Environmental Corporation | SOIL BORING LOG

BORING NUMBER

1R-22.1-ENV-10

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

Spectra NJ-NY LOCATION: Staten Island, New York Expansion

CONTRACTOR: Land Air Water **PROJECT NO.:** 168217

Environmental Services

SAMPLER TYPE/DIA.: Hand Auger/Macro-**DEPTH TO WATER:** 6.0 feet

Core/2"

BORING METHOD: Hand Auger/Geoprobe TOTAL DEPTH DRILLED: 20 feet DATE DRILLED: 03/08/12

DRILLER: K. McGourty

LOGGED BY: W. Lindemuth

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
1						0.0 to 3.0 - FILL: Brown silt and coarse to fine sand; little coarse to fine gravel. Dry; no odor; no staining.
2 _						
3 _		Hand	ND	1R-22.1-ENV-10/2		
4 _		cleared	113			3.0 to 4.0 - FILL: Brown, coarse to fine sand; little silt, trace coarse to fine gravel. Dry; no odor; no staining.
_ 5 _						4.0 to 6.0' - FILL: Brown, coarse to fine sand; little coarse to fine gravel, trace coal. Dry; no odor; no staining.
6 _					0.44	
7 _				1R-22.1-ENV-10/6	SW	6.0 to 15' - Brown to gray, coarse to fine SAND; some coarse to fine, rounded gravel. Wet; no odor; no staining.
8 _		32	ND			
9 _						
_ 10 _						
_ 11 _						
_ 12 _						
_ 13 _		45	ND			
_ 14 _						
15						

BORING NUMBER

1R-22.1-ENV-10

57 E. V	Villow Stree	t, Millburn, N	J 07041	(973) 564-6006					IK-22.1-ENV-10
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	N				CATION AND COMMENTS
			ND		SW				AND; little fine gravel, trace
16			ND			shell	s. Wet; no odor; no stain	ing.	
			ND						
17			ND						
_ ` _		1	ND						
18		60	ND						
			ND						
19			ND						
_ '		-	5.5		ОН	19 to	20' - Gray-black CLAY;	trac	e vegetation. Wet; slight sulfur-
20		-	1.3			like c	dor; no staining.		
_ 20 _							End o	f bo	ring at 20'.
									•
		_				Note	: Borehole backfilled with	า รด	il cuttings and restored to grade.
									g
		1							
		-							
		_							
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BORING NUMBER

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

1R-22.1-ENV-11

PROJECT NAME:

Spectra NJ-NY Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water

Environmental Services

SAMPLER TYPE/DIA.: Hand Auger/Macro-Core/2"

DEPTH TO WATER: 4.0 feet

DATE DRILLED: 03/07/12

DRILLER: J. Lamprecht

BORING METHOD: Hand Auger/Geoprobe TOTAL DEPTH DRILLED: 20 feet

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)		SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
1						0 to 8.5' - FILL: Red-brown to brown to gray, medium to fine sand; some coarse to fine, sub-angular to rounded gravel, little silt, root materials and cobbles. Dry to 3.0', moist to 4.0'; medium dense.
2						
				1R-22.1-ENV-11/2		
_ 3 _		Hand cleared	ND			
4						Wet at 4.0'.
5						wei at 4.0.
_ 6 _			ND			
7			ND			
			ND 0.9	1R-22.1-ENV-11/7.5		
_ 8 _		48	17.0	IR-22.1-ENV-11/7.5		
9			19.8		ОН	8.5 to 11.5' - Black to gray CLAY; little silt, trace fine sand. Wet; loose; petroleum-like odor.
10			9.8 7.0			1003e, petroleum-like odor.
			0.3			
_ 11 _			0.8 0.5			
12			0.3		sc	11.5 to 15' - Gray, coarse to fine SAND; little fine, rounded gravel,
		56	0.2			trace silt. Two 6" bands of dark gray CLAY, little silt and trace fine sand from 12 to 12.5' and 14 to 14.5'. Wet; loose. Petroleum-like
_ 13 _			0.1 ND			odor from 12 to 12.5' and 14 to 14.5'.
14			0.2			
15			ND ND			

BORING NUMBER

Environmental Corporation | SOIL BORING LOG

BORING NUMBER

1R-22.1-ENV-12

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

Spectra NJ-NY Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water

Environmental Services

SAMPLER TYPE/DIA.: Hand Auger/Macro-

DEPTH TO WATER: 4.0 feet

Core/2"

BORING METHOD: Hand Auger/Geoprobe TOTAL DEPTH DRILLED: 20 feet DATE DRILLED: 03/07/12

DRILLER: K. McGourty

LOGGED BY: W. Lindemuth

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
_ 0 _						
_ 1 _					SM	0.0 to 4.0' - Brown SILT; some coarse to fine sand, little coarse to fine gravel. Moist; no odor; no staining.
_ 2 _				1R-22.1-ENV-12/1		
_ 3 _		Hand cleared	ND			
_ 4 _		cieared			SW	4.0 to 6.0 - Brown, coarse to fine SAND; little coarse to fine
_ 5 _				1R-22.1-ENV-12/5	Ovv	gravel. Wet; no odor; no staining.
6 _				11(22.1 21(1 12)		6.0 to 10' - No recovery.
_ 7 _						o.o to 10 No recovery.
_ 8 _		ND	ND			
9 _						
_ 10 _					sc	10 to 19' - Gray to gray-black, coarse to fine SAND and CLAY.
_ 11 _						Wet; no odor; no staining.
_ 12 _		2	ND			
_ 13 _						
_ 14 _ 15						

Environmental Corporation | SOIL BORING LOG

BORING NUMBER

1R-22.1-ENV-13

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

Spectra NJ-NY Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water

Environmental Services

SAMPLER TYPE/DIA.: Hand Auger/Macro-

DEPTH TO WATER: 4.0 feet

Core/2"

BORING METHOD: Hand Auger/Geoprobe TOTAL DEPTH DRILLED: 20 feet DATE DRILLED: 03/07/12

DRILLER: J. Lamprecht

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
1 _						0 to 7.0' - FILL: Dark brown to orange-brown, coarse to fine sand and coarse to fine, angular to sub-rounded gravel; little silt, cobbles. Dry to 1.0', moist from 1.0 to 4.0'; loose to 1.0', medium
2 _				1R-22.1-ENV-13/1		dense from 1.0 to 7.0'.
_ 3 _		Hand	ND			
4 _		cleared				
_ 5 _						Wet at 4.0'.
6 _						
7			ND 1.7			
8		48	0.1 ND	1R-22.1-ENV-13/7		7.0 to 7.5' - FILL: Black to dark gray clay; little fine sand. Wet; loose; petroleum-like odor.
9		40	ND ND		SW	7.5 to 14' - Dark brown to dark gray, coarse to fine SAND; little medium to fine, angular to rounded gravel, trace silt. Wet; medium dense.
10			ND ND			dense.
11			ND ND			
12			ND ND			
13		44	ND ND			
14			0.5 ND			
15			ND ND		ОН	14 to 15' - Black to dark gray CLAY; little silt and fine sand. Wet; loose; petroleum-like odor.

BORING NUMBER

1R-22.1-ENV-13

57 E. V	Villow Stree	t, Millburn, N	J 07041	(973) 564-6006			3	OIL E	JUKII	NG LOC	9	1R-22.1-ENV-13
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED							ATION AND COMMENTS
			ND		SM							edium to fine SAND; trace silt
16			ND			and	fine	e, round	ded gra	vel. Wet;	loc	ose.
			ND									
17			ND									
- '' —			1.9									
18		51	1.7									
_ '0 _			0.5									
19			0.7		ОН	18.5	i to	20' - BI	lack to	dark grav	CL	AY; little silt and fine sand, roc
_ 18 _			ND									e; organic-like odor.
20		_	ND									
20			ND							End of I	hoi	ring at 20'.
										Liid oi i	001	g ut 20 :
							_					
						Note	e: B	orehole	e backti	lled with s	SOI	I cuttings and restored to grade
_												
_												
_												
_												
_												

BORING NUMBER

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

1R-22.1-ENV-14

PROJECT NAME:

Spectra NJ-NY Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water

Environmental Services

SAMPLER TYPE/DIA.: Hand Auger/Macro-

DEPTH TO WATER: 3.0 feet

Core/2"

BORING METHOD: Hand Auger/Geoprobe TOTAL DEPTH DRILLED: 20 feet DATE DRILLED: 03/07/12

DRILLER: K. McGourty

LOGGED BY: W. Lindemuth

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
1			ND ND		GM	0 to 0.5' - Brown SILT; some coarse to fine gravel, trace roots. Dry; no odor; no staining.
2			0.7 0.7		SW	0.5 - 7.0' - Brown, coarse to fine SAND; some coarse to fine gravel. Moist from 0.5 to 3.0'; no odor; no staining.
			0.7	1R-22.1-ENV-14/2		
_ 3 _		Hand cleared	ND ND			Wet at 3.0'.
_ 4 _			ND ND			
_ 5 _			ND 0.9			
6 _			0.9			
7			1.3 0.9			
8		36	4.9 7.2	1R-22.1-ENV-14/7	SM	7.0 to 10' - Brown/gray, coarse to fine SAND; little silt. No odor; no staining.
9		30	3.1 3.1			
			2.3 2.3			
_ 10 _			3.9		sc	10 to 15' - Black, coarse to fine SAND and CLAY. Wet; slight petroleum-like odor; no staining.
_ 11 _			4.7 7.8			potionality into outing.
_ 12 _		60	32.4 29.4			
_ 13 _		bU	16.4 312			
_ 14 _			224			
15						

BORING NUMBER

1R-22 1-FNV-14

57 E. \	Willow Stree	t, Millburn, N	J 07041	(973) 564-6006					1R-22.1-ENV-14
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	(ppm)	SAMPLE DESIGNATION	UNIFIED				CATION AND COMMENTS
			36.2		PT	15 to	18' - Brown PEA	T. Moist; st	rong sulfur-like odor; no staining.
16			48.1						
			53.2						
17			72.5						
		50	41.1						
_ 18 _		_	17.1		011	10 40	201 Crov Cl AV		Majati maada mata ayılfı in lika
		_	13.2		ОП		no staining.	trace peat	t. Moist; moderate sulfur-like
19			6.4			ouoi,	no otaning.		
00									
_ 20 _								End of bo	ring at 20'.
									9
		1							
		1							
-						Note:	Borehole backfill	led with so	il cuttings and restored to grade.
_									
<u></u>									
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		1							
		1							

BORING NUMBER

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

1R-22.1-ENV-15

PROJECT NAME:

Spectra NJ-NY Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water

Environmental Services

SAMPLER TYPE/DIA.: Hand Auger/Macro-Core/2"

BORING METHOD: Hand Auger/Geoprobe

DEPTH TO WATER: 2.0 feet

TOTAL DEPTH DRILLED: 20 feet

DATE DRILLED: 03/09/12

DRILLER: C. Pederson

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
_ 1 _						0 to 6.0' - FILL: Red-brown to orange-brown, coarse to fine sand; some coarse to fine, sub-rounded to rounded gravel, little silt, roots at 0 to 1.0'. Moist; medium dense.
_ 2 _				1R-22.1-ENV-15/1		
3		Hand	ND			Wet at 2.0'.
4		cleared	140			
5						
6						
			ND ND			6. 0 to 7.0' - FILL: Gray, medium to fine sand; little silt. Wet; loose.
7 -			ND	4D 00 4 5NN 45 7 5		7.0 to 10' - FILL: Black to dark gray clay; little silt, trace fine sand. Wet; loose; petroleum-like odor; little staining; little sheen.
8 _		48	0.1 1.2	1R-22.1-ENV-15/7.5		3,
9 _			0.7 0.9			
_ 10 _			0.8 ND			10 to 11' - FILL: Gray, medium to fine sand; trace silt, shell
_ 11 _			ND ND			fragments. Wet; medium dense. 11 to 14' - FILL: Black to dark gray clay; little silt and fine sand.
_ 12 _			ND 0.8			Wet; loose.
_ 13 _		55	5.4 8.8			
_ 14 _			51.3 ND		рт	14 to 15' - Gray-brown PEAT; little clay, trace silt. Wet, medium
15			ND ND		FI	dense.

Environmental Corporation | SOIL BORING LOG

BORING NUMBER

1R-22.1-ENV-16

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

Spectra NJ-NY Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water

Environmental Services

SAMPLER TYPE/DIA.: Hand Auger/Macro-

DEPTH TO WATER: 3.0 feet

Core/2"

BORING METHOD: Hand Auger/Geoprobe TOTAL DEPTH DRILLED: 20 feet DATE DRILLED: 03/09/12

DRILLER: S. Pederson

LOGGED BY: W. Lindemuth

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
			ND		OL	0.0 to 5.0 - Light brown to brown-gray SILT and CLAY; little coarse
1 _			ND			to fine sand. Moist; no odor; no staining.
			ND			
_ 2 _			ND			
			ND	1R-22.1-ENV-16/2		
3 _		Hand cleared	ND			Wet at 3.0'.
		cleareu	ND ND			vvei at 3.0.
_ 4 _			1.6			
_			1.6			
_ 5 _			1.8	1R-22.1-ENV-16/5	ОН	5.0 to 10' - Gray-brown CLAY; little silt, trace vegetation. Wet; no
6			1.8	22 2 10,0		odor; no staining.
⊢			1.4			
7			1.4			
			1.1			
8		33	1.1			
		33	1.3			
9			1.3			
			1.9			
_ 10 _			2.4		.	
			359.1		ОН	10 to 17' - Gray CLAY; some peat. Moist; strong sulfur-like odor; no staining.
_ 11 _			160.3			no staining.
40			117.4 78			
_ 12 _			78 139			
10		37	ND			
_ 13 _			ND			
14			ND			
├ '* ┤			ND			
15			ND			

BORING NUMBER

1R-22.1-ENV-16

57 E. \	Willow Stree	t, Millburn, N	J 07041	(973) 564-6006					1K-22.1-ENV-10
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)		SAMPLE DESIGNATION	UNIFIED		LITHOLOG	IC CLASSIFIC	CATION AND COMMENTS
			139						
16		1	1609						
		1	8605						
17		1	159						
		1	270		РТ			AT and WO	OD. Moist; strong sulfur-like odor:
18		29	ND			no s	aining.		
		1	ND		SW			rse to fine SA	AND. Moist; strong sulfur-like
19		1	ND			odor	no staining.		
_		1	ND						
20		1	ND						
								End of bo	oring at 20'.
		1							
		1							
		1							
		1				Note	: Borehole back	filled with so	il cuttings and restored to grade.
		1							
		1							
		1							
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		1							
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Environmental Corporation SOIL BORING LOG

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

1R-22.1-ENV-17

BORING NUMBER

PROJECT NAME:

Spectra NY/NJ

Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water Environmental

Services

SAMPLER TYPE/DIA.: Hand Auger

BORING METHOD: Hand Auger

DEPTH TO WATER: 3 Feet

TOTAL DEPTH DRILLED: 8 Feet

DATE DRILLED: 09/19/12

DRILLER: K. McCourty

U. Hallaceli

LOGGED BY: J. Nichols

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)		SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						Unpaved.
1 _			2.0		SW	0.0 to 3.0' - Brown fine to medium sand, some medium, rounded gravel, little medium to coarse, rounded gravel.
_ 2 _			0.6	1R-22.1-ENV- 17/0-4		
_ 3 _			2.0			Wet at 3' 3.0 to 4.0' - Brown to dark brown fine to medium SAND; little silt.
4			0.6			Wet.
5			1.0		SW	4.0 to 5.0' - Dark brown, fine SAND: little silt, little fine to medium, rounded gravel. Saturated, slight odor.
					SM	5.0 to 8.0' - Dark brown SAND and SILT. Wet, odor.
_ 6 _			2.1	1R-22.1-ENV- 17/4-8		
7 _			3.5			
_ 8 _			1.1			
						End of Boring at 8 feet Note: Borehole backfilled with soil cuttings & restored to grade.
						1R-22.1-ENV-17-WC/2 thru 8 collected for TPHC analysis every 2 feet.
_						1R-22.1-ENV-17-WC composited for waste characterization
_						analyses.

Environmental Corporation | SOIL BORING LOG

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

BORING NUMBER

1R-22.1-ENV-18

PROJECT NAME:

Spectra NY/NJ

Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

SAMPLER TYPE/DIA.: Hand Auger

CONTRACTOR: Land Air Water Environmental

Services

DEPTH TO WATER: 3 Feet

DATE DRILLED: 09/25/12

DRILLER: K. McCourty U. Hallaceli

LOGGED BY: J. Nichols

BORING METHOD: Hand Auger TOTAL DEPTH DRILLED: 8 Feet

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)		SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
_ 0 _ _ 1 _ _ 2 _			ND ND	1R-22.1-ENV- 18/0-4		Unpaved. 0.0 to 2.0' - Brown fine to medium SAND; some silt, little small, rounded gravel, trace organics 2.0 to 3.0' - Dark brown fine to medium SAND and SILT, trace organics.
- 3 - - 4 - - 5 - - 6 - - 7 -			2.41.41.61.31	1R-22.1-ENV- 18/4-8		3.0 to 8.0' - Dark brown SILT and SAND. Wet, odor. Wet at 3'
- 8 - 						End of Boring at 8 feet Note: Borehole backfilled with soil cuttings & restored to grade. 1R-22.1-ENV-18-WC/2 thru 8 collected for TPHC analysis every 2 feet. 1R-22.1-ENV-18-WC composited for waste characterization analyses.

Environmental Corporation SOIL BORING LOG

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

BORING NUMBER

1R-22.1-ENV-19

PROJECT NAME:

Spectra NY/NJ

Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water Environmental

Services

SAMPLER TYPE/DIA.: Hand Auger

BORING METHOD: Hand Auger

DEPTH TO WATER: 5 Feet

TOTAL DEPTH DRILLED: 8 Feet

DATE DRILLED: **09/25/12**

DRILLER: K. McCourty

U. Hallaceli

LOGGED BY: J. Nichols

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)		SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						Unpaved.
1 _			1.0		SW	0.0 to 3.0' - Brown, fine to medium SAND; little small, rounded gravel, trace to little organics.
_ 2 _			0.4			
_ 3 _			0.6	1R-22.1-ENV-19/3	SM	3.0 to 5.0' - Brown to dark brown SAND and SILT. Slight odor.
4 _			4.2			
_ 5 _			3.7			Wet at 5' 5.0 to 8.0' - Dark brown, very fine SAND and SILT. Wet, odor.
6 _			1.7			, , , , , , , , , , , , , , , , , , ,
7 _			2.2	1R-22.1-ENV-19/7		
8 _			1.6			End of Boring at 8 feet
						Note: Borehole backfilled with soil cuttings & restored to grade.
						1R-22.1-ENV-19-WC/2 thru 8 collected for TPHC analysis every 2 feet.
						1R-22.1-ENV-19-WC composited for waste characterization analyses.

Environmental Corporation SOIL BORING LOG

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

1R-22.1-ENV-20

BORING NUMBER

PROJECT NAME:

Spectra NY/NJ

Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water Environmental

Services

SAMPLER TYPE/DIA.: Hand Auger

BORING METHOD: Hand Auger

DEPTH TO WATER: 4 Feet

TOTAL DEPTH DRILLED: 8 Feet

DATE DRILLED: **09/25/12**

DRILLER: K. McCourty

U. Hallaceli LOGGED BY: J. Nichols

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						Unpaved.
1 _			1.0		SW	0.0 to 3.0' - Brown fine to medium SAND; little small, rounded gravel, little organics.
_ 2 _			0.4			
3 _			0.6	1R-22.1-ENV-20/3	SM	3.0 to 4.0' - Dark brown SILT and SAND. slight odor.
4 _			4.2			Wet at 4' 4.0 to 8.0' - Dark brown, very fine SILT and SAND. Wet, odor.
_ 5 _			3.7	1R-22.1-ENV-20/5		
6 _			1.7			
7 -			2.2			
8 –			1.6			End of Boring 8 feet.
_						Note: Borehole backfilled with soil cuttings & restored to grade. 1R-22.1-ENV-20-WC/2 thru 8 collected for TPHC analysis every 2 feet.
						1R-22.1-ENV-20-WC composited for waste characterization analyses.
_						
_						

Environmental Corporation SOIL BORING LOG

BORING NUMBER

1R-22.1-ENV-4

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

Spectra NJ-NY

Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water

Environmental Services

SAMPLER TYPE/DIA.: Macrocore/2"

DEPTH TO WATER: 5 feet

BORING METHOD: Geoprobe Direct Push TOTAL DEPTH DRILLED: 15 feet DATE DRILLED: 07/07/11

DRILLER: K. McGourty

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
1						0 to 1.0' - FILL: Brown silt, little clay, trace fine gravel. Moist, roots.
2				1R-22.1-4/1		1.0 to 5.0' - FILL: Brown, medium to fine sand, little sub-rounded
3		24	ND			gravel, trace silt. Moist.
4						
5						
6				1R-22.1-4/5		5.0 to 6.0' - FILL: Brown, fine sand, little clay, trace gravel. Wet.
7						6.0 to 10' - FILL: Gray brown, coarse to fine sand, little subrounded medium to fine gravel, trace silt. Wet.
8		15	ND			
9						
10						
11			196		OL	10 to 15' - Gray CLAY, little peat. Moist.
12			32.1			
13		30	195			
14			368 407			
15			362			End of Boring @ 15'

Environmental Corporation SOIL BORING LOG

BORING NUMBER

1R-22.1-ENV-5

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

Spectra NJ-NY Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water

Environmental Services

SAMPLER TYPE/DIA.: Macrocore/2"

DEPTH TO WATER: 5 feet

BORING METHOD: Geoprobe Direct Push

TOTAL DEPTH DRILLED: 15 feet

DATE DRILLED: 07/07/11

DRILLER: K. McGourty

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0 _						0 to 1.0' - FILL: Brown, medium to fine sand; some silt. Moist,
1						roots.
<u> </u>				1R-22.1-5/1		
2						1.0 to 5.0' - FILL: Brown silt; little clay, trace fine sand. Moist, roots.
		24	ND			
_ 3 _		24	ND			
_ 4 _						
_						
5 _						5.0 to 6.5' - FILL: Gray, medium to fine sand; little medium to fine
6			ND			sub-rounded gravel, trace silt. Wet, roots.
				1R-22.1-5/6		
7			ND		OL	6.5 to 10.0' - Grayish brown CLAY and PEAT. Moist, odor.
		36				
8 _			0.2			
			8.3			
9 _			39.2			
10			54.4			
- '0 -			47.1		OL	10.0 to 13.0' - Gray CLAY; trace fine sand. Moist, roots, odor.
11						
			57.3			
12			45.1			
		40				
_ 13 _			42.3		рт	13.0 to 15.0' - Dark brown to black PEAT. Moist, odor.
14			73.6		F 1	13.0 to 13.0 - Daik blowil to black FEAT. Moist, Odol.
_ 14 _			57.6			
15			68.5			End of Boring @ 15'

SAMPLER TYPE/DIA.: Hand Auger/ Macrocore/2"

DEPTH TO BEDROCK: Not Encountered

TOTAL DEPTH DRILLED: 20 feet

Environmental Corporation

SOIL BORING LOG 57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

WELL NUMBER

1R-22.1-ENV-6W

PROJECT NAME: Spectra NJ-NY Expansion **LOCATION:** Staten Island, New York

CONTRACTOR: Land Air Water Environmental **PROJECT NO.: 168217**

Services

TYPE OF WELL: Temporary

DRILLING METHOD: Hollow Stem Auger

TEMPORARY WELL AND

BIT TYPE: Auger Bit

START DATE: 07/06/11 FINISH DATE: 07/06/11 DRILLER: K. McGourty

LOGGED BY: B. Chaky DEPTH **BLOW** RECOVERY PID SAMPLE WELL FROM COUNT SURFACE (INCHES) (ppm) DESIGNATION DIAGRAM LITHOLOGIC CLASSIFICATION AND COMMENTS PER 6 IN. (FEET) 0 0 to 5.0' - FILL: Brown, medium to fine sand; some medium gravel, little silt, trace roots, trace concrete, trace cobbles. Wet @ 3', subangular to sub-ND ND 2 Hand Cleared 3 T ND 4 5.8 1R-22.1-6W/4 5 SW 5.0 to 10' - Brown, coarse to fine SAND; some medium to fine gravel, trace 1R-22.1-6W/5 silt. Wet, sub-rounded. 13.3 6 7 8 8 5.7 9 10 SM 10 to 15' - Dark gray to dark brown, medium to fine SAND; little silt, little clay, 72.9 trace roots. Wet, petroleum-like odor. 11 12 105 15 13 14 89.8 15 STATIC WATER LEVEL: 3.00 (07/07/11) feet below surface CASING TYPE/DIAMETER (IN.) INNER: PVC/3 OUTER: DEPTH WATER ENCOUNTERED: ______ feet below surface SCREENED OR OPEN INTERVAL: MEASURING POINT ELEVATION: (FEET BELOW SURFACE) GROUND SURFACE ELEVATION: ft.msl



TRC Environmental Corporation

TEMPORARY WELL AND SOIL BORING LOG

WELL NUMBER 1R-22.1-ENV-6W

57 E.		et, Millburn,	NJ 0704	1 (973) 564-6006	-		S	SOIL BORING LOG	1R-22.1-ENV-6W
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	WELL DIAGRA	ιM	UNIFIED		SIFICATION AND COMMENTS
			25.8			-	SW	15 to 20' - Dark gray, medium to fir clay. Wet, petroleum-like odor.	ne SAND; little medium to fine gravel, little
16			9.7			-		, , , , , , , , , , , , , , , , , , , ,	
17						_			
4.0		30	39.4			-			
_ 18 _			47.2			-			
19									
20			16.3			-			
_ 20 _								End o	of boring at 20'
]							
								Well Co	nstruction Details
								0 to 20 ft. below surface - 3" di	ameter 0.010 slot PVC screen
_								0 to 20 ft. below surface - No. 0	01 sand
L _									
<u> </u>									
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]							

Environmental Corporation | SOIL BORING LOG

BORING NUMBER

1R-22.1-ENV-7

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

Spectra NJ-NY Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water

Environmental Services

SAMPLER TYPE/DIA.: Hand Auger/Macro-

DEPTH TO WATER: 1.5 feet

Core/2"

BORING METHOD: Hand Auger/Geoprobe TOTAL DEPTH DRILLED: 20 feet DATE DRILLED: 03/08/12

DRILLER: K. McGourty

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
1						0.0 to 5.0' - Fill: Brown, fine to coarse, sand with fine to coarse, sub-angular to rounded gravel and trace silt. Medium dense, wet at 1.5 feet below grade, cobbles and shell material.
2				1R-22.1-ENV-7/2		
3		Hand	ND			
4		cleared				
5						
6				1R-22.1-ENV-7/5	ОН	5.0 to 6.5' - Black CLAY; some silt, trace fine sand. Wet, loose.
7			2.7		sc	6.5 to 10.5' - Dark gray/brown, fine SAND; some clay, little silt.
8		12	2.1			Wet, loose.
9		12	0.5			
10			0.5			
11					ОН	10.5 to 15.5' - Dark gray to black CLAY; some silt, trace fine sand. Wet, loose.
12			ND			
13		17	ND			
_ 14 _ 15			1.9			

BORING NUMBER

57 E. V	Villow Street	t, Millburn, N	J 07041	(973) 564-6006	30IL B	OKING LO	,,	1R-22.1-ENV-7		
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED		LITHO	DLOGIC CLAS	SIFIC	CATION AND COMMENTS
			1.3		БТ	45.5) // DE		Pod Ne Pod I AA 1 4
_ 16 _		<u> </u>	0.5 11.2		ы		to 20.0° - 0 um-dense		=A I ;	little silt, little clay. Moist,
17			25.4							
		47	13.8							
_ 18 _			34.7							
19		-	93.6							
_ '' _		-	81.2							
_ 20 _			01.2							
		-						End	of bo	ring at 20'.
<u> </u>		-								
]								
						Note:	Borehole	backfilled wit	h so	il cuttings and restored to gra
							20.00.0			catango ana roctoroa to gra
		<u> </u>								
_		-								
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L]								
<u> </u>										
		-								

BORING NUMBER

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

1R-22.1-ENV-8

PROJECT NAME:

Spectra NJ-NY Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water

Environmental Services

DATE DRILLED: 03/08/12

SAMPLER TYPE/DIA.: Hand Auger/Macro-Core/2"

DEPTH TO WATER: 3.0 feet

DRILLER: K. McGourty

BORING METHOD: Hand Auger/Geoprobe

TOTAL DEPTH DRILLED: 20 feet

LOGGED BY: W. Lindemuth

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
1			ND ND		OL	0.0 to 3.0 - Gray-brown SILT and CLAY; some coarse to fine gravel. Dry; no odor; no staining.
2			ND ND			
3		Hand	ND ND			
4 _		cleared	ND ND		SC	3.0 to 6.0 - Gray-brown to gray-black, coarse to fine SAND; some clay, little coarse to fine, rounded gravel. Wet; no odor; no staining.
_ 5 _			0.9 0.9	1R-22.1-ENV-8/4		
_ 6 _			1.2	1R-22.1-ENV-8/5.5		No recovery from 6.0 to 10' West at 6.0'
7 _						No recovery from 6.0 to 10'. Wet at 6.0'
_ 8 _		ND	ND			
9 _						
_ 10 _			42.1		ОН	10 to 14.5' - Black CLAY; little silt. Moist; slight petroleum-like
_ 11 _			31.2			odor; no staining.
_ 12 _		20	1.0 1.7			
_ 13 _		36	4.0 ND			
_ 14 _			ND ND		SM	14.5 to 15' - Black, fine SAND; some silt. Moist; slight petroleum-
15			ND			like odor; no staining.

BORING NUMBER

1R-22.1-FNV-8

57 E. V	57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006								1R-22.1-ENV-8
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	(ppm)	SAMPLE DESIGNATION	UNIFIED				CATION AND COMMENTS
			1.3		ОН			CLAY; little peat.	. Moist; slight sulfur-like odor; no
_ 16 _			1.4			stainir			
			3.0		PT	16 to 2	20' - Brown	PEAT. Moist; s	light sulfur-like odor; no staining.
_ 17 _			97.2						
		50	157.1						
18			332						
			242						
19			412						
			ND						
_ 20 _			ND					F., .,	rein n. at 001
								End of bo	oring at 20'.
_									
_									
<u> </u>						Natai	Darahala h	م ماداند اممالناد م	il autting an and restaural to grade
						note:	Borenoie b	ackilled with so	il cuttings and restored to grade.
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		-							
<u> </u>		4							
		4							
<u> </u>		4							
		4							
<u> </u>		4							
		4							
<u> </u>		4							
		4							
<u> </u>		1							

Environmental Corporation | SOIL BORING LOG

BORING NUMBER

1R-22.1-ENV-9

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

Spectra NJ-NY **LOCATION:** Staten Island, New York Expansion

CONTRACTOR: Land, Air, Water **PROJECT NO.:** 168217

Environmental Services

SAMPLER TYPE/DIA.: Hand Auger/Macro-**DEPTH TO WATER:** 6.0 feet

Core/2"

BORING METHOD: Hand Auger/Geoprobe TOTAL DEPTH DRILLED: 20 feet DATE DRILLED: 03/08/12

DRILLER: K. McGourty

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0 _						
1 _						0.0 to 6.0' - FILL: Gray clay and brown silt; little fine, sub-rounded gravel, fine to medium sand and root material. Moist, loose, reworked clay, cobbles.
2 _						
_ 3 _		Hand cleared	ND			
_ 4 _		cicarca		1R-22.1-ENV-9/3		
_ 5 _						
6 _			0.8	1R-22.1-ENV-9/6		6.0 to 8.0' - FILL: Gray clay; little silt; trace fine, rounded gravel;
7 _			0.6	11(22.1 2111 0/0		trace fine sand. Wet at 6.0', loose, three-inch peat layer at 3.5'.
8 _		43	0.5			8.0 to 10.0' - FILL: Gray, fine to medium clay; little sub-rounded to
9 _			0.2			rounded gravel, trace silt. Wet, medium-dense.
_ 10 _			ND 0.0			10.0 to 10.5' - FILL: Gray, fine to medium sand; little fine, sub-
_ 11 _			2.5 11.6			rounded gravel; trace silt. Wet, loose. 10.5 to 15' - FILL: Black clay, little silt. Wet, loose, petroleum-like
_ 12 _		49	9.3			odor.
_ 13 _			6.9 15.1			
_ 14 _			2.3			
15			0.4			

O T	RC	Enviro	nmei	ntal Corpo	rati	on	SOIL BORING LOG	BORING NUMBER	
57 E. V	Villow Stree	t, Millburn, N	J 07041	(973) 564-6006			1R-22.1-ENV-9		
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED		LITHOLOGIC CLASSIFICATION AND COMMENTS		
_ 16 _					SW	roun	to 20.0' - Gray, fine to mediu ded to rounded gravel, trace acro-Core, little shell materia	silt. Wet, loose, black clay in tip	
_ 17 _ _ 18 _		55	ND						
_ 19 _									
_ 20 _							End of bo	ring at 20'.	
						Note	e: Borehole backfilled with so	il cuttings and restored to grade.	
_									
_									

Environmental Corporation SOIL BORING LOG

BORING NUMBER

1R-22.1-HDD-1

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

Spectra NJ-NY Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Warren George, Inc.

SAMPLER TYPE/DIA.: BORING METHOD:

PROJECT NAME:

Stainless steel spoon/2" Mud rotary / **DEPTH TO WATER:** 5.0 feet

TOTAL DEPTH DRILLED: 21 feet

DATE DRILLED: 10/27/10

DRILLER: O. Sanchez

LOGGED BY: C. Nichol

		Tri cone rolle	er bit			
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						Unpaved
			ND	No Samples		0.0 to 4.0' - FILL: Reddish-brown, fine to medium sand; trace silt,
1			ND	Collected		trace roots. Loose. Increasing silt composition towards 3'. Wood
			ND			pieces from 2.5 to 3.0'.
2			ND			
			ND			
3 _			ND			
		Hand cleared	6.3			
_ 4 _			1.5		CL	4.0 to 7.0' - Red and black, CLAY; some silt. Slight odor, moist. Varved red/black from 4 to 5'. Some fine sand towards 7'. Wet @
			0.9			5'.
_ 5 _			2			
			2.8			
_ 6 _			22.3			
_			8.9 33.3			
7 –			3.8		CI	7.0 to 9.0' - Black SILT; some clay.
8	Weight of		4.3		-	The to one Black Oler, come day.
⊢ ° −	Hammer	18	2.9			
9			1.1			
├						9.0 to 11' - Continuous drilling; no spoons collected.
10						
11			ND			
			ND		ML	11 to 13' - (lithology from ends of shelby tube) Dark gray, SILT;
12						trace fine sand, trace shells. Shelby tube collected from 11 to 13'.
_ 13 _					. ـ ا	
			48.6		OL	13 to 15' - Gray, PEAT; and organic silt. Organic odor, no visible signs of contamination
_ 14 _	Weight of	24	82			jaigna oi contanination
	Hammer		143.1			
15			51.1			

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

BORING NUMBER

1R-22.1-HDD-1

3/ E	. willow sire	et, Milliburn, NJ	07041	913) 304-0000		
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
16	Weight of Hammer	14	63.6 84.2 32.4		OL	15 to 17' - Gray, PEAT; and organic silt. Organic odor, no visible signs of contamination
_ 17 _						17 to 19' - Continuous drilling; no spoons collected.
_ 18 _						17 to 19 - Continuous animing, no spoons conected.
19						
20	Weight of Hammer	24	516 873 431		OL	19 to 21' -Gray, PEAT; and organic silt. Strong organic odor, no visible signs of contamination
_ 21 _						End of boring lithology @ 21'
						Borehole extended to 99'
						Note: Borehole grouted in accordance with N.J.A.C. 7:9D-3.1
_						
_						
_						
_						
<u> </u>						
<u> </u>						

BORING NUMBER

1R-22.1-HDD-2

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

Spectra NJ-NY PROJECT NAME: Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Warren George, Inc.

SAMPLER TYPE/DIA.: Hand Auger/ Stainless

BORING METHOD:

steel spoon/2" Mud rotary /

DEPTH TO WATER: 1.5 feet

TOTAL DEPTH DRILLED: 22 feet

DATE DRILLED: 10/22/10

DRILLER: O. Sanchez

LOGGED BY: C. Nichol

		Tri cone rol	ler bit				
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFI	CATION AND COMMENTS
0							
1 _			ND	No Samples Collected		0.0 to 2.25' - ASPHALT; Intermitt borehole @ 1.5'.	ent layers of sand. Water in
_ 2 _			ND			2.25 to 4.5' - FILL: Reddish -brov sand; little silt. Wet, loose, petrol 4 to 4.5'.	vn to black, medium to coarse eum-like odor. Piece of wood from
_ 3 _		Hand	0.7 86.6			4 10 4.5 .	
_ 4 _		cleared	30 10.6			4.5 to 5.0' - FILL: Dark brown to be	olack, coarse to fine sand; and
_ 5 _			315 119			fine to coarse gravel. Wet. 5.0 to 6.5' - FILL: Black, medium Petroleum-like odor, separate ph	
6 _			219 230			bailed from borehole.	·
7 –			237		SP	6.5 to 7.0' - Reddish brown, coars coarse gravel. Wet, sheen, petro	
8 _		6	ND		SP	7.0 to 9.0' - Gray, fine to medium	SAND; little fine gravel. Wet.
9 _						9.0 to 16' - Continuous drilling. N	o spoons collected.
_ 10 _							
_ 11 _							
_ 12 _							
_ 13 _							
_ 14 _							
15							



57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

BORING NUMBER

1R-22.1-HDD-2

37 L.	Willow Otree	rt, Milliourii, it	10 070-1	(973) 304-0000								
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED			LITHO	LOGIC	CLAS	SIFIC	CATION AND COMMENTS
_ 16 _						40.4-	4.01	0		:- OU T	r/DF	A.T
_ 17 _		24	10 14.4		OL	16 10	18.	- Gray,	, organi	IC SIL I	I/PE	AT; organic odor.
18			24.8			10 to	20'	Conti	inuous	drilling	, No	spoons collected.
_ 19 _						10 10	. 20 -	- Conu	illuous	ariiirig	g. INO	spoons conected.
_ 20 _					OL	20 to	22' -	- Grav.	. organi	ic SILT	Γ/ΡΕ	AT; organic odor.
21 _		6	113						, - 3			, . 5
_ 22 _			110							End o	of bo	ring @ 22'
_												
_												
_												
_												
_												
_												
_												

BORING NUMBER

1R-22.1-HDD-3

PROJECT NAME:

Spectra NJ-NY Expansion

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Warren George, Inc.

DATE DRILLED: 07/27/11

SAMPLER TYPE/DIA.: Stainless Steel Split Spoon/1 3/8"

DEPTH TO WATER: 10 feet

DRILLER: T. Gregory

BORING METHOD: Mud Rotary/

TOTAL DEPTH DRILLED: 47.5 feet

Tri-cone roller bit

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
1 _				No samples collected.		0.0 to 10.0' - Continuous drilling; no spoons collected.
2 _						
3 _						
4 _						
5 _						
6 _						
7 _	_					
8 _						
9 _						
_ 10 _	WOH		05.4	·	DT	10 to 12' - Dark Brown PEAT; little silt, little clay, trace root
_ 11 _	WOH WOH	17	25.4 33.8 1253			material. Wet @ approximately 10', loose.
_ 12 _	WOH		1200			12 to 15' - Continuous drilling, no spoons collected.
_ 13 _						The to to continue diming, no openio conceto.
14 _						
15						



BORING NUMBER

1R-22.1-HDD-3

_						
DEPTH FROM SURFACE (FEET)		RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
_ 16	PUSH PUSH PUSH	24	ND			15' to 17' - Dark Brown PEAT; little silt, little clay, trace root material. Wet, loose.
_ 17	PUSH					17.0 to 20.0' - Continuous drilling; no spoons collected.
_ 18						J. 1
19						
_ 20	14				sw	20.0 to 22.0' - Gray brown, medium to fine SAND; some coarse to
21	22	14	ND			fine gravel, little silt. Wet, loose, sub-rounded.
22	22					22.0 to 25.0' - Continuous drilling; no spoons collected.
_ 23						22.0 to 20.0 Continuous drining, no spoons conceted.
_ 24						
25						
26	11 15	15	ND		SM	25.0 to 27.0' - Red brown, medium to fine SAND; some medium to fine gravel, little silt. Moist, dense, angular to sub-angular.
27	25 31					
28						27.0 to 30.0' - Continuous drilling; no spoons collected.
29						
30				•		
31	26 68	18	ND		GP	30.0 to 32.0' - Red brown, coarse to fine GRAVEL; some clay, little medium to fine sand. Moist, dense, angular.
32	90 46					
33						32.0 to 35.0' - Continuous drilling; no spoons collected.
34						
35						



BORING NUMBER

1R-22.1-HDD-3

57 E. Willow Street,	Millburn	N I 07041	(073	564-6006
or E. Willow Street,	williburn,	NJ 0/041	(9/3) 304-6006

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
	44				SM	35.0 to 37.0' - Red brown, fine SAND; some silt, little medium to
36	80	15	ND			fine gravel. Moist, dense, angular. Some decomposed rock at bottom 2".
	36	. •				Solidin 2.
37	50+					27.0 to 40.5! Continuous drillings no anagen collected
						37.0 to 40.5' - Continuous drilling; no spoons collected.
_ 38 _						
39						
_ 39 _						
40						
41						40.5 to 42.5' - Red brown, fine grained SHALE. Highly fractured,
		17	ND			highly weathered, 1/2" to 8" joint spacing, 0 to 90 degree fractures. RQD=0
42						
						42.5 to 47.5' - Red brown, fine grained SHALE. Highly fractured,
_ 43 _						highly weathered, 1" to 4" joint spacing, 0 to 70 degree fractures.
44						RQD=9%
F						
45		24	ND			
	_	34	ND			
46						
47						
						End of boring @ 47.5 Feet

BORING NUMBER TRC Environmental Corporation SOIL BORING LOG 57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006 1R-22.1-HDD-4 Spectra NJ-NY PROJECT NAME: LOCATION: Staten Island, New York Expansion **PROJECT NO.:** 168217 **CONTRACTOR**: Warren George Inc. DATE DRILLED: 2/24/2012 to 2/27/2012 DRILLER: J. Ware SAMPLER TYPE/DIA.: Hand Auger/ DEPTH TO WATER: 4 feet Stainless steel spoon/2" LOGGED BY: W. Lindemuth BORING METHOD: Mud Rotary/ Tricone TOTAL DEPTH DRILLED: 117 feet Roller Bit

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
1					ML	0.0 to 4.0' - Brown SILT and little fine to coarse gravel.
2						
3						
4		Hand Cleared	ND			Wet @ 3'.
_ 5 _						4.0 to 7.0' - Dark brown/black CLAY and SILT, wet at 4.0'.
_ 6 _						
7 _						
8 _	3	18	ND			7.0 to 7.5' - Black CLAY and fine to coarse GRAVEL. 7.5 to 9.0' - Gray/black organic PEAT.
9 _	1 2				01	
_ 10 _	WH 2	24	4.3 12.1		OL	9.0 to 11' - Gray CLAY and PEAT; slight sulfur-like odor.
_ 11 _	2		20.7 5.4			44 to 45! Continuous dilling no appaga collected
_ 12 _						11 to 15' - Continuous drilling - no spoons collected.
_ 13 _						
_ 14 _						
15						



TRC Environmental Corporation SOIL BORING LOG 1R-22.1-HDD-4

		-,,		(0.0) 000		
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
	WH		4.5		OH	15 to 16.5' - Gray CLAY.
16	WH	23	8.1			
F	WH		24.3			
17	WH		18.1		РТ	16.5 to 17' - Brown PEAT.
⊩ '' −	7711		10.1			17 to 20' - Continuous drilling - no spoons collected.
40						The Lot Committee and the opening committee and the committee and
_ 18 _						
_ 19 _						
_ 20 _						
	4		0.9		SM	20 to 22' - Gray fine SAND, some organics (vegetation).
21	5	17	8.0			
	7	''	0.5			
22	10		0.4			
						22 to 25' - Continuous drilling - no spoons collected.
23						
F						
24						
F 24 -						
0.5						
_ 25 _	40				SW	25 to 27' - Brown, fine SAND and fine to coarse GRAVEL.
	12				Ovv	25 to 27 - Brown, fille GAIND and fille to coarse GRAVEE.
26	10	13	ND			
	14					
_ 27 _	19					
						27 to 30' - Continuous drilling - no spoons collected.
28						
29						
30						
	14				SW	30 to 32' - Brown, fine to coarse SAND and fine GRAVEL.
31	16	1				
	12	11	ND			
32	7	1				
F 32 -						32 to 35' - Continuous drilling - no spoons collected.
22		1				3 / sp = 1 · · · · · · · · · · · · · · · · · ·
_ 33 _		1				
6.1		-				
_ 34 _		1				
		4				
35						



Environmental Corporation SOIL BORING LOG 1R-22.1-HDD-4

BORING NUMBER

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

	1				I .	
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
	7				SW	35 to 37' - Brown, fine to coarse SAND and fine GRAVEL.
36	10	_				
	9	7	ND			
37	7					
- " -	,					37 to 40' - Continuous drilling - no spoons collected.
20						3 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
_ 38 _						
_ 39 _						
_ 40 _						
	WH				ОН	40 to 42' - Red/brown CLAY and SILT; trace coarse sand.
41	8	13	ND			
	13	10	140			
42	27					
						42 to 45' - Continuous drilling - no spoons collected
43						
44						
_ ++ _						
45						
45	40.400/48				ОН	45 to 47' - Red/brown CLAY and SILT; some fine to coarse sand,
	42-100/4"				011	little fine gravel, dense.
_ 46 _	42-100/4"	8	ND			9
	42-100/4"					
_ 47 _	42-100/4"					47 (40 7) 0 () 1 ()
						47 to 48.7' - Continuous drilling - no spoons collected.
48						
						48.7 to 117' - Red/brown shale - bedrock.
49						
50		40	ND			
		18	ND			
51						
├						
52						
_ 32 _						
F0						
_ 53 _						
_ 54 _	-	29	ND			
55						

37 E.	E. Willow Street, Miliburn, NJ 07041 (973) 564-6006										
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED					CATION AND COMME	NTS
						48.7	' to 117' -	Red/brov	vn shale -	bedrock.	
56											
57											
58											
59											
		60	ND								
60			110								
61											
62											
63											
64											
		60	ND								
65											
66											
_ 67 _											
_ 68 _		-									
		-									
_ 69 _		_									
		60	ND								
_ 70 _											
_,		1									
_ 71 _		-									
		-									
_ 72 _	-										
70		-									
_ 73 _		-									
7.4		60	ND								
_ 74 _		1									
75		1									
75		<u> </u>									

37 L.	57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006									
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED					CATION AND COMMENTS
						48.7	' to 117' -	Red/brow	n shale -	bedrock.
76		1								
77										
78										
79										
80										
81										
82										
		114	ND							
83		'''	110							
84										
85										
86										
87										
88										
89										
_ 90 _		-								
		-								
91		-								
		-								
92		120	ND							
		-								
_ 93 _		-								
6.1										
_ 94 _		-								
O.F		-								
95		<u> </u>	<u> </u>		<u> </u>					

J, L.		.,	- V1 U7 I	(973) 564-6006		
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	
						48.7 to 117' - Red/brown shale - bedrock.
96						
97						
98						
_ 99 _						
100		-				
_ 100 _						
101		1				
_ ''' _		1				
102						
		116.5	ND			
_ 103 _		110.5	ND			
_ 104 _						
_ 105 _						
400						
_ 106 _						
107						
108						
109						
_ 110 _						
		-				
_ 111 _		1				
112		-				
- ' ' -		120	ND			
113						
		1				
114]				
115						

37 E.	willow Stree	t, Williburn, N	J 07041	(973) 564-6006	111 = 211 113 3	
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
						48.7 to 117' - Red/brown shale - bedrock.
116						
F 110 -		-				
117						
						End of TRC observation of boring at 117'
F -		1				
		+				
<u> </u>						
		1				
		1				
⊢ –		1				
		1				
<u> </u>						
		1				
<u> </u>						
		1				
⊢ –		-				
		4				
L _]				
		1				
F -		1				
		1				
L _		1				
		1				
		1				
F -		1				
		1				
L _		1				
		1				
		1				
⊢ −		1				
		4				
L _		1				
		1				
		1				
<u> </u>	<u> </u>	1		<u> </u>	<u> </u>	

TEMPORARY WELL AND SOIL BORING LOG 57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

WELL NUMBER

1R-22.1H-ENV-1W

SAMPLER TYPE/DIA.: Hand Auger/ Macrocore/2"

DEPTH TO BEDROCK: Not Encountered TOTAL DEPTH DRILLED: 20 feet

PROJECT NAME: Spectra NJ-NY Expansion **LOCATION:** Staten Island, New York

CONTRACTOR: Land Air Water Environmental **PROJECT NO.:** 168217

Services

TYPE OF WELL: Temporary

DRILLING METHOD: Hollow Stem Auger

BIT TYPE: Auger Bit

START DATE: 07/05/11 FINISH DATE: 07/06/11 DRILLER: K. McGourty

LOGGED BY: B. Chaky

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	WELL DIAGRAM	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
_ 0 _							0 - 3.0' - FILL: Brown, medium to fine sand, medium gravel, little silt, trace
_ 1 _							roots, clay pipe material, shells. Wet @ 1'.
2 _							
_ 3 _		Hand Cleared	ND	1R-22.1H-1W/2		SM.	3.0 to 6.0' - Gray brown, medium to fine SAND, some clay, little silt. Wet.
4 _						SIVI	3.0 to 6.0 - Gray brown, medium to line SAND, some day, little slit. Wet.
_ 5 _							
_ 6 _			ND ND			0.1	
7 _			ND	1R-22.1H-1W/6		CL	6.0 to 10' - Gray brown CLAY, trace silt, trace roots. Moist, slight odor.
_ 8 _		36	0.2				
9 _							
10			9.2 16.3				
_ 11 _			ND ND				10 to 11' - Dark gray, medium to fine SAND, little silt, little clay. Wet, odor.
12			2.1			OL	11 to 15' - Dark gray CLAY, trace roots, trace shells. Moist.
13		48	5.4 7.3				
14			52.1				
15			24.6 19.8				
CASING T	YPE/DIAME	TER (IN.)					STATIC WATER LEVEL: 3.12 (07/06/11) feet below surface
INNER:	PVC/3	OUTER:		N/A		D	EPTH WATER ENCOUNTERED:1 feet below surface
SCREE		N INTERVAL: DW SURFACE)		0 - 20			MEASURING POINT ELEVATION: NA ft.msl GROUND SURFACE ELEVATION: NA ft.msl



TEMPORARY WELL AND SOIL BORING LOG

WELL NUMBER

1R-22.1H-ENV-1W

57 E.		et, Millburn,	NJ 0704	1 (973) 564-6006			SOIL BORING LOG 1R-22.1H-ENV-1				
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	WELL DIAGRAI	М	LITHOLOGIC CLASSIFICATION AND COMMENTS				
			15.4				SM	15 to 20' - Dark gray, medium to fi	ne SAND, little silt. Wet, slight odor.		
_ 16 _					<u> </u>						
17			21.6		 						
- '' -			21.0								
18		24									
			27.1								
_ 19 _					 						
20			35.2								
					un madelelel	• 0000000000000		End o	of boring at 20'		
<u> </u>											
								Well Co	nstruction Details		
								0 to 20 ft. below surface - 3" di			
]						0 to 20 ft. below surface - No. 0	on sand		
<u> </u>											
L _											
<u> </u>											
<u> </u>											
L _											
<u> </u>											
		1									

PROJECT NAME:

Environmental Corporation SOIL BORING LOG

BORING NUMBER

NYC-2-PIP-1

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

Spectra NJ-NY Expansion

LOCATION: New York, New York

PROJECT NO.: 168217

CONTRACTOR: Warren George, Inc.

SAMPLER TYPE/DIA.: Split Spoon **DEPTH TO WATER:** 5.0 feet

BORING METHOD: Mud Rotary / Tri-

cone Roller Bit

TOTAL DEPTH DRILLED: 205 feet

DATE DRILLED: 11/2/11-11/8/11

DRILLER: C. Moreira

LOGGED BY: B. Bermingham

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
_ 1 _				No Samples Collected		0.0 to 1.5' - Asphalt (0.25' thick), underlain by belgian block, underlain by concrete.
_ 2 _						1.5 to 8.0' - FILL: Brown, medium to coarse sand and silt; little fine gravel, some red brick, trace concrete.Trace asphalt at 5.0'. Dry no odor, no
_ 3 _		12	ND			staining.
4 _		10.2	ND			
_ 5 _		10.2	IND			Wet at 5.0'.
6 _		9	ND			vvoi at 0.0.
7 _						
_ 8 _		24	ND			8.0 to 9.0' - FILL: Gray silt and fine to medium sand; trace fine gravel.
9						Wet, no odor, no staining.
10						9.0 to 10' - Continuous drilling, no spoons collected.
11	12 12	6	ND			10 to 12'- FILL: Fine gravel and concrete; trace coarse sand. Wet, no odor, no staining.
12	4 5	0	ND			
13						12 to 15' - Continuous drilling, no spoons collected.
_ 14 _						
15						



BORING NUMBER

57 E. V	Villow Stree	t, Millburn, N	J 07041	(973) 564-6006		NYC-2-PIP-1		
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED		LITHOLOGIC CLASSIFIC	CATION AND COMMENTS
	24						20' - FILL: Fine gravel; trace we	
_ 16	7	6	ND			Litho	logy from 17 to 20' was based of	on mud rotary soil cuttings.
	2	-						
_ 17 _	2							
18		-						
_		1						
19								
		_						
_ 20	07					20 to	25' - FILL: Fine to medium gray	vel; little coarse sand, trace wood.
21	27 20	1				Wet,	no odor, no staining. Lithology f	from 22 to 25' was based on mud
' _	55	- 6	ND			rotar	y soil cuttings.	
22	22							
		1						
23		1						
24		_						
		-						
25								
	15							vel, trace medium to coarse sand. from 27 to 30' was based on mud
26	10	- 6	ND				y soil cuttings.	nom 27 to 50 was based on mud
27	15 57	1						
_ 27 _	57							
28		1						
29 _		-						
20		-						
30 _	100/5"					30 to	40' - FILL: Wood timber; trace	gray, medium to coarse sand. We
31	. 5 3/ 5	3	ND			no od	dor, no staining. Refusal at 30 to d on mud rotary soil cuttings.	30.5'. Lithology from 30 to 40' wa
_] 3	טאו			Dusc	a on mad rotary son outlings.	
32								
00		-						
33		1						
34		1						
		1						
35								

BORING NUMBER

NIVC_2_DID_1

57 E. V	Villow Stree	t, Millburn, N	J 07041	(973) 564-6006					NYC-2-PIP-1
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	_	LITH	IOLOGIC CLASSIF	CICATION AND COMMENTS
	24								
36	12	3	ND						
07	12					Refu	sal at 36.5	to 37.5'	
37	100/12"					rtoru	oai at oo.o	10 01.0.	
38									
39									
40		-							
0 _	6				ОН	40 to	50' - Gray	SILT and CLAY; tra	ace shells and fine to medium sand.
41	12	24	ND			Less Litho	silt and sal	nd towards 45'. We n 42 to 45' and from	t, medium stiff, no odor, no staining. 47 to 50' were based on mud rotary
	10		IND				uttings.		,
42	10								
43									
_ +3 _									
44									
45	14/01/								
46	WOH WOH								
	WOH	15	ND						
47	3								
_ 48 _		1							
49									
_ +3 _		1							
50									
			_			50 to	55' - Fixed	d Piston tube collect	ted, no lithology taken.
51									
52									
_ 52 _		Piston							
53		Tube Collected							
54		_							
<i></i>									
55		<u> </u>							

0	TRO	

BORING NUMBER

57 E. V	Villow Stree	t, Millburn, N.	J 07041	(973) 564-6006					NYC-2-PIP-1
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED				ATION AND COMMENTS
	WOH				ОН	55 to	65' - Gray CLAY; trace silt.	. Wet,	medium stiff, no odor, no staining
56	WOH	15.6	ND				ogies from 57 to 60' and fro uttings.	om 62	2 to 65' were based on mud rotary
	WOH	15.0	ND			JOII O	attings.		
57	WOH								
58		_							
59									
· <u>-</u>									
60 _	WOH								
61	WOH	1							
01 _	WOH	13.2	ND						
62	WOH	1							
. 02 _	WOIT								
63									
_									
64									
65									
· 	WOH					65 to	70' - Fixed Piston tube colle	ected	l, no lithology taken.
66	WOH								
	WOH								
67	WOH	Distant							
		Piston Tube							
68 _		Collected							
		1							
69 _		1							
		1							
70 _					<u> </u>	70 to	90' Gray Cl AV: trace 5:14	\ \ \^+	modium stiff no oder no etainin
	WOH	-			UH	Litho	ogies from 72 to 75' and 77	. vvet, 7 to 80	medium stiff, no odor, no stainin O' were based on mud rotary soil
71 _	WOH	13.2	ND			cuttin			,
70	WOH	-							
72 _	WOH								
70		-							
73 _		1							
74		1							
74 _		1							
75		1							



BORING NUMBER

57 E. V	Villow Street	t, Millburn, N	J 07041	(973) 564-6006						NTC-2-PIP-I
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED		LITH	OLOGIC (CLASSIFIC	CATION AND COMMENTS
	WOH	Î	<u> </u>							
76	WOH									
	WOH	10.2	ND							
77	WOH									
78										
79										
80										
	WOH				ОН	80 to	85' - Gray	CLAY; trac	ce silt. We	t, medium soft, no odor, no staining on mud rotary soil cuttings.
81	WOH	6	ND			Lillio	logy IIOIII 6	2 10 00 Wa	as baseu u	in mud rotary son cuttings.
	WOH		110							
82	WOH									
83										
84										
85						05 4-	001 5:	Distant to b	!! 4 -	d as Ethalam tales
	WOH					85 10	90° - Fixed	Piston tub	e collecte	d, no lithology taken.
86	WOH	_								
	WOH	_								
87	WOH	Piston								
		Tube								
88		Collected								
00		1								
89										
00		1								
_ 90 _	10				ОН	90 to	105' - Grav	v CLAY: tra	ace silt. tra	ace shells. Wet, medium soft, no
91	10 8	1				odor,	, no staining	g. Lithologi	es from 92	2 to 95', 97 to 100' and 102 to 105'
_ اق _	WOH	15	ND			were	based on r	mud rotary	soil cutting	gs.
92	WOH	1								
_ 32 _	VVOII									
93		1								
_ 33 _		1								
94		1								
_ ~ _		1								
95		=								

A-		F		m4al 0 = === :	4 ¹			BORING NUMBER
				ntal Corpo (973) 564-6006	rati	ion	SOIL BORING LOG	NYC-2-PIP-1
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED		LITHOLOGIC CLASSIFIC	CATION AND COMMENTS
_ 96 _	2 1 1	24	ND					
97 _	3							
_ 98 _		-						
99 _		-						
_ 100 _								
_ 101 _	WOH WOH	10.2	ND					
_ 102 _	WOH	-						
_ 103 _								
_ 104 _								
_ 105 _					О Ц	105 1	to 110' - Gray SILT and CLAY: t	race peat. Wet, medium soft, no
_ 106 _	WOH	22.2	ND		OH		, no staining. Lithology from 107	to 110' was based on mud rotary soil
_ 107 _	WOH WOH							
_ 108 _								
_ 109 _								
_ 110 _						110 4	to 115' - Fixed Piston tube collec	sted no lithology taken
_ 111 _	WOH					1101	o 110 - Fined Fision tube collec	nea, no innology taken.
_ 112 _	WOH WOH	Piston						
_ 113 _		Tube Collected						

0	Т	RC	
		10	

BORING NUMBER

57 E. V	Villow Stree	t, Millburn, N.	J 07041	(973) 564-6006					NYC-2-PIP-1
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED				CATION AND COMMENTS
	WOH				ОН	115 t	o 140' - Gray S	SILT and CLAY; t	race peat. Wet, medium soft, no
116 _	WOH	12	ND			odor,	, no staining. L to 135', and 13	ithologies from 1 7 to 140' were ba	17 to 120', 122 to 125', 127 to 130', ased on mud rotary soil cuttings.
	WOH	12	IND				,		
117 _	WOH								
118		1							
119		<u></u>							
120 _	14/011								
404	WOH	1							
121 _	WOH	3.5	ND						
100	WOH								
122 _	WOH								
100									
123 _									
124									
124		_							
125									
120	WOH								
126	WOH								
120	WOH	9	ND						
127	WOH								
. 127	WOII								
128									
129									
130									
	WOH								
131	WOH]	ND						
	WOH	3.6	ND						
132	WOH								
133									
134									
135						L			

Q T	RC	Envi
57 E. V	Villow Stree	t, Millburi
DEPTH	BLOW	DE001//

BORING NUMBER

57 E. V	Villow Street	t, Millburn, N.	J 07041	(973) 564-6006						NYC-2-PIP-1
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED		LITHO	DLOGIC C	LASSIFIC	CATION AND COMMENTS
	WOH									
136 _	WOH	9	ND							
	WOH									
137	WOH									
400										
138										
139		1								
_ 100										
140										
- <u>-</u>	WOH				SM					nd SILT. Wet, no odor, no staining
141 _	WOH					Litho	logy from 14	12 to 145° t	was base	d on mud rotary soil cuttings.
	WOH									
142	WOH									
143		-								
4.4.4										
144		-								
145										
145	WOH				SM	145	to 160' - Gra	y, fine to c	oarse SA	ND; trace silt. Wet, no odor, no
146	WOH	1				stain	ing. Litholog	ies from 1	47 to 150	', 152 to 155' and 157 to 160' were
_	WOH	9	ND			base	ed on mud ro	tary son ci	uttings.	
147	WOH	1								
148										
149		1								
4===		1								
150	MOLL			-						
151	WOH	1								
151	WOH WOH	24	ND							
152	WOH	†								
				1						
153]								
154										
]								
155		<u> </u>			<u></u>					

-		
	TDO	
10 7	I RU	
-		

BORING NUMBER

FROM SURFACE	BLOW COUNT PER 6 IN.	RECOVERY								
		(INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED		LIT	[HOLOGIC	CLASSIFIC	CATION AND COMMENTS
. ⊢	24									
156	20	15	ND							
	22	.0								
157	21									
158										
159										
160										
160	34				SW	160 t	o 165'- N	Medium to	coarse SANI	and fine GRAVEL. Wet, no odor, no
161	30					stain	ing. Litho	logy from	161 to 165' v	vas based on mud rotary soil cuttings.
	100/3"	6	ND							
162	100/3					Refu	sal at 16	1 to 161.5'.		
F 102 +										
163										
164										
165										
	26				SW					ND and fine GRAVEL; trace silt. Wet,
166	16	0.96	ND			180'	or, no st were bas	aining. Litr sed on muc	l rotary soil o	n 167 to 170', 172 to 175' and 177 to cuttings.
	20	0.00							•	· ·
167	67									
_ 168										
169										
470										
170	MO11									
474	WOH									
_ 171	WOH	3.6	ND							
172	WOH									
172	VVOIT									
173										
⊢ '' ³ 										
174										
'' '										
175										



BORING NUMBER

57 E. V	Villow Street	t, Millburn, N	J 07041	(973) 564-6006					NTC-2-PIP-1
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)		SAMPLE DESIGNATION	UNIFIED		LITHOLOGIC C	CLASSIFIC	CATION AND COMMENTS
	22								
176	22	3	ND						
	19		IND						
177	12								
178		-							
470									
179									
180									
_ 100 _	23				SM				parse SAND and SILT; some fine
181	30	4.5	ND			grav	el. Wet, no odor, no st were based on mud ro	taining. Litl	hologies from 182 to 185' and 187 t
	50	- 15	ND			130	were based on mud it	otary son c	attings.
182	4								
183									
184									
185									
_ 165 _	16								
186	19		ND						
	28	- 6	ND						
187	24								
188									
_ 189 _									
190		1							
_ 190	27				SM	190 1	to 205'- Reddish-brow	n, fine to c	coarse SAND; some silt, trace grav
191	32	9	ND			Wet,	no odor, no staining.	Lithologies	s from 191 to 195, 197 to 200' and
	100/12"					2021	to 205' were based on	i mud rotai	ry soil cuttings.
192						Refu	sal at 191 to 192'.		
]							
193									
_ 194 _		4							
405		4							
195		<u> </u>	<u> </u>			<u> </u>			

OT	DC.	Enviro	nmai	ntal Corpo	rati	ion		BORING NUMBER
				(973) 564-6006	ati	1011	SOIL BORING LOG	NYC-2-PIP-1
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED		LITHOLOGIC CLASSIFI	CATION AND COMMENTS
196	23 32 39	9	ND					
_ 197 _	100/3"					Refu	sal at 196.5 to 197'.	
_ 198 _								
_ 199 _								
_ 200 _	22							
_ 201 _	17 18	12	ND					
_ 202 _	26							
_ 203 _								
_ 204 _								
_ 205 _							End of boring	ng at 205 feet.
_						Note	y Parabala graytad in accord	dance with N.J.A.C. 7:9D-3.1
_						NOLE	s. Borefiole grouted in accord	rance with N.J.A.C. 7.9D-5.1
_								



57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

BORING NUMBER

NYC-2-PIP-2

PROJECT NAME:

Spectra NJ-NY

Expansion

LOCATION: New York, New York

PROJECT NO.: 168217

CONTRACTOR: Warren George, Inc.

SAMPLER TYPE/DIA.: Hand Auger / Split

DEPTH TO WATER: 10 feet

Spoon

BORING METHOD: Mud Rotary / Tri-

cone Roller Bit

TOTAL DEPTH DRILLED: 155 feet

DATE DRILLED: 10/27/11

DRILLER: C. Moreira

LOGGED BY: B. Bermingham

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
1				No Samples Collected		0.0 to 1.0' - Asphalt.
2						1.0 to 8.0' - FILL: Gray, fine to medium sand; some silt, trace gravel and concrete. Moist at 5'.
3						
4						
5		Hand				
6		Cleared	ND			
7						
8						
9						8.0 to 9.0' - FILL: Granite stone.
10						9.0 to 10' - FILL: Large pieces of reinforced concrete, red brick, and wood timbers.
11	7		ND			10 to 12' - FILL: Gray, medium to coarse sand and fine gravel; trace red brick. Wet at 10'.
12	3 10	6	NU			
13						12 to 15' - Continuous drilling, no spoons collected.
14						
15						



BORING NUMBER

16	DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
17		5				SM	15 to 17' - Gray SILT and medium to coarse SAND; trace fine gravel. Wet.
17	16	3	6	ND			
18							
18	_ 17 _	3					17 to 20' - Continuous drilling no spoons collected
19	10		1				Tr to 20 Continuous drining, no spoons conceted.
20	- '0 -		1				
20	19		1				
SM 20 to 22' - Gray SILT and medium to coarse SAND; trace fine gray							
21	20						
2			-			SM	20 to 22' - Gray SILT and medium to coarse SAND; trace fine gravel. Wet.
22	_ 21 _		12	ND			
23	00		=				
23	_ 22 _	8					22 to 25' - Continuous drilling, no spoons collected.
24	23						G. ,
CL 25 to 27' - Gray, medium soft CLAY and SILT; trace fine gravel. 26							
CL 25 to 27' - Gray, medium soft CLAY and SILT; trace fine gravel. 21	24						
CL 25 to 27' - Gray, medium soft CLAY and SILT; trace fine gravel. 21							
26	25					01	OF to O7! Once we always as # OLAY and Oll To top as # or a way of Mat
1			-			CL	25 to 27' - Gray, medium soft CLAY and SIL1; trace fine gravei. Wet.
27 to 30' - Continuous drilling, no spoons collected. 28	L 26 -		24	ND			
28	27		-				
29 30 CL 30 to 32' - Gray, medium soft CLAY and SILT; trace fine gravel. 31 4 12 ND 32 2 32 to 35' - Continuous drilling, no spoons collected.		ı					27 to 30' - Continuous drilling, no spoons collected.
30 CL 30 to 32' - Gray, medium soft CLAY and SILT; trace fine gravel. 31 4 12 ND 32 2 32 to 35' - Continuous drilling, no spoons collected.	28		=				
CL 30 to 32' - Gray, medium soft CLAY and SILT; trace fine gravel. 31 4 12 ND 32 2 32 to 35' - Continuous drilling, no spoons collected.							
CL 30 to 32' - Gray, medium soft CLAY and SILT; trace fine gravel. 31	29						
CL 30 to 32' - Gray, medium soft CLAY and SILT; trace fine gravel. 31							
31 4 12 ND 3 3 3 2 2 32 32 to 35' - Continuous drilling, no spoons collected.	_ 30 _					CI	30 to 32' - Gray medium soft CLAY and SILT: trace fine gravel. Wet
32 2 32 32 to 35' - Continuous drilling, no spoons collected.	31		1				Stay, modium son out and oil i, trace into graver. Wet.
32 2 32 to 35' - Continuous drilling, no spoons collected.	31 -		12	ND			
32 to 35' - Continuous drilling, no spoons collected.	32		1				
33							32 to 35' - Continuous drilling, no spoons collected.
<u> </u>	33						
			1				
34	_ 34 _		<u> </u>				
35	25		1				



57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

SOIL BORING LOG

BORING NUMBER

NYC-2-PIP-2

DEPTH **BLOW** UNIFIED FROM RECOVERY PID SAMPLE COUNT LITHOLOGIC CLASSIFICATION AND COMMENTS (ppm) SURFACE (INCHES) **DESIGNATION** PER 6 IN. (FEET) CH 35 to 37' - Gray, medium soft CLAY; trace silt. Wet. 2 36 1 24 ND 1 37 1 37 to 40' - Continuous drilling, no spoons collected. 38 39 40 CH 40 to 42' - Gray, medium soft CLAY; trace silt. Wet. WOR 41 **WOR** 6 ND WOR WOR 42 42 to 45' - Continuous drilling, no spoons collected. 43 44 45 CH 45 to 47' - Gray, medium soft CLAY; trace silt. Wet. **WOR** 46 **WOR** 23 WOR **WOR** 47 47 to 50' - Continuous drilling, no spoons collected. 48 49 50 50 to 52' - Gray, medium soft CLAY; trace silt. Wet. WOR 51 **WOR** 6 ND WOR 52 **WOR** 52 to 55' - Continuous drilling, no spoons collected. 53 54 55



57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

SOIL BORING LOG

BORING NUMBER

NYC-2-PIP-2

DEPTH **BLOW** UNIFIED FROM RECOVERY PID SAMPLE COUNT LITHOLOGIC CLASSIFICATION AND COMMENTS (ppm) SURFACE (INCHES) **DESIGNATION** PER 6 IN. (FEET) CH 55 to 57' - Gray, medium soft CLAY; trace silt. Wet. WOR **WOR** 56 12 ND **WOR** 57 **WOR** 57 to 60' - Continuous drilling, no spoons collected. 58 59 60 CH 60 to 62' - Gray, medium soft CLAY; trace silt. Wet. WOR 61 **WOR** 15 ND WOR WOR 62 62 to 65' - Continuous drilling, no spoons collected. 63 64 65 CH 65 to 67' - Gray, medium soft CLAY; trace silt. Wet. **WOR** 66 **WOR** 12 ND WOR **WOR** 67 67 to 70' - Continuous drilling, no spoons collected. 68 69 70 CH 70 to 72' - Gray, medium soft CLAY; trace silt, trace shells. Wet. WOR 71 **WOR** 24 ND WOR 72 **WOR** 72 to 75 - Continuous drilling, no spoons collected. 73 74

75



57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

SOIL BORING LOG

BORING NUMBER

NYC-2-PIP-2

DEPTH **BLOW** UNIFIED FROM RECOVERY PID SAMPLE COUNT LITHOLOGIC CLASSIFICATION AND COMMENTS SURFACE (INCHES) (ppm) **DESIGNATION** PER 6 IN. (FEET) CH 75 to 77' - Gray, medium soft CLAY; trace silt, trace shells. Wet. WOR **WOR** 76 21 ND **WOR** 77 **WOR** 77 to 80' - Continuous drilling, no spoons collected. 78 79 80 CH 80 to 82' - Gray, medium soft CLAY; trace silt, trace shells. Wet. WOR 81 **WOR** 24 ND **WOR** WOR 82 82 to 85' - Continuous drilling, no spoons collected. 83 84 85 CH 85 to 87' - Gray, medium soft CLAY; trace silt, trace shells. Wet. **WOR** 86 **WOR** 24 ND WOR **WOR** 87 87 to 90' - Continuous drilling, no spoons collected. 88 89 90 CH 90 to 92' - Gray, medium soft CLAY; trace silt. Wet. WOR 91 **WOR** 22 ND WOR 92 **WOR** 92 to 95' - Continuous drilling, no spoons collected. 93 94 95



57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

SOIL BORING LOG

BORING NUMBER

NYC-2-PIP-2

DEPTH **BLOW** UNIFIED FROM RECOVERY PID SAMPLE COUNT LITHOLOGIC CLASSIFICATION AND COMMENTS (ppm) SURFACE (INCHES) **DESIGNATION** PER 6 IN. (FEET) CH 95 to 97' - Gray, medium soft CLAY; trace silt. Wet. WOR **WOR** 96 9 ND **WOR** 97 **WOR** 97 to 100' - Continuous drilling, no spoons collected. 98 99 100 CH 100 to 102' - Gray, medium soft CLAY; trace silt. Wet. WOR 101 **WOR** 22 ND **WOR** 102 WOR 102 to 105' - Continuous drilling, no spoons collected. 103 104 105 CH 105 to 107' - Gray, medium soft CLAY; trace silt. Wet. **WOR** 106 **WOR** 13 ND WOR 107 **WOR** 107 to 110' - Continuous drilling, no spoons collected. 108 109 110 CH 110 to 112' - Gray, medium soft CLAY; trace silt. Wet. WOR 11 111 ND 9 6 112 112 to 115' - Continuous drilling, no spoons collected. 113 114 115



57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

SOIL BORING LOG

BORING NUMBER
NYC-2-PIP-2

DEPTH BLOW UNIFIED FROM RECOVERY PID SAMPLE COUNT LITHOLOGIC CLASSIFICATION AND COMMENTS (ppm) SURFACE (INCHES) **DESIGNATION** PER 6 IN. (FEET) OH 115 to 117' - Gray, medium soft CLAY; trace silt, trace wood, trace peat. WOR **WOR** 116 18 ND **WOR** 117 WOR 117 to 120' - Continuous drilling, no spoons collected. 118 119 120 OH 120 to 122' - Gray, medium soft CLAY; trace silt, trace wood, trace peat. WOR 121 **WOR** 15 ND **WOR** 122 WOR 122 to 125' - Continuous drilling, no spoons collected. 123 124 125 OH 125 to 127' - Gray, medium soft CLAY; trace silt, trace wood, trace peat. **WOR** Wet. 126 **WOR** 18 ND WOR 127 **WOR** 127 to 130' - Continuous drilling, no spoons collected. 128 129 130 OH 130 to 132' - Gray, medium soft CLAY; trace silt, trace wood, trace peat. WOR Wet. 131 **WOR** 9 ND WOR 132 **WOR** 132 to 135' - Continuous drilling, no spoons collected. 133 134 135



57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

BORING NUMBER

		.,,		(373) 304-0000		
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
	WOR				СН	135 to 137' - Gray, medium soft CLAY; trace silt. Wet.
136	WOR		ND			
	WOR	9	ND			
137	WOR					
- ''' -	WOIX					137 to 140' - Continuous drilling, no spoons collected.
138						• •
130 -						
139						
_ 139 _						
140						
_ 140 _	14/05				СН	140 to 142' - Gray, medium soft CLAY; trace silt. Wet.
	WOR				CII	140 to 142 Oray, modium son obx1, trace sin. wet.
_ 141 _	WOR	9	ND			
	WOR					
142	WOR					440. 445. 0 .: 1.11.
						142 to 145' - Continuous drilling, no spoons collected.
143						
144						
145						
	17				CH	145 to 147' - Gray, medium soft CLAY; trace silt. Wet.
146	20	24	ND			
	18	24	ND			
147	18					
						147 to 150' - Continuous drilling, no spoons collected.
148						
149						
F						
150						
	2				CL	150 to 152' - Gray, soft CLAY and SILT. Wet.
151	1					-
131 -	WOR	24	ND			
150	WOR	1				
_ 152 _	VVOIC					152 to 155' - Continuous drilling, no spoons collected.
450						3, 1 3, 2000
_ 153 _						Note: Boring hole grouted, topped with cement and asphalt to grade
4						Titolo. 25.mg note grouted, topped with comont and aspiral to grade
_ 154 _						
						Doducel energy to a 4551
155						Bedrock encountered at 155'

BORING NUMBER

NYC-2-PIP-3

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

PROJECT NAME:

Spectra NJ-NY

Expansion

LOCATION: New York, New York

PROJECT NO.: 168217

CONTRACTOR: Warren George, Inc.

SAMPLER TYPE/DIA.: Split Spoon

DEPTH TO WATER: 7.0 feet

BORING METHOD: Mud Rotary / Tri-

cone Roller Bit

TOTAL DEPTH DRILLED: 80 feet

DATE DRILLED: 10/25/11

DRILLER: C. Moreira

LOGGED BY: B. Bermingham

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)		SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
1				No Samples Collected		0.0 to 3.0' - Asphalt (0.25' thick), underlain by belgian block, underlain by concrete rubble.
2			ND			
3						
4	16 7	12	ND.			3.0 to 5.0' - FILL: Red brick; some brown, fine to medium sand; trace silt, trace fine gravel. Moist.
5	7 20	12	ND			
6	10 20	12				5.0 to 9.0' - FILL: Brown silt and fine to coarse sand; trace gravel, some red brick, little black ash, trace concrete.
7	18 12	12	ND			
8	12 14	12	ND			Wet at 7 feet.
9	16 10	12				
10	8 7	6	ND.		CL	9.0 to 11' - Gray SILT and soft CLAY; trace fine to medium sand. Wet.
11	6 5	0	ND			
12						11 to 20' - Continuous drilling, no spoons collected.
13						
14						
15						



57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

BORING NUMBER

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
_ 16 _						
_ 17 _						
_ 18 _						
_ 19 _						
_ 20 _	3				SM	20 to 22' - Dark brown, fine to medium SAND and SILT; little fine gravel.
21	2	12	ND			Wet.
00	2					
_ 22 _	2					22 to 25' - Continuous drilling, no spoons collected.
_ 23 _						
_ 24 _						
_ 25 _					CM	25 to 27' - Dark brown, fine to medium SAND and SILT; little fine gravel.
26	6	12	ND		SIVI	Wet.
	6	12	ND			
_ 27 _	7					27 to 30' - Continuous drilling, no spoons collected.
28						
00						
_ 29 _						
_ 30 _					0	20 to 201. Dark harrow fire to mading CAND at LOUIT Full fi
31	5 2				SM	30 to 32' - Dark brown, fine to medium SAND and SILT; little fine gravel. Wet.
	2	12	ND			
_ 32 _	3					32 to 35' - Continuous drilling, no spoons collected.
_ 33 _						
_ 34 _						
35						



57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
	4				SM	35 to 37' - Dark brown, fine to medium SAND and SILT; little fine gravel.
36	3	0.25	ND			Wet.
	5	0.20	110			
_ 37 _	4					37 to 40' - Continuous drilling, no spoons collected.
						37 to 40 - Continuous arilling, no spoons collected.
_ 38 _						
39						
F 39 -						
40						
	2				CL	40 to 42' - Medium gray CLAY; trace silt. Wet.
41	2	21	ND			
	3	21	ND			
_ 42 _	2					40.45.0.0
						42 to 45' - Continuous drilling, no spoons collected.
_ 43 _						
4.4						
_ 44 _						
45						
- ⁻ -						45 to 50' - MRCE piston sample collected, no lithology recorded.
46						
47						
48						
_ 49 _						
50						
⊢ 30 −	2				CL	50 to 52' - Gray CLAY; trace silt, trace fine gravel. Wet
51	1	2.2				
	2	22	ND			
52	1					
						52 to 55' - Continuous drilling, no spoons collected.
_ 53 _						
_ 54 _						
55						



57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

DEPTH FROM	BLOW COUNT	RECOVERY	PID	SAMPLE	IED	II II LITHOLOGIC CLASSIFICATION AND COMMENTS
SURFACE (FEET)	PER 6 IN.	(INCHES)	(ppm)	DESIGNATION	UNIFIED	
	WOR				СН	55 to 57' - Gray, medium soft CLAY; trace silt. Wet.
56	WOR	18	ND			
	WOR	10	ND			
_ 57 _	WOR					
						57 to 60' - Continuous drilling, no spoons collected.
_ 58 _						
_ 59 _						
00						
_ 60 _	WOR				СН	60 to 62' - Gray, medium soft CLAY; trace silt. Wet.
61	WOR					
├	WOR	12	ND			
62	WOR					
						62 to 65' - Continuous drilling, no spoons collected.
63						
64						
65					.	25 . 25 . 2
	WOR				СН	65 to 67' - Gray, medium soft CLAY; trace silt. Wet.
_ 66 _	WOR	24	ND			
07	WOR					
_ 67 _	WOR					67 to 70' - Continuous drilling, no spoons collected.
68						or to 10 Community, no specific conscious.
⁰⁰ -						
69						
70						
	WOR				СН	70 to 72' - Gray, medium soft CLAY; trace silt, trace shells. Wet.
71	WOR	24	ND			
	WOR	<u> </u>	שוי			
_ 72 _	WOR					
						72 to 75 - Continuous drilling, no spoons collected.
_ 73 _						
_ 74 _						
75						
75						



57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

BORING NUMBER

		.,,		(973) 304-0000				
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)		SAMPLE DESIGNATION	UNIFIED			IFICATION AND COMMENTS
	WOR					75 to 7	77' - Gray, medium soft CL	AY; trace silt, trace shells. Wet.
76	WOR							
⊢ ′	WOR	24	ND					
77								
_ 77 _	WOR					77 to 9	80' - Continuous drilling, no	snoons collected
						177.00	50 Continuous animing, ne	spoons concercu.
78								
79						Note:	Borehole grouted, topped v	with cement and asphalt to grade.
80								
							End o	f Boring at 80'
<u> </u>								
<u> </u>								
├ ┤								
⊩ ⊣								
<u>⊩</u> ⊣								
_								
├								
⊩ ⊣								
<u> </u>								

TRC

Environmental Corporation SOIL BORING LOG

BORING NUMBER

NYC-2-PIP-4

PROJECT NAME:

Spectra NJ-NY

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

Expansion

LOCATION: New York Sanitation Pier,

New York City, New York

PROJECT NO.: 168217

CONTRACTOR: Warren George, Inc.

SAMPLER TYPE/DIA.: Stainless Steel Split

Spoon/2" BORING METHOD: Mud Rotary /

TOTAL DEPTH DRILLED: 77 feet

DEPTH TO WATER: 2.0 feet

DATE DRILLED: 10/21/11

DRILLER: C. Moreria

LOGGED BY: K. Rillen

BOIL		Tri-cone roller b	oit	TOTAL DEPT	וואט ו	LLED: // Teet	LOGGED BY: K. Rillen
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFIC	CATION AND COMMENTS
0							
1 _						0.0 to 0.5' - Asphalt layer. 0.5 to 1.0' - Belgian block layer.	
_ 2 _						1.0 to 1.5' - Void space with 4" co	own, fine to coarse sand and
_ 3 _						silt, some sub-rounded to sub-an clay, wet @ 2.0'	gular, line gravel and gray
4							
_ 5 _							
_ 6 _							
7							
_ 8 _						8.0 to 10' - FILL: Light brown and	
9						round gravel, pieces of gray, silty	clay. vvet.
_ 10 _						10 to 12' - FILL: Gray brown silt; crushed brick @ 11.5'.	some fine sand. Wet. Red
11 _							
13						12 to 15' - Continuous drilling; no	spoons collected.
14							
15		_					



BORING NUMBER

		et, Milliburn, NJ			1			
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED			CATION AND COMMENTS
								d fine sand. Wet. Some small
16		18	ND			d brick piece	es throughout.	
_ 17 _						7 to 20' - Cor	ntinuous drilling; no	spoons collected.
18							3, 1	.,
19								
_ 20 _) to 22' - FII I	I · Dark grav fine s	and and silt; little rounded gravel.
21							of brick and some s	
_ 21 _		16	ND					
22								
						2 to 25' - Cor	ntinuous drilling; no	spoons collected.
_ 23 _								
0.4								
_ 24 _								
25								
								sand and silt. Some organics @
26		20	ND			6'. Brick piec	e @ 27'.	
		20	I					
_ 27 _						7 to 30' - Cor	ntinuous drilling; no	snoons collected
28						10 30 - 001	mindous unining, mo	spoons collected.
_ 20 _								
29								
_ 30 _					۵.	00 D	01.00/.04	
0.4					CL) (0 3∠' - Dar	k gray CLAY. Mois	t, IIITTI.
_ 31 _		24	ND					
32								
						2 to 35' - Cor	ntinuous drilling; no	spoons collected.
_ 33 _								
_ 34 _								
35								
_ 33 _					CL	5 to 37' - Dar	k gray CLAY. Mois	t, firm.
36		24	ND					
Γ 7		24	טא					
37	-							



BORING NUMBER

57 E.	Willow Stree	et, Millburn, NJ	07041 (973) 564-6006	1		301	L BORING	3 LOG	NYC-2-PIP-4
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED			ND COMMEN		
38						37 to	40' -	Continuous o	drilling; no	spoons collected.
_ 39 _										
_ 40 _					CI	40 to	o 42' -	Dark gray CL	_AY. Mois	t. firm.
41		24	ND					g,		••••••
42										
43						42 to	45' -	Continouous	drilling; n	o spoons collected.
_ 44 _										
45					CI	45 to	o 47' -	Dark gray CL	_AY. Mois	t. firm.
46		24	ND					3 4, 4		,
47										
48						47 to	50' -	Continuous of	drilling; no	spoons collected.
49										
_ 50 _				•	SM	50 to	52' -	Very fine SA	ND and S	ILT. Soft, wet.
51		20	ND							
52				•						
53						52 to	55' -	Continuous o	drilling; no	spoons collected.
_ 54 _										
_ 55 _					ML	55 to	57' -	Dark gray SI	LT; little cl	lay, trace fine sand. Dense.
_ 56 _		24	ND							
57						.	. 00'	0	J.:110.	
58						5/ to	0 60' -	Continuous o	ariiing; no	spoons collected.
59			<u> </u>							



BORING NUMBER

NYC-2-PIP-4

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
60					ML	60 to 61' - Dark gray SILT; little clay, trace fine sand. Wet, soft.
_ 61 _		24	ND		CL	61 to 62' - Dark gray CLAY, some silt. Wet, soft.
_ 62 _						62 to 65' - Continuous drilling; no spoons collected.
_ 63 _						
64						
65					CL	65 to 67' - Dark gray CLAY, some silt. Wet, soft.
66		24	ND			
67						67 to 70' - Continuous drilling; no spoons collected.
_ 68 _						G. ,
_ 69 _						
70 _					CI	70 to 72' - Dark gray CLAY; little silt. Trace shells.
71		24	ND			To to 12 Bank gray GEAT, made one. Trace onoine.
_ 72 _						72 to 75' - Continuous drilling; no spoons collected.
73						72 to 73 - Continuous animig, no spoons collected.
_ 74 _						
75						
76		24	ND		CL	75 to 77' - Dark gray CLAY; little silt.
77						
						End of boring @ 77 feet
						Note: Borehole grouted in accordance with N.J.A.C. 7:9D-3.1.

©TRC

Environmental Corporation

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

SOIL BORING LOG

NYC-4H-ENV-5W

BORING NUMBER

PROJECT NAME:

Spectra NJ-NY

Expansion

LOCATION: Manhattan, New York

PROJECT NO.: 168217

CONTRACTOR: Henkels & McCoy

SAMPLER TYPE/DIA.: Hand Auger

DEPTH TO WATER: Not Encountered

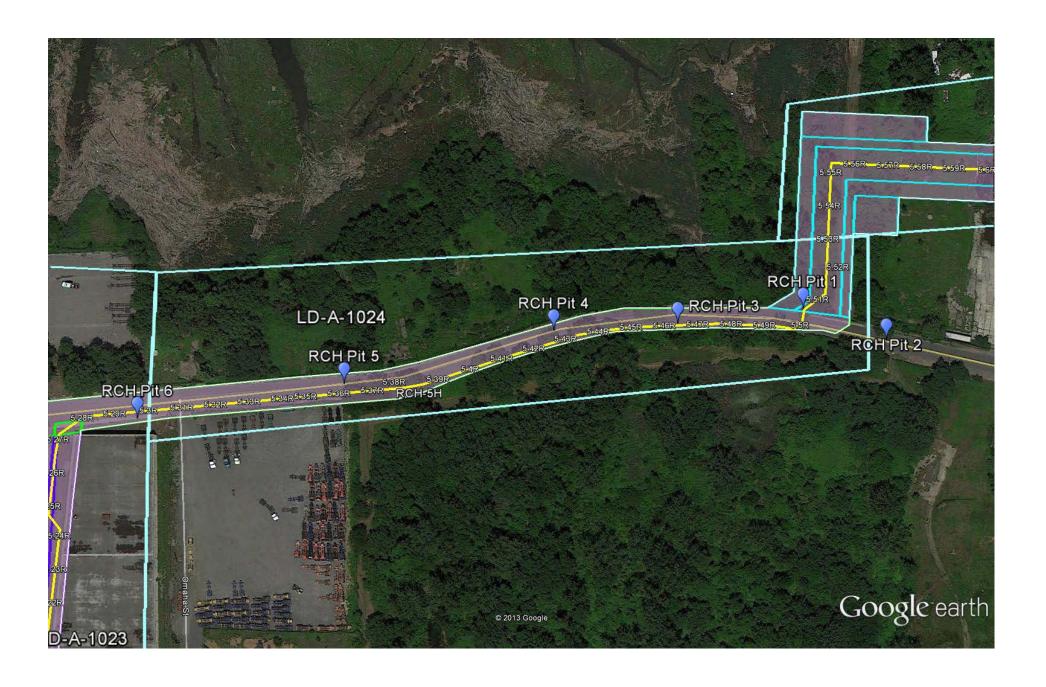
BORING METHOD: Hand Auger TOTAL DEPTH DRILLED: 6.5 feet

DATE DRILLED: **08/16/12**

DRILLER: P. Hallen

LOGGED BY: L. Melanson

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)		SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS				
0										
						0.0 to 0.5' - Asphalt				
1 _						0.5 to 4.0' - FILL: Dark brown, medium to coarse sand; little silt, little fine to coarse sub-angular gravel, trace pieces of red brick,				
2		1				plastic, concrete, miscellaneous trash. Cobble layer 6" thick at 3'.				
_						Dry, medium-dense.				
3		1								
		Hand cleared	ND							
4		cleared								
		1		NYC-4H-ENV-5W/4		4.0 to 6.5' - FILL: Concrete chunks, brick, cobbles.				
5		1								
		1								
6		1								
		1								
						Refusal @ 6.5'				
		1				Note: Borehole backfilled with soil cuttings and restored to grade.				
_						HUD-4H-ENV-5W-WC/4 and HUD-4H-ENV-5W-WC/6 collected for TPHC analysis				



BORING NUMBER

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

RCH-1-ENV-1

PROJECT NAME:

Spectra NJ-NY Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water

Environmental Services

DATE DRILLED: 01/02/13

SAMPLER TYPE/DIA.: Macrocore/2"

DEPTH TO WATER: 2'

DRILLER: J. Lamprecht

BORING METHOD: Geoprobe- Direct Push

TOTAL DEPTH DRILLED: 10 feet

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)		SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
1 _						0 to 6.0' - Orange brown, medium to fine SAND; trace fine gravel and silt. Moist, loose, roots.
2 _				RCH-1-ENV-1/1		
_ 3 _						Wet at 2'.
4 _		Hand cleared	ND			
5 _						6.0 to 8.0' - Orange brown SAND; some gray clay, little silt. Wet,
6 _				RCH-1-ENV-1/6		loose.
7 _				RCH-1-ENV-1 WC		
8 _						
9 _						
_ 10 _						End of boring @ 10'
11 _						Zind or boning O 10
_ 12 _						
_ 13 _						
_ 14 _						
15						



Environmental Corporation

TEMPORARY WELL AND SOIL BORING LOG

WELL NUMBER

RCH-1-ENV-2W

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

PROJECT NAME: Spectra NJ-NY Expansion

LOCATION: Staten Island, New York

CONTRACTOR: Land Air Water Environmental **PROJECT NO.:** 168217

Services

SAMPLER TYPE/DIA.: Hand Auger/ Macrocore/2" TYPE OF WELL: Temporary

DRILLING METHOD: Hollow Stem Auger **DEPTH TO BEDROCK:** Not Encountered

TOTAL DEPTH DRILLED: 15 feet

BIT TYPE: Auger Bit

START DATE: 01/02/13 FINISH DATE: 01/03/13 DRILLER: J. Lamprecht LOGGED BY: B. Chaky / C. Nichol

FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)		SAMPLE DESIGNATION	WELL DIAGRAM	LITHOLOGIC CLASSIFICATION AND COMMENTS
0 _						
_ 1 _		 - -		RCH-1-ENV-2W/1		0 to 2.0' - FILL: Dark brown, medium to fine sand, little medium to fine gravel, little silt, trace roots. Moist, loose.
_ 2 _		Hand cleared	ND			2.0 to 7.5' - Orange brown, medium to fine SAND, little medium to fine gravel, little silt. Moist, loose. Wet at 3'.
4 _		-				
5 <u> </u>						
7 _		-		RCH-1-ENV-2W/2		7.5 to 4.01. Crow brown to rad brown CLAV come modium to fine cond. little
8 <u> </u>		34	ND	RCH-1-ENV-2W-WC		7.5 to 10' - Gray brown to red brown CLAY, some medium to fine sand, little fine gravel. Wet, soft.
_ 10 _				RCH-1-ENV-2W-WC		10 to 15' - Red brown CLAY, little medium to fine gravel, little sand. Wet, medium stiff.
11						medium siin.
_ 13 _						
_ 14 _]				
15						
	PVC/2			N/A		STATIC WATER LEVEL: 2 feet below surface DEPTH WATER ENCOUNTERED: 3 feet below surface
SCREE		:N INTERVAL: DW SURFACE)		5 - 15 feet		MEASURING POINT ELEVATION: NA ft.msl GROUND SURFACE ELEVATION: NA ft.msl



Environmental Corporation

TEMPORARY WELL AND SOIL BORING LOG

WELL NUMBER

57 E.		et, Millburn,	NJ 0704	1 (973) 564-6006			S	OIL BORING LOG	RCH-1-ENV-2W		
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	WELL DIAGRAM	N INFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS				
							Ï	End o	of boring @ 15'		
_ 16 _		-						Well Co	nstruction Details		
17							,	Ground surface to 15.0 ft. below	w surface - 2" diameter 0.010 slot		
40								PVC screen 0 to 15.0 ft. below surface - No	01 sand		
_ 18 _								o to To.o II. Bolow Garlage Tito	· Or Garia		
_ 19 _											
20											
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BORING NUMBER

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

RCH-1-ENV-4

PROJECT NAME:

Spectra NJ-NY

Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Zebra Environmental

SAMPLER TYPE/DIA.: Macrocore/2"

BORING METHOD: Geoprobe- Direct Push

DEPTH TO WATER: 5.3'

TOTAL DEPTH DRILLED: 10 feet

DATE DRILLED: 12/09/10

DRILLER: B. Lombardo

LOGGED BY: C. Nichol

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)		SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
_ 1 _						0 to 0.7' - FILL: Fine to coarse gravel; some coarse sand and asphalt fragments. 0.7 to 3.4' - FILL: Dark brown, medium to coarse sand.
_ 2 _				SI-002A		o. 7 to 6.4 Fiee. Built blown, modium to occide dand.
_ 3 _		42	ND			3.4 to 4' - FILL: Dark brown, fine gravel and coarse sand; some
4 _				SI-002B		silt, concrete, and asphalt fragments.
_ 5 _					GM	5 to 5.3' - Dark brown, fine GRAVEL; and coarse sand, some silt,
6 _					SP	concrete, and asphalt fragments. 5.3 to 10' - Tannish/brown, medium SAND; trace silt and coarse
7 _		00	ND			gravel. Wet.
_ 8 _		60	ND			
9 _						
_ 10 _						End of boring @ 10'
_ 11 _						
_ 12 _						
_ 13 _						
_ 14 _ 15						

PROJECT NAME:

BORING METHOD:

Environmental Corporation | SOIL BORING LOG

BORING NUMBER

RCH-1-HDD-1

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

Spectra NJ-NY Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Warren George, Inc.

DEPTH TO WATER: 2.5 feet

SAMPLER TYPE/DIA.: Stainless steel spoon/2"

Mud rotary / TOTAL DEPTH DRILLED: 22 feet

Tri cone roller bit

DATE DRILLED: 10/15/10

DRILLER: O. Sanchez

LOGGED BY: T. Ward

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
1				No Samples Collected	SW	0.0 to 1.0' - Reddish-brown, medium SAND; gravel surface.
2					SW	1.0 to 2.0' - Reddish-brown to brown, medium SAND; trace gravel, trace silt.
3					SW	2.0 to 3.0' - Reddish-brown to brown, fine to coarse SAND and gravel; trace silt. Wet @ 2.5'
4		Hand	ND		SP	3.0 to 4.0' - Brown, fine to medium SAND; trace gravel. Wet to very moist.
		cleared	ND		SP	4.0 to 7.0' - Brown, fine to medium SAND; trace silt. Moist to very moist.
_ 5 _						
6 _						
7 –						
_ 8 _			ND		SP	7.0 to 12.0' - Brown, fine to coarse SAND; trace silt. Very moist.
9 _						
_ 10 _						
_ 11 _			ND			
_ 12 _						12.0 to 15.0' - Continuous drilling. No spoons collected.
_ 13 _						3 sp
14 _						
15						

OT	RC	Enviro	nmei	ntal Corpo	rati	on	_		BORING NUMBER		
	The state of the s			(973) 564-6006	ati	011	SOIL BORING	LOG	RCH-1-HDD-1		
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED		LITHOLOGIC CLASSIFICATION AND COMMENTS				
_ 16 _			ND		SM	trace			ne to coarse SAND; some silt, s drilling from 17 to 20 feet; no		
_ 17 _											
_ 18 _											
_ 19 _											
_ 20 _											
_ 21 _			ND								
_ 22 _								1 (1			
							En	na ot bo	ring @ 22'		
<u> </u>											
<u> </u>											



BORING NUMBER

RCH-2-ARC-4

PROJECT NAME:

Spectra NJ-NY

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water

Environmental Services

SAMPLER TYPE/DIA.: Hand Auger **DEPTH TO WATER: 2.0 feet**

BORING METHOD: Hand Auger TOTAL DEPTH DRILLED: 20 feet DATE DRILLED: 08/08/11

DRILLER: J. Lamprecht

						·
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
1 _				No Samples Collected		0 to 1.0' - FILL: Gray brown, medium to fine sand; some organic material/roots, little silt, trace ceramic pieces. Dry, loose.
2 _		Hond				1.0 to 4.0' - FILL: Grayish-brown, medium to fine sand; some coarse to
3 _		Hand Cleared	ND			fine gravel, little engineered clay, little silt, trace cinder fragments. Dense, wet @ 2', sub-rounded to sub-angular. Broken glass pieces @ 2'. Trace ceramic pieces @ 3'. Trace construction-grade wood pieces from 3 to 4'.
4 _						4.0 to 5.0' - FILL: Dark gray, medium to fine, angular gravel; little coarse
5 _						to fine sand, trace silt, trace cinders, trace ceramic pieces. Wet, dense.
ļ						End of boring lithology @ 5'
						Archeological boring advanced to 20 feet; no lithology recorded.
_						
_						
_						
_						
1———						



BORING NUMBER

RCH-2-ENV-1

PROJECT NAME:

Spectra NJ-NY

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water

Environmental Services

SAMPLER TYPE/DIA.: Hand Auger/Macrocore/2" **DEPTH TO WATER:** 0.5 feet

BORING METHOD: Direct Push TOTAL DEPTH DRILLED: 15 feet DATE DRILLED: 8/8/2011 - 8/9/2011

DRILLER: J. Lamprecht

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
1 _					OL	0 to 4.0' - Dark brown, high plasticity, organic SILT; some medium to fine sand. Loose, organic material/roots. Wet at 0.5 feet.
2 _						
_ 3 _		Hand Cleared	ND			
4 _		Oldarda		RCH2-1/4	SP	4.0 to 6.0' - Gray to orange brown, medium to fine SAND; little silt.
_ 5 _				RU⊓2-1/4		Wet, loose, trace root material.
6 _					SP	6.0 to 15' - Orange-brown to grayish brown, medium to fine SAND;
7 _				RCH2-1/7		little clay, trace silt. Wet, loose. Trace rounded gravel at 10'.
8 _		48	ND			
9 _						
_ 10 _						
_ 11 _						
_ 12 _		45	ND			
13 _						
14 15						End of boring @ 15'

380 PROPERTY, STATEN ISLAND, NEW YORK SPECTRA ENERGY NJ-NY EXPANSION PROJECT SUMMARY OF RESULTS OF ANALYSIS OF SOIL SAMPLES FOR VOLATILE ORGANIC COMPOUNDS

				Sample ID	RCH-2-ENV-1	
				Lab Sample ID	JA83045-5	_
				Sampling Date	8/8/2011	
				Matrix	Soil	_
VOLATILE ORGANIC COMPOUNDS (VOCs) (mg/kg)	Unrestricted Use SCO	Industrial SCO	Protection of Ecological Resources	Protection of Groundwater SCO	Result	
1,1,1-Trichloroethane (TCA)	0.68	1,000	NC	0.68	ND (0.00064)	L
1,1,2,2-Tetrachloroethane	NC	NC	NC	0.6	ND (0.00047)	Ļ
1,1,2-Trichloroethane 1.1-Dichloroethane	NC 0.27	NC 480	NC NC	NC 0.27	ND (0.0011) ND (0.00058)	╀
1,1-Dichloroethane	0.33	1,000	NC NC	0.27	ND (0.00058)	╁
1,2,3-Trichlorobenzene	NC	NC	20	NC	ND (0.0010)	t
1,2,4-Trichlorobenzene	NC	NC	20	3.4	ND (0.00090)	t
1,2,4-Trimethylbenzene	4	380	NC	4	NA	Γ
1,2-Dibromo-3-Chloropropane	NC	NC	NC	NC	ND (0.0040)	
1,2-Dibromoethane	NC	NC	NC	NC	ND (0.00063)	╄
1,2-Dichlorobenzene 1,2-Dichloroethane	1	1,000	NC 10	1	ND (0.00073)	╀
1,2-Dichloroptopane	0.02 NC	60 NC	NC	0.02 NC	ND (0.00048) ND (0.00071)	t
1,3,5-Trimethylbenzene	8	380	NC	8	NA	t
1,3-Dichlorobenzene	2	560	NC	2	ND (0.00051)	T
1,4-Dichlorobenzene	2	250	20	2	ND (0.00045)	Ι
1,4-Dioxane	0.1	250	1	0.1	ND (0.15)	Ļ
2-Butanone (MEK)	0.12	1,000	100	0.12	ND (0.011)	Ł
2-Hexanone 4-Methyl-2-pentanone	NC NC	NC NC	NC NC	NC 1	ND (0.0066) ND (0.0070)	╀
Acetone	0.05	1,000	2.2	0.05	0.0482	t
Benzene	0.06	89	70	0.06	ND (0.00035)	t
Bromochloromethane	NC	NC	NC	NC	ND (0.0014)	T
Bromodichloromethane	NC	NC	NC	NC	ND (0.00059)	Γ
Bromoform	NC	NC	NC	NC	ND (0.0020)	L
Bromomethane	NC	NC	NC NC	NC	ND (0.0010)	١.
Carbon disulfide Carbon tetrachloride	NC 0.76	NC 44	NC NC	2.7 0.76	0.0011 ND (0.00092)	H
Chlorobenzene	1	1,000	40	1	ND (0.00092)	t
Chloroethane	NC	NC	NC	1.9	ND (0.0011)	t
Chloroform	0.37	700	12	0.37	ND (0.0013)	T
Chloromethane	NC	NC	NC	NC	ND (0.0017)	Ī
cis-1,2-Dichloroethene	0.25	1,000	NC	0.25	ND (0.00085)	Ļ
cis-1,3-Dichloropropene	NC NC	NC NC	NC NC	NC NO	ND (0.00040)	Ļ
Cyclohexane Dibromochloromethane	NC NC	NC NC	NC 10	NC NC	ND (0.0010) ND (0.00045)	ł
Dichlorodifluoromethane	NC NC	NC NC	NC	NC NC	ND (0.00045)	t
Ethylbenzene	1	780	NC	1	ND (0.00039)	t
Freon TF ⁽²⁾	NC	NC	NC	6	ND (0.0019)	Ī
Isopropylbenzene	NC	NC	NC	2.3	ND (0.00036)	Ī
m&p-Xylene	0.26 ⁽¹⁾	1,000 ⁽¹⁾	0.26	1.6 ⁽¹⁾	ND (0.00083)	
Methyl acetate	NC	NC	NC	NC	ND (0.0059)	Ļ
Methylcyclohexane	NC 0.05	NC 1,000	NC 12	NC 0.05	ND (0.00065)	+
Methylene Chloride Methyl tert-butyl ether (MTBE)	0.05	1,000	NC	0.05	ND (0.00061) ND (0.00047)	ł
n-Butylbenzene	12	1,000	NC	12	NA NA	t
n-Propylbenzene	3.9	1,000	NC	4	NA	t
o-Xylene	0.26 ⁽¹⁾	1,000 ⁽¹⁾	0.26	1.6 ⁽¹⁾	ND (0.00049)	T
p-Isopropyltoluene	NC	NC	NC	NC	NA	Ι
sec-Butylbenzene	11	1,000	NC	11	NA	L
Styrene	NC 5.0	NC 1,000	300	NC	ND (0.00049)	Ļ
tert-Butylbenzene Tetrachloroethene (PCE)	5.9 1.3	1,000 300	NC 2	6 1.3	NA ND (0.00051)	+
Toluene	0.7	1,000	36	1.3 0.7	ND (0.00051) ND (0.0010)	t
trans-1,2-Dichloroethene	0.19	1,000	NC	0.19	ND (0.0010)	t
trans-1,3-Dichloropropene	NC NC	NC	NC	NC NC	ND (0.00089)	t
Trichloroethene (TCE)	0.47	400	2	0.47	ND (0.00065)	İ
Trichlorofluoromethane	NC	NC	NC	NC	ND (0.0013)	Γ
Vinyl chloride	0.02	27	NC	0.02	ND (0.0012)	Ļ
Xylene (total)	0.26	1,000	0.26 NC	1.6 NC	ND (0.00049)	L

Notes:
mg/kg - milligrams per kilogram

(1) - The SCO for m/p xylene and o-xylene applies to Total Xylenes.

(2) - Also known as 1,1,2-trichloro-1,2,2-trifluoroethane and 1,1,2-trichlorotrifluoroethane.

J - Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

NC - No Criterion

NA - Not Analyzed

ND (0.00064) - Not Detected (Method Detection Limit)

SCO - Soil Cleanup Objective

* - Recovery or RPD exceeds control limits

380 PROPERTY, STATEN ISLAND, NEW YORK SPECTRA ENERGY NJ-NY EXPANSION PROJECT SUMMARY OF RESULTS OF ANALYSIS OF SOIL SAMPLES FOR SEMIVOLATILE ORGANIC COMPOUNDS

				Sample ID	RCH-2-ENV-1/
				Lab Sample ID	JA83045-5
				Sampling Date	8/8/2011
	•			Matrix	Soil
SEMIVOLATILE ORGANIC COMPOUNDS (SVOCs)	Unrestricted Use SCO	Industrial SCO	Protection of Ecological Resources	Protection of Groundwater SCO	Result
1,2,4,5-Tetrachlorobenzene	NC	NC	NC	NC	ND (0.021)
2,2'-oxybis[1-chloropropane]	NC	NC	NC	NC	NA
2,3,4,6-Tetrachlorophenol	NC NC	NC	NC	NC	ND (0.071)
2,4,5-Trichlorophenol 2,4,6-Trichlorophenol	NC NC	NC NC	4 10	0.1 NC	ND (0.080) ND (0.065)
2,4-Dichlorophenol	NC NC	NC NC	20	0.4	ND (0.003)
2,4-Dimethylphenol	NC NC	NC	NC	NC	ND (0.11)
2,4-Dinitrophenol	NC	NC	20	0.2	ND (0.084)
2,4-Dinitrotoluene	NC	NC	NC	NC	ND (0.030)
2,6-Dinitrotoluene	NC	NC	NC	1	ND (0.026)
2-Chloronaphthalene	NC	NC	NC	NC	ND (0.021)
2-Chlorophenol	NC	NC	0.8	NC	ND (0.070)
2-Methylnaphthalene	NC	NC	NC	36.4	ND (0.038)
2-Methylphenol (o-cresol)	0.33	1,000	NC NC	0.33	ND (0.079)
2-Nitrophonol	NC NC	NC NC	NC 7	0.4	ND (0.030)
2-Nitrophenol 3 & 4 Methylphenol (m&p-cresol)	NC NC	NC NC	NC	0.3 NC	ND (0.073) ND (0.088)
3 & 4 Methylphenol (m&p-cresol) 3,3'-Dichlorobenzidine	NC NC	NC NC	NC NC	NC NC	ND (0.088)
3-Nitroaniline	NC NC	NC NC	NC NC	0.5	ND (0.018)
4,6-Dinitro-2-methylphenol	NC NC	NC	NC NC	NC	ND (0.084)
4-Bromophenyl phenyl ether	NC	NC	NC	NC	ND (0.025)
4-Chloro-3-methylphenol	NC	NC	NC	NC	ND (0.069)
4-Chloroaniline	NC	NC	NC	0.22	ND (0.022)
4-Chlorophenyl phenyl ether	NC	NC	NC	NC	ND (0.021)
4-Methylphenol	NC	NC	NC	NC	NA
4-Nitroaniline	NC	NC	NC	NC	ND (0.027)
4-Nitrophenol	NC NC	NC	7	0.3	ND (0.12)
Acenaphthene	20	1,000	20 NC	98	ND (0.020) ND (0.022)
Acenaphthylene Acetophenone	100 NC	1,000 NC	NC NC	107 NC	ND (0.022)
Anthracene	100	1,000	NC NC	1,000	ND (0.024)
Atrazine	NC NC	NC	NC	NC	ND (0.014)
Benzaldehyde	NC	NC	NC	NC	ND (0.016)
Benzo[a]anthracene	1	11	NC	1	ND (0.022)
Benzo[a]pyrene	1	1	2.6	22	ND (0.021)
Benzo[b]fluoranthene	1	11	NC	2	ND (0.023)
Benzo[g,h,i]perylene	100	1,000	NC	1,000	ND (0.026)
Benzo[k]fluoranthene	1	110	NC NO	2	ND (0.026)
Bis(2-chloroethoxy)methane	NC NC	NC NC	NC NC	NC NC	ND (0.028)
Bis(2-chloroethyl)ether Bis(2-ethylhexyl) phthalate	NC NC	NC NC	239	435	ND (0.021) ND (0.061)
Butyl benzyl phthalate	NC NC	NC NC	NC	122	ND (0.040)
Caprolactam	NC NC	NC	NC NC	NC NC	ND (0.022)
Carbazole	NC	NC	NC	NC	ND (0.032)
Chrysene	1	110	NC	1	ND (0.023)
Dibenz(a,h)anthracene	0.33	1.1	NC	1,000	ND (0.023)
Dibenzofuran	7	1,000	NC	210	ND (0.020)
Diethyl phthalate	NC	NC	100	7	ND (0.023)
Dimethyl phthalate	NC	NC	200	27	ND (0.024)
Di-n-butyl phthalate	NC NC	NC	0.014	8.1	ND (0.015)
Di-n-octyl phthalate	NC NC	NC NC	NC 60	120	ND (0.034)
Diphenyl (1,1'-Biphenyl)	NC 100	NC 1.000	60 NC	NC 1,000	ND (0.0080)
Fluoranthene Fluorene	100 30	1,000 1,000	NC 30	1,000 386	ND (0.030) ND (0.023)
Hexachlorobenzene	0.33	1,000	NC	386	ND (0.023)
Hexachlorobutadiene	NC	NC	NC NC	NC NC	ND (0.019)
Hexachlorocyclopentadiene	NC	NC	10	NC NC	ND (0.070)
Hexachloroethane	NC	NC	NC	NC	ND (0.019)
ndeno[1,2,3-cd]pyrene	0.5	11	NC	8.2	ND (0.024)
sophorone	NC	NC	NC	4	ND (0.019)
Naphthalene	12	1,000	NC	12	ND (0.019)
Nitrobenzene	NC	140	40	0.17	ND (0.020)
N-Nitrosodi-n-propylamine	NC	NC	NC	NC	ND (0.017)
N-Nitrosodiphenylamine	NC .	NC	20	NC .	ND (0.041)
Pentachlorophenol	1	55	0.8	1	ND (0.12)
Phenanthrene	100	1,000	NC 30	1,000	ND (0.031)
Phenol Pyrene	0.33 100	1,000 1,000	30 NC	0.33 1,000	ND (0.072) ND (0.026)
Total SVOCs	NC	1,000 NC	NC NC	1,000 NC	ND (0.026)

Notes:

Notes:
mg/kg - milligrams per kilogram
J - Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate
NC - No Criterion
NA - Not Analyzed
ND () - Not Detected (Method Detection Limit)
SCO - Soil Cleanup Objective
* - Recovery or RPD exceeds control limits

380 PROPERTY, STATEN ISLAND, NEW YORK SPECTRA ENERGY NJ-NY EXPANSION PROJECT SUMMARY OF RESULTS OF ANALYSIS OF SOIL SAMPLES FOR METALS AND CYANIDE

				Sample ID	RCH-2-ENV-1/4
				Lab Sample ID	JA83045-5
				Sampling Date	8/8/2011
				Matrix	Soil
METALS AND CYANIDE	Unrestricted Use SCO	Industrial SCO	Protection of Ecological Resources	Protection of Groundwater SCO	Result
Aluminum	NC	NC	10,000	NC	7740
Antimony	NC	NC	12	NC	<4.9
Arsenic	13	16	13	16	<4.9
Barium	350	10,000	433	820	<49
Beryllium	7.2	2,700	10	47	<0.49
Cadmium	2.5	60	4	7.5	<1.2
Calcium	NC	NC	10,000	NC	2870
Chromium (Total)	1 ⁽¹⁾	800 ⁽¹⁾	NC	19 ⁽¹⁾	11.7
Chromium (Hexavalent)	1 ⁽¹⁾	800 ⁽¹⁾	1	19 ⁽¹⁾	<0.98
Cobalt	NC	NC	20	NC	<12
Copper	50	10,000	50	1,720	17.1
Cyanide (Total)	27	10,000	NC	40	NA
Iron	NC	NC	NC	NC	11000
Lead	63	3,900	63	450	17.9
Magnesium	NC	NC	NC	NC	<1200
Manganese	1,600	10,000	1,600	2,000	107
Mercury (Total)	0.18	5.7	0.18	0.73	<0.075
Nickel	30	10,000	30	130	10.6
Potassium	NC	NC	NC	NC	<2400
Selenium	3.9	6,800	3.9	4	<4.9
Silver	2	6,800	2	8.3	<1.2
Sodium	NC	NC	NC	NC	<2400
Thallium	NC	NC	5	NC	<2.4
Vanadium	NC	NC	39	NC	14.5
Zinc	109	10,000	109	2,480	67.5

Notes: mg/kg - milligrams per kilogram (1) - Hexavalent chromium SCO NC - No Criterion

NA - Not analyzed
< - Less than the Method Detection Limit
SCO - Soil Cleanup Objective

380 PROPERTY, STATEN ISLAND, NEW YORK SPECTRA ENERGY NJ-NY EXPANSION PROJECT SUMMARY OF RESULTS OF ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS

				Sample ID	RCH-2-ENV-1/	4						
	Lab Sample ID											
			9	Sampling Date	8/8/2011							
		•	•	Matrix	Soil							
Equivalent Carbon Range	Unrestricted Use SCO	Industrial SCO	Protection of Ecological Resources	Protection of Groundwater SCO								
TPH-GRO (C6-C10)	NC	NC	NC	NC	ND (7.0)							
TPH-DRO (C10-C44)	NC	NC	NC	NC	164							

Notes:

NOtes:
NC - No Criterion
ND (7.0) - Not Detected (Method Detection Limit)
SCO - Soil Cleanup Objective GRO - Gasoline Range Organics DRO - Diesel Range Organics

380 PROPERTY, STATEN ISLAND, NEW YORK SPECTRA ENERGY NJ-NY EXPANSION PROJECT SUMMARY OF RESULTS OF ANALYSIS OF SOIL SAMPLES FOR POLYCHLORINATED BIPHENYLS

				Sample ID	RCH-2-ENV-1	/4
	Lab Sample ID	JA83045-5				
	Sampling Date	8/8/2011				
	Matrix	Soil				
POLYCHLORINATED BIPHENYLS (PCBs)	Unrestricted Use SCO	Industrial SCO	Protection of Ecological Resources	Protection of Groundwater SCO	Result	
Aroclor 1016	NC	NC	NC	NC	ND (0.019)	
Aroclor 1221	NC	NC	NC	NC	ND (0.043)	
Aroclor 1232	NC	NC	NC	NC	ND (0.036)	
Aroclor 1242	NC	NC	NC	NC	ND (0.023)	
Aroclor 1248	NC	NC	NC	NC	ND (0.022)	
Aroclor 1254	NC	NC	NC	NC	ND (0.034)	
Aroclor 1260	NC	NC	NC	NC	ND (0.024)	
Aroclor 1262	NC	NC	NC	NC	ND (0.021)	
Aroclor 1268	NC	NC	NC	NC	ND (0.023)	
Total PCBs	0.1	25	1	3.2	ND	

Notes: mg/kg - milligrams per kilogram NC - No Criterion ND () - Not Detected (Method Detection Limit) SCO - Soil Cleanup Objective

380 PROPERTY, STATEN ISLAND, NEW YORK SPECTRA ENERGY NJ-NY EXPANSION PROJECT SUMMARY OF RESULTS OF ANALYSIS OF SOIL SAMPLES FOR PESTICIDES AND HERBICIDES

				Sample ID	RCH-2-ENV-1/4
				Lab Sample ID	JA83045-5
				Sampling Date	8/8/2011
				Matrix	Soil
PESTICIDES	Unrestricted Use SCO	Industrial SCO	Protection of Ecological Resources	Protection of Groundwater SCO	Result
4,4'-DDD	0.0033	0.18	0.0033	14	0.0044
4,4'-DDE	0.0033	120	0.0033	17	0.0025
4,4'-DDT	0.0033	94	0.0033	136	ND (0.0011)
Aldrin	0.005	1.4	0.14	0.19	ND (0.00072)
alpha-BHC	0.02	6.8	0.04	0.02	ND (0.0011)
alpha-Chlordane	0.094	47	1.3	2.9	ND (0.00093)
beta-BHC	0.036	14	0.6	0.09	ND (0.0010)
Chlordane	NC	NC	NC	NC	NA
gamma-Chlordane	NC	NC	NC	14	ND (0.00073)
delta-BHC	0.04	1,000	0.04	0.25	ND (0.00084)
Dieldrin	0.005	2.8	0.006	0.1	ND (0.0011)
Endosulfan I	2.4	920	NC	102	ND (0.00069)
Endosulfan II	2.4	920	NC	102	ND (0.00095)
Endosulfan sulfate	2.4	920	NC	1,000	ND (0.0013)
Endrin	0.014	410	0.014	0.060	ND (0.00073)
Endrin aldehyde	NC	NC	NC	NC	ND (0.0014)
Endrin ketone	NC	NC	NC	NC	ND (0.00093)
gamma-BHC (Lindane)	0.1	23	6	0.1	ND (0.00065)
Heptachlor	0.042	29	0.14	0.38	ND (0.00088)
Heptachlor epoxide	NC	NC	NC	0.02	ND (0.00071)
Methoxychlor	NC	NC	1.2	900	ND (0.0010)
Toxaphene	NC	NC	NC	NC	ND (0.018)
2,4-D	NC	NC	NC	0.5	ND (0.010)
2,4,5-TP (Silvex)	3.8	1,000	NC	3.8	ND (0.0012)
2,4,5-T	NC	NC	NC	1.9	ND (0.0031)
Dalapon	NC	NC	NC	NC	ND (0.0024)
Dicamba	NC	NC	NC	NC	ND (0.0014)
Dichloroprop	NC	NC	NC	NC	ND (0.0082)
Dinoseb	NC	NC	NC	NC	ND (0.0066)
MCPA	NC	NC	NC	NC	ND (1.1)
MCPP	NC	NC	NC	NC	ND (0.57)
Pentachlorophenol	0.8	55	0.8	0.8	ND (0.0024)
2,4-DB	NC	NC	NC	NC	ND (0.024)

Notes:

Notes:
mg/kg - milligrams per kilogram
NC - No Criterion
NA - Not Analyzed
ND () - Not Detected (Method Detection Limit)
Shading indicates result above SCO. Color representing least stringent SCO exceeded is shown unless otherwise noted.
SCO - Soil Cleanup Objective

380 PROPERTY, STATEN ISLAND, NEW YORK SPECTRA ENERGY NJ-NY EXPANSION PROJECT SUMMARY OF RESULTS OF ANALYSIS OF SOIL SAMPLES FOR GENERAL CHEMISTRY

				Sample ID	RCH-2-ENV-1	/4
				Lab Sample ID	JA83045-5	
				Sampling Date	8/8/2011	
				Matrix	Soil	
Redox Potential Vs H2	NC	NC	NC	NC	351	
Solids, Percent	NC	NC	NC	NC	41	
pH	NC	NC	NC	NC	6.39	

Notes:

mg/kg - milligrams per kilogram NC - No Criterion

SCO - Soil Cleanup Objective



BORING NUMBER

RCH-2-ENV-2

PROJECT NAME:

Spectra NJ-NY

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

BORING METHOD: Direct Push

CONTRACTOR: Land Air Water

Environmental Services

SAMPLER TYPE/DIA.: Hand Auger/Macrocore/2"

DEPTH TO WATER: 0.5 feet

TOTAL DEPTH DRILLED: 15 feet

DATE DRILLED: 08/08/11

DRILLER: J. Lamprecht

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
1					OL	0 to 2.0' - Dark brown, organic SILT; some organic material/roots, little medium to fine sand. Wet at 0.5 ft bg, loose.
2						
3		Hand	ND		SM	2.0 to 3.0' - Dark grayish-brown, fine SAND; some silt, little organic material/roots. Wet, loose.
4		Cleared	ND	RCH-2-2/3	SP	3.0 to 8.5' - Grayish-brown, medium to fine SAND; little silt. Wet, loose.
5						
6						
7				RCH-2-2/6		
8		45	ND			
9		45	ND		SP	8.5 to 10' - Orange brown, medium to fine SAND; little clay, trace silt.
10						Wet, loose.
11					SP	10 to 15' - Grayish-brown, medium to fine SAND; little silt. Wet, loose.
12						
13		52	ND			
14						
15						End of boring @ 15'



Environmental Corporation

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

TEMPORARY WELL AND SOIL BORING LOG

RCH-2-ENV-3W

WELL NUMBER

PROJECT NAME: Spectra NJ-NY Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

DEPTH TO BEDROCK: Not Encountered

TOTAL DEPTH DRILLED: 20 feet

SAMPLER TYPE/DIA.: Hand Auger/ Macrocore/2"

CONTRACTOR: Land Air Water Environmental Services

TYPE OF WELL: Temporary

DRILLING METHOD: Hollow Stem Auger

BIT TYPE: Auger Bit

START DATE: 08/08/11
FINISH DATE: 08/08/11
DRILLER: J. Lamprecht

LOGGED BY: B. Chaky / C. Nichol

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	C	WELL DIAGRAM						LITHOLOGIC CLASSIFICATION AND COMMENTS
0 1 2 3 4 5 6 7		Hand cleared	ND ND 67.2 100.1 12.3 14.7 5.3 1.2 15.3 12.4 0.2 ND 22.9 21.7	RCH2-3W/1.5 RCH2-3W/6		•	ОН	Top of casing 18" above surface. 0 to 1.0' - FILL: Grayish-brown silt; and fibrous organic material/roots, trace fine sand. Trace brick/concrete pieces from 0 to 1.0'. Wet @ 0.5'. 1.0 to 4.0' - Grayish-brown SILT; and fibrous organic material/roots, trace fine sand. Loose, high plasticity, strong organic-like odor. 4.0 to 6.0' - Dark gray SILT; some fibrous organic material/roots. Wet, loose, high plasticity, slight organic-like odor. 6.0 to 9.0' - Dark gray, organic SILT; little fibrous organic material/roots. Wet, loose, organic-like odor.				
_ 8 _ _ 9 _		36	49 11.9 16.4 0.7				ОН	9.0 to 14.5' - Dark gray, organic SILT; trace fibrous organic material/roots. Wet, loose, organic-like odor.				
11 12 13 14		40	14.4 9.1 13.8 9.4 11 16.9 7.5				ОН	14.5 to 15' - Dark gray, organic SILT; little fine sand, trace organic material				
INNER:		, ,		N/A 0 - 15 feet				STATIC WATER LEVEL: 4.00 (8/8/11) feet below surface DEPTH WATER ENCOUNTERED: 0.5 feet below surface MEASURING POINT ELEVATION: NA ft.msl GROUND SURFACE ELEVATION: NA ft.msl				



Environmental Corporation

TEMPORARY WELL AND SOIL BORING LOG

WELL NUMBER

	. Willow Stre	et, Millburn, I		1 (973) 564-6006		SOIL BORING LOG RCH-2-ENV-3V			
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	WELL DIAGRAI	UNIFIED	LITHOLOGIC CLASS	SIFICATION AND COMMENTS	
_ 16 _						SW	15 to 17.5' - Gray, medium to coars organic-like odor.	se SAND; trace silt. Wet, loose, slight	
_ 17 _									
_ 18 _		60	ND			SM	17.5 to 20' - Reddish-brown, fine S	AND and SILT. Wet, dense.	
_ 19 _ 20									
_ 20 _							End o	f boring @ 20'	
_									



BORING NUMBER

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

RCH-3-ENV-1

PROJECT NAME:

Spectra NJ-NY

LOCATION: Staten Island, New York

Expansion

CONTRACTOR: Land Air Water Environmental

Services

DATE DRILLED: 09/05/12

SAMPLER TYPE/DIA.: Hand Auger /

PROJECT NO.: 168217

Macrocore/2"

DEPTH TO WATER: 4 feet

DRILLER: J. Lamprecht

BORING METHOD: Hand Auger/Direct Push TOTAL DEPTH DRILLED: 20 feet

LOGGED BY: D. Avudzega

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)		SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0 _						
1 _						0.0 to 2.0' - Asphalt roadway and gravel sub-base.
2 _						
3 _		Hand Cleared	ND			2.0 to 10.5' - FILL: Dark brown, medium to coarse sand; some sub-angular gravel, processed wood, glass. Loose, wet at 4 feet, no staining or odors.
4 _		Cleared		RCH-3-ENV-1/3		Wet at 4'
_ 5 _						
6 _						
7 _				RCH-3-ENV-1/7		
8 _		24	ND	110110 2111 1/1		
9 _						
10 _						
11 _					ОН	10.5 to 15' - Yellowish brown CLAY; some organics (roots). Fibrous, wet, no staining, slight hydrogen sulfide-like odors.
_ 12 _		30	ND			
_ 13 _		30	טאו			
_ 14 _						
15						



BORING NUMBER

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

RCH-3-ENV-1

			,			
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)		SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
					PT	15 to 16' - Yellowish orange PEAT. Fibrous, wet.
16						
17		-			ОН	16 to 17' - Greenish gray CLAY; little medium to coarse sand, trace organics (roots). Soft, wet, no staining or odors.
		60	ND		SP	17 to 20' - Greenish gray, fine to medium SAND. Loose, wet, no
18		00	שוו			staining or odors.
19						
20						
						End of boring @ 20'.
<u> </u>						Note: Borehole backfilled with bentonite chips and soil cuttings to restore to grade.
						RCH-3-ENV-1-WC/2, 4, 6 and 8 collected for TPHC analysis.
<u> </u>						RCH-3-ENV-1-WC composited for waste characterization
						analyses.
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TRC

Environmental Corporation

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

TEMPORARY WELL AND SOIL BORING LOG

PROJECT NAME: Spectra NJ-NY Expansion LOCATION: Staten Island, New York

CONTRACTOR: Land Air Water Environmental **PROJECT NO.:** 168217

Services

SAMPLER TYPE/DIA.: Hand Auger/ Macrocore/2" TYPE OF WELL: Temporary DEPTH TO BEDROCK: Not Encountered DRILLING METHOD: Hollow Stem Auger TOTAL DEPTH DRILLED: 20 feet

BIT TYPE: Auger Bit

WELL NUMBER

RCH-3-ENV-2W

START DATE: 09/04/12 FINISH DATE: 09/05/12 DRILLER: J. Lamprecht LOGGED BY: B. Chaky

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	D	WELL DIAGRAM	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
(FEET) 0	FER O IIV.	Hand cleared	6.1 17.5 18.1 19.3 13.1 13.2 ND	RCH-3-ENV-2W/3 RCH-3-ENV-2W/5			5	0.0 to 0.5' - Asphalt. 0.5 to 3.0' - FILL: Dark gray brown, fine to coarse sand and fine to medium sub-angular gravel; trace silt, brick, cinders, ash, ceremics, glass, metal, coal. Loose, dry. 3.0 to 20' - FILL: Light gray brown, fine to coarse sand; some fine to medium sub-angular gravel, trace silt, slag, cinders, ash, ceramics, coal, processed wood from 15 to 20 feet. Loose, moist, wet at 15 feet.
	YPE/DIAMET	, ,		N/A				Wet at 15' STATIC WATER LEVEL: 12.64 feet below surface DEPTH WATER ENCOUNTERED: 15 feet below surface
	NED OR OPE	N INTERVAL:		10 - 20 feet				MEASURING POINT ELEVATION: NA ft.msl GROUND SURFACE ELEVATION: NA ft.msl

TRC Environmental Corporation 57 E. Willow Street, Millburn. NJ 07041 (973) 564-6006

TEMPORARY WELL AND SOIL BORING LOG

WELL NUMBER
RCH-3-ENV-2W

57 E.	Willow Stre	et, Millburn,	NJ 0704	1 (973) 564-6006			SOIL	RCH-3-ENV-2VV	
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	WELL DIAGRAM	INFE		LITHOLOGIC CLAS	SIFICATION AND COMMENTS
_ 16 _						THE PERSON NAMED IN			
_ 17 _		-							
_ 18 _		14	ND						
_ 19 _		-							
_ 20 _								End o	of boring @ 20'
								Elia	or borning @ 20
		-							nstruction Details
									" diameter 0.010 slot PVC screen
								20 ft. below surface - No	
⊩ –								depth of well: 20 ft below	surface
							NOTE:		nite chips and soil cuttings to restore to
F -							grade.		nite chips and soil cuttings to restore to
									collected for TPHC analysis.
									ed for waste characterization analyses.
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BORING NUMBER

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

RCH-3-ENV-4

PROJECT NAME:

Spectra NJ-NY

LOCATION: Staten Island, New York

Expansion

CONTRACTOR: Land Air Water Environmental

Services

DATE DRILLED: 09/04/12

SAMPLER TYPE/DIA.: Hand Auger /

PROJECT NO.: 168217

Macrocore/2"

DEPTH TO WATER: 10 feet

DRILLER: J. Lamprecht

BORING METHOD: Hand Auger/Direct Push TOTAL DEPTH DRILLED: 20 feet

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
1 _				RCH-3-ENV-4/1		0.0 to 0.5' - Asphalt. 0.5 to 2.0' - FILL: Gray brown, fine to medium sand; fine to medium sub-angular gravel, trace silt, concrete, carbon rod.
2 _				1.011-3-EINV-4/1		Loose, moist.
3 _		Hand Cleared	ND			2.0 to 17' - FILL: Gray brown, fine to coarse sand; fine to medium
4 _						sub-angular gravel, trace silt, brick, cinders, ash, glass, concrete. Loose, moist, wet at 10 feet
5 _						
6 _						
7 _				RCH-3-ENV-4/6		
8 _		15	ND			
9 _						
10						
11						Wet at 10'
12						
13		20	ND			
14						
15						



BORING NUMBER

RCH-3-ENV-4

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)		SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
_ 16 _						
_ 17 _		-				
_ 18 _		26	ND		PT	17 to 20 '- PEAT. Loose, wet.
_ 19 _						
20						End of boring @ 20'.
						Note: Borehole backfilled with bentonite chips and soil cuttings to restore to grade.
						RCH-3-ENV-4-WC/2, 4, 6 and 8 collected for TPHC analysis. RCH-3-ENV-4-WC composited for waste characterization
						analyses.
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BORING NUMBER

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

RCH-4-ENV-19

PROJECT NAME:

Spectra NJ-NY Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water Environmental

Services

SAMPLER TYPE/DIA.: Hand Auger /

BORING METHOD: Direct Push

Macrocore/2"

DEPTH TO WATER: 6.0 feet

TOTAL DEPTH DRILLED: 20 feet

DATE DRILLED: 04/11/12

DRILLER: J. Lamprecht

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)		SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
1 _						0.0 to 2.0' - FILL: Brown, fine to coarse sand and silt, some fine to coarse gravel, little asphalt, wood, metal and red brick; dry.
2 _						2.0 to 6.0' - FILL: Black, fine to coarse sand and silt, some fine to
3 _		Hand	ND	RCH-4-ENV-19-WC/2		coarse gravel, little red brick, wood and glass; moist.
4 _		Cleared		RCH-4-ENV-19/3		
5 _				RCH-4-ENV-19-WC/4		
6 _					CM	6.0 to 8.0' - Black to brown, fine to coarse SAND and SILT, some
7 _					SIVI	fine to coarse gravel, trace organics; wet at 6.0'.
8 _		46	ND	RCH-4-ENV-19/7	ОН	8.0 to 10' - Black to gray CLAY, trace organics; moist.
9 _				RCH-4-ENV-19-WC/6	011	oto to 10 Black to gray ob 11, trace organice, motet.
_ 10 _					SC	10 to 15' - Light brown to gray, fine to coarse SAND, little clay; wet.
11 _						
_ 12 _						
_ 13 _		15	ND			
_ 14 _						
15						

OT	RC	Enviro	nmei	ntal Corpo	rati	on	SOIL BORING LO		BORING NUMBER
				(973) 564-6006	- 0-0-		SOIL BORING LOG		RCH-4-ENV-19
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)		SAMPLE DESIGNATION	UNIFIED				CATION AND COMMENTS
_ 16 _					SW	15 to	o 20' - Gray, fine SAND; v	vet.	
_ 17 _									
_ 18 _		48	ND						
_ 19 _									
_ 20 _								,,	
									ring at 20'
						Note	e: Borehole backfilled with	gro	out and restored to grade.
_									
_									
_									
_									

CTRC

Environmental Corporation

TEMPORARY WELL AND SOIL BORING LOG

WELL NUMBER

RCH-4-ENV-20W

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

PROJECT NAME: Spectra NJ-NY Expansion

SAMPLER TYPE/DIA.: Hand Auger/Macrocore/2"

PROJECT NO.: 168217

DEPTH TO BEDROCK: Not Encountered

TOTAL DEPTH DRILLED: 20 feet

LOCATION: Staten Island, New York

CONTRACTOR: Land Air Water Environmental

Services

TYPE OF WELL: Temporary

DRILLING METHOD: Hollow Stem Auger

BIT TYPE: Auger Bit

START DATE: 04/10/12
FINISH DATE: 04/10/12
DRILLER: E. Santiago
LOGGED BY: B. Chaky

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)		SAMPLE DESIGNATION	WELL DIAGRAM	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS		
0							Top of casing .25' below surface.		
							0.0 to 1.0' - FILL: Gray brown, medium to fine sand, little medium to fine, subangular to sub-rounded gravel and silt; dry, medium-dense.		
_ ' _				RCH-4-ENV-20W/2			1.0 to 2.0' - FILL: Orange brown, medium to fine sand, little coarse to fine, angular to sub-angular gravel, silt and slag; medium-dense to loose.		
				RCH-4-ENV-20W- WC/2			2.0 to 6.5 - FILL: Gray brown, medium to fine sand, some medium to fine, angular to sub-rounded gravel, little silt and cobbles; medium-dense to loose,		
_ 3 _		Hand Cleared	ND				moist.		
_ 4 _				DOLL 4 END 4 COM					
5				RCH-4-ENV-20W- WC/4					
							Wet at 5.0'.		
_ 6 _				RCH-4-ENV-20W-					
_ 7 _				WC/6			6.5 to 9.0' - FILL: Red brown, medium to fine sand, some silt, little fine, sub-rounded gravel, trace clay; moist to wet, medium-dense to dense.		
8							,		
		42	ND	RCH-4-ENV-20W- WC/8					
_ 9 _						ОН	9.0 to 10' - Dark gray to black PEAT and CLAY, trace silt; wet, loose.		
_ 10 _						01	10 to 15' - Gray brown to brown, medium to fine SAND, little clay, trace fine,		
11						CL	rounded gravel and silt; wet, medium-dense.		
_ 12 _		60	ND						
_ 13 _		00	ND						
14									
15									
	VDE/DIAN4=	TED (IN)	1	<u> </u>	[88888]	1	CTATIC WATER LEVEL: 2.6 (4/44/42) foot below surface		
	YPE/DIAME			NI/A		_	STATIC WATER LEVEL: 3.6 (4/11/12) feet below surface DEPTH WATER ENCOUNTERED: 5 feet below surface		
IININER:	PVC/3	OUIEK:		IN/A			DEFINITION SUFFICE STATE		
SCREE	NED OR OPE	N INTERVAL:		0.25 to 14.76		ı	MEASURING POINT ELEVATION: NA ft.msl		
		OW SURFACE)			GROUND SURFACE ELEVATION: NA ft.msl				

TRC Environmental Corporation

TEMPORARY WELL AND SOIL BORING LOG

WELL NUMBER
RCH-4-ENV-20W

57 E.		et, Millburn, I	NJ 0704	1 (973) 564-6006			S	RCH-4-ENV-20W				
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	WELL DIAGRAI	м	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS				
_ 16 _								15 to 20' - Brown to gray brown, modense.	edium to fine SAND, trace silt; wet, medium			
_ 17 _			NB									
_ 18 _		60	ND									
_ 19 _ 20												
_ 20 _								End o	f boring at 20'			
									nstruction Details			
_								0.25 to 14.76 ft. below surface 0.5 to 14.76 ft. below surface -	- 3" diameter 0.010 slot PVC screen No. 01 sand.			
								Total depth of well = 14.76 feet	bg as measured on 4/11/12			
_								Note: Borehole back filled with and restored to grade.	bentonite chips, sand, soil cuttings			
_												
_												
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<u> </u>												
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<u> </u>		1		l .								

