CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York GEI PROJECT NUMBER: 093060

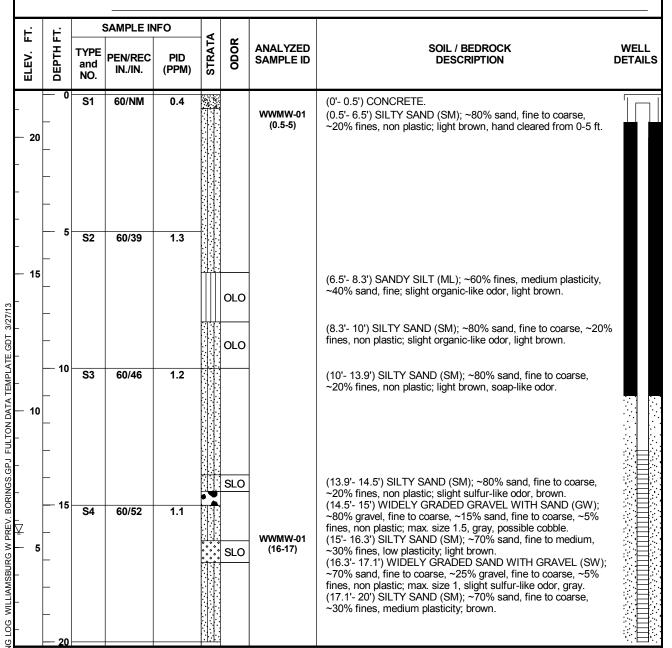
**PAGE** 1 of 3

**WW-MW-01** 

**BORING LOG** 

**GROUND SURFACE ELEVATION (FT):** 21.55 LOCATION: Wythe Ave NORTHING (FT): 688406 **EASTING (FT):** 642399 TOTAL DEPTH (FT): 65.0 DRILLED BY: Zebra Environmental / Luke Caballero DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Maura MacLeod DATE START / END: 6/16/2009 - 6/17/2009 DRILLING DETAILS: Geoprobe 

**GENERAL NOTE:** 



IN. = INCHES FT. = FEET

#### **NOTES:**

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

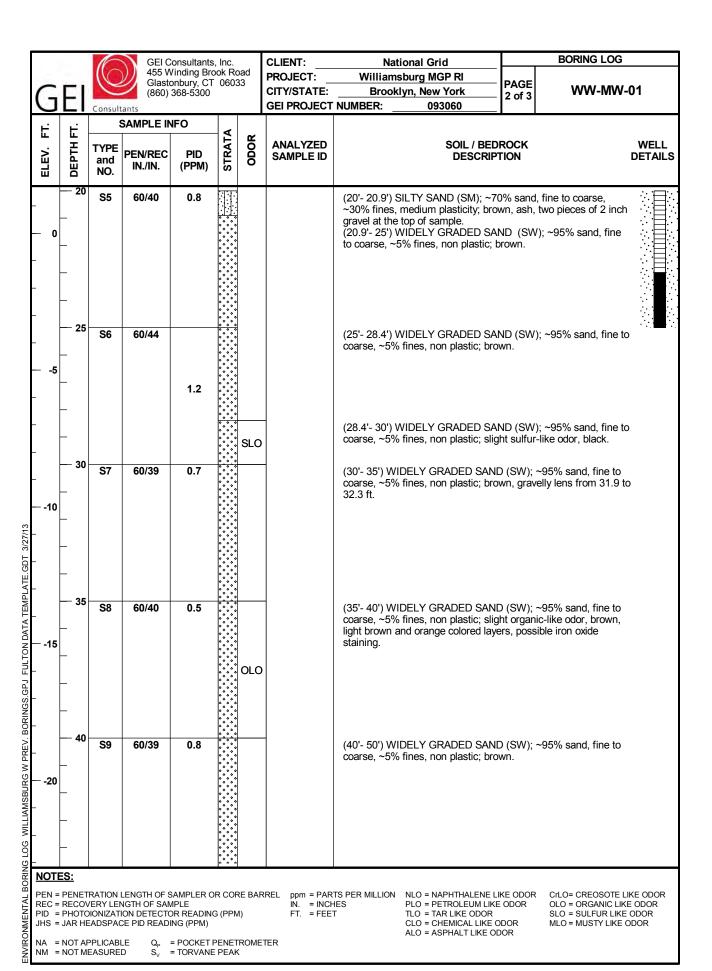
Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE NM = NOT MEASURED

= TORVANE PEAK

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR



G	ΕI	Consult	455 V Glast (860)	consultants, /inding Bro onbury, CT 368-5300	ok Ro	oad 33	CLIENT: PROJECT: CITY/STATE: GEI PROJECT	Williams Brook	ional Grid sburg MGP RI lyn, New York 093060	PAGE 3 of 3	BORING LOG  WW-MW-01
ELEV. FT.	DEPTH FT.		SAMPLE IN PEN/REC IN./IN.	PID (PPM)	STRATA	ODOR	ANALYZED SAMPLE ID	_	SOIL / BEDI DESCRIPT		WELL DETAILS
- 25 -	— <b>45</b> _ _	S10	60/38	0.8							
- - <b>-30</b>	<b>50</b>	S11	60/40	1.4				~90% sand, brown.	VIDELY GRADED SAN fine to medium, ~10% SILTY SAND (SM); ~70 ; light brown.	fines, lo	ow plasticity; light
	_ 55 _ _	S12	60/44	1.1				(56.8'- 57.5') (56.8'- 57.5') (56.8'- 57.5') ~90% sand, brown.	DELY GRADED SANE fines, non plastic; brown VIDELY GRADED SANE fines, non plastic; ligony WIDELY GRADED SANE fine to medium, ~10% SILT (ML); ~80% fine	wn.  ND (SW)  Int brown  AND WI  fines, Id	r); ~95% sand, fine to n.  ITH SILT (SW-SM); ow plasticity; light lasticity. ~20% sand.
BORINGS GPJ FULTON DATA TEMPLATE.GDT	<b>60</b>	S13	60/39	0.9			WWMW-01 (63-64)	(61.4'- 62.9') to medium, -	interbeds of silty sand,  WIDELY GRADED S5% fines, non plastic;  EAN CLAY (CL); ~909 fine; reddish brown.	AND (S' light bro	W); ∼95% sand, fine wn.
REC = PID = JHS = NA =	PENET RECOV PHOTO JAR HE NOT AF	/ERY LEI IONIZAT	NGTH OF SAM ION DETECTO CE PID READ LE Q <sub>P</sub>	MPLE OR READING	G (PPM PENET	I) ROME	IN. = INCH FT. = FEE	IES	g at 65 feet.  NLO = NAPHTHALENE LI PLO = PETROLEUM LIKE TLO = TAR LIKE ODOR CLO = CHEMICAL LIKE OD ALO = ASPHALT LIKE OD	ODOR ODOR	CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR MLO = MUSTY LIKE ODOR

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York **GEI PROJECT NUMBER:** 093060

**PAGE** 1 of 3

**WW-MW-02** 

**BORING LOG** 

Consultants **GROUND SURFACE ELEVATION (FT):** 19.19 LOCATION: North 11th Street NORTHING (FT): 688484 EASTING (FT): 642129 TOTAL DEPTH (FT): 55.0 DRILLED BY: Zebra Environmental / Luke Caballero DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Melissa Felter DATE START / END: 7/10/2009 - 7/13/2009 DRILLING DETAILS: Geoprobe WATER LEVEL DEPTHS (FT): <u>□ 12.00 7/10/2009</u>

GENERAL NOTE:

エ   TYPE     TYPE	Ę.	Ë		SAMPLE IN	NFO	⋖	L TS	~			
WWMW-02 (2-5) WIDELY GRADED SAND (SW); ~85% sand, fine to coarse, ~10% gravel, fine to coarse, ~5% fines; ~5% to 10% brick and coal, dry, brown and gray, loose, hand cleared. FILL.  5 S2 60/25 0.6 (5'- 10') WIDELY GRADED SAND (SW); ~85% sand, fine to coarse, ~10% gravel, fine to coarse, ~5% fines; ~5% to 10% brick and coal, dry to moist, brown and gray, loose. FILL.  (10'- 12') NARROWLY GRADED SAND (SP); ~90% sand, fine to medium, ~5% gravel, fine, ~5% fines; ~5% brick and coal, moist, brown, loose. FILL.  (10'- 12') NARROWLY GRADED SAND (SP); ~90% sand, fine to medium, ~5% gravel, fine, ~5% fines; ~5% brick and coal, moist, brown, loose. FILL.  (12'- 14') WIDELY GRADED SAND WITH SILT (SW-SM); ~85% sand, fine to medium, ~10% fines, ~5% gravel, fine; slight petroleum-like odor, wet, gray, dense.  (14'- 17') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines; moderate petroleum-like odor, wet, gray, loose, gray stained.			and	PENKEC		STRAT	VISUA IMPAC	ODO			WELI DETAII
to coarse, ~10% gravel, fine to coarse, ~5% fines; -5% to 10% brick and coal, dry, brown and gray, loose, hand cleared. FILL.    S2   60/25   0.6   (5'- 10') WIDELY GRADED SAND (SW); ~85% sand, fine to coarse, ~10% gravel, fine to coarse, ~5% fines; ~5% to 10% brick and coal, dry to moist, brown and gray, loose. FILL.    S3   60/51   (10'- 12') NARROWLY GRADED SAND (SP); ~90% sand, fine to medium, ~5% gravel, fine, ~5% fines; ~5% brick and coal, moist, brown, loose. FILL.    C2   (12'- 14') WIDELY GRADED SAND WITH SILT (SW-SM); ~85% sand, fine to medium, ~10% fines, ~5% gravel, fine; slight petroleum-like odor, wet, gray, dense.    WWMW-02 (15-17)   WWMW-02 (15-17)   (14'- 17') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines; moderate petroleum-like odor, wet, gray, loose, gray stained.	-	<b>— 0</b>								(0'- 2') CONCRETE.	
S2 60/25 0.6 (S- 10') WIDELY GRADED SAND (SW); ~85% sand, fine to coarse, ~10% gravel, fine to coarse, ~5% fines; ~5% to 10% brick and coal, dry to moist, brown and gray, loose. FILL.  (10'- 12') NARROWLY GRADED SAND (SP); ~90% sand, fine to medium, ~5% gravel, fine, ~5% fines; ~5% brick and coal, moist, brown, loose. FILL.  (12'- 14') WIDELY GRADED SAND WITH SILT (SW-SM); ~85% sand, fine to medium, ~10% fines, ~5% gravel, fine; slight petroleum-like odor, wet, gray, dense.  (14'- 17') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines; moderate petroleum-like odor, wet, gray, loose, gray stained.	- 15	_	S1	36/22	1.9				-	to coarse, ~10% gravel, fine to coarse, ~5% fines; ~5% to 10% brick and coal, dry, brown and gray, loose, hand	
S3 60/51  S3 60/51  (10'- 12') NARROWLY GRADED SAND (SP); ~90% sand, fine to medium, ~5% gravel, fine, ~5% fines; ~5% brick and coal, moist, brown, loose. FILL.  (12'- 14') WIDELY GRADED SAND WITH SILT (SW-SM); ~85% sand, fine to medium, ~10% fines, ~5% gravel, fine; slight petroleum-like odor, wet, gray, dense.  (14'- 17') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines; moderate petroleum-like odor, wet, gray, loose, gray stained.		_ 5 _ _	S2	60/25	0.6					fine to coarse, ~10% gravel, fine to coarse, ~5% fines; ~5% to 10% brick and coal, dry to moist, brown and gray,	
PLO PLO (SW-SM); ~85% sand, fine to medium, ~10% fines, ~5% gravel, fine; slight petroleum-like odor, wet, gray, dense.  (14'- 17') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines; moderate petroleum-like odor, wet, gray, loose, gray stained.	- 10	_ 10 _	<b>S</b> 3	60/51		* ` * ` * * * * * * * * * * * * * * * *				sand, fine to medium, ~5% gravel, fine, ~5% fines; ~5%	
S4 60/48  PLO   www.02  (15-17)  WWMW-02  (15-17)  WWMW-02  (15-17)  WWMW-02  (15-17)  WWMW-02  (15-17)	-	_			224			PLO		(SW-SM); ~85% sand, fine to medium, ~10% fines, ~5% gravel, fine; slight petroleum-like odor, wet, gray, dense.	
	- 5	— 15 —	S4	60/48	315			PLO		fine to medium, ~5% fines; moderate petroleum-like odor	
(17'- 20') SANDY SILT (ML); ~60% fines, ~35% sand, fine to coarse, ~5% gravel, fine; moist, reddish brown, dense.	_ ^	_				****				fine to coarse, ~5% gravel, fine; moist, reddish brown,	

# NOTES:

NM = NOT MEASURED

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK NA = NOT APPLICABLE

IN. = INCHES FT. = FEET

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

			GEI C	consultants,	Inc.		CLIEN	IT:	National Grid		BORING LOG
is.			455 V	Vinding Bro onbury, CT	ok Ro	oad	PROJI		Williamsburg MGP RI	DAGE	
(	EI	~	(860)	368-5300	000	55	CITY/S	STATE:	Brooklyn, New York	PAGE 2 of 3	WW-MW-02
J		Consult	tants				GEI PI	ROJECT NUMI	BER:093060		
FT.	Ę.	;	SAMPLE IN	NFO		"					
ELEV. F	DEPTH F	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID		EDROCK RIPTION	WELL DETAILS
		S5 S6	60/48 60/51	7.8		2 2			(20'- 21.5') WIDELY GRADE GRAVEL (SW-SM); ~70% sigravel, fine to coarse, ~10% reddish brown, dense. (21.5'- 35') WIDELY GRADE fine to medium, ~5% fines; v	and, fine fines; mo	to medium, ~20% ist, brown and (SW); ~95% sand,
- - - 	35 - 	\$8 \$9	60/53	9.5					(35'- 44') WIDELY GRADED fine to coarse, ~5% gravel, fi brown, lens of gravel at 37.5	ne to coa	SW); ~90% sand, rse, ~5% fines; wet,
25 <u>NOTI</u>	_ ES:				***		-		(44'- 44.5') WIDELY GRADE	ED SAND	(SW); ~95% sand,

ENVIRONMENTAL BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

 $Q_P$  = POCKET PENETROMETER  $S_V$  = TORVANE PEAK

NA = NOT APPLICABLE NM = NOT MEASURED

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
IN. = INCHES
PLO = PETROLEUM LIKE ODOR
PID = PHOTOIONIZATION DETECTOR READING (PPM)
FT. = FEET
TLO = TAR LIKE ODOR
CLO = CHEMICAL LIKE ODOR
ALO = ASPHALT LIKE ODOR

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York

**PAGE** 3 of 3

**WW-MW-02** 

**BORING LOG** 

	<u>                                     </u>	Consult	tants				GEI PI	ROJECT NUME	BER:093060		
Ħ.	Ę.		SAMPLE IN	NFO	Δ	AL TS	~				
ELEV.	DEPTH	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BI DESCR		WELL DETAILS
- - - -		S10	60/60	2.2					fine to medium, ~5% fines; w (44.5'- 45') SILT (ML); ~90% moist, reddish brown, dense, (45'- 50') SILT WITH SAND (sand, fine; moist, brownish g	fines, ~10% sand, fine; layered. (ML); ~60% fines, ~40%	
-	— <b>50</b> _	S11	60/60					WWMW-02 (50-53)	(50'- 53') SILTY SAND (SM); medium, ~20% fines; wet, gr		
- 3!	5 55								(53'- 55') SANDY LEAN CLA very dense, cohesive.	Y (CL); moist, red and gra	<b>y</b> ,

End of Boring at 55 feet. Grouted

#### NOTES:

BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (PPM)

PIN = PARTS PER MILLION
NLO = NAPHTHALENE LIKE ODOR
PLO = PETROLEUM LIKE ODOR
TLO = TAR LIKE ODOR

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

NA = NOT APPLICABLE NM = NOT MEASURED

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

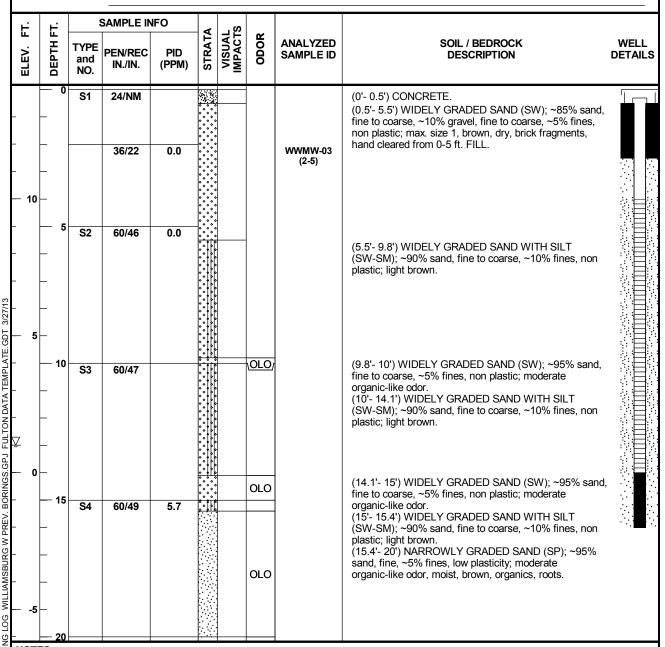
CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York GEI PROJECT NUMBER: 093060

**PAGE** 1 of 3

WW-MW-03

**BORING LOG** 

Consultants **GROUND SURFACE ELEVATION (FT):** 13.99 LOCATION: North 12th Street NORTHING (FT): 688684 **EASTING (FT):** 642208 TOTAL DEPTH (FT): 65.0 DRILLED BY: Zebra Environmental / Luke Caballero DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Maura MacLeod DATE START / END: 6/23/2009 - 6/26/2009 DRILLING DETAILS: Geoprobe **GENERAL NOTE:** 



# **NOTES:**

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

= TORVANE PEAK NM = NOT MEASURED

ppm = PARTS PER MILLION

NLO = NAPHTHALENE LIKE ODOR IN. = INCHES FT. = FEET

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

		1	GELC	Consultants,	. Inc.	$\neg$	CLIEN	JT:	National Grid		BORING LOG	
		$((\bigcirc$	455 W	Winding Bro	ook Ro	oad	PROJ		Williamsburg MGP RI			
(		~		368-5300	UUUL	33	CITY/S	STATE:	Brooklyn, New York	PAGE 2 of 3	WW-MW-	.03
	$\Box$	Consult	tants				GEI P	ROJECT NUMI	BER: 093060			
Ħ.	ı.	,	SAMPLE IN	NFO		· w						
	F	TYPE			STRATA	VISUAL	ODOR	ANALYZED	SOIL / BI	EDROC	К	WELL
ELEV.	DEPTH	and	PEN/REC		E I	ISL	Ö	SAMPLE ID		RIPTION		DETAILS
급	ᆷ	NO.	IN./IN.	(PPM)	S	>≥	-					
$\vdash$	<u> </u>	S5	60/NM		100	=	+		(20'- 25') NARROWLY GRA		MD (SD): ~05%	
		00	00/14		:::1				sand, fine, ~5% fines, low pla	asticity;	slight petroleum-like	
					1:::1	1			odor, wet, brown, organics, re	oots, ler	is of gray sand.	
<u> </u>	L					1						
						-	PLO					
F	H				:::1	1						
40					!							
— <b>-10</b>				61.2		1						
-	25		20/20		:::1			•	(051 07 01) NADDOWI V OD	, , D. D. (	CAND (OD). OE0/	
		S6	60/38						(25'- 27.2') NARROWLY GR sand, fine, ~5% fines, low pla			
-	F						NLO		naphthalene-like odor, wet, b	rown, o	rganics, roots,	
									sheen, moderate petroleum-l	ike odor	-	
					*****		PLO,	;	(27.2'- 27.5') NARROWLY G			
}	F			>9999		,		WWMW-03	sand, fine, ~5% fines, low pla			
l				/3333		,	NLO	(28-30)	petroleum-like odor, wet, brov (27.5'- 29.5') WIDELY GRAD	Wn, Diac DED SA	ik staining. ND (SW); ~95%	
<del>15</del>					••••				sand, fine to coarse, ~5% fin	es, non	plastic; strong	
	30	L					NLO	]	naphthalene-like odor, moist, lenses of coating.	brown,	tar-like staining with	
		S7	60/35	777					(29.5'- 30') NARROWLY GR			
-	F								sand, fine, ~5% fines, low planaphthalene-like odor, moist,			
						,			sheen.	,	, ,	
2							NLO		(30'- 35') WIDELY GRADED fine to coarse, ~5% fines, no			
- 74	L					1	INLO		naphthalene-like odor, moist,			<u></u>
<u>د</u> د									odor.		<b>.</b>	
	F											
5	25											
<u> </u>	<del> 35</del>	S8	60/60	161		<del></del>		]	(35'- 36.2') WIDELY GRADE			
<u> </u>	L					·	NLO		fine to coarse, ~5% fines, no naphthalene-like odor, moist,			
ì					****	-		1	(36.2'- 37.8') WIDELY GRAD	DED SA	ND (SW); ~95%	
2 -	F						PLO		sand, fine to coarse, ~5% fin petroleum-like odor, moist, but the		plastic; slight	
-					***		PLO	-	(37.8'- 38.2') WIDELY GRAD		ND (2\M/\· ~05%	
5					***	,	FLO	1	sand, fine to coarse, ~5% fin	es, non	plastic; moderate	
<u> </u>	F					,	PLO		petroleum-like odor, moist, bi			
5						1			(38.2'- 40') WIDELY GRADE fine to coarse, ~5% fines, no			
-	<b>— 40</b>	S9	60/42	149		,	7.0	•	petroleum-like odor, moist, bi	rown.	•	
						,	PLO		(40'- 41.2') WIDELY GRADE fine to coarse, ~5% fines, no			
į					****			•	petroleum-like odor, moist, bi	rown.		
-	F						PLO		(41.2'- 43.1') WIDELY GRAD sand, fine to coarse, ~5% fin			
									petroleum-like odor, moist, bi			
						,	<del>                                     </del>	†	(43.1'- 45') WIDELY GRADE			
30	L					,	NLO		fine to coarse, ~5% fines, no naphthalene-like odor, moist,			
2					,,,,,	<u> </u>			Парпинанененіке оцог, птогог,	DI UWI I.		
NOT	ES:	_	_	_						_		_
					R COF	RE BAR			R MILLION NLO = NAPHTHALENE LI			
PID =	PHOTO	TAZINOIC	NGTH OF SAN	OR READING	G (PPN	۷l)		N. = INCHES FT. = FEET	PLO = PETROLEUM LIKE TLO = TAR LIKE ODOR		OLO = ORGANIC LIKI SLO = SULFUR LIKE	ODOR
JHS =	· JAR HE	EADSPA	CE PID READ	ING (PPM)					CLO = CHEMICAL LIKE O ALO = ASPHALT LIKE OD		MLO = MUSTY LIKE (	DDOR
NA =	NOT A	PPLICAB	LE Q <sub>P</sub>	= POCKET F	PENET	rome.	TER					

