2 FOOTPRINT RELOCATION/NY BORING NO. RMU2-W6
DEPTH SOIL DRILL 12.0' GA INSP. RJM DRILLING METHOD DIRECT PUSH SHEET 1 of 1
DEPTH ROCK CORE N/A WEATHER OVERCAST DRILLING CO. ZEBRA ENVIRONMENTAL DRILLING SURFACE EL. 317.9
NO. DIST. N/A US. N/A TEMP. 41°F DRILL RIG BOBCAT MT52 DRILLER P. ORSI DATUM SITE
DEPTH WL. N/A HRS. PROD. N/A WT. SAMPLER HAMMER N/A DROP N/A STARTED 0830/2-10-09
TIME WL. N/A HRS. DELAYED N/A WT. CASING HAMMER N/A DROP N/A COMPLETED 0850/2-10-09

SAMPLE TYPES

A.S.	AUGER SAMPLE
C.S.	CHUNK SAMPLE
D.O.	DRIVE OPEN
D.S.	DENISON SAMPLE
P.S.	PITCHER SAMPLE
R.C.	ROCK CORE
S.T.	SLOTTED TUBE
T.O.	THIN-WALLED, OPEN
T.P.	THIN-WALLED, PISTON
W.S.	WASH SAMPLE

ABBREVIATIONS

BL	BLACK	M	MEDIUM	SA	SAMPLE
BR	BROWN	MIC	MICACEOUS	SAT	SATURATED
C	COARSE	MOT	MOTTLED	SD	SAND
CA	CASING	NP	NON-PLASTIC	SI	SILT
CL	CLAY	OG	ORANGE	SIY	SILTY
CLY	CLAYEY	ORG	ORGANIC	SM	SOME
F	FINE	PH	PRESSURE-HYDRAULIC	TR	TRACE
FRAG	FRAGMENTS	PM	PRESSURE-MANUAL	WL	WATER LEVEL
GL	GRAVEL	R	RED	WH	WEIGHT OF HAMMER
LYD	LAYERED	RES	RESIDUAL	WR	WEIGHT OF RODS
LI	LITTLE	RX	ROCK	Y	YELLOW

SOIL DESCRIPTION – RANGE OF PROPORTION

"TRACE" – 0–5%
"LITTLE" – 5–12%
"SOME" – 12–30%
"AND" – 30–50%

CONSISTENCY

LS	LOOSE	S	SOFT
CP	COMPACT	FM	FIRM
DN	DENSE	ST	STIFF
V	VERY	H	HARD

ELEV. DEPTH	DESCRIPTION	BLOWS/FT.	SAMPLES NO.	TYPE	REC/ATTEMPT	PID (ppm)	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
	FILL 0.0–0.2'					0.0		SA–1 0.0-4.0 Ft. Thin layer of gravelly topsoil, then firm, brown to tan-brown, SILTY CLAY to CLAYEY SILT, some coarse gravel, trace to little fine gravel, occasional plant roots, trace fine sand, moist to very moist. (CL-ML)
2		NA	1	DO	3.1/4.0	0.0		
	UPPER CLAY TILL					0.0		
4								
						0.0		SA–2 4.0-8.0 Ft. Firm to stiff, brown to grayish brown SILTY CLAY, occasional coarse gravel, little fine gravel, trace fine sand, some tan-brown silt near top, moist to very moist, with increasing moisture towards bottom. (CL)
6		NA	2	DO	4.0/4.0	0.0		
						0.1		
8						0.0		
						0.0		SA–3 8.0-10.0 Ft. As above to approx. 8.4 ft. bgs., then soft, brown to gray-brown SILTY CLAY, little fine gravel, little silt content, very moist, to approx. 10.2 ft. bgs. (CL), becoming very soft, gray-brown SILTY CLAY to CLAY, trace to little fine gravel, plastic, very moist. (CL)
10		NA	3	DO	4.0/4.0	0.0		
	GLACIOLACUSTRINE CLAY					0.0		Glaciolacustrine clay (*GC*) beginning at approx. 10.2 ft. bgs.
12						0.0		
	END OF BORING 12.0' bgs.							0905 - Collect soil sample 8.0-9.0 ft. bgs. for VOCs. 1620 - Collect groundwater sample for VOCs. NOTE: Since the Direct Push drilling method does not provide blow counts, soil consistency was determined in the field by physical (hand) observation.

FIELD BORING LOG

DEPTH HOLE 12.0' JOB NO. 083-89111 PROJECT CWM/RMU-2 FOOTPRINT RELOCATION/NY BORING NO. RMU2-W7
DEPTH SOIL DRILL 12.0' GA INSP. RJM DRILLING METHOD DIRECT PUSH SHEET 1 of 1
DEPTH ROCK CORE N/A WEATHER OVERCAST DRILLING CO. ZEBRA ENVIRONMENTAL DRILLING SURFACE EL. 317.47
NO. DIST. N/A US. N/A TEMP. 42°F DRILL RIG BOBCAT MT52 DRILLER P. ORSI DATUM SITE
DEPTH WL. N/A HRS. PROD. N/A WT. SAMPLER HAMMER N/A DROP N/A STARTED 0915/2-10-09
TIME WL. N/A HRS. DELAYED N/A WT. CASING HAMMER N/A DROP N/A COMPLETED 0945/2-10-09

SAMPLE TYPES

A.S.	AUGER SAMPLE
C.S.	CHUNK SAMPLE
D.O.	DRIVE OPEN
D.S.	DENISON SAMPLE
P.S.	PITCHER SAMPLE
R.C.	ROCK CORE
S.T.	SLOTTED TUBE
T.O.	THIN-WALLED, OPEN
T.P.	THIN-WALLED, PISTON
W.S.	WASH SAMPLE

ABBREVIATIONS

BL	BLACK	M	MEDIUM	SA	SAMPLE
BR	BROWN	MIC	MICACEOUS	SAT	SATURATED
C	COARSE	MOT	MOTTLED	SD	SAND
CA	CASING	NP	NON-PLASTIC	SI	SILT
CL	CLAY	OG	ORANGE	SIY	SILTY
CLY	CLAYEY	ORG	ORGANIC	SM	SOME
F	FINE	PH	PRESSURE-HYDRAULIC	TR	TRACE
FRAG	FRAGMENTS	PM	PRESSURE-MANUAL	WL	WATER LEVEL
GL	GRAVEL	R	RED	WH	WEIGHT OF HAMMER
LYD	LAYERED	RES	RESIDUAL	WR	WEIGHT OF RODS
LI	LITTLE	RX	ROCK	Y	YELLOW