Fnvironmental Corporation

SOIL BORING LOG llburn, NJ 07041 (973) 564-6006

RCH-4-ENV-21.1

BORING NUMBER

PROJECT NAME:

Spectra NJ-NY Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water Environmental

Services

SAMPLER TYPE/DIA.: Hand Auger /

Split Spoon/2"

DEPTH TO WATER: 6.0 feet

TOTAL DEPTH DRILLED: 27 feet BORING METHOD: Mud rotary /

DATE DRILLED: 04/16/12

DRILLER: J. Lamprecht

LOGGED BY: B. Chaky

		Tri cone rolle	r bit			
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
_ 0 _						
_ 1 _			ND 0.6			0.0 to 4.0' - FILL: Gray brown, medium to fine sand, some coarse to fine, angular to rounded gravel, little silt, cobbles, concrete, brick, asphalt, metal, processed wood, glass, and plastic, trace
_ 2 _				RCH-4-ENV-21.1-		clay; moist at 3.0'; dense to medium-dense.
_ 3 _		Hand	ND	WC/2		
4		Cleared	10.8	RCH-4-ENV-21.1/3 RCH-4-ENV-21.1/4		
5			123	RCH-4-ENV-21.1- WC/4		4.0 to 6.0' - FILL: Dark gray to black, medium to fine sand, little medium to fine, sub-angular to rounded gravel, little silt, coal,
			43.6			cinders, and slag.
_ 6 _	1				PT	6.0 to 8.0' - Brown PEAT, little clay, trace silt; loose; wet at 6.0'.
7	W.O.H.	6	2.3			
8	1 W.O.H.	_				
9	1 W.O.H.			RCH-4-ENV-21.1- WC/8	SM	8.0 to 10' - Brown, medium to fine SAND, little silt, trace clay and root material; loose.
_	1	24	ND			
_ 10 _	4				SM	10 to 12' - Brown, medium to fine SAND, trace silt; medium dense.
11	6	40	NE			2.3,
	9	10	ND			
12 _	11					
_ 13 _						12 to 15' - Continuous drilling - no spoons collected.
14						
15						

5/30/2012 1 of 2

BORING NUMBER

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

RCH-4-ENV-21.1

57 E. V	Willow Stree	t, Millburn, N	J 07041	(973) 564-6006												14 4	- Z I ,	• •
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED				HOLOG									
4.0	6				SM	15 to	17' -	- Gr	ay, me	dium	to fine	SA	ND, tr	ace s	silt; m	ediun	n-den	se.
_ 16 _	5 10	14	ND															
17	14																	
18						17 to	20'	- Cc	ontinuo	us dri	lling - n	no s	poons	colle	ected	l.		
_ 19 _																		
20																		
21	9 12				SM	20 to		- Da	ark gray	/ brov	vn, med	diur	n to fir	ne SA	AND,	trace	silt;	
	20	14	ND															
C.	TRO	> —				22 to	25' -	- Co	ontinuo	us dri	lling - n	no s	poons	colle	ected	l.		
24		-																
_ 24 -		-																
_ 25 _																		
26	9 14	-			SC	25 to	27'	- Re	ed brow	/n, fin	e SANI	D a	nd SIL	₋T; de	ense.			
F 20 -	14	20	ND															
_ 27 _	16										ما مد ام		~ ~ ^ ^	1 7 !				
		<u> </u>									nd of b	orir	ig at 2	. 7				
						Note	: Bor	reho	le grou	ıted ir	n accor	dar	ce wit	h N.	J.A.C	. 7:90	-3.1.	
									compos			RC	H-4-E	NV-2	1.1-V	VC wa	as	
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2 of 2 5/30/2012

BORING NUMBER

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

RCH-4-ENV-22

PROJECT NAME:

Spectra NJ-NY Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water Environmental

Services

DATE DRILLED: 04/06/12

SAMPLER TYPE/DIA.: Hand Auger /

Macrocore/2"

DRILLER: J. Lamprecht

BORING METHOD: Direct Push

TOTAL DEPTH DRILLED: 25 feet

DEPTH TO WATER: 8.0 feet

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
1						0.0 to 4.0' - FILL: Red brown, fine to coarse sand, concrete and red brick, some fine to coarse gravel; dry.
2						
3				RCH-4-ENV-22-WC/2		
				RCH-4-ENV-22/3		
4 -		Hand Cleared	ND	RCH-4-ENV-22-WC/4		4.0 to 8.0' - FILL: Gray brown, fine to coarse sand, red brick,
5 _						concrete, wood and glass, little fine to coarse gravel; moist.
6 _				DOLL 4 ENIV 00 MOVO		
7 _				RCH-4-ENV-22-WC/6 RCH-4-ENV-22/6		
8 _						
9			NE	RCH-4-ENV-22-WC/8	SW	8.0 to 10' - Brown gray, fine to coarse SAND; wet at 8.0'.
10		26	ND			
					sc	10 to 19' - Brown gray, fine to coarse SAND, some clay.
11 -						
_ 12 _		50	ND			
_ 13 _		50	ND			
14 _						
15						



BORING NUMBER

57 E. V	Villow Street	t, Millburn, N.	J 07041	(973) 564-6006					RCH-4-ENV-22
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)		SAMPLE DESIGNATION	UNIFIED		LITHOLOGIC	CLASSIFIC	CATION AND COMMENTS
_ 16 _									
17 _									
18 _		60	ND						
19					00	40.4	001 0 5		
20 _						vege	tation; wet		AND, some clay, trace
21 _					SW	20 to	24' - Red brown, f	ine to coa	rse SAND and GRAVEL; wet.
22									
23		60	ND						
24									
25					SW	24 to	25' - Red brown, f		
								End of bo	oring at 25'
						Note	: Borehole backfille	ed with gro	out and restored to grade.
								·	-

BORING NUMBER

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

RCH-4-ENV-23

PROJECT NAME:

Spectra NJ-NY Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water Environmental

Services

DATE DRILLED: 04/06/12

SAMPLER TYPE/DIA.: Hand Auger /

Macrocore/2"

DEPTH TO WATER: 4.0 feet

DRILLER: J. Lamprecht

BORING METHOD: Direct Push

TOTAL DEPTH DRILLED: 20 feet

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
_ 0 1 2 3				RCH-4-ENV-23/1 RCH-4-ENV-23-WC/2		0.0 to 1.0' - FILL: Gray to dark brown, medium to fine sand, some coarse to fine, sub-angular to sub-rounded gravel, little silt, roots, concrete and rip-rap; dry, medium-dense. 1.0 to 3.0' - FILL: Dark brown to orange brown, medium to fine sand, little coarse to fine, sub-angular to sub-rounded gravel, some brick and concrete, little silt; medium-dense to loose.
_ 4 _ _ 5 _ _ 6 _ _ 7 _		Hand Cleared	ND	RCH-4-ENV-23-WC/4 RCH-4-ENV-23/5 RCH-4-ENV-23-WC/6		3.0 to 8.0' - FILL: Orange brown, medium to fine sand, trace medium to fine, sub-angular to rounded gravel, some brick and concrete, little silt; medium-dense to loose. Wet at 4.0'.
9 _		8	ND	RCH-4-ENV-23-WC/8	sw	8.0 to 15' - Brown, medium to fine SAND, trace fine, rounded gravel and silt; medium-dense to loose.
_ 11 _ _ 12 _ _ 13 _		2	ND			
_ 14 _ _ 15						



BORING NUMBER

57 E. V	Villow Stree	t, Millburn, N	J 07041	(973) 564-6006			SOIL BOY	KING LOG	RCH-4-ENV-23
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)		SAMPLE DESIGNATION	UNIFIED				CATION AND COMMENTS
_ 16 _		-			SM	15 to	20' - Orange br ded gravel; med	own, medium to lium-dense.	o fine SAND, little silt, trace fine,
_ 17 _		- - 							
_ 18 _		- 54	ND						
19		-							
20		-							
								End of bo	oring at 20'
		- -				Note	: Borehole back	filled with grout	and restored to grade.
_		-							
_		-							
_]							
<u> </u>		-							
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<u> </u>									
–									

BORING NUMBER

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

RCH-4-ENV-24

PROJECT NAME:

Spectra NJ-NY

Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water Environmental

Services

DATE DRILLED: 04/10/12

SAMPLER TYPE/DIA.: Hand Auger /

Macrocore/2"

DEPTH TO WATER: 4.0 feet

DRILLER: E.Santiago

BORING METHOD: Direct Push

TOTAL DEPTH DRILLED: 20 feet

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
1						0.0 to 1.0' - FILL: Brown, coarse to fine sand, little coarse to fine, gravel, trace coal; dry, medium-dense.
2				RCH-4-ENV-24/1	SW	1.0 to 4.0' - Brown, coarse to fine SAND, little coarse to fine, gravel; moist.
3		Hand		RCH-4-ENV-24-WC/2		
4		Cleared	ND			
				RCH-4-ENV-24-WC/4	SM	4.0 to 8.0'- Brown to gray, coarse to fine SAND, trace clay; wet at 4.0'.
_ 5 _						
6 _				RCH-4-ENV-24-WC/6		
7 –				RCH-4-ENV-24/7		
8 _		57	ND	RCH-4-ENV-24-WC/8	SW	8.0 to 20' - Brown, fine to coarse SAND; wet.
9 _						
_ 10 _						
_ 11 _						
_ 12 _						
_ 13 _		55	ND			
_ 14 _						
15						

	RC Villow Street	Enviro	nme i J 07041	ntal Corpo (973) 564-6006	rati	on	SOIL BORIN	NG LOG	BORING NUMBER RCH-4-ENV-24
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED				CATION AND COMMENTS
_ 16 _					SW	8.0 t	o 20' - Brown, fine	e to coarse	SAND; wet.
17									
_ 18 _		46	ND						
_ 19 _									
_ 20 _								End of ho	oring at 20'
_						Nata	. Davahala baaldi		_
_						INOIE	: Borenole backii	ilea with gro	out and restored to grade.
_									
_									
_									
<u> </u>									

CTRC

Environmental Corporation

TEMPORARY WELL AND SOIL BORING LOG

WELL NUMBER

RCH-4-ENV-25W

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

PROJECT NAME: Spectra NJ-NY Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217 CONTRACTOR: Land Air Water Environmental

Services

SAMPLER TYPE/DIA.: Hand Auger/Macrocore/2"

TYPE OF WELL: Temporary

DEPTH TO BEDROCK: Not Encountered DRILLING METHOD: Hollow Stem Auger

TOTAL DEPTH DRILLED: 20 feet BIT TYPE: Auger Bit

START DATE: 04/09/12
FINISH DATE: 04/10/12
DRILLER: E. Santiago
LOGGED BY: W. Lindemuth

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)		SAMPLE DESIGNATION	WELL DIAGRAM	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS		
_ 0 _						SM	Top of casing 0.50' below surface. 0.0 to 1.0' - Brown SILT and fine to coarse SAND, little fine to coarse		
_ 1 _				RCH-4-ENV-25W-		sw	gravel, trace organics (roots); dry. 1.0 to 4.0' - Brownish gray, fine to coarse SAND, little fine to coarse gravel; moist.		
_ 3 _ _ 4 _		Hand Cleared	ND	/2 & RCH-4-ENV- 25W-WC/2 RCH-4-ENV-25W-		SW/	4.0 to 6.0'. Proving fine to geograp SAND little fine to geograp gravely		
_ 5 <u>_</u>				WC/4		SW	4.0 to 6.0' - Brown, fine to coarse SAND, little fine to coarse gravel; wet at 4.0'.		
7 _				RCH-4-ENV-25W- WC/6 RCH-4-ENV-25W/7		SP	6.0 to 10' - Brown, fine to coarse SAND; wet.		
_ 8 _ _ 9 _		42	ND	RCH-4-ENV-25W- WC/8					
_ 10 _						SP	10 to 15' - Gray/brown, fine to coarse SAND; wet.		
_ 12 _ _ 13 _		- 60	ND						
_ 14 _ _ 15									
CASING T	YPE/DIAME	TER (IN.) OUTER:		N/A		D	STATIC WATER LEVEL: 2.72 (4/10/12) feet below surface EPTH WATER ENCOUNTERED: 4 feet below surface		
SCREENED OR OPEN INTERVAL: 0.50 to 15.50 ft. bg (FEET BELOW SURFACE)					MEASURING POINT ELEVATION: NA ft.msl GROUND SURFACE ELEVATION: NA ft.msl				

oration	TEMPORARY WELL AND
	SOIL BORING LOG

WELL NUMBER
RCH-4-ENV-25W

0	TRC	Environmental Corpo
	57 E. Willow St	reet, Millburn, NJ 07041 (973) 564-6006

57 E.	57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006							SOIL BORING LOG RCH-4-ENV-23VV				
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	WELL DIAGRAN	1	UNIFIED	LITHOLOGIC CLASS	SIFICATION AND COMMENTS			
						5	SP	15 to 20' - Red/Brown, fine to c	oarse SAND; wet.			
16												
17												
		56	ND									
18												
_ 19 _		-										
_ 20 _								End	of boring at 20'			
									nstruction Details			
<u> </u>									- 3" diameter 0.010 slot PVC screen			
								0.75 to 15.50 ft. below surface				
<u> </u>								0.75 to 15.50 ft. below surface	- No. 01 Sand.			
		-						Total Depth of well = 14.58 fee	t bg as measured on 4/10/12			
⊩ –								Total Doptil of Well = 14.00 lee	1 bg 45 medsared 611 4/16/12			
								Notes:				
<u> </u>									ite chips, sand, soil cuttings to restore			
								to grade.	me empe, earra, een earmige te rectore			
<u> </u>		-							/-25W-WC was collected from this			
		1						boring.				
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BORING NUMBER

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

RCH-4-ENV-26

PROJECT NAME:

Spectra NJ-NY

LOCATION: Staten Island, New York Expansion

PROJECT NO.: 168217

CONTRACTOR: Land Air Water Environmental

Services

DATE DRILLED: 04/09/12

SAMPLER TYPE/DIA.: Hand Auger /

Macrocore/2"

DEPTH TO WATER: 4.0 feet

DRILLER: K.McGourty

BORING METHOD: Direct Push

TOTAL DEPTH DRILLED: 20 feet

LOGGED BY: J.Lenhart

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
_ 1 _				RCH-4-ENV-26/1		0.0 to 2.0' - FILL: Gray brown, medium to fine sand, some medium to fine, angular to sub-angular gravel, trace silt, concrete, brick, road base gravel and glass; moist, medium-dense.
2 _						2.0 to 4.0' - FILL: Brown to dark brown, fine to medium sand, little
_ 3 _				RCH-4-ENV-26-WC/2		fine to medium, sub-angular to sub-rounded gravel and concrete, trace silt; moist, medium-dense to loose.
_ 4 _		Hand Cleared	ND	RCH-4-ENV-26-WC/4		4.0 to 10' - FILL: Gray brown, medium to fine sand, trace fine rounded gravel and silt; wet at 4.0', loose.
5 _						Tourided graver and sint, wet at 4.0 , 10036.
6 _				DOLL 4 ENIV 00 MQ/0		
7 _				RCH-4-ENV-26-WC/6 RCH-4-ENV-26/6		
8 _						
9		0.4		RCH-4-ENV-26-WC/8		
		24	ND			
_ 10 _					SM	10 to 15' - Red/brown, medium to fine SAND, little silt, trace fine, sub-rounded gravel; medium-dense, wet.
_ 11 _						Sub-rounded graver, medium-dense, wet.
_ 12 _						
_ 13 _		38	ND			
_ 14 _						
15						

	RC Villow Street	Enviroi	nmei J 07041	ntal Corpoi (973) 564-6006	on	SOIL BORIN	G LOG	BORING NUMBER RCH-4-ENV-26	
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)		SAMPLE DESIGNATION	UNIFIED				CATION AND COMMENTS
_ 16 _					SM	15 to	20' - Brown, med	ium to fine	SAND, trace silt; wet, dense.
17									
_ 18 _		50	ND						
_ 19 _									
_ 20 _								Food of bo	oring at 20'
								Elia oi ba	oring at 20
						Note	: Borehole backfill	ed with so	il cuttings and restored to grade.
_									
_									
_									

BORING NUMBER

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

RCH-4-ENV-27

PROJECT NAME:

Spectra NJ-NY

Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water Environmental

Services

DATE DRILLED: 04/05/12

SAMPLER TYPE/DIA.: Hand Auger /

Macrocore/2"

DEPTH TO WATER: 4.0 feet

DRILLER: K.McGourty

BORING METHOD: Direct Push

TOTAL DEPTH DRILLED: 20 feet

LOGGED BY: J.Lenhart

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
1						0.0 to 2.0' - FILL: Brown, coarse to fine sand, some silt, little coarse to fine gravel,trace cinders and slag; moist.
2				RCH-4-ENV-27/1		
3 _				RCH-4-ENV-27-WC/2	SP	2.0 to 4.0' - Brown, fine to coarse SAND, some fine to coarse gravel, trace silt; moist
_ 4 _		Hand Cleared	ND	RCH-4-ENV-27-WC/4	sw	4.0 to 9.0' - Light brown, fine to coarse SAND; wet at 4.0'.
_ 5 _						
6 _						
7 _				RCH-4-ENV-27-WC/6 RCH-4-ENV-27/6		
8 _						
9		26	ND	RCH-4-ENV-27-WC/8		
10		20	ND		ML	9.0 to 14' - Red brown, SILT and CLAY; wet.
11						
_ 12 _		51	ND			
_ 13 _			145			Note: Borehole backfilled with soil cuttings and restored to grade.
_ 14 _					sw	14 to 15' - Red brown, fine to coarse SAND; wet.
15						End of boring at 15'.

BORING NUMBER

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

RCH-4-ENV-28

PROJECT NAME:

Spectra NJ-NY Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water Environmental

Services

DATE DRILLED: 04/04/12

SAMPLER TYPE/DIA.: Hand Auger /

Macrocore/2"

DEPTH TO WATER: 3.0 feet

DRILLER: E. Santiago

BORING METHOD: Direct Push

TOTAL DEPTH DRILLED: 20 feet

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
1 _						0.0 to 2.0' - FILL: Asphalt (4" thick); gravel base (4"); dark brown, medium to fine sand, some medium to fine angular to sub-angular gravel, little silt; moist, medium-dense.
_ 2 _						
_ 3 _				RCH-4-ENV-28-WC/2 RCH-4-ENV-28/2		2.0 to 9.0' - FILL: Orange brown, medium to fine sand, little clay, trace medium to fine, rounded gravel, trace silt; medium-dense to loose. Wet at 3.0'.
4		Hand	ND			
5		Cleared	,,,,	RCH-4-ENV-28-WC/4		
_ 6 _				RCH-4-ENV-28-WC/6		
7 _						
8				RCH-4-ENV-28/7		
9				RCH-4-ENV-28-WC/8		
_ 9 _		24	ND		CL	9.0 to 16' - Red brown CLAY, little medium to fine, angular to
_ 10 _						rounded gravel, trace medium to fine sand; medium-dense to dense.
_ 11 _						
12						
13		58	ND			
14						
15						

OT	RC	Enviro	nmei	ntal Corpo	rati	on			BORING NUMBER
		t, Millburn, N	J 07041	(973) 564-6006	-	•	SOIL BORING LOG	RCH-4-ENV-28	
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED		LITHOLOGIC	CLASSIFIC	CATION AND COMMENTS
16									
17						16 to		dium to fine	SAND, trace silt; medium-dense
18		56	ND						
19									
20									
								End of bo	oring at 20'
						Note	: Borehole backfil	lled with gro	out and restored to grade.
_									
_									
_									
_									
-									

CTRC

Environmental Corporation

TEMPORARY WELL AND SOIL BORING LOG

WELL NUMBER

RCH-4-ENV-29W

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

PROJECT NAME: Spectra NJ-NY Expansion

PROJECT NO.: 168217

DEPTH TO BEDROCK: Not Encountered

TOTAL DEPTH DRILLED: 20 feet

SAMPLER TYPE/DIA.: Hand Auger/Macrocore/2"

LOCATION: Staten Island, New York

CONTRACTOR: Land Air Water Environmental

Services

TYPE OF WELL: Temporary

DRILLING METHOD: Hollow Stem Auger

BIT TYPE: Auger Bit

START DATE: 04/04/12
FINISH DATE: 04/04/12
DRILLER: E. Santiago
LOGGED BY: W. Lindemuth

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	WELL DIAGRAM	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0							Top of casing .80' below surface.
_ 1 _ 2 3 4 5 6 7		Hand Cleared	ND	RCH-4-ENV-29W-WC/2 RCH-4-ENV-29W-WC/4 RCH-4-ENV-29W-WC/6 RCH-4-ENV-29W-WC/6		SM	O.0 to 0.5' - FILL: Black asphalt and fine to coarse, gravel; dry. 0.5 to 3.0' - FILL: Brown, fine to coarse sand and silt, some fine to coarse gravel, trace concrete and wood; moist. 3.0 to 8.0' - Light brown/gray, fine to coarse SAND, little silt; moist. Wet @ 4.0'
_ 8 _ _ 9 _ _ 10 _		33	ND	RCH-4-ENV-29W- WC/8		ML	8.0 to 10' - Red/brown CLAY, little fine to medium gravel; moist, medium-stiff.
_ 11 _ _ 12 _ _ 13 _ _ 14 _ _ 15		57	ND			ML	. 10 to 20' - Red/brown CLAY, trace fine to medium gravel; stiff, wet.
	YPE/DIAME ⁻ PVC/3			N/A		[STATIC WATER LEVEL: 1.74 (4/5/12) feet below surface DEPTH WATER ENCOUNTERED: 4 feet below surface
SCREE		N INTERVAL: DW SURFACE)		0.8 to 14.71			MEASURING POINT ELEVATION: NA ft.msl GROUND SURFACE ELEVATION: NA ft.msl

Environmental Corporation TEMPORARY WELL AND SOIL BORING LOG

WELL NUMBER

RCH-4-ENV-29W

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006 DEPTH **BLOW** UNIFIED RECOVERY FROM PID SAMPLE WELL COUNT SURFACE (INCHES) DESIGNATION DIAGRAM LITHOLOGIC CLASSIFICATION AND COMMENTS (ppm) PER 6 IN. (FEET) 10 to 20' - Red/brown CLAY, trace fine to medium gravel; stiff, wet. 16 17 ND 60 18 19 20 End of boring at 20' Well Construction Details 0.8 to 14.71 ft. below surface - 3" diameter 0.010 slot PVC screen 1.25 to 14.71 ft. below surface - No. 01 sand. Total Depth of well = 14.71 feet bg as measured on 4/5/12 Note: Borehole backfilled with bentonite chips, sand, soil cuttings to restore to grade.

TRC

BORING NUMBER

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

RCH-4-ENV-30

PROJECT NAME:

Spectra NJ-NY

LOCATION: Staten Island, New York Expansion

PROJECT NO.: 168217

CONTRACTOR: Land Air Water Environmental

Services

DATE DRILLED: 04/05/12

SAMPLER TYPE/DIA.: Hand Auger /

Macrocore/2"

DEPTH TO WATER: 4.0 feet

DRILLER: K.McGourty

BORING METHOD: Direct Push

TOTAL DEPTH DRILLED: 20 feet

LOGGED BY: J.Lenhart

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
1						0.0 to 1.0' - Asphalt and coarse to fine gravel; dry
2				RCH-4-ENV-30/1	SW	1.0 to 4.0' - Red brown, coarse to fine SAND and CLAY, some coarse to fine gravel, little cobbles; moist.
3				RCH-4-ENV-30-WC/2		
4 –		Hand Cleared	ND	RCH-4-ENV-30-WC/4	CL	4.0 to 8.0' - Red brown CLAY and coarse to fine GRAVEL; Wet at 4.0'.
_ 5 _				RCH-4-ENV-30/5		4.0.
6 _				RCH-4-ENV-30-WC/6		
7 _						
8 _						8.0 to 10' - Brown red SILT, little clay, trace coarse to fine gravel;
9 _		26	ND	RCH-4-ENV-30-WC/8	IVIL	wet.
10						
11					ML	10 to 20' - Red brown SILT and CLAY, little fine gravel; wet.
12						
		60	ND			
_ 13 _						
_ 14 _						
15						

	RC Villow Street	Enviro	nmei J 07041	ntal Corpoi	on	SOIL BORING LOG	BORING NUMBER RCH-4-ENV-30	
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)		SAMPLE DESIGNATION	UNIFIED			ICATION AND COMMENTS
16						10 to	o 20' - Red brown SILT and	CLAY, little fine gravel; wet.
_ 17 _								
_ 18 _		47	ND					
_ 19 _								
_ 20 _							End of b	oring at 20'
_								
_						Note	e: Borehole backfilled with s	oil cuttings and restored to grade.
<u> </u>								
_								
_]						

BORING NUMBER

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

RCH-4-ENV-31

PROJECT NAME:

Spectra NJ-NY Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water Environmental

Services

DATE DRILLED: 04/03/12

SAMPLER TYPE/DIA.: Hand Auger /

Macrocore/2"

DEPTH TO WATER: 4.0 feet

DRILLER: E. Santiago

BORING METHOD: Direct Push

TOTAL DEPTH DRILLED: 20 feet

medium-dense. 1.0 to 3.0' - FILL: Red brown, medium to fine, sand, some clay, little medium to fine, sub-angular to rounded, gravel, little silt; moist, medium to fine, sub-angular to sub-angular gralittle medium to fine sand, clay and concrete; medium-dense. 8.0 to 6.0' - FILL: Red brown, medium to fine, sand, some clay, little medium to fine, sub-angular to sub-angular gralittle medium to fine sand, clay and concrete; medium-dense. 8.1 to 3.0' - FILL: Red brown, medium to fine, sand, some clay, little medium to fine, sub-angular to rounded, gravel, little silt; moist, medium to fine sand, clay and concrete; medium-dense. 8.2 to 5.0 to 6.0' - FILL: Red brown, medium to fine, sand, some clay, little medium to fine, sub-angular to rounded, gravel, little silt; moist, medium to fine, sub-angular to sub-angular gralittle medium to fine sand, clay and concrete; medium-dense. 9.2 to 5.0 to 6.0' - FILL: Red brown, medium to fine, sand, some clay, little medium to fine, sub-angular to sub-angular gralittle medium to fine sand, clay and concrete; medium-dense. 9.3 to 6.0' - FILL: Red brown, medium to fine, sand, some clay, little medium to fine, sub-angular to sub-angular gralittle medium to fine sand, clay and concrete; medium-dense.	DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)		SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
Some medium to fine, sub-angular to sub-rounded gravel, little silt; medium-dense. Hand Cleared ND RCH-4-ENV-31-WC/2 RCH-4-ENV-31-WC/4 RCH-4-ENV-31-WC/4 RCH-4-ENV-31-WC/6 RCH-4-EN	0 _						
Hand Cleared ND RCH-4-ENV-31-WC/2 A Cleared ND RCH-4-ENV-31-WC/4 A Cleared ND RCH-4-ENV-31-WC/4 A Cleared ND RCH-4-ENV-31-WC/4 B CH-4-ENV-31-WC/6 A RCH-4-ENV-31-WC/6 B CH-4-ENV-31-WC/6 A RCH-4-ENV-31-WC/6 B CH-4-ENV-31-WC/6 A RCH-4-ENV-31-WC/6 B CH-4-ENV-31-WC/6 A RCH-4-ENV-31-WC/6 B CH-4-ENV-31-WC/8 A RCH-4-ENV-31-WC/8 B CH-4-ENV-31-WC/8 A RCH-4-ENV-31-WC/8 B CH-4-ENV-31-WC/8 A RCH-4-ENV-31-WC/8 B CH-4-ENV-31-WC/8 B CH-4-E	1 _						some medium to fine, sub-angular to sub-rounded gravel, little silt; moist,
Hand Cleared ND Cleared ND RCH-4-ENV-31-WC/4 RCH-4-ENV-31-WC/4 RCH-4-ENV-31-WC/6 RCH-4-ENV-31-WC/6 RCH-4-ENV-31-WC/6 RCH-4-ENV-31-WC/6 RCH-4-ENV-31-WC/6 RCH-4-ENV-31-WC/6 RCH-4-ENV-31-WC/6 RCH-4-ENV-31-WC/8	2 _				RCH-4-ENV-31/1		1.0 to 3.0' - FILL: Red brown, medium to fine, sand, some clay, little
Cleared RCH-4-ENV-31-WC/4 RCH-4-ENV-31-WC/6 RCH-4-ENV-31-WC/6 RCH-4-ENV-31-WC/6 RCH-4-ENV-31-WC/8	_ 3 _			ND	RCH-4-ENV-31-WC/2		dense.
CH-4-ENV-31-WC/4	4		Cleared				
RCH-4-ENV-31-WC/6 RCH-4-ENV-31-WC/6 RCH-4-ENV-31-WC/8	5				RCH-4-ENV-31-WC/4		Wet at 4.0'
7	6						
- 8	7				RCH-4-ENV-31-WC/6	CL	6.0 to 15' - Red brown CLAY, some medium to fine, sub-angular to rounded gravel, little medium to fine, sand; dense.
9	8		40		RCH-4-ENV-31/7		
10			48	ND	RCH-4-ENV-31-WC/8		
11							
12 60 ND							
60 ND							
13			60	ND			
Note: Borehole backfilled with soil cuttings and restored to grade.							Note: Borehole backfilled with soil cuttings and restored to grade.
14							Ford of having at 451

BORING NUMBER

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

RCH-4-ENV-32

PROJECT NAME:

Spectra NJ-NY Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water Environmental

Services

DATE DRILLED: 04/03/12

SAMPLER TYPE/DIA.: Hand Auger /

Macrocore/2"

DEPTH TO WATER: 15 feet

DRILLER: E. Santiago

BORING METHOD: Direct Push

TOTAL DEPTH DRILLED: 20 feet

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)		SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
_ 1 _				RCH-4-ENV-32/1		0.0 to 1.0' - FILL: Asphalt (1" thick); Gray brown, medium to fine sand and medium to fine, angular to sub-angular gravel, trace silt and clay; moist, medium-dense. 1.0 to 2.0' - FILL: Dark brown, medium to fine sand, some medium to fine, sub-angular to rounded gravel, little silt, trace clay; moist, medium-
_ 2 _				RCH-4-ENV-32-WC/2		dense. 2.0 to 4.0' - FILL: Orange brown, medium to fine sand, little medium to
_ 3 _						fine, sub-rounded to rounded gravel, little silt and clay; moist, loose.
_ 4 _		Hand Cleared	ND	RCH-4-ENV-32-WC/4	CL	4.0 to 20' - Red brown CLAY, some medium to fine, rounded to sub-
5 _						rounded gravel, little medium to fine sand; moist, medium-dense to dense.
6 _				RCH-4-ENV-32/6		
7 _				RCH-4-ENV-32-WC/6		
8 _				RCH-4-ENV-32-WC/8		
9 _		24	ND			
_ 10 _						
_ 11 _						
_ 12 _		56	ND			
_ 13 _		50	140			
_ 14 _						
15						Wet at 15'



BORING NUMBER

57 E. V	Willow Stree	t, Millburn, N	J 07041	(973) 564-6006			OOIL	_ DOM	10 200	RCH-4-ENV-32
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)		SAMPLE DESIGNATION	UNIFIED					CATION AND COMMENTS
16		-			CL	4.0 to	ded grav	ted brown C vel, little me	CLAY, some edium to fine	medium to fine, rounded to sub- sand; moist, medium-dense to
17		-								
18		- 58	ND							
19		=								
20 _										
		1							End of bo	oring at 20'
		-						ole backfille to grade.	d with grout,	bentonite chips, black dyed concrete
_		_								
_										
		_								
		1								
		1								
<u> </u>										
_		1								

Environmental Corporation

TEMPORARY WELL AND SOIL BORING LOG

WELL NUMBER

RCH-4-ENV-33W

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

PROJECT NAME: Spectra NJ-NY Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

SAMPLER TYPE/DIA.: Hand Auger/Macrocore/2"

DEPTH TO BEDROCK: Not Encountered

TOTAL DEPTH DRILLED: 20 feet

CONTRACTOR: Land Air Water Environmental Services

TYPE OF WELL: Temporary

DRILLING METHOD: Hollow Stem Auger

BIT TYPE: Auger Bit

START DATE: 04/02/12 FINISH DATE: 04/02/12 DRILLER: E. Santiago LOGGED BY: B. Chaky

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)		SAMPLE DESIGNATION	WELL DIAGRAM	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
_ 0 1 2 3 4 5 6 7 8 10 11 12 13 15		Hand Cleared	ND ND	RCH-4-ENV-33W-WC/2 RCH-4-ENV-33W-WC/4 RCH-4-ENV-33W-WC/6 RCH-4-ENV-33W-WC/8			Top of casing .75' below surface. 0.0 to 0.5' - FILL: Asphalt and fine to coarse gravel; dry. 0.5 to 6.0' - Light brown, fine to coarse SAND, little fine to coarse, gravel; dry to 4.0'; moist at 4.0'. 6.0 to 20' - Brown/red CLAY, some fine to coarse sand, little fine to coarse gravel; Wet at 6.0'; stiff from 8 to 10', medium soft from 10 to 20'.
CASING T			N/A			STATIC WATER LEVEL: 5.24 (4/3/12) feet below surface DEPTH WATER ENCOUNTERED: 6 feet below surface	
SCREE	INNER:PVC/3 OUTER:N/A						MEASURING POINT ELEVATION: NA ft.msl GROUND SURFACE ELEVATION: NA ft.msl

E. Willow Street, Millburn, NJ 07041 (973) 564-6006

TEMPORARY WELL AND SOIL BORING LOG

WELL NUMBER

RCH-4-ENV-33W

57 E.	Willow Stre	et, Millburn, I	NJ 0704	1 (973) 564-6006			3	OIL BORING LOG	RCH-4-ENV-33W
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)		SAMPLE DESIGNATION	WELL DIAGRAN	1	UNIFIED	LITHOLOGIC CLASS	SIFICATION AND COMMENTS
16		-				(_	6.0 to 20' - Brown/red CLAY, so coarse gravel; Wet at 6.0'; stiff 20'.	ome fine to coarse sand, little fine to from 8 to 10', medium soft from 10 to
_ 17 _		-							
_ 18 _		- 57 -	ND						
_ 19 _		 - -							
_ 20 _		-						End o	f boring at 20'
		1						Well Cor	nstruction Details
		1							- 3" diameter 0.010 slot PVC screen
F -		†						0.75 to 14.98 ft. below surface	
		1						Total depth of well = 14.98 feet	
-		_							- g
		- -						Note: Borehole back filled with and restored to grade.	bentonite chips, sand, soil cuttings
								ğ	
⊢ –									
<u> </u>									
L _									
		1							
		1							
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		1							
<u> </u>		-							
		4							

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006 PROJECT NAME: SAMPLER TYPE/DIA.: Hand Auger / **BORING METHOD**: Direct Push

Environmental Corporation SOIL BORING LOG

BORING NUMBER

RCH-4-ENV-34

Spectra NJ-NY

Expansion

LOCATION: Staten Island, New York

CONTRACTOR: Land Air Water Environmental **PROJECT NO.:** 168217

Services

DATE DRILLED: 04/02/12

DEPTH TO WATER: 6.0 feet

Macrocore/2"

TOTAL DEPTH DRILLED: 20 feet

DRILLER: E. Santiago

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
1 _						0.0 to 1.0' - FILL: Asphalt (1" thick); Gray to brown, coarse to fine sand and medium to fine, angular to sub-angular gravel, little silt, trace clay; moist, medium-dense.
_ 2 _				RCH-4-ENV-34/2		1.0 to 4.0' - FILL: Red brown to brown, medium to fine, sand some coarse to fine, sub-angular to sub-rounded gravel, little silt,
_ 3 _		Hand Cleared	ND	RCH-4-ENV-34-WC/2		cobbles and clay; moist, medium-dense.
_ 4 _				RCH-4-ENV-34-WC/4		4.0 to 7.0' - FILL: Black medium to fine sand, little medium to fine, sub-rounded gravel, little silt, slag, coal, processed wood, cinders;
_ 5 _ 6				RCH-4-ENV-34/5		moist, medium-dense.
7				RCH-4-ENV-34-WC/6		Wet at 6.0'.
8		42	ND		CL	7.0 to 20' - Red brown CLAY, little medium to fine, sub-angular to sub-rounded gravel and sand; moist, dense.
9 _				RCH-4-ENV-34-WC/8		
_ 10 _						
_ 11 _						
_ 12 _		54	ND			
_ 13 _ 14						
15						



BORING NUMBER

57 E. V		t, Millburn, N	J 07041	(973) 564-6006			SOIL BOR	ING LOG	RCH-4-ENV-34
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED				CATION AND COMMENTS
_ 16 _							o 20' - Red bro rounded gravel		e medium to fine, sub-angular to bist, dense.
_ 17 _									
_ 18 _		56	ND						
_ 19 _									
_ 20 _									
								End of bo	oring at 20'
						Note	: Borehole bac rete and restor	kfilled with gro ed to grade.	out, bentonite chips, black dyed

©TRC

Environmental Corporation

SOIL BORING LOG

BORING NUMBER

RCH-4H-ENV-10

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

PROJECT NAME: Spectra NJ-NY

Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217 CONTRACTOR: Land Air Water Environmental

Services

SAMPLER TYPE/DIA.: Hand Auger /

BORING METHOD: Direct Push

Macrocore/2"

DEPTH TO WATER: 4.0 feet

TOTAL DEPTH DRILLED: 15 feet

DATE DRILLED: 11/01/11

DRILLER: J. Lamprecht

LOGGED BY: W. Lindemuth

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0 _						
						0.0 to 1.0' - Asphalt roadway and gravel road base. Dry.
_ 1 _						1.0 to 3.0' - Light brown, fine to medium SAND; little clay, trace fine gravel. Moist.
_ 2 _						
_ 3 _				RCH-4H-ENV-10/3.5	CL	3.0 to 15' - Red brown, CLAY; some fine to medium sand, trace fine gravel.
4 _		Hand	ND			Wat at 4.0
_ 5 _		Cleared				Wet at 4.0'.
6						
7 _				RCH-4H-ENV-10/7		
_ 8 _						
9 _		21	ND			
10						
11						
_ 12 _						
_ 13 _		46	ND			Note: Perchala healfilled with grout heatenite shine, block dived assessed
_ 14 _						Note: Borehole backfilled with grout, bentonite chips, black dyed concrete and restored to grade.
15						End of boring at 15'

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Environmental Corporation

TEMPORARY WELL AND SOIL BORING LOG

WELL NUMBER

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

RCH-4H-ENV-2W

PROJECT NAME: Spectra NJ-NY Expansion

DEPTH TO BEDROCK: Not Encountered

TOTAL DEPTH DRILLED: 21 feet

LOCATION: Staten Island, New York

PROJECT NO.: 168217 CONTRACTOR: Land Air Water Environmental

Services

SAMPLER TYPE/DIA.: Hand Auger/Macrocore/2" TYPE OF WELL: Temporary

DRILLING METHOD: Hollow Stem Auger

BIT TYPE: Auger Bit

START DATE: 09/15/11

FINISH DATE: 09/15/11

DRILLER: K. McGourty

LOGGED BY: B. Chaky

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	D	WELL DIAGRAM		WELL DIAGRAM		UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS			
0		-							Top of casing 13" below surface.					
_									0.0 to 1.0' - Asphalt layer (9" thick).					
_ 1 _		-		RCH-4H-2W/1					1.0 to 5.0' - FILL: Dark brown to brown, fine to medium sand; little fine					
_ 2 _		-							to medium, sub-angular to sub-rounded gravel, trace silt. Moist, medium dense. Wet @ 3'.					
3		Hand Cleared	ND						induiting deliber. West of the					
_		-												
_ 4 _		-		RCH-4H-2W/4										
_ 5 _									COA-471 Decree fire to reading CAND to see sit Met medium					
6		<u> </u>						SP	5.0 to 17' - Brown, fine to medium SAND; trace silt. Wet, medium dense.					
_ 7 _		7	ND											
_ 8 _		,	ND											
_ 9 _		-												
10		<u> </u>												
_ ' -														
_ 11 _		-												
_ 12 _		1												
13		- 26	ND											
]												
_ 14 _														
15														
CASING T	CASING TYPE/DIAMETER (IN.)							STATIC WATER LEVEL: 2.30 (9/16/11) feet below surface						
INNER:	INNER: PVC/3 OUTER: N/A							DEPTH WATER ENCOUNTERED: 3 feet below surface						
SCREE		6.0 to 21.0					MEASURING POINT ELEVATION: NA ft.msl GROUND SURFACE ELEVATION: NA ft.msl							



RC Environmental Corporation

TEMPORARY WELL AND SOIL BORING LOG

WELL NUMBER RCH-4H-ENV-2W

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006								SOIL BORING LOG RCH-4H-EN			
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	D	WELL DIAGRAN		UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS		
_ 16 _											
17								SP	17 to 17.5' - Gray, fine SAND; I	ittle silt. Moist, medium dense.	
_ 18 _		40	ND						17.5 to 21' - Red brown, fine to	medium SAND; trace silt. Wet, dense.	
_ 19 _											
_ 20 _											
_ 21 _									End c	of boring at 21'	
									Well Con 1.0 to 6.0 ft. below surface - 3"	nstruction Details diameter PVC riser.	
									6.0 to 21.0 ft. below surface - 3 1.0 to 21.0 ft. below surface - N	8" diameter 0.010 slot PVC screen lo. 01 sand.	
									Total Depth of well = 21.08 feet	bg as measured on 9/16/11	

PROJECT NAME:

SAMPLER TYPE/DIA.: Hand Auger /

BORING METHOD: Direct Push

Environmental Corporation SOIL BORING LOG

BORING NUMBER

RCH-4H-ENV-3

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

Macrocore/2"

Spectra NJ-NY Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217 **CONTRACTOR:** Land Air Water Environmental

Services

DEPTH TO WATER: 3.0 feet

TOTAL DEPTH DRILLED: 15 feet

DATE DRILLED: 10/20/11

DRILLER: J. Lamprecht

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0 _			ND			0.0 to 2.0' - Asphalt/concrete (10" thick). Gravel road base (14"
			ND			thick).
<u> </u>			ND			
			ND ND			
_ 2 _			0.1		SW	2.0 to 9.0' - Orange brown, fine to medium SAND; trace sub-
3			0.1	RCH-4H-ENV-3/2.5		angular, fine to coarse gravel, trace silt. Loose.
			0.1	RCH-4H-ENV-3/2.5		Wet at 3.0'.
4		Hand	ND			
		Cleared	ND			
5			ND			
			ND			
6			ND			
			ND			
7			ND	RCH-4H-ENV-3/6.5		
			ND			
8			ND			
			ND			
9		24	ND			00.45
			ND		SP	9.0 to 15' - Light brown, fine to medium SAND; trace silt. Wet, loose. Light gray sandy clay lens at 9.0'.
_ 10 _			ND			Light gray darray day forto at 0.0.
			ND ND			
11			ND ND			
12			ND			
- 2 -			ND			
13		48	ND			
'S			ND			Note: Borehole backfilled with grout, bentonite chips, black dyed
14			ND			concrete and restored to grade.
			ND			
15			ND			End of boring at 15'

BORING NUMBER

RCH-4H-ENV-4

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

Spectra NJ-NY PROJECT NAME: Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217 **CONTRACTOR:** Land Air Water Environmental

Services

SAMPLER TYPE/DIA.: Hand Auger /

Macrocore/2" BORING METHOD: Direct Push

DEPTH TO WATER: 5.0 feet

TOTAL DEPTH DRILLED: 15 feet

DATE DRILLED: 10/21/11

DRILLER: J. Lamprecht

LOGGED BY: J. Lenhart

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
1						0.0 to 2.0' - Asphalt layer (7" thick), concrete with gravel base and some fine to medium sand (13" thick).
2 _						
_ 3 _					SP	2.0 to 4.0' - Orange brown, fine to medium SAND; trace silt, trace fine to coarse, sub-angular gravel. Moist, loose.
4 _		Hand	ND	RCH-4H-ENV-4/3.5		
_ 5 _		Cleared				5.0 to 8.0' - Dark to light brown, fine to medium SAND; some silt,
6 _					SP	little clay, trace fine to medium, sub-rounded gravel. Wet, loose. Water at 5.0'
7 _						
8 _				RCH-4H-ENV-4/7.5	CD	8.0 to 15' - Orange brown, fine to medium SAND; trace silt. Wet,
9 _					51	loose. Color changes to light brown from 12 to 15'.
_ 10 _		48	ND			
_ 11 _						
_ 12 _						
_ 13 _						Note: Borehole backfilled with grout, bentonite chips, black dyed
_ 14 _		36	ND			concrete and restored to grade.
15						End of boring at 15'

PROJECT NAME:

SAMPLER TYPE/DIA.: Hand Auger /

BORING METHOD: Direct Push

Environmental Corporation SOIL BORING LOG

BORING NUMBER

RCH-4H-ENV-6

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

Macrocore/2"

Spectra NJ-NY Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217 **CONTRACTOR:** Land Air Water Environmental

Services

DEPTH TO WATER: 4.0 feet

TOTAL DEPTH DRILLED: 15 feet

DATE DRILLED: 10/27/11

DRILLER: J. Lamprecht

LOGGED BY: W.Lindemuth

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
1 _						0.0 to 2.0' - Asphalt layer (12" thick), sub-base - black fine to coarse fravel and fine to coarse sand (12" thick).
_ 2 _					S/V/	2.0 to 4.0' - Brown fine to medium SAND; some fine to coarse
_ 3 _					SVV	gravel. Moist.
_ 4 _		Hand Cleared	ND	RCH-4H-ENV-6/3.5	ML	4.0 to 5.0' - Light brown SILT; some clay. Wet at 4.0'.
_ 5 _					SW	5.0 to 10' - Light brown, fine to medium SAND; little silt. Wet.
_ 6 _						
7 -						
_ 8 _ 9				RCH-4H-ENV-6/7.5		
10		12	ND			
11 _					CL	10 to 15' - Red/brown CLAY; some silt, little fine gravel. Wet, dense.
_ 12 _						
_ 13 _		38	ND			Note: Borehole backfilled with grout, bentonite chips, black dyed
_ 14 _						concrete and restored to grade.
15						End of boring at 15'

PROJECT NAME:

Environmental Corporation SOIL BORING LOG

BORING NUMBER

RCH-4H-ENV-7

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

Spectra NJ-NY Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water Environmental

Services

DATE DRILLED: 10/28/11

SAMPLER TYPE/DIA.: Hand Auger / Macrocore/2" **DEPTH TO WATER: 4.0 feet**

DRILLER: J. Lamprecht

BORING METHOD: Direct Push

TOTAL DEPTH DRILLED: 15 feet

LOGGED BY: W.Lindemuth

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
						0.0 to 1.0' - Asphalt and fine to coarse gravel road base.
2			ND		SW	1.0 to 4.0' - Brown, fine to medium SAND; little fine to coarse gravel. Moist.
3			ND			
4 _		Hand Cleared		RCH-4H-ENV-7/3.5	CVA	4.0 to 7.01. Drawn fine to reading CAND, little clay. Wet at 41
5 _					SW	4.0 to 7.0' - Brown, fine to medium SAND; little clay. Wet at 4'.
_ 6 _			ND			
7 _				RCH-4H-ENV-7/6.5	80	7 to 10' - Red/brown, fine to medium SAND and CLAY. Wet.
8 _					50	7 to 10 Troublown, fine to modular out to and object. West.
_ 9 _		22	ND			
_ 10 _					CL	10 to 15' - Red/brown CLAY; little fine to medium sand, trace
_ 11 _						organics (vegetation). Wet, dense.
_ 12 _						
_ 13 _		34	ND			Note: Borehole backfilled with grout, bentonite chips, black dyed
_ 14 _						concrete and restored to grade.
15						End of boring at 15'

BORING NUMBER Environmental Corporation SOIL BORING LOG 57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006 RCH-4H-ENV-8W Spectra NJ-NY **PROJECT NAME:** LOCATION: Staten Island, New York Expansion **CONTRACTOR:** Land Air Water Environmental **PROJECT NO.:** 168217 Services DATE DRILLED: 10/24/11 SAMPLER TYPE/DIA.: Hand Auger / **DEPTH TO WATER:** Not Encountered DRILLER: J. Lamprecht Macrocore/2" LOGGED BY: J. Lenhart BORING METHOD: Direct Push TOTAL DEPTH DRILLED: 20 feet DEPTH **BLOW** RECOVERY PID SAMPLE UNIFIED FROM COUNT LITHOLOGIC CLASSIFICATION AND COMMENTS SURFACE (INCHES) **DESIGNATION** (ppm) PER 6 IN. (FEET) 0 0 to 1.0' - Asphalt layer (5" thick), Concrete mixed with gravel, some fine brown sand (7" thick). 1.0 to 2.0' - FILL: Brown, fine sand; some fine to coarse, subangular gravel, little reddish-brown silt. Dry, medium dense. 2 2.0 to 3.0' - FILL: Reddish-brown silt; some brown, fine to medium sand, little fine to medium, sub-angular gravel. Dry, stiff. 3 ML 3.0 to 20' - Reddish-brown SILT; some clay, trace fine, sub-angular gravel. Dry, stiff. RCH-4H-ENV-4 Hand ND 8W/3.5 Cleared 5 6 7 RCH-4H-ENV-8W/7.0 8 9 24 ND 10 11 12 50 ND 13 14

15

OT	RC	Fnviror	ımeı	ntal Corpo	rati	ion			BORING NUMBER
	Villow Street	, Millburn, NJ	J 07041	(973) 564-6006	ati		SOIL BOI	RING LOG	RCH-4H-ENV-8W
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED				CATION AND COMMENTS
_ 16 _					ML		to 20' - Reddis vel. Dry, stiff.	sh-brown SILT;	some clay, trace fine, sub-angular
_ 17 _									
18		60	ND						
19									
20									
								End of bo	oring @ 20'
							e: Borehole ba ent and restor		out, bentonite chips, black dyed
								well not installe r or macrocore	d due to no water encountered sampling.
_									

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Environmental Corporation

SOIL BORING LOG

BORING NUMBER

RCH-4H-ENV-9

PROJECT NAME:

Spectra NJ-NY

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water Environmental

Services

DATE DRILLED: 10/31/11

DEPTH TO WATER: 4.0 feet

DRILLER: J. Lamprecht

SAMPLER TYPE/DIA.: Hand Auger / Macrocore/2"
BORING METHOD: Direct Push

TOTAL DEPTH DRILLED: 15 feet

LOGGED BY: W. Lindemuth

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
1						0.0 to 1.0' - Asphalt roadway and gravel road base. Dry.
_ 1 _					SP	1.0 to 4.0' - Brown, fine to medium SAND; little silt. Moist.
_ 2 _						
_ 3 _						
4		Hand	ND	RCH-4H-ENV-9/3.5		
_		Cleared			CL	4.0 to 15' - Red brown CLAY; fine to coarse gravel. Wet at 4.0'.
_ 5 _						
6 _						
7						
				RCH-4H-ENV-9/7		
_ 8 _						
9 _		30	ND			
_ 10 _						
11						
_ 12 _		F0	ND			
_ 13 _		50	ND			Note: Pershala healfilled with grout hontonite china block died accepts
_ 14 _						Note: Borehole backfilled with grout, bentonite chips, black dyed concrete and restored to grade.
15						End of boring at 15'

Environmental Corporation

Millburn, NJ 07041 (973) 564-6006

SOIL BORING LOG

BORING NUMBER

RCH-4-PIP-3

PROJECT NAME:

PROJECT NO.: 168217

Spectra NJ-NY

LOCATION: Staten Island, New York

Expansion

CONTRACTOR: Land Air Water

Environmental Services

SAMPLER TYPE/DIA.: Hand Auger/Stainless

Steel Split Spoon/2"

DEPTH TO WATER: 6.0 feet

BORING METHOD: Hand Auger/

TOTAL DEPTH DRILLED: 27 feet

DATE DRILLED: 4/18/2012 to 4/19/2012

DRILLER: J. Lamprecht

		Tri-cone roller b	oit			
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
_ 0 _						
1 _			2.3	No Samples Collected		0.0 to 2.0' - FILL: Orange-brown, fine to medium sand; some fine to coarse, angular to sub-rounded gravel, trace silt, concrete pieces. Dry, medium-dense.
2			0.8			
			0.0			2.0 to 6.0' - FILL: Gray, fine to medium sand; some fine to
_ 3 _	-	Hand	ND			medium sub-angular to sub-rounded gravel, trace silt. Moist, medium-dense.
		Cleared				medium-dense.
_ 4 _			ND			
_			ND			
_ 5 _			IND			
6			ND			
	6					6.0 to 8.0' - FILL: Brown, fine sand; some fine to medium, sub-
_ 7 _	7	6	ND			angular to sub-rounded gravel, trace silt. Wet at 6.0', medium-dense.
	5					
_ 8 _	5				РТ	8.0 to 11'- Brown PEAT; some clay, little silt. Wet, loose.
9	2					c.o. to TT Brown T E.M., come clay, mad clim Wes, leader
	1	14	ND			
10	1					
	W.O.H.					
_ 11 _	W.O.H.	16	ND		0.5	44 to 40! Cross fine to modistre CANDs trees site Mark and sites
40	5				SP	11 to 12' - Gray, fine to medium SAND; trace silt. Wet, medium-dense.
_ 12 _	3					12 to 15' - Continuous drilling - no spoons collected.
13						3
14						
15						

BORING NUMBER

RCH-4-PIP-3

57 E.	Willow Stre	et, Millburn, N.	J 07041 ((973) 564-6006	-	RCH-4-PIP-3
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	
16	3 2	14	ND		SP	15 to 17' - Gray, fine to medium SAND; trace silt. Wet, mediumdense.
17	7 6					17 to 20' - Continuous drilling - no spoons collected.
18						17 to 20 - Continuous arining - no spoons conected.
_ 19 _						
20	TRO	16	ND		SP	20 to 22' - Brown, fine SAND; trace silt. Wet, medium-dense.
_ 22 _	11	1.0				22 to 25' - Continuous drilling - no spoons collected.
23						and the second s
_ 24 _						
_ 25 <u> </u>	9				SP	25 to 27' - Brown, fine SAND; little silt. Wet, dense.
_ 27 _	12 10	18	ND			
						End of boring at 27' Notes: Borehole grouted in accordance with N.J.A.C. 7:9D-3.1.
						Notes. Borefiole grouted in accordance with N.J.A.C. 7.9D-5.1.
<u> </u>						
 -						

Environmental Corporation

Millburn, NJ 07041 (973) 564-6006

SOIL BORING LOG

BORING NUMBER

RCH-4-PIP-4

PROJECT NAME:

PROJECT NO.: 168217

Spectra NJ-NY

LOCATION: Staten Island, New York

Expansion

CONTRACTOR: Land Air Water

Environmental Services

SAMPLER TYPE/DIA.: Hand Auger/Stainless Steel Split Spoon/2"

DEPTH TO WATER: 6.0 feet

DATE DRILLED: 4/12/2012 to 4/13/2012

DRILLER: J. Lamprecht

воі	RING METHOD:	Steel Split Spoo Hand Auger/ Tri-cone roller b		TOTAL DEPTH	H DRII	LLED: 27 feet	LOGGED BY: B. Chaky
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS	
0							
1 _				No Samples Collected		0.0 to 2.0' - FILL: Gray brown, me to fine, angular to sub-rounded g slag, little silt; dry, dense.	
_ 2 _						2.0 to 6.0' - FILL: Dark gray to bla	ack coarse to fine sand some
_ 3 _		Hand Cleared	ND			sub-angular to sub-rounded grav plastic, rubber, brick and concret	el, little clay, trace silt, cobbles,
4 _		0.00.00					
_ 5 _							
6 _							
7 _	3 3	6	ND			6.0 to 8.0' - FILL: Brown, medium fine, sub-angular to sub-rounded medium-dense; Wet at 6.0'.	
8 _	3				рт	0.04-40 Dadi mari DEAT	alan tuana silkumat lana
9 _	1 1	16	ND		ы	8.0 to 12'- Dark gray PEAT, some	e clay, trace siit; wet, loose.
_ 10 _	1 W.O.H						
_ 11 _	W.O.H	20	ND				
_ 12 _	2					12 to 15' - Continuous drilling - no	o spoons collected
_ 13 _						12 to 10 Continuous unining - 10	o opeono conceicu.
_ 14 _							
15							

BORING NUMBER

RCH-4-PIP-4

57 E.	Willow Stre	et, Millburn, NJ	J 07041 (973) 564-6006	3	OIL BORING LO	RCH-4-PIP-4	
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED			FICATION AND COMMENTS
16	5 6 4	14	ND		SP		7' - Gray, medium to find ; medium-dense.	e SAND, trace fine rounded gravel
_ 17 _	11					17 to 20	0' - Continuous drilling -	no spoons collected.
18 19								
20_	TRO	16	ND		SP	20 to 22 gravel a		ne SAND , trace fine, rounded
22	13	16	ND			22 to 2	5' - Continuous drilling -	no spoons collected.
23 _ 24								
25	9				SM	25 to 21	7' - Brown, fine SAND, s	ome silt; medium-dense.
26 27	10 15 16	17	ND					
_ 27 _						Notes		boring at 27' ccordance with N.J.A.C. 7:9D-3.1.

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Environmental Corporation SOIL BORING LOG

BORING NUMBER

RCH-5H-ENV-2

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

Spectra NJ-NY **PROJECT NAME:**

Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water

Environmental Services

SAMPLER TYPE/DIA.: Hand Auger/

Macrocore/2" BORING METHOD: Geoprobe/Hand Auger **DEPTH TO WATER: 3 feet**

TOTAL DEPTH DRILLED: 15 feet

DATE DRILLED: 10/26/11

DRILLER: J. Lamprecht

LOGGED BY: W.Lindemuth

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
1						0.0 to 1.0' - Asphalt (5") underlain by concrete
2						1.0 to 2.0' - FILL: Brown silt and fine to coarse sand; some fine to coarse gravel. Dry.
3				RCH-5H-ENV-2/2.5-3		2.0 to 8.0' - FILL: Black/brown fine to coarse sand and silt; some fine to coarse gravel, trace wood and coal fragments at 4.0'. Wet at 3.0'.
4		Hand	ND			
5		Cleared	110			
6						
7						
8 _				RCH-5H-ENV-2/7.5-8		8.0 to 10' - FILL: Brown/red, fine sand and clay. Wet.
9		4	ND			
_ 10 _					CL	10 to 15' - Red-brown CLAY and SILT; little fine gravel. Wet
_ 11 _						
12						Note: Parabala backfilled with sail auttings and rectored to grade
_ 13 _		23	ND			Note: Borehole backfilled with soil cuttings and restored to grade
14						
15						End of Boring at 15'

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TEMPORARY WELL AND SOIL BORING LOG

WELL NUMBER

RCH-5H-ENV-3W

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

PROJECT NAME: Spectra NJ-NY Expansion

PROJECT NO.: 168217

DEPTH TO BEDROCK: Not Encountered **TOTAL DEPTH DRILLED:** 20.5 feet

SAMPLER TYPE/DIA.: Hand Auger/Macrocore/2"

CONTRACTOR: Land Air Water Environmental Services

TYPE OF WELL: Temporary

LOCATION: Staten Island, New York

DRILLING METHOD: Hollow Stem Auger

BIT TYPE: Auger Bit

START DATE: 09/19/11

FINISH DATE: 09/19/11

DRILLER: E. Santiago

LOGGED BY: J. Lenhart

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION		WELL IAGRAM	ı	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
_ 0 1 2 3 4 5 6 7 8 10 11 12 13 15		Hand Cleared	ND ND 0.3 0.2 0.4 0.3 0.2 0.3 0.3 0.3 0.3 0.2 0.7 1.1 0.8 1.6 0.4 ND	RCH-5H-ENV-3W/2	- - - - - -	V		CL	Top of casing 5" below surface. 0.0 to 1.0' - Asphalt layer (5" thick) to a concrete layer containing coarse gravel (8" thick). 1.0 to 3.0' - Reddish brown, fine to medium SAND; little reddish brown clay, trace silt, trace fine to medium, sub-angular gravel. Moist, loose, clay is soft. 3.0 to 7.0' - Reddish brown CLAY; little fine to medium sand, trace fine to medium, sub-angular gravel. Moist, soft, medium plasticity. 7.0 to 15' - Reddish-brown SILT; little clay, trace fine sand, trace fine to medium, sub-angular gravel. Medium dense to very stiff from 10 to 15'. Wet @ 8.5'. Dark brown, fine to medium sand lens, wet and loose @ 8.5 to 9.5'.
CASING T	YPE/DIAME ⁻ PVC/3			N/A	10000000	<u> </u>		D	STATIC WATER LEVEL: 6.89 (9/20/11) feet below surface EPTH WATER ENCOUNTERED: 8.5 feet below surface
SCREE		N INTERVAL: DW SURFACE)		5.5 to 20.5					MEASURING POINT ELEVATION: NA ft.msl GROUND SURFACE ELEVATION: NA ft.msl



Environmental Corporation

TEMPORARY WELL AND SOIL BORING LOG

WELL NUMBER RCH-5H-ENV-3W

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006 BLOW FROM RECOVERY PID SAMPLE WELL COUNT SURFACE DESIGNATION DIAGRAM (INCHES) LITHOLOGIC CLASSIFICATION AND COMMENTS (ppm) PER 6 IN. (FEET) 15 to 20' - Reddish brown, fine SAND; trace silt. Wet, medium dense. 16 17 ND 18 19 20 End of boring at 20.5' Well Construction Details 0.5 to 5.5 ft. below surface - 3" diameter PVC riser. 5.5 to 20.5 ft. below surface - 3" diameter 0.010 slot PVC screen 0.5 to 1.5 ft. below surface - No. 00 sand. 1.5 to 2.5 ft below surface - Bentonite chips. 2.5 to 20.5 ft. below surface - No. 01 sand. Total depth of Well = 18.13 feet bg as measured on 9/20/11

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Environmental Corporation SOIL BORING LOG

BORING NUMBER

RCH-5H-ENV-5

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

Spectra NJ-NY **PROJECT NAME:** Expansion

LOCATION: Staten Island, New York

CONTRACTOR: Land Air Water **PROJECT NO.:** 168217

Environmental Services

SAMPLER TYPE/DIA.: Hand Auger/ **DEPTH TO WATER: 2 feet** Macrocore/2"

BORING METHOD: Geoprobe/Hand Auger TOTAL DEPTH DRILLED: 15 feet DATE DRILLED: 10/28/11

DRILLER: E. Santiago

LOGGED BY: L. Greenbaum

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
1 _			ND			0.0 to 2.0' - Asphalt (5") underlain by cement (1'), underlain by sandy base (7").
2			0.5			2.0 to 3.0' - FILL: Dark brown clay and fine sand; trace shell fragments. Loose, plastic. Wet at 2'.
3 _		Hand	0.5 0.5 0.6			3.0 to 4.0' - FILL: Dark brown and black, fine sand, little silt. Wet, loose.
_ 4 <u>_</u> 5		Hand Cleared	3.1	RCH-5H-ENV-5/4		4.0 to 7.0' - FILL: Brown, fine sand; some silt, trace wood chips (mulch), roots. Wet, loose, slight organic-like odor.
6			1.1 1.0			
7			1.0 0.9			
8 _			0.9	RCH-5H-ENV-5/7		7.0 to 8.0' - FILL: Mottled red and green/gray, fine sand; and silt, trace red brick pieces, roots. Wet, loose, strong organic-like odor. 8.0 to 10' - Red-brown, fine to medium SAND; some silt, trace fine,
9		36	0.7 0.7 0.5			sub-angular gravel, some brittle rock fragments. Wet, loose, slight organic-like odor.
_ 10 _			0.4	•		10 to 15' - Red CLAY; some fine, angular gravel, little medium to
_ 11 _						coarse sand. Wet, dense, plastic.
_ 12 _						
_ 13 _		48	ND			
_ 14 _						
15						End of Boring at 15'

BORING NUMBER **Environmental Corporation SOIL BORING LOG** 57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006 RCH-5H-ENV-7 Spectra NJ-NY PROJECT NAME: LOCATION: Staten Island, New York Expansion **CONTRACTOR:** Land Air Water Environmental **PROJECT NO.:** 168217 DATE DRILLED: 10/31/11 Services DRILLER: J. Lamprecht SAMPLER TYPE/DIA.: Hand Auger / **DEPTH TO WATER:** 5.0 feet Macrocore/2" BORING METHOD: Direct Push TOTAL DEPTH DRILLED: 15 feet LOGGED BY: D. Santana DEPTH BI OW RECOVERY SAMPLE PID FROM COUNT LITHOLOGIC CLASSIFICATION AND COMMENTS SURFACE DESIGNATION (INCHES) (ppm) PER 6 IN. (FEET) 0 0.0 to 1.0' - FILL; Asphalt layer (6" thick), cement and fine to coarse gravel (4" thick), dark brown, fine to medium sand, some fine to coarse, subangular gravel. Loose, dry. 1.0 to 4.0' - FILL; Dark brown, fine to medium sand; some fine to coarse, subangular gravel, little dimensional wood fragments, trace silt. Loose, Dry. 2 3 RCH-5H-FNV-7/3 Hand ND Cleared 4.0 to 5.0' - FILL; Red brown, fine to medium sand; little dimensional wood fragments, trace silt and trace subangular gravel. Loose, moist. Wet at 5.0'. 5

RCH-5H-FNV-7/7 5

12

47

ND

ND

5.0 to 9.0' - Red brown, fine to medium SAND; little silt, trace clay and fine, subangular

gravel. Loose at 5.0 to 7.0', medium dense 7.0 to 9.0', wet.

ML 9.0 to 15' - Red brown SILT; some clay, trace fine gravel 10 to 15'. Stiff, dry.

Note: Borehole backfilled with grout, bentonite chips, black dyed concrete and restored to

End of boring at 15'

6

7

8

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15



TRC Environmental Corporation SOIL BORING LOG

BORING NUMBER

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

RCH-5H-ENV-8

PROJECT NAME:

Spectra NJ-NY

LOCATION: Staten Island, New York

Expansion **PROJECT NO.:** 168217

CONTRACTOR: Land Air Water Environmental

Services

DATE DRILLED: 09/19/12

SAMPLER TYPE/DIA.: Hand Auger

DEPTH TO WATER: 5 feet

DRILLER: J. Lamprecht

BORING METHOD: Hand Auger

TOTAL DEPTH DRILLED: 8 feet

LOGGED BY: D. Avudzega

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)		SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
1						0.0 to 0.5' - Asphalt 0.5 to 1.0' - Concrete
2						1.0 to 2.0' - FILL: Brown, medium to coarse sand; little subangular gravel, concrete. Loose, moist, no staining, no odor.
3					SW	2.0 to 5.0' - Red-brown, fine to medium SAND. Loose, moist, no staining, no odor.
4		Hand	NE			
5		Cleared	ND			Wet at 5'
6					ML	5.0 to 8.0' - Red-brown SILT; little clay, trace sub-angular gravel. Medium-stiff, wet, no staining, no odor.
7						
8		-				
0						End of boring at 8 feet.
<u> </u>						Note: Borehole backfilled with bentonite chips and soil cuttings to restore to grade.
_						RCH-5H-ENV-8-WC/1 through 8 collected at every foot for TPHC analysis.
						RCH-5H-ENV-8-WC composited for waste characterization analyses.

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

TEST PIT LOG

TEST PIT NUMBER

RCH-6-ARC/MT-1

PROJECT NAME: Spectra NJ-NY

Expansion

LOCATION: Staten Island, New York

DATE COMPLETED: 03/14/12

PROJECT NO.: 168217 CONTRACTOR: The Napp-Grecco Company

OPERATOR: J. Paiva
LOGGED BY: B. Bermingham

II SURFACE II / II		SAMPLE DESIGNATION AND DEPTH (feet)	LITHOLOGIC CLASSIFICATION AND COMMENTS	
				0 to 0.5' - Brown top soil; some roots. Dry; no odor; no staining.
_ 1	_			0.5 to 5.0' - Brown, medium to coarse, loose SAND; little brown silt, trace fine to coarse, sub-angular gravel. Moist; no odor; no staining.
_ 2	! <u> </u>			
_ 3	· _			
_ 4	· _	ND		
5				Ground water encountered at 4.5'.
⊩ "	_			5.0 to 6.5' - Black SILT and medium to coarse, loose SAND; some down vegetation (tree),
_ 6	_		RCH-6-ARC/MT-1 WC	trace roots. Wet; no odor; no staining.
_ 7				6.5 to 8.0' - Reddish-brown SILT; some medium soft clay, trace medium to coarse, loose sand and fine, sub-angular gravel. A layer of gray, medium soft clay; trace silt and medium
8				to coarse sand at uppermost 1". Wet; no odor; no staining.
				End of test pit at 8.0'
L	_			
	_			
L	_			
	_			

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

TEST PIT LOG

TEST PIT NUMBER

RCH-6-ARC/MT-11

PROJECT NAME: Spectra NJ-NY

Expansion

LOCATION: Staten Island, New York

DATE COMPLETED: 03/07/12

OPERATOR: B. Grecco

PROJECT NO.: 168217 CONTRACTOR: The Napp-Grecco Company

					· · · · · · · · · · · · · · · · · · ·	
DEPTH FROM SURFACE (FEET) PID (ppm) SAMPLE DESIGNATION AND DEPTH (feet)		DESIGNATION	LITHOLOGIC CLASSIFICATION A	ND COMMENTS		
	1				0.0 to 0.83' - Asphalt and concrete sub-base. 0.83 to 1.58' - FILL: Dark brown silt and medium to coafine, sub-angular gravel, trace concrete; no staining/od	
	2				1.58 to 1.83' - FILL: Brown, fine to coarse sand; trace s	silt and sub-angular gravel.
	3			RCH-6-ARC/MT-11 WC	1.83 to 3.33' - FILL: Reddish brown silt and clay; trace staining/odor; wet at 2.3'.	sub-angular, fine gravel; no
F	Ü		ND		3.33 to 3.5' - Fill: Black coal ash, trace fine, sub-angula	ar gravel; no staining/odor.
L	4	_			3.5 to 5.85' - FILL: Fine to coarse gravel and gray silt; red brick, and debris (glass bottles, scrap metal, glass,	
	5					
	6					
					End of test pit at 5.8	35'
L		_				
r						
		_				
F		-				
-		_				
		_				

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

TEST PIT LOG

TEST PIT NUMBER

RCH-6-ARC/MT-12

PROJECT NAME: Spectra NJ-NY

Expansion

LOCATION: Staten Island, New York

DATE COMPLETED: 03/06/12

OPERATOR: J. Murray

PROJECT NO.: 168217 CONTRACTOR: The Napp-Grecco Company

						_			
SI	DEPTH FROM SURFACE (FEET) PID (ppm		PID (ppm)	SAMPLE DESIGNATION AND DEPTH (feet)	LITHOLOGIC CLASSIFICATION AND COMMENTS				
	1				0.0 to 0.67' - Asphalt and concrete sub-base 0.67 to 1.25' - FILL: brownish-red silt and fine sand, so	me gravel; no staining/odor			
	2				1.25 to 3.0' - FILL: Black coal ash, brown silt, some find and debris (timbers, glass bottles, ceramic). Wet at 2.5				
_	3		ND	RCH-6-ARC/MT-12 WC	3.0 to 5.0' - FILL: Gray silt with coarse to medium suba				
_	4				coarse, loose sand, trace red brick and timbers; no sta	ining/odors.			
F	5				End of test pit at 5.0	0'			
_									
_									
_		_							
_		_							

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

TEST PIT LOG

TEST PIT NUMBER

RCH-6-ARC/MT-2

PROJECT NAME: Spectra NJ-NY

Expansion

LOCATION: Staten Island, New York

DATE COMPLETED: 03/13/12

OPERATOR: J. Paiva

PROJECT NO.: 168217 CONTRACTOR: The Napp-Grecco Company

	·						
DEPTH FROM SURFACE (FEET) PID (ppm) SAMPLE DESIGNATION AND DEPTH (feet)		DESIGNATION	LITHOLOGIC CLASSIFICATION AND COMMENTS				
_ 1 _			0 to 5.0' - FILL: Black coal ash and reddish-brown silt; sfine to coarse, sub-angular gravel, trace roots, red brick Moist; no odor; no staining.				
_ 2 _							
_ 3 _							
_ 4 _	ND		Ground water encountered at 4.0'.				
_ 5 _			5.0 to 5.5' - Brown, fine to coarse SAND and SILT; trac	e fine gravel. Wet; no odor; no			
_ 6 _		RCH-6-ARC/MT-2 WC	staining. 5.5 to 6.5' - PEAT. Wet; no odor; no staining.				
7 _			6.5 to 8.5' - Reddish-brown SILT and fine SAND; trace	soft clay. Wet; no odor; no staining.			
8 _							
			End of test pit at 8.5	5'			

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

TEST PIT LOG

TEST PIT NUMBER

RCH-6-ARC/MT-3

PROJECT NAME:

Spectra NJ-NY Expansion

LOCATION: Staten Island, New York

DATE COMPLETED: 03/12/12

OPERATOR: J. Paiva

PROJECT NO.: 168217

CONTRACTOR: The Napp-Grecco Company

DEPTH FROM SURFACE (FEET)	PID (ppm)	SAMPLE DESIGNATION AND DEPTH (feet)	LITHOLOGIC CLASSIFICATION AND COMMENTS							
1	ND		0 to 1.0' - FILL: Brownish-red silt and coarse sand; son gravel and medium soft clay. Dry; no odor; no staining.	_						
	0.3 0.1		1.0 to 2.5' - FILL: Black coal ash and dark brown, coarse sand; little silt, trace red brick and wooden planks. Moist; strong odor; no staining.							
_ 2 _	ND									
_ 3 _			2.5 to 5.0'. FILL Light grov cool cob and dark brown a	ilti little medium te george Jacob						
_ 4 _	ND		2.5 to 5.0' - FILL: Light gray coal ash and dark brown silt; little medium to coarse, loose sand, trace red brick, concrete and miscellaneous debris (ceramics, plates, glass bottles, scrap metal, wood timbers, wooden planks). Wet; strong odor; no staining. Ground water							
_ 5			encountered at 3.25'.							
	1.2		5.0 to 6.0' - FILL: Dark brown, medium to coarse sand and silt; some black coal ash, little fine to coarse, sub-angular gravel, trace red brick, concrete and miscellaneous debris							
_ 6 _	1.8	RCH-6-ARC/MT-3 WC	(same as above). Wet; strong odor; no staining.							
7			6.0 to 8.5' - Brown PEAT. Wet; no odor; no staining.							
8	ND									
-										
			End of test pit at 8.	5'						
_										
_										
_										
<u> </u>		l .								

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

TEST PIT LOG

TEST PIT NUMBER

RCH-6-ARC/MT-5

PROJECT NAME: Spectra NJ-NY

Expansion

LOCATION: Staten Island, New York

DATE COMPLETED: 03/15/12

OPERATOR: J. Paiva

PROJECT NO.: 168217 CONTRACTOR: The Napp-Grecco Company

SI	DEPTH FROM SURFACE (FEET) PID (pp		PID (ppm)	SAMPLE DESIGNATION AND DEPTH (feet)	LITHOLOGIC CLASSIFICATION AND COMMENTS					
	1				0 to 2.5' - FILL: Brown silt and medium to coarse, loose and fine to coarse, sub-angular gravel. Dry; no odor; no					
_	2									
_	3	_			2.5 to 4.0' - FILL: Black coal ash and medium to coarse sub-angular gravel, little silt, trace belgium blocks, red at 3.75'; sheen on ground water; no odor; no staining o	brick and glass bottles. Moist; wet				
	4 5	_	ND		4.0 to 8.0' - FILL: Light gray, medium to coarse, loose sangular gravel; little black coal ash, trace silt, glass bot	sand and fine to coarse, sub-				
_	6			RCH-6-ARC/MT-5 WC	Wet; no odor; no staining.					
	7									
	8				End of test pit at 8.0	מי				
_		_			End of tool pictures.					
_										
		_								

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

TEST PIT LOG

TEST PIT NUMBER

RCH-6-ARC/MT-7

PROJECT NAME: Spectra NJ-NY

Expansion

LOCATION: Staten Island, New York

DATE COMPLETED: 03/09/12

OPERATOR: J. Paiva

PROJECT NO.: 168217 CONTRACTOR: The Napp-Grecco Company

DEPTH				
FROM SURFACE (FEET)	PID (ppm)	SAMPLE DESIGNATION AND DEPTH (feet)	LITHOLOGIC CLASSIFICATION AND COMMENTS	
			0 to 0.5' - Asphalt and concrete pad.	
_ 1 _				
_ 2 _			0.5 to 3.0' - FILL: Brown silt and fine to coarse sand; little fine to coarse, sub-angular gravel, trace concrete, red brick and miscellaneous debris (aluminum scrap metal, glass bottles, electrical conduit, rebar, glass, plastic sheeting, wooden boards). Moist; no odor.	
3		RCH-6-ARC/MT-7 WC		
4	ND		3.0 to 8.0' - FILL: Black coal ash; some fine to coarse, sub-angular gravel, little brown, medium to coarse sand, trace red brick, concrete and miscellaneous debris. Wet at 3.0'; slight odor; sheen observed on ground water from northwest corner.	
5	שוו			
_ 6 _				
_ 7 _				
8				
			End of test pit at 8.0'	
F -				
<u> </u>				

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

TEST PIT LOG

TEST PIT NUMBER

RCH-6-ARC/MT-9

PROJECT NAME: Spectra NJ-NY

Expansion

LOCATION: Staten Island, New York

DATE COMPLETED: 03/08/12

OPERATOR: J. Paiva

PROJECT NO.: 168217 CONTRACTOR: The Napp-Grecco Company

DEPTH FROM SURFACE (FEET)	PID (ppm)	SAMPLE DESIGNATION AND DEPTH (feet)	LITHOLOGIC CLASSIFICATION AND COMMENTS
1			0 to 0.5' - Asphalt and gray, medium to fine sand and fine sub-angular gravel sub-base.
2 _	ND		0.5 to 3.5' - FILL: Brownish-red silt and medium soft clay; trace sub-angular gravel and red brick
_ 3 _		RCH-6-ARC/MT-9 WC	Wet at 2.9' 2.5 to 8.0'. Fill I Crow fine to coorse out angular grouply little coorse conditions debrie
_ 4 _	0.7		3.5 to 8.0' - FILL: Gray, fine to coarse, sub-angular gravel; little coarse sand, trace debris (wood timbers, glass bottles, red brick, sea shells, concrete).
_ 5 _			
6 _			
7 _			
8 _			End of test pit at 8.0'



Environmental Corporation SOIL BORING LOG

BORING NUMBER

RCH-6-ENV-1

PROJECT NAME:

Spectra NJ-NY Expansion

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water

Environmental Services

SAMPLER TYPE/DIA.: Hand Auger/ BORING METHOD: Direct Push

Macrocore/2"

DEPTH TO WATER: 4.0 feet

TOTAL DEPTH DRILLED: 15 feet

DATE DRILLED: 07/20/11

DRILLER: K. McGourty

LOGGED BY: B. Chaky / P. Narea

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
_ 0 _			ND			0 to 4.0' - FILL: Brown, coarse to fine sand; trace gravel, trace
1			ND			coal/ash/cinder fragments, trace brick pieces. Dry.
<u> </u>			ND			
2						
_		Hand	ND	RCH6ENV1/2		
_ 3 _		Cleared				
			ND			
_ 4 _			3		рт	4.0 to 5.0' - Black PEAT. Wet at 4.0 feet.
5			3			4.0 to 0.0 Black F.M. World 4.0 loot.
⊢			ND		SM	5.0 to 10' - Red brown, fine SAND; little silt. Wet, dense.
6			ND			
			0.9			
_ 7 _				B0110ENN/4/E		
_		48	0.8 ND	RCH6ENV1/7		
_ 8 _			טא			
9			0.5			
			ND			
10			ND			
			0.5		PT	10 to 12' - Brown PEAT; little silt, trace roots. Wet, loose.
_ 11 _			0.4			
40			ND			
_ 12 _			0.3		CL	12 to 15' - Red brown CLAY; little medium to fine sand, trace
13		45	0.5			medium to fine, rounded, gravel. Wet, dense.
			0.0			
14			0.4			
			0.5			5 1 (5) 0 (5)
15			0.3			End of Boring @ 15'

PROJECT NAME:

Environmental Corporation SOIL BORING LOG

BORING NUMBER

RCH-6-HDD-1

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

Spectra NJ-NY Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Warren George, Inc.

SAMPLER TYPE/DIA.: Hand Auger/Stainless

DEPTH TO WATER: 1.5 feet

TOTAL DEPTH DRILLED: 22 feet

steel spoon/2" BORING METHOD: Mud Rotary /

Tricone roller bit

DATE DRILLED: 11/05/10

DRILLER: O. Sanchez

LOGGED BY: C. Nichol

		I ricone roller i	JIL			<u> </u>
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0 _						
1				No Samples Collected		0.0 to 1.0' - ASPHALT; and gravel sub-base.
2						1.0 to 2.0' - FILL: Dark gray, fine to coarse sand; some fine gravel, trace silt, trace shells. Wet @ 1.5'
3 _						2.0 to 7.0' - FILL: Dark gray, fine to coarse sand; and shells, some fine to coarse gravel, pieces of brick and pottery fragments.
4 _		Hand cleared	ND			
_ 5 _	_					
6 _						
7						
8		0	ND			7.0 to 9.0' - No recovery.
9			ND			
10						9.0 to 10.0' - Continuous drilling; no spoons collected.
11			57.4		PT	10.0 to 12.0' - PEAT. Strong organic odor, no visual signs of contamination.
12		12	34.3			
13						12.0 to 14.0' - Shelby tube.
_ 14 _						14.0 to 15.0' - Continuous drilling; no spoons collected.
15						

TRC Environmental Corporation SOIL BORING LOG

BORING NUMBER

RCH-6-HDD-1

	E. Willow		et, Millburn, N	J 07041	(973) 564-6006			SOIL BORI	ING LOG	RCH-6-HDD-1
DEPTH FROM SURFACE (FEET)	BLOV COUN PER 6	ΝT	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED		LITHOLOG	IC CLASSIFIC	CATION AND COMMENTS
				523		ОН				SILT; and peat. Strong organic
16			18	157			odor	, no visual signs	s of contamin	ation.
				155						
_ 17	-						17.0	to 20.0' - Contin	augus drilling	; no spoons collected.
40			-				17.0	to 20.0 - Contin	idous drilling	i, no spoons collected.
_ 18	-		-							
19			-							
			-							
20										
						SP	20.0	to 22.0' - Reddi	sh gray, med	dium to coarse SAND; trace silt.
21			24	ND						
			-							
22									F 1 - 4 b -	
										oring @ 22' tended to 100'
									Doreriole ext	lended to 100
							Note	: Borehole arou	ted in accord	dance with N.J.A.C. 7:9D-3.1
			-					0. 0o. g. 0 a.		
			-							
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L	_									
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	+		1							
			1							
]							

Environmental Corporation

SOIL BORING LOG

BORING NUMBER

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

RCH-MM-ARC-1

PROJECT NAME:

Spectra NJ-NY

Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water

Environmental Services

DATE DRILLED: 11/30/11

SAMPLER TYPE/DIA.: Hand Auger/

Macrocore/2"

DEPTH TO WATER: 1.5 feet

DRILLER: J. Lamprecht

BORING METHOD: Direct Push

TOTAL DEPTH DRILLED: 20 feet

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
1 _				No Samples Collected	sw	0.0 to 6.0' - Brown to light brown, fine to coarse SAND; little silt. Moist with trace organic roots from 0.0 to 1.5'.
2 _						Wet @ 1.5'.
3 _		Hand Cleared	ND			
4 _		0.00.00				
_ 5 _						
6 _						
7					SW	6.0 to 11' - Brown, fine to coarse SAND. Wet.
8		00	ND			
9		38	ND			
_ 10 _						
_ 11 _					ML	11 to 14.5' - Red brown SILT; and clay. Wet.
_ 12 _		45	ND			
_ 13 _						
14 _						
15		36	ND		SP	14.5 to 20' - Brown, fine SAND. Wet.



TRC Environmental Corporation SOIL BORING LOG

BORING NUMBER

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

RCH-MM-ARC-1

57 E.	. Willow Stre	et, Millburn, NJ	07041 (973) 564-6006			ROTT WINT ARCO T
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED		CATION AND COMMENTS
					SP	14.5 to 20' - Brown, fine SAND. \	Vet.
16							
		20	ND				
17		- 36	ND				
18							
" -							
19		1					
· · · -		24	ND				
20		-				End of bo	oring at 20'
F 20 -							3
├ -						Note: Borehole backfilled with so	il cuttings and restored to grade.
		-					camings and received to grader
<u> </u>		-					
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├ -		-					
		+					
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L _							

Environmental Corporation

SOIL BORING LOG 57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

BORING NUMBER

RCH-MM-ARC-5

PROJECT NAME:

Spectra NJ-NY

Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water

Environmental Services

DATE DRILLED: 11/30/11

SAMPLER TYPE/DIA.: Hand Auger/

Macrocore/2"

DEPTH TO WATER: 3.0 feet

DRILLER: J. Lamprecht

BORING METHOD: Direct Push

TOTAL DEPTH DRILLED: 20 feet

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
1						0.0 to 0.5' - Brown SILT; and fine to coarse gravel. Dry. 0.5 to 3.0' - Brown SILT; some clay. Moist.
2						
_ 3 _		Hand	ND			
4 _		Cleared			CL	3.0 to 6.0' - Brown to light brown CLAY; and silt, some fine to coarse gravel. Wet.
_ 5 _						
6 _						Note: No lithology recorded from 6.0 to 20' due to macrocore
7 _						samples remaining unopened for further investigation by archaeologist (GRA).
8 _						
9 _						
_ 10 _						
_ 11 _						
_ 12 _						
_ 13 _						
14						
15						

TRC Environmental Corporation SOIL BORING LOG

BORING NUMBER RCH-MM-ARC-5

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

57 E.	Willow Stre	et, Millburn, NJ	07041 (973) 564-6006				Roll Mill Arto 6
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLO	GIC CLASSIFIC	CATION AND COMMENTS
_ 16 _								
17								
18								
19								
20							End of bo	oring at 20'
						ote: Borehole bad	ckfilled with so	il cuttings and restored to grade.
<u> </u>								
_								
_								
_								
_								
_								

Environmental Corporation

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

SOIL BORING LOG

RCH-MM-ARC-6

BORING NUMBER

PROJECT NAME:

Spectra NJ-NY

Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water

Environmental Services

SAMPLER TYPE/DIA.: Hand Auger/

Macrocore/2"

BORING METHOD: Direct Push

DEPTH TO WATER: 4.0 feet

TOTAL DEPTH DRILLED: 20 feet

DATE DRILLED: **11/30/11**

DRILLER: J. Lamprecht

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
1			ND ND			0.0 to 3.0' - FILL: Brown, fine sand and silt, some fine to coarse gravel. Moist. Trace organic roots from 0.0 to 0.5'. Trace wood
2			ND ND			and plastic pieces from 0.5 to 3.0'.
3		Hand	ND ND			
4		Cleared	ND ND			3.0 to 6.0' - Red brown SILT and CLAY, some fine to coarse gravel. Moist. Wet @ 4.0'.
 5			1.8 1.3			
6			ND ND			
7						Note: No lithology recorded from 6.0 to 20' due to macrocore samples remaining unopened for further investigation by
8						archaeologist (GRA).
9 _						
_ 10 _						
_ 11 _						
_ 12 _						
_ 13 _						
_ 14 _						
15						

OT	RC	Environ	men	tal Corpor	ati	on courses	BORING NUMBER
		et, Millburn, NJ				SOIL BORING LOG	RCH-MM-ARC-6
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFIC	TATION AND COMMENTS
16							
_ 17 _							
_ 18 _							
19							
20						End of bo	ring at 20'
_						Note: Borehole backfilled with soi	I cuttings and restored to grade.
<u> </u>							

Environmental Corporation

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

SOIL BORING LOG

RCH-MM-ARC-7

BORING NUMBER

PROJECT NAME:

Spectra NJ-NY Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water

Environmental Services

SAMPLER TYPE/DIA.: Hand Auger/

Macrocore/2"

BORING METHOD: Direct Push

DEPTH TO WATER: Not encountered

TOTAL DEPTH DRILLED: 20 feet

DATE DRILLED: 11/29/11

DRILLER: J. Lamprecht

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
1 _					ML	0.0 to 6.0 - Red brown SILT and CLAY, trace fine to coarse gravel. Moist. 0.0 to 0.5 Dry, organic roots.
2 _						
3 _		Hand Cleared	ND			
4 _		Cleared				
_ 5 _						
6 _						Note: No lithology recorded from 6.0 to 20' due to macrocore
7 _						samples remaining unopened for further investigation by archaeologist (GRA).
8 _						
9 _						
_ 10 _						
_ 11 _						
_ 12 _						
_ 13 _						
_ 14 _ 15						

OT	BC	Fnviron	men	tal Corpor	on SOIL BORING LOG	BORING NUMBER	
		et, Millburn, NJ			u	SOIL BORING LOG	RCH-MM-ARC-7
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFIC	CATION AND COMMENTS
16							
_ 17 _							
18							
19							
20						End of bo	oring at 20'
						Note: Borehole backfilled with so	il cuttings and restored to grade.

Environmental Corporation

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

SOIL BORING LOG

BORING NUMBER

RCH-MM-ARC-8

PROJECT NAME:

Spectra NJ-NY

Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217 CONTRACTOR: Land Air Water

Environmental Services

DATE DRILLED: 11/29/11

SAMPLER TYPE/DIA.: Hand Auger/

Macrocore/2"

DEPTH TO WATER: 3.0 feet

DRILLER: J. Lamprecht

BORING METHOD: Direct Push

TOTAL DEPTH DRILLED: 20 feet

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
1						0.0 to 0.5 - Brown SILT; and fine sand. Dry, organic roots. 0.5 to 4.0' - Brown, fine SAND. Moist. Wet @ 3.0'.
2						
3 _		Hand	ND			
4 _		Cleared			N/I	4.0 to 6.0' - Red SILT and CLAY, little fine sand. Wet.
5 _					IVIL	4.0 to 0.0 - Ned SILT and CLAT, little line Sand. Wet.
6 _						Note: No lithology recorded from 6.0 to 20' due to macrocore
7 _						samples remaining unopened for further investigation by archaeologist (GRA).
8 _						
9 _						
10 _						
11 _						
_ 12 _						
_ 13 _						
14 _						
15						

OT	RC	Environ	men	tal Corpor	ati	on	SOIL BORING LOG	BORING NUMBER
		et, Millburn, NJ				•••	SOIL BORING LOG	RCH-MM-ARC-8
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED		LITHOLOGIC CLASSIFIC	CATION AND COMMENTS
16								
_ 17 _								
18								
19								
<u> </u>								
20							End of bo	oring at 20'

Note: Borehole backfilled with soil cuttings and restored to grade.

CTRC

Environmental Corporation

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

TEMPORARY WELL AND SOIL BORING LOG

RCH-MM-ENV-10W

WELL NUMBER

PROJECT NAME: Spectra NJ-NY Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water Environmental Services

SAMPLER TYPE/DIA.: Hand Auger/Macrocore/2"

DEPTH TO BEDROCK: Not Encountered DRILLING METHOD: Hollow Stem Auger

TOTAL DEPTH DRILLED: 20 feet

SERVICES

START DATE: 11/29/11

FINISH DATE: 11/29/11

FINISH DATE: 11/29/11

BIT TYPE: Auger Bit

START DATE: 11/29/11

FINISH DATE: 11/29/11

LOGGED BY: B. Bermingham

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	WELL DIAGRAM	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
_ 0 1 2 3 4		Hand Cleared	2.2 1.8 0.8 0.5 ND ND ND ND	RCH-MM-ENV-10W/0.5			Top of casing to ground surface: -0.50 feet 0.0 to 2.0' - FILL: Brown sand; some silt, trace fine to coarse gravel, trace ceramic tile, trace glass, trace cobble. Loose, dry, Moist @ 1.0'. 2.0 to 5.0' - FILL: Brown sand; some silt, little reddish-brown soft clay, trace fine to medium gravel. Loose, moist.
_ 5 _ 6 _			ND ND ND			CL	Wet at 5.0'. 5.0 to 6.0' - Reddish-brown CLAY; some silt, trace fine, subangular gravel. Medium soft, wet.
_ 7 _ 8 _ 9 10 11 12 13 14 15		48	ND ND	RCH-MM-ENV-10W/7.5		CL	6.0 to 7.0' - Brown, fine to medium SAND; little silt. Loose, wet. 7.0 to 10' - Reddish-brown CLAY; some silt, trace fine, subangular gravel. Medium soft, wet. 10 to 12.5' - Reddish-brown CLAY; trace silt, trace fine, subangular gravel. Medium soft, wet. 12.5 to 15' - Reddish-brown fine SAND, little silt, trace fine, subangular gravel. Loose, wet.
	YPE/DIAMET	, ,		N/A		[STATIC WATER LEVEL: 4.45 (11/30/11) feet below surface DEPTH WATER ENCOUNTERED: 5 feet below surface
SCREE		N INTERVAL: DW SURFACE)		0.50 to 15.44			MEASURING POINT ELEVATION: NA ft.msl GROUND SURFACE ELEVATION: NA ft.msl

CTRC Environmental Corporation								TEMPORARY WELL AND WELL NUMBER			
				041 (973) 564-6006			SOIL BORING LOG RCH-MM-ENV-10W				
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	WELL DIAGRAI	м	UNIFIED	LITHOLOGIC CLASS	SIFICATION AND COMMENTS		
_ 16 _						S		15 to 17.5' - Reddish-brown fine gravel. Loose, wet.	e SAND; little silt, trace fine, subangular		
_ 17 _											
_ 18 _		60	ND			(AY; trace silt, trace fine, subangular		
_ 19 _								gravel. Medium soft, wet.			
_ 20 _								End c	of boring at 20'		
								0.50 to 15.44 ft. below surface 0.50 to 15.44 ft. below surface Total depth of well = 15.44 feet			
_											

Environmental Corporation

SOIL BORING LOG

BORING NUMBER

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

RCH-MM-ENV-11

PROJECT NAME:

Spectra NJ-NY

LOCATION: Staten Island, New York Expansion

PROJECT NO.: 168217

CONTRACTOR: Land Air Water Environmental

Services

SAMPLER TYPE/DIA.: Hand Auger /

Macrocore/2" BORING METHOD: Direct Push

DEPTH TO WATER: 4.0 feet

TOTAL DEPTH DRILLED: 15 feet

DATE DRILLED: 11/28/11

DRILLER: J. Lamprecht

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
⊢					SM	0.0 to 0.5' - Brown SILT; and organics (roots). Dry.
1						0.5 to 6.0' - Light brown, fine to coarse SAND; some silt and fine to coarse
						gravel, trace clay. Moist from 0.5 to 4.0'.
2						
_ 3 _						
		Hand	ND	RCH-MM-ENV-11/3		
_ 4 _		Cleared				Wet at 4.0'.
_						vvet at 4.0.
_ 5 _						
6						
				RCH-MM-ENV-11/6	CL	6.0 to 7.0' - Red CLAY; some silt, trace fine to coarse gravel. Wet.
7						
					ML	7.0 to 11' - Red brown SILT and CLAY, some fine to coarse gravel. Wet.
_ 8 _						
_ 9 _		48	ND			
10						
10 -						
11						
					SP	11 to 15' - Brown, fine SAND. Wet.
_ 12 _						
_ 13 _		42	ND			Note: Pershala haskfilled with acil outtings and restored to availa
						Note: Borehole backfilled with soil cuttings and restored to grade.
_ 14 _						
15						End of boring at 15'

BORING NUMBER Environmental Corporation TRC **SOIL BORING LOG** 57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006 RCH-MM-ENV-12 Spectra NJ-NY PROJECT NAME: LOCATION: Staten Island, New York Expansion **CONTRACTOR:** Land Air Water Environmental **PROJECT NO.:** 168217 Services DATE DRILLED: 11/28/11 **DEPTH TO WATER: 4.0 feet** SAMPLER TYPE/DIA.: Hand Auger / DRILLER: J. Lamprecht Macrocore/2" BORING METHOD: Direct Push TOTAL DEPTH DRILLED: 15 feet LOGGED BY: D. Santana DEPTH **BLOW** RECOVERY PID SAMPLE UNIFIED FROM COUNT LITHOLOGIC CLASSIFICATION AND COMMENTS SURFACE (INCHES) **DESIGNATION** (ppm) PER 6 IN. (FEET) 0 SW 0.0 to 1.0' - Dark brown, fine to medium SAND; trace silt and fine to medium, sub-angular gravel. Loose, moist. Root material 1.0 to 6.0' - Orange brown, fine to medium SAND; little silt, trace natural wood fragments. Moist, loose. 2 Hand 3 ND Cleared RCH-MM-ENV-12/3.5 Wet at 4.0'. 5 6 SP 6.0 to 10' - Orange brown, fine to medium SAND; trace silt. Loose, wet. RCH-MM-ENV-12/7.5 8 ND 48 10 CL 10 to 15' - Red brown CLAY; trace silt and fine, sub-angular gravel. Stiff, wet. 11 12

ND

41

13

14

15



TRC Environmental Corporation SOIL BORING LOG

BORING NUMBER

RCH-MM-ENV-12 57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

DEPTH		, , ,		41 (373) 304-0000		<u> </u>
FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
					CL	15 to 20' - Red brown CLAY; trace silt and fine, sub-angular gravel. Stiff, wet. Red brown, fine sand lense at 17'.
_ 16 _						
_ 17 _						
18		57	ND			
19						
_ 20 _						End of boring at 20'
						Note: Borehole backfilled with soil cuttings and restored to grade.
						Note. Doreline backlined with soil cuttings and restored to grade.
_						
<u> </u>						
<u> </u>						
<u> </u>						
<u> </u>						
<u> </u>						



Environmental Corporation

TEMPORARY WELL AND SOIL BORING LOG

WELL NUMBER

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

RCH-MM-ENV-13W

PROJECT NAME: Spectra NJ-NY Expansion

SAMPLER TYPE/DIA.: Hand Auger/Macrocore/2"

LOCATION: Staten Island, New York

PROJECT NO.: 168217

TOTAL DEPTH DRILLED: 20 feet

DEPTH TO BEDROCK: Not Encountered

CONTRACTOR: Land Air Water Environmental Services

Services

TYPE OF WELL: Temporary

DRILLING METHOD: Hollow Stem Auger

BIT TYPE: Auger Bit

START DATE: 11/28/11
FINISH DATE: 11/28/11
DRILLER: J. Lamprecht

LOGGED BY: D. Santana

BLOW RECOVERY SAMPLE WELL FROM COUNT SURFACE (INCHES) DESIGNATION DIAGRAM LITHOLOGIC CLASSIFICATION AND COMMENTS (ppm) PER 6 IN. (FEET) Top of casing at grade. 0 SW 0.0 to 1.0' - Dark brown, fine to medium SAND; little fine to coarse, ND sub-angular gravel, trace silt. Loose, dry. 18.1 SW 1.0 to 2.0' - Light brown, fine to medium SAND; trace silt and fine to 47.3 coarse, sub-angular gravel. Loose, dry. 137 2 SP 2.0 to 6.0' - Orange brown, fine to medium SAND; trace silt. Loose, 182 RCH-MM-ENV-13W/2 13.6 Hand 3 Cleared ND ND 4 ND ND 5 Wet at 5.0'. ND ND 6 SP 6.0 to 10' - Light brown, fine to medium SAND; trace silt. Loose, wet. 7 RCH-MM-ENV-13W/7.5 8 ND 9 10 CL 10 to 15' - Red brown CLAY, trace silt and fine sub-angular gravel. Stiff, wet. 11 12 ND 13 14 15 CASING TYPE/DIAMETER (IN.) STATIC WATER LEVEL: 2.33 (11/29/11) feet below surface DEPTH WATER ENCOUNTERED: ______ 5 _____feet below surface INNER: PVC/3 OUTER: MEASURING POINT ELEVATION: SCREENED OR OPEN INTERVAL: 0.0 to 14.76 NA (FEET BELOW SURFACE) GROUND SURFACE ELEVATION: ft msl



Environmental Corporation

TEMPORARY WELL AND SOIL BORING LOG

WELL NUMBER RCH-MM-ENV-13W

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006 **BLOW** FROM RECOVERY PID SAMPLE WELL COUNT DESIGNATION DIAGRAM SURFACE (INCHES) LITHOLOGIC CLASSIFICATION AND COMMENTS (ppm) PER 6 IN. (FEET) 15 to 20' - Red brown CLAY; trace silt and fine sub-angular gravel. Stiff, wet. Fine sand lense at 18'. 16 17 54 ND 18 19 20 End of boring at 20' Well Construction Details 0.0 to 14.76 ft. below surface - 3" diameter 0.010 slot PVC screen 0.0 to 14.76 ft. below surface - No. 01 sand. Total depth of well = 14.76 feet bg as measured on 11/29/11 Note: Borehole backfilled with soil cuttings and restored to grade.

Environmental Corporation SOIL BORING LOG

BORING NUMBER

RCH-MM-ENV-14

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

Spectra NJ-NY PROJECT NAME: Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water Environmental

Services

DATE DRILLED: 11/17/11

SAMPLER TYPE/DIA.: Hand Auger **DEPTH TO WATER: 3.0 feet** DRILLER: J. Lampert

BORING METHOD: Direct Push

TOTAL DEPTH DRILLED: 6.0 feet

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0 _						
1 _						0.0 to 2.0' - Brown, fine SAND and silt.
2 _						2.0 to 6.0' - Light brown/orange, fine SAND.
_ 3 _		Hand Cleared	ND	RCH-MM-ENV-		Wet at 3.0'
4 _				14/3		
_ 5 _				RCH-MM-ENV-		
6 _				14/5		End of Boring at 6.0 feet
7 _						Note: Borehole backfilled with soil cuttings and restored to grade
8 _						
9 <u> </u>						
11						
12						
13						
14						
15						

Environmental Corporation SOIL BORING LOG

BORING NUMBER

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

RCH-MM-ENV-15

PROJECT NAME:

Spectra NJ-NY

Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water Environmental

Services

DATE DRILLED: 11/17/11

SAMPLER TYPE/DIA.: Hand Auger/

Macrocore/2"

DEPTH TO WATER: 1.0 feet

DRILLER: J. Lampert

BORING METHOD: Direct Push

TOTAL DEPTH DRILLED: 20 feet

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
1					SM	0.0 to 3.5' - Brown, fine SAND and SILT; some fine to coarse gravel, little organic roots. Wet at 1.0'.
2						
3 _		Hand	ND	RCH-MM-ENV-		
4 _		Cleared	ND	15/3		3.5 to 4.0' - Red brown CLAY and fine SAND. 4.0 to 10' - Red brown, fine to medium SAND and CLAY; trace
5 _						fine to medium gravel.
6 _						
7 _				RCH-MM-ENV- 15/6		
8 _						
9 _		30	ND			
10						
11					CH	10 to 14' - Red brown CLAY; trace sub-angular gravel; stiff.
_ 12 _		25				
_ 13 _			ND			
14						
15						

35

Environmental Corporation SOIL BORING LOG

BORING NUMBER

RCH-MM-ENV-15

57 E.	Willow Stre	et, Millburn, N.	J 07041 (973) 564-6006		30	IL BOKII	10 LUG	RCH-MM-ENV-15	
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED					CATION AND COMMENTS
					МН	14 to	18' -	Red brown	SILT; little	clay, trace fine to medium gravel
_ 16 _		40	ND							
_ 17 _		40								
18		-								
				•	SP	18 to	20' -	Red brown	, fine SAND	D; trace silt.
_ 19 _		24	ND							
_ 20 _									End of b	oring at 20'
21									Elia oi ba	oning at 20
22]								
						Note	: Bore	ehole backf	illed with so	il cuttings and restored to grade.
_ 23 _		-								
24										
25		-								
_ 26 _										
27										
28		-								
_ 29 _		-								
_ 30 _]								
31										
]								
_ 32 _										
_ 33 _										
3/1		-								

Environmental Corporation

TEMPORARY WELL AND SOIL BORING LOG

WELL NUMBER

RCH-MM-ENV-16W

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

PROJECT NAME: Spectra NJ-NY Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water Environmental

Services

SAMPLER TYPE/DIA.: Hand Auger/Macrocore/2"

TYPE OF WELL: Temporary
DEPTH TO BEDROCK: Not Encountered

DRILLING METHOD: Hollow Storman
TYPE OF WELL: Temporary FINISH DATE: 11/17/11

DRILLING METHOD: Hollow Stem Auger DRILLER: J. Lamprecht

LOGGED BY: **D. Santana**

START DATE: 11/17/11

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	C	WELL DIAGRAM	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
_ 0 1 2 3 4 5 6 7 8 10 11 12 13 15		Hand Cleared 41	9.8 10.7 1 1.2 2.6 3.5 8.9 12.2 1.1 0.7 0.6 0.3 ND 2.1 10.0 8.4 16.7 19.1 18.7 17.6	RCH-MM-ENV-16W/3.5			SM	Top of casing at grade. 0.0 to 4.0' - Red brown, fine to medium SAND; trace silt, trace natural wood fragments. Loose, moist. 4.0 to 6.0' - Red brown SILT; some red brown, fine to medium sand, trace fine to coarse, subangular gravel. Dense, moist. 6.0 to 10' - Red brown CLAY; some silt, trace fine, subangular gravel. Stiff, moist. Wet at 8.0'. 10 to 15' - Red brown CLAY; little silt, trace fine, subangular gravel. Stiff, moist.
CASING TYPE/DIAMETER (IN.) INNER: PVC/3 OUTER: N/A								STATIC WATER LEVEL: 6.62 (11/18/11) feet below surface DEPTH WATER ENCOUNTERED: 8 feet below surface
SCREENED OR OPEN INTERVAL: 5.0 to 19.25 (FEET BELOW SURFACE)								MEASURING POINT ELEVATION: NA ft.msl GROUND SURFACE ELEVATION: NA ft.msl

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(6)		

Environmental Corporation

TEMPORARY WELL AND SOIL BORING LOG

WELL NUMBER

57	E. Willow S	treet, Millbur	n, NJ 07	7041 (973) 564-6006		S	OIL BORING LOG	RCH-MM-ENV-16W
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	WELL DIAGRAM	UNIFIED	LITHOLOGIC CLASS	SIFICATION AND COMMENTS
_ 16 _							15 - 18' - Red brown CLAY; littl Stiff, moist.	e silt, trace fine, subangular gravel.
_ 17 _ _ 18 _		37	ND			SD	18 - 20' - Red brown, fine SANI	O Madium dense wet
_ 19 _ _ 20						51	10 - 20 - Neu Blown, line SANL	5. Medidili delise, wet.
							Well Cor 0.0 to 5.0 ft. below surface - 3" 5.0 to 19.25 ft. below surface - 0.0 to 19.25 ft. below surface - Total depth of Well = 19.25 feet	3" diameter 0.010 slot PVC screen No. 01 sand.

