# INTERIM REMEDIAL MEASURES WORK PLAN

# **FOR**

# 19 NORTH STREET CITY OF BUFFALO, ERIE COUNTY, NEW YORK NYSDEC SITE No. C915303

## Prepared by:



# C&S ENGINEERS, INC.

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Prepared on Behalf of:

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#### **ACRONYM LIST**

AAR ALTERNATIVE ANALYSIS REPORT

BGS BELOW GROUND SURFACE

BCP BROWNFIELD CLEANUP PROGRAM

DUSR DATA USABILITY AND SUMMARY REPORT

FER FINAL ENGINEERING REPORT

IRM INTERIM REMEDIAL MEASURES

NAPLS Non-Aqueous Phase Liquids

NYSDEC NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

PCBs POLYCHLORINATED BIPHENYLS

PID PHOTO-IONIZATION DETECTOR

PPM PARTS PER MILLION

RI REMEDIAL INVESTIGATION

SCO SOIL CLEANUP OBJECTIVES

SITE 19 NORTH STREET BUFFALO, NEW YORK

SMP SITE MANAGEMENT PLAN

SVOC SEMI-VOLATILE ORGANIC COMPOUNDS

TAL TARGET ANALYTE LIST

TCL TARGET COMPOUND LIST

USEPA UNITED STATE ENVIRONMENTAL PROTECTION AGENCY

VOC VOLATILE ORGANIC COMPOUNDS

QAQC QUALITY ASSURANCE QUALITY CONTROL

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## **INTRODUCTION**

C&S Engineers, Inc. (C&S) has prepared this Interim Remedial Measures Work Plan (IRM WP) behalf of the applicant to the Brownfield Cleanup Program (BCP), 23 North Street, LLC (hereafter known as "Applicant"), for the remediation and redevelopment of 19 North Street in the City of Buffalo, New York (the "Site"). **Figure 1** shows the Site's location.

On January 19, 2016, the Applicant submitted a BCP Application to remediate the Site at 19 North Street in the City of Buffalo, New York. Investigative actions covered under the RI included the entire 0.5-acre Site, which formerly occupied two addresses: 23 North Street and 19 North Street, Buffalo, New York.

Initial limited sampling indicated the presence of urban fill with contaminant concentrations in excess of the New York State Department of Environmental Conservation's (NYSDEC's) Soil Cleanup Objectives (SCOs). The NYSDEC used these results to approve the Site's entrance into the BCP.

This IRM WP presents the planned interim remedial steps that will be implemented at the Site to address the soil contamination. Based on information collected during the Remedial Investigation (RI), the IRM WP calls for the removal and re-use or proper disposal of approximately 6,000 cubic yards of contaminated material from the Site. Dewatering is likely unnecessary based on the depth to groundwater and planned excavation depths ranging from one to 13 feet. Following the performance of the IRMs, an IRM Report, Alternatives Analysis Report (AAR), and draft Final Engineering Report (FER) will be submitted to the NYSDEC.

# INTERIM REMEDIAL MEASURES WORK PLAN

This plan is based on the review of data collected during preliminary investigations in 2015 and the RI completed in August 2016 through January 2017. **Appendix A** contains soil boring logs from the RI.

#### 1. Approach

Based on data collected during the RI, the following steps will be implemented to address the contaminated soil at the Site:

- Removal of approximately 6,000 cubic yards of surface soil, imported fill, and native soil with residual impacts from the overlying fill for off-site disposal or treatment at a regulated facility, or re-use at a commercial or industrial use brownfield site. If the material is to be re-used, a Beneficial Use Determination (BUD) would be required for formal approval by the NYSDEC.
- If necessary, dewatering of the excavation area and the treatment of captured water.
- Use of confirmatory soil sample results generated during the RI, in conjunction with additional analytical results from post-excavation samples collected along the excavation walls, to show compliance with the Unrestricted Use Soil Cleanup Objective.

The following sections of the IRM Work Plan will identify the actions to be implemented at the Site to achieve the NYSDEC's Unrestricted Use SCOs.

#### 2. Site Control

Site control is an important aspect of this remedial measure. In order to safeguard the health and safety of site workers and the general public, access to all remedial work areas will be restricted. Perimeter fencing will be installed to facilitate site control. Additionally, temporary construction fencing will be erected around accessible excavations and staging areas to prevent unauthorized personnel from entering these areas as appropriate.

#### 3. Site Preparation

Based on planned excavation depths and depth to groundwater at the Site, it is unlikely that groundwater will be encountered in the excavation. However, contingent plans will be created to address stormwater, if any, in the excavation. These plans include the potential for pumping the excavation water using temporary sumps or a vacuum truck into steel holding tanks. Stored water will either be shipped for off-site treatment at a licensed treatment facility or will be characterized and treated, if necessary, on-site and discharged to the sanitary sewer under a Buffalo Sewer Authority permit.

#### 4. Excavation

As discussed in the RI Report, the on-site fill material is present across the Site. The underlying native material generally meets Unrestricted Use SCOs, except for small areas where the urban fill has impacted the upper layers of native material. Based on this information, excavation is planned to occur across the Site and will include the removal and off-site disposal of surface and subsurface fill and certain areas of native material.

The depth of the excavation will be based on the sampling completed during the RI, which demonstrated that, generally, the underlying native material met the Unrestricted Use SCOs. The RI sampling included native soil samples from each 30-foot by 30-foot grid location. Because the grid sampling identified slight variations in fill thickness, the depths of the excavation at the Site will vary and will be based on the RI sampling results. **Figure 2** shows the proposed excavation depths. The existing grade and excavation depths are to be verified via Global Positioning System (GPS) survey.

Due to concerns of structural stability of the adjacent building located at the eastern BCP boundary, a wedge of soil will be left-in-place along the eastern property line to support the foundation. The soil wedge will be necessary beginning at 60 feet north from the southeastern corner of the property and ending at the northeastern corner of the property. The wedge is required to be a minimum of eight feet and a maximum of 15 feet in various locations. Documentation samples of the material left in place will be collected under observation and with location approval from the NYSDEC. Based on the results of this additional documentation data, designation as a Track 4 cleanup and the need for an environmental easement will be determined. **Figure 3** shows the soil wedge necessary along the eastern property line. **Figure 4** shows a schematic of the soil wedge.

Although petroleum or other similar impacts are not anticipated in the material that is planned to be removed, during excavation, a C&S scientist or engineer will screen the removed fill for visual and olfactory observations and for total volatile compounds using a photoionization detector (PID). If grossly contaminated fill is observed, the impacted material will be evaluated and may be handled separately from the other excavated materials at the Site. Excavation is to continue if indications of fill are observed or grossly contaminated soil is discovered at the planned excavation depth. Grossly contaminated soil is defined, for the purpose of this report, as soil with vapors greater than 50 ppm on the PID. Excavation is to continue until the PID reading is less than 50 ppm or until the excavation reaches 15 feet.

Due to limited space, excavated soil will likely be direct-loaded onto trucks for off-site disposal. However, it is possible that excavated material may be stockpiled prior to being loaded onto trucks for off-site re-use or disposal. Any excavated soil to be stockpiled on-site will be placed on and covered by a minimum of double 6-mil polyethylene sheeting which is sufficiently anchored to prevent any wind and water erosion. The cover will be inspected at least once per day, with corrective action taken as needed. The inspections and any corrective actions will be documented in logs and will occur until the materials have been properly removed and disposed off-site.

The excavated material will either be disposed at a landfill permitted by the NYSDEC to receive such material, or, reused if a suitable location can be identified. For landfill disposal, the material will be approved by the NYSDEC prior to transportation off-site. Should a suitable reuse opportunity become evident, a Beneficial Use Determination (BUD) will be submitted to the NYSDEC for consideration. Only after the BUD is approved would the material be removed from the Site.

Good housekeeping practices will be followed during excavation activities to prevent leaving contaminated material on the ground surface (e.g., precautions will be taken to prevent impacts to the ground surface due to material spilled from the excavator bucket). Care will be taken to ensure that contaminated fill material is not tracked off-site. Should the tracking of fill material onto North Street or adjoining roads occur, the road(s) shall be properly cleaned.

Transportation of all wastes will be completed by properly permitted vehicles. To the extent practicable, trucks will travel along routes that avoid residential areas.

## 5. Backfilling

Grid excavation depth is to be approved by the NYSDEC prior to backfilling. The excavation at the Site will be backfilled with material such as clean soil, crushed stone, and/or concrete to an elevation to facilitate construction of the Site buildings, in accordance with DER-10. The minimum compaction requirements for backfill across the Site and near the adjacent building foundation is 95%.

For each source of backfill that is imported to the Site, one of the following will be completed prior to importing the backfill.

- a. Documentation will be provided to NYSDEC as to the source of the material and the consistency of the material in accordance with the exemption for no chemical testing listed in DER-10 Section 5.4(e)(5); **OR**
- b. Chemical testing will be completed in accordance with the following table:

Recommended Nu	mber of Soil Samples	s for Soil Imported T	o or Exported From a Site				
Contaminant	VOCs	SVOCs, Inorganics	& PCBs/Pesticides				
Soil Quantity (cubic yards)	Discrete Samples	Composite	Discrete Samples/Composite				
0-50	1	1	3-5 discrete samples from				
50-100	2	1	different locations in the fill				
100-200	3	1	being provided will compris				
200-300	4	1	a composite sample for				
300-400	4	2	analysis				
400-500	5	2					
500-800	6	2					
800-1000	7	2					
1000	Add an additional 2	VOC and 1 composite yards or consult wi	for each additional 1000 Cubic th DER				

Taken from DER-10 - Table 5.4(e)10

In the event that laboratory analytical testing is conducted, the results for each new source of fill must meet the values provided in Appendix 5 of DER-10 for Unrestricted Use and must receive approval by the NYSDEC.

#### 6. Air Monitoring

When soil is being excavated or moved at the Site, the Community Air Monitoring Plan (CAMP) included in **Appendix B** will be implemented by C&S. CAMP monitors will be positioned at upwind and downwind locations on the perimeter of the Site.

The action threshold for VOCs established in the CAMP is 5 ppm above background. If this value is exceeded for the 15-minute average work will be halted and work may resume once instantaneous readings fall below 5 ppm work. The action level for dust is 100 micrograms per cubic meter over background during a 15-minute average. If this limit is exceeded, dust suppression techniques will be employed, including using water to wet the area.

#### 7. Erosion and Dust Controls

As part of the interim remedial measures to be performed at the Site, measures will be needed to limit erosion and dust generation. NYSDEC Dust and Erosion Control Guidance is included in the CAMP in **Appendix B**. Erosion control and dust suppression techniques will be employed as necessary to limit erosion and fugitive dust generated in disturbed areas during remediation and redevelopment activities. Such techniques may be employed even if the community air monitoring results indicate that particulate levels are below action levels. Techniques may include but are not limited to:

- Using silt fencing, hay bales, and/or mulching
- Applying water on access/haul roads
- Wetting equipment and excavation surfaces
- Hauling materials in properly tarped or watertight containers
- Limiting vehicle speed on the Site
- Limiting the size of excavations
- Covering excavated areas and materials following excavation

Effectiveness of the dust suppression measures will be evaluated based on the results of the air monitoring that will be conducted under the Community Air Monitoring Plan provided in **Appendix B.** 

### 8. Confirmatory Sampling

As discussed previously, the native soil samples collected during the RI meet the Site's SCOs. Ten additional confirmatory samples will be collected from the excavation walls. The ten samples are comprised of four samples collected from the west excavation wall, three samples collected from the north excavation wall, and three samples collected from the south excavation wall. Along the eastern BCP boundary, documentation samples will be collected from each grid location where soil will remain in place. A total of four documentation samples will be collected from this area.

### 9. Reporting

Following the performance of the IRMs, an IRM Report, Alternatives Analysis Report (AAR), and draft FER will be submitted to the NYSDEC. A Site Management Plan (SMP) will be submitted at that time, if applicable. The IRM Report will document the efforts and results of the removal and backfilling activities and contain the associated logs, manifests, and weigh tickets. The AAR will identify and evaluate potential remedial alternatives for the Site, of which no additional work is anticipated based on achieving a Track 1 cleanup. The FER will affirm that the remedial activities have achieved the Remedial Action Objectives (RAOs).

#### 10. Schedule

The following presents a revised remedial schedule for the project:

Anticipated Date
July 10, 2017

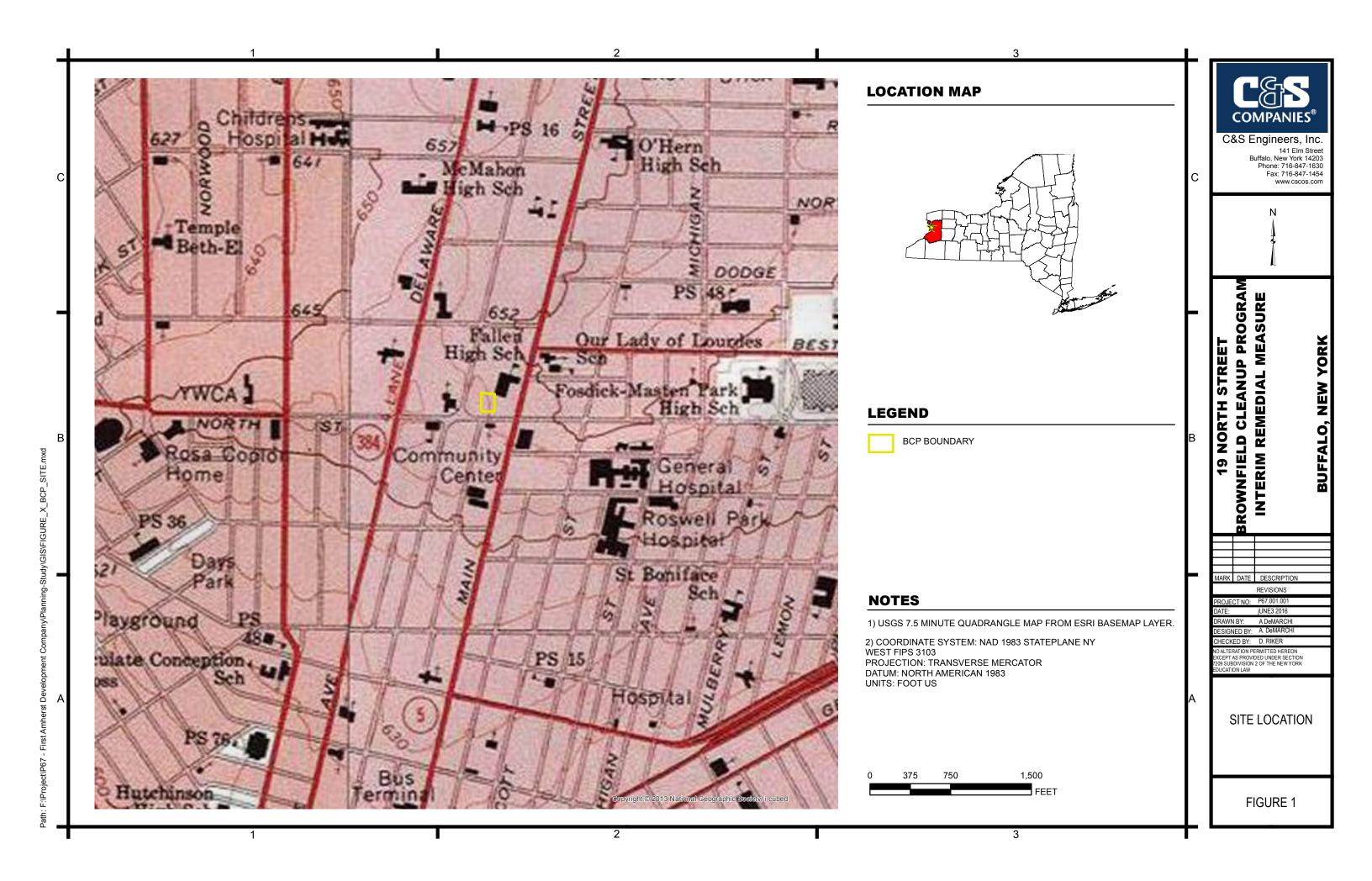
Milestone
Initiation of Interi

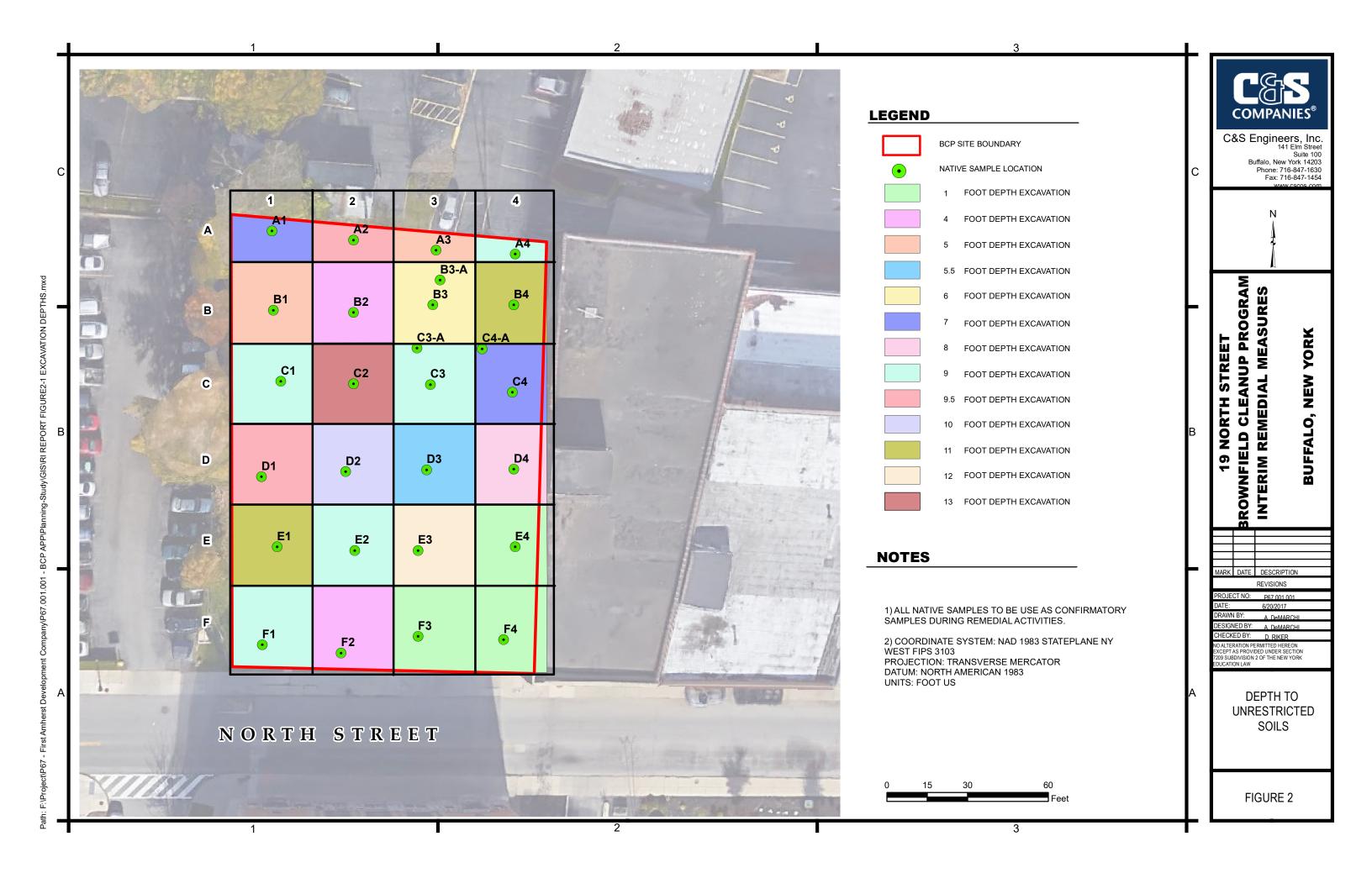
July 10, 2017 Initiation of Interim Remedial Measures
September 1, 2017 Completion of Interim Remedial Measures

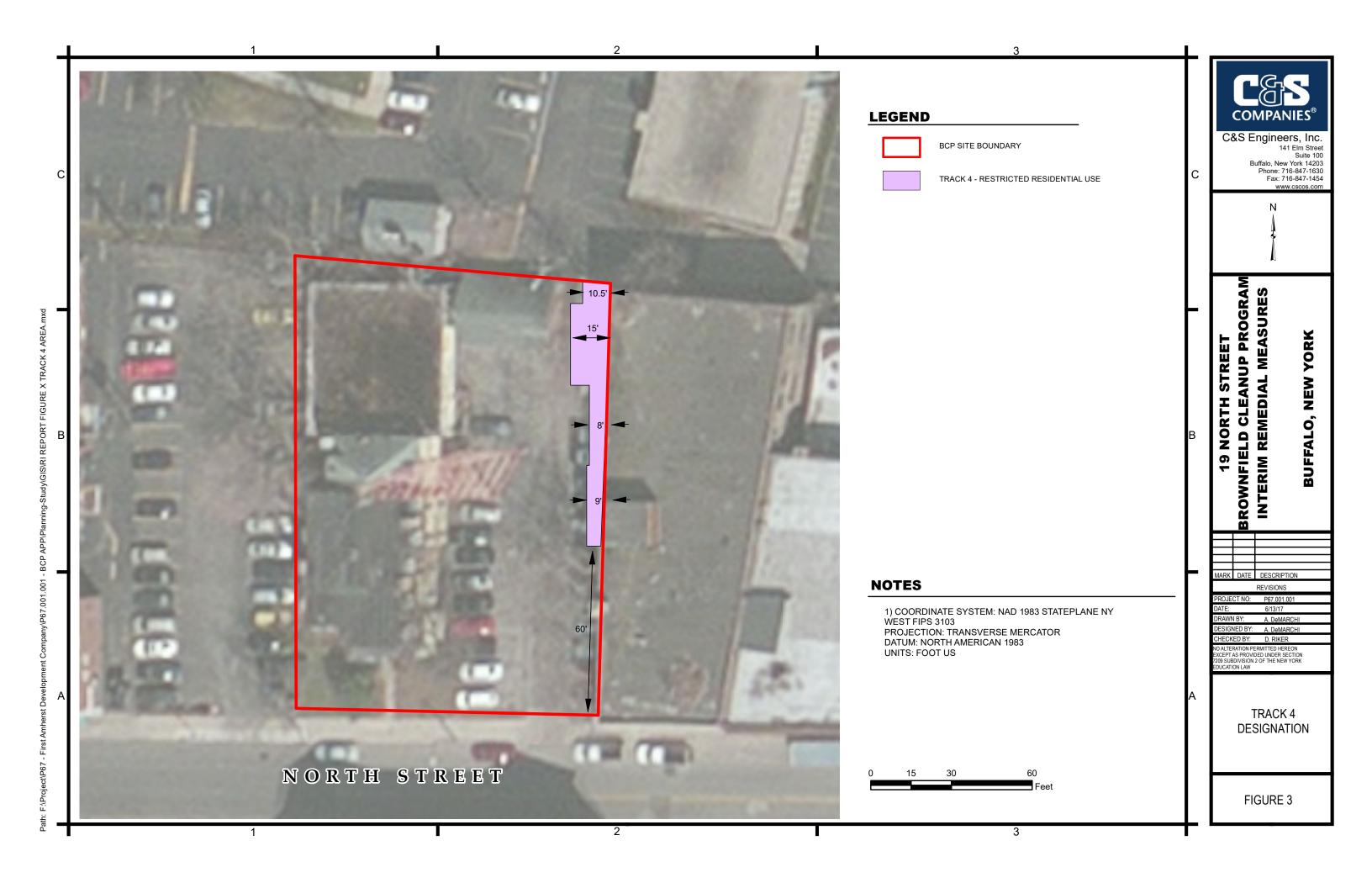
September 15, 2017 Submission of IRM Report, AAR and draft FER. Submission of the

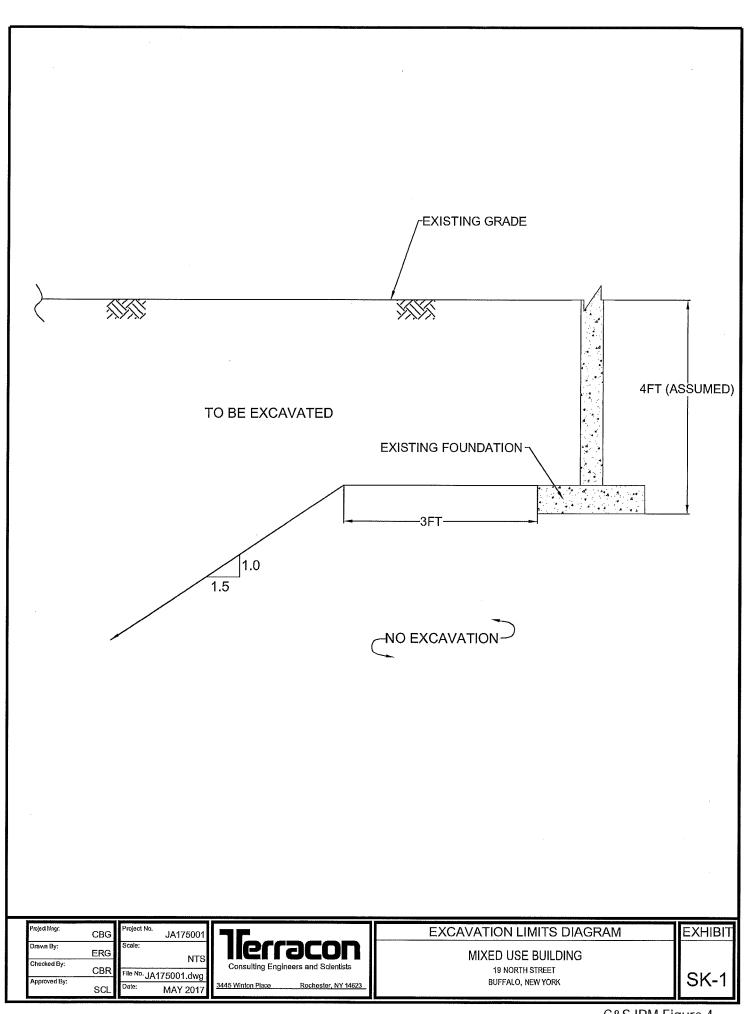
SMP, if applicable. Receipt of Certificate of Completion December 2017













APPENDIX A SOIL BORING LOGS

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				24-30"	red brown claye	SILT, tree root			0.0 ppm			
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4	-											
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				0-56"	red brown CLAY	, high plasticity			0.0 ppm	63" Recov	ered	
6				56-63"	red brown, fine S	<u>SILT</u>			0.0 ppm			
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9		-				×						
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				0-6"	brown, wet SILT	with some imbe	dded gravel		0.0 ppm	58" recove	red	
11				6-58"	tannish brown, v	vet, fine SAND			0.0 ppm			
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ı				0-24"	tan, fine SAND, v	vet to saturated			0.0 nnm	58" Recov	ered	
16				24-36"	tan, fine SILT wit		ed gravel		0.0 ppm	500		
				36-58"	wet, fine SAND				0.0 ppm			
17	. 🔟	-								1		
18		-										
19												e e
20												
				0-17"	tannish brown S	ILT and CLAY			0.0 ppm	58" recove	red	
21				17-29"	tan silty CLAY				0.0 ppm			
				29-42"	tan SILT				0.0 ppm			
22				42-58"	tannish brown C	LAY, dense/har	<u>d</u>		0.0 ppm			
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				0-6"	topsoil						START 91		
1		╽┟		6-29"	FILL - dark sand					0.0 ppm	53" Recov	erea	
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Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	c - coarse m - mediur f - fine			DESCRIPTION - Gravel, C - Clay, cly - G	s - som I - litt	nd - 35-50% ne - 20-35% le - 10-20% nce - 0-10%	(e.g., N-va	COMMENTS alue, recovery, relat e, core run, RQD, % recovered)	
				0-12"	<u>topsoil</u>					START 93		
1	-			12-14"	black rock					30" Recov	ered	
_				14-17"	concrete fragme							
2	-			17-22"	silty SAND with		oots, brick pieces					
3				22-30"	FILL - DIOWN, SA	na with black S	ous, brick pieces			7		
<u> </u>	1						v					
4												
	1											
5										,		
		70		0-18"	red brown, claye	y SILT, native	×			60" Recov	ered	
6				18-40"	red brown CLAY					Top of nati	ive 6 feet below gra	ade
				40-60"	red brown CLAY	, grades to brow	vn silty CLAY					
7												
_												
8		1					7					
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17												
		[			-			-				
18		[										
19	4											
00							9					-
20	-	-		0-12"	slug				77 nnm	60" Recov	ered	
21				12-36"		AND, dark stain	ng, petroleum smell		35 ppm		J. 30	
۷۱	1	1 }		36-60"	grey tan, mediur		ped oledin sineli			Sample:	Time:	
22				30 30	g. of tany modius	3,			PP.11	A3-5-7ft	1054	
				*	,					DUP	1054	
23										A3-7-8ft	1100	
		1 [								A3-8-9ft	1103	
24	1									A3-9-10ft	1107	
						25.5		5		A3-14-15f		
25					end of boring at	25 feet				A3-22-23f	<u>t</u> 1124	

1	T C		-	141 Elm St	gineers, Inc. treet ew York 14203		BORING L	00			В	oring No.	1	<b>A</b> 4
C		AN	I.E.C.		6-847-1630	· •	DOKING L	.OG	ı			heet 1 of:	DOZ	1
Project	ct Nan	10.	of the State of	www.cscos.c								oject No.: ace Elev.:	P67.	001.002
_			19 North Str								Ouric	Datum:	GROUNE	SURFACE
16		$\overline{}$	23 North Str							a	S	tart Date:	8/3	31/16
Drilli	_	_	NYEG				John (NYEG)					ish Date:		31/16
	Grou		ile Drilling:	Depth	Date & Time	Drill Rig: Casing:	geoprobe 7220		Poc	k Core:	- 11	nspector: Undist:		SH
Befo			Removal:			Sampler:			Other:	N Oore.		ondist.		
			g Removal:			Hammer:	,							
		ТТ	(N I	No. of blow	ws to drive sample	r 12" w/140 lb. ha	mmer falling 30" A	ASTM	D-1586	s, Standar	d Penetr		00111151	T0
Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	c - coarse m - mediun f - fine		•	DESCRIPTION - Gravel, C - Clay,	cly - cla	ayey	s - some I - little t - trae	I - 35-50% e - 20-35% e - 10-20% ce - 0-10%	(e.g., N-v moistur	e, core rur recovere	very, relativen, RQD, %
				0-7"	topsoil		-1					START 11 24" Recov		
1		$ \cdot $		7-18" 18-24"	FILL - dark brow						0.0 ppm		ereu	
3						·							ive 1 foot 6	3 inches bel
4									(					
E														
5		$ \cdot $		0-16"	dark brown, SAN	ID with dark spo	ots, dry				0.0 ppm	30" Recov	ered	Ú.
6				16-30"	red brown, silty	CLAY, tough, lit	tle moist				0.0 ppm			
7	ş.													
8														
9														
10			4	0.01							0.0	55" recove	and d	
11				0-2" 2-15"	slug red brown, silty	CLAY, trace san	d with dark spot		J*		0.0 ppm	55 Tecove	ereu	
				15-38"	red brown CLAY	, tough					0.0 ppm			
12				38-55"	red brown, silty	SAND, moist				,	0.0 ppm			
13														
14														
16					end of boring at	15 feet								
17	_													
18			ž.						/	8				
19														
20														
21				X <sub>k</sub>		1						<u>Sample:</u> <u>A4-9-10ft</u>		Time: 1141
22												A4-10-111		1146
23	597											<u>A4-11-121</u> <u>A4-12-131</u>	=	1150 1154
24														
	1													