SOIL DESCRIPTION – RANGE OF PROPORTION

"TRACE" – 0–5%
"LITTLE" – 5–12%
"SOME" – 12–30%
"AND" – 30–50%

CONSISTENCY

LS	LOOSE	S	SOFT
CP	COMPACT	FM	FIRM
DN	DENSE	ST	STIFF
V	VERY	H	HARD

ELEV. DEPTH	DESCRIPTION	BLOWS/FT.	SAMPLES NO.	TYPE	REC/ATTEMPT	PID (ppm)	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
2	FILL 0.0–1.4'	NA	1	DO	4.0/4.0	0.0 0.0 0.0 0.0		SA–1 0.0-4.0 Ft. Dense, gray SILT and coarse GRAVEL fill, very moist to wet, to approx. 1.4 ft. bgs. (GM), then firm, brown CLAYEY SILT, little fine gravel, little fine sand, with zone of loose, tan-brown fine sand from approx. 2.9-3.1 ft. bgs., moist. (ML)
4 6	UPPER CLAY TILL	NA	2	DO	4.0/4.0	0.0 0.0 0.1 0.0		SA–2 4.0-8.0 Ft. Firm to stiff, brown to gray brown SILTY CLAY, trace fine gravel, occasional very thin silt seams, very moist (CL), to approx. 6.2 ft. bgs., then compact, brown SILT, some clay content, slightly wet, to approx. 7.3 ft. bgs. (ML), then firm, brown SILTY CLAY, trace fine gravel, increasing softness from approx. 7.8 ft. bgs., slightly plastic, slightly wet. (CL)
8 10	GLACIOLACUSTRINE CLAY	NA	3	DO	3.5/4.0	0.0 0.0 0.0 0.0		SA–3 8.0-12.0 Ft. Soft to very soft, gray to gray-brown CLAY, trace fine gravel, very plastic, slightly wet. (CL) Glaciolacustrine clay (*GC*) beginning at approx. 7.8 ft. bgs.
12	END OF BORING 12.0' bgs.							0930 - Collect soil sample 5.0-6.0 ft. bgs. for VOCs. 0955 - Collect groundwater sample for VOCs. NOTE: Since the Direct Push drilling method does not provide blow counts, soil consistency was determined in the field by physical (hand) observation.

FIELD BORING LOG

DEPTH HOLE 12.0' JOB NO. 083-89111 PROJECT CWM/RMU-2 FOOTPRINT RELOCATION/NY BORING NO. RMU2-W8
DEPTH SOIL DRILL 12.0' GA INSP. RJM DRILLING METHOD DIRECT PUSH SHEET 1 of 1
DEPTH ROCK CORE N/A WEATHER OVERCAST DRILLING CO. ZEBRA ENVIRONMENTAL DRILLING SURFACE EL. 317.74
NO. DIST. N/A US. N/A TEMP. 43°F DRILL RIG BOBCAT MT52 DRILLER P. ORSI DATUM SITE
DEPTH WL. N/A HRS. PROD. N/A WT. SAMPLER HAMMER N/A DROP N/A STARTED 1000/2-10-09
TIME WL. N/A HRS. DELAYED N/A WT. CASING HAMMER N/A DROP N/A COMPLETED 1025/2-10-09

SAMPLE TYPES

A.S.	AUGER SAMPLE
C.S.	CHUNK SAMPLE
D.O.	DRIVE OPEN
D.S.	DENISON SAMPLE
P.S.	PITCHER SAMPLE
R.C.	ROCK CORE
S.T.	SLOTTED TUBE
T.O.	THIN-WALLED, OPEN
T.P.	THIN-WALLED, PISTON
W.S.	WASH SAMPLE

ABBREVIATIONS

BL	BLACK	M	MEDIUM	SA	SAMPLE
BR	BROWN	MIC	MICACEOUS	SAT	SATURATED
C	COARSE	MOT	MOTTLED	SD	SAND
CA	CASING	NP	NON-PLASTIC	SI	SILT
CL	CLAY	OG	ORANGE	SIY	SILTY
CLY	CLAYEY	ORG	ORGANIC	SM	SOME
F	FINE	PH	PRESSURE-HYDRAULIC	TR	TRACE
FRAG	FRAGMENTS	PM	PRESSURE-MANUAL	WL	WATER LEVEL
GL	GRAVEL	R	RED	WH	WEIGHT OF HAMMER
LYD	LAYERED	RES	RESIDUAL	WR	WEIGHT OF RODS
LI	LITTLE	RX	ROCK	Y	YELLOW

SOIL DESCRIPTION – RANGE OF PROPORTION

"TRACE" – 0–5%
"LITTLE" – 5–12%
"SOME" – 12–30%
"AND" – 30–50%

CONSISTENCY

LS	LOOSE	S	SOFT
CP	COMPACT	FM	FIRM
DN	DENSE	ST	STIFF
V	VERY	H	HARD

ELEV. DEPTH	DESCRIPTION	BLOWS/FT.	SAMPLES NO.	TYPE	REC/ATTEMPT	PID (ppm)	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
	FILL 0.0–1.0'					0.0		SA–1 0.0-4.0 Ft. Dense, coarse GRAVEL and SILT fill, wet, to approx. 1.0 ft. bgs. (GM), then firm, gray-brown CLAYEY SILT, occasional coarse gravel, trace to little fine gravel, moist to very moist. (CL-ML)
2		NA	1	DO	2.4/4.0	0.0		
	UPPER CLAY TILL					0.0		
4						0.0		
						0.0		SA–2 4.0-8.0 Ft. As above to approx. 5.1 ft. bgs., moist, then loose, brown SILT and fine SAND, saturated, with occasional zones of firm, brown clayey silt, trace fine gravel. (SM)
6		NA	2	DO	3.8/4.0	0.0		
	UPPER SILT TILL					0.0		
8						0.0		
						0.0		SA–3 8.0-10.0 Ft. As above, saturated, to approx. 11.7 ft. bgs. (SM), then very soft, gray SILTY CLAY to CLAY, very plastic, very moist. (CL)
10	GLACIOLACUSTRINE CLAY	NA	3	DO	2.5/4.0	0.0		Glaciolacustrine clay (*GC*) beginning at approx. 11.7 ft. bgs.
						0.0		
12	END OF BORING 12.0' bgs.							1020 - Collect soil sample 4.0-5.0 ft. bgs. for VOCs. 1035 - Collect groundwater sample for VOCs. NOTE: Since the Direct Push drilling method does not provide blow counts, soil consistency was determined in the field by physical (hand) observation.

FIELD BORING LOG

DEPTH HOLE 12.0' JOB NO. 083-89111 PROJECT CWM/RMU-2 FOOTPRINT RELOCATION/NY BORING NO. RMU2-W9
DEPTH SOIL DRILL 12.0' GA INSP. RJM DRILLING METHOD DIRECT PUSH SHEET 1 of 1
DEPTH ROCK CORE N/A WEATHER OVERCAST DRILLING CO. ZEBRA ENVIRONMENTAL DRILLING SURFACE EL. 318.28
NO. DIST. N/A US. N/A TEMP. 45°F DRILL RIG BOBCAT MT52 DRILLER P. ORSI DATUM SITE
DEPTH WL. N/A HRS. PROD. N/A WT. SAMPLER HAMMER N/A DROP N/A STARTED 1055/2-10-09
TIME WL. N/A HRS. DELAYED N/A WT. CASING HAMMER N/A DROP N/A COMPLETED 1120/2-10-09

SAMPLE TYPES

A.S.	AUGER SAMPLE
C.S.	CHUNK SAMPLE
D.O.	DRIVE OPEN
D.S.	DENISON SAMPLE
P.S.	PITCHER SAMPLE
R.C.	ROCK CORE
S.T.	SLOTTED TUBE
T.O.	THIN-WALLED, OPEN
T.P.	THIN-WALLED, PISTON
W.S.	WASH SAMPLE