Boring Identification: RCH-MM-ENV-17

		Boring	Informat	ion								
Alternate Boring ID (if applicable)	N/A											
Pipeline Mile Marker ID	Approximat	ely 80 feet s	outh of 5.48								-	
Location (Latitude/Longitude) –		887" N / 74°			rveye	d						
estimated/surveyed												
Site Address	Boring is lo	cated in a v	vooded area	a, approxi	imate	ly 870 f	eet east	of the in	tersection	of Ri	chmond	
	Terrace and	Western Av	enue in Stat	en Island,	, New	York (no	o exact s	treet addr	ess availabl	e).		
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)		e sewer line		•								
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	Newark Bay is located approximately 850 feet northwest of boring.											
Drilling Date	11/17/11											
Drilling Company	Land Air Wa	ter Environr	nental Servi	ces								
Drilling Method	Hand Auger											
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A											
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environmer	tal										
		Boring (Observat	ions								
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1 – 8	3.0	8.1 – 12	2.0 12	2.1 – 16.0	16.1 – 2	0.0	>20	
where applicable		Χ										
PRODUCT												
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No											
- Product in GW – Check where	None O	bserved	She	en Only		Floatir	ng Produ	ct = <6"	Floating P	rodu	ct = >6"	
applicable	X											
HISTORIC FILL MATERIAL												
 Composition, other observations – 		Reworke	d Material			Α	nthropo	genically-0	Generated I	Mate	rial	
complete, as applicable		N	/A				N/A					
 Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only 	0.0 - 2.0	2.1 – 4.	0 4.1 -	- 6.0	6.1 -	- 8.0	8.1 – 1	0.0 10	0.1 – 12.0	>	•12.1	
PID/Odors (depth)	No PID. No	odors.	ı	ı		ı						
Geology	Light brown SAND; little	, fine SAND silt from 1.0 y red/brown	to 2.0 ft bg,	underlair	n by li	ght brov	vn/orang	ge, fine SA	ND from 2.0	0 to 4	1.5 ft bg,	
Soil Permeability		Loose		In	nterm	ediate			Tight			
					>	<						
Total Boring Depth (feet bg)	6.5											
GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing)	N/A											
Laboratory Name and Report No. (if samples collected)	Accutest La	ooratories, L	ab Report II	JA92420).							
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	RCH-MM-ENV-17/3 (3.0 to 3.5 feet bg) and RCH-MM-ENV-17/6 (6.0 to 6.5 feet bg) were collected for VOC, SVOC, PCB, TPH, pesticide, herbicide, metals and general chemistry analyses.											
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A											
Additional Hydro/Geological Test –	<10	⁻² Feet/Day		10 ⁻²	– 10	Feet/Da	у	<u></u>	>10 Feet/	Day		
Permeability Results (e.g. pump test/slug test/packer test)												
Additional Comments/Notes/ Observations (if applicable)	N/A				_				·	_		

Environmental Corporation SOIL BORING LOG

BORING NUMBER

RCH-MM-ENV-17

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

Expansion

PROJECT NAME: Spectra NJ-NY LOCATION: Staten Island, New York

PROJECT NO.: 168217 **CONTRACTOR:** Land Air Water Environmental

Services

DATE DRILLED: 11/17/11

DRILLER: J. Lampert

LOGGED BY: W. Lindemuth

SAMPLER TYPE/DIA.: Hand Auger	DEPTH TO WATER: 3.0 feet

BORING METHOD: Direct Push TOTAL DEPTH DRILLED: 6.5 feet

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
_ 0 _					SW	0.0 to 1.0' - Light brown, fine SAND and SILT; some roots.
_ 1 _					Ovv	1.0 to 2.0' - Brown/black, fine SAND; little silt
_ 2 _						2.0 to 4.5' - Light brown/orange, fine SAND
_ 3 _		Hand Cleared	ND	RCH-MM-ENV-		Wet at 3.0'
_ 4 _		Cleared		17/3		
_ 5 _					МН	4.5 to 6.5' - Red/brown CLAY; some silt; little fine to medium gravel
_ 6 _				RCH-MM-ENV- 17/6		
_ 7 _						End of Boring @ 6.5 feet
_ 8 _						Note: Borehole backfilled with soil cuttings and restored to grade.
_ 9 _						
_ 10 _						
_ 11 _						
_ 12 _						
_ 13 _						
_ 14 _						
15						

CTRC

Environmental Corporation

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

TEMPORARY WELL AND SOIL BORING LOG

RCH-MM-ENV-1W

WELL NUMBER

PROJECT NAME: Spectra NJ-NY Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

TOTAL DEPTH DRILLED: 20 feet

CONTRACTOR: Land Air Water Environmental

Services

SAMPLER TYPE/DIA.: Hand Auger/Macrocore/2" **DEPTH TO BEDROCK:** Not Encountered

TYPE OF WELL: Temporary

DRILLING METHOD: Hollow Stem Auger

BIT TYPE: Auger Bit

START DATE: 12/05/11
FINISH DATE: 12/05/11
DRILLER: J. Lamprecht
LOGGED BY: W. Lindemuth

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)		SAMPLE DESIGNATION	WELL DIAGRAM	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0							Top of casing to ground surface: -0.20 feet.
_ 1 _						SM	0.0 to 4.0' - Dark to light brown, fine to medium SAND and SILT. Moist. Trace vegetation roots from 0.0 to 0.5'.
_ 2 _ _ 3 _		Hand	ND	RCH-MM-ENV-1W/2			
_ 4 _		Cleared	ND				Wet @ 3.0'
_ 5 _				RCH-MM-ENV-1W/5			
_ 6 _						SP	4.0 to 10' - Light brown, fine to medium SAND. Wet.
_ 7 _							
_ 8 _		48	ND				
_ ⁹ _ 10							
11						CL	10 to 15.5' - Red CLAY; some silt. Wet.
12							
_ 13 _		40	ND				
_ 14 _							
15							
	YPE/DIAMET			N/A		[STATIC WATER LEVEL: 1.41 (12/06/11) feet below surface DEPTH WATER ENCOUNTERED: 3 feet below surface
SCREE		N INTERVAL: DW SURFACE)		0.2 to 15.06			MEASURING POINT ELEVATION: NA ft.msl
	(1 221 322	JON NOL)					GROUND SURFACE ELEVATION: NA ft.msl

	RC E. Willow S			ental Corpora	ation	TEMPORARY WELL AND			WELL NUMBER RCH-MM-ENV-1W
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	WELL DIAGRAI	И	UNIFIED	LITHOLOGIC CLASS	SIFICATION AND COMMENTS
_ 16 _							SP	15.5 to 20' - Red, fine to mediur	m SAND. Wet.
_ 17 _		-							
_ 18 _		58	ND						
_ 19 _		<u> </u>							
								Well Cor 0.2 to 15.06 ft. below surface - 0.2 to 15.06 ft. below surface - Total depth of well = 15.06 feet	



Environmental Corporation

SOIL BORING LOG

BORING NUMBER

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

RCH-MM-ENV-2

PROJECT NAME:

Spectra NJ-NY

Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water

Environmental Services

SAMPLER TYPE/DIA.: Hand Auger/

Macrocore/2"

BORING METHOD: Direct Push

DEPTH TO WATER: 3.0 feet

TOTAL DEPTH DRILLED: 15 feet

III TO WATER. 5.0 leet

DATE DRILLED: **12/05/11**

DRILLER: J. Lamprecht

LOGGED BY: B. Chaky

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
1				RCH-MM-ENV-	SW	0.0 to 1.0' - Brown, fine to medium SAND; little fine to medium, sub-rounded gravel, little silt. Dry, loose. Organic root material.
2				2/0.5	SP	1.0 to 7.0' - Orange brown fine SAND; trace fine, rounded gravel, trace silt. Moist, loose. Large cobble @ 1.0 to 2.0'.
3		Hand				
4		Cleared	ND			Wet @ 3.0'
5 _				RCH-MM-ENV- 2/5		
6 _				2/5		
7 –					CL	7.0 to 8.0' - Red brown CLAY; trace fine to medium sand, trace
8 _		48	ND		SP	silt. Wet, loose. 8.0 to 9.5' - Red brown, fine to medium SAND; little fine, rounded
9 _						gravel, trace silt. Wet, loose.
_ 10 _					CL	9.5 to 15' - Red brown CLAY; little fine, sub-rounded gravel, trace fine sand, trace silt. Moist, medium-dense.
_ 11 _						
_ 12 _						
_ 13 _		46	ND			Note: Borehole backfilled with soil cuttings and restored to grade.
_ 14 _						
15						End of boring at 15'

CTRC

Environmental Corporation

SOIL BORING LOG

BORING NUMBER

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

RCH-MM-ENV-3

PROJECT NAME:

Spectra NJ-NY

Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

contractor: Land Air Water

Environmental Services

DATE DRILLED: 12/02/11

SAMPLER TYPE/DIA.: Hand Auger/

Macrocore/2"

DEPTH TO WATER: 2.0 feet

DRILLER: J. Lamprecht

BORING METHOD: Direct Push

TOTAL DEPTH DRILLED: 15 feet

LOGGED BY: D. Santana

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
1					SW	0.0 to 2.5' - Orange brown, fine to medium SAND; trace silt. Loose, moist.
2						
_ 3 _		Head Cleared	ND		CL	Wet @ 2.0'. 2.5 to 15' - Red brown CLAY; little silt. Stiff, wet. 6.0 - 15' Trace fine, sub-angular gravel.
4 _		Cicarca		RCH-MM-ENV- 3/3.5		
_ 5 _						
6 _				RCH-MM-ENV-		
7 _				3/6		
8 _		35	ND			
9 _						
_ 10 _						
11 _						
_ 12 _ 13		60	ND			Note: Borehole backfilled with soil cuttings and restored to grade.
14						
15						End of boring at 15'

CTRC

Environmental Corporation

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

TEMPORARY WELL AND SOIL BORING LOG

WELL NUMBER

RCH-MM-ENV-4W

PROJECT NAME: Spectra NJ-NY Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

TOTAL DEPTH DRILLED: 20 feet

CONTRACTOR: Land Air Water Environmental

Services

SAMPLER TYPE/DIA.: Hand Auger/Macrocore/2"

DEPTH TO BEDROCK: Not Encountered

TYPE OF WELL: Temporary

DRILLING METHOD: Hollow Stem Auger

BIT TYPE: Auger Bit

START DATE: 12/01/11

FINISH DATE: 12/01/11

DRILLER: J. Lamprecht

LOGGED BY: B. Bermingham

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	WELL DIAGRAM	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0		Hand Cleared	ND ND	RCH-MM-ENV- 4W/3.5 RCH-MM-ENV- 4W/7.5		SM SC CL	Top of casing to ground surface: -0.50 feet. 0.0 to 1.0' - Dark brown, SILT; and fine to coarse sand, trace fine to coarse gravel, trace cobble, trace organics (roots). Loose, dry. 1.0 to 3.0' - Brown, fine to medium SAND; some silt, trace fine to medium, subangular gravel. Loose, moist. 3.0 to 4.0' - Brown, fine to medium SAND; some silt, trace reddish-brown medium soft clay, trace fine to medium gravel. Loose, moist. 4.0 to 6.0' - Reddish-brown CLAY; some fine to medium sand, little silt, trace fine, subangular gravel. Medium soft, moist. 6.0 to 10' - Reddish-brown CLAY; trace silt, trace fine, subangular gravel. Medium soft, wet @ 6.5'.
	YPE/DIAMET	, ,		N/A	1954	D	STATIC WATER LEVEL: 9.58 (12/2/11) feet below surface EPTH WATER ENCOUNTERED: 6.5 feet below surface
SCREEN		N INTERVAL: DW SURFACE)		0.5 to 19.83			MEASURING POINT ELEVATION: NA ft.msl GROUND SURFACE ELEVATION: NA ft.msl

	RC E. Willow S			ental Corpor	ation	TE	TEMPORARY WELL AND SOIL BORING LOG RCH-MM-ENV-		
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	WELL DIAGRAI	VI	UNIFIED		SIFICATION AND COMMENTS
16 17 18 19 20		54	ND				SP	15 to 20' - Reddish-brown CLA gravel. Medium soft, wet.	Y; trace silt, trace fine, subangular
								Well Cc 0.5 to 19.83 ft. below surface - 0.5 to 19.83 ft. below surface - Total depth of well = 19.83 fee	
- 									

TRC

Environmental Corporation SOIL BORING LOG

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

RCH-MM-ENV-5

BORING NUMBER

PROJECT NAME:

Spectra NJ-NY

LOCATION: Staten Island, New York

Expansion

CONTRACTOR: Land Air Water

Environmental Services

DATE DRILLED: 12/01/11

SAMPLER TYPE/DIA.: Hand Auger/

Macrocore/2"

DEPTH TO WATER: 7.0 feet

DRILLER: J. Lamprecht

BORING METHOD: Direct Push

PROJECT NO.: 168217

TOTAL DEPTH DRILLED: 20 feet

LOGGED BY: D. Santana

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
1 _					ML	0.0 to 10.5' - Red brown SILT; little fine to medium sand, trace clay, trace fine to coarse, sub-angular gravel. Dry, soft. Stiff from 8.0 to 10.5'.
2 _						
3 _		Head Cleared	ND	RCH-MM-ENV-		
4 _				5/3		
_ 5 _						
6 _				RCH-MM-ENV-		
7 –				5/6		Wet @ 7.0'
8 _		40	ND			
9 —						
11					CL	10 to 20' - Red brown CLAY; little silt. Stiff, wet.
12		44	ND			
13		44	IND			
14						
15		42	ND			



CTRC Environmental Corporation SOIL BORING LOG

BORING NUMBER

57 E.				(973) 564-6006	٠	•	SOIL BUI	RING LO	G	RCH-MM-ENV-5
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED					ATION AND COMMENTS
					CL	10 to	20' - Red bro	own CLAY; I	little	silt. Stiff, wet.
_ 16 _										
17		42	ND							
18										
19		24	ND							
20								End of	f bo	ring at 20'
_						Note	Borehole ba	ckfilled with	soi	I cuttings and restored to grade.
_										
_										
_										
_										
_										
<u> </u>										
<u> </u>										

CTRC

Environmental Corporation

SOIL BORING LOG

BORING NUMBER

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

RCH-MM-ENV-6

PROJECT NAME:

Spectra NJ-NY

Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water

Environmental Services

DATE DRILLED: 12/01/11

SAMPLER TYPE/DIA.: Hand Auger/

Macrocore/2"

DEPTH TO WATER: 3.0 feet

DRILLER: J. Lamprecht

BORING METHOD: Direct Push

TOTAL DEPTH DRILLED: 15 feet

LOGGED BY: D. Santana

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS						
0 _					S/A/	0.0 to 4.0' - Dark brown to red brown, fine to medium SAND; little						
1 _					SVV	silt, little fine to coarse, sub-angular gravel. Moist, medium-dense.						
2 _												
3 _												
4 _		Head Cleared	ND	RCH-MM-ENV- 6/3		Wet @ 3.0'						
_ 5 _					ОН	4.0 to 15' - Red brown CLAY; little silt, trace fine to medium, su angular gravel. Stiff, wet.						
6 _												
7 _				RCH-MM-ENV- 6/6.5								
8 _				6/6.5								
9 _		41	ND									
10												
11						Note: Borehole backfilled with soil cuttings and restored to grade.						
_ 12 _												
_ 13 _		45	ND									
14		70	140									
15						End of boring at 15'						

Environmental Corporation SOIL BORING LOG

BORING NUMBER

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

RCH-MM-ENV-7W

PROJECT NAME:

Spectra NJ-NY Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water Environmental

Services

DEPTH TO WATER: Not Encountered

DRILLER: J. Lamprecht

DATE DRILLED: 12/01/11

SAMPLER TYPE/DIA.: Hand Auger / Macrocore/2" BORING METHOD: Direct Push

TOTAL DEPTH DRILLED: 20 feet

LOGGED BY: B. Bermingham

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
_ 0 _						
1					SM	0.0 to 1.0 - Dark brown SILT; and fine to coarse sand, little fine to coarse gravel, trace cobble, trace roots. Dry, loose.
2 _					SM	1.0 to 6.0' - Reddish brown SILT; little fine to coarse, sub-angular gravel, trace fine to medium sand, trace cobble. Dry, loose, moist @ 2.0'.
_ 3 _		Hand Cleared	ND	RCH-MM-ENV-		
4 _				7W/3.5		
_ 5 _						
6						
7 _					CL	6.0 to 15' - Reddish-brown CLAY; trace silt, trace fine, sub-angular gravel. Medium soft, moist.
_ 8 _		48	ND	RCH-MM-ENV- 7W-7.5		
9		.0	2			
10						
11						
_ 12 _		44	ND			
_ 13 _		77	ND			
_ 14 _						
15						

OT	PC	Enviro		ntal Corpo	rati	on		_	BORING NUMBER
	Land Control			(973) 564-6006	au	OII	SOIL BORING LOG		RCH-MM-ENV-7W
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED		LITHOLOGIC CLASS	IFIC	CATION AND COMMENTS
_ 16 _					CL		o 20' - Reddish-brown CL rel. Medium soft, moist.	ĀΥ;	trace silt, trace fine, sub-angular
17									
_ 18 _		46	ND						
_ 19 _									
20									
							End o	f bo	ring @ 20'
						Note	e: Borehole backfilled with	so	il cuttings and restored to grade.
<u> </u>							e: Temporary well not inst ng hand auger or macroco		d due to no water encountered sampling.
]							



Environmental Corporation

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

SOIL BORING LOG

BORING NUMBER

RCH-MM-ENV-8

PROJECT NAME:

Spectra NJ-NY

Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water

Environmental Services

DATE DRILLED: 11/30/11

SAMPLER TYPE/DIA.: Hand Auger/

Macrocore/2"

DEPTH TO WATER: Not encountered

DRILLER: J. Lamprecht

BORING METHOD: Geoprobe/Hand Auger

TOTAL DEPTH DRILLED: 15 feet

LOGGED BY: W.Lindemuth

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
			ND			0.0 to 3.0' - FILL: Brown silt and fine sand, little fine to coarse
1 _			ND			gravel. Moist. Trace organic roots and cinder block pieces from 0.0 to 1.0'. Wood and plastic fill from 1.0 to 3.0'.
_			ND			'
_ 2 _			ND ND			
3		Hand	ND			
- ° -		Cleared	10.6	RCH-MM-ENV-		3.0 to 6.0' - FILL: Red brown silt; little fine to coarse gravel. Moist.
4			1.4	8/3		Trace wood fill material from 4.0 to 6.0'.
			ND			
5			ND			
			ND	RCH-MM-ENV-		
_ 6 _			ND	8/5		
_					ML	6.0 to 10' - Red brown SILT; some clay, trace fine to coarse gravel. Moist.
7 —						3.5.5.
8						
⊢		48	ND			
9						
10						
					CL	10 to 15' - Red brown CLAY; and silt, little fine to coarse gravel. Moist.
_ 11 _						Wiorst.
10						
_ 12 _		48	ND			
13						Note: Borehole backfilled with soil cuttings and restored to grade
14						
15		12	ND			End of Boring at 15'



Environmental Corporation

SOIL BORING LOG

BORING NUMBER

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

RCH-MM-ENV-9

PROJECT NAME:

Spectra NJ-NY

Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water

Environmental Services

DATE DRILLED: 11/29/11

SAMPLER TYPE/DIA.: Hand Auger/

Macrocore/2"

DEPTH TO WATER: Not encountered

DRILLER: J. Lamprecht

BORING METHOD: Geoprobe/Hand Auger

TOTAL DEPTH DRILLED: 15 feet

LOGGED BY: W.Lindemuth

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
					ML	0.0 to 11' - Red brown SILT and CLAY, some fine to coarse
1 _						gravel. Moist. Trace organic roots from 0.0 to 0.5'.
2						
				RCH-MM-ENV- 9/2		
_ 3 _		Hand		3/L		
4		Cleared	ND			
5						
_ 6 _				RCH-MM-ENV-		
7				9/6		
8						
_						
9 _		48	ND			
10						
_ 11 _					CL	11 to 15' - Red brown CLAY; some silt, trace fine to coarse gravel.
_ 12 _						Moist.
13		40	ND			Note: Borehole backfilled with soil cuttings and restored to grade
		48	ND			
_ 14 _						
15						End of Boring at 15'

Boring Identification: 1R-22.1-ENV-4

Alternate Boring ID (if applicable) Pipeline Mile Marker ID Approximately 15 feet northwest of 3.77 Location (Latitude/Longitude) – estimated/surveyed Site Address Boring lnformation N/A Approximately 15 feet northwest of 3.77 40° 37' 31.9065" N/74° 11' 48.2333" W – Surveyed Boring located approximately 375 feet southwest of the intersection of 4 th Avenue and Staten Island, New York (no exact street address available).												
Pipeline Mile Marker ID Approximately 15 feet northwest of 3.77 Location (Latitude/Longitude) – 40° 37' 31.9065" N/74° 11' 48.2333" W – Surveyed estimated/surveyed Site Address Boring located approximately 375 feet southwest of the intersection of 4 th Avenue and												
Location (Latitude/Longitude) – 40° 37' 31.9065" N/74° 11' 48.2333" W – Surveyed estimated/surveyed Site Address Boring located approximately 375 feet southwest of the intersection of 4 th Avenue and												
estimated/surveyed Site Address Boring located approximately 375 feet southwest of the intersection of 4 th Avenue and												
Site Address Boring located approximately 375 feet southwest of the intersection of 4 th Avenue and												
	5 th Stroot i											
	J Juleet II											
Nearby Subsurface Features (Distance and A subsurface water line is located approximately 375 feet northeast of boring.												
Direction from Utilities, Tanks, Properties,												
etc.)												
Nearby Hydraulic Features (Distance and Arthur Kill is located approximately 1,500 feet west of boring. Boring is located in wetland	lc											
Direction from wetlands, etc.)	٦.											
Drilling Date 7/7/2011												
Drilling Company Land Air Water Environmental Services												
Drilling Method Geoprobe – Direct Push / 2" Macrocore	N/A											
, , , ,												
pump test/slug test/packer test)	Environmental											
5 6 1 P 2 2 4 5 6 2 2 2 2 4 2 4 2 4 2 4 2 4 2 4 2 4 2 4	Environmental											
environmental/geoarchaelogical)												
Boring Observations	- 1											
Depth to saturation (feet bg) - Check 0.0 - 2.0 2.1 - 4.0 4.1 - 6.0 6.1 - 8.0 8.1 - 12.0 12.1 - 16.0 16.1 - 20	0.0 >20											
where applicable X												
PRODUCT												
- Product in Soil – Yes/No No												
(odor/inches/viscosity, etc.)												
- Product in GW – Check where None Observed Sheen Only Floating Product = <6" Floating P	roduct = >6											
applicable X												
HISTORIC FILL MATERIAL												
	/laterial											
- Composition, other observations – Reworked Material Anthropogenically-Generated I												
complete, as applicable Brown silt; little clay; trace gravel from grade to N/A												
complete, as applicable Brown silt; little clay; trace gravel from grade to 1.0 feet bg, underlain by brown medium to fine												
complete, as applicable Brown silt; little clay; trace gravel from grade to 1.0 feet bg, underlain by brown medium to fine sand; little sub-rounded gravel; trace silt to 5.0												
complete, as applicable Brown silt; little clay; trace gravel from grade to 1.0 feet bg, underlain by brown medium to fine sand; little sub-rounded gravel; trace silt to 5.0 feet bg, underlain by fine sand; little clay; trace												
complete, as applicable Brown silt; little clay; trace gravel from grade to 1.0 feet bg, underlain by brown medium to fine sand; little sub-rounded gravel; trace silt to 5.0 feet bg, underlain by fine sand; little clay; trace gravel to 6.0 feet bg, underlain by gray brown												
complete, as applicable Brown silt; little clay; trace gravel from grade to 1.0 feet bg, underlain by brown medium to fine sand; little sub-rounded gravel; trace silt to 5.0 feet bg, underlain by fine sand; little clay; trace gravel to 6.0 feet bg, underlain by gray brown coarse to fine sand; little sub-rounded gravel;												
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complete, as applicable Brown silt; little clay; trace gravel from grade to 1.0 feet bg, underlain by brown medium to fine sand; little sub-rounded gravel; trace silt to 5.0 feet bg, underlain by fine sand; little clay; trace gravel to 6.0 feet bg, underlain by gray brown coarse to fine sand; little sub-rounded gravel; trace silt to 10 feet bg. Pepth (feet bg) – check more than 0.0 – 2.0 2.1 – 4.0 4.1 – 6.0 6.1 – 8.0 8.1 – 10.0 10.1 – 12.0	>12.1											
complete, as applicable Brown silt; little clay; trace gravel from grade to 1.0 feet bg, underlain by brown medium to fine sand; little sub-rounded gravel; trace silt to 5.0 feet bg, underlain by fine sand; little clay; trace gravel to 6.0 feet bg, underlain by gray brown coarse to fine sand; little sub-rounded gravel; trace silt to 10 feet bg. - Depth (feet bg) – check more than one depth, if applicable – applies to Brown silt; little clay; trace gravel from grade to 1.0 feet bg, underlain by brown medium to fine sand; little sub-rounded gravel; trace silt to 10 feet bg. - Depth (feet bg) – check more than one depth, if applicable – applies to												
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Complete, as applicable Brown silt; little clay; trace gravel from grade to 1.0 feet bg, underlain by brown medium to fine sand; little sub-rounded gravel; trace silt to 5.0 feet bg, underlain by fine sand; little clay; trace gravel to 6.0 feet bg, underlain by gray brown coarse to fine sand; little sub-rounded gravel; trace silt to 10 feet bg. - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only												
Brown silt; little clay; trace gravel from grade to 1.0 feet bg, underlain by brown medium to fine sand; little sub-rounded gravel; trace silt to 5.0 feet bg, underlain by fine sand; little clay; trace gravel to 6.0 feet bg, underlain by gray brown coarse to fine sand; little sub-rounded gravel; trace silt to 10 feet bg. - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Brown silt; little clay; trace gravel from grade to 1.0 feet bg, underlain by gray brown coarse to fine sand; little sub-rounded gravel; trace silt to 10 feet bg. 8.1 – 10.0 10.1 – 12.0 10.1 – 12.0 PID readings from 10' to 15' (max = 407 ppm from 13.5 to 14 feet bg). No odors noted.												
Brown silt; little clay; trace gravel from grade to 1.0 feet bg, underlain by brown medium to fine sand; little sub-rounded gravel; trace silt to 5.0 feet bg, underlain by fine sand; little clay; trace gravel to 6.0 feet bg, underlain by gray brown coarse to fine sand; little sub-rounded gravel; trace silt to 10 feet bg. - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) PID readings from 10' to 15' (max = 407 ppm from 13.5 to 14 feet bg). No odors noted. Fill to 10 feet bg (see above), underlain by gray CLAY and little peat to at least 15 feet bg.												
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Brown silt; little clay; trace gravel from grade to 1.0 feet bg, underlain by brown medium to fine sand; little sub-rounded gravel; trace silt to 5.0 feet bg, underlain by fine sand; little clay; trace gravel to 6.0 feet bg, underlain by gray brown coarse to fine sand; little sub-rounded gravel; trace silt to 10 feet bg. - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) PID readings from 10' to 15' (max = 407 ppm from 13.5 to 14 feet bg). No odors noted. Geology Soil Permeability Loose Intermediate N/A N/A N/A N/A N/A N/A N/A N/												
Brown silt; little clay; trace gravel from grade to 1.0 feet bg, underlain by brown medium to fine sand; little sub-rounded gravel; trace silt to 5.0 feet bg, underlain by fine sand; little clay; trace gravel to 6.0 feet bg, underlain by gray brown coarse to fine sand; little sub-rounded gravel; trace silt to 10 feet bg. Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) PID readings from 10' to 15' (max = 407 ppm from 13.5 to 14 feet bg). No odors noted. Geology Fill to 10 feet bg (see above), underlain by gray CLAY and little peat to at least 15 feet bg. Soil Permeability Loose Intermediate N/A N/A N/A N/A N/A N/A N/A N/												
Brown silt; little clay; trace gravel from grade to 1.0 feet bg, underlain by brown medium to fine sand; little sub-rounded gravel; trace silt to 5.0 feet bg, underlain by fine sand; little clay; trace gravel to 6.0 feet bg, underlain by gray brown coarse to fine sand; little sub-rounded gravel; trace silt to 10 feet bg. - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) PID readings from 10' to 15' (max = 407 ppm from 13.5 to 14 feet bg). No odors noted. Geology Fill to 10 feet bg (see above), underlain by gray CLAY and little peat to at least 15 feet bg. Soil Permeability Loose Intermediate Tight Total Boring Depth (feet bg) N/A												
Brown silt; little clay; trace gravel from grade to 1.0 feet bg, underlain by brown medium to fine sand; little sub-rounded gravel; trace silt to 5.0 feet bg, underlain by fine sand; little clay; trace gravel to 6.0 feet bg, underlain by gray brown coarse to fine sand; little sub-rounded gravel; trace silt to 10 feet bg. - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Fill to 10 feet bg (see above), underlain by gray brown coarse to fine sand; little sub-rounded gravel; trace silt to 10 feet bg. - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Fill to 10 feet bg (see above), underlain by gray CLAY and little peat to at least 15 feet bg. Soil Permeability - Loose Intermediate Tight X Total Boring Depth (feet bg) M/A (Depth, Screen, Riser, Slot Size, Casing)												
Brown silt; little clay; trace gravel from grade to 1.0 feet bg, underlain by brown medium to fine sand; little sub-rounded gravel; trace silt to 5.0 feet bg, underlain by fine sand; little clay; trace gravel to 6.0 feet bg, underlain by gray brown coarse to fine sand; little sub-rounded gravel; trace silt to 10 feet bg. - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) PID readings from 10' to 15' (max = 407 ppm from 13.5 to 14 feet bg). No odors noted. Geology Fill to 10 feet bg (see above), underlain by gray CLAY and little peat to at least 15 feet bg. Soil Permeability Loose Intermediate Tight Total Boring Depth (feet bg) N/A												
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Brown silt; little clay; trace gravel from grade to 1.0 feet bg, underlain by brown medium to fine sand; little sub-rounded gravel; trace silt to 5.0 feet bg, underlain by fine sand; little clay; trace gravel to 6.0 feet bg, underlain by gray brown coarse to fine sand; little sub-rounded gravel; trace silt to 10 feet bg. - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID readings from 10' to 15' (max = 407 ppm from 13.5 to 14 feet bg). No odors noted. Geology Fill to 10 feet bg (see above), underlain by gray CLAY and little peat to at least 15 feet bg. Soil Permeability Loose Intermediate Tight GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	>12.1											
Brown silt; little clay; trace gravel from grade to 1.0 feet bg, underlain by brown medium to fine sand; little sub-rounded gravel; trace silt to 5.0 feet bg, underlain by fine sand; little clay; trace gravel to 6.0 feet bg, underlain by gray brown coarse to fine sand; little sub-rounded gravel; trace silt to 10 feet bg. - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) PID readings from 10' to 15' (max = 407 ppm from 13.5 to 14 feet bg). No odors noted. Geology Fill to 10 feet bg (see above), underlain by gray CLAY and little peat to at least 15 feet bg. Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Find to 10 feet bg (see above) and 1R-22.1-4/5 (5.0 to 5.5 feet bg) were collected for	>12.1											
Brown silt; little clay; trace gravel from grade to 1.0 feet bg, underlain by brown medium to fine sand; little sub-rounded gravel; trace silt to 5.0 feet bg, underlain by fine sand; little clay; trace gravel to 6.0 feet bg, underlain by gray brown coarse to fine sand; little sub-rounded gravel; trace silt to 10 feet bg, underlain by gray brown coarse to fine sand; little sub-rounded gravel; trace silt to 10 feet bg. - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID readings from 10' to 15' (max = 407 ppm from 13.5 to 14 feet bg). No odors noted. Geology Fill to 10 feet bg (see above), underlain by gray CLAY and little peat to at least 15 feet bg. Soil Permeability Loose Intermediate Tight GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Brown silt; little clay; trace gravel from grade to fine sub-vice sub, underlain by gray clay clay Alta - 10.0 Alta - 10.1 Alta - 10.0	>12.1 VOC, SVOC											
Brown silt; little clay; trace gravel from grade to 1.0 feet bg, underlain by brown medium to fine sand; little sub-rounded gravel; trace silt to 5.0 feet bg, underlain by fine sand; little clay; trace gravel to 6.0 feet bg, underlain by gray brown coarse to fine sand; little sub-rounded gravel; trace silt to 10 feet bg. - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) PID readings from 10' to 15' (max = 407 ppm from 13.5 to 14 feet bg). No odors noted. Geology Fill to 10 feet bg (see above), underlain by gray CLAY and little peat to at least 15 feet bg. Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Find to 10 feet bg (see above) and 1R-22.1-4/5 (5.0 to 5.5 feet bg) were collected for	>12.1 VOC, SVOC											
Brown silt; little clay; trace gravel from grade to 1.0 feet bg, underlain by brown medium to fine sand; little sub-rounded gravel; trace silt to 5.0 feet bg, underlain by fine sand; little clay; trace gravel to 6.0 feet bg, underlain by fine sand; little clay; trace gravel to 6.0 feet bg, underlain by fine sand; little clay; trace gravel to 6.0 feet bg, underlain by gray brown coarse to fine sand; little sub-rounded gravel; trace silt to 10 feet bg. - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) PID readings from 10' to 15' (max = 407 ppm from 13.5 to 14 feet bg). No odors noted. Geology Fill to 10 feet bg (see above), underlain by gray CLAY and little peat to at least 15 feet bg. Soil Permeability Loose Intermediat Total Boring Depth (feet bg) 15 GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling PCB, TPH, pesticide, herbicide, metals (including hexavalent chromium) and gener	>12.1 VOC, SVOC											
Brown silt; little clay; trace gravel from grade to 1.0 feet bg, underlain by brown medium to fine sand; little sub-rounded gravel; trace silt to 5.0 feet bg, underlain by gray brown coarse to fine sand; little sub-rounded gravel; trace gravel to 6.0 feet bg, underlain by gray brown coarse to fine sand; little sub-rounded gravel; trace gravel to 6.0 feet bg, underlain by gray brown coarse to fine sand; little sub-rounded gravel; trace silt to 10 feet bg. - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) PID readings from 10' to 15' (max = 407 ppm from 13.5 to 14 feet bg). No odors noted. Geology Fill to 10 feet bg (see above), underlain by gray CLAY and little peat to at least 15 feet bg. Loose Intermediate Tight X Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) RR-22.1-4/1 (1.0 to 1.5 feet bg) and 1R-22.1-4/5 (5.0 to 5.5 feet bg) were collected for PCB, TPH, pesticide, herbicide, metals (including hexavalent chromium) and gener analyses.	>12.1 VOC, SVOC											
Brown silt; little clay; trace gravel from grade to 1.0 feet bg, underlain by brown medium to fine sand; little sub-rounded gravel; trace silt to 5.0 feet bg, underlain by fine sand; little clay; trace gravel to 6.0 feet bg, underlain by gray brown coarse to fine sand; little sub-rounded gravel; trace silt to 10 feet bg. - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) PID readings from 10' to 15' (max = 407 ppm from 13.5 to 14 feet bg). No odors noted. Geology Fill to 10 feet bg (see above), underlain by gray brown coarse to fine sand; little sub-rounded gravel; trace silt to 10 feet bg. 0.0 - 2.0 2.1 - 4.0 4.1 - 6.0 6.1 - 8.0 8.1 - 10.0 10.1 - 12.0 10.1 - 12.0 10.1 - 12.0 10.2 - 10.1 - 12.0 10.3 - 10.1 - 12.0 10.3 - 10.1 - 12.0 10.4 - 10.1 - 10.1 - 10.0 10.1 - 12.0 10.1 - 12.0 10.2 - 10.1 - 10.0 10.3 - 10.1 - 10.0 10.4 - 10.1 - 10.0 10.5 - 10.1 - 10.0 10.5 - 10.1 - 10.0 10.5 - 10.1 - 10.0 10.5 - 10.1 - 10.0 10.6 - 1 - 8.0 10.1 - 10.0 10.1 - 12.0 10.1 -	>12.1 VOC, SVOC											
Brown silt; little clay; trace gravel from grade to 1.0 feet bg, underlain by brown medium to fine sand; little sub-rounded gravel; trace silt to 5.0 feet bg, underlain by fine sand; little clay; trace gravel to 6.0 feet bg, underlain by gray brown coarse to fine sand; little sub-rounded gravel; trace silt to 10 feet bg. - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) PID readings from 10' to 15' (max = 407 ppm from 13.5 to 14 feet bg). No odors noted. Geology Fill to 10 feet bg (see above), underlain by gray CLAY and little peat to at least 15 feet bg. Soil Permeability Loose Intermediate Tight X Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report IDs JA80291, JA80291R and JA80291RT. Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) RW Samples Collected - Sample ID(s) and Sampling Parameter(s) N/A N/A	>12.1 VOC, SVOC											

Additional Comments/Notes/	N/A
Observations (if applicable)	

Boring Identification: 1R-22.1-ENV-5

Bornig Identification. 114-22:11-E144-3		Boring In	format	ion								
Albamada Barta 1976 P. U. L.	1 1/4	ווו אווויספ	ioiiiiat	1011								
Alternate Boring ID (if applicable)	N/A	Ju 11 fa a t a a a a	buot f	2.00								
Pipeline Mile Marker ID		ly 11 feet nort			a							
Location (Latitude/Longitude) – estimated/surveyed	40 37 33.01	.38" N/74° 11'	40.9211"	vv – Surve	yed							
Site Address	Poring locate	ed approximat	oly 21E f	ot southu	voct	of the int	orcoctio	n of 4 th	Λυορμο αρο	E th Stroot in		
Site Address		l, New York (no					ersectio.	11 01 4	Avenue and	3 3tteet III		
Nearby Subsurface Features (Distance and		water line is l					rthwest	of borin	າອ.			
Direction from Utilities, Tanks, Properties,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		o carea ap	p. 07acc	, =	20 .000		0. 00	.0.			
etc.)												
Nearby Hydraulic Features (Distance and	Arthur Kill is	located approx	ximately 1	,300 feet	wes	t of boring	g. Boring	is locat	ed in wetlan	ds.		
Direction from wetlands, etc.)												
Drilling Date	7/7/2011											
Drilling Company	Land Air Wat	Land Air Water Environmental Services										
Drilling Method	Geoprobe –	Geoprobe – Direct Push / 2" Macrocore										
Additional Hydro/Geological Tests (e.g.	N/A	N/A										
pump test/slug test/packer test)		Environmental										
Boring Purpose (e.g. geotech/	Environment	Environmental										
environmental/geoarchaelogical)												
		Boring Ob	servati	ons								
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	1.1 – 6.0	6.1 – 8.	0	8.1 – 12.	0 12	.1 – 16.0	16.1 – 2	0.0 >20		
where applicable			Х									
PRODUCT	1											
- Product in Soil – Yes/No	No											
(odor/inches/viscosity, etc.)						T			T			
- Product in GW – Check where	None Ob	served	Shee	n Only		Floating	Produc	t = <6"	Floating F	roduct = >6"		
applicable	Х											
HISTORIC FILL MATERIAL		Reworked N	Astorial			Δ		onically.	Canavatad	Matarial		
 Composition, other observations – complete, as applicable 	Prown mod			an silt fr		An	unropog		-Generated	viateriai		
complete, as applicable	Brown medium to fine sand; some silt from grade to 1.0 ft bg, underlain by brown silt; little											
	grade to 1.0 ft bg, underlain by brown silt; little little clay; trace fine silt to 5.0 ft bg, underlain by											
		n to fine sand;	_		-							
		gravel, trace s										
- Depth (feet bg) – check more than	0.0 - 2.0	2.1 – 4.0	4.1 -	6.0	6.1 -	- 8.0	8.1 – 10	0.0 1	.0.1 – 12.0	>12.1		
one depth, if applicable – applies to												
Anthropogenically-Generated												
Material only												
PID/Odors (depth)		readings (max										
Geology		et bg (see abo		, 0	•				O,	,		
Soil Bormoshility	gray CLAY; tr	ace fine sand t	ro 13 teet			•	own to	DIACK PE		t 15 feet bg.		
Soil Permeability		Loose		in		nediate v			Tight			
Total Boring Depth (feet bg)	15					X						
GW Monitoring Well Installed	N/A											
(Depth, Screen, Riser, Slot Size, Casing)	.,,,											
Laboratory Name and Report No. (if	Accutest Lab	oratories, Lab	Report ID	s JA80291	and	JA80291	R.					
samples collected) (e.g. "Accutest			- 1, - 1, 0		•							
Laboratories, Lab Report ID JA65410")												
Soil Samples Collected - Sample ID(s),	1R-22.1-5/1	(1.0 to 1.5 fee	et bg) and	1R-22.1-5	5/6 ((6.0 to 6.5	feet be	g) were	collected fo	· voc, svoc,		
Sample Depth(s) and Sampling	PCB, TPH, p	esticide, herb	oicide, m	etals (incl	udin	ıg hexava	lent chr	romium	and gener	al chemistry		
Parameter(s)	analyses.											
GW Samples Collected - Sample ID(s) and	N/A							-				
Sampling Parameter(s)												
Additional Hydro/Geological Test –	<10	² Feet/Day		10 ⁻² -	- 10	Feet/Day			>10 Feet/	Day		
Permeability Results (e.g. pump test/slug												
test/packer test)												
Additional Comments/Notes/	N/A											
Observations (if applicable)	1											

Boring Identification: 1R-22.1-ENV-6W

		Boring	Informat	ion							
Alternate Boring ID (if applicable)	N/A										
Pipeline Mile Marker ID	4.02R										
Location (Latitude/Longitude) – estimated/surveyed	40° 37' 27.99				•						
Site Address	Boring is local Avenue in Sta								Lambert Av	enue	and 6 th
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)	A subsurface	water pipe	is located a	pproxi	mately 1	1,000 fee	et northy	vest of th	e boring.		
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	Carteret War										Creek is
Drilling Date	7/6/2011										
Drilling Company	Land Air Wat	er Environm	nental Servi	ces							
Drilling Method	2"-Macrocore Hollow Stem										
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	Pump Test			•							
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environment	al									
	•	Boring C	bservat	ions							
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	_	- 8.0	8.1 – 1	2.0 1	2.1 – 16.	0 16.1 – 2	0.0	>20
where applicable		Χ									
PRODUCT		l		ı			I.		I		
- Product in Soil – Yes/No (odor/inches/viscosity, etc.)	No										
 Product in GW – Check where applicable 	None Ob	served	She	en Only	/	Floati	ng Produ	ıct = <6"	Floating F	rodu	ct = >6"
HISTORIC FILL MATERIAL			I			L			L		
- Composition, other observations –		Reworked	d Material			А	nthropo	genically	-Generated	Mate	rial
complete, as applicable		N,	/A			gravel	, little :	silt, trac	m sand, so e roots, tra le to 5.0 feet	ce c	
- Depth (feet bg) – check more than	0.0 – 2.0	2.1 – 4.0	4.1	-6.0 6.1		- 8.0	8.1 – 1		10.1 – 12.0		>12.1
one depth, if applicable – applies to Anthropogenically-Generated Material only	Х	Х	,	(
PID/Odors (depth)	Elevated PID Petroleum-lik	_				_	= 105 p	pm fron	n 12.0 to 1	2.5 f	eet bg).
Geology	FILL from gra medium grav little silt, little to medium gr	el, trace silt e clay, trace	to 10.0 fee roots to 15	et bg, u 5.0 feet	nderlair bg, und	n by dark Ierlain b	gray to y dark gr	dark bro ay fine to	wn fine to mo medium SA	ediur	m SAND,
Soil Permeability		Loose			Intern	nediate X			Tight		
Total Boring Depth (feet bg)	20		I			*					
GW Temporary Well Installed	Grade to 20.0) feet bg - 3	-inch diame	ter 0.0	10-slot	PVC scre	en				
(Depth, Screen, Riser, Slot Size, Casing)	Grade to 20.0) feet bg - N	o. 1 sand								
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	Accutest Lab	oratories, La	ab Report II	os JA80	288, JA8	80169 ar	nd JA801	69R.			
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	1R-22.1-6W/- SVOC, PCB, T							feet bg)	were collec	ted f	or VOC,
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	1R-22-1-6W v	was collecte	d for VOC,	metals	and ger	neral che	mistry a	nalyses.		_	

Additional Hydro/Geological Test –	<10 ⁻² Feet/Day	10 ⁻² – 10 Feet/Day	>10 Feet/Day
Permeability Results (e.g. pump test/slug		V	
test/packer test)		*	
Additional Comments/Notes/	N/A		
Observations (if applicable)			

Boring Identification: 1R-22.1-HDD-1

		Boring	Inform	ation								
Alternate Boring ID (if applicable)	B-1A (SI)											
Pipeline Mile Marker ID	3.71R											
Location (Latitude/Longitude) – estimated/surveyed	40°37'25.79"	N / 74°11'5	4.96"W	surveyed	t							
Site Address	Arthur Kill R Pipeline, Stat								property ow	ned b	у ІМТТ	
Nearby Subsurface Features (Distance and	Numerous s								running alo	ng ea	sement	
Direction from Utilities, Tanks, Properties, etc.)	approximate						. 900 b.l	pees				
Nearby Hydraulic Features (Distance and Direction from wetlands, piping, etc.)	The Arthur Ki	ill is located	l approxi	mately 52	25 feet v	vest of th	e soil bor	ring.				
Drilling Date	10/27/2010											
Drilling Company	Warren Geor	ge, Inc.										
Drilling Method	Mud Rotary /	Mud Rotary / Tri-cone Roller Bit										
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A	·										
Boring Purpose (e.g. geotech/ environmental/geoarchelogical)	Geotechnical	Geotechnical (HDD pullback area)										
.0	<u>'</u>	Boring (Observ	ations								
Depth to saturation (feet bg) – Check where applicable	0.0 - 2.0	2.1 - 4.0	4.1 – 6	0 6.1	- 8.0	8.1 – 13	2.0 12	2.1 – 16.	0 16.1 – 2	0.0	>20	
PRODUCT	1											
- Product in Soil – Yes/No	No											
(odor/inches/viscosity, etc.)	None Ob			haan On	L.	Flootie	an Duadii	at - 46"	Flooting)uad	<u></u>	
 Product in GW – Check where applicable 	None Obs	servea		heen On	ıy	Floatii	ng Produ	ct = <6°	Floating F	roau	ct = >6	
HISTORIC FILL MATERIAL												
 Composition, other observations – 		Reworke							-Generated			
complete, as applicable	Reddish brov silt and r	wn loose fin oots from g					Wood pie	eces fror	m 2.5 to 3.0 f	eet b	g.	
- Depth (feet bg) – check more than	0.0 - 2.0	2.1 – 4.		1-6.0 6.1-8.0 8.1-1				0.0	0.0 10.1 – 12.0 >1			
one depth, if applicable – applies to												
Anthropogenically-Generated Material only		Х										
PID/Odors (depth)	Elevated PID 19.5 to 20 fe 15.0 to 17.0 f	et bg); orga	anic-like	odors we	re ident		_		_			
Geology	FILL from gra to 5.0 feet by trace fine sa organic silt to bg. Continuo	de to 4.00 f g. Black SIL nd and she o 17.0 feet I	feet bg (T; and so ells were bg. Grey	ee above me clay identifie PEAT; an	e), under was ider d from id organ	ntified fro 11.0 to 1 ic silt we	om 7.0 to 13.0 feet re identif	9.0 fee bg, und fied from	et bg. Dark g derlain by gra n 19.0 to at le	ray SI ay PE east 2	LT; with AT; and 1.0 feet	
Soil Permeability		Loose			Intern	nediate			Tight X			
Total Boring Depth (feet bg)	21			<u>I</u>				1	^			
GW Monitoring Well Installed	N/A											
(Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if	N/A											
samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	N/A											
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	N/A											
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A											
Additional Hydro/Geological Test –	<10-2	² Feet/Day		:	10 ⁻² – 10	Feet/Da	v		>10 Feet/	'Dav		
Permeability Results (e.g. pump test/slug test/packer test)	120			•			•		22 / 224	1		

Boring Observations									
Additional Comments/Notes/	N/A								
Observations (if applicable)									

Boring Identification: 1R-22.1-HDD-2

		Boring	Informa	ion							
Alternate Boring ID (if applicable)	B-4 (SI)										
Pipeline Mile Marker ID	4.11R										
Location (Latitude/Longitude) – estimated/surveyed	40°37'2.64"N	N / 74°11'31	.56"W - sur	veyed							
Site Address	Boring locate former GAT available).	X property	on Lamber	t Aveni	ue in S	taten Is	land, Ne	ew York	(no exact s	treet	address
Nearby Subsurface Features (Distance and	A subsurfac	e water pi	pe located	at the	e inters	section	of 4 th a	and Lan	nbert Avenu	es is	located
Direction from Utilities, Tanks, etc.)	approximate										
Nearby Hydraulic Features (Distance and Direction from wetlands, piping, etc.)		oring is located on the side of a paved road surrounded by wetlands; a ditch is locate pproximately 15 feet west of the boring.									located
Drilling Date	10/22/2010										
Drilling Company	Warren Geo	_									
Drilling Method	Mud Rotary	/ Tri-cone R	oller Bit								
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A										
Boring Purpose (e.g. geotech/ environmental/geoarchelogical)	Geotechnica	l (HDD entry	/ point)								
		Boring (Observat	ions							
Depth to saturation (feet bg) – Check	0.0 - 2.0	2.1 - 4.0	4.1 – 6.0	6.1 -	- 8.0	8.1 – 1	2.0 1	2.1 – 16	.0 16.1 – 3	20.0	>20
where applicable	Х										
PRODUCT	T										
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	Yes—soil im	pacted with	petroleum	product	:-like od					et bg.	
 Product in GW – Check where 	None Ob	served	She	en Only	'	Floatii	ng Produ	uct = <6'	' Floating	Produ	ct = >6"
applicable							Х				
Historic Fill Material						1					
- Composition, other observations –			d Material			Α	nthropo	genicall	y-Generated	Mate	rial
complete, as applicable	coarse SANE little silt from black fine	in by reddis With some	h brown to fine to coa O feet bg. I AND and so	black fir se grav ark bro me fine	ne to el and wn to e to		Wood p	ieces fro	om 4.0 to 4.5	feet b	g.
- Depth (feet bg) – check more than	0.0 - 2.0	2.1 – 4.		- 6.0		- 8.0	8.1 – 2	10.0	10.1 – 12.0	;	>12.1
one depth, if applicable – applies to Anthropogenically-Generated Material only				<							
PID/Odors (depth)	Elevated PID 315 ppm bet	_			odors d	etected	from 3.0) to 7.0	feet bg (max	PID re	ading =
Geology	FILL to 6.5 fe to coarse gu encountered from 9.0 to 1	eet bg (see a ravel to at d from 16.0	bove), und least 9.0 f to 18.0 fee	erlain b eet bg. et bg an	PEAT (d from	(decomp 20.0 to	osing p at least	lant ma : 22.0 fe	tter and orget bg. Cont	anic s inuous	silt) was
Soil Permeability		Loose X			Interm	nediate			Tigh	t	
Total Boring Depth (feet bg)	22										
GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing)	N/A										
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	N/A										
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	N/A										
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A										

Additional Hydro/Geological Test –	<10 ⁻² Feet/Day	10 ⁻² – 10 Feet/Day	>10 Feet/Day								
Permeability Results (e.g. pump test/slug											
test/packer test)											
Additional Comments/Notes/	Recovery trench/ditch for remed	iation was observed along Lambert	t Avenue, approximately 300 feet								
Observations (if applicable)	up-gradient and northwest of the	up-gradient and northwest of the boring. No information available regarding the construction of the									
	recovery trench or the nature of t	the remedial activities.									

Boring Identification: 1R-22.1-HDD-3

		Boring	Informat	tion								
Alternate Boring ID (if applicable)	B-5											
Pipeline Mile Marker ID	4.31R											
Location (Latitude/Longitude) –		618"N / 74°	11' 25 2817	'''\// _ Sur	nevev							
estimated/surveyed	40 37 34.3	010 117 74	11 25.2017	vv Sui	veyeu	ı						
Site Address	Boring is loc	cated approx	rimately 150) feet sou	ıtheas	t of the	inters	ection of	6 th	Avenue and	3 rd S	treet in
Site Address	_	d, New York						cction or	0 ,	wende and		ti cct iii
Nearby Subsurface Features (Distance and	_	e water pipe						northwes	t of	the horing		
Direction from Utilities, Tanks, Properties,	71 300301100	z water pipe	inic is locat	cu uppi o	XIIIIatt	y 1,030	, , , , , ,	ioi tiiwes	,, ,	the bornig.		
etc.)												
Nearby Hydraulic Features (Distance and	Old Place Cr	eek is locate	ed annroxim	ately 800) feet i	northwe	st of t	he horing	7			
Direction from wetlands, etc.)	Old Flace Ci	cen is iocate	а аррголии	ately ood			.5001		٠.			
Drilling Date	7/27/2011											
Drilling Company	Warren Geo	rge Inc										
Drilling Method		/ Tri-cone R	allar Dit									
		/ Tri-cone R	oller Bit									
Additional Hydro/Geological Tests (e.g.	N/A											
pump test/slug test/packer test)	0											
Boring Purpose (e.g. geotech/	Geotechnica	31										
environmental/geoarchaelogical)				•								
			Observat	-	1					1		
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1 –	8.0	8.1 – 1	2.0	12.1 – 1	6.0	16.1 – 20	0.0	>20
where applicable						Х						
PRODUCT	_											
 Product in Soil – Yes/No 	No											
(odor/inches/viscosity, etc.)												
 Product in GW – Check where 	None Ol	oserved	She	en Only		Floati	ng Pro	duct = <(6"	Floating P	rodu	ct = >6"
applicable	>	(
HISTORIC FILL MATERIAL												
 Composition, other observations – 		Reworke	d Material			Α	nthro	pogenica	lly-G	Generated I	Mate	ial
complete, as applicable		N	I/A						N/	Α		
 Depth (feet bg) – check more than 	0.0 – 2.0	2.1 – 4.	0 4.1	- 6.0	6.1	- 8.0	8.1	- 10.0	10	.1 – 12.0	>	12.1
one depth, if applicable – applies to												
Anthropogenically-Generated												
Material only												
PID/Odors (depth)		O readings at				ppm), 1	.0.5 to	11.0 fee	t bg	(33.8 ppm)	, and	11.0 to
	11.5 feet bg	(1,253 ppm)) No odors	identifie								
			<i>j</i> . 140 00013		eu.							
Geology		llected from	grade to 1	0.0 feet l	bg, fro						to 2	5.0 feet
Geology		llected from .0 to 30.0 fee	grade to 1	0.0 feet l	bg, fro						to 2	5.0 feet
Geology	bg, from 27	.0 to 30.0 fee	grade to 1 et bg, from 3	0.0 feet k 32.0 to 3	bg, fro 5.0 fee	et bg, an	d from	37.0 to	40.5	feet bg.		
Geology	bg, from 27	.0 to 30.0 fee	grade to 1 et bg, from s	0.0 feet k 32.0 to 39 ay, trace	bg, fro 5.0 fee root n	et bg, an naterial	d from from 1	1 37.0 to	40.5 7.0 f	feet bg.	t at 1	0.0 feet
Geology	bg, from 27 Dark brown bg. Gray/bro	.0 to 30.0 fee PEAT, little own fine to r	grade to 1 et bg, from s silt, little cla medium SA	0.0 feet b 32.0 to 3 ay, trace ND, some	bg, fro 5.0 fee root n	et bg, an naterial se to fin	d from from 1 e grave	1 37.0 to 10.0 to 1 el, little s	40.5 7.0 f	feet bg. eet bg. We oose, sub-ro	t at 1 ound	0.0 feet ed from
Geology	bg, from 27 Dark brown bg. Gray/bro 20.0 to 22.0	.0 to 30.0 fee PEAT, little own fine to r) feet bg. Re	grade to 1 et bg, from : silt, little cla medium SAI d/brown fir	0.0 feet b 32.0 to 39 ay, trace ND, some ne to med	bg, fro 5.0 fee root n e coars dium S	et bg, an naterial se to fin- sAND, so	d from from 1 e grave ime fin	1 37.0 to 10.0 to 1 ⁻¹ el, little s ne to med	40.5 7.0 fe ilt, le dium	feet bg. eet bg. We oose, sub-ro gravel, litt	t at 1 ounde	0.0 feet ed from , dense,
Geology	bg, from 27 Dark brown bg. Gray/bro 20.0 to 22.0 angular to s	.0 to 30.0 fee PEAT, little own fine to r I feet bg. Re ub-angular f	silt, little cla medium SAI d/brown fir	0.0 feet b 32.0 to 39 ay, trace ND, some ne to med 27.0 fee	bg, fro 5.0 fee root n e coars dium S et bg.	et bg, an naterial se to fin- SAND, so Red/bro	d from from 1 e grave ome fin	1 37.0 to 10.0 to 1 10.1 t	40.5 7.0 fo ilt, lo dium rse G	feet bg. Were bose, sub-rose, sub-rose, sub-rose, sorange branch	t at 1 ound e silt ne cla	0.0 feet ed from , dense, ay, little
Geology	bg, from 27 Dark brown bg. Gray/bro 20.0 to 22.0 angular to s fine to med	PEAT, little own fine to role feet bg. Re ub-angular fium sand, de	silt, little cla medium SAl d/brown fir from 25.0 to	0.0 feet to 3.2.0 to 3.2.0 to 3.2.0 to 3.2.0 to 3.2.0 feed to media 27.0 feed of 1.0.0 feed to 3.0.0	root ne coars dium Set bg.	et bg, an naterial se to find SAND, so Red/bro 32.0 fee	d from from 1 e grave ome fin own fin t bg. F	1 37.0 to 10.0 to 1 1el, little s 1e to med 1e to coal Red/brow	40.5 7.0 fo ilt, lo dium rse G	feet bg. Were oose, sub-resident little GRAVEL, some SAND, some sa	t at 1 ound e silt ne cla ome s	0.0 feet ed from , dense, ay, little ilt, little
Geology	bg, from 27 Dark brown bg. Gray/bro 20.0 to 22.0 angular to s fine to med fine to med	PEAT, little own fine to role feet bg. Re ub-angular fium sand, de ium gravel, o	silt, little cla medium SAI d/brown fir from 25.0 to ense, angula	0.0 feet k 32.0 to 3! ay, trace ND, some to med 27.0 fee r from 30 lar, some	bg, fro 5.0 feed root not e coars dium S et bg. 0.0 to 1	et bg, an material se to fin- SAND, so Red/bro 32.0 fee imposed	from 1 e grave ome fin t bg. F	1 37.0 to 10.0 to 17 el, little s ne to med ne to coa Red/brow nat botton	40.5 7.0 fe ilt, le dium rse G n fir n 2-i	eet bg. Wer oose, sub-ro gravel, littl GRAVEL, sor ne SAND, so nches from	t at 1 ounde le silt me cla ome s 35.0	0.0 feet ed from dense, ay, little ilt, little to 37.0
Geology	bg, from 27 Dark brown bg. Gray/br 20.0 to 22.0 angular to s fine to med fine to med feet bg. Re	PEAT, little own fine to role feet bg. Re ub-angular fium sand, de	silt, little cla medium SAI d/brown fir from 25.0 to ense, angula	0.0 feet k 32.0 to 3! ay, trace ND, some to med 27.0 fee r from 30 lar, some	bg, fro 5.0 feed root not e coars dium S et bg. 0.0 to 1	et bg, an material se to fin- SAND, so Red/bro 32.0 fee imposed	from 1 e grave ome fin t bg. F	1 37.0 to 10.0 to 17 el, little s ne to med ne to coa Red/brow nat botton	40.5 7.0 fe ilt, le dium rse G n fir n 2-i	eet bg. Wer oose, sub-ro gravel, littl GRAVEL, sor ne SAND, so nches from	t at 1 ounde le silt me cla ome s 35.0	0.0 feet ed from dense, ay, little ilt, little to 37.0
Geology	bg, from 27 Dark brown bg. Gray/bro 20.0 to 22.0 angular to s fine to med fine to med	PEAT, little own fine to role feet bg. Re ub-angular fium sand, de ium gravel, o	silt, little cla medium SAI d/brown fir from 25.0 to ense, angula	0.0 feet k 32.0 to 3! ay, trace ND, some to med 27.0 fee r from 30 lar, some	bg, fro 5.0 feed root not e coars dium S et bg. 0.0 to 1	et bg, an material se to fin- SAND, so Red/bro 32.0 fee imposed	from 1 e grave ome fin t bg. F	1 37.0 to 10.0 to 17 el, little s ne to med ne to coa Red/brow nat botton	40.5 7.0 fe ilt, le dium rse G n fir n 2-i	eet bg. Wer oose, sub-ro gravel, littl GRAVEL, sor ne SAND, so nches from	t at 1 ounde le silt me cla ome s 35.0	0.0 feet ed from dense, ay, little ilt, little to 37.0
Geology	bg, from 27 Dark brown bg. Gray/br 20.0 to 22.0 angular to s fine to med fine to med feet bg. Re feet bg.	PEAT, little own fine to roll feet bg. Re ub-angular fium sand, de ium gravel, od/brown fin	silt, little cla medium SAI d/brown fir from 25.0 to ense, angula dense, angu e grained S	0.0 feet b 32.0 to 39 ay, trace ND, some to med 27.0 fee r from 30 lar, some HALE, hip	root nee coars dium Set bg. 0.0 to se deco	et bg, an naterial se to fin- iAND, so Red/bro 32.0 fee imposed ractured	from 1 e grave ome fin own fin t bg. F I rock a and w	1 37.0 to 10.0 to 1 10.0 t	40.5 7.0 fo dium rse G vn fir n 2-i d fro	eet bg. Wer boose, sub-ro gravel, littl GRAVEL, sor ne SAND, so nches from om 40.5 to	t at 1 oundo le silt me cla ome s 35.0 at lea	0.0 feet ed from , dense, ay, little ilt, little to 37.0 ast 47.5
Geology	bg, from 27 Dark brown bg. Gray/br. 20.0 to 22.0 angular to s fine to med fine to med feet bg. Refeet bg. %-inch to 8-	PEAT, little own fine to roll feet bg. Re ub-angular fium sand, de ium gravel, ced/brown fin	silt, little cla medium SAI d/brown fir from 25.0 to ense, angula dense, angula dense grained S	O.0 feet by trace ND, some to med of 27.0 feet rfrom 30 lar, some HALE, high one of degree of the trace of th	root nee coars dium Set bg. 0.0 to see deco	naterial se to find AND, so Red/bro 32.0 fee imposed ractured ures, RO	from 1 e grave me fin	1 37.0 to 10.0 to 1 10.0 to 1 10.1 title so 10.0 to 1 10	40.5 7.0 fe ilt, le dium rse G /n fir n 2-i d fre	eet bg. Wer coose, sub-ro gravel, littl GRAVEL, sor ne SAND, so nches from om 40.5 to	t at 1 bunde le silt me cla ome s 35.0 at lea	0.0 feet ed from , dense, ay, little ilt, little to 37.0 ast 47.5
	bg, from 27 Dark brown bg. Gray/br. 20.0 to 22.0 angular to s fine to med fine to med feet bg. Refeet bg. %-inch to 8-	PEAT, little own fine to roll feet bg. Re ub-angular fium sand, de ium gravel, cod/brown fin inch joint sp. spacing, 0 to	silt, little cla medium SAI d/brown fir from 25.0 to ense, angula dense, angula dense grained S	o.0 feet to 32.0 to 35 ay, trace ND, some to med 27.0 fee r from 30 lar, some HALE, high pools degree fractures	bg, fro 5.0 fee root n e coars dium S et bg. 0.0 to : e deco ghly fr	naterial see to find see to find see to find seed/brown seed/brown seed/brown seed/brown seed/brown seed/brown seed/brown seed seed seed seed seed seed seed see	from 1 e grave me fin	1 37.0 to 10.0 to 1 10.0 to 1 10.1 title so 10.0 to 1 10	40.5 7.0 fe ilt, le dium rse G /n fir n 2-i d fre	eet bg. Weroose, sub-roose, sub-roose, sub-roose, sub-roose, sub-roose SAND, soon soon 40.5 to	t at 1 bunde le silt me cla ome s 35.0 at lea	0.0 feet ed from , dense, ay, little ilt, little to 37.0 ast 47.5
Geology Soil Permeability	bg, from 27 Dark brown bg. Gray/br. 20.0 to 22.0 angular to s fine to med fine to med feet bg. Refeet bg. %-inch to 8-	PEAT, little own fine to ro feet bg. Re ub-angular fium sand, de ium gravel, od/brown fin spacing, 0 to Loose	silt, little cla medium SAI d/brown fir from 25.0 to ense, angula dense, angula dense grained S	o.0 feet to 32.0 to 35 ay, trace ND, some to med 27.0 fee r from 30 lar, some HALE, high pools degree fractures	bg, fro 5.0 fee root n e coars dium S et bg. 0.0 to : e deco ghly fr	naterial se to find AND, so Red/bro 32.0 fee imposed ractured ures, RO	from 1 e grave me fin	1 37.0 to 10.0 to 1 10.0 to 1 10.1 title so 10.0 to 1 10	40.5 7.0 fe ilt, le dium rse G /n fir n 2-i d fre	eet bg. Wer coose, sub-ro gravel, littl GRAVEL, sor ne SAND, so nches from om 40.5 to	t at 1 bunde le silt me cla ome s 35.0 at lea	0.0 feet ed from , dense, ay, little ilt, little to 37.0 ast 47.5
Soil Permeability	bg, from 27 Dark brown bg. Gray/bro 20.0 to 22.0 angular to s fine to med fine to med feet bg. Re feet bg. ½-inch to 8- 4-inch joint	PEAT, little own fine to roll feet bg. Re ub-angular fium sand, de ium gravel, cod/brown fin inch joint sp. spacing, 0 to	silt, little cla medium SAI d/brown fir from 25.0 to ense, angula dense, angula dense grained S	o.0 feet to 32.0 to 35 ay, trace ND, some to med 27.0 fee r from 30 lar, some HALE, high pools degree fractures	bg, fro 5.0 fee root n e coars dium S et bg. 0.0 to : e deco ghly fr	naterial see to find see to find see to find seed/brown seed/brown seed/brown seed/brown seed/brown seed/brown seed/brown seed seed seed seed seed seed seed see	from 1 e grave me fin	1 37.0 to 10.0 to 1 10.0 to 1 10.1 title so 10.0 to 1 10	40.5 7.0 fe ilt, le dium rse G /n fir n 2-i d fre	eet bg. Weroose, sub-roose, sub-roose, sub-roose, sub-roose, sub-roose SAND, soon soon 40.5 to	t at 1 bunde le silt me cla ome s 35.0 at lea	0.0 feet ed from , dense, ay, little ilt, little to 37.0 ast 47.5
Soil Permeability Total Boring Depth (feet bg)	bg, from 27 Dark brown bg. Gray/br. 20.0 to 22.0 angular to s fine to med fine to med feet bg. Refeet bg. ½-inch to 8-4-inch joint	PEAT, little own fine to ro feet bg. Re ub-angular fium sand, de ium gravel, od/brown fin spacing, 0 to Loose	silt, little cla medium SAI d/brown fir from 25.0 to ense, angula dense, angula dense grained S	o.0 feet to 32.0 to 35 ay, trace ND, some to med 27.0 fee r from 30 lar, some HALE, high pools degree fractures	bg, fro 5.0 fee root n e coars dium S et bg. 0.0 to : e deco ghly fr	naterial see to find see to find see to find seed/brown seed/brown seed/brown seed/brown seed/brown seed/brown seed/brown seed seed seed seed seed seed seed see	from 1 e grave me fin	1 37.0 to 10.0 to 1 10.0 to 1 10.1 title so 10.0 to 1 10	40.5 7.0 fe ilt, le dium rse G /n fir n 2-i d fre	eet bg. Weroose, sub-roose, sub-roose, sub-roose, sub-roose, sub-roose SAND, soon soon 40.5 to	t at 1 bunde le silt me cla ome s 35.0 at lea	0.0 feet ed from , dense, ay, little ilt, little to 37.0 ast 47.5
Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed	bg, from 27 Dark brown bg. Gray/bro 20.0 to 22.0 angular to s fine to med fine to med feet bg. Re feet bg. ½-inch to 8- 4-inch joint	PEAT, little own fine to ro feet bg. Re ub-angular fium sand, de ium gravel, od/brown fin spacing, 0 to Loose	silt, little cla medium SAI d/brown fir from 25.0 to ense, angula dense, angula dense grained S	o.0 feet to 32.0 to 35 ay, trace ND, some to med 27.0 fee r from 30 lar, some HALE, high pools degree fractures	bg, fro 5.0 fee root n e coars dium S et bg. 0.0 to : e deco ghly fr	naterial see to find see to find see to find seed/brown seed/brown seed/brown seed/brown seed/brown seed/brown seed/brown seed seed seed seed seed seed seed see	from 1 e grave me fin	1 37.0 to 10.0 to 1 10.0 to 1 10.1 title so 10.0 to 1 10	40.5 7.0 fe ilt, le dium rse G /n fir n 2-i d fre	eet bg. Weroose, sub-roose, sub-roose, sub-roose, sub-roose, sub-roose SAND, soon soon 40.5 to	t at 1 bunde le silt me cla ome s 35.0 at lea	0.0 feet ed from , dense, ay, little ilt, little to 37.0 ast 47.5
Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing)	bg, from 27 Dark brown bg. Gray/br. 20.0 to 22.0 angular to s fine to med fine to med feet bg. Refeet bg. ½-inch to 8-4-inch joint	PEAT, little own fine to ro feet bg. Re ub-angular fium sand, de ium gravel, od/brown fin spacing, 0 to Loose	silt, little cla medium SAI d/brown fir from 25.0 to ense, angula dense, angula dense grained S	o.0 feet to 32.0 to 35 ay, trace ND, some to med 27.0 fee r from 30 lar, some HALE, high pools degree fractures	bg, fro 5.0 fee root n e coars dium S et bg. 0.0 to : e deco ghly fr	naterial see to find see to find see to find seed/brown seed/brown seed/brown seed/brown seed/brown seed/brown seed/brown seed seed seed seed seed seed seed see	from 1 e grave me fin	1 37.0 to 10.0 to 1 10.0 to 1 10.1 title so 10.0 to 1 10	40.5 7.0 fe ilt, le dium rse G /n fir n 2-i d fre	eet bg. Weroose, sub-roose, sub-roose, sub-roose, sub-roose, sub-roose SAND, soon soon 40.5 to	t at 1 bunde le silt me cla ome s 35.0 at lea	0.0 feet ed from , dense, ay, little ilt, little to 37.0 ast 47.5
Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if	bg, from 27 Dark brown bg. Gray/br. 20.0 to 22.0 angular to s fine to med fine to med feet bg. Refeet bg. ½-inch to 8-4-inch joint	PEAT, little own fine to ro feet bg. Re ub-angular fium sand, de ium gravel, od/brown fin spacing, 0 to Loose	silt, little cla medium SAI d/brown fir from 25.0 to ense, angula dense, angula dense grained S	o.0 feet to 32.0 to 35 ay, trace ND, some to med 27.0 fee r from 30 lar, some HALE, high pools degree fractures	bg, fro 5.0 fee root n e coars dium S et bg. 0.0 to : e deco ghly fr	naterial see to find see to find see to find seed/brown seed/brown seed/brown seed/brown seed/brown seed/brown seed/brown seed seed seed seed seed seed seed see	from 1 e grave me fin	1 37.0 to 10.0 to 1 10.0 to 1 10.1 title so 10.0 to 1 10	40.5 7.0 fe ilt, le dium rse G /n fir n 2-i d fre	eet bg. Weroose, sub-roose, sub-roose, sub-roose, sub-roose, sub-roose SAND, soon soon 40.5 to	t at 1 bunde le silt me cla ome s 35.0 at lea	0.0 feet ed from , dense, ay, little ilt, little to 37.0 ast 47.5
Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing)	bg, from 27 Dark brown bg. Gray/br. 20.0 to 22.0 angular to s fine to med feet bg. Re feet bg. %-inch to 8-4-inch joint 47.5 N/A	PEAT, little own fine to ro feet bg. Re ub-angular fium sand, de ium gravel, od/brown fin spacing, 0 to Loose	silt, little cla medium SAI d/brown fir from 25.0 to ense, angula dense, angula dense grained S	o.0 feet to 32.0 to 35 ay, trace ND, some to med 27.0 fee r from 30 lar, some HALE, high pools degree fractures	bg, fro 5.0 fee root n e coars dium S et bg. 0.0 to : e deco ghly fr	naterial see to find see to find see to find seed/brown seed/brown seed/brown seed/brown seed/brown seed/brown seed/brown seed seed seed seed seed seed seed see	from 1 e grave me fin	1 37.0 to 10.0 to 1 10.0 to 1 10.1 title so 10.0 to 1 10	40.5 7.0 fe ilt, le dium rse G /n fir n 2-i d fre	eet bg. Weroose, sub-roose, sub-roose, sub-roose, sub-roose, sub-roose SAND, soon soon 40.5 to	t at 1 bunde le silt me cla ome s 35.0 at lea	0.0 feet ed from , dense, ay, little ilt, little to 37.0 ast 47.5

Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	N/A		
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A		
Additional Hydro/Geological Test – Permeability Results (e.g. pump test/slug test/packer test)	<10 ⁻² Feet/Day	10 ⁻² – 10 Feet/Day	>10 Feet/Day
Additional Comments/Notes/ Observations (if applicable)	N/A		

Boring Identification: 1R-22.1H-ENV-1W

		Boring	Informat	ion					
Alternate Boring ID (if applicable)	N/A								
Pipeline Mile Marker ID	3.84R								
Location (Latitude/Longitude) – estimated/surveyed	40° 37' 33.2	496"N / 74°	11' 44.7166	"W – Survey	ed				
Site Address					of the interse is available).	ction of 4 th	Avenue and	5 th S	treet in
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)		-	•		tely 60 feet no	rth of boring	ţ.		
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	Arthur Kill is	located app	proximately	1,500 feet w	est of boring. Bo	oring is locat	ed in wetland	ds.	
Drilling Date	07/05/11								
Drilling Company	Land Air Wa	ter Environr	nental Servi	ces					
Drilling Method	2"-Macroco Hollow Sten								
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	Pump Test	<u> </u>		,					
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environmen	tal							
		Boring (Observat	ions					
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1 – 8.0	8.1 – 12.0	12.1 – 16.	0 16.1 – 20	0.0	>20
where applicable	Х								
PRODUCT									
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No								
- Product in GW – Check where	None Ob	served	She	en Only	Floating Pr	oduct = <6"	Floating P	rodu	ct = >6"
applicable	X	(
HISTORIC FILL MATERIAL									
 Composition, other observations – complete, as applicable 			d Material /A		Brown, med little silt, tra	dium to fine	-Generated I sand, mediur ay pipe mater	n gra	ıvel,
- Depth (feet bg) – check more than	0.0 - 2.0	2.1 – 4.	0 4.1 -	-6.0 6.			10.1 – 12.0		12.1
one depth, if applicable – applies to Anthropogenically-Generated Material only	х	X							
PID/Odors (depth)	Elevated PIE				to 13.5 feet bg).	. Odor detec	ted from 6.0	to 11	feet bg
Geology	FILL from gr little silt to by dark gray	ade to 3.0 fe 6.0 feet bg, y, medium t trace shells	eet bg (see a underlain b o fine SAND	bove), under gray brown ; little silt, li bg, underlair	rlain by gray bro CLAY; trace sil ttle clay to 11 n by dark gray,	t, trace root feet bg, und	s to 10 feet l erlain by dan	og, u k gra	nderlain ay CLAY;
Soil Permeability		Loose		Inte	mediate X		Tight		
Total Boring Depth (feet bg)	20					ı			
GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing)	Well Constru Grade to 20 Grade to 20 Next Day Mo Total depth	feet bg – 3 i feet bg – No easurement	o. 1 sand s:	er 0.010-slot	PVC screen				
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest	Accutest Lab)s JA80288 a	nd JA80082.				
Laboratories, Lab Report ID JA65410")									
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)					H-1W/6 (6.0 to general chemis	_		ted f	or VOC

GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	1R-22-1H-1W was collected for VOC, metals and general chemistry analyses.								
Additional Hydro/Geological Test –	<10 ⁻² Feet/Day	10 ⁻² – 10 Feet/Day	>10 Feet/Day						
Permeability Results (e.g. pump test/slug test/packer test)		X							
Additional Comments/Notes/	N/A								
Observations (if applicable)									

Boring Identification: NYC-2-PIP-1

		Boring I	nformat	ion							
Alternate Boring ID (if applicable)	N/A										
Pipeline Mile Marker ID	19.85R										
Location (Latitude/Longitude) – estimated/surveyed	40° 44' 21.70	35" N / 74° (00' 41.2403	" W – Sur	veye	d					
Site Address	Boring locate Avenue in Ne								eet nea	r the corn	er of 13 th
Nearby Subsurface Features (Distance and	No nearby su						mabic				
Direction from Utilities, Tanks, Properties, etc.)	Tro nearby sa	issurface rec		. vicinity (01 001						
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	Hudson River	udson River is located approximately 40 feet south and 40 feet west of boring.									
Drilling Date	11/2/11-11/8	3/11									
Drilling Company	Warren Geor	ge, Inc.									
Drilling Method	Stainless Stee	el Split Spoo	n / 2"/ Mud	Rotary /	Tri-co	one rolle	r bit				
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A										
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Geotechnical										
environmentaly geodicandenogramy		Boring C	bservati	ons							
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1 – 8	.0	8.1 – 12	2.0	12.1 – 1	6.0 1	6.1 – 20.0	>20
where applicable			Х								1
PRODUCT	l N-										
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No	<u>, </u>				1					
- Product in GW – Check where	None Obs	served	Shee	n Only		Floatir	g Pro	duct = <6	5" Flo	ating Prod	uct = >6"
applicable	Х										
HISTORIC FILL MATERIAL						I _					
- Composition, other observations –		Reworked								erated Mat	
complete, as applicable	8.0 to 9.0 fee sand; trace fi		silt and fin	e to mea	ium	concre Trace a	te fro	n 1.5 to	8.0 and feet bg.	8.0 feet d 10 to 12 Trace woo	feet bg.
- Depth (feet bg) – check more than	0.0 – 2.0	2.1 – 4.0	4.1 -	6.0	6.1 -	-		· 10.0	10.1 –	12.0	>12.1
one depth, if applicable – applies to Anthropogenically-Generated Material only	X	X	x			(0.1	10.0	X		X
PID/Odors (depth)	N/D	1						1			
Geology	Asphalt (0.25 underlain by to 55 ft bg, u trace peat to underlain by to coarse SAI bg and 12 to	FILL to 40 fe nderlain by 140 ft bg, gray, fine to ND and SILT	eet bg, unde gray CLAY; underlain b coarse SAI	rlain by g trace silt a by gray, fi ND and fir	ray S and s ine to ne GF	ILT and (hells to : o coarse RAVEL to	CLAY; t 105 ft SAND 180 fe	race she bg, unde ; some f eet bg, u	ells and f erlain by to trace inderlain	ine to med gray SILT a silt to 165 by red/br	ium sand and CLAY, 5 feet bg, own, fine
Soil Permeability		Loose X		In	iterm	ediate				Tight	
Total Boring Depth (feet bg)	205		I								
GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing)	N/A										
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	N/A										
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	N/A										
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A										

Additional Hydro/Geological Test –	<10 ⁻² Feet/Day	10 ⁻² – 10 Feet/Day	>10 Feet/Day
Permeability Results (e.g. pump test/slug			
test/packer test)			
Additional Comments/Notes/	Refusal from 36.5 to 37.5 feet bg,	from 161 to 161.5 feet bg, and fro	om 196.5 to 197 feet bg,
Observations (if applicable)			

Boring Identification: NYC-2-PIP-2

		Boring	Informa	tion							
Alternate Boring ID (if applicable)	N/A										
Pipeline Mile Marker ID	19.86R										
Location (Latitude/Longitude) – estimated/surveyed	40° 44' 21.93	28" N / 74°	00' 40.188	3" W – 9	Surveye	d					
Site Address	Boring locate Avenue in Ne							eld street	near the co	orner	of 13 th
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)	No nearby su						•				
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	Hudson River	r is approxin	nately 70 fe	et sout	h of bo	ring.					
Drilling Date	10/27/2011	/27/2011									
Drilling Company	Warren Geor	ge, Inc.									
Drilling Method	Hand Auger /	Split Spoor	n / Mud Ro	tary / Tr	i-cone l	Roller Bit					
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A										
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Geotechnical										
		Boring C	bservat	ions							
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	_	- 8.0	8.1 – 12	2.0 12	2.1 – 16.0	16.1 – 20	0.0	>20
where applicable						Х					
PRODUCT											
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No										
- Product in GW – Check where	None Ob	served	She	en Only	/	Floatir	g Produ	ct = <6"	Floating P	rodu	ct = >6"
applicable	Х								_		
HISTORIC FILL MATERIAL											
 Composition, other observations – 		Reworked							Generated N		
complete, as applicable		N,	/A			by gra large p and w	nite stor pieces of pod timb	ne to 9.0 f reinforc pers to 10	to 8.0 feet by the	unde e, re unde	rlain by d brick,
 Depth (feet bg) – check more than 	0.0 - 2.0	2.1 – 4.0	4.1	- 6.0	6.1	- 8.0	8.1 – 10	0.0 10	.1 – 12.0	>	12.1
one depth, if applicable – applies to Anthropogenically-Generated Material only	Х	Х		x		x	Х		Х		
PID/Odors (depth)	N/D	-									
Geology	Asphalt from CLAY and SIL feet bg (trac wood, trace Encountered	T; trace fine e shells froi peat to 132	gravel to m 70 to 87 2 feet bg,	32 feet 7 feet b underla	bg, und g), und	lerlain by erlain by	gray, m gray, m	edium so edium so	ft CLAY; trac ft CLAY; tra	ce sili ce si	t to 112 lt, trace
Soil Permeability		Loose				nediate X			Tight		
Total Boring Depth (feet bg)	155 (Encount	ered bedro	ck)					1			
GW Temporary Well Installed	N/A		-								
(Depth, Screen, Riser, Slot Size, Casing)											
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	N/A										
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	N/A										
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A		,		2						
Additional Hydro/Geological Test –	<10-7	² Feet/Day		1	0	Feet/Da	/		>10 Feet/	Day	

Permeability Results (e.g. pump test/slug test/packer test)			
Additional Comments/Notes/	Boring hole grouted, topped with	cement and asphalt to grade.	
Observations (if applicable)			

Boring Identification: NYC-2-PIP-3

		Boring Ir	nformat	ion							
Alternate Boring ID (if applicable)	N/A										
Pipeline Mile Marker ID	19.87R										
Location (Latitude/Longitude) –	40° 44' 21.34	53" N / 74° 0	0' 39.2533	3" W – S	Surveve	d					
estimated/surveyed											
Site Address	Boring locate	ed on New Y	ork Sanita	ition Pi	er prop	erty, on	Bloomfield	d street	between 2	11 th a	and 13 th
Nacular Culturations Factures / Distance and	Avenue in Ne						iabie).				
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)	No nearby su	osuriace real	tures in th	e vicinii	ly or bo	ririg.					
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	Hudson River	is approxima	ately 25 fe	et sout	h of bo	ring.					
Drilling Date	10/25/2011										
Drilling Company	Warren Geor	ge. Inc.									
Drilling Method	Hand Auger/		Mud Rota	rv							
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A	<u></u>		· /							
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Geotechnical										
environmentalygeourenderogleary		Boring O	bservat	ions							
Depth to saturation (feet bg) – Check			4.1 – 6.0	6.1 -	- 8.0	8.1 – 12	.0 12.1	- 16.0	16.1 – 20	0.0	>20
where applicable					(
PRODUCT	I			1			<u> </u>		1		
- Product in Soil – Yes/No (odor/inches/viscosity, etc.)	No										
- Product in GW – Check where	None Obs	served	She	en Only	,	Floatin	g Product	= <6"	Floating P	rodu	ct = >6"
applicable	X	Scived	3110	cii Oiliy		Hoatiii	5 i iouuct	- 10	i loating i	Toda	<u>ct - > 0</u>
HISTORIC FILL MATERIAL	Α	II.									
- Composition, other observations –		Reworked	Material			Ar	thropogei	nically-G	Generated I	Mate	rial
complete, as applicable		N/A							lerlain by b		
,,,		,.				underla	in by con	crete ru	ibble from d brick fro	grad	e to 3.0
						_			om 5.0 to 9		
- Depth (feet bg) – check more than	0.0 – 2.0	2.1 – 4.0	4.1	- 6.0	6.1	- 8.0	8.1 – 10.0		.1 – 12.0		•12.1
one depth, if applicable – applies to Anthropogenically-Generated	Х	х		(х	Х				
Material only PID/Odors (depth)	No PID or odd	or dotacted									
Geology	FILL (see abore feet, underlain by gravel to 55 Continuous d to 45 ft bg, 5 bg.	in by dark I medium gra feet, underla rilling from 1	brown, fir by CLAY; to hin by ray, 11 to 20 ft	ne to mace silt mediumediumediumediumediumediumediumediu	nedium to 50 m soft to 25 ft 2 to 65	SAND a feet, und CLAY; tra bg, 27 to ft bg, 67	nd SILT; li erlain by ce silt, tra 30 ft bg, 3	ittle fine gray CL ice shell 32 to 35	e gravel to AY; trace si s to at leas i ft bg, 37 to	40 ilt, tr it 80 o 40 f	feet bg, ace fine feet bg. ft bg, 42
Soil Permeability		Loose				nediate X			Tight		
Total Boring Depth (feet bg)	80		1				1				
GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing)	N/A										
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	N/A										
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	N/A										
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A										

Additional Hydro/Geological Test –	<10 ⁻² Feet/Day	10 ⁻² – 10 Feet/Day	>10 Feet/Day				
Permeability Results (e.g. pump test/slug							
test/packer test)							
Additional Comments/Notes/	Borehole grouted, topped with cement and asphalt to grade.						
Observations (if applicable)							

Boring Identification: NYC-2-PIP-4

		Boring	Informat	ion							
Alternate Boring ID (if applicable)	N/A										
Pipeline Mile Marker ID	19.90R										
Location (Latitude/Longitude) – estimated/surveyed	40° 44' 21.3100" N / 74° 00' 37.4852" W – Surveyed										
Site Address	Boring located on New York Sanitation Pier property, on Bloomfield street near the corner of Hudson River Greenway in New York, New York (no exact street address available).										Hudson
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)	No nearby subsurface features in the vicinity of boring.										
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	Hudson River is approximately 35 feet south of boring.										
Drilling Date	10/21/2011										
Drilling Company	Warren George, Inc.										
Drilling Method	Stainless Steel Split Spoon / 2"/ Mud Rotary / Tri-cone roller bit										
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A										
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Geotechnical										
Boring Observations											
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1 – 8	8.0	8.1 – 1	2.0 12	2.1 – 16.0	16.1 – 2	0.0	>20
where applicable	Х										
PRODUCT											
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No										
- Product in GW – Check where	None Observed Sheen Only					Floating Product = <6" Floating Product = >6"					
applicable	X										
HISTORIC FILL MATERIAL											
 Composition, other observations – 	Reworked Material Anthropogenically-Generated Material										
complete, as applicable	1.5 to 8.0 feet bg - dark to light brown, fine to coarse sand and silt, some sub-rounded to sub-					Crushed and small pieces of red brick from 11.5 to 27 feet bg.					
		e gravel and gray clay.									
 Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only 	0.0 – 2.0	2.1 – 4.0	0 4.1 -	- 6.0	6.1 -	- 8.0	8.1 – 1	0.0 1	0.1 – 12.0 X	>	X
PID/Odors (depth)	N/D										
Geology	Asphalt (0.5'), underlain by Belgian block (0.5') underlain by void space with concrete bottom from grade to 1.5 feet bg, underlain by FILL (see above) to 27 feet bg, underlain by dark gray CLAY to 50 feet bg, underlain by fine SAND and SILT to 55 ft bg, underlain by dark gray SILT; trace clay and fine sand to 61 ft bg, underlain by dark gray CLAY to at least 77 ft bg. Continuous drilling from 12 to 15 ft bg, 17 to 20 ft bg, 22 to 25 ft bg, 27 to 30 ft bg, 32 to 35 ft bg, 37 to 40 ft bg, 42 to 45 ftbg, 47 to 50 ft bg, 52 to 55 ftbg, 57 to 60 ft bg, 62 to 65 ft bg, 67 to 70 ft bg, and 72 to 75 ft bg – no spoons collected.										
Soil Permeability	Loose			Intermedia		ediate	diate		Tight		
Total Paving Double (fact ha)	X							<u> </u>			
Total Boring Depth (feet bg) GW Temporary Well Installed	77 N/A										
(Depth, Screen, Riser, Slot Size, Casing)	IN/A										
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	N/A										
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	N/A										
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A	-2			.2					<u>,_</u>	
Additional Hydro/Geological Test –	<10 ⁻² Feet/Day			10 ⁻² – 10 Feet/Day				>10 Feet/Day			

Permeability Results (e.g. pump test/slug test/packer test)			
Additional Comments/Notes/	Borehole backfilled with grout and	d restored to natural grade.	
Observations (if applicable)			

Boring Identification: RCH-1-ENV-3

		Boring	Informat	ion							
Alternate Boring ID (if applicable)	RCH-1-ARC-N										
Pipeline Mile Marker ID	4.85R										
Location (Latitude/Longitude) – estimated/surveyed	40° 37' 52.16	522"N / 74°	11' 6.1317"	N – Sur	veyed						
Site Address	Test pit loca Avenue in St								the entrance	e on \	Western
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)	A Coca Cola		-					•	et northwes	t of te	st pit.
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	Old Place C approximate					feet so	uthwest	of test	pit. Test p	oit is	located
Drilling Date	8/17/2011										
Drilling Company	The Napp-Gr	eco Compa	ny								
Drilling Method	Excavator										
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A										
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environment	tal/Geoarch	eological								
, , , , , , , , , , , , , , , , , , , ,		Boring (Observat	ions							
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1 -	- 8.0	8.1 – 12	2.0 12	2.1 – 16.0	16.1 – 2	0.0	>20
where applicable	Х										
PRODUCT											
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 											
- Product in GW – Check where	None Ob	served	She	en Only	,	Floatin	g Produc	ct = <6"	Floating I	Produ	ct = >6"
applicable	Х										
HISTORIC FILL MATERIAL											
- Composition, other observations –		Reworke	d Material			Aı	nthropog	enically	-Generated	Mate	rial
complete, as applicable	Orange brow from 1.0 to 1 Brown to gr fine to co- gravel, little from 1.5 to 3	I.5 feet bg. ay brown fi arse sub-a silt, mica so	ne to coars	e sand; sub-ro	some unded	foot bg	_	s, grave	base from	grade	e to 1.0
- Depth (feet bg) – check more than	0.0 - 2.0	2.1 – 4.0	0 4.1-	- 6.0	6.1	- 8.0	8.1 – 10	0.0 1	0.1 – 12.0	>	12.1
one depth, if applicable – applies to Anthropogenically-Generated Material only	х										
PID/Odors (depth)	N/D		•					•			
Geology	FILL from grable black organic					rlain by b	rown to	dark br	own fine SA	ND; li	ittle silt,
Soil Permeability		Loose				nediate			Tight		
Total Test Pit Depth (feet bg)	4					X					
GW Temporary Well Installed	N/A										
(Depth, Screen, Riser, Slot Size, Casing)	11//1										
Laboratory Name and Report No. (if	Accutest Lab	oratories L	ab Report IF	S IARR	967 and	1.1883820)				
samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	/ tocatest Lab	oracorres, E	as report is	,	Jor une	. 37 103021	,				
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	RCH-1-ENV-3 SVOC, TPH, F	PCB, pesticid	le, herbicide	, metal	ls and g	eneral ch	emistry a	analyses	•	cted f	for VOC,
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	RCH1ARCMT	4 was collec	cted for VO	, meta	ls and g	eneral ch	nemistry a	analyses			
Additional Hydro/Geological Test –	<10	² Feet/Day		10	0 ⁻² – 10	Feet/Da	y		>10 Feet,	/Day	
Permeability Results (e.g. pump test/slug test/packer test)										-	

Additional Comments/Notes/	N/A
Observations (if applicable)	

Boring Identification: RCH-1-ARC-MT-2

		Boring	nforma	tion						
Alternate Boring ID (if applicable)	N/A									
Pipeline Mile Marker ID	Approximatel	y 14 feet so	uthwest o	f 4.86R						
Location (Latitude/Longitude) – estimated/surveyed	40°37'52.43"I	N / 74°11'5.	68"W – es	imated	(no sur	vey data co	llected	d)		
Site Address	Boring is loca 278 and West	_			-					f US Highwa
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)	An undergrou								iej.	
Nearby Hydraulic Features (Distance and Direction from wetlands, piping, etc.)	Old Place Cre	ek is locate	d approxin	ately 83	35 feet s	southwest	of bori	ng. Boring	g is located	in wetland.
Drilling Date	8/18/2011									
Drilling Company	The Napp-Gre	eco Compar	ny							
Drilling Method	Excavator									
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A									
Boring Purpose (e.g. geotech/ environmental/geoarcheological)	Archaelogical									
		Boring C	bserva	ions						
Depth to saturation (feet bg) – Check where applicable	0.0 - 2.0	2.1 - 4.0 X	4.1 – 6.0	6.1	- 8.0	8.1 – 12.0	12	.1 – 16.0	16.1 – 2	0.0 >20
PRODUCT		•		•	•		•		•	•
- Product in Soil – Yes/No (odor/inches/viscosity, etc.)	No									
- Product in GW – Check where applicable	None Obs	served	She	en Only	/	Floating	Produc	ct = <6"	Floating F	roduct = >6
HISTORIC FILL MATERIAL								Į.		
complete, as applicable	Asphalt from gray-brown f medium angu Dry, dense, g schist, granit little slag frag brown fine rounded gray to 2.7 feet bg	ine to coa ular to sub-r gravel base, ic pieces fi gments at 1 sand; little vel, moist, i	rse sand; rounded gr metal fra rom 0.1 to .7', underl	some favel; litt gments, 2.3 feain by o	ine to tle silt. mica- et bg, range- sub-					
- Depth (feet bg) – check more than	0.0 - 2.0	2.1 – 4.0	4.1	- 6.0	6.1	- 8.0 8	3.1 – 10	0.0 10).1 – 12.0	>12.1
one depth, if applicable – applies to Anthropogenically-Generated Material only	Х	Х								
PID/Odors (depth)	No PID detect	ted. No odo	ors.					ı		
Geology	Dark brown organic staini organic root r	ng from 2.	7 to 3.6 fe	et, unde	erlain by	y brown fin	_			
Soil Permeability		Loose			Interm	nediate			Tight X	
Total Boring Depth (feet bg)	5.0									
GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing)	N/A									
Laboratory Name and Report No. (if samples collected)	N/A									
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	No samples co	ollected								
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A									
Additional Hydro/Geological Test – Permeability Results (e.g. pump test/slug	<10 ⁻²	Feet/Day		10	0 ⁻² – 10	Feet/Day			>10 Feet/	Day

test/packer test)			
Additional Comments/Notes/	Soil boring was a test pit used to	evaluate subsurface conditions.	
Observations (if applicable)			

Boring Identification: RCH-1-ARC-MT-5

		Boring	Informat	ion							
Alternate Boring ID (if applicable)	N/A										
Pipeline Mile Marker ID	Approximate	ly 14 feet so	outhwest of	4.86R							
Location (Latitude/Longitude) –	40°37'52.43"	•			(no sur	vey data c	ollecte	ed)			
estimated/surveyed		,			•	•		•			
Site Address	Boring is loca	ited in a gra	vel area app	roxima	ately 45	2 feet no	theast	of the int	ersection o	f US F	lighway
	278 and Wes	tern Avenue	e in Staten Is	land, N	IY (no e	xact stree	t addre	ess availal	ole).		
Nearby Subsurface Features (Distance and	Boring is loca	ted 75 feet	southeast o	f under	ground	l water lin	e.				
Direction from Utilities, Tanks, Properties,											
etc.)											
Nearby Hydraulic Features (Distance and	Old Place Cre	ek is locate	d approxima	itely 83	5 feet	southwest	of bor	ing. Borin	g is located	in we	tland.
Direction from wetlands, piping, etc.)											
Drilling Date	8/18/2011										
Drilling Company	The Napp-Gr	eco Compar	ny								
Drilling Method	Excavator										
Additional Hydro/Geological Tests (e.g.	N/A										
pump test/slug test/packer test)											
Boring Purpose (e.g. geotech/	Archaelogical										
environmental/geoarcheological)											
			Observati								
Depth to saturation (feet bg) – Check	0.0 - 2.0	2.1 - 4.0	4.1 – 6.0	6.1 -	- 8.0	8.1 – 12.	0 1	2.1 – 16.0	16.1 – 2	0.0	>20
where applicable											
PRODUCT	Т										
- Product in Soil – Yes/No	No										
(odor/inches/viscosity, etc.)											
- Product in GW – Check where	None Obs	served	Snee	n Only		Floating	Produ	ict = <6"	Floating F	rodu	ct = >6"
applicable	Х										
HISTORIC FILL MATERIAL	T	Dannarlas	l Nantouial					:!	C	N/-+	.:
- Composition, other observations –	A t - f		d Material		-t l	Ant	nropo	genically-	Generated	iviatei	riai
complete, as applicable	Asphalt from	-	_								
	gray-brown										
	medium angu Dry, dense, g										
	schist, granit		_								
	little slag frag										
				,							
				e fine							
	brown fine	sand; little	e silt; trac								
	brown fine rounded grav	sand; littlevel, moist,	e silt; trac								
- Depth (feet bg) – check more than	brown fine	sand; little vel, moist, i	e silt; trac medium dei	nse fro	m 2.3	- 8.0	8.1 – 1	0.0 1	0.1 – 12.0	>	12.1
 Depth (feet bg) – check more than one depth, if applicable – applies to 	brown fine rounded grav to 2.7 feet bg	sand; littlevel, moist,	e silt; trac medium dei	nse fro	m 2.3	- 8.0	8.1 – 1	10.0 1	0.1 – 12.0	>	12.1
 Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated 	brown fine rounded grav to 2.7 feet bg	sand; littlevel, moist, littless.	e silt; trac medium dei	nse fro	m 2.3	- 8.0	8.1 – 1	0.0 1	0.1 – 12.0	>	12.1
one depth, if applicable – applies to	brown fine rounded grav to 2.7 feet bg	sand; little vel, moist, i	e silt; trac medium dei	nse fro	m 2.3	- 8.0	8.1 – 1	0.0 1	0.1 – 12.0	>	12.1
one depth, if applicable – applies to Anthropogenically-Generated	brown fine rounded grav to 2.7 feet bg	sand; little vel, moist, s z. 2.1 – 4.0 X	e silt; trac medium dei	nse fro	m 2.3	- 8.0	8.1 – 1	0.0 1	0.1 – 12.0	>	12.1
one depth, if applicable – applies to Anthropogenically-Generated Material only	brown fine rounded grav to 2.7 feet bg 0.0 – 2.0	sand; littlevel, moist, littlevel, moist, littlevel, moist, littlevel, moist, littlevel,	e silt; trac medium dei 0 4.1 –	6.0	6.1						
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth)	brown fine rounded grav to 2.7 feet bg 0.0 – 2.0 X No PID detect	sand; little vel, moist, little vel, moist, little vel, moist, little vel, moist, little vel, little v	e silt; trac medium der 0 4.1 – ors. ne sand; litt	6.0	6.1 -	fine round	ded gr	avel. Moi	st, medium	dens	e, dark
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth)	brown fine rounded grav to 2.7 feet bg 0.0 – 2.0 X No PID detect Dark brown	sand; little vel, moist, street, moist, street. No ode to black fining from 2.	e silt; tracemedium der 9 4.1 – ors. ne sand; litt 7 to 3.6 fee	6.0 cle silt;	m 2.3 6.1 trace	fine round	ded gr	avel. Moi	st, medium	dens	e, dark
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth)	brown fine rounded gravato 2.7 feet bg 0.0 – 2.0 X No PID detect Dark brown organic stain organic root in the round of the round organic root in the round of the round organic root in the round of the round of the round organic root in the round of	sand; little vel, moist, street, moist, street. No ode to black fining from 2.	e silt; tracemedium der 9 4.1 – ors. ne sand; litt 7 to 3.6 fee	6.0 cle silt;	trace rlain by	fine round	ded gr	avel. Moi	st, medium	dens	e, dark
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability	brown fine rounded gravato 2.7 feet by 0.0 – 2.0 X No PID detect Dark brown organic stain organic root	sand; littlevel, moist, is. 2.1 – 4.0 X ted. No ode to black fining from 2.5 material from tenders.	e silt; tracemedium der 9 4.1 – ors. ne sand; litt 7 to 3.6 fee	6.0 cle silt;	trace rlain by	fine round	ded gr	avel. Moi	st, medium ilt. Wet, m	dens	e, dark
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg)	brown fine rounded gravato 2.7 feet by 0.0 – 2.0 X No PID detect Dark brown organic stain organic root in 5.0	sand; littlevel, moist, is. 2.1 – 4.0 X ted. No ode to black fining from 2.5 material from tenders.	e silt; tracemedium der 9 4.1 – ors. ne sand; litt 7 to 3.6 fee	6.0 cle silt;	trace rlain by	fine round	ded gr	avel. Moi	st, medium ilt. Wet, m Tight	dens	e, dark
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed	brown fine rounded gravato 2.7 feet by 0.0 – 2.0 X No PID detect Dark brown organic stain organic root	sand; littlevel, moist, is. 2.1 – 4.0 X ted. No ode to black fining from 2.5 material from tenders.	e silt; tracemedium der 9 4.1 – ors. ne sand; litt 7 to 3.6 fee	6.0 cle silt;	trace rlain by	fine round	ded gr	avel. Moi	st, medium ilt. Wet, m Tight	dens	e, dark
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing)	brown fine rounded gray to 2.7 feet bg 0.0 – 2.0 X No PID detect Dark brown organic stain organic root in 5.0 N/A	sand; littlevel, moist, is. 2.1 – 4.0 X ted. No ode to black fining from 2.5 material from tenders.	e silt; tracemedium der 9 4.1 – ors. ne sand; litt 7 to 3.6 fee	6.0 cle silt;	trace rlain by	fine round	ded gr	avel. Moi	st, medium ilt. Wet, m Tight	dens	e, dark
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if	brown fine rounded gravato 2.7 feet by 0.0 – 2.0 X No PID detect Dark brown organic stain organic root in 5.0	sand; littlevel, moist, is. 2.1 – 4.0 X ted. No ode to black fining from 2.5 material from tenders.	e silt; tracemedium der 9 4.1 – ors. ne sand; litt 7 to 3.6 fee	6.0 cle silt;	trace rlain by	fine round	ded gr	avel. Moi	st, medium ilt. Wet, m Tight	dens	e, dark
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected)	brown fine rounded gray to 2.7 feet bg 0.0 – 2.0 X No PID detect Dark brown organic stain organic root of N/A N/A	sand; littlivel, moist, it. 2.1 – 4.0 X ted. No odd to black firing from 2.5 material fro Loose	e silt; tracemedium der 9 4.1 – ors. ne sand; litt 7 to 3.6 fee	6.0 cle silt;	trace rlain by	fine round	ded gr	avel. Moi	st, medium ilt. Wet, m Tight	dens	e, dark
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) Soil Samples Collected - Sample ID(s),	brown fine rounded gray to 2.7 feet bg 0.0 – 2.0 X No PID detect Dark brown organic stain organic root in 5.0 N/A	sand; littlivel, moist, it. 2.1 – 4.0 X ted. No odd to black firing from 2.5 material fro Loose	e silt; tracemedium der 9 4.1 – ors. ne sand; litt 7 to 3.6 fee	6.0 cle silt;	trace rlain by	fine round	ded gr	avel. Moi	st, medium ilt. Wet, m Tight	dens	e, dark
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling	brown fine rounded gray to 2.7 feet bg 0.0 – 2.0 X No PID detect Dark brown organic stain organic root of N/A N/A	sand; littlivel, moist, it. 2.1 – 4.0 X ted. No odd to black firing from 2.5 material fro Loose	e silt; tracemedium der 9 4.1 – ors. ne sand; litt 7 to 3.6 fee	6.0 cle silt;	trace rlain by	fine round	ded gr	avel. Moi	st, medium ilt. Wet, m Tight	dens	e, dark
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	brown fine rounded gray to 2.7 feet bg 0.0 – 2.0 X No PID detect Dark brown organic stain organic root of N/A N/A N/A N/A No samples companies to the samples of the	sand; littlivel, moist, it. 2.1 – 4.0 X ted. No odd to black firing from 2.5 material fro Loose	e silt; tracemedium der 9 4.1 – ors. ne sand; litt 7 to 3.6 fee	6.0 cle silt;	trace rlain by	fine round	ded gr	avel. Moi	st, medium ilt. Wet, m Tight	dens	e, dark
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and	brown fine rounded gray to 2.7 feet bg 0.0 – 2.0 X No PID detect Dark brown organic stain organic root of N/A N/A	sand; littlivel, moist, it. 2.1 – 4.0 X ted. No odd to black firing from 2.5 material fro Loose	e silt; tracemedium der 9 4.1 – ors. ne sand; litt 7 to 3.6 fee	6.0 cle silt;	trace rlain by	fine round	ded gr	avel. Moi	st, medium ilt. Wet, m Tight	dens	e, dark
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	brown fine rounded gray to 2.7 feet bg 0.0 – 2.0 X No PID detect Dark brown organic stain organic root of N/A N/A N/A N/A	sand; little vel, moist, st. 2.1 – 4.0 X ted. No ode to black firing from 2.5 material fro Loose	e silt; tracemedium der 9 4.1 – ors. ne sand; litt 7 to 3.6 fee	6.0 cle silt; t, unde feet bg	trace rlain by	fine round brown finediate	ded gr	avel. Moi	st, medium ilt. Wet, m Tight X	dens	e, dark
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and	brown fine rounded gray to 2.7 feet bg 0.0 – 2.0 X No PID detect Dark brown organic stain organic root of N/A N/A N/A N/A	sand; littlivel, moist, it. 2.1 – 4.0 X ted. No odd to black firing from 2.5 material fro Loose	e silt; tracemedium der 9 4.1 – ors. ne sand; litt 7 to 3.6 fee	6.0 cle silt; t, unde feet bg	trace rlain by	fine round	ded gr	avel. Moi	st, medium ilt. Wet, m Tight	dens	e, dark

test/packer test)			
Additional Comments/Notes/	Soil boring was a test pit used to	evaluate subsurface conditions.	
Observations (if applicable)			

Boring Identification: RCH-1-ARC-MT-6

		Boring	Infor	rmatio	n								
Alternate Boring ID (if applicable)	N/A												
Pipeline Mile Marker ID	4.87R												
Location (Latitude/Longitude) – estimated/surveyed	40°37′52.74′	"N / 74°11′04	1.87"W	– Estim	ated (survey	data fort	hcomi	ing)				
Site Address		ted in the Ma and, New Yor						northe	east of the	entra	ance on W	ester	n Avenue
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)	A Coca Cola	Enterprises s	ubsurfa	ace wate	erline	is locate	ed appro	ximate	ely 110 fee	et nor	thwest of	test p	it.
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)		eek is locate thwest of we			ly 900) feet so	outhwes	t of te	est pit. Tes	st pit	is located	appro	ximately
Drilling Date	8/23/2011												
Drilling Company	<u> </u>	reco Compan	V										
Drilling Method	Excavator		<u>, </u>										
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A												
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Geoarcheolo	gical											
environmentaly geodrenaelogicaly		Boring	Obse	rvatio	ns								
Depth to saturation (feet bg) – Check where applicable	0.0 – 2.0	2.1 – 4.0		- 6.0		- 8.0	8.1 – 1	2.0	12.1 – 1	L6.0	16.1 – 2	20.0	>20
PRODUCT						I					1		
- Product in Soil – Yes/No (odor/inches/viscosity, etc.)	No												
- Product in GW – Check where	None O	bserved		Sheer	n Only	7	Float	ing Pr	oduct = <6	5"	Floating	Produ	ict = >6"
applicable	>	(
HISTORIC FILL MATERIAL							1						
 Composition, other observations – complete, as applicable 		Reworke n medium from grade to	to co	arse s	and;	gravel		ural a	nd non-st		ral pieces		
- Depth (feet bg) – check more than one	0.0 - 2.0	2.1 – 4.	<u> </u>	4.1 – 6	<u> </u>	6.1	- 8.0	0 1	- 10.0	10	.1 – 12.0		>12.1
depth, if applicable – applies to Anthropogenically-Generated Material only	X	X		X	.	0.1	0.0	0.1	10.0	10	.1 12.0		712.1
PID/Odors (depth)	N/D							l .					
Geology	FILL from gr	ade to 4.5 fe			ve), u	nderlaii	n by bro	wn me	edium SAI	ND; s	ome CLAY,	lense	es of silty
Soil Permeability		Loose				Intern	nediate				Tight	;	
							Х						
Total Boring Depth (feet bg) GW Temporary Well Installed	8 N/A			•									
(Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab	N/A												
Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	N/A												
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A												
Additional Hydro/Geological Test – Permeability Results (e.g. pump test/slug test/packer test)	<10	D ⁻² Feet/Day			1	.0 ⁻² – 10	Feet/Da	ıy			>10 Feet	/Day	
Additional Comments/Notes/ Observations (if applicable)	N/A								1				

Boring Identification: RCH-1-ARC-MT-7

		Boring I	nforma	tion							
ali	1	Dornig	11101111	ition							
Alternate Boring ID (if applicable)	N/A										
Pipeline Mile Marker ID	4.86R	/ = .0/			.,						
Location (Latitude/Longitude) – estimated/surveyed	40°37′52.72"										
Site Address	Test pit locat in Staten Isla							the ent	rance on We	stern	Avenue
Nearby Subsurface Features (Distance and	A Coca Cola I							ely 130 f	eet northwe	st of to	est pit.
Direction from Utilities, Tanks, Properties, etc.)		·									·
Nearby Hydraulic Features (Distance and	Old Place C	reek is loca	ated ann	rovimate	lv 8/10	feet sour	hwest	of test	nit Test n	it ic	located
Direction from wetlands, etc.)	approximate					1000	illwcst	01 (63)	pit. Test p	11 13	located
Drilling Date	8/24/2011	., 200 .000		0							
Drilling Company	The Napp-Gr	eco Compan	nv								
Drilling Method	Excavator	cco compan	· y								
Additional Hydro/Geological Tests (e.g.	N/A										
pump test/slug test/packer test)	NA										
Boring Purpose (e.g. geotech/	Geoarchaelo	gical									
environmental/geoarchaelogical)											
		Boring C)bserva	tions							
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1 -	- 8.0	8.1 – 12.	0 12	2.1 – 16.	0 16.1 – 2	0.0	>20
where applicable			Χ								
PRODUCT											
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No										
- Product in GW – Check where	None Ob	served	Sh	een Only	,	Floating	Produ	ct = <6"	Floating F	rodu	ct = >6"
applicable	X				<u> </u>						
HISTORIC FILL MATERIAL						ı					
- Composition, other observations –		Reworked	Materia			Ant	hropog	enically	-Generated	Mate	rial
	Dark brown	medium t	to coarse		gravel				2.0 to 5.0 fe		
complete, as applicable	Dark brown throughout f			sand,	-				2.0 to 5.0 fe		
	throughout f		to 1.0 foo	sand, t bg, und	derlain				2.0 to 5.0 fe		
	throughout f	rom grade trown-orange	to 1.0 foo	sand, t bg, und	derlain				2.0 to 5.0 fe		
	throughout f by light b	rom grade trown-orange	to 1.0 foo e mediur	sand, t bg, und	derlain some			cks from	2.0 to 5.0 fe	et bg.	
 complete, as applicable Depth (feet bg) – check more than one depth, if applicable – applies to 	throughout f by light b gravel to 2.0 0.0 – 2.0	rom grade t rown-orange feet bg. 2.1 – 4.0	to 1.0 foo e mediur	sand, t bg, und n sand, -6.0	derlain some	Large in	act brid	cks from		et bg.	
 complete, as applicable Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated 	throughout f by light b gravel to 2.0	rom grade t rown-orange feet bg.	to 1.0 foo e mediur	sand, t bg, und n sand,	derlain some	Large in	act brid	cks from		et bg.	
 Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only 	throughout f by light b gravel to 2.0 0.0 – 2.0	rom grade t rown-orange feet bg. 2.1 – 4.0	to 1.0 foo e mediur	sand, t bg, und n sand, -6.0	derlain some	Large in	act brid	cks from		et bg.	
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth)	throughout f by light b gravel to 2.0 0.0 – 2.0 X	rom grade t rown-orange feet bg. 2.1 – 4.0	to 1.0 foo e mediur	sand, t bg, und n sand, - 6.0	derlain some	Large in	8.1 – 1	o.o	10.1 – 12.0	et bg.	12.1
 Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only 	throughout f by light b gravel to 2.0 0.0 – 2.0	rom grade t rown-orange feet bg. 2.1 – 4.0 X	to 1.0 foo e mediur 0 4.1	sand, t bg, und n sand, - 6.0 X	derlain some 6.1	- 8.0	8.1 – 1	0.0 Own fin	10.1 – 12.0 e SAND and	et bg.	organic
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth)	throughout f by light b gravel to 2.0 0.0 – 2.0 X N/D FILL from gra material thro- feet bg.	rom grade t rown-orange feet bg. 2.1 – 4.0 X	to 1.0 foo e mediur 0 4.1	sand, t bg, und n sand, - 6.0 X	derlain some 6.1 e), under ain by linterm	- 8.0 erlain by oght brown	8.1 – 1	0.0 Own fin	10.1 – 12.0 e SAND and	et bg.	•12.1
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability	throughout f by light b gravel to 2.0 0.0 – 2.0 X N/D FILL from gramaterial through	rom grade t rown-orange feet bg. 2.1 – 4.0 X ade to 5.0 foughout to 6	to 1.0 foo e mediur 0 4.1	sand, t bg, und n sand, - 6.0 X	derlain some 6.1 e), under ain by linterm	- 8.0 erlain by oright brown	8.1 – 1	0.0 Own fin	10.1 – 12.0 e SAND and I fine SAND t	et bg.	•12.1
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Test Pit Depth (feet bg)	throughout f by light b gravel to 2.0 0.0 – 2.0 X N/D FILL from gramaterial throafeet bg.	rom grade t rown-orange feet bg. 2.1 – 4.0 X ade to 5.0 foughout to 6	to 1.0 foo e mediur 0 4.1	sand, t bg, und n sand, - 6.0 X	derlain some 6.1 e), under ain by linterm	- 8.0 erlain by oght brown	8.1 – 1	0.0 Own fin	10.1 – 12.0 e SAND and I fine SAND t	et bg.	organic
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Test Pit Depth (feet bg) GW Temporary Well Installed	throughout f by light b gravel to 2.0 0.0 – 2.0 X N/D FILL from gramaterial through	rom grade t rown-orange feet bg. 2.1 – 4.0 X ade to 5.0 foughout to 6	to 1.0 foo e mediur 0 4.1	sand, t bg, und n sand, - 6.0 X	derlain some 6.1 e), under ain by linterm	- 8.0 erlain by oght brown	8.1 – 1	0.0 Own fin	10.1 – 12.0 e SAND and I fine SAND t	et bg.	•12.1
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Test Pit Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing)	throughout f by light b gravel to 2.0 0.0 – 2.0 X N/D FILL from gramaterial throfeet bg.	rom grade t rown-orange feet bg. 2.1 – 4.0 X ade to 5.0 foughout to 6	to 1.0 foo e mediur 0 4.1	sand, t bg, und n sand, - 6.0 X	derlain some 6.1 e), under ain by linterm	- 8.0 erlain by oght brown	8.1 – 1	0.0 Own fin	10.1 – 12.0 e SAND and I fine SAND t	et bg.	•12.1
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Test Pit Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if	throughout f by light b gravel to 2.0 0.0 – 2.0 X N/D FILL from gramaterial throafeet bg.	rom grade t rown-orange feet bg. 2.1 – 4.0 X ade to 5.0 foughout to 6	to 1.0 foo e mediur 0 4.1	sand, t bg, und n sand, - 6.0 X	derlain some 6.1 e), under ain by linterm	- 8.0 erlain by oght brown	8.1 – 1	0.0 Own fin	10.1 – 12.0 e SAND and I fine SAND t	et bg.	•12.1
complete, as applicable - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Test Pit Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest	throughout f by light b gravel to 2.0 0.0 – 2.0 X N/D FILL from gramaterial throfeet bg.	rom grade t rown-orange feet bg. 2.1 – 4.0 X ade to 5.0 foughout to 6	to 1.0 foo e mediur 0 4.1	sand, t bg, und n sand, - 6.0 X	derlain some 6.1 e), under ain by linterm	- 8.0 erlain by oght brown	8.1 – 1	0.0 Own fin	10.1 – 12.0 e SAND and I fine SAND t	et bg.	•12.1
complete, as applicable - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Test Pit Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	throughout f by light b gravel to 2.0 0.0 – 2.0 X N/D FILL from gramaterial throfeet bg. 8 N/A N/A	rom grade t rown-orange feet bg. 2.1 – 4.0 X ade to 5.0 foughout to 6	to 1.0 foo e mediur 0 4.1	sand, t bg, und n sand, - 6.0 X	derlain some 6.1 e), under ain by linterm	- 8.0 erlain by oght brown	8.1 – 1	0.0 Own fin	10.1 – 12.0 e SAND and I fine SAND t	et bg.	organic
complete, as applicable - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Test Pit Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s),	throughout f by light b gravel to 2.0 0.0 – 2.0 X N/D FILL from gramaterial throfeet bg.	rom grade t rown-orange feet bg. 2.1 – 4.0 X ade to 5.0 foughout to 6	to 1.0 foo e mediur 0 4.1	sand, t bg, und n sand, - 6.0 X	derlain some 6.1 e), under ain by linterm	- 8.0 erlain by oght brown	8.1 – 1	0.0 Own fin	10.1 – 12.0 e SAND and I fine SAND t	et bg.	organic
complete, as applicable - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Test Pit Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling	throughout f by light b gravel to 2.0 0.0 – 2.0 X N/D FILL from gramaterial throfeet bg. 8 N/A N/A	rom grade trown-orange feet bg. 2.1 – 4.0 X ade to 5.0 foughout to 6	to 1.0 foo e mediur 0 4.1	sand, t bg, und n sand, - 6.0 X	derlain some 6.1 e), under ain by linterm	- 8.0 erlain by oght brown	8.1 – 1	0.0 Own fin	10.1 – 12.0 e SAND and I fine SAND t	et bg.	organic
complete, as applicable - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Test Pit Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	throughout f by light b gravel to 2.0 0.0 – 2.0 X N/D FILL from grade material throughout feet bg. 8 N/A N/A N/A	rom grade trown-orange feet bg. 2.1 – 4.0 X ade to 5.0 foughout to 6	to 1.0 foo e mediur 0 4.1	sand, t bg, und n sand, - 6.0 X	derlain some 6.1 e), under ain by linterm	- 8.0 erlain by oght brown	8.1 – 1	0.0 Own fin	10.1 – 12.0 e SAND and I fine SAND t	et bg.	organic
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Test Pit Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and	throughout f by light b gravel to 2.0 0.0 – 2.0 X N/D FILL from gramaterial throfeet bg. 8 N/A N/A	rom grade trown-orange feet bg. 2.1 – 4.0 X ade to 5.0 foughout to 6	to 1.0 foo e mediur 0 4.1	sand, t bg, und n sand, - 6.0 X	derlain some 6.1 e), under ain by linterm	- 8.0 erlain by oght brown	8.1 – 1	0.0 Own fin	10.1 – 12.0 e SAND and I fine SAND t	et bg.	organic
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Test Pit Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	throughout f by light b gravel to 2.0 0.0 – 2.0 X N/D FILL from gra material throfeet bg. 8 N/A N/A N/A	rom grade t rown-orange feet bg. 2.1 – 4.0 X ade to 5.0 f bughout to 6	to 1.0 foo e mediur 0 4.1	sand, t bg, unc n sand, -6.0 X ee above g, underla	e), undeain by li	- 8.0 erlain by oright brown nediate	8.1 – 1	0.0 Own fin	e SAND and fine SAND t	SILT;	organic
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Test Pit Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test –	throughout f by light b gravel to 2.0 0.0 – 2.0 X N/D FILL from gra material throfeet bg. 8 N/A N/A N/A	rom grade trown-orange feet bg. 2.1 – 4.0 X ade to 5.0 foughout to 6	to 1.0 foo e mediur 0 4.1	sand, t bg, unc n sand, -6.0 X ee above g, underla	e), undeain by li	- 8.0 erlain by oght brown	8.1 – 1	0.0 Own fin	10.1 – 12.0 e SAND and I fine SAND t	SILT;	•12.1
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Test Pit Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test – Permeability Results (e.g. pump test/slug	throughout f by light b gravel to 2.0 0.0 – 2.0 X N/D FILL from gra material throfeet bg. 8 N/A N/A N/A	rom grade t rown-orange feet bg. 2.1 – 4.0 X ade to 5.0 f bughout to 6	to 1.0 foo e mediur 0 4.1	sand, t bg, unc n sand, -6.0 X ee above g, underla	e), undeain by li	- 8.0 erlain by oright brown nediate	8.1 – 1	0.0 Own fin	e SAND and fine SAND t	SILT;	•12.1
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Test Pit Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test –	throughout f by light b gravel to 2.0 0.0 – 2.0 X N/D FILL from gra material throfeet bg. 8 N/A N/A N/A	rom grade t rown-orange feet bg. 2.1 – 4.0 X ade to 5.0 f bughout to 6	to 1.0 foo e mediur 0 4.1	sand, t bg, unc n sand, -6.0 X ee above g, underla	e), undeain by li	- 8.0 erlain by oright brown nediate	8.1 – 1	0.0 Own fin	e SAND and fine SAND t	SILT;	•12.1

Observations (if applicable)	

Boring Identification: RCH-1-ARC-MT-8

		Boring	Informa	tion							
Alternate Boring ID (if applicable)	N/A										
Pipeline Mile Marker ID	4.86R										
Location (Latitude/Longitude) –	40°37′51.95	"N / 74°11′0	4.99"W – I	stimate	d (surve	y data for	hcoming)				
estimated/surveyed		,			. (,					
Site Address	Test pit loca	ted in the N	/1&R-058 lo	ot, appro	oximate	ly 135 fee	southeas	st of th	e entrance	on V	Vesterr
	Avenue in St										
Nearby Subsurface Features (Distance and	A Coca Cola							165 fee	t northwest	of to	est pit.
Direction from Utilities, Tanks, Properties,											
etc.)											
Nearby Hydraulic Features (Distance and	Old Place (Creek is loc	ated appr	oximate	ly 800	feet sout	hwest of	test p	it. Test pit	is	located
Direction from wetlands, etc.)	approximate	ely 180 feet s	outhwest	of wetla	nds.						
Drilling Date	8/25/2011										
Drilling Company	The Napp-G	reco Compai	าง								
Drilling Method	Excavator										
Additional Hydro/Geological Tests (e.g.	N/A										
pump test/slug test/packer test)											
Boring Purpose (e.g. geotech/	Geoarchaeld	ogical									
environmental/geoarchaelogical)											
		Boring (Observa	tions					_		
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1 -	- 8.0	8.1 – 12.0	12.1	- 16.0	16.1 – 20	0	>20
where applicable			Х								
PRODUCT											
- Product in Soil – Yes/No	No										
(odor/inches/viscosity, etc.)								1			
- Product in GW – Check where	None Ob		Sh	een Only	<u> </u>	Floating	Product =	: <6"	Floating Pr	odu	ct = >6'
applicable	Х										
HISTORIC FILL MATERIAL						1					
- Composition, other observations –			d Material			Ant	ropogen		enerated N	ater	rial
complete, as applicable	Dark brown							N/A	Д		
	throughout	_		_							
	by light brown pebbles, sor	_									
	brown med		_								
	throughout										
	brown, fine										
	throughout			_							
	brown silty o	clay with fine	sand to 6	0 feet b	g.						
 Depth (feet bg) – check more than 	0.0 – 2.0	2.1 – 4.0	0 4.1	- 6.0	6.1 -	- 8.0	3.1 – 10.0	10	.1 – 12.0	>	12.1
one depth, if applicable – applies to											-
Anthropogenically-Generated											
Material only	N/F										
PID/Odors (depth)	N/D	1							A)/ 1.0		
Geology	FILL from gr		eet bg (see	above),	, underl	lain by lig	nt brown	silty CL	AY and fine	SAN	ID to a
Cail Daymanhility	least 9.0 fee				In-t	di-+-	ı		T : _ l		
Soil Permeability		Loose	-			nediate			Tight		
Total Tast Dit Danth (fact ha)					<u> </u>	X					
Total Test Pit Depth (feet bg)	9										
GW Temporary Well Installed	N/A										
(Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if	N/A										
samples collected) (e.g. "Accutest	N/A										
Laboratories, Lab Report ID JA65410")											
Soil Samples Collected - Sample ID(s),	N/A										
Sample Depth(s) and Sampling											
	ĺ										
Parameter(s)											
Parameter(s) GW Samples Collected - Sample ID(s) and	N/A										