	7	3	3	141 Elm S					В	oring No.	A4
	_((	Щ			ew York 14203 6-847-1630	l t	BORING LO	خ	S	heet 1 of:	1
C	OMF	ΊΑΝ	IIES	Fax: 716-8					Pro	oject No.:	P67.001.002
roje	ct Na	ne:	19 North St		edial Investigation					ace Elev.:	
L	ocati	on:	19 North St	reet Buffal	lo New York					Datum:	GROUND SURFA
	Clie	ent:	23 North St	reet, LLC					S	tart Date:	9/2/16
Drilli	ing Fi	rm:	NYEG			Driller:	John (NYEG)		Fin	ish Date:	9/2/16
	Grou	ındı	water	Depth	Date & Time	Drill Rig:	geoprobe 7220		I.	nspector:	AD
		Wh	ile Drilling:			Casing:		Rock Core:		Undist:	
			g Removal:			Sampler:		Other:			
Af	ter Ca	sin	g Removal:			Hammer:					
-		_	(N	No. of blo	ws to drive sample	r 12" w/140 lb. ha	ammer falling 30" AST	/ D-1586, Standa	rd Penetr		
Depth (ft)	Sample	Symbol	Blows on Sampler per 6"	c - coarse m - mediur f - fine			DESCRIPTION - Gravel, C - Clay, cly - c	s - som I - litt	nd - 35-50% ne - 20-35% le - 10-20% ace - 0-10%	(e.g., N-va	COMMENTS alue, recovery, relat e, core run, RQD, % recovered)
		T								START 91	0
1					See A4 log					70 degrees	s F and Sunny
							3				
2	-			-							
3				-							
J	1			-							
4			-								
	1										
5											
	1							2			
6					See A4 log						
7	1										
0				-			(8)				
8	-										
9											
	1										
10											
	1										
11					See A4 log						
12											
13	-										
11											
14	1						P				
15											
	1			0-12"	slug					62" Recov	ered
16				12-31"	brown, fine SAN	D, dry					
				31-43"	grey, coarse SAI	ND, moist		headspace 2.1 -			
17	1			43-54"	light brown, fine				2.3 peak		
				54-62"	grey, medium to	coarse SAND, r	<u>noist</u>		3.2 peak		
18	-										
10											
19	1										
20				-							
	1			0-8"	grey, medium to	coarse SAND			4.3 ppm	62" Recov	ered
21				8-14"	black grey, coars				om @ 18"		
	1			14-21"	silty CALY with i	mbedded rock		62 pp	om @ 23"	Sample:	Time:
22				21-32"	wet to saturated		AND			A4-23-24f	t 945
				32-48"	brown, fine SAN			88	32.4 peak		
23	100000000	534		48-62"	brown, fine SAN	<u>D</u>			4.0 ppm		
0.1							* ,				
24				-							
	1	1			and of having at						

-	g g	7		141 Elm St	gineers, Inc. reet ew York 14203		BORING LO	)C		В	oring No.	B1
	_0	4	HEC	Phone: 716	6-847-1630	"	DORING LC	JG		S	heet 1 of:	1
C	OMP	AN	The second second second	Fax: 716-8-						Pro	oject No.:	P67.001.002
Proje	ct Nan	ne:	19 North Str	eet Reme	dial Investigation					Surfa	ace Elev.:	
		$\overline{}$	19 North Str								Datum:	GROUND SURFA
	Clie	nt:	23 North Str	eet. LLC						S	tart Date:	9/1/16
Drilli			NYEG	,		Driller:	John (NYEG)			Fir	ish Date:	9/1/16
	Grou	_		Depth	Date & Time		geoprobe 7220				nspector:	AD
			ile Drilling:	2000		Casing:	5	Roc	k Core:		Undist:	
Refe			g Removal:			Sampler:		Other:			· · · · · · ·	
			g Removal:			Hammer:		Ounci.				
	ter ou	Jing		No. of blov	vs to drive sample		mmer falling 30" AS	TM D-158	6. Standa	rd Penetr	ation Test)	
Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	c - coarse m - medium f - fine	1	MATERIAL	<b>DESCRIPTION</b> - Gravel, C - Clay, cly		a - ar s - som I - litt	nd - 35-50% ne - 20-35% lle - 10-20% ace - 0-10%	(e.g., N-v moistur	COMMENTS alue, recovery, relat e, core run, RQD, % recovered)
		П			silty clay topsoil						START 84	
1		[					rock, rock @34"					s F and Sunny
				36-38"	red brown CLAY	<u>', moist</u>				0.1 ppm	37" Recov	ered
2												
											Top of nat	ive 8 inches below g
3												
,												
4												
_		1										
5				0-18"	red brown CLAY	/ trans amall <0	E" rook			0.1 nnm	62" Recov	orod
6		1			brown, moist Sli		3 70CK			0.0 ppm		ered
0					red brown, CLA					0.0 ppm		
7		1			moist silt, some					0.0 ppm		
				30-02	moist siit, some	<u>OLA I</u>				о.о ррпп		
8												
9												
		1								-		
10		11										
				0-9"	brown, silty CLA	Y, moist				0.0 ppm	62" recove	ered
11					brown, fine SILT					0.0 ppm		
				187								
12												
13		[										
14												
15		1										
16					end of boring at	15 feet			P			
17												
17												
18											160	
10												
19												
,5												
20		1 1										
21									16		Sample:	headsp
											B1-5-6ft	2.0
22											B1-6-7ft	1.3
											B1-7-8ft	2.3
23											B1-8-9ft	0.2
											<u>B1-15ft</u>	0.5
24												
							,					
25	l	1 [										

		1		141 Elm St	gineers, Inc.		DODING LOG	•	В	oring No.	E	32
	$ \bigcirc$	L	150	Phone: 716	ew York 14203 6-847-1630	"	BORING LO	,	\$1	heet 1 of:		1
C	OMP/	M	ES	Fax: 716-8	47-1454				Pro	ject No.:	P67.0	01.002
Proje	ct Nam	e: 1			dial Investigation				Surfa	ce Elev.:		
L	ocatio	n: 1	19 North Str	eet Buffal	o New York		3)			Datum:	GROUND	SURFACE
	Clier	it: 2	23 North Str	eet, LLC					S	tart Date:		
Drilli	ing Firi	n:	NYEG			Driller:	John (NYEG)	-	Fin	ish Date:		
	Grou	ndw	ater	Depth	Date & Time	Drill Rig:	geoprobe 7220		lr	spector:		SH
		Nhii	le Drilling:			Casing:		Rock Core:		Undist:		
Bef	ore Cas	sing	Removal:			Sampler:		Other:				
At	ter Cas	sing	Removal:			Hammer:						
			1 N)	No. of blo	ws to drive sample	r 12" w/140 lb. ha	ammer falling 30" AST	/I D-1586, Standa	rd Penetr			
Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	c - coarse m - mediun f - fine		-	. DESCRIPTION - Gravel, C - Clay, cly - c	s - som I - litt	nd - 35-50% ne - 20-35% le - 10-20% ace - 0-10%	(e.g., N-va	commenature, recover, core run	ery, relative , RQD, %
				0-4"	topsoil		\			126 ppm		
1				4-11"	dark brown, CLA	Y, clean till				Concrete h	it so move	d 3 ft
		╽┟		11-36"	FILL, dark sand	with gravel and	<u>brick</u>			east		
2		-								38" Recove	erea	
•		-										
3	-	-										
4		-						5				
-		-										
5		╽┝										
-		╽┟		0-7"	brown, SAND				0.0 ppm	57" Recov	ered	
6				7-34"	silty SAND with	some brown cla	Y		0.0 ppm	Top of nati	ve 6 feet b	elow grade
				34-57"	brown CLAY		A		0.0 ppm			
7												
		l L										
8												
^		l ⊦										
9		╽┟										
10		╽├										
10	1	Ιŀ		0-8"	red brown, silty	CLAY			0.0 ppm	60" recove	red	
11				8-17"	brown light, silty		<u>ıd</u>		0.0 ppm			14
				17-60"	brown light, silty	/ SAND			0.0 ppm			
12												
13	1	╽┟					1					
		-										
14	1	-										
15		-										
,,,	1											
16					end of boring at	15 feet						
	1											•
17												
18	4											
40		-										
19	-											
20		-				*	T.					
20	1											
21								*		Sample:		time:
	1									B2 surfac	<u>e</u>	1408
22										B2-4-5FT		1415
	1									<u>B2-5-6FT</u>		1437
23										<u>B2-6-7FT</u>		1448
		[								B2-7-8FT		1455
	1	Ιl								<u>B2-8-9FT</u>		1456
24	1				7					1		

	Ç			141 Elm St					В	oring No.	E	33
	_@				ew York 14203 6-847-1630		BORING LO	غ ا	S	heet 1 of:		1
C	OMP.	٩N	IES	Fax: 716-8	47-1454				Pro	oject No.:	P67.0	001.002
Proje	ct Nam	e:	19 North Str	eet Reme	edial Investigation				Surfa	ce Elev.:		
		_			o New York					Datum:	GROUNE	SURFACE
	Clie	nt:	23 North Str	eet, LLC			,		S	tart Date:	8/3	31/16
Drilli	ing Fir	n:	NYEG			Driller:	John (NYEG)		Fin	ish Date:	8/3	31/16
	Grou	ıdw	ater	Depth	Date & Time	Drill Rig:	geoprobe 7220		li	nspector:		SH
		Whi	le Drilling:	*		Casing:		Rock Core:		Undist:		
Bef	ore Ca	sing	Removal:			Sampler:		Other:				
At	ter Ca	sing	Removal:			Hammer:						
			(N I	No. of blov	ws to drive sample	er 12" w/140 lb. ha	mmer falling 30" ASTN	и D-1586, Standa	ard Penetr			
Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	c - coarse m - mediun f - fine		-	DESCRIPTION ravel, C - Clay, cly - claye	a - and - s - some - l - little - t - trace	20-35% 10-20% - 0-10%	(e.g., N-va		ery, relativ
		П		0-5"	topsoil .				0.1 ppm			
1	1			5-13"	gravel, asphalt					36" Recove	ered	
0		-		13-36"	dark sandy FILL	., brick, concrete	and gravel		0.1 ppm			
2		-										
3		-										
J		-										
4												
•												
5												
	000000000000000			0-4"	dark sandy FILL	., brick, concrete	and gravel		0.1 ppm	51" Recove	ered	
6				4-6"	brown coarse sa	and, moist, conta	aining dark spots		0.1 ppm	1		
				6-27"	light brown silty				0.1 ppm			
7				27-35"	hard red-brown				0.1 ppm			
		-		35-43"	red brown silty				0.1 ppm			
8		-		43-51"	hard red-brown	CLAY			0.1 ppm			
9		╽┟										
		-										
10												
		lt		0-4"	slug				31 ppm	46" recove	red	
11				4-46"	moist, red-brow	n, silty CLAY			136 ppm			
					red-brown chan		vn with depth					
12		╽┟			material similar	to A3						
		l ⊦										
13		-										
14		-										
14		-										
15		-										
16					end of boring at	t 15 feet						
17												
18												
19		-										
20	1											·
20	1									,		
21										Sample:		time:
	1									B3 UF 2-3	<u>ft</u>	1327
22										B3 3-5 FT		1330
	1									<u>B3 6-7 FT</u>		1336
23										<u>B3 7-8FT</u>		1352
										B3 8-9 FT		1354
24		1 -								<u>B3-13-15 I</u>	<u>-1</u>	1357
27	1											

	Ç			141 Elm S				-	В	oring No.	В	3 - A
U	$ \bigcirc$				ew York 14203 6-847-1630	6	BORING LO	خ	S	heet 1 of:		1
C	OMP.	AN	IES	Fax: 716-8	47-1454				Pro	oject No.:	P67.	001.002
roje	ct Nan	ie:			edial Investigation				Surfa	ace Elev.:		
I	ocatio	n:	19 North Str	eet Buffal	o New York			2		Datum:	GROUNI	SURFAC
	Clie	nt:	23 North Str	eet, LLC			,		S	tart Date:	8/	31/16
Drill	ing Fir	m:	NYEG			Driller:	John (NYEG)	×	Fin	ish Date:	8/	31/16
el calcon	Grou	ndv	vater	Depth	Date & Time	Drill Rig:	geoprobe 7220		II.	nspector:		SH
		Wh	ile Drilling:			Casing:		Rock Core:	8	Undist:		
Bef	ore Ca	sing	g Removal:			Sampler:	-	Other:				
A	ter Ca	sing	g Removal:			Hammer:						
			(N	No. of blo	ws to drive sample	r 12" w/140 lb. ha	ammer falling 30" ASTN	/ D-1586, Standa	ard Penetr			
Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	c - coarse m - mediun f - fine			DESCRIPTION - Gravel, C - Clay, cly - c	s - sor I - lit	nd - 35-50% ne - 20-35% tle - 10-20% ace - 0-10%	(e.g., N-v moistur	e, core rur recovere	very, relativ n, RQD, %
				0-3"	topsoil					START 13		
1	1			3-10"	FILL - dark sand	with clay concr	ete		U.U ppm	15" Recov	ered	
2				10-14"	coal pieces	anarata aubb	•		0.4 nnm			
2	1			14-15"	FILL - crushed c	Oncrete SUDDAS	<u> </u>		0.4 ppm			
3												
<u> </u>	1			-			1					
4												
	1											
5												
	1			0-22"	red brown, silty	SAND with trace	e clay		0.0 ppm	60" Recov	ered	
6		[		22-37"	red brown, silty					Top of nat	ive 6 feet	below grad
				37-60"	fine, sandy SILT,	, trace rounded	<u>gravel</u>		0.0 ppm			
7												
8	-	$  \cdot  $						(4)				
9												
3	1	H				0						
10			1									
	1	H		0-3"	slug				0.6 ppm	58" recove	ered	
11		11		3-12"	red brown, SILT			-	0.0 ppm			
		11		12-58"	tan, fine SAND, o	<u>clean</u>			0.0 ppm			
12							9					
										-		
13												
14	-			-								
15												
13	1			0-12"	slug					52" Recov	ered	
16				12-18"	tan, fine SAND				0.0 ppm			
. 5	1			18-40"	clayey SILT with	trace gravel, gr	ay @19 ft		0.0 ppm			
17				40-52"	gray, fine SAND,				112 ppm			
	1											
18												
19	-											
20				-	(2)							
20	1			0-10"	slug		,			53" Recov	rered	
21	-			10-42"	grey SAND, trace	e gravel, petrole	um odor smells	1179 ppn	n - 135.1 h	neadspace		
-1	1			42-53"			ND, trace gravel, wate			Sample:		Time:
22				1.2 55	at 22-23 ft		,			B3-A-22-2	23ft	1426
	S-1											
23								14				
							i e					
24												
					and of having at							

1	T C	7	₹	141 Elm St		F	ODING LOG		В	oring No.	B4
	_((	4	NC C		ew York 14203 6-847-1630		BORING LOC	خ	s	heet 1 of:	1
C	OMP	'AN		Fax: 716-8					Pr	oject No.:	P67.001.002
Proje	ct Nar	ne:			dial Investigation				Surf	ace Elev.:	
L	ocati	on:	19 North Str	reet Buffal	o New York					Datum:	GROUND SURFACE
			23 North Str	reet, LLC		-				tart Date:	8/30/16
Drilli	ing Fi	rm:	NYEG				John (NYEG)			nish Date:	8/30/16
	Grou		vater	Depth	Date & Time		geoprobe 7220			nspector:	SH
			ile Drilling:	26 ft		Casing:		Rock Core	):	Undist:	
			g Removal:			Sampler:		Other:			
At	ter Ca	sing	g Removal:		to drive comple	Hammer:	mmer falling 30" ASTN	AD 1506 Cton	dard Danati	otion Toot	
	Г	Т	(14	NO. OI DIO	ws to drive sample	1 12 W/140 ID. 11a	ITITILE TAILING SU ASTR	7 D-1300, Stan	ualu Felleti		COMMENTS
Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	c - coarse m - mediun f - fine			DESCRIPTION - Gravel, C - Clay, cly - c	s - s  -	and - 35-50% come - 20-35% little - 10-20% trace - 0-10%	(e.g., N-v moistui	alue, recovery, relative e, core run, RQD, % recovered)
		П		1-8"	<u>topsoil</u>					START 10	
1	-			8-12"		with pieces of v	vood, trace glass, bri	ck,	0.0 ppm	36" Recov	rered
				10.00"	and concrete		114		0.0		
2	-			12-36"	FILL - dark brow	n, medium grair	siity sand, dry		0.0 ppm		
3					· · · · · · · · · · · · · · · · · · ·		0				
<u> </u>	1										
4											
	1					е					4
5								-		f	
				0-12"	FILL - dark brow	n, sand with roo	k chunk, brick and g	ravel,	0.0 ppm	23" Recov	ered
6					<u>moist</u>	e		i, j			
				12-23"	brown, silty CLA	<u> Y</u>		(4)	0.0 ppm	Top of nat	ive 7 feet below grade
7	-				*						
8											
	ĺ				•					0	
9				-							
10					×						
				0-12"	dark brown, silty					45" Recov	ered
11				12-18"	dark brown, silty		2		0.0 ppm		
				18-45"	red brown, CLA	<u>/, hard, moist</u>	7		0.0 ppm		
12								13			
13											
10											
14				1							
			10								· · · · · · · · · · · · · · · · · · ·
15											
				0-8"	red brown, CLA					58" Recov	rered
16				8-58"	light brown, silty	SAND			0.0 ppm		
4-											
17	1			-					п		
18				-							
10	1									-	
19								1			
	1										
20											,
21	-			-	end of boring at	20 feet				Sample:	-
00				-			4		~	B4-9-10F B4-10-11	<u>I</u>
22	1									MSMSD	
23	770.			-				*		B4-12-14	5
۷3	1								8	B4-14.5-1	
24										B4-15.5-1	
	1										
25											