ENVIRONMENTAL BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

			GEI C	Consultants	, Inc.		CLIEN		National Grid		BORING LOG	
			Glast	Vinding Bro conbury, CT	060:	33	PROJI		Williamsburg MGP RI	PAGE	1000 B.	
(7	FI			368-5300				STATE:	Brooklyn, New York	3 of 3	WW-MW-	03
7	<u>L1</u>	Consult				$oldsymbol{oldsymbol{}}$	GEI PI	ROJECT NUME	BER:093060			
Ë	Ę	;	SAMPLE IN	√FO	' <u>ہ</u> ٰٰ	_ ည						
		TYPE	DEN:/DE0	210	STRATA	VISUAL	ODOR	ANALYZED	SOIL / BI			WELL
ELEV.	DEPTH	and	PEN/REC IN./IN.	PID (PPM)	ᄩ	VIS MP.	8	SAMPLE ID	DESCR	RIPTION		DETAILS
Ш		NO.		(,								
	<b>— 45</b>						NLO					
	40	S10	60/60	9.9					(45'- 50') WIDELY GRADED	SAND	(SW); ~95% sand,	
-	<u> </u>			[					fine to coarse, ~5% fines, no petroleum-like odor, moist, br	n plastic rown.	;; slight	
				[					potroioum inte easi, me.e., e.	····		
-	-			[	****	,						
				[	10000		PLO					
				[								
<b>— -35</b>	ļ- '			[								
				[								
<b> </b>	<del> 50</del>	S11	60/54	19.1	1000	,	<del>                                     </del>		(50'- 55') WIDELY GRADED			
				[	1000	,			fine to coarse, ~5% fines, no odor, brown, two 1 inch silt le	n plastic		
				[					Odor, drown, two i inch sit is	inses.		
-	<u> </u>			[								
				[			OLO					
<b> </b>	-			[								
-40				[								
				[								
-	<b>—</b> 55	S12	60/50	131	1000	-	<del> </del>		(EE' EO E') OII TV QAND (QA	4\·QE0	V cand find to	
		312	00/00	'5'		1			(55'- 58.5') SILTY SAND (SM medium, ~15% fines, non pla	astic; sli	ght naphthalene-like	
	-			[		]			odor, brown, slight petroleum	ı-like od	or.	
<u>.</u>	L			[			NLO					
				[								
<u>-</u>	-			[		1						
<u>i</u>				[		<u> </u>	+		(58.5'- 60') SILTY SAND (SN	Л); ~85%	% sand, fine to	
— <b>-4</b> 5				[			PLO		medium, ~15% fines, non pla	astic; sli	ght petroleum-like	
<u>i</u>	<b>—</b> 60	240	20/27	L		<u> </u>	<u>                                     </u>		odor, brown.		= :=::: 0=2/	
		S13	60/37	26.4				WWMW-03 (60-63)	(60'- 62.7') WIDELY GRADE fine to coarse, ~5% fines, no	:D SANI n nlastic	) (SW); ~95% sand, ∴ slight	
<u>:</u>  -	-			[			NLO	,	naphthalene-like odor, brown	, slight	petroleum-like odor.	
įĹ				[			INLO					
				[								
<u>;</u> –	-			[					(62.7'- 65') LEAN CLAY (CL)	); ~95%	fines, medium	
2				[		}			plasticity, ~5% sand, fine; red	.t		
-50	-			[								
<u>.</u>	65			<u> </u>		<u> </u>						
	00								End of Boring at 65 feet. Grouted			
)									Grouted			
i												
)												
2												
NOT!	<u> ES:</u>											

ENVIRONMENTAL BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

NA = NOT APPLICABLE NM = NOT MEASURED

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
IN. = INCHES
PLO = PETROLEUM LIKE ODOR
PID = PHOTOIONIZATION DETECTOR READING (PPM)
FT. = FEET
TLO = TAR LIKE ODOR
CLO = CHEMICAL LIKE ODOR
ALO = ASPHALT LIKE ODOR

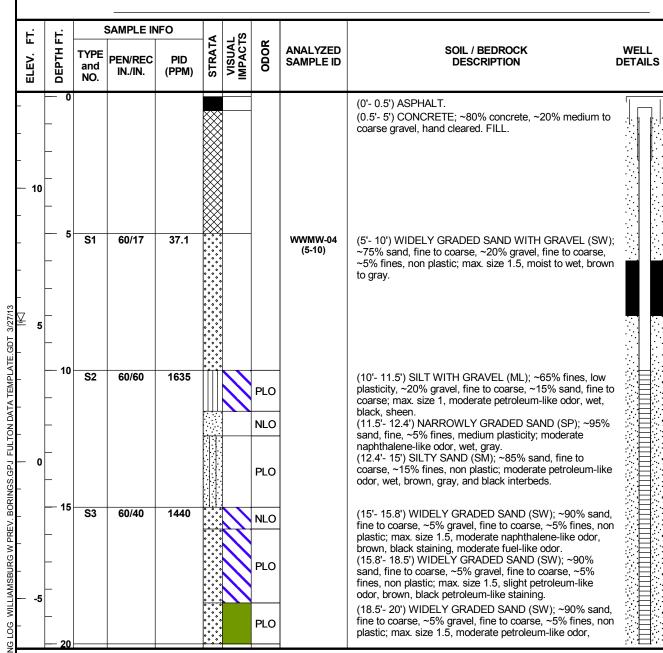
CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York GEI PROJECT NUMBER: 093060

**PAGE** 1 of 3

WW-MW-04

**BORING LOG** 

**GROUND SURFACE ELEVATION (FT):** 13.34 LOCATION: 50 Kent Ave NORTHING (FT): 688734 **EASTING (FT):** 642033 TOTAL DEPTH (FT): 65.0 DRILLED BY: Zebra Environmental / Luke Caballero DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone DATE START / END: 6/14/2009 - 6/15/2009 LOGGED BY: Maura MacLeod DRILLING DETAILS: Geoprobe **GENERAL NOTE:** 



# **NOTES:**

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER

ppm = PARTS PER MILLION

NLO = NAPHTHALENE LIKE ODOR IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

MLO = MUSTY LIKE ODOR

NA = NOT APPLICABLE NM = NOT MEASURED

= TORVANE PEAK

G	FI		455 V Glast	Consultants, Vinding Bro onbury, CT 368-5300	ok R	33		ECT: \	National Grid Williamsburg MGP RI Brooklyn, New York	PAGE 2 of 3	BORING LOG WW-MW-04
J	LI	Consult	SAMPLE IN	NEO	Ι	_ •	GEI PI	ROJECT NUMI	BER:		
ELEV. FT.	DEPTH FT.	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL	ODOR	ANALYZED SAMPLE ID	SOIL / B DESCR	EDROC RIPTION	
_	— <b>20</b> –	S4	60/40				PLO		brown and black, moderate fr (20'- 21') WIDELY GRADED (SW-SM); ~90% sand, fine t	SAND	WITH SILT
- - 10 -	_			1795			NLO		plastic; slight petroleum-like of tuel-like odor. (21'- 25') WIDELY GRADED fine to medium, ~5% fines, n naphthalene-like odor, brown petroleum-like odor.	SAND on plast	∵
-	— 25 _	S5	60/39	7860			NLO		(25'- 27.1') WIDELY GRADE fine to medium, ~5% fines, n naphthalene-like odor, brown	on plast	tic; moderate
- 15 -	_						PLO		(27.1'- 30') WIDELY GRADE fine to medium, ~5% fines, n petroleum-like odor, brown, t	on plast	tic; moderate
-	— <b>30</b> —	S6	60/31	> 9999			NLO	WWMW-04 (31-33)	(30'- 33.5') WIDELY GRADE fine to medium, ~5% fines, n naphthalene-like odor, brown	on plast	tic; strong
	_ _ 35						NLO		(33.5'- 35') WIDELY GRADE fine to medium, ~5% fines, n naphthalene-like odor, brown	ion plast i, sheen	tic; moderate
	_	S7	60/41				NLO		(35'- 36.7') WIDELY GRADE fine to medium, ~5% fines, n naphthalene-like odor, brown	on plast	
- 25	_								(36.7'- 40') WIDELY GRADE fine to medium, ~5% fines, n	ED SANI non plast	D (SW); ~95% sand, tic; brown.
-	<b>40</b>	\$8	60/42	1845			NLO		(40'- 43.8') WIDELY GRADE fine to medium, ~5% fines, n naphthalene-like odor, brown	on plast	
	_								(43.8'- 45') WIDELY GRADE	ED SANI	D (SW); ~95% sand,
NOTE PEN = REC = PID = JHS = NA = NM =	PENET RECOV PHOTO JAR HE	'ERY LEN IONIZATI	NGTH OF SAM ION DETECTO CE PID READ LE Q <sub>P</sub>	MPLE OR READING	G (PPI	M) TROME <sup>-</sup>	ir F	pm = PARTS PER N. = INCHES T. = FEET	MILLION NLO = NAPHTHALENE LI PLO = PETROLEUM LIKE TLO = TAR LIKE ODOR CLO = CHEMICAL LIKE O ALO = ASPHALT LIKE OE	ODOR	CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR MLO = MUSTY LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE** WW-MW-04 CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 3 093060 GEI PROJECT NUMBER: Consultants SAMPLE INFO Ë Ë VISUAL IMPACTS STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK WELL **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION DETAILS** and IN./IN. (PPM) NO. fine to medium, ~5% fines, non plastic; brown. S9 60/31 58.5 (45'- 50') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; slight naphthalene-like odor, brown. NLO -35 50 S10 60/43 78.9 (50'- 51.3') WIDELY GRADED SAND (SW); ~95% sand, NLO fine to medium, ~5% fines, non plastic; slight naphthalene-like odor, reddish brown. (51.3'- 52.2') NARROWLY GRADED SAND (SP); ~95% NLO sand, fine, ~5% fines, non plastic; slight naphthalene-like odor, reddish brown. NLO (52.2'- 52.9') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; slight -40 naphthalene-like odor, brown. (52.9'- 56.7') SANDY SILT (ML); ~60% fines, low plasticity, ~40% sand, fine to medium; slight NLO naphthalene-like odor, brown. 55 **S11** 60/23 56.9 (56.7'- 60') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; slight naphthalene-like odor, brown. WWMW-04 45 NLO (58-59) **S12** 60/43 194 (60'- 65') LEAN CLAY (CL); ~95% fines, medium plasticity, ~5% sand, fine; slight naphthalene-like odor, NLO -50 End of Boring at 65 feet. NOTES: NLO = NAPHTHALENE LIKE ODOR

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

WILLIAMSBURG W PREV. BORINGS GPJ FULTON DATA TEMPLATE GDT 3/27/13

PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

NM = NOT MEASURED = TORVANE PEAK ppm = PARTS PER MILLION

IN. = INCHES FT. = FEET

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

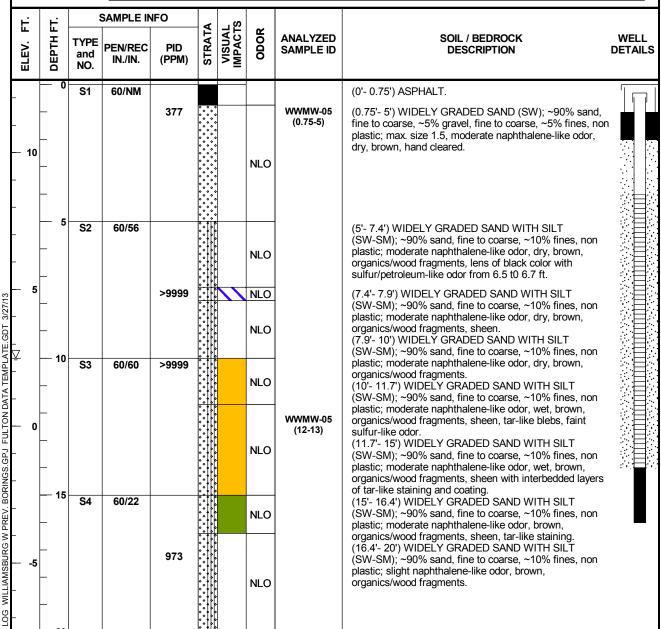
CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York GEI PROJECT NUMBER: 093060

**PAGE** 1 of 3

WW-MW-05

**BORING LOG** 

Consultants **GROUND SURFACE ELEVATION (FT):** 12.48 LOCATION: 50 Kent Ave NORTHING (FT): 688776 **EASTING (FT):** 641946 TOTAL DEPTH (FT): 65.0 DRILLED BY: Zebra Environmental / Luke Caballero DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Maura MacLeod DATE START / END: 6/10/2009 - 6/11/2009 DRILLING DETAILS: Geoprobe **GENERAL NOTE:** 



# **NOTES:**

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

IN. = INCHES FT. = FEET

ppm = PARTS PER MILLION

NLO = NAPHTHALENE LIKE ODOR PLO = PETROLEUM LIKE ODOR

TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE** WW-MW-05 CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 3 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK WELL **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION DETAILS** and IN./IN. (PPM) NO. 20 **S5** 60/35 (20'- 22.3') SILTY SAND (SM); ~80% sand, fine to coarse, ~20% fines, non plastic; slight naphthalene-like odor, reddish brown. NLO -10 (22.3'- 24') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; strong NLO >9999 naphthalene-like odor, brown, tar-like staining (24'- 25') SILTY SAND (SM); ~80% sand, fine to coarse, NLO ~20% fines, non plastic; slight naphthalene-like odor, 25 reddish brown **S6** 60/36 (25'- 26.7') SILTY SAND (SM); ~80% sand, fine to NLO coarse, ~20% fines, non plastic; slight naphthalene-like 479 odor, reddish brown. (26.7'- 28.1') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; strong NLO -15 naphthalene-like odor, brown, tar-like staining. (28.1'- 30') SILTY SAND (SM); ~80% sand, fine to coarse, ~20% fines, non plastic; slight naphthalene-like NLO odor, reddish brown. 30 60/29 **S7** (30'- 31.6') SILTY SAND WITH GRAVEL (SM); ~35% sand, fine to coarse, ~35% fines, ~30% gravel, fine; max. NLO size 0.5, moderate naphthalene-like odor, brown, dense. (31.6'- 33.4') SILTY SAND WITH GRAVEL (SM); ~60% sand, fine to coarse, ~25% gravel, ~15% fines; max. size -20 NLO 0.75, strong naphthalene-like odor, brown, tar-like staining 2891 (33.4'- 35') SILTY SAND WITH GRAVEL (SM); ~60% sand, fine to coarse, ~25% gravel, ~15% fines; max. size NLO 0.75, strong naphthalene-like odor, brown. 35 S8 60/30 (35'- 40') SILTY SAND WITH GRAVEL (SM); ~35% sand, fine to coarse, ~35% fines, ~30% gravel, fine; max. size 0.5, moderate naphthalene-like odor, brown, dense. 575 -25 NLO 40 S9 60/21 877 NLO (40'- 40.5') SILTY SAND WITH GRAVEL (SM); ~60% sand, fine to coarse, ~25% gravel, ~15% fines; max. size 0.75, strong naphthalene-like odor, brown, tar-like (40.5'- 45') SILTY SAND WITH GRAVEL (SM); ~40% fines, ~30% gravel, fine to coarse, ~30% sand, fine to -30 NLO medium; max. size 1, moderate naphthalene-like odor, brown. **NOTES:** ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/1

LOG

PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

= TORVANE PEAK NM = NOT MEASURED

IN. = INCHES FT. = FEET

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR

ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE** WW-MW-05 CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 3 093060 GEI PROJECT NUMBER: Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK WELL **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION DETAILS** and IN./IN. (PPM) NO. NLO 45 (45'- 48') SILTY SAND WITH GRAVEL (SM); ~40% S10 60/32 fines, ~30% gravel, fine to coarse, ~30% sand, fine to medium; max. size 1, moderate naphthalene-like odor, NLO -35 (48'- 50') WIDELY GRADED SAND WITH SILT (SW-SM); ~80% sand, fine to coarse, ~10% gravel, fine, NLO ~10% fines; max. size 0.25, strong naphthalene-like odor, 4673 brown with reddish brown, tar-like staining. 50 S11 60/39 (50'- 50.9') WIDELY GRADED SAND WITH SILT NLO (SW-SM); ~80% sand, fine to coarse, ~10% gravel, fine, ~10% fines; max. size 0.25, strong naphthalene-like odor, NLO 3595 brown with reddish brown, tar-like staining. (50.9'- 51.5') WIDELY GRADED SAND WITH SILT (SW-SM); ~80% sand, fine to coarse, ~10% gravel, fine, NLO -40 ~10% fines; max. size 0.25, strong naphthalene-like odor, brown with reddish brown, tar-like coating. (51.5'- 53.2') WIDELY GRADED SAND WITH SILT (SW-SM); ~80% sand, fine to coarse, ~10% gravel, fine, NLO ~10% fines; max. size 0.25, strong naphthalene-like odor, brown with reddish brown, tar-like staining. 55 NLO (53.2'- 54.9') SILT (ML); ~90% fines, ~5% gravel, fine, **S12** 60/25 ~5% sand, fine; moderate naphthalene-like odor, brown 218 (54.9'- 55') WIDELY GRADED SAND WITH SILT (SW-SM); ~80% sand, fine to coarse, ~10% gravel, fine, ~10% fines; max. size 0.25, strong naphthalene-like odor, -45 NLO brown with reddish brown. (55'- 60') SILT (ML); ~90% fines, ~5% gravel, fine, ~5% sand, fine; slight naphthalene-like odor, brown gray, S13 60/31 10.4 (60'- 63.2') WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, fine, ~5% fines; max. size 0.25, slight naphthalene-like odor, brown. NLO -50 WWMW-05 (63.2'- 65') LEAN CLAY (CL); ~95% fines, ~5% sand, (63-64)fine; red and gray. End of Boring at 65 feet. Grouted

# NOTES:

BORINGS.GPJ FULTON DATA TEMPLATE.GDT

WILLIAMSBURG W

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

PID = PHOTOIONIZATION DETECTOR READING (PPM)
JHS = JAR HEADSPACE PID READING (PPM)

,

NA = NOT APPLICABLE Q<sub>p</sub> = POCKET PENETROMETER

NM = NOT MEASURED  $S_v = TORVANE PEAK$ 

ppm = PARTS PER MILLION

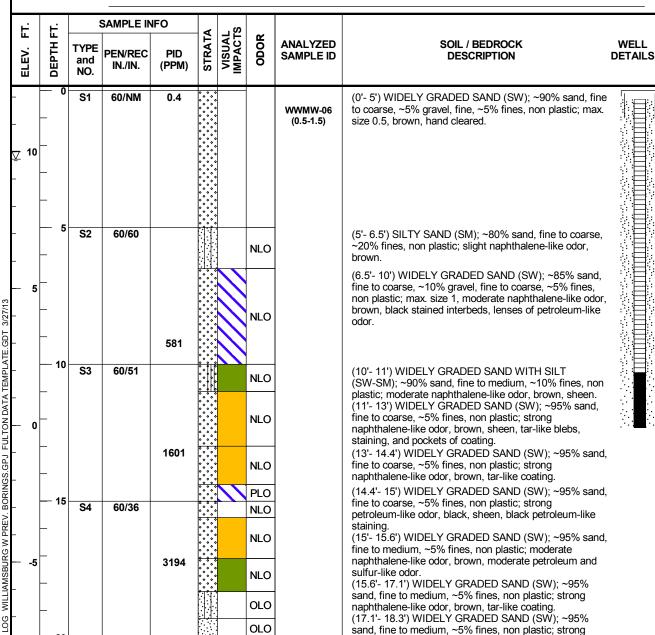
IN. = INCHES FT. = FEET NLO = NAPHTHALENE LIKE ODOR PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

**BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** CITY/STATE: Brooklyn, New York 1 of 3 GEI PROJECT NUMBER: 093060

**WW-MW-06** 

**GROUND SURFACE ELEVATION (FT):** 12.23 LOCATION: North 11th Street NORTHING (FT): 688730 **EASTING (FT):** 641824 TOTAL DEPTH (FT): 65.0 DRILLED BY: Zebra Environmental / Luke Caballero DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Maura MacLeod DATE START / END: 6/17/2009 - 6/18/2009 DRILLING DETAILS: Geoprobe **GENERAL NOTE:** 



#### **NOTES:**

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER

ppm = PARTS PER MILLION IN. = INCHES FT. = FEET

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G	Εl	Consult	455 V Glast (860)	Consultants, Vinding Bro onbury, CT 368-5300	ok R	oad			National Grid Williamsburg MGP RI Brooklyn, New York BER: 093060	PAGE 2 of 3	BORING LOG WW-MW-06
ELEV. FT.	<b>DEPTH FT.</b>	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BI DESCR	EDROCI RIPTION	K WELL DETAIL
-	— 20 –	S5	60/36				SLO PLO		naphthalene-like odor, brown (18.3'- 19.3') SILTY SAND (\$ fines, non plastic; slight orga burnt/sulfur-like odor.	SM); ~80	)% sand, fine, ~20%
— <b>-10</b> -	_			2567			PLO NLO		(19.3'- 20') NARROWLY GR sand, fine, ~5% fines, non pl brown, slight burnt/sulfur-like (20'- 21') SILT (ML); ~90% fi ~10% sand, fine; slight sulfu	astic; sli odor. nes, me	ght organic-like odor, dium plasticity,
-	_ 25	S6	60/53				NLO NLO		burnt-like odor. (21'- 21.9') SILTY SAND (SN fines, non plastic; slight petro (21.9'- 22.5') WIDELY GRAD	/I); ~80% bleum-lik DED SAI	s sand, fine, ~20% e odor, brown. ND (SW); ~85%
- 15	_			2310			NLO		sand, fine to coarse, ~10% g fines, non plastic; max. size odor, brown, slight sulfur-like (22.5'- 22.9') WIDELY GRAE coarse; orange and reddish b (22.9'- 23.1') WIDELY GRAE	1.5, sligh odor. DED GR orown.	at petroleum-like
-	_ 30	S7	60/45	2205			NLO		coarse; strong naphthalene-librown, tar-like coating. (23.1'- 24.2') WIDELY GRAE sand, fine to coarse, ~10% g fines, non plastic; strong nap	ike odor, DED SAI ravel, fir	orange and reddish ND (SW); ~85% ne to coarse, ~5%
- <b>-20</b>	_ _ _	31	60/45	2205					tar-like coating. (24.2'- 25') WIDELY GRADE fine to coarse, ~10% gravel, non plastic; slight naphthaler (25'- 25.8') WIDELY GRADE (SW-SM); ~90% sand, fine tiplastic; strong naphthalene-litar-like staining. (25.8'- 28.1') WIDELY GRADE sand, fine to coarse, ~5% fin naphthalene-like odor, brown (26.41) and thalene-like odor, brown (26.41) with the coarse of the coars	fine to cone-like one-like one-like one-like odor, DED SAME, so none-like odor, tar-like	carse, ~5% fines, dor, brown. ) WITH SILT m, ~10% fines, non brown, bands of ND (SW); ~95% plastic; strong coating.
- <b>-25</b> -	— <b>35</b> — — —	\$8	60/27	1300			NLO		(28.1'- 30') SILTY SAND (SF medium, ~30% fines, mediur naphthalene-like odor, brown (30'- 40') SILTY SAND (SP); ~30% fines, medium plasticit odor, brown, dense.	n plastic ∼70% s	ity; strong and, fine to medium,
- 30 -	<b>40</b>  	S9	60/23	286			NLO		(40'- 45') SILTY SAND (SP); ~30% fines, medium plasticit odor, brown.		
REC = PID =	PENET RECO\ PHOTO	/ERY LEN	LENGTH OF S NGTH OF SAN ION DETECTO CE PID READ	MPLE OR READING			li 1	pm = PARTS PER N. = INCHES T. = FEET	MILLION NLO = NAPHTHALENE LII PLO = PETROLEUM LIKE TLO = TAR LIKE ODOR CLO = CHEMICAL LIKE O ALO = ASPHALT LIKE OD	ODOR DOR	CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR MLO = MUSTY LIKE ODOR

 $Q_P$  = POCKET PENETROMETER  $S_V$  = TORVANE PEAK

NA = NOT APPLICABLE NM = NOT MEASURED

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-MW-06** CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 3 093060 GEI PROJECT NUMBER: Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK WELL **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION DETAILS** and IN./IN. (PPM) NO. NLO S10 60/16 9316 (45'- 50') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; strong naphthalene-like odor, brown, sheen, tar-like staining. -35 NLO 50 S11 60/50 >9999 WWMW-06 (50'- 54') WIDELY GRADED SAND (SW); ~95% sand, (50-52)fine to medium, ~5% fines, non plastic; strong naphthalene-like odor, brown, sheen, lens of fine sand from 53.3 to 53.6 ft, tar-like coating. NLO -40 (54'- 55') SILT (ML); ~90% fines, medium plasticity. NLO ~10% sand, fine; strong naphthalene-like odor, brown. 55 **S12** 60/27 (55'- 57.6') SILT (ML); ~90% fines, medium plasticity, ~10% sand, fine; moderate naphthalene-like odor, brown. NLO -45 (57.6'- 59.1') WIDELY GRADED SAND (SW); ~95% 94.9 WWMW-06 sand, fine to medium, ~5% fines, non plastic; moderate NLO (58-60) naphthalene-like odor, brown. (59.1'- 59.8') SILT (ML); ~90% fines, medium plasticity, NLO ~10% sand, fine; moderate naphthalene-like odor, brown. NLO (59.8'- 60') LEAN CLAY (CL); ~90% fines, medium S13 60/27 0.0 plasticity, ~10% sand, fine; moderate naphthalene-like odor, reddish brown. (60'- 65') LEAN CLAY (CL); ~90% fines, medium plasticity, ~10% sand, fine; reddish brown. -50 End of Boring at 65 feet. **NOTES:** 

WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/1

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

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JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

= TORVANE PEAK NM = NOT MEASURED

ppm = PARTS PER MILLION

IN. = INCHES FT. = FEET

NLO = NAPHTHALENE LIKE ODOR PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York 1 of 3 **GEI PROJECT NUMBER:** 093060

**PAGE WW-MW-07** 

**BORING LOG** 

**GROUND SURFACE ELEVATION (FT):** 10.69 LOCATION: North 12th Street NORTHING (FT): 688890 EASTING (FT): 641971 TOTAL DEPTH (FT): 60.0 DRILLED BY: Zebra Environmental / Luke Caballero DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Maura MacLeod DATE START / END: 6/22/2009 - 6/23/2009 DRILLING DETAILS: Geoprobe WATER LEVEL DEPTHS (FT): <u><u></u> <u>∑</u> 4.00 6/22/2009</u> **GENERAL NOTE:** 

Ë	ᄩ		SAMPLE IN	NFO	ΙΨ	AL	R	ANALYZED	SOIL / BEDROCK	WELL
ELEV.	DEPTH	and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL	ODOR	SAMPLE ID	DESCRIPTION	DETAIL
— 10 - -	— <b>0</b> —	S1	60/NM	2.3					(0'- 5') WIDELY GRADED SAND (SW); ~85% sand, fine to coarse, ~10% gravel, fine, ~5% fines, non plastic; max. size 0.5, wet, brown, hand cleared.	
<u>⊽</u> - - 5	_ 5	S2	60/0					WWMW-07 (4-5)	(5'- 10') no recovery.	
-	_									
- - 0 -	— <b>10</b> —	<b>S</b> 3	60/0						(10'- 15') no recovery.	
- - 5	_ 15 	\$4	60/60		* * * * * * * * * * * * * * * * * * *		NLO		(15'- 16.8') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, medium plasticity; moderate naphthalene-like odor, wet, gray, sheen.	
-	_						NLO		(16.8'- 19.1') NARROWLY GRADED SAND (SP); ~95% sand, fine, ~5% fines, medium plasticity; moderate naphthalene-like odor, gray, lens of widely graded sand from 17.6 to 17.8 ft, tar-like staining, moderate petroleum-like odor.	
_	— 20			> 9999			NLO		(19.1'- 20') WIDELY GRADED SAND (SW); $\sim$ 95% sand, fine to medium, $\sim$ 5% fines, medium plasticity; strong	

IN. = INCHES FT. = FEET

# NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK NA = NOT APPLICABLE NM = NOT MEASURED

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR

ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE** WW-MW-07 CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 3 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë Ë VISUAL IMPACTS STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK WELL **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION DETAILS** and IN./IN. (PPM) NO. 20 naphthalene-like odor, wet, gray, sheen, tar-like staining. (20'- 20.5') WIDELY GRADED SAND (SW); ~95% sand, **S5** 60/20 3372 NLO -10 NLO fine to medium, ~5% fines, non plastic; moderate NLO naphthalene-like odor, brown, dense. (20.5'- 20.8') WIDELY GRADED SAND (SW); ~95% NLO/ sand, fine to coarse, ~5% fines, non plastic; strong naphthalene-like odor, brown, dense, tar-like staining. (20.8'- 21.8') WIDELY GRADED SAND (SW); ~95% NLO sand, fine to medium, ~5% fines, non plastic; moderate naphthalene-like odor, brown, dense. (21.8'- 22') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; strong 25 **S6** 60/56 784 naphthalene-like odor, brown, dense, tar-like staining. (22'- 25') WIDELY GRADED SAND (SW); ~95% sand, -15 fine to medium, ~5% fines, non plastic; moderate naphthalene-like odor, brown, dense. (25'- 30') WIDELY GRADED SAND WITH SILT (SP-SM): ~85% sand, fine to coarse, ~10% fines, medium plasticity, ~5% gravel, fine; max. size 0.5, brown, dense, slight solvent/ burnt-like odor. 30 S7 60/56 1982 (30'- 31.9') WIDELY GRADED SAND (SW); ~85% sand, -20 fine to coarse, ~10% fines, medium plasticity, ~5% NLO gravel, fine; max. size 0.5, moderate naphthalene-like odor, brown, dense. (31.9'- 35') WIDELY GRADED SAND (SW); ~85% sand, fine to coarse, ~10% gravel, fine to coarse, ~5% fines, non plastic; max. size 1, slight naphthalene-like odor, brown. NLO 35 S8 60/NM (35'- 45') WIDELY GRADED SAND (SW); ~95% sand, 565 fine to coarse, ~5% fines, non plastic; moderate -25 naphthalene-like odor, brown. NLO 40 S9 60/NM 401 -30

**NOTES:** 

PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

WILLIAMSBURG W

LOG

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

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ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR IN. = INCHES FT. = FEET

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CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-MW-07** CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 3 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK WELL **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION DETAILS** and IN./IN. (PPM) NO. NLO 45 S10 60/53 > 9999 (45'- 49.2') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; strong -35 naphthalene-like odor, brown, strong petroleum-like odor from 46.3 to 49.4 ft, tar-like staining. NLO WWMW-07 (48.5 - 49.5)(49.2'- 50') WIDELY GRADED SAND (SW); ~95% sand, NLO fine to coarse, ~5% fines, non plastic; strong 50 S11 60/46 naphthalene-like odor, brown. -40 (50'- 52.8') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; slight 1269 NLO naphthalene-like odor, brown, moderate petroleum-like odor. (52.8'- 54.1') SILTY SAND (SM); ~85% sand, fine, ~15% NLO fines, medium plasticity; slight naphthalene-like odor, brown, slight petroleum-like odor. NLO (54.1'- 54.3') WIDELY GRADED SAND (SW); fine to NLO coarse; moderate naphthalene-like odor, brown, moderate 55 petroleum-like odor. **S12** 60/48 0.0 . (54.3'- 55') SILTY SAND (SM); ~85% sand, fine, ~15% -45 fines, medium plasticity; slight naphthalene-like odor, NLO brown, slight petroleum-like odor. (55'- 57.1') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; slight naphthalene-like odor, wet, brown, slight petroleum-like PLO (57.1'- 59.6') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; slight WWMW-07 petroleum-like odor, wet, brown. (59-60)(59.6'- 59.8') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; wet, brown, slight solvent-like odor. (59.8'- 60') LEAN CLAY (CL); ~90% fines, medium plasticity, ~10% sand, fine; red gray. End of Boring at 60 feet. Grouted

# **NOTES:**

WILLIAMSBURG W PREV, BORINGS GPJ FULTON DATA TEMPLATE.GDT 3/27/13

FOG

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

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= TORVANE PEAK NM = NOT MEASURED

ppm = PARTS PER MILLION

IN. = INCHES FT. = FEET

NLO = NAPHTHALENE LIKE ODOR PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

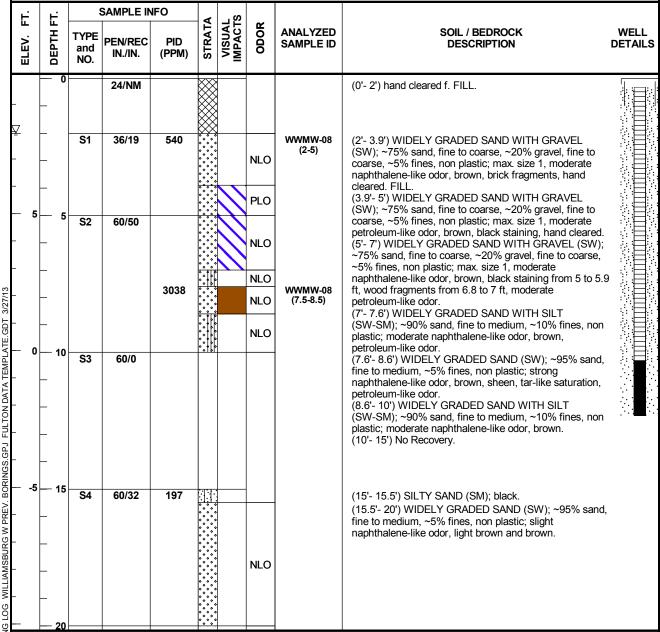
CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York GEI PROJECT NUMBER: 093060

**PAGE** 1 of 3

**WW-MW-08** 

**BORING LOG** 

**GROUND SURFACE ELEVATION (FT):** LOCATION: North 11th Street NORTHING (FT): 688854 **EASTING (FT):** 641671 TOTAL DEPTH (FT): 50.0 DRILLED BY: Zebra Environmental / Luke Caballero DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Maura MacLeod DATE START / END: 6/19/2009 - 6/19/2009 DRILLING DETAILS: Geoprobe **GENERAL NOTE:** 



# **NOTES:**

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

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IN. = INCHES FT. = FEET

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TLO = TAR LIKE ODOR CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

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=				Vinding Bro onbury, CT			PROJ		Williamsburg MGP RI	PAGE	14.04/ 1.04/ 0.0
G	FΙ			368-5300				STATE:	Brooklyn, New York	2 of 3	WW-MW-08
<u> </u>	<u> </u>	Consult		150	Т		GEIP	ROJECT NUME	BER:		
Ë	Ę	•	SAMPLE IN	NFO	₹	75	o <sub>c</sub>				
<u> </u>	DEPTH	TYPE and	PEN/REC	PID	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID		REDROCK RIPTION	WEL DETA
ELEV.	E	NO.	IN./IN.	(PPM)	S	⋝≣	0				
-	<b>— 20</b>	S5	60/19	221	•,•,•				(20'- 25') WIDELY GRADED	SAND (S	\/\\: ~05% sand
		-	00/10						fine to medium, ~5% fines, r	non plastic	; slight
									naphthalene-like odor, light l change at 22.9 ft to brown.	orown and	brown, color
·	-										
.	_				***		NLO				
·	-				***						
15	25	00	00/00	<b>50.0</b>	****				(051, 05 01) MUDEL V ODADI	ED CAND	(O)A(): OFO(
		S6	60/33	56.2	****		NLO		(25'- 25.8') WIDELY GRADI fine to coarse, ~5% fines, no	on plastic;	
	_				7777		NLO		naphthalene-like odor, browi (25.8'- 26.4') WIDELY GRA		O (SW): ~95%
.	-						NLO		sand, fine to medium, ~5% to naphthalene-like odor, light to		
.	_								(26.4'- 26.7') LEAN CLAY (0	CL); ~90%	fines, medium
							NLO		plasticity, ~10% sand, fine, r widely graded fine to mediur	n sand lens	S.
	-				***				(26.7'- 27.3') WIDELY GRA sand, fine to medium, ~5% f		
- <b>-20</b>	— 30	<b>S</b> 7	60/32	178	****				naphthalene-like odor, light l	orown and	brown.
		31	00/32	170					(27.3'- 30') WIDELY GRADI fine to coarse, ~5% fines, no	on plastic;	slight
Γ	_								naphthalene-like odor, browi blackish brown.	n, color cha	ange at 28.9 ft to
.	-								(30'- 35') WIDELY GRADED		
.	_				***		NLO		fine to medium, ~5% fines, in naphthalene-like odor, light l	orown and	
									up to 0.5 inch throughout sa	mple.	
	-				****						
25	— 35	S8	60/32	0.1	****				(35'- 40') WIDELY GRADED	SAND (S	\/\)· ~05% sand
. [		00	00/32	0.1					fine to medium, ~5% fines, r	non plastic	; light brown and
	_				***				brown, silty lenses up to 1 in varved clay from 36.7 to 37	ich through ft.	nout sample,
·	-								·		
.	_										
	-										
- <b>-30</b>	<b>— 40</b>	S9	60/23		****		NI 0	WWMW-08	(40'- 40.7') WIDELY GRADI	ED SAND (	(SW): ~95% sand
. [	_		00/20				NLO	(40-45)	fine to medium, ~5% fines, i	non plastic	slight
									naphthalene-like odor, light I (40.7'- 45') LEAN CLAY (CL	.); ~90% fir	nes, medium
·	-								plasticity, ~10% sand, fine; r of the clay has ~30% fine sa		
.	-								, , , , , , , , , , , , , , , , , , , ,		
	-										
NOTE	<u>S:</u>				•						
			LENGTH OF S		R COI	RE BAR		pm = PARTS PER N. = INCHES	MILLION NLO = NAPHTHALENE L PLO = PETROLEUM LIKE		CrLO= CREOSOTE LIKE ODC OLO = ORGANIC LIKE ODOR
PID = I	PHOTO	IONIZAT	ION DETECTO CE PID READ	OR READING	G (PPN	M)		T. = FEET	TLO = TAR LIKE ODOR CLO = CHEMICAL LIKE (		SLO = SULFUR LIKE ODOR MLO = MUSTY LIKE ODOR
		0. / (0		- (					ALO = ASPHALT LIKE O		

#### NOTES:

GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 **BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE WW-MW-08** CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 3 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS Ë STRATA ODOR DEPTH **ANALYZED** SOIL / BEDROCK **WELL TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION DETAILS** and (PPM) IN./IN. NO. -35 45 (45'- 50') LEAN CLAY (CL); ~90% fines, medium plasticity, ~10% sand, fine; red, gray silt varves, higher S10 60/19 silt content 5 to 15 inches.

> End of Boring at 50 feet. Grouted

# NOTES:

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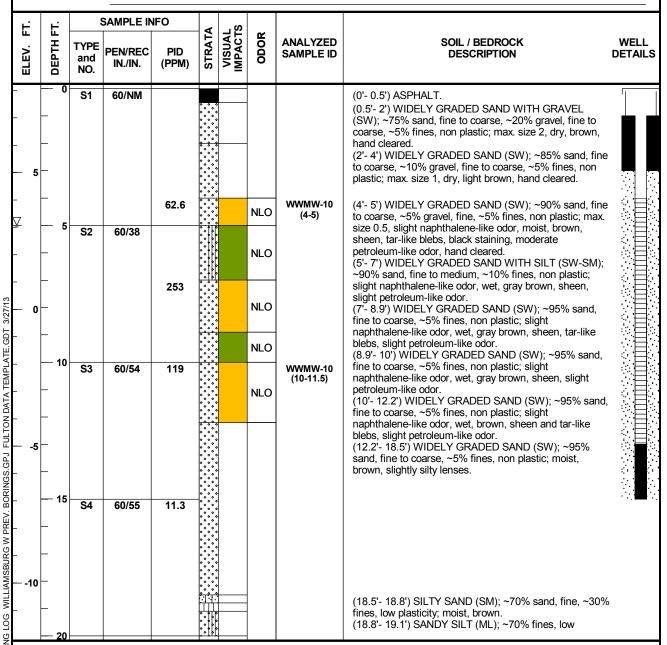
BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York GEI PROJECT NUMBER: 093060

**PAGE** WW-MW-10 1 of 3

**BORING LOG** 

**GROUND SURFACE ELEVATION (FT):** LOCATION: North 12th Street NORTHING (FT): 689119 **EASTING (FT):** 641686 TOTAL DEPTH (FT): 49.0 DRILLED BY: Zebra Environmental / Quincy Brandt DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Maura MacLeod DATE START / END: 9/8/2009 - 9/9/2009 DRILLING DETAILS: Geoprobe **GENERAL NOTE:** 



IN. = INCHES FT. = FEET

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**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE** WW-MW-10 CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 3 093060 GEI PROJECT NUMBER: Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK WELL **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION DETAILS** and IN./IN. (PPM) NO. **S5** 60/40 plasticity, ~30% sand, fine; moist, black. (19.1'- 20') WIDELY GRADED SAND WITH SILT (SW-SM); ~85% sand, fine to coarse, ~10% fines, low plasticity, ~5% gravel, fine; max. size 0.5, moist, brown. (20'- 25') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; slight NLO naphthalene-like odor, wet, brown, loose, slight burnt-like -15 51.7 **S6** 60/27 (25'- 30') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; slight naphthalene-like odor, wet, brown, loose, slight burnt-like odor. NLO -20 65.9 30 60/35 **S7** (30'- 35') WIDELY GRADED SAND WITH SILT (SW-SM); ~85% sand, fine to coarse, ~10% fines, low plasticity, ~5% gravel, fine; max. size 0.5, slight 69.6 naphthalene-like odor, moist, brown, dense, slight petroleum-like odor. NLO -25 35 S8 60/41 36.1 (35'- 35.7') WIDELY GRADED SAND (SW); ~95% sand, NLO fine to coarse, ~5% fines, non plastic; slight naphthalene-like odor, moist, brown. NLO (35.7'- 37') WIDELY GRADED SAND WITH SILT (SW-SM); ~85% sand, fine to coarse, ~10% fines, low plasticity, ~5% gravel, fine; max. size 0.5, slight naphthalene-like odor, moist, brown, dense. -30 (37'- 45') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; moist, brown. S9 60/44 9.0 -35

# **NOTES:**

WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT

LOG

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= TORVANE PEAK NM = NOT MEASURED

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GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 **BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE WW-MW-10** CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 3 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS Ë STRATA ODOR DEPTH **ANALYZED** SOIL / BEDROCK **WELL** TYPE ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION DETAILS** and (PPM) IN./IN. NO.

> End of Boring at 49 feet. Refusal at 49 feet. Grouted

(45'- 49') WIDELY GRADED SAND (SW); ~95% sand,

fine to medium, ~5% fines, non plastic; slight naphthalene-like odor, moist, brown.

# NOTES:

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

S10

-40

48/45

6.2

NLO

JHS = JAR HEADSPACE PID READING (PPM)

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CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York GEI PROJECT NUMBER: 093060

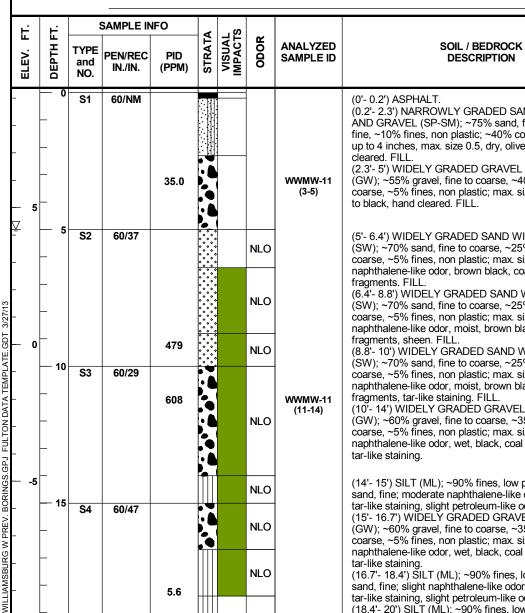
**PAGE** WW-MW-11 1 of 3

**BORING LOG** 

WELL

**DETAILS** 

**GROUND SURFACE ELEVATION (FT):** LOCATION: North 11th Street NORTHING (FT): 688957 **EASTING (FT):** 641530 TOTAL DEPTH (FT): 45.0 DRILLED BY: Zebra Environmental / Quincy Brandt DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Maura MacLeod DATE START / END: 8/21/2009 - 8/25/2009 DRILLING DETAILS: Geoprobe **GENERAL NOTE:** 



(0.2'- 2.3') NARROWLY GRADED SAND WITH SILT AND GRÁVEL (SP-SM); ~75% sand, fine, ~15% gravel, fine, ~10% fines, non plastic; ~40% concrete fragments up to 4 inches, max. size 0.5, dry, olive brown, hand

(2.3'- 5') WIDELY GRADED GRAVEL WITH SAND (GW); ~55% gravel, fine to coarse, ~40% sand, fine to coarse, ~5% fines, non plastic; max. size 1.5, moist, gray to black, hand cleared. FILL.

(5'- 6.4') WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~25% gravel, fine to coarse, ~5% fines, non plastic; max. size 1, slight naphthalene-like odor, brown black, coal and brick

(6.4'- 8.8') WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~25% gravel, fine to coarse, ~5% fines, non plastic; max. size 1, slight naphthalene-like odor, moist, brown black, coal and brick

(8.8'- 10') WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~25% gravel, fine to coarse, ~5% fines, non plastic; max. size 1, moderate naphthalene-like odor, moist, brown black, coal and brick fragments, tar-like staining. FILL.

(10'- 14') WIDELY GRADED GRAVEL WITH SAND (GW); ~60% gravel, fine to coarse, ~35% sand, fine to coarse, ~5% fines, non plastic; max. size 1, moderate naphthalene-like odor, wet, black, coal fragments, sheen,

(14'- 15') SILT (ML); ~90% fines, low plasticity, ~10% sand, fine; moderate naphthalene-like odor, moist, black, tar-like staining, slight petroleum-like odor.

(15'- 16.7') WIDELY GRADED GRAVEL WITH SAND (GW); ~60% gravel, fine to coarse, ~35% sand, fine to coarse, ~5% fines, non plastic; max. size 1, moderate naphthalene-like odor, wet, black, coal fragments, sheen,

(16.7'- 18.4') SILT (ML); ~90% fines, low plasticity, ~10% sand, fine; slight naphthalene-like odor, moist, black, tar-like staining, slight petroleum-like odor. (18.4'- 20') SILT (ML); ~90% fines, low plasticity, ~10% sand, fine; moist, gray.