ABBREVIATIONS

BL	BLACK	M	MEDIUM	SA	SAMPLE
BR	BROWN	MIC	MICACEOUS	SAT	SATURATED
C	COARSE	MOT	MOTTLED	SD	SAND
CA	CASING	NP	NON-PLASTIC	SI	SILT
CL	CLAY	OG	ORANGE	SIY	SILTY
CLY	CLAYEY	ORG	ORGANIC	SM	SOME
F	FINE	PH	PRESSURE-HYDRAULIC	TR	TRACE
FRAG	FRAGMENTS	PM	PRESSURE-MANUAL	WL	WATER LEVEL
GL	GRAVEL	R	RED	WH	WEIGHT OF HAMMER
LYD	LAYERED	RES	RESIDUAL	WR	WEIGHT OF RODS
LI	LITTLE	RX	ROCK	Y	YELLOW

SOIL DESCRIPTION - RANGE OF PROPORTION

"TRACE" - 0-5%
"LITTLE" - 5-12%
"SOME" - 12-30%
"AND" - 30-50%

CONSISTENCY

LS	LOOSE	S	SOFT
CP	COMPACT	FM	FIRM
DN	DENSE	ST	STIFF
V	VERY	H	HARD

ELEV. DEPTH	DESCRIPTION	BLOWS/FT.	SAMPLES NO.	TYPE	REC/ATTEMPT	PID (ppm)	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
	FILL 0.0-1.3					0.0		SA-1 0.0-4.0 Ft. Very dense, coarse GRAVEL and SILT fill to approx. 1.3 ft. bgs. (GM), then stiff to firm, brown to red-brown CLAYEY SILT to SILTY CLAY, little to some fine gravel, trace cinders near top of interval, occasional thin (>0.1 ft.-thick) silt pockets, moist. (ML-CL)
2		NA	1	DO	4.0/4.0	0.0		
	UPPER CLAY TILL					0.0		
4						0.0		
						0.0		SA-2 4.0-8.0 Ft. Stiff to firm, brown CLAYEY SILT, trace to little fine gravel, moist to very moist, with zone of compact, tan-brown SILT, little clay content, very moist, from approx. 4.7 ft. bgs., becoming firm with increasing gray clay content from approx. 6.7 ft. bgs. very moist. (ML)
6		NA	2	DO	4.0/4.0	0.0		
						0.0		
8						0.0		
						0.0		SA-3 8.0-11.9 Ft. As above to approx. 8.7 ft. bgs., then firm to slightly soft, gray-brown SILTY CLAY, little to some fine gravel, occasional coarse gravel, occasional silt pockets, plastic, very moist with intermittent wet zones throughout. (CL)
10	GLACIOLACUSTRINE CLAY	NA	3	DO	4.0/3.9	0.1		Glaciolacustrine clay (*GC*) beginning at approx. 8.7 ft. bgs.
						0.0		
12	END OF BORING 11.9' bgs.							Geoprobe refusal at approx. 11.9 ft. bgs.
								1125 - Collect soil sample 4.0-5.0 ft. bgs. for VOCs.
								1550 - Collect groundwater sample for VOCs.
								NOTE: Since the Direct Push drilling method does not provide blow counts, soil consistency was determined in the field by physical (hand) observation.

FIELD BORING LOG

DEPTH HOLE 12.0' JOB NO. 083-89111 PROJECT CWM/RMU-2 FOOTPRINT RELOCATION/NY BORING NO. RMU2-W10
DEPTH SOIL DRILL 12.0' GA INSP. RJM DRILLING METHOD DIRECT PUSH SHEET 1 of 1
DEPTH ROCK CORE N/A WEATHER OVERCAST DRILLING CO. ZEBRA ENVIRONMENTAL DRILLING SURFACE EL. 319.32
NO. DIST. N/A US. N/A TEMP. 45°F DRILL RIG BOBCAT MT52 DRILLER P. ORSI DATUM SITE
DEPTH WL. N/A HRS. PROD. N/A WT. SAMPLER HAMMER N/A DROP N/A STARTED 1145/2-10-09
TIME WL. N/A HRS. DELAYED N/A WT. CASING HAMMER N/A DROP N/A COMPLETED 1210/2-10-09

SAMPLE TYPES

A.S.	AUGER SAMPLE
C.S.	CHUNK SAMPLE
D.O.	DRIVE OPEN
D.S.	DENISON SAMPLE
P.S.	PITCHER SAMPLE
R.C.	ROCK CORE
S.T.	SLOTTED TUBE
T.O.	THIN-WALLED, OPEN
T.P.	THIN-WALLED, PISTON
W.S.	WASH SAMPLE

ABBREVIATIONS

BL	BLACK	M	MEDIUM	SA	SAMPLE
BR	BROWN	MIC	MICACEOUS	SAT	SATURATED
C	COARSE	MOT	MOTTLED	SD	SAND
CA	CASING	NP	NON-PLASTIC	SI	SILT
CL	CLAY	OG	ORANGE	SIY	SILTY
CLY	CLAYEY	ORG	ORGANIC	SM	SOME
F	FINE	PH	PRESSURE-HYDRAULIC	TR	TRACE
FRAG	FRAGMENTS	PM	PRESSURE-MANUAL	WL	WATER LEVEL
GL	GRAVEL	R	RED	WH	WEIGHT OF HAMMER
LYD	LAYERED	RES	RESIDUAL	WR	WEIGHT OF RODS
LI	LITTLE	RX	ROCK	Y	YELLOW

SOIL DESCRIPTION – RANGE OF PROPORTION

"TRACE" – 0–5%
"LITTLE" – 5–12%
"SOME" – 12–30%
"AND" – 30–50%

CONSISTENCY

LS	LOOSE	S	SOFT
CP	COMPACT	FM	FIRM
DN	DENSE	ST	STIFF
V	VERY	H	HARD

ELEV. DEPTH	DESCRIPTION	BLOWS/FT.	SAMPLES NO.	TYPE	REC/ATTEMPT	PID (ppm)	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
	FILL 0.0–2.0'					0.0		SA–1 0.0-4.0 Ft. Very dense, coarse GRAVEL and SILT fill to approx. 2.0 ft. bgs. (GM), then firm, brown SILTY CLAY, some very fine to fine gravel, occasional coarse gravel, trace fine sand, moist to very moist. (CL)
2		NA	1	DO	4.0/4.0	0.0		
						0.0		
						0.0		
	UPPER CLAY TILL					0.0		SA–2 4.0-8.0 Ft. Stiff to firm, red-brown to brown SILTY CLAY, some fine gravel, occasional coarse gravel, moist to very moist, intermittent slightly wet zones throughout, with increasing clay content towards bottom, moist to very moist. (CL-GC)
4						0.0		
		NA	2	DO	3.8/4.0	0.0		
6						0.0		
						0.0		
8						0.0		SA–3 8.0-10.0 Ft. Firm, brown SILTY CLAY to CLAY, trace fine gravel, plasticity and softness increasing from approx. 9.8 ft. bgs., plastic, very moist. (CL)
						0.0		
	GLACIOLACUSTRINE CLAY	NA	3	DO	4.0/4.0	0.0		Glaciolacustrine clay (*GC*) beginning at approx. 8.0 ft. bgs.
10						0.0		
						0.0		
12	END OF BORING 12.0' bgs.							1215 - Collect soil sample 6.0-8.0 ft. bgs. for VOCs.
								1555 - Collect groundwater sample for VOCs.
								NOTE: Since the Direct Push drilling method does not provide blow counts, soil consistency was determined in the field by physical (hand) observation.