			-	C&S En	gineers, Inc.				В	oring No.		C1
	_((			Buffalo, No	ew York 14203 6-847-1630	E	BORING LO	3	s	heet 1 of:		1
C	OMP.	AN	IES	Fax: 716-8	47-1454					oject No.:	P67	.001.002
Proje	ct Nan	16.		www.cscos.c	dial Investigation					ace Elev.:	. 07.	
		_			o New York					Datum:	GROUNI	D SURFACE
			23 North Str		7 1011				s	tart Date:		/31/16
Drilli		_	NYEG			Driller:	John (NYEG)		Fir	ish Date:	8/	/31/16
	Grou	-		Depth	Date & Time		geoprobe 7220		1	nspector:		SH
		Whi	ile Drilling:			Casing:		Rock Core:		Undist:		
Befo	ore Ca	sing	Removal:			Sampler:		Other:				
Af	ter Ca	sing	g Removal:			Hammer:						
			(N	No. of blow	ws to drive sample	r 12" w/140 lb. ha	mmer falling 30" ASTI	И D-1586, Standa	rd Penetr			
Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	c - coarse m - mediun f - fine	S		DESCRIPTION - Gravel, C - Clay, cly - c	s - son I - liti	nd - 35-50% ne - 20-35% le - 10-20% ace - 0-10%	(e.g., N-v moistur	e, core rui recovere	very, relative n, RQD, %
			2	0-12"	<u>topsoil</u>			4		START 81		
1				12-24"	FILL - dark sand				0.0 ppm	Refusal at		ed
2		1 }		24-41"	FILL - red brown	sand with dark	spots, brick			east 3.7 ft After conc		went
2	-			1						down easi		
3										in surface	*	19
										Refusal at		ed 3 ft
4		l f			<u> </u>					south		
		1 [		1	9					41" Recov	ered	
5												
				0-29"	FILL with brick of		<u>and</u>			60" Recov		
6				29-38"	light brown, fine					Top of nat		5 inches
7		1 -	i	38-60"	red brown, silty	SAND				below grad	Je	
	1											
8		1										
		ı										
9												
10				0.40"						50" Recov		
44		1		0-18" 18-50"	fine SAND, coars					50" Recov	erea	
11				10-50	iight brown, nne	SAND, Wet						
12		ŀ										
		1										
13								9				
14												
45												
15	1											
16					end of boring at	15 feet						
	1											
17	]		-									
18	1											
40												
19	-			-								
20												
	1						V <sub>p</sub>					
21		11							5	Sample:		Time:
	1									C1 Surfac	e	823
22										C1-3-4ft		900
										C1-3-4ft F	<u>lex</u>	911
23	-									C1-8-9ft		900
24				-						C1-9-10ft C1-10-11i		901
24	1			-						C1-10-111		908
	1	1 L										

				<b>C&amp;S En</b> 141 Elm S	gineers, Inc.				В	oring No.	(	 C2
	_@				lew York 14203 6-847-1630	E	BORING LC	)G	s	heet 1 of:		1
C	OMP.	AN	IES	Fax: 716-8	347-1454					oject No.:	P67.0	001.002
Proie	ct Nam	ie:	19 North Str	www.cscos.	edial Investigation			CANCELLE ROMAN INCAMA ASSOCIATA		ace Elev.:		
		_			lo New York					Datum:	GROUNE	SURFACE
		_	23 North Str						s	tart Date:	9/	1/16
Drilli	ng Fir	_		,		Driller:	John (NYEG)		Fin	ish Date:	9/	1/16
	Grou	-		Depth	Date & Time		geoprobe 7220		- 11	nspector:		AD
		_	le Drilling:			Casing:		Rock Core:		Undist:		
Bef			Removal:			Sampler:		Other:				
			Removal:			Hammer:						
			(N I	No. of blo	ws to drive sample	r 12" w/140 lb. ha	mmer falling 30" AS	TM D-1586, Standa	ard Penetr	ation Test)		
Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	c - coarse m - mediur f - fine	m		DESCRIPTION - Gravel, C - Clay, cly	s - sor I - lit	nd - 35-50% me - 20-35% tle - 10-20% race - 0-10%	(e.g., N-va	COMMEN alue, recove e, core run recovered	rery, relative RQD, %
		П		0-10"	topsoil and gras					START 91		
1				10-51"	FILL - clay and to			**		52" Recov	ered	
		[		51-52"	FILL - stained ma	aterial, silt, brici	k, and coal		0.0 ppm			
2												
3										-		
4							ji					
5												
5		H		0-5"	hade of light hro	un fino SAND a	nd dark brown silt	CLAV	0.1 nnm	62" Recov	ered	
6		H		5-22"	grey, rock, coars		ild dark brown sin	CLAT	0.0 ppm		creu	
0		lŀ		22-45"	brown CLAY, de				0.0 ppm			
7		l		45-62"	light brown and		•		0.0 ppm			
		1 +		45-02	iight brown and	rea brown, GILT	•		ото ррии			
8												
9												
10			-									
10		H		0-5"	brown, CLAY, de	ense			0.1 ppm	57" Recov	ered	
11				5-38"			te with SILT, moist			Possible b	uilding fou	ndation
				38-57"	brown, fine SAN				0.1 ppm			
12												)
13							Y					
14		-										
15										0011 5		
				0-5"	slug	-				62" Recov	ered	
16		-		5-13"	light brown, SIL				0.1 ppm 0.1 ppm			
17		1		13-38" 38-62"	light brown, SAI		l stones, moist		0.1 ppm			
40												
18												
19										,	X II	
20				0-18"	brown Cli T car	uratad			0.1 nnm	62" Recov	ered	
21				18-39"	brown, SILT, sat SILT, brown, sat				0.1 ppm 0.0 ppm		OLEG	
21	1	1 }		39-62"	brown, CLAY, de					Sample:		headspac
22				39-02	BIOWII, CLAT, de	<u> </u>			о.о ррпі	C2-WC		2.0
	1				·					(comp fro	m 3-12)	
23		1 1		<del> </del>						C2-13-14.		1.7
	1	1 1								(+MS/MSL		
24	11									C2-14.5-1		1.4
										C2-15.5-1		1.7
25	1	Ιſ			end of boring at	25 feet				C2-16.5-1	7.5ft	1.5

14-29" FILL - dark  3 4 5 0-6" FILL - brow	Driller: ime Drill Rig: Casing: Sampler: Hammer: ampler 12" w/140 lb. ha	Immer falling 30" ASTM  DESCRIPTION  - Gravel, C - Clay, cly - cl	Rock Core: Other:  1 D-1586, Standa a - ar s - son  little	Surfa  S Fin  In  ard Penetr  ad - 35-50%  le - 20-35%  le - 10-20%  3cc - 0-10%  0.0 ppm	(e.g., N-v	COMMENTS alue, recovery, relative re, core run, RQD, % recovered)
Project Name: 19 North Street Buffalo New York  Location: 19 North Street Buffalo New York  Client: 23 North Street, LLC  Drilling Firm: NYEG  Groundwater Depth Date & Ti  While Drilling:  Before Casing Removal:  After Casing Removal:  (N No. of blows to drive sampler per 6"  Blows on Sampler per 6"  0-6" topsoil 1-29" FILL - dark  2 3 4 5 0-6" FILL - brow.	Driller: Ime Drill Rig: Casing: Sampler: Hammer: ampler 12" w/140 lb. ha  MATERIAL S - Sand, \$ - Silt, G	geoprobe 7220  Immer falling 30" ASTM  DESCRIPTION  - Gravel, C - Clay, cly - cl	Other:  1 D-1586, Standa  a - ar  s - son 1 - litt	Surfa  S  Fin  II  d - 35-50% ne - 20-35% le - 10-20% 0.0 ppm 0.1 ppm	ace Elev.: Datum: tart Date: ish Date: inspector: Undist:  (e.g., N-v moistur	COMMENTS alue, recovery, relative re, core run, RQD, % recovered)
Project Name: 19 North Street Remedial Investigate   Location: 19 North Street Buffalo New York   Client: 23 North Street, LLC	Driller: Ime Drill Rig: Casing: Sampler: Hammer: ampler 12" w/140 lb. ha  MATERIAL S - Sand, \$ - Silt, G	geoprobe 7220  Immer falling 30" ASTM  DESCRIPTION  - Gravel, C - Clay, cly - cl	Other:  1 D-1586, Standa  a - ar  s - son 1 - litt	S Fin III  urd Penetr d - 35-50% ne - 20-35% le - 10-20% 0.0 ppm 0.1 ppm	Datum: tart Date: iish Date: inspector: Undist: ation Test) (e.g., N-v moistur	COMMENTS alue, recovery, relative re, core run, RQD, % recovered)
Client: 23 North Street, LLC  Drilling Firm: NYEG  Groundwater Depth Date & Ti  While Drilling:  Before Casing Removal:  (N No. of blows to drive so  (N	ime Drill Rig: Casing: Sampler: Hammer: ampler 12" w/140 lb. ha  MATERIAL S - Sand, \$ - Silt, G el subbase, brick con	geoprobe 7220  Immer falling 30" ASTM  DESCRIPTION  - Gravel, C - Clay, cly - cl	Other:  1 D-1586, Standa  a - ar  s - son 1 - litt	Fin II  and Penetr and - 35-50% are - 20-35% le - 10-20% ace - 0-10%  0.0 ppm  0.1 ppm	tart Date: iish Date: inspector: Undist: ation Test)  (e.g., N-v moistur	COMMENTS alue, recovery, relative re, core run, RQD, % recovered)
Drilling Firm:   NYEG	ime Drill Rig: Casing: Sampler: Hammer: ampler 12" w/140 lb. ha  MATERIAL S - Sand, \$ - Silt, G el subbase, brick con	geoprobe 7220  Immer falling 30" ASTM  DESCRIPTION  - Gravel, C - Clay, cly - cl	Other:  1 D-1586, Standa  a - ar  s - son 1 - litt	Fin II  and Penetr and - 35-50% are - 20-35% le - 10-20% ace - 0-10%  0.0 ppm  0.1 ppm	ish Date: Inspector: Undist: ation Test) (e.g., N-v moistur	COMMENTS alue, recovery, relative re, core run, RQD, % recovered)
Groundwater  While Drilling:  Before Casing Removal:  After Casing Removal:  (N No. of blows to drive sate of the sampler o	ime Drill Rig: Casing: Sampler: Hammer: ampler 12" w/140 lb. ha  MATERIAL S - Sand, \$ - Silt, G el subbase, brick con	geoprobe 7220  Immer falling 30" ASTM  DESCRIPTION  - Gravel, C - Clay, cly - cl	Other:  1 D-1586, Standa  a - ar  s - son 1 - litt	Ind - 35-50% the - 20-35% le - 10-20% 0.0 ppm 0.1 ppm	ation Test)  (e.g., N-v moistur	COMMENTS alue, recovery, relative re, core run, RQD, % recovered)
While Drilling:  Before Casing Removal:  After Casing Removal:  (N No. of blows to drive sate of the per 6"  Blows on Sampler per 6"  0-6" topsoil 1 6-14" FILL - grave 14-29" FILL - dark 5  0-6" FILL - brown	Casing: Sampler: Hammer: ampler 12" w/140 lb. ha  MATERIAL S - Sand, \$ - Silt, G	mmer falling 30" ASTM  DESCRIPTION  - Gravel, C - Clay, cly - cl	Other:  1 D-1586, Standa  a - ar  s - son 1 - litt	ard Penetr ad - 35-50% ae - 20-35% le - 10-20% ace - 0-10% 0.0 ppm 0.1 ppm	undist:  ation Test)  (e.g., N-v moistur	COMMENTS alue, recovery, relative re, core run, RQD, % recovered)
Before Casing Removal:  After Casing Removal:  (N No. of blows to drive sate of the sampler o	Sampler: Hammer: ampler 12" w/140 lb. ha  MATERIAL S - Sand, \$ - Silt, G  el subbase, brick con	Immer falling 30" ASTM  DESCRIPTION  - Gravel, C - Clay, cly - cl	Other:  1 D-1586, Standa  a - ar  s - son 1 - litt	ard Penetr nd - 35-50% ne - 20-35% le - 10-20% ace - 0-10% 0.0 ppm 0.1 ppm	ation Test) (e.g., N-v moistur	COMMENTS alue, recovery, relative re, core run, RQD, % recovered)
After Casing Removal:  (N No. of blows to drive so (N No	Hammer: ampler 12" w/140 lb. ha  MATERIAL S - Sand, \$ - Silt, G  el subbase, brick com	Immer falling 30" ASTM  DESCRIPTION  - Gravel, C - Clay, cly - cl	1 D-1586, Standa a - ar s - son I - litt	nd - 35-50% ne - 20-35% le - 10-20% ace - 0-10% 0.0 ppm 0.1 ppm	(e.g., N-v moistur	COMMENTS alue, recovery, relative re, core run, RQD, % recovered)
(N No. of blows to drive sate of the sa	MATERIAL S - Sand, \$ - Silt, G el subbase, brick con	DESCRIPTION - Gravel, C - Clay, cly - cl	a - ar s - son I - litt	nd - 35-50% ne - 20-35% le - 10-20% ace - 0-10% 0.0 ppm 0.1 ppm	(e.g., N-v moistur	COMMENTS alue, recovery, relative re, core run, RQD, % recovered)
0-6" <u>topsoil</u> 6-14" <u>FILL - grave</u> 14-29" <u>FILL - dark</u> 3 4 5	S - Sand, \$ - Silt, G	- Gravel, C - Clay, cly - cl	s - son I - litt	ne - 20-35% le - 10-20% ace - 0-10% 0.0 ppm 0.1 ppm	(e.g., N-v moistur START 12	alue, recovery, relative re, core run, RQD, % recovered)
1 6-14" FILL - grav 14-29" FILL - dark  3 4 5 0-6" FILL - brow				0.1 ppm		
14-29" FILL - dark  3 4 5 0-6" FILL - brow					29 Recov	rered
2 3 4 5 0-6" FILL - brow	SSAISS SAING WINI DIA	S. SPONE HINDS	,	2.0 ppill		
3 4 5 0-6" FILL - brow					I	
5 0-6" <u>FILL - brow</u>			,			
5 0-6" <u>FILL - brow</u>						
5 0-6" <u>FILL - brow</u>						
0-6" <i>FILL - brow</i>						
			,			
	n coarse sand with c	oncrete pieces		0.0 ppm	45" Recov	vered
6 6-7" <i>gravel</i>				0.0 ppm		
		ne clay, glass, concre	ete, and	0.0 ppm	Top of nat	tive 7 feet below grade
7 dark spots 12-15" red brown,	sandy CLAY			0.0 ppm		
	CLAY, dense			0.0 ppm		
26-28" <u>red brown,</u>	silty SAND			0.0 ppm		
	CLAY, tough			0.0 ppm		
	silty SAND, wet	\\		0.0 ppm 0.0 ppm		
10 40-45" <u>red brown,</u> 0-6" <b>slug</b>	CLAY	(6)			50" Recov	vered
11 6-15" <u>red brown,</u>	CLAY			0.0 ppm		
	with sand, moist			0.0 ppm		
12 21-50" <i>light brown</i>	n, medium grain SANI	D, moist		0.0 ppm		
12						
13						
14						
15						
16 end of bori	ing at 15 feet					
end of bon	41 10 1001					
17						
18			×	7	, h	
19						
		1				
20						
						· · · · · · · · · · · · · · · · · · ·
21	1				Sample:	
22	v		· ·		C3-9-10F	<u>T</u>
					C3-10.5-1	11.5
23					C3-12.5-1	
0.4					<u>C3-14-15</u>	
24						
25						