Additional Hydro/Geological Test –	<10 ⁻² Feet/Day	10 ⁻² – 10 Feet/Day	>10 Feet/Day
Permeability Results (e.g. pump test/slug			
test/packer test)			
Additional Comments/Notes/	Archaelogical feature, possibly a	fire pit, at 5.5 feet bg.	
Observations (if applicable)			

Boring Identification: RCH-1-ENV-5

		Boring	Informat	ion							
Alternate Boring ID (if applicable)	RCH-1-ARC/N										
Pipeline Mile Marker ID	4.88R										
Location (Latitude/Longitude) –	40° 37' 53.15	348"N / 74° 1	1' 4 9537"W	– Surve	ved						
estimated/surveyed	10 37 33.13	, 10 11, , , 1	1 1.5557 **	Surve	, cu						
Site Address	Test pit locat	ted in the M	&R-058 lot, a	pproxim	nately 1	50 feet no	rtheast	of the e	ntrance on W	esterr	n Avenue
	in Staten Isla										
Nearby Subsurface Features (Distance and	A Coca Cola I	Enterprises s	ubsurface wa	terline i	is locate	d approxi	nately 8	30 feet r	orthwest of to	est pit	:
Direction from Utilities, Tanks, Properties,											
etc.)											
Nearby Hydraulic Features (Distance and				ely 930	feet sou	ithwest of	test pit.	Test pi	t is located ap	proxin	nately 85
Direction from wetlands, etc.)	feet southwe	est of wetlan	ds.								
Drilling Date	8/15/2011										
Drilling Company	The Napp-Gr	eco Compan	У								
Drilling Method	Excavator										
Additional Hydro/Geological Tests (e.g.	N/A										
pump test/slug test/packer test)											
Boring Purpose (e.g. geotech/	Environment	al/Geoarche	ological								
environmental/geoarchaelogical)											
		Boring	Observat	ions							
Depth to saturation (feet bg) – Check where	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1 -	- 8.0	8.1 – 12.	0 1	2.1 – 16	.0 16.1 – 2	0.0	>20
applicable	X										
PRODUCT											
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No										
 Product in GW – Check where 	None Ob	oserved	She	en Only	,	Floating	g Produ	ct = <6"	Floating	Produ	ict = >6"
applicable	Х	(
HISTORIC FILL MATERIAL											
 Composition, other observations – 		Reworke	d Material			Aı	nthropo	genical	y-Generated	Mater	rial
complete, as applicable	Gray, fine to	coarse gra	vel; some fi	ne to m	edium	Brick fra	gments	from gr	ade to 1.0 foo	t bg a	nd 1.5 to
	sand, little si	ilt, rock fragi	ments from	1.0 to 1.	.5 feet	4.0 feet	0				
	bg.						e and e	ngineer	ed clay from	1.5 to	4.0 feet
Double (fact ha) shock may a than and	00.20	24.4	0 44	<u> </u>		bg.	0.4 .4	00	101 120		12.1
 Depth (feet bg) – check more than one depth, if applicable – applies to 	0.0 – 2.0	2.1 – 4.	0 4.1	- 6.0	6.1	- 8.0	8.1 – 1	0.0	10.1 – 12.0		>12.1
Anthropogenically-Generated Material	Х	Х									
only	^	^									
PID/Odors (depth)	Elevated PID	readings (ma	ax=15.3 ppm	at 2.0 f	eet bg).	No odor.					
Geology	FILL from gra										
Soil Permeability		Loose			Intern	nediate			Tight		
									X		
Total Test Pit Depth (feet bg)	4							•			
GW Temporary Well Installed	N/A										
(Depth, Screen, Riser, Slot Size, Casing)											
Laboratory Name and Report No. (if samples	Accutest Lab	oratories, La	b Report ID J	A83820							
collected) (e.g. "Accutest Laboratories, Lab											
Report ID JA65410")											
Soil Samples Collected - Sample ID(s), Sample			0,	was coll	ected fo	or VOC, SV	OC, TPI	H, PCB,	pesticide, her	bicide	, metals,
Depth(s) and Sampling Parameter(s)	and general of	chemistry an	alyses.								
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	RCH1ARCMT	4 was collect	ed for VOC,	metals a	and gene	eral chemi	stry ana	lyses.			
Additional Hydro/Geological Test –	/10) ⁻² Feet/Day		1	0 ⁻² _ 10	Feet/Day			>10 Feet	/Day	
Permeability Results (e.g. pump test/slug	10	, rect/Day			0 - 10	. ccy bay			~10 FEEL	Day	
test/packer test)											
								1			
Additional Comments/Notes/ Observations	I N/A										
Additional Comments/Notes/ Observations (if applicable)	N/A										

Boring Identification: RCH-1-ENV-6

	Boring	Informat	ion								
RCH-1-ARC-											
+											
_	"N / 74°11′05	5.32"W – Esti	mated (survey o	data forth	ncomi	ing)				
						orthe	east of the	entra	ance on We	esteri	n Avenue
						imate	ely 80 feet	north	hwest of te	st pit	:
			tely 900) feet so	outhwest	of te	est pit. Test	t pit i	is located	appro	ximately
8/15/2011											
The Napp-G	reco Compan	ıV									
		,									
N/A											
Environmen	tal/Geoarcha	elogical									
	Boring	Observat	ions								
0.0 – 2.0	2.1 – 4.0	4.1 – 6.0		- 8.0	8.1 – 12	2.0	12.1 – 1	6.0	16.1 – 2	0.0	>20
_1		<u> </u>	_1				l				
No											
		She	en Only		Floati	ng Pr	oduct = <6	"	Floating F	Produ	ict = >6"
	X										
 	D	-l 84-4:			1	٠ <u>۴ ا</u> ٠		II C		4-4	
_	wn, fine to	medium sa	nd; trac	e fine	Trace	concr	rete from	grad	e to 1.0	foot	bg, little
0.0 – 2.0			- 6.0	6.1							>12.1
х	Х										
N/D											
rounded gra	ivel, tree root	t and tree stu	ımp mat		•						
Siit, little fine		least 6.0 fee	t bg.	1	!!				T:-L+		
				intern	iediate				rignt		
6	^										
N/A											
Accutest Lab	ooratories, La	b Report ID J	A83923								
	4 (4.0 to 4.5 mistry analyse		collecte	ed for V	OC, SVO	C, TPI	H, PCB, pes	sticid	e, herbicid	e, m	etals and
<u> </u>											
N/A											
	0 ⁻² Feet/Day		1	0 ⁻² – 10	Feet/Da	у			>10 Feet/	Day	
	4.87R 40°37′52.76 Test pit loca in Staten Isla A Coca Cola Old Place Cola 140 feet sou 8/15/2011 The Napp-G Backhoe Loca N/A Environmen 0.0 – 2.0 No None O Grange brog gravel from 0.0 – 2.0 X N/D FILL from gr rounded grasilt, little fin 6 N/A Accutest Lala RCH1ENV6/	RCH-1-ARC-MT-3 4.87R 40°37′52.76"N / 74°11′05 Test pit located in the Min Staten Island, New Yor A Coca Cola Enterprises s Old Place Creek is located 140 feet southwest of we 8/15/2011 The Napp-Greco Compani Backhoe Loader N/A Environmental/Geoarcha Boring 0.0 – 2.0 2.1 – 4.0 No None Observed X Reworked Orange brown, fine to gravel from 1.0 to 1.5 feet on 1.	RCH-1-ARC-MT-3 4.87R 40°37′52.76″N / 74°11′05.32″W – Esti Test pit located in the M&R-058 lot, a in Staten Island, New York (no exact st A Coca Cola Enterprises subsurface was 140 feet southwest of wetlands. 8/15/2011 The Napp-Greco Company Backhoe Loader N/A Environmental/Geoarchaelogical Boring Observati 0.0 – 2.0 2.1 – 4.0 4.1 – 6.0 No Reworked Material Orange brown, fine to medium san gravel from 1.0 to 1.5 feet bg. 0.0 – 2.0 2.1 – 4.0 4.1 – 4.	4.87R 40°37′52.76″N / 74°11′05.32″W – Estimated (Test pit located in the M&R-058 lot, approxim in Staten Island, New York (no exact street add A Coca Cola Enterprises subsurface waterline Old Place Creek is located approximately 90°0 140 feet southwest of wetlands. 8/15/2011 The Napp-Greco Company Backhoe Loader N/A Environmental/Geoarchaelogical Boring Observations 0.0 - 2.0 2.1 - 4.0 4.1 - 6.0 6.1 - 4.1 - 6.0 No Reworked Material Orange brown, fine to medium sand; trac gravel from 1.0 to 1.5 feet bg. 0.0 - 2.0 2.1 - 4.0 4.1 - 6.0 X	RCH-1-ARC-MT-3 4.87R 40°37′52.76″N / 74°11′05.32″W – Estimated (survey of the state of the M&R-058 lot, approximately 1 in Staten Island, New York (no exact street address away A Coca Cola Enterprises subsurface waterline is located of the Normal Staten Island, New York (no exact street address away A Coca Cola Enterprises subsurface waterline is located of the State of State	RCH-1-ARC-MT-3 4.87R 40°37′52.76″N / 74°11′05.32″W — Estimated (survey data forth of the processite of the processite of the process of the	RCH-1-ARC-MT-3 4.87R 40°37′52.76″N / 74°11′05.32″W – Estimated (survey data forthcominately located in the M&R-058 lot, approximately 100 feet norther in Staten Island, New York (no exact street address available). A Coca Cola Enterprises subsurface waterline is located approximately 900 feet southwest of teach 140 feet southwest of wetlands. 8/15/2011 The Napp-Greco Company Backhoe Loader N/A Environmental/Geoarchaelogical Boring Observations 0.0 – 2.0 2.1 – 4.0 4.1 – 6.0 6.1 – 8.0 8.1 – 12.0 No No Reworked Material Orange brown, fine to medium sand; trace fine gravel from 1.0 to 1.5 feet bg. 0.0 – 2.0 2.1 – 4.0 4.1 – 6.0 6.1 – 8.0 8.1 X	RCH-1-ARC-MT-3 4.87R 40°37'52.76"N / 74°11'05.32"W – Estimated (survey data forthcoming) Test pit located in the M&R-058 lot, approximately 100 feet northeast of thein Staten Island, New York (no exact street address available). A Coca Cola Enterprises subsurface waterline is located approximately 80 feet Old Place Creek is located approximately 900 feet southwest of test pit. Test 140 feet southwest of wetlands. 8/15/2011 The Napp-Greco Company Backhoe Loader N/A Environmental/Geoarchaelogical Boring Observations 0.0 - 2.0 2.1 - 4.0 4.1 - 6.0 6.1 - 8.0 8.1 - 12.0 12.1 - 11.1 No Reworked Material Anthropogenica Orange brown, fine to medium sand; trace fine gravel from 1.0 to 1.5 feet bg. 0.0 - 2.0 2.1 - 4.0 4.1 - 6.0 6.1 - 8.0 8.1 - 10.0 X	## ACH-1-ARC-MT-3 4.87R 40°37′52.76″N / 74°11′05.32″W – Estimated (survey data forthcoming) Test pit located in the M&R-058 lot, approximately 100 feet northeast of the entrain Staten Island, New York (no exact street address available). A Coca Cola Enterprises subsurface waterline is located approximately 80 feet northolder for the entrain Staten Island, New York (no exact street address available). A Coca Cola Enterprises subsurface waterline is located approximately 80 feet northolder for the entrain Staten Island, New York (no exact street address available). A Coca Cola Enterprises subsurface waterline is located approximately 80 feet northolder for the entrain Staten Island, New York (no exact street address available). A Coca Cola Enterprises subsurface waterline is located approximately 80 feet northolder for the entrain Staten Island I	RCH-1-ARC-MT-3 4.87R 40°37′52.76″N / 74°11′05.32″W – Estimated (survey data forthcoming) Test pit located in the M&R-058 lot, approximately 100 feet northeast of the entrance on Wein Staten Island, New York (no exact street address available). A Coca Cola Enterprises subsurface waterline is located approximately 80 feet northwest of test pit. Test pit is located: 140 feet southwest of wetlands. 8/15/2011 The Napp-Greco Company Backhoe Loader N/A Environmental/Geoarchaelogical **Boring Observations** 0.0 – 2.0	RCH-1-ARC-MT-3 4.87R 40°37′52.76"N / 74°11′05.32"W – Estimated (survey data forthcoming) Test pit located in the M&R-058 lot, approximately 100 feet northeast of the entrance on Western in Staten Island, New York (no exact street address available). A Coca Cola Enterprises subsurface waterline is located approximately 80 feet northwest of test pit of feet southwest of wetlands. 8/15/2011 The Napp-Greco Company Backhoe Loader N/A Environmental/Geoarchaelogical **Boring Observations** 0.0 – 2.0 2.1 – 4.0 4.1 – 6.0 6.1 – 8.0 8.1 – 12.0 12.1 – 16.0 16.1 – 20.0 No **None Observed** **Sheen Only** **Floating Product = <6" Floating Product = <6" Floating Product Floating Product

TRC Boring Identification: RCH-1-HDD-1

		Boring	Infor	mati	ion							
Alternate Boring ID (if applicable)	B-2A(SI)											
Pipeline Mile Marker ID	4.76R											
Location (Latitude/Longitude) –	40° 37' 51.78	3" N / 74° 11	L' 5.64"	W - s	urveye	d						
estimated/surveyed												
Site Address	Goethals Ro	ad North ar	nd West	tern A	venue	in the	northea	ast corne	r of the	ast of the ir Texas East T nue in Stater	ransp	ortation
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)	A subsurface	water utilit	y line is	s locat	ted app	oroxima	ately 12	5 feet no	rthwest	of the boring	•	
Nearby Hydraulic Features (Distance and Direction from wetlands, piping, etc.)		eek is locate	d appro	oxima	tely 80	0 feet	south of	the bori	ng, beyo	ond Goethals	Road	North.
Drilling Date	10/15/2010											
Drilling Company	Warren Geo											
Drilling Method	Mud Rotary	– Tri-cone r	oller bit	t								
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A											
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Geotechnica	l (HDD entr	y point))								
		Boring (Obser	vati	ons							
Depth to saturation (feet bg) – Check	0.0 - 2.0	2.1 - 4.0	4.1 –	6.0	6.1 -	- 8.0	8.1 – 1	2.0 1	2.1 – 16	.0 16.1 – 2	0.0	>20
where applicable		Х										
- Product in Soil – Yes/No	No											
(odor/inches/viscosity, etc.)	INO											
 Product in GW – Check where applicable 	None Ob			Shee	n Only		Floati	ing Produ	ıct = <6"	' Floating	Produ	ict = >6"
HISTORIC FILL MATERIAL												
 Composition, other observations – 		Reworke	d Mate	rial			P	nthropo	genicall	y-Generated	Mate	rial
complete, as applicable		N	/A							N/A		
 Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only 	0.0 – 2.0	2.1 – 4.	0	4.1 -	6.0	6.1	- 8.0	8.1 – 1	10.0	10.1 – 12.0	;	>12.1
PID/Odors (depth)	N/D		<u> </u>			<u>l</u>						
Geology	moist to we coarse SANI	t brown fin D with som	e to m e silt a	nediun and tr	n SANI ace cla	with ay fron	trace si n 15.0 t	It to 12.0 to 17.0 f	0 feet b	to 4.0 feet bg og. Reddish-land 20.0 to cores collecte	orowr 22.0	fine to feet bg.
Soil Permeability		Loose					nediate			Tight	•	
Total Paring Donth (foot ha)	22.0						X					
Total Boring Depth (feet bg) GW Monitoring Well Installed	N/A											
(Depth, Screen, Riser, Slot Size, Casing)	IN/A											
Laboratory Name and Report No. (if	N/A											
samples collected) (e.g. "Accutest	'','											
Laboratories, Lab Report ID JA65410")												
Soil Samples Collected	N/A											
(Parameters, Analytical Results Summary)												
GW Samples Collected	N/A											
(Parameters, Analytical Results Summary)												
Additional Hydro/Geological Test –	<10	² Feet/Day			10) ⁻² – 10	Feet/D	ay		>10 Feet,	/Day	
Permeability Results (e.g. pump test/slug test/packer test)												
Additional Comments/Notes/	N/A			1					1			
Observations (if applicable)												

Boring Identification: RCH-2-ARC-4

		Boring	Informat	ion							
Alternate Boring ID (if applicable)	N/A										
Pipeline Mile Marker ID	4.68										
Location (Latitude/Longitude) –	40°37′58.10"	N / 74°11′00).29"W – Esti	nated (survey	data forth	ncoming)				
estimated/surveyed		•		•	•		O,				
Site Address	Boring is loca in Staten Isla						tersectior	n of 6 th Ave	enue and We	esterr	Avenue
Nearby Subsurface Features (Distance and	Boring is loca		•				0 feet sou	uthwest of	a subsurfac	e Pro	cter and
Direction from Utilities, Tanks, Properties, etc.)	Gamble utilit	y line.									
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	A small creek	is located a	pproximately	150 fee	et south	west of b	ooring. Bo	oring is loca	ited in wetla	ınds.	
Drilling Date	8/8/2011										
Drilling Company	Land Air Wat	er Environm	ental Service	<u> </u>							
Drilling Method	Hand Auger										
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A										
Boring Purpose (e.g. geotech/	Geoarcheolo	gical									
environmental/geoarchaelogical)	Geodreneoio	Picai									
		Boring	Observati	ons							
Depth to saturation (feet bg) – Check where	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1 -	- 8.0	8.1 – 1	2.0 1	2.1 – 16.0	16.1 – 2	0.0	>20
applicable	Х										
PRODUCT			•		•		•				
- Product in Soil – Yes/No (odor/inches/viscosity, etc.)	No										
- Product in GW – Check where	None Ob	served	She	en Only	,	Floati	ng Produ	ct = <6"	Floating F	rodu	ct = >6"
applicable	Х										
HISTORIC FILL MATERIAL			•					'			
- Composition, other observations –		Reworke	d Material				Anthropo	genically-0	Generated N	/later	ial
complete, as applicable		N	I/A			feet b fragme constr	ents from uction-gra	4.0 to 5.0 m 1.0 to ade wood p	grade to 1.0 feet bg, o 5.0 fee pieces from 2.0 feet bg.	trace t be	e cinder g, trace
- Depth (feet bg) – check more than one	0.0 - 2.0	2.1 – 4.	0 4.1 -	6.0	6.1	- 8.0	8.1 – 1	0.0 10	0.1 – 12.0	:	>12.1
depth, if applicable – applies to Anthropogenically-Generated Material only	Х	Х	>	Z							
PID/Odors (depth)	N/D					Į					
Geology	FILL from gra	de to at leas	t 5.0 feet bg	see abo	ove).						
Soil Permeability	1122110111810	Loose	10.0.000.000	,500 000		nediate			Tight		
•						X					
Total Boring Depth (feet bg)	Lithology rec	orded to 5.0	feet bg. arch	eologica	al borin	g advanc	ed to 20 f	eet.			
GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing)	N/A					8					
Laboratory Name and Report No. (if samples	N/A										
collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")											
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	N/A										
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A										
Additional Hydro/Geological Test –	<10	⁻² Feet/Day		1	0 ⁻² – 10	Feet/Da	у		>10 Feet/	Day	
Permeability Results (e.g. pump test/slug test/packer test)		· ·					-		•		
Additional Comments/Notes/ Observations (if applicable)	N/A		,								

Boring Identification: RCH-2-ENV-2

		Boring	Inform	ation								
Alternate Boring ID (if applicable)	N/A											
Pipeline Mile Marker ID	-	tely 17 feet so	outhwest	of 4 61								
Location (Latitude/Longitude) –		1455" N/74° 1			rveved							
estimated/surveyed	40 37 33.4		11 2.4010	VV Su	iveyeu							
Site Address	Boring is lo	cated approx	imately 1	10 feet so	outh of	a hridge	crossi	ng a sma	all cre	ek on We	stern	Avenue
Site Address	_	land, New Yo	-			_		116 0 31110	JII CI C	CK OII WC.	Jecini	Avenue
Nearby Subsurface Features (Distance and		ce water pipe						nuthwest	t of h	oring Bor	ing is	located
Direction from Utilities, Tanks, Properties,		c landfill and			, oxiiiia	icly 143	cct sc	Jacinwesi	. 01 5	oring. Don	6 13	locatea
etc.)	011 4 111010111		oupeu	. 0.00								
Nearby Hydraulic Features (Distance and	Old Place	Creek is loc	cated ani	roximate	elv 1.2	50 feet	south	west of	bori	ing. Borin	g is	located
Direction from wetlands, etc.)		ely 95 feet no								-	_	
Drilling Date	8/8/2011											
Drilling Company		ater Environn	nental Ser	vices								
Drilling Method		re / GeoProb										
Additional Hydro/Geological Tests (e.g.	N/A	, 000	20 (00 00									
pump test/slug test/packer test)	,											
Boring Purpose (e.g. geotech/	Environmer	ntal										
environmental/geoarchaelogical)												
76 6 7	.1	Boring (Observa	tions								
Depth to saturation (feet bg) – Check	0.0 - 2.0	2.1 – 4.0	4.1 – 6.		- 8.0	8.1 – 12	2.0	12.1 – 1	16.0	16.1 – 2	0.0	>20
where applicable	Х											
PRODUCT	.1			I	1		1			I		
- Product in Soil – Yes/No	No											
(odor/inches/viscosity, etc.)												
- Product in GW – Check where	None O	bserved	Sł	een Onl	V	Floatir	ng Pro	duct = <(6"	Floating P	rodu	ct = >6"
applicable	2	X			•							
HISTORIC FILL MATERIAL												
- Composition, other observations –		Reworke	d Materia	l		A	nthrop	ogenica	lly-G	enerated I	Mate	rial
complete, as applicable		N	/A						N/A	\		
- Depth (feet bg) – check more than	0.0 - 2.0	2.1 – 4.0	0 4.:	L – 6.0	6.1	- 8.0	8.1 -	- 10.0	10.	1 – 12.0	>	12.1
one depth, if applicable – applies to												
Anthropogenically-Generated												
Material only												
PID/Odors (depth)	ND. No odo	rs detected.										
Geology		n organic SILT		_								-
		bg, underla										
		ots from 2 to	_									
		bg, underlain										n 8.5 to
	10 feet bg,	underlain by	grayish-b	rown, me			ND; ar	nd silt to	at lea			
Soil Permeability		Loose			Intern	nediate				Tight		
	<u> </u>	Х										
Total Boring Depth (feet bg)	15											
GW Monitoring Well Installed	N/A											
(Depth, Screen, Riser, Slot Size, Casing)	<u> </u>											
Laboratory Name and Report No. (if	Accutest La	boratories, La	ab Report	IDs JA83	045, JA	83045svc	c, and	JA8304	5RT.			
samples collected) (e.g. "Accutest												
Laboratories, Lab Report ID JA65410")												
Soil Samples Collected - Sample ID(s),		(3.0 to 3.5 fe	0.				٠,				,	
Sample Depth(s) and Sampling	IPH, pestici	ide, herbicide	e, metals (ıncluding	g hexava	ilent chro	mium	i) and ge	neral	chemistry	anal	yses.
Parameter(s)												
GW Samples Collected - Sample ID(s) and	N/A											
Sampling Parameter(s)			ı		2							
		0 ⁻² Feet/Day		1	0 - 10	Feet/Da	У			>10 Feet/	Day	
Additional Hydro/Geological Test –	110	, ,						- 1				
Permeability Results (e.g. pump test/slug	\11									•		
Permeability Results (e.g. pump test/slug test/packer test)												
Permeability Results (e.g. pump test/slug	N/A											

Boring Identification: RCH-2-ENV-3W

		Boring	Informat	ion				
Alternate Boring ID (if applicable)	N/A							
Pipeline Mile Marker ID	4.64							
Location (Latitude/Longitude) – estimated/surveyed	40° 37' 56.8	433"N / 74°	11' 0.8853"\	W – Surveye	d			
Site Address					east of a bridg et address is av		a small creek o	n Western
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)	A subsurfac		eline is locat	ed approxim			f boring. Boring	is located
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)					400 feet sout and is in wetla		ooring. Boring	is located
Drilling Date	8/8/2011							
Drilling Company		ter Environn						
Drilling Method		re / GeoProb n Auger (wel						
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	Pump Test							
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environmer	ital						
<u> </u>		Boring (Observati	ons				
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1 – 8.0	8.1 – 12.0	12.1 – 16	0 16.1 – 20.0	>20
where applicable PRODUCT	Х	-				_		
- Product in Soil – Yes/No (odor/inches/viscosity, etc.)	No							
- Product in GW – Check where applicable	None O		Shee	en Only	Floating Pr	oduct = <6"	Floating Pro	duct = >6"
HISTORIC FILL MATERIAL			1		1		•	
 Composition, other observations – complete, as applicable 			d Material /A		Grayish-bro material/ro	own silt; oots, trac	y-Generated Ma and fibrous e fine san rom grade to 1.0	organic d, trace
- Depth (feet bg) – check more than	0.0 – 2.0	2.1 – 4.	0 4.1-	6.0 6.			10.1 – 12.0	>12.1
one depth, if applicable – applies to Anthropogenically-Generated Material only	X			0.0	2 0.0 0	100	1011 1210	
PID/Odors (depth)	Elevated PII to 17.5 feet		max = 100.1	ppm from 1	5 to 2.0 feet be	g). Organic-l	ke odor detecte	d from 1.0
Geology	FILL from g material/ro organic mat	rade to 1.0 ots, trace fir erial/roots, l feet bg, un	ne sand to dittle fine sar	4.0 feet bg, ad to 15 feet eddish-brov	underlain by obg, underlain by on, fine SAND;	dark gray SI by gray med	SILT; and fibro LT; some to tra ium to coarse Sa at least 20 fee	ice fibrous AND; trace
Soil Permeability		Loose X		Inte	rmediate		Tight	
Total Boring Depth (feet bg)	20		•			•		
GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing)	Grade to 13 Next Day M Total depth		No. 1 sand s: 88 feet bg	ameter 0.01	.0-slot PVC scre	en		
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")		boratories, L	•	s JA83047 a	nd JA83045.			
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)					/6 (6.0 to 6.5 fo al chemistry an		e collected for V	OC, SVOC,

GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	RCH-2-3W was collected for VOC	C, metals and general chemistry analy	ses.
Additional Hydro/Geological Test –	<10 ⁻² Feet/Day	10 ⁻² – 10 Feet/Day	>10 Feet/Day
Permeability Results (e.g. pump test/slug test/packer test)		X	
Additional Comments/Notes/	N/A		
Observations (if applicable)			

Boring Identification: RCH-4-ENV-19

		Boring Ir	nformat	ion						
Alternate Boring ID (if applicable)	N/A									
Pipeline Mile Marker ID	4.79R									
Location (Latitude/Longitude) –	40° 38' 0.975	0" N/74° 10'	54.0148" \	V - Surveye	d					
estimated/surveyed				·						
Site Address	Boring is local Avenue in Sta							a small creel	on \	Western
Nearby Subsurface Features (Distance and								approximatel	y 85 f	eet east
Direction from Utilities, Tanks, Properties, etc.)	of the boring.									
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	A wetland a northeast of		ds the bo	ring. An u	nnamed s	ream is	locate	d approximat	ely 2	250 feet
Drilling Date	04/11/2012	_								
Drilling Company	Land Air Wate	er Environme	ental Servio	es						
Drilling Method	Hand Auger/	2" Macrocor	e							
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A									
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environmenta	al								
	•	Boring O	bservati	ons						
Depth to saturation (feet bg) – Check	0.0 – 2.0		4.1 – 6.0	6.1 – 8.0	8.1 – 1	2.0 12	2.1 – 16	5.0 16.1 – 2	0.0	>20
where applicable			Х							
PRODUCT	1									
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No									
 Product in GW – Check where applicable 	None Obs	served	Shee	en Only	Floati	ng Produ	ict = <6	" Floating I	Produ	ct = >6"
HISTORIC FILL MATERIAL								L		
- Composition, other observations –		Reworked	Material		Δ.	nthropog	genical	ly-Generated	Mate	rial
complete, as applicable					coarse brick coarse	gravel, I to 2.0 ft sand an	ittle as t bg, u nd silt, s	sand and silt, phalt, wood, renderlain by lessome fine to cand glass to 6.	metal olack, coarse	and red fine to e gravel,
 Depth (feet bg) – check more than 	0.0 – 2.0	2.1 – 4.0	4.1 -	6.0 6	.1 – 8.0	8.1 – 1	0.0	10.1 – 12.0	^	>12.1
one depth, if applicable – applies to Anthropogenically-Generated Material only	Х	х	х							
PID/Odors (depth)	N/D	I		·			<u> </u>			
Geology	coarse grave	l, trace organ 0 ft bg, unde	nics from (rlain by lig	5.0 to 8.0 f ht brown to	bg, unde	rlain by b to coars	olack to	AND and SILT, o gray CLAY, t o, little clay fro	race	organics
Soil Permeability		Loose		Inte	rmediate X			Tight	:	
Total Boring Depth (feet bg)	20									
GW Monitoring Well Installed	N/A									
(Depth, Screen, Riser, Slot Size, Casing)										
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	Accutest Labo	oratories, Lab	Report ID	JB3917, JB	3774, JB42	78, and J	B4278T	- .		
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	SVOC, PCB, p RCH-4-ENV-1 chromium) a	esticide, TPH 9-WC was on nd general of , RCRA cha	I, metals (in collected of the collected	ncluding he for SVOC, analyses. F s, SVOC, F	exavalent of PCB, pest RCH-4-ENV	hromium icide, TP -19+20W	n) and g PH, me '+21-W	bg) were colle general chemi tals (includin C-COMP was tals (includin	stry a g hea colle	nalyses. xavalent cted for
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A									

Additional Hydro/Geological Test –	<10 ⁻² Feet/Day	10 ⁻² – 10 Feet/Day	>10 Feet/Day
Permeability Results (e.g. pump test/slug			
test/packer test)			
Additional Comments/Notes/	Borehole backfilled with grout an	d restored to natural grade.	
Observations (if applicable)			

Boring Identification: RCH-4-ENV-20W

		Boring	Informat	tion							
Alternate Boring ID (if applicable)	N/A										
Pipeline Mile Marker ID	4.82R										
Location (Latitude/Longitude) –		131" N/74° 10	0' 55.2658"	W - Surv	reved						
estimated/surveyed					-,						
Site Address	Boring is lo	cated appro	ximately 74	5 feet r	orthea	st of a brid	ge crossin	gas	small creek	on W	/estern
		Staten Island,						Ü			
Nearby Subsurface Features (Distance and		ments and						ated	approxima	ately 3	35 feet
Direction from Utilities, Tanks, Properties, etc.)	north of the									•	
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	A wetland a boring.	area surroun	ds the borir	ng. An ui	nname	d stream is l	ocated ap	prox	imately 125	5 feet	east of
Drilling Date	04/10/2012	2									
Drilling Company	Land Air Wa	ater Environr	nental Servi	ces							
Drilling Method		r/ 2" Macroco m auger (well)							
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A										
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environmer	ntal									
		Boring (Observat	ions							
Depth to saturation (feet bg) – Check	0.0 - 2.0	2.1 – 4.0	4.1 – 6.0	6.1 -	8.0	8.1 – 12.0	12.1 – 1	16.0	16.1 – 20	0.0	>20
where applicable	0.0 2.0		X						1 -0:1		
PRODUCT				_1			1		1		
- Product in Soil – Yes/No	No										
(odor/inches/viscosity, etc.)											
- Product in GW – Check where	None O	bserved	She	en Only		Floating P	roduct = <	6"	Floating P	roduc	t = >6"
applicable		X									
HISTORIC FILL MATERIAL			I								
- Composition, other observations –		Reworke	d Material			Anthr	opogenica	ally-G	Generated I	Materi	ial
complete, as applicable	to fine, subsilt to 1.0 medium to angular to cobbles fro brown, med	n, medium to p-angular to of the sand, of fine sand, sub-rounde om 2.0 to 6.9 dium to fine sand and gravel, tra	sub-rounded derlain by some med d gravel, I of ft bg, und sand, some	ed grave gray br dium to ittle silt lerlain b silt, little	el and rown, fine, and y red e fine,	_	ngular to	sub-	o fine sand angular gra		
- Depth (feet bg) – check more than	0.0 - 2.0	2.1 – 4.	0 4.1 -	- 6.0	6.1 -	- 8.0 8.	1 – 10.0	10	.1 – 12.0	>1	l 2.1
one depth, if applicable – applies to Anthropogenically-Generated Material only	х										
PID/Odors (depth)	N/D										
Geology	ft bg, under	pove) to 9.0 f rlain by gray m 10 to 15 ft st 20 ft bg.	brown to b	rown, m ain by br	edium own to	to fine SANI gray brown), little cla	y, tra	ace fine, ro	unded	gravel
Soil Permeability		Loose				ediate <			Tight		
Total Boring Depth (feet bg)	20				/	``					
GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing)	0.25 to 14.7	76 ft. below s of well = 14.					reen				
		boratories, L					B3774, JB4	1278,	, and JB427	8T.	
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s),		-20W/2 (2.0									

	Dorning Summary	10010	
	_	neral chemistry analyses. RCH-4-RA characteristics, SVOC, PCB, po	
	, ,	<u> </u>	
GW Samples Collected - Sample ID(s) and	RCH-4-ENV-20W was collected fo	r VOCs, metals, PCBs, NYCDEP Sew	er Use Discharge Parameters, and
Sampling Parameter(s)	SPDES analyses.		
Additional Hydro/Geological Test –	<10 ⁻² Feet/Day	10 ⁻² – 10 Feet/Day	>10 Feet/Day
Permeability Results (e.g. pump test/slug			
test/packer test)			
Additional Comments/Notes/	Borehole backfilled with grout an	d restored to natural grade.	
Observations (if applicable)		•	

Boring Identification: RCH-4-ENV-22

where applicable X PRODUCT - Product in Soil – Yes/No (odor/inches/viscosity, etc.) No	nately 130 feet
Pipeline Mile Marker ID	nately 130 feet
Location (Latitude/Longitude) — estimated/surveyed Site Address Boring is located approximately 955 feet northeast of a bridge crossing a small crawled in Staten Island, New York (no exact street address is available). Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.) Nearby Hydraulic Features (Distance and Direction from wetlands, etc.) Nearby Hydraulic Features (Distance and Direction from wetlands, etc.) Prilling Date O4/06/2012 Drilling Company Land Air Water Environmental Services Hand Auger/ 2" Macrocore N/A Depth to saturation (feet bg) – Check where applicable PRODUCT Product in Soil – Yes/No (odor/inches/viscosity, etc.) Product in GW – Check where applicable None Observed Site Address Boring Vox 10' 54.3629" W - Surveyed Boring approximately 955 feet northeast of a bridge crossing a small crawled and small crawled approximately 955 feet northeast of a bridge crossing a small crawled approximately 955 feet northeast of a bridge crossing a small crawled approximately 955 feet northeast of a bridge crossing a small crawled approximately 955 feet northeast of a bridge crossing a small crawled approximately 955 feet northeast of a bridge crossing a small crawled approximately 955 feet northeast of the boring of a bridge crossing a small crawled approximately 955 feet northeast of the boring of a bridge crossing a small crawled approximately 955 feet northeast of the boring of a bridge crossing a small crawled approximately 955 feet northeast of the boring of a bridge crossing a small crawled approximately 955 feet northeast of the boring or proctor and Gamble are located approximately 955 feet northeast of the boring. It is a very substance and other pipelines for Proctor and Gamble are located approximately 955 feet northeast of the boring. It is a very substance and substance and northeast of the boring. A wetland area surrounds	nately 130 feet
Site Address Boring is located approximately 955 feet northeast of a bridge crossing a small on Avenue in Staten Island, New York (no exact street address is available). Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.) Nearby Hydraulic Features (Distance and Direction from wetlands, etc.) Nearby Hydraulic Features (Distance and Direction from wetlands, etc.) Drilling Date O4/06/2012 Drilling Method Additional Hydro/Geological Tests (e.g., pump test/slug test/packer test) Boring Purpose (e.g. geotech/environmental/geoarchaelogical) Environmental/geoarchaelogical Depth to saturation (feet bg) – Check where applicable PRODUCT Product in Soil – Yes/No (odor/inches/viscosity, etc.) None Observed Subsurface Approximately 955 feet northeast of a bridge crossing a small on Avenue in Staten Island, New York (no exact street address is available). Utility easements and other pipelines for Proctor and Gamble are located approximation on the saturation of the boring. A wetland area surrounds the boring. An unnamed stream is located approximation on the stream is located approximation. A wetland area surrounds the boring. An unnamed stream is located approximation. A wetland area surrounds the boring. An unnamed stream is located approximation. A wetland area surrounds the boring. An unnamed stream is located approximation. A wetland area surrounds the boring. An unnamed stream is located approximation. A wetland area surrounds the boring. A wetland area surrounds the boring. An unnamed stream is located approximation. A wetland area surrounds the boring. A wetland area surrounds the	nately 130 feet
Boring is located approximately 955 feet northeast of a bridge crossing a small or Avenue in Staten Island, New York (no exact street address is available). Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.) Nearby Hydraulic Features (Distance and Direction from wetlands, etc.) Nearby Hydraulic Features (Distance and Direction from wetlands, etc.) Prilling Date O4/06/2012 Drilling Method Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test) Boring Purpose (e.g. geotech/environmental/geoarchaelogical) Depth to saturation (feet bg) – Check where applicable PRODUCT Product in Soil – Yes/No (odor/inches/viscosity, etc.) Product in GW – Check where applicable Name and other pipelines for Proctor and Gamble are located approximately of the boring. Avenue in Staten Island, New York (no exact street address is available). Utility easements and other pipelines for Proctor and Gamble are located approximately approximately approximately approximately approximately and other pipelines for Proctor and Gamble are located approximately approxima	nately 130 feet
Avenue in Staten Island, New York (no exact street address is available). Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.) Nearby Hydraulic Features (Distance and Direction from wetlands, etc.) Nearby Hydraulic Features (Distance and Direction from wetlands, etc.) Drilling Date O4/06/2012 Drilling Company Land Air Water Environmental Services Drilling Method Hand Auger/ 2" Macrocore Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test) Boring Purpose (e.g. geotech/environmental/geoarchaelogical) Environmental/geoarchaelogical) Bering Observations Boring Observations Depth to saturation (feet bg) – Check where applicable Product in Soil – Yes/No (odor/inches/viscosity, etc.) Product in GW – Check where applicable X leating New York (no exact street address is available). Utility easements and other pipelines for Proctor and Gamble are located approxing northeast proving applicable of Proctor and Gamble are located approxing northeast proving applicable of Proctor and Gamble are located approxing northeast proving applicable of A wetland other pipelines for Proctor and Gamble are located approxing northeas approxing northeas approxing northeas surrounds the boring. An unnamed stream is located approxing southeast approxing surrounds the boring. An unnamed stream is located approxing southeast approxing surrounds the boring. An unnamed stream is located approxing southeast approxing surrounds the boring. An unnamed stream is located approxing southeast approxing surrounds the boring. An unnamed stream is located approxing surrounds the boring. An unnamed stream is located approxing southeast approxing surrounds the boring. An unnamed stream is located approxing surrounds the boring. An unnamed stream is located approxing southeast approxing surrounds the boring. An unnamed stream is located approxing southeast approxing surrounds the boring. An unnamed stream is located approxing surrounds the boring. An unnamed stream is located appr	nately 130 feet
Direction from Utilities, Tanks, Properties, etc.) Nearby Hydraulic Features (Distance and Direction from wetlands, etc.) A wetland area surrounds the boring. An unnamed stream is located approxing southwest of boring. Drilling Date O4/06/2012 Drilling Company Land Air Water Environmental Services Drilling Method Additional Hydro/Geological Tests (e.g., pump test/slug test/packer test) Boring Purpose (e.g. geotech/environmental/geoarchaelogical) Environmental/geoarchaelogical) Depth to saturation (feet bg) – Check where applicable PRODUCT Product in Soil – Yes/No (odor/inches/viscosity, etc.) Product in GW – Check where applicable None Observed Sheen Only Floating Product = <6" Floating	nately 260 feet
Direction from Utilities, Tanks, Properties, etc.) Nearby Hydraulic Features (Distance and Direction from wetlands, etc.) Drilling Date O4/06/2012 Drilling Method Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test) Boring Purpose (e.g. geotech/environmental/geoarchaelogical) Depth to saturation (feet bg) – Check where applicable Product in Soil – Yes/No (odor/inches/viscosity, etc.) Product in GW – Check where applicable Na wetland area surrounds the boring. An unnamed stream is located approxim southwest of boring. A wetland area surrounds the boring. An unnamed stream is located approxim southwest of boring. A wetland area surrounds the boring. An unnamed stream is located approxim southwest of boring. A wetland area surrounds the boring. An unnamed stream is located approxim southwest of boring. A wetland area surrounds the boring. An unnamed stream is located approxim southwest of boring. A wetland area surrounds the boring. An unnamed stream is located approxim southwest of boring. A wetland area surrounds the boring. An unnamed stream is located approxim southwest of boring. A wetland area surrounds the boring. An unnamed stream is located approxim southwest of boring. A wetland area surrounds the boring. An unnamed stream is located approxim southwest of boring. A wetland area surrounds the boring. An unnamed stream is located approxim southwest of boring. A wetland area surrounds the boring. An unnamed stream is located approxim southwest of boring. A wetland area surrounds the boring. An unnamed stream is located approxim southwest of boring. By a location and stream is located approxim southwest of boring. Brilling Carlon Services Boring Observations N/A 1-1-0.0 6.1-8.0 8.1-12.0 12.1-16.0 16.1 No 1-8-1-8-1-8-1-8-1-8-1-8-1-8-1-8-1-8-1-8	
Direction from wetlands, etc.) Drilling Date O4/06/2012 Land Air Water Environmental Services Drilling Method Hand Auger/ 2" Macrocore Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test) Boring Purpose (e.g. geotech/environmental/geoarchaelogical) Environmental/geoarchaelogical) Bering Observations Depth to saturation (feet bg) – Check where applicable PRODUCT Product in Soil – Yes/No (odor/inches/viscosity, etc.) None Observed Southwest of boring. Water Environmental Services N/A Environmental Environmental Environmental Southwest environmental Services N/A Service Southwest environmental Services Southwest environmental Services Service Southwest environmental Services Ser	
Drilling Date Drilling Company Land Air Water Environmental Services Hand Auger/ 2" Macrocore Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test) Boring Purpose (e.g. geotech/environmental/geoarchaelogical) Environmental Boring Observations Boring Observations Boring Observations PRODUCT Product in Soil – Yes/No (odor/inches/viscosity, etc.) Product in GW – Check where applicable X None Observed None Observed Sheen Only Floating Product = <6"	· 20.0 >20
Drilling Company Land Air Water Environmental Services Drilling Method Hand Auger/ 2" Macrocore Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test) N/A Boring Purpose (e.g. geotech/environmental/geoarchaelogical) Environmental/seoarchaelogical) Boring Observations Depth to saturation (feet bg) – Check where applicable 0.0 – 2.0 2.1 – 4.0 4.1 – 6.0 6.1 – 8.0 8.1 – 12.0 12.1 – 16.0 16.1 PRODUCT - Product in Soil – Yes/No (odor/inches/viscosity, etc.) No No Floating Product = <6" Floating applicable Floating Product = <6" Floating Pr	· 20.0 >20
Drilling Method Hand Auger/ 2" Macrocore Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test) N/A Boring Purpose (e.g. geotech/ environmental/geoarchaelogical) Environmental Boring Observations Depth to saturation (feet bg) – Check where applicable 0.0 – 2.0 2.1 – 4.0 4.1 – 6.0 6.1 – 8.0 8.1 – 12.0 12.1 – 16.0 16.1 PRODUCT - Product in Soil – Yes/No (odor/inches/viscosity, etc.) No - Product in GW – Check where applicable None Observed Sheen Only Floating Product = <6" Floa	· 20.0 >20
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test) Boring Purpose (e.g. geotech/environmental/geoarchaelogical) Boring Observations Boring Observations Depth to saturation (feet bg) – Check where applicable PRODUCT - Product in Soil – Yes/No (odor/inches/viscosity, etc.) - Product in GW – Check where applicable X None Observed None Observed Sheen Only Floating Product = <6" Flo	· 20.0 >20
pump test/slug test/packer test) Boring Purpose (e.g. geotech/ environmental/geoarchaelogical) Boring Observations Boring Observations Depth to saturation (feet bg) – Check where applicable PRODUCT - Product in Soil – Yes/No (odor/inches/viscosity, etc.) - Product in GW – Check where applicable None Observed None Observed Sheen Only Floating Product = <6" Floating Product = <6	- 20.0 >20
Boring Purpose (e.g. geotech/environmental/geoarchaelogical) Boring Observations Boring Observations Depth to saturation (feet bg) - Check where applicable PRODUCT Product in Soil - Yes/No (odor/inches/viscosity, etc.) Product in GW - Check where applicable None Observed None Observed Sheen Only Floating Product = <6" Floating Produ	-20.0 >20
Depth to saturation (feet bg) - Check where applicable None Observed applicable None Observed X Sheen Only Floating Product = <6" F	- 20.0 >20
Depth to saturation (feet bg) - Check where applicable 0.0 - 2.0 2.1 - 4.0 4.1 - 6.0 6.1 - 8.0 8.1 - 12.0 12.1 - 16.0 16.1 PRODUCT - Product in Soil - Yes/No (odor/inches/viscosity, etc.) No No Floating Product = <6"	- 20.0 >20
where applicable X	
PRODUCT - Product in Soil – Yes/No (odor/inches/viscosity, etc.) - Product in GW – Check where applicable X Sheen Only Floating Product = <6" Floating Produc	1
(odor/inches/viscosity, etc.) - Product in GW – Check where applicable X None Observed X Floating Product = <6" Floating Product = <6	
- Product in GW – Check where applicable None Observed Sheen Only Floating Product = <6"	
applicable X	
	g Product = >6"
HISTORIC FILL MATERIAL	
- Composition, other observations – Reworked Material Anthropogenically-Generate	d Material
complete, as applicable Red brown, fine to coarse sand, or brick, some fine to coarse grave underlain by gray brown, fine to brick, concrete, wood and glass	el to 4.0 ft bg, coarse sand, red
coarse gravel from 4.0 to 8.0 ft by	
- Depth (feet bg) - check more than 0.0 - 2.0 2.1 - 4.0 4.1 - 6.0 6.1 - 8.0 8.1 - 10.0 10.1 - 12.0	
one depth, if applicable – applies to Anthropogenically-Generated X X X X X	72272
Material only PID/Odors (depth) N/D	
Geology FILL (see above) to 8.0 ft bg, underlain by brown gray, fine to coarse SAND from underlain by brown gray, fine to coarse SAND, some clay from 10 to 19 ft bg, underlated to coarse SAND, some clay, trace vegetation from 19 to 20 ft bg, underlain by recoarse SAND and GRAVEL from 20 to 24 ft bg, underlain by red brown, fine SAND from 25 ft bg.	ain by gray, fine brown, fine to
	ht
X X	
Total Boring Depth (feet bg) 25	
GW Monitoring Well Installed (Near the General River State General)	
(Depth, Screen, Riser, Slot Size, Casing) Leberatory Name and Banast No. (if Assutant Laboratories, Lab Banast ID ID3653 ID3653B ID3774 and ID3800	
Laboratory Name and Report No. (if Accutest Laboratories, Lab Report ID JB3652, JB3652R, JB3774, and JB3809. samples collected) (e.g. "Accutest Laboratories, Lab Report ID JB3652, JB3652R, JB3774, and JB3809.	
Laboratories, Lab Report ID JA65410") Scil Complex Collected Complex ID(a) PCU 4 ENV 23/2 (2.0 to 2.5 feet he) and PCU 4 ENV 23/6 (6.0 to 6.5 feet he) was seen	
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling RCH-4-ENV-22/3 (3.0 to 3.5 feet bg) and RCH-4-ENV-22/6 (6.0 to 6.5 feet bg) were consumpted by the sample Depth(s) and Sampling RCH-4-ENV-22/3 (3.0 to 3.5 feet bg) and RCH-4-ENV-22/6 (6.0 to 6.5 feet bg) were consumpted by the sample Depth(s) and Sampling SVOC, PCB, pesticide, TPH, metals (including hexavalent chromium) and general chemical states are consumpted by the sample Depth(s) and Sampling by the sample Depth(s) and	
Sample Depth(s) and Sampling SVOC, PCB, pesticide, TPH, metals (including hexavalent chromium) and general che Parameter(s) RCH-4-ENV-22-WC, RCH-4-ENV-22-WC/2 (2.0 to 2.5 ft bg), RCH-4-ENV-22-WC/4 (4	
RCH-4-ENV-22-WC/4 (4 RCH-4-ENV-22-WC/2 (2.0 to 2.5 it bg), RCH-4-ENV-22-WC/4 (4 RCH-4-ENV-22-WC/4 (6.0 to 6.5 ft bg), and RCH-4-ENV-22-WC/8 (8.0 to 8.5 ft bg) with the second se	
TPH and general chemistry analyses. RCH-4-ENV-22+23+24 COMP was collected for '	OC TCLP, SVOC
	ac, ii ii. iiicidis
TCLP, pesticide/herbicide TCLP, metals TCLP, RCRA characteristics, SVOC, PCB, pestic (including hexavalent chromium) and general chemistry analyses.	, , ,

Sampling Parameter(s)			
Additional Hydro/Geological Test –	<10 ⁻² Feet/Day	10 ⁻² – 10 Feet/Day	>10 Feet/Day
Permeability Results (e.g. pump test/slug		-	-
test/packer test)			
Additional Comments/Notes/	Borehole backfilled with grout an	d restored to natural grade.	
Observations (if applicable)			

Boring Identification: RCH-4-ENV-23

		Boring	Informati	on								
Alternate Boring ID (if applicable)	N/A											
Pipeline Mile Marker ID	4.86R											
Location (Latitude/Longitude) –	40° 38' 5.725	2" N/74° 10)' 54 3316" \	V - Sur	veved							
estimated/surveyed	40 30 3.723	2 11/74 10) 54.5510 V	v Jul	vcycu							
Site Address	Boring is loca	ated approx	imately 1.12	25 feet	north	east of a	bridge c	rossing	small cree	k on \		
	Avenue in Sta						_	_				
Nearby Subsurface Features (Distance and	Utility easem								d approxim	ately	70 feet	
Direction from Utilities, Tanks, Properties,	south of the									,		
etc.)		· ·										
Nearby Hydraulic Features (Distance and	A wetland are	ea is located	d approxima	tely 14	0 feet	south of	oring.					
Direction from wetlands, etc.)												
Drilling Date	04/06/2012											
Drilling Company	Land Air Wat	er Environn	nental Servic	es								
Drilling Method	Hand Auger/	2" Macroco	ore									
Additional Hydro/Geological Tests (e.g.	N/A											
pump test/slug test/packer test)												
Boring Purpose (e.g. geotech/	Environment	al										
environmental/geoarchaelogical)												
		Boring (Observati	ons								
Depth to saturation (feet bg) – Check	0.0 - 2.0	2.1 – 4.0	4.1 – 6.0	6.1 -	-8.0	8.1 – 1	2.0 12	2.1 – 16.0	16.1 – 2	0.0	>20	
where applicable		Х									-	
PRODUCT												
- Product in Soil – Yes/No	No										-	
(odor/inches/viscosity, etc.)												
- Product in GW – Check where	None Obs	served	Shee	n Only	,	Floatii	ng Produ	ct = <6"	Floating	Produ	ct = >6"	
applicable	Х										-	
HISTORIC FILL MATERIAL			•			•						
- Composition, other observations –		Reworked	d Material			Α	nthropog	genically	-Generated	Mate	rial	
						gravel, 1.0 ft brown sub-and and co underl sand, rounder	little sil bg, und medium gular to oncrete, ain by o trace med grave	it, roots, erlain by n to fine sub-rou little sil- orange nedium l, some	angular to sub-rounded, concrete and rip-rap to y dark brown to orange sand, little coarse to fine unded gravel, some brickly from 1.0 to 3.0 ft bg. brown, medium to fine to fine, sub-angular to brick and concrete, little			
			_		ı _			8.0 ft bg				
- Depth (feet bg) – check more than	0.0 – 2.0	2.1 – 4.0	0 4.1 -	6.0	6.1	-8.0	8.1 – 1	0.0 1	0.1 – 12.0	>	12.1	
one depth, if applicable – applies to Anthropogenically-Generated Material only	Х	х	х			Х						
PID/Odors (depth)	N/D	1						I				
Geology	FILL (see abo and silt from rounded grav	8.0 to 15 f	t bg, underla	ain by o	orange			,			•	
Soil Permeability		Loose			Interr	nediate			Tight			
						X						
Total Boring Depth (feet bg)	20											
GW Monitoring Well Installed	N/A											
(Depth, Screen, Riser, Slot Size, Casing)												
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	Accutest Labo	oratories, La	ab Report ID	JB365	2, JB36	52R, JB3	774, and	JB3809.				
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	RCH-4-ENV-2 SVOC, PCB, p RCH-4-ENV-2 RCH-4-ENV-2	esticide, TF 3-WC, RCH	PH, metals (i -4-ENV-23-V	ncludir VC/2 (2	ng hexa 2.0 to	avalent cl 2.5 ft bg	nromium), RCH-4) and ge -ENV-23	neral chemi -WC/4 (4.0	stry a to 4.5	nalyses. 5 ft bg),	

	Doining Samman	,	
	TCLP, pesticide/herbicide TCLP,	yses. RCH-4-ENV-22+23+24 COMP w metals TCLP, RCRA characteristics, S') and general chemistry analyses.	
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A		
Additional Hydro/Geological Test – Permeability Results (e.g. pump test/slug test/packer test)	<10 ⁻² Feet/Day	10 ⁻² – 10 Feet/Day	>10 Feet/Day
Additional Comments/Notes/ Observations (if applicable)	Borehole backfilled with grout a	nd restored to natural grade.	

Boring Identification: RCH-4-ENV-24

		Boring I	nforma	ition							
Alternate Boring ID (if applicable)	N/A										
Pipeline Mile Marker ID	4.90R										
Location (Latitude/Longitude) –	40° 38' 7.835	4" N/74° 10'	52.9354	' W - Sur	veyed						
estimated/surveyed		,0			,						
Site Address	Boring is loca Avenue in Sta								a small cree	k on '	Westerr
Nearby Cubayyface Features /Distance and									d annravima	+ 0 1 1 1	205 foo
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)	north of the l		ner pipe	ines for	Procto	r and Ga	amble ar	e locate	a approxima	itely .	205 166
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	A wetland are	ea is located	approxir	nately 32	0 feet s	outh of	boring.				
Drilling Date	04/10/2012										
Drilling Company	Land Air Wat	er Environm	ental Ser	/ices							
Drilling Method	Hand Auger/	2" Macrocoi	e								
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A										
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environment	al									
	•	Boring O	bserva	tions							
Depth to saturation (feet bg) – Check where applicable	0.0 – 2.0	2.1 – 4.0 X	4.1 – 6.0	6.1	- 8.0	8.1 – 1	2.0 1	2.1 – 16.	0 16.1 – 2	20.0	>20
PRODUCT	1	^							1		
- Product in Soil – Yes/No (odor/inches/viscosity, etc.)	No										
- Product in GW – Check where	None Obs	served	Sh	een Only	/	Floati	ng Produ	ıct = <6"	Floating	Produ	ict = >6
applicable HISTORIC FILL MATERIAL	X										
- Composition, other observations –		Reworked	Materia			Δ	nthrono	genically	-Generated	Mate	rial
complete, as applicable		neworked	Widteria			Brown	, coarse	to fine	sand, little c		
- Depth (feet bg) – check more than	0.0 – 2.0	2.1 – 4.0	4.1	- 6.0	6.1	gravel, trace coal to 1.0 ft bg. - 8.0					
one depth, if applicable – applies to Anthropogenically-Generated	Х										
Material only											
PID/Odors (depth)	N/D										
Geology	FILL (see abo										
	from 1.0 to 4	-							clay from 4	.0 to 8	3.0 ft bg
A 11 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	underlain by		to coarse	SAND fr			st 20 ft b	og.			
Soil Permeability		Loose				nediate			Tight		
Total Barina Barth (fact ha)	20					X					
Total Boring Depth (feet bg)	20										
GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing)	N/A										
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	Accutest Labo	oratories, La	b Report	ID JB377	4 and J	B3809.					
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	RCH-4-ENV-2 SVOC, PCB, p RCH-4-ENV-2 RCH-4-ENV-2	esticide, TPI 4-WC, RCH-	H, metals 4-ENV-24	(includi -WC/2 (ng hexa 2.0 to	valent c 2.5 ft ba	hromiumg), RCH-4	n) and ge 4-ENV-24	eneral chemi -WC/4 (4.0	stry a to 4.	analyse: 5 ft bg
	TPH and general TCLP, pesticion (including her	eral chemist de/herbicide	ry analys TCLP, m	es. RCH- etals TCL	4-ENV-2 .P, RCR/	22+23+2 A charac	4 COMP teristics,	was colle	ected for VC	C TCL	P, SVO
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A										
Additional Hydro/Geological Test –	<10 ⁻²	Feet/Day		1	0 ⁻² – 10	Feet/Da	ıy		>10 Feet	/Day	
Permeability Results (e.g. pump test/slug test/packer test)		-									

Bornig Summary Table									
Additional Comments/Notes/	Borehole backfilled with grout and restored to natural grade.								
Observations (if applicable)									

Boring Identification: RCH-4-ENV-25W

		Boring In	format	ion							
Alternate Boring ID (if applicable)	N/A										
Pipeline Mile Marker ID	4.94R										
Location (Latitude/Longitude) – estimated/surveyed	40° 38' 10.74	21" N/74° 10	' 51.5726"	W – Su	ırveyed	d					
Site Address	Boring is loca Richmond Te									Aver	nue and
Nearby Subsurface Features (Distance and	Utility easem									lv 5 fe	eet east
Direction from Utilities, Tanks, Properties, etc.)	of the boring									.,	
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	A wetland are	ea is located a	approxima	tely 71	5 feet r	northeas	t of the	boring.			
Drilling Date	04/09/2012 t	o 04/10/2012	2								
Drilling Company	Land Air Wat	er Environme	ntal Servio	es							
Drilling Method	Hand Auger (soil)/Hollow S	Stem Auge	r (well	installa	ation)					
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A										
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environment	al									
		Boring Ol	oservati	ons							
Depth to saturation (feet bg) – Check where applicable	0.0 – 2.0	2.1 – 4.0 X	4.1 – 6.0	6.1 -	- 8.0	8.1 – 1	2.0 1	12.1 – 16.0	16.1 – 2	0.0	>20
PRODUCT	1	۸									
- Product in Soil – Yes/No	No										
(odor/inches/viscosity, etc.)	140										
- Product in GW – Check where applicable	None Obs	served	Shee	n Only	'	Floati	ng Prod	uct = <6"	Floating I	Produ	ct = >6"
HISTORIC FILL MATERIAL	^					1					
- Composition, other observations –		Reworked I	Material			Δ	nthrono	ngenically	-Generated	Mate	
complete, as applicable		Reworked	viacciiai			<u> </u>	псторс	удетнейну	Generatea	- Iviate	101
- Depth (feet bg) – check more than	0.0 – 2.0	2.1 – 4.0	4.1 -	6.0	6.1	- 8.0	8.1 -	10.0 1	0.1 – 12.0	>	12.1
one depth, if applicable – applies to Anthropogenically-Generated											
Material only	N/D										
PID/Odors (depth) Geology	N/D Brown SILT a	and fine to se	NAMES CANI) :++ o	fine to		aroual	+raca ara	onics (roots	\ +o 1	0 ft ha
Geology	underlain by underlain by coarse SAND	brownish gray/brown,	ay, fine to fine to co	coarse arse S <i>A</i>	e SAND	, little fi	ne to co	oarse grav	vel from 1.0	to 6.	0 ft bg,
Soil Permeability		Loose			Intern	nediate			Tight		
						Χ					
Total Boring Depth (feet bg)	20										
GW Monitoring Well Installed	0.50 to 15.50										
(Depth, Screen, Riser, Slot Size, Casing)	Total Depth o										
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	Accutest Labo	oratories, Lab	Report ID	JA350	6, JB38	20, JB37	44, JB37	'44T and J	B3744R.		
Soil Samples Collected - Sample ID(s),	RCH-4-ENV-2	5W/2 (2.0 to	2.5 feet b	g) and	RCH-4	-ENV-25	W/7 (7.0	0 to 7.5 fe	eet bg) were	colle	cted for
Sample Depth(s) and Sampling	voc, svoc,	PCB, pesticio	le, TPH, n	netals	(includi	ing hexa	valent	chromium	n) and gene	ral ch	emistry
Parameter(s)	analyses. RCF ENV-25W-W(C/2 (2.0 to 2	.5 ft bg), I	RCH-4-I	ENV-25	W-WC/4	(4.0 to	4.5 ft bg	g), RCH-4-EN	IV-25V	N-WC/6
	(6.0 to 6.5 ft chemistry a pesticide/her	nalyses. RCI bicide TCLP,	H-4-ENV-2 metals T	5W+26 CLP, R	COM CRA cl	IP was haracteri	collecte stics, S	ed for \	OC TCLP,	SVOC	TCLP,
GW Samples Collected - Sample ID(s) and	(including hear							analyses.			
Sampling Parameter(s)	.40-2	Foot/Day	1		n ⁻² 40	Feet/Da			\40 F	/D	
Additional Hydro/Geological Test – Permeability Results (e.g. pump test/slug	<10	Feet/Day		10	J - 10	reet/Da	y		>10 Feet,	vay	

test/packer test)			
Additional Comments/Notes/	Borehole backfilled with grout an	d restored to grade.	
Observations (if applicable)			

Boring Identification: RCH-4-ENV-26

		Boring	Informat	ion								
Alternate Boring ID (if applicable)	N/A											
Pipeline Mile Marker ID	4.97R											
Location (Latitude/Longitude) –	40° 38' 11.83	31" N/74° 1	10' 50.8903"	W - Sur	veved							
estimated/surveyed		- ,			-,							
Site Address	Boring is loc	ated appro	ximately 1,5	90 feet	south	west of	the inte	ersection	of Western	Aver	nue and	
	Richmond Te											
Nearby Subsurface Features (Distance and	Utility easem									tely 1	.95 feet	
Direction from Utilities, Tanks, Properties,	southeast of	the boring.								•		
etc.)												
Nearby Hydraulic Features (Distance and	A wetland ar	ea is located	d approxima	tely 600) feet n	ortheast	of the b	oring.				
Direction from wetlands, etc.)												
Drilling Date	04/9/2012											
Drilling Company	Land Air Wat			es								
Drilling Method	Hand Auger/	2" Macroco	ore									
Additional Hydro/Geological Tests (e.g.	N/A											
pump test/slug test/packer test)												
Boring Purpose (e.g. geotech/	Environment	al										
environmental/geoarchaelogical)												
		Boring (Observati	ons								
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1 -	8.0	8.1 – 12	.0 12	2.1 – 16.0	16.1 – 2	0.0	>20	
where applicable		Χ										
PRODUCT												
 Product in Soil – Yes/No 	No											
(odor/inches/viscosity, etc.)			_						,			
 Product in GW – Check where 	None Ob	served	Shee	n Only		Floating	g Produ	ct = <6"	Floating F	rodu	ct = >6"	
applicable	Х											
HISTORIC FILL MATERIAL						ı						
 Composition, other observations – complete, as applicable 	Gray brown,		d Material						Generated fine sand, s			
	rounded grav	ver and site i	10111 4.0 to 1	o it bg.		concret ft bg, u medium	e, brick nderlair n sand, rounde	, road ban by brow little fine d gravel	se gravel an vn to dark b to medium	ravel, trace silt, and glass to 2.0 brown, fine to im, sub-angular crete, trace silt		
- Depth (feet bg) – check more than	0.0 – 2.0	2.1 – 4.0	0 4.1 -	6.0	61-	- 8.0	8.1 – 1		0.1 – 12.0	>	12.1	
one depth, if applicable – applies to	0.0 2.0	2.1	4.1	0.0		0.0	0.1 1	.0.0	0.1 12.0			
Anthropogenically-Generated	х	Х										
Material only												
PID/Odors (depth)	N/D											
Geology	FILL (see abo rounded grav least 20 ft bg	el from 10										
Soil Permeability		Loose			Interm	ediate			Tight			
-						X						
Tatal Davids - Davids /f - + 1 - \	20		•									
Total Boring Depth (feet bg)	20				_		_		-			
Total Boring Depth (feet bg) GW Monitoring Well Installed	N/A											
GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if		oratories, L	ab Report ID	JB3744	and JE	33744R.						
GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest	N/A	oratories, L	ab Report ID	JB3744	and JE	33744R.						
GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	N/A Accutest Lab											
GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s),	N/A Accutest Lab RCH-4-ENV-2	16/1 (1.0 to	1.5 feet bg)	and RCI	H-4-EN	V-26/6 (6		_	•			
GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling	N/A Accutest Lab RCH-4-ENV-2 SVOC, PCB, p	26/1 (1.0 to pesticide, TF	1.5 feet bg) PH, metals (i	and RCI	H-4-EN g hexa	V-26/6 (6 valent ch	romium	n) and ge	neral chemi	stry a	nalyses.	
GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s),	N/A Accutest Lab RCH-4-ENV-2 SVOC, PCB, p RCH-4-ENV-2	26/1 (1.0 to besticide, TF 26-WC, RCH	1.5 feet bg) PH, metals (i -4-ENV-26-V	and RCI ncluding VC/2 (2	H-4-EN g hexa .0 to 2	V-26/6 (6 valent ch 2.5 ft bg)	romium , RCH-4	n) and ge I-ENV-26	neral chemi WC/4 (4.0	stry a to 4.5	nalyses. ft bg),	
GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling	N/A Accutest Lab RCH-4-ENV-2 SVOC, PCB, p RCH-4-ENV-2 RCH-4-ENV-2 TPH and gen	26/1 (1.0 to besticide, TF 26-WC, RCH 26-WC/6 (6. eral chemis	1.5 feet bg) PH, metals (i -4-ENV-26-V 0 to 6.5 ft b stry analyses	and RCI ncluding VC/2 (2 g), and RCH-4	H-4-EN g hexa .0 to 2 RCH-4- 1-ENV-2	V-26/6 (6 valent ch 2.5 ft bg) -ENV-26-V 25W+26 (romium , RCH-4 VC/8 (8 COMP v	n) and ge R-ENV-26 B.0 to 8.5 was colle	neral chemine WC/4 (4.0 ft bg) were cted for VO	stry and to 4.5 collect	nalyses. ft bg), cted for P, SVOC	
GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling	N/A Accutest Lab RCH-4-ENV-2 SVOC, PCB, p RCH-4-ENV-2 RCH-4-ENV-2 TPH and gen TCLP, pesticie	26/1 (1.0 to pesticide, TF 26-WC, RCH 26-WC/6 (6. eral chemis de/herbicid	1.5 feet bg) PH, metals (i -4-ENV-26-V 0 to 6.5 ft b stry analyses e TCLP, met	and RCI ncluding VC/2 (2 g), and i. RCH-4 als TCLP	H-4-EN g hexa .0 to 2 RCH-4- 1-ENV-2	V-26/6 (6 valent ch 2.5 ft bg) -ENV-26-V 25W+26 (romium , RCH-4 WC/8 (8 COMP v ristics,	n) and ge R-ENV-26 B.0 to 8.5 was colle	neral chemine WC/4 (4.0 ft bg) were cted for VO	stry and to 4.5 collect	nalyses. ft bg), cted for P, SVOC	
GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling	N/A Accutest Lab RCH-4-ENV-2 SVOC, PCB, p RCH-4-ENV-2 RCH-4-ENV-2 TPH and gen	26/1 (1.0 to pesticide, TF 26-WC, RCH 26-WC/6 (6. eral chemis de/herbicid	1.5 feet bg) PH, metals (i -4-ENV-26-V 0 to 6.5 ft b stry analyses e TCLP, met	and RCI ncluding VC/2 (2 g), and i. RCH-4 als TCLP	H-4-EN g hexa .0 to 2 RCH-4- 1-ENV-2	V-26/6 (6 valent ch 2.5 ft bg) -ENV-26-V 25W+26 (romium , RCH-4 WC/8 (8 COMP v ristics,	n) and ge R-ENV-26 B.0 to 8.5 was colle	neral chemine WC/4 (4.0 ft bg) were cted for VO	stry and to 4.5 collect	nalyses. ft bg), cted for P, SVOC	

Sampling Parameter(s)			
Additional Hydro/Geological Test –	<10 ⁻² Feet/Day	10 ⁻² – 10 Feet/Day	>10 Feet/Day
Permeability Results (e.g. pump test/slug			
test/packer test)			
Additional Comments/Notes/	Borehole backfilled with grout an	d restored to grade.	
Observations (if applicable)			

Boring Identification: RCH-4-ENV-27

		Boring I	nformat	ion								
Alternate Boring ID (if applicable)	N/A											
Pipeline Mile Marker ID	5.01R											
Location (Latitude/Longitude) –	40° 38' 13.56	31" N/74° 10	0' 49.8192"	W - Surv	reved							
estimated/surveyed	10 00 10.00		0 .5.0151		c, c							
Site Address	Boring is loc	ated approx	imately 1,3	90 feet	south	east of t	the in	tersectio	n of	Richmond	Terr	ace and
	Western Ave											
Nearby Subsurface Features (Distance and	Utility easem										itely 3	390 feet
Direction from Utilities, Tanks, Properties,	south of the	boring.									•	
etc.)												
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	A wetland ar	ea is located	approxima	tely 485	feet e	east of bo	oring.					
Drilling Date	04/05/2012											
Drilling Company	Land Air Wat	er Environm	ental Servi	ces								
Drilling Method	Hand Auger/	2" Macroco	re									
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A											
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environment	al										
. 5	•	Boring O	bservati	ions								
Depth to saturation (feet bg) – Check	0.0 - 2.0	2.1 – 4.0	4.1 – 6.0	6.1 – 8	3.0	8.1 – 12	2.0	12.1 – 1	16.0	16.1 – 2	0.0	>20
where applicable		Х								1		
PRODUCT				•			I			•		
- Product in Soil – Yes/No	No											
(odor/inches/viscosity, etc.)												
 Product in GW – Check where 	None Ob	served	She	en Only		Floatir	ng Pro	duct = <	6"	Floating I	Produ	ct = >6"
applicable	Х											
HISTORIC FILL MATERIAL												
 Composition, other observations – 		Reworked	Material							enerated		
complete, as applicable							to fi			sand, sor ce cinder		
- Depth (feet bg) – check more than	0.0 – 2.0	2.1 – 4.0	4.1 -	6.0	6.1 -	- 8.0	8.1	- 10.0	10.	1 – 12.0	^	12.1
one depth, if applicable – applies to												
Anthropogenically-Generated	Х											
Material only												
PID/Odors (depth)	N/D											
Geology	FILL (see about trace silt from underlain by SAND from 1	m 2.0 to 4.0 red brown,	ft bg, und SILT and C	erlain by	light	brown,	fine to	coarse	SAND) from 4.0) to 9	.0 ft bg,
Soil Permeability		Loose		- I	nterm	nediate				Tight		
)	X						
Total Boring Depth (feet bg)	15											
GW Monitoring Well Installed	N/A											
(Depth, Screen, Riser, Slot Size, Casing)												
Laboratory Name and Report No. (if	Accutest Lab	oratories, La	b Report ID	JB3514.								
samples collected) (e.g. "Accutest												
Laboratories, Lab Report ID JA65410")	DOLL 4 EARLY 3	7/4 /4 0 + 4	1 F fact \	d DC:	. 4	N/ 27/C /	C C +	C F f= .	. la =\	11	المعم	f== \/OC
Soil Samples Collected - Sample ID(s),	RCH-4-ENV-2		•									
Sample Depth(s) and Sampling Parameter(s)	SVOC, PCB, p RCH-4-ENV-2			_					_		-	
i didilictor(3)	chromium) a										-	
	WC/4 (4.0 to	-	•	•								
	bg) were col											
	for metals 1											
	chromium) a				,		,	,		-	-	
	cin ciniani, a	na generai c	inclinistry at	iaiyses.								
GW Samples Collected - Sample ID(s) and	N/A	nd general c	nemistry ur	iaiyses.								

Additional Hydro/Geological Test –	<10 ⁻² Feet/Day	10 ⁻² – 10 Feet/Day	>10 Feet/Day
Permeability Results (e.g. pump test/slug			
test/packer test)			
Additional Comments/Notes/	Borehole backfilled with grout an	d restored to grade.	
Observations (if applicable)			

Boring Identification: RCH-4-ENV-28

		Boring	Informati	ion						
Alternate Boring ID (if applicable)	N/A									
Pipeline Mile Marker ID	5.05R									
Location (Latitude/Longitude) –	40° 38' 15.47	59" N /74°	10' 48.5776"	W - Survey	ed					
estimated/surveyed										
Site Address	Boring is loca	ated appro	ximately 1,1	90 feet soι	ıtheast of	the inte	ersection	of Richmond	Terra	ace and
	Western Ave	nue in State	en Island, Ne	w York (no	exact stre	et addre	ss is avail	able).		
$\label{lem:nearby Subsurface Features} \mbox{ (Distance and } \\$	Utility easem		ther pipelin	es for Proc	tor and G	amble a	are locate	d approxima	tely 3	70 feet
Direction from Utilities, Tanks, Properties,	east of the bo	oring.								
etc.)	Aatlandan	:-!	d =	tal. 420 fa						
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	A wetland are	ea is located	u approxima	tely 420 fee	et east of t	oring.				
Drilling Date	04/04/2012									
Drilling Company	Land Air Wat	er Environn	nental Servic	es						
Drilling Method	Hand Auger/									
Additional Hydro/Geological Tests (e.g.	N/A									
pump test/slug test/packer test)										
Boring Purpose (e.g. geotech/	Environment	al								
environmental/geoarchaelogical)										
		Boring (Observati	ons						
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1 – 8.0	8.1 - 1	12.0	12.1 – 16.	0 16.1 – 2	0.0	>20
where applicable		Χ								
PRODUCT	1									
- Product in Soil – Yes/No	No									
(odor/inches/viscosity, etc.)	None Obe		Char	on Only	Floor	: D	l 46"	Flooting D	a al	-+ - > C"
 Product in GW – Check where applicable 	None Obs	servea	Snee	n Only	Float	ing Proc	luct = <6"	Floating P	roau	ct = >6"
HISTORIC FILL MATERIAL	^									
- Composition, other observations –		Reworke	d Material			Anthron	ogenically	-Generated	Matei	rial
complete, as applicable	Asphalt (4" t			dark browi	_	шинор	ogerneun,	- Concrated	via cc.	
	medium to									
	angular to su									
	bg, underlain									
	sand, little cl				d					
5 11 (6 11) 1 1 1 1	gravel, trace				1 00		100			40.4
 Depth (feet bg) – check more than one depth, if applicable – applies to 	0.0 – 2.0	2.1 – 4.	0 4.1 –	6.0 6	.1 – 8.0	8.1 -	10.0	10.1 – 12.0	>	12.1
Anthropogenically-(senerated										
Anthropogenically-Generated Material only										
Anthropogenically-Generated Material only PID/Odors (depth)	N/D									
Material only	N/D FILL (see abo	ve) to 9.0 f	t bg, underla	in by red b	rown CLA	Y, little r	medium to	o fine, angula	r to r	ounded
Material only PID/Odors (depth)	FILL (see abo	medium to	fine sand fro	om 9.0 to 16	ft bg, und			_		
Material only PID/Odors (depth) Geology	FILL (see abo gravel, trace to fine SAND,	medium to trace silt fi	fine sand fro	om 9.0 to 16 least 20 ft l	oft bg, und og.			derlain by Bro	own, r	
Material only PID/Odors (depth)	FILL (see abo gravel, trace to fine SAND,	medium to	fine sand fro	om 9.0 to 16 least 20 ft l	oft bg, und og. ermediate			_	own, r	
Material only PID/Odors (depth) Geology Soil Permeability	FILL (see abo gravel, trace to fine SAND,	medium to trace silt fi	fine sand fro	om 9.0 to 16 least 20 ft l	oft bg, und og.			derlain by Bro	own, r	
Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg)	FILL (see abo gravel, trace to fine SAND,	medium to trace silt fi	fine sand fro	om 9.0 to 16 least 20 ft l	oft bg, und og. ermediate			derlain by Bro	own, r	
Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed	FILL (see abo gravel, trace to fine SAND,	medium to trace silt fi	fine sand fro	om 9.0 to 16 least 20 ft l	oft bg, und og. ermediate			derlain by Bro	own, r	
Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing)	FILL (see abo gravel, trace to fine SAND, 20 N/A	medium to . trace silt fi Loose	fine sand from 16 to at	om 9.0 to 16 least 20 ft l Inte	6 ft bg, und og. ermediate X	derlain k	oy red, und	derlain by Bro	own, r	
Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if	FILL (see abo gravel, trace to fine SAND,	medium to . trace silt fi Loose	fine sand from 16 to at	om 9.0 to 16 least 20 ft l Inte	6 ft bg, und og. ermediate X	derlain k	oy red, und	derlain by Bro	own, r	
Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing)	FILL (see abo gravel, trace to fine SAND, 20 N/A	medium to . trace silt fi Loose	fine sand from 16 to at	om 9.0 to 16 least 20 ft l Inte	6 ft bg, und og. ermediate X	derlain k	oy red, und	derlain by Bro	own, r	
Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest	FILL (see abo gravel, trace to fine SAND, 20 N/A	medium to trace silt fi Loose	fine sand from 16 to at	om 9.0 to 16 least 20 ft l Inte	of the beginner of the beginne	derlain b	oy red, und	derlain by Bro	own, r	medium
Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling	FILL (see abo gravel, trace to fine SAND, 20 N/A Accutest Labo RCH-4-ENV-2 SVOC, PCB, p	medium to trace silt fi Loose pratories, Loose 8/2 (2.0 to pesticide, TR	ab Report ID 2.5 feet bg) PH, metals (i	JB3514, JB	og. ermediate X 3410R, and ENV-28/7 exavalent of	d JB3410 (7.0 to chromiu	D. 7.5 feet b	Tight g) were colleceneral chemis	cted f	or VOC, nalyses.
Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s),	FILL (see abo gravel, trace to fine SAND, 20 N/A Accutest Labo RCH-4-ENV-2 SVOC, PCB, p RCH-4-ENV-2	medium to trace silt fi Loose pratories, Loose 8/2 (2.0 to esticide, TI 8-WC was	ab Report ID 2.5 feet bg) PH, metals (icollected for	JB3514, JB. and RCH-4-ncluding her metals TC	6 ft bg, und og. rmediate X 3410R, and ENV-28/7 exavalent of	d JB3410 (7.0 to chromiu nd gene	7.5 feet by m) and go	Tight g) were collegeneral chemisstry analyses	cted f	or VOC, nalyses.
Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling	FILL (see abo gravel, trace to fine SAND, 20 N/A Accutest Labo RCH-4-ENV-2 SVOC, PCB, p RCH-4-ENV-2 28-WC/2 (2.0	medium to trace silt fi Loose pratories, L 8/2 (2.0 to esticide, TI 8-WC was 0 to 2.5 ft b	ab Report ID 2.5 feet bg) PH, metals (icollected for bg), RCH-4-EN	JB3514, JB. and RCH-4-ncluding her metals TCNV-28-WC/4	S ft bg, und bg. rmediate X 3410R, and ENV-28/7 exavalent of LP, TPH, a 1 (4.0 to 4	d JB3410 (7.0 to chromiu nd gene5 ft bg)	7.5 feet by m) and governal chemi	g) were collected analyses NV-28-WC/6	cted f stry a . RCH (6.0 t	or VOC, nalyses. -4-ENV-
Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling	FILL (see abo gravel, trace to fine SAND, 20 N/A Accutest Labo RCH-4-ENV-2 SVOC, PCB, p RCH-4-ENV-2 28-WC/2 (2.0 bg), and RCI	medium to trace silt fi Loose oratories, Land 18/2 (2.0 to pesticide, Ti 8-WC was 0 to 2.5 ft b H-4-ENV-28	ab Report ID 2.5 feet bg) PH, metals (i collected for og), RCH-4-ER-WC/8 (8.0	JB3514, JB and RCH-4- ncluding he metals TC	ENV-28/7 exavalent of LP, TPH, a 4 (4.0 to 4 bg) were	d JB3410 (7.0 to chromiu nd gene .5 ft bg) collected	7.5 feet by m) and geral cheming, RCH-4-Eed for TP	g) were collected the collecte	cted f stry a . RCH (6.0 t	or VOC, nalyses. -4-ENV- to 6.5 ft emistry
Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling	FILL (see abo gravel, trace to fine SAND, 20 N/A Accutest Labo RCH-4-ENV-2 SVOC, PCB, p RCH-4-ENV-2 28-WC/2 (2.0 bg), and RCI analyses. RCI	medium to trace silt fi Loose Dratories, Land Services, Land Services, Land Services, Telephones, Land Services, Telephones, Land Services, L	ab Report ID 2.5 feet bg) PH, metals (i collected for og), RCH-4-EI	JB3514, JB and RCH-4-ncluding her metals TC VV-28-WC/4 to 8.5 ft	ENV-28/7 exavalent of LP, TPH, a 14 (4.0 to 4 bg) were ed for me	d JB3410 (7.0 to chromiu nd gene .5 ft bg) collecte	7.5 feet by m) and ge ral chemi , RCH-4-E ed for TP P, RCRA c	g) were collected and services analyses NV-28-WC/6 H and general characteristics	cted f stry a . RCH (6.0 t	or VOC, nalyses. -4-ENV- to 6.5 ft emistry
Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling	FILL (see abo gravel, trace to fine SAND, 20 N/A Accutest Labo RCH-4-ENV-2 SVOC, PCB, p RCH-4-ENV-2 28-WC/2 (2.0 bg), and RCI	medium to trace silt fi Loose Dratories, Land Services, Land Services, Land Services, Telephones, Land Services, Telephones, Land Services, L	ab Report ID 2.5 feet bg) PH, metals (i collected for og), RCH-4-EI	JB3514, JB and RCH-4-ncluding her metals TC VV-28-WC/4 to 8.5 ft	ENV-28/7 exavalent of LP, TPH, a 14 (4.0 to 4 bg) were ed for me	d JB3410 (7.0 to chromiu nd gene .5 ft bg) collecte	7.5 feet by m) and ge ral chemi , RCH-4-E ed for TP P, RCRA c	g) were collected and services analyses NV-28-WC/6 H and general characteristics	cted f stry a . RCH (6.0 t	or VOC, nalyses. -4-ENV- to 6.5 ft emistry

Additional Hydro/Geological Test –	<10 ⁻² Feet/Day	10 ⁻² – 10 Feet/Day	>10 Feet/Day
Permeability Results (e.g. pump test/slug			
test/packer test)			
Additional Comments/Notes/	Borehole backfilled with grout an	d restored to grade.	
Observations (if applicable)			

Boring Identification: RCH-4-ENV-29W

		Boring	Informat	ion						
Alternate Boring ID (if applicable)	N/A									
Pipeline Mile Marker ID	5.09R									
Location (Latitude/Longitude) –		855" N/74° 1	10' 48.2051"	W - Surveve	d					
estimated/surveyed										
Site Address			ximately 1,0 en Island, Ne						l Terr	ace and
Nearby Subsurface Features (Distance and			other pipelin						telv :	330 feet
Direction from Utilities, Tanks, Properties, etc.)	east of the I								,	
Nearby Hydraulic Features (Distance and	A wetland a	rea is locate	d approxima	tely 435 feet	southeast o	f borin	g.			
Direction from wetlands, etc.)	04/04/2012									
Drilling Date	04/04/2012									
Drilling Company			mental Servic	es						
Drilling Method	_	r/2" Macro co n auger (well	ore l installation)							
Additional Hydro/Geological Tests (e.g.	N/A									
pump test/slug test/packer test)	Function and a second									
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environmer	ıtaı								
		Boring (Observati	ons						
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1 – 8.0	8.1 – 12.0	12	.1 – 16.0	16.1 – 2	0.0	>20
where applicable		Χ								
PRODUCT										
 Product in Soil – Yes/No 	No									
(odor/inches/viscosity, etc.)										
 Product in GW – Check where 	None O	bserved	Shee	n Only	Floating	Produc	t = <6"	Floating F	Produ	ct = >6"
applicable	>	(
HISTORIC FILL MATERIAL										
 Composition, other observations – 		Reworke	d Material					Generated		
 Composition, other observations – complete, as applicable 		Reworke	d Material		Black as brown, f coarse gi	phalt a	and fine coarse sai	Generated to coarse nd and silt, crete and w	, gra	vel and e fine to
complete, as applicable	0.0 – 2.0			6.0 6.	Black as brown, f coarse gr bg.	phalt a ine to c ravel, to	and fine coarse sar race cond	to coarse nd and silt, crete and w	some	vel and e fine to to 3.0 ft
 Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated 	0.0 – 2.0 X	2.1 – 4.		6.0 6.	Black as brown, f coarse gr bg.	phalt a	and fine coarse sar race cond	to coarse nd and silt,	some	vel and e fine to
 complete, as applicable Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only 	Х	2.1 – 4.		6.0 6.	Black as brown, f coarse gr bg.	phalt a ine to c ravel, to	and fine coarse sar race cond	to coarse nd and silt, crete and w	some	vel and e fine to to 3.0 ft
complete, as applicable - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology	X N/D Fill (see abo	2.1 – 4. X Eve) to 3.0 ft aderlain by recurrence for the control of the control		n by light br AY, little fine m gravel fro	Black as brown, for coarse grown. 1 - 8.0 Sown/gray, first to medium m 10 to at less than the second secon	phalt a ine to c ravel, to 3.1 – 10 ne to c gravel	oarse SAlfrom 8.0	to coarse and and silt, crete and w	some yood ;	vel and e fine to to 3.0 ft >12.1 m 3.0 to
complete, as applicable - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth)	X N/D Fill (see abo	2.1 – 4. X ove) to 3.0 ft oderlain by re	0 4.1 – bg, underlaied/brown CL	n by light br AY, little fine m gravel fro	Black as brown, f coarse groups bg. 1 – 8.0	phalt a ine to c ravel, to 3.1 – 10 ne to c gravel	oarse SAlfrom 8.0	to coarse and and silt, crete and w	some yood ;	vel and e fine to to 3.0 ft >12.1 m 3.0 to
complete, as applicable - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology	X N/D Fill (see abo	2.1 – 4. X Eve) to 3.0 ft aderlain by recurrence for the control of the control	0 4.1 – bg, underlaied/brown CL	n by light br AY, little fine m gravel fro	Black as brown, for coarse grown, for some service to medium m 10 to at lemediate	phalt a ine to c ravel, to 3.1 – 10 ne to c gravel	oarse SAlfrom 8.0	to coarse and and silt, crete and w	some yood ;	vel and e fine to to 3.0 ft >12.1 m 3.0 to
complete, as applicable - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg)	X N/D Fill (see about 8.0 ft bg, ur red/brown 6.20	2.1 – 4. X Eve) to 3.0 ft aderlain by reclary, trace f	0 4.1 – bg, underlaied/brown CL ine to mediu	in by light br AY, little fine m gravel fro Inter	Black as brown, for coarse grown, for some services of the ser	phalt a cravel, to cravel, to cravel, to cravel ne to congravel ast 20 m	oarse SAlfrom 8.0	to coarse and and silt, crete and w	some yood ;	vel and e fine to to 3.0 ft >12.1 m 3.0 to
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability	X N/D Fill (see about 8.0 ft bg, ur red/brown 9.0 ft bg. ur red/brown 9.0 ft	X 2.1 – 4. X Eve) to 3.0 ft aderlain by recurrence for the consecution of the consecut	0 4.1 – bg, underlaied/brown CL	n by light br AY, little fine m gravel fro Inter	Black as brown, for coarse grown, for some services of the ser	phalt a cravel, to cravel, to cravel, to cravel ne to congravel ast 20 m	oarse SAlfrom 8.0	to coarse and and silt, crete and w	some yood ;	vel and e fine to to 3.0 ft >12.1 m 3.0 to
complete, as applicable - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed	X N/D Fill (see about 8.0 ft bg, urred/brown 9.20 0.8 to 14.71 Total Depth	X Eve) to 3.0 ft aderlain by reclay, trace for Loose Ift. below sure of well = 14.	0 4.1 – bg, underlaied/brown CL ine to mediu	n by light br AY, little fine m gravel fro Inter ameter 0.01	Black as brown, for coarse grown, for some services and services are services as a service to medium and services are serv	phalt a rine to coravel, to see to cogravel ast 20 reen	noarse SAlfrom 8.0 ft bg.	to coarse and and silt, crete and w 1.1 – 12.0 ND, little si to 10 ft bg, Tight	some some some some some some some some	vel and e fine to to 3.0 ft >12.1 m 3.0 to
complete, as applicable - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing)	X N/D Fill (see about 8.0 ft bg, urred/brown 9.20 0.8 to 14.71 Total Depth	X Eve) to 3.0 ft aderlain by reclay, trace for Loose Ift. below sure of well = 14.	bg, underlaied/brown CLine to mediu	n by light br AY, little fine m gravel fro Inter ameter 0.01	Black as brown, for coarse grown, for some services and services are services as a service to medium and services are serv	phalt a rine to coravel, to see to cogravel ast 20 reen	noarse SAlfrom 8.0 ft bg.	to coarse and and silt, crete and w 1.1 – 12.0 ND, little si to 10 ft bg, Tight	some some some some some some some some	vel and e fine to to 3.0 ft >12.1 m 3.0 to
complete, as applicable - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if	X N/D Fill (see about 8.0 ft bg, urred/brown 9.20 0.8 to 14.71 Total Depth	X Eve) to 3.0 ft aderlain by reclay, trace for Loose Ift. below sure of well = 14.	bg, underlaied/brown CLine to mediu	n by light br AY, little fine m gravel fro Inter ameter 0.01	Black as brown, for coarse grown, for some services and services are services as a service to medium and services are serv	phalt a rine to coravel, to see to cogravel ast 20 reen	noarse SAlfrom 8.0 ft bg.	to coarse and and silt, crete and w 1.1 – 12.0 ND, little si to 10 ft bg, Tight	some some some some some some some some	vel and e fine to to 3.0 ft >12.1 m 3.0 to
complete, as applicable - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest	X N/D Fill (see about 8.0 ft bg, urred/brown 9.0 ft bg, urred/brow	X Eve) to 3.0 ft aderlain by reclay, trace for Loose Ift. below sure of well = 14 boratories, L	bg, underlaied/brown CLine to mediu	in by light br AY, little fine m gravel fro Inter ameter 0.01 s measured of JB3508, JB3	Black as brown, froarse grown, froarse grown, from the second sec	phalt a rine to contact and the contact and th	oarse SAl from 8.0 ft bg.	to coarse and and silt, crete and work of the silt of	somiyood ::	vel and e fine to to 3.0 ft >12.1 m 3.0 to erlain by
complete, as applicable - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	X N/D Fill (see abox 8.0 ft bg, ur red/brown 9.0 ft	2.1 – 4. X Eve) to 3.0 ft aderlain by reclar to the conse It. below sure of well = 14 aboratories, L 29W/1 (1.0	o 4.1 – bg, underlaied/brown CL ine to mediu urface - 3" di .71 feet bg a ab Report ID	ameter 0.01 s measured B	Black as brown, f coarse grown, from the second sec	phalt a fine to contain the total the tot	oarse SAl from 8.0 ft bg. OR, JB341	to coarse and and silt, crete and w 1.1 – 12.0 ND, little si to 10 ft bg, Tight O, and JB35 et bg) were	some some some some some some some some	vel and e fine to to 3.0 ft >12.1 m 3.0 to erlain by
complete, as applicable - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s),	X N/D Fill (see about 8.0 ft bg, unred/brown 1.20) 0.8 to 14.71 Total Depth Accutest La RCH-4-ENV-VOC, SVOC analyses. Rit to 4.5 ft bg were collect VOC TCLP,	2.1 – 4. X Eve) to 3.0 ft inderlain by received for the second of well = 14. Eve) boratories, L 29W/1 (1.0 PCB, pestic CH-4-ENV-29), RCH-4-ENV ted for TPH a SVOC TCLP,	bg, underlaied/brown CL ine to mediu Inface - 3" di .71 feet bg a: ab Report ID to 1.5 feet b cide, TPH, n W-WC, RCH V-29W-WC/6 and general o pesticide/h	ameter 0.01 s measured of JB3508, JB3 sg) and RCH-netals (inclu-4-ENV-29W5 (6.0 to 6.5 chemistry ar erbicide TC	Black as brown, for coarse grown, for some services and services are services as a services are services as a services are	ne to construction of the	coarse sal race cond coarse sal race cond coarse SA from 8.0 ft bg. OR, JB341 to 7.5 fee iromium) t bg), RCI ENV-29W+30 iCRA cha	ND, little si to 10 ft bg, Tight O, and JB35 et bg) were and gene H-4-ENV-29 -WC/8 (8.0 COMP was racteristics,	some some some some some some some some	m 3.0 to erlain by ected for nemistry (C/4 (4.0).5 ft bg) ected for
complete, as applicable - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling	X N/D Fill (see about 8.0 ft bg, unred/brown 9.20) 0.8 to 14.71 Total Depth Accutest La RCH-4-ENV-VOC, SVOC analyses. Rit to 4.5 ft bg were collect VOC TCLP, pesticide, T	Z.1 – 4. X Eve) to 3.0 ft derlain by rectangled for the second of well = 14. Eve) boratories, L Eve) ft. below sure of well = 14. Eve) ft. below sure o	bg, underlaied/brown CLine to mediu arface - 3" di71 feet bg a ab Report ID to 1.5 feet bcide, TPH, now-WC, RCH-W-29W-WC/8	ameter 0.01 s measured of JB3508, JB3 schemistry are erbicide TC avalent chro	Black as brown, for coarse grown, for some services of the ser	ne to congravel ast 20 from the congrave as the cong	coarse sal race cond coarse sal race cond coarse SA from 8.0 ft bg. OR, JB341 to 7.5 fee aromium) t bg), RCI ENV-29W+30 iCRA cha chemistr	ND, little si to 10 ft bg, Tight O, and JB35 et bg) were and gene di-4-ENV-29 -WC/8 (8.0 COMP was racteristics, y analyses.	lt fro some collection of the	m 3.0 to erlain by ected for nemistry (C/4 (4.0) 5 ft bg) ected for DC, PCB,

Additional Hydro/Geological Test –	<10 ⁻² Feet/Day	10 ⁻² – 10 Feet/Day	>10 Feet/Day
Permeability Results (e.g. pump test/slug			
test/packer test)			
Additional Comments/Notes/	Borehole backfilled with grout an	d restored to grade.	
Observations (if applicable)			

Boring Identification: RCH-4-ENV-30

		Boring I	nformat	ion							
Alternate Boring ID (if applicable)	N/A										
Pipeline Mile Marker ID	5.12R										
Location (Latitude/Longitude) – estimated/surveyed	40° 38' 19.17	96" N/74° 10	0' 47.8787"	W - Su	rveyed						
Site Address	Boring is loc Western Ave		•							Terra	ace and
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)	Utility easem	ents and ot								tely 3	300 feet
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	A wetland are	ea is located	approxima	tely 54	0 feet s	outheas	t of borir	ng.			
Drilling Date	04/05/2012										
Drilling Company	Land Air Wat	er Environm	ental Servio	es							
Drilling Method	Hand Auger/	2" Macroco	re								
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A										
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environment	al									
		Boring O	bservati	ons							
Depth to saturation (feet bg) – Check where applicable	0.0 – 2.0	2.1 – 4.0 X	4.1 – 6.0	6.1 -	- 8.0	8.1 – 1	2.0 12	2.1 – 16.0	16.1 – 2	0.0	>20
PRODUCT		^									
- Product in Soil – Yes/No (odor/inches/viscosity, etc.)	No										
- Product in GW – Check where applicable	None Obs	served	Shee	n Only	,	Floati	ng Produ	ct = <6"	Floating F	Produ	ct = >6"
HISTORIC FILL MATERIAL	^										
- Composition, other observations –		Reworked	Material			Δ	nthrono	genically.	Generated	Mate	rial
complete, as applicable		Neworkea	Widterial				iitiii opo ₈	5cilically-	Generateu	IVIACE	iiui
 Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only 	0.0 – 2.0	2.1 – 4.0	4.1 -	6.0	6.1	- 8.0	8.1 – 1	0.0 1	0.1 – 12.0	>	12.1
PID/Odors (depth)	N/D	L									
Geology	Asphalt and of some coarse to fine gravel frolleast 20 ft bg	to fine grave GRAVEL from 8.0 to 10	vel, little co om 4.0 to 8	bbles t 3.0 ft b	from 1. g, unde	.0 to 4.0 erlain by	ft bg, u brown r	nderlain ed SILT, I	by Red bro ittle clay, tr	wn C ace c	LAY and parse to
Soil Permeability		Loose				nediate			Tight		
Total Boring Depth (feet bg)	20				•	X		1			
GW Monitoring Well Installed	N/A										
(Depth, Screen, Riser, Slot Size, Casing)	'',''										
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	Accutest Labo	oratories, La	b Report ID	JB3514	4.						
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	RCH-4-ENV-3 SVOC, PCB, p RCH-4-ENV-3 RCH-4-ENV-3 TPH and gen TCLP, pesticic (including he.	esticide, TPl 0-WC, RCH- 0-WC/6 (6.0 eral chemist de/herbicide	H, metals (i 4-ENV-30-V to 6.5 ft b ry analyses TCLP, met	ncludir VC/2 (2 g), and RCH- als TCLI	ng hexa 2.0 to 2 RCH-4 4-ENV- P, RCRA	valent c 2.5 ft bg -ENV-30 29W+30 A charact	hromium g), RCH-4 -WC/8 (8 COMP v ceristics,	n) and gen I-ENV-30- B.0 to 8.5 was collec	neral chemi WC/4 (4.0 ft bg) were cted for VO	stry a to 4.5 colle C TCL	nalyses. ft bg), cted for P, SVOC
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A			-		•					
Additional Hydro/Geological Test – Permeability Results (e.g. pump test/slug	<10	Feet/Day		10)-2 – 10	Feet/Da	у		>10 Feet,	/Day	

test/packer test)								
Additional Comments/Notes/	ts/Notes/ Borehole backfilled with grout and restored to grade.							
Observations (if applicable)								

Boring Identification: RCH-4-ENV-31

		Boring	Inform	ation							
Alternate Boring ID (if applicable)	N/A										
Pipeline Mile Marker ID	5.16R										
Location (Latitude/Longitude) –	40° 38' 21.05	51" N/74° 1	.0' 47.584	6" W - Sı	ırveyed						
estimated/surveyed		•			•						
Site Address	Boring is loc Western Ave								of Richmond able).	Terra	ce and
Nearby Subsurface Features (Distance and									ed approximat	tely 2	70 feet
Direction from Utilities, Tanks, Properties, etc.)	east of the bo								••	,	
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	An unnamed	pond is loca	ated appr	oximately	y 630 fe	et east c	of the bor	ing.			
Drilling Date	04/03/2012										
Drilling Company	Land Air Wat	er Environm	nental Ser	vices							
Drilling Method	Hand Auger/	2" Macroco	re								
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A										
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environment	al									
		Boring C	bserva	tions							
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.		- 8.0	8.1 – 1	2.0 12	2.1 – 16	.0 16.1 – 20	0.0	>20
where applicable		Χ									
PRODUCT	1										
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No										
 Product in GW – Check where applicable 	None Ob	served	SI	een Only	<u>/</u>	Floati	ng Produc	ct = <6"	' Floating P	roduc	t = >6"
HISTORIC FILL MATERIAL						1			•		
- Composition, other observations –		Reworked	d Materia	l		А	nthropog	enicall	y-Generated I	Vlater	ial
complete, as applicable	Asphalt (3" sand, some r rounded gravel by red brown little medium gravel, little s	medium to vel, little sil n, medium n to fine, s	fine, sub- t to 1.0 f to fine, s sub-angul	angular to the same the same to the same t	o sub- derlain e clay,	gravel		nedium	e, angular to to fine san .0 ft bg.		
- Depth (feet bg) – check more than	0.0 - 2.0	2.1 – 4.0) 4.	L – 6.0	6.1	- 8.0	8.1 – 10	0.0	10.1 – 12.0	>	12.1
one depth, if applicable – applies to Anthropogenically-Generated Material only		х		х							
PID/Odors (depth)	N/D	<u> </u>			<u> </u>						
Geology		ve) to 6.0 f	t ha una	erlain h	red h	rown Cl	ΔV some	medii	ım to fine, su	h-and	ular to
deology	rounded grav		_						iiii to iiiic, sa	שווט טוו	, aiai to
Soil Permeability		Loose		•	Intern	nediate			Tight		
Total Basing Darath (fact ha)	15					X					
Total Boring Depth (feet bg)	15										
GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing)	N/A										
Laboratory Name and Report No. (if	Accutest Lab	oratories, La	ab Report	ID JB322	9, JB32	29R and	JB3142.				
samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")											
Soil Samples Collected - Sample ID(s),							-		g) were collec		
Sample Depth(s) and Sampling				-	_				eneral chemis		•
Parameter(s)	RCH-4-ENV-3 TPH and gen	1-WC/6 (6.0 eral chemis	0 to 6.5 f try analy	bg), and ses. RCH	d RCH-4 -4-ENV-	-ENV-31 31+32 C	-WC/8 (8. OMP was	.0 to 8. collec	1-WC/4 (4.0 t 5 ft bg) were ted for metals t chromium)	colled TCLF	ted for P, RCRA
	chemistry an		, ,,	-,	,	. (6				J - 1 - 1 - 1
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A	<u>, </u>									
ISSUURIE EST STUPPERION	1										

Additional Hydro/Geological Test –	<10 ⁻² Feet/Day	10 ⁻² – 10 Feet/Day	>10 Feet/Day
Permeability Results (e.g. pump test/slug			
test/packer test)			
Additional Comments/Notes/	Borehole backfilled with soil cutti	ngs and restored to grade.	
Observations (if applicable)			

Boring Identification: RCH-4-ENV-32

		Boring	Informat	ion						
Alternate Boring ID (if applicable)	N/A									
Pipeline Mile Marker ID	5.20R									
Location (Latitude/Longitude) –	40° 38' 22.81	59" N/74° 1	0' 47.0922"	W - Survey	ed					
estimated/surveyed	10 30 22.01	.55 14,71 1	.0 17.0322	· · · · · · · · · · · · · · · · · · ·	Cu					
Site Address	Boring is loc	ated appro	ximately 40	0 feet sou	theast of	he inter	section o	of Richmond	Terra	ce and
	Western Ave									
Nearby Subsurface Features (Distance and	Utility easem								30 fe	et west
Direction from Utilities, Tanks, Properties,	of the boring		- 1-1					,		
etc.)										
Nearby Hydraulic Features (Distance and	An unnamed	pond is loca	ated approx	imately 605	feet east	of the bo	ring.			
Direction from wetlands, etc.)										
Drilling Date	04/03/2012									
Drilling Company	Land Air Wat	er Environm	nental Servio	es						
Drilling Method	Hand Auger/	2" Macroco	re							
Additional Hydro/Geological Tests (e.g.	N/A									
pump test/slug test/packer test)										
Boring Purpose (e.g. geotech/	Environment	al								
environmental/geoarchaelogical)										
		Boring C) Dbservati	ons						
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1 – 8.0	8.1 – 1	2.0 1	2.1 – 16.	16.1 – 20	0.0	>20
where applicable							Χ			
PRODUCT										
 Product in Soil – Yes/No 	No									
(odor/inches/viscosity, etc.)										
 Product in GW – Check where 	None Ob	served	Shee	en Only	Float	ng Produ	uct = <6"	Floating P	roduc	t = >6"
applicable	Х									
HISTORIC FILL MATERIAL										
 Composition, other observations – 			d Material			nthropo	genically	-Generated I	∕later	ial
complete, as applicable	Asphalt (1" t	:hick); Gray	brown, me	dium to fir	ne					
	sand and me	dium to fine	e, angular to	sub-angul	ar					
	gravel, trace									
	by dark bro									
	medium to f									
	little silt, tra									
	orange brow									
	medium to fi			inded grave	임,					
	little silt and	1 /	0							
- Depth (feet bg) – check more than	0.0 – 2.0	2.1 – 4.0	0 4.1 -	6.0	.1 – 8.0	8.1 – 2	10.0	10.1 – 12.0	>:	12.1
one depth, if applicable – applies to										
Anthropogenically-Generated										
Material only	N/D									
PID/Odors (depth)	N/D)								
	Fill (see abov	•	-	•				to fine, rou	nded	to sub-
PID/Odors (depth) Geology	Fill (see above rounded grave	vel, little me	-	sand from	4.0 to at l				nded	to sub-
PID/Odors (depth)	Fill (see above rounded grave	•	-	sand from	4.0 to at le			to fine, rou	nded	to sub-
PID/Odors (depth) Geology Soil Permeability	Fill (see above rounded grave)	vel, little me	-	sand from	4.0 to at l				nded	to sub-
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg)	Fill (see above rounded grave) 20	vel, little me	-	sand from	4.0 to at le				nded	to sub-
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed	Fill (see above rounded grave)	vel, little me	-	sand from	4.0 to at le				nded :	to sub-
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing)	Fill (see above rounded grave) 20 N/A	vel, little me Loose	dium to fine	e sand from Inte	4.0 to at learmediate	east 20 ft	t bg.		nded :	to sub
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if	Fill (see above rounded grave) 20	vel, little me Loose	dium to fine	e sand from Inte	4.0 to at learmediate	east 20 ft	t bg.		nded :	to sub-
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest	Fill (see above rounded grave) 20 N/A	vel, little me Loose	dium to fine	e sand from Inte	4.0 to at learmediate	east 20 ft	t bg.		nded '	to sub
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	Fill (see above rounded grave) 20 N/A Accutest Labo	vel, little me Loose oratories, La	dium to fine	e sand from Into	4.0 to at learmediate X 3229R and	JB3142.	t bg.	Tight		
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s),	Fill (see above rounded grave) 20 N/A Accutest Laboratory RCH-4-ENV-3	oratories, La	dium to fine ab Report ID	Into	4.0 to at learnediate X 3229R and	JB3142.	t bg.	Tight	tted fo	or VOC
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling	Fill (see above rounded grave) 20 N/A Accutest Labove RCH-4-ENV-3 SVOC, PCB, p	oratories, La	ab Report ID 1.5 feet bg) PH, metals (i	JB3229, JB and RCH-4 ncluding he	4.0 to at learnediate X 3229R and ENV-32/6 exavalent (JB3142. (6.0 to 6	i.5 feet band and ge	Tight s) were collected the c	ted fo	or VOC
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s),	Fill (see above rounded grave) 20 N/A Accutest Labove RCH-4-ENV-3 SVOC, PCB, pc RCH-4-ENV-3	oratories, La 22/1 (1.0 to pesticide, TF 22-WC, RCH	ab Report ID 1.5 feet bg) PH, metals (i	JB3229, JB and RCH-4 ncluding he	4.0 to at lease mediate X 3229R and ENV-32/6 exavalent co 2.5 ft b	JB3142. (6.0 to 6 hromium	i.5 feet by m) and ge 4-ENV-32	Tight s) were collected them is contact the contac	ted for	or VOC nalyses ft bg)
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling	Fill (see above rounded grave) 20 N/A Accutest Labove RCH-4-ENV-3 SVOC, PCB, pch-4-ENV-3 RCH-4-ENV-3 RCH-4-ENV-3	oratories, La 22/1 (1.0 to pesticide, TF 22-WC, RCH 22-WC/6 (6.0	ab Report ID 1.5 feet bg) PH, metals (i -4-ENV-32-V 0 to 6.5 ft b	JB3229, JB and RCH-4 ncluding h VC/2 (2.0 t g), and RCH	3229R and ENV-32/6 exavalent of the control of the	JB3142. (6.0 to 6 hromium g), RCH-4-WC/8 (;	i.5 feet by m) and ge 4-ENV-32	Tight s) were collectioneral chemis -WC/4 (4.0 to fix bg) were	eted for try ar o 4.5 collect	or VOC nalyses ft bg) ted for
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling	Fill (see above rounded grave) 20 N/A Accutest Labove RCH-4-ENV-3 SVOC, PCB, pc RCH-4-ENV-3	oratories, La 22/1 (1.0 to besticide, TF 22-WC, RCH 22-WC/6 (6.0 eral chemis	ab Report ID 1.5 feet bg) PH, metals (i -4-ENV-32-V 0 to 6.5 ft b try analyses	JB3229, JB and RCH-4 ncluding h VC/2 (2.0 t g), and RCH i. RCH-4-EN	4.0 to at lease mediate X 3229R and ENV-32/6 exavalent (o 2.5 ft b d-4-ENV-32 (V-31+32 (V-31	JB3142. (6.0 to 6 chromium g), RCH-4-WC/8 (iCOMP wa	5.5 feet by m) and go 4-ENV-32 8.0 to 8.5 as collect	Tight (5) were collections (7) were chemis (8) were collection (9) were (1) to find the collection (1	eted for try ar o 4.5 collect	or VOC nalyses ft bg) ted for

	2011110	,	
GW Samples Collected - Sample ID(s) and	N/A		
Sampling Parameter(s)			
Additional Hydro/Geological Test –	<10 ⁻² Feet/Day	10 ⁻² – 10 Feet/Day	>10 Feet/Day
Permeability Results (e.g. pump test/slug			
test/packer test)			
Additional Comments/Notes/	Borehole backfilled with soil cut	tings and restored to grade.	
Observations (if applicable)			

Boring Identification: RCH-4-ENV-33W

		Boring	Informat	ion							
Alternate Boring ID (if applicable)	N/A										
Pipeline Mile Marker ID	5.24R										
Location (Latitude/Longitude) – estimated/surveyed	40° 38' 24.666	61" N/74° 10)' 46.7745" V	√ - Surve	eyed						
Site Address	Boring is local Avenue in Sta								mond Terrace	e and	Western
Nearby Subsurface Features (Distance and	Utility easem								proximately 4	2 feet	west of
Direction from Utilities, Tanks, Properties, etc.)	the boring.							·	,		
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	An unnamed	pond is locat	ed approxin	nately 60	00 feet s	outheas	st of th	ne boring.			
Drilling Date	04/02/2012										
Drilling Company	Land Air Wate	er Environme	ental Service	S							
Drilling Method	Hand Auger/ 2	2" Macrocor	e								
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A										
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environmenta	al									
		Boring (Observat	ons							
Depth to saturation (feet bg) – Check where applicable	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0 X	6.1 -	- 8.0	8.1 – 1	2.0	12.1 – 16	.0 16.1 – 2	0.0	>20
PRODUCT		•			•				'		
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No										
 Product in GW – Check where applicable 	None Ob	served	She	en Only		Float	ing Pro	oduct = <6"	Floating	Produ	ct = >6"
HISTORIC FILL MATERIAL						•					
- Composition, other observations –		Reworked	d Material				Anthro	opogenical	y-Generated	Mater	ial
complete, as applicable	Asphalt and fi	ne to coarse	gravel to 0.	5 ft bg.							
 Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material 	0.0 – 2.0	2.1 – 4.0	0 4.1	- 6.0	6.1 -	- 8.0	8.1	- 10.0	10.1 – 12.0	;	12.1
only	ND										
PID/Odors (depth)	ND Fill (see above	a) +a 0 E ft b	a undorlain	by light	brown	fine to	coarco	CAND II++I	a fina ta caar	. ara	val fram
Geology	0.5 to 6.0 ft b	g, underlain									
Soil Permeability		Loose			Interm	ediate			Tight	:	
•)	X					
Total Boring Depth (feet bg)	20										
GW Monitoring Well Installed	0.75 to 14.98						reen.				
(Depth, Screen, Riser, Slot Size, Casing)	Total depth of										
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	Accutest Labo	oratories, Lab	Report ID J	B93506,	JB3233	, JB3142	2R and	JB3142.			
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	RCH-4-ENV-33 SVOC, PCB, pe ENV-33W-WC ENV-33W-WC general chen pesticide/herl hexavalent ch	esticide, TPH c, RCH-4-EN\ c/6 (6.0 to 6. nistry analy bicide TCLP, romium) and	, metals (ind /-33W-WC/2 5 ft bg), and ses. RCH-4 metals TCLI d general ch	luding h (2.0 to RCH-4- ENV-33 P, RCRA emistry	exavale 2.5 ft l ENV-33 W+34 charact analyses	nt chror bg), RCH W-WC/8 COMP eristics, s.	nium) I-4-EN' I (8.0 t was c SVOC,	and genera V-33W-WC to 8.5 ft bg; collected fo , PCB, pesti	I chemistry ar /4 (4.0 to 4.5 were collected or VOC TCLP	alyses ft bg) ed for , SVO	RCH-4- , RCH-4- TPH and C TCLP,
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	RCH-4-ENV-33		ected for VO					alyses.			
Additional Hydro/Geological Test –	<10	² Feet/Day		1	0 ⁻² – 10	Feet/Da	ay		>10 Feet	/Day	
Permeability Results (e.g. pump test/slug test/packer test)											
Additional Comments/Notes/ Observations	Borehole back	filled with c	oil cuttings a	nd rest	ared to	arado					

Boring Identification: RCH-4-ENV-34

		Boring I	nformat	ion							
Alternate Boring ID (if applicable)	N/A										
Pipeline Mile Marker ID	5.27R										
Location (Latitude/Longitude) –	40° 38' 26.45	55" N/74° 10	0' 46.7829"	W - Su	irveyed						
estimated/surveyed	Davisa is lase	-4		f+	1	:		Dialama	and Taurana	المسم	A/ = = + = ===
Site Address	Boring is loca Avenue in Sta								ond Terrace	and v	vestern
Nearby Subsurface Features (Distance and	Utility easem	ents and oth	er pipeline	s for P	roctor a	nd Gaml	ole are lo	cated ap	proximately	/ 30 fe	et west
Direction from Utilities, Tanks, Properties, etc.)	of the boring	•									
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	An inlet to No	ewark Bay is	located ap	oroxim	ately 53	0 feet no	orth of th	e boring	.		
Drilling Date	04/02/2012										
Drilling Company	Land Air Wat	er Environm	ental Servi	es							
Drilling Method	Hand Auger/	2" Macrocoi	re e								
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A										
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environment	al									
.0 .	•	Boring O	bservati	ons							
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1	- 8.0	8.1 – 12	2.0 12	.1 – 16.0	16.1 – 2	0.0	>20
where applicable			Х								
- Product in Soil – Yes/No	l No.										
- Product in Soil – Yes/No (odor/inches/viscosity, etc.)	No										
- Product in GW – Check where	None Obs	served	Shee	n Only	/	Floatir	g Produc	ct = <6"	Floating F	Produ	ct = >6"
applicable	Х										
- Composition, other observations –		Reworked	Material			Λ.	thronog	enically	-Generated	Mate	rial
complete, as applicable	Asphalt (1" ti sand and me gravel, little s by red brow some coarse gravel, little s ft bg.	dium to fine silt, trace cla n to brown, to fine, sub-	, angular to y to 1.0 ft medium angular to	sub-a og, und o fine sub-ro	ngular derlain , sand unded	sub-ro	unded g	gravel,	nd, little me little silt, s from 4.0 to	slag	, coal,
- Depth (feet bg) – check more than	0.0 – 2.0	2.1 – 4.0	4.1 -	6.0	6.1 -	- 8.0	8.1 – 10	0.0 1	0.1 – 12.0	>	12.1
one depth, if applicable – applies to Anthropogenically-Generated Material only		Х	х			X					
PID/Odors (depth)	N/D					<u> </u>		L			
Geology	Fill (see abov	•	0,	•			little me	dium to	fine, sub-ar	ngular	to sub-
Soil Permeability		Loose				ediate			Tight		
Total Boring Depth (feet bg)	20				>	X					
GW Monitoring Well Installed	N/A										
(Depth, Screen, Riser, Slot Size, Casing)	IN/A										
Laboratory Name and Report No. (if	Accutest Labo	oratories. La	b Report ID	JB314	2R and	JB3142.					
samples collected) (e.g. "Accutest	7.000.000.200	5. a.c., _a.	cp 0								
Laboratories, Lab Report ID JA65410")											
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	RCH-4-ENV-3 SVOC, PCB, p RCH-4-ENV-3 RCH-4-ENV-3 TPH and gen TCLP, pesticic (including her	esticide, TPI 4-WC, RCH- 4-WC/6 (6.0 eral chemist de/herbicide	H, metals (i 4-ENV-34-V to 6.5 ft b ry analyses TCLP, met	ncludir VC/2 (i g), and i. RCH- als TCL	ng hexa 2.0 to 2 I RCH-4- -4-ENV-3 .P, RCRA	valent ch 2.5 ft bg -ENV-34- 33W+34 A charact	nromium)), RCH-4- WC/8 (8. COMP w eristics, S	and ge ENV-34 0 to 8.5 as colle	neral chemi -WC/4 (4.0 ft bg) were cted for VO	stry a to 4.5 colle C TCL	nalyses. 5 ft bg), cted for P, SVOC
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A										

Additional Hydro/Geological Test –	<10 ⁻² Feet/Day	10 ⁻² – 10 Feet/Day	>10 Feet/Day
Permeability Results (e.g. pump test/slug			
test/packer test)			
Additional Comments/Notes/	Borehole backfilled with soil cutti	ngs and restored to grade.	
Observations (if applicable)			

Boring Identification: RCH-4H-ENV-10

		Boring	Informat	ion								
Alternate Boring ID (if applicable)	N/A											
Pipeline Mile Marker ID	Approxima	tely 50 feet s	outhwest of	5.24R								
Location (Latitude/Longitude) –		9134" N / 74°			veyed	d						
estimated/surveyed					•							
Site Address	Boring is lo	cated approx	kimately 200	feet sout	h of t	the inters	ection	of Richr	nond T	errace a	nd West	
	Avenue in S	Staten Island,	, New York (no exact st	reet	address i	s availa	able).				
Nearby Subsurface Features (Distance and	Utility ease	ments and o	ther pipelin	es for Proc	tor a	nd Gamb	le are	located	approxi	imately	15 feet e	
Direction from Utilities, Tanks, Properties,	of the bori	ng.										
etc.)												
Nearby Hydraulic Features (Distance and	An unname	ed pond is loc	ated approx	imately 66	55 fee	et southe	ast of b	boring.				
Direction from wetlands, etc.)												
Drilling Date	11/01/2013											
Drilling Company		ater Environi										
Drilling Method		r/ GeoProbe	(soil sample	s)								
Additional Hydro/Geological Tests (e.g.	N/A											
pump test/slug test/packer test)												
Boring Purpose (e.g. geotech/	Environme	ntal										
environmental/geoarchaelogical)												
		Boring	Observat	ions								
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1 – 8.	0	8.1 – 12	.0 1	2.1 – 16	.0 1	6.1 – 20.	.0 >2	
where applicable		Χ										
PRODUCT				-								
- Product in Soil – Yes/No	No											
(odor/inches/viscosity, etc.)												
 Product in GW – Check where 	None O	bserved	She	en Only		Floating	g Produ	uct = <6'	' Flo	ating Pr	oduct = >	
applicable		X										
HISTORIC FILL MATERIAL												
 Composition, other observations – 		Reworke	d Material			Anthropogenically-Generated Material						
complete, as applicable	Asphalt roa	adway and g	ravel road b	ase from	0.0							
	to 1.0 feet	bg										
 Depth (feet bg) – check more than 	0.0 – 2.0	2.1 – 4.	.0 4.1	- 6.0	6.1 -	- 8.0	8.1 - 2	10.0	10.1 –	12.0	>12.1	
one depth, if applicable – applies to												
Anthropogenically-Generated												
Material only												
PID/Odors (depth)	No PID. No											
Geology		adway and g										
		ND; little cla	•	-			-		by red	brown,	CLAY; soi	
Cail Barrasahilita	Tine to med	lium sand, tr	ace fine grav				oπ bg.			T:-b4		
Soil Permeability		Loose		ın		ediate				Tight		
Total Paring Donth (fact hg)	10				Х	`						
Total Boring Depth (feet bg) GW Monitoring Well Installed	15 N/A											
(Depth, Screen, Riser, Slot Size, Casing)	IN/A											
Laboratory Name and Report No. (if	Accutoct La	boratories, L	ah Danart II	1400004	and I	14000040						
samples collected) (e.g. "Accutest	Accutest La	iboratories, L	ар кероп п	JA90604	anu J	IA90604N	•					
Laboratories, Lab Report ID JA65410")												
Soil Samples Collected - Sample ID(s),	RCH_4H_EN	V-10/3.5 (3.5	5 to 1 0 feet	hal and R	CH-4	H_ENI\/_1(1/7 /7 (0 to 7 5	foot ha) were c	ollected	
Sample Depth(s) and Sampling		C, PCB, pesti							_	-		
Parameter(s)	analyses.	, 1 CD , pcsti	ciac, iiii,	inctais (iii	ciaaii	ing mexav	aiciic c	cinomia	iii, aiia	Bellera	1 CHCIIII3	
GW Samples Collected - Sample ID(s) and	N/A											
Sampling Parameter(s)	11/5											
	~1	0 ⁻² Feet/Day		10-2	- 10	Feet/Day			>10) Feet/D	av	
Additional Hydro/(seological Test –		. ccc, bay		10	-01	. cct, Day			-10		<u>~ 7</u>	
Additional Hydro/Geological Test – Permeability Results (e.g. pump test/slug			l l									
Permeability Results (e.g. pump test/slug												
• • •	Borehole h	oackfilled wit	h grout, he	ntonite ch	ips. a	and black	dved	concret	e and	restored	to natu	