FIELD BORING LOG

DEPTH HOLE 12.0' JOB NO. 083-89111 PROJECT CWM/RMU-2 FOOTPRINT RELOCATION/NY BORING NO. RMU2-W11
DEPTH SOIL DRILL 12.0' GA INSP. RJM DRILLING METHOD DIRECT PUSH SHEET 1 of 1
DEPTH ROCK CORE N/A WEATHER OVERCAST DRILLING CO. ZEBRA ENVIRONMENTAL DRILLING SURFACE EL. 319.15
NO. DIST. N/A US. N/A TEMP. 46°F DRILL RIG BOBCAT MT52 DRILLER P. ORSI DATUM SITE
DEPTH WL. N/A HRS. PROD. N/A WT. SAMPLER HAMMER N/A DROP N/A STARTED 1330/2-10-09
TIME WL. N/A HRS. DELAYED N/A WT. CASING HAMMER N/A DROP N/A COMPLETED 1355/2-10-09

SAMPLE TYPES

A.S.	AUGER SAMPLE
C.S.	CHUNK SAMPLE
D.O.	DRIVE OPEN
D.S.	DENISON SAMPLE
P.S.	PITCHER SAMPLE
R.C.	ROCK CORE
S.T.	SLOTTED TUBE
T.O.	THIN-WALLED, OPEN
T.P.	THIN-WALLED, PISTON
W.S.	WASH SAMPLE

ABBREVIATIONS

BL	BLACK	M	MEDIUM	SA	SAMPLE
BR	BROWN	MIC	MICACEOUS	SAT	SATURATED
C	COARSE	MOT	MOTTLED	SD	SAND
CA	CASING	NP	NON-PLASTIC	SI	SILT
CL	CLAY	OG	ORANGE	SIY	SILTY
CLY	CLAYEY	ORG	ORGANIC	SM	SOME
F	FINE	PH	PRESSURE-HYDRAULIC	TR	TRACE
FRAG	FRAGMENTS	PM	PRESSURE-MANUAL	WL	WATER LEVEL
GL	GRAVEL	R	RED	WH	WEIGHT OF HAMMER
LYD	LAYERED	RES	RESIDUAL	WR	WEIGHT OF RODS
LI	LITTLE	RX	ROCK	Y	YELLOW

SOIL DESCRIPTION – RANGE OF PROPORTION

"TRACE" – 0–5%
"LITTLE" – 5–12%
"SOME" – 12–30%
"AND" – 30–50%

CONSISTENCY

LS	LOOSE	S	SOFT
CP	COMPACT	FM	FIRM
DN	DENSE	ST	STIFF
V	VERY	H	HARD

ELEV. DEPTH	DESCRIPTION	BLOWS/FT.	SAMPLES NO.	TYPE	REC/ATTEMPT	PID (ppm)	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
	FILL 0.0–0.2'					0.0		SA–1 0.0-4.0 Ft. Thin layer of gravelly topsoil, then firm, tan-gray and brown mottled CLAYEY SILT to SILTY CLAY, occasional coarse gravel, little fine gravel, occasional pockets of tan-brown coarse sand, plant roots throughout, very moist. (ML-CL)
2		NA	1	DO	4.0/4.0	0.0		
	UPPER CLAY TILL					0.0		
4						0.0		SA–2 4.0-8.0 Ft. Firm, brown CLAYEY SILT to SILTY CLAY, little fine gravel, occasional coarse gravel, occasional thin (>0.1-ft. thick) silt seams, very moist, to approx. 7.6 ft. bgs. (ML-CL) , then compact, brown to tan-brown SILT, very moist to wet. (ML)
						0.0		
6		NA	2	DO	4.0/4.0	0.0		
						0.0		
8	UPPER SILT TILL					0.0		SA–3 8.0-12.0 Ft. As above, saturated, to approx. 11.6 ft. bgs. (ML), then very soft, gray to gray-brown CLAY, trace fine gravel, high plasticity, very moist. (CL)
						0.0		
10	GLACIOLACUSTRINE CLAY	NA	3	DO	4.0/4.0	0.0		Glaciolacustrine clay (*GC*) beginning at approx. 11.6 ft. bgs.
						0.0		
12	END OF BORING 12.0' bgs.							1405 - Collect soil sample 6.5-7.5 ft. bgs. for VOCs. 1610 - Collect groundwater sample for VOCs. NOTE: Since the Direct Push drilling method does not provide blow counts, soil consistency was determined in the field by physical (hand) observation.

FIELD BORING LOG

DEPTH HOLE 11.5' JOB NO. 083-89111 PROJECT CWM/RMU-2 FOOTPRINT RELOCATION/NY BORING NO. RMU2-W12
DEPTH SOIL DRILL 11.5' GA INSP. RJM DRILLING METHOD DIRECT PUSH SHEET 1 of 1
DEPTH ROCK CORE N/A WEATHER OVERCAST DRILLING CO. ZEBRA ENVIRONMENTAL DRILLING SURFACE EL. 319.68
NO. DIST. N/A US. N/A TEMP. 46°F DRILL RIG BOBCAT MT52 DRILLER P. ORSI DATUM SITE
DEPTH WL. N/A HRS. PROD. N/A WT. SAMPLER HAMMER N/A DROP N/A STARTED 1410/2-10-09
TIME WL. N/A HRS. DELAYED N/A WT. CASING HAMMER N/A DROP N/A COMPLETED 1435/2-10-09

SAMPLE TYPES

A.S.	AUGER SAMPLE
C.S.	CHUNK SAMPLE
D.O.	DRIVE OPEN
D.S.	DENISON SAMPLE
P.S.	PITCHER SAMPLE
R.C.	ROCK CORE
S.T.	SLOTTED TUBE
T.O.	THIN-WALLED, OPEN
T.P.	THIN-WALLED, PISTON
W.S.	WASH SAMPLE

ABBREVIATIONS

BL	BLACK	M	MEDIUM	SA	SAMPLE
BR	BROWN	MIC	MICACEOUS	SAT	SATURATED
C	COARSE	MOT	MOTTLED	SD	SAND
CA	CASING	NP	NON-PLASTIC	SI	SILT
CL	CLAY	OG	ORANGE	SIY	SILTY
CLY	CLAYEY	ORG	ORGANIC	SM	SOME
F	FINE	PH	PRESSURE-HYDRAULIC	TR	TRACE
FRAG	FRAGMENTS	PM	PRESSURE-MANUAL	WL	WATER LEVEL
GL	GRAVEL	R	RED	WH	WEIGHT OF HAMMER
LYD	LAYERED	RES	RESIDUAL	WR	WEIGHT OF RODS
LI	LITTLE	RX	ROCK	Y	YELLOW