#### **NOTES:**

-10

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CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE** WW-MW-11 CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 3 093060 GEI PROJECT NUMBER: Consultants SAMPLE INFO Ë Ë VISUAL IMPACTS STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK WELL **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION DETAILS** and IN./IN. (PPM) NO. 20 **S5** 60/61 (20'- 20.7') WIDELY GRADED GRAVEL WITH SAND NLO (GW); ~60% gravel, fine to coarse, ~35% sand, fine to coarse, ~5% fines, non plastic; max. size 1, moderate NLO naphthalene-like odor, wet, black, coal fragments, sheen, tar-like staining. (20.7'- 22.2') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to coarse, ~10% fines, low 4.3 plasticity; slight naphthalene-like odor, moist, brown, gray petroleum-like staining, moderate petroleum-like odor. (22.2'- 27.4') WIDELY GRADED SAND (SW); ~90% -15 sand, fine to coarse, ~5% gravel, fine, ~5% fines, non plastic; max. size 0.5, wet, brown, loose. 25 **S6** 60/40 0.3 (27.4'- 30') WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, fine, ~5% fines, non plastic; max. size 0.5, wet, brown, dense. -20 30 60/NM 0.2 (30'- 35') WIDELY GRADED SAND WITH GRAVEL **S7** (SW); ~80% sand, fine to coarse, ~15% gravel, fine to coarse, ~5% fines, non plastic; max. size 2.5, moist, brown -25 35 S8 60/13 (35'- 40') WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, fine, ~5% fines, non plastic; max. size 0.5, wet, brown, dense. WWMW-11 -30 0.1 (39-40)40 S9 60/59 0.3 (40'- 45') LEAN CLAY (CL); ~90% fines, medium plasticity, ~10% sand, fine; slight naphthalene-like odor, reddish gray. NLO -35 **NOTES:** PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR CrLO= CREOSOTE LIKE ODOR REC = RECOVERY LENGTH OF SAMPLE IN. = INCHES FT. = FEET OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR PLO = PETROLEUM LIKE ODOR PID = PHOTOIONIZATION DETECTOR READING (PPM) TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR

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MLO = MUSTY LIKE ODOR

JHS = JAR HEADSPACE PID READING (PPM)

WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 **BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** WW-MW-11 CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 3 **GEI PROJECT NUMBER:** 093060 Consultants **SAMPLE INFO** Ë VISUAL Ë STRATA ODOR DEPTH **ANALYZED** SOIL / BEDROCK WELL **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION DETAILS** and (PPM) IN./IN. NO. NLO

End of Boring at 45 feet. Grouted

NOTES:

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK NA = NOT APPLICABLE

NM = NOT MEASURED

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (PPM)

PIN = PARTS PER MILLION
IN. = INCHES
PLO = PETROLEUM LIKE ODOR
TLO = TAR LIKE ODOR
TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

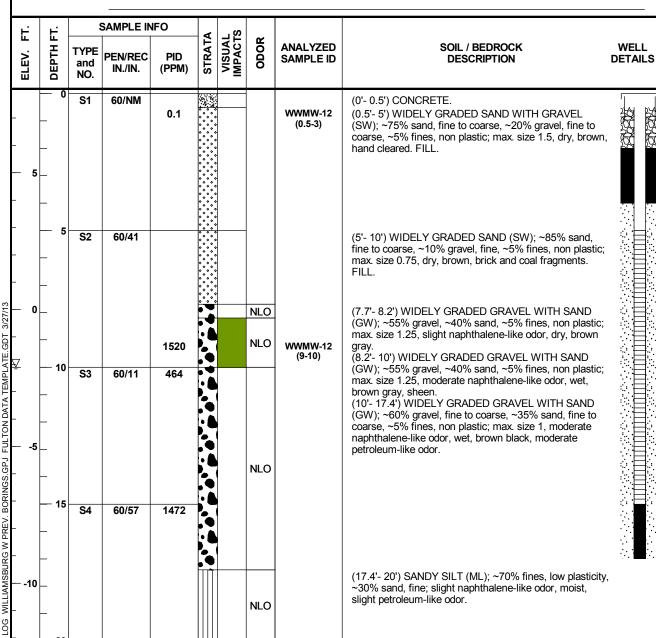
CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York GEI PROJECT NUMBER: 093060

**PAGE** 1 of 2

WW-MW-12

**BORING LOG** 

**GROUND SURFACE ELEVATION (FT):** 7.89 LOCATION: North 11th Street NORTHING (FT): 689011 **EASTING (FT):** 641395 TOTAL DEPTH (FT): 40.0 DRILLED BY: Zebra Environmental / Quincy Brandt DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Maura MacLeod DATE START / END: 8/28/2009 - 8/31/2009 DRILLING DETAILS: Geoprobe **GENERAL NOTE:** 



**NOTES:** 

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

IN. = INCHES FT. = FEET

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road Glastonbury, CT 06033 PROJECT: Williamsburg MGP RI **PAGE** WW-MW-12 CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 2 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë Ë VISUAL IMPACTS STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK WELL **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION DETAILS** and IN./IN. (PPM) NO. **S5** 60/36 787 (20'- 22.2') WIDELY GRADED GRAVEL WITH SAND (GW); ~60% gravel, fine to coarse, ~35% sand, fine to coarse, ~5% fines, non plastic; max. size 1, moderate NLO naphthalene-like odor, wet, brown black, moderate petroleum-like odor. (22.2'- 25') WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, fine, ~5% fines, non plastic; max. size 0.75, moist, light brown. -15 **S6** 60/57 14.4 (25'- 30') WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, fine, ~5% fines, non plastic; max. size 0.75, slight naphthalene-like odor, moist, light brown, slight petroleum-like odor. NLO -20 30 60/47 **S7** 28.1 (30'- 35') WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, fine, ~5% fines, non plastic; max. size 0.75, slight petroleum-like odor, moist, light brown. PLO -25 35 S8 60/38 215 (35'- 40') WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, fine, ~5% fines, non plastic; max. size 0.75, slight naphthalene-like odor, moist, light brown, slight petroleum-like odor. NLO -30 End of Boring at 40 feet. Refusal at 40 feet. Grouted NOTES: PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR CrLO= CREOSOTE LIKE ODOR REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM) IN. = INCHES FT. = FEET

FULTON DATA TEMPLATE GDT

WILLIAMSBURG W PREV. BORINGS.GPJ

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

= TORVANE PEAK NM = NOT MEASURED

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

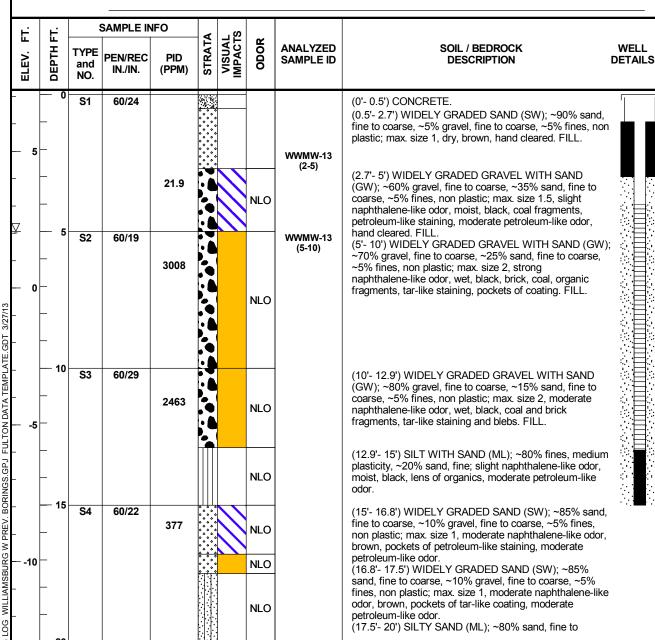
OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR MLO = MUSTY LIKE ODOR

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York GEI PROJECT NUMBER: 093060

**PAGE** WW-MW-13 1 of 3

**BORING LOG** 

**GROUND SURFACE ELEVATION (FT):** 7.07 LOCATION: North 12th Street NORTHING (FT): 689224 **EASTING (FT):** 641557 TOTAL DEPTH (FT): 58.0 DRILLED BY: Zebra Environmental / Quincy Brandt DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Maura MacLeod DATE START / END: 9/15/2009 - 9/15/2009 DRILLING DETAILS: Geoprobe **GENERAL NOTE:** 



#### **NOTES:**

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

IN. = INCHES FT. = FEET

PLO = PETROLEUM LIKE ODOR

TLO = TAR LIKE ODOR CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR MLO = MUSTY LIKE ODOR

NA = NOT APPLICABLE NM = NOT MEASURED

Q<sub>P</sub> = POCKET PENETROMETER

= TORVANE PEAK

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road Glastonbury, CT 06033 PROJECT: Williamsburg MGP RI **PAGE** WW-MW-13 CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 3 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë Ë VISUAL IMPACTS STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK WELL TYPE ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION DETAILS** and IN./IN. (PPM) NO. **S5** 60/37 coarse, ~15% fines, low plasticity, ~5% gravel, fine to coarse; max. size 1, slight naphthalene-like odor, moist, brown, slight petroleum-like odor. (20'- 22.7') WIDELY GRADED SAND (SW); ~90% sand, 518 NLO fine to coarse, ~5% gravel, fine, ~5% fines, non plastic; -15 max. size 0.5, moderate naphthalene-like odor, moist, brown, sheen and tar-like staining. (22.7'- 25') SILTY SAND (ML); ~80% sand, fine to coarse, ~15% fines, low plasticity, ~5% gravel, fine to NLO coarse; max. size 1, slight naphthalene-like odor, moist, brown, slight petroleum-like odor. (25'- 30') WIDELY GRADED SAND (SW); ~95% sand, **S6** 60/35 fine to medium, ~5% fines, non plastic; slight naphthalene-like odor, moist, reddish brown. -20 NLO 52.9 30 **S7** 60/43 (30'- 45') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; slight naphthalene-like odor, moist, brown. -25 114 35 S8 60/43 99 8 -30 NLO S9 60/35 24.2 -35 **NOTES:** 

WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

FOG

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE = TORVANE PEAK

NM = NOT MEASURED

ppm = PARTS PER MILLION

NLO = NAPHTHALENE LIKE ODOR IN. = INCHES FT. = FEET

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR CLO = CHEMICAL LIKE ODOR

ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 **BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE WW-MW-13** CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 3 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS Ë STRATA ODOR DEPTH **ANALYZED** SOIL / BEDROCK **WELL** TYPE ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION DETAILS** and IN./IN. (PPM) NO. NLO 45 (45'- 58') WIDELY GRADED SAND (SW); ~95% sand, S10 60/43 fine to medium, ~5% fines, non plastic; slight naphthalene-like odor, moist, reddish brown. 50.7 -40 50 S11 60/38 NLO -45 207

> End of Boring at 58 feet. Refusal at 58 feet. Grouted

# NOTES:

BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

55

-50

S12

36/NM

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

NM = NOT MEASURED S<sub>v</sub> = TORVANE PEAK

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

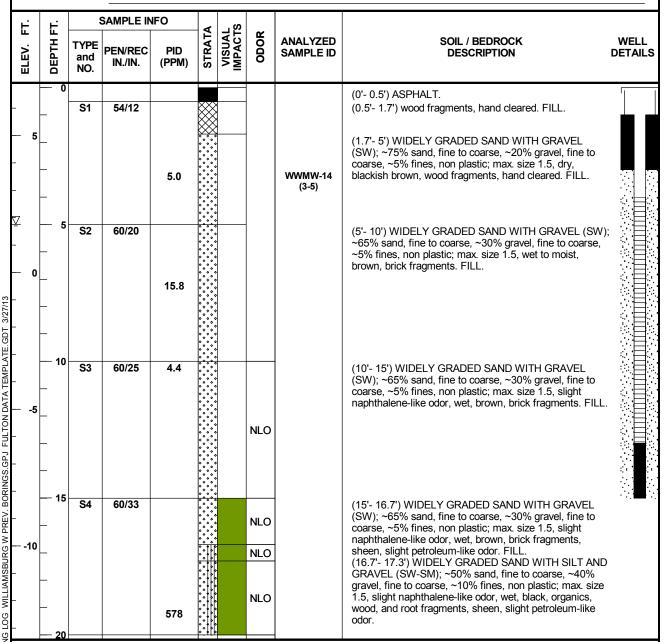
CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York GEI PROJECT NUMBER: 093060

**PAGE** 1 of 3

WW-MW-14

**BORING LOG** 

**GROUND SURFACE ELEVATION (FT):** 6.75 LOCATION: North 11th Street NORTHING (FT): 689121 **EASTING (FT):** 641313 TOTAL DEPTH (FT): 60.0 DRILLED BY: Zebra Environmental / Quincy Brandt DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Maura MacLeod DATE START / END: 9/1/2009 - 9/2/2009 DRILLING DETAILS: Geoprobe **GENERAL NOTE:** 



ppm = PARTS PER MILLION

IN. = INCHES FT. = FEET

# **NOTES:**

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

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NLO = NAPHTHALENE LIKE ODOR PLO = PETROLEUM LIKE ODOR

TLO = TAR LIKE ODOR CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE** WW-MW-14 CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 3 093060 GEI PROJECT NUMBER: Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK WELL **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION DETAILS** and IN./IN. (PPM) NO. 20 **S5** 60/46 973 (17.3'- 20') WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM); ~50% sand, fine to coarse, ~40% gravel, fine to coarse, ~10% fines, non plastic; max. size NLO 1.5, moderate naphthalene-like odor, wet, black, organics, -15 wood, and root fragments, sheen, slight petroleum-like (20'- 22.2') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; strong NLO naphthalene-like odor, wet, black, tar-like coating, slight petroleum-like odor. (22.2'- 25') SANDY ORGANIC SOIL (OL); ~60% fines, low plasticity, ~40% sand, fine; moderate 1345 **S6** 60/55 naphthalene-like odor, moist, black, organics, roots, wood fragments, tar-like staining, slight petroleum-like odor. NLO (25'- 26.6') WIDELY GRADED SAND WITH GRAVEL (SW); ~65% sand, fine to coarse, ~30% gravel, fine to -20 coarse, ~5% fines, non plastic; max. size 1.5, slight naphthalene-like odor, wet, brown, brick fragments, slight NLO petroleum-like odor. (26.6'- 28.6') SANDY ORGANIC SOIL (OL); ~60% fines, low plasticity, ~40% sand, fine; moderate NLO naphthalene-like odor, moist, black, organics, roots, wood fragments, tar-like staining, slight petroleum-like odor. NLO (28.6'- 28.8') WIDELY GRADED SAND (SW); tar-like 30 S7 60/33 coating. (28.8'- 29.1') SANDY ORGANIC SOIL (OL); ~60% fines, NLO low plasticity, ~40% sand, fine; moderate naphthalene-like odor, moist, black, organics, roots, wood -25 fragments, tar-like staining, slight petroleum-like odor. 348 (29.1'- 30') ORGANIC SOIL WITH SAND (OL); ~80% fines, low plasticity, ~20% sand, fine; moderate NLO naphthalene-like odor, moist, black, organics, roots, wood fragments, tar-like staining, slight petroleum-like odor. (30'- 32.1') NARROWLY GRADED SAND (SP); ~95% NLO sand, fine, ~5% fines, non plastic; slight naphthalene-like odor, wet, brown, slight petroleum-like odor. (32.1'- 33.9') SILTY SAND (SM); ~75% sand, fine to S8 60/35 NLO medium, ~20% fines, non plastic, ~5% gravel, fine; max. 1313 WWMW-14 size 0.25, slight naphthalene-like odor, brown, lenses of (36-37)silt and white burnt-like material, slight petroleum-like -30 (33.9'- 35') SILT (ML); ~90% fines, low plasticity, slow dilatancy, ~10% sand, fine; slight naphthalene-like odor, wet, gray, slight petroleum-like odor. NLO (35'- 36.6') WIDELY GRADED SAND (SW); ~85% sand, fine to coarse, ~10% gravel, fine, ~5% fines, non plastic; max. size 0.5, strong naphthalene-like odor, black, tar-like 40 coating, slight petroleum-like odor. S9 60/56 1044 (36.6'- 36.9') SLIT (ML); gray. (36.9'- 40') WIDELY GRADED SAND WITH GRAVEL NLO (SW); ~80% sand, fine to medium, ~15% gravel, fine to coarse, ~5% fines, non plastic; max. size 1, slight -35 naphthalene-like odor, wet, gray, slight petroleum-like odor (40'- 42.1') WIDELY GRADED SAND WITH GRAVEL NLO (SW); ~80% sand, fine to medium, ~15% gravel, fine to coarse, ~5% fines, non plastic; max. size 1, slight NLO naphthalene-like odor, wet, gray, silty lenses, tar-like **NOTES:** 

IN. = INCHES FT. = FEET

PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/1

WILLIAMSBURG W

LOG

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

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PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

= NOT MEASURED = TORVANE PEAK ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE** WW-MW-14 CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 3 093060 GEI PROJECT NUMBER: Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK WELL **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION DETAILS** and IN./IN. (PPM) NO. coating, slight petroleum-like odor. 45 S10 60/54 (42.1'- 43.9') WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM); ~75% sand, fine to coarse, ~15% gravel, fine to coarse, ~10% fines, non plastic; max. size NLO 1.25, moderate naphthalene-like odor, wet, brown, sheen, -40 tar-like blebs, slight petroleum-like odor. 100 (43.9'- 47.9') WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, fine, ~5% fines, non plastic; max. size 0.5, slight naphthalene-like odor, moist, brown (47.9'- 50') WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, fine, ~5% fines, non plastic; max. size 0.5, moist, brown. 50 S11 60/43 (50'- 54.8') WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM); ~85% sand, fine to coarse, ~10% fines, non plastic, ~5% gravel, fine to coarse; max. size 1, slight naphthalene-like odor, moist, brown, slight 45 petroleum-like odor. NLO 109 (54.8'- 55') SANDY LEAN CLAY (CL); ~70% fines, 55 WWMW-14 **S12** 60/53 55.3 medium plasticity, ~30% sand, fine; moist, reddish brown. (55'- 57') WIDELY GRADED SAND (SW); ~90% sand, (55-57) NLO fine to coarse, ~5% gravel, fine, ~5% fines, non plastic; max. size 0.75, slight naphthalene-like odor, moist, -50 brown, lenses of clay, slight petroleum-like odor. (57'- 60') LEAN CLAY (CL); ~90% fines, medium plasticity, ~10% sand, fine, slight naphthalene-like odor, moist, reddish gray, lens of sand, slight petroleum-like NLO

> End of Boring at 60 feet. Grouted

#### **NOTES:**

WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/1

FOG

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE NM = NOT MEASURED

= TORVANE PEAK

ppm = PARTS PER MILLION

NLO = NAPHTHALENE LIKE ODOR IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

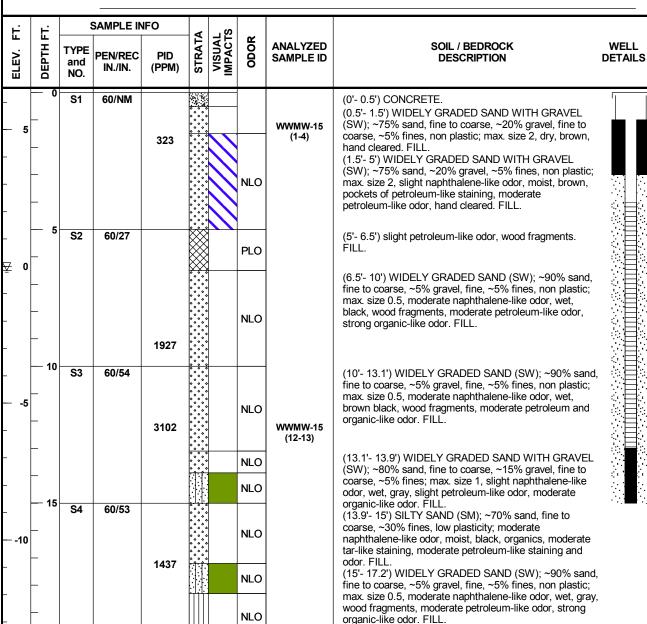
CLIENT: National Grid
PROJECT: Williamsburg MGP RI
CITY/STATE: Brooklyn, New York
GEI PROJECT NUMBER: 093060

PAGE 1 of 2

**WW-MW-15** 

**BORING LOG** 

Consultants **GROUND SURFACE ELEVATION (FT):** 6.35 LOCATION: North 12th Street NORTHING (FT): 689377 **EASTING (FT):** 641365 TOTAL DEPTH (FT): 21.0 DRILLED BY: Zebra Environmental / Quincy Brandt DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Maura MacLeod DATE START / END: 9/24/2009 - 9/29/2009 DRILLING DETAILS: Geoprobe **GENERAL NOTE:** 



#### **NOTES:**

BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

WILLIAMSBURG W

LOG

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

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JHS = JAR HEADSPACE PID READING (PPM)

ppm = PARTS PER MILLION IN. = INCHES FT. = FEET

NLO = NAPHTHALENE LIKE ODOR PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

(17.2'- 18.3') SILTY SAND (SM); ~70% sand, fine to

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR MLO = MUSTY LIKE ODOR

NA = NOT APPLICABLE  $Q_P = NM = NOT MEASURED$   $S_V = S_V = S_V$ 

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road Glastonbury, CT 06033 PROJECT: Williamsburg MGP RI **PAGE** WW-MW-15 CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 2 **GEI PROJECT NUMBER:** 093060 Consultants SAMPLE INFO Ë Ë SOIL / BEDROCK

VISUAL IMPACTS STRATA ODOR DEPTH ANALYZED TYPE ELEV. PEN/REC PID **SAMPLE ID** and IN./IN. (PPM) NO. **S5** 12/54 NLO NLO 1015

coarse, ~30% fines, low plasticity; moderate naphthalene-like odor, moist, black, organics, moderate tar-like staining, moderate petroleum-like odor. FILL. (18.3'- 20') SANDY SILT (ML); ~70% fines, medium plasticity, ~30% sand, fine; moderate naphthalene-like odor, moist, black, moderate petroleum-like odor. FILL. (20'- 20.4') WIDELY GRADED GRAVEL WITH SAND (GW); ~60% gravel, fine to coarse, ~35% sand, fine to coarse, ~5% fines, non plastic; max. size 1, moderate naphthalene-like odor, moist, black, moderate

**DESCRIPTION** 

WELL

**DETAILS** 

petroleum-like odor. FILL. (20.4'- 20.8') SILTY SAND (SM); ~70% sand, fine to coarse, ~30% fines, low plasticity; moderate naphthalene-like odor, moist, black, organics, moderate tar-like staining, moderate petroleum-like staining and odor. FILL.

(20.8'- 21') wood fragments. FILL. End of Boring at 21 feet.

Refusal at 21 feet.

Grouted

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CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York 093060 GEI PROJECT NUMBER:

**PAGE** WW-MW-16 1 of 3

**BORING LOG** 

**GROUND SURFACE ELEVATION (FT):** 9.99 LOCATION: Kent Ave NORTHING (FT): 688980 **EASTING (FT):** 642266 TOTAL DEPTH (FT): 52.5 DRILLED BY: Zebra Environmental / Luke Caballero DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Maura MacLeod DATE START / END: 7/27/2009 - 8/11/2009 DRILLING DETAILS: Geoprobe **GENERAL NOTE:** 

**SAMPLE INFO** VISUAL IMPACTS Ħ ᇤ STRATA ODOR DEPTH **ANALYZED** SOIL / BEDROCK WELL **TYPE** ELEV. PEN/REC **SAMPLE ID DETAILS** DESCRIPTION and IN./IN. (PPM) NO. **S1** 60/NM (0'- 0.9') CONCRETE. (0.9'- 2') SILTY GRAVEL WITH SAND (GM); ~50% gravel, fine to coarse, subangular, ~35% sand, fine to coarse, ~15% fines, non plastic; max. size 2.5, moist, WWMW-16 1.3 dark brown, concrete, brick fragments, and cobbles, hand (2-3.5)(2'- 3.5') SILTY SAND WITH GRAVEL (SM); ~55% sand, fine to coarse, ~25% gravel, fine to coarse, subangular, ~20% fines, non plastic; max. size 1.5, moist, brown to dark brown, coal and brick fragments, hand cleared. FILL. (3.5'- 5') SILTY SAND (SM); ~60% sand, fine to medium, 5 5 S2 60/57 ~30% fines, non plastic, ~10% gravel, fine, subangular; max. size 0.75, moist, brown to dark brown, hand cleared. (5'- 5.6') WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~15% gravel, ~5% fines, non plastic; max. size 1, dry, brown. (5.6'- 10') WIDELY GRADED SAND (SW); ~95% sand, **PLO** fine to medium, ~5% fines, non plastic; moderate 4843 petroleum-like odor, wet, brown. 0 10 **S3** 60/47 (10'- 10.9') WIDELY GRADED SAND (SW); ~85% sand, PLO fine to coarse, ~10% gravel, fine, ~5% fines, non plastic; max. size 0.75, moderate petroleum-like odor, wet, 3520 brown, sheen. (10.9'- 12.2') SILTY SAND (SM); ~85% sand, fine to medium, ~15% fines, non plastic; wet, brown, sheen. (12.2'- 15') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; slight petroleum-like odor, wet, brown. **PLO** 60/62 (15'- 18.3') WIDELY GRADED SAND (SW); ~95% sand, **S4** fine to coarse, ~5% fines, non plastic; slight petroleum-like odor, wet, brown, silty sand lenses from 16.6 to 17.6 ft. **PLO** (18.3'- 20') SANDY ORGANIC SOIL (OL); ~60% fines,

**NOTES:** 

GDT 3/27/1

GPJ FULTON DATA TEMPLATE.