Boring Identification: RCH-4H-ENV-2W

		Boring	Informa	tion								
Alternate Boring ID (if applicable)	N/A											
Pipeline Mile Marker ID	Approxima	tely 25 feet v	est of 4.83									
Location (Latitude/Longitude) – estimated/surveyed		799" N/ 74° 1			rveyed							
Site Address		cated appro Staten Island,							ailroad bed	l on '	Western	
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)		nd utility eas							et southwe	st of	boring.	
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)		nnamed cree ely 2,300 fee							Place Cree	ek is	located	
Drilling Date	9/15/2011											
Drilling Company	Land Air W	ater Environr	nental Serv	ices								
Drilling Method	_	r / GeoProbe m Auger (wel										
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	Pump Test	and Slug Test										
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environme	ntal										
		Boring (Observa	tions								
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0		- 8.0	8.1 – 12.0	12.1 -	- 16.0	16.1 – 2	0.0	>20	
where applicable		Х										
PRODUCT												
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No											
- Product in GW – Check where	None O	bserved	She	en Only	,	Floating	Product =	<6"	Floating P	rodu	ct = >6"	
applicable		X										
HISTORIC FILL MATERIAL												
 Composition, other observations – complete, as applicable 	brown to b to medium	Reworke m 0.0 to 1.0 to rown, fine to , sub-angular nedium dense	medium sa to sub-rou	ind; little nded gra	e fine avel,	Anth	ropogeni	cally-0	-Generated Material			
 Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only 	0.0 – 2.0	2.1 – 4.	0 4.1	- 6.0	6.1	- 8.0 8	3.1 – 10.0	10	.1 – 12.0	;	•12.1	
PID/Odors (depth)	No PID. No	odor.										
Geology	Asphalt frounderlain by gray, fin	m 0.0 to 1. y brown, fine e SAND; little ND; trace silt	e to mediur e silt; medi	n SAND; um dens	trace see from	ilt; medium 17 to 17.5	dense fro feet bg, u	m 5.0	to 17 feet	bg, u	nderlain	
Soil Permeability		Loose				nediate X			Tight			
Total Boring Depth (feet bg)	21					^						
GW Temporary Well Installed		to 6.0 feet b	g - 3 inch di	ameter	PVC rise	er						
(Depth, Screen, Riser, Slot Size, Casing)	_	to 0.0 feet bg	-				en					
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest		boratories, L										
Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)		V-2W/1 (1.0 , PCB, TPH, p								colle	cted for	
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	RCH-4H-EN	V-2W was co	llected for	NY SPDE	S, VOC	s, SVOCs, Po	CBs, metal	ls and	pesticide a	nalys	es.	
Additional Hydro/Geological Test – Permeability Results (e.g. pump test/slug	<10	D ⁻² Feet/Day		10	0 ⁻² – 10	Feet/Day			>10 Feet/	Day		

test/packer test)			
Additional Comments/Notes/	N/A		
Observations (if applicable)			

Boring Identification: RCH-4H-ENV-3

		Boring	Informat	ion							
Alternate Boring ID (if applicable)	N/A										
Pipeline Mile Marker ID	4.85										
Location (Latitude/Longitude) –		252" N/74° 10	ט' 54.3316" \	V– Surveved							-
estimated/surveyed	10 30 3.72		3 3 1.3310	Janveyea							
Site Address	Boring is Ic	cated appro	ximately 580) feet north	east of a	hridge	e crossina	o a s	mall creek	on W	/estern
Site Madress		Staten Island,				_		5 u s	man creek	011 11	Cotterin
Nearby Subsurface Features (Distance and		ements and						ated	annroxima	ately 6	55 feet
Direction from Utilities, Tanks, Properties,		of the boring.		103 101 1100	tor aria v	Garrion	c arc loc	atcu	аррголине	icciy c	3 icci
etc.)	nor tricast o	in the borning.									
Nearby Hydraulic Features (Distance and	A wetland :	area is locate	d annrovima	tely 35 feet	Southwes	t of ho	ring				
Direction from wetlands, etc.)	A Wetland	irea is locate	а аррголіна	tely 33 leet	Southwes	01 00	// III 6.				
Drilling Date	10/20/2011	1									
Drilling Company		ater Environr	nontal Convid	.00							
Drilling Method		r/ GeoProbe	(son samples)							
Additional Hydro/Geological Tests (e.g.	N/A										
pump test/slug test/packer test)	Facilities	- 4 - 1									
Boring Purpose (e.g. geotech/	Environmer	าเลเ									
environmental/geoarchaelogical)											
		Boring (Observati	ons							
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1 – 8.0	8.1 – 3	12.0	12.1 – 1	6.0	16.1 – 20	0.0	>20
where applicable		X									
PRODUCT											
 Product in Soil – Yes/No 	No										
(odor/inches/viscosity, etc.)											
- Product in GW – Check where	None O	bserved	Shee	en Only	Float	ing Pro	oduct = <6	6"	Floating P	roduc	t = >6"
applicable	7	X									
HISTORIC FILL MATERIAL											
- Composition, other observations –		Reworke	d Material			Anthropogenically-Generated Material					
complete, as applicable	Asphalt/cor	ncrete (10"	thick) and	gravel road							
. ,		nick) from 0.0									
- Depth (feet bg) – check more than	0.0 – 2.0	2.1 – 4.			1 – 8.0	8.1	- 10.0	10	.1 – 12.0	>1	12.1
one depth, if applicable – applies to											
Anthropogenically-Generated											
Material only											
	Highest PID		t 2.5 feet bg.	No odor.							
PID/Odors (depth)		0.2 ppm a			nge hrow	n fine	to medii	ım S	ΔND: trace	suh-a	ngular
	Asphalt from	m 0.0 to 2.0	feet bg, und	erlain by ora							
PID/Odors (depth)	Asphalt from	m 0.0 to 2.0 rse gravel, tra	feet bg, unde ace silt from	erlain by ora 2.0 to 9.0 ft	bg, unde	erlain b	y light br	own			
PID/Odors (depth) Geology	Asphalt from	m 0.0 to 2.0 t rse gravel, tra om 9.0 to at l	feet bg, unde ace silt from	erlain by ora 2.0 to 9.0 ft g. Light gray	bg, unde sandy cla	erlain b y lens	y light br	own	, fine to me		
PID/Odors (depth)	Asphalt from	m 0.0 to 2.0 free gravel, training 5.0 to at l	feet bg, unde ace silt from	erlain by ora 2.0 to 9.0 ft g. Light gray	bg, unde	erlain b y lens	y light br	own			
PID/Odors (depth) Geology Soil Permeability	Asphalt from fine to coar trace silt from	m 0.0 to 2.0 t rse gravel, tra om 9.0 to at l	feet bg, unde ace silt from	erlain by ora 2.0 to 9.0 ft g. Light gray	bg, unde sandy cla	erlain b y lens	y light br	own	, fine to me		
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg)	Asphalt from fine to coar trace silt from 15	m 0.0 to 2.0 free gravel, training 5.0 to at l	feet bg, unde ace silt from	erlain by ora 2.0 to 9.0 ft g. Light gray	bg, unde sandy cla	erlain b y lens	y light br	own	, fine to me		
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed	Asphalt from fine to coar trace silt from	m 0.0 to 2.0 free gravel, training 5.0 to at l	feet bg, unde ace silt from	erlain by ora 2.0 to 9.0 ft g. Light gray	bg, unde sandy cla	erlain b y lens	y light br	own	, fine to me		
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing)	Asphalt froi fine to coar trace silt fro 15 N/A	m 0.0 to 2.0 free gravel, training 9.0 to at land	feet bg, undo ace silt from east 15 ft b g	erlain by ora 2.0 to 9.0 ft g. Light gray Inte	bg, unde sandy cla	erlain b y lens	y light br	own	, fine to me		
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if	Asphalt froi fine to coar trace silt fro 15 N/A	m 0.0 to 2.0 free gravel, training 5.0 to at l	feet bg, undo ace silt from east 15 ft b g	erlain by ora 2.0 to 9.0 ft g. Light gray Inte	bg, unde sandy cla	erlain b y lens	y light br	own	, fine to me		
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest	Asphalt froi fine to coar trace silt fro 15 N/A	m 0.0 to 2.0 free gravel, training 9.0 to at land	feet bg, undo ace silt from east 15 ft b g	erlain by ora 2.0 to 9.0 ft g. Light gray Inte	bg, unde sandy cla	erlain b y lens	y light br	own	, fine to me		
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	Asphalt from fine to coar trace silt from 15 N/A Accutest La	m 0.0 to 2.0 mse gravel, tra om 9.0 to at l Loose X boratories, L	feet bg, undo	erlain by ora 2.0 to 9.0 ft g. Light gray Inter	bg, unde sandy cla rmediate	erlain b	oy light br at 9.0ft b	rown g.	, fine to me	edium	SAND;
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s),	Asphalt from fine to coar trace silt from trace silt from 15 N/A Accutest La	m 0.0 to 2.0 mse gravel, trase gravel, trase m 9.0 to at l Loose X boratories, L	feet bg, undo ace silt from east 15 ft bg ab Report ID	erlain by ora 2.0 to 9.0 ft g. Light gray Inter	bg, undersandy clarendersender	erlain by lens	oy light br at 9.0ft by 	own g.	, fine to me	collec	SAND;
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling	Asphalt froi fine to coar trace silt fro 15 N/A Accutest La RCH-4H-EN VOC, SVOC	m 0.0 to 2.0 mse gravel, tra om 9.0 to at l Loose X boratories, L	feet bg, undo ace silt from east 15 ft bg ab Report ID	erlain by ora 2.0 to 9.0 ft g. Light gray Inter	bg, undersandy clarendersender	erlain by lens	oy light br at 9.0ft by 	own g.	, fine to me	collec	SAND;
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	Asphalt froi fine to coar trace silt fro 15 N/A Accutest La RCH-4H-EN VOC, SVOC analyses.	m 0.0 to 2.0 mse gravel, trase gravel, trase m 9.0 to at l Loose X boratories, L	feet bg, undo ace silt from east 15 ft bg ab Report ID	erlain by ora 2.0 to 9.0 ft g. Light gray Inter	bg, undersandy clarendersender	erlain by lens	oy light br at 9.0ft by 	own g.	, fine to me	collec	SAND;
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and	Asphalt froi fine to coar trace silt fro 15 N/A Accutest La RCH-4H-EN VOC, SVOC	m 0.0 to 2.0 mse gravel, trase gravel, trase m 9.0 to at l Loose X boratories, L	feet bg, undo ace silt from east 15 ft bg ab Report ID	erlain by ora 2.0 to 9.0 ft g. Light gray Inter	bg, undersandy clarendersender	erlain by lens	oy light br at 9.0ft by 	own g.	, fine to me	collec	SAND;
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	Asphalt from fine to coar trace silt from trac	m 0.0 to 2.0 rse gravel, tracem 9.0 to at l Loose X boratories, L V-3/2.5 (2.5 c, PCB, pesti	feet bg, undo ace silt from east 15 ft bg ab Report ID	Interpretation (Including Including	bg, undersandy classemediate 4H-ENV-3	erlain by lens y lens 3/6.5 (avalen	oy light br at 9.0ft by 	own g.	t bg) were	collecture controllecture controllec	SAND;
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test -	Asphalt from fine to coar trace silt from trac	m 0.0 to 2.0 mse gravel, trase gravel, trase m 9.0 to at l Loose X boratories, L	feet bg, undo ace silt from east 15 ft bg ab Report ID	Interpretation (Including Including	bg, undersandy classed to the sandy classed to the	erlain by lens y lens 3/6.5 (avalen	oy light br at 9.0ft by 	own g.	, fine to me Tight	collecture controllecture controllec	SAND;
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test — Permeability Results (e.g. pump test/slug	Asphalt from fine to coar trace silt from trac	m 0.0 to 2.0 rse gravel, tracem 9.0 to at l Loose X boratories, L V-3/2.5 (2.5 c, PCB, pesti	feet bg, undo ace silt from east 15 ft bg ab Report ID	Interpretation (Including Including	bg, undersandy classemediate 4H-ENV-3	erlain by lens y lens 3/6.5 (avalen	oy light br at 9.0ft by 	own g.	t bg) were	collecture controllecture controllec	SAND;
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test — Permeability Results (e.g. pump test/slug test/packer test)	Asphalt from fine to coan trace silt from trac	m 0.0 to 2.0 rse gravel, tracem 9.0 to at land to both	ab Report ID	JA89714. JOURNAL STATE OF THE	bg, under sandy class mediate 4H-ENV-: ding hex	3/6.5 (avalen	oy light brat 9.0ft by	own g.	t bg) were and gener	collectral che	SAND;
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test — Permeability Results (e.g. pump test/slug	Asphalt from fine to coan trace silt from trac	m 0.0 to 2.0 rse gravel, tracem 9.0 to at l Loose X boratories, L V-3/2.5 (2.5 c, PCB, pesti	ab Report ID	JA89714. JOURNAL STATE OF THE	bg, under sandy class mediate 4H-ENV-: ding hex	3/6.5 (avalen	oy light brat 9.0ft by	own g.	t bg) were and gener	collectral che	SAND;

Boring Identification: RCH-4H-ENV-4

Soring Identification.											
		Boring	Informat	ion							
Alternate Boring ID (if applicable)	N/A										
Pipeline Mile Marker ID	Approximate	ly 55 feet w	est of 4.93R								
Location (Latitude/Longitude) –	40° 38' 9.477	73" N/ 74° 10	0' 52.6495"	W– Surv	eyed						
estimated/surveyed											
Site Address	Boring is loc	ated approx	imately 1,0	40 feet r	northe	ast of a b	ridge cro	ssing a	small creek	on W	/estern
	Avenue in St	aten Island,	New York (r	o exact s	street	address is	available	e).			
Nearby Subsurface Features (Distance and	Utility easen	nents and o	ther pipelir	nes for P	rocto	r and Gar	nble are	located	approxim	ately 6	50 feet
Direction from Utilities, Tanks, Properties,	northeast of	the boring.									
etc.)											
Nearby Hydraulic Features (Distance and	A wetland ar	ea is located	d approxima	tely 490	feet s	outhwest	of boring				
Direction from wetlands, etc.)											
Drilling Date	10/21/2011										
Drilling Company	Land Air Wat										
Drilling Method	Hand Auger/	GeoProbe (soil samples	5)							
Additional Hydro/Geological Tests (e.g.	N/A										
pump test/slug test/packer test)											
Boring Purpose (e.g. geotech/	Environment	al									
environmental/geoarchaelogical)											
		Boring C	Observati	ons							
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1 – 8	8.0	8.1 – 12.	12.1	- 16.0	16.1 – 2	0.0	>20
where applicable			Х								
PRODUCT											
- Product in Soil – Yes/No	No										
(odor/inches/viscosity, etc.)											
- Product in GW – Check where	None Ob	served	Shee	n Only		Floating	Product	= <6"	Floating P	roduc	t = >6"
applicable	Х										
HISTORIC FILL MATERIAL			·			•					
- Composition, other observations –		Reworked	Material			Anthropogenically-Generated Material					ial
complete, as applicable	Asphalt/cond	crete (7" thi	ck), concret	e with gr	ravel						
	base and so	me fine to r	medium san	d (13" tl	hick)						
	from 0.0 to 2	2.0 feet bg.									
 Depth (feet bg) – check more than 	0.0 - 2.0	2.1 – 4.0	4.1 –	6.0	6.1 -	- 8.0	8.1 – 10.	0 10	.1 – 12.0	>1	L2.1
one depth, if applicable – applies to											
Anthropogenically-Generated											
Material only											
PID/Odors (depth)	No PID. No o										
Geology	Asphalt from		_		_						_
	fine to coars	-			-		•	_			
	SAND; some						-			g, un	derlain
	by orange br		medium SA				at least	15 ft bg			
Soil Permeability		Loose		<u>I</u> I	nterm	ediate			Tight		
	45	Х									
Total Boring Depth (feet bg)	15 N/A										
GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing)	N/A										
Laboratory Name and Report No. (if	Accutest Lab	oratorios La	h Ronart ID	176066	5 2 2 4	IV808ED					
samples collected) (e.g. "Accutest	ACCULEST LAD	oratories, La	an vehour in	THODOD	aliu .	JAOJOOJK.					
Laboratories, Lab Report ID JA65410")											
Soil Samples Collected - Sample ID(s),	RCH-4H-ENV	-1/3 5 /2 5 +	to 10 foot b	a) and D	CH. 41	4_FN\/. 1 /7	5 (7 5 +^	2 0 foo	t hal word	collec	ted for
Sample Depth(s) and Sampling	VOC, SVOC,										
Parameter(s)	analyses.	, CD, PESUL	nuc, ifil, l	iciais (II	iiciuul	iie liexava	iiciit CIII	Jiiiulii)	ana gener	ai Cilt	.iiiisti y
GW Samples Collected - Sample ID(s) and	N/A										
Sampling Parameter(s)	19/7										
Additional Hydro/Geological Test –	<10 ⁻	² Feet/Day		10-2	² – 10	Feet/Day			>10 Feet/	Dav	
Permeability Results (e.g. pump test/slug	110	. cct, bay		10		. ccy bay	+		- 10 1 661/	,	
test/packer test)											
Additional Comments/Notes/	Borehole bad	ckfilled with	grout, hent	onite chi	ps. hla	ack dved r	oncrete a	nd rest	ored to nati	ural gr	ade.
Observations (if applicable)			J - 2-, 20.10	0.11	, -, ~	,				O''	
(/	1										

Boring Identification: RCH-4H-ENV-5W

		Boring	Informat	ion				
Alternate Boring ID (if applicable)	N/A							
Pipeline Mile Marker ID	Approximate	aly 25 foot w	est of 1 97R					
Location (Latitude/Longitude) – estimated/surveyed				'W – Surveye	ed			
Site Address					of the interse		n Avenue and	Richmond
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)					located approx		feet south of b	ooring.
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	A portion of	Bridge Cree	k is located	730 feet west	of boring.			
Drilling Date	9/19/2011							
Drilling Company	Land Air Wa	ter Environr	nental Servio	es				
Drilling Method	Hand Auger Hollow Stem							
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	Pump Test a							
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environmen	tal						
		Boring (Observati	ons				
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1 – 8.0	8.1 – 12.0	12.1 – 16.0	16.1 – 20.0	>20
where applicable	Х							
PRODUCT				•	•		•	
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No							
- Product in GW – Check where	None Ob	served	Shee	n Only	Floating Pr	oduct = <6"	Floating Pro	duct = >6"
applicable	Х				_			
HISTORIC FILL MATERIAL								
 Composition, other observations – 		Reworke	d Material		Anthro	pogenically-	Generated Ma	terial
complete, as applicable	Asphalt (15"	-	base from 0 og.	.0 to 1.5 feet	gravel; som	e fine to coa	angular to s	e silt; trace
- Depth (feet bg) – check more than	0.0 - 2.0	2.1 – 4.	0 4.1-	60 61			to 3.5 feet bg	· >12.1
one depth, if applicable – applies to Anthropogenically-Generated Material only	X	X X	4.1-	6.0	8.1	. – 10.0 1	0.1 – 12.0	>12.1
PID/Odors (depth)	No PID. Sligh	nt petroleum	n-like odor fr	om 3.5 to 4.5	feet bg.		l	
Geology	(see above) angular grav underlain by gravel from	, underlain vel, trace sil v light brown 4.5 to 5.0 fe	by dark bro t; slight petron to brown, to eet bg, unde	wn to black, oleum-like o fine to mediu rlain by red b	t bg, underlain , fine to medi dor; trace org im SAND; trace orown, fine to ine gravel from	um SAND; tranic root made silt from 4.5 medium SAN	race fine to conterial 3.5 to 45 to 10 feet bg D; little silt 10	oarse, sub- .5 feet bg, ; trace fine
Soil Permeability		Loose		Inter	X X		Tight	
Total Boring Depth (feet bg)	20	<u> </u>		·		·		<u> </u>
GW Temporary Well Installed	_			meter PVC ris				
(Depth, Screen, Riser, Slot Size, Casing)					slot PVC screer			
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest	Accutest Lak	ooratories, L	ab Report ID	s JA86686, J <i>A</i>	\86687, JA865!	59 and JA865	59R.	
Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	6.0 feet bg) were colle	ected for VO		(3.5 to 4.0 fee PCBs, TPH, polyses.	•		-
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)		/-5W was co	llected for N	IYDEC Sewer	Use Discharge	parameters,	NY SPDES, VC	Cs, SVOCs,
Additional Hydro/Geological Test –		⁻² Feet/Day			0 Feet/Day		>10 Feet/Da	ıv
		, y	1		,,	1		

Permeability Results (e.g. pump test/slug test/packer test)			
Additional Comments/Notes/	Total depth of well was approxim	ately 16 feet bg.	
Observations (if applicable)			

Boring Identification: RCH-4H-ENV-6

		Boring	Info	rmatic	on								
Alternate Boring ID (if applicable)	N/A												
Pipeline Mile Marker ID	5.05R												
Location (Latitude/Longitude) – estimated/surveyed	40° 38' 15.11	17" N / 74°	10' 4	9.2840"	W – Sur	veye	d						
Site Address	Boring is loc Western Ave			•								Terr	ace and
Nearby Subsurface Features (Distance and	Utility easem				-						•	ntoly /	100 foot
Direction from Utilities, Tanks, Properties, etc.)	east of the bo		Milei	pipeiiile	5 IUI FI	octor	and G	annoie	are loca	iteu a	рргохина	ately 2	+00 Teet
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	A wetland are	ea is locate	d app	roximate	ely 460 f	feet e	ast of b	oring.					
Drilling Date	10/27/2011												
Drilling Company	Land Air Wat	er Environn	nenta	I Service	S								
Drilling Method	Hand Auger/	GeoProbe	(soil s	amples)									
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A												
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environment	al											
		Boring (Obse	ervatio	ns								
Depth to saturation (feet bg) – Check where applicable	0.0 – 2.0	2.1 – 4.0 X	4.1	- 6.0	6.1 – 8	3.0	8.1 – 1	2.0	12.1 – 1	L6.0	16.1 – 2	20.0	>20
PRODUCT	1	^											
- Product in Soil – Yes/No (odor/inches/viscosity, etc.)	No												
- Product in GW – Check where applicable	None Obs	served		Sheen	Only		Floati	ing Pro	oduct = <	6"	Floating	Produ	ct = >6"
HISTORIC FILL MATERIAL			ı				I			ı			
- Composition, other observations –		Reworke	d Mat	terial			Δ	nthro	pogenica	ally-Generated Material			
complete, as applicable	Asphalt (12" and fine to a 2.0 feet bg.				_					,			
 Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only 	0.0 – 2.0	2.1 – 4.	0	4.1 – 6	5.0	6.1 -	- 8.0	8.1	<u>– 10.0</u>	10.:	1 – 12.0	>	·12.1
PID/Odors (depth)	No PID. No o	dor.										ı	
Geology	Asphalt from from 2.0 to 4 brown fine to little fine grav	.0 ft bg, un o medium S	derlai SAND;	in by ligh ; little sil	nt browr t from 5	n SILT	; some	clay fr	om 4.0 to	5.0 f	ft bg, und	erlain	by light
Soil Permeability		Loose			Ir	nterm	ediate				Tight	t	
)	Χ.						
Total Boring Depth (feet bg)	15												
GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing)	N/A												
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	Accutest Labo	oratories, L	ab Re	port ID J	A90403	and.	JA90403	3R.					
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	RCH-4H-ENV- VOC, SVOC, analyses.			_									
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A												
Additional Hydro/Geological Test – Permeability Results (e.g. pump test/slug	<10 ⁻²	Feet/Day			10 ⁻²	- 10	Feet/Da	ay			>10 Feet	/Day	
test/packer test) Additional Comments/Notes/	Borehole bac	kfilled with	grou	t hentor	nite chir	ns hla	ack dver	d conc	rete and	resto	red to nat	tural o	rade
Observations (if applicable)	DOI CHOIC DAG	KINICU WILLI	ыои	e, sentor	nic onip	,, DIC	ack dyel		i ete anu	. 03(0)	ca to nat	.u.u.g	,

Boring Identification: RCH-4H-ENV-7

ris locarn Aven easeme f the bo and are /2011 hir Wate Auger/ (2.0 2	ated appronue in State ents and o pring. ea is located er Environm GeoProbe (2.1 – 4.0 X Served Reworked	10' 48.6679 Den Island, Ne other pipelir d approximately 1 d approximately 1 d approximately 1 control service Sheet d Material	,,000 fe ew York nes for ately 46! ces s)	et sout (no exa Proctor 5 feet e	act street a and Gam ast of bori	ddress is an old are loc	vailable ated a	e).	ely 45		
ris locarn Aven easeme f the bo and are /2011 hir Wate Auger/ (2.0 2	ated appronue in State ents and o pring. ea is located er Environm GeoProbe (2.1 – 4.0 X Served Reworked	pximately 1 en Island, Ne other pipelir d approxima mental Servic (soil sample) Dbservat 4.1 – 6.0	ions ions	et sout (no exa Proctor 5 feet e	act street a and Gam ast of bori	ddress is an ole are loc	vailable ated a	2). pproximat	ely 45	55 feet	
ris locarn Aven easeme f the bo and are /2011 hir Wate Auger/ (2.0 2	ated appronue in State ents and o pring. ea is located er Environm GeoProbe (2.1 – 4.0 X Served Reworked	pximately 1 en Island, Ne other pipelir d approxima mental Servic (soil sample) Dbservat 4.1 – 6.0	ions ions	et sout (no exa Proctor 5 feet e	act street a and Gam ast of bori	ddress is an ole are loc	vailable ated a	2). pproximat	ely 45	55 feet	
rn Aven easeme f the bo and are /2011 sir Wate Auger/ C nmenta	enue in State ents and o pring. ea is located er Environm GeoProbe (2.1 – 4.0 X Reworked	en Island, Ne other pipelir d approxima mental Servic (soil sample: 4.1 – 6.0 Shee	ew York nes for ately 46: ces s) ions 6.1 -	(no exa Proctor 5 feet e	act street a and Gam ast of borin	ddress is an ole are loc	vailable ated a	2). pproximat	ely 45	55 feet	
easement fithe board are fithe board are fithe board are fithe board are fither with a second are fither than the fither than	ents and opring. ea is located er Environm GeoProbe (Boring C 2.1 – 4.0 X Served Reworked	d approxima nental Servic (soil sample: 4.1 – 6.0	ces s)	Froctor 5 feet e	ast of boring	12.1 –	16.0	16.1 – 20	0.0		
f the bo and are /2011 Air Wate Auger/ C nmenta 2.0 2 one Obsc X	ea is located er Environm GeoProbe (Boring C 2.1 – 4.0 X Served Reworked	nental Service (soil sample: Observat 4.1 – 6.0	ces s)	- 8.0	ast of borio	12.1 –	16.0	16.1 – 20	0.0		
/2011 Auger/ Connenta 2.0 2 Inne Observing August 1 A	Boring C 2.1 – 4.0 X Served Reworked	Dbservat 4.1 – 6.0	ions 6.1 –	- 8.0	8.1 – 12.0	12.1 -				>20	
nmenta 2.0 2 one Obso X	Boring C 2.1 – 4.0 X served	Observati 4.1 – 6.0	ions 6.1 -							>20	
nmenta 2.0 2 one Obso X	Boring C 2.1 – 4.0 X served	Observati 4.1 – 6.0	ions 6.1 -							>20	
2.0 2 one Obs	Boring C 2.1 – 4.0 X served	Observati 4.1 – 6.0 Shee	ions 6.1 -							>20	
2.0 2 one Obso X	Boring C 2.1 – 4.0 X served	4.1 – 6.0 Shee	6.1 -							>20	
2.0 2 one Obso X	Boring C 2.1 – 4.0 X served	4.1 – 6.0 Shee	6.1 -							>20	
2.0 2 one Obso X	2.1 – 4.0 X	4.1 – 6.0 Shee	6.1 -							>20	
ne Obso	X served	Shed								>20	
X It and f	served Reworked		en Only	,	Floating	Product = <	<6"	Floating Pi	oduc		
X It and f	Reworked		en Only	,	Floating	Product = <	< 6"	Floating Pi	oduc		
X It and f	Reworked		en Only	,	Floating	Product = <	< 6 "	Floating P	oduc		
		d Material								t = >6"	
		d Material									
	fine coarse				Anth	nropogenically-Generated Material					
1.0 feet	t bg	e gravel roa	ad base	from			-				
2.0	2.1 – 4.0	0 4.1-	- 6.0	6.1 -	- 8.0	3.1 – 10.0	10.1	.1 – 12.0 >12.1			
). No od	l dor										
It and fi little fir 1.0 to 7.	ine coarse ine to coars '.0 ft bg, ur	gravel road se gravel fro nderlain by n CLAY; littl	om 1.0 t red/bro	o 4.0 ft wn fine	bg, under to mediu	lain by find m SAND ar	e to me	edium SAN Y from 7.0	ID; lit	tle clay 0 ft bg,	
5 ft bg.		<u> </u>				-					
L	Loose			Interm				Tight			
				>	(
- I - I-		ah Dawasat ID		74	14005745						
st Labo	oratories, La	ыр кероrt ID	JA9057	74 and J	IA9U5/4R.						
	7/3 5 /3 5 1	to 4 N feet F	hø) RC	H-4H-FI	NV-7/2 5^	and RCH-/	1H-FNN	1-7/6 5 /6 !	5 to 7	7 N feet	
H-FNW-											
			. 00, pc.	,	,	.5 (o nexu		Ju	, and	
ere colle											
ere colle							,	>10 Foot/F)21/		
ere colle al chemi	Feet/Day		10) ⁻² _ 10	Feet/Day	J		- 10 661/1	-u y		
ere colle al chemi	Feet/Day		10) ⁻² – 10	Feet/Day						
	4H-ENV- vere coll	4H-ENV-7/3.5 (3.5 vere collected for V	4H-ENV-7/3.5 (3.5 to 4.0 feet	4H-ENV-7/3.5 (3.5 to 4.0 feet bg), RC vere collected for VOC, SVOC, PCB, pe ral chemistry analyses.	4H-ENV-7/3.5 (3.5 to 4.0 feet bg), RCH-4H-Elvere collected for VOC, SVOC, PCB, pesticide, ral chemistry analyses.	vere collected for VOC, SVOC, PCB, pesticide, TPH, meta ral chemistry analyses.	4H-ENV-7/3.5 (3.5 to 4.0 feet bg), RCH-4H-ENV-7/3.5A, and RCH-4	4H-ENV-7/3.5 (3.5 to 4.0 feet bg), RCH-4H-ENV-7/3.5A, and RCH-4H-ENV vere collected for VOC, SVOC, PCB, pesticide, TPH, metals (including hexal chemistry analyses.	4H-ENV-7/3.5 (3.5 to 4.0 feet bg), RCH-4H-ENV-7/3.5A, and RCH-4H-ENV-7/6.5 (6.5 vere collected for VOC, SVOC, PCB, pesticide, TPH, metals (including hexavalent chroral chemistry analyses.	4H-ENV-7/3.5 (3.5 to 4.0 feet bg), RCH-4H-ENV-7/3.5A, and RCH-4H-ENV-7/6.5 (6.5 to 7 vere collected for VOC, SVOC, PCB, pesticide, TPH, metals (including hexavalent chromium ral chemistry analyses.	

Boring Identification: RCH-4H-ENV-8W

		Boring	Informat	ion									
Alternate Boring ID (if applicable)	RCH-4H-EN\												
Pipeline Mile Marker ID	5.17R												
Location (Latitude/Longitude) –	40° 38' 21.3	451" N / 74°	10' 47.9302	" W – Sun	/evec								
estimated/surveyed		,			-,								
Site Address	Boring loca	ted on Wes	tern Avenu	e on Port	Auth	nority prop	erty appro	oxima	ately 560 fe	eet so	outh of		
		errace in Sta											
Nearby Subsurface Features (Distance and		l Gamble ut								eet n	orth of		
Direction from Utilities, Tanks, Properties,	boring.	. • • • • • • • • • • • • • • • • • • •		aa. p			асса арр.	· · · · · ·	utc., 155 .		0 0.		
etc.)													
Nearby Hydraulic Features (Distance and	Newark Bay	is located a	pproximatel	v 1.100 fe	et no	rth of borin	ng. Wetlan	ds ar	e located ar	nrox	imately		
Direction from wetlands, etc.)		utheast of bo		, _,			.6	u.	c .000.00 a	op. o			
Drilling Date	10/24/2011												
Drilling Company	+	iter Environn	nental Servi	- AC									
Drilling Method		/ Macrocore											
		/ Macrocore	e / Z / Direc	l Pusn									
Additional Hydro/Geological Tests (e.g.	N/A												
pump test/slug test/packer test)	 												
Boring Purpose (e.g. geotech/	Environmen	itai											
environmental/geoarchaelogical)			_										
			Observat						1				
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1 – 8.	0	8.1 – 12.0	12.1 –	16.0	16.1 – 20	0.0	>20		
where applicable													
PRODUCT													
 Product in Soil – Yes/No 	No												
(odor/inches/viscosity, etc.)													
 Product in GW – Check where 	None Ol	bserved	She	en Only		Floating F	roduct = <	:6 "	Floating P	roduc	t = >6"		
applicable	Х	(
HISTORIC FILL MATERIAL													
- Composition, other observations –		Reworke	d Material			Anth	Anthropogenically-Generated Material						
complete, as applicable	1.0 to 2.0 f	eet bg - Bro	wn, fine sar	nd; some f	ine								
		sub-angular											
	brown silt.		_										
	2.0 to 3.0	feet bg - R	eddish-brov	n silt; so	me								
	brown, fine	e to mediu	ım sand, l	ittle fine	to								
	medium, su	b-angular gr	avel.										
Developed to the second		_	0 44										
 Depth (feet bg) – check more than 	0.0 - 2.0	2.1 – 4.	0 4.1-	- 6.0	6.1 -	8.0	.1 – 10.0	10	.1 – 12.0	>:	12.1		
	0.0 – 2.0	2.1 – 4.	0 4.1-	- 6.0	6.1 -	8.0 8	.1 – 10.0	10	0.1 – 12.0	>:	12.1		
one depth, if applicable – applies to	0.0 – 2.0	2.1 – 4.	0 4.1 -	- 6.0	6.1 -	8.0 8	.1 – 10.0	10	0.1 – 12.0	>:	12.1		
	0.0 - 2.0	2.1 – 4.	0 4.1-	- 6.0	6.1 -	8.0 8	.1 – 10.0	10	0.1 – 12.0	>:	12.1		
one depth, if applicable – applies to Anthropogenically-Generated		2.1 – 4.		- 6.0	6.1 -	8.0 8	.1 – 10.0	10	0.1 – 12.0	>:	12.1		
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth)	No PID, no c	odor detecte	d.										
one depth, if applicable – applies to Anthropogenically-Generated Material only	No PID, no c	odor detecte	d. underlain by	concrete	mixe	d with grav	vel, some f	ine b	prown sand	(base) to 1.0		
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth)	No PID, no o	odor detecte er (5" thick) (derlain by FII	d. underlain by L to 3.0 fee	concrete t bg, unde	mixe rlain	d with grav	vel, some f	ine b	prown sand	(base) to 1.0		
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology	No PID, no o	odor detecte er (5" thick) (derlain by FII vel to at leas	d. underlain by L to 3.0 fee	concrete t bg, unde Water no	mixe rlain t enc	d with grav by reddish ountered.	vel, some f	ine b	prown sand me clay, tra	(base) to 1.0		
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth)	No PID, no o	odor detecte er (5" thick) (derlain by FII	d. underlain by L to 3.0 fee	concrete t bg, unde Water no	mixe rlain t enc	d with grav	vel, some f	ine b	prown sand me clay, tra	(base) to 1.0		
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability	No PID, no o Asphalt laye foot bg, und angular grav	odor detecte er (5" thick) (derlain by FII vel to at leas	d. underlain by L to 3.0 fee	concrete t bg, unde Water no	mixe rlain t enc	d with grav by reddish ountered.	vel, some f	ine b	prown sand me clay, tra	(base) to 1.0		
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg)	No PID, no o Asphalt laye foot bg, und angular grav	odor detecte er (5" thick) (derlain by FII vel to at leas	d. underlain by L to 3.0 fee	concrete t bg, unde Water no	mixe rlain t enc	d with grav by reddish ountered.	vel, some f	ine b	prown sand me clay, tra	(base) to 1.0		
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed	No PID, no o Asphalt laye foot bg, und angular grav	odor detecte er (5" thick) (derlain by FII vel to at leas	d. underlain by L to 3.0 fee	concrete t bg, unde Water no	mixe rlain t enc	d with grav by reddish ountered.	vel, some f	ine b	prown sand me clay, tra	(base) to 1.0		
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing)	No PID, no of Asphalt layer foot bg, uncangular graves 20 N/A	odor detecte er (5" thick) (derlain by FII vel to at leas Loose	d. underlain by L to 3.0 fee t 20 feet bg.	concrete t bg, unde Water no In	mixe rlain t ence term	d with grav by reddish ountered.	vel, some f	ine b	prown sand me clay, tra	(base) to 1.0		
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if	No PID, no of Asphalt layer foot bg, uncangular graves 20 N/A	odor detecte er (5" thick) (derlain by FII vel to at leas	d. underlain by L to 3.0 fee t 20 feet bg.	concrete t bg, unde Water no In	mixe rlain t ence term	d with grav by reddish ountered.	vel, some f	ine b	prown sand me clay, tra	(base) to 1.0		
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest	No PID, no of Asphalt layer foot bg, uncangular graves 20 N/A	odor detecte er (5" thick) (derlain by FII vel to at leas Loose	d. underlain by L to 3.0 fee t 20 feet bg.	concrete t bg, unde Water no In	mixe rlain t ence term	d with grav by reddish ountered.	vel, some f	ine b	prown sand me clay, tra	(base) to 1.0		
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	No PID, no c Asphalt layer foot bg, uncangular grave 20 N/A	odor detecte er (5" thick) i derlain by FII vel to at leas Loose	d. underlain by L to 3.0 fee t 20 feet bg.	v concrete t bg, unde Water no In	mixe rlain t enco term	d with gravely reddish ountered.	vel, some f -brown SIL	T; so	orown sand me clay, tra Tight X	(base) to 1.0 ne, sub-		
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s),	No PID, no of Asphalt layer foot bg, uncangular graves 20 N/A Accutest Lale	odor detecte er (5" thick) i derlain by FII vel to at leas: Loose	d. underlain by L to 3.0 feet t 20 feet bg. ab Report ID	v concrete t bg, unde Water no In	mixe rrlain t encc term	d with gravely reddish ountered. ediate	vel, some f -brown SIL	o 7.5	orown sand me clay, tra Tight X	(base) to 1.0 ne, sub-		
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling	No PID, no c Asphalt layer foot bg, uncangular grave 20 N/A	odor detecte er (5" thick) i derlain by FII vel to at leas: Loose	d. underlain by L to 3.0 feet t 20 feet bg. ab Report ID	v concrete t bg, unde Water no In	mixe rrlain t encc term	d with gravely reddish ountered. ediate	vel, some f -brown SIL	o 7.5	orown sand me clay, tra Tight X	(base) to 1.0 ne, sub-		
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	No PID, no of Asphalt layer foot bg, und angular grave 20 N/A Accutest Laler RCH-4H-ENV for VOC, SVO	odor detecte er (5" thick) i derlain by FII vel to at leas: Loose	d. underlain by L to 3.0 feet t 20 feet bg. ab Report ID	v concrete t bg, unde Water no In	mixe rrlain t encc term	d with gravely reddish ountered. ediate	vel, some f -brown SIL	o 7.5	orown sand me clay, tra Tight X	(base) to 1.0 ne, sub-		
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and	No PID, no of Asphalt layer foot bg, uncangular graves 20 N/A Accutest Lale	odor detecte er (5" thick) i derlain by FII vel to at leas: Loose	d. underlain by L to 3.0 feet t 20 feet bg. ab Report ID	v concrete t bg, unde Water no In	mixe rrlain t encc term	d with gravely reddish ountered. ediate	vel, some f -brown SIL	o 7.5	orown sand me clay, tra Tight X	(base) to 1.0 ne, sub-		
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	No PID, no of Asphalt layer foot bg, und angular grave 20 N/A Accutest Laler RCH-4H-ENV for VOC, SVO	odor detecte er (5" thick) i derlain by FII vel to at leas: Loose	d. underlain by L to 3.0 feet t 20 feet bg. ab Report ID	o concrete t bg, unde Water no In D JA90025. t bg) and I cide, TPH,	mixe rlain t enco term	d with gravely reddish ountered. ediate	vel, some f -brown SIL	o 7.5	orown sand me clay, tra Tight X	(base ace fir) to 1.0 ne, sub-		

Permeability Results (e.g. pump test/slug			
test/packer test)			
Additional Comments/Notes/	No well installed, water not enc	ountered during boring. Borehole	backfilled with grout, bentonite
Observations (if applicable)	chips, black dyed cement and rest	cored to natural grade.	

Boring Identification: RCH-4H-ENV-9

		Boring	Informat	ion								
Alternate Boring ID (if applicable)	N/A	8										
Pipeline Mile Marker ID		taly 10 fact y	unst of F 201	,								
Location (Latitude/Longitude) –		tely 40 feet v 0856" N / 74°				<u>ا</u>						
estimated/surveyed												
Site Address	_	cated approx Staten Island	•						hmo	nd Terrace	and V	Vestern
Nearby Subsurface Features (Distance and	Utility ease	ments and o	ther pipelin	es for P	roctor a	and Gan	nble a	re locate	d ap	proximatel	/ 10 fe	et east
Direction from Utilities, Tanks, Properties, etc.)	of the borir	ng.										
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	An unname	d pond is lo	cated approx	imately	/ 655 fe	et east o	of bor	ing.				
Drilling Date	10/31/2011	<u> </u>										
<u> </u>		ater Environi	mantal Cami									
Drilling Company												
Drilling Method		r/ GeoProbe	(soil sample	S)								
Additional Hydro/Geological Tests (e.g.	N/A											
pump test/slug test/packer test)	 											
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environmer	ntal										
			Observat	ions								
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1 -	- 8.0	8.1 – 1	2.0	12.1 – 1	16.0	16.1 – 2	0.0	>20
where applicable		Χ										
PRODUCT												
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No											
- Product in GW – Check where	None O	bserved	She	en Only	,	Floati	ng Pro	oduct = <	6"	Floating F	roduc	t = >6"
applicable		X										
HISTORIC FILL MATERIAL												
- Composition, other observations –		Reworke	d Material		Anthropogenically-Generated Material							ial
complete, as applicable	Asphalt roate to 1.0 feet l	ndway and g	ravel road l	ase fro								
- Depth (feet bg) – check more than	0.0 - 2.0	2.1 – 4.	.0 4.1	- 6.0	6.1	- 8.0	8.1	- 10.0	10	0.1 – 12.0	>	12.1
one depth, if applicable – applies to												
Anthropogenically-Generated												
Material only												
PID/Odors (depth)	No PID. No	odor.										
Geology	Asphalt roa	dway and g	ravel road b	ase fro	m 0.0 t	o 1.0 fe	et bg,	, underla	in by	/ brown fin	e to n	nedium
	SAND; little	silt from 1.0	0 to 4.0 ft b	g, unde	rlain by	red/bro	own C	LAY; fine	to c	oarse grave	el fron	1 4.0 to
	at least 15 f	ft bg.										
Soil Permeability		Loose			Intern	nediate				Tight		
						Χ						
Total Boring Depth (feet bg)	15											
GW Monitoring Well Installed	N/A											
-	14//											
(Depth, Screen, Riser, Slot Size, Casing)	1,7,7											
		boratories, L	.ab Report II) JA906	84 and	JA90684	1R.					
(Depth, Screen, Riser, Slot Size, Casing)		boratories, L	.ab Report II) JA906	84 and	JA90684	1R.					
(Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if		boratories, L	ab Report II) JA906	84 and	JA90684	1R.					
(Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest	Accutest La	boratories, L V-9/3.5 (3.5						7.0 to 7.5	i fee	t bg) were	collec	ted for
(Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	Accutest La	,	to 4.0 feet	bg) and	d RCH-4	lH-ENV-	9/7 (7					
(Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s),	Accutest La	V-9/3.5 (3.5	to 4.0 feet	bg) and	d RCH-4	lH-ENV-	9/7 (7					
(Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling	Accutest La RCH-4H-EN VOC, SVOC	V-9/3.5 (3.5	to 4.0 feet	bg) and	d RCH-4	lH-ENV-	9/7 (7					
(Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	RCH-4H-EN VOC, SVOC analyses.	V-9/3.5 (3.5	to 4.0 feet	bg) and	d RCH-4	lH-ENV-	9/7 (7					
(Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and	RCH-4H-EN VOC, SVOC analyses.	V-9/3.5 (3.5	to 4.0 feet cide, TPH,	bg) and metals	d RCH-4 (includi	lH-ENV-	9/7 (7 avalen				ral ch	
(Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	RCH-4H-EN VOC, SVOC analyses.	V-9/3.5 (3.5 c, PCB, pesti	to 4.0 feet cide, TPH,	bg) and metals	d RCH-4 (includi	H-ENV-	9/7 (7 avalen			and gene	ral ch	
(Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test -	RCH-4H-EN VOC, SVOC analyses.	V-9/3.5 (3.5 c, PCB, pesti	to 4.0 feet cide, TPH,	bg) and metals	d RCH-4 (includi	H-ENV-	9/7 (7 avalen			and gene	ral ch	
(Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test - Permeability Results (e.g. pump test/slug	RCH-4H-EN VOC, SVOC analyses. N/A	V-9/3.5 (3.5 c, PCB, pesti	to 4.0 feet cide, TPH,	bg) and metals	d RCH-4 (includi	H-ENV-ing hexa	9/7 (7 avalen	et chromi	ium)	and gene	ral ch	emistry

Boring Identification: RCH-4-PIP-3

		Boring	Informat	ion							
Alternate Boring ID (if applicable)	N/A										
Pipeline Mile Marker ID	4.82R										
Location (Latitude/Longitude) –	40° 38′ 1.94	33" N/ 74° 1	0' 55.2457"	W - Sui	rveyed						
estimated/surveyed											
Site Address	_	cated approx	-				_	_	small cree	k on \	Western
		taten Island,									
Nearby Subsurface Features (Distance and		ments and c	other pipelir	nes for	Procto	or and G	amble a	are locate	d approxin	nately	50 feet
Direction from Utilities, Tanks, Properties, etc.)	north of the										
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	A stream is area.	located appr	roximately 1	.30 feet	t west	of boring	. The bo	oring is lo	cated withi	in the	wetlan
Drilling Date	04/18/13 to	04/19/12									
Drilling Company		ter Environn		es							
Drilling Method		/ Tri-cone ro	ller bit								
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A										
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environmen	tal									
			Observati								
Depth to saturation (feet bg) – Check where applicable	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0 X	6.1 -	- 8.0	8.1 – 12	2.0 1	2.1 – 16.0	16.1 –	20.0	>20
PRODUCT											
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No										
 Product in GW – Check where applicable 	None Ol		Shee	en Only	,	Floatir	ng Prodi	uct = <6"	Floating	Produ	ct = >6
HISTORIC FILL MATERIAL			1			1			1		
- Composition, other observations -		Reworked	d Material			A	nthropo	genically	-Generated	Mate	rial
complete, as applicable	sub-angular from 2.0 to sand; some	to sub-rou to sub-rou 6.0 ft bg, u fine to med evel, trace sili	inded grave inderlain by ium, sub-an	el, trac brown gular te	ce silt n, fine o sub-	to coa	rse, ang		medium sa ub-rounded !.0 ft bg.		
- Depth (feet bg) – check more than	0.0 - 2.0	2.1 – 4.0				- 8.0	8.1 –	10.0 1	0.1 – 12.0	;	>12.1
one depth, if applicable – applies to Anthropogenically-Generated Material only	Х										
PID/Odors (depth)	No PID. No	odor.	II.		1						
Geology	underlain b	ove) to 8.0 fe y gray, medi	ium to fine	SAND,	trace	silt from	11 to 2	17 ft bg,	underlain b		
	SAND, trace	silt from 20	to at least 2	7 ft bg.			ling froi	m 17 to 2			
Soil Permeability		Loose				nediate		+	Tigh	Ιτ	
Tatal Barda - Bardh (faatha)	27					Х					
Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth Server Biser Slot Size Casing)	27 N/A										
(Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if	No samples	collected									
samples collected) (e.g. "Accutest	ino sampies	conected.									
Laboratories, Lab Report ID JA65410")											
Soil Samples Collected - Sample ID(s),	N/A										
Sample Depth(s) and Sampling Parameter(s)	,										
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A										
Additional Hydro/Geological Test –	<10	⁻² Feet/Day		10) ⁻² – 10	Feet/Da	v		>10 Feet	t/Dav	
Permeability Results (e.g. pump test/slug		,,				,	•			, ;	
test/packer test)											
Additional Comments/Notes/	Borehole gr	outed in acco	ordance with	N.J.A.	C. 7:9D	-3.1.					
Observations (if applicable)	Ĭ.										

Boring Identification: RCH-5H-ENV-1W

		Boring	Informat	ion						
Alternate Boring ID (if applicable)	N/A									
Pipeline Mile Marker ID	5.32R									
Location (Latitude/Longitude) –	40° 38' 27.1	845" N / 74°	10' 43.9593	" W – Survey	ed					
estimated/surveyed	.5 55 27.11	, , ,		34.10						
Site Address	Boring is lo	rated in Por	t Authority	nronerty on	Richmond	Terrace	at the i	ntersection	of Ca	therine
Site Address				exact street			at the i	intersection	01 00	atticitie
Nearby Subsurface Features (Distance and	A manhole						line is	located 19 f	foot s	outh of
Direction from Utilities, Tanks, Properties,	boring.	is located o	icct northw	rest of borni	g. A 30030	riace gas	3 11110 13	located 15 i	icci s	outii o
etc.)	bornig.									
Nearby Hydraulic Features (Distance and	Newark bay	is located an	nroximately	, 650 feet no	rth of hori	าฮ				
Direction from wetlands, etc.)	Newark bay	is located up	proximater	7 050 1001 110	1 (11 01 0011	۰6۰				
Drilling Date	10/25/2011									
Drilling Company	Land Air Wa	ter Environn	nental Servic	`AS						
Drilling Method	Hand Auger									
Additional Hydro/Geological Tests (e.g.	Slug Test	/ iviaciocore,	/Z /Direct P	usii						
pump test/slug test/packer test)	Siug Test									
Boring Purpose (e.g. geotech/	Environmen	tal.								
environmental/geoarchaelogical)	Environmen	ldi								
environmental/geoarchaelogical)		Davina (`h							
Double to action of the telest Charles	00 00		Observati	1	0.4.43	0 10	4 46 0	164 2	2.0	. 20
Depth to saturation (feet bg) – Check where applicable	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1 – 8.0	8.1 – 12	.0 12	.1 – 16.0	16.1 – 20	U.U	>20
			Х							
PRODUCT	1									
- Product in Soil – Yes/No	No									
(odor/inches/viscosity, etc.)					1					
- Product in GW – Check where	None Ob		Shee	en Only	Floatin	g Produc	t = <6"	Floating P	rodu	ct = >6"
applicable	X									
HISTORIC FILL MATERIAL										
- Composition, other observations -			d Material		_	thropog		Generated I	Mate	rial
complete, as applicable	1.0 to 5.0						N,	/A		
	medium sa				,					
	sub-angular	-		-						
				e to medium	1					
	sand; some							24 42 2		
- Depth (feet bg) – check more than	0.0 – 2.0	2.1 – 4.0	0 4.1 -	6.0 6.3	L – 8.0	8.1 – 10).0 10	0.1 – 12.0	>	12.1
one depth, if applicable – applies to										
Anthropogenically-Generated										
NACH CALL										
Material only	Mari DID 0	5 0 form	- 0.0 + - 0.5	f+ l C		f	. 0 + - 40	f+ l		
PID/Odors (depth)	Max PID = 8				_					
•	Asphalt laye	r (5" thick),	underlain by	concrete m	ixed with g	ravel fro	m grade	to 1.0 foot	_	
PID/Odors (depth)	Asphalt laye by FILL to 1	r (5" thick), 0 feet bg (s	underlain by ee above),		ixed with g	ravel fro	m grade	to 1.0 foot	_	
PID/Odors (depth) Geology	Asphalt laye	r (5" thick), 0 feet bg (s least 20 feet	underlain by ee above),	concrete m underlain by	ixed with g reddish k	ravel fro	m grade	to 1.0 foot l	sub-r	
PID/Odors (depth)	Asphalt laye by FILL to 1	r (5" thick), 0 feet bg (s least 20 feet Loose	underlain by ee above),	concrete m underlain by	ixed with g	ravel fro	m grade	to 1.0 foot	sub-r	
PID/Odors (depth) Geology Soil Permeability	Asphalt layer by FILL to 1 gravel to at	r (5" thick), 0 feet bg (s least 20 feet	underlain by ee above),	concrete m underlain by	ixed with g reddish k	ravel fro	m grade	to 1.0 foot l	sub-r	
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg)	Asphalt layer by FILL to 1 gravel to at	r (5" thick), 0 feet bg (s least 20 feet Loose X	underlain by ee above), bg.	concrete m underlain by Inter	ixed with g reddish b mediate	ravel fro	m grade	to 1.0 foot l	sub-r	
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed	Asphalt laye by FILL to 1 gravel to at 20 0.58 to 15.7	r (5" thick), 0 feet bg (s least 20 feet Loose X 0 feet bg - 3	underlain by ee above), bg.	r concrete m underlain by Inter	ixed with g reddish b mediate	ravel fro	m grade	to 1.0 foot l	sub-r	
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing)	Asphalt laye by FILL to 1 gravel to at 20 0.58 to 15.7 0.58 to 15.7	r (5" thick), 10 feet bg (sleast 20 feet Loose X 0 feet bg - 3 0 ft. below s	underlain by ee above), bg. " diameter (urface - No.	Inter 0.010 slot PV	reddish by mediate	ravel fro prown SII	m grade	to 1.0 foot l	sub-r	
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if	Asphalt laye by FILL to 1 gravel to at 20 0.58 to 15.7	r (5" thick), 10 feet bg (sleast 20 feet Loose X 0 feet bg - 3 0 ft. below s	underlain by ee above), bg. " diameter (urface - No.	Inter 0.010 slot PV	reddish by mediate	ravel fro prown SII	m grade	to 1.0 foot l	sub-r	
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest	Asphalt laye by FILL to 1 gravel to at 20 0.58 to 15.7 0.58 to 15.7	r (5" thick), 10 feet bg (sleast 20 feet Loose X 0 feet bg - 3 0 ft. below s	underlain by ee above), bg. " diameter (urface - No.	Inter 0.010 slot PV	reddish by mediate	ravel fro prown SII	m grade	to 1.0 foot l	sub-r	
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	Asphalt laye by FILL to 1 gravel to at 20 0.58 to 15.7 0.58 to 15.7 Accutest Lab	r (5" thick), 0 feet bg (s least 20 feet Loose X 0 feet bg - 3 0 ft. below s poratories, La	underlain by ee above), bg. " diameter (urface - No. ab Report ID	Inter 0.010 slot PV 01 sand s JA90265 ar	mediate C screen	ravel fro	m grade LT; little	to 1.0 foot clay, trace Tight	sub-r	ounded
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s),	Asphalt laye by FILL to 1 gravel to at 20 0.58 to 15.7 0.58 to 15.7 Accutest Lak	r (5" thick), 0 feet bg (sleast 20 feet Loose X 0 feet bg - 3 0 ft. below sporatories, La	underlain by ee above), bg. " diameter (urface - No. ab Report ID	Inter O.010 slot PV 01 sand s JA90265 ar	mediate C screen and JA90105	ravel fro prown SII	m grade LT; little	to 1.0 foot clay, trace Tight	sub-r	ounded
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling	Asphalt laye by FILL to 1 gravel to at 20 0.58 to 15.7 0.58 to 15.7 Accutest Lab	r (5" thick), 0 feet bg (sleast 20 feet Loose X 0 feet bg - 3 0 ft. below sporatories, La	underlain by ee above), bg. " diameter (urface - No. ab Report ID	Inter O.010 slot PV 01 sand s JA90265 ar	mediate C screen and JA90105	ravel fro prown SII	m grade LT; little	to 1.0 foot clay, trace Tight	sub-r	ounded
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	Asphalt laye by FILL to 1 gravel to at 20 0.58 to 15.7 0.58 to 15.7 Accutest Late RCH-5H-ENV	r (5" thick), 0 feet bg (sleast 20 feet Loose X 0 feet bg - 3 0 ft. below sporatories, Lacot, PCB, pess	underlain by ee above), bg. " diameter (urface - No. ab Report ID 5 to 4.0 fee ticide, herbi	n concrete m underlain by Inter 0.010 slot PV 01 sand is JA90265 ar t bg) and RC cide, metals,	mediate C screen ad JA90105 H-5H-ENV-TPH and g	ravel fro prown SII 1W/7.0 (eneral ch	m grade LT; little 7.0 to 7 emistry	to 1.0 foot clay, trace Tight .5 feet bg) vanalyses.	sub-r	ounded
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and	Asphalt laye by FILL to 1 gravel to at 20 0.58 to 15.7 0.58 to 15.7 Accutest Lak	r (5" thick), 0 feet bg (sleast 20 feet Loose X 0 feet bg - 3 0 ft. below sporatories, Lacot, PCB, pess	underlain by ee above), bg. " diameter (urface - No. ab Report ID 5 to 4.0 fee ticide, herbi	n concrete m underlain by Inter 0.010 slot PV 01 sand is JA90265 ar t bg) and RC cide, metals,	mediate C screen ad JA90105 H-5H-ENV-TPH and g	ravel fro prown SII 1W/7.0 (eneral ch	m grade LT; little 7.0 to 7 emistry	to 1.0 foot clay, trace Tight .5 feet bg) vanalyses.	sub-r	ounded
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	Asphalt layer by FILL to 1 gravel to at 20 0.58 to 15.7 0.58 to 15.7 Accutest Later RCH-5H-ENV for VOC, SVG	r (5" thick), 0 feet bg (sleast 20 feet Loose X 0 feet bg - 3 0 ft. below sporatories, Lace Corrections (c) (7-1W/3.5 (3.5)) 7-1W/3.5 (3.5) 7-1W/3.5 (3.5)	underlain by ee above), bg. " diameter (urface - No. ab Report ID 5 to 4.0 fee ticide, herbi	Inter O.010 slot PV 01 sand s JA90265 ar t bg) and RC cide, metals, F	reddish by	1W/7.0 (eneral che	m grade LT; little 7.0 to 7 emistry	to 1.0 foot clay, trace Tight 5 feet bg) vanalyses.	vas c	ounded
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and	Asphalt layer by FILL to 1 gravel to at 20 0.58 to 15.7 0.58 to 15.7 Accutest Later RCH-5H-ENV for VOC, SVG	r (5" thick), 0 feet bg (sleast 20 feet Loose X 0 feet bg - 3 0 ft. below sporatories, Lacot, PCB, pess	underlain by ee above), bg. " diameter (urface - No. ab Report ID 5 to 4.0 fee ticide, herbi	Inter O.010 slot PV 01 sand s JA90265 ar t bg) and RC cide, metals, F	mediate C screen ad JA90105 H-5H-ENV-TPH and g	1W/7.0 (eneral che	m grade LT; little 7.0 to 7 emistry	to 1.0 foot clay, trace Tight .5 feet bg) vanalyses.	vas c	ounded

Additional Comments/Notes/	Borehole backfilled with grout, bentonite chips, black dyed cement and restored to natural grade.
Observations (if applicable)	

Boring Identification: RCH-5H-ENV-2

		Boring Ir	nformati	on					
Alternate Boring ID (if applicable)	N/A								
Pipeline Mile Marker ID	Approximate	lv 20 feet sou	theast of 5	5.36					
Location (Latitude/Longitude) –	40° 38' 27.39				ed				
estimated/surveyed	10 00 27100	01 11, 7. 1							
Site Address	Boring is loca	ted in on Ric	hmond Ter	race, approx	imately 500	feet east o	of the intersection	on of W	Vestern
	_						et address is ava		
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)	A subsurface							,	
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	Newark Bay i	s located app	roximately	575 feet no	rth of borin	g.			
Drilling Date	10/26/2011								
Drilling Company	Land Air Wat	er Environme	ental Servic	es					
Drilling Method	Hand Auger/	GeoProbe (so	oil samples)					
Additional Hydro/Geological Tests (e.g.	N/A	,	· ·						
pump test/slug test/packer test)	'								
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environment	al							
-		Boring O	bservati	ons					
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1 – 8.0	8.1 – 12.	0 12.1 -	16.0 16.1 - 3	20.0	>20
where applicable		Х							
PRODUCT		l l				•	•		
- Product in Soil – Yes/No (odor/inches/viscosity, etc.)	No								
- Product in GW – Check where	None Obs	served	Shee	n Only	Floating	Product =	<6" Floating	Produc	ct = >6"
applicable	Х			•					-
HISTORIC FILL MATERIAL					1		l.		
- Composition, other observations –		Reworked	Material		Ant	hropogenio	ally-Generated	Mater	rial
complete, as applicable	Asphalt layer 1.0 ft bg, ur coarse sand; to 2.0 feet bg and clay from	nderlain by I some fine to g, underlain b	brown silt coarse gra by brown/r	and fine to vel from 1.0	fine to o	oarse grave	o coarse sand a el from 2.0 to 8 ments at 4.0 ft b	.0 ft b	
- Depth (feet bg) – check more than	0.0 – 2.0	2.1 – 4.0	4.1 -	60 61	L – 8.0	8.1 – 10.0	10.1 – 12.0	>	12.1
one depth, if applicable – applies to Anthropogenically-Generated Material only	0.0 2.0	X	X		х	0.1 10.0	10.1 12.0		12.1
PID/Odors (depth)	No PID. No o	l					l .		
Geology		0.0 to 1.0 fe	-	•			see above), und	erlain	by red-
Soil Permeability		Loose	Ť		mediate		Tigh	t	
					X				
Total Boring Depth (feet bg)	15		I		-				
GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing)	N/A								
Laboratory Name and Report No. (if	Accutest Labo	oratories Lah	Report ID	IA90265 and	1 IA90265R				
samples collected) (e.g. "Accutest	, iccuitest Labo	oratorics, Lak	, report in	50205 and	, ,, (JUZUJII.				
Laboratories, Lab Report ID JA65410")	1								
Soil Samples Collected - Sample ID(s),	RCH-5H-FNV-	.2/2 5 /2 5 to	3 () feet h	g) and RCH ₋	5H-FNV-2/7	5 (7 5 to 8	.0 feet bg) were	ء رمااور	ted for
Sample Depth(s) and Sampling							nium) and gene		
Parameter(s)	analyses.	, co, pesticit	ac, 1111, 11	iciais (illiciai	anie richava	iiciii ciiiOii	main, una gene		Critisti y
GW Samples Collected - Sample ID(s) and	N/A								
Sampling Parameter(s)	IN/A								
Additional Hydro/Geological Test –	<10 ⁻²	Feet/Day		10 ⁻² - 10	0 Feet/Day		>10 Feet	/Day	
Permeability Results (e.g. pump test/slug test/packer test)		•			•				
Additional Comments/Notes/	N/A		l.			1			
Observations (if applicable)									

Boring Identification: RCH-5H-ENV-3W

Alternate Boring ID (if applicable) Pipeline Mile Marker ID Location (Latitude/Longitude) - estimates/divinveyed Site Address Site Address Soring is located on Richmond Torrace, approximately 500 feet east of the intersection of Western Avenue and Richmond Torrace, in Staten Island, New York (no eact street address is available). Nearby subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.) Nearby subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.) Nearby Mydraulic Features (Distance and Direction from Utilities, Tanks, Properties, etc.) Nearby Mydraulic Features (Distance and Direction from wetlands, etc.) Prilling Detel Drilling Detel Jing Det			Boring	Informat	ion							
Repetite Mile Marker ID Approximately 20 feet northeast of 5.38	Alternate Boring ID (if applicable)	N/A										
Size Address		Approximat	ely 20 feet n	ortheast of 5	5.38							
Side Address Soring is located on Rithmond Terrace, approximately 600 feet east of the intersection of Western Avenue and Rithmond Terrace in Salaten Island, New York (in exact street daters is available).	· · · · · · · · · · · · · · · · · · ·					rveye	d					
Aubsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)	-											
Direction from Utilities, Tanks, Properties, etc.) Nearby Hydraulic Features (Distance and Direction from wetlands, etc.) Drilling Date Jorilling Company Land Air Water Environmental Services Hollow Stem Auger (Weel' Installation) N/A Additional Hydro/Geological Tests (e.g., pump test/slug test/packer test) Boring Purpose (e.g. genetich/ environmental/geoarchaelogical) Boring Purpose (e.g. genetich/ environmental/geoarchaelogical) Boring Purpose (e.g. genetich/ environmental/geoarchaelogical) Boring Doservations Boring Purpose (e.g. genetich/ environmental/geoarchaelogical) Boring Purpose (e.g. genetich/ environmental/geoarchaelogical) Boring Observations Boring Doservations Boring Observations Boring Observations Boring Observations Boring Observations Composition (feet bg) – Check where applicable Product in Soil – Yes/No (odor/inches/viscosity, etc.) Product in Soil – Yes/No (odor/inches/viscosity, etc.) Product in GW – Check where applicable None Observed Sheen Only Floating Product = 66" Floating Product = >6" Floating Float	Nearby Subsurface Features (Distance and										labic	<i>j</i> ·
Direction from wetlands, etc.) Drilling Date Drilling Company Land Alie Water Environmental Services Hand Auger (Well installation) Additional Hydro/Geological Tests (e.g., bloow Stem Auger (well installation) MyA Moring Purpose (e.g. geotech/ environmental/georarchaelogical) Environmental/georarchaelogical) Boring Observations Depth to saturation (feet bg) – Check where applicable Product in Soll – Yes/No (odor/inches/viscosity, etc.) Product in Soll – Yes/No (odor/inches/viscosity, etc.) Product in Soll – Nes/No (Direction from Utilities, Tanks, Properties,		p.p				,			-8-		
Drilling Method Hand Augur (FeorProbe (soil samples) Hollow Stem Augur (record Probe (soil samples) Hollow Stem Augur (record Probe (soil samples) Hollow Stem Augur (record Probe (soil samples) Hollow Stem Augur (record Installation)		Newark Bay	is located a	pproximately	/ 500 fee	t nort	h of borin	g.				
Animal Auger / GeoProbe (soil samples) Hand Auger / GeoProbe (soil samples) Hollow Stem Auger (well installation)	Drilling Date	9/19/2011										
Hollow Stem Auger (well installation) Hollow Stem Auger (well installation)	Drilling Company	Land Air Wa	ter Environr	nental Servio	es							
Additional Hydro/Geological Tests (e.g. peotech/ environmental/geoarchaelogical) Boring Purpose (e.g. geotech/ environmental/geoarchaelogical) Boring Observations Depth to saturation (feet bg) – Check where applicable Product in Soil – Yes/No (odor/inches/viscosity, etc.) Product in GW – Check where applicable Product in GW – Check where applicable None Observed Sheen Only Floating Product = <6" Floating Product = >6" Floating Product = >6" Floating Product = >6" Floating Product = >6" Anthropogenically-Generated Material only Floating Product = >6"	Drilling Method											
Environmental/geoarchaelogical) Environmental/geoarchaelogical) Environmental/geoarchaelogical) Solitor So			<u> </u>									
Depth to saturation (feet bg) - Check where applicable Depth (feet bg) - Check where than one depth, if applicable - Depth (feet bg) - Check where than one depth, if applicable - Depth (feet bg) - Check where than one depth, if applicable - Depth (feet bg) - Check where than one depth, if applicable - Depth (feet bg) - Check where than one depth, if applicable - Depth (feet bg) - Check where than one depth, if applicable - Depth (feet bg) - Check where than one depth, if applicable - Depth (feet bg) - Check where than one depth, if applicable - Depth (feet bg) - Check where than one depth, if applicable - Depth (feet bg) - Check where than one depth, if applicable - Depth (feet bg) - Check where than one depth, if applicable - Depth (feet bg) - Check where than one depth, if applicable - Depth (feet bg) - Check where than one depth, if applicable - Depth (feet bg) - Depth	Boring Purpose (e.g. geotech/	Environmer	ntal									
Depth to saturation (feet bg) - Check where applicable Depth (feet bg) - Check where than one depth, if applicable - Depth (feet bg) - Check where than one depth, if applicable - Depth (feet bg) - Check where than one depth, if applicable - Depth (feet bg) - Check where than one depth, if applicable - Depth (feet bg) - Check where than one depth, if applicable - Depth (feet bg) - Check where than one depth, if applicable - Depth (feet bg) - Check where than one depth, if applicable - Depth (feet bg) - Check where than one depth, if applicable - Depth (feet bg) - Check where than one depth, if applicable - Depth (feet bg) - Check where than one depth, if applicable - Depth (feet bg) - Check where than one depth, if applicable - Depth (feet bg) - Check where than one depth, if applicable - Depth (feet bg) - Check where than one depth, if applicable - Depth (feet bg) - Depth			Boring (Observati	ons							
PRODUCT Product in Soil – Yes/No (odor/inches/viscosity, etc.) Product in GW – Check where applicable None Observed AX Sheen Only Floating Product = <6" Floating Product = >6" Floating Product = \$6" Floatin	Depth to saturation (feet bg) – Check	0.0 – 2.0			1	8.0	8.1 – 12.	0 12.	.1 – 16.0	16.1 – 2	0.0	>20
- Product in Soil - Yes/No (odor/inches/viscosity, etc.) - Product in GW - Check where applicable - None Observed - Ristroil Fill MATERIAL - Composition, other observations - complete, as applicable - Depth (feet bg) - check more than one depth, if applicable - applies to Anthropogenically-Generated Material only Material only - PID/Odors (depth) - Robert of Geology - Asphalt (5") and concrete layer containing coarse gravel from 0.0 to 1.0 feet bg, underlain by reddish brown, fine to medium sAND; little reddish brown soft clay, trace slit, trace fine to medium, subangular gravel from 0.0 to 15 feet bg, underlain by reddish brown, fine to medium sand, trace fine to medium, sub-angular gravel; medium plasticity from 3.0 to 7.0 feet bg, underlain by reddish brown, fine to be greated by to 15 feet bg; dedit more to very stiff from 10 to 15 feet bg; dark brown, fine to medium sand, trace fine to medium sub-angular gravel from 7.0 to 15 feet bg; dedit more to Visit from 10 to 15 feet bg; dark brown, fine to medium sand, trace fine to medium sub-angular gravel from 7.0 to 15 feet bg; dedit brown, fine SAND; trace slit from 15 to a last 20 feet bg. Soil Permeability - Loose Intermediate Tight Total Boring Depth (feet bg) 20.5 GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) 0.5 feet bg to 5.5 feet bg - 3" diameter 0.010-slot PVC screen Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), and Sampling Parameter(s) SAND SAN	where applicable				Х							
(odor/inches/viscosity, etc.) Product in GW – Check where applicable Composition, other observations—complete, as applicable Depth (feet bg) — check more than one depth, if applicable — applies to Anthropogenically-Generated Material — anthropogenically-Generated Material — anthropogenically-Generated Material — No PID. No odor. Asphalt (5") and concrete layer containing coarse gravel from 0.0 to 1.0 feet bg, underlain by reddish brown, fine to medium, sub-angular gravel from 1.0 foot bg to 3.0 feet bg, underlain by reddish brown CLAY; little fine to medium, sub-angular gravel from 1.0 foot bg to 3.0 feet bg, underlain by reddish brown, fine to medium, sub-angular gravel from 1.0 foot bg to 3.0 feet bg, underlain by reddish brown, fine to medium, sub-angular gravel from 1.0 foot bg to 3.0 feet bg, underlain by reddish brown, fine to medium, sub-angular gravel from 1.0 foot bg to 3.0 feet bg, underlain by reddish brown, fine to medium, sub-angular gravel from 1.0 foot bg to 3.0 feet bg, underlain by reddish brown, fine to medium, sub-angular gravel from 1.0 foot bg to 3.0 feet bg, underlain by reddish brown, fine to medium, sub-angular gravel from 1.0 foot bg to 3.0 feet bg, underlain by reddish brown, fine to medium, sub-angular gravel from 1.0 foot bg to 3.0 feet bg, underlain by reddish brown, fine to medium, sub-angular gravel from 1.0 foot bg to 3.0 feet bg, underlain by reddish brown, fine to medium, sub-angular gravel from 1.0 foot bg to 3.5 feet bg; dark brown, fine to medium, sub-angular gravel from 1.0 foot bg to 3.5 feet bg; dark brown, fine to medium, sub-angular gravel from 1.0 foot bg to 3.5 feet bg; dark brown, fine to medium, sub-angular gravel from 1.0 foot bg to 3.5 feet bg; dark brown, fine to medium, sub-angular gravel from 1.0 foot bg to 3.5 feet bg; dark brown, fine to medium, sub-angular gravel from 1.0 foot bg to 3.5 feet bg; dark brown, fine to medium, sub-angular gravel from 1.0 foot bg to 3.5 feet bg; dark brown, fine to medium, sub-angular gravel from 1.0 foot bg to 3.5 feet bg; d	PRODUCT											
### Anthropogenically-Generated Material - Composition, other observations – complete, as applicable - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Qdors (depth) Applicable – applies to Anthropogenically-Generated Material only Applicable – applies to Anthropogenically-Generated Material	•	No										
Reworked Material Anthropogenically-Generated Material Anthropogenically-Generated Material		None O	bserved	Shee	n Only		Floating	Produc	t = <6"	Floating P	rodu	ct = >6"
Composition, other observations - complete, as applicable Depth (feet bg) - check more than one depth, if applicable - applies to Anthropogenically-Generated Material only	applicable	>	(-					_		
Complete, as applicable Depth (feet bg) – Check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) No PID. No odor. Asphalt (5") and concrete layer containing coarse gravel from 0.0 to 1.0 feet bg, underlain by reddish brown, fine to medium SAND; little reddish brown soft clay, trace silt, trace fine to medium, subangular gravel from 1.0 foot bg to 3.0 feet bg, underlain by reddish brown CLAY; little fine to medium, subangular gravel from 1.0 foot bg to 3.0 feet bg, underlain by reddish brown CLAY; little fine to medium sand, trace fine to medium, sub-angular gravel from 1.0 foot bg to 3.0 feet bg, underlain by reddish brown, fine to medium, sub-angular gravel from 1.0 foot bg to 3.0 feet bg, underlain by reddish brown, fine to medium sand, trace fine to medium, sub-angular gravel from 5.0 to 15 feet bg; Medium dense to very stiff from 10 to 15 feet bg; dark brown, fine to medium sand lens, wet and loose at 8.5 to 9.5 feet bg, underlain by reddish brown, fine SAND; trace silt from 15 to at least 20 feet bg. Soil Permeability Loose Intermediate Tight Total Boring Depth (feet bg) QU.5 GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples Collected) (e.g. "Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86559 and JA86559R. RCH-5H-ENV-3W/2 (2.0 to 2.5 feet bg) and RCH-5H-ENV-3W/8 (8.0 to 8.5 feet bg) were collected for VOCs, SVOCs, PCBs, TPH, pesticide, herbicide, metals (including hexavalent chromium) and general chemistry analyses. RCH-5H-ENV-3W was collected for NYDEC Sewer Use Discharge parameters, NY SPDES, VOCs, SVOCs, SVOCs, PCBs, TPH, Desticide analyses.	HISTORIC FILL MATERIAL											
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Reology Asphalt (5") and concrete layer containing coarse gravel from 0.0 to 1.0 feet bg, underlain by reddish brown, fine to medium SAND; little reddish brown soft clay, trace slit, trace fine to medium, sub-angular gravel from 1.0 foot bg to 3.0 feet bg, underlain by reddish brown CLAY; little fine to medium, sub-angular gravel; medium plasticity from 3.0 to 7.0 feet bg, underlain by reddish-brown SILT; little clay, trace fine sand, trace fine to medium, sub-angular gravel; medium plasticity from 3.0 to 7.0 feet bg, underlain by reddish-brown, fine to medium sand lens, wet and loose at 8.5 to 9.5 feet bg, underlain by reddish brown, fine SAND; trace slit from 15 to at least 20 feet bg. Soil Permeability Loose Intermediate Tight Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) RCH-5H-ENV-3W/ was collected for NYDEC Sewer Use Discharge parameters, NY SPDES, VOCs, SVOCs, SVOCs, PCBs, TPH, pesticide analyses.			Reworke	d Material			Ant	hropog	enically-	Generated	Mate	rial
Anthropogenically-Generated Material only PID/Odors (depth) Asphalt (5") and concrete layer containing coarse gravel from 0.0 to 1.0 feet bg, underlain by reddish brown, fine to medium SAND; little reddish brown soft clay, trace silt, trace fine to medium, subangular gravel from 1.0 foot bg to 3.0 feet bg, underlain by reddish brown CLAY; little fine to medium, subangular gravel from 1.0 foot bg to 3.0 feet bg, underlain by reddish brown CLAY; little fine to medium, subangular gravel; medium plasticity from 3.0 to 7.0 feet bg, underlain by reddish-brown SILT; little clay, trace fine sand, trace fine to medium, subangular gravel from 7.0 to 15 feet bg; Medium dense to very stiff from 10 to 15 feet bg; dark brown, fine to medium sand lens, wet and loose at 8.5 to 9.5 feet bg, underlain by reddish brown, fine SAND; trace silt from 15 to at least 20 feet bg. Soil Permeability Loose Intermediate Tight Total Boring Depth (feet bg) 20.5 GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) RCH-5H-ENV-3W/ accollected for NYDEC Sewer Use Discharge parameters, NY SPDES, VOCs, SVOCs, PCBs, metals and pesticide analyses.	- Depth (feet bg) – check more than	0.0 - 2.0	2.1 – 4.	0 4.1 -	6.0	6.1 -	- 8.0	8.1 – 10	0.0 10	0.1 – 12.0	>	12.1
No PID. No odor.	Anthropogenically-Generated											
Asphalt (5") and concrete layer containing coarse gravel from 0.0 to 1.0 feet bg, underlain by reddish brown, fine to medium SAND; little reddish brown soft clay, trace silt, trace fine to medium, subangular gravel from 1.0 foot bg to 3.0 feet bg, underlain by reddish brown CLAY; little fine to medium, sand, trace fine to medium, sub-angular gravel; medium plasticity from 3.0 to 7.0 feet bg, underlain by reddish brown SILT; little clay, trace fine sand, trace fine to medium, sub-angular gravel from 7.0 to 15 feet bg; Medium dense to very stiff from 10 to 15 feet bg; dark brown, fine to medium sand lens, wet and loose at 8.5 to 9.5 feet bg, underlain by reddish brown, fine SAND; trace silt from 15 to at least 20 feet bg. Soil Permeability Loose Intermediate Tight Total Boring Depth (feet bg) Qu.5 GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Samples Collected - Sample ID(s), Samples Collected - Sample ID(s) and Sampling Parameter(s) RCH-5H-ENV-3W/2 (2.0 to 2.5 feet bg) and RCH-5H-ENV-3W/8 (8.0 to 8.5 feet bg) were collected for NYDEC Sewer Use Discharge parameters, NY SPDES, VOCs, SVOCs, PCBs, metals and pesticide analyses.		No PID. No	odor.						I			
Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) RCH-5H-ENV-3W was collected for NYDEC Sewer Use Discharge parameters, NY SPDES, VOCs, SVOCs, PCBs, metals and pesticide analyses.		brown, fine angular grav sand, trace by reddish-l to 15 feet k lens, wet ar	to medium vel from 1.0 fine to medi brown SILT; og; Medium nd loose at 8	SAND; little foot bg to 3. ium, sub-ang little clay, tra dense to ve	reddish O feet bg gular grav ace fine s ry stiff fr t bg, und	browg, undervel; mesand, from 10 lerlain	n soft cla erlain by r edium pla trace fine O to 15 fe by reddis	y, trace eddish b sticity f to med et bg; d	silt, trad prown CL rom 3.0 ium, sub ark brow	ce fine to r .AY; little fin to 7.0 feet -angular grayn, fine to r	nediu ne to bg, u avel f nediu	im, sub- medium nderlain from 7.0 um sand
Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) ampling Parameter(s) COLOR TO Sever By to 5.5 feet bg to 20.5 feet bg – 3" diameter 0.010-slot PVC screen Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86687, JA86559 and JA86686, JA86687, JA86687, JA86687, JA86687, JA86687, JA86687, JA86686, JA86687, JA86687, JA86686, JA86687, JA8	Soil Permeability		Loose		lı					Tight		
GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) O.5 feet bg to 5.5 feet bg – 3" diameter PVC riser 5.5 feet bg to 20.5 feet bg – 3" diameter PVC screen Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86686, JA86687, JA86686, JA86687, JA86687, JA86686, JA86687, JA86687, JA86686, JA86687, JA86687, JA86686, JA86687, JA86687	Total Boring Donth (foot ha)	20.5				>	(
(Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) S.5 feet bg to 20.5 feet bg - 3" diameter 0.010-slot PVC screen Accutest Laboratories, Lab Report ID JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86687, JA86559 and JA86559R. Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86687, JA86686,		1	n 5 5 feet h	z = 3" diamo	er DV/C ri	iser						
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report IDs JA86686, JA86687, JA86559 and JA86559R. Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) RCH-5H-ENV-3W/2 (2.0 to 2.5 feet bg) and RCH-5H-ENV-3W/8 (8.0 to 8.5 feet bg) were collected for VOCs, SVOCs, PCBs, TPH, pesticide, herbicide, metals (including hexavalent chromium) and general chemistry analyses. RCH-5H-ENV-3W was collected for NYDEC Sewer Use Discharge parameters, NY SPDES, VOCs, SVOCs, PCBs, metals and pesticide analyses.	• •	_	•	•			PVC scree	en				
Sample Depth(s) and Sampling Parameter(s) WOCs, SVOCs, PCBs, TPH, pesticide, herbicide, metals (including hexavalent chromium) and general chemistry analyses. GW Samples Collected - Sample ID(s) and Sampling Parameter(s) RCH-5H-ENV-3W was collected for NYDEC Sewer Use Discharge parameters, NY SPDES, VOCs, SVOCs, PCBs, metals and pesticide analyses.	Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	Accutest La	boratories, L	ab Report ID	s JA8668	86, JA8	6687, JA8	6559 an				
GW Samples Collected - Sample ID(s) and Sampling Parameter(s) RCH-5H-ENV-3W was collected for NYDEC Sewer Use Discharge parameters, NY SPDES, VOCs, SVOCs, PCBs, metals and pesticide analyses.	Sample Depth(s) and Sampling	VOCs, SVO	Cs, PCBs, TPI									
	GW Samples Collected - Sample ID(s) and	RCH-5H-EN	V-3W was co			wer U	lse Discha	rge para	ameters,	NY SPDES, V	VOCs	, SVOCs,
	Additional Hydro/Geological Test –			ac unaryses.		² – 10	Feet/Day			>10 Feet/	'Dav	

Permeability Results (e.g. pump test/slug			
test/packer test)			
Additional Comments/Notes/	Installation depth of well was 20.	5 feet bg. Total depth of well, mea	sured on 9/20/11, was 18.13 feet
Observations (if applicable)	bg.		

Boring Identification: RCH-5H-ENV-4

		Boring	Informa	tion							
Alternate Boring ID (if applicable)	N/A										
Pipeline Mile Marker ID	Approximat	tely 20 feet n	orthwest of	5.41							
Location (Latitude/Longitude) –		3890" N/74° 1			ırveyed						
estimated/surveyed Site Address	Boring is lo	cated in on R	ichmond Ta	rrace	annrovir	mately 70	Ω feet es	st of the	intersection	of V	Nactorn
Site Address		d Richmond T									
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)	A subsurfac	e water pipe	line is locat	ed appr	roximate	ely 10 fee	t south o	f the bor	ing.		
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	Newark Bay	y is located ap	oproximate	y 475 f	eet nort	hwest of	boring.				
Drilling Date	9/20/2011										
Drilling Company	Land Air Wa	ater Environn	nental Serv	ces							
Drilling Method	Hand Augei	r/ GeoProbe ((soil sample	s)							-
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A	•	` '	,							
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environmer	ntal									
.0 ,	J.	Boring (Observat	ions							
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0		- 8.0	8.1 – 12	.0 12.	1 – 16.0	16.1 – 20	0.0	>20
where applicable	X										
PRODUCT											
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No										
- Product in GW – Check where	None O	bserved	She	en Only	у	Floatin	g Produc	t = <6"	Floating Pr	odu	ct = >6"
applicable	,	X									
HISTORIC FILL MATERIAL											
- Composition, other observations –	Reworked Material Anthropogenically-Generated Material										
	gravel layer	(19" thick) fi	rom 0.0 to 2	2.0 feet	bg.	clumps bg; tra- odor fr from 4 from 5 brown	of red cl ce pieces om 3.0 to .0 to 5.0 .0 to 6.0	ay, trace of brick 4.0 feet feet bg feet b	ravel, little silt from 2.0 and slight of bg; trace pictoric, underlain d, little silt; eet bg.	0 to creos eces es of by	7.0 feet ote-like of glass f plastic reddish
- Depth (feet bg) – check more than	0.0 - 2.0	2.1 – 4.0	0 4.1	- 6.0	6.1	- 8.0	8.1 – 10		0.1 – 12.0	>	12.1
one depth, if applicable – applies to Anthropogenically-Generated Material only		х		K)	x	Х				
PID/Odors (depth)	PID through	nout; highest	PID - 14 pp	m at 3.0	0 feet be	g. Creoso	te- like o	dor from	3.0 to 4.0 fe	et b	
Geology	Asphalt from CLAY; little	m 0.0 to 2.0 f fine gravel, to y red SILT; lit	eet bg, und race silt; ve	erlain b ry stiff f	oy FILL fr from 8.0 sub-ang	rom 2.0 t) to 13 fe ular grav	o 8.0 feet et bg; fine	bg (see e sand le	above), undons (2" thick); stiff from 1	erlaiı at 9	n by rec
Soil Permeability		Loose			Interm	nediate			Tight X		
Total Boring Depth (feet bg)	15		l .								
GW Monitoring Well Installed	N/A										
(Depth, Screen, Riser, Slot Size, Casing)											
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	Accutest La	boratories, L	ab Report II) JA866	667 and .	JA86667I	₹.				
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)		V-4/3 (3.0 to pesticide, TP	_								

GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A		
Additional Hydro/Geological Test – Permeability Results (e.g. pump test/slug test/packer test)	<10 ⁻² Feet/Day	10 ⁻² – 10 Feet/Day	>10 Feet/Day
Additional Comments/Notes/ Observations (if applicable)	N/A		

Boring Identification: RCH-5H-ENV-5

		Boring	Informat	ion					
Alternate Boring ID (if applicable)	N/A								
Pipeline Mile Marker ID	5.4								
Location (Latitude/Longitude) – estimated/surveyed	40° 38' 28.2	2995" N / 74°	' 10' 35.7462	" W– Surve	/ed				
Site Address	_				•			of the inte	
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)	·	ce sewer line	is approxima	ately 7 feet	west of borir	g.			
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	Newark Ba	y is located a	pproximately	/ 700 feet n	orth of borin	g.			
Drilling Date	10/28/11								
Drilling Company		ater Environr		es					
Drilling Method	2"-Macroco	ore / GeoProl	be						
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A								
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environme	ntal							
		Boring	Observati	ons					
Depth to saturation (feet bg) – Check	0.0 - 2.0	2.1 – 4.0	4.1 – 6.0	6.1 – 8.0	8.1 – 12.	0 12.	.1 – 16.0	16.1 – 20.	0 >20
where applicable	Х								
PRODUCT									
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No								
 Product in GW – Check where 	None O	bserved	Shee	en Only	Floating	Produc	t = <6"	Floating Pro	oduct = >6"
applicable		X							
HISTORIC FILL MATERIAL									
 Composition, other observations – complete, as applicable 	fragments	rn clay and from 2.0 to n and black,	3.0 feet bg,	underlain b	II Trace w	ood chip	s (mulch)	Generated M) from 4.0 to m 7.0 to 8.0 f	7.0 feet bg,
 Depth (feet bg) – check more than 	0.0 - 2.0	2.1 – 4.	0 4.1 -	6.0 6	1-8.0	8.1 – 10	0.0 10	.1 – 12.0	>12.1
one depth, if applicable – applies to Anthropogenically-Generated Material only		х	×		x				
PID/Odors (depth)		D readings (r					-like odor	from 4.0 to	7.0 and 8.0
Geology	underlain b	y FILL to 8.0	feet bg (see gravel, some	above), und brittle rock	lerlain by red fragments to	l-brown 10 feet	fine to m	grade to 2 nedium SANE erlain by red (; some silt,
Soil Permeability		Loose		Inte	rmediate			Tight	
		Х							
Total Boring Depth (feet bg)	15								
GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing)	N/A								
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	Accutest La	boratories, L	ab Report ID	JA90574					
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)		V-5/4 (4.0 to TPH, pesticio						were collecto	ed for VOC,
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A								
Additional Hydro/Geological Test –	<1	0 ⁻² Feet/Day		10 ⁻² –	10 Feet/Day			>10 Feet/D	ay

Permeability Results (e.g. pump test/slug test/packer test)		
Additional Comments/Notes/	N/A	
Observations (if applicable)		

Boring Identification: RCH-5H-ENV-6.1W

		Roring	Informat	ion					
21	1	Dorning	iiioiiiiat	1011					
Alternate Boring ID (if applicable)	N/A								
Pipeline Mile Marker ID	5.48	402 N. / 749	40 22 0260	NA C	d				
Location (Latitude/Longitude) – estimated/surveyed		103" N / 74°							
Site Address					oximately 1 Island, New				
Nearby Subsurface Features (Distance and					tely 20 feet s				
Direction from Utilities, Tanks, Properties, etc.)									
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	Newark Bay	is located a	oproximately	800 feet no	rth of boring				
Drilling Date	10/27/2011								
Drilling Company	1 1	ater Environn	nental Service	-Δς					
Drilling Company		re / Geoprol							
Drilling Method	Hollow Ster	n Auger (wel		•					
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	Slug Test								
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environmer	ntal							
		Boring (Observati	ons					
Depth to saturation (feet bg) – Check	0.0 - 2.0	2.1 – 4.0	4.1 – 6.0	6.1 – 8.0	8.1 – 12.0	12.1	- 16.0	16.1 – 2	0.0 >2
where applicable			Х						
PRODUCT				l .	I	1			
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No								
- Product in GW – Check where	None O	bserved	Shee	n Only	Floating	Product	= <6"	Floating P	roduct = >
applicable)			,			_		
HISTORIC FILL MATERIAL									
- Composition, other observations –		Reworke	d Material		Anth	ropoger	nically-0	Generated I	Vlaterial
complete, as applicable	4.0 to 8.0	feet bg -		wn. fine to				4" diametei	
h h h		nd; little silt			II.			eces from 8	
			, ,	,		0			
	fine to med	ium. sub-ang	ular gravel.		l bg.				
- Depth (feet bg) – check more than	fine to med 0.0 – 2.0		gular gravel. 0 4.1 –	6.0 6.	bg. L – 8.0 8	.1 – 10.0) 10	.1 – 12.0	>12.1
one depth, if applicable – applies to Anthropogenically-Generated		ium, sub-ang 2.1 – 4.		6.0 6.		x) 10	1.1 – 12.0	>12.1
one depth, if applicable – applies to Anthropogenically-Generated Material only	0.0 – 2.0 X	2.1 – 4.		6.0 6.) 10	.1 – 12.0	>12.1
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth)	X N/D	2.1 – 4. X	0 4.1 -		1 – 8.0 8	Х			
one depth, if applicable – applies to Anthropogenically-Generated Material only	X N/D Asphalt (4"	2.1 – 4. X thick), unde	0 4.1 -	crete mixed	L – 8.0 8	X rom gra	de to 1	.0 foot bg,	underlain
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth)	X N/D Asphalt (4" FILL (see ab	2.1 – 4. X thick), unde	o 4.1 –	crete mixed erlain by rec	with gravel fldish-brown	X rom gra SILT; sor	de to 1 ne clay,	.0 foot bg,	underlain . sub-angu
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth)	X N/D Asphalt (4" FILL (see all gravel, trace	2.1 – 4. X thick), unde	o 4.1 –	crete mixed erlain by rec	L – 8.0 8	X rom gra SILT; sor	de to 1 ne clay,	.0 foot bg,	underlain . sub-angu
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology	X N/D Asphalt (4" FILL (see ab	2.1 – 4. X thick), undepove) to 10 fele organic ma	o 4.1 –	crete mixed erlain by red eet bg, unde	with gravel fldish-brown	X rom gra SILT; sor	de to 1 ne clay,	.0 foot bg, , trace fine SAND to at	underlain , sub-angu least 20 f
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth)	X N/D Asphalt (4" FILL (see all gravel, trace	thick), undepove) to 10 fee organic ma	o 4.1 –	crete mixed erlain by red eet bg, unde	with gravel fldish-brown	X rom gra SILT; sor	de to 1 ne clay,	.0 foot bg,	underlain , sub-angu least 20 f
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability	X N/D Asphalt (4" FILL (see ab gravel, trace bg.	2.1 – 4. X thick), undepove) to 10 fele organic ma	o 4.1 –	crete mixed erlain by red eet bg, unde	with gravel fldish-brown	X rom gra SILT; sor	de to 1 ne clay,	.0 foot bg, , trace fine SAND to at	underlain , sub-angu least 20 f
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg)	X N/D Asphalt (4" FILL (see at gravel, trace bg.	thick), under ove) to 10 fe organic ma	rlain by conceet bg, undeterial to 16 f	crete mixed erlain by rec eet bg, unde Inter	with gravel fildish-brown erlain by reddimediate	X rom gra SILT; sor	de to 1 ne clay,	.0 foot bg, , trace fine SAND to at	underlain , sub-angu least 20 f
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed	X N/D Asphalt (4" FILL (see algravel, trace bg. 20 1.0 to 15.95	thick), under ove) to 10 fe organic ma	rlain by confeet bg, unditerial to 16 f	crete mixed erlain by rec eet bg, unde Inter	with gravel fildish-brown erlain by reddimediate	X rom gra SILT; sor	de to 1 ne clay,	.0 foot bg, , trace fine SAND to at	underlain , sub-angu least 20 f
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing)	N/D Asphalt (4" FILL (see algravel, trace bg. 20 1.0 to 15.95 1.0 to 15.95	thick), under ove) to 10 fe organic ma Loose X 5 feet bg - 3"	rlain by confeet bg, undeterial to 16 f	crete mixed erlain by rec eet bg, unde Inter	with gravel the dish-brown relain by redo	X rom gra SILT; sor	de to 1 ne clay,	.0 foot bg, , trace fine SAND to at	underlain , sub-angu least 20 f
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if	N/D Asphalt (4" FILL (see algravel, trace bg. 20 1.0 to 15.95 1.0 to 15.95	thick), under ove) to 10 fe organic ma	rlain by confeet bg, undeterial to 16 f	crete mixed erlain by rec eet bg, unde Inter	with gravel the dish-brown relain by redo	X rom gra SILT; sor	de to 1 ne clay,	.0 foot bg, , trace fine SAND to at	underlain , sub-angu least 20 f
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest	N/D Asphalt (4" FILL (see algravel, trace bg. 20 1.0 to 15.95 1.0 to 15.95	thick), under ove) to 10 fe organic ma Loose X 5 feet bg - 3"	rlain by confeet bg, undeterial to 16 f	crete mixed erlain by rec eet bg, unde Inter	with gravel the dish-brown relain by redo	X rom gra SILT; sor	de to 1 ne clay,	.0 foot bg, , trace fine SAND to at	underlain , sub-angu least 20 f
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	X N/D Asphalt (4" FILL (see al gravel, trace bg. 20 1.0 to 15.95 1.0 to 15.95 Accutest La	thick), under thick), under the organic marker than th	rlain by con- feet bg, und terial to 16 f diameter 0. 0. 01 sand ab Report ID	crete mixed erlain by red eet bg, unde Inter 010 slot PVC s JA90403 an	with gravel to dish-brown irlain by redding mediate screen	X rom gra SILT; sor ish-brow	de to 1 ne clay, vn, fine	.0 foot bg, , trace fine SAND to at Tight	underlain , sub-angu least 20 f
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s),	X N/D Asphalt (4" FILL (see al gravel, trace bg. 20 1.0 to 15.95 1.0 to 15.95 Accutest La	thick), under thick), under thick), under the thick), under the thick over the thick over the thick of the th	rlain by confeet bg, unditerial to 16 f	crete mixed erlain by received by, under Inter 010 slot PVC s JA90403 are feet bg) and	with gravel to dish-brown criain by reddishered screen and JA90567	X rom gra SILT; sor ish-brow	de to 1 ne clay, vn, fine	.0 foot bg, , trace fine SAND to at Tight	underlain sub-angu least 20 fo
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling	X N/D Asphalt (4" FILL (see al gravel, trace bg. 20 1.0 to 15.95 1.0 to 15.95 Accutest La	thick), under thick), under thick), under the thick), under the thick over the thick over the thick of the th	rlain by confeet bg, unditerial to 16 f	crete mixed erlain by received by, under Inter 010 slot PVC s JA90403 are feet bg) and	with gravel to dish-brown irlain by redding mediate screen	X rom gra SILT; sor ish-brow	de to 1 ne clay, vn, fine	.0 foot bg, , trace fine SAND to at Tight	underlain sub-angu least 20 fo
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	X N/D Asphalt (4" FILL (see abgravel, traceby. 20 1.0 to 15.95 1.0 to 15.95 Accutest La RCH-5H-EN' collected fo	thick), under yove) to 10 fe organic ma Loose X feet bg - 3" feet bg - No boratories, L V-6.1W/3.5 r VOC, SVOC	rlain by con- feet bg, und- terial to 16 f diameter 0. . 01 sand ab Report ID	crete mixed erlain by rec eet bg, unde Inter 010 slot PVC s JA90403 ar feet bg) and esticide, her	with gravel to dish-brown erlain by redoction by redoctio	x rom gra SILT; sor ish-brow V-6.1W/ s and ge	de to 1 ne clay, vn, fine (7.5 (7. neral cl	.0 foot bg, , trace fine SAND to at Tight 5 to 8.0 fenemistry an	underlain sub-angu least 20 fo
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling	X N/D Asphalt (4" FILL (see abgravel, traceby. 20 1.0 to 15.95 1.0 to 15.95 Accutest La RCH-5H-EN' collected fo	thick), under yove) to 10 fe organic ma Loose X 6 feet bg - 3" 6 feet bg - No boratories, L V-6.1W/3.5 or VOC, SVOC	rlain by con- feet bg, und- terial to 16 f diameter 0. . 01 sand ab Report ID	Inter O10 slot PVC s JA90403 and feet bg) and feet bg) and feet bg) which is specified to the specified of	with gravel to dish-brown erlain by redoction by redoctio	x rom gra SILT; sor ish-brow V-6.1W/ s and ge	de to 1 ne clay, vn, fine (7.5 (7. neral cl	.0 foot bg, , trace fine SAND to at Tight 5 to 8.0 fenemistry an	underlain sub-angu least 20 fo
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test –	X N/D Asphalt (4" FILL (see abgravel, traceby. 20 1.0 to 15.95 1.0 to 15.95 Accutest La RCH-5H-EN' collected fo	thick), under yove) to 10 fe organic ma Loose X feet bg - 3" feet bg - No boratories, L V-6.1W/3.5 r VOC, SVOC	rlain by con- feet bg, und- terial to 16 f diameter 0. . 01 sand ab Report ID	Inter O10 slot PVC s JA90403 and feet bg) and feet bg) and feet bg) which is specified to the specified of	with gravel to dish-brown erlain by redoction by redoctio	x rom gra SILT; sor ish-brow V-6.1W/ s and ge	de to 1 ne clay, vn, fine (7.5 (7. neral cl	.0 foot bg, , trace fine SAND to at Tight 5 to 8.0 fenemistry an	underlain , sub-angu least 20 fo eet bg) wa
one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	X N/D Asphalt (4" FILL (see abgravel, traceby. 20 1.0 to 15.95 1.0 to 15.95 Accutest La RCH-5H-EN' collected fo	thick), under yove) to 10 fe organic ma Loose X 6 feet bg - 3" 6 feet bg - No boratories, L V-6.1W/3.5 or VOC, SVOC	rlain by con- feet bg, und- terial to 16 f diameter 0. . 01 sand ab Report ID	Inter O10 slot PVC s JA90403 and feet bg) and feet bg) and feet bg) which is specified to the specified of	with gravel to dish-brown erlain by redoction by redoctio	x rom gra SILT; sor ish-brow V-6.1W/ s and ge	de to 1 ne clay, vn, fine (7.5 (7. neral cl	.0 foot bg, , trace fine SAND to at Tight 5 to 8.0 fenemistry and reses.	underlain , sub-angu least 20 fo eet bg) wa

Additional Comments/Notes/	Borehole backfilled with grout, bentonite chips, black dyed cement and restored to grade.
Observations (if applicable)	

Boring Identification: RCH-5H-ENV-7

		Boring Ir	nformat	ion							
Alternate Boring ID (if applicable)	N/A										
Pipeline Mile Marker ID	Approximate	ly 65 feet sou	theast of 5	5.51R							
Location (Latitude/Longitude) – estimated/surveyed	40° 38' 28.16				Surveye	ed					
Site Address	Boring is loca										
Nearby Subsurface Features (Distance and	Richmond Te A subsurface							act str	eet address	avai	iabie).
Direction from Utilities, Tanks, Properties, etc.)	A subsurface	sewer line is	арргохина	itely 10) leet st	outil of boll	ıg.				
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	Newark Bay i	s located app	roximately	715 fe	et nort	thwest of bo	ring.				
Drilling Date	10/31/11										
Drilling Company	Land Air Wat	er Environme	ental Servic	es							
Drilling Method	2"-Macrocore	e / GeoProbe									
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A										
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environment	al									
		Boring O	bservati	ons							
Depth to saturation (feet bg) – Check where applicable	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1 -	- 8.0	8.1 – 12.0	12.1 – 1	16.0	16.1 – 20.	0	>20
			Х								
PRODUCT	No										
- Product in Soil – Yes/No	No										
(odor/inches/viscosity, etc.) - Product in GW – Check where	None Obs	served	Shee	n Only	,	Floating F	roduct = <	6"	Floating Pro	oduc	t = >6"
applicable	Х										
HISTORIC FILL MATERIAL		l				· I					
- Composition, other observations –		Reworked	Material			Anth	ropogenica	ally-G	enerated M	ateri	ial
complete, as applicable	Asphalt laye	r (6" thick),	cement	and fi	ne to			-			
	coarse grave										
	medium sand	d, some fine	to coarse	, subar	ngular						
	gravel from										
	brown, fine										
	coarse, sub-										
	wood fragme										
	underlain by little dimensi										
	sub-angular g				it and						
- Depth (feet bg) – check more than	0.0 - 2.0	2.1 – 4.0	4.1 -		6.1	- 8.0 8	1 – 10.0	10	1 – 12.0	<u></u>	2.1
one depth, if applicable – applies to	0.0 – 2.0	2.1 - 4.0	4.1	0.0	0.1	- 8.0 8	1 - 10.0	10	1 – 12.0		
Anthropogenically-Generated											
Material only	N DIE .:	<u> </u>						<u> </u>			
PID/Odors (depth)	No PID. No o		/ ·	· · ·	odar 1		f :		- CAND III	1 - • • •	
Geology	FILL from 0.0	_	-			•					
	clay and fine,	•	•			•		_	,		
	9.0 ft bg, und	ieriairi by rec	i niowy 211	ı; som	ie ciay i	ווטווו ש.ע נס	15 It bg; tr	ace II	ne gravei 10	י נט נ	at ieast
Soil Permeability	15 ft bg.	Loose			Intern	nediate			Tight		
3011 Fermeability		LUUSE				X			rigiit		
Total Boring Depth (feet bg)	15				<u> </u>	Λ					
GW Temporary Well Installed	N/A										
(Depth, Screen, Riser, Slot Size, Casing)	'','										
Laboratory Name and Report No. (if	Accutest Lab	oratories. Lah	Report ID	JA9068	84 and	JA90684R.					
samples collected) (e.g. "Accutest			-	230							
Laboratories, Lab Report ID JA65410")	DCU EU EN	7/2 /2 0 += 1) F faat !-	\ 0::-! 5	OCI : 511	FNI\ / ¬ /¬ -	/7 F ±= 0.0) f==+	ha\	ا عالم	Fod t-
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	RCH-5H-ENV- VOC, SVOC, P									onec	tea tor
Parameter(s)	100,000,1	-2,, pcs				and Berrerai	y	J			

GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A		
Additional Hydro/Geological Test – Permeability Results (e.g. pump test/slug test/packer test)	<10 ⁻² Feet/Day	10 ⁻² – 10 Feet/Day	>10 Feet/Day
Additional Comments/Notes/ Observations (if applicable)	Borehole backfilled with grout, I	pentonite chips, black dyed concrete	and restored to natural grade.

Boring Identification: RCH-6-ARC-MT-11

		Boring	Informa	tion							
Alternate Boring ID (if applicable)	N/A										
Pipeline Mile Marker ID	Approximate	lv 30 feet w	est of 5.66	R							
Location (Latitude/Longitude) –	40°38'30.47"										
estimated/surveyed											
Site Address	Boring is loc	ated approx	ximately 6	30 feet	northwe	est of the	intersec	ction of	Richmond	Terra	ace and
	Holland Aven	ue in Stater	n Island, Ne	w York	(no exac	t street ad	dress av	ailable)			
Nearby Subsurface Features (Distance and	An undergrou	und water p	ipe is locat	ed appro	oximate	ly 410 feet	southw	est of th	ne test pit.		
Direction from Utilities, Tanks, Properties, etc.)											
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	The Newark E	Bay is locate	ed 310 feet	northea	st of the	e test pit.					
Drilling Date	3/07/12										
Drilling Company	The Napp-Gro	ecco Compa	iny								
Drilling Method	Excavator		-								
Additional Hydro/Geological Tests (e.g.	N/A										
pump test/slug test/packer test)											
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Geoarchaelog	gical									
		Boring C	bservat	ions							
Depth to saturation (feet bg) – Check	0.0 - 2.0	2.1 – 4.0	4.1 – 6.0	6.1 -	-8.0	8.1 – 12.0	12.1	L – 16.0	16.1 – 2	0.0	>20
where applicable		Х									
PRODUCT		l		<u> </u>	LL						
- Product in Soil – Yes/No	No										
(odor/inches/viscosity, etc.)											
- Product in GW – Check where	None Obs	served	She	en Only	,	Floating I	Product	= <6"	Floating P	rodu	ct = >6"
applicable	Х										
HISTORIC FILL MATERIAL											
- Composition, other observations –		Reworked	Material			Anth	ropogei	nically-0	Generated	Mate	rial
	underlain by silt and sub-a bg, underlain trace sub-ang bg.	angular gra n by reddis	vel from 1 sh brown	.58 to 1 silt and	.83 ft clay;	trace con by black from 3.33 gravel an concrete,	crete from the coal ash to 3.5 fd gray so red bratal, glass	om 0.83 n, trace ft bg, ur silt; son rick, and s, and c	ine, sub-ar to 1.58 ft fine, sub-a iderlain by the fine grad d debris (geramic pla	bg, un ngula fine to y san glass	nderlain r gravel o coarse d, trace bottles,
- Depth (feet bg) – check more than	0.0 – 2.0	2.1 – 4.0	4.1	-6.0	6.1 -		.1 – 10.		0.1 – 12.0	>	12.1
one depth, if applicable – applies to											
Anthropogenically-Generated	X	Х		X							
Material only											
PID/Odors (depth)	N/D										
Goology											
Geology		5.85 ft bg (see above)				1				
Soil Permeability		5.85 ft bg (Loose	see above)	•	Interm				Tight		
Soil Permeability			see above)	•	Interm				Tight		
Soil Permeability Total Boring Depth (feet bg)	5.85		see above)						Tight		
Soil Permeability			see above						Tight		
Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed	5.85	Loose			X	(19R.		Tight		
Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest	5.85 N/A	Loose oratories, La	ab Report I	D JB1033	X 3, JB131	9 and JB13		analyses			(11+12)
Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	5.85 N/A Accutest Labo	oratories, La	ab Report I	D JB103:	3, JB131 PH and g	9 and JB13	mistry a		. RCH-6-AR	C/MT	
Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s),	5.85 N/A Accutest Labo	oratories, La VIT-11 WC was collecte	ab Report I vas collecte d for VOC	D JB103: d for TP TCLP, S	3, JB131 PH and g	9 and JB13 general che LLP, metals	mistry a	pesticid	i. RCH-6-AR e/herbicide	C/MT	P, RCRA
Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and	5.85 N/A Accutest Labo RCH-6-ARC/N COMP WC w	oratories, La VIT-11 WC was collecte	ab Report I vas collecte d for VOC	D JB103: d for TP TCLP, S	3, JB131 PH and g	9 and JB13 general che LLP, metals	mistry a	pesticid	i. RCH-6-AR e/herbicide	C/MT	P, RCRA
Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	5.85 N/A Accutest Labo RCH-6-ARC/N COMP WC w characteristic	oratories, La VIT-11 WC was collecte	ab Report I vas collecte d for VOC	D JB103: d for TF TCLP, S TPH, pe	X 3, JB131 PH and g VOC TC esticide/	9 and JB13 general che LLP, metals	mistry a	pesticid	i. RCH-6-AR e/herbicide	C/MT TCLI lyses.	P, RCRA
Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	5.85 N/A Accutest Labo RCH-6-ARC/N COMP WC w characteristic	Oratories, La MT-11 WC was collected cs, SVOC, mo	ab Report I vas collecte d for VOC	D JB103: d for TF TCLP, S TPH, pe	X 3, JB131 PH and g VOC TC esticide/	9 and JB13 general che CLP, metals herbicide,	mistry a	pesticid	i. RCH-6-AR e/herbicide emistry ana	C/MT TCLI lyses.	P, RCRA

	Doning Gunnary Tubic
Additional Comments/Notes/	Location was a test pit used for subsurface evaluation.
Observations (if applicable)	

Boring Identification: RCH-6-ARC-MT-12

		Boring I	nforma	tion							
	T	DOTTING I	IIIOIIIIa								
Alternate Boring ID (if applicable)	N/A										
Pipeline Mile Marker ID	5.68R										
Location (Latitude/Longitude) – estimated/surveyed	40°38'30.47"	'N / 74°10'2	2.25"W								
Site Address	Boring is loc	ated approx	rimately 6	20 feet	northw	est of t	he interse	ection o	of Richmond	Terra	ace and
Site Address	Holland Aven									rent	acc una
Nearby Subsurface Features (Distance and	An undergrou										
Direction from Utilities, Tanks, Properties,						,					
etc.)											
Nearby Hydraulic Features (Distance and	The Newark I	Bay is locate	d 255 feet	northea	ast of th	e test pi	t.				
Direction from wetlands, etc.)		,				•					
Drilling Date	3/06/12										
Drilling Company	The Napp-Gr	ecco Compa	ny								
Drilling Method	Excavator										
Additional Hydro/Geological Tests (e.g.	N/A										
pump test/slug test/packer test)											
Boring Purpose (e.g. geotech/	Geoarchaelo	gical									
environmental/geoarchaelogical)	<u> </u>										
		Boring C	bserva	ions							
Depth to saturation (feet bg) – Check	0.0 - 2.0	2.1 – 4.0	4.1 - 6.0	6.1	-8.0	8.1 – 1	2.0 12	.1 – 16.0	16.1 – 2	0.0	>20
where applicable		Х		1							
PRODUCT				1	1_		1			1	
- Product in Soil – Yes/No	No										
(odor/inches/viscosity, etc.)											
- Product in GW – Check where	None Obs	served	She	en Only	,	Floati	ng Produc	t = <6"	Floating F	rodu	ct = >6"
applicable	Х				<u> </u>						
HISTORIC FILL MATERIAL									1		
- Composition, other observations –		Reworked	l Material			А	nthropog	enically	-Generated	Mate	rial
	Acphalt and	concrete s	uh-hase t	- 0.67	ft ha				silt, some fin		
complete, as applicable	Aspirait and		ub base t	0.67	π υg,						d, trace
complete, as applicable	· ·				-						
complete, as applicable	underlain by	/ brownish-	red silt a	nd fine	-	fine g	ravel, red	brick, a	and debris (t m 1.25 to	imbe	rs, glass
complete, as applicable	underlain by	/ brownish-	red silt a	nd fine	-	fine g	ravel, red s, ceram	brick, a	ind debris (t	imbe 3.0	rs, glass ft bg,
complete, as applicable	underlain by	/ brownish-	red silt a	nd fine	-	fine g bottle under	ravel, red s, ceram ain by g	brick, a ic) froi ray silt	and debris (t m 1.25 to	imber 3.0 e to i	rs, glass ft bg, medium
complete, as applicable	underlain by	/ brownish-	red silt a	nd fine	-	fine g bottle under sub-ar	ravel, red s, ceram ain by gi ngular gra	brick, a ic) froi ray silt avel; lit	and debris (t m 1.25 to with coarse	timber 3.0 e to i	rs, glass ft bg, medium coarse,
complete, as applicable	underlain by	/ brownish-	red silt a	nd fine	-	fine g bottles under sub-ar loose	ravel, red s, ceram ain by gi ngular gra	brick, a ic) from ray silt avel; lit se red bo	and debris (to m 1.25 to with coarse ttle medium	timber 3.0 e to i	rs, glass ft bg, medium coarse,
- Depth (feet bg) – check more than	underlain by	/ brownish-	red silt a 1.25 ft bg	nd fine	sand,	fine g bottles under sub-ar loose	ravel, red s, ceram lain by gi ngular gra sand, trac	brick, a ic) froi ray silt avel; lit e red bi bg.	and debris (to m 1.25 to with coarse ttle medium	imber 3.0 to to to pers f	rs, glass ft bg, medium coarse,
 Depth (feet bg) – check more than one depth, if applicable – applies to 	underlain by some gravel (/ brownish- from 0.67 to 2.1 – 4.0	red silt a 1.25 ft bg 4.1	-6.0	sand,	fine g bottle under sub-ar loose to at le	ravel, red s, ceram ain by gr ngular grassand, trac east 5.0 ft	brick, a ic) froi ray silt avel; lit e red bi bg.	and debris (1 m 1.25 to with coarse ttle medium rick and timl	imber 3.0 to to to pers f	rs, glass ft bg, medium coarse, rom 3.0
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated	underlain by some gravel i	/ brownish- from 0.67 to	red silt a 1.25 ft bg 4.1	nd fine	sand,	fine g bottle under sub-ar loose to at le	ravel, red s, ceram ain by gr ngular grassand, trac east 5.0 ft	brick, a ic) froi ray silt avel; lit e red bi bg.	and debris (1 m 1.25 to with coarse ttle medium rick and timl	imber 3.0 to to to pers f	rs, glass ft bg, medium coarse, rom 3.0
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only	underlain by some gravel (/ brownish- from 0.67 to 2.1 – 4.0	red silt a 1.25 ft bg 4.1	-6.0	sand,	fine g bottle under sub-ar loose to at le	ravel, red s, ceram ain by gr ngular grassand, trac east 5.0 ft	brick, a ic) froi ray silt avel; lit e red bi bg.	and debris (1 m 1.25 to with coarse ttle medium rick and timl	imber 3.0 to to to pers f	rs, glass ft bg, medium coarse, rom 3.0
Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth)	underlain by some gravel f	y brownish- from 0.67 to 2.1 – 4.0	red silt a 0 1.25 ft bg 0 4.1	-6.0	sand,	fine g bottle under sub-ar loose to at le	ravel, red s, ceram ain by gr ngular grassand, trac east 5.0 ft	brick, a ic) froi ray silt avel; lit e red bi bg.	and debris (1 m 1.25 to with coarse ttle medium rick and timl	imber 3.0 to to to pers f	rs, glass ft bg, medium coarse, rom 3.0
Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology	underlain by some gravel for the some gravel f	2.1 – 4.0 X	red silt a 0 1.25 ft bg 0 4.1	-6.0	sand,	fine g bottles under sub-ar loose to at le	ravel, red s, ceram ain by gr ngular grassand, trac east 5.0 ft	brick, a ic) froi ray silt avel; lit e red bi bg.	and debris (to m 1.25 to with coarse tele medium rick and time telephone)	3.0 e to in to pers f	rs, glass ft bg, medium coarse, rom 3.0
Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth)	underlain by some gravel for the some gravel f	y brownish- from 0.67 to 2.1 – 4.0	red silt a 0 1.25 ft bg 0 4.1	-6.0	6.1	fine g bottles under sub-ar loose to at li -8.0	ravel, red s, ceram ain by gr ngular grassand, trac east 5.0 ft	brick, a ic) froi ray silt avel; lit e red bi bg.	and debris (1 m 1.25 to with coarse ttle medium rick and timl	3.0 e to in to pers f	rs, glass ft bg, medium coarse, rom 3.0
Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability	underlain by some gravel for the some gravel f	2.1 – 4.0 X	red silt a 0 1.25 ft bg 0 4.1	-6.0	6.1	fine g bottles under sub-ar loose to at le	ravel, red s, ceram ain by gr ngular grassand, trac east 5.0 ft	brick, a ic) froi ray silt avel; lit e red bi bg.	and debris (to m 1.25 to with coarse tele medium rick and time telephone)	3.0 e to in to pers f	rs, glass ft bg, medium coarse, rom 3.0
Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg)	underlain by some gravel for the some gravel f	2.1 – 4.0 X	red silt a 0 1.25 ft bg 0 4.1	-6.0	6.1	fine g bottles under sub-ar loose to at li -8.0	ravel, red s, ceram ain by gr ngular grassand, trac east 5.0 ft	brick, a ic) froi ray silt avel; lit e red bi bg.	and debris (to m 1.25 to with coarse tele medium rick and time telephone)	3.0 e to in to pers f	rs, glass ft bg, medium coarse, rom 3.0
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed	underlain by some gravel for the some gravel f	2.1 – 4.0 X	red silt a 0 1.25 ft bg 0 4.1	-6.0	6.1	fine g bottles under sub-ar loose to at li -8.0	ravel, red s, ceram ain by gr ngular grassand, trac east 5.0 ft	brick, a ic) froi ray silt avel; lit e red bi bg.	and debris (to m 1.25 to with coarse tele medium rick and time telephone)	3.0 e to in to pers f	rs, glass ft bg, medium coarse, rom 3.0
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing)	underlain by some gravel for the some gravel f	2.1 – 4.0 X t 5.0 ft bg (se	red silt a b 1.25 ft bg	-6.0	6.1	fine g bottle: under sub-ar loose to at lo- 8.0	ravel, red s, ceram ain by gi ngular gra sand, trac east 5.0 ft 8.1 – 10	brick, a ic) froi ray silt avel; lit e red bi bg.	and debris (to m 1.25 to with coarse tele medium rick and time telephone)	3.0 e to in to pers f	rs, glass ft bg, medium coarse, rom 3.0
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if	underlain by some gravel for the some gravel f	2.1 – 4.0 X t 5.0 ft bg (se	red silt a b 1.25 ft bg	-6.0	6.1	fine g bottle: under sub-ar loose to at lo- 8.0	ravel, red s, ceram ain by gi ngular gra sand, trac east 5.0 ft 8.1 – 10	brick, a ic) froi ray silt avel; lit e red bi bg.	and debris (to m 1.25 to with coarse tele medium rick and time tele tele tele tele tele tele tele te	3.0 e to in to pers f	rs, glass ft bg, medium coarse, rom 3.0
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest	underlain by some gravel for the some gravel f	2.1 – 4.0 X t 5.0 ft bg (se	red silt a b 1.25 ft bg	-6.0	6.1	fine g bottle: under sub-ar loose to at lo- 8.0	ravel, red s, ceram ain by gi ngular gra sand, trac east 5.0 ft 8.1 – 10	brick, a ic) froi ray silt avel; lit e red bi bg.	and debris (to m 1.25 to with coarse tele medium rick and time tele tele tele tele tele tele tele te	3.0 e to in to pers f	rs, glass ft bg, medium coarse, rom 3.0
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	underlain by some gravel for the some gravel f	2.1 – 4.0 X t 5.0 ft bg (so Loose	ee above).	- 6.0 X	6.1 - Interm	fine g bottle: under sub-ar loose to at lo-8.0	ravel, red s, ceram ain by gi ngular gra sand, trac east 5.0 ft 8.1 – 10	brick, a ic) froi ray silt avel; lit e red bi bg.	and debris (to mode) 1.25 to with coarse the medium rick and timb	3.0 3.0 in to	rs, glass ft bg, medium coarse, rom 3.0
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s),	underlain by some gravel for the some gravel f	2.1 – 4.0 X t 5.0 ft bg (so Loose	ee above).	- 6.0 X D JB103	Interm	fine g bottle: under sub-ar loose to at lo-8.0	ravel, red s, ceram ain by gi ngular gri sand, trac east 5.0 ft 8.1 – 10	brick, a ic) froi ray silt avel; lit e red bi bg. 0.0 1	and debris (1m 1.25 to with coarse the medium rick and timber of the timber of timber of the timber of timber	3.0 a to in to opers f	rs, glass ft bg, medium coarse, rom 3.0
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling	underlain by some gravel for the some gravel f	2.1 – 4.0 X t 5.0 ft bg (se Loose Oratories, Lawys collected	ee above). As collected for VOC	- 6.0 X D JB103 d for TI TCLP, 5	Interm 3, JB131	fine g bottle: under sub-ar loose to at lo-ar loose to at lo	ravel, red s, ceram ain by gi ngular gri sand, trac east 5.0 ft 8.1 – 10 31319R. chemistry tals TCLP,	brick, a ic) froi ray silt avel; lit e red bi bg. D.O 1	nnd debris (1m 1.25 to with coarse tile medium rick and timber of the timber of timb	CC/MT	rs, glass ft bg, medium coarse, rom 3.0 12.1 (11+12) P, RCRA
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	underlain by some gravel for the some gravel f	2.1 – 4.0 X t 5.0 ft bg (se Loose Oratories, Lawys collected	ee above). As collected for VOC	- 6.0 X D JB103 d for TI TCLP, 5	Interm 3, JB131	fine g bottle: under sub-ar loose to at lo-ar loose to at lo	ravel, red s, ceram ain by gi ngular gri sand, trac east 5.0 ft 8.1 – 10 31319R. chemistry tals TCLP,	brick, a ic) froi ray silt avel; lit e red bi bg. D.O 1	nnd debris (1m 1.25 to with coarse tile medium rick and timber of the timber of timb	CC/MT	rs, glass ft bg, medium coarse, rom 3.0 12.1 (11+12) P, RCRA
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and	underlain by some gravel for the some gravel f	2.1 – 4.0 X t 5.0 ft bg (se Loose Oratories, Lawys collected	ee above). As collected for VOC	- 6.0 X D JB103 d for TI TCLP, 5	Interm 3, JB131	fine g bottle: under sub-ar loose to at lo-ar loose to at lo	ravel, red s, ceram ain by gi ngular gri sand, trac east 5.0 ft 8.1 – 10 31319R. chemistry tals TCLP,	brick, a ic) froi ray silt avel; lit e red bi bg. D.O 1	nnd debris (1m 1.25 to with coarse tile medium rick and timber of the timber of timb	CC/MT	rs, glass ft bg, medium coarse, rom 3.0 12.1 (11+12) P, RCRA
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	underlain by some gravel for s	2.1 – 4.0 X t 5.0 ft bg (so Loose MT-12 WC was collected cs, SVOC, me	ee above). As collected for VOC	O JB103	Interm 33, JB131	fine g bottle: under sub-ar loose to at lo 8.0 nediate X 19 and Ji general CLP, me /herbicid	ravel, red s, ceram ain by gi ngular gra sand, trac east 5.0 ft 8.1 – 10 31319R. chemistry tals TCLP, de, and ge	brick, a ic) froi ray silt avel; lit e red bi bg. D.O 1	rind debris (1m 1.25 to with coarse title medium rick and time of title time of time o	CC/MT TCLF	rs, glass ft bg, medium coarse, rom 3.0 12.1 (11+12) P, RCRA
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test –	underlain by some gravel for s	2.1 – 4.0 X t 5.0 ft bg (se Loose Oratories, Lawys collected	ee above). As collected for VOC	O JB103	Interm 33, JB131	fine g bottle: under sub-ar loose to at lo-ar loose to at lo	ravel, red s, ceram ain by gi ngular gra sand, trac east 5.0 ft 8.1 – 10 31319R. chemistry tals TCLP, de, and ge	brick, a ic) froi ray silt avel; lit e red bi bg. D.O 1	nnd debris (1m 1.25 to with coarse tile medium rick and timber of the timber of timb	CC/MT TCLF	rs, glass ft bg, medium coarse, rom 3.0 12.1 (11+12) P, RCRA
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	underlain by some gravel for s	2.1 – 4.0 X t 5.0 ft bg (so Loose MT-12 WC was collected cs, SVOC, me	ee above). As collected for VOC	O JB103	Interm 33, JB131	fine g bottle: under sub-ar loose to at lo 8.0 nediate X 19 and Ji general CLP, me /herbicid	ravel, red s, ceram ain by gi ngular gra sand, trac east 5.0 ft 8.1 – 10 31319R. chemistry tals TCLP, de, and ge	brick, a ic) froi ray silt avel; lit e red bi bg. D.O 1	rind debris (1m 1.25 to with coarse title medium rick and time of title time of time o	CC/MT TCLF	rs, glass ft bg, medium coarse, rom 3.0 12.1 (11+12) P, RCRA