•	Ç	'n	9	141 Elm St					Во	oring No.	C3-A
	$\mathbb{C}$			Buffalo, Ne Phone: 716	ew York 14203 S-847-1630	6	BORING LOC	j .	SI	heet 1 of:	1
CC	OMP.	AN	IIES	Fax: 716-8	47-1454				Pro	ject No.:	P67.001.002
Projec	et Nan	ie:		eet Reme	dial Investigation				Surfa	ce Elev.:	
			19 North Str							Datum:	GROUND SURFACE
	Clie	nt:	23 North Str	eet, LLC					Si	tart Date:	
Drilli	ng Fir	m:	NYEG			Driller:	John (NYEG)		Fin	ish Date:	
	Grou	-	The second secon	Depth	Date & Time	Drill Rig:	geoprobe 7220		Ir	spector:	
		Wh	ile Drilling:			Casing:		Rock Core:		Undist:	
Befo	re Ca	sin	g Removal:			Sampler:		Other:			
Af	ter Ca	sin	g Removal:			Hammer:					
			(N I	No. of blow	ws to drive sample	r 12" w/140 lb. ha	ammer falling 30" ASTN	/I D-1586, Standa	ard Penetra		
Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	c - coarse m - medium f - fine			DESCRIPTION - Gravel, C - Clay, cly - c	s - son I - lit	nd - 35-50% ne - 20-35% ile - 10-20% ace - 0-10%	(e.g., N-v	COMMENTS ralue, recovery, relative re, core run, RQD, % recovered)
1					See C3 log						
<u> </u>					See OS log						
2						Į.					
3	4										
4	,										
5											
6					See C3 log						
7											
8											
9			·		A.	9					
10	6						2				
11					See C3 log						
12											
13							,				
14											
15							*				
				0-60"	brown, fine SAN		t			62" Recov	vered
16				60-62"	brown, fine SAN	D, some silt		pea	k 0.4 ppm		
17	1				(Water Saturated	d 32-59" <u>)</u>					
18	<u>+</u>										
19											
20										-	
20	1			0-12"	light brown, clay	rev SAND. wet		nea	k 0.4 ppm	62" Reco	vered
21				12-24"	clayey SAND	, cy child, wet		pou	PPIII		
	1			24-30"	clayey SAND wit	th rock		pea	k 0.4 ppm	Sample:	
22				30-40"	red brown, medi					No Samp	oles
	1			40-55"	coarse SAND, so		<u> </u>		k 0.4 ppm		
23				55-62"	brown, CLAY, ha		*	pea	k 0.4 ppm	No odors	<u> </u>
24	-										

	- C		-	141 Elm St	gineers, Inc. reet ew York 14203		BORING LOG	3		oring No.	С	
C		ANI	UEC	Phone: 716	6-847-1630	l ·	DOKING LOC	3	S	heet 1 of:	•	
			1. 11	Fax: 716-8- www.cscos.c	om					oject No.:	P67.00	01.002
		$\rightarrow$			dial Investigation				Surfa	ace Elev.:		
L	ocatio	n:	19 North Str	eet Buffal	o New York					Datum:	GROUND	W 10 1 10 10 10 1 1 1 1
			23 North Str	eet, LLC						tart Date:	8/30	
Drill	ing Fir	m:	NYEG				John (NYEG)			ish Date:	8/30	0/16
	Grou			Depth	Date & Time		geoprobe 7220		-	nspector:		
			ile Drilling:	22 feet	8/30 @ 845am	Casing:		Rock Core:		Undist:	26.1. "	
			g Removal:			Sampler:		Other: well bo	ttom -24 ft	sand to 12	2 ft. benonite	) -
A	fter Ca	sing	g Removal:			Hammer:		10 ft to surface	and Danata	otion Toot)		
	1	T 1	(N	No. of blov	ws to drive sample	r 12" w/140 lb. ha	mmer falling 30" ASTN	/ D-1586, Stand	ard Penetr		COMMENT	c .
Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	c - coarse m - medium f - fine			DESCRIPTION - Gravel, C - Clay, cly - c	s - so I - li	and - 35-50% me - 20-35% ittle - 10-20% race - 0-10%	(e.g., N-v	ralue, recover re, core run, recovered)	ry, relativ RQD, %
_	<u> </u>	H		0-10"	asphalt, gravel s	uhhase			0.0 ppm	START 74		
1				10-25"			s, medium grain, son	ne brick		25" Recov		
<u> </u>	1	11		10 20	and concrete pie		-,,,,,,,, .					
2												
	1			1								
3												
	1											
4		[									<i>r</i>	
5							9					
				0-17"	FILL - brick, con					46" Recov	/ered	
6				17-20"	FILL - concrete i				0.0 ppm			
				20-28"	red brown, silty		- 1		0.0 ppm			
7				28-36" 36-46"	red brown, silty		e ciay		0.0 ppm 0.0 ppm			
8				30-40	red brown, silty	CLAT IIIOISI			о.о ррпп			
0												
9										(		
									×			
10												
				0-8"	slug				0.0 ppm	52" Recov	/ered	
11			· · ·	8-18"			e concrete, brick		0.0 ppm			
	1			18-52"	red brown, silty	SAND, little mo	st		0.0 ppm			
12												
13	1					_						
				-								
14	1							1				
15												
13	1			0-8"	dark brown, mer	dium grain SAN	D with trace concrete		0.0 ppm	60" Recov	vered	
16				1	and brick				F-1-11			
	1			8-13"	red brown silty	SAND			0.0 ppm			
17	1			13-20"	sandy CLAY				0.0 ppm			
	1			20-41"		AND with some	concrete, brick, and	gravel_	0.0 ppm			
18				41-60"	light brown, med	dium grain SAN	D, some brick		0.0 ppm			
											=	
19	1											
	1			=	1							
20	1								0.0	FO! D		
	1			0-10"			brick and concrete, d	<u>ry</u>		58" Reco	vered	
21	4			10-58"	light brown, med	gium grain SAN	υ, wet		0.0 ppm			Time:
00				-	water at 22 ft					Sample: C4-5-7ft		rime:
22	1			-		<del>,                                      </del>				C4-5-7ft	Неу	
23				101						C4-3-71t		
23	-					t						
24										C4-9-10ft	1	
24						i				C4-8-9ft C4-9-10ft		

ſ	9			141 Elm St	gineers, Inc. treet ew York 14203		BORING LO	G	В	oring No.	C4-A	
CC		AN			6-847-1630		SORING LO	G		heet 1 of:	1	20
Dunia	4 Man			www.cscos.c						oject No.:	P67.001.00	J2
		_	19 North Str						Surre	Datum:	GROUND SUR	FACE
		$\rightarrow$	23 North Str		O IVEW TOIK	0			s	tart Date:	9/2/16	
Drilli	ng Fir			001, 220		Driller:	John (NYEG)		Fin	ish Date:	9/2/16	
	Grou			Depth	Date & Time	THE RESERVE OF THE PARTY OF THE	geoprobe 7220		li	spector:		
		Whi	le Drilling:	22 feet	8/30 @ 845am	Casing:		Rock Core:		Undist:		
			Removal:		-	Sampler:		Other: well bott	om -24 ft,	sand to 12	2 ft. benonite -	
Af	ter Cas	sing	Removal:			Hammer:	6.00 000 4.07	10 ft to surface	15 1	T		
			(N I	No. of blow	ws to drive sampler	r 12" w/140 lb. ha	ammer falling 30" AST	M D-1586, Standa	rd Penetr		COMMENTS	-
Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	c - coarse m - mediun f - fine		-	DESCRIPTION - Gravel, C - Clay, cly -	s - som I - littl	d - 35-50% e - 20-35% e - 10-20% ce - 0-10%	(e.g., N-v	alue, recovery, re e, core run, RQE recovered)	
		Н								START 94	15	
1												
		[			See C4 log						y	
2												
3												
J												
4		╽┟										
	Tr.		X (*)									
5								1				
6					See C4 log							
7		╽┟			See C4 log							
		╽┟										
8					(8)						3	
9												
10		╽┟				5			a			
10		╽┟										
11												
1									-			
12					See C4 log		4					
											*	
13		╽┟					*					
14		╽┟			<u>* 5</u>							
15												
				0-22"	brown, fine SILT				1.1 ppm			
16				22-28"	brown grey, GRA	AVEL and SAND	), wet		2.0 ppm			
17				28-32" 32-62"	brown CLAY	rown SAND co	arse to medium grain	າ	0.4 ppm			
17				52 0Z	z.om and red b		so caram gran	<del>-</del>	21. PP111			
18											,	
	1							4				
19												
200							*				V	
20				0-12"	brown GRAVFI	and fine SAND	, wet, very slight odd	or	0.4 ppm		-	
21	*			12-16"	brown, fine SAN		, o., . ory origin out	<u> </u>	0.1 ppm			
	1			16-36"	brown, medium		<u>ret</u>		0.1 ppm	Sample:	Tim	ne:
22				36-40"	brown, coarse S.					No Samp	les	
				40-60"	brown, fine SAN		ist		0.3 ppm			
23				60-62"	brown, varve CL	<u>AY</u>	į.		0.4 ppm	· ·		
24												
24	1											
	1	ı L										

•	<b>Q</b>			141 Elm S		r	BORING LO		В	oring No.		<b>D1</b>
	_0		UEC	Phone: 716	ew York 14203 6-847-1630		BORING LOC	,	S	heet 1 of:	1	1
CC	)MP	AN		Fax: 716-8					Pro	ject No.:	P67.	001.002
roje	t Nam	e:	19 North Str	eet Reme	edial Investigation				Surfa	ce Elev.:		
L	ocatio	n:	19 North Str	eet Buffal	o New York					Datum:	GROUNE	SURFAC
	Clie	nt:	23 North Str	eet, LLC					S	tart Date:		
Drilli	ng Firi	n:	NYEG			Driller:	John (NYEG)		Fin	ish Date:		
	Grou	ndw	vater	Depth	Date & Time	Drill Rig:	geoprobe 7220		lı	spector:		
		Whi	ile Drilling:			Casing:		Rock Core:		Undist:		
Befo	re Cas	sing	g Removal:			Sampler:		Other:				
Af	ter Ca	sing	g Removal:			Hammer:						
			(N I	No. of blo	ws to drive sampler	r 12" w/140 lb. ha	ammer falling 30" AST	M D-1586, Standa	rd Penetr			
Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	c - coarse m - mediur f - fine			. DESCRIPTION  - Gravel, C - Clay, cly - c	s - som I - litt	nd - 35-50% ne - 20-35% le - 10-20% ace - 0-10%	(e.g., N-v	comment alue, recovere, core rur recovered	very, relativ n, RQD, %
_		Н		0-5"	topsoil and grass	s				START 10	The second second second	,
1				5-19"	FILL- CLAY, brow		dded rock piece			20" Recov		
•				19-20"	FILL - SILT, brow							
2												
3					,		\					
-												
4												
5											-	
				0-19"	FILL - clay with r	ock, brick, woo	dy debris, root			56" Recov		
6				19-26"	red silt and brow						ive soil 7 fe	eet 7 inche
				26-39"	red yellow brown		ed and wet			below gra	de	
7				39-52"	red brown, CLA	/, dense						
0				52-56"	brown SILT							41
8		╽┟										
9												
10		$  \cdot  $										
				0-7"	brown SILT with	rock, wet				62" Recov	ered	
11				7-60"	light brown, fine							
				60-62"	brown grey, SAN	ID and rock, dry	<u> </u>					
12		H										
13		1										
10												
14		$  \cdot  $										
15	alessa ne			ļ						0011 5		
4.0				0-1"	slug	avola CAND	CDAVE			62" Recov	rerea	
16				1-9"	brown, medium		GRAVEL					
17				9-14" 14-15"	red brown CLAY multicolor, coars							
17				15-21"	brown, fine SAN							
18				21-45"	brown, fine to m		nd rock, moist					
				45-62"	brown, fine SAN							
19												
20												
				0-11"		coarse to mediu	m grain SAND, wet			62" Recov	vered	
21				11-62"	varve CLAY			h		Sample:		Time:
									2.2	D1-9.5-11		1117
										Hex + MS D1-11.5-1		4404
22		1 1		i					2.0	1117-77 5-1	/ DIT	1121
22									1.9	D1-12.5-1	3.5ft	1123
									1.9 2.2		3.5ft 4.5ft	

				141 Elm St		r		^	В	oring No.	D2	
	_(				ew York 14203 6-847-1630	1	BORING LO	3	S	heet 1 of:	1	
C	OMP	AN	IES	Fax: 716-8	47-1454				Pro	oject No.:	P67.001.	002
Proje	ct Nan	ne:			dial Investigation				Surfa	ace Elev.:		
L	.ocatio	n:	19 North Str	eet Buffal	o New York					Datum:	GROUND SL	JRFACE
		_	23 North Str	eet, LLC			I			tart Date:		
Drilli		-	NYEG				John (NYEG)			ish Date:		
	Grou		later ile Drilling:	Depth	Date & Time	Casing:	geoprobe 7220	Rock Core:		nspector: Undist:		
Rofe			Removal:			Sampler:		Other:		Olluist.		
			Removal:			Hammer:	i.	Caron				
				No. of blov	ws to drive sample	r 12" w/140 lb. ha	ammer falling 30" ASTI	M D-1586, Standa	rd Penetr	ation Test)		
Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	c - coarse m - mediun f - fine	S	- Sand, \$ - Silt, G	DESCRIPTION - Gravel, C - Clay, cly -	s - son I - litt	nd - 35-50% ne - 20-35% ile - 10-20% ace - 0-10%	(e.g., N-v moistur	COMMENTS alue, recovery, e, core run, RO recovered)	
				0-24"	FILL - dark brow		<u>cks</u>			START 14		
1	-			24-34" 34-36"	FILL - dark brow				0.1 ppm 0.1 ppm	36" Recov	erea	
2				J4-30	ı ıLL - yıaveı and	, concrete			ол ррш			
3												
4												
5												
	1			0-10"	FILL - concrete a					45" Recov		
6		Н		10-23"	brown, medium						ive soil 5 feet	10 inche
7				23-45"	light brown, med	dium grain SANi	<u>D</u>		U.1 ppm	below grad	1e	
8												
9												
10				0-9"	slug, brown, silt	v sand, drv			0.0 ppm	57" Recov	rered	
11	,			9-12"	slug, gravel and	concrete			0.0 ppm			
	1				red brown, medi				0.0 ppm			
12				12-57"	light brown, med	dium grain SAN	D with some silt		0.0 ppm			
13												
14												
15												
16					end of boring at	<u>15 feet</u>						
17												
18												
19												
20												
21										Sample:		ime:
22										D2 SURF		
23										D2-10-11		
٥.										D2-11-12		
24	-			-						D2-12-13 D2-13-14		
25												

•		7,		141 Elm St				^	В	oring No.	D3
	$\mathbb{Q}$		U.S.C.	Phone: 716	ew York 14203 6-847-1630	l t	BORING LO	G	Si	heet 1 of:	1
	OMP			Fax: 716-8- www.cscos.c	com					ject No.:	P67.001.002
		$\overline{}$			dial Investigation				Surfa	ce Elev.:	
L			19 North Str		o New York					Datum: tart Date:	GROUND SURFACE
Drilli		_	23 North Str NYEG	eet, LLC		Driller	John (NYEG)			ish Date:	,
Dillil	Grou			Depth	Date & Time		geoprobe 7220			nspector:	
		Wh	ile Drilling:			Casing:		Rock Core:		Undist:	
Befo	ore Ca	sing	g Removal:			Sampler:		Other:			
Af	ter Ca	sing	g Removal:			Hammer:	f III 00II 40T	M.D. 4500, Ot		-4: T4)	
		Т	(N I	No. of blov	ws to drive sample	r 12" W/140 lb. na	ammer falling 30" AST	IVI D-1586, Standa	ard Peneur		COMMENTS
Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	c - coarse m - mediun f - fine			DESCRIPTION - Gravel, C - Clay, cly -	s - sor I - lit	nd - 35-50% ne - 20-35% tle - 10-20% ace - 0-10%	(e.g., N-v	ralue, recovery, relative re, core run, RQD, % recovered)
				0-4"	<u>topsoil</u>					START 12	
1					FILL - gravel sub			9)		17" Recov	vered
2			-	9-17"	FILL - gravel, bri	ск, concrete ch	unks		0.0 ppm		
3											
4	-										
5											
	1			0-6"	FILL - brick, con					39" Recov	
6					lighter brown, m		ry SAND, wet				tive 5 feet 6 inches
7				22-27" 27-39"	red brown, silty		ND wet		0.0 ppm 0.0 ppm	below gra	ae
				21-39	iigiiter brown, iii	edium gram SA	NO, WEL		о.о ррпп		
8											
									-		
9	-	П					3				v.
10				-		)					
				0-58"	light brown, med	dium grained SA	ND, wet		0.0 ppm	58" Recov	vered
11					(wettest 0-1 ft)				0.0 ppm		
12						1					
12	1										
13								1			
	1										1
14	-										
15											
.5	1										15
16					end of boring at	15 feet		9			
47											
17	1				,						
18											
	,										e e
19	-								=		
20							, "				
	1										
21	1										
00										Sample: D3-5.5-7.	Time:
22	-			-						D3-5.5-7.	<u>⊻</u>
23								*		D3-7.5-9.	<u>5</u>
	1									D3-10.5-1	11.5
24	-						47				
	1	1	1	1							