WILLIAMSBURG W

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PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

ppm = PARTS PER MILLION

matter

IN. = INCHES FT. = FEET

OLO

NLO = NAPHTHALENE LIKE ODOR PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

low plasticity, ~40% sand, fine; moderate organic-like

odor, moist, brown black, organics, roots, seeds, plant

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

NM = NOT MEASURED

= TORVANE PEAK

65.6

				consultants			CLIEN	T:	National Grid		BORING LOG	
_				Vinding Bro onbury, CT		33	PROJI		Williamsburg MGP RI	PAGE	\A@A/ B@A/	40
	HΙ	_	` ′	368-5300				STATE: ROJECT NUME	Brooklyn, New York BER: 093060	2 of 3	WW-MW-	16
_		Consult	SAMPLE IN	JEO			GEIFI	NOJECT NOINE	DEN			
ELEV. FT.	ОЕРТН ГТ.	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL	ODOR	ANALYZED SAMPLE ID	SOIL / BI DESCR	EDROCI RIPTION		WELL DETAILS
	— 20	S5	60/58	8564	****		PLO	WWMW-16 (20-21)	(20'- 20.9') WIDELY GRADE fine to medium, ~5% fines, n	on plast		
_					***		PLO		petroleum-like odor, wet, bro (20.9'- 22') WIDELY GRADE fine to coarse, ~5% fines, no	D SAND		
							OLO		petroleum-like odor, wet, bro	wn.		
	_						PLO		(22'- 22.8') SANDY ORGANI low plasticity, ~40% sand, fin			
									odor, moist, brown black, org			
					***		PLO		matter. (22.8'- 23.6') NARROWLY G	RADED	SAND (SP); ~95%	
15	25	S6	60/54	81.2	****				sand, fine, ~5% fines, non pl odor, moist, gray.	astic; sli	ght petroleum-like	
			00/04	01.2					(23.6'- 25') WIDELY GRADE			
					***				fine to coarse, ~5% fines, no petroleum-like odor, reddish		c; slight	
	_								(25'- 30') WIDELY GRADED	SÁND (		
									fine to medium, ~5% fines, n fruit-like, possibly petroleum		ic; moist, gray, slight	
									Truit like, possibly petroleum	odoi.		
	_											
– <b>-2</b> 0	<del> 30</del>	S7	60/59						(30'- 31.2') WIDELY GRADE			
	_				****				fine to medium, ~5% fines, n moderate fruit-like, possibly p			,
									(31.2'- 31.8') WIDELY GRAD	DED SAI	ND WITH SILT	
									(SW-SM); ~85% sand, fine to plasticity, ~5% gravel, fine; m			
									silty seams, fruit-like, possibl	y petrole	eum odor.	
				8.0					(31.8'- 32.9') LEAN CLAY (C plasticity, ~30% sand, fine; re			
	_								possibly petroleum odor.			
25	<b>—</b> 35				****				(32.9'- 35') WIDELY GRADE fine to medium, ~5% fines, n			
-20		S8	60/46	5.7					fruit-like, possibly petroleum (35'- 37.4') WIDELY GRADE	odor.	_	
	_				***				fine to medium, ~5% fines, n			
									fruit-like, possibly petroleum	odor.		
									(37.4'- 40') WIDELY GRADE	D SANI	) (SW): ~90% cand	
.	_							WWMW-16	fine to coarse, ~5% gravel, fi	ne, ~5%	fines, non plastic;	
								(38-40)	max. size 0.5, brown, slight foodor.	ruit-like,	possibly petroleum	
									ouoi.			
30	<b>— 40</b>	S9	60/62	12.7	<del> </del>				(40'- 48.1') SANDY SILT (ML	)· ~60%	fines low plasticity	
		03	00/02	12.7					~40% sand, fine; brown, den	se, sligh	nt fruit-like, possibly	
									petroleum odor.			
	_											
•	_											
	_											
NOTE	ES:				[111							
		RATION	LENGTH OF S	SAMPLER O	R CO	RE BAR	REL n	pm = PARTS PER	MILLION NLO = NAPHTHALENE LII	KE ODOR	CrLO= CREOSOTE LI	KE ODOR
REC =	RECOV	/ERY LEI	NGTH OF SAM	ИPLE			İN	N. = INCHES T. = FEET	PLO = PETROLEUM LIKE TLO = TAR LIKE ODOR		OLO = ORGANIC LIKI SLO = SULFUR LIKE	E ODOR
			ION DETECTO CE PID READ		۲۲۱) <i>و</i>	/I)	۲	i. = FEE	CLO = CHEMICAL LIKE O		MLO = MUSTY LIKE	
NA =	NOT AF	PPLICABI	LE Q <sub>p</sub>	= POCKET F	PENET	ROME!	ΓER		ALO = ASPHALT LIKE OD	UR		
		EASURE		= TORVANE								

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York GEI PROJECT NUMBER: 093060

**PAGE WW-MW-16** 3 of 3

**BORING LOG** 

			Consult	tants				OLIT	NOOLOT NOME	JEIN		
Ë	li li	<u>: [</u>	;	SAMPLE IN	NFO	4	ري.					
ELEV. F			TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID		EDROCK RIPTION	WELL DETAILS
	35 —	45	S10	60/60	4.2	-						
- - - -	10 —	50 -	S11	30/51						(48.1'- 52.5') WIDELY GRAE sand, fine to medium, ~5% fi slight fruit-like, possibly petro	nes, non plastic; brown,	
										End of Boring at 52.5 feet.		

End of Boring at 52.5 feet. Refusal at 52.5 feet. Grouted

# NOTES:

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

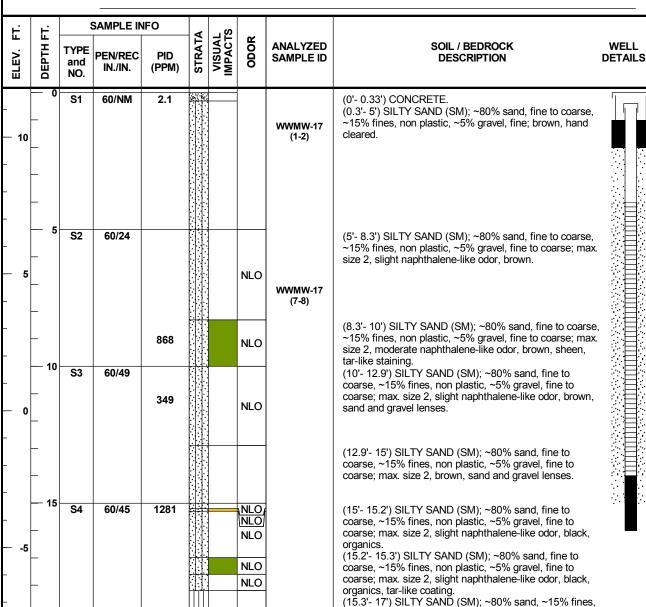
CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York GEI PROJECT NUMBER: 093060

**PAGE** 1 of 3

WW-MW-17

**BORING LOG** 

**GROUND SURFACE ELEVATION (FT):** 11.62 LOCATION: 50 Kent Ave NORTHING (FT): 688917 EASTING (FT): 641758 TOTAL DEPTH (FT): 60.0 DRILLED BY: Zebra Environmental / Luke Caballero DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Maura MacLeod DATE START / END: 6/8/2009 - 6/9/2009 DRILLING DETAILS: Geoprobe WATER LEVEL DEPTHS (FT): **GENERAL NOTE:** 



#### **NOTES:**

PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

WILLIAMSBURG W

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

IN. = INCHES FT. = FEET

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

non plastic, ~5% gravel; max size 2, slight naphthalene-like odor, black, organics, sandy silt lens

> CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE** WW-MW-17 CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 3 093060 GEI PROJECT NUMBER: Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK WELL **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION DETAILS** and IN./IN. (PPM) NO. 20 **S5** 60/35 71.3 from 16.3 to 16.7 ft. (17'- 17.6') SILTY SAND (SM); ~80% sand, fine to coarse, ~15% fines, non plastic, ~5% gravel, fine to coarse; max. size 2, slight naphthalene-like odor, black, -10 NLO organics, sheen. (17.6'- 18.2') SILTY SAND (SM); ~55% sand, fine, ~45% fines, low plasticity; slight naphthalene-like odor, black. (18.2'- 20') SANDY SILT (ML); ~70% fines, low plasticity, ~30% sand, fine; gray, shells from 19.2 to 20 ft. (20'- 23.3') SILTY SAND (SM); ~80% sand, fine to coarse, ~15% fines, non plastic, ~5% gravel, fine to coarse; max. size 2, slight naphthalene-like odor, brown. 25 **S6** 60/19 0 (23.3'- 25') SANDY SILT (ML); ~70% fines, low plasticity, ~30% sand, fine; brown gray. (25'- 30') SILTY SAND (SM); ~60% sand, fine to coarse, ~30% fines, non plastic, ~10% gravel, fine to coarse; -15 max. size 2, brown. 30 60/44 (30'- 35.3') SILTY SAND (SM); ~70% sand, fine to **S7** coarse, ~20% fines, non plastic, ~10% gravel, fine to coarse; max. size 2, brown, gravel layer from 43.9 to 44.4 ft -20 35 S8 60/47 0 (35.3'- 36.1') WIDELY GRADED GRAVEL WITH SAND (GW); ~50% gravel, fine to coarse, ~45% sand, fine to coarse, ~5% fines, non plastic; max. size 2, gray. -25 (36.1'- 38') SILTY SAND (SM); ~70% sand, fine to coarse, ~20% fines, non plastic, ~10% gravel, fine to coarse; brown, 1" lens of fine to coarse gravel at 37.9 ft. (38'-40') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; brown. 40 S9 60/41 6.2 (40'- 41.6') SILTY SAND (SM); ~80% sand, fine to medium, ~20% fines, non plastic; moderate organic-like OLO odor, brown. -30 (41.6'- 46.8') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; slight naphthalene-like odor, black, lens of brown silty sand NLO from 43.9 to 44.4 ft, organic odor. **NOTES:** 

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

WILLIAMSBURG W

LOG

PID = PHOTOIONIZATION DETECTOR READING (PPM)
JHS = JAR HEADSPACE PID READING (PPM)

, ,

NA = NOT APPLICABLE Q<sub>p</sub> = POCKET PENETROMETER

NM = NOT MEASURED  $S_v = TORVANE PEAK$ 

ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR

IN. = INCHES PER MILLION NLO = NAPH I HALENE LIKE ODC PLO = PETROLEUM LIKE ODOR FT. = FEET TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE** WW-MW-17 CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 3 093060 GEI PROJECT NUMBER: Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK WELL **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION DETAILS** and IN./IN. (PPM) NO. 45 S10 60/39 11.6 NLO -35 (46.8'- 49.2') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; brown, silty sand lenses. (49.2'- 50') SILT (ML); ~80% fines, non plastic, ~20% sand, fine; brown. 50 (50'- 50.3') WIDELY GRADED SAND (SW); ~95% sand, S11 60/38 55 NLO NLO fine to medium, ~5% fines, non plastic; slight naphthalene-like odor, brown. NLO (50.3'- 50.7') SILTY SAND (SM); ~70% sand, fine, ~30% 40 fines, non plastic; slight naphthalene-like odor, gray. NLO (50.7'- 51.8') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; slight naphthalene-like odor, brown. NLO (51.8'- 52.4') SANDY SILT (ML); ~60% fines, non plastic, ~40% sand, fine; slight naphthalene-like odor, gray. WWMW-17 (52.4'- 54.7') WIDELY GRADED SAND (SW); ~95% (54-55)NLO sand, fine to medium, ~5% fines, non plastic; slight 55 **S12** 60/20 1.4 naphthalene-like odor, brown. (54.7'- 55') LEAN CLAY (CL); ~95% fines, medium plasticity, ~5% sand, fine; slight naphthalene-like odor, reddish brown. -45 (55'- 60') LEAN CLAY (CL); ~95% fines, medium plasticity, ~5% sand, fine; brown, reddish brown varves.

End of Boring at 60 feet. Grouted

#### **NOTES:**

WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

FOG

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

= TORVANE PEAK NM = NOT MEASURED

ppm = PARTS PER MILLION

IN. = INCHES FT. = FEET

NLO = NAPHTHALENE LIKE ODOR PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York **GEI PROJECT NUMBER:** 093060

**PAGE** 

WW-MW-18 1 of 4

**BORING LOG** 

**GROUND SURFACE ELEVATION (FT):** 8.72 LOCATION: 26 N 12th St NORTHING (FT): 689179 EASTING (FT): 641982 TOTAL DEPTH (FT): 85.0 DRILLED BY: Boart Longyear / Frank Gardella DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone

LOGGED BY: Amy Malsbary/Kari Weber DATE START / END: 10/27/2010 - 10/28/2010

DRILLING DETAILS: Sonic Coring

GENERAL NOTE:

E.	F.	;	SAMPLE IN	NFO					
ELEV. F	DEPTH F	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL DETAILS
-	— <b>0</b> — —		60/NM	23.2			WW-MW-18 (1-2)	(0'- 0.5') ASPHALT. (0.5'- 5') NARROWLY GRADED SAND WITH SILT (SP-SM); ~90% sand, coarse, ~10% fines; hand cleared.	
<b>5</b>	5 	S-1	60/28	2.4		PLO	WW-MW-18 (6-7)	(5'- 10') WIDELY GRADED SAND WITH SILT (SW-SM); ~85% sand, fine to medium, ~10% fines, ~5% gravel, fine to coarse, subrounded; max. size 1.5, slight petroleum-like odor, wet, grayish brown to brown.	
FULTON DATA TEMPLATE.GDT 3/	10 	S-2	60/14			PLO		(10'- 15') WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, fine to coarse, subangular, ~5% fines; max size 2, slight petroleum-like odor, wet, brown, mostly fine to medium sand.	
G LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13  1	15 	S-3	120/95	8.9		OLO		(15'- 16.8') SILT WITH SAND (ML); ~85% fines, low plasticity, rapid dilatancy, ~15% sand, fine; slight organic-like odor, wet, dark gray, lenses of brown fine to coarse sand up to 1.5 inches thick; wood pieces from ~15.3 to 15.8 feet. (16.8'- 21.5') SANDY ORGANIC SOIL (OL); ~70% fines, low plasticity, slow dilatancy, ~30% sand, fine; moderate organic-like odor, wet, gray, lenses of black organic silt up to 1	
- <b>- 10</b>	_ 20			8.0		OLO		inch thick.	

#### NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

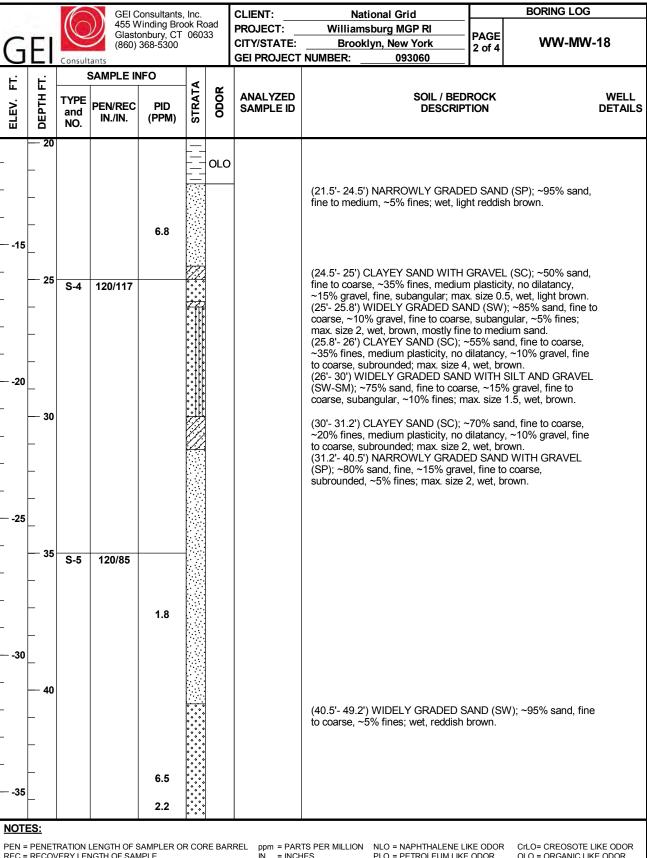
NM = NOT MEASURED

IN. = INCHES FT. = FEET

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR



REC = RECOVERY LENGTH OF SAMPLE

GDT

WILLIAMSBURG W PREV, BORINGS.GPJ FULTON DATA TEMPLATE.

PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

= TORVANE PEAK NM = NOT MEASURED

IN. = INCHES FT. = FEET

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

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OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

			M GEI C	Consultants,	Inc.	CLIENT:	National Grid		BORING LOG
155				Vinding Bro onbury, CT		PROJECT:	Williamsburg MGP RI	PAGE	
(		~		368-5300	00033	CITY/STATE:	Brooklyn, New York	3 of 4	WW-MW-18
J		Consult	ants			GEI PROJECT	NUMBER:093060		
FT.	Ę.	(	SAMPLE IN	NFO	4				
ELEV.	DEPTH	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	SAMPLE ID	SOIL / BED DESCRIPT		WELL DETAILS
-	— 45 –	S-6	120/92						
<b>-40</b>	_ _ <b>50</b> 			13.8	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		(49.2'- 52') NARROWLY GRADED fine to medium, ~5% fines; wet, bro		SP); ~95% sand,
- 	- -			20.4	· · · · · · · · · · · · · · · · · · ·		(52'- 55') WIDELY GRADED SANE (SW-SM); ~70% sand, fine to coar coarse, ~10% fines; max. size 2, w	se, ~20%	gravel, fine to
- - - 	— 55 · - -	S-7	120/95		**************************************		(55'- 56.4') WIDELY GRADED SAI coarse, ~5% gravel, fine to coarse, size 1, wet, grayish brown. (56.4'- 56.7') LEAN CLAY (CL); ~1 dilatancy; moist, red with mottled gr (56.7'- 59') WIDELY GRADED SAI coarse, ~5% gravel, fine to coarse, size 1.5, wet, brown.	subangul 00% fines ray. ND (SW);	lar, ~5% fines; max. s, high plasticity, no ~90% sand, fine to
-	_ 60 _						(59'- 61.8') SILTY SAND (SM); fine ~85% sand, fine to medium, ~15% light brown, mostly fine sand.	e to coarse fines; ma	e, subangular, xx. size 1.25, wet,
- 55	- - -			8.2	1.4.4.		(61.8'- 65') ELASTIC SILT WITH S plasticity, slow dilatancy, ~15% san gray, lens of brown fine sand up to	nd, fine to	medium; moist,
- -	— 65 –	S-8	60/16				(65'- 71') NARROWLY GRADED S to medium, ~5% fines; wet, brown.	SAND (SP	<sup>2</sup> ); ~95% sand, fine
- 60	_			7.8					
NOTE PEN =		RATION I	LENGTH OF S	SAMPLER O	R CORE B	ARREL ppm = PAR	RTS PER MILLION NLO = NAPHTHALENE LI	KE ODOR	CrLO= CREOSOTE LIKE ODOR
			NGTH OF SAM		. JOINE D	IN. = INC			OLO = ORGANIC LIKE ODOR

PEN = PENE IRATION LEINGTH OF SAMPLER OR CORE
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (PPM)
JHS = JAR HEADSPACE PID READING (PPM)

NA = NOT APPLICABLE NM = NOT MEASURED  $Q_P$  = POCKET PENETROMETER  $S_V$  = TORVANE PEAK

IN. = INCHES FT. = FEET

NLO = NAPH I HALENE LIKE ODO PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR MLO = MUSTY LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE** WW-MW-18 CITY/STATE: Brooklyn, New York (860) 368-5300 4 of 4 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë Ë STRATA ODOR DEPTH SOIL / BEDROCK **ANALYZED** WELL TYPE ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION DETAILS** and IN./IN. (PPM) NO. 70 36/36 S-9 (71'- 73') WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, fine to coarse, subangular, ~5% fines; max. size 1, wet, brown. WW-MW-18 5.2 (72-73)S-10 144/136 (73'- 74') CLAYEY SAND (SC); ~50% sand, fine to coarse, ~40% fines, ~10% gravel, fine to coarse, subangular; max. size -65 0.75, wet, reddish brown. 3.3 (74'- 75.5') LEAN CLAY (CL); ~100% fines, high plasticity, no dilatancy; moist, red with mottled gray. 75 (75.5'- 80') LEAN CLAY (CL); ~100% fines, high plasticity, no dilatancy; moist, dark gray and gray, red mottling. 4.1 - -70 80 (80'- 85') SANDY LEAN CLAY (CL); ~60% fines, medium plasticity, no dilatancy, ~40% sand, fine to coarse; wet, light gray. 0.0 -75 85 End of Boring at 85 feet.

Grouted

#### NOTES:

LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE NM = NOT MEASURED = TORVANE PEAK

IN. = INCHES FT. = FEET

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York GEI PROJECT NUMBER: 093060

**PAGE** WW-MW-19

1 of 5

**BORING LOG** 

**GROUND SURFACE ELEVATION (FT):** 7.13 LOCATION: 26 N 12th St NORTHING (FT): 689382 **EASTING (FT):** 641853 TOTAL DEPTH (FT): 95.0 DRILLED BY: Boart Longyear / Frank Gardella DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone DATE START / END: 11/2/2010 - 11/2/2010 LOGGED BY: Kari Weber/Alex Royko DRILLING DETAILS: Sonic Coring WATER LEVEL DEPTHS (FT): <u>▼ 5.00 11/2/2010</u> **GENERAL NOTE:** 

**SAMPLE INFO** ᇤ ᇤ STRATA ODOR DEPTH **ANALYZED** SOIL / BEDROCK WELL **TYPE** ELEV. PEN/REC SAMPLE ID **DETAILS** DESCRIPTION and (PPM) IN./IN. NO. (0'- 5') NARROWLY GRADED SAND WITH SILT (SP-SM): 60/NM ~85% sand, ~10% fines, ~5% gravel; hand cleared. FILL. WW-MW-19 (1-2)S-1 60/29 WW-MW-19 (5'- 9') ORGANIC SOIL WITH SAND (OL): ~85% fines. low (5-6)plasticity, rapid dilatancy, ~10% sand, fine, ~5% gravel, fine to 26.7 coarse, subangular; with organics, slight organic-like odor, wet, black, FILL. OLO 0 (9'- 10') WOOD; moderate organic-like odor, stained black with OLO organics. FILL. 10 **S-2** 60/0 (10'- 15') No Recovery, possibly due to wood. FILL. (15'- 18') ORGANIC SOIL (OL);  $\sim$ 90% fines, low plasticity, rapid dilatancy,  $\sim$ 10% sand, fine; with  $\sim$ 40% wood fibers, slight S-3 60/48 organic-like odor, wet, black, FILL. OLO -10 107 (18'- 20') WOOD; moderate chemical-like odor, light brown, odor possibly odor from wood treatment. FILL. CLO

IN. = INCHES FT. = FEET

**NOTES:** 

BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

WILLIAMSBURG W

LOG

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

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PID = PHOTOIONIZATION DETECTOR READING (PPM)

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Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

= TORVANE PEAK NM = NOT MEASURED

ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR

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				onsultants			CLIENT:	National Grid		BORING LOG
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	FI			368-5300	000		CITY/STATE:	Brooklyn, New York	2 of 5	WW-MW-19
7	<u> </u>	Consult	tants				GEI PROJECT	NUMBER: 093060		
Ħ.	Ħ.	;	SAMPLE IN	NFO .	_					
ELEV. F	DEPTH F	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BED DESCRIP		WELL DETAILS
- 15 -	— <b>20</b> — —	S-4	60/28	12.4		OLO		(20'- 24') SANDY ORGANIC SOIL plasticity, rapid dilatancy, ~30% sa ~15% wood fibers, slight organic-li gray, FILL.	nd, fine to	medium; with
- - -	25 	S-5	60/39	5.6		PLO		(24'- 27') SILTY SAND (SM); ~85% ~15% fines; slight petroleum-like o		
— <b>-20</b> - -	- 1 -					PLO		(27'- 30') WIDELY GRADED SANI coarse, ~10% gravel, fine to coarse max. size 1.5, slight petroleum-like	e, subroui	nded, ~5% fines;
- - 25	— 30 —	S-6	60/41			PLO		(30'- 32.5') SILTY SAND WITH GF fine to coarse, ~15% gravel, fine to fines; slight petroleum-like odor, m	o coarse, s oist, brow	subangular, ~15% nish gray.
-	_ _ 35	S-7	120/78	7.5				(32.5'- 35') SANDY SILT (ML); ~60 dilatancy, ~40% sand, fine; moist, (35'- 55') NARROWLY GRADED \$	brownish	gray.
- 	- -	J-1	120,10					to medium, ~5% fines; wet, brown.		,, SO / GOITG, THE
- 35 -	— <b>40</b> - - -									
REC = PID =	PENET RECOV PHOTO	'ERY LEN	LENGTH OF S NGTH OF SAN ION DETECTO CE PID READ	MPLE OR READING			REL ppm = PAR IN. = INCH FT. = FEE		E ODOR	CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR MLO = MUSTY LIKE ODOR