Additional Comments/Notes/	Location was a test pit used for subsurface evaluation.
Observations (if applicable)	

Boring Identification: RCH-6-ARC-MT-9

borning identification. RCH-o-ARC-IVIT-9											
		Boring	Informati	on							
Alternate Boring ID (if applicable)	N/A										
Pipeline Mile Marker ID	Approximate	ely 20 feet w	est of 5.63R								
Location (Latitude/Longitude) –	40°38'30.57'	'N / 74°10'2	25.67"W								
estimated/surveyed											
Site Address	Boring is loc									Terra	ace and
	Holland Aver										
Nearby Subsurface Features (Distance and	An undergro	und water p	pipe is locate	d appro	ximate	ely 340 f	eet so	uth of the te	st pit.		
Direction from Utilities, Tanks, Properties,											
etc.) Nearby Hydraulic Features (Distance and	The Newark	Day is locate	ad 40E fact r	orthoa	ct of th	o tost ni					
Direction from wetlands, etc.)	THE NEWALK	bay is locati	eu 403 leet i	or trieas	31 01 111	e test þi	ι.				
Drilling Date	3/08/12										
Drilling Company	The Napp-Gr	ecco Comp	anv								
Drilling Method	Excavator	ccco comp	u11y								
Additional Hydro/Geological Tests (e.g.	N/A										
pump test/slug test/packer test)	1.47.										
Boring Purpose (e.g. geotech/	Geoarchaelo	gical									
environmental/geoarchaelogical)		J									
	•	Boring (Observati	ons							
Depth to saturation (feet bg) – Check	0.0 - 2.0	2.1 – 4.0	4.1 – 6.0	6.1 -	8.0	8.1 – 1	2.0	12.1 – 16.0	16.1 – 2	0.0	>20
where applicable	1	X		<u> </u>						-	-
PRODUCT			i	<u> </u>			1		1		
- Product in Soil – Yes/No	No			-							
(odor/inches/viscosity, etc.)											
- Product in GW – Check where	None Ob	served	Shee	n Only		Floati	ng Pro	duct = <6"	Floating I	Produ	ct = >6"
applicable	Х										
HISTORIC FILL MATERIAL			•								
- Composition, other observations –		Reworke	d Material			Α	nthro	ogenically-	Generated	Mate	rial
complete, as applicable	Asphalt and sub-angular				, IIIIC	sub-ar ft bg, angula (wood	igular unde r grav timb	d silt and gravel and rlain by gravel; little copers, glasset) from 3.	red brick fr ay, fine to parse sand, bottles, re	om 0. coars trace d bri	5 to 3.5 se, sub- e debris ck, sea
- Depth (feet bg) – check more than	0.0 - 2.0	2.1 – 4.	0 4.1 -	6.0	6.1	-8.0			0.1 – 12.0		12.1
one depth, if applicable – applies to	0.0 2.0	 	<u> </u>	-							
Anthropogenically-Generated	х	Х	Х		2	x					
Material only											
PID/Odors (depth)	N/D										
Geology	Fill to at leas	t 8.0 ft bg (s	see above).								
Soil Permeability		Loose				nediate			Tight		
						X					
Total Boring Depth (feet bg)	8.0										
GW Temporary Well Installed	N/A										
(Depth, Screen, Riser, Slot Size, Casing)			_								
Laboratory Name and Report No. (if	Accutest Lab	oratories, L	ab Report ID	JB1510), JB151	LOR, JB1	190 ar	nd JB1190R.			
samples collected) (e.g. "Accutest											
Laboratories, Lab Report ID JA65410")	RCH-6-ARC/N	MT O M/C	was salls -+	od for	DCD.	TDII -	nd s	anoral sha	nictry and	VC C C	DCI 6
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling	ARC/MT(7+9										
Parameter(s)	TCLP, RCRA	-									
	analyses.		, 5.00,	,	. 555,	, р		, 510100	, 50110		
GW Samples Collected - Sample ID(s) and	N/A										
Sampling Parameter(s)											
Additional Hydro/Geological Test –	<10	² Feet/Day		10) ⁻² – 10	Feet/Da	у		>10 Feet,	/Day	
Permeability Results (e.g. pump test/slug									-		
test/packer test)											
•	1										
Additional Comments/Notes/ Observations (if applicable)	Location was	s a test pit u	sed for subs	urface e	evaluat	ion.		•			

Boring Identification: RCH-6-ENV-1

		Boring Inf	format	ion								
Alternate Boring ID (if applicable)	N/A											
Pipeline Mile Marker ID		ly 14 feet bg n	ortheast	of 5.53R								
Location (Latitude/Longitude) –		31" N/74° 10'										
estimated/surveyed		,			•							
Site Address	Boring is loca	ted approxima	ately 215	feet wes	st of a	NYDOT	parki	ng lot on	Richmo	nd Terrac	ce in	Staten
	Island, New Y	ork (no exact :	street add	dress is a	vailab	ıle).						
Nearby Subsurface Features (Distance and	A subsurface	water pipeline	is locate	d approx	kimate	ely 165 f	eet so	uth of bo	ring.			
Direction from Utilities, Tanks, Properties,												
etc.)												
Nearby Hydraulic Features (Distance and	Newark Bay i	s located appr	oximately	665 tee	t nort	h of bor	ing. B	oring is lo	cated w	vithin wet	land	S.
Direction from wetlands, etc.) Drilling Date	7/20/2011											
Drilling Company		er Environmen	tal Sarvio	.00								
Drilling Method		e / GeoProbe (
Additional Hydro/Geological Tests (e.g.	N/A	e / Geor robe (3011 301111	103)								
pump test/slug test/packer test)	14,71											
Boring Purpose (e.g. geotech/	Environment	al										
environmental/geoarchaelogical)												
		Boring Ob	servati	ons								
Depth to saturation (feet bg) – Check	0.0 – 2.0		.1 – 6.0	6.1 – 8	8.0	8.1 – 1	2.0	12.1 – 1	6.0 1	16.1 – 20.	0	>20
where applicable		Х										
PRODUCT				•								
- Product in Soil – Yes/No	No											
(odor/inches/viscosity, etc.)												
 Product in GW – Check where 	None Ob	served	Shee	n Only		Floatii	ng Pro	duct = <6	j" Flo	oating Pro	oduc	t = >6"
applicable	Х											
HISTORIC FILL MATERIAL						I _					_	
 Composition, other observations – complete, as applicable 		Reworked N	laterial							erated M		
complete, as applicable										d with trand brick p		-
						grade		_	iciits, a	ina brick j	JICCC	.3 11 0111
- Depth (feet bg) – check more than	0.0 - 2.0	2.1 – 4.0	4.1 -	6.0	6.1	- 8.0		- 10.0	10.1 -	- 12.0	>1	2.1
one depth, if applicable – applies to												
Anthropogenically-Generated	Х	X										
Material only		L										
PID/Odors (depth)		5 feet bg. No o	, .									
Geology		le to 4 feet bg							ነ 5 ተወወተ	bg. unde		
	brown fina C	AND with little	cil+ from	F +a 10	foot I	hada	منداء	h., h				
		AND with little							PEAT;	little silt,		
	from 10 to 1	2 feet bg, unde	erlain by	red brow					PEAT;	little silt,		
Soil Permeability	from 10 to 1 fine, rounded		erlain by	red brow et bg.	n CLA				PEAT;	little silt,		
	from 10 to 1 fine, rounded	2 feet bg, unde d gravel to at le	erlain by	red brow et bg.	n CLA	Y; little			PEAT;	little silt, and trace		
	from 10 to 1 fine, rounded	2 feet bg, unde d gravel to at le	erlain by	red brow et bg.	n CLA	Y; little			PEAT;	little silt, and trace		
Soil Permeability	from 10 to 1 fine, rounded	2 feet bg, unde d gravel to at le	erlain by	red brow et bg.	n CLA	Y; little			PEAT;	little silt, and trace		
Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing)	from 10 to 1 fine, rounded	2 feet bg, unde d gravel to at le	erlain by	red brow et bg.	n CLA	Y; little			PEAT;	little silt, and trace		
Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if	from 10 to 1 fine, rounded 15 N/A	2 feet bg, unde d gravel to at le	erlain by east 15 fe	red brow et bg. I	nterm	AY; little	mediu	um to fine	PEAT;	little silt, and trace		
Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest	from 10 to 1 fine, rounded 15 N/A	2 feet bg, unde d gravel to at le Loose	erlain by east 15 fe	red brow et bg. I	nterm	AY; little	mediu	um to fine	PEAT;	little silt, and trace		
Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	from 10 to 1 fine, rounded 15 N/A Accutest Laboratory	2 feet bg, under gravel to at le Loose	erlain by east 15 fe	red brow et bg. I	nterm	ediate K B1299R a	medio	um to fine	PEAT;	little silt, and trace Tight	med	ium to
Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s),	from 10 to 1 fine, rounded 15 N/A Accutest Lab	2 feet bg, under gravel to at less Loose oratories, Lab I	erlain by east 15 fe Report ID	red brow et bg. In	nterm (2)	ediate (7.0 to	nnd JA	81299.	PEAT; e sand a	little silt, and trace Tight	VOC	SVOC,
Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling	15 N/A Accutest Lab	2 feet bg, under gravel to at le Loose	erlain by east 15 fe Report ID	red brow et bg. In	nterm (2)	ediate (7.0 to	nnd JA	81299.	PEAT; e sand a	little silt, and trace Tight	VOC	SVOC,
Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	15 N/A Accutest Lab RCH6ENV1/2 PCB, TPH, panalyses.	2 feet bg, under gravel to at less Loose oratories, Lab I	erlain by east 15 fe Report ID	red brow et bg. In	nterm (2)	ediate (7.0 to	nnd JA	81299.	PEAT; e sand a	little silt, and trace Tight	VOC	SVOC,
Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling	15 N/A Accutest Lab	2 feet bg, under gravel to at less Loose oratories, Lab I	erlain by east 15 fe Report ID	red brow et bg. In	nterm (2)	ediate (7.0 to	nnd JA	81299.	PEAT; e sand a	little silt, and trace Tight	VOC	SVOC,
Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and	from 10 to 1 fine, rounded 15 N/A Accutest Labe RCH6ENV1/2 PCB, TPH, p analyses. N/A	2 feet bg, under gravel to at less Loose oratories, Lab I	erlain by east 15 fe Report ID	red brow et bg. II s JA8143 I RCH6EP etals (inc	nterm) 89, JA8 NV1/7 cludin	ediate (7.0 to	mediu nnd JA 7.5 fe	81299.	re colle m) and	little silt, and trace Tight	VOC,	SVOC,
Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	from 10 to 1 fine, rounded 15 N/A Accutest Labe RCH6ENV1/2 PCB, TPH, p analyses. N/A	2 feet bg, under digravel to at le Loose oratories, Lab le (2.0 to 2.5 fee esticide, herb	erlain by east 15 fe Report ID	red brow et bg. II s JA8143 I RCH6EP etals (inc	nterm) 89, JA8 NV1/7 cludin	ediate (31299R a (7.0 to g hexav	mediu nnd JA 7.5 fe	81299.	re colle m) and	little silt, and trace Tight ected for 'd general	VOC,	SVOC,
Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test - Permeability Results (e.g. pump test/slug test/packer test)	from 10 to 1 fine, rounded 15 N/A Accutest Labe RCH6ENV1/2 PCB, TPH, p analyses. N/A <10	2 feet bg, under digravel to at le Loose oratories, Lab le (2.0 to 2.5 fee esticide, herb	erlain by east 15 fe Report ID	red brow et bg. II s JA8143 I RCH6EP etals (inc	nterm) 89, JA8 NV1/7 cludin	ediate (31299R a (7.0 to g hexav	mediu nnd JA 7.5 fe	81299.	re colle m) and	little silt, and trace Tight ected for 'd general	VOC,	SVOC,
Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test - Permeability Results (e.g. pump test/slug	from 10 to 1 fine, rounded 15 N/A Accutest Labe RCH6ENV1/2 PCB, TPH, p analyses. N/A	2 feet bg, under digravel to at le Loose oratories, Lab le (2.0 to 2.5 fee esticide, herb	erlain by east 15 fe Report ID	red brow et bg. II s JA8143 I RCH6EP etals (inc	nterm) 89, JA8 NV1/7 cludin	ediate (31299R a (7.0 to g hexav	mediu nnd JA 7.5 fe	81299.	re colle m) and	little silt, and trace Tight ected for 'd general	VOC,	SVOC,

Boring Identification: RCH-6-ENV-2W

		Boring	Informat	ion						
Alternate Boring ID (if applicable)	N/A									
Pipeline Mile Marker ID	5.56R									
Location (Latitude/Longitude) – estimated/surveyed	40° 38' 31.1	.547"N / 74°	10' 30.6348	"W – Sui	rveyed					
Site Address		cated appro							ond Terrace railable).	and a Port
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)		e water pipe								
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	Arthur Kill i	s located app	proximately	550 feet	north	west of bori	ng. Boring	is loc	ated in wetla	nds.
Drilling Date	7/19/2011									
Drilling Company	Land Air Wa	ater Environr	nental Servi	ces						
Drilling Method		re / GeoProl n Auger (wel								
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	Pump Test	and Slug Test	i							
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environmer	ntal								
		Boring (Observat	ions						
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1 -	8.0	8.1 – 12.0	12.1 – 1	16.0	16.1 – 20.0	>20
where applicable	Х									
PRODUCT	•									
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No									
- Product in GW – Check where	None O	bserved	She	en Only		Floating I	roduct = <	6"	Floating Pro	duct = >6"
applicable)	<								
HISTORIC FILL MATERIAL										
- Composition, other observations – complete, as applicable	gravel from	dium to find n grade to 3 nr gravel; litt	.0 feet bg,	underla	in by	Gray to o	dark gray to fine ang	medi gular	Generated Ma fum to fine s gravel, trace om 5.0 to 10 fo	sand; little silt, trace
- Depth (feet bg) – check more than	0.0 - 2.0	2.1 – 4.	0 4.1-	- 6.0	6.1	- 8.0 8	.1 – 10.0	10	.1 – 12.0	>12.1
one depth, if applicable – applies to Anthropogenically-Generated Material only	0.0 2.0)			x	Х			
PID/Odors (depth)		D readings (om 10 to 20		ppm fro	m 12.	5 to 13 fee	t bg, 83.5	ppm	at 15.5 feet	bg). Odor
Geology									wn PEAT; littl silt, trace clay	
Soil Permeability		Loose X			Interm	nediate			Tight	
Total Boring Depth (feet bg)	20	- •								
GW Temporary Well Installed	Well Constr	uction:								
(Depth, Screen, Riser, Slot Size, Casing)	Grade to 10 Grade to 10 Next Day M Total depth	of feet bg – 3 in the second of the second o	o. 1 sand s: eet bg	er 0.010-	-slot P\	/C screen				
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest		boratories, L		s JA812	99 and	I JA81454.				
Laboratories, Lab Report ID JA65410")										
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)		N/1 (1.0 to TPH, pesticio							were collecte	d for VOC,

GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	RCH-6-ENV-2W was collected fo	r VOC, metals and general chemistry	analyses.
Additional Hydro/Geological Test –	<10 ⁻² Feet/Day	10 ⁻² – 10 Feet/Day	>10 Feet/Day
Permeability Results (e.g. pump test/slug test/packer test)			X
Additional Comments/Notes/	N/A		
Observations (if applicable)			

Boring Identification: RCH-6-ENV-3

		Boring	Informat	ion							
Alternate Boring ID (if applicable)	RCH-6-ARC-										
Pipeline Mile Marker ID		ely 23 feet b	a southeast	of 5 50)R						
Location (Latitude/Longitude) – estimated/surveyed		302" N/74° 1	_			d					
Site Address	_	cated approx d Terrace in								ОТ ра	rking lot
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)		e water pipe									
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	Newark Bay	is located a	oproximately	/ 680 fe	eet nor	thwest of	ooring. B	oring is I	ocated in t	he we	etlands.
Drilling Date	7/20/2011										
Drilling Company	Land Air Wa	ter Environn	nental Servio	es							
Drilling Method	2"-Macroco	re / GeoProk	oe (soil samp	les)							
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A										
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environmen	tal									
		Boring (Observati	ons							
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	_	- 8.0	8.1 – 12.	0 12.	1 – 16.0	16.1 – 2	20.0	>20
where applicable		X							1		
PRODUCT											
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No										
- Product in GW – Check where	None Ol	served	Shee	n Only	,	Floating	Product	t = <6"	Floating I	Produ	ct = >6"
applicable	>	(`					
HISTORIC FILL MATERIAL						- I		L.			
- Composition, other observations – complete, as applicable Denth (fact bg), chack more than	00.20		d Material	6.0	6.1	Brown, gravel, sub-ang grade to be and dark br coarse to silt, wo fragmer bg to 5 medium sub-rou from 5 to wood m	medium little sill ular to o 3 feet l coal frag own me o fine grood materits, sub-feet bg, to fine inded graeet bg to aterial a	to fine sat, trace sub-rounder, little crounded, underlais sand with avel, trace of 11 feet tall, trace tall feet	_	coars ck fra , loo ents a ; unde d wit wn cl and e fror gray edium d coal	e to fine gments, se from at 1 foot erlain by h some ay, trace ceramic in 3 feet to black to fine, /cinders ents and
- Depth (feet bg) – check more than	0.0 – 2.0	2.1 – 4.	0 4.1 -	6.0	6.1	- 8.0	8.1 – 10	.0 10	.1 – 12.0	- :	>12.1
one depth, if applicable – applies to Anthropogenically-Generated Material only	х	х	х			Х	Х		Х		
PID/Odors (depth)		14.0 feet bg									
Geology	FILL to 11 fe	et bg (see al	oove), under	lain by			e silt, tra	ce roots	to at least	15 fe	et bg.
Soil Permeability		Loose			Interr	nediate			Tight	:	
		X									
Total Boring Depth (feet bg)	15										
GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing)	N/A										
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest	Accutest Lal	ooratories, L	ab Report ID	JA814	39						

Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)) and RCH6ENV3/6 (6.0 to 6.5 feet bas (including hexavalent chromium) an	= '
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A		
Additional Hydro/Geological Test – Permeability Results (e.g. pump test/slug test/packer test)	<10 ⁻² Feet/Day	10 ⁻² – 10 Feet/Day	>10 Feet/Day
Additional Comments/Notes/ Observations (if applicable)	N/A		

Boring Identification: RCH-6-ENV-4

		Boring	Inform	ation							
Alternate Boring ID (if applicable)	RCH-6-ARC-4	<u> </u>									
Pipeline Mile Marker ID	Approximate	ly 20 feet b	g southea	st of 5.64	IR						
Location (Latitude/Longitude) – estimated/surveyed	40° 38' 30.42					d					
Site Address	Boring is loc Richmond Te									arkin	g lot on
Nearby Subsurface Features (Distance and	A subsurface										
Direction from Utilities, Tanks, Properties, etc.)	7.00.000000	тисс. р.рс.		.cca app.	· · · · · · · · · · · · · · · · · · ·	c., 555			о.		
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	Newark Bay wetlands.	is located a	pproxima	tely 380	feet no	rtheast c	f boring.	. Boring i	s located 60	feet	west of
Drilling Date	7/18/2011										
Drilling Company	Land Air Wat	er Environm	nental Ser	vices							
Drilling Method	2"-Macrocor	e / GeoProb	e (soil sai	nples)							-
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A		•	•							
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environment	al									
	•	Boring C	bserva	tions							
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1	- 8.0	8.1 – 12	2.0 12	2.1 – 16.0	16.1 – 2	0.0	>20
where applicable		Χ									
PRODUCT											
- Product in Soil – Yes/No (odor/inches/viscosity, etc.)	No										
- Product in GW – Check where	None Ob	served	Sł	een Only	У	Floatir	g Produ	ct = <6"	Floating P	rodu	ct = >6"
applicable	Х										
HISTORIC FILL MATERIAL											
 Composition, other observations – 	Reworked Material Anthropogenically-Generated Material										
complete, as applicable	Asphalt surfa	ice with grav	vei graue	to 0.3 lee	et bg.	Brown clay; little medium to fine gravel at sand; trace coal fragments, wood, and medium to fine sand; little medium to fine sand; little medium to fine gravel, trace cinders from 3.0 to 11 ft bg. Trawood material from 5.0 to 11 ft bg.					d metal to black to fine
- Depth (feet bg) – check more than	0.0 - 2.0	2.1 – 4.0) 4.:	L – 6.0	6.1	- 8.0	8.1 – 1		0.1 – 12.0	>	>12.1
one depth, if applicable – applies to Anthropogenically-Generated Material only	Х	Х		Х		Х	Х		Х		
PID/Odors (depth)	12.9 ppm at	13.0 feet bg	. No odor	detected	i	1					
Geology	Asphalt and underlain by	gravel surfa	ce from	grade to	0.3 fee				11 feet bg	(see	above),
Soil Permeability	,	Loose	,			nediate			Tight		
Total Boring Denth (feet hg)	15	Х						1			
Total Boring Depth (feet bg) GW Monitoring Well Installed	N/A										
_	IN/A										
(Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if	Accutest Lab	oratories 1	ah Renort	ΙΩς ΙΔΩ1	290R 31	nd IA212	99				
samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	Accutest Lab	oratories, La	зь керогі	103 1701	2991 ai	IU JAOIZ					
Soil Samples Collected - Sample ID(s),	RCH6ENV4/2	2 (2.0 to 2 5	feet hg) a	ind RCH6	ENV4/9	3 (8.0 to	3.5 feet l	bg) were	collected fo	r VO	C. SVOC
Sample Depth(s) and Sampling Parameter(s)	PCB, TPH, panalyses.	-				•					
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A										
Additional Hydro/Geological Test –	<10	² Feet/Day		1	0 ⁻² – 10	Feet/Da	У		>10 Feet/	Day	
Permeability Results (e.g. pump test/slug test/packer test)		· · · · ·				•	-			•	

Additional Comments/Notes/	N/A
Observations (if applicable)	

Boring Identification: RCH-6-ENV-5W

		Boring	Informat	ion							
Alternate Boring ID (if applicable)	N/A										
Pipeline Mile Marker ID	5.68R										
Location (Latitude/Longitude) –	40° 38' 30.3	747"N / 74°	10' 22.1555"	W – Surv	veved						
estimated/surveyed	10 30 30.3	, ,, ,, , ,	10 22.1333	· · · · · ·	veyea						
Site Address	Boring is lo	cated appro	ximately 50	feet nor	rth of	the northea	st corn	er of a	NYDOT pa	arking	z lot on
3.13.7.13.1.000			ten Island, N								5 .00 0
Nearby Subsurface Features (Distance and	A subsurface										
Direction from Utilities, Tanks, Properties,		• •				•			· ·		
etc.)											
Nearby Hydraulic Features (Distance and	Newark Bay	is located a	oproximately	330 fee	t nort	heast of bori	ng. Bori	ng is Ic	cated in we	etlan	ds.
Direction from wetlands, etc.)											
Drilling Date	7/19/2011										
Drilling Company	Land Air Wa	ter Environn	nental Servic	es							
Drilling Method	2"-Macroco	re / GeoProb	oe (soil samp	les)							
	Hollow Stem	n Auger (wel	l installation								
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	Slug Test										
Boring Purpose (e.g. geotech/	Environmen	tal									
environmental/geoarchaelogical)											
		Boring (Observati	ons							
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1 – 8	8.0	8.1 – 12.0	12.1 -	- 16.0	16.1 – 20	0.0	>20
where applicable	Х										
PRODUCT							-				
- Product in Soil – Yes/No	No										
(odor/inches/viscosity, etc.)											
 Product in GW – Check where 	None Ob	served	Shee	n Only		Floating Pi	oduct =	<6"	Floating P	rodu	ct = >6"
applicable	Х										
HISTORIC FILL MATERIAL											
 Composition, other observations – 			d Material						Generated I		
complete, as applicable			sand; little			Gray to I					
	fine sub-rou	nded gravel	, trace silt fro	om 0.8 to	o 1.5	medium to					
	feet bg					trace coal/					
- Depth (feet bg) – check more than	00 20	21.4	0 41	6.0	6.1 -	bg. Trace wood ma					
one depth, if applicable – applies to	0.0 – 2.0	2.1 – 4.	0 4.1 –	6.0	0.1 -	- 8.0 8	L – 10.0	10	.1 – 12.0		12.1
Anthropogenically-Generated	X	х	X		,	,					
	_ ^	^	^								
Material only					,	`	Х				
Material only PID/Odors (depth)		readings (n	nax = 79.3 pr					t 15 fe	et bg.		
PID/Odors (depth)	Elevated PID			m from	15.5 t	o 16 feet bg)	. Odor a			(see	above).
	Elevated PID	gravel surfa	ace from gra	om from onde to 0.	15.5 t .8 fee	o 16 feet bg) t bg, underla	. Odor a	LL to	10 feet bg	•	• • •
PID/Odors (depth)	Elevated PIC Asphalt and underlain by	gravel surfa brown PE	ace from gra AT; little silt,	om from ide to 0. trace ro	15.5 t .8 fee	o 16 feet bg) t bg, underla o 16.5 feet	. Odor a ain by F og, unde	LL to	10 feet bg	•	• • •
PID/Odors (depth)	Elevated PIC Asphalt and underlain by	gravel surfa brown PE	ace from gra	om from ide to 0. trace ro ded grave	15.5 t .8 fee oots t	o 16 feet bg) t bg, underla o 16.5 feet	. Odor a ain by F og, unde	LL to	10 feet bg	•	• • •
PID/Odors (depth) Geology	Elevated PIC Asphalt and underlain by	gravel surfa brown PEA clay, trace fi	ace from gra AT; little silt,	om from ide to 0. trace ro ded grave	15.5 t .8 fee oots t	o 16 feet bg) t bg, underla o 16.5 feet t least 20 fee	. Odor a ain by F og, unde	LL to	10 feet bg by gray me	•	• • •
PID/Odors (depth) Geology	Elevated PIC Asphalt and underlain by	gravel surfa brown PE clay, trace fi Loose	ace from gra AT; little silt,	om from ide to 0. trace ro ded grave	15.5 t .8 fee oots t	o 16 feet bg) t bg, underla o 16.5 feet t least 20 fee	. Odor a ain by F og, unde	LL to	10 feet bg by gray me	•	• • •
PID/Odors (depth) Geology Soil Permeability	Elevated PID Asphalt and underlain by SAND; little	gravel surfa brown PE clay, trace fi Loose X	ace from gra AT; little silt,	om from ide to 0. trace ro ded grave	15.5 t .8 fee oots t	o 16 feet bg) t bg, underla o 16.5 feet t least 20 fee	. Odor a ain by F og, unde	LL to	10 feet bg by gray me	•	• • •
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg)	Elevated PID Asphalt and underlain by SAND; little	gravel surfa brown PE clay, trace fi Loose X uction:	ace from gra	om from ide to 0. trace ro ded grave	15.5 t .8 fee oots t el to a nterm	o 16 feet bg) t bg, underlo o 16.5 feet t least 20 fee	. Odor a ain by F og, unde	LL to	10 feet bg by gray me	•	• • •
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed	Elevated PID Asphalt and underlain by SAND; little 20 Well Constru	gravel surf. y brown PE, clay, trace fi Loose X uction: feet bg - 3 i	ace from gra AT; little silt, ne sub-round sub-round	om from ide to 0. trace ro ded grave	15.5 t .8 fee oots t el to a nterm	o 16 feet bg) t bg, underlo o 16.5 feet t least 20 fee	. Odor a ain by F og, unde	LL to	10 feet bg by gray me	•	• • •
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed	Asphalt and underlain by SAND; little 20 Well Construction Grade to 15 Grade to 15 Next Day Mo	gravel surfi brown PE clay, trace fi Loose X uction: feet bg – 3 i feet bg – No casurement:	nch diamete o. 1 sand	om from ide to 0. trace ro ded grave	15.5 t .8 fee oots t el to a nterm	o 16 feet bg) t bg, underlo o 16.5 feet t least 20 fee	. Odor a ain by F og, unde	LL to	10 feet bg by gray me	•	• • •
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed	Asphalt and underlain by SAND; little 20 Well Construction Grade to 15 Grade to 15 Next Day Motor Total depth	gravel surfice of the	nch diamete o. 1 sand s: eet bg	om from ide to 0. trace ro ded grave	15.5 t .8 fee oots t el to a nterm	o 16 feet bg) t bg, underlo o 16.5 feet t least 20 fee	. Odor a ain by F og, unde	LL to	10 feet bg by gray me	•	• • •
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing)	Asphalt and underlain by SAND; little 20 Well Construction Grade to 15 Grade to 15 Next Day Motor Total depth Borehole ba	gravel surfing by the surfing state of the surfine sur	nch diamete o. 1 sand s: eet bg ell depth.	om from nde to 0. trace ro ded grave II	15.5 t .8 fee oots t el to a nterm	o 16 feet bg, t bg, underla o 16.5 feet it least 20 fea rediate	. Odor a ain by F og, unde	LL to	10 feet bg by gray me	•	• • •
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if	Asphalt and underlain by SAND; little 20 Well Construction Grade to 15 Grade to 15 Next Day Motor Total depth	gravel surfing by the surfing state of the surfine sur	nch diamete o. 1 sand s: eet bg ell depth.	om from nde to 0. trace ro ded grave II	15.5 t .8 fee oots t el to a nterm	o 16 feet bg, t bg, underla o 16.5 feet it least 20 fea rediate	. Odor a ain by F og, unde	LL to	10 feet bg by gray me	•	•
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest	Asphalt and underlain by SAND; little 20 Well Construction Grade to 15 Grade to 15 Next Day Motor Total depth Borehole ba	gravel surfing by the surfing state of the surfine sur	nch diamete o. 1 sand s: eet bg ell depth.	om from nde to 0. trace ro ded grave II	15.5 t .8 fee oots t el to a nterm	o 16 feet bg, t bg, underla o 16.5 feet it least 20 fea rediate	. Odor a ain by F og, unde	LL to	10 feet bg by gray me	•	•
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	Elevated PID Asphalt and underlain by SAND; little 20 Well Constru Grade to 15 Grade to 15 Next Day Mo Total depth Borehole ba Accutest Lab	gravel surfi y brown PE/ clay, trace fi Loose X uction: feet bg – 3 i feet bg – No easurement: of well: 15 fo ckfilled to w	nch diamete o. 1 sand s: eet bg eell depth. ab Report ID	om from de to 0. trace ro ded grave In r 0.010-s	15.5 t .8 fee oots t el to a nterm	o 16 feet bg, t bg, underla o 16.5 feet t least 20 fee lediate /C screen	. Odor a ain by F og, unde et bg.	ILL to erlain I	10 feet bg by gray me Tight	dium	to fine
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s),	Elevated PIE Asphalt and underlain by SAND; little 20 Well Constru Grade to 15 Grade to 15 Next Day Mr Total depth Borehole ba Accutest Lab	gravel surfing by brown PE/clay, trace find the Loose X	nch diamete o. 1 sand s: eet bg ell depth. ab Report ID	om from Inde to 0. Itrace ro Inde ded grave Inde ro.010-s	15.5 t .8 fee oots trel to a nterm	o 16 feet bg, t bg, underla o 16.5 feet t least 20 fee lediate /C screen JA81299.	Odor a ain by Fog, under bg.	et bg)	10 feet bg by gray me Tight	dium	to fine
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling	Elevated PID Asphalt and underlain by SAND; little 20 Well Constru Grade to 15 Grade to 15 Next Day Mo Total depth Borehole ba Accutest Lab	gravel surfing by brown PE/clay, trace find the Loose X	nch diamete o. 1 sand s: eet bg ell depth. ab Report ID	om from Inde to 0. Itrace ro Inde ded grave Inde ro.010-s	15.5 t .8 fee oots trel to a nterm	o 16 feet bg, t bg, underla o 16.5 feet t least 20 fee lediate /C screen JA81299.	Odor a ain by Fog, under bg.	et bg)	10 feet bg by gray me Tight	dium	to fine
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s),	Elevated PIE Asphalt and underlain by SAND; little 20 Well Constru Grade to 15 Grade to 15 Next Day Mr Total depth Borehole ba Accutest Lab	gravel surf. / brown PE/ clay, trace fi Loose X uction: feet bg - 3 i feet bg - No easurement: of well: 15 fo ckfilled to w poratories, L V/2 (2.0 to 2 TPH, pesticio	nch diamete o. 1 sand s: eet bg ell depth. ab Report ID	om from de to 0. trace roded grave li ro.010-s	15.5 t .8 fee oots trel to a nterm	o 16 feet bg, t bg, underla o 16.5 feet t least 20 fee lediate /C screen JA81299.	Odor a ain by Fog, under the bg.	et bg)	10 feet bg by gray me Tight	dium	to fine

Sampling Parameter(s)			
Additional Hydro/Geological Test –	<10 ⁻² Feet/Day	10 ⁻² - 10 Feet/Day	>10 Feet/Day
Permeability Results (e.g. pump test/slug		X	
test/packer test)		^	
Additional Comments/Notes/	N/A		
Observations (if applicable)			

Boring Identification: RCH-6-HDD-1

		Boring	Info	rmati	on								
Alternate Boring ID (if applicable)	B-29 (SI)												
Pipeline Mile Marker ID	5.67R												
Location (Latitude/Longitude) – estimated/surveyed	40°38'30.73"	N / 74°10'2	2.08	'W - Sur	veyed								
Site Address	3551 Richmo	nd Terrace	Road,	, Staten	Island	l, New \	ork.						
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)	Boring is loca							/ .					
Nearby Hydraulic Features (Distance and Direction from wetlands, piping, etc.)	Boring is loca	ted approxi	imate	ely 390 f	eet we	est of th	ne moutl	h of th	e Arthur	Kill –	Newark I	Вау.	
Drilling Date	11/8/2010												
Drilling Company	Warren Geor	ge, Inc.											
Drilling Method	Mud Rotary /	Tri-cone Ro	oller E	Bit									
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A												
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Geotechnical												
		Boring C			ons								
Depth to saturation (feet bg) – Check where applicable	0.0 - 2.0 X	2.1 - 4.0	4.1	- 6.0	6.1 -	- 8.0	8.1 – 1	2.0	12.1 – 1	16.0	16.1 – 2	0.0	>20
PRODUCT													
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No												
 Product in GW – Check where applicable 	None Observed Sheen Only X			<u>'</u>	Floati	ng Pro	duct = <	6"	Floating I	Produ	ct = >6"		
HISTORIC FILL MATERIAL													
- Composition, other observations –		Reworked	d Mat	terial			Α	nthro	pogenica	ally-G	enerated	Mate	rial
complete, as applicable	Dark gray fin				_		Brick	and n	otterv ni	eres f	rom 2.0 to	n 7 0 f	eet hø
	trace silt, ti												
Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material calls.	0.0 – 2.0 ×	2.1 – 4.0 X	0	4.1 – 0	5.0		- 8.0 ×	8.1	- 10.0	10.	1 – 12.0	>	12.1
Material only PID/Odors (depth)	ND												
Geology	Asphalt from (decomposing coarse SAND 9.0 to 10.0 fe	g plant ma was encour	tter a	and orga	anic s ore rec	ilt) to a covered	at least from 20	17.0 f 0.0 to	feet bg. 22.0 feet	Redo	dish-brow Continuou	n me s drilli	dium to
Soil Permeability	l	Loose				Interm	ediate				Tight	;	
		Χ											
Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing)	22 N/A												
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	N/A												
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	N/A												
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A												
Additional Hydro/Geological Test – Permeability Results (e.g. pump test/slug test/packer test)	<10 ⁻²	Feet/Day			10) ⁻² – 10	Feet/Da	ау			>10 Feet,	/Day	
Additional Comments/Notes/ Observations (if applicable)	Abundant wa			-		asphalt	-driller	rs had	to drive	casir	ng in orde	r to k	eep the

Boring Identification: RCH-MM-ENV-10W

		Boring	Informat	ion						
Alternate Boring ID (if applicable)	N/A									
Pipeline Mile Marker ID		ely 385 feet :	south of 5.3	7						
Location (Latitude/Longitude) –				W– Surveyed	<u> </u>					
estimated/surveyed	10 30 23.0	.,,,,	.0 10.2033	Janveyee	•					
Site Address	Roring is In	cated in a w	noded area	annroximat	ely 635 feet	east of the	intersection	of Ric	hmono	
Site Address							dress available			
Nearby Subsurface Features (Distance and				kimately 305			aress available	-1.		
Direction from Utilities, Tanks, Properties,	Othicy Caser	incints are loc	atcu appio	diffacely 303	cet west of i	oring.				
etc.)										
Nearby Hydraulic Features (Distance and	An unname	d nond is loc	ated annrox	imately 80 fe	et east of hou	ing				
Direction from wetlands, etc.)	/ an anname	a porta 15 toc	ated approx	imately 66 fe	ct cast or bor	6.				
Drilling Date	11/29/11									
Drilling Company	· · · · ·	ter Environn	nantal Sarviv	200						
Drilling Method		/2"-Macroco								
		/Z -IVIACTOCO	re/nollow 3	terri Auger						
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	Pump test									
Boring Purpose (e.g. geotech/	Farironnon	to!								
environmental/geoarchaelogical)	Environmen	tai								
environmental/geoarchaelogical)		D	N							
			Observati	ì						
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1 – 8.0	8.1 – 12.0	12.1 – 16	.0 16.1 – 2	0.0	>20	
where applicable			Х							
PRODUCT	1									
- Product in Soil – Yes/No	No									
(odor/inches/viscosity, etc.)			i .		1		. 1			
- Product in GW – Check where	None Observed Sheen Only					roduct = <6'	' Floating F	Produ	ct = >6'	
applicable	X									
HISTORIC FILL MATERIAL					1					
 Composition, other observations – 			d Material		_		y-Generated			
complete, as applicable				h-brown soft						
	-	ine to mediu	m gravel fro	om 2.0 to 5.0						
	ft bg.	1	-		cobble to	-				
- Depth (feet bg) – check more than	0.0 – 2.0	2.1 – 4.0	0 4.1 -	6.0 6.1	- 8.0 8	.1 – 10.0	10.1 – 12.0	>	12.1	
one depth, if applicable – applies to										
Anthropogenically-Generated	Х									
Material only										
PID/Odors (depth)		– 2.2 at 0.5 f								
Geology		ove) to 5.0	ft bg, unde	rlain hy red		'I AV· cama		s cub		
		- 0								
			bg, underlai	n by brown, f	ine to mediu	m SAND; litt	le silt. from 6.	0 to 7	.0 ft bg	
	underlain b	y reddish-br	bg, underlai own CLAY;	n by brown, f some silt, tra	ine to mediu ice fine, sub	m SAND; litt angular grav	le silt. from 6. rel from 7.0 t	0 to 7 o 12.	.0 ft bg 5 ft bg	
	underlain b underlain b	y reddish-br / reddish-bro	bg, underlai own CLAY; own fine SAN	n by brown, f some silt, tra ND, little silt,	ine to mediu ace fine, sub trace fine, su	m SAND; litt angular grav bangular gra	le silt. from 6. vel from 7.0 t vel from 12.5	0 to 7 o 12. to 17	.0 ft bg 5 ft bg .5 ft bg	
	underlain b underlain b underlain b	y reddish-br / reddish-bro	bg, underlai own CLAY; own fine SAN	n by brown, f some silt, tra ND, little silt,	ine to mediu ace fine, sub trace fine, su	m SAND; litt angular grav bangular gra	le silt. from 6. rel from 7.0 t	0 to 7 o 12. to 17	.0 ft bg 5 ft bg .5 ft bg	
Sail Barmachilitu	underlain b underlain b	y reddish-br / reddish-bro / reddish-bro	bg, underlai own CLAY; own fine SAN	n by brown, f some silt, tra ND, little silt, race silt, trac	ine to mediu ace fine, sub trace fine, su e fine, suban	m SAND; litt angular grav bangular gra	le silt. from 6. rel from 7.0 t vel from 12.5 from 17.5 to	0 to 7 o 12. to 17 at lea	.0 ft bg 5 ft bg .5 ft bg	
Soil Permeability	underlain b underlain b underlain b	y reddish-br / reddish-bro	bg, underlai own CLAY; own fine SAN	n by brown, f some silt, tra ND, little silt, race silt, trac	ine to mediu ace fine, sub trace fine, su	m SAND; litt angular grav bangular gra	le silt. from 6. rel from 7.0 t vel from 12.5 from 17.5 to Tight	0 to 7 o 12. to 17 at lea	.0 ft bg 5 ft bg .5 ft bg	
·	underlain b underlain b underlain b bg.	y reddish-br / reddish-bro / reddish-bro	bg, underlai own CLAY; own fine SAN	n by brown, f some silt, tra ND, little silt, race silt, trac	ine to mediu ace fine, sub trace fine, su e fine, suban	m SAND; litt angular grav bangular gra	le silt. from 6. rel from 7.0 t vel from 12.5 from 17.5 to	0 to 7 o 12. to 17 at lea	.0 ft bg 5 ft bg .5 ft bg	
Total Boring Depth (feet bg)	underlain b underlain b underlain b bg.	y reddish-br / reddish-bro y reddish-bro Loose	bg, underlai own CLAY; own fine SAI own CLAY; t	n by brown, f some silt, tra ND, little silt, race silt, trac	ine to mediu ace fine, sub trace fine, su e fine, suban mediate	m SAND; litti angular grav bangular gra gular gravel	le silt. from 6. rel from 7.0 t vel from 12.5 from 17.5 to Tight	0 to 7 o 12. to 17 at lea	.0 ft bg 5 ft bg .5 ft bg	
Total Boring Depth (feet bg) GW Temporary Well Installed	underlain b underlain b underlain b bg.	y reddish-br / reddish-bro y reddish-bro Loose	bg, underlai own CLAY; own fine SAI own CLAY; t	n by brown, f some silt, tra ND, little silt, race silt, trac	ine to mediu ace fine, sub trace fine, su e fine, suban mediate	m SAND; litti angular grav bangular gra gular gravel	le silt. from 6. rel from 7.0 t vel from 12.5 from 17.5 to Tight	0 to 7 o 12. to 17 at lea	.0 ft bg 5 ft bg .5 ft bg	
Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing)	underlain bunderlain b	y reddish-br y reddish-bro y reddish-bro Loose	bg, underlai own CLAY; own fine SAN own CLAY; t	n by brown, for some silt, trace silt, tra	ine to mediu ace fine, sub trace fine, su e fine, suban mediate	m SAND; litt angular grav bangular gra gular gravel	le silt. from 6. rel from 7.0 t vel from 12.5 from 17.5 to Tight	0 to 7 o 12. to 17 at lea	.0 ft bg 5 ft bg .5 ft bg	
Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if	underlain bunderlain b	y reddish-br y reddish-bro y reddish-bro Loose	bg, underlai own CLAY; own fine SAN own CLAY; t	n by brown, f some silt, tra ND, little silt, race silt, trac	ine to mediu ace fine, sub trace fine, su e fine, suban mediate	m SAND; litt angular grav bangular gra gular gravel	le silt. from 6. rel from 7.0 t vel from 12.5 from 17.5 to Tight	0 to 7 o 12. to 17 at lea	.0 ft bg 5 ft bg .5 ft bg	
Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected)	underlain b underlain b underlain b bg. 20 0.5 to 15.44 Accutest Lal	y reddish-bro y reddish-bro y reddish-bro Loose Ift below sur	bg, underlai own CLAY; own fine SAN own CLAY; t rface - 3" di ab Report ID	n by brown, for some silt, trace silt, tra	ine to mediu ace fine, sub trace fine, su e fine, suban mediate	m SAND; litt angular grav bangular gra gular gravel een	le silt. from 6. rel from 7.0 t vel from 12.5 from 17.5 to Tight X	0 to 7	.0 ft bg 5 ft bg .5 ft bg sst 20 f	
Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) Soil Samples Collected - Sample ID(s),	underlain bunderlain b	y reddish-broy reddish-broy reddish-broose Loose If t below surporatories, La	bg, underlai own CLAY; own fine SAN own CLAY; t rface - 3" di ab Report ID	n by brown, for some silt, trace silt, sil	ine to mediu ace fine, sub trace fine, su e fine, suban mediate U slot PVC scre 23099, and JA	m SAND; litti angular grav bangular gra gular gravel een 493099A.	le silt. from 6. rel from 7.0 t vel from 12.5 from 17.5 to Tight X (7.5 to 8.0 f	o to 7 to 12. to 17 at lea	.0 ft bg 5 ft bg .5 ft bg ast 20 f	
Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling	underlain bunderlain b	y reddish-broy reddish-broy reddish-broose Loose If t below surporatories, La	bg, underlai own CLAY; own fine SAN own CLAY; t rface - 3" di ab Report ID	n by brown, for some silt, trace silt, sil	ine to mediu ace fine, sub trace fine, su e fine, suban mediate U slot PVC scre 23099, and JA	m SAND; litti angular grav bangular gra gular gravel een 493099A.	le silt. from 6. rel from 7.0 t vel from 12.5 from 17.5 to Tight X	o to 7 to 12. to 17 at lea	.0 ft bg 5 ft bg .5 ft bg .st 20 f	
Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	underlain bunderlain b	y reddish-bro y reddish-bro y reddish-bro Loose If the below surporatories, Landau SV-10W/0.5 r VOC, SVOC,	bg, underlai own CLAY; own fine SAN own CLAY; t rface - 3" di ab Report ID (0.5 to 1.0 . PCB, TPH, p	n by brown, for some silt, trace silt, sil	ine to mediu ace fine, sub trace fine, su e fine, suban mediate Slot PVC scr 33099, and JA RCH-MM-El picide, metal:	m SAND; litti angular grav bangular gra gular gravel een 493099A. NV-10W/7.5 s and genera	le silt. from 6. rel from 7.0 t vel from 12.5 from 17.5 to Tight X (7.5 to 8.0 f I chemistry ar	o to 7 to 12. to 17 at lea	.0 ft bg 5 ft bg .5 ft bg ist 20 f	
Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and	underlain bunderlain b	y reddish-bro y reddish-bro y reddish-bro Loose If the below surporatories, Landau (1988) IN-10W/0.5 r VOC, SVOC,	bg, underlai own CLAY; own fine SAN own CLAY; t rface - 3" di ab Report ID (0.5 to 1.0 . PCB, TPH, p	n by brown, for some silt, trace silt, sil	ine to mediu ace fine, sub trace fine, su e fine, suban mediate Slot PVC scr 33099, and JA RCH-MM-El picide, metal:	m SAND; litti angular grav bangular gra gular gravel een 493099A. NV-10W/7.5 s and genera	le silt. from 6. rel from 7.0 t vel from 12.5 from 17.5 to Tight X (7.5 to 8.0 f	o to 7 to 12. to 17 at lea	.0 ft bg 5 ft bg .5 ft bg ist 20 f	
Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	underlain bunderlain b	y reddish-bro y reddish-bro y reddish-bro Loose If the below surporatories, Landau (1988) In the below surporatories, Landau (1988) IN-10W/0.5 IN-10W was mistry analys	bg, underlai own CLAY; own fine SAN own CLAY; t rface - 3" di ab Report ID (0.5 to 1.0 . PCB, TPH, p	n by brown, for some silt, trace silt, sil	ine to mediu ace fine, sub trace fine, su e fine, suban mediate Slot PVC scri 23099, and JA RCH-MM-El picide, metal:	m SAND; litti angular grav bangular gra gular gravel een 493099A. NV-10W/7.5 s and genera	le silt. from 6. rel from 7.0 t vel from 12.5 from 17.5 to Tight X (7.5 to 8.0 f I chemistry ar	0 to 7 to 12. to 17 at least l	.0 ft bg 5 ft bg .5 ft bg ist 20 f	
Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and	underlain bunderlain b	y reddish-bro y reddish-bro y reddish-bro Loose If the below surporatories, Landau (1988) IN-10W/0.5 r VOC, SVOC,	bg, underlai own CLAY; own fine SAN own CLAY; t rface - 3" di ab Report ID (0.5 to 1.0 . PCB, TPH, p	n by brown, for some silt, trace silt, sil	ine to mediu ace fine, sub trace fine, su e fine, suban mediate Slot PVC scr 33099, and JA RCH-MM-El picide, metal:	m SAND; litti angular grav bangular gra gular gravel een 493099A. NV-10W/7.5 s and genera	le silt. from 6. rel from 7.0 t vel from 12.5 from 17.5 to Tight X (7.5 to 8.0 f I chemistry ar	0 to 7 to 12. to 17 at least l	.0 ft bg 5 ft bg .5 ft bg ist 20 f	

Additional Comments/Notes/	N/A
Observations (if applicable)	

Boring Identification: RCH-MM-ENV-11

		Boring	Informat	ion							
Alternate Boring ID (if applicable)	N/A										
Pipeline Mile Marker ID		tely 250 feet	south of 5.3	7							
Location (Latitude/Longitude) – estimated/surveyed)316" N/74° 1			rveyed						
Site Address	_									tersection of ess available).	Richmond
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)		e sewer line							idare	ass available).	
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	An unname	d pond is loc	ated approx	imately	/ 190 fe	et south	east o	of boring.			
Drilling Date	11/28/11										
Drilling Company	Land Air Wa	ater Environr	nental Servi	ces							
Drilling Method	Hand Auger	r/2"-Macroco	re / GeoPro	be							
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A		•								
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environmer	ntal									
	ı	Boring (Observat	ions							
Depth to saturation (feet bg) – Check	0.0 - 2.0	2.1 – 4.0	4.1 – 6.0		- 8.0	8.1 – 12	2.0	12.1 – 1	6.0	16.1 – 20.0	>20
where applicable		Х									1
PRODUCT							<u> </u>				
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No										
- Product in GW – Check where	None O	bserved	She	en Only	,	Floatin	ng Pro	oduct = <6	5"	Floating Prod	luct = >6"
applicable		X								-	
HISTORIC FILL MATERIAL			11			II.					
 Composition, other observations – complete, as applicable 		Reworke	d Material			Ar	nthro	pogenica	lly-G	enerated Ma	terial
 Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only 	0.0 - 2.0	2.1 – 4.	0 4.1	- 6.0	6.1	- 8.0	8.1	- 10.0	10.	1-12.0	>12.1
PID/Odors (depth)	No PID. No	odors.									
Geology	some silt ar trace fine to	nd fine to coa o coarse grav	arse gravel, vel from 6.0	trace cl	lay fron ft bg, u	n 0.5 to 6 nderlain	5.0 ft by Re	bg, unde ed brown	rlain SILT	n, fine to coa by red CLAY; and CLAY, soi t least 15 ft b	some silt, me fine to
Soil Permeability		Loose			Intern	nediate				Tight	
						X					
Total Boring Depth (feet bg)	15										
GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing)	N/A										
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	Accutest La	boratories, L	ab Report II) JA930	29.						
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)		NV-11/3 (3.0 PCB, TPH, po								t bg) were co vses.	lected for
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A										
Additional Hydro/Geological Test –	<10	D ⁻² Feet/Day		10	0 ⁻² – 10	Feet/Da	у			>10 Feet/Da	y
Permeability Results (e.g. pump test/slug											
test/packer test)											

Boring Identification: RCH-MM-ENV-12

Location (Latitude/Longitude) — estimated/surveyed Site Address Rearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.) Nearby Hydraulic Features (Distance and Direction from wetlands, etc.) Drilling Date Drilling Company Lar Drilling Method Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test) Boring Purpose (e.g. geotech/environmental/geoarchaelogical) Depth to saturation (feet bg) – Check where applicable PRODUCT Product in Soil – Yes/No (odor/inches/viscosity, etc.) Product in GW – Check where applicable HISTORIC FILL MATERIAL Composition, other observations – complete, as applicable	pproximate 0° 38' 26.16 oring is loca errace and \(\) subsurface n unnamed 1/28/11 end Air Wate and Auger/2 /A nvironments	ted in a woo Nestern Ave sewer line i pond is loca er Environm 2"-Macroco al Boring C 2.1 – 4.0 X	outh of 5.3: 0' 40.2003" oded area, a enue in State s approxima ated approxi mental Servic re / GeoPro Observati 4.1 – 6.0	W— Surven Provided in erval I	nately ! I, New I feet r	York (no export of border) et southeas 8.1 – 12.0	act street a ing.	ddress a			
Pipeline Mile Marker ID Location (Latitude/Longitude) — estimated/surveyed Site Address Bo Tel Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.) Nearby Hydraulic Features (Distance and Direction from wetlands, etc.) Drilling Date Drilling Company Lar Drilling Method Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test) Boring Purpose (e.g. geotech/environmental/geoarchaelogical) Depth to saturation (feet bg) — Check where applicable PRODUCT Product in Soil — Yes/No (odor/inches/viscosity, etc.) Product in GW — Check where applicable HISTORIC FILL MATERIAL Composition, other observations — complete, as applicable	pproximate 0° 38' 26.16 oring is loca errace and N subsurface n unnamed 1/28/11 end Air Wate and Auger/2 /A nvironment	ted in a woo Nestern Ave sewer line i pond is loca er Environm 2"-Macroco al Boring C 2.1 – 4.0	o' 40.2003" oded area, a enue in State s approxima ated approxi mental Servic re / GeoPro Observati 4.1 – 6.0	w– Survent Sur	nately ! I, New I feet r	York (no export of border) et southeas 8.1 – 12.0	t of boring.	ddress a	vailable).		
Location (Latitude/Longitude) — estimated/surveyed Site Address Bo Tel Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.) Nearby Hydraulic Features (Distance and Direction from wetlands, etc.) Drilling Date Drilling Company Drilling Method Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test) Boring Purpose (e.g. geotech/environmental/geoarchaelogical) Depth to saturation (feet bg) – Check where applicable PRODUCT - Product in Soil – Yes/No (odor/inches/viscosity, etc.) - Product in GW – Check where applicable HISTORIC FILL MATERIAL - Composition, other observations – complete, as applicable	oring is local errace and Natural Subsurface on unnamed 1/28/11 and Air Water and Auger/2//A or vironments of the control of t	ted in a woo Nestern Ave sewer line i pond is loca er Environm 2"-Macroco al Boring C 2.1 – 4.0	o' 40.2003" oded area, a enue in State s approxima ated approxi mental Servic re / GeoPro Observati 4.1 – 6.0	w– Survent Sur	nately ! I, New I feet r	York (no export of border) et southeas 8.1 – 12.0	t of boring.	ddress a	vailable).		
estimated/surveyed Site Address Rearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.) Nearby Hydraulic Features (Distance and Direction from wetlands, etc.) Drilling Date Drilling Company Lar Drilling Method Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test) Boring Purpose (e.g. geotech/environmental/geoarchaelogical) Depth to saturation (feet bg) – Check where applicable PRODUCT - Product in Soil – Yes/No (odor/inches/viscosity, etc.) - Product in GW – Check where applicable HISTORIC FILL MATERIAL - Composition, other observations – complete, as applicable	oring is local errace and Natural Subsurface on unnamed 1/28/11 and Air Water and Auger/2/A on vironment:	ted in a woo Western Ave sewer line i pond is loca er Environm 2"-Macroco al Boring C 2.1 – 4.0 X	oded area, a enue in State s approximated approximated approximated approximated (Service / GeoPro) Observati 4.1 – 6.0	imately 2 ces be 6.1 – 8	nately ! I, New I feet r	York (no export of border) et southeas 8.1 – 12.0	t of boring.	ddress a	vailable).		
Site Address Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.) Nearby Hydraulic Features (Distance and Direction from wetlands, etc.) Prilling Date Drilling Company Drilling Method Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test) Boring Purpose (e.g. geotech/environmental/geoarchaelogical) Depth to saturation (feet bg) – Check where applicable PRODUCT - Product in Soil – Yes/No (odor/inches/viscosity, etc.) - Product in GW – Check where applicable HISTORIC FILL MATERIAL - Composition, other observations – complete, as applicable	subsurface n unnamed 1/28/11 and Air Wate and Auger/2 /A nvironments	western Avesewer line is pond is locater Environm 2"-Macroco al Boring C 2.1 – 4.0 X	enue in States approximated approximated approximated Service / GeoProi	en Island ately 150 imately 2 ces be 6.1 – 8	l, New) feet r	York (no export of border) et southeas 8.1 – 12.0	t of boring.	ddress a	vailable).		
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.) Nearby Hydraulic Features (Distance and Direction from wetlands, etc.) Drilling Date Drilling Company Lar Drilling Method Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test) Boring Purpose (e.g. geotech/ environmental/geoarchaelogical) Depth to saturation (feet bg) – Check where applicable PRODUCT Product in Soil – Yes/No (odor/inches/viscosity, etc.) Product in GW – Check where applicable HISTORIC FILL MATERIAL Composition, other observations – complete, as applicable	subsurface n unnamed 1/28/11 and Air Wate and Auger/2 /A nvironments	western Avesewer line is pond is locater Environm 2"-Macroco al Boring C 2.1 – 4.0 X	enue in States approximated approximated approximated Service / GeoProi	en Island ately 150 imately 2 ces be 6.1 – 8	l, New) feet r	York (no export of border) et southeas 8.1 – 12.0	t of boring.	ddress a	vailable).		
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.) Nearby Hydraulic Features (Distance and Direction from wetlands, etc.) Prilling Date Drilling Company Drilling Method Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test) Boring Purpose (e.g. geotech/environmental/geoarchaelogical) Depth to saturation (feet bg) – Check where applicable PRODUCT Product in Soil – Yes/No (odor/inches/viscosity, etc.) Product in GW – Check where applicable HISTORIC FILL MATERIAL Composition, other observations – complete, as applicable	n unnamed 1/28/11 and Air Wate and Auger/2 /A nvironments	pond is loca er Environm 2"-Macroco al Boring C 2.1 – 4.0 X	s approxima neted approxi nental Service re / GeoProi Dbservati 4.1 – 6.0	imately 2 ces be 6.1 – 8) feet r	et southeas	t of boring.				
etc.) Nearby Hydraulic Features (Distance and Direction from wetlands, etc.) Drilling Date Drilling Company Drilling Method Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test) Boring Purpose (e.g. geotech/environmental/geoarchaelogical) Depth to saturation (feet bg) – Check where applicable PRODUCT - Product in Soil – Yes/No (odor/inches/viscosity, etc.) - Product in GW – Check where applicable HISTORIC FILL MATERIAL - Composition, other observations – complete, as applicable	1/28/11 and Air Wate and Auger/2 /A nvironment	er Environm 2"-Macroco al Boring C 2.1 – 4.0	nental Service re / GeoPro Observati 4.1 – 6.0	ions		8.1 – 12.0		6.0 16	5.1 – 20.0	>20	
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.) Drilling Date Drilling Company Drilling Method Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test) Boring Purpose (e.g. geotech/environmental/geoarchaelogical) Depth to saturation (feet bg) – Check where applicable PRODUCT Product in Soil – Yes/No (odor/inches/viscosity, etc.) Product in GW – Check where applicable HISTORIC FILL MATERIAL Composition, other observations – complete, as applicable	1/28/11 and Air Wate and Auger/2 /A nvironment	er Environm 2"-Macroco al Boring C 2.1 – 4.0	nental Service re / GeoPro Observati 4.1 – 6.0	ions		8.1 – 12.0		6.0 16	j.1 – 20.0	>20	
Direction from wetlands, etc.) Drilling Date Drilling Company Drilling Method Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test) Boring Purpose (e.g. geotech/environmental/geoarchaelogical) Depth to saturation (feet bg) – Check where applicable PRODUCT - Product in Soil – Yes/No (odor/inches/viscosity, etc.) - Product in GW – Check where applicable HISTORIC FILL MATERIAL - Composition, other observations – complete, as applicable	1/28/11 and Air Wate and Auger/2 /A nvironment	er Environm 2"-Macroco al Boring C 2.1 – 4.0	nental Service re / GeoPro Observati 4.1 – 6.0	ions		8.1 – 12.0		6.0 16	5.1 – 20.0	>20	
Drilling Date Drilling Company Lar Drilling Method Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test) Boring Purpose (e.g. geotech/environmental/geoarchaelogical) Depth to saturation (feet bg) – Check where applicable PRODUCT - Product in Soil – Yes/No (odor/inches/viscosity, etc.) - Product in GW – Check where applicable HISTORIC FILL MATERIAL - Composition, other observations – complete, as applicable	and Air Water and Auger/2/A nvironments 0.0 – 2.0 None Obs	2"-Macroco al Boring C 2.1 – 4.0 X	Observati 4.1 – 6.0	ons 6.1 – 8	8.0		12.1 – 1	6.0 16	5.1 – 20.0	>20	
Drilling Company Drilling Method Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test) Boring Purpose (e.g. geotech/environmental/geoarchaelogical) Depth to saturation (feet bg) – Check where applicable PRODUCT - Product in Soil – Yes/No (odor/inches/viscosity, etc.) - Product in GW – Check where applicable HISTORIC FILL MATERIAL - Composition, other observations – complete, as applicable	and Air Water and Auger/2/A nvironments 0.0 – 2.0 None Obs	2"-Macroco al Boring C 2.1 – 4.0 X	Observati 4.1 – 6.0	ons 6.1 – 8	8.0		12.1 – 1	6.0 16	5.1 – 20.0	>20	
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Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test) Boring Purpose (e.g. geotech/ environmental/geoarchaelogical) Depth to saturation (feet bg) – Check where applicable PRODUCT - Product in Soil – Yes/No (odor/inches/viscosity, etc.) - Product in GW – Check where applicable HISTORIC FILL MATERIAL - Composition, other observations – complete, as applicable	/A nvironments 0.0 – 2.0 None Obs	Boring C 2.1 – 4.0 X	Observati 4.1 – 6.0	ions 6.1 – 8	8.0		12.1 – 1	6.0 16	5.1 – 20.0	>20	
pump test/slug test/packer test) Boring Purpose (e.g. geotech/ environmental/geoarchaelogical) Depth to saturation (feet bg) – Check where applicable PRODUCT - Product in Soil – Yes/No (odor/inches/viscosity, etc.) - Product in GW – Check where applicable HISTORIC FILL MATERIAL - Composition, other observations – complete, as applicable	0.0 – 2.0 0.0 – None Obs	Boring C 2.1 – 4.0 X	4.1 – 6.0	6.1 - 8	8.0		12.1 – 1	6.0 16	j.1 – 20.0	>20	
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical) Depth to saturation (feet bg) – Check where applicable PRODUCT - Product in Soil – Yes/No (odor/inches/viscosity, etc.) - Product in GW – Check where applicable HISTORIC FILL MATERIAL - Composition, other observations – complete, as applicable	0.0 – 2.0 0 None Obs	Boring C 2.1 – 4.0 X	4.1 – 6.0	6.1 - 8	8.0		12.1 – 1	6.0 16	j.1 – 20.0	>20	
environmental/geoarchaelogical) Depth to saturation (feet bg) – Check where applicable PRODUCT - Product in Soil – Yes/No (odor/inches/viscosity, etc.) - Product in GW – Check where applicable HISTORIC FILL MATERIAL - Composition, other observations – complete, as applicable	0.0 – 2.0 0 None Obs	Boring C 2.1 – 4.0 X	4.1 – 6.0	6.1 - 8	8.0		12.1 – 1	6.0 16	5.1 – 20.0	>20	
Depth to saturation (feet bg) – Check where applicable PRODUCT - Product in Soil – Yes/No (odor/inches/viscosity, etc.) - Product in GW – Check where applicable HISTORIC FILL MATERIAL - Composition, other observations – complete, as applicable	O None Obs	2.1 – 4.0 X	4.1 – 6.0	6.1 - 8	8.0		12.1 – 1	6.0 16	5.1 – 20.0	>20	
where applicable PRODUCT - Product in Soil – Yes/No (odor/inches/viscosity, etc.) - Product in GW – Check where applicable HISTORIC FILL MATERIAL - Composition, other observations – complete, as applicable	O None Obs	2.1 – 4.0 X	4.1 – 6.0	6.1 - 8	8.0		12.1 – 1	6.0 16	5.1 – 20.0	>20	
where applicable PRODUCT - Product in Soil – Yes/No (odor/inches/viscosity, etc.) - Product in GW – Check where applicable HISTORIC FILL MATERIAL - Composition, other observations – complete, as applicable	O None Obs	Х			8.0		12.1 – 1	b.0 16	5.1 – 20.0	>20	
PRODUCT - Product in Soil – Yes/No (odor/inches/viscosity, etc.) - Product in GW – Check where applicable HISTORIC FILL MATERIAL - Composition, other observations – complete, as applicable	None Obs	1	Shee	en Only							
- Product in Soil – Yes/No (odor/inches/viscosity, etc.) - Product in GW – Check where applicable HISTORIC FILL MATERIAL - Composition, other observations – complete, as applicable	None Obs	served	Shee	en Only							
(odor/inches/viscosity, etc.) - Product in GW – Check where applicable HISTORIC FILL MATERIAL - Composition, other observations – complete, as applicable	None Obs	served	Shee	en Only							
- Product in GW – Check where applicable HISTORIC FILL MATERIAL - Composition, other observations – complete, as applicable		served	Shee	en Only							
applicable HISTORIC FILL MATERIAL - Composition, other observations – complete, as applicable		serveu	Silec	en Only		Eleating I	Product = <6	" Flor	ating Pro	duct = >6	
- Composition, other observations – complete, as applicable										<u> </u>	
- Composition, other observations – complete, as applicable											
complete, as applicable		Reworked	l Material			Anth	ropogenical	lv-Gene	rated Ma	terial	
						7	- ородошом	.,			
	0.0 – 2.0	2.1 – 4.0	4.1-	6.0	6.1 -	- 8.0 8	.1 – 10.0	10.1 -	10.1 – 12.0		
one depth, if applicable – applies to											
Anthropogenically-Generated											
Material only											
, , , ,	o PID. No o										
= -			ium SAND;					-			
			orange brow				_			·	
			lerlain by or	-							
			CLAY; trace ilt and fine,								
	and lens at 1		nt and fine,	Sub-ang	ular gi	ravei iroiii	15 to at leas	St 20 It I	ig. Red b	rown, m	
Soil Permeability		Loose		lı	nterm	ediate			Tight		
Son I criticusmey		<u> </u>)						
Total Boring Depth (feet bg) 20	0					-	l				
GW Temporary Well Installed N/A											
(Depth, Screen, Riser, Slot Size, Casing)	, :										
	ccutest Labo	oratories, La	b Report ID	JA93029	9.						
samples collected) (e.g. "Accutest		,	·								
Laboratories, Lab Report ID JA65410")											
Soil Samples Collected - Sample ID(s), RC	CH-MM-EN	V-12/3.5 (3.	5 to 4.0 feet	t bg) and	RCH-	MM-ENV-1	2/7.5 (7.5 to	8.0 feet	bg) were	e collecte	
, , , , , ,	or VOC, SVO	C, PCB, TPH	, pesticide, l	herbicide	e, meta	als and gen	eral chemist	ry analy:	ses.		
Parameter(s)											
GW Samples Collected - Sample ID(s) and N/A	/A										
Sampling Parameter(s)				-	,						
Additional Hydro/Geological Test –	<10 ⁻²	Feet/Day		10-2	- 10	Feet/Day		>10	Feet/Da	у	
Permeability Results (e.g. pump test/slug											
test/nacker test)											
test/packer test) Additional Comments/Notes/ N/A	/^										

Boring Identification: RCH-MM-ENV-13W

Alternate Bording 10 (if applicable) Pipeline Mile Marker ID Location (Latitude/Longitude) Site Address Authority Hydradile Features (Distance and Direction from Utilities, Tanks, Properties, etc.) Authority Hydradile Features (Distance and Direction from Utilities, Tanks, Properties, etc.) Additional Pydro (Seological Tests (e.g. pump test/slig statistics, Tanks, Properties) Soring Purpose, (e.g. geotech/ environmental/geor/chalepical) Soring Purpose, (e.g. geotech/ environmental/geor/chalepical) Soring Observations Soring Obse			Boring	Informa	tion								
Pipeline Mile Marker ID	Alternate Boring ID (if applicable)	N/A	2018										
Lication (Latitude/Longitude)		<u> </u>	alv 80 feet s	outheast o	f 5 3 9								
seitmated/surveyed Size Address Boring is located in a wooded area, approximately 680 feet east of the intersection of Richmond Terrace and Holland Avenue in Staten Island, New York (no exact street address available). A subsurface Features (Distance and Direction from Wethods, etc.) Nearby Hydraulic Features (Distance and Direction from Wethods, etc.) Nearby Hydraulic Features (Distance and Direction from Wethods, etc.) Polliting Company Defiliting Company Land Air Water Environmental Services Polliting Gompany Land Air Water Environmental Services Product in Soil – Yes/No (2004) (Acceptable 1921) PRODUCT Product in Soil – Yes/No (2004) (Acceptable 1922) Product in Soil – Yes/No (2004) (Acceptabl	•					IIIVOVO	d						
Size Address Soring is located in a wooded area, approximately 680 feet east of the intersection of Richmond Terrace and Holland Avenue in Staten Island, New Tork (no exact street address available). A subsurface sewer line is approximately 90 feet north of boring. Different form on wetlands, etc. A wetland area is located approximately 400 feet northeast of boring. Different form wetlands, etc. Different form form form wetlands, etc. Different form form form form form form form form		40 30 20.7	/13 N//+ .	10 33.013.	. •• 5	uiveye	u						
Terrace and Holland Avenue in Staten Island, New York (no exact street address available). A subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.) Nearby Hydraulic Features (Distance and Direction from Wetlands, etc.) Drilling Date 11/28/11 Drilling Company Land Ar Water Environmental Services Pump test/stig test/packer test) Boring Pumpose (e.g., geotech/ environmental/geoarchaelogical) Boring Pumpose (e.g., geotech/ environmental/geoarchaelogical) Boring Observations Boring Observations Boring Observations Boring Observations Product in Soil – Yes/No (odor/inches/viscosity, etc.) No (odor/inches/viscosity, etc.) Product in Soil – Yes/No (odor/inches/viscosity, etc.) Depth feet bg) – check where applicable Product in Soil – Yes/No (odor/inches/viscosity, etc.) Depth (feet bg) – check where applicable and the soil of the state of the soil of the state of the soil of the state of		Roring is lo	rated in a v	vooded ar	ea annr	nximat	elv 680	feet e	ast of th	e intere	section	of Ric	hmond
Nearby Mydraulic Features (Distance and Direction from Utilities, Tanks, Properties, etc.) Nearby Hydraulic Features (Distance and Direction from Wetlands, etc.) Probling Date 11/28/11 Pulling Company	Site Address												,,,,,,,
Direction from Utilities, Tanks, Properties, etc.) Naarby Hydraulic Features (Distance and Direction from wetlands, etc.) Drilling Date 11/28/11 Drilling Company Hand Auger/2*-Macrocore/Hollow Stem Auger Pump test Styling test/packer test) Boring Observations Boring Product = 56" Floating Product = 56" Floating Pro	Nearby Subsurface Features (Distance and											-,-	
A wetland area is located approximately 400 feet northeast of boring. A wetland area is located approximately 400 feet northeast of boring.	· · · · · · · · · · · · · · · · · · ·				, .								
Direction from wetlands, etc.) 1/28/11 1/28/11 1/28/11	•												
1/128/11 1/128/11	Nearby Hydraulic Features (Distance and	A wetland a	ea is locate	d approxin	ately 40	00 feet	northeas	t of b	oring.				
Drilling Company Land Air Water Environmental Services	Direction from wetlands, etc.)												
Hand Auger/2"-Macrocore/Hollow Stem Auger	Drilling Date	11/28/11											
Additional Hydro/Geological Tests (e.g. protects/ Boring Purpose (e.g. geotech/ environmental/geoarchaelogical) Product in Sul - Ves/No (dodo/nchee/viscosity, etc.) Product in Sul - Ves/No (dodo/nchee/viscosity)	Drilling Company	Land Air Wa	ter Environr	nental Serv	ices								
Boring Purpose (e.g. gentech/environmental/geoarchaelogical) Environmental/geoarchaelogical) Environme	Drilling Method	Hand Auger,	/2"-Macroco	re/Hollow	Stem A	uger							
Environmental/geoarchaelogical) Environmental/geoarchaelogical) Environmental/geoarchaelogical) Soring Observations	Additional Hydro/Geological Tests (e.g.	Pump test											
Boring Observations	pump test/slug test/packer test)												
Depth to saturation (feet bg) – Check where applicable PRODUCT Product in Soil – Yes/No (odor/Inches/viscosity, etc.) Productin GW – Check where applicable No (odor/Inches/viscosity, etc.) Productin GW – Check where applicable No (odor/Inches/viscosity, etc.) Productin GW – Check where applicable None Observed None Observed None Observed Sheen Only Floating Product = <6" Floating Product = >6" Floating Product = Simple Product = Simple Product = Simple Product = Simple Produ		Environmen	tal										
Depth to saturation (feet bg) - Check where applicable No No No No No No No N	environmental/geoarchaelogical)												
where applicable PRODUCT Product in Soil – Yes/No (odor/inches/viscosity, etc.) Product in GW – Check where applicable None Observed Sheen Only Floating Product = <6" Floating Floatin			Boring (Observa	tions								
PRODUCT Product in Soil – Yes/No (odor/inches/viscosity, etc.) Product in GW – Check where applicable Anthropogenically—Generated Material One depth, if applicable — applies to Anthropogenically—Generated Material only PID/Odors (depth) Geology Piormapility A Soil Permeability Loose Intermediat Total Boring Depth (feet bg) Depth (feet bg) Do to 14.76 ft below surface – 3" diameter 0.010 slot PVC screen Understand Stampling Parameter(s) Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Pyroduct = <6" Floating Product = <6" F		0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1	- 8.0	8.1 – 1	2.0	12.1 – 1	6.0	16.1 – 2	0.0	>20
Product in Soil − Yes/No (odor/inches/viscosity, etc.) Product in GW − Check where applicable None Observed None Observed None Observed Sheen Only Floating Product = <6" Floating Product = >6" Floating	where applicable			Χ									
Odor/Inches/viscosity, etc.	PRODUCT												
- Product in GW - Check where applicable X	 Product in Soil – Yes/No 	No											
Anthropogenically-Generated Material - Composition, other observations - complete, as applicable - Depth (feet bg) - Check more than one depth, if applicable - applies to Anthropogenically-Generated Material only PID/Odors (depth) Filiphose Dark brown, fine to medium SAND; little fine to coarse, sub-angular gravel, trace silt from 0.0 to 1.0 ft bg, underlain by light brown, fine to medium SAND; trace silt and fine to coarse, sub-angular gravel, trace silt from 1.0 to 2.0 ft bg, underlain by one to medium SAND; trace silt from 6.0 to 1.0 ft bg, underlain by light brown, fine to medium SAND; trace silt from 6.0 to 10 ft bg, underlain by light brown, fine to medium SAND; trace silt from 6.0 to 10 ft bg, underlain by Red brown CLAY, trace silt and fine sub-angular gravel from 1.0 to 2.0 ft bg, underlain by light brown, fine to medium SAND; trace silt from 6.0 to 10 ft bg, underlain by Red brown CLAY, trace silt and fine sub-angular gravel from 10 to at least 20 ft bg. Fine sand lens at 18 ft bg. Soil Permeability Loose Intermediate Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples Collected) (e.g. "Kacutest Laboratories, Lab Report ID JA65410") Soil Samples Collected (e.g. "Kacutest Laboratories, Lab Report ID JA93029, JA93110, and JA93133. RCH-MM-ENV-13W/2.0 (2.0 to 2.5 feet bg) and RCH-MM-ENV-13W/7.5 (7.5 to 8.0 feet bg) were collected of concept of the collected of the collec	(odor/inches/viscosity, etc.)												
HISTORIC FILL MATERIAL Composition, other observations— complete, as applicable Depth (feet bg) — check more than one depth, if applicable — applies to Anthropogenically-Generated Material Anthropogenically-Generated Material O.O — 2.0	 Product in GW – Check where 	None Ob	Sh	en Onl	у	Floati	ng Pro	oduct = <6	5" Flo	oating P	rodu	:t = >6"	
Reworked Material Anthropogenically-Generated Material Complete, as applicable	applicable	Х											
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Sampling Parameter(s) Additional Hydro/Geological Test - Permeability Results (e.g. pump test/slug test/packer test) Additional Comments/Notes/ Seperal chemistry analyses 10°2 - 10 Feet/Day >10 Feet/Day X X					•								
Additional Hydro/Geological Test - <10 ⁻² Feet/Day 10 ⁻² - 10 Feet/Day >10 Feet/Day Permeability Results (e.g. pump test/slug test/packer test) Additional Comments/Notes/ N/A					for SPDI	ES, VO	c, svoc,	PCB,	TPH, pest	icide, h	erbicide	e, met	als and
Permeability Results (e.g. pump test/slug test/packer test) Additional Comments/Notes/ N/A				ses		- -2			1				
test/packer test) Additional Comments/Notes/ N/A	• • •	<10	Feet/Day		1	υ - 10) Feet/Da	ау		>1	LU Feet/	Day	
Additional Comments/Notes/ N/A							Χ						
		N/A											
	Observations (if applicable)	IN/A											

Boring Identification: RCH-MM-ENV-14

		Boring	Informat	ion					
Alternate Boring ID (if applicable)	N/A								
Pipeline Mile Marker ID		elv 75 feet s	outh of 5.43						
Location (Latitude/Longitude) –				W– Surveye	<u></u>				
estimated/surveyed					-				
Site Address	Boring is lo	cated in a v	vooded area	. approxima	telv 855 feet	east of th	ne int	ersection of	Richmond
								ess available).	
Nearby Subsurface Features (Distance and					north of bori			•	
Direction from Utilities, Tanks, Properties,				•		Ü			
etc.)									
Nearby Hydraulic Features (Distance and	An unname	d pond is loc	ated approx	mately 475 f	eet southwe:	st of boring	ζ.		
Direction from wetlands, etc.)									
Drilling Date	11/17/11								
Drilling Company	Land Air Wa	ter Environr	mental Servic	es					
Drilling Method	Hand Auger								
Additional Hydro/Geological Tests (e.g.	N/A								
pump test/slug test/packer test)									
Boring Purpose (e.g. geotech/	Environmer	ıtal							
environmental/geoarchaelogical)									
		Boring (Observati	ons					
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1 – 8.0	8.1 – 12.0	12.1 –	16.0	16.1 – 20.0	>20
where applicable		Х							
PRODUCT			•		•			•	•
- Product in Soil – Yes/No	No								
(odor/inches/viscosity, etc.)									
- Product in GW – Check where	None O	bserved	Shee	n Only	Floating F	roduct = <	6"	Floating Prod	luct = >6"
applicable	>	(
HISTORIC FILL MATERIAL									
 Composition, other observations – 		Reworke	d Material		Anth	ropogenica	ally-G	enerated Ma	erial
complete, as applicable									
- Depth (feet bg) – check more than	0.0 – 2.0	2.1 – 4.	0 4.1 -	6.0 6.1	. – 8.0	.1 – 10.0	10.	1 – 12.0	>12.1
one depth, if applicable – applies to									
Anthropogenically-Generated									
Material only									
PID/Odors (depth)	No PID. No								
Geology	Brown, fine	SAND and s	ilt from 0.0 t	ο 2.0 ft bg, ι	nderlain by I	ight brown	/orar	nge, fine SAND	from 2.0
	to at least 6	.0 ft bg.				1			
Soil Permeability		Loose		Inter	mediate			Tight	
		Х							
Total Boring Depth (feet bg)	6								
GW Temporary Well Installed	N/A								
(Donth Coroon Dison Clat Cias Casinal)									
(Depth, Screen, Riser, Slot Size, Casing)									
Laboratory Name and Report No. (if	Accutest La	boratories, L	ab Report ID	JA92420.					
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest	Accutest La	boratories, L	ab Report ID	JA92420.					
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")									
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s),	RCH-MM-E	NV-14/3 (3.0	to 3.5 feet b	g), RCH-MM				RCH-MM-ENV	
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling	RCH-MM-EI to 5.5 feet	NV-14/3 (3.0 bg) were co	to 3.5 feet b	g), RCH-MM				RCH-MM-ENV de, metals an	
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	RCH-MM-EI to 5.5 feet chemistry a	NV-14/3 (3.0 bg) were co	to 3.5 feet b	g), RCH-MM					
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and	RCH-MM-EI to 5.5 feet	NV-14/3 (3.0 bg) were co	to 3.5 feet b	g), RCH-MM					
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	RCH-MM-EI to 5.5 feet chemistry a N/A	NV-14/3 (3.0 bg) were co nalyses.	to 3.5 feet b	g), RCH-MM VOC, SVOC,	PCB, TPH, pe			de, metals an	d general
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test -	RCH-MM-EI to 5.5 feet chemistry a N/A	NV-14/3 (3.0 bg) were co	to 3.5 feet b	g), RCH-MM VOC, SVOC,					d general
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test – Permeability Results (e.g. pump test/slug	RCH-MM-EI to 5.5 feet chemistry a N/A	NV-14/3 (3.0 bg) were co nalyses.	to 3.5 feet b	g), RCH-MM VOC, SVOC,	PCB, TPH, pe			de, metals an	d general
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test -	RCH-MM-EI to 5.5 feet chemistry a N/A	NV-14/3 (3.0 bg) were co nalyses.	to 3.5 feet b	g), RCH-MM VOC, SVOC,	PCB, TPH, pe			de, metals an	d general

Boring Identification: RCH-MM-ENV-15

		Boring	Inform	ation								
Alternate Boring ID (if applicable)	N/A											
Pipeline Mile Marker ID	Approximate	ely 80 feet so	outh of 5	48								
Location (Latitude/Longitude) –	40° 38' 27.65				Surveye	d						
estimated/surveyed												
Site Address	Boring is loc Terrace and											chmond
Nearby Subsurface Features (Distance and	A subsurface							. street a	uures	avanabi	<u>.</u>	
Direction from Utilities, Tanks, Properties, etc.)	71303011000	sewer mie	о прртол	matery o	0 100011	01111011	, , , , , , , , , , , , , , , , , , ,					
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	Newark Bay	is located ap	oproxima	ely 615 f	eet nor	thwest o	of boring	g.				
Drilling Date	11/17/11											
Drilling Company	Land Air Wat	ter Environn	nental Se	vices								
Drilling Method	Han Auger/2	"-Macrocor	e / GeoPi	obe								
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A		,									
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environment	tal										
environmental/geodrenaelogical/	1	Boring (Observ	ations								
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6		- 8.0	8.1 – 1	2.0	12.1 – 1	6.0	16.1 – 2	0.0	>20
where applicable	Х											
PRODUCT	I I			ı	I		l l					
- Product in Soil – Yes/No	No											
(odor/inches/viscosity, etc.)												
- Product in GW – Check where	None Ob	served	S	neen Onl	V	Floati	ng Proc	duct = <6	" F	loating P	rodu	ct = >6"
applicable	Х				•							
HISTORIC FILL MATERIAL						1						
- Composition, other observations –		Reworke	d Materia	I		Δ	nthrop	ogenical	lly-Ger	nerated	Mate	rial
complete, as applicable									_			
- Depth (feet bg) – check more than	0.0 - 2.0	2.1 – 4.	0 4.	1 – 6.0	6.1	- 8.0	8.1 -	- 10.0	10.1	- 12.0	>	12.1
one depth, if applicable – applies to												
Anthropogenically-Generated												
Material only												
PID/Odors (depth)	No PID. No o											
Geology	Brown, fine											
	underlain by											
	medium SAN				_						•	
	CLAY; trace s	_	-		_							
	to medium §		14 to 18	ft bg, ur	nderlain	by red	brown,	fine SAI	ND; tra	ace silt f	rom	18 to at
	least 20 ft bg	'						1				
Soil Permeability		Loose				nediate				Tight		
						X						
Total Boring Depth (feet bg)	20											
GW Temporary Well Installed	N/A											
(Depth, Screen, Riser, Slot Size, Casing)	1											
Laboratory Name and Report No. (if	Accutest Lab	oratories, L	ab Repor	ID JA922	264.							
samples collected) (e.g. "Accutest												
Laboratories, Lab Report ID JA65410")	DCII NANA EST	V/ 1 F /2 /2 2	+0.2 F f	+ b = \ - ··	4 DCI 1	46.4 E&IV.	15/0/0	- O +- C -	· fc - + 1	ng)	0.7!!	oto al f - ·
Soil Samples Collected - Sample ID(s),	RCH-MM-EN										colle	cted for
Sample Depth(s) and Sampling	VOC, SVOC, I	РСВ, ТРП, Р	esticiae, i	erbicide,	metais	and gen	erai cne	emistry a	illalyse	25.		
Parameter(s)	N1/6											
GW Samples Collected - Sample ID(s) and	N/A											
Sampling Parameter(s)		2			0-2 10	Fa - + /=		1		105	'D-:	
Additional Hydro/Geological Test –	<10	² Feet/Day		1	.U – 10	Feet/Da	ау	\perp	>	10 Feet/	υay	
Permeability Results (e.g. pump test/slug												
test/packer test) Additional Comments/Notes/	N/A											

Observations (if applicable)	

Boring Identification: RCH-MM-ENV-16W

		Boring	Informa	tion							
Alternate Boring ID (if applicable)	N/A										
Pipeline Mile Marker ID	<u> </u>	ely 110 feet	southeast o	f 5.5R							
Location (Latitude/Longitude) –		719" N/74° :			veved						
estimated/surveyed		,			- /						
Site Address	Boring is lo	cated in a w	ooded area	. approx	ximatel	lv 1.095	feet ea	ast of the	intersect	on of F	Richmond
	_	Holland Ave				•					
Nearby Subsurface Features (Distance and		e sewer line									
Direction from Utilities, Tanks, Properties,			• •	,			ŭ				
etc.)											
Nearby Hydraulic Features (Distance and	A wetland a	rea is locate	d approxim	ately 115	feet n	orth of I	boring.				
Direction from wetlands, etc.)											
Drilling Date	11/17/11										
Drilling Company	Land Air Wa	ter Environr	nental Serv	ces							
Drilling Method	Hand Auger	/2"-Macroco	re/Hollow	Stem Aug	ger						
Additional Hydro/Geological Tests (e.g.	N/A	-			-						
pump test/slug test/packer test)											
Boring Purpose (e.g. geotech/	Environmer	ıtal									
environmental/geoarchaelogical)											
		Boring (Observat	ions							
Depth to saturation (feet bg) – Check	0.0 - 2.0	2.1 – 4.0	4.1 – 6.0	6.1 -	8.0	8.1 – 1	2.0	12.1 – 16	.0 16.1	- 20.0	>20
where applicable				Х							
PRODUCT	l l		I	ı	Į.				ı		1
- Product in Soil – Yes/No	No										
(odor/inches/viscosity, etc.)											
- Product in GW – Check where	None O	bserved	She	en Only		Floatii	ng Proc	duct = <6'	' Floatii	ng Prod	uct = >6"
applicable	>						0			U	
HISTORIC FILL MATERIAL			1								
- Composition, other observations –		Reworke	d Material			Α	nthrop	ogenicall	y-Generat	ed Mat	erial
								•	•		
complete, as applicable											
complete, as applicable - Depth (feet bg) – check more than	0.0 – 2.0	2.1 – 4.	0 4.1	- 6.0	6.1	- 8.0	8.1 –	10.0	10.1 – 12.	0	>12.1
	0.0 – 2.0	2.1 – 4.	0 4.1	- 6.0	6.1	- 8.0	8.1-	10.0	10.1 – 12.	0	>12.1
- Depth (feet bg) – check more than	0.0 – 2.0	2.1 – 4.	0 4.1	- 6.0	6.1	- 8.0	8.1 –	10.0	10.1 – 12.	0	>12.1
 Depth (feet bg) – check more than one depth, if applicable – applies to 	0.0 – 2.0	2.1 – 4.	0 4.1	- 6.0	6.1	- 8.0	8.1 –	10.0	10.1 – 12.	0	>12.1
 Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated 		2.1 – 4. – 19.1 at 8.5			6.1	- 8.0	8.1 -	10.0	10.1 – 12.	0	>12.1
 Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only 	Highest PID		5 ft bg. No c	dor.							
Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth)	Highest PID Red brown,	– 19.1 at 8.5	5 ft bg. No c	dor. ; trace s	ilt, tra	ce natur	ral woo	od fragme	ents from	0.0 to	4.0 ft bg,
Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth)	Highest PID Red brown, underlain b gravel from	- 19.1 at 8.5 fine to med y red brown 4.0 to 6.0 f	5 ft bg. No c dium SAND SILT; some t bg, under	dor. ; trace s red brov	ilt, tra wn, find	ce natur e to med wn CLAN	ral woo dium sa Y; some	od fragme and, trace	ents from fine to co silt, trace	0.0 to arse, su	4.0 ft bg, ubangular
Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth)	Highest PID Red brown, underlain b gravel from	– 19.1 at 8.5 fine to medy red brown	5 ft bg. No c dium SAND SILT; some t bg, under	dor. ; trace s red brov	ilt, tra wn, find	ce natur e to med wn CLAN	ral woo dium sa Y; some	od fragme and, trace	ents from fine to co silt, trace	0.0 to arse, su	4.0 ft bg, ubangular
Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth)	Highest PID Red brown, underlain b gravel from	- 19.1 at 8.5 fine to med y red brown 4.0 to 6.0 f	5 ft bg. No c dium SAND SILT; some t bg, under	dor. ; trace s red brov ain by red	ilt, tra wn, find ed bro brown	ce natur e to med wn CLAN	ral woo dium sa Y; some	od fragme and, trace	ents from fine to co silt, trace t least 20	0.0 to arse, su	4.0 ft bg, ubangular
Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology	Highest PID Red brown, underlain b gravel from	- 19.1 at 8.5 fine to med y red brown 4.0 to 6.0 f 6.0 to 18 ft l	5 ft bg. No c dium SAND SILT; some t bg, under	dor. ; trace s red brov ain by red	ilt, tra wn, find ed bro brown	ce natur e to mec wn CLA\ n, fine SA	ral woo dium sa Y; some	od fragme and, trace	ents from fine to cc silt, trace t least 20	0.0 to arse, sufine, suft bg.	4.0 ft bg, ubangular
Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology	Highest PID Red brown, underlain b gravel from	- 19.1 at 8.5 fine to med y red brown 4.0 to 6.0 f 6.0 to 18 ft l	5 ft bg. No c dium SAND SILT; some t bg, under	dor. ; trace s red brov ain by red	ilt, tra wn, find ed bro brown	ce natur e to mec wn CLA\ n, fine SA	ral woo dium sa Y; some	od fragme and, trace	ents from fine to cc silt, trace t least 20	0.0 to arse, sufine, suft bg.	4.0 ft bg, ubangular
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability	Highest PID Red brown, underlain b gravel from gravel from	- 19.1 at 8.5 fine to med y red brown 4.0 to 6.0 f 6.0 to 18 ft l	5 ft bg. No c dium SAND SILT; some t bg, underla	dor. ; trace s red brov lain by red	ilt, tra wn, find ed bro brown Interm	ce natur e to mec wn CLA\ n, fine SA nediate	ral woo dium sa Y; some	od fragme and, trace	ents from fine to cc silt, trace t least 20	0.0 to arse, sufine, suft bg.	4.0 ft bg, ubangular
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing)	Highest PID Red brown, underlain b gravel from gravel from 20 0.0 to 5.0 5.0 to 19.25	- 19.1 at 8.5 fine to medy red brown 4.0 to 6.0 f 6.0 to 18 ft l Loose ft. below sure ft. below sure ft. below sure	of ft bg. No codium SAND SILT; some t bg, underlaibg,	dor. ; trace s red brov ain by red n by red ameter P iameter	wn, find ed bro brown Interm	ce natur e to mec wn CLA\ n, fine SA nediate	ral woo dium sa y; some ND fro	od fragme and, trace e to little m 18 to a	ents from fine to cc silt, trace t least 20	0.0 to arse, sufine, suft bg.	4.0 ft bg, ubangular
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if	Highest PID Red brown, underlain b gravel from gravel from 20 0.0 to 5.0 5.0 to 19.25	- 19.1 at 8.5 fine to med y red brown 4.0 to 6.0 f 6.0 to 18 ft I Loose ft. below sur	of ft bg. No codium SAND SILT; some t bg, underlaibg,	dor. ; trace s red brov ain by red n by red ameter P iameter	wn, find ed bro brown Interm	ce natur e to mec wn CLA\ n, fine SA nediate	ral woo dium sa y; some ND fro	od fragme and, trace e to little m 18 to a	ents from fine to co silt, trace t least 20	0.0 to arse, sufine, suft bg.	4.0 ft bg, ubangular
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest	Highest PID Red brown, underlain b gravel from gravel from 20 0.0 to 5.0 5.0 to 19.25	- 19.1 at 8.5 fine to medy red brown 4.0 to 6.0 f 6.0 to 18 ft l Loose ft. below sure ft. below	of ft bg. No codium SAND SILT; some t bg, underlaibg,	dor. ; trace s red brov ain by red n by red ameter P iameter	wn, find ed bro brown Interm	ce natur e to mec wn CLA\ n, fine SA nediate	ral woo dium sa y; some ND fro	od fragme and, trace e to little m 18 to a	ents from fine to co silt, trace t least 20	0.0 to arse, sufine, suft bg.	4.0 ft bg, ubangular
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	Highest PID Red brown, underlain b gravel from gravel from 20 0.0 to 5.0 5.0 to 19.25 Accutest Lal	- 19.1 at 8.5 fine to men y red brown 4.0 to 6.0 f 6.0 to 18 ft l Loose ft. below sur of the below sur boratories, L	of the big. No condium SAND SILT; some the big, underlaiding, underlaiding and the big, underlaiding and the big, underlaiding and the big, underlaiding and the big, underlaiding and the big and the	dor. ; trace s red brov ain by red n by red ameter P iameter D JA9242	wn, find ed bro brown Interm PVC rise 0.010	ce natur e to mec wn CLA\ n, fine SA nediate er slot PVC JA92552	ral woo dium sa Y; some ND fron	od fragme and, trace e to little m 18 to a	ents from fine to co silt, trace t least 20 Ti	0.0 to arse, suffine, suft bg.	4.0 ft bg, ıbangular ıbangular
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s),	Highest PID Red brown, underlain b gravel from gravel from 20 0.0 to 5.0 5.0 to 19.25 Accutest Lal	- 19.1 at 8.5 fine to menty red brown 4.0 to 6.0 f 6.0 to 18 ft l Loose ft. below sure ft. belo	of the bg. No condium SAND SILT; some it bg, underlabg,	dor. ; trace s red brov lain by red meter P iameter D JA9242	wn, fined brown Interm PVC rise 0.010 20 and 20 an	ce nature to med wn CLAN, fine SAnediate	ral woo dium sa Y; some ND fro Screen	od fragme and, trace to little m 18 to a	ents from fine to co silt, trace t least 20 Ti	0.0 to arse, suffine,	4.0 ft bg, Ibangular Ibangular
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling	Highest PID Red brown, underlain b gravel from gravel from 20 0.0 to 5.0 5.0 to 19.25 Accutest Lal	- 19.1 at 8.5 fine to men y red brown 4.0 to 6.0 f 6.0 to 18 ft l Loose ft. below sur of the below sur boratories, L	of the bg. No condium SAND SILT; some it bg, underlabg,	dor. ; trace s red brov lain by red meter P iameter D JA9242	wn, fined brown Interm PVC rise 0.010 20 and 20 an	ce nature to med wn CLAN, fine SAnediate	ral woo dium sa Y; some ND fro Screen	od fragme and, trace to little m 18 to a	ents from fine to co silt, trace t least 20 Ti	0.0 to arse, suffine,	4.0 ft bg, Ibangular Ibangular
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	Highest PID Red brown, underlain b gravel from gravel from 20 0.0 to 5.0 5.0 to 19.25 Accutest Lal RCH-MM-EI collected fo	- 19.1 at 8.5 fine to men y red brown 4.0 to 6.0 f 6.0 to 18 ft l Loose ft. below sur ft. below sur ft. below su boratories, L	of t bg. No codium SAND SILT; some it bg, underla offace - 3" di irface - 3" di irface - 3" codo ab Report I (3.5 to 4.1	dor. ; trace s red brov lain by red ameter P iameter D JA9242 D feet ba pesticide	wn, finded brown Interm PVC rise 0.010 and a g) and a herb	ce natur e to mec wn CLA\ n, fine SA nediate er slot PVC JA92552 RCH-M icide, me	ral woo dium sa y; some ND fro screen c.	od fragme and, trace e to little m 18 to a	ents from fine to cc silt, trace t least 20 Ti	0.0 to arse, suffine, suffine, suff bg. ght X	4.0 ft bg, ibangular ibangular bg) were es.
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and	Highest PID Red brown, underlain b gravel from gravel from 20 0.0 to 5.0 5.0 to 19.25 Accutest Lal RCH-MM-EI collected fo	- 19.1 at 8.5 fine to medy red brown 4.0 to 6.0 f 6.0 to 18 ft l Loose ft. below sur	of t bg. No codium SAND SILT; some t bg, underla rface - 3" di irface - 3" di ab Report I (3.5 to 4.1	dor. ; trace s red brov lain by red ameter P iameter D JA9242 D feet ba pesticide	wn, finded brown Interm PVC rise 0.010 and a g) and a herb	ce natur e to mec wn CLA\ n, fine SA nediate er slot PVC JA92552 RCH-M icide, me	ral woo dium sa y; some ND fro screen c.	od fragme and, trace e to little m 18 to a	ents from fine to cc silt, trace t least 20 Ti	0.0 to arse, suffine, suffine, suff bg. ght X	4.0 ft bg, ibangular ibangular bg) were es.
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	Highest PID Red brown, underlain b gravel from gravel from 20 0.0 to 5.0 5.0 to 19.25 Accutest Lal RCH-MM-EI collected fo RCH-MM-EI general che	- 19.1 at 8.5 fine to medy red brown 4.0 to 6.0 f 6.0 to 18 ft l Loose ft. below sure ft. below sure ft. below sure ft. below sure ft. voc, svoc	of t bg. No codium SAND SILT; some t bg, underla rface - 3" di irface - 3" di ab Report I (3.5 to 4.1	dor. ; trace s red brov lain by red ameter P iameter D JA9242 D feet ba pesticide or SPDES	wn, finded brown Interm PVC rise 0.010 20 and 20 and 20 and 20 s, voc	ce natur e to mec wn CLA\ n, fine SA nediate er slot PVC JA92552 RCH-M icide, me	ral woodium sa y; some ND from screen M-ENV etals an	od fragme and, trace e to little m 18 to a	ents from fine to co silt, trace t least 20 Ti (7.0 to 7. I chemistr	0.0 to arse, suffine,	4.0 ft bg, ubangular ubangular bg) were ses.
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test –	Highest PID Red brown, underlain b gravel from gravel from 20 0.0 to 5.0 5.0 to 19.25 Accutest Lal RCH-MM-EI collected fo RCH-MM-EI general che	- 19.1 at 8.5 fine to medy red brown 4.0 to 6.0 f 6.0 to 18 ft l Loose ft. below sur	of t bg. No codium SAND SILT; some t bg, underla rface - 3" di irface - 3" di ab Report I (3.5 to 4.1	dor. ; trace s red brov lain by red ameter P iameter D JA9242 D feet ba pesticide or SPDES	wn, finded brown Interm PVC rise 0.010 20 and 20 and 20 and 20 s, voc	ce natur e to mec wn CLA\ n, fine SA nediate er slot PVC JA92552 RCH-M icide, me	ral woodium sa y; some ND from screen M-ENV etals an	od fragme and, trace e to little m 18 to a	ents from fine to co silt, trace t least 20 Ti (7.0 to 7. I chemistr	0.0 to arse, suffine, suffine, suff bg. ght X	4.0 ft bg, ubangular ubangular bg) were ses.
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test – Permeability Results (e.g. pump test/slug	Highest PID Red brown, underlain b gravel from gravel from 20 0.0 to 5.0 5.0 to 19.25 Accutest Lal RCH-MM-EI collected fo RCH-MM-EI general che	- 19.1 at 8.5 fine to medy red brown 4.0 to 6.0 f 6.0 to 18 ft l Loose ft. below sure ft. below sure ft. below sure ft. below sure ft. voc, svoc	of t bg. No codium SAND SILT; some t bg, underla rface - 3" di irface - 3" di ab Report I (3.5 to 4.1	dor. ; trace s red brov lain by red ameter P iameter D JA9242 D feet ba pesticide or SPDES	ilt, trawn, finded brown Interm PVC rise 0.010 go and go and go, herb	ce natur e to mec wn CLA\ n, fine SA nediate er slot PVC JA92552 RCH-M icide, me	ral woodium sa y; some ND from screen M-ENV etals an	od fragme and, trace e to little m 18 to a	ents from fine to co silt, trace t least 20 Ti (7.0 to 7. I chemistr	0.0 to arse, suffine,	4.0 ft bg, ubangular ubangular bg) were ses.
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test – Permeability Results (e.g. pump test/slug test/packer test)	Highest PID Red brown, underlain b gravel from gravel from 20 0.0 to 5.0 5.0 to 19.25 Accutest Lal RCH-MM-EI collected fo RCH-MM-Egeneral che <10	- 19.1 at 8.5 fine to medy red brown 4.0 to 6.0 f 6.0 to 18 ft l Loose ft. below sure ft. below sure ft. below sure ft. below sure ft. voc, svoc	of t bg. No codium SAND SILT; some t bg, underla rface - 3" di irface - 3" di ab Report I (3.5 to 4.1	dor. ; trace s red brov lain by red ameter P iameter D JA9242 D feet ba pesticide or SPDES	ilt, trawn, finded brown Interm PVC rise 0.010 go and go and go, herb	ce nature to mecwn CLA\ n, fine SA nediate er slot PVC JA92552 RCH-M icide, me	ral woodium sa y; some ND from screen M-ENV etals an	od fragme and, trace e to little m 18 to a	ents from fine to co silt, trace t least 20 Ti (7.0 to 7. I chemistr	0.0 to arse, suffine,	4.0 ft bg, ubangular ubangular bg) were ses.
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test – Permeability Results (e.g. pump test/slug	Highest PID Red brown, underlain b gravel from gravel from 20 0.0 to 5.0 5.0 to 19.25 Accutest Lal RCH-MM-EI collected fo RCH-MM-EI general che	- 19.1 at 8.5 fine to medy red brown 4.0 to 6.0 f 6.0 to 18 ft l Loose ft. below sure ft. below sure ft. below sure ft. below sure ft. voc, svoc	of t bg. No codium SAND SILT; some t bg, underla rface - 3" di irface - 3" di ab Report I (3.5 to 4.1	dor. ; trace s red brov lain by red ameter P iameter D JA9242 D feet ba pesticide or SPDES	ilt, trawn, finded brown Interm PVC rise 0.010 go and go and go, herb	ce nature to mecwn CLA\ n, fine SA nediate er slot PVC JA92552 RCH-M icide, me	ral woodium sa y; some ND from screen M-ENV etals an	od fragme and, trace e to little m 18 to a	ents from fine to co silt, trace t least 20 Ti (7.0 to 7. I chemistr	0.0 to arse, suffine,	4.0 ft bg, ubangular ubangular bg) were ses.

Boring Identification: RCH-MM-ENV-1W

		Boring	Informat	ion							
Alternate Boring ID (if applicable)	N/A										
Pipeline Mile Marker ID	Approximate	elv 820 feet	south of 4 9	7R							
Location (Latitude/Longitude) –	40° 38' 10.1				rveved						
estimated/surveyed	10 30 10.1	121 14, 71	10 10.5201	54.	veyeu						
Site Address	Boring is lo	rated annro	ximately 1 6	95 feet	northe	east of	the into	ersection	of a r	railroad cr	nssing and
Site Madicas	Western Av										0331116 4114
Nearby Subsurface Features (Distance and	Utility easer								nabicj.		
Direction from Utilities, Tanks, Properties,	othicy caser	incinto di circ	catea appi o	umatery	25010	et West	. 01 5011				
etc.)											
Nearby Hydraulic Features (Distance and	An unnamed	nond is loc	ated approx	imately 4	415 fe	et north	east of	horing			
Direction from wetlands, etc.)	, an annume	a porta 15 100	atea approx	matery	113 10	CC 1101 CI	icust oi	501116.			
Drilling Date	12/05/11										
Drilling Company	Land Air Wa	ter Environr	nental Servi	202							
Drilling Method	Hand Auger				tor						
Additional Hydro/Geological Tests (e.g.	Pump test/s		ne/nollow 3	tem Aug	gei						
pump test/slug test/packer test)	Pullip test/s	iug test									
Boring Purpose (e.g. geotech/	Environmen	tal .									
environmental/geoarchaelogical)	Environmen	ıdı									
environmental/geoarthaelogital)]	D - 1 1	01								
			Observati	ons			-		-		T
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1 -	8.0	8.1 – 1	2.0	12.1 – 10	6.0	16.1 – 20.	0 >20
where applicable		Χ									
PRODUCT											
 Product in Soil – Yes/No 	No										
(odor/inches/viscosity, etc.)											
- Product in GW – Check where	None Ol	served	Shee	en Only		Floati	ng Prod	duct = <6	" Flo	oating Pro	duct = >6"
applicable	Х										
HISTORIC FILL MATERIAL									ı.		
- Composition, other observations –		Reworke	d Material			А	nthrop	ogenical	ly-Gen	erated M	aterial
complete, as applicable		N	I/A						N/A		
- Depth (feet bg) – check more than	0.0 - 2.0	2.1 – 4.		6.0	6.1 -	- 8.0	8.1 -	- 10.0	10.1 -	- 12.0	>12.1
• • •											
one depth, if applicable – applies to											
one depth, if applicable – applies to Anthropogenically-Generated											
Anthropogenically-Generated Material only											
Anthropogenically-Generated Material only	No PID. No o	odor.									
Anthropogenically-Generated Material only PID/Odors (depth)			e to medium	SAND at	nd SILT	to 4.0	ft bg: tr	race vege	etation	roots fron	n 0.0 to 0.5
Anthropogenically-Generated Material only	Dark to light	brown, fine									
Anthropogenically-Generated Material only PID/Odors (depth)	Dark to light ft bg, under	brown, fine	brown, fine	to med	dium S	AND fro	om 4.0	to 10 ft	bg, un	derlain by	red CLAY;
Anthropogenically-Generated Material only PID/Odors (depth)	Dark to light ft bg, under some silt fro	brown, fine	brown, fine	to med	dium S	AND fro	om 4.0	to 10 ft	bg, un	derlain by	red CLAY;
Anthropogenically-Generated Material only PID/Odors (depth) Geology	Dark to light ft bg, under	brown, fine	brown, fine	e to med erlain by	dium S red, f	AND fro	om 4.0	to 10 ft	bg, un	derlain by .5 ft bg to	red CLAY;
Anthropogenically-Generated Material only PID/Odors (depth)	Dark to light ft bg, under some silt fro	brown, fine lain by light om 10 to 15.	brown, fine	e to med erlain by	dium S red, f Interm	AND fro ine to n	om 4.0	to 10 ft	bg, un	derlain by	red CLAY;
Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability	Dark to light ft bg, under some silt fro ft bg.	brown, fine lain by light om 10 to 15.	brown, fine	e to med erlain by	dium S red, f Interm	AND fro	om 4.0	to 10 ft	bg, un	derlain by .5 ft bg to	red CLAY;
Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg)	Dark to light ft bg, under some silt froft bg.	brown, fine lain by light om 10 to 15.	t brown, find	e to med erlain by	dium S red, f Interm	AND fro ine to n nediate	om 4.0 nedium	to 10 ft SAND fr	bg, un	derlain by .5 ft bg to	red CLAY;
Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed	Dark to light ft bg, under some silt fro ft bg.	brown, fine lain by light om 10 to 15.	t brown, find	e to med erlain by	dium S red, f Interm	AND fro ine to n nediate	om 4.0 nedium	to 10 ft SAND fr	bg, un	derlain by .5 ft bg to	red CLAY;
Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing)	Dark to light ft bg, under some silt fro ft bg. 20 0.2 to 15.06	brown, fine lain by light om 10 to 15. Loose ft. below su	s brown, fine 5 ft bg, und strface - 3" di	e to med erlain by I ameter (dium S red, f Interm	AND from the inertial from the	om 4.0 nedium	to 10 ft	bg, un	derlain by .5 ft bg to	red CLAY;
Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if	Dark to light ft bg, under some silt froft bg.	brown, fine lain by light om 10 to 15. Loose ft. below su	s brown, fine 5 ft bg, und strface - 3" di	e to med erlain by I ameter (dium S red, f Interm	AND from the inertial from the	om 4.0 nedium	to 10 ft	bg, un	derlain by .5 ft bg to	red CLAY;
Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest	Dark to light ft bg, under some silt fro ft bg. 20 0.2 to 15.06	brown, fine lain by light om 10 to 15. Loose ft. below su	s brown, fine 5 ft bg, und strface - 3" di	e to med erlain by I ameter (dium S red, f Interm	AND from the inertial from the	om 4.0 nedium	to 10 ft	bg, un	derlain by .5 ft bg to	red CLAY;
Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	Dark to light ft bg, under some silt froft bg. 20 0.2 to 15.06 Accutest Lab	brown, fine lain by light om 10 to 15. Loose ft. below su	s brown, fine 5 ft bg, und strface - 3" di ab Report ID	e to mec erlain by I ameter (dium S red, f Interm) 0.010 s	AND from the total fr	om 4.0 nedium	to 10 ft SAND fr	bg, un	derlain by .5 ft bg to Tight	red CLAY; at least 20
Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s),	Dark to light ft bg, under some silt froft bg. 20 0.2 to 15.06 Accutest Lab	t brown, fine lain by light om 10 to 15. Loose ft. below surporatories, L	t brown, fine 5 ft bg, und irface - 3" di ab Report IC	ameter (dium Syred, for red,	AND from the to not not not not not not not not not	om 4.0 nedium S screen d JA936 V-1W/5	to 10 ft sAND fr 585.	bg, un 15.	derlain by .5 ft bg to Tight et bg) wer	red CLAY; at least 20
Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling	Dark to light ft bg, under some silt froft bg. 20 0.2 to 15.06 Accutest Lab	t brown, fine lain by light om 10 to 15. Loose ft. below surporatories, L	t brown, fine 5 ft bg, und irface - 3" di ab Report IC	ameter (dium Syred, for red,	AND from the to not not not not not not not not not	om 4.0 nedium S screen d JA936 V-1W/5	to 10 ft sAND fr 585.	bg, un 15.	derlain by .5 ft bg to Tight et bg) wer	red CLAY; at least 20
Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	Dark to light ft bg, under some silt fro ft bg. 20 0.2 to 15.06 Accutest Lak RCH-MM-EN for VOC, SVO	t brown, fine lain by light om 10 to 15. Loose ft. below supportatories, Looratories, Looratories, Loor, PCB, TPF	s brown, fine 5 ft bg, und urface - 3" di ab Report ID 0 to 2.5 feet d, pesticide,	e to mecerlain by I JA9384. E bg) ancerbicide	dium S red, f Interm) 0.010 s 5, JA93	AND froine to note to	om 4.0 nedium Screen d JA936 V-1W/5 general	to 10 ft sAND fr 585.	bg, un om 15. 5.5 fee ry anal	tet bg) wer	red CLAY; at least 20
Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and	Dark to light ft bg, under some silt fro ft bg. 20 0.2 to 15.06 Accutest Lak RCH-MM-EN for VOC, SVO	t brown, fine lain by light om 10 to 15. Loose ft. below supportatories, L IV-1W/2 (2.IV-1W/2, PCB, TPF)	s brown, fine 5 ft bg, und urface - 3" di ab Report ID 0 to 2.5 feet d, pesticide,	e to mecerlain by I JA9384. E bg) ancerbicide	dium S red, f Interm) 0.010 s 5, JA93	AND froine to note to	om 4.0 nedium Screen d JA936 V-1W/5 general	to 10 ft sAND fr 585.	bg, un om 15. 5.5 fee ry anal	tet bg) wer	red CLAY; at least 20
Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	Dark to light ft bg, under some silt froft bg. 20 0.2 to 15.06 Accutest Late for VOC, SVO RCH-MM-EN analyses.	to brown, fine lain by light om 10 to 15. Loose ft. below supportatories, Laiv-1W/2 (2.10), PCB, TPH IV-1W was	ab Report ID O to 2.5 feet H, pesticide,	ameter (JA9384 bg) and herbicide	dium S red, f Interm) 0.010 s 5, JA93 d RCH- e, met	AND froine to note to	om 4.0 nedium Screen d JA936 V-1W/5 general	to 10 ft sAND fr 585.	5.5 fee	Tight et bg) wer lyses.	e collected
Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test —	Dark to light ft bg, under some silt froft bg. 20 0.2 to 15.06 Accutest Late for VOC, SVO RCH-MM-EN analyses.	t brown, fine lain by light om 10 to 15. Loose ft. below supportatories, L IV-1W/2 (2.IV-1W/2, PCB, TPF)	ab Report ID O to 2.5 feet H, pesticide,	ameter (JA9384 bg) and herbicide	dium S red, f Interm) 0.010 s 5, JA93 d RCH- e, met	AND froine to note to	om 4.0 nedium Screen d JA936 V-1W/5 general	to 10 ft sAND fr 585.	5.5 fee	tet bg) wer	e collected
Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test — Permeability Results (e.g. pump test/slug	Dark to light ft bg, under some silt froft bg. 20 0.2 to 15.06 Accutest Late for VOC, SVO RCH-MM-EN analyses.	to brown, fine lain by light om 10 to 15. Loose ft. below supportatories, Laiv-1W/2 (2.10), PCB, TPH IV-1W was	ab Report ID O to 2.5 feet H, pesticide,	ameter (JA9384 bg) and herbicide	nterm) 0.010 s 5, JA93 d RCH- e, met	AND froine to note to	om 4.0 nedium Screen d JA936 V-1W/5 general	to 10 ft sAND fr 585.	5.5 fee	Tight et bg) wer lyses.	e collected
Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test — Permeability Results (e.g. pump test/slug test/packer test)	Dark to light ft bg, under some silt fro ft bg. 20 0.2 to 15.06 Accutest Lab RCH-MM-EN for VOC, SVO RCH-MM-EN analyses.	to brown, fine lain by light om 10 to 15. Loose ft. below supportatories, Laiv-1W/2 (2.10), PCB, TPH IV-1W was	ab Report ID O to 2.5 feet H, pesticide,	ameter (JA9384 bg) and herbicide	nterm) 0.010 s 5, JA93 d RCH- e, met	AND from the total fr	om 4.0 nedium Screen d JA936 V-1W/5 general	to 10 ft sAND fr 585.	5.5 fee	Tight et bg) wer lyses.	e collected
Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test — Permeability Results (e.g. pump test/slug	Dark to light ft bg, under some silt froft bg. 20 0.2 to 15.06 Accutest Late for VOC, SVO RCH-MM-EN analyses.	to brown, fine lain by light om 10 to 15. Loose ft. below supportatories, Laiv-1W/2 (2.10), PCB, TPH IV-1W was	ab Report ID O to 2.5 feet H, pesticide,	ameter (JA9384 bg) and herbicide	nterm) 0.010 s 5, JA93 d RCH- e, met	AND from the total fr	om 4.0 nedium Screen d JA936 V-1W/5 general	to 10 ft sAND fr 585.	5.5 fee	Tight et bg) wer lyses.	e collected

Boring Identification: RCH-MM-ENV-2

		Boring	Informat	ion							
Alternate Boring ID (if applicable)	N/A										
Pipeline Mile Marker ID		ely 745 feet	southeast o	f 5.04R							
Location (Latitude/Longitude) – estimated/surveyed		351" N/ 74°			ırveyed	I					
Site Address	_	ocated in a Terrace and									
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)	Procter and	Gamble util	ity easemen	ts are lo	cated	approxim	nately 29	90 feet w	est of boring		
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	An unname	d pond is loc	ated approx	imately	255 fe	et northe	east of b	oring.			
Drilling Date	12/05/2011										
Drilling Company	Land Air Wa	nter Environr	nental Servi	ces							
Drilling Method	Hand Auger	/ Macrocore	e / 2"								
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	None										
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environmer	ntal									
		Boring (Observat	ions							
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1 -	8.0	8.1 – 12	2.0 1	2.1 – 16.0	0 16.1 – 2	0.0	>20
where applicable		Х									
PRODUCT	1						1				
- Product in Soil – Yes/No	No										
(odor/inches/viscosity, etc.)											
- Product in GW – Check where	None O	bserved	She	en Only	,	Floatin	ng Produ	ıct = <6"	Floating F	Produ	ct = >6"
applicable	,	(·							-
HISTORIC FILL MATERIAL			1								-
- Composition, other observations -		Reworke	d Material			Ar	nthropo	genically	-Generated	Mate	rial
complete, as applicable			/A						I/A		
 Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only 	0.0 – 2.0	2.1 – 4.	0 4.1 -	- 6.0	6.1	- 8.0	8.1 – 1	10.0 1	10.1 – 12.0	,	>12.1
PID/Odors (depth)	No PID. No	odors.								1	
Geology	bg, underla Large cobbl from 7.0 to silt from 8.0	to medium in by orange e at 1.0 to 2 8.0 ft bg, un d to 9.5 ft bg, om 9.5 to at l	brown fine 2.0 ft bg, un derlain by r underlain b	SAND; derlain ed brow	trace fi by red n, fine	ne, roun brown C to medi	ded gra LAY; tra um SAN	vel, trace ice fine t D; little f	silt from 1.0 o medium sa ine, rounded	O to 7 and, 1 I grav	7.0 ft bg, trace silt rel, trace
Soil Permeability		Loose				nediate X			Tight		
Total Boring Depth (feet bg)	15		1					_1			
GW Temporary Well Installed	N/A										
(Depth, Screen, Riser, Slot Size, Casing)											
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	Accutest La	boratories, L	ab Report II	JA9368	35						
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	voc, svoc,	NV-2/0.5 (0.5 PCB, TPH, po								colle	cted for
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A										
Additional Hydro/Geological Test –	<10	⁻² Feet/Day		10) ⁻² – 10	Feet/Da	у		>10 Feet/	'Day	
Permeability Results (e.g. pump test/slug test/packer test)											

Additional Comments/Notes/	Borehole backfilled with soil cuttings and restored to grade.
Observations (if applicable)	

Boring Identification: RCH-MM-ENV-3

		Boring	Informat	ion							
Alternate Boring ID (if applicable)	N/A										
Pipeline Mile Marker ID	Approximat	elv 690 feet	southeast o	5 06R							
Location (Latitude/Longitude) – estimated/surveyed	40° 38' 13.2				eyed						
Site Address	Boring is lo Richmond available).	ocated in a Terrace and									
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)	Procter and	Gamble util	ity easemen	ts are loca	ated a	approximat	ely 290	0 feet wes	t of boring.		
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	An unname	d pond is loc	ated approx	imately 12	25 fe	et northea	st of bo	oring.			
Drilling Date	12/02/2011										
Drilling Company	Land Air Wa	ter Environr	nental Servi	ces							
Drilling Method	Hand Auger	/ Macrocore	e / 2"								
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	None										
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environmer	tal									
		Boring (Observati	ons							
Depth to saturation (feet bg) – Check where applicable	0.0 – 2.0 X	2.1 – 4.0	4.1 – 6.0	6.1 – 8.	.0	8.1 – 12.0	12	2.1 – 16.0	16.1 – 20	0	>20
PRODUCT	1								1		
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No										
- Product in GW – Check where applicable	None O		She	en Only		Floating	Produc	ct = <6"	Floating Pr	odu	ct = >6"
HISTORIC FILL MATERIAL											
- Composition, other observations –		Reworke	d Material			Antl	ropog	enically-G	enerated M	ate	rial
complete, as applicable		N	/A					N/	A		
 Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only 	0.0 – 2.0	2.1 – 4.	0 4.1 -	6.0	6.1 -	- 8.0	3.1 – 10	0.0 10	.1 – 12.0	>	12.1
PID/Odors (depth)	No PID. No	odors.	I .			<u> </u>		<u> </u>	l .		-
Geology	Orange bro	wn, fine to i									l brown
Soil Permeability	,	Loose				ediate			Tight		
)	(
Total Boring Depth (feet bg)	15										
GW Temporary Well Installed	N/A										
(Depth, Screen, Riser, Slot Size, Casing)											
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	Accutest La	ooratories, L	ab Report ID	JA93504							
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	RCH-MM-EI VOC, SVOC,									olle	cted for
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A										
Additional Hydro/Geological Test –	<10	⁻² Feet/Day		10 ⁻²	- 10	Feet/Day			>10 Feet/D	ay	
Permeability Results (e.g. pump test/slug test/packer test)		•				ζ			-	-	
Additional Comments/Notes/ Observations (if applicable)	Borehole ba	ckfilled with	soil cutting	and resto	ored	to grade.					