	<b>-</b> (c			141 Elm St					В	oring No.	D4
	_@	I			ew York 14203 6-847-1630		BORING LO	3	s	heet 1 of:	1
C	OMP.	AN		Fax: 716-8					Pro	oject No.:	P67.001.002
		$\overline{}$			dial Investigation				Surfa	ace Elev.:	
L		$\rightarrow$			o New York				<b>—</b>	Datum: tart Date:	GROUND SURFA
Drilli		_	23 North Str NYEG	eet, LLC		Drillor	John (NYEG)			ish Date:	8/29/16
Dillil	Grou	_		Depth	Date & Time		geoprobe 7220			nspector:	5,25,10
			le Drilling:			Casing:		Rock Cor	e:	Undist:	
			Removal:			Sampler:		Other:			
Af	ter Ca	sing	Removal:			Hammer:	mmer falling 30" ASTI	AD 4506 Ctor	adard Danati	ention Toot)	
_		ТТ	(1/ 1	NO. OF BIO	ws to drive sample	12 W/140 ID. 118	ammer failing 50 AST				COMMENTS
Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	c - coarse m - mediun f - fine		•	DESCRIPTION - Gravel, C - Clay, cly - 6	s -	- and - 35-50% some - 20-35% - little - 10-20% - trace - 0-10%	(e.g., N-v	alue, recovery, relati e, core run, RQD, % recovered)
		П		0-12"	asphalt, gravel s					START 14	
1				12-29"	FILL - dark, med	ium grained san	d with spots of dark	trace silt	0.1 ppm	29" Recov	rered
2		╽┟			-						
3											
,						*					
4											
5		11									
	1			0-9"	FILL - medium g	rain sand, dry				34" Recov	
6		$ \cdot $		9-11" 11-24"	gravel FILL brown, silty SAN	ID dny		1		l op of nat below gra	tive 5 feet 9 inches
7		$\ \cdot\ $		24-29"	brown, SAND wi		oist			below gra	
	1			29-34"	red brown, CLA						
8	en en en en en										
9											
		of a mountain									0
10											
				1-12"	brown, silty SAN		ned, moist			49" Recov	vered
11		0000		12-49"	red brown, sand	y SIL I , moist			0.0 ppm		
12											
13	-	1									
14		1									
	1	(									
15											
16					end of boring at	15 feet					
	1										
17											
10											
18											
19							· · · · · · · · · · · · · · · · · · ·				
20	1										
21								8			
	1									Sample:	Time:
22	-									D4-8-9ft D4-Hex-8	-9ft
23										D4-Hex-8	
20	1									D4-10-11	
24	-									<u>D4-15ft</u>	
	1	1									

		<u></u>	•		141 Elm St		. 1	POPING LOG		В	oring No.	E1
C	_((	Ų	4	EC	Phone: 716	ew York 14203 6-847-1630		BORING LO	<b>.</b>	S	heet 1 of:	1
	IMC				Fax: 716-8 www.cscos.c	com			/		oject No.:	P67.001.002
				9 North Str	eet Reme	dial Investigation		9		Surfa	ace Elev.:	
L	ocat	ion.	: 1	9 North Str	eet Buffal	o New York			-		Datum:	GROUND SURFAC
			_	3 North Str	eet, LLC						tart Date:	8/30/16
Drilli	_		_	IYEG			The second secon	John (NYEG)			ish Date:	8/30/16
	Gro				Depth	Date & Time		geoprobe 7220	D. d. C.		nspector:	`
				e Drilling:			Casing:		Rock Core:		Undist:	
				Removal:			Sampler: Hammer:		Otner:			
Ai	ter C	asıı	ng	Removal:	No. of blox	ws to drive sample		I ammer falling 30" ASTN	I M D-1586, Standa	rd Penetr	ation Test	<b>\</b>
Depth (ft)	Sample	Symbol	001110	Blows on Sampler per 6"	c - coarse m - mediun f - fine	n	MATERIAL	. DESCRIPTION  - Gravel, C - Clay, cly - c	a - an s - som I - litt	d - 35-50% de - 20-35% de - 10-20% de - 0-10%	(e.g., N-v	COMMENTS ralue, recovery, relativere, core run, RQD, % recovered)
			T		0-18"	Topsoil - light br	own soil, sandy	<u>′</u>			START 14	
1					18-19"	FILL - rock piece					29" Recov	vered
			L		19-29"	FILL - mix of san	d silt and clay,	brown, moist, some i	mbedded rock p	<u>ieces</u>		
2			-									
3			F						6			
4			L									
5			H	2				*				
					0-10"	slug, gravel and	<u>rock</u>				48" Recov	
6					10-26"	dark brown, med					Top of nat	tive soil 5 feet below g
7			-		26-48"	light brown, med	lium grained SA	AND with silt		w.		
	1								}			
8			F	1								
9			F									
10			F								ACII Deser	d
11			$\vdash$		0-7" 7-46"	slug, gravel, roc		<u>e</u>			46" Recov	/ered
			$\vdash$		7-40	iigiit bi owii, siity	GAND					
12			F									
13	90		ŀ				,					
14			F									·
									0			
15	1		-		0-8"	light brown, silty	SAND with trac	ce clav			48" Recov	vered
16					8-18"	light colored, co	arse SAND with					
17			F		15-48"	silty SAND, coar	se, wet					
18			F									
											2	
19	1											
20	-		-				<del></del>					
21	-	74	F			end of boring at	20 feet	S.			Sample:	Time:
22			F								E1 SURF	ACE
23			+								E1-1-2.5F E1-11-12	FT
											E1-12-13	
24	-		F					17			E1-13-14 E1-14-15	
25			-									

Location Clien Drilling Firm Groun L Before Cas	ne: on: ent: rm: undv	19 North Sti 19 North Sti 23 North Sti NYEG water iile Drilling: g Removal: (N	Phone: 716-8 www.cscos.geet Reme reet Buffal reet, LLC  Depth	dial Investigation o New York  Date & Time  ws to drive sample	Driller: Drill Rig: Casing: Sampler: Hammer: r 12" w/140 lb. ha  MATERIAL - Sand, \$ - Silt, G n clay with rock		Rock Core: Other:  I D-1586, Standa a - ar s - so	Pro Surfa Si Fin II		P67.0  GROUND 9/1 9/1 A	
### Droject Nam	me: on: ent: rm: undv Wh asing	19 North Sti 19 North Sti 23 North Sti NYEG water iile Drilling: g Removal: (N	www.cscs.cet Remered Buffal reet, LLC  Depth  No. of blov  c - coarse m - medium f - fine	dial Investigation o New York  Date & Time  ws to drive sample  S  FILL - dark brow	Drill Rig: Casing: Sampler: Hammer: r 12" w/140 lb. ha  MATERIAL - Sand, \$ - Silt, G n clay with rock	geoprobe 7220 ammer falling 30" ASTN	Other:  1 D-1586, Standa  a - ar s - son	Surfa Si Fin II ard Penetr	Datum: tart Date: ish Date: nspector: Undist: ation Test)	GROUND 9/1 9/1 A	SURFACE 1/16 1/16 AD
Location   Client	on: ent: rm: undv Wh asing	19 North Str 23 North Str NYEG water nile Drilling: g Removal: (N	reet Reme reet Buffal reet, LLC  Depth  No. of blov  c - coarse m - mediun f - fine	Date & Time  ws to drive sample  But a drive sample	Drill Rig: Casing: Sampler: Hammer: r 12" w/140 lb. ha  MATERIAL - Sand, \$ - Silt, G n clay with rock	geoprobe 7220 ammer falling 30" ASTN	Other:  1 D-1586, Standa  a - ar s - son	Si Fin In	Datum: tart Date: ish Date: nspector: Undist: ation Test)	9/1 9/1 A	1/16 1/16 AD
Client	ent: rm: undv Wh asing	23 North Str NYEG water nile Drilling: g Removal: g Removal:	Depth  No. of blov  c - coarse m - medium f - fine	Date & Time  ws to drive sample  S  FILL - dark brow	Drill Rig: Casing: Sampler: Hammer: r 12" w/140 lb. ha  MATERIAL - Sand, \$ - Silt, G n clay with rock	geoprobe 7220 ammer falling 30" ASTN	Other:  1 D-1586, Standa  a - ar s - son	Fin	tart Date: ish Date: nspector: Undist: ation Test)	9/1 9/1 A	1/16 1/16 AD
### Prilling Firm   Groun   Name   N	rm: undv Wh asing	NYEG water hile Drilling: g Removal: g Removal: (N	No. of blov	ws to drive sample  S  FILL - dark brow	Drill Rig: Casing: Sampler: Hammer: r 12" w/140 lb. ha  MATERIAL - Sand, \$ - Silt, G n clay with rock	geoprobe 7220 ammer falling 30" ASTN	Other:  1 D-1586, Standa  a - ar s - son	Fin	ish Date: nspector: Undist: ation Test)	9/1 A	1/16 AD
Srour   Name	undv Wh asing	water nile Drilling: g Removal: g Removal: (N	c - coarse m - mediun f - fine	ws to drive sample  S  FILL - dark brow	Drill Rig: Casing: Sampler: Hammer: r 12" w/140 lb. ha  MATERIAL - Sand, \$ - Silt, G n clay with rock	geoprobe 7220 ammer falling 30" ASTN	Other:  1 D-1586, Standa  a - ar s - son	ard Penetr	undist: ation Test)	COMMENT	AD
### Page 10	Wh asing asing	nile Drilling: g Removal: g Removal: (N	c - coarse m - mediun f - fine	ws to drive sample  S  FILL - dark brow	Casing: Sampler: Hammer: r 12" w/140 lb. ha  MATERIAL - Sand, \$ - Silt, G n clay with rock	ammer falling 30" ASTN	Other:  1 D-1586, Standa  a - ar s - son	ard Penetr	Undist:	COMMENT	<u>s</u>
Refore Case	asin <sub>i</sub>	g Removal: g Removal: (N	c - coarse m - mediun f - fine	n S <u>FILL - dark brow</u>	Sampler: Hammer: r 12" w/140 lb. ha  MATERIAL - Sand, \$ - Silt, G n clay with rock	ammer falling 30" ASTN	Other:  1 D-1586, Standa  a - ar s - son	nd - 35-50%	ation Test)	COMMENT	
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 17	sin	g Removal: (N	c - coarse m - mediun f - fine	n S <u>FILL - dark brow</u>	Hammer: r 12" w/140 lb. ha  MATERIAL - Sand, \$ - Silt, G n clay with rock	ammer falling 30" ASTN	∄ D-1586, Standa a - ar s - son	nd - 35-50%		COMMENT	
1 2 3 4 5 6 7 8 9 10 11 1 12 13 14 15 16 17 17	T	(N	c - coarse m - mediun f - fine	n S <u>FILL - dark brow</u>	MATERIAL - Sand, \$ - Silt, G	ammer falling 30" ASTN	a - ar s - son	nd - 35-50%		COMMENT	
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	Symbol		c - coarse m - mediun f - fine	n S <u>FILL - dark brow</u>	MATERIAL - Sand, \$ - Silt, G	_ DESCRIPTION	a - ar s - son	nd - 35-50%		COMMENT	
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	Symbol	Blows on Sampler per 6"	m - mediun f - fine	S FILL - dark brow	- Sand, \$ - Silt, G	-	s - son				
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17			0-62"			the second secon	clayey t - tra	lle - 10-20% ace - 0-10%	moistur	e, core run, recovered	
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17				with dark clay ne	ar them	k and trace tree pieces	<u>s</u>	0.1 ppm	START 13		
3 4 5 6 7 8 9 10 11 12 13 14 15 16 17					sar unem		1		80 degree 62" Recov	s F and Sur	ıny
3 4 5 6 7 8 9 10 11 12 13 14 15 16 17									62" Recov	erea	
4 5 6 7 8 9 10 11 12 13 14 15 16 17											
4 5 6 7 8 9 10 11 12 13 14 15 16 17			1								
5 6 7 8 9 10 11 12 13 14 15 16 17						ſ					
6 7 8 9 10 11 12 13 14 15 16 17				×							
6 7 8 9 10 11 12 13 14 15 16 17											
7 8 9 10 11 12 13 14 15 16 17											
7 8 9 10 11 12 13 14 15 16 17	BE .		0-8"	FILL - light brow					50" Recov	ered	
8 9 10 11 12 13 14 15 16 17			8-16"			ice brick, some coars	e sana	0.1 ppm 0.1 ppm			
8 9 10 11 12 13 14 15 16 17			16-29" 29-34"	brown, fine silty dark brown, silty				0.1 ppm			
9 10 11 12 13 14 15 16 17			34-50"	light brown, fine				0.1 ppm			
10			0.00	ingite 21 contra to the							
10											
11 12 13 14 15 16 17											
11 12 13 14 15 16 17											
12 13 14 15 16 17			0-12"	light brown, silty	CAND			0 ppm			
12 13 14 15 16 17			12-50"			D with some silt		-	50" recove	ered	
13 14 15 16 17			12-30	ngin brown, mee	nam gram OAN	D With Some Six		о ррии	00 100011	-10-0	
14 15 16 17											
14 15 16 17								u u	8		
15 16 17											
15 16 17							/				
16											
16											
17											
17			1	end of boring at	15 feet	>	y				
										2	
18		-									
18											*
1			-				3				
19							<u>&lt;</u>				
19											
20											
21							h		Sample:		Time:
					,				E2-5-6.5ft		1412
22			-						E2-9-10ft E2-10-111		1416 1418
22			-						E2-10-111		1418
23		1	-						E2-11-121		1423
24	٠		1						E2-14-15		1425
	0										

A 200	C	7		141 Elm St			ODINO		2	В	oring No.	E3	
CO		AN	UEC		ew York 14203 6-847-1630	"	BORING	LUC	5		heet 1 of:	1	
				www.cscos.c	com						oject No.:	P67.001.00	)2
		$\rightarrow$			dial Investigation					Surfa	ce Elev.:	GROUND SUR	FACE
	100000 000000 0	_	19 North Str		o New York						Datum: tart Date:	8/29/16	FACE
D. ''''		_	23 North Str	eet, LLC		D.211	John (NVEC)				ish Date:	8/29/16	
Drillil	Grou		NYEG	Donath	Data 6 Times	A STATE OF THE PARTY OF THE PAR	John (NYEG) geoprobe 7220	_		10.10.00	ish bate.	8/29/10 SH	
			ile Drilling:	Depth	Date & Time	Casing:	-		Rock Core:	"	Undist:	OIT	
Refe			Removal:			Sampler:	5 It lines		Other:		Olidist.		
			Removal:			Hammer:			ouner.	-			
				No. of blo	ws to drive sample		mmer falling 30	" ASTN	л Л D-1586, Standa	rd Penetr	ation Test)		
Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	c - coarse m - mediun f - fine	S	- Sand, \$ - Silt, G	<b>DESCRIPTION</b> - Gravel, C - Clay	_	s - son I - litt	nd - 35-50% ne - 20-35% de - 10-20% ace - 0-10%	(e.g., N-v moistur	COMMENTS alue, recovery, re e, core run, RQD recovered)	
. 1				0-10"	asphalt and grav						START 13		
1				10-28"	URBAN FILL, bri					0.1 ppm 0.1 ppm	30" Recov	erea	
2				28-30"	yellow, SAND, di	y materiai				o. i ppm			
3						7							
4													
5													
				1-13"	brick, concrete					0.1 ppm	28" Recov	ered	
6				13-28"	brown, fine silty	sand, little mois	<u>it</u>			0.0 ppm			
7													
											, N		
8													
9												· · · · · · · · · · · · · · · · · · ·	
10				0.40"							56" Recov	torod	
11				0-12" 12-18"	brick and concre						30 Recov	ereu	
				18-22"	brick pieces						possible b	uilding foundatio	n
12				22-42"	red brown, silty		<u>Y</u>						
13				42-56"	brown, fine SAN	<u>D, dry</u>							
14								O					
15			,										
16				0-16" 16-57"	slug brown, medium	grained SAND	wet				57" Recov	rered	
17				10-07	Elown, mediam	gramed GAND,							
18													
19													
20				,	3								
					end of boring at	20 feet							
21					end of boring at	ZU IEEL					<u>Sample:</u> E3-12-13	Tim	ie:
22											E3-13-14	t	
23			1								E3-14-15		
24													