 $Q_P$  = POCKET PENETROMETER  $S_V$  = TORVANE PEAK NA = NOT APPLICABLE NM = NOT MEASURED

NLO = NAPHTHALENE LIKE ODO PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

			<b>∭</b> GEI C	Consultants,	Inc.		CLIENT:	National Grid		BORING LOG
		$\mathbb{C}$	455 V	Vinding Bro	nk Rn	ad	PROJECT:	Williamsburg MGP RI	_	
-	T1	~	(860)	onbury, CT 368-5300	0603	3	CITY/STATE:	Brooklyn, New York	PAGE 3 of 5	WW-MW-19
U		Consult					<b>GEI PROJECT</b>	•		
			SAMPLE IN	NFO						
FT.	ᄩ				STRATA	8	ANALYZED	SOIL / BE	DBUCK	WELL
ELEV.	DEPTH	TYPE and	PEN/REC	PID	≱	ODOR	SAMPLE ID	DESCRI		DETAILS
	DE	NO.	IN./IN.	(PPM)	လ	U				
					20.50					
-	<del> 45</del>	S-8	120/72	27.5						
	_									
<b></b> -40	-									
-										
_	_									
-	<del> 50</del>									
_										
45	-									
-										
	_									
				32.5						
_	<del> 55</del>	S-9	120/86	32.3				(55'- 64') WIDELY GRADED SAI	ND (SW): ~	95% sand, fine to
			120.00					coarse, ~5% fines; wet, brown.	(0.1.),	55,75 54.14, 1.115 15
-										
<b></b> -50	_									
				10.7						
-										
	_				***					
_										
-	<u> </u>									
					****					
-										
— -55	_									
55				10.5						
-	-			10.5						
_								(64'- 66.5') SILTY SAND WITH (	SRAVEL (SI	M); ~60% sand,
L	<b>—</b> 65	S-10	120/NM					fine to medium, ~20% gravel, fine fines; wet, brown, 2 inch lens of	ະ ເວ coarse, gray silt with	subrounded, ~20% sand at ~60.5 ft.
		J-10	120/INIVI					, , , , , , , , , , , , , , , , , , , ,	, ,	
-	-									
-00	L							(66.5'- 73.8') ELASTIC SILT WIT	H SAND (M	/IH); ~85% fines,
— <b>-6</b> 0				42.0				low plasticity, slow dilatancy, ~15 gray.	% sand, find	e to medium; moist,
-	-			12.9				<b>5</b> ,		
NOT										
NOTE		- · - · · ·		344E- == -			DEI	TO DED MILLION - 111 2 - 111 - 111		0.10.0050055
PEN =	PENET	≺a HON I	LENGTH OF S	SAMPLER OF	≺ COR	∟ BAR	KEL ppm = PAR	TS PER MILLION NLO = NAPHTHALENE	LIKE ODOR	CrLO= CREOSOTE LIKE ODOR

NA = NOT APPLICABLE NM = NOT MEASURED  $Q_P$  = POCKET PENETROMETER  $S_V$  = TORVANE PEAK

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
RIN. = INCHES
RIN. = INCHES
RIN. = INCHES
RIN. = INCHES
RIN. = FEET

			M GEI C	consultants,	Inc.		CLIENT:	National Grid		BORING LOG
5	Ξ.		455 V Glast	Vinding Bro onbury, CT	ok Ro 0603	oad 33	PROJECT:	Williamsburg MGP RI	PAGE	
G	FΙ		(860)	368-5300			CITY/STATE: GEI PROJECT	Brooklyn, New York NUMBER: 093060	4 of 5	WW-MW-19
)		Consult	SAMPLE IN	NFO.			GEIFROJECI	NOWIDER. 093000		
Ę.	1FT.			41 0	¥	굕	ANALYZED	SOIL / BEI	DOCK	WELL
ELEV.	DEPTH	TYPE and	PEN/REC IN./IN.	PID (PPM)	STRATA	ODOR	SAMPLE ID	DESCRIP		DETAILS
EL	DE	NO.	IIN./IIN.	(PPIVI)	တ					
- - <b>-65</b>	— <b>70</b> — —			7.8						
-	_ 75							(73.8'- 75') CLAYEY SAND (SC); medium plasticity, no dilatancy; m	oist, light (	gray with white.
- 70 - -	75 _ _ _ _ 80	S-11	120/120	5.5				(75'- 81') CLAYEY SAND (SC); ~ moist, light gray.	65% sand	, fine, ~35% fines;
- 75 -				5.7				(81'- 84.3') CLAYEY SAND (SC); moist, whiteish gray. (84.3'- 87') WIDELY GRADED SA	ND (SW)	; ~95% sand,
- - 80	— <b>85</b> –	S-12	120/96					medium to coarse, ~5% fines; mo (87'- 95') CLAYEY SAND (SC); ~	ist, whiteis	sh gray.
- - - 85	_ 90 			5.6				medium plasticity, no dilatancy, m	oist, light ç	gray with white.
-	_			4.2						
					1/1					
NOTE										
REC = PID = JHS =	RECOV PHOTO JAR HE	ERY LEN	LENGTH OF S NGTH OF SAM ION DETECTO CE PID READ LE Q <sub>p</sub>	MPLE OR READING	G (PPN	Л)	IN. = INCH FT. = FEET		E ODOR ODOR	CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR MLO = MUSTY LIKE ODOR

G	ΕI	Consult	455 W Glasto (860)	Consultants, Vinding Bro onbury, CT 368-5300	ok Ro		CLIENT: PROJECT: CITY/STATE: GEI PROJECT	National Grid Williamsburg MGP RI Brooklyn, New York NUMBER: 093060	PAGE 5 of 5	BORING LOG WW-MW-19
ELEV. FT.	DEPTH FT.	TVDE	PEN/REC IN./IN.	PID (PPM)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BED DESCRIP		WELL DETAILS
_	95							End of Paring at 05 fact		

End of Boring at 95 feet. Grouted

# NOTES:

NA = NOT APPLICABLE NM = NOT MEASURED  $Q_P$  = POCKET PENETROMETER  $S_V$  = TORVANE PEAK

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
RIN. = INCHES
RIN. = INCHES
RIN. = INCHES
RIN. = INCHES
RIN. = FEET

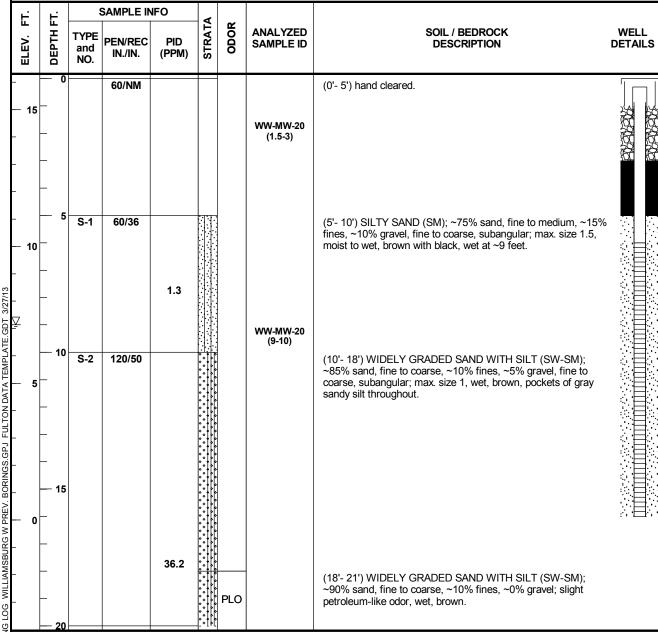
CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York GEI PROJECT NUMBER: 093060

**PAGE** 1 of 2

WW-MW-20

**BORING LOG** 

Consultants **GROUND SURFACE ELEVATION (FT):** 16.13 LOCATION: Kent Ave NORTHING (FT): 688469 **EASTING (FT):** 641882 TOTAL DEPTH (FT): 25.0 DRILLED BY: Boart Longyear / Frank Gardella DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone DATE START / END: 11/4/2010 - 11/22/2010 LOGGED BY: Kari Weber/Alex Royko DRILLING DETAILS: Sonic Coring WATER LEVEL DEPTHS (FT): <u>▼ 9.00 11/4/2010</u> **GENERAL NOTE:** 



#### **NOTES:**

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

NM = NOT MEASURED = TORVANE PEAK

IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR

TLO = TAR LIKE ODOR CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

			GEI C	consultants.	Inc.		CLIENT:	National Grid		BORING LOG
G	ΕI	Consult	Glasto (860)	Vinding Bro onbury, CT 368-5300	ok Ro 0603	33	PROJECT: CITY/STATE: GEI PROJECT	Williamsburg MGP RI Brooklyn, New York NUMBER: 093060	PAGE 2 of 2	WW-MW-20
F.	Ę.	;	SAMPLE IN	NFO	7					
ELEV. F	DEPTH F	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDI DESCRIPT		WELL DETAILS
	— <b>20</b>	S-3	60/36			PLO				
- <b>-5</b>	_			1.9				(21'- 25') NARROWLY GRADED S ~80% sand, fine to medium, ~10% subangular, ~10% fines; max. size brown.	gravel, t	fine to coarse,
	25		1		1 111		1	End of Boring at 25 feet. Grouted		

NOTES:

 $Q_P$  = POCKET PENETROMETER  $S_V$  = TORVANE PEAK

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
RIN. = INCHES
RIN. = INCHES
RIN. = INCHES
RIN. = INCHES
RIN. = FEET

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR MLO = MUSTY LIKE ODOR

ENVIRONMENTAL BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

NA = NOT APPLICABLE NM = NOT MEASURED

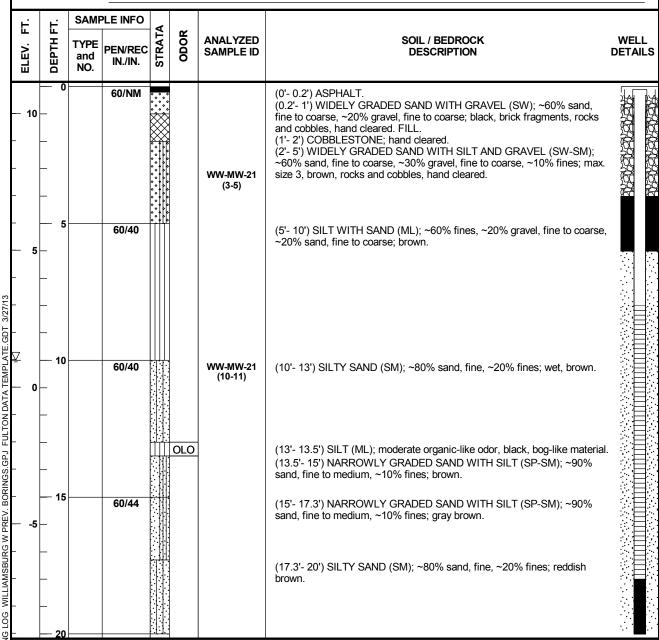
CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** CITY/STATE: Brooklyn, New York 1 of 3 093060 GEI PROJECT NUMBER:

WW-MW-21

**BORING LOG** 

**GROUND SURFACE ELEVATION (FT):** 10.98 LOCATION: Private property - End of N 10th Street NORTHING (FT): 688524 **EASTING (FT):** 641589 TOTAL DEPTH (FT): 60.0 DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone DRILLED BY: Boart Longyear / Frank Gardella DATE START / END: 11/14/2012 - 11/14/2012 LOGGED BY: Chris Anastasiou DRILLING DETAILS: Sonic Coring WATER LEVEL DEPTHS (FT): 

□ 10.00 11/14/2012 **GENERAL NOTE:** 



# **NOTES:**

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

NA = NOT APPLICABLE Q<sub>P</sub> = POCKET PENETROMETER

NM = NOT MEASURED = TORVANE PEAK ppm = PARTS PER MILLION

NLO = NAPHTHALENE LIKE ODOR IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

					ultants,		CLIE	ENT:	Nat	ional Grid		BORING LOG	i
5			455 V Glast	Vind onbu	ing Bro ıry, CT	ok Road 06033	PRO	JECT:		sburg MGP RI	─ ─    PAGE		
G	FI		(860)	368	-5300			//STATE:		lyn, New York	2 of 3		<i>I</i> -21
)	<u> </u>	Consult					GEI	PROJECT NU	WBER: _	093060		<u>l</u>	
F.	IFT.		PLE INFO	4	ŭ.	ANIALY	7ED			COUL / DEDD	OCK.		\A/EL I
ELEV.	DEPTH	TYPE and	PEN/REC	STRATA	ODOR	ANALYZ SAMPL				SOIL / BEDRO DESCRIPTION			WELL DETAILS
	DE	NO.	IN./IN.	S.									
	<u> </u>		60/45	ा।				(20'- 24.4')	NARROWL	Y GRADED SAND	WITH SIL	T (SP-SM): ~90%	
<b></b> -10	_				]			sand, fine to	medium, ~	~10% fines; brown.		( ),	
					]								
-	-				1								
-	_				]								
	_				<u>:</u>			(04.41.06.01		ND (CM): 700/ aa	nd fine	200/ finan brown	
-	25		60/48		1			(24.4 - 20.3	SILITSA	ND (SM); ~70% sa	na, nne, ~	30% ililes, brown.	
— -15	_		00.10		1								
-10					1			(26.3'- 30')	NARROWL	Y GRADED SAND	WITH SIL	T (SP-SM); ~90%	
-	_							sand, fine to	medium, ~	~10% fines; brown o	orange.		
ļ.	_				:								
					1								
-	<b>— 30</b>		60/24		1			(30'- 37 7') 5	SANDY SII	.T (ML); ~50% sand	I fine ~50	% fines: brown	
20	_							(00 0)	,	(), 00 /0 00	.,,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
<b> </b>	_												
-	_												
	_												
-	<b>—</b> 35		60/44										
25													
	_												
_	_				•			(37.7'- 40') \	WIDELY G	RADED SAND (SW	′); ~95% s	and, fine to coarse,	
								~5% fines; b	rown red.				
	_												
-	<b>— 40</b>		60/48	***				(40'- 48 8') \	VIDELY G	RADED SAND (SW	/)· ~95% s	and fine to coarse	
30	_							~5% fines; b	rown.		,,	,,	
<b> </b>	_												
<b> </b>	<u> </u>												
NOTE	S:												
			ENGTH OF SAI			R CORE BAI	RREL	ppm = PARTS P IN. = INCHES	ER MILLION	NLO = NAPHTHALEN PLO = PETROLEUM I		R CrLO= CREOSOTE OLO = ORGANIC LI	

REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (PPM)
JHS = JAR HEADSPACE PID READING (PPM)

 $Q_P$  = POCKET PENETROMETER  $S_V$  = TORVANE PEAK

NA = NOT APPLICABLE NM = NOT MEASURED

IN. = INCHES FT. = FEET

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR MLO = MUSTY LIKE ODOR

CLIENT: **BORING LOG** GEI Consultants, Inc. **National Grid** 455 Winding Brook Road Glastonbury, CT 06033 PROJECT: Williamsburg MGP RI **PAGE** WW-MW-21 CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 3 **GEI PROJECT NUMBER:** 093060 Consultants SAMPLE INFO Ë Ë STRATA ODOR SOIL / BEDROCK **WELL** DEPTH **ANALYZED** TYPE ELEV. PEN/REC **SAMPLE ID DESCRIPTION DETAILS** and IN./IN. NO. 45 60/48 -35 (48.8'- 50') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines; dark brown. 50 WW-MW-21 60/48 (50'- 52.5') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to coarse, ~10% fines; brown. (50-52)-40 (52.5'- 55') LEAN CLAY (CL); ~90% fines, ~10% sand, fine; gray. 55 60/48 (55'- 55.8') NARROWLY GRADED SAND WITH SILT (SP-SM); ~90% sand, fine, ~10% fines; brown. (55.8'- 60') LEAN CLAY (CL); red. -45 End of Boring at 60 feet. Grouted NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

NM = NOT MEASURED = TORVANE PEAK ppm = PARTS PER MILLION

NLO = NAPHTHALENE LIKE ODOR IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**GENERAL NOTE:** 

CLIENT: **National Grid** PROJECT: Williamsburg Works Former MGP

Brooklyn, New York **GEI PROJECT NUMBER:** 093060

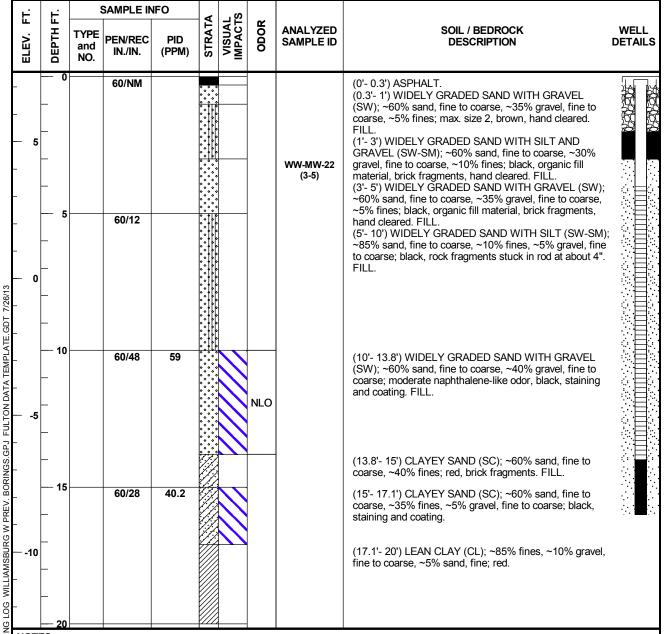
**PAGE** 1 of 3

WW-MW-22

**BORING LOG** 

**GROUND SURFACE ELEVATION (FT):** LOCATION: Private property - End of N 10th Street 7.38 TOTAL DEPTH (FT): 55.0 688828 EASTING (FT): NORTHING (FT): 641223 DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone DRILLED BY: Boart Longyear / Frank Gardella LOGGED BY: Chris Anastasiou DATE START / END: 11/12/2012 - 11/12/2012 DRILLING DETAILS: Sonic Coring WATER LEVEL DEPTHS (FT):

CITY/STATE:



PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION

REC = RECOVERY LENGTH OF SAMPLE

PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

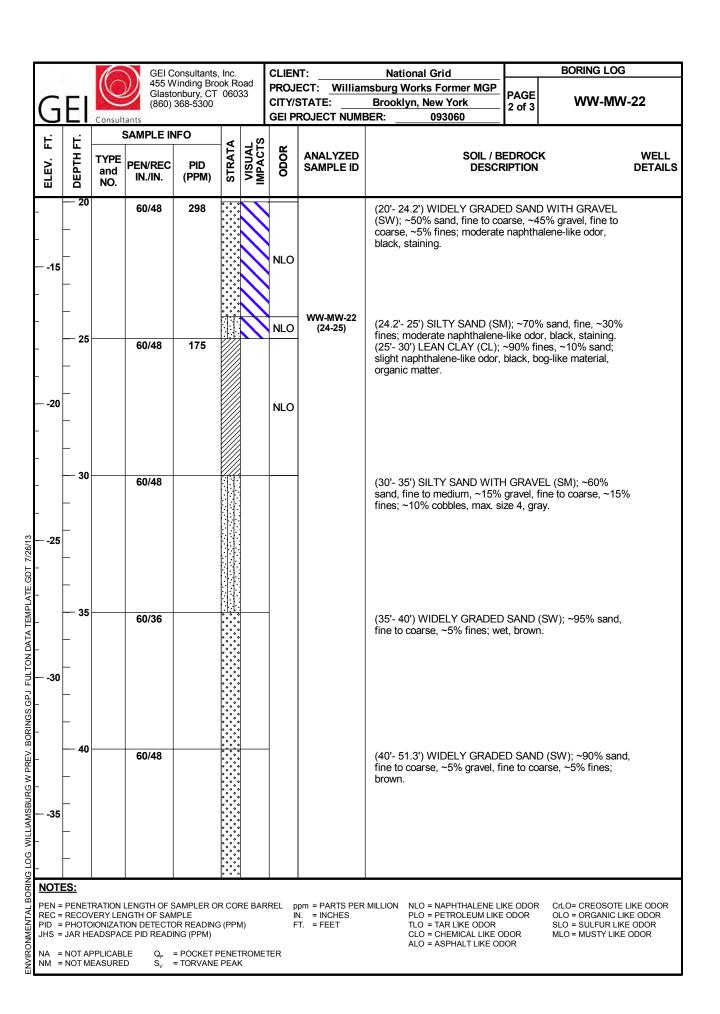
= NOT APPLICABLE NM = NOT MEASURED

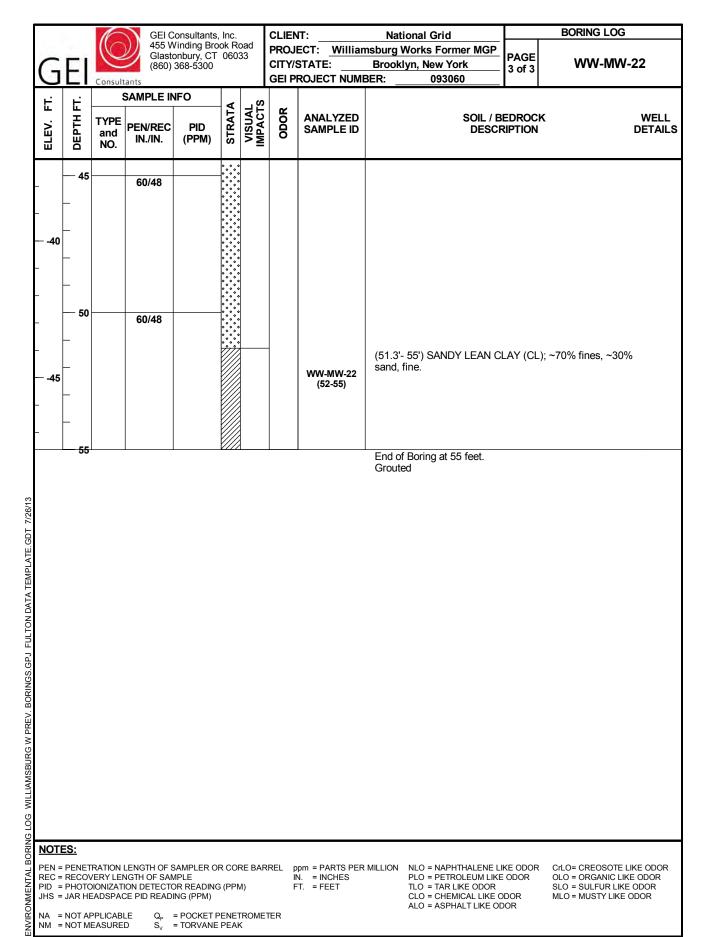
= POCKET PENETROMETER = TORVANE PEAK

NLO = NAPHTHALENE LIKE ODOR IN. = INCHES FT. = FEET

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR CLO = CHEMICAL LIKE ODOR

ALO = ASPHALT LIKE ODOR





NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL RCC = RECOVERY LENGTH OF SAMPLE RDD = PHOTOIONIZATION DETECTOR READING (PPM) PHOTOIONIZATION PHOTOIONIZ

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

NA = NOT APPLICABLE NM = NOT MEASURED

 $Q_P$  = POCKET PENETROMETER  $S_V$  = TORVANE PEAK

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** WW-SB-01 CITY/STATE: Brooklyn, New York 1 of 2 **GEI PROJECT NUMBER:** 093060

Consultants **GROUND SURFACE ELEVATION (FT):** 16.19 LOCATION: North 11th Street NORTHING (FT): 688566 EASTING (FT): 642027 TOTAL DEPTH (FT): 26.0 DRILLED BY: Zebra Environmental / Luke Caballero DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Melissa Felter DATE START / END: 7/10/2009 - 7/10/2009 DRILLING DETAILS: Geoprobe **GENERAL NOTE:** 

	Τ.		SAMPLE IN	JFO.					
ELEV. FT.	DEPTH FT.	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
- - 1! -	5 -	S1	60/38	0.2	***			WWSB-01 (1-5)	(0'- 0.5') CONCRETE. (0.5'- 5') SILTY SAND (SM); ~80% sand, fine, ~20% fines; ~5% brick, moist, brown, soft, hand cleared. FILL.
- - - 10	_ 5 	S2	60/45						(5'- 8') SILTY SAND (SM); ~85% sand, fine to medium, ~15% fines; ~5% brick, moist, brown, loose. FILL.
FULTON DATA TEMPLATE.GDT 3/27/13	_ _ 10 _ _ _	S3	60/43	256			PLO PLO		(8'- 8.2') WIDELY GRADED SAND (SW); ~95% sand, medium to coarse, ~5% fines; dry, light brown, loose. (8.2'- 9') SANDY SILT (ML); ~60% fines, ~40% sand, fine; moist, brown, soft. (9'- 10') SANDY SILT (ML); ~60% fines, ~40% sand, fine; moderate petroleum-like odor, moist, black, soft, black stained. (10'- 14.5') SANDY SILT (ML); ~50% fines, ~45% sand, fine to medium, ~5% gravel, fine to coarse; moderate petroleum-like odor, wet, black and brown, black stained lenses.
NG LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT	_ 15 _ _ _ _	S4	60/60	524			PLO	WWSB-01 (14-15)	(14.5'- 16.5') WIDELY GRADED SAND WITH SILT (SW-SM); ~85% sand, fine to medium, ~10% fines, ~5% gravel, fine; moderate petroleum-like odor, wet, gray, loose, gray stained.  (16.5'- 18.5') SANDY SILT (ML); ~60% fines, ~35% sand, fine, ~5% gravel, fine to coarse; moist, gray and reddish brown, dense.  (18.5'- 19.5') NARROWLY GRADED SAND WITH SILT (SP-SM); ~85% sand, fine to medium, ~10% fines, ~5% gravel, fine; moist, reddish brown, dense.