SOIL DESCRIPTION – RANGE OF PROPORTION

"TRACE" – 0–5%
"LITTLE" – 5–12%
"SOME" – 12–30%
"AND" – 30–50%

CONSISTENCY

LS	LOOSE	S	SOFT
CP	COMPACT	FM	FIRM
DN	DENSE	ST	STIFF
V	VERY	H	HARD

ELEV. DEPTH	DESCRIPTION	BLOWS/FT.	SAMPLES NO.	TYPE	REC/ATTEMPT	PID (ppm)	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
0	FILL 0.0–0.2'					0.0		SA–1 0.0-4.0 Ft. Thin layer of gravelly topsoil, then firm, brown CLAYEY SILT to SILTY CLAY, occasional coarse gravel, little fine gravel, trace fine sand, some brown to tan-brown mottled silt pockets, plant roots throughout, wet near top to very moist. (ML-CL)
2	UPPER CLAY TILL	NA	1	DO	4.0/4.0	0.0		
						0.0		
						0.1		
4						0.0		SA–2 4.0-8.0 Ft. Firm, brown CLAYEY SILT, little fine gravel, occasional coarse gravel, occasional thin (>0.1-ft. thick) fine sand and silt partings, with zone of SILT and fine to medium SAND from approx. 4.6-5.2 ft. bgs., very moist, with increasing clay content towards bottom. (ML to SM)
6		NA	2	DO	3.9/4.0	0.0		
						0.0		
8						0.0		SA–3 8.0-11.5 Ft. Compact to dense, tan-brown SILT, saturated, to approx. 8.9 ft. bgs. (ML), then firm, brown SILTY CLAY, occasional coarse gravel, little fine gravel, very moist to moist. (CL)
10	GLACIOLACUSTRINE CLAY	NA	3	DO	4.0/3.5	0.0		Glaciolacustrine clay (*GC*) beginning at approx. 8.9 ft. bgs.
						0.0		
12	END OF BORING 11.5' bgs.							Geoprobe refusal at approx. 11.5 ft. bgs. 1425 - Collect soil sample 4.0-5.0 ft. bgs. for VOCs. 1540 - Collect groundwater sample for VOCs. NOTE: Since the Direct Push drilling method does not provide blow counts, soil consistency was determined in the field by physical (hand) observation.

FIELD BORING LOG

DEPTH HOLE 12.0' JOB NO. 083-89111 PROJECT CWM/RMU-2 FOOTPRINT RELOCATION/NY BORING NO. RMU2-W13
DEPTH SOIL DRILL 12.0' GA INSP. RJM DRILLING METHOD DIRECT PUSH SHEET 1 of 1
DEPTH ROCK CORE N/A WEATHER P.SUNNY DRILLING CO. ZEBRA ENVIRONMENTAL DRILLING SURFACE EL. 320.73
NO. DIST. N/A US. N/A TEMP. 46°F DRILL RIG BOBCAT MT52 DRILLER P. ORSI DATUM SITE
DEPTH WL. N/A HRS. PROD. N/A WT. SAMPLER HAMMER N/A DROP N/A STARTED 1450/2-10-09
TIME WL. N/A HRS. DELAYED N/A WT. CASING HAMMER N/A DROP N/A COMPLETED 1510/2-10-09

SAMPLE TYPES

A.S.	AUGER SAMPLE
C.S.	CHUNK SAMPLE
D.O.	DRIVE OPEN
D.S.	DENISON SAMPLE
P.S.	PITCHER SAMPLE
R.C.	ROCK CORE
S.T.	SLOTTED TUBE
T.O.	THIN-WALLED, OPEN
T.P.	THIN-WALLED, PISTON
W.S.	WASH SAMPLE

ABBREVIATIONS

BL	BLACK	M	MEDIUM	SA	SAMPLE
BR	BROWN	MIC	MICACEOUS	SAT	SATURATED
C	COARSE	MOT	MOTTLED	SD	SAND
CA	CASING	NP	NON-PLASTIC	SI	SILT
CL	CLAY	OG	ORANGE	SIY	SILTY
CLY	CLAYEY	ORG	ORGANIC	SM	SOME
F	FINE	PH	PRESSURE-HYDRAULIC	TR	TRACE
FRAG	FRAGMENTS	PM	PRESSURE-MANUAL	WL	WATER LEVEL
GL	GRAVEL	R	RED	WH	WEIGHT OF HAMMER
LYD	LAYERED	RES	RESIDUAL	WR	WEIGHT OF RODS
LI	LITTLE	RX	ROCK	Y	YELLOW

SOIL DESCRIPTION – RANGE OF PROPORTION

"TRACE" – 0–5%
"LITTLE" – 5–12%
"SOME" – 12–30%
"AND" – 30–50%

CONSISTENCY

LS	LOOSE	S	SOFT
CP	COMPACT	FM	FIRM
DN	DENSE	ST	STIFF
V	VERY	H	HARD

ELEV. DEPTH	DESCRIPTION	BLOWS/FT.	SAMPLES NO.	TYPE	REC/ATTEMPT	PID (ppm)	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
	FILL 0.0–1.2'					0.0		SA–1 0.0-4.0 Ft. Dense, coarse GRAVEL and SILT fill to approx. 1.2 ft. bgs. (GM), then firm, brown to gray-brown CLAYEY SILT to SILTY CLAY, trace fine gravel, moist, to approx. 3.5 ft. bgs. (ML-CL), then loose, coarse GRAVEL and rock fragments. (GP)
2		NA	1	DO	4.0/4.0	0.0		
						0.0		
	UPPER CLAY TILL					0.1		
4						0.0		SA–2 4.0-8.0 Ft. Stiff, brown CLAYEY SILT to SILTY CLAY, little to some fine gravel, occasional coarse gravel, slightly laminated, very moist. (ML-CL)
		NA	2	DO	4.0/4.0	0.0		
6						0.0		
						0.0		
8						0.0		SA–3 8.0-12.0 Ft. As above, with zone of brown, medium to coarse sand from approx. 8.2-8.3 ft., some coarse gravel, then firm, brown SILTY CLAY, occasional coarse gravel, little fine gravel, increasing softness towards bottom, very moist. (CL)
	GLACIOLACUSTRINE CLAY	NA	3	DO	4.0/4.0	0.0		
10						0.0		Glaciolacustrine clay (*GC*) beginning at approx. 8.3 ft. bgs.
						0.0		
12	END OF BORING 12.0' bgs.							1515 - Collect soil sample 6.0-8.0 ft. bgs. for VOCs. 1530 - Collect groundwater sample for VOCs. NOTE: Since the Direct Push drilling method does not provide blow counts, soil consistency was determined in the field by physical (hand) observation.