1	T C			141 Elm St		F	DODING LO	····		В	oring No.	E4	
	_@				ew York 14203 6-847-1630		BORING LO	)G		SI	neet 1 of:	1	
C	OMP/	M	A STATE OF THE PARTY OF THE PAR	Fax: 716-8						Pro	ject No.:	P67.001	.002
Proje	ct Nam	e:			dial Investigation		-			Surfa	ce Elev.:		
L	ocatio	n:	19 North Str	eet Buffal	o New York						Datum:	GROUND SU	JRFACE
	Clie	nt: 2	23 North Str	eet, LLC						S	tart Date:	8/29/1	6
Drilli	ing Firi	n: l	NYEG				John (NYEG)			Fin	ish Date:	8/29/1	6
	Grou	ıdw	ater	Depth	Date & Time		geoprobe 7220			Astronom Publication	spector:		
			le Drilling:			Casing:	5 ft liner		k Core:		Undist:		
			Removal:			Sampler:		Other:					
At	ter Cas	sing	Removal:	N 6  -	to deine consider	Hammer:	mmer falling 30" AS	TM D 450	C Ctandara	Donote	otion Toot)		
	1	Т	(17 1	NO. OI DIO	ws to drive sample	r 12 W/140 lb. Ha	aminer faming 50 AS	11VI D-130	o, Standard	reneu		COMMENTS	
Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	c - coarse m - mediun f - fine		•	DESCRIPTION - Gravel, C - Clay, cly	- clayey	s - some I - little	- 35-50% - 20-35% - 10-20% e - 0-10%	(e.g., N-v	alue, recovery e, core run, Ro recovered)	
				0-11"	asphalt and gra						START 14		
1				11-16"	red brown, silty						30" Recov	ered	
				16-30"	brown, sandy SI	<u>LT</u>			(	).1 ppm	T ( )		
2											Top of nat grade	ive soil 11 inch	ies below
3		-									grade		
3		-	-										
4													
<u> </u>	1												
5													
				0-4"	<u>slug</u>						42" Recov	ered	
6				4-11"	brown, medium		<u>dry</u>			).1 ppm			
_				11-21"	dark brown, silty					).1 ppm			
7		-		21-36" 36-42"	lighter brown, si					0.1 ppm 0.1 ppm			
8		lŀ		30-42	rea brown, CLA	r, moisi				л ррп			
	1	-											
9													
	1												
10													
		-		0-10"	slug						32" Recov	ered	
11		-		10-28"	red brown, sand					0.1 ppm 0.0 ppm			
12		H		28-32"	rea brown, CLA	r, moist				o.o ppm			
12	1	╽┟											
13		lŀ											
	1												
14													
15	-												
16		-			end of boring at	15 feet							
16	1	-			end of borning at	10 1661							
17				-									
	1												
18													
19	1												
20		-											
20	1			-									
21													
	1										Sample:	Т	ime:
22											E4-1-2ft		
	1		1								E4-2-3ft		
23		[									E4-5.5-6.5		
	-										E4-6.5-7.5	<u>oft</u>	
24	1	Ιŀ					34						
27	1												

				C&S Eng	gineers, Inc.					В	oring No.		F1
	_@	JI.			ew York 14203	E	BORING L	OC	3	Si	heet 1 of:		1
C	OMP	AN	IIF2	Fax: 716-8	47-1454					Pro	oject No.:	P67.	001.002
Proje	ct Nar	ne:	19 North Str	eet Reme	dial Investigation				I.	Surfa	ce Elev.:		
L			19 North Str		o New York						Datum:	GROUNI	SURFACE
			23 North Str	eet, LLC							tart Date:		
Drilli			NYEG				John (NYEG)	-			ish Date:	1	
	Grou		water	Depth	Date & Time	Casing:	geoprobe 7220		Rock Core:	11	nspector: Undist:		
Pof	oro Co		ile Drilling: g Removal:			Sampler:	5 jt liner	-	Other:		Onaist.		
			g Removal:			Hammer:		-	other.				
		-		No. of blov	ws to drive sample		mmer falling 30" A	ASTM	1 D-1586, Standa	rd Penetr	ation Test)		
Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	c - coarse m - medium f - fine			DESCRIPTION - Gravel, C - Clay, o	cly - cl	s - son I - litt	nd - 35-50% ne - 20-35% tle - 10-20% ace - 0-10%	(e.g., N-v		very, relative n, RQD, %
		T		0-10"	topsoil and gras	<u>s</u>					START 14		
1				10-54"	FILL - medium g	rain sand, brow	n, with rock and i	trace	brick, moist	0.0 ppm	80 degree		
2											54" Recov	rered	
3													
4													
5													
					FILL - medium s			trace	e brick pieces		62" Recov		
6	-				dark brown, fine		<u>, dry</u>				Top of nat below gra		eet 4 inches
7				45-52" 52-62"	brown, SILT, dry					0.0 ppm	below gra	ue	
	1			32-02	brown, oil i, dry	to moist				от рр			
8													
9													
10													
				0-1"	slug	OU T				0.0 ppm 0.0 ppm	62" Recov	ered	
11				1-62"	red brown, fine S	<u>SIL I</u>				0.0 ppm			
12													
13			,									a .	
14							`						
15													ν.
16					end of boring at	15 feet							
17				7									
18					9								
19							8		,				
20													
21										· ·	Cample		hoodona
22											Sample: F1-3-5ft (	+Hex)	headspa
	1		1								F1-9-10ft		1.5
23											F1-10-11	<u>t</u>	1.5
	1										F1-11-12	_	1.4
24	4							0			F1-12-13	<u>t</u>	0.4
	1										<u>F1-15ft</u>		0.4

1			9	141 Elm S	gineers, Inc. treet ew York 14203		BORING LO	G		oring No.		F2
C	OMP	AN	15.0		6-847-1630		JONING LO	O		heet 1 of:	D07	1
			X 11.5 X	www.cscos.						oject No.: ace Elev.:	P6/.	.001.002
			19 North Str 19 North Str						Suria	Datum:	GROUNI	D SURFAC
		_	23 North Str		O New Tork				s	tart Date:		/1/16
Drilli		_	NYEG	ect, LLO		Driller:	John (NYEG)			ish Date:		/1/16
	Grou	-		Depth	Date & Time	The second secon	geoprobe 7220		li li	nspector:		
		Whi	ile Drilling:	•		Casing:	5 ft liner	Rock Core:		Undist:		
Bef	ore Ca	sing	Removal:			Sampler:		Other:	•			5
Af	ter Ca	sing	g Removal:			Hammer:						1
		_	(N I	No. of blo	ws to drive sampler	r 12" w/140 lb. ha	mmer falling 30" AS	M D-1586, Stand	ard Penetr			
Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	c - coarse m - mediur f - fine		-	DESCRIPTION - Gravel, C - Clay, cly	s - so I - li	and - 35-50% me - 20-35% ttle - 10-20% race - 0-10%	(e.g., N-v		very, relati n, RQD, %
_		H		0-5"	topsoil				0.0 ppm	START 1	500	
1		H		5-28"	FILL - brown, me	dium sand with	rock pieces		0.1 ppm	28" Recov	vered	
2												
3												
4					,							
5								,	-			
		li		0-5"	red brown, fine S	SAND and SILT			0.1 ppm	62" Recov	vered	
6				5-62"			SAND, wet to satura	<u>ted</u>	0.1 ppm			
7					coarse, wet sand	I @ 62"						
8												
9												
10				0-16"	brown, medium	cand with rock	nincae		0.1 ppm	45" Recov	vered	
11				16-29"	dense, hard CLA		<del>Neces</del>		0.1 ppm	10 110001	70100	
•		1		29-45"	red brown, fine S				0.1 ppm			
12												
13												
14												
15				0-5"	red brown, silty	SAND, trace cla	V	<u> </u>	0.1 ppm	40" Recov	vered	
16				5-40"	red brown, silty		-		0.0 ppm			
17												
18					· ·							
19												
20				0-24"	brown, coarse S	AND wet			0.0 nnm	62" Recov	vered	
21			· · · · · · · · · · · · · · · · · · ·	24-62"	hard, dense CLA				0.0 ppm		. 51 0 4	headspa
22			*							F2-4-6ft		0.7
22	1								5	F2-9-10ft	(+ Hex)	0.8
	1									F2-10-11		8.0
23				1								
23	1									F2-11-12 F2-12-13		1.6 0.8

end of boring at 25 feet

-		7,		141 Elm St				2	В	oring No.	F3
	_((			Buffalo, Ne Phone: 716	ew York 14203 3-847-1630	l E	BORING LO	ف	S	heet 1 of:	1
	OMP		IE2	Fax: 716-8- www.cscos.c	47-1454 com					oject No.:	P67.001.002
		_			dial Investigation				Surfa	ace Elev.:	CDOLIND SUBTACE
			19 North Str 23 North Str		o New York				9	Datum: tart Date:	GROUND SURFACE 8/29/16
Drill		_	NYEG	eet, LLC		Driller:	John (NYEG)			ish Date:	8/29/16
	Grou	-	Court Consultation Consultation	Depth	Date & Time		geoprobe 7220		l	nspector:	NW
			ile Drilling:			Casing:	5 ft liner	Rock Core:		Undist:	
			Removal:			Sampler:		Other:			
A	ter Ca	sıng	Removal:	No. of blov	vs to drive sample	Hammer:	 ammer falling 30" ASTI	│ M D-1586. Standa	rd Penetr	ation Test)	
Depth (ft)	Sample No.	Symbol	Blows on Sampler per 6"	c - coarse m - medium f - fine	s	MATERIAL	DESCRIPTION - Gravel, C - Clay, cly -	a - ar s - som l - litt	nd - 35-50% ne - 20-35% le - 10-20% ace - 0-10%	(e.g., N-va moistur	COMMENTS  alue, recovery, relative e, core run, RQD, % recovered)
ı				0"-4" 4"-8"	blacktop				0.1 ppm	START 12 33" Recov	
1	1			4 -8 8"-60"	red brown, verv	fine SAND, silt,	and a little clay, dam	p			ve soil 8 inches below
2										grade	
•						1					
3	1				18						
4	4								9		
_											
5	1			5'-7'	red brown, CLA	/. some silt. ver	y fine sand, damp		0.1 ppm	37" Recov	ered
6				7'-10'			SILT, little clay, damp		0.5 ppm		
_											
7	1										
8											
9										-	
9								·			
10						4					
11				10'-16'	red brown, very	fine SAND and S	SILT, little clay, damp	<u>!</u>	0.1 ppm	34" Recov	ered
12											
13											
14					,						
15											
16				15'-16'	medium brown,	nne SAND, som	e siit, moist		0.1 ppm		
17					end of boring at	16 feet					
18	-										
19											
20											
21										Sample:	Time:
22	-									F3-0.5-1F F3-1-2.5 F	<u>r</u>
23	-								Ŋ	F3-3.5-4.5 F3-5.5-6.5	FT
24	32								1	F3-15FT	
25											