Boring Identification: RCH-MM-ENV-7W

		Boring	Info	rmation						
Alternate Boring ID (if applicable)	N/A									
Pipeline Mile Marker ID	Approximate	lv 585 feet e	east c	of 5.13R						
Location (Latitude/Longitude) – estimated/surveyed).2764" W – Su	urveyed					
Site Address	Boring is loca	ted in a wo	nded	area annrovi	imately	9/15 fee	t southeast	of the	intersection	of Richmond
Site Address	_			in Staten Islar	-					
Nearby Subsurface Features (Distance and				approximatel				cctuuc	ar C33 avanab	10,1
Direction from Utilities, Tanks, Properties, etc.)	Ctimey cuseiii	cires are loc	ateu	аррголичисе	., 233 10	ice west	or soring.			
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	An unnamed	pond is loca	ated a	approximately	y 90 feet	t east of	f boring.			
Drilling Date	12/01/11									
Drilling Company	Land Air Wate	er Environn	nenta	l Services						
Drilling Method	Hand Auger/2			Jei vices						
Additional Hydro/Geological Tests (e.g.	None	Liviacioco	10							
pump test/slug test/packer test)	None									
Boring Purpose (e.g. geotech/	Environmenta	al								
environmental/geoarchaelogical)		Poring (hco	rvations						
Depth to saturation (feet bg) – Check		2.1 – 4.0		ervations - 6.0 6.1 -	- 8.0	8.1 – 1	2.0 12 1	1 – 16.0	0 16.1 – 2	0.0 >20
where applicable	0.0 2.0	2.1 4.0	7.1		er Not E		l .	1 10.	0 10.1 2	20.0
PRODUCT	<u></u>			vvat	ei Not L	incount	ereu			
- Product in Soil – Yes/No	No									
(odor/inches/viscosity, etc.)						Ī				
 Product in GW – Check where 	None Obs	served		Sheen Only	/	Floati	ng Product	: = <6"	Floating	Product = >6"
applicable	X									
HISTORIC FILL MATERIAL										
 Composition, other observations – complete, as applicable 		Reworked	d Mat	terial		Д	nthropoge	nically	-Generated	Material
- Depth (feet bg) – check more than	0.0 - 2.0	2.1 – 4.0	0	4.1 – 6.0	6.1 -	- 8.0	8.1 – 10.	.0 1	0.1 – 12.0	>12.1
one depth, if applicable – applies to										
Anthropogenically-Generated										
Material only										
PID/Odors (depth)	No PID. No od	dor.								
Geology	Dark brown S	SILT and fin	e to o	coarse SAND,	little fir	ne to co	arse grave	l, trace	cobble, tra	ce roots from
										, trace fine to
	medium sand	d, trace cob	ble fi	rom 1.0 to 6.0	0 ft bg,	underla	in by redd	ish-bro	wn CLAY; tr	ace silt, trace
	fine, sub-ang	ular gravel	from	6.0 to 15 ft b	og, unde	erlain by	reddish-b	rown C	CLAY; trace s	ilt, trace fine,
	sub-angular g	gravel from	15 to	at least 20 ft	bg.					
Soil Permeability	!	Loose			Interm	ediate			Tight	:
						(
Total Boring Depth (feet bg)	20									
GW Temporary Well Installed	Temporary v	vell not in	stalle	d due to no	water	encou	ntered dur	ring ha	and auger o	or macrocore
(Depth, Screen, Riser, Slot Size, Casing)	sampling.								-	
Laboratory Name and Report No. (if	· · · · · ·	oratories, La	ab Re	port ID JA933	82.					
samples collected) (e.g. "Accutest		•								
Laboratories, Lab Report ID JA65410")										
	RCH-MM-EN	V-7W/3.5 (3.5 to	o 4.0 feet by	g) and	RCH-MI	M-ENV-7W	/7.5 (7	7.5 to 8.0 f	eet bg) were
Soil Samples Collected - Sample ID(s),				, TPH, pesticid						
Sample Depth(s) and Sampling	collected for								-	
	collected for									
Sample Depth(s) and Sampling		lled. No gro	und v	water samples	s collect	ed.				
Sample Depth(s) and Sampling Parameter(s)		lled. No gro	und v	water samples	s collect	ed.				
Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	No well instal		und v				av		>10 Feet	/Day
Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test -	No well instal	lled. No gro	und v		s collect		ау		>10 Feet,	/Day
Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	No well instal		und v				ау		>10 Feet,	'Day
Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test – Permeability Results (e.g. pump test/slug	No well instal		und v				ау		>10 Feet,	/Day
Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test - Permeability Results (e.g. pump test/slug test/packer test)	No well instal		und v				ау		>10 Feet,	/Day

TRC Boring Identification: SI-2

		Boring In	formatio	<u> </u>					
Alternate Boring ID (if applicable)	N/A								
Pipeline Mile Marker ID	4.79R								
Location (Latitude/Longitude) – estimated/surveyed	40°37′49.49"	N / 74°11′05.	47"W – estin	ated (no s	urvey dat	a collected	I)		
Site Address	The boring is Goethals Roa								Avenue and
Nearby Subsurface Features (Distance and	The boring is								ity line near
Direction from Utilities, Tanks, Properties, etc.)	Western Avei	nue.							
Nearby Hydraulic Features (Distance and Direction from wetlands, piping, etc.)	This boring is	located appr	oximately 58	0 feet nort	heast of (Old Place C	reek.		
Drilling Date	3/7/2011								
Drilling Company	N/A								
Drilling Method	Hand Auger								
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A								
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Geoarcheolog	gical							
		Boring Ok	servation	ns					
Depth to saturation (feet bg) – Check	1			5.1 – 8.0	8.1 – 12	2.0 12.1	- 16.0	16.1 – 20	0.0 >20
where applicable	0.0 2.0			Water not					1 = 0
PRODUCT	1								
- Product in Soil – Yes/No	No								
(odor/inches/viscosity, etc.) - Product in GW – Check where	None Obs	orvod	Sheen) nlv	Eleatir	ng Product	- /6"	Eleating D	roduct = >6"
applicable	X	serveu	Sileen	Jilly	Floatii	ig Product	- <0	Floatilig	roduct – >6
HISTORIC FILL MATERIAL	^								
- Composition, other observations –		Reworked I	//aterial		Λ.	nthronoge	nically.	-Generated I	Material
complete, as applicable		N/A				iitiiiopogei		I/A	viateriai
- Depth (feet bg) – check more than	0.0 – 2.0	2.1 – 4.0	4.1 – 6.) 61	- 8.0	8.1 – 10.		0.1 – 12.0	>12.1
one depth, if applicable – applies to Anthropogenically-Generated	0.0 2.0	2.1 4.0	4.1 0.	0.1	0.0	0.1 10.		0.1 12.0	712.1
Material only									
PID/Odors (depth)	ND	<u> </u>		l .	<u> </u>		1	L	
Geology	0 to 1 foot bg	- Brown med	lium SAND, t	ace Silt, tr	ace orgar	nics (roots)	, moist		
Soil Permeability		Loose			nediate	, -7,		Tight	
					Х				
Total Boring Depth (feet bg)	1					I			
GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing)	N/A								
Laboratory Name and Report No. (if	Accutest Labo	oratories, Lab	Report JA69	812					
samples collected) (e.g. "Accutest		,	•						
Laboratories, Lab Report ID JA65410")									
Soil Samples Collected (Parameters, Analytical Results Summary)	SI-2-1 (0.5 to	1.0 foot bg) v	vas analyzed	for PCBs.					
GW Samples Collected	N/A								
(Parameters, Analytical Results Summary)	''''								
Additional Hydro/Geological Test –	<10 ⁻²	Feet/Day		10 ⁻² – 10	Feet/Da	v		>10 Feet/	Dav
Permeability Results (e.g. pump test/slug	120	,,			,	•			~,
test/packer test)									
Additional Comments/Notes/	N/A		ı						
Observations (if applicable)									

TRC Boring Identification: SI-3

		Boring In	formati	on				
Alternate Boring ID (if applicable)	N/A							
Pipeline Mile Marker ID	4.77R							
Location (Latitude/Longitude) –		N / 74°11′04.6	63"W – est	imated (no s	urvey data coll	ected)		
estimated/surveyed		,		, , , , , , , , , , , , , , , , , , , ,	,	,		
Site Address	The boring is	located appr	oximately	450 feet eas	t-southeast of	the inter	section of Wes	tern Avenue
			•		rk (no exact sti			
Nearby Subsurface Features (Distance and							er utility line n	ear Westerr
Direction from Utilities, Tanks, Properties,	Avenue.		•				,	
etc.)								
Nearby Hydraulic Features (Distance and	This boring is	located appro	oximately !	540 feet nort	heast of Old Pla	ace Creek	ζ.	
Direction from wetlands, piping, etc.)			,					
Drilling Date	3/7/2011							
Drilling Company	N/A							
Drilling Method	Hand Auger							
Additional Hydro/Geological Tests (e.g.	N/A							
pump test/slug test/packer test)	,							
Boring Purpose (e.g. geotech/	Geoarcheolo	gical						
environmental/geoarchaelogical)		S						
, ,		Boring Ob	servatio	ons				
Depth to saturation (feet bg) – Check	0.0 - 2.0		4.1 – 6.0	6.1 – 8.0	8.1 – 12.0	12.1 – 1	6.0 16.1 – 20	0.0 >20
where applicable	0.0 2.0		0.0		encountered		0.0 10.1	, , , ,
PRODUCT				Water not	encountered			
- Product in Soil – Yes/No	No							
(odor/inches/viscosity, etc.)	140							
- Product in GW – Check where	None Ob	served	Shee	n Only	Floating Pro	duct = <6	" Floating P	roduct = >6"
applicable	X	Scived	31100		Tiouting Fre	uuct – 🤫	, Houting I	iouuct - 70
HISTORIC FILL MATERIAL								
- Composition, other observations –		Reworked N	/laterial		Anthro	nogenica	lly-Generated I	Material
complete, as applicable		N/A			Antino	pogemea	N/A	viacciiai
- Depth (feet bg) – check more than	0.0 – 2.0	2.1 – 4.0	4.1 -	60 61	-8.0 8.1	- 10.0	10.1 – 12.0	>12.1
one depth, if applicable – applies to	0.0 2.0	2.1 4.0	7.1	0.0 0.1	0.0 0.1	10.0	10.1 12.0	712.1
Anthropogenically-Generated								
Material only								
PID/Odors (depth)	N/D	l	ı	I .		I	L	
Geology		z - Light brown	n medium :	SAND. some :	Silt, some orga	nics (root	s), moist.	
Soil Permeability	-	Loose			nediate		Tight	
,							1.0.11	
					X			
Total Boring Depth (feet bg)	1				X			
Total Boring Depth (feet bg) GW Monitoring Well Installed	1 N/A				X	<u> </u>		
GW Monitoring Well Installed	1 N/A				X			
GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing)	N/A	oratories. Lab	Report JA		x			
GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if	N/A	oratories, Lab	Report JA		X			
GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing)	N/A	oratories, Lab	Report JA		X	-		
GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest	N/A Accutest Labo	oratories, Lab	•	59812	X			
GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	N/A Accutest Labo		•	59812	X			
GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected	N/A Accutest Labo		•	59812	X			
GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected (Parameters, Analytical Results Summary)	N/A Accutest Labo SI-3-1 (0.5 to		•	59812	X			
GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected (Parameters, Analytical Results Summary) GW Samples Collected	N/A Accutest Labo SI-3-1 (0.5 to		•	59812 ed for PCBs.	X Feet/Day		>10 Feet/	Day
GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected (Parameters, Analytical Results Summary) GW Samples Collected (Parameters, Analytical Results Summary)	N/A Accutest Labo SI-3-1 (0.5 to	1.0 foot bg) w	•	59812 ed for PCBs.			>10 Feet/	Day
GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected (Parameters, Analytical Results Summary) GW Samples Collected (Parameters, Analytical Results Summary) Additional Hydro/Geological Test —	N/A Accutest Labo SI-3-1 (0.5 to	1.0 foot bg) w	•	59812 ed for PCBs.			>10 Feet/	Day
GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected (Parameters, Analytical Results Summary) GW Samples Collected (Parameters, Analytical Results Summary) Additional Hydro/Geological Test – Permeability Results (e.g. pump test/slug	N/A Accutest Labo SI-3-1 (0.5 to	1.0 foot bg) w	•	59812 ed for PCBs.			>10 Feet/	Day

TRC Boring Identification: SI-4

Alternate Boring ID (if applicable) Pipeline Mile Marker ID Coardion (Latitude)-Ongitude) - estimated/surveyed Morary Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.) Nearby Hydraulic Features (Distance and Direction from Utilities, Tanks, Properties, etc.) Nearby Hydraulic Features (Distance and Direction from Utilities, Tanks, Properties, etc.) Nearby Hydraulic Features (Distance and Direction from Utilities, Tanks, Properties, etc.) Nearby Hydraulic Features (Distance and Direction from Utilities, Tanks, Properties, etc.) Nearby Hydraulic Features (Distance and Direction from Utilities, Tanks, Properties, etc.) Nearby Hydraulic Features (Distance and Direction from Utilities, Tanks, Properties, etc.) Priling Date Mile Method Additional Hydro/Geological Tests (e.g., pump test/slug test/packer test) Boring Purpose (e.g., geotect/v entropes) Popular in Soil – Yes/No (dodr/Inches/viscosity, etc.) Product in Soil – Yes/No (dodr/Inches/viscosity, etc.) Product in Soil – Yes/No (dodr/Inches/viscosity, etc.) Product in GW – Check where applicable HISTORIC PILL MATERIAL Composition, other observations – complete, as applicable as poplicable on the soil of the boring location. None Observed Sheen Only Floating Product – Soil 16.1–20.0 > 20 PID/Goars (depth) N/A Depth (feet bg) – Check more than one depth, if applicable – applies to Anthropogenically-Generated Material one depth, if applicable – applies to Anthropogenically-Generated Material one depth, if applicable – applies to Anthropogenically-Generated Material one depth, if applicable – applies to Anthropogenically-Generated Material one depth, if applicable – applies to Anthropogenically-Generated Material one depth, if applicable – applies to Anthropogenically-Generated Material one depth, if applicable – applies to Anthropogenically-Generated Material one depth, if applicable – applies to Anthropogenically-Generated Material one depth, if applicable – applies to Anthropogenically-Generated Material one d			Boring In	formatio	n				
Agriculture 4.76R	Alternate Boring ID (if applicable)	N/A							
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Site Address The boring is located approximately 460 feet east of the intersection of Western Avenue and Goethals Road North in Staten Island, New York (no exact street address available). A subsurface water utility line is located approximately 460 feet east of the intersection for Western Avenue and Goethals Road North in Staten Island, New York (no exact street address available). A subsurface water utility line is located approximately 460 feet northwest of the boring location. Description from wetlands, piping, etc.) This boring is located approximately 460 feet northwest of the boring location. Description from wetlands, piping, etc.) This boring is located approximately 460 feet northwest of the boring location. Description from wetlands, piping, etc.) This boring is located approximately 460 feet northwest of the boring location. Description from wetlands, piping, etc.) This boring is located approximately 460 feet northwest of the boring location. Description from wetlands, piping, etc.) This boring is located approximately 460 feet northwest of the boring location. Description from wetlands, piping, etc.) This boring is located approximately 460 feet northwest of the boring location. Description from wetlands, piping, etc.) This boring is located approximately 460 feet northwest of the boring location. Description from wetlands, piping, etc.) This boring is located approximately 460 feet northwest of the boring location. Description from wetlands, piping, etc.) This boring is located approximately 460 feet northwest of the boring location. Description from wetlands, piping, etc.) This boring is located approximately 460 feet northwest of Old Place Creek. Description from wetlands properly feet permitted to the piping permitted from the fact permitted fro	•		N / 74°11′04.0)4"W – estii	mated (no s	urvev data c	ollected)		
Goethals Road North in Staten Island, New York (no exact street address available). Asubsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.) This boring is located approximately 400 feet northwest of the boring location. This boring is located approximately 400 feet northwest of Old Place Creek. This boring is located approximately 400 feet northwest of Old Place Creek. This boring is located approximately 400 feet northwest of Old Place Creek. This boring is located approximately 400 feet northwest of Old Place Creek. This boring is located approximately 400 feet northwest of Old Place Creek. This boring is located approximately 400 feet northwest of Old Place Creek. This boring is located approximately 400 feet northwest of Old Place Creek. This boring is located approximately 400 feet northwest of Old Place Creek. This boring is located approximately 400 feet northwest of Old Place Creek. This boring is located approximately 400 feet northwest of Old Place Creek. This boring is located approximately 400 feet northwest of Old Place Creek. This boring is located approximately 400 feet northwest of Old Place Creek. This boring is located approximately 400 feet northwest of Old Place Creek. This boring is located approximately 400 feet northwest of Old Place Creek. This boring is located approximately 400 feet northwest of Old Place Creek. This boring is located approximately 400 feet northwest of Old Place Creek. This boring is located approximately 400 feet northwest of Old Place Creek. This boring is located approximately 400 feet northwest of Old Place Creek. This boring is located approximately 400 feet northwest of Old Place Creek. This boring is located approximately 650 feet northwest of Old Place Creek. This boring is located approximately 650 feet northwest of Old Place Creek. This boring is located approximately 650 feet northwest of Old Place Creek. This boring is located approximately 650 feet northwest of Old Place Creek. This boring is located	· · · · · · · · · · · · · · · · · · ·		,		, , , ,	,	,		
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Direction from Utilities, Tanks, Properties, etc.) Nearby Hydraulic Features (Distance and Direction from wetlands, piping, etc.) Prilling Date 3/7/2011 Drilling Company N/A Additional Hydro/Geological Tests (e.g., pump test/slug test/packet test) Borring Purpose (e.g., geotech) environmental/geoarchaelogical) Depth to saturation (feet bg) - Check where applicable PRODUCT - Product in Soil - Ves/No (odor/inches/viscosity, etc.) - Product in Soil - Ves/No (odor/inches/viscosity, etc.) - Product in Soil -	Nearby Subsurface Features (Distance and								location.
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test) Product in Soil - Yes/No (odor/inches/viscosity, etc.) Product flux MATERIAL Composition, other observations—complete, as applicable Depth (1964 bg) - Check more than one depth, if applicable - applies to Anthropogenically-Generated Material only Product (1976) Product (1976) Soil Permeability Loose Intermediate N/A Accutest Laboratories, Lab Report ID JA65410° Soil Samples Collected (Parameters, Analytical Results Summany) Results (Parameters, Analytical Results Summany) Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test) Additional Hydro/Geological Tests Application in the Check by the Check where applicable and			,			,			
Direction from wetlands, piping, etc.	•								
Drilling Company		This boring is	located appro	oximately 6	50 feet nort	heast of Old	Place Cree	ek.	
Hand Auger	Drilling Date	3/7/2011							
Hand Auger		N/A							
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test) Pump test/slug test/packer test) Geoarcheological		Hand Auger							
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Depth to saturation (feet bg) - Check where applicable	, , , , , , , , , , , , , , , , , , , ,	I	Boring Ob	servatio	ns				
where applicable Water not encountered	Denth to saturation (feet hg) - Check	00-20				81-120	12 1 –	160 161-2	0.0 >20
PRODUCT - Product in Soil - Yes/No (odor/inches/viscosity, etc.) - Product in GW - Check where applicable - Composition, other observations – complete, as applicable - Depth (feet bg) - Check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) - Depth (feet bg) - Check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) - Depth (feet bg) - Check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) - Depth (feet bg) - Check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) - Depth (feet bg) - Check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) - Depth (feet bg) - Check more than one depth, if applicable – applies to Anthropogenically-Generated Material - Do to 1 foot bg - Brown medium SAND, some Silt, trace organics (roots), wet at 1 foot bg. - Soil Permeability - Loose Intermediate Tight - Total Boring Depth (feet bg) 1 - Total Boring Depth (feet bg) 1 - GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Accutest Laboratories, Lab Report JA69812 - Soil Samples Collected (Parameters, Analytical Results Summary) GW Samples Collected (Parameters, Analytical Results Summary) Additional Hydro/Geological Test —	•	0.0 - 2.0	2.1 - 4.0	0.0				10.0 10.1 2	0.0 >20
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Codor/inches/viscosity, etc.) Product in GW - Check where applicable		No							
Product in GW - Check where applicable X	•	INO							
Applicable		None Oh	enved	Shoon	Only	Floating F	Product = 4	'6" Floating B	roduct = >6"
HISTORIC FILL MATERIAL - Composition, other observations – complete, as applicable - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Reworked Material - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Reworked Material N/A - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Reworked Material N/A - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material N/B Geology O to 1 foot bg - Brown medium SAND, some Silt, trace organics (roots), wet at 1 foot bg. Loose Intermediate Tight Total Boring Depth (feet bg) 1 GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if Samples Collected) (e.g. "Accutest Laboratories, Lab Report JA69812 Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected (Parameters, Analytical Results Summary) Additional Hydro/Geological Test –			scrvcu	Jileen	Olliy	Tioating i	Toduct -	Tioating	Toduct - >0
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test/packer test) Additional Comments/Notes/ N/A	• • •	10	. ccy bay		10 - 10	ccy Day		×101661/	,
Additional Comments/Notes/ N/A									
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restimated/surveyed The boring is located approximately 510 feet southeast of the intersection of Western Avenue and Goethals Road North in Staten Island, New York (no exact street address available). A subsurface reatures (Distance and Direction from Utilities, Tanks, Properties, etc.) A subsurface water utility line running along Western Avenue is located approximately 390 feet northwest of boring. Old Place Creek is located approximately 500 feet southwest of boring. Old Place Creek is located approximately 500 feet southwest of boring. Old Place Creek is located approximately 500 feet southwest of boring. Old Place Creek is located approximately 500 feet southwest of boring. Old Place Creek is located approximately 500 feet southwest of boring. Old Place Creek is located approximately 500 feet southwest of boring. Old Place Creek is located approximately 500 feet southwest of boring. Old Place Creek is located approximately 500 feet southwest of boring. Old Place Creek is located approximately 500 feet southwest of boring. Old Place Creek is located approximately 500 feet southwest of boring. Old Place Creek is located approximately 500 feet southwest of boring. Old Place Creek is located approximately 500 feet southwest of boring. Old Place Creek is located approximately 500 feet southwest of boring. Old Place Creek is located approximately 500 feet southwest of boring. Old Place Creek is located approximately 500 feet southwest of boring. Old Place Creek is located approximately 500 feet southwest of boring. Old Place Creek is located approximately 500 feet southwest of boring. Old Place Creek is located approximately 500 feet southwest of boring. Old Place Creek is located approximately 500 feet southwest of boring. Old Place Creek is located approximately 500 feet southwest of boring. Old Place Creek is located approximately 500 feet southwest of boring. Old Place Creek is located approximately 500 feet southwest of boring. Old Place Creek is located approximately 500 feet sout			Boring I	nformat	ion							
A 69R A 0*37*7.59*N / 74*11'04.17*W - estimated (no surveyed coordinates available)	Alternate Boring ID (if applicable)	N/A	_									
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Drilling Company Drilling Method Hand Auger N/A Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test) Boring Purpose (e.g. geotech/ environmental/geoarchaelogical) Boring Observations Depth to saturation (feet bg) – Check where applicable PRODUCT Product in Soil – Yes/No (odor/inches/viscosity, etc.) Product in GW – Check where applicable None Observed Sheen Only Historian Flut MATERIAL Complete, as applicable Reworked Material Complete, as applicable Reworked Material N/A None Observed None Ob	Nearby Hydraulic Features (Distance and Direction from wetlands, piping, etc.)	Old Place Cre	ek is located	approxima	ately 500	0 feet s	outhwest	of boring.				
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Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test) Soring Purpose (e.g. geotech/ environmental/geoarchaelogical) Geoarcheelogical Geoar	Drilling Method	Hand Auger										
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Depth to saturation (feet bg) - Check where applicable	environmental/geoarchaelogical)											
where applicable Water not encountered			Boring O	bservati						_		
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complete, as applicable N/A	HISTORIC FILL MATERIAL											
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test/packer test) Additional Comments/Notes/ N/A	Additional Hydro/Geological Test -	<10 ⁻²	Feet/Day		10	⁻² – 10	Feet/Day			>10 Feet/[Day	
Additional Comments/Notes/ N/A	Permeability Results (e.g. pump test/slug test/packer test)										_	
		N/A										
	Observations (if applicable)	','										

Afternate Boring ID (if applicable) A/2R			Boring I	nformat	ion					
Pipeline Mile Marker ID	Alternate Boring ID (if applicable)	N/A								
A0°37'48.60" / 74°11'03.012"\ — estimated (no survey data collected)										
The boring is located approximately 550 feet southeast of the intersection of Western Avenue and Goethals Road Morth in Staten Island, New York (no exact street address available). Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.) Nearby Hydraulic Features (Distance and Direction from wetlands, piping, etc.) Drilling Date This boring is located approximately 430 feet southeast of a subsurface water utility line near Western Avenue. This boring is located approximately 430 feet southeast of a subsurface water utility line near Western Avenue. This boring is located approximately 630 feet northeast of Old Place Creek. Diffiling Company N/A Drilling Method Additional Hydro/Geological Tests (e.g., pump test/slug test/packer test) Boring Purpose (e.g. genetich) environmental/geoarchaelogical) Boring Doservations Depth to saturation (feet bg) – Check where applicable PRODUCT Product in Soil – Yes/No (odor/inches/viscosity, etc.) Product in Soil – Yes/No (odor/inches/viscosity, etc.) Product in GW – Check where applicable None Observed Material Composition, other observations – complete, as applicable N/A Depth (feet bg) – Check more than one depth, if applicable – applies to Anthropogenically-Generated Material one depth, if applicable – applies to Anthropogenically-Generated Material one depth, if applicable – applies to Anthropogenically-Generated Material N/A Depth (feet bg) – Check more than one depth, if applicable – applies to Anthropogenically-Generated Material N/A Depth (feet bg) – Check more than one depth, if applicable – applies to Anthropogenically-Generated Material N/A Depth (feet bg) – Check more than one depth, if applicable – applies to Anthropogenically-Generated Material N/A Depth (feet bg) – Check more than one depth, if applicable – applies to Anthropogenically-Generated Material N/A Depth (feet bg) – Check more than one depth, if applicable – applies to Anthropogenically-Generated Material N/A Depth (feet bg) – Check more th	Location (Latitude/Longitude) –		N / 74°11′03	3.012"W –	estimated (n	o survey data	collected)		
Goethals Road North in Staten Island, New York (no exact street address available). Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.) Nearby Hydraulic Features (Distance and Direction from wetlands, piping, etc.) Prilling Company N/A Additional Hydro/Geological Tests (e.g. by more transfer only to saturation (feet bg) – Check where applicable PRODUCT Product in Soil – Yes/No (odoo/nches/viscosity, etc.) Product in GW – Check where applicable PISTORIC FILL MATERIAL Company (i. applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Ceology O to 1 foot bg: Light brown medium SAND, some Silt, some organics (roots), wet at 1 foot bg. Soil Samples Collected (parameters, Analytical Results Summany) N/A Solid Samples Collected (Parameters, Analytical Results Summany) Additional Hydro/Geological Test — (10.5 feet to 1.0 foot bg) was analyzed for PCBs.										
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.) Western Avenue.	Site Address	_	•							nue and
Western Avenue West	Nearby Subsurface Features (Distance and									ine near
Direction from wetlands, piping, etc.) Drilling Date 3/7/2011 Drilling Method Additional Hydro/Geological Tests (e.g., pump test/slug test/packer test) Boring Purpose (e.g. geotech/ environmental/geoarchaelogical) Boring Observations Depth to saturation (feet bg) – Check where applicable	Direction from Utilities, Tanks, Properties,	_			,				,	
Drilling Method Hand Auger N/A Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test) Boring Purpose (e.g. geotech/e environmental/geoarchaelogical) Geoarcheological Geoarcheological Boring Purpose (e.g. geotech/e environmental/geoarchaelogical) Geoarcheological Geoarcheologic		This boring is	located app	roximately	630 feet no	rtheast of Old	l Place Cre	ek.		
Drilling Method	Drilling Date	3/7/2011								
Drilling Method Additional Hydro/Geological Tests (e.g., pump test/slug test/packer test) Boring Purpose (e.g., geotech/ environmental/geoarchaelogical) Boring Observations Conception (feet bg) – Check where applicable No Observed Sheen Only applicable No Observed No Observ										
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Sering Observations	Additional Hydro/Geological Tests (e.g.									
Soring Observations		Genarcheolog	gical							
Depth to saturation (feet bg) - Check where applicable X X X X X X X X X		Geoarcheolog	gicai							
Depth to saturation (feet bg) - Check where applicable	crivirorimentaly geodrenaelogicaly	<u> </u>	Doring O	h.c						
where applicable X No PRODUCT - Product in Soil – Yes/No (odor/inches/viscosity, etc.) - Product in GW – Check where applicable X None Observed Sheen Only Floating Product = <6" Floating Product = >6" Floating Product = >6" Floating Product = >6" Sheen Only Anthropogenically-Generated Material Surplicable Sheen Only	Double to ask well as (fact ha). Cheek				1	0.4.42.6	424	16.0	16.1 20.0	. 20
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Product in Soil – Yes/No (odor/inches/viscosity, etc.) Product in GW – Check where applicable None Observed None Observed None Observed Sheen Only Floating Product = <6" Floating Product = >6" Floating Product = >6										
Codor/inches/viscosity, etc. - Product in GW - Check where applicable		No								
Product in GW - Check where applicable X		NO								
Section Sect		None Oh	erved	Sho	an Only	Floating	Product =	<6" F	loating Produ	ıct = >6"
HISTORIC FILL MATERIAL - Composition, other observations - complete, as applicable - Depth (feet bg) - check more than one depth, if applicable - applies to Anthropogenically-Generated Material only PID/Odors (depth) PID/Odors (depth) PID/Odors (depth) Fooil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (Parameters, Analytical Results Summary) Additional Comments/Notes/ Additional Comments/Notes/ Reworked Material Anthropogenically-Generated Material Anthropogenically-Generated Material N/A N/A N/A N/A N/A 10.0 - 2.0 2.1 - 4.0 4.1 - 6.0 6.1 - 8.0 8.1 - 10.0 10.1 - 12.0 > 12.1 N/A N/B (S.1 - 10.0 10.1 - 12.0 > 12.1 N/A N/D Sol 1 - 10.0 1 - 12.0 N/A N/D N/D Soli Samples Collected (Parameters, Analytical Results Summary) N/A Soli Samples Collected (Parameters, Analytical Results Summary) Additional Comments/Notes/ N/A										
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complete, as applicable N/A Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) N/D Geology O to 1 foot bg- Light brown medium SAND, some Silt, some organics (roots), wet at 1 foot bg. Soil Permeability Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected (Parameters, Analytical Results Summary) GW Samples Collected (Parameters, Analytical Results Summary) Additional Hydro/Geological Test – Permeability Results (e.g. pump test/slug test/packer test) Additional Comments/Notes/ N/A N/A 1.1-6.0 6.1-8.0 8.1-10.0 10.1-12.0 11.1-12.0 11.1-12.0 10.1-1			Reworked	Material		Δnt	ronogeni	cally-Ge	nerated Mate	erial
- Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Regology O to 1 foot bg- Light brown medium SAND, some Silt, some organics (roots), wet at 1 foot bg. Soil Permeability Loose Intermediate Tight Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected (Parameters, Analytical Results Summary) GW Samples Collected (Parameters, Analytical Results Summary) Additional Hydro/Geological Test – Permeability Results (e.g. pump test/slug test/packer test) Additional Comments/Notes/ N/A	-					7	породени		c. atca mat	
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PID/Odors (depth) N/D	one depth, if applicable – applies to Anthropogenically-Generated	0.0								·
Coolegy Dot 1 foot bg- Light brown medium SAND, some Silt, some organics (roots), wet at 1 foot bg.	,	N/D								
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Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report JA69812 Soil Samples Collected (Parameters, Analytical Results Summary) GW Samples Collected (Parameters, Analytical Results Summary) Additional Hydro/Geological Test – Permeability Results (e.g. pump test/slug test/packer test) Additional Comments/Notes/ N/A		_	_	ii iiieuluiii			garries (10)	Jisj, wei		
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Permeability Results (e.g. pump test/slug test/packer test) Additional Comments/Notes/ N/A										
test/packer test) Additional Comments/Notes/ N/A	• • •	<10 ⁻²	Feet/Day		10 ⁻² – 1	LO Feet/Day		>	>10 Feet/Day	
Additional Comments/Notes/ N/A										
		N/A					I			
	Observations (if applicable)	'								

		Boring I	nformat	ion					
Alternate Boring ID (if applicable)	N/A								
Pipeline Mile Marker ID	4.74R								
Location (Latitude/Longitude) – estimated/surveyed		N / 74°11′02	2.90"W – e	stimated (no	survey data co	llected)			
Site Address							on of Western	Aver	nue and
					no exact stree			1	
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)	Western Ave	•	proximatei	y 310 feet ea	ist-soutneast	ot a subst	ırface water ut	ility i	ine near
Nearby Hydraulic Features (Distance and Direction from wetlands, piping, etc.)	This boring is	located app	oroximately	750 feet nor	theast of Old	Place Cree	k.		
Drilling Date	3/7/2011								
Drilling Company	N/A								
Drilling Method	Hand Auger								
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A								
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Geoarcheolo	gical							
	L	Boring C	bservat	ions					
Depth to saturation (feet bg) – Check	0.0 - 2.0	2.1 - 4.0	4.1 – 6.0	6.1 – 8.0	8.1 – 12.0	12.1 – 1	16.0 16.1 – 2	0.0	>20
where applicable	Х								
PRODUCT				•	•	•	•		
- Product in Soil – Yes/No (odor/inches/viscosity, etc.)	No								
- Product in GW – Check where	None Obs	served	She	en Only	Floating P	roduct = <	6" Floating F	rodu	ict = >6"
applicable	Х								
HISTORIC FILL MATERIAL									
- Composition, other observations –		Reworked	l Material		Anthr	opogenica	ally-Generated	Mate	rial
complete, as applicable		N/	/A				N/A		
 Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated 	0.0 - 2.0	2.1 – 4.0	4.1 -	- 6.0 6.1	1-8.0 8.	1 – 10.0	10.1 – 12.0	;	>12.1
Material only									
PID/Odors (depth)	N/D								
Geology	0 to 1 foot be	g - Light brov	wn medium	SAND, some	Silt, some org	anics (roo	ts), wet at 1 foo	t bg.	
Soil Permeability		Loose		Inter	mediate		Tight		
					Х				
Total Boring Depth (feet bg)	1								
GW Monitoring Well Installed	N/A								
(Depth, Screen, Riser, Slot Size, Casing)									
Laboratory Name and Report No. (if	Accutest Lab	oratories, La	b Report J	\69812					
samples collected) (e.g. "Accutest	1								
Laboratories, Lab Report ID JA65410")									
Soil Samples Collected	SI-7-1 (0.5 fee	et to 1.0 foo	t bg) was a	nalyzed for Po	CBs.				
(Parameters, Analytical Results Summary)	1								
GW Samples Collected	N/A								
(Parameters, Analytical Results Summary)	ļ .		ı	<u>.</u>		Т			
Additional Hydro/Geological Test –	<10-	Feet/Day		10 - 1	0 Feet/Day		>10 Feet/	Day	
Permeability Results (e.g. pump test/slug									
test/packer test)									

		Boring I	nformat	ion							
Alternate Boring ID (if applicable)	N/A	<u>_</u>									
Pipeline Mile Marker ID	4.69R										
Location (Latitude/Longitude) –	40°37′47.22"	N / 74°11′03	.30"W – es	timated (no su	ırvev data	collected	4)			
estimated/surveyed		,		(00000	-,			
Site Address	This boring is	located app	roximately	315 feet	t eas	t-southea	st of the	intersec	tion of Wes	tern	Avenue
	and Goethals										
Nearby Subsurface Features (Distance and	The boring i									y lin	e along
Direction from Utilities, Tanks, Properties,	Western Ave		•	•						•	· ·
etc.)											
Nearby Hydraulic Features (Distance and	This boring is	located app	roximately	525 feet	north	neast of O	ld Place C	reek.			
Direction from wetlands, piping, etc.)											
Drilling Date	3/7/2011										
Drilling Company	N/A										
Drilling Method	Hand Auger										
Additional Hydro/Geological Tests (e.g.	N/A										
pump test/slug test/packer test)											
Boring Purpose (e.g. geotech/	Geoarcheolo	gical									
environmental/geoarchaelogical)		-									
-		Boring O	bservati	ons							
Depth to saturation (feet bg) – Check	0.0 - 2.0	2.1 - 4.0	4.1 – 6.0	6.1 – 8	3.0	8.1 – 12.	0 12.1	L – 16.0	16.1 – 20	0.0	>20
where applicable	Х										
PRODUCT	1			1			l l			1	
- Product in Soil – Yes/No	No										
(odor/inches/viscosity, etc.)											
- Product in GW – Check where	None Obs	served	Shee	n Only		Floating	g Product	= <6"	Floating P	rodu	ct = >6"
applicable	Х			•							
HISTORIC FILL MATERIAL											
- Composition, other observations –		Reworked	Material			An	thropoge	nically-	Generated N	/late	rial
complete, as applicable		N/A	Α				1 0 -	N,			
- Depth (feet bg) – check more than	0.0 – 2.0	2.1 – 4.0		6.0	6.1	- 8.0	8.1 – 10.		0.1 – 12.0	>	12.1
one depth, if applicable – applies to											
Anthropogenically-Generated											
Material only											
PID/Odors (depth)	N/D										
Geology	0 to 1 foot bg	g - Light brow	n medium	SAND, so	me S	ilt, some	organics (roots), י	wet at 1 foo	bg.	
Soil Permeability		Loose		Ir	nterm	nediate			Tight		
					7	X					
Total Boring Depth (feet bg)	1		-								
GW Monitoring Well Installed	N/A										
(Depth, Screen, Riser, Slot Size, Casing)											
Laboratory Name and Report No. (if	Accutest Lab	oratories, Lal	o Report JA	69812							
samples collected) (e.g. "Accutest											
Laboratories, Lab Report ID JA65410")											
Soil Samples Collected	SI-8-1 (0.5 to	1.0 foot bg)	was analyz	ed for PC	Bs.						
(Parameters, Analytical Results Summary)											
GW Samples Collected	N/A										
(Parameters, Analytical Results Summary)			•	_							
Additional Hydro/Geological Test –	<10-2	Feet/Day		10 ⁻²	- 10	Feet/Day			>10 Feet/	Day	
Permeability Results (e.g. pump test/slug										_	
test/packer test)	1										
Additional Comments/Notes/	N/A										
Observations (if applicable)											

		Boring	Infor	mation					
Alternate Boring ID (if applicable)	N/A								
Pipeline Mile Marker ID	18.76R								
Location (Latitude/Longitude) – estimated/surveyed	40°44'0.63" N	N / 74° 1'47.	15" W	/ - Surveyed					
Site Address								ey City Long Slip racks (no exact s	
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)	N/A								
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	Boring locate	d in the Hu	dson R	River.					
Drilling Date	4/4/2011								
Drilling Company	Aqua Survey,	Inc.							
Drilling Method	Vibracore								
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A								
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environment	al							
		Boring C	Obse	rvations					
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 -		- 8.0	8.1 – 1		16.0 16.1 – 2	0.0 >20
where applicable				N/A – bori	ng insta	lled in H	ludson River		
PRODUCT	T								
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No								
 Product in GW – Check where applicable 	None Obs	served		Sheen Onl	У	Float	ing Product = ·	<6" Floating I	Product = >6"
HISTORIC FILL MATERIAL									
 Composition, other observations – 		Reworked	d Mate	erial		-	Anthropogenic	ally-Generated	Material
complete, as applicable		N,						N/A	
 Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only 	0.0 – 2.0	2.1 – 4.0)	4.1 – 6.0	6.1	- 8.0	8.1 – 10.0	10.1 – 12.0	>12.1
PID/Odors (depth)	N/A	1	<u> </u>		1			I	
Geology	Dark gray to	black SILT fr	om gr	ade to at lea	st 20.0	feet bg.			
Soil Permeability		Loose				nediate		Tight	:
		Х							
Total Boring Depth (feet bg)	20								
GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing)	N/A								
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	Accutest Lab								
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	TCL VOC+10,	TCL SVOC+: ahn), total s	10, EPI	H, TAL Meta	ls, cyan	ide, tota	al phenols, PCB	to 14.5 feet bg s, dioxins, furan cific gravity, and	s, pesticides,
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A								
Additional Hydro/Geological Test –	<10-2	Feet/Day		1	.0 ⁻² – 10	Feet/D	ay	>10 Feet,	/Day
Permeability Results (e.g. pump test/slug test/packer test)		•				-			
Additional Comments/Notes/ Observations (if applicable)	N/A			•			·		

		Boring I	nfo	rmation						
Alternate Boring ID (if applicable)	N/A									
Pipeline Mile Marker ID	In between 1	8 81R and 1	8 82	R						
Location (Latitude/Longitude) – estimated/surveyed	40°44'0.50"N									
Site Address								of Jersey City I acks (no exact s		
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)	N/A									
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	Boring locate	d in the Hud	dson I	River.						
Drilling Date	4/4/2011									
Drilling Company	Aqua Survey,	Inc.								
Drilling Method	Vibracore									
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A									
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environment	al								
		Boring C)bse	ervations						
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1		- 8.0	8.1 – 1		16.0 16.1 – 2	20.0 >20	
where applicable				N/A – bor	ing insta	lled in H	ludson River			
PRODUCT	1									
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No									
 Product in GW – Check where applicable 	None Ob	None Observed Sheen Only Floating Product = <6" Floating Product = >6" X								
HISTORIC FILL MATERIAL		•				•		•		
- Composition, other observations –		Reworked	Mat	erial		1	Anthropogenic	cally-Generated	Material	
complete, as applicable		N/	/A					N/A		
 Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only 	0.0 – 2.0	2.1 – 4.0)	4.1 – 6.0	6.1	- 8.0	8.1 – 10.0	10.1 – 12.0	>12.1	
PID/Odors (depth)	PID = N/D. O	rganic-like o	odor t	throughout	ooring.		•	•		
Geology	Dark gray to	black SILT fr	om g	rade to at le	ast 21.0	feet bg.	ı			
Soil Permeability		Loose			Interr	nediate		Tigh	t	
		Х								
Total Boring Depth (feet bg)	21									
GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing)	N/A									
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	Accutest Lab	·		•						
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	TCL VOC+10,	TCL SVOC+: ahn), total s	10, EF	PH, TAL Met	als, cyar	nide, tot	al phenols, PC	O to 15.5 feet bg Bs, dioxins, fura ecific gravity, an	ns, pesticides,	
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A									
Additional Hydro/Geological Test –	<10	Feet/Day			10 ⁻² – 10	Feet/D	ay	>10 Feet	/Day	
Permeability Results (e.g. pump test/slug test/packer test)		-				-				
Additional Comments/Notes/ Observations (if applicable)	N/A			•			'			

		Boring	Info	rmation							
Alternate Boring ID (if applicable)	N/A	<u>J</u>									
Pipeline Mile Marker ID	In between 1	8.86R and 1	8.87F	₹							
Location (Latitude/Longitude) – estimated/surveyed	40°44'0.08"N										
Site Address	Boring locate approximatel										
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)	N/A										
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	Boring locate	d in the Hu	dson I	River.							
Drilling Date	4/4/2011										
Drilling Company	Aqua Survey,	Inc.									
Drilling Method	Vibracore										
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A										
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environment	al									
		Boring C	Obse	rvations							
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0			- 8.0	8.1 – 1	12.0 12.	1 – 16.0	0 16.1 – 2	0.0	>20
where applicable				N/A – borir				r	- -		
PRODUCT	<u> </u>			.,	8						
- Product in Soil – Yes/No	No										
(odor/inches/viscosity, etc.)											
- Product in GW – Check where	None Obs	served		Sheen Only	v	Float	ing Product	t = <6"	Floating P	rodu	ct = >6"
applicable	X				<u> </u>	11000		-			
HISTORIC FILL MATERIAL						1					
- Composition, other observations –		Reworked	d Mat	erial		1	Anthropoge	nically	-Generated	Mate	rial
complete, as applicable			/A			_			N/A		
- Depth (feet bg) – check more than	0.0 - 2.0	2.1 – 4.0		4.1 – 6.0	6.1	- 8.0	8.1 – 10		10.1 – 12.0	>	12.1
one depth, if applicable – applies to Anthropogenically-Generated Material only					-						
PID/Odors (depth)	PID = N/D. O	rganic-like o	odor t	hroughout b	oring.			,			
Geology	Dark gray to					feet bg.					-
Soil Permeability		Loose				nediate			Tight		-
•		Х									
Total Boring Depth (feet bg)	10						ı.				-
GW Monitoring Well Installed	N/A										
(Depth, Screen, Riser, Slot Size, Casing)											
Laboratory Name and Report No. (if	Accutest Labo	oratories, La	ab Rep	oort ID JA723	38.						
samples collected) (e.g. "Accutest											
Laboratories, Lab Report ID JA65410")											
Soil Samples Collected - Sample ID(s),	VC-3/2 (2.0 to										
Sample Depth(s) and Sampling	EPH, TAL Met			•						•	
Parameter(s)	solids, grain s	ize distribu	tion, v	water conten	it, speci	fic gravi	ty, and acio	l-volatil	le sulfide ana	lyses	<u> </u>
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A										
Additional Hydro/Geological Test –	<10 ⁻²	Feet/Day		1	$0^{-2} - 10$	Feet/D	ay		>10 Feet/	Day	
Permeability Results (e.g. pump test/slug		-							·		
test/packer test)											
Additional Comments/Notes/ Observations (if applicable)	N/A										

		Boring I	nformat	ion							
Alternate Boring ID (if applicable)	N/A										
Pipeline Mile Marker ID	In between 1	9 83R and 19	9 84R								
Location (Latitude/Longitude) – estimated/surveyed	40°44'20.81"			veyed							
Site Address	Boring locate Sanitation Pie street addres	er and appro									
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)	N/A	,									
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	Boring locate	d in the Hud	son River.								
Drilling Date	4/4/2011										
Drilling Company	Aqua Survey,	Inc.									
Drilling Method	Vibracore										
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A										
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environmenta	al									
		Boring O	bservat	ions							
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1 -	- 8.0	8.1 – 12	2.0 12.	1 – 16.0	0 16.1 – 2	0.0	>20
where applicable	•	•	N/A	– borin	instal	led in Hu	dson Rive	r			
PRODUCT											
- Product in Soil – Yes/No (odor/inches/viscosity, etc.)	No										
- Product in GW – Check where	None Obs	served	She	en Only	,	Floatin	g Product	t = <6"	Floating F	rodu	ct = >6"
applicable	х										
HISTORIC FILL MATERIAL											
 Composition, other observations – 		Reworked	Material			Ar	nthropoge	enically	-Generated	Mate	rial
complete, as applicable		N/	Α					N	I/A		
 Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only 	0.0 – 2.0	2.1 – 4.0	4.1 -	- 6.0	6.1	- 8.0	8.1 – 10	.0 1	10.1 – 12.0	>	•12.1
PID/Odors (depth)	PID = 5.1 ppm	n at 2.0 feet	bg. and 1.	nnm a	t 7.0 fe	et bg. Or	ganic-like	odor t	hroughout b	oring	
Geology	Dark gray to I						Barne inte			·····	
Soil Permeability		Loose			Interm				Tight		
,		Х									
Total Boring Depth (feet bg)	10						I				
GW Monitoring Well Installed	N/A										
(Depth, Screen, Riser, Slot Size, Casing)											
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	Accutest Labo	oratories, La	b Report II) JA723	38.						
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	VC-4/2 (2.0 to EPH, TAL Met solids, grain s	als, cyanide	, total phei	nols, PC	Bs, diox	ins, fura	ns, pestici	des, TC	C (Lloyd Kah	n), to	tal
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A					·					
Additional Hydro/Geological Test –	<10 ⁻²	Feet/Day		10	0 ⁻² – 10	Feet/Day	/		>10 Feet	'Day	
Permeability Results (e.g. pump test/slug test/packer test)		-									
Additional Comments/Notes/ Observations (if applicable)	N/A	-									

		Boring In	format	ion							
Alternate Boring ID (if applicable)	N/A										
Pipeline Mile Marker ID	In between 1	9.84R and 19.	.85R								
Location (Latitude/Longitude) –	40°44'21.12"			veved							
estimated/surveyed		,		,							
Site Address	Boring locate	d in the Huds	on River	approxin	nately	25 feet so	outh of t	he emb	ankment of	the \	Nestern
	Manhattan S										
	Greenway bil						•				
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties,	N/A										
etc.)	Davis a la sata	al tar Alexa I I calle	D:								
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	Boring locate	d in the Huds	on River.								
Drilling Date	4/4/2011										
Drilling Company	Aqua Survey,	Inc.									
Drilling Method	Vibracore										
Additional Hydro/Geological Tests (e.g.	N/A										
pump test/slug test/packer test)											
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environmenta	al									
		Boring Ok	servati	ons							
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1 –	8.0	8.1 – 12.	0 12.:	1 – 16.0	16.1 – 2	0.0	>20
where applicable		•	N/A	– boring	instal	led in Hud	son Rive	r	•		
PRODUCT											
- Product in Soil – Yes/No	No										
(odor/inches/viscosity, etc.)											
- Product in GW – Check where	None Obs	None Observed Sheen Only Floating Product = <6" Floating Product = >6"									
applicable	х										
HISTORIC FILL MATERIAL											
 Composition, other observations – 		Reworked I	Material			Ant	hropoge	nically-	Generated	Mate	rial
complete, as applicable		N/A	1					N,	/A		
 Depth (feet bg) – check more than 	0.0 – 2.0	2.1 – 4.0	4.1 -	6.0	6.1 -	- 8.0	8.1 – 10.	0 10	0.1 – 12.0	>	12.1
one depth, if applicable – applies to Anthropogenically-Generated Material only											
PID/Odors (depth)	PID = 1.2 ppm	l nat70 feet h	g Organi	c-like od	or thr	oughout h	oring	<u> </u>			
Geology	Dark gray to l						oring.				
Soil Permeability	<u> </u>	Loose	II grade te			nediate			Tight		
3011 Cimeusiney	'	X		•		iculate			118110		
Total Boring Depth (feet bg)	10		<u> </u>				1				
GW Monitoring Well Installed	N/A										
(Depth, Screen, Riser, Slot Size, Casing)	N/A										
Laboratory Name and Report No. (if	Accutest Labo	nratories Lah	Report ID	ΙΔ7233	<u> </u>						
samples collected) (e.g. "Accutest	Accutest Labo	oratorics, Lab	Керогеть	JA/2330	0.						
Laboratories, Lab Report ID JA65410")											
Soil Samples Collected - Sample ID(s),	VC-5/2 (2.0 to	2.5 feet bg)	and VC-5/	7 (7.0 to	7.5 fe	et bg) col	ected fo	r TCL VC	C+10. TCL :	SVOC	+10.
	EPH, TAL Met	O,		•		0.					
Sample Depth(s) and Sampling											
Sample Depth(s) and Sampling Parameter(s)	solids, grain s	size distributio		-7	•	<u> </u>				•	
Parameter(s)	· -	ize distributio									
Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A		1		2 .					-	
Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test -	N/A	ize distributio		10	² – 10	Feet/Day			>10 Feet/	Day	
Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test - Permeability Results (e.g. pump test/slug	N/A			10	² – 10	Feet/Day			>10 Feet/	Day	
Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test - Permeability Results (e.g. pump test/slug test/packer test)	N/A <10 ⁻²			10	² – 10	Feet/Day			>10 Feet/	Day	
Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test - Permeability Results (e.g. pump test/slug	N/A			10	² – 10	Feet/Day			>10 Feet/	Day	



TRC Environmental Corporation SOIL BORING LOG

BORING NUMBER

SI-1

PROJECT NAME: Spectra NJ-NY Expansion

SAMPLER TYPE/DIA.: 3 1/8" SS Hand Auger

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

LOCATION: Staten Island, NY

PROJECT NO.: 168217

CONTRACTOR: N/A

DEPTH TO WATER: Not Encountered

BORING METHOD: Hand Auger TOTAL DEPTH DRILLED: 1.0' DATE DRILLED: 03/07/11

DRILLER: N/A

LOGGED BY: C. Nichol

		Tidila 7 tagoi				-	
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFIC	CATION AND COMMENTS
0						Unpaved.	
1			ND ND	SI-1-1	SM	0 to 1' - Light brown medium SAN	D, some silt, some roots, moist.
2						End of bo	ring at 1.0'
3 _							
4 –							
_ 5 _							
<u> </u>							
<u> </u>							
<u> </u>							
<u> </u>							
_							
_							

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						Unpaved.
1			ND ND	SI-2-1	SM	0 to 1' -Brown medium SAND, trace silt, trace roots, moist.
2						End of boring at 1.0'
3						
4						
5						
- 3 -						
_						
_						
_						

TRC

Environmental Corporation SOIL BORING LOG

BORING NUMBER

RCH-6-ENV-4

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

Spectra NJ-NY **PROJECT NAME:**

PROJECT NO.: 168217

Expansion

LOCATION: Staten Island, New York

CONTRACTOR: Land Air Water

Environmental Services

SAMPLER TYPE/DIA.: Macrocore/2" **DEPTH TO WATER: 3.0 feet**

BORING METHOD: Direct Push TOTAL DEPTH DRILLED: 15 feet DATE DRILLED: 07/18/11

DRILLER: K. McGourty

LOGGED BY: B. Chaky

		Γ			1	
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
_ 1 _						0 to 0.3' - Asphalt surface with gravel top. 0.3 to 3.0' - FILL: Brown to dark brown clay; little medium to fine
_ 2 _				DOLLOFNIVA/O		gravel, little medium to fine sand, trace coal fragments, trace wood and metal material. Sub-angular, moist, dense.
_ 3 _		44	ND	RCH6ENV4/2		3.0 to 11' - FILL: Gray to black, medium to fine sand; little medium
_ 4 _						to fine sand, trace cinders, sub-angular, wet, loose. Trace wood material from 5.0 to 11'.
_ 5 _						
_ 6 _						
_ 7 _		40	ND			
_ 8 _		40	IND	RCH6ENV4/8		
_ 9 _						
_ 10 _			ND			
_ 11 _					РТ	11 to 15' - Dark brown PEAT; little silt, trace roots. Wet, loose.
_ 12 _			7.6 4.5		' '	THE TO BUILDIOWITE LATE, INDO SIN, MACO 10013. WELL 10036.
_ 13 _		34	12.9 1.0			
_ 14 _						
15			ND			End of Boring at 15'

TRC

PROJECT NAME:

Environmental Corporation SOIL BORING LOG

BORING NUMBER

RCH-5H-ENV-4

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

Spectra NJ-NY

Expansion

LOCATION: Staten Island, New York

CONTRACTOR: Land Air Water

Environmental Services

SAMPLER TYPE/DIA.: Hand Auger/

PROJECT NO.: 168217

Macrocore/2" BORING METHOD: Direct Push

DEPTH TO WATER: 2 feet

TOTAL DEPTH DRILLED: 15 feet

DATE DRILLED: 09/20/11

DRILLER: E. Santiago

LOGGED BY: L. Greenbaum

			1	<u> </u>	1	
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
_ 0 _						
1 _						0.0 to 2.0' - Asphalt layer (5" thick) and concrete with coarse gravel layer (19" thick).
_ 2 _						
_ 3 _			13.0 13.0 14.0	DOLL 511 511 / 4/9		2.0 to 7.0' - FILL: Light brown, fine to medium sand; little fine to medium, sub-angular gravel, little intermittent clumps of red clay, trace silt. Wet, medium dense. Trace pieces of brick and slight
4		Hand Cleared	9.0	RCH-5H-ENV-4/3		creosote-like odor from 3.0 to 4.0'. Trace pieces of glass from 4.0 to 5.0'. Trace pieces of plastic from 5.0 to 6.0'.
_ 5 _			6.0			
_ 6 _			8.9 1.0			
7			1.8 4.5	RCH-5H-ENV-4/7		7.0 to 8.0' - FILL: Reddish brown clay; little fine sand, little silt. Wet,
8			4.0	ROH OH ENV 4/1		dense. Trace pieces of glass.
9		24	2.4 4 4.8		CL	8.0 to 13' - Red CLAY; little fine gravel, trace silt. Wet, very stiff. Fine sand lens (2" thick) at 9'.
10			6.2			
_ 11 _			8.2 8.4			
_ 12 _			0.5 ND			
_ 13 _		41	ND ND		K A I	42 to 45! Dod CII Tulittle fine to coorde such as guiles ground trans
_ 14 _			ND ND		IVIL	13 to 15' - Red SILT; little fine to coarse, sub-angular gravel, trace fine sand. Wet, stiff.
15			ND ND			End of Boring @ 15'

Boring Identification: RCH-5H-ENV-8

		Boring Ir	nformat	ion							
Alternate Boring ID (if applicable)	N/A										
Pipeline Mile Marker ID	5.5R										
Location (Latitude/Longitude) –	N/A										
estimated/surveyed											
Site Address		ated in a ve								Terr	ace and
Nearby Subsurface Features (Distance and		ners Marsh Pa									
Direction from Utilities, Tanks, Properties, etc.)	TVI 13 IVIGIT		ark water	Tipe is	rocate		e south o		•		
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	A wetland is	located 5.0 fe	et north o	f borin	g.						
Drilling Date	9/19/2012										
Drilling Company		er Environme	ental Service	es							
Drilling Method	Hand Auger	er Environme	intai Sci Vit								
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A										
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environmental										
	l .	Boring O	bservati	ons							
Depth to saturation (feet bg) – Check where applicable	0.0 – 2.0		4.1 – 6.0 X	6.1 -	- 8.0	8.1 – 12	2.0 12	.1 – 16.0	16.1 – 2	20.0	>20
PRODUCT	1									<u> </u>	
- Product in Soil – Yes/No (odor/inches/viscosity, etc.)	No										
- Product in GW – Check where applicable	None Observed Sheen Only Floating Product = <6" Floating							Floating	ng Product = >6"		
HISTORIC FILL MATERIAL	,	l .									
-		Reworked	Material			Aı	nthropog	enically	-Generated	Mate	rial
						concre Brown	te from , medium	0.5 to 2 to coar	.5 feet bg, 1.0 feet bg, se sand; litt 0 to 2.0 fee	unde e sub	erlain by
- Depth (feet bg) – check more than	0.0 - 2.0	2.1 – 4.0	4.1 -	6.0	6.1	-8.0	8.1 – 10		0.1 – 12.0		>12.1
one depth, if applicable – applies to Anthropogenically-Generated Material only	X										
PID/Odors (depth)	No PIDs. No	ndors.						I		ı	
Geology	Fill from 0 to	2.0 feet bg erlain by red-k	-			•					
Soil Permeability	1000 08) 01100	Loose				nediate	Baiai Bia		Tight		<u>y.</u>
						X				_	
Total Boring Depth (feet bg)	8.0							1			
GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing)	N/A										
Laboratory Name and Report No. (if samples collected)	Accutest Lab	oratories, Lab	Report ID	JB1682	23						
Soil Samples Collected - Sample ID(s),	RCH_5H_ENV	-8-WC was c	allected f	or met	al (incl	luding ha	vavalen+	chromi	um) Metal	s TCI	D RCR 4
Sample Depth(s) and Sampling Parameter(s)	RCH-5H-ENV-8-WC was collected for metal (including hexavalent chromium), Metals TCLP, RCRA Characteristics, general chemistry analyses and composited for waste characterization analyses. RCH-5H-ENV-8-WC/1 (1.0 to 1.5 feet bg), RCH-5H-ENV-8-WC/2 (2.0 to 2.5 feet bg), RCH-5H-ENV-8-WC/3 (3.0 to 3.5 feet bg), and RCH-5H-ENV-8-WC/4 (4.0 to 4.5 feet bg) were collected for TPHC and								nalyses. I-ENV-8-		
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A	nistry analyse									
Additional Hydro/Geological Test –	<10 ⁻² Feet/Day 10 ⁻² – 10 Feet/Day >10 Feet/Day										
Permeability Results (e.g. pump test/slug test/packer test)	110	. ccy bay			, 10	. cc., Da	7		- 10 1 661	, Day	
Additional Comments/Notes/ Observations (if applicable)	Borehole bad	ckfilled with b	entonite c	hips an	d soil c	cuttings to	restore	to grade	2 .		

		Boring	Inform	ation							
Alta-mata Barta ID (if an alta-lala)	N1/A	Dorning		ation							
Alternate Boring ID (if applicable)	N/A										
Pipeline Mile Marker ID	4.1R										
Location (Latitude/Longitude) – estimated/surveyed	40° 37' 15.7	3" N/ 74° 11	' 49.38" \	N- Estimat	ed, sur	veyed co	ordinates	s fortho	coming.		
Site Address	_	ated along to exact stree	_			n River I	Road and	Lambe	ert Avenue ir	State	n Island,
Nearby Subsurface Features (Distance and		e water line			•	of the b	oring				
Direction from Utilities, Tanks, Properties, etc.)				,			Ü				
Nearby Hydraulic Features (Distance and	Boring is loc	ated in wetl	ands. An	unnamed	pond is	located	1,200 fe	et nort	heast of bor	ng loc	ation.
Direction from wetlands, piping, etc.)	00/40/42	10/10/12									
Drilling Date		09/19/12 .and Air Water Environmental Services									
Drilling Company			nental Se	rvices							
Drilling Method	Hand Auger										
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A										
Boring Purpose (e.g. geotech/ environmental/geoarcheological)	Environmental										
environmentally geodreneologically		Boring (Observ	ations							
Depth to saturation (feet bg) – Check	0.0 - 2.0	2.1 - 4.0	4.1 – 6	.0 6.1-	- 8.0	8.1 – 1	2.0 12	.1 – 16	5.0 16.1 –	20.0	>20
where applicable		Х									
PRODUCT	1			L			L		I		
- Product in Soil – Yes/No (odor/inches/viscosity, etc.)	No										
- Product in GW – Check where	None Ol	served	l c	heen Only	,	Eloatio	ng Produc	ct - <6'	' Floating	Drodu	rct - >6"
applicable			3	neen Only		rioatii	ig Flouut	- \0	Floating	FIOUL	ict - 70
HISTORIC FILL MATERIAL) X	L									
		Reworke	d Matari	al .		٠ .	nthronog	onicall	v Conoratos	l Mata	rial
- Composition, other observations –		Keworke	a iviateri	aı			ntnropog	enicali	y-Generated	iviate	riai
complete, as applicable	00.00	T	<u> </u>	4 6 0		None	0.4.44		40.4 40.0	Τ.	40.4
 Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated 	0.0 – 2.0	2.1 – 4.	0 4	.1 – 6.0	6.1	- 8.0	8.1 – 10	0.0	10.1 – 12.0		<u>>12.1</u>
Material only				0.6 . 1		515 60				<u> </u>	
PID/Odors (depth)											
Geology	Brown, fine to medium SAND, some medium to coarse rounded gravel from 0.0 to 3.0 feet bg underlain by brown to dark-brown, fine to medium SAND, little silt to 4.0 feet bg; underlain by dark brown, fine SAND, little silt, little fine to medium rounded gravel to 5.0 feet bg; underlain by dark										
	-	and SILT to			g.		d gravel	to 5.0			
Soil Permeability	-				g. Interm	rounde nediate	d gravel	to 5.0	feet bg; und		. '
Soil Permeability Total Boring Depth (feet bg)	-	and SILT to			g. Interm	nediate	d gravel	to 5.0			. '
·	brown SANI	and SILT to			g. Interm	nediate	d gravel	to 5.0			
Total Boring Depth (feet bg) GW Monitoring Well Installed	brown SANI	and SILT to			g. Interm	nediate	d gravel	to 5.0			
Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if	brown SANI 8 N/A	and SILT to	o at least	8.0 feet b	g. Interm	nediate (d gravel	to 5.0			
Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest	brown SANI 8 N/A	Dand SILT to Loose	o at least	8.0 feet b	g. Interm	nediate (d gravel	to 5.0			
Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	8 N/A Accutest Lal	D and SILT to Loose	at least	8.0 feet bg	g. Interm	rediate K			Tigh	t	by dark
Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest	8 N/A Accutest Lal 1R-22.1-ENV for VOC, SV WC was col	Dand SILT to Loose Doratories, L 7-17/0-4 (0.0 OC, metals, lected for w	ab Repor	8.0 feet bg t JB16942 feet bg) ar sticide, he	Interm	.7083. 2.1-ENV-and gerysis. 1R-2	-17/4-8 (4 neral che 22.1-ENV-	4.0 to 8 mistry -17-WC	Tigh 3.0 feet bg) analyses. 1FC/2, 1R-22.1-	were (by dark
Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and	8 N/A Accutest Lal 1R-22.1-ENV for VOC, SV WC was col	Dand SILT to Loose Doratories, L V-17/0-4 (0.0 OC, metals,	ab Repor	8.0 feet bg t JB16942 feet bg) ar sticide, he	Interm	.7083. 2.1-ENV-and gerysis. 1R-2	-17/4-8 (4 neral che 22.1-ENV-	4.0 to 8 mistry -17-WC	Tigh 3.0 feet bg) analyses. 1FC/2, 1R-22.1-	were (by dark
Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	8 N/A Accutest Lal 1R-22.1-ENV for VOC, SV WC was col 1R-22.1-ENV N/A	Dand SILT to Loose Dooratories, L V-17/0-4 (0.0 OC, metals, lected for w V-17-WC/6, a	ab Repor	t JB16942 eet bg) ar sticide, he acterizatio	and JB1 and 1R-2 rbicide, on analy 7-WC/8	.7083. 2.1-ENV- and ger ysis. 1R-; were co	-17/4-8 (² neral che 22.1-ENV llected fo	4.0 to 8 mistry -17-WC	Tigh 3.0 feet bg) analyses. 1FC/2, 1R-22.1-3 analyses.	were (R-22.1-	by dark
Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test - Permeability Results (e.g. pump test/slug	8 N/A Accutest Lal 1R-22.1-ENV for VOC, SV WC was col 1R-22.1-ENV N/A	Dand SILT to Loose Doratories, L 7-17/0-4 (0.0 OC, metals, lected for w	ab Repor	t JB16942 eet bg) ar sticide, he acterizatio	and JB1 and 1R-2 rbicide, on analy 7-WC/8	.7083. 2.1-ENV-and gerysis. 1R-2	-17/4-8 (² neral che 22.1-ENV llected fo	4.0 to 8 mistry -17-WC	Tigh 3.0 feet bg) analyses. 1FC/2, 1R-22.1-	were (R-22.1-	by dark
Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test -	8 N/A Accutest Lall 1R-22.1-ENV for VOC, SV WC was col 1R-22.1-ENV N/A	Dand SILT to Loose Dooratories, L V-17/0-4 (0.0 OC, metals, lected for w V-17-WC/6, a	ab Repor O to 4.0 f PCB, per aste chair	t JB16942 eet bg) ar sticide, he acterization	and JB1 and 1R-2 rbicide, on analy 7-WC/8	.7083. .7083. .2.1-ENV- and gel /sis. 1R- were co	-17/4-8 (4 neral che 22.1-ENV- llected fo	4.0 to 8 mistry -17-WC r TPHC	3.0 feet bg) analyses. 1FC/2, 1R-22.1-2 analyses.	were (R-22.1-	by dark

		Boring	Informa	tion								
Alternate Boring ID (if applicable)	N/A											
Pipeline Mile Marker ID	4.14R											
Location (Latitude/Longitude) – estimated/surveyed	40° 37' 16.6	52" N/ 74° 11	' 47.26" W-	Estimate	ed, surv	veyed coor	dinates f	orthco	ming.			
Site Address	Boring is lo	cated along t	the vegetate	ed area b	etwee	n River Ro	ad and La	ambert	Avenue in	Staten Island,		
	New York (ı	no exact stre	et address a	vailable)).							
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)	A subsurfac	e water line	is located 1	.900 feet	t north	of the bor	ing					
Nearby Hydraulic Features (Distance and Direction from wetlands, piping, etc.)	Boring is lo	Boring is located in wetlands. An unnamed pond is located 1,000 feet northeast of boring location.										
Drilling Date	09/25/12	19/25/12										
Drilling Company		09/25/12 Land Air Water Environmental Services										
Drilling Method	+		ilelitai Seiv	ces								
	Hand Auger											
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A											
Boring Purpose (e.g. geotech/ environmental/geoarcheological)	Environmer	ntal										
environmentally geometreologically		Boring	Observat	ions								
Depth to saturation (feet bg) – Check	0.0 - 2.0	2.1 - 4.0	4.1 – 6.0	6.1 -	8.0	8.1 – 12.0	12.1	- 16.0	16.1 – 2	0.0 >20		
where applicable		X										
PRODUCT												
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No											
- Product in GW – Check where	None O	bserved	She	en Only		Floating	Product	= <6"	Floating I	Product = >6"		
applicable	-	X	3110	en Omy		Tioating	TTOUUCE	- 10	Tioating i	Toduct = >0		
HISTORIC FILL MATERIAL		^	1									
- Composition, other observations –		Reworke	d Material			Δnt	hronogei	nically-	Generated	Material		
complete, as applicable		Neworke	u Wateriai			None	породе	incarry-	Generated	iviateriai		
 Depth (feet bg) – check more than 	0.0 - 2.0	2.1 – 4.	.0 4.1	- 6.0	6.1	- 8.0	8.1 – 10.0	0 1	0.1 – 12.0	>12.1		
one depth, if applicable – applies to Anthropogenically-Generated												
Material only												
PID/Odors (depth)		trations from			_							
Geology	feet bg; un		ark brown,	fine to	mediu	m SAND a	nd SILT,		-	om 0.0 to 2.0 3.0 feet bg;		
Soil Permeability	anacham s	Loose	i, sier and s			ediate	ь.		Tight			
John Chineasiney		20050				X				'		
Total Boring Depth (feet bg)	8		I			•						
GW Monitoring Well Installed	N/A											
(Depth, Screen, Riser, Slot Size, Casing)	14//											
Laboratory Name and Report No. (if	Accutest La	boratories, L	ah Renort I	317083								
samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	/ tecatest La	borutories, E	ab Report 3	317003.								
Soil Samples Collected - Sample ID(s),	1R-22 1-FN	V-18/0 - // (0	0 to 4 0 for	et høl an	d 1R-3	2 1-FN\/-1	8/4- 8 //	0 to 8	n feet hal w	vere collected		
Sample Depth(s) and Sampling										22.1-ENV-18-		
Parameter(s)	WC was co	llected for w	aste charac	terizatio	n analy	/sis. 1R-22	1-ENV-1	8-WC/2	2, 1R-22.1-E	NV-18-WC/4,		
GW Samples Collected - Sample ID(s) and	1R-22.1-ENV-18-WC/6, and 1R-22.1-ENV-18-WC/8 were collected for TPHC analyses. d N/A											
Sampling Parameter(S)	<10 ⁻² Feet/Day 10 ⁻² – 10 Feet/Day >10 Feet/Day											
Sampling Parameter(s) Additional Hydro/Geological Test –	<10) Feet/Dav	l	TO	10 - 10 reet/Day >10 reet/Day							
Additional Hydro/Geological Test – Permeability Results (e.g. pump test/slug	<10	O [*] Feet/Day		10	- 10	reet/Day			>10 Feet/	Day		
Additional Hydro/Geological Test –		D² Feet/Day ackfilled with					l restored	d to gra	-	идау		

		Boring	Informat	ion								
Alternate Boring ID (if applicable)	N/A	- 0										
Pipeline Mile Marker ID	4.18R											
Location (Latitude/Longitude) –		1" N/ 74° 11	' 45 46" W- I	stimate	ed surv	veved co	ordina	ates forth	com	ing		
estimated/surveyed	10 37 17.0	1 14, 7 1 11	13.10 11	-501111400	Ju, Jui	veyeu co	or arric	100		6		
Site Address	Boring is loo	cated along t	he vegetate	d area b	etwee	en River	Road a	and Lamb	ert	Avenue in	State	en Island
		reet address										
Nearby Subsurface Features (Distance and		e water line		,700 fee	t north	h of the	boring	g. An area	of of	free phase	prod	duct and
Direction from Utilities, Tanks, Properties,		mpacted soi					-	-		•	•	
etc.)	of petroleur	m impacted s	soil is located	approx	kimate	ly 1,620	feet ea	ast of the	bor	ing locatio	n.	
Nearby Hydraulic Features (Distance and	Arthur Kill is	located app	roximately 1	L,445 fe	et wes	t of borii	ng.					
Direction from wetlands, piping, etc.)												
Drilling Date	09/25/12)9/25/12										
Drilling Company	Land Air Wa	Land Air Water Environmental Services										
Drilling Method	Hand Auger	Hand Auger										
Additional Hydro/Geological Tests (e.g.	N/A											
pump test/slug test/packer test)												
Boring Purpose (e.g. geotech/	Environmental											
environmental/geoarcheological)												
	 		Observati			_				_		
Depth to saturation (feet bg) – Check	0.0 - 2.0	2.1 - 4.0	4.1 – 6.0	6.1 –	8.0	8.1 – 1	2.0	12.1 – 1	6.0	16.1 – 2	0.0	>20
where applicable			Х									
PRODUCT	T											
- Product in Soil – Yes/No	No											
(odor/inches/viscosity, etc.)	Nama Ol	h.a.m.r.al	Cha	0		Flant:	D	da. = 4C	,,,	Flacking I)a.al	
- Product in GW – Check where	None O		Snee	n Only		Floatii	ng Pro	duct = <6)"	Floating I	roau	ict = >6"
applicable	>	(
- Composition, other observations –	- Reworked Material Anthropogenically-Generated Material											
complete, as applicable		REWUIKE	u iviateriai			None	iitiii Op	ogenical	ily-G	enerateu	iviate	:i iai
- Depth (feet bg) – check more than	0.0 - 2.0	2.1 – 4.	0 4.1-	6.0	61-	- 8.0	81-	- 10.0	10	1 – 12.0	١,	>12.1
one depth, if applicable – applies to	0.0 2.0		<u> </u>	0.0		0.0		20.0				
Anthropogenically-Generated												
Material only												
PID/Odors (depth)	PID concent	rations from	0.0 to 8.0 fe	eet bg; h	nighest	PID of 4	.2 ppn	n at 4 fee	t bg	Odor pre	sent.	
Geology		3.0 feet b										to little
	organics; ur	derlain by d	ark-brown, S	ILT and	SAND	3.0 to at	least a	8.0 feet b	g.			
Soil Permeability		Loose			Interm	nediate				Tight		
)	X						
Total Boring Depth (feet bg)	8											
GW Monitoring Well Installed	N/A											
(Depth, Screen, Riser, Slot Size, Casing)												
Laboratory Name and Report No. (if	Accutest La	boratories, L	ab Report JB	17339 a	and JB1	L7339A.						
samples collected) (e.g. "Accutest												
Laboratories, Lab Report ID JA65410")												
Soil Samples Collected - Sample ID(s),		V-19/3 (3.0 t										
Sample Depth(s) and Sampling		metals, PCI				•		•	•			
Parameter(s) was collected for waste characterization analysis. 1R-22.1-ENV-19-WC/2, 1R-22.1-ENV-19-WC/4, 1R-22.1-ENV-19-WC/6, and 1R-22.1-ENV-19-WC/8 were collected for TPHC analyses.										C/4, 1R-		
GW Samples Collected - Sample ID(s) and	N/A	vvc/0, and	TIV-77.T-FIN	, T3-44	-/ 0 WE	i e collec	teu IUI	i iriic di	iaiys			
Sampling Parameter(s)												
	<10 ⁻² Feet/Day 10 ⁻² – 10 Feet/Day >10 Feet/Day											
Additional Hydro/Geological Test –												
Additional Hydro/Geological Test – Permeability Results (e.g. pump test/slug	120	1004-01										
Additional Hydro/Geological Test – Permeability Results (e.g. pump test/slug test/packer test)	120											
Permeability Results (e.g. pump test/slug		nckfilled with	bentonite c	hips and	d soil c	uttings a	nd res	tored to	grad	e.		

		Boring	Informat	ion								
Alternate Boring ID (if applicable)	N/A	- 0										
Pipeline Mile Marker ID	4.2R											
Location (Latitude/Longitude) –		0" N/ 74° 11	' 44.12" W-	Estimat	ed, sur	veyed co	ordin	ates forth	ncom	ing		
estimated/surveyed Site Address	Boring is lo	cated along	the vegetate	d area	hetwe	en River	Road	and Lamh	nert i	Avenue in	State	n Island
Site Address		reet address		u area	Detwe	en Kivei	Noau	anu Lanii	Jei t /	Avenue in	State	:II ISIAIIU
Nearby Subsurface Features (Distance and		e water line		.645 fe	et nort	h of the	boring	g. An area	a of t	free phase	prod	duct and
Direction from Utilities, Tanks, Properties, etc.)	petroleum i	mpacted soin impacted :	I is located	approxi	imately	985 fee	t nort	heast of t	the b	oring loca	ition;	
Nearby Hydraulic Features (Distance and Direction from wetlands, piping, etc.)	Arthur Kill is	located app	proximately	1,550 fe	eet wes	st of bori	ng.					
Drilling Date	09/25/12	9/25/12										
Drilling Company	Land Air Wa	Land Air Water Environmental Services										
Drilling Method	Hand Auger	Hand Auger										
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A											
Boring Purpose (e.g. geotech/ environmental/geoarcheological)	Environmer	tal										
		Boring (Observat	ions								
Depth to saturation (feet bg) – Check	0.0 - 2.0	2.1 - 4.0	4.1 – 6.0	6.1 -	- 8.0	8.1 – 1	2.0	12.1 – 1	6.0	16.1 – 2	0.0	>20
where applicable		Χ										
PRODUCT												
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No											
 Product in GW – Check where 	None O	oserved	She	en Only	1	Floati	ng Pro	duct = <6	5"	Floating F	Produ	ct = >6"
applicable	>	(
HISTORIC FILL MATERIAL												
 Composition, other observations – complete, as applicable 		Reworke	d Material			None	nthro	pogenical	lly-G	enerated	Mate	rial
 Depth (feet bg) – check more than 	0.0 – 2.0	2.1 – 4.	0 4.1 -	- 6.0	6.1	- 8.0	8.1	- 10.0	10.	1 – 12.0	``	>12.1
one depth, if applicable – applies to Anthropogenically-Generated Material only												
PID/Odors (depth)	PID concent	rations from	0 0 to 8 0 f	eet hø:	highest	t PID of 4	l 2 nnr	n at 4 fee	t hø	· Odor pre	sent	
Geology		3.0 feet by										
		y dark-browi								0 /		0,
Soil Permeability		Loose				nediate				Tight		
						Х						
Total Boring Depth (feet bg)	8											
GW Monitoring Well Installed	N/A											
(Depth, Screen, Riser, Slot Size, Casing)												
Laboratory Name and Report No. (if	Accutest La	ooratories, L	ab Report JI	317339	and JB	17339A.						
samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")												
Soil Samples Collected - Sample ID(s),		/-20/3 (3.0 t										
Sample Depth(s) and Sampling		metals, PC				-						
Parameter(s)		ed for waste D-WC/6, and									20-W	C/4, 1R-
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	nd N/A											
Additional Hydro/Geological Test –	<10	⁻² Feet/Day		10	0 ⁻² – 10	Feet/Da	ау			>10 Feet/	/Day	
Permeability Results (e.g. pump test/slug test/packer test)										_		
Additional Comments/Notes/	Borehole ba	ckfilled with	bentonite (hips an	ıd soil c	cuttings a	and res	stored to	grad	le.		
Observations (if applicable)												

		Boring	Informa	ion								
Alternate Boring ID (if applicable)												
Pipeline Mile Marker ID	4.31R											
Location (Latitude/Longitude) – estimated/surveyed	40° 37' 34.96	518"N / 74° :	11' 25.2817	"W – Sı	urveyed							
Site Address	Boring is loca Staten Island							ion of 6 th	Avenue an	d 3 rd S	Street in	
Nearby Subsurface Features (Distance and	A subsurface		•			•		thwest o	f the boring			
Direction from Utilities, Tanks, Properties, etc.)						, ,						
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	Old Place Cre	eek is locate	d approxim	ately 80	00 feet	northwe	est of the	boring.				
Drilling Date		/24/12 through 2/27/12										
Drilling Company	Warren Geor	_										
Drilling Method	Hand Auger/	Mud Rotary	/ Tri-cone	Roller B	Bit							
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A											
Boring Purpose (e.g. geotech/ Geotechnical environmental/geoarchaelogical)												
		Boring C	Observat	ions								
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1	- 8.0	8.1 – 1	2.0 12	2.1 – 16.0	16.1 – 2	0.0	>20	
where applicable		Χ										
PRODUCT	1											
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No											
 Product in GW – Check where 	None Observed Sheen Only Floating Product = <6" Floating Product =								ct = >6"			
applicable	X	X										
HISTORIC FILL MATERIAL												
- Composition, other observations –			Material			Δ.	nthropog		Generated	Mate	rial	
complete, as applicable		N/A N/A				<u> </u>						
- Depth (feet bg) – check more than	0.0 – 2.0	2.1 – 4.0	4.1	- 6.0	6.1	- 8.0	8.1 – 1	0.0 1	0.1 – 12.0	>	12.1	
one depth, if applicable – applies to Anthropogenically-Generated												
Material only PID/Odors (depth)	Highest PID -	24.2 at 16	ft ha Culfu	· liko oo	lor from	2 O O to	11 ft ba					
								foot ha	27 to 20 foo	t ha	22 to 25	
No cores collected from 11 to 15 feet bg, 17 to 20 feet bg, 22 to 25 feet bg, 27 to 30 feet bg, 32 to 3 feet bg, 37 to 40 feet bg, 40 to 42 feet bg, and 47 to 48.7 feet bg. Brown SILT and little fine to coarse gravel to 4.0 feet bg, underlain by dark brown/black CLAY and from 4.0 to 7.0 feet bg, underlain by black CLAY and fine to coarse GRAVEL from 7.0 to 7.5 ft bg underlain by gray/black organic PEAT from 7.5 to 9.0 ft bg, underlain by gray CLAY and PEAT; sligh sulfur-like odor from 9.0 to 11 ft bg, underlain by gray CLAY from 15 to 16.5 ft bg, underlain by brown PEAT from 16.5 to 17 ft bg, underlain by gray fine SAND, some organics (vegetation) from 20 to 22 ft bg, underlain by brown, fine SAND and fine to coarse GRAVEL from 25 to 27 ft bg, 30 to 32 ft bg, an 35 to 37 ft bg, underlain by Red/brown CLAY and SILT; trace coarse sand from 40 to 42 ft bg underlain by red/brown CLAY and SILT; some fine to coarse sand, little fine gravel from 45 to 47 ft bg									LAY and .5 ft bg, T; slight y brown to 22 ft bg, and 2 ft bg,			
Soil Permeability	Loose Intermediate Tight											
Total Boring Depth (feet bg)	117					Х						
GW Monitoring Well Installed	N/A											
(Depth, Screen, Riser, Slot Size, Casing)	'''											
Laboratory Name and Report No. (if	N/A											
samples collected) (e.g. "Accutest	,											
Laboratories, Lab Report ID JA65410")	N/A											
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling	N/A											
Parameter(s)												

GW Samples Collected - Sample ID(s) and	N/A		
Sampling Parameter(s)			
Additional Hydro/Geological Test –	<10 ⁻² Feet/Day	10 ⁻² – 10 Feet/Day	>10 Feet/Day
Permeability Results (e.g. pump test/slug			
test/packer test)			
Additional Comments/Notes/	N/A		
Observations (if applicable)			

Boring Identification: RCH-3-ENV-1

		Boring	Informa	tion								
Alternate Boring ID (if applicable)	N/A											
Pipeline Mile Marker ID	4.71R											
Location (Latitude/Longitude) – estimated/surveyed	40° 38' 04.0	0" N/74° 10'	55.10" W -	- Estima	ted, sur	veyed co	ordinate	es forthco	oming			
Site Address	Boring is loc	ated along	Western A	/enue. a	approxi	mately 70	feet ea	ast of the	intersectio	n of	Western	
	Avenue and available).											
Nearby Subsurface Features (Distance and	Utility easer	ments and o	other pipel	ines for	Procto	r and Ga	mble a	re locate	d approxim	ately	65 feet	
Direction from Utilities, Tanks, Properties,	northwest o	f the boring.										
etc.)												
Nearby Hydraulic Features (Distance and	A wetland	A wetland area surrounds the boring. An unnamed stream is located approximately 125 fee										
Direction from wetlands, etc.)		northwest of boring.										
Drilling Date	09/05/2012											
Drilling Company	Land Air Wa			ices								
Drilling Method	Hand Auger,	/ 2" Macroco	ore									
Additional Hydro/Geological Tests (e.g.	N/A											
pump test/slug test/packer test)												
Boring Purpose (e.g. geotech/ environmental/geoarcheological)	Environmen	tal and Geoa	archeologic	al								
		Boring (Observat	ions								
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1	- 8.0	8.1 – 12	.0 12	2.1 – 16.0	16.1 – 2	0.0	>20	
where applicable		Χ										
PRODUCT		'		•	•		•		•			
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No											
- Product in GW – Check where	None Ob	served	She	en Only	,	Floatin	2 Produ	ict = <6"	Floating F	rodu	ct = >6"	
applicable	X			· · · · · · · · · · · · · · · · · · ·	<u>/</u>		3					
HISTORIC FILL MATERIAL	,		L						L			
- Composition, other observations –		Reworke	d Material			An	thropos	genically-	Generated	Mate	rial	
complete, as applicable						Asphalt	roadwa	ay and g	ravel sub-ba	el sub-base, from 0.0 dark brown, medium		
									ne sub-ang			
									o 10.5 feet		Bravei,	
- Depth (feet bg) – check more than	0.0 – 2.0	2.1 – 4.	0 4.1	- 6.0	6.1	- 8.0	8.1 – 1		0.1 – 12.0		12.1	
one depth, if applicable – applies to Anthropogenically-Generated	Х	х		х		х	х		Х			
Material only												
PID/Odors (depth)	No PID. No o											
Geology	FILL from 0.											
	to 15 feet l	-			-		-			_	•	
	medium SAN			_	.5 (10015	5), tO 17 10	eet bg; t	unuenam	by greenisi	gray	, fine to	
Soil Permeability	mediam sai	Loose	30 100 1	5.	Intern	nediate			Tight			
3011 Ferriteability		LUUSE				X			rigiit			
Total Boring Depth (feet bg)	20							1				
GW Monitoring Well Installed	N/A											
(Depth, Screen, Riser, Slot Size, Casing)	''''											
Laboratory Name and Report No. (if	Accutest Lak	oratories. L	ab Report I	Ds JB15	520. JB1	15520A. a	nd JB15	520R.				
samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")					,	,						
Soil Samples Collected - Sample ID(s),	RCH-3-ENV-	1/3 (3.0 to 3	3.5 feet hø	and Ro	CH-3-FN	V-1/7 (7	0 to 7 5	feet hø\	were collec	ted t	or VOC	
Sample Depth(s) and Sampling	SVOC, PCB,											
Parameter(s)	analyses. RCRCH-3-ENV-	CH-3-ENV-1-	WC was co	llected	for wa	ste chara	cterizat	ion analy	sis. RCH-3-	ENV-	1-WC/2,	
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A	, .,		-, 0, u	2		,			,,,,,,		
Additional Hydro/Geological Test –	∠10	-2 Feet/Day		1	0 ⁻² _ 10	Feet/Day	,	I	>10 Feet/	Dav		
i i jai o j decionical i est	1	. ccc, Day			- 10	. ccy bay			- 20 : 661/	- u y		

test/packer test)									
Additional Comments/Notes/	Borehole backfilled with grout and	Borehole backfilled with grout and restored to grade.							
Observations (if applicable)	· ·								

Boring Identification: RCH-3-ENV-2W

		Boring	Inform	ation							
At	1 21/2	Dorning		1011							
Alternate Boring ID (if applicable)	N/A										
Pipeline Mile Marker ID	4.763R	NI NI /7 40 4 OL	E 4 E 0 \ \ \	E-Aire				- ft			
Location (Latitude/Longitude) – estimated/surveyed	40° 37' 59.40)" N//4° 10'	54.59" W	– Estima	itea, sui	rveyed co	ordinate	s forthco	ming		
Site Address	Boring is loc address is av		e Arlingto	n Rail Y	ard pro	perty in	Staten Is	sland, Ne	w York (no	exac	t street
Nearby Subsurface Features (Distance and	Utility easen	nents and o	ther pipe	lines for	Procto	r and Ga	mble are	e located	approxima	itely 2	265 feet
Direction from Utilities, Tanks, Properties, etc.)	northwest of								• •	•	
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	A wetland a		nds the	ooring. <i>i</i>	An unn	amed st	ream is	located a	approxima	tely 3	20 feet
	northwest of 09/04/2012	borning.									
Drilling Date	<u> </u>	Land Air Water Environmental Services									
Drilling Company											
Drilling Method	Hand Auger/	2" Macroco	ore / Hollo	w Stem	Auger						
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A										
Boring Purpose (e.g. geotech/ environmental/geoarcheological)	Environment	al									
Boring Observations											
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.	6.1	- 8.0	8.1 – 12	2.0 12	2.1 – 16.0	16.1 – 2	0.0	>20
where applicable								Х			
PRODUCT											
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No										
- Product in GW – Check where	None Ob	served	SI	een Onl	/	Floatii	ng Produ	ct = <6"	Floating I	Produ	ct = >6"
applicable	X						0				
HISTORIC FILL MATERIAL	,		1			1					
- Composition, other observations –		Reworked	d Materia	1		Δ	nthronos	enically-0	Generated	Mate	rial
complete, as applicable						gray be mediu cinder feet be coarse gravel, coal, p	rown, fi m sub-a s, ash, ce g; under sand, so trace s	ne to congular gramics, gramics, gramics, gramics, grame fine lit, slag, wood (fr	eet bg; und arse sand ravel, tracelass, meta ght gray b to mediun cinders, a om 15 to 2	and e silt l, coa rown, n sub- sh, co	fine to t, brick, l, to 3.0 fine to angular eramics,
 Depth (feet bg) – check more than 	0.0 - 2.0	2.1 – 4.0	0 4.	-6.0	6.1	- 8.0	8.1 – 1	0.0 10	.1 – 12.0	>	12.1
one depth, if applicable – applies to Anthropogenically-Generated Material only	х	х		Х		x	х		X		x
PID/Odors (depth)	PID concentr	ations from	0.0 to 6.0	feet bg;	highest	t PID of 1	9.3 ppm	at 4 feet.	No odors.		
Geology	FILL from 0.0										
Soil Permeability		Loose	Ì			nediate			Tight	:	
,						X					
Total Boring Depth (feet bg)	20		I								
GW Monitoring Well Installed	0.0 to 20 ft. I	oelow surfac	ce – 3" di:	meter 1	0 feet C).10 slot	PVC scree	en, and 10	feet PVC r	iser	
(Depth, Screen, Riser, Slot Size, Casing)	0.0 10 20 11. 1	JOIN JUITAL	5 ui		J .CCI (3100	. 0 30100	, and 10	.ccti vCl	.501.	
Laboratory Name and Report No. (if	Accutest Lab	oratories 1	ah Renort	IDs IR15	500 ID	15520 15	155204	and IR15	630		
samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	Accutest Laboratories, Lab Report IDs JB15509, JB15520, JB15520A, and JB15630.										
Soil Samples Collected - Sample ID(s),	RCH-3-FNV-2	2W/3 (3.0 to	0 3,5 feet	bg) and	RCH-3	-ENV-2W	/5 (5,0 t	o 5.5 fee	t bg) were	colle	cted for
Sample Depth(s) and Sampling Parameter(s)	RCH-3-ENV-2W/3 (3.0 to 3.5 feet bg) and RCH-3-ENV-2W/5 (5.0 to 5.5 feet bg) were collected for VOC, SVOC, PCB, pesticide, herbicide, metals (including hexavalent chromium) and general chemistry analyses. RCH-3-ENV-2W-WC was collected for waste characterization analysis. RCH-3-ENV-2W-WC/4 and RCH-3-ENV-2W-WC/8 collected for TPHC analyses.										
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	RCH-3-ENV-2 hexavalent c						PH, pesti	icide, her	bicide, me	tal (ir	ncluding
Additional Hydro/Geological Test –		² Feet/Day				Feet/Da	v		>10 Feet	/Dav	
, -,						,	•	1		- 1	

Permeability Results (e.g. pump test/slug			
test/packer test)			
Additional Comments/Notes/	Borehole backfilled with grout and	d restored to grade.	
Observations (if applicable)			

Boring Identification: RCH-3-ENV-4

Alternate Boring ID (if applicable) Pipeline Mile Marker ID Location (Latitude/Longitude) – estimated/surveyed Site Address Boring is located along the driveway to Arlington Rail Yard, approximately 230 feet e Avenue in Staten Island, New York (no exact street address is available). Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.) Nearby Hydraulic Features (Distance and Direction from wetlands, etc.) Drilling Date Drilling Company Drilling Company Drilling Method Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test) Boring Observations N/A N/A N/A Boring Observations	ofeet nort	0 feet				
Pipeline Mile Marker ID Location (Latitude/Longitude) – estimated/surveyed Site Address Boring is located along the driveway to Arlington Rail Yard, approximately 230 feet e Avenue in Staten Island, New York (no exact street address is available). Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.) Nearby Hydraulic Features (Distance and Direction from wetlands, etc.) Nearby Hydraulic Features (Distance and Direction from wetlands, etc.) Drilling Date Drilling Company Land Air Water Environmental Services Drilling Method Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test) Boring Purpose (e.g. geotech/ environmental/geoarcheological) 40° 37' 59.47" N/74° 10' 55.26" W – Estimated, surveyed coordinates forthcoming estimated, surveyed coordinates for rocate address is available. Utility easements and other pipelines for Proctor and Gamble are located approxim northwest of the boring. A wetland area surrounds the boring. An unnamed stream is located approxim northwest of the boring. A wetland area surrounds the boring. An unnamed stream is located approxim northwest of the boring. A wetland area surrounds the borin	ofeet nort	0 feet				
Site Address Boring is located along the driveway to Arlington Rail Yard, approximately 230 feet e Avenue in Staten Island, New York (no exact street address is available). Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.) Nearby Hydraulic Features (Distance and Direction from wetlands, etc.) Drilling Date Drilling Company Land Air Water Environmental Services Drilling Method Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test) Boring Purpose (e.g. geotech/ environmental/geoarcheological) Boring is located along the driveway to Arlington Rail Yard, approximately 230 feet e Avenue in Staten Island, New York (no exact street address is available). Utility easements and other pipelines for Proctor and Gamble are located approximately 40 boring. Orithwest of the boring. A wetland area surrounds the boring. An unnamed stream is located approximately 40 boring. Doy/04/2012 Drilling Company Land Air Water Environmental Services N/A Pump test/slug test/packer test) Boring Purpose (e.g. geotech/ environmental/geoarcheological)	ofeet nort	0 feet				
Avenue in Staten Island, New York (no exact street address is available). Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.) Nearby Hydraulic Features (Distance and Direction from wetlands, etc.) Prilling Date Drilling Company Land Air Water Environmental Services Drilling Method Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test) Boring Purpose (e.g. geotech/environmental/geoarcheological) Avenue in Staten Island, New York (no exact street address is available). Utility easements and other pipelines for Proctor and Gamble are located approximately 40 northwest of the boring. A wetland area surrounds the boring. An unnamed stream is located approximately 40 boring. Drilling Company Land Air Water Environmental Services N/A Environmental and Geoarcheological	ofeet nort	0 feet				
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.) Nearby Hydraulic Features (Distance and Direction from wetlands, etc.) Drilling Date Drilling Company Drilling Method Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test) Boring Purpose (e.g. geotech/environmental/geoarcheological) Utility easements and other pipelines for Proctor and Gamble are located approximation for Proctor and Proctor and Gamble are l) feet nort					
Direction from Utilities, Tanks, Properties, etc.) Nearby Hydraulic Features (Distance and Direction from wetlands, etc.) Drilling Date Drilling Company Drilling Method Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test) Boring Purpose (e.g. geotech/environmental/geoarcheological) A wetland area surrounds the boring. An unnamed stream is located approximately 40 boring. Dyological A wetland area surrounds the boring. An unnamed stream is located approximately 40 boring. Dyological A wetland area surrounds the boring. An unnamed stream is located approximately 40 boring. Dyological A wetland area surrounds the boring. An unnamed stream is located approximately 40 boring. Dyological A wetland area surrounds the boring. An unnamed stream is located approximately 40 boring. Dyological A wetland area surrounds the boring. An unnamed stream is located approximately 40 boring. Dyological A wetland area surrounds the boring.) feet nort					
Direction from wetlands, etc.) Drilling Date 09/04/2012 Drilling Company Land Air Water Environmental Services Drilling Method Hand Auger/ 2" Macrocore Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test) Boring Purpose (e.g. geotech/ environmental/geoarcheological) Environmental and Geoarcheological		orth of				
Drilling Company Land Air Water Environmental Services Drilling Method Hand Auger/ 2" Macrocore Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test) Boring Purpose (e.g. geotech/ environmental/geoarcheological) Environmental and Geoarcheological	0.0 >					
Drilling Method Hand Auger/ 2" Macrocore Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test) Boring Purpose (e.g. geotech/ environmental/geoarcheological) Environmental and Geoarcheological	0.0 >					
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test) Boring Purpose (e.g. geotech/ environmental/geoarcheological) Environmental and Geoarcheological	0.0 >					
pump test/slug test/packer test) Boring Purpose (e.g. geotech/ Environmental and Geoarcheological environmental/geoarcheological)	0.0 >					
environmental/geoarcheological)	0.0 >					
Boring Observations	20.0 >					
	:0.0 >					
Depth to saturation (feet bg) - Check 0.0 - 2.0 2.1 - 4.0 4.1 - 6.0 6.1 - 8.0 8.1 - 12.0 12.1 - 16.0 16.1 -		>20				
where applicable X						
PRODUCT						
- Product in Soil – Yes/No No (odor/inches/viscosity, etc.)						
- Product in GW - Check where applicable None Observed Sheen Only Floating Product = <6" Fl	Product =	= >6"				
HISTORIC FILL MATERIAL						
- Composition, other observations – Reworked Material Anthropogenically-Generated	Material	al				
gray brown, fine to medium sand medium sub-angular gravel, trace carbon rod, to 2.0 feet bg; und brown, fine to coarse sand, some for sub-angular gravel, trace silt, brick	Asphalt, from 0.0 to 0.5 feet bg; underlain by gray brown, fine to medium sand, some fine to medium sub-angular gravel, trace silt, concrete, carbon rod, to 2.0 feet bg; underlain by gray brown, fine to coarse sand, some fine to medium sub-angular gravel, trace silt, brick, cinders, ash, glass, concrete, to 17 feet bg.					
- Depth (feet bg) – check more than 0.0 – 2.0 2.1 – 4.0 4.1 – 6.0 6.1 – 8.0 8.1 – 10.0 10.1 – 12.0	>12.1	2.1				
one depth, if applicable – applies to Anthropogenically-Generated X X X X X X X X X X X X X X X X X X X	х	<				
PID/Odors (depth) No PID. No odors						
Geology FILL from 0.0 to 17 feet bg (see above); underlain by PEAT, to at least 20 feet bg.						
Soil Permeability Loose Intermediate Tight	i					
X						
Total Boring Depth (feet bg) 20						
GW Monitoring Well Installed N/A						
(Depth, Screen, Riser, Slot Size, Casing)						
Laboratory Name and Report No. (if Accutest Laboratories, Lab Report IDs JB15520, JB15520A, JB15629, and JB15629A. samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")						
Soil Samples Collected - Sample ID(s), RCH-3-ENV-4/1 (1.0 to 1.5 feet bg) and RCH-3-ENV-4/6 (6.0 to 6.5 feet bg) were collected.						
Sample Depth(s) and Sampling SVOC, PCB, pesticide, herbicide, metals (including hexavalent chromium) and gen analyses. RCH-3-ENV-4-WC was collected for waste characterization analysis. RCH-3-ENV-4-WC was collected for waste characterization analysis. RCH-3-ENV-4-WC/6-and RCH-3-EN	-ENV-4-W					
RCH-3-ENV-4-WC/4, RCH-3-ENV-4-WC/6, and RCH-3-ENV-4-WC/8 collected for TPHC and Sampling Parameter(s) RCH-3-ENV-4-WC/4, RCH-3-ENV-4-WC/6, and RCH-3-ENV-4-WC/8 collected for TPHC and N/A	iiyses.					
Additional Hydro/Geological Test – <10 ⁻² Feet/Day 10 ⁻² – 10 Feet/Day >10 Feet	/Day					
Permeability Results (e.g. pump test/slug test/packer test)						

Borning Summary Table									
Additional Comments/Notes/ Borehole backfilled with grout and restored to grade.									
Observations (if applicable)									

Boring Identification: RCH-4-ENV-21.1

		Boring	Informat	ion							
Alternate Boring ID (if applicable)	N/A										
Pipeline Mile Marker ID	Approximately 85 feet west of 4.83R										
Location (Latitude/Longitude) –	40° 38' 2.620	•			rveved						
estimated/surveyed					,						
Site Address	Boring is loca	ated approx	ximately 830) feet	northea	ast of a b	ridge cr	ossing a	small creek	on \	Vestern
	Avenue in Sta						_	_			
Nearby Subsurface Features (Distance and	Utility easem								d approxim	ately	35 feet
Direction from Utilities, Tanks, Properties, etc.)	southwest of	the boring.									
Nearby Hydraulic Features (Distance and	A wetland a	roa currou	nds the he	ring /	\n unn	amod str	oam is	located	annrovimat	oly 2	15 foot
Direction from wetlands, etc.)	southwest of		iius tile bu	illig. F	AII UIIII	ailleu sti	eaiii is	locateu	аррголипас	ely Z	13 1660
Drilling Date	04/16/2012	201111-61									
Drilling Company		Land Air Water Environmental Services									
Drilling Method											
Additional Hydro/Geological Tests (e.g.	N/A	Hand Auger/ 2" Macrocore/Mud Rotary N/Δ									
pump test/slug test/packer test)	,										
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environment	al									
environmental/geoarchaelogical/		Boring (Observati	ons							
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1 -	- 8 0	8.1 – 12	0 12	.1 – 16.0	16.1 – 2	n n	>20
where applicable	0.0 – 2.0	2.1 - 4.0	X	0.1	0.0	0.1 – 12	.0 12	.1 – 10.0	10.1 - 2	0.0	-20
PRODUCT											
- Product in Soil – Yes/No	No										
(odor/inches/viscosity, etc.)	110										
- Product in GW – Check where	None Obs	served	Shee	n Only	,	Floatin	g Produc	t = <6"	Floating F	rodu	ct = >6"
applicable	X	Je. 104	5.1.00	•,		11000	<u> </u>	i io incumginoual io			
HISTORIC FILL MATERIAL						<u>I</u>					
- Composition, other observations –	Reworked Material Anthropogenically-Generated Material									rial	
						to fine, angular to rounded gravel, little sil cobbles, concrete, brick, asphalt, meta processed wood, glass, and plastic, trace clay to 4.0 ft bg, underlain by dark gray to blac medium to fine sand, little medium to fine, sul angular to rounded gravel, little silt, coacinders, and slag from 4.0 to 6.0 ft bg.					
											12.1
 Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated 	0.0 – 2.0 X	2.1 – 4.0 X	0 4.1 - X		6.1	8.1 – 10		0.0 1	0.1 – 12.0	1-12.0 >1	
Material only											
PID/Odors (depth)	Highest PID –										
Geology	FILL (see abounderlain by 22 ft bg, under from 22 to 25	brown to g erlain by Re	ray, mediun ed brown, fir	n to fin ne SAN	e SAND	, little sil	t, trace c	lay and	root materia	al fror	n 8.0 to
Soil Permeability		Loose		Intermediate X				Tight			
Total Boring Depth (feet bg)	27		Į.					<u> </u>			
GW Monitoring Well Installed	N/A										
(Depth, Screen, Riser, Slot Size, Casing)											
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	Accutest Labo	oratories, La	ab Report ID	JB427	8, and J	B4278T.					
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	RCH-4-ENV-2 VOC, SVOC, analyses. RCH 4.5 ft bg), an analyses. RC SVOC, PCB, p	PCB, pestic 1-4-ENV-21. d RCH-4-EN H-4-ENV-19	cide, TPH, n .1-WC, RCH- IV-21.1-WC/)+20W+21-V	netals 4-ENV- 8 (8.0 °	(includi 21.1-W to 8.5 f MP was	ing hexav C/2 (2.0 t t bg) wer s collecte	valent ch to 2.5 ft k e collecto d for mo	romium og), RCH ed for TF etals TC) and gene 4-ENV-21.1 PH and gene LP, RCRA ch	ral ch -WC/4 ral ch naract	emistry 4 (4.0 to emistry eristics,

	2011118	,	
GW Samples Collected - Sample ID(s) and	N/A		
Sampling Parameter(s)			
Additional Hydro/Geological Test –	<10 ⁻² Feet/Day	10 ⁻² – 10 Feet/Day	>10 Feet/Day
Permeability Results (e.g. pump test/slug			
test/packer test)			
Additional Comments/Notes/	Borehole grouted in accordance	e with N.J.A.C. 7:9D-3.1.	
Observations (if applicable)			

		Boring I	nformat	ion								
Alternate Boring ID (if applicable)	N/A											
Pipeline Mile Marker ID	4.78R											
Location (Latitude/Longitude) –	40°37′48.52"	N / 74°11′06	.06"W – es	stimated	d (no su	ırvev data	collected	d)				
estimated/surveyed		,			. (,		-,				
Site Address	The boring is	located app	roximatel	v 300 fe	et sou	theast of	the inter	section	of Western	Avei	nue and	
	Goethals Roa			•								
Nearby Subsurface Features (Distance and	The boring i									ity lii	ne near	
Direction from Utilities, Tanks, Properties,	Western Ave			,						-,		
etc.)												
Nearby Hydraulic Features (Distance and	This boring is	located app	roximately	475 fee	et north	east of O	ld Place C	reek.				
Direction from wetlands, piping, etc.)			·									
Drilling Date	3/7/2011	/7/2011										
Drilling Company	N/A	I/A										
Drilling Method	Hand Auger											
Additional Hydro/Geological Tests (e.g.	N/A											
pump test/slug test/packer test)	,											
Boring Purpose (e.g. geotech/	Geoarcheolo	gical										
environmental/geoarchaelogical)		J										
	•	Boring O	bservat	ions								
Depth to saturation (feet bg) – Check	0.0 - 2.0	2.1 - 4.0	4.1 – 6.0	6.1 -	8.0	8.1 – 12.	0 12.1	1 – 16.0	16.1 – 2	0.0	>20	
where applicable		<u> </u>		Wate	er not e	ncounter	ed		•			
PRODUCT	1											
- Product in Soil – Yes/No	No											
(odor/inches/viscosity, etc.)												
- Product in GW – Check where	None Obs	served	She	en Only		Floating	g Product	= <6"	Floating P	Product = >6"		
applicable	Х			•		,	<u>, </u>					
HISTORIC FILL MATERIAL	1					I			1			
- Composition, other observations –		Reworked	Material			An	thropoge	nically	-Generated	Mate	rial	
complete, as applicable		N/A	A				N/A					
- Depth (feet bg) – check more than	0.0 - 2.0	2.1 – 4.0		- 6.0	6.1 -	- 8.0	8.1 – 10.		0.1 – 12.0	>	12.1	
one depth, if applicable – applies to							0.12 10.0					
Anthropogenically-Generated												
Material only												
PID/Odors (depth)	N/D		•						•			
Geology	0 to 1 foot bg	g - Light brow	n medium	SAND,	some S	ilt, some	organics (roots),	moist.			
Soil Permeability	Loose Intermediate							Tight				
	X											
•)	Κ						
Total Boring Depth (feet bg)	1)	K						
•	1 N/A)	K						
Total Boring Depth (feet bg) GW Monitoring Well Installed)	Κ						
Total Boring Depth (feet bg)	N/A	oratories, Lal	b Report JA	\69812)	Κ						
Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing)		oratories, Lal	b Report J <i>A</i>	A69812)	K						
Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if	N/A	oratories, Lal	b Report JA	A69812)	(
Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest	N/A		-			(
Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	N/A Accutest Labo		-			X						
Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected	N/A Accutest Labo		-			X .						
Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected (Parameters, Analytical Results Summary)	N/A Accutest Labo SI-1-1 (0.5 to	1.0 foot bg)	-	ed for F	PCBs.							
Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected (Parameters, Analytical Results Summary) GW Samples Collected (Parameters, Analytical Results Summary) Additional Hydro/Geological Test —	N/A Accutest Labo SI-1-1 (0.5 to		-	ed for F	PCBs.	Feet/Day			>10 Feet/	['] Day		
Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected (Parameters, Analytical Results Summary) GW Samples Collected (Parameters, Analytical Results Summary)	N/A Accutest Labo SI-1-1 (0.5 to	1.0 foot bg)	-	ed for F	PCBs.				>10 Feet/	Day		
Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected (Parameters, Analytical Results Summary) GW Samples Collected (Parameters, Analytical Results Summary) Additional Hydro/Geological Test —	N/A Accutest Labo SI-1-1 (0.5 to	1.0 foot bg)	-	ed for F	PCBs.				>10 Feet/	'Day		
Total Boring Depth (feet bg) GW Monitoring Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected (Parameters, Analytical Results Summary) GW Samples Collected (Parameters, Analytical Results Summary) Additional Hydro/Geological Test — Permeability Results (e.g. pump test/slug	N/A Accutest Labo SI-1-1 (0.5 to	1.0 foot bg)	-	ed for F	PCBs.				>10 Feet/	['] Day		

Boring Identification: RCH-6-ARC-MT-1

		Boring	Informat	ion								
Alternate Bering ID (if applicable)	N/A											
Alternate Boring ID (if applicable)	Approximately 40 feet west of 5.51R											
Pipeline Mile Marker ID Location (Latitude/Longitude) –	Waiting for		/est 01 5.51K									
estimated/surveyed	waiting for	<mark>GC</mark>										
Site Address	Boring is lo	cated approx	vimately 1 C	On feet	north	west of	the int	arcaction	of Richmon	l Torr	ace and	
Site Address	_	enue in State								1 1611	ace and	
Nearby Subsurface Features (Distance and		ound water p										
Direction from Utilities, Tanks, Properties,	7	, a.i.a. 1, a.c., p	7.pc 10 10 00 00 00	а арр. с		.,	21 30 41	0	or p.c.			
etc.)												
Nearby Hydraulic Features (Distance and	The Newark	Bay is locate	ed 790 feet i	orthwe	st of t	he test p	it. A w	etland area	surrounds	the te	st pit.	
Direction from wetlands, etc.)												
Drilling Date	3/14/12	3/14/12										
Drilling Company	The Napp-G	recco Comp	any									
Drilling Method	Excavator											
Additional Hydro/Geological Tests (e.g.	N/A											
pump test/slug test/packer test)												
Boring Purpose (e.g. geotech/	Geoarchaeld	ogical										
environmental/geoarchaelogical)												
		Boring (Observati	ons								
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1 –	8.0	8.1 – 1	2.0	12.1 – 16.	0 16.1 – 2	0.0	>20	
where applicable			Х									
PRODUCT								- 	- 			
 Product in Soil – Yes/No 	No											
(odor/inches/viscosity, etc.)												
 Product in GW – Check where 	None Ol	served	Shee	Sheen Only Floating Product					ct = <6" Floating Product = >6"			
applicable	X											
HISTORIC FILL MATERIAL												
 Composition, other observations – 		Reworke	d Material			Α	nthrop	ogenically	-Generated	Mate	rial	
complete, as applicable		N	I/A			<u> </u>		1	N/A			
 Depth (feet bg) – check more than 	0.0 – 2.0	2.1 – 4.	0 4.1 -	6.0	6.1 – 8.0 8.1 -		8.1 -	- 10.0	10.1 – 12.0	>	12.1	
one depth, if applicable – applies to												
Anthropogenically-Generated												
Material only												
PID/Odors (depth)	N/D											
Geology		soil; some ro										
		trace fine to coarse, loos										
					_	_						
	fine, sub-an	y reddish-br										
		coarse sand			0.0 11	ug, laye	i oi gi	ay, illeului	II SUIT CLAT,	trace	Siit aiiu	
Soil Permeability	incarain to	Loose	ас арренноз		Intern	nediate			Tight			
						X				-		
Total Boring Depth (feet bg)	8.0											
GW Temporary Well Installed	N/A											
(Depth, Screen, Riser, Slot Size, Casing)	' '											
Laboratory Name and Report No. (if	Accutest Lal	boratories, L	ab Report IC	JB1690	and JI	B1690R.						
samples collected) (e.g. "Accutest												
Laboratories, Lab Report ID JA65410")												
Soil Samples Collected - Sample ID(s),	RCH-6-ARC/	MT-1 WC wa	as collected	or VOC	, SVOC	, PCB, TI	H, me	tals pestici	de/herbicide	e, and	general	
Sample Depth(s) and Sampling	chemistry a							•			Ü	
Parameter(s)												
GW Samples Collected - Sample ID(s) and	N/A											
Sampling Parameter(s)												
Additional Hydro/Geological Test –	<10	⁻² Feet/Day		10	⁻² – 10	Feet/Da	ıy		>10 Feet,	/Day		
Permeability Results (e.g. pump test/slug											_	
								I				
test/packer test)												
test/packer test) Additional Comments/Notes/ Observations (if applicable)	Location wa	ıs a test pit u	sed for subs	urface e	valuat	ion.						

Boring Identification: RCH-6-ARC-MT-2

		Boring In	formati	ion								
Alternate Boring ID (if applicable)	N/A											
Pipeline Mile Marker ID	Approximate	ly 40 feet wes	t of 5.52R									
Location (Latitude/Longitude) –	Waiting for G	i <mark>E</mark>										
estimated/surveyed												
Site Address		ated approxinue in Staten I								nd Terr	ace and	
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)	An undergrou	und water pip	e is locate	d appro	ximate	ely 125 fe	eet sout	h of the	test pit.			
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	The Newark I	Bay is located	705 feet n	orthwe	st of tl	he test p	it. A we	tland ar	ea surrounds	the te	st pit.	
Drilling Date	3/13/12											
Drilling Company		ecco Compan	У									
Drilling Method	Excavator	·	<u>, </u>								-	
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A											
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Geoarchaelog	gical										
		Boring Ob	servati	ons								
Depth to saturation (feet bg) – Check where applicable	0.0 – 2.0	2.1 – 4.0 X	4.1 – 6.0	6.1 –	8.0	8.1 – 12	2.0 1	12.1 – 16	5.0 16.1 -	20.0	>20	
PRODUCT												
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No											
- Product in GW – Check where applicable	None Observed Sheen Only X					Floatir	ng Prod	uct = <6	" Floating	Produ	ict = >6"	
HISTORIC FILL MATERIAL		II							L		-	
- Composition, other observations –	Reworked Material						nthropo	genical	ly-Generate	d Mate	rial	
complete, as applicable		N/A				mediu angula	m to co r gravel	sh and reddish-brown silt; some coarse sand and fine to coarse, subvel, trace roots, red brick, scrap me ottles to 5.0 ft bg,				
- Depth (feet bg) – check more than	0.0 - 2.0	2.1 – 4.0	4.1 -	6.0	6.1	- 8.0	8.1 –	10.0	10.1 – 12.0	;	>12.1	
one depth, if applicable – applies to Anthropogenically-Generated Material only	х	х										
PID/Odors (depth)	N/D	I				I I				I		
Geology	Fill to 5.0 ft b 5.0 to 5.5 ft	g (see above) bg, underlain soft clay from	by PEAT	from 5.	5 to 6					_		
Soil Permeability	-	Loose	Ė			nediate			Tigl	nt		
•						X						
Total Boring Depth (feet bg)	8.5		L.								-	
GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing)	N/A											
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	Accutest Labo	oratories, Lab	Report ID	JB1510	and Ji	31510R.						
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling	ARC/MT(2+3)		was collec	ted for '	VOC T	CLP, SV	OC TCLF	, metal	s TCLP, pest	icide/h	erbicide	
Parameter(s)	TCLP, RCRA c	haracteristics,	, SVOC, me	etals, PC	Bs, TP	H, pestic	ide/her	bicide, a	and general o	chemis	try.	
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A										_	
Additional Hydro/Geological Test –	<10 ⁻²	Feet/Day		10	² – 10	Feet/Da	у		>10 Fee	t/Day		
Permeability Results (e.g. pump test/slug test/packer test)		•								•		
Additional Comments/Notes/	Location was	a test pit use	d for subsi	urface e	valuat	ion.		•				

Boring Identification: RCH-6-ARC-MT-3

		Boring	Informat	ion							
Alternate Boring ID (if applicable)	N/A										
Pipeline Mile Marker ID	Approximate	ly 30 feet w	est of 5.54F								
Location (Latitude/Longitude) –	Waiting for G	<mark>SE</mark>									
estimated/surveyed											
Site Address	Boring is loc Holland Aver									d Terr	ace and
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)	An undergro										
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	The Newark	Bay is locate	ed 630 feet i	northwe	est of th	ne test pit	. A wetl	and are	a surrounds	the te	st pit.
Drilling Date	3/12/12										
Drilling Company	The Napp-Gr	ecco Compa	any								
Drilling Method	Excavator										
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A										
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Geoarchaelo	gical									
		Boring (Observati	ions							
Depth to saturation (feet bg) – Check where applicable	0.0 – 2.0	2.1 – 4.0 X	4.1 – 6.0	6.1 -	- 8.0	8.1 – 12	0 12	2.1 – 16.	0 16.1 – 2	20.0	>20
PRODUCT		^									
- Product in Soil – Yes/No (odor/inches/viscosity, etc.)	No										
- Product in GW – Check where applicable	None Observed Sheen Only X						g Produ	ct = <6"	Floating	Produ	ct = >6"
HISTORIC FILL MATERIAL	, , , , , , , , , , , , , , , , , , ,										
- Composition, other observations –		Reworker	d Material			Δn	throno	zenically	/-Generated	Mate	rial
complete, as applicable	Brownish-red silt and coarse sand; some roots, trace fine, sub-angular gravel and medium soft clay to 1.0 ft bg, Black coal ash and dark brown, coal ash and dark brown silt; lift coarse, loose sand, trace red brick miscellaneous debris (ceramics bottles, scrap metal, wood tin planks); strong odor from 2.5 underlain by dark brown, medium and silt; some black coal ash, little sub-angular gravel, trace red brick miscellaneous debris (same as							d wooden pbg, underlain bwn silt; littl ce red brick, (ceramics, wood timb from 2.5 ton, medium tal ash, little fice red brick, (same as a	olanks on by lipe medicance concriplate pers, on 5.0 on coal ine to concri	; strong ght gray dium to rete and s, glass wooden of t bg, rse sand ocoarse, rete and	
- Depth (feet bg) – check more than	0.0 – 2.0	2.1 – 4.	0 4.1-	6.0	6.1 -	odor fro	8.1 – 1		10.1 – 12.0	,	12.1
one depth, if applicable – applies to Anthropogenically-Generated Material only	X	X	5 4.1		0.1	0.0	0.1 1	0.0	10:1 12:0		12.1
PID/Odors (depth)	Highest PID -	- 1.8 ppm at	5.5 ft bg. S	rong o	dors fro	m 1.0 to	6.0 ft b	ζ.		•	
Geology	Fill to 6.0 ft b								5 ft bg.		
					Interm				Tight	;	
Soil Permeability		Loose									
		Loose			/	•					
Total Boring Depth (feet bg)	8.5	Loose			/						
Total Boring Depth (feet bg) GW Temporary Well Installed		Loose			/						
Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	8.5 N/A Accutest Lab	oratories, L	·		O and JE	31510R.		1			
Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest	8.5 N/A	oratories, La MT-3 WC w was collecte	vas collected	f for TI	O and JE PH and	general CLP, meta	ls TCLF	, pestic	ide/herbicid		

Sampling Parameter(s)			
Additional Hydro/Geological Test –	<10 ⁻² Feet/Day	10 ⁻² – 10 Feet/Day	>10 Feet/Day
Permeability Results (e.g. pump test/slug			
test/packer test)			
Additional Comments/Notes/	Location was a test pit used for si	ubsurface evaluation.	
Observations (if applicable)			

Boring Identification: RCH-6-ARC-MT-5

		Boring	Informat	ion								
Alternate Boring ID (if applicable)	N/A	<u>=</u>										
Pipeline Mile Marker ID	Approximate	ely 25 feet w	est of 5.57F									
Location (Latitude/Longitude) –	Waiting for 0											
estimated/surveyed												
Site Address	Boring is loc Holland Ave									Richmond	l Terra	ace and
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)	An undergro									pit.		
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	The Newark	Bay is locate	ed 580 feet	northw	est of t	he test p	it. A w	etland ar	ea su	urrounds t	he te	st pit.
Drilling Date	3/15/12											
Drilling Company	The Napp-G	recco Compa	any									
Drilling Method	Excavator											
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A											
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Geoarchaeld	gical										
		Boring C	Observat	ions								
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0		- 8.0	8.1 – 1	2.0	12.1 – 1	6.0	16.1 – 2	0.0	>20
where applicable		Χ										
PRODUCT	1											
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No, but shee	en on ground	l water fron	1 2.5 to	4.0 ft l	og.						
 Product in GW – Check where applicable 	None Ob	served	She	en Only X	<u>'</u>	Floati	ng Pro	duct = <6	3"	Floating F	Produ	ct = >6"
HISTORIC FILL MATERIAL			<u> </u>			· · · · · · · · · · · · · · · · · · ·						
- Composition, other observations –		Reworked	d Material			Α	nthro	ogenica	lv-G	enerated	Mate	rial
Double (fact by) shock mare than	00.30		2 41		6.1	sub-ar black of some trace I sheen 2.5 to to coa angula glass b to at le	ngular coal as fine to belgiur on ground the firse, longer oottles east 8.	gravel thand me coarse, so blocks, ound wat bg, unde cose sandel; little, scrap months of the first of the cose series.	o 2.5 dium sub-a red er; n rlain d an blace	ots and fire to coarse of the together to coarse of the together t	under e, loos avel, li glass g on se gray, r coars sh, tra nics f	rlain by se sand; ittle silt, bottles; oil from medium se, sub- ace silt, rom 4.0
 Depth (feet bg) – check more than one depth, if applicable – applies to 	0.0 – 2.0	2.1 – 4.0	0 4.1 -	- 6.0	6.1	-8.0	8.1 -	- 10.0	10.	1 – 12.0	>	12.1
Anthropogenically-Generated Material only	х	Х	,	(х						
PID/Odors (depth)	N/D	1	1		l						<u> </u>	
Geology	Fill to at leas	t 8.0 ft hø (s	ee ahove)									
Soil Permeability	· to at icas	Loose			Intern	nediate				Tight		
						X				. 15.11		
Total Boring Depth (feet bg)	8.0											
GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing)	N/A											
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	Accutest Lab		-									
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	RCH-6-ARC/l pesticide/he						racteri	stics, S\	oc,	metals,	PCBs	s, TPH,
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A											

Additional Hydro/Geological Test –	<10 ⁻² Feet/Day	10 ⁻² – 10 Feet/Day	>10 Feet/Day
Permeability Results (e.g. pump test/slug			
test/packer test)			
Additional Comments/Notes/	Location was a test pit used for su	ubsurface evaluation.	
Observations (if applicable)			

Boring Identification: RCH-6-ARC-MT-7

		Boring	Informa	tion								
Alternate Boring ID (if applicable)	N/A											
Pipeline Mile Marker ID	Approximate	ly 25 feet w	est of 5.6R									
Location (Latitude/Longitude) –	Waiting for G											
estimated/surveyed												
Site Address	Boring is loc		•							chmond	Terra	ace and
	Holland Aven											
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)	An undergrou	und water p	ipe is locat	ed appr	oximate	ely 320 fe	et sou	th of the	e test pi	it.		
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	The Newark I	Bay is locate	ed 575 feet	northea	ast of th	ne test pit						
Drilling Date	3/09/12											
Drilling Company	The Napp-Gro	ecco Compa	any									
Drilling Method	Excavator											
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A											
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Geoarchaelog	gical										
		Boring C	bserva	tions								
Depth to saturation (feet bg) – Check where applicable	0.0 – 2.0	2.1 – 4.0 X	4.1 – 6.0		- 8.0	8.1 – 12	2.0	12.1 – 1	6.0 1	16.1 – 2	0.0	>20
PRODUCT]	۸										
- Product in Soil – Yes/No (odor/inches/viscosity, etc.)	No											
Product in GW – Check where applicable	None Observed Sheen Only Floating Produ						luct = <6	ct = <6" Floating Product = >				
HISTORIC FILL MATERIAL												
- Composition, other observations –		Reworked	d Material			IA.	nthrop	ogenical	lv-Gen	erated I	Mate	rial
	Asphalt and concrete pad to 0.5 ft bg. Brown silt and fine to coarse sand coarse, sub-angular gravel, trace brick and miscellaneous debris (all metal, glass bottles, electrical configuration glass, plastic sheeting, wooden both bg, underlain by black coal ash; coarse, sub-angular gravel, little brought to coarse sand, trace red brick, miscellaneous debris; slight observed on ground water from							oris (alu rical co den boa I ash; s ittle bro brick, c ight o	minur nduit, rds) t some own, r concre dor;	rebar, o 3.0 ft fine to medium ete and sheen		
- Depth (feet bg) – check more than	0.0 - 2.0	2.1 – 4.0	4.1	- 6.0	6.1	- 8.0	8.1 -		10.1 -		>	12.1
one depth, if applicable – applies to Anthropogenically-Generated Material only	х	х		х		х						
PID/Odors (depth)	Slight odor fr	om 3.0 to 8	.0 ft bg.		•							
Geology	Fill to at least											
Soil Permeability	Loose Intermediate Tight											
Total Boring Depth (feet bg)	8.0		J									
GW Temporary Well Installed	N/A											
(Depth, Screen, Riser, Slot Size, Casing)	<u> </u>											
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	Accutest Labo					•						
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	RCH-6-ARC/N ARC/MT(7+9) TCLP, RCRA analyses.	COMP WO	C was colle	cted fo	r VOC 1	TCLP, SV	OC TCL	P, metal	ls TCLP,	, pestici	ide/h	erbicide
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A										_	

Additional Hydro/Geological Test –	<10 ⁻² Feet/Day	10 ⁻² – 10 Feet/Day	>10 Feet/Day
Permeability Results (e.g. pump test/slug			
test/packer test)			
Additional Comments/Notes/	Location was a test pit used for su	ubsurface evaluation.	
Observations (if applicable)			

Boring Identification: RCH-MM-ARC-7

		Boring	Informat	ion						
Alternate Boring ID (if applicable)	N/A									
Pipeline Mile Marker ID	PENDING w	ith Mariner's	Marsh rero	<mark>ute</mark>						
Location (Latitude/Longitude) –	40° 38' 21.8	3696" N / 74°	10' 40.2559	" W – Surv	eyed					
estimated/surveyed					•					
Site Address	Boring is lo	cated in Ma	riner's Mar	sh, approx	imate	ely 98 feet	southeast	of (Omaha Stree	t in State
		York (no exa								
Nearby Subsurface Features (Distance and	A concrete	wall is locate	d approxima	itely 185 fe	et ea	ast of borin	g.			
Direction from Utilities, Tanks, Properties,										
etc.)										
Nearby Hydraulic Features (Distance and	Newark Bay	is located a	pproximatel	/ 1,150 fee	t nor	th of boring	g.			
Direction from wetlands, etc.)										
Drilling Date	11/29/2011	[
Drilling Company	Land Air Wa	ater Environr	nental Servi	ces						
Drilling Method	Hand Auger	/ Macrocore	/2"/ Direct	Push						
Additional Hydro/Geological Tests (e.g.	N/A									
pump test/slug test/packer test)										
Boring Purpose (e.g. geotech/	Geoarchael	ogical								
environmental/geoarchaelogical)										
		Boring (Observat	ons						
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1 – 8.0)	8.1 – 12.0	12.1 – 1	6.0	16.1 – 20.	0 >20
where applicable	0.0 2.0		0.0	0.2 0.0		0.1 11.0			10:1 20:	
PRODUCT	1									
- Product in Soil – Yes/No	No									
(odor/inches/viscosity, etc.)	140									
- Product in GW – Check where	None O	bserved	She	en Only		Floating P	roduct = <	5"	Floating Pro	duct = >6
applicable	X							_	riouting riv	
HISTORIC FILL MATERIAL	,		1							
- Composition, other observations –		Reworke	d Material			Anthi	ropogenica	llv-G	enerated M	aterial
complete, as applicable			/A				- -	N/		
- Depth (feet bg) – check more than	0.0 - 2.0			6.0	6.1 –	8.0 8.	1 – 10.0		.1 – 12.0	>12.1
one depth, if applicable – applies to									_	
Anthropogenically-Generated										
Material only										
PID/Odors (depth)	N/D		•	•		•				
Geology	Red brown	SILT and CLA	Y, trace fine	to coarse g	grave	el, organic r	oots from g	grade	e to at least 6	.0 feet bg
Soil Permeability		Loose				ediate			Tight	
·					Х					
Total Boring Depth (feet bg)	20						•			
GW Temporary Well Installed	N/A									
(Depth, Screen, Riser, Slot Size, Casing)	,									
Laboratory Name and Report No. (if	N/A									
samples collected) (e.g. "Accutest										
Laboratories, Lab Report ID JA65410")										
Soil Samples Collected - Sample ID(s),	N/A									
Sample Depth(s) and Sampling										
Parameter(s)										
GW Samples Collected - Sample ID(s) and	N/A									
Sampling Parameter(s)										
Additional Hydro/Geological Test –	<10	D ⁻² Feet/Day		10 ⁻² -	10 F	eet/Day			>10 Feet/D	ay
Permeability Results (e.g. pump test/slug						-				
test/packer test)										
Additional Comments/Notes/		y recorded f								
Observations (if applicable)	investigatio	n by archae	ologist (GRA). Borehol	e bac	ckfilled witl	n soil cutti	ngs a	and restored	to natur
	grade.									