FIELD BORING LOG

DEPTH HOLE 16.0' JOB NO. 083-89111 PROJECT CWM/RMU-2 FOOTPRINT RELOCATION/NY BORING NO. RMU2-W14
DEPTH SOIL DRILL 16.0' GA INSP. RJM DRILLING METHOD DIRECT PUSH SHEET 1 of 1
DEPTH ROCK CORE N/A WEATHER OVERCAST DRILLING CO. ZEBRA ENVIRONMENTAL DRILLING SURFACE EL. 320.5
NO. DIST. N/A US. N/A TEMP. 45°F DRILL RIG BOBCAT MT52 DRILLER P. ORSI DATUM SITE
DEPTH WL. N/A HRS. PROD. N/A WT. SAMPLER HAMMER N/A DROP N/A STARTED 0815/2-11-09
TIME WL. N/A HRS. DELAYED N/A WT. CASING HAMMER N/A DROP N/A COMPLETED 0845/2-11-09

SAMPLE TYPES

A.S.	AUGER SAMPLE
C.S.	CHUNK SAMPLE
D.O.	DRIVE OPEN
D.S.	DENISON SAMPLE
P.S.	PITCHER SAMPLE
R.C.	ROCK CORE
S.T.	SLOTTED TUBE
T.O.	THIN-WALLED, OPEN
T.P.	THIN-WALLED, PISTON
W.S.	WASH SAMPLE

ABBREVIATIONS

BL	BLACK	M	MEDIUM	SA	SAMPLE
BR	BROWN	MIC	MICACEOUS	SAT	SATURATED
C	COARSE	MOT	MOTTLED	SD	SAND
CA	CASING	NP	NON-PLASTIC	SI	SILT
CL	CLAY	OG	ORANGE	SIY	SILTY
CLY	CLAYEY	ORG	ORGANIC	SM	SOME
F	FINE	PH	PRESSURE-HYDRAULIC	TR	TRACE
FRAG	FRAGMENTS	PM	PRESSURE-MANUAL	WL	WATER LEVEL
GL	GRAVEL	R	RED	WH	WEIGHT OF HAMMER
LYD	LAYERED	RES	RESIDUAL	WR	WEIGHT OF RODS
LI	LITTLE	RX	ROCK	Y	YELLOW

SOIL DESCRIPTION – RANGE OF PROPORTION

"TRACE" – 0–5%
"LITTLE" – 5–12%
"SOME" – 12–30%
"AND" – 30–50%

CONSISTENCY

LS	LOOSE	S	SOFT
CP	COMPACT	FM	FIRM
DN	DENSE	ST	STIFF
V	VERY	H	HARD

ELEV. DEPTH	DESCRIPTION	BLOWS/FT.	SAMPLES NO.	TYPE	REC/ATTEMPT	PID (ppm)	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
	FILL 0.0–1.5'					0.0		SA–1 0.0-4.0 Ft. Dense, coarse GRAVEL and SILT fill to approx. 1.5 ft. (GM), then stiff, brown CLAYEY SILT, little fine gravel, occasional coarse gravel, trace fine sand, some blackish, ash-like staining from approx. 3.0-4.0 ft. bgs., moist. (ML)
2		NA	1	DO	4.0/4.0	0.0		
						0.0		
						3.2		
4						1.5		SA–2 4.0-8.0 Ft. Stiff to firm, brown CLAYEY SILT to SILTY CLAY, little coarse gravel, little fine gravel, trace fine sand, occasional thin silt pockets, moist. (ML to CL)
6		NA	2	DO	4.0/4.0	1.0		
						0.0		
						0.0		
8	UPPER CLAY TILL					0.0		SA–3 8.0-12.0 Ft. Firm, brown SILTY CLAY, occasional coarse gravel, little fine gravel, occasional fine sand seams, occasional thin silt pockets, increasing clay content from approx. 9.0 ft. bgs., moist to very moist. (CL)
10		NA	3	DO	4.0/4.0	0.0		
						0.0		
						0.0		
12						0.0		SA–4 12.0-16.0 Ft. As above, with zone of coarse gravel and fine to medium sand and silt, wet, from approx. 12.6-13.1 ft., moist, then very soft, gray-brown to brown SILTY CLAY to CLAY, trace fine gravel, very plastic, with approx. 0.3-ft. thick silt pocket at bottom of interval, moist. (CL)
14	GLACIOLACUSTRINE CLAY	NA	4	DO	4.0/4.0	0.0		
						0.0		Glaciolacustrine clay (GC) beginning at approx. 12.4 ft. bgs.
16	END OF BORING 16.0' bgs.							0830 - Collect soil sample 3.0-4.0 ft. bgs. for VOCs. 1505 - Collect groundwater sample for VOCs. NOTE: Since the Direct Push drilling method does not provide blow counts, soil consistency was determined in the field by physical (hand) observation.

FIELD BORING LOG

DEPTH HOLE 16.0' JOB NO. 083-89111 PROJECT CWM/RMU-2 FOOTPRINT RELOCATION/NY BORING NO. RMU2-W15
DEPTH SOIL DRILL 16.0' GA INSP. RJM DRILLING METHOD DIRECT PUSH SHEET 1 of 1
DEPTH ROCK CORE N/A WEATHER OVERCAST DRILLING CO. ZEBRA ENVIRONMENTAL DRILLING SURFACE EL. 320.02
NO. DIST. N/A US. N/A TEMP. 45°F DRILL RIG BOBCAT MT52 DRILLER P. ORSI DATUM SITE
DEPTH WL. N/A HRS. PROD. N/A WT. SAMPLER HAMMER N/A DROP N/A STARTED 0900/2-11-09
TIME WL. N/A HRS. DELAYED N/A WT. CASING HAMMER N/A DROP N/A COMPLETED 0935/2-11-09

SAMPLE TYPES

A.S.	AUGER SAMPLE
C.S.	CHUNK SAMPLE
D.O.	DRIVE OPEN
D.S.	DENISON SAMPLE
P.S.	PITCHER SAMPLE
R.C.	ROCK CORE
S.T.	SLOTTED TUBE
T.O.	THIN-WALLED, OPEN
T.P.	THIN-WALLED, PISTON
W.S.	WASH SAMPLE

ABBREVIATIONS

BL	BLACK	M	MEDIUM	SA	SAMPLE
BR	BROWN	MIC	MICACEOUS	SAT	SATURATED
C	COARSE	MOT	MOTTLED	SD	SAND
CA	CASING	NP	NON-PLASTIC	SI	SILT
CL	CLAY	OG	ORANGE	SIY	SILTY
CLY	CLAYEY	ORG	ORGANIC	SM	SOME
F	FINE	PH	PRESSURE-HYDRAULIC	TR	TRACE
FRAG	FRAGMENTS	PM	PRESSURE-MANUAL	WL	WATER LEVEL
GL	GRAVEL	R	RED	WH	WEIGHT OF HAMMER
LYD	LAYERED	RES	RESIDUAL	WR	WEIGHT OF RODS
LI	LITTLE	RX	ROCK	Y	YELLOW