Project Name:   19 North Street Remodula Investigation	1				141 Elm St					В	oring No.	F4
Project Name: 19 North Street Regulation   Surface Ellev:		_@					"	BORING LO	G	s	heet 1 of:	1
Martin   Surface   Removal   North   Stret   Removal   North   North   Stret   Stret	CC	OMP.	AN	IES	Fax: 716-8-	47-1454				Pr	oject No.:	P67.001.002
Description	Proje	ct Nan	ne:	19 North Str	eet Reme	dial Investigation				Surf	ace Elev.:	
Drilling Firm:   NYEO   Depth   Date & Time   Drilling:   Segretary   Drilling:   Segretary   Depth   Date & Time   Drilling:   Segretary   Depth   Drilling:   Segretary   Depth   Date & Time   Drilling:   Segretary   Drilling:   Depth   Drilling:   Dept			$\overline{}$								Datum:	GROUND SURFA
Sample   S		Clie	nt:	23 North Str	eet, LLC					S	tart Date:	8/29/16
While Drilling:	Drilli	ng Fir	m:	NYEG			Driller:	John (NYEG)		Fir	nish Date:	8/29/16
Sampler   Other		Grou	ndv	/ater	Depth	Date & Time				1	nspector:	NW
After   Casting Removals			Wh	ile Drilling:			Casing:	5 ft liner	Rock Core:		Undist:	
No. of blows to drive sampler 12" w140 ib. hammer falling 30" ASTM D-1586, Standard Panetration Test)	Befo	ore Ca	sing	Removal:					Other:			
Sample   S	Af	ter Ca	sing									
Blows on   Material Description   S. Sample			_	(N I	No. of blov	ws to drive sample	r 12" w/140 lb. ha	mmer falling 30" AST	M D-1586, Standa	rd Peneti		
1	Depth (ft)	Sample No.	Symbol	Sampler	m - medium f - fine	S		•	s - som I - litt	ie - 20-35% le - 10-20%	(e.g., N-v moistur	alue, recovery, relate, core run, RQD, % recovered)
8.5"-28" red brown, very fine SAND and Sil.T, little clay, damp  Top of native soil 8.5 inch below grade  18" red brown, very fine SAND and Sil.T, moist to wet  18" red brown, very fine SAND and Sil.T, trace clay  24-34" red brown, very fine SAND and Sil.T, trace clay  24-34" red brown, very fine SAND and Sil.T, trace clay  0"-47" red brown, very fine SAND and Sil.T, trace clay, moist to  34" Recovered  47" Recovered  55 attracted  47" Recovered  56 and of boring at 15 feet  77 and of boring at 15 feet  78 attracted  79 and of boring at 15 feet  70 attracted  71 attracted  72 attracted  73 attracted  74 attracted  75 attracted  76 attracted  77 attracted  77 attracted  78 attracted  79 attracted  79 attracted  79 attracted  79 attracted  70 attracted  70 attracted  71 attracted  71 attracted  72 attracted  74 attracted  75 attracted  76 attracted  77 attracted  77 attracted  78 attracted  79 attracted  79 attracted  70 attracted  70 attracted  70 attracted  71 attracted  71 attracted  71 attracted  71 attracted  72 attracted  73 attracted  74 attracted  75 attracted  76 attracted  77 attracted  77 attracted  78 attracted  79 attracted  79 attracted  70 attracted  70 attracted  70 attracted  71 attracted  72 attracted  73 attracted  74 attracted  75 attracted  76 attracted  77 attracted  77 attracted  78 attracted  79 attracted  79 attracted  70 attracted  70 attracted  70 attracted  70 attracted  71 attracted  71 attracted  72 attracted  73 attracted  74 attracted  75 attracted  76 attracted  77 attracted  77 attracted  77 attracted  78 attracted  79 attracted  70 attracted  70 attracted  70 attracted  70 attracted  71 attracted  71 attracted  72 attracted  73 attracted  74 attracted  75 attracted  75 attracted  76 attracted  77 attracted  77 attracted  77 attracted  78 attracted  79 attracted  70 attracted  70 attracted  70 attracted  71 attracted  71 attracted  71 attracted  71 attracted  72 attracted  73 attracted  74 a										0.2 nnm		
Top of native soil 8.5 inch below grade  18" red brown, very fine SAND and SiLT, moist to wet 18"-24" red brown, very fine SAND and SiLT, trace clay  18" red brown, very fine SAND and SiLT, trace clay  10 0"-47" red brown, very fine SAND and SiLT, trace clay, moist to 47" Recovered  11 saturated  11 saturated  12 saturated  18 end of boring at 15 feet  19 conditions at 15 feet  19 conditions at 15 feet  20 conditions at 15 feet  21 sample: Tile F4-0.5-FT F4-1.2.5 F4-1.2.6 F4-1.2.6 F4-3.5-1.0	1		1 1				fine CAND and	CII T little elev dem	n			rered
below grade	2				o.5"-28"	rea prown, very	IIIIE SAND ANG S	oı⊾ı, ınde ciay, dam	<u> </u>	ı.ı ppın		ive soil 8.5 inches
18"   red brown, very fine SAND and Sil.T, moist to wet   34" Recovered   18"-24"   red brown, very fine SAND and Sil.T, trace clay											1 '	
18" red brown, very fine SAND and SILT, moist to wet 18"-24" red brown, very fine SAND and SILT, trace clay 24-34" red brown, very fine SAND and SILT, trace clay  10 0"-47" red brown, very fine SAND and SILT, trace clay, moist to saturated  11 12 13 14 15 16	3					0					January State	
18" red brown, very fine SAND and Sil.T, moist to wet  18"-24" red brown, very fine SAND and Sil.T, trace clay  24-34" red brown, very fine SAND and Sil.T, trace clay  10  11  11  12  13  14  15  16  end of boring at 15 feet  21  22  23  34" Recovered  34" Recovered  47" Recovered  58						7	·		e e			
18"   red brown, very fine SAND and Sil.T, moist to wet   34" Recovered	4											
18" red brown, very fine SAND and Sil. T, trace clay		1										
18"-24" red brown, Very fine SAND and SILT, trace clay	5					, ,						
24-34" red brown, very fine SAND and Sil.T. trace clay  10  0"-47" red brown, very fine SAND and Sil.T. trace clay, moist to  31  12  13  14  15  16  9  9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  3ample: Til  4-4-5-FT  4-4-1-2.5  4-4-1-2.5  4-4-5-5-7.0								SILT, moist to wet			34" Recov	vered
7 8 9 10 0 0"-47" red brown, very fine SAND and SiLT, trace clay, moist to 47" Recovered 11	6											
8 9 10 0"-47" red brown, very fine SAND and SILT, trace clay, moist to 47" Recovered  11 12 13 14 15 16 end of boring at 15 feet  17 18 19 20 21 22 23 3 5Ample: Till F4-1.5-1.5 F4-3.5-4.5 F4-3.5-4.5 F4-3.5-4.5 F4-5.5-7.0					24-34"	red brown, very	fine SAND and S	SILT, trace clay				
9   10   0"-47" red brown, very fine SAND and SILT, trace clay, moist to	7											
9   10   0"-47" red brown, very fine SAND and SILT, trace clay, moist to	0											
10 0"-47" red brown, very fine SAND and SILT, trace clay, moist to 3aturated	8	-										
10 0"-47" red brown, very fine SAND and SILT, trace clay, moist to 3aturated	0											
11   0"-47" red brown, very fine SAND and SILT, trace clay, moist to   47" Recovered		1						, , , , , , , , , , , , , , , , , , , ,				
11   Saturated   S	10		11									
12 13 14 15 16 end of boring at 15 feet  17 18 19 20 21 22 23 33 44 54-12.5 74-3.5-4.5 74-5.5-7.0					0"-47"	red brown, very	fine SAND and	SILT, trace clay, mo	st to		47" Recov	vered
13 14 15 16 16 17 18 19 20 21 22 23	11		11			saturated						
13												
14	12			,								
14												
15 16 17 18 19 20 21 22 23 23 24 25 26 27 27 28 29 29 20 20 20 21 20 21 21 22 23 24 25 26 27 27 28 29 20 20 20 20 21 20 21 20 21 20 21 20 21 21 22 23 24 25 26 27 28 28 29 29 20 20 20 20 20 21 20 21 20 21 20 21 21 22 23 24 25 26 27 28 28 28 28 28 28 28 28 28 28 28 28 28	13											
15 16 17 18 19 20 21 22 23 23 24 25 26 27 27 28 29 29 20 20 20 21 20 21 21 22 23 24 25 26 27 27 28 29 20 20 20 20 21 20 21 21 22 23 24 25 26 27 28 29 20 20 20 21 20 21 20 21 20 21 20 21 20 21 21 22 23 24 25 26 27 28 28 28 28 28 28 28 28 28 28 28 28 28	4.4											
16   end of boring at 15 feet	14	1										
16	15							,				
17 18 19 20 21 21 22 23 3 54-3-5-7.0	10	1					5					
17 18 19 20 21 22 23 5Ample: Tin F4-0.5-1FT F4-1-2.5 F4-3.5-4.5 F4-5.5-7.0	16					end of boring at	15 feet					
18 19 20 21 21 22 23 3 54-3-5-7.0		1					27					
20 21 22 23 54-5-7.0	17								-			
20 21 22 23 23 24 25 25 25 25 25 25 26 26 27 27 28 29 29 29 29 29 29 29 29 29 29 29 29 29												
20   21   22   23   24   25   26   26   26   26   26   26   26	18											
20 21 22 2												
21 Sample: Till 22 F4-0.5-1FT F4-1-2.5 F4-3.5-4.5 F4-5.5-7.0	19	-						[A]			-	
21 22 23 23 24 25 26 27 28 29 29 20 20 20 21 21 22 23 24 25 26 26 27 28 28 28 28 29 29 20 20 20 20 20 20 20 20 20 20 20 20 20	20											
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22 Sample: Till F4-0.5-1FT F4-1-2.5 F4-3.5-4.5 F4-5.5-7.0	21											
22 F4-0.5-1FT F4-1-2.5 F4-3.5-4.5 F4-5.5-7.0	۷1	1									Sample:	Time:
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F4-5.5-7.0		1										
	23										_	
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25												-



# C&S Engineers, Inc.

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# **BORING LOG GENERAL INFORMATION & KEY**

### Casing, Sampling and Other Equipment

**Rock Cores** H.S.A: Hollow Stem Auger (record I.D.) Wire Line I.D. S.S.A: Solid Stem Auger (record O.D.) Standard I.D. Steel: Hollow Steel Flush Joint Casing (recorded I.D.) EW / EX 1-13/32" AW / AX 1-25/32" AQ 1-1/8" Open: Open Hole / No Casing (record I.D.) BW / BX 2-7/32" BQ 1-1/2" S.S.: Split Spoon (record I.D.) NQ 1-31/32" Hammer: Auto - Automatic, Manual - Manual (rope & cat-head) NW / NX 2-27/32" Undist: Tube - Shelby, Oste - Osteberg (record I.D. & length) HW / HX 2-25/32" HQ 2-5/8"

Symbol Legend & Abbreviations **Abbreviations** Color W.O.R. - Weight of Rods br - brown Split Spoon W.O.H. - Weight of Rods & Hammer rd - red Sample N - Standard Penetration Test N-value gr - gray N.W.E. - No Water Encountered grn - green Rock Core do - ditto (same as above) blk - black wht - white Rec - Recovery Undisturbed RQD - Rock Quality Designation Sample PP - Pocket Penetrometer Tor - Torvane

### Description of Soil Density

Relative Soil Density determined while advancing the soil boring by using ASTM Method D-1586, Standard Penetration Test N-Value. The N-Value is calculated by adding the hammer blow counts of the 2nd and 3rd sampling intervals together for driving a 2" O.D. sampler with a 140 lb. hammer falling 30' -OR-- by obtaining Pocket Penetrometer or Torvane Readings.

Cour	se Grained Soils			<u>Fin</u>	ne Grained Soils	3	
Greater that	n half the material larger	N-Value		<b>Undrained She</b>	ar Strength (q <sub>u</sub> )		Relative Density
than No. 200	) Sieve (sand and gravel)	in-value	psi	psf	tsf or kg/cm <sup>2</sup>	kN/m <sup>2</sup>	Relative Delisity
N-Value	Relative Density	< 2	< 2.5	< 375	< 0.2	< 20	Very Soft
< 4	Very Loose	2 to 4	2.5 - 5	375 - 750	0.20 - 0.40	20 - 40	Soft
4 to 10	Loose	5 to 8	5 -10	750 - 1,500	0.40 - 0.75	40 - 75	Firm -or- Medium Stiff
11 to 30	Medium Dense	9 to 15	10 - 20	1,500 - 3,000	0.75 - 1.50	75 - 150	Stiff
31 to 50	31 to 50 Dense		20 - 40	3,000 - 6,000	1.50 - 3.00	150 - 300	Very Stiff
> 50	> 50 Very Dense		> 40	> 6,000	> 3	> 3,000	Hard

### Description of Soil Type

Material	Grain Size	Material	Grain Size	Material	Grain Size	Material	Grain Size	
Boulder	> 8"	Gra	avel	5	Sand	Silt & Clay	< #200	
Cobble	8" - 3"	Course	3" - 1-1/2"	Course	#4 - #10	Note: # indicate	s U.S. Standa	ard Sieve
		Medium	1-1/2" - 3/4"	Medium	#10 - #40	with size	shown.	
		Fine	3/4" - #4	Fine	#40 - #200			

### Bed Rock Classification Terms & Field Test / Field Observation

Term	Field Test / Field Observation	Rock Mass Classification based on RQD			
	Hardness	RQD	Rock Mass Quality		
Soft	Can be Scratched by Fingernail	< 25%	very poor		
Medium Hard	Easily Scratched by Pen Knife or Nail	25% - 50%	poor		
Hard	Difficultly Scratched by Pen Knife or Nail	50% - 75%	fair		
Very Hard	Cannot be Scratched by Pen Knife or Nail	75% - 90%	good		
	Weathering	90% - 100%	excellent		
Van Waathard	December of a second se				

Bedding (Natural Breaks in Rock Layers)					
Sound	material within joints, etc.)				
Weathered	iron staining, core recovery, clay seams, amount o				
Very Weathered	Based on observations (e.g., amount of disintegration				

 $\Sigma$  of pieces ≥ 4" RQD = total length of run

Laminated < 1 inch Thinly Bedded 1 inch to 4 inches Bedded 4 inches to 12 inches Thickly Bedded 12 inches to 36 inches Massive > 36 inches

ASTM Method D-6032, Standard Test Method for Determining Rock Quality Designation (RQD) of Rock Cores

# APPENDIX B

COMMUNITY AIR MONITORING PROGRAM (INCLUDES NYSDEC DUST AND EROSION CONTROL GUIDANCE)

# **Community Air Monitoring Plan**

for

19 North Street Buffalo, Erie County, New York

**Site No.** C915303

### **Community Air Monitoring Plan**

### Overview

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for VOCs and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary.

**Continuous monitoring** will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

**Periodic monitoring** for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. "Periodic" monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

### VOC Monitoring, Response Levels and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate

surrogate, such as isobutylene. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

- 1. If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.
- 2. If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.
- 3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.
- 4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

## Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

- 1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m<sub>3</sub>) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m<sub>3</sub> above the upwind level and provided that no visible dust is migrating from the work area.
- 2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust

suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m<sup>3</sup> of the upwind level and in preventing visible dust migration.

3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

## **Fugitive Dust and Particulate Monitoring**

A program for suppressing fugitive dust and particulate matter monitoring at hazardous waste sites is a responsibility on the remedial party performing the work. These procedures must be incorporated into appropriate intrusive work plans. The following fugitive dust suppression and particulate monitoring program should be employed at sites during construction and other intrusive activities which warrant its use:

- 1. Reasonable fugitive dust suppression techniques must be employed during all site activities which may generate fugitive dust.
- 2. Particulate monitoring must be employed during the handling of waste or contaminated soil or when activities on site may generate fugitive dust from exposed waste or contaminated soil. Remedial activities may also include the excavation, grading, or placement of clean fill. These control measures should not be considered necessary for these activities.
- 3. Particulate monitoring must be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns (PM10) with the following minimum performance standards:
  - (a) Objects to be measured: Dust, mists or aerosols;
  - (b) Measurement Ranges: 0.001 to 400 mg/m3 (1 to 400,000 :ug/m3);
  - (c) Precision (2-sigma) at constant temperature: +/- 10 :g/m3 for one second averaging; and +/- 1.5 g/m3 for sixty second averaging;
  - (d) Accuracy:  $\pm$  5% of reading  $\pm$  precision (Referred to gravimetric calibration with SAE fine test dust (mmd= 2 to 3 :m, g= 2.5, as aerosolized);
  - (e) Resolution: 0.1% of reading or 1g/m3, whichever is larger;
  - (f) Particle Size Range of Maximum Response: 0.1-10;
  - (g) Total Number of Data Points in Memory: 10,000;
  - (h) Logged Data: Each data point with average concentration, time/date and data point number;
  - (i) Run Summary: overall average, maximum concentrations, time/date of maximum, total number of logged points, start time/date, total elapsed time (run duration), STEL concentration and time/date occurrence, averaging (logging) period, calibration factor, and tag number;
  - (j) Alarm Averaging Time (user selectable): real-time (1-60 seconds) or STEL (15 minutes), alarms required;

- (k) Operating Time: 48 hours (fully charged NiCd battery); continuously with charger;
- (l) Operating Temperature: -10 to 50<sub>0</sub> C (14 to 122<sub>0</sub> F); and
- (m) Particulate levels will be monitored upwind and immediately downwind at the working site and integrated over a period not to exceed 15 minutes.
- 4. In order to ensure the validity of the fugitive dust measurements performed, there must be appropriate Quality Assurance/Quality Control (QA/QC). It is the responsibility of the remedial party to adequately supplement QA/QC Plans to include the following critical features: periodic instrument calibration, operator training, daily instrument performance (span) checks, and a record-keeping plan.
- 5. The action level will be established at 150 ug/m3 (15 minutes average). While conservative, this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety. If particulate levels are detected in excess of 150 ug/m3, the upwind background level must be confirmed immediately. If the working site particulate measurement is greater than 100 ug/m3 above the background level, additional dust suppression techniques must be implemented to reduce the generation of fugitive dust and corrective action taken to protect site personnel and reduce the potential for contaminant migration. Corrective measures may include increasing the level of personal protection for on-site personnel and implementing additional dust suppression techniques (see paragraph 7). Should the action level of 150 ug/m3 continue to be exceeded work must stop and DER must be notified as provided in the site design or remedial work plan. The notification shall include a description of the control measures implemented to prevent further exceedances.
- 6. It must be recognized that the generation of dust from waste or contaminated soil that migrates off-site, has the potential for transporting contaminants off-site. There may be situations when dust is being generated and leaving the site and the monitoring equipment does not measure PM-10 at or above the action level. Since this situation has the potential to allow for the migration of contaminants off-site, it is unacceptable. While it is not practical to quantify total suspended particulates on a real-time basis, it is appropriate to rely on visual observation. If dust is observed leaving the working site, additional dust suppression techniques must be employed.
- 7. The following techniques have been shown to be effective for the controlling of the generation and migration of dust during construction activities:
  - (a) Applying water on haul roads;
  - (b) Wetting equipment and excavation faces;
  - (c) Spraying water on buckets during excavation and dumping;
  - (d) Hauling materials in properly tarped or watertight containers;
  - (e) Restricting vehicle speeds to 10 mph;
  - (f) Covering excavated areas and material after excavation activity ceases; and
  - (g) Reducing the excavation size and/or number of excavations.

Experience has shown that the chance of exceeding the 150ug/m3 action level is remote when the above-mentioned techniques are used. When techniques involving water application are used, care must be taken not to use excess water, which can result in unacceptably wet conditions. Using atomizing sprays will prevent overly wet conditions, conserve water, and provide an effective means of suppressing the fugitive dust.

8. The evaluation of weather conditions is necessary for proper fugitive dust control. When extreme wind conditions make dust control ineffective, as a last resort remedial actions may need to be suspended. There may be situations that require fugitive dust suppression and particulate monitoring requirements with action levels more stringent than those provided above. Under some circumstances, the contaminant concentration and/or toxicity may require additional monitoring to protect site personnel and the public. Additional integrated sampling and chemical analysis of the dust may also be in order. This must be evaluated when a health and safety plan is developed and when appropriate suppression and monitoring requirements are established for protection of health and the environment.