# NOTES:

BORING

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

NA = NOT APPLICABLE

NM = NOT MEASURED

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

Consultants

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York **GEI PROJECT NUMBER:** 093060

**PAGE** WW-SB-01 2 of 2

**BORING LOG** 

SAMPLE INFO Ë VISUAL IMPACTS Ë STRATA ODOR DEPTH **ANALYZED** SOIL / BEDROCK TYPE ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. **S5** 60/52 (19.5'- 20') SILTY SAND (SM); ~80% sand, fine, ~15% fines, ~5% gravel, fine to coarse; moist, brown, dense. (20'- 23') WIDELY GRADED SAND (SW); ~90% sand, fine to -5 coarse, ~5% gravel, fine, ~5% fines; wet, brown, loose. (23'- 25') SILTY SAND (SM); ~60% sand, fine, ~25% gravel, fine to coarse, ~15% fines; wet, brown and grayish brown, dense, lens of crushed rock 24-24.5 ft. **S6** 12/12 21 (25'- 26') SANDY SILT (ML); ~60% fines, ~30% sand, fine, ~10% gravel, fine; moist, gray, very dense.

> End of Boring at 26 feet. Refusal at 26 feet. Grouted

#### NOTES:

BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

NM = NOT MEASURED = TORVANE PEAK

IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York 1 of 3 **GEI PROJECT NUMBER:** 093060

**PAGE** WW-SB-02

**BORING LOG** 

**GROUND SURFACE ELEVATION (FT):** 13.19 LOCATION: N 12th Street NORTHING (FT): 688735 EASTING (FT): 642160 TOTAL DEPTH (FT): 55.0 DRILLED BY: Zebra Environmental / Luke Caballero DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Maura MacLeod DATE START / END: 7/8/2009 - 7/9/2009

DRILLING DETAILS: Geoprobe

**WATER LEVEL DEPTHS (FT):** <u><u></u> <u><u></u> <u></u> <u></u> <u></u> <u> </u> <u> </u> <u> </u> <u> </u> 8.00 <u> </u> 7/8/2009</u></u>

**GENERAL NOTE:** 

L									
Ī	FT.	Ħ.	;	SAMPLE IN	NFO	4			
	ELEV. F	DEPTH F	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	NOGO	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
	-	— <b>0</b> —	S1	60/18	5.5	****		WWSB-02	(0'- 0.5') CONCRETE. (0.5'- 2.2') WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~15% gravel, fine to coarse, ~5% fines, non plastic; max. size 2, gray, hand cleared.
	- 10 -	- - -					OLO	(2-5)	(2.2'- 5') WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~15% gravel, fine to coarse, ~5% fines, non plastic; max. size 2, moderate organic-like odor, brown, coal fragments and organics from 2.8 to 3.3 ft, hand cleared.
1E.9D1 3/2/13	- - - - 5	— 5 — — —	S2	60/33	1322		PLO PLO		(5'- 6.1') WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~15% gravel, fine to coarse, ~5% fines, non plastic; max. size 2, brown. (6.1'- 6.5') LEAN CLAY (CL); ~90% fines, medium plasticity, ~10% sand, fine; red. (6.5'- 8') SILTY SAND (SM); ~80% sand, fine to coarse, ~15% fines, non plastic, ~5% gravel, fine; max. size 0.5, organics. (8'- 9.1') SILTY SAND (SM); ~80% sand, fine to coarse, ~15% fines, non plastic, ~5% gravel, fine; max. size 0.5, slight petroleum-like odor, moist, organics, black layers. (9.1'- 10') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse,
A STATE OF S	- - - <b>0</b>	10   	S3	60/60	1574		NLO NLO PLO PLO	WWSB-02 (10.5-11.5)	~5% fines, non plastic; moderate petroleum-like odor, gray. (10'- 10.6') WIDELY GRADED GRAVEL WITH SAND (GW); ~70% gravel, fine to coarse, ~25% sand, fine to coarse, ~5% fines, non plastic; max. size 2, moist, brown. (10.6'- 11.1') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; moderate naphthalene-like odor, wet, gray, moderate petroleum-like odor. (11.1'- 11.7') SILTY SAND (SM); ~85% sand, fine to coarse, ~15% fines, non plastic; moderate naphthalene-like odor, wet, brown, moderate petroleum-like odor. (11.7'- 12.3') SILT (ML); ~70% fines, medium plasticity, ~30% sand, fine; slight petroleum-like odor, brown.
OG WILLIAMSBONG WINEY. BOT	5	— 15 — — —	S4	60/58	15.9		PLO		(12.3'- 13.9') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to coarse, ~10% fines, non plastic; slight petroleum-like odor, brown and black. (13.9'- 15') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; slight petroleum-like odor, brown. (15'- 16.2') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to medium, ~10% fines, non plastic; slight petroleum-like odor, black. (16.2'- 20') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; brown.

# NOTES:

**BORING LOG** 

WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK NA = NOT APPLICABLE

NM = NOT MEASURED

IN. = INCHES FT. = FEET

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

			<b>∭</b> GEI C	GEI Consultants, Inc.			CLIENT:	National Grid	BORING LOG	
		$((\bigcirc$	455 W	/inding Bro	ok Roa	ıd	PROJECT:	Williamsburg MGP RI		
(		6		onbury, CT 368-5300	Ubusa	j	CITY/STATE:	Brooklyn, New York	PAGE 2 of 3	WW-SB-02
U		Consult	tants				GEI PROJECT NUMBER: 093060			
		SAMPLE INFO								
Ħ.	1 FT	TVDE			STRATA	R	ANALYZED	SOIL / E	REDROC	CK
ELEV.	DEPTH	TYPE and	PEN/REC	PID		ODOR	SAMPLE ID		RIPTION	
딥	DE	NO.	IN./IN.	(PPM)	8	•				
	<b>— 20</b>	S5	60/44	317	• • •			(201, 22, 21) MUDEL V CDADED CAN	ID (CM)	). OF0/ and fine to seem
		35	60/44	317	****			(20'- 22.2') WIDELY GRADED SAN ~5% fines, non plastic; slight napht	שוא (Svv) halene-li	ike odor, moist, brown, slight
-	_				1 ::::	NLO		petroleum-like odor.		, , . <b>.</b> .
					****					
-							1	(22.2'- 23.4') SILTY SAND (SM); ~	80% sar	nd, fine, ~20% fines, low
40	_					PLO		plasticity; slight petroleum-like odor		
— <b>-10</b>							-	(23.4'- 25') WIDELY GRADED SAN	ND (SW	): ~95% sand, fine to coarse.
-	_				F	PLO		~5% fines, non plastic; slight petrol		
	25				***					
-	25	S6	60/49	356	1,0,0,1,0	NLO,	}	(25'- 25.3') WIDELY GRADED SAN		
	_				1	NLO		~5% fines, non plastic; slight napht petroleum-like odor.	naiene-i	ike odor, moist, brown, slight
					****			(25.3'- 26.2') WIDELY GRADED S.		
_	_							medium, ~5% fines, non plastic; me and black, moderate petroleum-like		naphthalene-like odor, brown
								(26.2'- 30') WIDELY GRADED SAI	ND (SW)	
— <b>-1</b> 5					I	NLO		~5% fines, non plastic; slight napht of gravel from 28.8 to 29 ft, slight p		
L	_				****			or graver from 26.6 to 29 ft, slight p	elioleuri	II-like odor.
					****					
-	<del> 30</del>	<b>S</b> 7	60/55		****		1	(30'- 32') WIDELY GRADED SANE	) (SW);	~95% sand, fine to coarse,
					****	PLO		~5% finés, non plastic; slight petrol	eùm-like	e odor, moist, brown.
-					, , , , , , , , , , , , , , , , , , ,	LU				
L	_				* * * *			(22' 25') MIDELY ODADED CANE	) (CM/).	OEO/ sand fine to madium
					• • • • •			(32'- 35') WIDELY GRADED SAND ~5% fines, non plastic; moderate na		
<b>20</b>	_							moderate petroleum-like odor.	•	
						NLO				
				761						
	<del></del> 35	S8	60/40		****		-	(35'- 38.6') WIDELY GRADED SAN	ND (6/V)	): ~95% sand fine to coarse
		- 50						~5% fines, non plastic; slight napht		
-	<b>–</b>									
					1	NLO				
3					****					
-25	<u> </u>									
[					****		-	(38.6'- 40') WIDELY GRADED SAN	ND (6/V)	). ~95% sand fine to coarse
-	_			1014		NLO		~5% fines, non plastic; moderate n		
3	<b>—</b> 40				[			·		
		S9	60/40	387				(40'- 44.3') WIDELY GRADED SAN ~5% fines, non plastic; slight napht		
<u> </u>	-							petroleum-like odor.	ı ıaı <del>c</del> ı it-l	ine odor, brown, slight
2										
-	<b> </b>				1	NLO				
	L									
-30										
	-									
					***					
NOTE	<u> </u>									

NA = NOT APPLICABLE NM = NOT MEASURED  $Q_P$  = POCKET PENETROMETER  $S_V$  = TORVANE PEAK

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
RIN. = INCHES
RIN. = INCHES
RIN. = INCHES
RIN. = INCHES
RIN. = FEET
RILLION
RIO = NAPHTHALENE LIKE ODOR
RIO = PETROLEUM LIKE ODOR
RIO = TAR LIKE ODOR
RIO = TAR LIKE ODOR
RIO = APPHALT LIKE ODOR

GEI Consultants, Inc.							CLIENT: National Grid			BORING LOG		
			455 W	Winding Brook		oad	PROJECT:	Williamsburg MGP RI				
(	Glastonbury, C7 (860) 368-5300		368-5300	00033		CITY/STATE:	Brook	dyn, New York	PAGE 3 of 3	WW-SB-02		
U		Consultants					<b>GEI PROJECT</b>	NUMBER:	093060		5 61 5	
		,	IFO									
Ę	FF				₽	ĸ	ANALYZED	SOIL / BEDDOCK				
>	РТН	TYPE PEN/REC		PID	STRATA	ODOR	SAMPLE ID	SOIL / BEDROCK DESCRIPTION				
ELEV.	DEF	and NO.	IN./IN.	(PPM)	ST	0	0, 4,,,,		5200			
Ë												
	<b>—</b> 45				****	NLO					); ~95% sand, fine to coarse,	
-	70	S10	60/56	7.0		NLO	/			halene-l	like odor, brown, silty seams,	
	_								eum-like odor. LTY SAND (SM): ~80%	sand f	fine to coarse, ~20% fines,	
								low plasticity	y; slight petroleum-like of	odor, gra	ay.	
	-									_		
						PLO						
35	_											
-	_											
-	— <b>50</b>	S11	60/55	185			1		WIDELY GRADED SAM			
								medium, ~5	% fines, non plastic; we	et, browr	n, loose.	
l												
	_											
					* * * * * * * * * * * * * * * * * * *		<u> </u>					
40	_								SILTY SAND (SM); ~85 slight petroleum-like od		I, fine to medium, ~15% fines, /n.	

PLO

End of Boring at 55 feet. Refusal at 55 feet. Grouted

# NOTES:

ENVIRONMENTAL BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

NA = NOT APPLICABLE NM = NOT MEASURED Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR
IN. = INCHES PLO = PETROLEUM LIKE ODOR
FT. = FEET TLO = TAR LIKE ODOR
CLO = CHEMICAL LIKE ODOR
ALO = ASPHALT LIKE ODOR

**BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** WW-SB-03 CITY/STATE: Brooklyn, New York 1 of 2 **GEI PROJECT NUMBER:** 093060

**GROUND SURFACE ELEVATION (FT):** 14.12 LOCATION: 50 Kent Ave NORTHING (FT): 688656 EASTING (FT): 641953 TOTAL DEPTH (FT): 22.0 DRILLED BY: Zebra Environmental / Luke Caballero DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Sarah Hay DATE START / END: 7/14/2009 - 7/14/2009 DRILLING DETAILS: Geoprobe WATER LEVEL DEPTHS (FT): <u>▼</u> 7.50 7/14/2009 **GENERAL NOTE:** 

BEDROCK RIPTION			
ND WITH SILT (SW-SM); ~89% es, low plasticity fines, ~1% gravel,			
fine; max. size 0.5, dry, brown, brick fragments, hand cleared.  FILL.  (4.1'- 4.3') CONCRETE; crushed concrete, hand cleared. FILL.			
(4.3'- 5') WIDELY GRADED SAND WITH SILT (SW-SM); ~89% sand, fine to medium, ~10% fines, low plasticity fines, ~1% gravel, fine; max. size 0.5, dry, brown, brick fragments, hand cleared. FILL. (5'- 7.5') WIDELY GRADED SAND WITH SILT (SW-SM); ~89%			
es, low plasticity fines, ~1% gravel, alene-like odor, dry, brown, brick			
hthalene-like odor, wet, crushed			
RAVEL WITH SAND (GW); ~70% -20% brick fragments, max. size wet, brown to black, FILL.			
ND WITH GRAVEL (SW); ~80%			
sand, fine to coarse, ~15% gravel, ~5% fines; max. size 1.5, strong naphthalene-like odor, wet, brown to black, brick fragments, sheen, tar-like staining, trace tar-like blebs. FILL.			

**NOTES:** 

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

NA = NOT APPLICABLE NM = NOT MEASURED

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

IN. = INCHES FT. = FEET

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR CLO = CHEMICAL LIKE ODOR

OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR MLO = MUSTY LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road Glastonbury, CT 06033 PROJECT: Williamsburg MGP RI **PAGE WW-SB-03** CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 2 093060 GEI PROJECT NUMBER: Consultants SAMPLE INFO Ë Ë VISUAL IMPACTS STRATA ODOR DEPTH SOIL / BEDROCK ANALYZED TYPE ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. WWSB-03 **S5** 24/21 3949 (20'- 21') WIDELY GRADED SAND WITH GRAVEL (SW); ~80% NLO (20-22)NLO

NLO

sand, fine to coarse, ~15% gravel, fine to medium, ~5% fines; max. size 1.5, strong naphthalene-like odor, wet, brown to black, heavy tar-like staining, glass, coal ash, and brick fragments. FILL. (21'- 21.8') WIDELY GRADED GRAVEL WITH SILT (GW-GM); ~80% gravel, angular, ~10% sand, ~10% fines; max. size 2, strong naphthalene-like odor, wet, brick and concrete fragments, tar-like staining. FILL.

(21.8'- 22') WIDELY GRADED GRAVEL WITH SILT (GW-GM); ~80% gravel, angular, ~10% sand, ~10% fines; max. size 2, strong naphthalene-like odor, wet, tar-like saturation. FILL.

End of Boring at 22 feet. Refusal at 22 feet. Grouted

NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE = TORVANE PEAK

NM = NOT MEASURED

IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR



CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York **GEI PROJECT NUMBER:** 093060

**PAGE** 1 of 2

**WW-SB-04** 

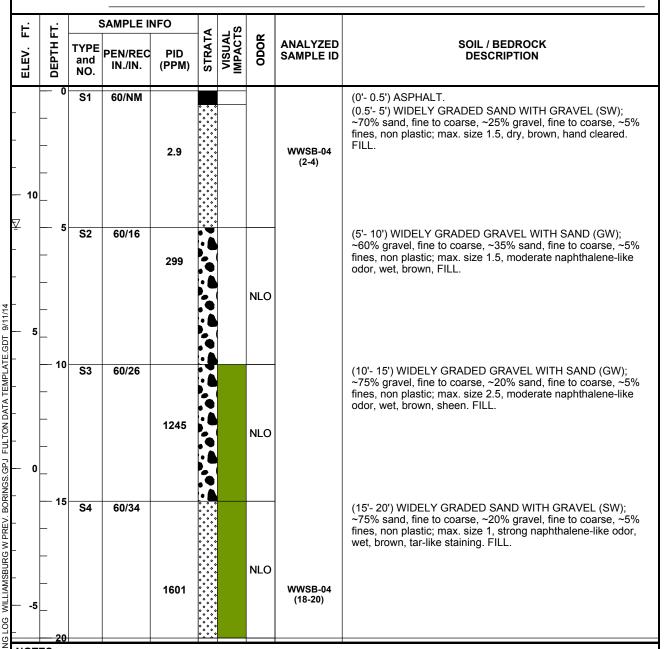
**BORING LOG** 

**GROUND SURFACE ELEVATION (FT):** 13.80 LOCATION: 50 Kent Ave NORTHING (FT): 688696 EASTING (FT): 641988 TOTAL DEPTH (FT): 20.0

DRILLED BY: Zebra Environmental / Quincy Brandt DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Maura MacLeod DATE START / END: 10/5/2009 - 10/5/2009

**DRILLING DETAILS: Geoprobe** 

**GENERAL NOTE:** 



# NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

= TORVANE PEAK NM = NOT MEASURED

ppm = PARTS PER MILLION

NLO = NAPHTHALENE LIKE ODOR IN. = INCHES PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR FT. = FEET

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR



CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York **GEI PROJECT NUMBER:** 093060

**PAGE** 2 of 2

WW-SB-04

**BORING LOG** 

Ë DEPTH

Ë

ELEV.

SAMPLE INFO **TYPE** PEN/REC and IN./IN. NO.

VISUAL IMPACTS STRATA PID (PPM)

ODOR **ANALYZED SAMPLE ID** 

SOIL / BEDROCK **DESCRIPTION** 

End of Boring at 20 feet. Refusal at 20 feet. Grouted

NOTES:

BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK NA = NOT APPLICABLE

NM = NOT MEASURED

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (PPM)

PD = PARTS PER MILLION
NLO = NAPHTHALENE LIKE ODOR
PLO = PETROLEUM LIKE ODOR
TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CLIENT: **National Grid** Williamsburg MGP RI PROJECT: CITY/STATE: Brooklyn, New York **GEI PROJECT NUMBER:** 093060

**PAGE WW-SB-05** 1 of 2

**BORING LOG** 

**GROUND SURFACE ELEVATION (FT):** 13.38 LOCATION: 50 Kent Ave NORTHING (FT): 688735 EASTING (FT): 641857 TOTAL DEPTH (FT): 24.0 DRILLED BY: Zebra Environmental / Luke Caballero DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Sarah Hay DATE START / END: \_7/14/2009 - 7/14/2009 DRILLING DETAILS: Geoprobe WATER LEVEL DEPTHS (FT): <u>₹ 4.50 7/14/2009</u>

GENERAL NOTE:

F	SAMPLE INFO		IFO		. ທ									
ELEV. F	ОЕРТН F	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL IMPACTS	водо	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION					
-	— 0 - -				**************************************				(0'- 3') CONCRETE; hand cleared.					
— 10 ∑	_	S1	24/11	283				WWSB-05 (3-5)	(3'- 4.5') CONCRETE; crushed concrete, hand cleared. FILL.					
1E.GD1 3/27/13	— 5 — — —	S2	60/19	2324			NLO NLO		(4.5'- 5') WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~15% gravel, ~5% fines; max. size 0.75, slight naphthalene-like odor, wet, brick/coal fragments, hand cleared. FILL. (5'- 10') WIDELY GRADED GRAVEL WITH SAND (GW); ~70% gravel, fine to coarse, angular, ~25% sand, fine to coarse, ~5% fines; strong naphthalene-like odor, wet, black staining. FILL.					
AINGS.GFJ FULION DATA LEMPLA	— <b>10</b> – – –	S3	60/14	3486			NLO		(10'- 15') WIDELY GRADED GRAVEL WITH SAND (GW); ~70% gravel, fine to coarse, angular, ~25% sand, fine to coarse, ~5% fines; strong naphthalene-like odor, wet, tar saturated. FILL.					
NG LOG WILLIAMSBUKG W PREV. BOKINGS.GPJ FULION DATA TEMPLATE.GDT 3/27/13  9 6 7	— 15 — — — — 20	S4	60/23	3051			NLO		(15'- 24') WIDELY GRADED SAND WITH SILT AND GRAVEL (SW); ~75% sand, fine to coarse, ~15% gravel, fine to coarse, angular, ~10% fines; max. size 1, strong naphthalene-like odor, black, tar saturated. FILL.					

NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

IN. = INCHES FT. = FEET

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK NA = NOT APPLICABLE NM = NOT MEASURED

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

MLO = MUSTY LIKE ODOR

GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 **BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** WW-SB-05 CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 2 **GEI PROJECT NUMBER:** 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS Ë STRATA ODOR DEPTH **ANALYZED** SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and (PPM) IN./IN. NO. WWSB-05 S5 48/46 4567 (20-24)NLO - -10 End of Boring at 24 feet.