SOIL DESCRIPTION – RANGE OF PROPORTION

"TRACE" – 0–5%
"LITTLE" – 5–12%
"SOME" – 12–30%
"AND" – 30–50%

CONSISTENCY

LS	LOOSE	S	SOFT
CP	COMPACT	FM	FIRM
DN	DENSE	ST	STIFF
V	VERY	H	HARD

ELEV. DEPTH	DESCRIPTION	BLOWS/FT.	SAMPLES NO.	TYPE	REC/ATTEMPT	PID (ppm)	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
	FILL 0.0–0.5'					0.0		SA–1 0.0-4.0 Ft. Loose, coarse GRAVEL and SILT fill to approx. 0.5 ft. (GM), then firm, brown CLAYEY SILT, some fine to medium sand, occasional coarse gravel, with zone of discolored CLAYEY SILT from approx. 2.6-3.0 ft. bgs., moist. (ML)
2		NA	1	DO	4.0/4.0	0.0		
						0.0		
						3.2		
4	UPPER CLAY TILL					1.5		SA–2 4.0-8.0 Ft. Stiff, brown CLAYEY SILT, occasional coarse gravel, little fine gravel, occasional tan-brown silt pockets, with zone of fine to coarse sand and coarse gravel from approx. 5.5 to 5.8 ft. bgs., very moist to slightly wet to approx. 5.8 ft.(ML), then stiff to firm, brown to gray-brown SILTY CLAY, little fine gravel, trace fine sand and silt, with increasing clay content towards bottom, very moist. (CL)
6		NA	2	DO	4.0/4.0	1.0		
						0.0		
						0.0		
8						0.0		SA–3 8.0-12.0 Ft. Firm, gray-brown SILTY CLAY, occasional coarse gravel, little fine gravel, slightly plastic, very moist. (CL)
						0.0		Glaciolacustrine clay (*GC*) beginning at approx. 8.0 ft. bgs.
10	GLACIOLACUSTRINE CLAY	NA	3	DO	2.9/4.0	0.0		
						0.0		
12						0.0		SA–4 12.0-16.0 Ft. POOR RECOVERY; Very soft, gray-brown CLAY, trace fine gravel, very plastic, very moist. (CH)
						0.0		
14		NA	4	DO	1.8/4.0	0.0		
						0.0		
16	END OF BORING 16.0' bgs.							0920 - Collect soil sample 2.5-3.5 ft. bgs. for VOCs. 1515 - Collect groundwater sample for VOCs. NOTE: Since the Direct Push drilling method does not provide blow counts, soil consistency was determined in the field by physical (hand) observation.

FIELD BORING LOG

DEPTH HOLE 12.0' JOB NO. 083-89111 PROJECT CWM/RMU-2 FOOTPRINT RELOCATION/NY BORING NO. RMU2-W16
DEPTH SOIL DRILL 12.0' GA INSP. RJM DRILLING METHOD DIRECT PUSH SHEET 1 of 1
DEPTH ROCK CORE N/A WEATHER OVERCAST DRILLING CO. ZEBRA ENVIRONMENTAL DRILLING SURFACE EL. 319.82
NO. DIST. N/A US. N/A TEMP. 49°F DRILL RIG BOBCAT MT52 DRILLER P. ORSI DATUM SITE
DEPTH WL. N/A HRS. PROD. N/A WT. SAMPLER HAMMER N/A DROP N/A STARTED 0950/2-11-09
TIME WL. N/A HRS. DELAYED N/A WT. CASING HAMMER N/A DROP N/A COMPLETED 1010/2-11-09

SAMPLE TYPES

A.S.	AUGER SAMPLE
C.S.	CHUNK SAMPLE
D.O.	DRIVE OPEN
D.S.	DENISON SAMPLE
P.S.	PITCHER SAMPLE
R.C.	ROCK CORE
S.T.	SLOTTED TUBE
T.O.	THIN-WALLED, OPEN
T.P.	THIN-WALLED, PISTON
W.S.	WASH SAMPLE

ABBREVIATIONS

BL	BLACK	M	MEDIUM	SA	SAMPLE
BR	BROWN	MIC	MICACEOUS	SAT	SATURATED
C	COARSE	MOT	MOTTLED	SD	SAND
CA	CASING	NP	NON-PLASTIC	SI	SILT
CL	CLAY	OG	ORANGE	SIY	SILTY
CLY	CLAYEY	ORG	ORGANIC	SM	SOME
F	FINE	PH	PRESSURE-HYDRAULIC	TR	TRACE
FRAG	FRAGMENTS	PM	PRESSURE-MANUAL	WL	WATER LEVEL
GL	GRAVEL	R	RED	WH	WEIGHT OF HAMMER
LYD	LAYERED	RES	RESIDUAL	WR	WEIGHT OF RODS
LI	LITTLE	RX	ROCK	Y	YELLOW

SOIL DESCRIPTION – RANGE OF PROPORTION

"TRACE" – 0–5%
"LITTLE" – 5–12%
"SOME" – 12–30%
"AND" – 30–50%

CONSISTENCY

LS	LOOSE	S	SOFT
CP	COMPACT	FM	FIRM
DN	DENSE	ST	STIFF
V	VERY	H	HARD

ELEV. DEPTH	DESCRIPTION	BLOWS/FT.	SAMPLES NO.	TYPE	REC/ATTEMPT	PID (ppm)	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
	FILL 0.0–0.7'							SA–1 0.0-4.0 Ft. Dense, coarse GRAVEL and SILT fill to approx. 0.7 ft. bgs. (GM), then loose (dry), brown CLAYEY SILT, occasional coarse gravel, moist, with blackish, ash-like staining from approx. 2.2-2.8 ft. bgs., then loose, tan-brown SILT, saturated to 4.0 ft. bgs. (ML)
2		NA	1	DO	4.0/4.0	0.0		
						0.0		
						0.0		
						0.2		
4	UPPER CLAY TILL							SA–2 4.0-8.0 Ft. Saturated mix of loose SILT, fine to coarse SAND and fine to coarse GRAVEL, saturated. (GM-SM)
						0.0		
6		NA	2	DO	1.6/4.0	0.0		
						0.0		
						0.0		
8								SA–3 8.0-12.0 Ft. Firm, brown SILTY CLAY, occasional coarse gravel, trace fine gravel, very moist to slightly wet to approx. 8.8 ft. bgs. (CL), then firm,gray-brown SILTY CLAY to CLAY, little fine gravel, some silt content, plastic, very moist. (CL)
						0.0		
10	GLACIOLACUSTRINE CLAY	NA	3	DO	3.8/4.0	0.0		Glaciolacustrine clay (*GC*) beginning at approx. 8.8 ft. bgs.
						0.0		
12	END OF BORING 12.0' bgs.							1015 - Collect soil sample 2.5-3.5 ft. bgs. for VOCs. 1520 - Collect groundwater sample for VOCs. NOTE: Since the Direct Push drilling method does not provide blow counts, soil consistency was determined in the field by physical (hand) observation.