PROJECT NAME:

Environmental Corporation SOIL BORING LOG

BORING NUMBER

RCH-6-ENV-3

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

Spectra NJ-NY Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water

Environmental Services

SAMPLER TYPE/DIA.: Hand Auger/

Macrocore/2" BORING METHOD: Direct Push

DEPTH TO WATER: 4.0 feet

TOTAL DEPTH DRILLED: 15 feet

DATE DRILLED: 07/20/11

DRILLER: K. McGourty

LOGGED BY: B. Chaky

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
_ 1 _						0 to 3.0' - FILL: Brown, medium to fine sand; some coarse to fine gravel, little silt, trace metal/brick fragments. Sub-angular to sub-rounded, dry, loose. Concrete fragments at 1'. Coal fragments at 2'.
_ 2 _		Hand				
_ 3 _		Cleared	ND			3.0 to 5.0' - FILL: Dark brown, medium to fine sand; some coarse to fine gravel, little gray/brown clay, trace silt, trace wood material,
_ 4 _				RCH6ENV3/4		trace cinders, trace coal fragments, trace ceramic fragments. Subrounded, loose, wet at 4'.
_ 5 _				KOHOLINV3/4		
6						
_				RCH6ENV3/6		5.0 to 11' -FILL: Dark gray to black, medium to fine sand; some medium to fine, sub-rounded gravel, trace silt, trace coal/cinders.
7 _						Wet, loose. Shell fragments and wood material at 11'.
_ 8 _		21	ND			
9						
_ 10 _			ND			
_ 11 _					БТ	ALL AFE DE DEAT BUT THE STATE OF THE STATE O
12			ND		ואן	11 to 15' - Brown PEAT; little silt, trace roots. Moist, loose.
		27				
_ 13 _			50.9			
_ 14 _			168			
15			20.7			End of Boring @ 15'

Boring Identification: RCH-MM-ARC-1

		Boring	Informat	ion									
Alternate Boring ID (if applicable)	N/A	<u>_</u>											
Pipeline Mile Marker ID		ith Mariner's	Marsh rero	ute									
Location (Latitude/Longitude) – estimated/surveyed		.421" N / 74°			Surveye	ed							
Site Address		ocated in Meet and Cathe											
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)		nd utility eas											
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	A wetland a	rea is locate	d approxima	tely 12	5 feet i	north of	boring.						
Drilling Date	11/30/2011												
Drilling Company	Land Air Wa	ter Environr	nental Servi	es									
Drilling Method	Hand Auger	/ Macrocore	:/2"										
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A	-											
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Geoarchael	ogical											
		Boring (Observati	ons									
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0		- 8.0	8.1 – 1	2.0	12.1 – 10	6.0	16.1 – 20	0.0	>20	
where applicable	Х												
PRODUCT													
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No												
- Product in GW – Check where	None O	bserved	Shee	n Only	,	Floati	ng Prod	luct = <6	"	Floating P	rodu	ct = >6"	
applicable	>	<											
HISTORIC FILL MATERIAL						•							
 Composition, other observations – complete, as applicable 			d Material /A			А	nthrop	ropogenically-Generated Material N/A					
 Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only 	0.0 - 2.0	2.1 – 4.	0 4.1 -	6.0	6.1	- 8.0	8.1 -	10.0	10.	1 – 12.0	>	·12.1	
PID/Odors (depth)	N/D				1					Į.			
Geology	Brown to lig	ght brown, fi in by brown l1 to 14.5 ft	, fine to coa	rse SAI	ND fror	n 6.0 to	11 ft b	g, under	lain	by red bro			
Soil Permeability		Loose			Intern	nediate				Tight			
Total Basing Double (fact ha)	20					Х							
Total Boring Depth (feet bg)	20												
GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing)	N/A												
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	N/A												
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	N/A												
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A												
Additional Hydro/Geological Test – Permeability Results (e.g. pump test/slug test/packer test)	<10	⁻² Feet/Day		10	0 ⁻² – 10	Feet/Da	ay			>10 Feet/	Day		
Additional Comments/Notes/ Observations (if applicable)	Borehole ba	ackfilled with	soil cuttings	and re	estored	to grade	е.						

Boring Identification: RCH-MM-ARC-5

		Boring	Informat	ion									
Alternate Boring ID (if applicable)	N/A												
Pipeline Mile Marker ID	PENDING w	ith Mariner's	s Marsh rero	ute									
Location (Latitude/Longitude) – estimated/surveyed)615" N / 74°			Surveye	ed							
Site Address		cated in Ma York (no exa					feet s	outheast	of	Omaha Str	eet ii	າ Staten	
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)		wall is locate					t of b	oring.					
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	Newark Bay	is located a	pproximatel	/ 1,550	feet no	orth of b	oring.						
Drilling Date	11/30/2011	L											
Drilling Company	Land Air Wa	ater Environr	nental Servi	es									
Drilling Method	Hand Auger	/ Macrocore	/2"/ Direct	Push									
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A												
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Geoarchael	ogical											
		Boring (Observati	ons									
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0		- 8.0	8.1 – 1	2.0	12.1 – 1	6.0	16.1 – 2	0.0	>20	
where applicable		Х											
PRODUCT					<u> </u>								
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No												
- Product in GW – Check where	None O	bserved	Shee	n Only	,	Floati	ng Pro	duct = <	6"	Floating P	rodu	ct = >6"	
applicable	,	Χ										-	
HISTORIC FILL MATERIAL						1							
 Composition, other observations – complete, as applicable 			d Material			А	nthro	pogenica	genically-Generated Material N/A				
- Depth (feet bg) – check more than	0.0 - 2.0	2.1 – 4.	0 4.1-	6.0	6.1	- 8.0	8.1	- 10.0			;	>12.1	
one depth, if applicable – applies to Anthropogenically-Generated Material only													
PID/Odors (depth)	N/D		ı		l.	I							
Geology	Brown SILT	and fine to								, underlain	by b	rown to	
Soil Permeability		Loose				nediate				Tight			
·						Х							
Total Boring Depth (feet bg)	20		l .					ı					
GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing)	N/A												
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	N/A												
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	N/A												
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A												
Additional Hydro/Geological Test – Permeability Results (e.g. pump test/slug test/packer test)	<10) ⁻² Feet/Day		10	0 ⁻² – 10	Feet/Da	ıy			>10 Feet/	'Day		
Additional Comments/Notes/ Observations (if applicable)	_	y recorded f n by archae											

Boring Identification: RCH-MM-ENV-8

		Boring	Infor	mation									
Alternate Boring ID (if applicable)	N/A												
Pipeline Mile Marker ID	PENDING wit	h Mariner's	s Mars	h reroute									
Location (Latitude/Longitude) –	40° 38' 20.30				Surveye	d							
estimated/surveyed		·			•								
Site Address	Boring is local Island, New Y						feet southeas	st of Om	aha Str	eet in Staten			
Nearby Subsurface Features (Distance and	A concrete w						ct of boring						
Direction from Utilities, Tanks, Properties, etc.)	A concrete w	all is locate	u appi	Oximately 24	is leet i	iortilea	st of bornig.						
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	Newark Bay i	s located a	pproxii	mately 1,325	feet no	rth of b	oring.						
Drilling Date	11/30/2011												
Drilling Company	Land Air Wat	er Environn	nental	Services									
Drilling Method	Hand Auger/												
Additional Hydro/Geological Tests (e.g.	N/A	TVIGCTOCOTC	. / 2 / 2	711 CCC 1 U311									
pump test/slug test/packer test)	14/7												
Boring Purpose (e.g. geotech/	Environment	al											
environmental/geoarchaelogical)		Boring (Ohse	rvations									
Double to activistic of fact belong the state	00 30		_		0.0	01 1	20 424	160 -	164 ^	0.0 5.20			
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 -		- 8.0	8.1 – 1		16.0 1	16.1 – 2	0.0 >20			
where applicable				wat	er Not E	ncount	erea						
PRODUCT	I Nie												
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No												
- Product in GW – Check where	None Obs	served		Sheen Only	/	Floati	ing Product = <	<6" Flo	oating I	Product = >6"			
applicable	X												
HISTORIC FILL MATERIAL													
 Composition, other observations – 		Reworke	d Mate	erial		-	Anthropogenic	ally-Gene	erated	Material			
complete, as applicable		N	I/A			Trace cinder block pieces from grade to 1.0 for bg. Wood and plastic fill from 1.0 to 3.0 feet bg. Trace wood fill material from 4.0 to 6.0 feet bg.							
- Depth (feet bg) – check more than	0.0 – 2.0	2.1 – 4.	0	4.1 – 6.0	6.1	- 8.0	8.1 – 10.0	10.1 -		>12.1			
one depth, if applicable – applies to Anthropogenically-Generated Material only	X	X		X	0.1	0.0	0.1 10.0	10.1	12.0	712.1			
PID/Odors (depth)	Max PID = 10	6 nnm from	m 2 0 t	o 2 5 foot ha	No od	or		1					
Geology		ve) from gr	ade to	6.0 feet bg,			ed brown SILT;	some cla	ay, trac	e to little fine			
Soil Permeability		Loose		1	Interm	ediate			Tight				
						(
Total Boring Depth (feet bg)	15												
GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing)	N/A												
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	Accutest Labo	oratories, L	ab Rep	oort ID JA932	46								
Soil Samples Collected - Sample ID(s),	BCH-VVVV EVI	//-8/3 /3 N +	to 3 5	feet hal and	RCH M	M-ENIV	-8/5 (5.0 to 5.	5 feet ha	a) word	collected for			
Sample Depth(s) and Sampling Parameter(s)							eral chemistry	_		conected 101			
GW Samples Collected - Sample ID(s) and	N/A												
Sampling Parameter(s)													
Additional Hydro/Geological Test –	<10-2	Feet/Day		10	0 ⁻² – 10	Feet/Da	ау	>1	0 Feet	/Day			
Permeability Results (e.g. pump test/slug				_									
test/packer test)													

		Boring	Informa	tion									
Alternate Boring ID (if applicable)	N/A												
Pipeline Mile Marker ID	Approximate	lv 845 feet	south of 3.0	59R									
Location (Latitude/Longitude) –	40° 37' 18.17				urveved	<u> </u>							
estimated/surveyed		·			•								
Site Address	Boring is loca							of Wate	r Street and	d 7 th S	Street in		
	Staten Island												
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)	A subsurface	A subsurface water pipeline is located approximately 1,630 feet southeast of boring.											
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	Arthur Kill is	Arthur Kill is located approximately 370 feet west of boring.											
Drilling Date	3/8/2012	3/8/2012											
Drilling Company	Land Air Wat	Land Air Water Environmental Services											
Drilling Method	Hand Auger/	Hand Auger/2"-Macrocore											
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A												
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environment	al											
		Boring (Observat	ions									
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1	- 8.0	8.1 – 12	.0 12.	1 – 16.0	16.1 – 2	0.0	>20		
where applicable			Χ										
PRODUCT													
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No												
- Product in GW – Check where	None Ob	None Observed Sheen Only Floating Product = <6" Floating Product = >6											
applicable	Х												
HISTORIC FILL MATERIAL													
 Composition, other observations – 			d Material						Generated				
complete, as applicable	to fine grave coarse to fine	· ·							to fine sand; little coarse to fine oal from 4.0 to 6.0 ft bg.				
D 11 (6 11) 1 1 1 1	gravel from 3	1					0.4.40	<u> </u>			40.4		
 Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only 	0.0 – 2.0	2.1 – 4.0		- 6.0	6.1	- 8.0	8.1 – 10.	.0 10	0.1 – 12.0		12.1		
PID/Odors (depth)	Highest PID -	- 5.5 ppm at	t 19 feet. Su	ılfur-like	e odor f	rom 19 t	20 ft bg.	l l					
Geology	Fill to 6.0 ft rounded gra- shells from 1 19 to at least	bg (see abovel from 6.0 by to 19 ft b	ove), under to 15 ft b	ain by g, unde	brown rlain by y-black	to gray, o gray, co CLAY; tra	oarse to fi	ne SANI	D; little fine	grave	el, trace		
Soil Permeability		Loose				nediate			Tight				
Total Boring Depth (feet bg)	20					X							
GW Temporary Well Installed	N/A												
(Depth, Screen, Riser, Slot Size, Casing)	','.'												
Laboratory Name and Report No. (if	Accutest Lab	oratories, L	ab Report I	Os JB11	89.								
samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")		,	•										
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	1R-22.1-10/2 PCB, TPH, pe								collected fo	r VO(C, SVOC,		
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A												
Additional Hydro/Geological Test –	<10	² Feet/Day		1	0 ⁻² – 10	Feet/Da	,		>10 Feet/	'Day			
Permeability Results (e.g. pump test/slug test/packer test)													
		_		_	_	_		_	_	_	_		

Additional Comments/Notes/	N/A
Observations (if applicable)	

		Boring I	Informa	ion								
Alternate Boring ID (if applicable)	N/A											
Pipeline Mile Marker ID	Approximate	ly 960 feet s	south of 3.7	'1R								
Location (Latitude/Longitude) –	40° 37' 16.87				reyed	d						
estimated/surveyed					-							
Site Address	Boring is loc Road in State							ion of '	Water Str	eet ar	nd River	
Nearby Subsurface Features (Distance and	No undergro							ne borin	g.			
Direction from Utilities, Tanks, Properties, etc.)	0											
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	Arthur Kill is	rthur Kill is located approximately 400 feet west of boring.										
Drilling Date	3/7/2012											
Drilling Company	Land Air Wat	Land Air Water Environmental Services										
Drilling Method	Hand Auger/	Hand Auger/2"-Macrocore										
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A											
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environment	al										
		Boring C	bservat	ions								
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1 – 8.	0	8.1 – 12.0	12.1	- 16.0	16.1 – 2	0.0	>20	
where applicable		Χ										
PRODUCT												
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No											
- Product in GW – Check where	None Ob	served	She	en Only		Floating	Product =	= <6"	Floating F	Produ	ct = >6"	
applicable	Х											
HISTORIC FILL MATERIAL		•										
- Composition, other observations -		Reworked	d Material			Antl	ropogen	ically-G	enerated	Mate	rial	
complete, as applicable	Red-brown to	o brown to g	gray, medic	m to fine								
	sand; some o											
	rounded grav		, root mate	rials and								
	cobbles to 8.	_										
 Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only 	0.0 – 2.0	2.1 – 4.0	0 4.1	- 6.0	6.1 -	- 8.0	3.1 - 10.0	10.	1 – 12.0	>	•12.1	
PID/Odors (depth)	Highest PID -	- 19 8 nnm a	at 8.5 feet	Petroleum-	like	odor from	8 5 to 14	5 ft hø				
Geology	Fill to 8.5 ft k odor from 8. silt from 11 petroleum li SAND; little bottom of in	og (see abov .5 to 11.5 ft .5 to 15 ft ke odor fro fine, rounde	ve), underla bg, underla bg; two 6 m 12 to 12	in by black in by gray ' bands of 2.5 ft bg ar	to g , coa dar nd 14	gray CLAY; arse to find k gray CL 4 to 14.5	little silt, SAND; li AY, little ft bg, und	trace fir ttle fine silt and derlain	ne sand; pe, rounded trace fir by gray, c	l grav ne san coarse	el, trace nd and to fine	
Soil Permeability		Loose		Int	term X	ediate			Tight	:		
Total Boring Depth (feet bg)	20		J			•						
GW Temporary Well Installed	N/A											
(Depth, Screen, Riser, Slot Size, Casing)												
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	Accutest Lab											
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	1R-22.1-11/2 SVOC, PCB, T								vere collec	cted f	or VOC,	
GW Samples Collected - Sample ID(s) and	N/A											
Sampling Parameter(s) Additional Hydro/Geological Test –		² Feet/Day		,		Feet/Day	ı		>10 Feet/			

Permeability Results (e.g. pump test/slug		
test/packer test)		
Additional Comments/Notes/	N/A	
Observations (if applicable)		

		Boring	Informat	ion								
Alternate Boring ID (if applicable)	N/A											
Pipeline Mile Marker ID		ely 1050 fee	t south of 3	7/R								
Location (Latitude/Longitude) –		646" N / 74°			urveye	ed						
estimated/surveyed												
Site Address		cated appro en Island, N							n of \	Nater S	treet a	ınd River
Nearby Subsurface Features (Distance and		ound utilities							borin	g.		
Direction from Utilities, Tanks, Properties, etc.)						,				J		
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	Arthur Kill is	located app	oroximately	610 feet	t west	of boring	g.					
Drilling Date	3/7/2012											
Drilling Company		iter Environn	nental Servi	ces								
Drilling Method	Hand Auger	/2"-Macroco	ore									
Additional Hydro/Geological Tests (e.g.	N/A	•										
pump test/slug test/packer test) Boring Purpose (e.g. geotech/	Environmen	ital										
environmental/geoarchaelogical)												
			Observat		2.6	24 -	2.0	40.1		145.5	20.5	1
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1 -	8.0	8.1 – 1	2.0	12.1 – 1	16.0	16.1 -	20.0	>20
where applicable		X										
PRODUCT	T											
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No											
- Product in GW – Check where	None Ol	None Observed Sheen Only Floating Product = <6" Floating Product = >6										
applicable	Х	X										
HISTORIC FILL MATERIAL												
HISTORIC FILL WIATERIAL												
- Composition, other observations –		Reworke	d Material			А	nthro	pogenica	ally-G	enerate	d Mat	erial
 Composition, other observations – complete, as applicable 	0.0 – 2.0			- 6.0	6.1							
 Composition, other observations – complete, as applicable Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated 	0.0 - 2.0	2.1 – 4.		- 6.0	6.1	- 8.0		ppogenica – 10.0		enerate 1 – 12.0		erial >12.1
 Composition, other observations – complete, as applicable Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only 		2.1 – 4.	0 4.1 -									
 Composition, other observations – complete, as applicable Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) 	Highest PID	2.1 – 4. – 1.9 ppm a	0 4.1 -	No odor		- 8.0	8.1	- 10.0	10.	1 – 12.0		>12.1
 Composition, other observations – complete, as applicable Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only 	Highest PID Brown SILT; coarse to fil	2.1 – 4. – 1.9 ppm are some coars	0 4.1 - t 19.5 feet. se to fine sattle coarse to	No odor Ind, littl	e coars	se to finom 4.0 t	8.1 ne gra	- 10.0 vel to 4.0 ft bg, un	10.	1 – 12.0 g, unde in by no	rlain b	>12.1 y brown, ery from
 Composition, other observations – complete, as applicable Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) 	Highest PID Brown SILT; coarse to fii 6.0 to 10 ft	2.1 – 4. – 1.9 ppm ar some coars ne SAND; litt bg, underla	t 19.5 feet. se to fine sattle coarse to	No odor Ind, littl Inde gr o gray-k	e coars	se to fin	8.1 ne gra	- 10.0 vel to 4.0 ft bg, un	10.	1 – 12.0 g, unde in by no	rlain b	>12.1 y brown, ery from
 Composition, other observations – complete, as applicable Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) 	Highest PID Brown SILT; coarse to fii 6.0 to 10 ft	2.1 – 4. – 1.9 ppm are some coars	t 19.5 feet. se to fine sattle coarse to	No odor ind, littl i fine gr o gray-k at least	e coars avel fro black, c 20 ft b	se to fin	8.1 ne gra	- 10.0 vel to 4.0 ft bg, un	10.	1 – 12.0 g, unde in by no	rlain borecov 10 to	>12.1 y brown, ery from
Composition, other observations – complete, as applicable Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology	Highest PID Brown SILT; coarse to fii 6.0 to 10 ft	2.1 – 4. – 1.9 ppm are some coarse SAND; little bg, underlary black PEAT	t 19.5 feet. se to fine sattle coarse to	No odor ind, littl i fine gr o gray-k at least	e coars avel fro black, c 20 ft b	se to finom 4.0 tooarse to	8.1 ne gra	- 10.0 vel to 4.0 ft bg, un	10.	1 – 12.0 g, unde in by no	rlain borecov 10 to	>12.1 y brown, ery from
- Composition, other observations – complete, as applicable - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability	Highest PID Brown SILT; coarse to fi 6.0 to 10 ft underlain by	2.1 – 4. – 1.9 ppm are some coarse SAND; little bg, underlary black PEAT	t 19.5 feet. se to fine sattle coarse to	No odor ind, littl i fine gr o gray-k at least	e coars avel fro black, c 20 ft b	se to finom 4.0 tooarse tog.	8.1 ne gra	- 10.0 vel to 4.0 ft bg, un	10.	1 – 12.0 g, unde in by no	rlain borecov 10 to	>12.1 y brown, ery from
- Composition, other observations – complete, as applicable - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed	Highest PID Brown SILT; coarse to fii 6.0 to 10 ft	2.1 – 4. – 1.9 ppm are some coarse SAND; little bg, underlary black PEAT	t 19.5 feet. se to fine sattle coarse to	No odor ind, littl i fine gr o gray-k at least	e coars avel fro black, c 20 ft b	se to finom 4.0 tooarse tog.	8.1 ne gra	- 10.0 vel to 4.0 ft bg, un	10.	1 – 12.0 g, unde in by no	rlain borecov 10 to	>12.1 y brown, ery from
- Composition, other observations – complete, as applicable - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing)	Highest PID Brown SILT; coarse to fil 6.0 to 10 ft underlain by 20 N/A	2.1 – 4. – 1.9 ppm are some coars ne SAND; little bg, underlary black PEAT Loose	t 19.5 feet. Is se to fine sattle coarse to in by gray to from 19 to	No odor ind, littl ofine gr o gray-b at least	e coar avel fro black, c 20 ft b Intern	se to finom 4.0 tooarse tog.	8.1 ne gra	- 10.0 vel to 4.0 ft bg, un	10.	1 – 12.0 g, unde in by no	rlain borecov 10 to	>12.1 y brown, ery from
- Composition, other observations – complete, as applicable - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if	Highest PID Brown SILT; coarse to fil 6.0 to 10 ft underlain by 20 N/A	2.1 – 4. – 1.9 ppm are some coarse SAND; little bg, underlary black PEAT	t 19.5 feet. Is se to fine sattle coarse to in by gray to from 19 to	No odor ind, littl ofine gr o gray-b at least	e coar avel fro black, c 20 ft b Intern	se to finom 4.0 tooarse tog.	8.1 ne gra	- 10.0 vel to 4.0 ft bg, un	10.	1 – 12.0 g, unde in by no	rlain borecov 10 to	>12.1 y brown, ery from
- Composition, other observations – complete, as applicable - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing)	Highest PID Brown SILT; coarse to fil 6.0 to 10 ft underlain by 20 N/A	2.1 – 4. – 1.9 ppm are some coars ne SAND; little bg, underlary black PEAT Loose	t 19.5 feet. Is se to fine sattle coarse to in by gray to from 19 to	No odor ind, littl ofine gr o gray-b at least	e coar avel fro black, c 20 ft b Intern	se to finom 4.0 tooarse tog.	8.1 ne gra	- 10.0 vel to 4.0 ft bg, un	10.	1 – 12.0 g, unde in by no	rlain borecov 10 to	>12.1 y brown, ery from
- Composition, other observations – complete, as applicable - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest	Highest PID Brown SILT; coarse to fii 6.0 to 10 ft underlain by 20 N/A Accutest Lal	2.1 – 4. – 1.9 ppm are some coars ne SAND; little bg, underlary black PEAT Loose	t 19.5 feet. se to fine sattle coarse to fine by gray to from 19 to	No odor ind, littl o fine gr o gray-b at least	e coar avel fro lack, c 20 ft b Intern	se to fin om 4.0 t coarse to g. nediate	8.1 ne gra oo 6.0 o fine	vel to 4.0 ft bg, un SAND an	10.	g, unde in by no AY from	rlain b recov 10 to	y brown, ery from 19 ft bg,
- Composition, other observations – complete, as applicable - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	Highest PID Brown SILT; coarse to fit 6.0 to 10 ft underlain by 20 N/A Accutest Lal	2.1 – 4. – 1.9 ppm are some coarse SAND; little bg, underlary black PEAT Loose	t 19.5 feet. se to fine sattle coarse to fine by gray to from 19 to ab Report II	No odor nd, littl ofine gr o gray-b at least	e coar: avel fro black, c 20 ft b Interm	se to finom 4.0 tooarse to g. nediate	8.1 ne gra oo 6.0 o fine	vel to 4.0 ft bg, un SAND an	10.	g, unde in by no AY from	rlain b recov 10 to	y brown, ery from 19 ft bg,
- Composition, other observations – complete, as applicable - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s),	Highest PID Brown SILT; coarse to fit 6.0 to 10 ft underlain by 20 N/A Accutest Lal	2.1 – 4. – 1.9 ppm are some coarse SAND; little bg, underlare black PEAT Loose	t 19.5 feet. se to fine sattle coarse to fine by gray to from 19 to ab Report II	No odor nd, littl ofine gr o gray-b at least	e coar: avel fro black, c 20 ft b Interm	se to finom 4.0 tooarse to g. nediate	8.1 ne gra oo 6.0 o fine	vel to 4.0 ft bg, un SAND an	10.	g, unde in by no AY from	rlain b recov 10 to	y brown, ery from 19 ft bg,
- Composition, other observations – complete, as applicable - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and	Highest PID Brown SILT; coarse to fit 6.0 to 10 ft underlain by 20 N/A Accutest Lal	2.1 – 4. – 1.9 ppm are some coarse SAND; little bg, underlare black PEAT Loose	t 19.5 feet. se to fine sattle coarse to fine by gray to from 19 to ab Report II	No odor nd, littl ofine gr o gray-b at least	e coar: avel fro black, c 20 ft b Interm	se to finom 4.0 tooarse to g. nediate	8.1 ne gra oo 6.0 o fine	vel to 4.0 ft bg, un SAND an	10.	g, unde in by no AY from	rlain b recov 10 to	y brown, ery from 19 ft bg,
- Composition, other observations – complete, as applicable - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	Highest PID Brown SILT; coarse to fit 6.0 to 10 ft underlain by 20 N/A Accutest Lal 1R-22.1-12/ PCB, TPH, p	2.1 – 4. – 1.9 ppm are some coarse SAND; little bg, underlary black PEAT Loose borratories, L	t 19.5 feet. se to fine sattle coarse to fine by gray to from 19 to ab Report II	No odor ind, littl ofine gr o gray-k at least Os JB103 d 1R-22 ls and g	e coar: avel fro black, c 20 ft b Intern	se to finom 4.0 to coarse to g. nediate X	8.1 ne gra so 6.0 o fine	vel to 4.0 ft bg, un SAND an	10.	g, unde in by no AY from Tig	rlain borecov 10 to ht	y brown, ery from 19 ft bg,
- Composition, other observations – complete, as applicable - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test –	Highest PID Brown SILT; coarse to fit 6.0 to 10 ft underlain by 20 N/A Accutest Lal 1R-22.1-12/ PCB, TPH, p	2.1 – 4. – 1.9 ppm are some coarse SAND; little bg, underlare black PEAT Loose	t 19.5 feet. se to fine sattle coarse to fine by gray to from 19 to ab Report II	No odor ind, littl ofine gr o gray-k at least Os JB103 d 1R-22 ls and g	e coar: avel fro black, c 20 ft b Intern	se to finom 4.0 tooarse to g. nediate	8.1 ne gra so 6.0 o fine	vel to 4.0 ft bg, un SAND an	10.	g, unde in by no AY from	rlain borecov 10 to ht	y brown, ery from 19 ft bg,
- Composition, other observations – complete, as applicable - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test – Permeability Results (e.g. pump test/slug	Highest PID Brown SILT; coarse to fit 6.0 to 10 ft underlain by 20 N/A Accutest Lal 1R-22.1-12/ PCB, TPH, p	2.1 – 4. – 1.9 ppm are some coarse SAND; little bg, underlary black PEAT Loose borratories, L	t 19.5 feet. se to fine sattle coarse to fine by gray to from 19 to ab Report II	No odor ind, littl ofine gr o gray-k at least Os JB103 d 1R-22 ls and g	e coar: avel fro black, c 20 ft b Intern	se to finom 4.0 to coarse to g. nediate X	8.1 ne gra so 6.0 o fine	vel to 4.0 ft bg, un SAND an	10.	g, unde in by no AY from Tig	rlain borecov 10 to ht	y brown, ery from 19 ft bg,
- Composition, other observations – complete, as applicable - Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test –	Highest PID Brown SILT; coarse to fit 6.0 to 10 ft underlain by 20 N/A Accutest Lal 1R-22.1-12/ PCB, TPH, p	2.1 – 4. – 1.9 ppm are some coarse SAND; little bg, underlary black PEAT Loose borratories, L	t 19.5 feet. se to fine sattle coarse to fine by gray to from 19 to ab Report II	No odor ind, littl ofine gr o gray-k at least Os JB103 d 1R-22 ls and g	e coar: avel fro black, c 20 ft b Intern	se to finom 4.0 to coarse to g. nediate X	8.1 ne gra so 6.0 o fine	vel to 4.0 ft bg, un SAND an	10.	g, unde in by no AY from Tig	rlain borecov 10 to ht	y brown, ery from 19 ft bg,

		Boring	Informat	ion						
Alternate Boring ID (if applicable)	N/A									
Pipeline Mile Marker ID	Approximate	ly 1,175 fee	t south of 3	.75R						
Location (Latitude/Longitude) –	40° 37' 14.30				eved					
estimated/surveyed		,			-,					
Site Address	Boring is loc	ated approx	ximately 27	0 feet nor	heast of t	he inter	section o	f Water Stre	et an	d River
Site Address	Road in State							. Water Stre	.cc am	a mvei
Nearby Subsurface Features (Distance and	No undergro							ing		
Direction from Utilities, Tanks, Properties,	No undergro	una utilities	are located	within app	тохинатегу	.5 IIIIIe (or the boi	ilig.		
etc.)										
<u> </u>	Author William	l tl		-00 (+ ···	-+ - f l:					
Nearby Hydraulic Features (Distance and	Arthur Kill is	located app	roximately	90 feet we	st or boring	3.				
Direction from wetlands, etc.)	2/7/2012									
Drilling Date	3/7/2012									
Drilling Company	Land Air Wat			ces						
Drilling Method	Hand Auger/	2"-Macroco	re							
Additional Hydro/Geological Tests (e.g.	N/A									
pump test/slug test/packer test)										
Boring Purpose (e.g. geotech/	Environment	al								
environmental/geoarchaelogical)										
		Boring C	bservati	ons						
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1 – 8.0	8.1 – 1	2.0 1	2.1 – 16.	16.1 – 2	0.0	>20
where applicable		Χ								
PRODUCT		•			•	•				
- Product in Soil – Yes/No	No									
(odor/inches/viscosity, etc.)										
- Product in GW – Check where	None Ob	served	Shee	en Only	Floati	ng Prodi	uct = <6"	Floating F	roduc	t = >6"
applicable	X			. ,	1.000			i i cui i i g		
HISTORIC FILL MATERIAL	<u> </u>							1		
- Composition, other observations –		Reworker	d Material		Δ	nthrono	genically	-Generated	Mater	ial
complete, as applicable	Dark brown t			to fino		пиноро	gernearry	Generated	viatei	iai
complete, as applicable	sand and coa	-			,					
	gravel; little				1					
	by black to da									
	petroleum-lik									
Double (foot ha) also also as the a	-				1 00	0.1	100 1	0.1 12.0		12.1
- Depth (feet bg) – check more than	0.0 – 2.0	2.1 – 4.0	4.1 –	6.0	.1 – 8.0	8.1 – 1	10.0	0.1 – 12.0	>.	12.1
one depth, if applicable – applies to										
Anthropogenically-Generated										
Material only										
PID/Odors (depth)	Highest PID -			etroleum-	ike odor a	7.0 ft k	og and 14	to 15 ft bg	. Orga	nic-like
	odor from 18		_					_		
Geology	Fill to 7.5 ft b			-						
	to fine, angu		-					•		
	CLAY; little s									
	gray, mediun									
	black to dark		little silt an	id fine sand	l, root mat	erials at	bottom 4	l"; organic-li	ke odo	or from
	18.5 to at lea	st 20 ft bg.								
Soil Permeability		Loose		Int	ermediate			Tight		
					Χ					
Total Boring Depth (feet bg)	20									
GW Temporary Well Installed	N/A							<u> </u>		
• • • • • • • • • • • • • • • • • • • •										
(Depth, Screen, Riser, Slot Size, Casing)										
	Accutest Lab	oratories, La	ab Report ID	s JB1030.						
(Depth, Screen, Riser, Slot Size, Casing)	Accutest Lab	oratories, La	ab Report ID	s JB1030.						
(Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest	Accutest Labo	oratories, La	ab Report ID	s JB1030.						
(Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")					3/7 (7.0 to	7.5 feet	bg) were	collected fo	r VOC	, SVOC.
(Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s),	1R-22.1-13/1	(1.0 to 1.5	feet bg) and	d 1R-22.1-1				collected fo	r VOC	, SVOC,
(Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling		(1.0 to 1.5	feet bg) and	d 1R-22.1-1				collected fo	r VOC	, SVOC,
(Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	1R-22.1-13/1 PCB, TPH, pe	(1.0 to 1.5	feet bg) and	d 1R-22.1-1				collected fo	r VOC	, SVOC,
(Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling	1R-22.1-13/1	(1.0 to 1.5	feet bg) and	d 1R-22.1-1				collected fo	r VOC	, SVOC,

Additional Hydro/Geological Test –	<10 ⁻² Feet/Day	10 ⁻² – 10 Feet/Day	>10 Feet/Day
Permeability Results (e.g. pump test/slug			
test/packer test)			
Additional Comments/Notes/	N/A		
Observations (if applicable)			

boring identification: 1R-22.1-ENV-14		Boring	Informat	ion									
		Dorning	illiorillat	ion									
Alternate Boring ID (if applicable)	N/A	1 4 220 ((2	750									
Pipeline Mile Marker ID	Approximate												
Location (Latitude/Longitude) – estimated/surveyed	40° 37' 14.2	831" N / /4°	11' 52.0156	" W – S	urveye	ed							
Site Address	Boring is lo								Water Stre	eet ar	nd River		
Nearby Subsurface Features (Distance and	No undergro								ing				
Direction from Utilities, Tanks, Properties, etc.)	i vo undergre	ouria demerce	are rocated	***************************************	аррго	Amutery	.5 111110	Time bott	6.				
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	Arthur Kill is	located app	roximately	705 feet	t west	of boring	g. Boring	is located	l in a wetlar	nd are	a.		
Drilling Date	3/7/2012	3/7/2012											
Drilling Company	Land Air Wa	ter Environn	nental Servi	es									
Drilling Method	Hand Auger	Hand Auger/2"-Macrocore											
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A												
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environmen	tal											
	<u> </u>	Boring (Observati	ons									
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1 -	- 8.0	8.1 – 1	2.0 12	2.1 – 16.0	16.1 – 2	0.0	>20		
where applicable		Х											
PRODUCT							-						
- Product in Soil – Yes/No	No												
(odor/inches/viscosity, etc.)													
 Product in GW – Check where applicable 	None Observed Sheen Only Floating Product = <6" Floating Product X									ct = >6"			
HISTORIC FILL MATERIAL						ı			1				
- Composition, other observations –		Reworke	Material			А	nthropog	genically-	Generated	Mate	rial		
complete, as applicable													
- Depth (feet bg) – check more than	0.0 - 2.0	2.1 – 4.0	4.1 -	6.0	6.1	- 8.0	8.1 – 1	0.0 1	0.1 – 12.0	12.1			
one depth, if applicable – applies to													
Anthropogenically-Generated													
Material only													
PID/Odors (depth)	Highest PID 20 ft bg.	– 312 ppm a	t 13 feet. Pe	troleur	n-like (odor fror	n 10 to 1	5 ft bg. Si	ulfur-like od	or fro	m 15 to		
Geology	Brown SILT;	some coars	e to fine gr	vel, tra	ace roo	ots to 0.5	ft bg, u	nderlain	by brown, o	coarse	to fine		
	SAND; some	coarse to	fine gravel	from 0.	.5 to 7	7.0 ft bg,	underla	in by bro	own/gray, c	oarse	to fine		
	SAND; little	silt from 7	.0 to 10 ft	bg, un	derlair	n by blac	k, coars	e to fine	SAND and	l CLA	r; slight		
	petroleum-l	ke odor fror	n 10 to 15 f	bg, un	derlair	n by brov	vn PEAT;	strong su	ılfur-like od	or fro	m 15 to		
	18 ft bg, und	derlain by gra	ay CLAY; tra	e peat;	; mode	erate sulf	ur-like oด	dor from	18 to at leas	st 20 f	t bg.		
Soil Permeability		Loose			Intern	nediate			Tight	:			
						Х							
Total Boring Depth (feet bg)	20												
GW Temporary Well Installed	N/A												
(Depth, Screen, Riser, Slot Size, Casing)													
Laboratory Name and Report No. (if	Accutest Lak	oratories, L	ab Report ID	s JB103	30.								
samples collected) (e.g. "Accutest													
Laboratories, Lab Report ID JA65410")							-						
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling	1R-22.1-14/ PCB, TPH, pe	-	•			-		•	collected fo	r VO	C, SVOC,		
Parameter(s)													
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A												
Additional Hydro/Geological Test –	<10	Feet/Day		10) ⁻² – 10	Feet/Da	V		>10 Feet	/Dav			
Permeability Results (e.g. pump test/slug test/packer test)		1				,	•						
Additional Comments/Notes/	N/A		1					1					
Observations (if applicable)													

		Boring I	nform	ation							
Alta-mata Barina ID (if and italia)	N / A	Dornig i		40011							
Alternate Boring ID (if applicable)	N/A	1 4 405 (. (2.7							
Pipeline Mile Marker ID	Approximate					-1					
Location (Latitude/Longitude) –	40° 37' 15.50	J55" N / /4"	11 50.60	123" VV —	Surveye	ea					
estimated/surveyed Site Address	Davina in Inc			400 fast		+ -6 +6-	:	+:f	Matau Ctur		ad Divar
Site Address	Boring is loc Road in State								water Stre	eet ar	na River
Nearby Subsurface Features (Distance and	An undergro	und water lii	ne is loca	ted withi	n 1,980	feet of th	e boring	g.			
Direction from Utilities, Tanks, Properties, etc.)											
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	Arthur Kill is	located appi	oximate	ly 860 fee	et west	of boring.	Boring i	is located	within a w	etland	d area.
Drilling Date	3/9/2012										
Drilling Company	Land Air Wa	ter Environm	ental Sei	vices							
Drilling Method	Hand Auger/	/2"-Macroco	e								
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A										
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environment	tal									
environmentally geodicinaciogleary		Boring C	bserva	ations							
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.		- 8.0	8.1 – 12.	0 12	2.1 – 16.0	16.1 – 2	0.0	>20
where applicable	Х										
PRODUCT											
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	Yes – stainin	g from 7.0 to	10 ft bg								
- Product in GW – Check where	None Ob	None Observed Sheen Only Floating Product = <6" Floating Product = >									
applicable				Х							
HISTORIC FILL MATERIAL											
 Composition, other observations – 		Reworked	Materia	ıl		Ant	hropog	enically-C	Generated	Mate	rial
complete, as applicable	Red-brown t sand; some of rounded gra underlain by from, 6.0 to gray clay; litt like odor; litt 10 ft bg, und trace silt, sho underlain by fine sand fro	coarse to fine vel, little silt, gray, mediu 7.0 ft bg, und tle silt, trace tle staining; lerlain by graell fragments black to dar im 11 to 14 f	e, sub-roots to roots to m to fine derlain by fine sand ttle shee y, mediu from 10 k gray cla t bg.	unded to 6.0 ft bg, e sand; litt y black to l; petrole en from 7 m to fine to 11 ft l ay; little s	tle silt dark um- .0 to sand; og, ilt and						
 Depth (feet bg) – check more than 	0.0 – 2.0	2.1 – 4.0	4.	1 – 6.0	6.1	- 8.0	8.1 – 1	0.0 10	.1 – 12.0	>	>12.1
one depth, if applicable – applies to Anthropogenically-Generated Material only											
PID/Odors (depth)	Highest PID -	– 120 ppm at	17.5 fee	t. Petrole	eum-like	e odor froi	n 7.0 to	10 ft bg.			
Geology	Fill to 14 ft underlain by	bg (see abov	e), unde	rlain by g	gray-bro	wn PEAT;	little cl	ay, trace	silt from 1	4 to 2	15 ft bg,
Soil Permeability	y	Loose			Intern	nediate X			Tight		
Total Boring Depth (feet bg)	20					^		I			
GW Temporary Well Installed	N/A										
(Depth, Screen, Riser, Slot Size, Casing)	.,										
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	Accutest Lab		-								
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	1R-22.1-15/2 SVOC, PCB, T								were colled	ted f	or VOC,
GW Samples Collected - Sample ID(s) and	N/A										

Sampling Parameter(s)			
Additional Hydro/Geological Test –	<10 ⁻² Feet/Day	10 ⁻² – 10 Feet/Day	>10 Feet/Day
Permeability Results (e.g. pump test/slug			
test/packer test)			
Additional Comments/Notes/	N/A	·	
Observations (if applicable)			

		Boring	Informa	tion								
Alternate Boring ID (if applicable)	N/A											
Pipeline Mile Marker ID		tely 885 feet	southeast	of 4.07R								
Location (Latitude/Longitude) –		1200" N / 74°				ed						
estimated/surveyed		,			,							
Site Address	Boring is lo	cated appro	ximately 1	150 feet	north	east of	the in	tersection	of Water	Street a	nd River	
	_	ten Island, N										
Nearby Subsurface Features (Distance and	An undergr	ound water l	ine is locat	ed 1,645	feet n	orth of t	he bo	ring.				
Direction from Utilities, Tanks, Properties,												
etc.)												
Nearby Hydraulic Features (Distance and	An unname	ed pond is I	ocated ap	oroximat	tely 51	5 feet v	vest o	of boring. I	Boring is	located	within a	
Direction from wetlands, etc.)	wetland are	vetland area.										
Drilling Date	3/9/2012											
Drilling Company		Land Air Water Environmental Services Hand Auger/2"-Macrocore										
Drilling Method	Hand Auger	r/2"-Macroco	ore									
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A											
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environmer	ntal										
		Boring (Observa	tions								
Depth to saturation (feet bg) – Check	0.0 - 2.0	2.1 – 4.0	4.1 – 6.0	6.1	- 8.0	8.1 – 1	12.0	12.1 – 16	.0 16.	1 – 20.0	>20	
where applicable		Х										
PRODUCT											•	
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No											
- Product in GW – Check where	None O	None Observed Sheen Only Floating Product = <6" Floating Product = >6										
applicable	,	X										
HISTORIC FILL MATERIAL			•						•			
 Composition, other observations – 		Reworke	d Material			P	\nthro	pogenicall	y-Genera	ted Mat	erial	
complete, as applicable												
 Depth (feet bg) – check more than 	0.0 - 2.0	2.1 – 4.	0 4.1	- 6.0	6.1	- 8.0	8.1	- 10.0	10.1 – 12	2.0	>12.1	
one depth, if applicable – applies to												
Anthropogenically-Generated												
Material only		0.505	. 10.5	0.15								
PID/Odors (depth)		– 8,605 ppm							0 (1)			
·	Light brown	n to brown-g	gray SILT a	nd CLAY;	; little d	coarse t	o fine	sand to 5.	-			
PID/Odors (depth)	Light brown brown CLA	n to brown-g Y; little silt,	gray SILT a trace vege	nd CLAY; tation fr	; little o	coarse to 0 to 10	o fine ft bg,	sand to 5.	by gray	CLAY; so	me peat;	
PID/Odors (depth)	Light brown brown CLA strong sulfu	n to brown-g Y; little silt, ur-like odor f	gray SILT a trace vege from 10 to	nd CLAY; tation fr 17 ft bg	; little o rom 5.0 ;, under	coarse to 0 to 10 rlain by	o fine ft bg, brown	sand to 5. underlain PEAT and	by gray WOOD;	CLAY; so strong s	me peat; ulfur-like	
PID/Odors (depth)	Light brown brown CLA strong sulfu odor from	n to brown-g Y; little silt, ur-like odor f 17 to 19 ft b	gray SILT a trace vege from 10 to	nd CLAY; tation fr 17 ft bg	; little o rom 5.0 ;, under	coarse to 0 to 10 rlain by	o fine ft bg, brown	sand to 5. underlain PEAT and	by gray WOOD;	CLAY; so strong s	me peat; ulfur-like	
PID/Odors (depth) Geology	Light brown brown CLA strong sulfu	n to brown-g Y; little silt, ur-like odor f 17 to 19 ft b ft bg.	gray SILT a trace vege from 10 to	nd CLAY; tation fr 17 ft bg	; little (rom 5.0 , under y, coars	coarse to 0 to 10 rlain by se to fin	o fine ft bg, brown	sand to 5. underlain PEAT and	by gray WOOD; sulfur-like	CLAY; so strong s odor fr	me peat; ulfur-like	
PID/Odors (depth)	Light brown brown CLA strong sulfu odor from	n to brown-g Y; little silt, ur-like odor f 17 to 19 ft b	gray SILT a trace vege from 10 to	nd CLAY; tation fr 17 ft bg	; little of rom 5.0 , under y, coars	coarse to 0 to 10 rlain by	o fine ft bg, brown	sand to 5. underlain PEAT and	by gray WOOD; sulfur-like	CLAY; so strong s	me peat; ulfur-like	
PID/Odors (depth) Geology Soil Permeability	Light brown brown CLA strong sulfu odor from a at least 20 f	n to brown-g Y; little silt, ur-like odor f 17 to 19 ft b ft bg.	gray SILT a trace vege from 10 to	nd CLAY; tation fr 17 ft bg	; little of rom 5.0 , under y, coars	coarse to to 10 rlain by se to fin	o fine ft bg, brown	sand to 5. underlain PEAT and	by gray WOOD; sulfur-like	CLAY; so strong s odor fr	me peat; ulfur-like	
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg)	Light brown brown CLA strong sulft odor from a at least 20 f	n to brown-g Y; little silt, ur-like odor f 17 to 19 ft b ft bg.	gray SILT a trace vege from 10 to	nd CLAY; tation fr 17 ft bg	; little of rom 5.0 , under y, coars	coarse to to 10 rlain by se to fin	o fine ft bg, brown	sand to 5. underlain PEAT and	by gray WOOD; sulfur-like	CLAY; so strong s odor fr	me peat; ulfur-like	
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed	Light brown brown CLA strong sulfu odor from a at least 20 f	n to brown-g Y; little silt, ur-like odor f 17 to 19 ft b ft bg.	gray SILT a trace vege from 10 to	nd CLAY; tation fr 17 ft bg	; little of rom 5.0 , under y, coars	coarse to to 10 rlain by se to fin	o fine ft bg, brown	sand to 5. underlain PEAT and	by gray WOOD; sulfur-like	CLAY; so strong s odor fr	me peat; ulfur-like	
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg)	Light brown brown CLA' strong sulfu odor from at least 20 f	n to brown-g Y; little silt, ur-like odor f 17 to 19 ft b ft bg. Loose	gray SILT a trace vege from 10 to g, underlai	nd CLAY; tation fr 17 ft bg n by gra	; little c rom 5.6 , under y, coars	coarse to to 10 rlain by se to fin	o fine ft bg, brown	sand to 5. underlain PEAT and	by gray WOOD; sulfur-like	CLAY; so strong s odor fr	me peat; ulfur-like	
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing)	Light brown brown CLA' strong sulfu odor from at least 20 f	n to brown-g Y; little silt, ur-like odor f 17 to 19 ft b ft bg.	gray SILT a trace vege from 10 to g, underlai	nd CLAY; tation fr 17 ft bg n by gra	; little c rom 5.6 , under y, coars	coarse to to 10 rlain by se to fin	o fine ft bg, brown	sand to 5. underlain PEAT and	by gray WOOD; sulfur-like	CLAY; so strong s odor fr	me peat; ulfur-like	
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if	Light brown brown CLA' strong sulfu odor from at least 20 f	n to brown-g Y; little silt, ur-like odor f 17 to 19 ft b ft bg. Loose	gray SILT a trace vege from 10 to g, underlai	nd CLAY; tation fr 17 ft bg n by gra	; little c rom 5.6 , under y, coars	coarse to to 10 rlain by se to fin	o fine ft bg, brown	sand to 5. underlain PEAT and	by gray WOOD; sulfur-like	CLAY; so strong s odor fr	me peat; ulfur-like	
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest	Light brown brown CLA strong sulfu odor from at least 20 f	n to brown-g Y; little silt, ur-like odor f 17 to 19 ft b ft bg. Loose	gray SILT a trace vege from 10 to g, underlai	nd CLAY; tation fr 17 ft bg n by gra	; little crom 5.0; under 5.0; under 9, coars	coarse to 0 to 10 rlain by se to fin mediate X	o fine ft bg, brown e SAN	sand to 5. underlain PEAT and D; strong	by gray WOOD; sulfur-like	CLAY; so strong s e odor fr ight	me peat; ulfur-like om 19 to	
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling	Light brown brown CLA strong sulfu odor from a tleast 20 f	n to brown-g Y; little silt, ur-like odor f 17 to 19 ft b ft bg. Loose	gray SILT a trace vege from 10 to g, underlai ab Report	nd CLAY; tation fr 17 ft bg n by gra	; little crom 5.0; under 5.0; under 6.0; under 6.0; little crown 5.0; little crown 5	coarse to 0 to 10 rlain by se to fin mediate X	o fine ft bg, brown e SAN	sand to 5. underlain PEAT and D; strong:	by gray WOOD; sulfur-like	CLAY; so strong s e odor fr ight	me peat; ulfur-like om 19 to	
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s),	Light brown brown CLA strong sulfu odor from a tleast 20 f	n to brown-g Y; little silt, ur-like odor f 17 to 19 ft b ft bg. Loose	gray SILT a trace vege from 10 to g, underlai ab Report	nd CLAY; tation fr 17 ft bg n by gra	; little crom 5.0; under 5.0; under 6.0; under 6.0; little crown 5.0; little crown 5	coarse to 0 to 10 rlain by se to fin mediate X	o fine ft bg, brown e SAN	sand to 5. underlain PEAT and D; strong:	by gray WOOD; sulfur-like	CLAY; so strong s e odor fr ight	me peat; ulfur-like om 19 to	
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling	Light brown brown CLA strong sulfu odor from a tleast 20 f	n to brown-g Y; little silt, ur-like odor f 17 to 19 ft b ft bg. Loose	gray SILT a trace vege from 10 to g, underlai ab Report	nd CLAY; tation fr 17 ft bg n by gra	; little crom 5.0; under 5.0; under 6.0; under 6.0; little crown 5.0; little crown 5	coarse to 0 to 10 rlain by se to fin mediate X	o fine ft bg, brown e SAN	sand to 5. underlain PEAT and D; strong:	by gray WOOD; sulfur-like	CLAY; so strong s e odor fr ight	me peat; ulfur-like om 19 to	
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and	Light brown brown CLA strong sulfu odor from a tleast 20 f	n to brown-g Y; little silt, ur-like odor f 17 to 19 ft b ft bg. Loose	gray SILT a trace vege from 10 to g, underlai ab Report	nd CLAY; tation fr 17 ft bg n by gran Ds JB13 and 1R-22 tals and g	; little crom 5.0; under y, coars Intern 27.	coarse to 0 to 10 rlain by se to fin mediate X	o fine ft bg, brown e SAN	sand to 5. underlain PEAT and D; strong:	by gray wood; wood; sulfur-like	CLAY; so strong s e odor fr ight	me peat; ulfur-like om 19 to	
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	Light brown brown CLA strong sulfu odor from a tleast 20 f	n to brown-g Y; little silt, ur-like odor f 17 to 19 ft b ft bg. Loose boratories, L	gray SILT a trace vege from 10 to g, underlai ab Report	nd CLAY; tation fr 17 ft bg n by gran Ds JB13 and 1R-22 tals and g	; little crom 5.0; under y, coars Intern 27.	coarse to 0 to 10 rlain by se to fin mediate X	o fine ft bg, brown e SAN	sand to 5. underlain PEAT and D; strong:	by gray wood; wood; sulfur-like	CLAY; so strong s e odor fr Fight	me peat; ulfur-like om 19 to	
PID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test —	Light brown brown CLA strong sulfu odor from a tleast 20 f	n to brown-g Y; little silt, ur-like odor f 17 to 19 ft b ft bg. Loose boratories, L	gray SILT a trace vege from 10 to g, underlai ab Report	nd CLAY; tation fr 17 ft bg n by gran Ds JB13 and 1R-22 tals and g	; little crom 5.0; under y, coars Intern 27.	coarse to 0 to 10 rlain by se to fin mediate X	o fine ft bg, brown e SAN	sand to 5. underlain PEAT and D; strong:	by gray wood; wood; sulfur-like	CLAY; so strong s e odor fr Fight	me peat; ulfur-like om 19 to	
FID/Odors (depth) Geology Soil Permeability Total Boring Depth (feet bg) GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing) Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410") Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test — Permeability Results (e.g. pump test/slug	Light brown brown CLA strong sulfu odor from a tleast 20 f	n to brown-g Y; little silt, ur-like odor f 17 to 19 ft b ft bg. Loose boratories, L	gray SILT a trace vege from 10 to g, underlai ab Report	nd CLAY; tation fr 17 ft bg n by gran Ds JB13 and 1R-22 tals and g	; little crom 5.0; under y, coars Intern 27.	coarse to 0 to 10 rlain by se to fin mediate X	o fine ft bg, brown e SAN	sand to 5. underlain PEAT and D; strong:	by gray wood; wood; sulfur-like	CLAY; so strong s e odor fr Fight	me peat; ulfur-like om 19 to	

		<u>Boring</u>	Informa	tion								
Alternate Boring ID (if applicable)	N/A											
Pipeline Mile Marker ID	Approximate	ely 235 feet	south of 3.	71R								
Location (Latitude/Longitude) –	40° 37' 24.00				irveye	d						
estimated/surveyed		•			,							
Site Address	Boring is loc	ated approx	imately 76	0 feet soι	ıtheas	t of the	intersec	ction of	Water :	Street an	d 7 th S	tree
	in Staten Isla											
Nearby Subsurface Features (Distance and	A subsurface	e water pipe	line is loca	ted appro	ximate	ely 1,115	feet so	utheast	of bori	ng.		
Direction from Utilities, Tanks, Properties,												
etc.)												
Nearby Hydraulic Features (Distance and	Arthur Kill is	located app	proximately	530 feet	west c	of boring	. Boring	s is locat	ted in w	etlands.		
Direction from wetlands, etc.)	2/0/2012											
Drilling Date	3/8/2012	tau Fardaaaa	a a matal Cam									
Drilling Company		Land Air Water Environmental Services Hand Auger/2"-Macrocore										
Drilling Method		N/A										
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A											
Boring Purpose (e.g. geotech/	Environmen	tal										
environmental/geoarchaelogical)	LIIVII OIIIIIEII	tui										
, 8000. 0001001/	[Boring (Ohserva	tions								
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1 –	8 U	8.1 – 12	20 1	12.1 – 10	60 1	L6.1 – 20.	<u>п .</u>	>20
where applicable	X X	2.1 - 4.0	4.1 - 6.0	0.1 -	0.0	0.1 – 12	2.0 1	12.1 – 10	0.0 1	10.1 – 20.	' '	-2U
PRODUCT	^											
- Product in Soil – Yes/No	No											
(odor/inches/viscosity, etc.)	NO											
- Product in GW – Check where	None Observed Sheen Only Floating Product = <6" Floating Product = >											
applicable	Х											
HISTORIC FILL MATERIAL			I						l l			
- Composition, other observations –		Reworke	d Material			Aı	nthropo	genical	lly-Gene	erated M	aterial	
complete, as applicable	Brown, fine	to coarse, sa	and with fir	ne to coars	se,				N/A			
	sub-angular	to rounded	gravel and	trace silt,								
	cobbles and	shell mater	ial to 5.0 ft	bg.								
 Depth (feet bg) – check more than 	0.0 – 2.0	2.1 – 4.	0 4.1	- 6.0	6.1	- 8.0	8.1 –	10.0	10.1 –	12.0	>12.	.1
one depth, if applicable – applies to												
Anthropogenically-Generated												
Material only PID/Odors (depth)	Elevated PID	\	02.6	f	10+-	10 fa a t h	\ N		441			
	Fill to 5.0 ft			•						rom E O t	0 6 E f	ft ba
Geology	underlain by		• .	•								_
	dark gray to											
	PEAT; little s							3.3 2	B) aa.c	27	,,	• • • •
Soil Permeability		Loose				nediate				Tight		
•)	X				-		
Total Boring Depth (feet bg)	20											
GW Temporary Well Installed	N/A	-										
(Depth, Screen, Riser, Slot Size, Casing)												
Laboratory Name and Report No. (if	Accutest Lab	oratories, L	ab Report I	Ds JB1030).							
samples collected) (e.g. "Accutest												
Laboratories, Lab Report ID JA65410")	45.55	10.0:		1 4 =		/= a :						
Fail Famples Collected Cample ID(s)	1R-22.1-7/2								re colle	cted for '	VOC, S	VOC
Soil Samples Collected - Sample ID(s),	T PCB. IPH. DE	esticide, her	bicide, met	ais and ge	eneral	cnemistr	y analy	ses.				
Sample Depth(s) and Sampling	, , , , ,											
Sample Depth(s) and Sampling Parameter(s)												
Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and	N/A											
Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A	-2 Eact/Dav		10	² _ 10	Eact/Da			\1	0 East/D	2V	
Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test -	N/A	⁻² Feet/Day		10	² – 10	Feet/Da	у	1	>1	0 Feet/D	ау	
Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test - Permeability Results (e.g. pump test/slug	N/A	⁻² Feet/Day		10	² – 10	Feet/Da	у		>1	0 Feet/D X	ay	
Sample Depth(s) and Sampling Parameter(s) GW Samples Collected - Sample ID(s) and Sampling Parameter(s) Additional Hydro/Geological Test -	N/A	⁻² Feet/Day		10	² – 10	Feet/Da	у		>1		ау	

		Boring	Info	rmati	ion								
Alternate Boring ID (if applicable)	N/A												
Pipeline Mile Marker ID	Approximate	ly 415 feet	south	n of 3.7:	1R								
Location (Latitude/Longitude) – estimated/surveyed		40° 37' 22.1089" N / 74° 11' 57.8787" W – Surveyed											
Site Address	Boring is loca								ction of	Wate	r Street	and 7	th Street
Nearby Subsurface Features (Distance and		n Staten Island, New York (no exact street address is available). subsurface water pipeline is located approximately 1,260 feet southeast of boring.											
Direction from Utilities, Tanks, Properties, etc.)	713453411466	subsurface water piperine is located approximately 1,200 feet southeast of borning.											
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	Arthur Kill is	located app	oroxin	nately 5	10 fee	t west	of borin	g.					
Drilling Date	3/8/2012												
Drilling Company	Land Air Wat	er Environn	nenta	al Servic	es								
Drilling Method	Hand Auger/	2"-Macroco	ore										
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A												
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environment	al											
		Boring (Obse	ervati	ons								
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0		- 6.0	6.1 -	- 8.0	8.1 – 1	2.0 1	L2.1 – 1	6.0	16.1 – 2	20.0	>20
where applicable				Χ									
PRODUCT													
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No												
 Product in GW – Check where 	None Ob	served		Shee	n Only	'	Floati	ng Prod	uct = <6	" F	loating I	Produ	ct = >6"
applicable	Х												
HISTORIC FILL MATERIAL													
 Composition, other observations – complete, as applicable 		Reworke	d Ma	terial			Α	nthropo	ogenical	ly-Ge	nerated	Mate	rial
- Depth (feet bg) – check more than	0.0 – 2.0	2.1 – 4.	0	4.1 -	6.0	6.1	- 8.0	8.1 –	10.0	10.1	- 12.0	>	12.1
one depth, if applicable – applies to Anthropogenically-Generated Material only													
PID/Odors (depth)	Highest PID -		at 18.	5 feet. I	Petrole	um-lik	e odor fr	om 10 t	o 15 ft k	og and	d Sulfur-l	ike oc	lor from
Geology	Gray-brown black, coarse underlain by odor from 10 from 14.5 to	SILT and CL to fine SA no recover) to 14.5 ft l	AND; y fror bg, ur	some c n 6.0 to nderlain	lay, lit 10 ft l by bla	tle coa og, und ick, fine	rse to fi lerlain b e SAND;	ne, roui y black C some sil	nded gr CLAY; litt t. Moist	avel t tle silt t; sligh	from 3.0 t, slight p nt petrole	to 6. etrole eum-li	.0 ft bg, eum-like ike odor
	underlain by	brown PEA	T, slig	ght sulfu	ır-like	odor fr	om 16 to	at least	t 20 ft b	g.			
Soil Permeability		Loose					nediate X				Tight		
Total Boring Depth (feet bg)	20						• •						
GW Temporary Well Installed	N/A												
(Depth, Screen, Riser, Slot Size, Casing)	,												
Laboratory Name and Report No. (if	Accutest Lab	oratories. L	ab Re	port ID	s JB11	39.							
samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")		,											
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	1R-22.1-8/4 PCB, TPH, pe									re col	llected fo	r VO	S, SVOC,
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A												
Additional Hydro/Geological Test –	<10	² Feet/Day			10) ⁻² – 10	Feet/Da	av v		-	>10 Feet,	/Dav	
Permeability Results (e.g. pump test/slug test/packer test)		, = +)					,	•				- 1	

Additional Comments/Notes/	N/A
Observations (if applicable)	

		Boring	Informat	ion						
Alternate Boring ID (if applicable)	N/A									
Pipeline Mile Marker ID	Approximately 650 feet south of 3.69R									
Location (Latitude/Longitude) – estimated/surveyed		40° 37' 20.3717" N / 74° 11' 58.5331" W – Surveyed								
Site Address					itheast of th		n of Water	Stree	t and 7	
Nearby Subsurface Features (Distance and	Street in Staten Island, New York (no exact street address is available). A subsurface water pipeline is located approximately 1,440 feet southeast of boring.									
Direction from Utilities, Tanks, Properties, etc.)	A Subsuriac	e water pipe	enne is locate	а арргохіпі	atery 1,440 re	et southeasi	or boring.			
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	Arthur Kill i	Arthur Kill is located approximately 400 feet west of boring.								
Drilling Date	3/8/2012									
Drilling Company	Land Air W	ater Environi	mental Servio	ces						
Drilling Method	Hand Auge	r/2"-Macroco	ore							
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A									
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environme	ntal								
erra orintentary geodi oriderogicary	I	Boring	Observati	ons						
Depth to saturation (feet bg) – Check	0.0 - 2.0	2.1 – 4.0	4.1 – 6.0	6.1 – 8.0	8.1 – 12.0	12.1 – 1	5.0 16.1 -	20.0	>20	
where applicable			Х							
PRODUCT	•			•	•				•	
- Product in Soil – Yes/No (odor/inches/viscosity, etc.)	No									
- Product in GW – Check where	None O	bserved	Shee	n Only	Floating	Product = <6	" Floatin	Prod	uct = >6	
applicable		Κ		,				,		
HISTORIC FILL MATERIAL			I							
- Composition, other observations -	Reworked Material Anthropogenically-Generated Materi									
complete, as applicable	gravel, fine 6.0 ft bg, ui fine, round 8.0 ft bg, 3-gray, fine to rounded gr underlain b fine, sub-ro 10.5 ft bg, upetroleum-	to medium some derlain by good gravel; trace si y gray, fine tunderlain by like odor fro	i; little fine, s sand and roo ray clay; little ace fine sand rer at 3.5', ur ay; little sub- lt from 8.0 to o medium sa di; trace silt fr black clay, lit m 10.5 to 15	t material to e silt; trace from 6.0 to iderlain by rounded to o 10 ft bg, and; little om 10 to tle silt; ft bg.						
- Depth (feet bg) – check more than	0.0 – 2.0	2.1 – 4.	0 4.1 -	6.0 6.	1 – 8.0	3.1 – 10.0	10.1 – 12.0		>12.1	
one depth, if applicable – applies to Anthropogenically-Generated										
Material only PID/Odors (depth)	_		at 13.5 feet	. Sulfur-like	odor from 1	5 to 20 ft bg	. Petroleum	-like o	dor fro	
Geology		t bg (see ab	• • • • • • • • • • • • • • • • • • • •		fine to med 20 ft bg; blad					
Soil Permeability		Loose		Inte	rmediate X		Tig	ht		
Total Boring Depth (feet bg)	20				^					
GW Temporary Well Installed	N/A									
(Depth, Screen, Riser, Slot Size, Casing)	,									
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	Accutest La	boratories, L	ab Report ID	s JB1189.						

Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)		and 1R-22.1-9/6 (6.0 to 6.5 feet bg netals and general chemistry analyse	
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A		
Additional Hydro/Geological Test – Permeability Results (e.g. pump test/slug	<10 ⁻² Feet/Day	10 ⁻² – 10 Feet/Day	>10 Feet/Day
test/packer test) Additional Comments/Notes/ Observations (if applicable)	N/A		

Boring Identification: RCH-MM-ARC-6

		Boring	Inforr	mati	on								
Alternate Boring ID (if applicable)	N/A												
Pipeline Mile Marker ID	<u> </u>	PENDING with Mariner's Marsh reroute											
Location (Latitude/Longitude) – estimated/surveyed		40° 38' 20.3071" N / 74° 10' 40.3148" W – Surveyed											
Site Address	_	Boring is located in Mariner's Marsh, approximately 245 feet southeast of Omaha Street in Staten sland, New York (no exact street address available).								n Staten			
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)		wall is locate						st of b	oring.				
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	Newark Ba	y is located a	pproxim	nately	1,325	feet no	orth of b	oring.					
Drilling Date	11/30/2013	1											
Drilling Company	Land Air W	ater Environi	mental S	Service	es								
Drilling Method	Hand Auge	r/ Macrocore	e /2"/ Di	rect P	ush								-
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A	•	· ·										
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Geoarchae	logical											
	1	Boring	Obser	vatio	ons								
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 -		6.1 -	- 8.n	8.1 – 1	2.0	12.1 – 1	16.0	16.1 – 2	0.0	>20
where applicable PRODUCT	0.0 – 2.0	χ	4.1	0.0	0.1	8.0	0.1 - 1	2.0	12.1 – 1	10.0	10.1 – 2	.0.0	>20
	T												
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No		T				1			ı			
 Product in GW – Check where applicable 		bserved X		Shee	n Only	<i>'</i>	Floati	ng Pr	oduct = <	6"	Floating	Produ	ict = >6"
HISTORIC FILL MATERIAL													
 Composition, other observations – complete, as applicable 		Reworke N	d Mate	rial			Anthropogenically-Generated Material Trace wood and plastic pieces from 0.5 to 3.0 feet bg.						
 Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated Material only 	0.0 – 2.0	2.1 – 4.	.0	4.1 – (6.0	6.1	- 8.0	8.1	- 10.0	10	.1 – 12.0		>12.1
PID/Odors (depth)	Max PID = 1	1.8 ppm from	1 4.0 to 4	4.5 fee	et bg.	No odo	r detect	ed.					
Geology	FILL (see ak	oove) from gr	ade to 3						wn SILT a	nd CI	LAY, some	fine t	o coarse
Soil Permeability		Loose					nediate X				Tight	i .	
Total Boring Depth (feet bg)	20												-
GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing)	N/A												
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	N/A												
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	N/A												
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A												
Additional Hydro/Geological Test –	21	0 ⁻² Feet/Day			10) ⁻² _ 10	Feet/Da	av.	1		>10 Feet	/Dav	
Permeability Results (e.g. pump test/slug test/packer test)										_	-	•	
Additional Comments/Notes/ Observations (if applicable)	_	y recorded to on by archae							•				

Boring Identification: RCH-MM-ARC-8

		Boring	Informat	ion								
Alternate Boring ID (if applicable)	N/A											
Pipeline Mile Marker ID	PENDING with Mariner's Marsh reroute											
Location (Latitude/Longitude) – estimated/surveyed		1682" N / 74°			Surveye	ed						
Site Address		cated in Ma York (no exa					feet r	northeast	of	Omaha Str	eet ii	n Staten
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)		wall is locate					oring.					
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	Newark Bay	is located a	pproximatel	y 980 f	eet nor	th of bor	ing.					
Drilling Date	11/29/2011											
Drilling Company	Land Air Wa	ter Environr	nental Servi	ces								
Drilling Method	Hand Auger	/ Macrocore	/2"/ Direct	Push								
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A	•										
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Geoarchael	ogical										
	•	Boring (Observat	ions								
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	1	- 8.0	8.1 – 1	2.0	12.1 – 1	6.0	16.1 – 2	0.0	>20
where applicable		X		1			-					
PRODUCT				1			1					
- Product in Soil – Yes/No (odor/inches/viscosity, etc.)	No											
- Product in GW – Check where	None O	bserved	She	en Only	,	Floati	ng Pro	oduct = <6	6"	Floating F	rodu	ct = >6"
applicable)		00	<u> </u>		11000			-			-
HISTORIC FILL MATERIAL	,	•	1									
- Composition, other observations –		Reworke	d Material			Δ	nthro	nogenica	llv-6	enerated	Mate	rial
complete, as applicable			/A			1		ровение	N/			
- Depth (feet bg) – check more than	0.0 - 2.0	2.1 – 4.	0 4.1-	- 6.0	6.1	- 8.0	8.1	- 10.0		.1 – 12.0	;	12.1
one depth, if applicable – applies to Anthropogenically-Generated Material only												
PID/Odors (depth)	N/D	l .						· ·		l		
Geology	Brown SILT	and fine sar									fine	SAND to
Soil Permeability	<u> </u>	Loose				nediate				Tight		
·						Х						
Total Boring Depth (feet bg)	20		l					I.				
GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing)	N/A											
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	N/A											
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	N/A											
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A						_		_		_	
Additional Hydro/Geological Test – Permeability Results (e.g. pump test/slug test/packer test)		⁻² Feet/Day				Feet/Da	•			>10 Feet/	-	
Additional Comments/Notes/ Observations (if applicable)	_	y recorded f n by archae										

Boring Identification: RCH-MM-ENV-4W

		Boring	Informa	ion							
Alternate Boring ID (if applicable)	N/A										
Pipeline Mile Marker ID		ely 650 feet	south of 5.0)6R							
Location (Latitude/Longitude) –		'321" N/74° :			ırveyed						
estimated/surveyed											
Site Address	_	Boring is located in a wooded area, approximately 1,375 feet southeast of the intersection o Richmond Terrace and Western Avenue in Staten Island, New York (no exact street address available).									
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)	Utility ease	Utility easements are located approximately 295 feet west of boring.									
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	An unname	d pond is loc	ated appro	kimatel [,]	y 80 fee	t east of	boring.				
Drilling Date	12/01/11										
Drilling Company	Land Air Wa	ater Environr	nental Serv	ces							
Drilling Method	Hand Auger	·/2"-Macroco	re/Hollow	Stem A	uger						
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	None										
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environmer	ntal									
	•	Boring (Observat	ions							
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	_	- 8.0	8.1 – 12	2.0	12.1 – 16.0	0 16.1 – 2	0.0	>20
where applicable	-				Х						
PRODUCT	l l				ı						
- Product in Soil – Yes/No	No										
(odor/inches/viscosity, etc.)											
- Product in GW – Check where	None O	bserved	She	en Onl	V	Floatir	ng Prod	uct = <6"	Floating F	rodu	ct = >6"
applicable	X X										
HISTORIC FILL MATERIAL			•			•					
 Composition, other observations – complete, as applicable 			d Material /A			Aı	nthrop		- Generated I/A	Mate	rial
- Depth (feet bg) – check more than	0.0 - 2.0	2.1 – 4.		- 6.0	6.1	- 8.0	8.1 -		0.1 – 12.0	- 12.0 >12.1	
one depth, if applicable – applies to Anthropogenically-Generated Material only	0.0 2.0	2.2 4.		0.0	0.1	0.0	0.1	10.0	12.0		12.1
PID/Odors (depth)	No PID. No	odor.				I		<u> </u>		<u> </u>	
Geology	1.0 ft bg, u gravel. from brown med brown CLA	SILT and fir nderlain by n 1.0 to 3.0 lium soft cla f; some fine y reddish-bro	brown, fine ft bg, unde y, trace fin to medium	to me rlain b e to me sand, li	edium S y brown edium g ettle silt,	AND; son n, fine to gravel fro n, trace fir	me silt, o mediu om 3.0 ne, suba	trace find Im SAND; to 4.0 ft angular gr	e to mediun some silt, t bg, underlai avel from 4.0	n, sul race n by 0 to 6	oangular reddish- reddish- 5.0 ft bg,
Soil Permeability		Loose				nediate X			Tight		
Total Boring Depth (feet bg)	20										
GW Temporary Well Installed	0.5 to 19.83	ft. below su	rface - 3" c	iamete	r 0.010	slot PVC	screen				
(Depth, Screen, Riser, Slot Size, Casing)											
Laboratory Name and Report No. (if samples collected)	Accutest La	boratories, L	ab Report I) JA935	06 and	JA93382	•				
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	collected fo	NV-4W/3.5 (or VOC, SVOC	, PCB, TPH,	pesticio	de, herb	icide, me	etals an	d general	chemistry ar	nalyse	es.
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)		NV-4W was o	collected for					general ch			
Additional Hydro/Geological Test –	<10) ⁻² Feet/Day		1		Feet/Da	у		>10 Feet/	'Day	
Permeability Results						X					
Additional Comments/Notes/ Observations (if applicable)	N/A										

Boring Identification: RCH-MM-ENV-5

		Boring	Informat	ion						
Alternate Boring ID (if applicable)	N/A									
Pipeline Mile Marker ID	•	ith Mariner's	Marsh rero	ute						
Location (Latitude/Longitude) –		40° 38′ 15.7902″ N / 74° 10′ 40.3218″ W – Surveyed								
estimated/surveyed										
Site Address		Boring is located in Mariner's Marsh, approximately 670 feet southeast of Omaha Street in Stater Island, New York (no exact street address available).								
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)						ely 280 feet w	est of boring.			
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	Wetlands a	re located ap	proximately	200 feet sou	th of boring.					
Drilling Date	12/1/2011									
Drilling Company		ater Environr	nental Servio	es						
Drilling Method	Hand Auger	/ Macrocor	e / 2"/ Geop	obe						
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A	,	, , , , , , , , ,							
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environmer	ntal								
		Boring (Observati	ons						
Depth to saturation (feet bg) – Check	0.0 - 2.0	2.1 – 4.0	4.1 – 6.0	6.1 – 8.0	8.1 – 12.0	12.1 – 16.0	0 16.1 – 20.	0 >20		
where applicable				Х						
PRODUCT					I.	- I	l .	ı		
 Product in Soil – Yes/No (odor/inches/viscosity, etc.) 	No									
 Product in GW – Check where applicable 		None Observed Sheen Only Floating Product = <6" Floating Product X						oduct = >6"		
HISTORIC FILL MATERIAL							•			
 Composition, other observations – complete, as applicable 			d Material		Anth	nthropogenically-Generated Material N/A				
- Depth (feet bg) – check more than	0.0 - 2.0			0.1 – 12.0	>12.1					
one depth, if applicable – applies to	0.0 – 2.0	2.1 - 4.	0 4.1	0.0 0.1	. – 8.0	1 - 10.0	10.1 – 12.0	/12.1		
Anthropogenically-Generated										
Material only										
PID/Odors (depth)	N/D									
	<i>'</i>	CII T. little fi	na ta madiu	m cand trac	- clay +race +	fina ta saarsa	sub angular	reaval fram		
Geology		.5 feet bg, ur	nderlain by r	ed brown CLA	AY; little silt to	at least 20 fe	, sub-angular g eet bg.	gravei irom		
Soil Permeability		Loose		Inter	mediate		Tight			
Total Boring Depth (feet bg)	20						Х			
GW Temporary Well Installed	N/A									
(Depth, Screen, Riser, Slot Size, Casing)	'','									
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest	Accutest La	boratories, L	ab Report ID	JA93382						
Laboratories, Lab Report ID JA65410")										
Soil Samples Collected - Sample ID(s),				<i>-</i>	•	•	et bg) were co	ollected for		
Sample Depth(s) and Sampling Parameter(s)	voc, svoc,	PCB, TPH, p	esticide, herl	oicide, metal	and general	chemistry and	alyses.			
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A									
Additional Hydro/Geological Test –	211	D ⁻² Feet/Day		10-2 1) Feet/Day		>10 Feet/D	21/		
Permeability Results (e.g. pump test/slug	\	, reel/Ddy		10 - 10	J reet/Day		>10 FEET/ D	ау		
test/packer test)										
Additional Comments/Notes/ Observations (if applicable)	Borehole ba	ackfilled with	soil cuttings	and restore	d to grade.					

New Jersey/New York Expansion Project Boring Summary Table

Boring Identification: RCH-MM-ENV-6

		Boring	Informa	ion								
Alternate Boring ID (if applicable)	N/A											
Pipeline Mile Marker ID	PENDING with Mariner's Marsh reroute											
Location (Latitude/Longitude) – estimated/surveyed		40° 38' 15.7902" N / 74° 10' 40.2879" W – Surveyed										
Site Address		cated in Ma York (no exa					feet so	outheast	of C	Omaha Stre	eet ii	1 Staten
Nearby Subsurface Features (Distance and Direction from Utilities, Tanks, Properties, etc.)		Gamble util					mately 2	280 feet	west	t of boring.		
Nearby Hydraulic Features (Distance and Direction from wetlands, etc.)	Wetlands a	e located ap	proximatel	400 fe	et sout	h of bor	ing.					
Drilling Date	12/1/2011											
Drilling Company	Land Air Wa	ter Environr	nental Servi	ces								
Drilling Method	Hand Auger	/ Macrocor	e / 2"/ Geop	robe								
Additional Hydro/Geological Tests (e.g. pump test/slug test/packer test)	N/A											
Boring Purpose (e.g. geotech/ environmental/geoarchaelogical)	Environmer	ital										
		Boring (Observat	ions								
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	_	- 8.0	8.1 – 1	2.0	12.1 – 1	6.0	16.1 – 20	0.0	>20
where applicable		Х										
PRODUCT			•							•		
- Product in Soil – Yes/No (odor/inches/viscosity, etc.)	No											
- Product in GW – Check where	None Observed Sheen Only				y	Floating Product = <6"				Floating P	rodu	ct = >6"
applicable	>											
HISTORIC FILL MATERIAL			•			•						
 Composition, other observations – complete, as applicable 		Reworked Material Anthropogenically-Generated M N/A N/A						Vlate	rial			
 Depth (feet bg) – check more than one depth, if applicable – applies to Anthropogenically-Generated 	0.0 – 2.0	2.1 – 4.	0 4.1	- 6.0	6.1	- 8.0	8.1 -	- 10.0	10.	1 – 12.0	;	·12.1
Material only												
PID/Odors (depth)	N/D											
Geology		to red broved brown CLA eet bg.										
Soil Permeability		Loose		Intermediate					Tight			
						Χ						
Total Boring Depth (feet bg)	15											
GW Temporary Well Installed (Depth, Screen, Riser, Slot Size, Casing)	N/A											
Laboratory Name and Report No. (if samples collected) (e.g. "Accutest Laboratories, Lab Report ID JA65410")	Accutest Laboratories, Lab Report ID JA93382											
Soil Samples Collected - Sample ID(s), Sample Depth(s) and Sampling Parameter(s)	RCH-MM-ENV-6/3 (3.0 to 3.5 feet bg) and RCH-MM-ENV-6/6.5 (6.5 to 7.0 feet bg) were comple Depth(s) and Sampling RCH-MM-ENV-6/3 (3.0 to 3.5 feet bg) and RCH-MM-ENV-6/6.5 (6.5 to 7.0 feet bg) were completed by the complex of the com						colle	cted for				
GW Samples Collected - Sample ID(s) and Sampling Parameter(s)	N/A											
Additional Hydro/Geological Test – Permeability Results (e.g. pump test/slug	<10	⁻² Feet/Day		1	0 ⁻² – 10	Feet/Da	ay			>10 Feet/	Day	
test/packer test) Additional Comments/Notes/	Borehole ba	ickfilled with	soil cutting	s and re	estored	to grade	e.					
Observations (if applicable)						-						

New Jersey/New York Expansion Project Boring Summary Table

Boring Identification: RCH-MM-ENV-9

		Boring	Informa	tion							
Alternate Boring ID (if applicable)	N/A										
Pipeline Mile Marker ID	PENDING with Mariner's Marsh reroute										
Location (Latitude/Longitude) –	40° 38' 21.8696" N / 74° 10' 40.2559" W – Surveyed										
estimated/surveyed	35 21.5	,	10 .0.200		,	~					
Site Address	Boring is lo	cated in Ma	riner's Ma	arsh, app	roximat	tely 98	feet south	neast of	Omaha Str	eet in Staten	
		York (no exa									
Nearby Subsurface Features (Distance and		wall is locate				•	oring.				
Direction from Utilities, Tanks, Properties,			• •	•			J				
etc.)											
Nearby Hydraulic Features (Distance and	Newark Bay	is located a	oproximate	ely 1,150	feet no	rth of b	oring.				
Direction from wetlands, etc.)											
Drilling Date	11/29/2011										
Drilling Company	Land Air Wa	iter Environn	nental Serv	vices							
Drilling Method	Hand Auger	/ Macrocore	e / 2"/ Geo	probe							
Additional Hydro/Geological Tests (e.g.	N/A										
pump test/slug test/packer test)											
Boring Purpose (e.g. geotech/	Environmer	ital									
environmental/geoarchaelogical)											
		Boring (Observa	tions							
Depth to saturation (feet bg) – Check	0.0 – 2.0	2.1 – 4.0	4.1 – 6.0	6.1	- 8.0	8.1 – 1	12.0	.1 – 16.0	16.1 – 2	0.0 >20	
where applicable		•		Wat	er Not E	Encount	ered				
PRODUCT	•										
- Product in Soil – Yes/No	No										
(odor/inches/viscosity, etc.)											
- Product in GW – Check where	None Observed Sho			neen Only Floating Produc			t = <6"	Floating F	Product = >6"		
applicable	Х										
HISTORIC FILL MATERIAL											
 Composition, other observations – 	Reworked Material Anthropogenically-Generated Material										
complete, as applicable		N	/A			N/A					
 Depth (feet bg) – check more than 	0.0 - 2.0	2.1 – 4.	0 4.1	4.1 - 6.0 6.1		1 – 8.0 8.1 – 10		0.0 10	0.1 – 12.0	>12.1	
one depth, if applicable – applies to											
Anthropogenically-Generated											
Material only											
PID/Odors (depth)	N/D										
Geology					-		-		-	to 11 feet bg,	
	underlain by red brown CLAY; some silt, trace fine to coarse gravel to at least 15 feet bg.										
Soil Permeability		Loose			Interm	ediate			Tight		
					>	X					
Total Boring Depth (feet bg)	15										
GW Temporary Well Installed	N/A										
(Depth, Screen, Riser, Slot Size, Casing)											
Laboratory Name and Report No. (if	Accutest Laboratories, Lab Report ID JA93099										
samples collected) (e.g. "Accutest											
Laboratories, Lab Report ID JA65410")											
Soil Samples Collected - Sample ID(s),	RCH-MM-ENV-9/2 (2.0 to 2.5 feet bg) and RCH-MM-ENV-9/6 (6.0 to 6.5 feet bg) were collected for										
Sample Depth(s) and Sampling	VOC, SVOC, PCB, TPH, pesticide, herbicide, metals and general chemistry analyses.										
Parameter(s)											
GW Samples Collected - Sample ID(s) and	N/A										
Sampling Parameter(s)		2			,			1			
	<10 ⁻² Feet/Day 10			10	0 ⁻² – 10	Feet/Da	ay		>10 Feet/	'Day	
Additional Hydro/Geological Test –											
Permeability Results (e.g. pump test/slug											
Permeability Results (e.g. pump test/slug test/packer test)		160									
Permeability Results (e.g. pump test/slug	Borehole ba	nckfilled with	soil cuttin	gs and re	estored	to grad	e.				

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TEST PIT LOG

TEST PIT NUMBER RCH-1-ARC-MT-2

PROJECT NAME:

PROJECT NO.: 168217

Spectra NJ-NY

Expansion

LOCATION: Staten Island, New York

(M&R-058)

CONTRACTOR: The Napp-Greco Company

DATE COMPLETED:

08/18/11

OPERATOR: LOGGED BY:

R. Degi	
B. Chaky	

DEPTH FROM SURFACE (FEET)	PID (ppm)	SAMPLE DESIGNATION AND DEPTH (feet)	LITHOLOGIC CLASSIFICATION AND COMMENTS
_ 1 _			0' to 0.1' - Asphalt. 0.1' to 2.3' - FILL: Gray-brown fine to coarse sand; some fine to medium angular to subrounded gravel; little silt. Dry, dense, gravel base, metal fragments, mica-schist, granitic pieces. Little slag fragments at 1.7'.
3 _	ND	No sample collected	2.3' to 2.7' - FILL: Orange-brown fine sand; little silt; trace fine sub-rounded gravel. Moist, 2.7' to 3.6 - Dark brown to black fine SAND; little silt; trace fine rounded gravel. Moist, medium dense, dark organic staining.
4 _			3.6' to 5.0' - Brown fine SAND; little silt. wet, medium dense, organic root material.
_ 5 			End of test pit @ 5.0'.

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TEST PIT LOG

TEST PIT NUMBER

RCH-1-ENV-6 (RCH-1-ARC-MT-3)

PROJECT NAME:

PROJECT NO.: 168217

Spectra NJ-NY

Expansion

LOCATION: Staten Island, New York

(M&R-058)

CONTRACTOR: The Napp-Greco Company

DATE COMPLETED:

08/15/11

OPERATOR: R. Degi LOGGED BY: B. Chaky

DEPTH FROM SURFACE (FEET) PID (ppm) SAMPLE DESIGNATION AND DEPTH (feet)		DESIGNATION	LITHOLOGIC CLASSIFICATION AND COMMENTS						
	1	_		_	0.0 to 1.0' - FILL: Gray to gray brown, fine to medium g trace silt, rock fragments, concrete. Dry, dense, sub-ar				
_	2	_			1.0 to 1.5'- FILL: Orange brown, fine to medium sand;	trace fine gravel.			
	3	_	ND		1.5 to 4.0' - FILL: Brown fine to medium sand; some fir concrete, brick. Moist, dense, sub-angular to sub-round				
	4								
	5			RCH1ENV6/4	race fine gravel, tree root and tree				
	6				5.0 to 6.0' - Tan brown, fine SAND; some silt, little fine	gravel. Wet, medium loose.			
F	•				End of test pit @ 6				
F									
r									
r									
r									
r									
r									
L									

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TEST PIT LOG

TEST PIT NUMBER RCH-1-ARC/MT-4

PROJECT NAME:

Spectra NJ-NY

Expansion

LOCATION: Staten Island, New York

(M&R-058)

DATE COMPLETED:

08/15/11

B. Chaky

PROJECT NO.: 168217

CONTRACTOR: The Napp-Greco Company

OPERATOR: R. Greco

LOGGED BY:

DEPTH FROM SURFACE (FEET)	PID (ppm)	SAMPLE DESIGNATION AND DEPTH (feet)	LITHOLOGIC CLASSIFICATION AND COMMENTS
	0.4		0.0 to 1.0' - FILL: Gray brown, fine to coarse sand; some fine to medium, sub-angular to
1 _	0.3		sub-rounded gravel, little silt, brick fragments, granite fragments. Dry, dense.
2	2.1 2.8		1.0 to 1.5' - FILL: Gray, fine to coarse gravel; some fine to medium sand, little silt, rock fragments. Moist, dense.
<u></u>	15.3	RCH1ARCMT4/2	1.5 to 4.0' - FILL: Gray brown to red brown, fine to medium sand; some fine to coarse,
3	12.6		sub-angular to sub-rounded gravel, little silt, concrete, brick, engineered clay. Wet,
F ~ -	9.7		dense.
4	7.2		
			End of test pit @ 4.0'.
_			
_			
<u> </u>			
L _			
<u> </u>			
<u> </u>			

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TEST PIT LOG

TEST PIT NUMBER RCH-1-ENV-3

PROJECT NAME:

PROJECT NO.: 168217

Spectra NJ-NY

Expansion

LOCATION: Staten Island, New York

(M&R-058)

CONTRACTOR: The Napp-Greco Company

DATE COMPLETED:

08/17/11

OPERATOR: LOGGED BY: R. Degi B. Chaky

sı	DEPTH FROM SURFACE (FEET)		PID (ppm)	SAMPLE DESIGNATION AND DEPTH (feet)	LITHOLOGIC CLASSIFICATION AND COMMENTS
	1				0.0 to 1.0' - FILL: Gray/brown, fine to coarse sand; some fine to coarse, angular to subangular to sub-rounded gravel,trace silt. Dry, dense. Asphalt millings,gravel base.
					1.0 to 1.5' - FILL: Orange brown, fine to medium sand; little silt. Wet, medium dense.
_	2		ND	RCH-1-ENV-3/1.5	1.5 to 3.0' - FILL: Brown to gray brown, fine to coarse sand; some fine to coarse, sub-angular to sub-rounded gravel, little silt, mica schist and granite cobbles. Wet, medium dense.
_	3	_			3.0 to 4.0' - Brown to dark brown, fine SAND; little silt. Wet, medium dense, black
	4			RCH-1-ENV-3/4	organic staining.
					End of test pit @ 4.0'.
L					

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TEST PIT LOG

TEST PIT NUMBER RCH-1-ARC/MT-5

PROJECT NAME: Spectra NY/NJ LOCATION: Staten Island, New York

Expansion

PROJECT NO.: 168217 CONTRACTOR: The Napp-Greco Company

DATE COMPLETED: 08/22/11

OPERATOR: R. Degl

DEPTH FROM SURFACE (FEET)	PID (ppm)	SAMPLE DESIGNATION AND DEPTH (feet)	LITHOLOGIC CLASSIFICATION AND COMMENTS
_ 1 _		No Samples Collected	0 to 1.0' - Dark brown medium to coarse SAND, gravel throughout. Moist.
_ 2 _			1.0 to 1.5' - Light brown medium SAND. 2.0 to 7.0' - Gray fine SAND and SILT, small to large rocks up to 3' in diameter. Encountered water at 3.5'.
3 _			
_ 4 _	ND		
_ 5 _			
6 _			
_ 7 _ 8			7.0 to 8.0' - Brown medium SAND and SILT, inclusions of clay throughout.
			End of test pit at 8 feet.

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TEST PIT LOG

TEST PIT NUMBER RCH-1-ARC/MT-6

PROJECT NAME: Spectra NY/NJ LOCATION: Staten Island, New York

Expansion

PROJECT NO.: 168217 CONTRACTOR: The Napp-Greco Company

DATE COMPLETED: 08/23/11

OPERATOR: R. Degl

DEPTH FROM SURFACE (FEET)	PID (ppm)	SAMPLE DESIGNATION AND DEPTH (feet)	LITHOLOGIC CLASSIFICATION AND COMMENTS
_ 1 _	-	No Samples Collected	0 to 0.5' - FILL: Dark brown, medium-coarse sand, gravel throughout. 0.5 to 4.5' - FILL: Brown to dark brown, medium to fine sand and gravel. Some large rocks. Structural and non-structural pieces of wood throughout. Streaks of dark brown clay.
_ 3 _	-		
_ 4 _	- ND		
_ 5 _	_		4.5 to 8.0' - Brown medium SAND, some CLAY. Lenses of silty clay throughout.
- 6 - 7	-		
8			
	-		End of test pit at 8 feet.
	_		

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TEST PIT LOG

TEST PIT NUMBER RCH-1-ARC/MT-7

PROJECT NAME: Spectra NY/NJ LOCATION: Staten Island, New York

Expansion

PROJECT NO.: 168217 CONTRACTOR: The Napp-Greco Company

DATE COMPLETED: 08/24/11

OPERATOR: R. Degl

	-		
DEPTH FROM SURFACE (FEET)	PID (ppm)	SAMPLE DESIGNATION AND DEPTH (feet)	LITHOLOGIC CLASSIFICATION AND COMMENTS
		No samples	0 to 1.0' - FILL: Dark brown, medium to coarse sand, gravel throughout.
1		1141	1.0 to 2.0' - FILL Light brown-orange, medium sand, some gravel.
F ' -			1.0 to 2.0 Thee eight brown brange, modum band, bonne graver.
0			
_ 2 _			2.0 to 5.0' - FILL: Brown and gray, medium sand. Many large rocks, small boulders, large
			intact bricks throughout. Some gray clay at 5 feet.
_ 3 _			ilitact bricks throughout. Some gray day at 5 feet.
4	ND		
	ND		
5			
⊢ ′ −			5.0 to 6.0' - Dark brown, fine SAND and SILT. Organic material throughout. Moist.
			2.0 to 0.0 Dark 5/54/1, fine 5/14/2 and 5/21. Organic material throughout. Wolst.
_ 6 _			
			6.0 to 8.0' - Light brown, silty CLAY and fine SAND. Wet.
7			
8			
			End of test pit at 8 feet.
			End of test pit at 6 feet.
-			
_			
-			
<u> </u>			
<u> </u>	l .		

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TEST PIT LOG

TEST PIT NUMBER RCH-1-ARC/MT-8

PROJECT NAME: Spectra NY/NJ LOCATION: Staten Island, New York

Expansion

PROJECT NO.: 168217 CONTRACTOR: The Napp-Greco Company

DATE COMPLETED: 08/25/11

OPERATOR: R. Degl

DEPTH FROM SURFACE (FEET)	PID (ppm)	SAMPLE DESIGNATION AND DEPTH (feet)	LITHOLOGIC CLASSIFICATION AND COMMENTS
_ 1 _		No Samples Collected	0 to 1.0' - FILL: Dark brown, medium to coarse sand, gravel throughout. 1.0 to 2.0' - FILL: Light brown-orange, medium sand, some small pebbles, some silt.
_ 2 _ _ 3			2.0 to 4.5' -FILL: Brown, medium sand and silt. Some large rocks throughout.
_ 4 _	115		
_ 5 <u> </u>	ND		4.5 to 5.0' - FILL: Dark brown, fine sand and silt with organic material throughout. 5.0 to 6.0' - FILL: Light brown, silty clay with fine sand. Moist (Archaelogical feature, possibly a fire pit, at 5.5').
7 _			6.0 to 9.0' - Light brown, silty CLAY and fine SAND. Wet.
_ 8 _			
9			End of test pit at 9 feet.

BORING NUMBER

PROJECT NAME: Spectra NJ-NY Expansion

LOCATION: Manhattan, NY

PROJECT NO.: 168217

CONTRACTOR: Aqua Survey, Inc.

SAMPLER TYPE/DIA.: 4" Core Barrel

DEPTH TO WATER: Not Applicable

DRILLER: B. Rottner

BORING METHOD: Vibracore

TOTAL DEPTH DRILLED: 10 Feet

LOGGED BY: B. Chaky

DATE DRILLED: 04/04/11

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (FEET)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
2			ND 5.1	VC-4 / 2'-2.5'		
4			ND ND			
6		8.3	ND ND		ML	0' to 10' - Dark Gray to Black SILT, plastic, loose, wet, odor
8			1.7 ND	VC-4 / 7'-7.5'		
10			ND			
12						End of Boring @ 10 Feet
14		-				
16						
18						
20						
22						
24						
26						
28						
30						

BORING NUMBER

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

PROJECT NAME: Spectra NJ-NY

Expansion

LOCATION: Jersey City, NJ

DEPTH TO WATER: Not Applicable

PROJECT NO.: 168217 **CONTRACTOR**: Aqua Survey, Inc.

DATE DRILLED: 04/04/11

DRILLER: B. Rottner

LOGGED BY: B. Chaky

SAMPLER TYPE/DIA.: 4" Core Barrel

BORING METHOD: Vibracore TOTAL DEPTH DRILLED: 20 Feet

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (FEET)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
2			ND ND	VC-1 / 2'-2.5'		
4			ND ND			
6			ND ND			
8			ND ND	VC-1 / 7'-7.5'		
10		15.4	ND ND		ML	0' to 20' - Dark Gray to Black SILT, plastic, loose, wet
_ 12 _			ND ND			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
14				VC-1 / 14'-14.5'		
_ 16 _			ND ND ND			
18			ND ND ND			
_ 20 _			ND			End of boring @ 20 Feet
_ 22 _						
_ 24 _						
_ 26 _						
_ 28 _						
30						

BORING NUMBER

PROJECT NAME: Spectra NJ-NY Expansion

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

LOCATION: Jersey City, NJ

PROJECT NO.: 168217

CONTRACTOR: Aqua Survey, Inc.

SAMPLER TYPE/DIA.: 4" Core Barrel

BORING METHOD: Vibracore

DEPTH TO WATER: Not Applicable

TOTAL DEPTH DRILLED: 21 Feet

DATE DRILLED: 04/04/11

DRILLER: B. Rottner

LOGGED BY: B. Chaky

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (FEET)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
2			ND ND	VC-2 / 2'-2.5'		0 to 20' - Dark Gray to Black SILT, plastic, loose, wet, odor.
4			ND ND			
			ND			
_ 6 _			ND ND	VC-2 / 7'-7.5'		
_ 8 _			ND ND			
_ 10 _		16.5	ND ND		ML	
_ 12 _			ND ND			
_ 14 _			ND ND	VC-2 / 15'-15.5'		
16			ND	VO-27 10-10.0		
18			ND ND			
20			ND ND			
22						End of boring @ 21 Feet
24						
26						
28						
30						
		<u> </u>				<u> </u>

BORING NUMBER

PROJECT NAME: Spectra NJ-NY

Expansion

LOCATION: Jersey City, NJ

PROJECT NO.: 168217

CONTRACTOR: Aqua Survey, Inc.

SAMPLER TYPE/DIA.: 4" Core Barrel

BORING METHOD: Vibracore

DEPTH TO WATER: Not Applicable

TOTAL DEPTH DRILLED: 12 Feet

DATE DRILLED: 04/04/11

DRILLER: B. Rottner

LOGGED BY: B. Chaky

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (FEET)	PID (ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0 _						
2 _			ND ND	VC-3 / 2'-2.5'		0 to 10' - Dark Gray to Black SILT, plastic, loose, wet, odor.
4 _			ND ND			
6 _		8.5	ND ND ND	VC-3 / 7'-7.5'	ML	
8 _			ND ND	VC-3/1-1.3		
_ 10 _			ND			End of Boring @ 10 Feet
_ 12 _						g cg
_ 14 _						
_ 16 _						
_ 18 _						
_ 20 _						
_ 22 _						
_ 24 _						
_ 26 _						
_ 28 _						
30					<u> </u>	

BORING NUMBER

PROJECT NAME: Spectra NJ-NY Expansion

LOCATION: Manhattan, NY

PROJECT NO.: 168217

CONTRACTOR: Aqua Survey, Inc.

SAMPLER TYPE/DIA.: 4" Core Barrel

BORING METHOD: Vibracore

DEPTH TO WATER: Not Applicable

TOTAL DEPTH DRILLED: 12 Feet

DATE DRILLED: 04/04/11

DRILLER: B. Rottner

LOGGED BY: B. Chaky

DEPTH	BLOW	RECOVERY	PID	CAMDI E	۵	
FROM SURFACE (FEET)	COUNT PER 6 IN.	(FEET)	(ppm)	SAMPLE DESIGNATION	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0						
2			ND ND	VC-5 / 2'-2.5'		
4			ND ND			
6 _		8.5	ND ND		ML	0' to 10' - Dark Gray to Black SILT, plastic, loose, wet, odor
8 _			1.2 ND	VC-5 / 7'-7.5'		
_ 10 _			ND ND			5 1 (0 : 0 (0 5)
12 _						End of Boring @ 10 Feet
_ 14 _						
_ 16 _						
_ 18 _						
_ 20 _						
_ 22 _						
_ 24 _						
26						
_ 28 _						
30						

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TEMPORARY WELL AND SOIL BORING LOG

WELL NUMBER

1R-22.1-ENV-3W

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

PROJECT NAME: Spectra NJ-NY Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

SAMPLER TYPE/DIA.: Macrocore/2"

TOTAL DEPTH DRILLED: 20 feet

DEPTH TO BEDROCK: Not Encountered

CONTRACTOR: Land Air Water Environmental

Services

TYPE OF WELL: Temporary

DRILLING METHOD: Hollow Stem Auger

BIT TYPE: Auger Bit

START DATE: 07/05/11

FINISH DATE: 07/05/11

DRILLER: K. McGourty

LOGGED BY: B. Chaky

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	WELL DIAGRAM	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
(FEET) - 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 -		18	ND ND ND ND ND ND 0.2 2.1 19.8	1R-22.1-3W/1 1R-22.1-3W/6		SW	0 to 5.0' - Brown, medium to fine SAND; some silt, trace clay, trace roots. 5.0 to 10' - Brown to gray, coarse to fine SAND; little silt, trace gravel. Wet @ 6'. 10 - 11' - Gray CLAY; some medium to fine sand, trace silt. Wet. 11 to 15' - Brown PEAT; trace clay. Moist.
15		-	31.8				
	YPE/DIAME PVC/3	TER (IN.) OUTER:		N/A		D	STATIC WATER LEVEL: 2.95 (07/06/11) feet below surface EPTH WATER ENCOUNTERED: 6 feet below surface
SCREE		EN INTERVAL: DW SURFACE)		0 - 20			MEASURING POINT ELEVATION: NA ft.msl GROUND SURFACE ELEVATION: NA ft.msl



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TEMPORARY WELL AND SOIL BORING LOG

WELL NUMBER

1R-22.1-ENV-3W

	Willow Stre	et, Millburn,		1 (973) 564-6006			S	OIL BORING LOG	1R-22.1-ENV-3W
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	WELL DIAGRAI	м	UNIFIED	LITHOLOGIC CLASS	SIFICATION AND COMMENTS
			150			ı	PT	15 to 19' - Dark brown PEAT; trace	clay. Moist.
16									
			89.2						
17		=	173						
		36							
18			166						
40			E2 2		-				
_ 19			53.2				2147	19 to 20' - Dark gray, medium to fir	ne SAND: trace silt. Wet.
20			80.6		-		SW	To to 20 Dain gray, modium to in	
_ 20 _			00.0					End o	f boring at 20'
									, and the second
_									
								Well Cor	nstruction Details
		1						0 to 20 ft. below surface - 3" di	ameter 0.010 slot PVC screen
								0 to 20 ft. below surface - No. 0	1 sand
_									
		-							
		1							
- 4									
		_							
		-							
		-							
		-							
		-							
		-							

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57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

TEMPORARY WELL AND SOIL BORING LOG

RCH-4H-ENV-5W

WELL NUMBER

PROJECT NAME: Spectra NJ-NY Expansion

ion LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water Environmental

Services

SAMPLER TYPE/DIA.: Macrocore/2" / Hand Auger TYPE OF WELL: Temporary

DEPTH TO BEDROCK: Not Encountered

DRILLING METHOD: Hollow Stem Auger
BIT TYPE: Auger Bit

LOGGED BY: B. Chaky

DRILLER: K. McGourty

START DATE: 09/19/11

FINISH DATE: 09/19/11

TOTAL DEPTH DRILLED: 20 feet

DEPTH **BLOW** RECOVERY PID SAMPLE WELL FROM COUNT SURFACE (INCHES) (ppm) DESIGNATION DIAGRAM LITHOLOGIC CLASSIFICATION AND COMMENTS PER 6 IN. (FEET) Top of casing 14" below surface. 0 0.0 to 1.5' - Asphalt layer (15" thick) and gravel base. 1.5 to 3.5' - FILL: Gray, fine to medium, angular to sub-angular gravel; 2 some fine to coarse sand, trace silt. Dry, dense. Trace brick Hand ND fragments. Cleared 3 RCH-4H-ENV-SW 3.5 to 4.5' - Dark brown to black, fine to medium SAND; trace fine to 4 5W/3.5 coarse, sub-angular gravel, trace silt. Moist, medium dense, slight petroleum-like odor. Trace organic root material. 5 4.5 to 10' - Light brown to brown, fine to medium SAND; trace silt. Wet, medium dense. Trace fine gravel from 4.5 to 5.0'. RCH-4H-ENV-6 5W/5.5 7 ND 39 8 9 10 SP 10 to 20' - Red brown, fine to medium SAND; little silt. Wet, medium dense. Red brown, stiff clay layer with trace fine gravel from 12 to 13'. 11 12 ND 13 14 15 STATIC WATER LEVEL: 1.64 (9/20/11) feet below surface CASING TYPE/DIAMETER (IN.) INNER: PVC/3 DEPTH WATER ENCOUNTERED: 4.5 feet below surface OUTER: SCREENED OR OPEN INTERVAL: 6.0 to 16.0 MEASURING POINT ELEVATION: (FEET BELOW SURFACE) GROUND SURFACE ELEVATION: ft.msl



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TEMPORARY WELL AND SOIL BORING LOG

WELL NUMBER RCH-4H-ENV-5W

57 E.		et, Millburn, I	NJ 0704	1 (973) 564-6006			S	OIL BORING LOG	RCH-4H-ENV-5W
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	WELL DIAGRAI	м	UNIFIED	LITHOLOGIC CLASS	SIFICATION AND COMMENTS
_ 16 _									
_ 17 _									
_ 18 _		37	ND						
_ 19 _									
_ 20 _						+		End c	of boring at 20'
								· · · · · · · · · · · · · · · · · · ·	nstruction Details
_								1.0 to 6.0 ft. below surface - 3" 6.0 to 16 ft. below surface - 3" 1.0 to 16 ft. below surface - No.	diameter 0.010 slot PVC screen
_								Total Depth of well = 16.07 feet	
								Total Bopar of Woll = 10.07 100.	. 5g do 1110dod 100 011 0/25/11
_									
_									
_									

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57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

TEMPORARY WELL AND SOIL BORING LOG

PROJECT NAME: Spectra NJ-NY Expansion LOCATION: Staten Island, New York

PROJECT NO.: 168217 CONTRACTOR: Land Air Water Environmental Services

SAMPLER TYPE/DIA.: Hand Auger/ Macrocore/2" TYPE OF WELL: Temporary

 DEPTH TO BEDROCK:
 Not Encountered
 DRILLING METHOD:
 Hollow Stem Auger

 TOTAL DEPTH DRILLED:
 20 feet
 BIT TYPE:
 Auger Bit

WELL NUMBER

RCH-5H-ENV-1W

START DATE: 10/25/11

FINISH DATE: 10/25/11

DRILLER: J. Lamprecht

LOGGED BY: J. Lenhart

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	WELL DIAGRAM	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
_ 0 1 2 3 4 5 6 7 8 10 11 12 13 14 14		Hand Cleared	ND I I I I I I I ND 44.2 26.7 23.2 35.7 64.1 45.8 23.4 52.1 85.9 34.6 0.8 1.1 0.9 1.2 0.1 ND ND ND ND	RCH-5H-ENV-1W/3.5		ML	Top of casing to ground surface: -0.58 feet 0.0 to 1.0' - Asphalt layer (5" thick), Concrete mixed with gravel (7" thick). 1.0 to 2.0' - FILL: Orange-brown, fine to medium sand; trace silt, trace fine to coarse, sub-angular gravel. Moist, loose. 2.0 to 5.0' - FILL: Orange-brown, fine to medium sand; some silt, trace clay, trace fine to medium, sub-angular gravel. Moist, loose. Cobble @ 3.0'. 5.0 to 10' - FILL: Dark brown, fine to medium sand; some silt, little clay, trace fine gravel. Wet, loose, sewage-like odor. Wet @ 5.0'. Clay lens (4" thick) medium stiff @ 8.5'.
15 CASING T INNER:	YPE/DIAME [*]		0.4	N/A		L	STATIC WATER LEVEL: 6.83 (10/26/11) feet below surface EPTH WATER ENCOUNTERED: 5 feet below surface
	NED OR OPE	N INTERVAL:		0.58 - 15.58		ı	MEASURING POINT ELEVATION: NA ft.msl GROUND SURFACE ELEVATION: NA ft.msl



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TEMPORARY WELL AND SOIL BORING LOG

WELL NUMBER RCH-5H-ENV-1W

	Willow Stre	et, Millburn,	NJ 0704	1 (973) 564-6006			S	OIL BORING LOG	RCH-5H-ENV-1W
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	WELL DIAGRAI	м	UNIFIED	LITHOLOGIC CLAS	SIFICATION AND COMMENTS
16								10 to 20' - Reddish brown SILT Dry, stiff.	; little clay, trace sub-rounded gravel.
_ 10 _									
17									
18		60	ND						
19		=							
20 _								End o	of boring @ 20'
. –									
. <u> </u>									nstruction Details
		_						0.58 to 15.70 ft. below surface 0.58 to 15.70 ft. below surface	 3" diameter 0.010 slot PVC screer No. 01 sand
_									
_		-						Total depth of well = 15.70 feet	t bg as measured on 10/26/11
									grout, bentonite chips, black dyed
		-						cement and restored to grade.	
_									
. <u> </u>									
		-							
_		-							
_									
. <u>–</u>]							
. –		-							
		1							
_		1							
		1							

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TEMPORARY WELL AND SOIL BORING LOG

WELL NUMBER

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

RCH-5H-ENV-6.1W

PROJECT NAME: Spectra NJ-NY Expansion

Services

LOCATION: Staten Island, New York

CONTRACTOR: Land Air Water Environmental

START DATE: 10/27/11

SAMPLER TYPE/DIA.: Hand Auger/ Macrocore/2"

TYPE OF WELL: Temporary **DRILLING METHOD:** Hollow Stem Auger FINISH DATE: 10/27/11 DRILLER: J. Lamprecht LOGGED BY: J. Lenhart

DEPTH TO BEDROCK: Not Encountered

PROJECT NO.: 168217

TOTAL DEPTH DRILLED: 20 feet

BIT TYPE: Auger Bit

DEPTH **BLOW** RECOVERY PID SAMPLE WELL FROM COUNT SURFACE (INCHES) (ppm) DESIGNATION DIAGRAM LITHOLOGIC CLASSIFICATION AND COMMENTS PER 6 IN. (FEET) Top of casing to ground surface: -1.0 feet 0 0.0 to 1.0' - Asphalt layer (4" thick), Concrete mixed with gravel (7" 1.0 to 4.0' - FILL: Orange-brown, fine to medium sand; little clay pieces, little fine to coarse, sub-angular gravel, trace silt. Loose, dry. 2 Little concrete pieces (1-4" diameter). Trace organic wood material within clay. 3 RCH-5H-ENV-4 Hand ND 6 1W/3 5 Cleared 4.0 to 10' - FILL: Orange-brown, fine to medium sand; little silt, trace clay pieces, trace fine to medium, sub-angular gravel. Loose, wet @ 5 5.0'. Trace coal pieces from 8.0 to 10'. 6 7 8 RCH-5H-ENV-6.1W/7.5 9 ND 10 OL 10 to 16' - Reddish-brown SILT, some clay, trace fine, sub-angular gravel. Wet, medium stiff. Trace organic material. 11 12 ND 13 14 15 STATIC WATER LEVEL: 5.46 (10/28/11) feet below surface CASING TYPE/DIAMETER (IN.) DEPTH WATER ENCOUNTERED: 5 feet below surface INNER: PVC/3 OUTER: SCREENED OR OPEN INTERVAL: 1.0 - 15.95 MEASURING POINT ELEVATION: (FEET BELOW SURFACE) GROUND SURFACE ELEVATION: ft.msl



TRC Environmental Corporation

TEMPORARY WELL AND SOIL BORING LOG

WELL NUMBER RCH-5H-ENV-6.1W

3, 5.	willow one	ct, milibuiti,	110 07 04	1 (373) 304-0000			
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	WELL DIAGRAM	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
_ 16 _						-	16 to 20' - Reddish-brown, fine SAND. Wet, loose.
_ 17 _						SP	10 to 20 Treddish Blown, fille Graves. Well, loose.
_ 18 _		55	ND				
_ 19 _							
_ 20 _							End of boring @ 20'
_							Well Construction Details 1.0 to 15.95 ft. below surface - 3" diameter 0.010 slot PVC screen
_							1.0 to 15.95 ft. below surface - No. 01 sand
_							Total depth of well = 15.95 feet bg as measured on 10/28/11
							Note: Borehole backfilled with grout, bentonite chips, black dyed cement and restored to grade.
_							
_							
_							
_							

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TEMPORARY WELL AND SOIL BORING LOG 57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

WELL NUMBER

RCH-6-ENV-2W

PROJECT NAME: Spectra NJ-NY Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

CONTRACTOR: Land Air Water Environmental

Services

SAMPLER TYPE/DIA.: Hand Auger/Macrocore/2" DEPTH TO BEDROCK: Not Encountered

TOTAL DEPTH DRILLED: 20 feet

TYPE OF WELL: Temporary DRILLING METHOD: Hollow Stem Auger

BIT TYPE: Auger Bit

START DATE: 07/19/11 FINISH DATE: 07/19/11 DRILLER: K. McGourty LOGGED BY: B. Chaky / P. Narea

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	WELL DIAGRAM	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
_ 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14		Hand cleared	ND ND 173 71.9 168 305 548 230 488	RCH6ENV2W/1			0 to 3.0' - FILL: Brown, medium to fine sand; some silt, trace gravel. Dry. Wet at 2' 3.0 to 5.0' - FILL: Gray, angular gravel; little brown coarse sand. Wet. 5.0 to 10' - FILL: Gray to dark gray, medium to fine sand; little medium to fine angular gravel, trace silt, trace coal/cinder fragments. Wet, loose. 10 to 15' - Brown to dark brown PEAT; little silt, little clay, trace roots. Wet, loose, odor.
	YPE/DIAMET	TER (IN.) OUTER:	336	N/A		D	STATIC WATER LEVEL: 2.30 (07/20/11) feet below surface EPTH WATER ENCOUNTERED: 2 feet below surface
SCREE		N INTERVAL:		0 - 10			MEASURING POINT ELEVATION: NA ft.msl GROUND SURFACE ELEVATION: NA ft.msl



TRC Environmental Corporation

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

TEMPORARY WELL AND SOIL BORING LOG

WELL NUMBER RCH-6-ENV-2W

37 E.	willow Stre	et, wiiibuiii, i	143 07 04	1 (3/3) 304-0000			
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	WELL DIAGRAM	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
			83.5			SW	15 to 20' - Gray, medium to fine SAND; little silt, trace clay. Wet,
16							loose, slight odor.
17			38.3				
		1					
18		24					
			0.9				
19							
		1					
20			0.2				
_ 20 _			0.2				End of boring @ 20'
							2.10 0. 20.11.9 0 20
		-					
		-					Well Construction Details
		1					0 to 10 ft. below surface - 3" diameter 0.010 slot PVC screen
		_					
							0 to 10 ft. below surface - No. 01 sand
							Total depth of well = 10 feet bg as measured on 7/20/11.
_							
_							
_							
_							
		-					
		1					
		_					
		1					
		-					
		-					
		4					
		1					
		1					

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57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

TEMPORARY WELL AND SOIL BORING LOG

RCH-6-ENV-5W

WELL NUMBER

PROJECT NAME: Spectra NJ-NY Expansion

LOCATION: Staten Island, New York

PROJECT NO.: 168217

DEPTH TO BEDROCK: Not Encountered **TOTAL DEPTH DRILLED:** 20 feet

SAMPLER TYPE/DIA.: Hand Auger/ Macrocore/2"

CONTRACTOR: Land Air Water Environmental

Services

TYPE OF WELL: Temporary

DRILLING METHOD: Hollow Stem Auger

BIT TYPE: Auger Bit

START DATE: 07/19/11

FINISH DATE: 07/19/11

DRILLER: K. McGourty

LOGGED BY: B. Chaky

DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	WELL DIAGRAM	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
0							
_ ° _ _ 1 _							0 to 0.8' - Asphalt and Gravel surface. 0.8 to 1.5' - FILL: Brown, medium to fine sand; little medium to fine, sub-rounded gravel, trace silt. Dry, dense.
_ 2 _				RCH6ENV5W/2			1.5 to 10.0' - FILL: Gray to black, medium to fine sand; some medium to fine, sub-rounded gravel, trace silt, trace coal/cinder fragments.
_ 3 _		54	54 ND				Wet, loose. Trace wood material from 5.0 to 10'.
_ 4 _							
_ 5 _							
6 _				DOLIOTAL VENVO			
7 _				RCH6ENV5W/6			
_ 8 _		20	ND				
9							
_ 10 _							
_ 11 _						PT	10 to 16.5' - Brown PEAT; little silt, trace roots. Wet, loose. Odor @ 15'.
_ 12 _							
_ 13 _		3	ND				
_ 14 _							
15							
CASING TYPE/DIAMETER (IN.)							STATIC WATER LEVEL:1.64 (07/20/11)feet below surface
INNER:	PVC/3	OUTER:		N/A		D	DEPTH WATER ENCOUNTERED:feet below surface
SCREENED OR OPEN INTERVAL: 0 - 15 feet (FEET BELOW SURFACE)							MEASURING POINT ELEVATION: NA ft.msl GROUND SURFACE ELEVATION: NA ft.msl



TRC Environmental Corporation

57 E. Willow Street, Millburn, NJ 07041 (973) 564-6006

TEMPORARY WELL AND SOIL BORING LOG

WELL NUMBER RCH-6-ENV-5W

37 E.	. Willow Stre	et, Milliburii, i	143 07 04	1 (373) 304-0000			
DEPTH FROM SURFACE (FEET)	BLOW COUNT PER 6 IN.	RECOVERY (INCHES)	PID (ppm)	SAMPLE DESIGNATION	WELL DIAGRAM	UNIFIED	LITHOLOGIC CLASSIFICATION AND COMMENTS
			2.4				
16		1	79.3				
<u> </u>		1					
							16.5 to 20' - Gray, medium to fine SAND; little clay, trace fine, sub-
17			24.4			SW	rounded gravel. Wet, loose.
		48	1.3				Tourided graver, wet, loose.
18		0	ND				
		1					
10		1	ND				
_ 19 _		1	ND				
20			ND				
]					End of boring @ 20'
-		1					
		1					Well Construction Details
⊩ –		1					
							0 to 15 ft. below surface - 3" diameter 0.010 slot PVC screen
							0 to 15 ft. below surface - No. 01 sand
<u> </u>							
<u> </u>		-					
L _]					
]					
		1					
<u> </u>							
⊩ –		-					
]					
		1					
-		1					
		-					
L _							
]					
		1					
		1					
l		1					