FIELD BORING LOG

DEPTH HOLE 16.0' | JOB NO. 083-89111 | PROJECT CWM/RMU-2 FOOTPRINT RELOCATION/NY | BORING NO. RMU2-W17
DEPTH SOIL DRILL 16.0' | GA INSP. RJM | DRILLING METHOD DIRECT PUSH | SHEET 1 of 1
DEPTH ROCK CORE N/A | WEATHER OVERCAST | DRILLING CO. ZEBRA ENVIRONMENTAL DRILLING | SURFACE EL. 319.94
NO. DIST. N/A | US. N/A | TEMP. 45°F | DRILL RIG BOBCAT MT52 | DRILLER P. ORSI | DATUM SITE
DEPTH WL. N/A | HRS. PROD. N/A | WT. SAMPLER HAMMER N/A | DROP N/A | STARTED 1020/2-11-09
TIME WL. N/A | HRS. DELAYED N/A | WT. CASING HAMMER N/A | DROP N/A | COMPLETED 1050/2-11-09

SAMPLE TYPES

A.S.	AUGER SAMPLE
C.S.	CHUNK SAMPLE
D.O.	DRIVE OPEN
D.S.	DENISON SAMPLE
P.S.	PITCHER SAMPLE
R.C.	ROCK CORE
S.T.	SLOTTED TUBE
T.O.	THIN-WALLED, OPEN
T.P.	THIN-WALLED, PISTON
W.S.	WASH SAMPLE

ABBREVIATIONS

BL	BLACK	M	MEDIUM	SA	SAMPLE
BR	BROWN	MIC	MICACEOUS	SAT	SATURATED
C	COARSE	MOT	MOTTLED	SD	SAND
CA	CASING	NP	NON-PLASTIC	SI	SILT
CL	CLAY	OG	ORANGE	SIY	SILTY
CLY	CLAYEY	ORG	ORGANIC	SM	SOME
F	FINE	PH	PRESSURE-HYDRAULIC	TR	TRACE
FRAG	FRAGMENTS	PM	PRESSURE-MANUAL	WL	WATER LEVEL
GL	GRAVEL	R	RED	WH	WEIGHT OF HAMMER
LYD	LAYERED	RES	RESIDUAL	WR	WEIGHT OF RODS
LI	LITTLE	RX	ROCK	Y	YELLOW

SOIL DESCRIPTION – RANGE OF PROPORTION

"TRACE" – 0–5%
"LITTLE" – 5–12%
"SOME" – 12–30%
"AND" – 30–50%

CONSISTENCY

LS	LOOSE	S	SOFT
CP	COMPACT	FM	FIRM
DN	DENSE	ST	STIFF
V	VERY	H	HARD

ELEV. DEPTH	DESCRIPTION	BLOWS/FT.	SAMPLES NO.	TYPE	REC/ATTEMPT	PID (ppm)	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
	FILL 0.0–0.2'					0.0		SA–1 0.0-4.0 Ft. Loose, coarse GRAVEL and SILT fill to approx. 0.4 ft. (GM), then firm, wafer-like, brown CLAYEY SILT, moist, with intermittent zones of coarse gravel and fine to coarse sand, wet, some ash-like material to approx. 4.0 ft. bgs. (ML)
2		NA	1	DO	3.4/4.0	0.0		
						0.0		
						0.2		
4						1.5		SA–2 4.0-8.0 Ft. Stiff, brown CLAYEY SILT, occasional coarse gravel, little fine gravel, occasional tan-brown silt pockets, with zone of fine to coarse sand and coarse gravel from approx. 5.5 to 5.8 ft. bgs., very moist to slightly wet to 5.8 ft. (ML), then stiff to firm, brown to gray-brown SILTY CLAY, little fine gravel, trace fine sand and silt, with increasing clay content towards bottom, very moist. (CL)
6		NA	2	DO	1.8/4.0	1.0		
						0.0		
	UPPER CLAY TILL					0.0		
8						0.0		SA–3 8.0-12.0 Ft. Firm, gray-brown SILTY CLAY, occasional coarse gravel, little fine gravel, slightly plastic, very moist. (CL)
						0.0		
10		NA	3	DO	1.5/4.0	0.0		
						0.0		
						0.0		
12						0.0		SA–4 12.0-16.0 Ft. NO RECOVERY; Core barrel nearly empty. Several chunks CLAYEY SILT falling out of barrel upon removal from boring.
						0.0		
14		NA	4	DO	0.0/4.0	0.0		
						0.0		
16	END OF BORING 16.0' bgs.							0920 - Collect soil sample 2.0-3.0 ft. bgs. for VOCs. 1515 - Collect groundwater sample for VOCs. NOTE: Since the Direct Push drilling method does not provide blow counts, soil consistency was determined in the field by physical (hand) observation.

FIELD BORING LOG

DEPTH HOLE 1.5' JOB NO. 083-89111 PROJECT CWM/RMU-2 FOOTPRINT RELOCATION/NY BORING NO. RMU2-W18
DEPTH SOIL DRILL 1.5' GA INSP. RJM DRILLING METHOD DIRECT PUSH SHEET 1 of 1
DEPTH ROCK CORE N/A WEATHER OVERCAST DRILLING CO. ZEBRA ENVIRONMENTAL DRILLING SURFACE EL. 320.23
NO. DIST. N/A US. N/A TEMP. 49°F DRILL RIG BOBCAT MT52 DRILLER P. ORSI DATUM SITE
DEPTH WL. N/A HRS. PROD. N/A WT. SAMPLER HAMMER N/A DROP N/A STARTED 1100/2-11-09
TIME WL. N/A HRS. DELAYED N/A WT. CASING HAMMER N/A DROP N/A COMPLETED 1110/2-11-09

SAMPLE TYPES

A.S.	AUGER SAMPLE
C.S.	CHUNK SAMPLE
D.O.	DRIVE OPEN
D.S.	DENISON SAMPLE
P.S.	PITCHER SAMPLE
R.C.	ROCK CORE
S.T.	SLOTTED TUBE
T.O.	THIN-WALLED, OPEN
T.P.	THIN-WALLED, PISTON
W.S.	WASH SAMPLE

ABBREVIATIONS

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C	COARSE	MOT	MOTTLED	SD	SAND
CA	CASING	NP	NON-PLASTIC	SI	SILT
CL	CLAY	OG	ORANGE	SIY	SILTY
CLY	CLAYEY	ORG	ORGANIC	SM	SOME
F	FINE	PH	PRESSURE-HYDRAULIC	TR	TRACE
FRAG	FRAGMENTS	PM	PRESSURE-MANUAL	WL	WATER LEVEL
GL	GRAVEL	R	RED	WH	WEIGHT OF HAMMER
LYD	LAYERED	RES	RESIDUAL	WR	WEIGHT OF RODS
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CONSISTENCY

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CP	COMPACT	FM	FIRM
DN	DENSE	ST	STIFF
V	VERY	H	HARD

ELEV. DEPTH	DESCRIPTION	BLOWS/FT.	SAMPLES NO.	TYPE	REC/ATTEMPT	PID (ppm)	DEPTH	SAMPLE DESCRIPTION AND BORING NOTES
			1	DO	1.8/4.0	0.0		SA-1 0.0-2.0 Ft. Dense, coarse GRAVEL and SILT fill (GM), then loose, coarse GRAVEL, SILT and fine to coarse SAND, olive gray and black discoloring, strong organic odor present, wet. (GM-SM)
	END OF BORING	NA				0.0		
2	1.0' bgs.							Geoprobe refusal at approx. 1.0 ft. bgs.; borehole offset approx. 1.0 ft. to the east and drilling reattempted. Second attempt encountered geoprobe refusal again at approx. 1.5 ft. bgs.; borehole offset approx. 5-ft. to south and drilling reattempted. Third attempt encountered geoprobe refusal again at approx. 1.5 ft. bgs. (red-brick and concrete fragments in partial core); borehole offset approx. 10-ft. to south and drilling reattempted.
								SEE BORING LOG FOR RMU2-W18R (Fourth attempt).
								NOTE: Since the Direct Push drilling method does not provide blow counts, soil consistency was determined in the field by physical (hand) observation.