Refusal at 24 feet. Grouted

### NOTES:

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK NA = NOT APPLICABLE

NM = NOT MEASURED

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL REC = RECOVERY LENGTH OF SAMPLE RIGHT OF SAMPLE REC = PHOTOIONIZATION DETECTOR READING (PPM) PLO = PHOTOIONIZATION DETECTOR READING (PPM) PLO = TAR LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE WW-SB-06** CITY/STATE: Brooklyn, New York 1 of 2 GEI PROJECT NUMBER: 093060

**GROUND SURFACE ELEVATION (FT):** 9.40 LOCATION: 50 Kent Ave NORTHING (FT): 688765 EASTING (FT): 641905 TOTAL DEPTH (FT): 25.5 DRILLED BY: Zebra Environmental / Luke Caballero DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone DATE START / END: 7/16/2009 - 7/16/2006 LOGGED BY: Sarah Hay DRILLING DETAILS: Geoprobe WATER LEVEL DEPTHS (FT): <u>▼ 5.00 7/1</u>6/2009 **GENERAL NOTE:** 

**SAMPLE INFO** VISUAL IMPACTS ᇤ ᇤ STRATA ODOR DEPTH SOIL / BEDROCK **TYPE** ELEV. PEN/REC DESCRIPTION and (PPM) IN./IN. NO. **S1** 60/NM 11.9 (0'- 0.7') CONCRETE. (0.7'- 5') WIDELY GRADED SAND WITH GRAVEL (SW); ~65% sand, fine to coarse, ~30% gravel, subangular to angular, ~5% fines; max. size 1.5, brown, hand cleared. FILL. 5 S2 60/19 852 (5'- 12.2') WIDELY GRADED GRAVEL WITH SILT AND SAND (GW-GM); ~70% gravel, subrounded to angular, ~20% sand, medium to coarse, ~10% fines; ~5% brick and wood fragments, max. size 1.5, moderate naphthalene-like odor, wet, black, heavy sheen, petroleum-like odor. FILL. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13 NLO n 10 **S3** 60/34 5558 (12.2'- 13.5') BRICK; ~95% sand, medium to coarse, ~5% gravel; ~80% brick fragments, strong naphthalene-like odor, wet, black, tar-like staining. FILL. NLO (13.5'- 15') WIDELY GRADED GRAVEL WITH SAND (GW); ~80% gravel, subrounded to subangular, ~20% sand, medium to coarse; ~5% wood and NLO -5 paper-like debris, max. size 1.5, strong naphthalene-like odor, black, tar-like > 9999 60/15 S4 (15'- 23.5') WIDELY GRADED GRAVEL WITH SAND (GW); ~80% gravel, WILLIAMSBURG W PREV. ~20% sand, fine to coarse; ~15% brick fragments, max. size 1, strong naphthalene-like odor, heavy tar-like coating. FILL. NLO -10

**NOTES:** 

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE = TORVANE PEAK

NM = NOT MEASURED

IN. = INCHES FT. = FEET

PLO = PETROLEUM LIKE ODOR

TLO = TAR LIKE ODOR CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

MLO = MUSTY LIKE ODOR

GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 **BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE WW-SB-06** CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 2 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS Ë STRATA ODOR DEPTH SOIL / BEDROCK TYPE ELEV. PEN/REC PID **DESCRIPTION** and IN./IN. (PPM) NO. 20 S5 60/24 > 9999 NLO (23.5'- 25.5') WIDELY GRADED GRAVEL WITH SAND (GW); ~80% gravel, ~20% sand, fine to coarse; ~15% brick fragments, max. size 1, strong -15 NLO naphthalene-like odor, tar saturated. FILL. 25 **S6** 6/5 > 9999

> End of Boring at 25.5 feet. Refusal at 25.5 feet. Grouted

# NOTES:

BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK NA = NOT APPLICABLE

NM = NOT MEASURED

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CLIENT: National Grid
PROJECT: Williamsburg MGP RI
CITY/STATE: Brooklyn, New York
GEI PROJECT NUMBER: 093060

PAGE 1 of 2 WW-SB-07

**BORING LOG** 

GROUND SURFACE ELEVATION (FT): 12.24 LOCATION: 50 Kent Ave

NORTHING (FT): 688810 EASTING (FT): 641918

DRILLED BY: Zebra Environmental / Luke Caballero

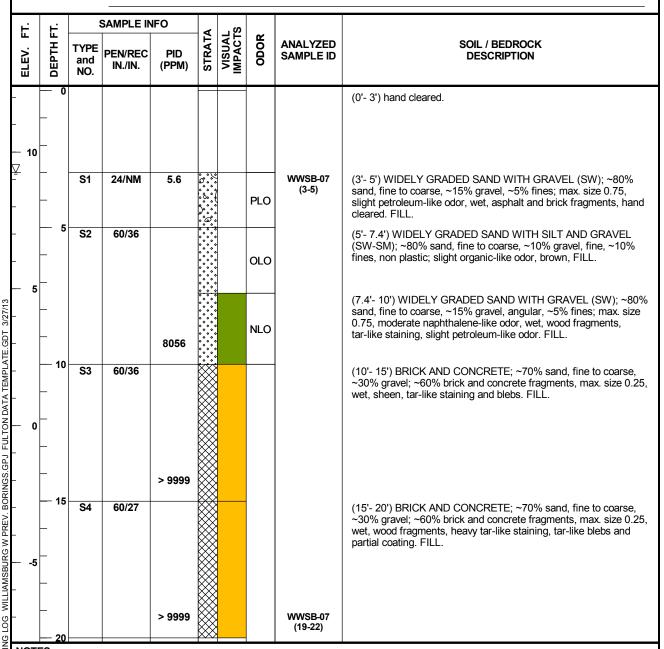
DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone

LOGGED BY: Sarah Hay DATE START / END: 7/15/2009 - 7/15/2009

DRILLING DETAILS: Geoprobe

WATER LEVEL DEPTHS (FT): <u>♀ 3.00 7/15/2009</u>

**GENERAL NOTE:** 



IN. = INCHES FT. = FEET

NOTES:

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REC = RECOVERY LENGTH OF SAMPLE

NA = NOT APPLICABLE

PID = PHOTOIONIZATION DETECTOR READING (PPM)
JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER

NM = NOT MEASURED S<sub>V</sub> = TORVANE PEAK

ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR

PLO = PETROLEUM LIKE ODOR
TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 **BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** WW-SB-07 CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 2 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS Ë STRATA ODOR DEPTH **ANALYZED** SOIL / BEDROCK TYPE ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and (PPM) IN./IN. NO. S5 24/24 (20'- 22') BRICK AND CONCRETE; ~70% sand, fine to coarse, ~30% gravel; ~60% brick and concrete fragments, max. size 0.25, wet, tar-like coating with partial tar saturation. FILL. > 9999

> End of Boring at 22 feet. Refusal at 22 feet. Grouted

# NOTES:

BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

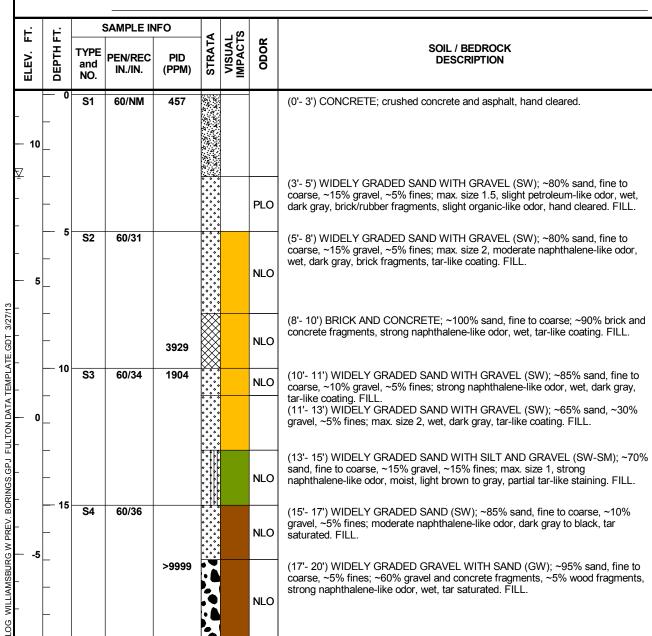
 CLIENT:
 National Grid
 BORING LOG

 PROJECT:
 Williamsburg MGP RI
 PAGE

 CITY/STATE:
 Brooklyn, New York
 1 of 2

 GEI PROJECT NUMBER:
 093060

**GROUND SURFACE ELEVATION (FT):** 11.80 LOCATION: 50 Kent Ave NORTHING (FT): 688829 **EASTING (FT):** 641958 TOTAL DEPTH (FT): 24.0 DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone DRILLED BY: Zebra Environmental / Luke Caballero DATE START / END: 7/15/2009 - 7/15/2009 LOGGED BY: Sarah Hav DRILLING DETAILS: Geoprobe **GENERAL NOTE:** 



# NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

PID = PHOTOIONIZATION DETECTOR READING (PPM)
JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER

ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR

IN. = INCHES PLO = PETROLEUM LIKE ODOR
FT. = FEET TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

G	GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 (860) 368-5300							ECT: Williamsburg MGP RI STATE: Brooklyn, New York	PAGE 2 of 2	BORING LOG  WW-SB-08
ELEV. FT.	ОЕРТН ГТ.	TVDE	SAMPLE IN PEN/REC IN./IN.		STRATA	VISUAL		ROJECT NUMBER: 093060  SOIL / BEDI DESCRIPT		
- 10 -	<b>20</b>  	<b>S</b> 5	48/36	9965			CrLO	(20'- 24') WIDELY GRADED SAND WITH Coarse, ~20% gravel, ~5% fines; slight creos wood fragments and fuzzy paper-like material	sote-like	odor, wet, dark gray to black,

End of Boring at 24 feet. Refusal at 24 feet. Grouted

### NOTES:

NA = NOT APPLICABLE NM = NOT MEASURED Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
RIN. = INCHES
RIN. = INCHES
RIN. = INCHES
RIN. = INCHES
RIN. = FEET

**BORING LOG** CLIENT: **National Grid** Williamsburg MGP RI PROJECT: **PAGE** WW-SB-09 CITY/STATE: Brooklyn, New York 1 of 3 **GEI PROJECT NUMBER:** 093060

Consultants **GROUND SURFACE ELEVATION (FT):** 12.28 LOCATION: 50 Kent Ave NORTHING (FT): \_ 688913 EASTING (FT): 641906 TOTAL DEPTH (FT): 55.0 DRILLED BY: Boart Longyear / Fred Lavoie DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Maura MacLeod DATE START / END: 6/25/2009 - 7/13/2009 DRILLING DETAILS: Sonic Coring WATER LEVEL DEPTHS (FT): <u>▼ 5.00 7/13/2009</u> **GENERAL NOTE:** 

	FT.	Ë	,	SAMPLE IN	IFO	_	. ω			
	ELEV. F	ОЕРТН F	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
F		— O	S1	60/NM		••••				(0'- 1') WIDELY GRADED SAND WITH GRAVEL (SW); ~55% sand, fine to coarse, ~40% gravel, fine to coarse, subangular,
ŀ		_				A 1				~5% fines, non plastic; max. size 3, brown, fragments of coal, brick, and glass, hand cleared. FILL.
ļ	- 10	_			2.1				WWSB-09	(1'- 2') CONCRETE; FILL. (2'- 5') WIDELY GRADED SAND (SW); ~85% sand, fine to
-		_							(2-4)	coarse, ~10% gravel, fine to coarse, subangular, ~5% fines, non plastic; max. size 1, brown, fragments of brick and coal, hand cleared. FILL.
ŀ	7	_								
-	<del>-</del>	— 5 —	S2	120/87	2.2			PLO		(5'- 7.3') WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM); ~70% sand, fine to coarse, ~15% gravel, fine to coarse, ~10% fines, non plastic; max. size 2, slight petroleum-like odor, brown, fragments of coal and brick. FILL.
/13	- 5							PLO		(7.3'- 8.4') WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM); ~65% sand, fine to medium, ~20% gravel, fine to
T 3/27	•									coarse, ~10% fines, non plastic; max. size 3, moderate petroleum-like odor, gray brown.
PLATE.GD		_ 10			1805			NLO		(8.4'- 10.5') WIDELY GRADED SAND WITH SILT AND GRAVE (SW-SM); ~65% sand, fine to coarse, ~20% gravel, fine to coarse, ~10% fines, non plastic; max. size 3, strong
ATA TEME		_						NLO	WWSB-09 (11-12)	naphthalene-like odor, gray brown, tar-like staining. (10.5'- 11.8') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; moderate naphthalene-like odor,
IG LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13	- <b>0</b>	_						NLO	, ,	brown gray, sheen. (11.8'- 15') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; slight naphthalene-like odor, brown gray.
RINGS.GF		_								
PREV. BC		— 15 –	S3	120/87	644			NLO		(15'- 17.4') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, low plasticity; moderate naphthalene-like odor, gray.
IRG W	_	_								
AMSBU	– <b>-</b> 5	_						NLO		(17.4'- 18.1') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, low plasticity; moderate naphthalene-like
G WILLI		_						NLO		odor, gray, sheen, tar-like staining. (18.1'- 19.3') WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, fine to coarse, ~5% fines, non plastic; max.
OT SI		<b>— 20</b>				***		NLO		size 1.5, moderate naphthalene-like odor, gray brown, sheen,

NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR

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JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK NA = NOT APPLICABLE

NM = NOT MEASURED

IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-SB-09** CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 3 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë Ë VISUAL IMPACTS STRATA ODOR DEPTH SOIL / BEDROCK ANALYZED **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 20 1297 tar-like staining. NLO (19.3'- 20.6') WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, fine to coarse, ~5% fines, non plastic; max. size 2, slight naphthalene-like odor, brown, sheen. (20.6'- 25') WIDELY GRADED SAND (SW); ~90% sand, fine to -10 coarse, ~5% gravel, fine to coarse, ~5% fines, non plastic; max. size 2, brown. **S4** 60/46 6.8 (25'- 30') WIDELY GRADED SAND WITH CLAY AND GRAVEL (SW-SC); ~80% sand, fine to medium, ~15% gravel, fine to coarse; max. size 1.5, gray. -15 30 60/12 S5 0.1 (30'- 32.5') Bolder. -20 (32.5'- 37.8') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to medium, ~10% fines, low plasticity; gray. 35 **S6** 60/50 104 -25 (37.8'- 40') WIDELY GRADED SAND WITH GRAVEL (SW); ~75% sand, fine to coarse, ~20% gravel, fine to coarse, ~5% fines, non plastic; max. size 2.5, brown, dense, iron oxide bands. (40'- 45') WIDELY GRADED SAND (SW); ~95% sand, fine to **S7** 60/60 642 medium, ~5% fines, non plastic; slight naphthalene-like odor, brown. -30 NLO 592 **NOTES:** PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR CrLO= CREOSOTE LIKE ODOR

REC = RECOVERY LENGTH OF SAMPLE

WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

FOG

PID = PHOTOIONIZATION DETECTOR READING (PPM)
JHS = JAR HEADSPACE PID READING (PPM)

NA = NOT APPLICABLE Q<sub>P</sub> = POCKET PENETROMETER

NM = NOT MEASURED  $S_v = TORVANE PEAK$ 

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York GEI PROJECT NUMBER: 093060

**PAGE** 3 of 3

**WW-SB-09** 

**BORING LOG** 

	O I Collisoritatitis										
	ے ا	;	SAMPLE IN	<b>IFO</b>							
ELEV. FT.	DEPTH FT	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION		
	4.5				***		NLO				
-	— <b>45</b> –	S8	120/78	3159			NLO		(45'- 47.3') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; moderate naphthalene-like odor, brown.		
35 - -	50			2435	****		NLO		(47.3'- 51.4') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; strong naphthalene-like odor, brown, sheen, tar-like staining, lenses of tar-like coating.		
- 40 -	_						NLO	WWSB-09 (53-54)	(51.4'- 54') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to medium, ~10% fines, non plastic; strong naphthalene-like odor, gray brown, sheen, tar-like staining and blebs.		
_	<del>55</del>								(54'- 55') SILT (ML); ~80% fines, medium plasticity, ~20% sand, fine; gray.		

End of Boring at 55 feet. Grouted

# NOTES:

BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (PPM)

PIN = PARTS PER MILLION
NLO = NAPHTHALENE LIKE ODOR
PLO = PETROLEUM LIKE ODOR
TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** CLIENT: **National Grid** Williamsburg MGP RI PROJECT: **PAGE** WW-SB-10 CITY/STATE: Brooklyn, New York 1 of 3 **GEI PROJECT NUMBER:** 093060

**GROUND SURFACE ELEVATION (FT):** 12.02 LOCATION: 50 Kent Ave NORTHING (FT): 688818 EASTING (FT): 641756 TOTAL DEPTH (FT): 55.0 DRILLED BY: Zebra Environmental / Luke Caballero DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Sarah Hay DATE START / END: 6/25/2009 - 7/14/2009 DRILLING DETAILS: Geoprobe WATER LEVEL DEPTHS (FT): <u>₹ 6.10 7/13/2009</u> **GENERAL NOTE:** 

	SAMPLE INFO		IFO	4	ιø					
	ELEV. F	DEPTH F	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
-	10	— <b>0</b> - - -	S1	60/NM	5.6					(0'- 0.3') CONCRETE. (0.3'- 0.7') ASPHALT. (0.7'- 5') WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~25% gravel, fine to coarse, subangular, ~5% fines, non plastic; max. size 2, brown, coal and brick fragments, hand cleared. FILL.
- <u>₹</u>	5	— 5 <sup>-</sup>	<b>S</b> 2	60/24		888			WWSB-10 (2-3)	(5'- 7.7') WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~15% gravel, ~5% fines; max. size 0.5, dry, tan, brick and shale fragments. FILL.
ATE.GDT 3/27/13	-	- - 10			8623			NLO		(7.7'- 10') WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~15% gravel, ~5% fines; max. size 0.5, moderate naphthalene-like odor, wet, tan, wood fragments, tar-like staining and blebs, petroleum-like odor.
ATA TEMPL	-	-	S3	60/50	3350			NLO		(10'- 11.8') WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~15% gravel, ~5% fines; max. size 0.5, moderate naphthalene-like odor, tan, sheen, tar-like blebs, petroleum-like odors.
VG LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13	0	-						NLO		(11.8'- 15') SILTY SAND (SM); ~70% sand, fine to medium, ~30% fines, non plastic fines; moderate naphthalene-like odor, wet, brown.
RG W PREV. BOI	-5	<del></del> 15 - -	S4	60/30						(15'- 20') SILTY SAND (SM); ~70% sand, ~30% fines, non plastic fines; moderate naphthalene-like odor, wet, brown to gray.
G LOG WILLIAMSBUF	~	- - 20			426			NLO		

IN. = INCHES FT. = FEET

NOTES:

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JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK NA = NOT APPLICABLE

NM = NOT MEASURED

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-SB-10** CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 3 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë Ë STRATA VISUAL IMPACTS ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. **S5** 60/53 455 (20'- 23.5') WIDELY GRADED SAND (SW); ~94% sand, fine to medium, ~5% fines, ~1% gravel; slight naphthalene-like odor, wet, NLO -10 (23.5'- 25') SANDY SILT (ML); ~60% fines, ~40% sand, fine to medium; slight naphthalene-like odor, dry, brown. NLO **S6** 36/16 0.0 (25'- 27.4') SILTY SAND (SM); ~70% sand, fine to medium, ~30% fines, non plastic; slight petroleum-like odor, gray. PLO -15 (27.4'- 28') possible bolder. **S7** 24/24 0.0 (28'- 28.9') possible bolder. (28.9'- 29.8') SILTY SAND (SM); ~80% sand, fine to coarse, ~15% fines, non plastic, ~5% gravel, fine; max. size 0.5, brown. 30 (29.8'- 30') possible bolder. 60/0 S8 (30'- 35') no recovery, bolder plugged sampler. -20 35 120/120 435 (35'- 40') SILTY SAND (SM); ~80% sand, fine to coarse, ~15% **S9** fines, non plastic, ~5% gravel, fine; max. size 0.5, brown. -25 40 (40'- 45') WIDELY GRADED SAND WITH SILT (SW-SM); ~80% 173 sand, fine to coarse, ~10% gravel, fine, ~10% fines, non plastic; max. size 0.5, brown. -30

NOTES:

WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

FOG

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PID = PHOTOIONIZATION DETECTOR READING (PPM)
JHS = JAR HEADSPACE PID READING (PPM)

` '

NA = NOT APPLICABLE  $Q_P = POCKET PENETROMETER$ NM = NOT MEASURED  $S_V = TORVANE PEAK$ 

ppm = PARTS PER MILLION

IN. = INCHES FT. = FEET NLO = NAPHTHALENE LIKE ODOR PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York GEI PROJECT NUMBER: 093060

**PAGE** 3 of 3

SOIL / BEDROCK **DESCRIPTION** 

WW-SB-10

**BORING LOG** 

FT.	Т.	;	SAMPLE IN	NFO	4	ιø		
ELEV. F	ОЕРТН FT	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL	ODOR	ANALYZED SAMPLE ID
	<b>— 45</b>				:•‡			
- 35	- -	S10	120/94				NLO	
_	_						NLO	
-	— <b>5</b> 0			9999 2553			NLO	WWSB-10 (49-50)
					••••		NLO	WWSB-10 (51-52)
<b>-40</b> - -	- - -						NLO	(51-52)
	55				<u> </u>		l	

(45'- 47.7') WIDELY GRADED SAND WITH SILT (SW-SM); ~80% sand, fine to coarse, ~10% gravel, fine, ~10% fines, non plastic; max. size 0.5, moderate naphthalene-like odor, brown.

(47.7'- 49') WIDELY GRADED SAND (SW): ~95% sand, fine to coarse, ~5% fines, non plastic; strong naphthalene-like odor, brown, tar-like staining and coating.

(49'- 51') SANDY SILT (ML); ~60% fines, low plasticity, ~40% sand, fine; moderate naphthalene-like odor, gray.

(51'- 51.6') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; moderate naphthalene-like odor,

(51.6'- 55') LEAN CLAY (CL); ~90% fines, medium plasticity, ~10% sand, fine; slight naphthalene-like odor, reddish gray.

End of Boring at 55 feet.

Geoprobe refusal at 26' with Zebra Environmental, boring completed by Boart Longyear using sonic drilling methods. Grouted

### NOTES:

LOG WILLIAMSBURG W PREV, BORINGS GPJ FULTON DATA TEMPLATE GDT 3/27/13

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

NM = NOT MEASURED = TORVANE PEAK IN. = INCHES FT. = FEET

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

MLO = MUSTY LIKE ODOR

CLIENT: **National Grid** Williamsburg MGP RI PROJECT: CITY/STATE: Brooklyn, New York **GEI PROJECT NUMBER:** 093060

**PAGE** 1 of 3

WW-SB-11

**BORING LOG** 

Consultants **GROUND SURFACE ELEVATION (FT):** 11.12 LOCATION: 50 Kent Ave NORTHING (FT): 688995 EASTING (FT): 641799 TOTAL DEPTH (FT): 65.0 DRILLED BY: Boart Longyear / Fred Lavoie DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Maura MacLeod DATE START / END: 6/25/2009 - 7/14/2009 DRILLING DETAILS: Sonic Coring WATER LEVEL DEPTHS (FT): <u>□ 14.00 7/14/2009</u> GENERAL NOTE:

L									
ſ	FT.	FT.	,	SAMPLE IN	NFO	4			
	ELEV. F	DEPTH F	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
-	- <b>10</b>	<b>0</b>  _ _	S1	60/NM	1.0			WWSB-11 (1-2)	(0'- 0.3') WIDELY GRADED SAND WITH GRAVEL (SW); ~55% sand, fine to coarse, ~40% gravel, fine to coarse, ~5% fines, non plastic; max. size 3, brown, coal, brick, and glass fragments, hand cleared. FILL. (0.3'- 1') CONCRETE; FILL. (1'- 5') WIDELY GRADED SAND (SW); ~85% sand, fine to coarse, ~10% gravel, fine to coarse, subangular, ~5% fines, non plastic; max. size 1, brown, coal fragments, hand cleared. FILL.
	- - 5	— <b>5</b> —	S2	120/48	1.8				(5'- 7.9') WIDELY GRADED GRAVEL WITH SAND (GW); ~70% gravel, fine to coarse, ~25% sand, fine to coarse, ~5% fines, non plastic; max. size 3, reddish brown, FILL.
E.GDT 3/27/13	-	_							(7.9'- 9.4') layer of brick. FILL.
ON DATA TEMPLATE	- 0	— 10 —			114				(9.4'- 11') WIDELY GRADED SAND WITH SILT AND GRAVEL (SW); ~65% sand, fine to coarse, ~25% gravel, fine to coarse, ~10% fines, non plastic; max. size 2, black, wood pieces, odor possibly related to wood preservative. FILL.  (11'- 13.3') CONCRETE.
DRINGS.GPJ FULTO	<u>-</u>	_ _ 15			•••		PLO		(13.3'- 15') WIDELY GRADED GRAVEL WITH SAND (GW); ~70% gravel, fine to coarse, ~25% sand, fine to coarse, ~5% fines, non plastic; max. size 2.5, slight petroleum-like odor, wet, gray brown.
RG W PREV. BC	- - <b>-</b> 5	_	S3	120/83	150	**************************************	NLO		(15'- 16.2') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; slight naphthalene-like odor, brown.  (16.2'- 17.4') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; brown.
NG LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT	-	_ _ 20							(16.8'- 20.1') WIDELY GRADED SAND WITH SILT (SW-SM); ~80% sand, fine to medium, ~10% gravel, fine to coarse, ~10% fines, non plastic; max. size 1, gray, layer of wood fragments.

### NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

IN. = INCHES FT. = FEET

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR MLO = MUSTY LIKE ODOR

NA = NOT APPLICABLE

NM = NOT MEASURED

			GEI C	Consultants	. Inc.	П	CLIENT:	National Grid		BORING LOG					
15		$\mathbb{C}$	455 W	Vinding Bro	ok Road	t l	PROJECT:	Williamsburg MGP RI	PAGE						
G	FI		(860)	368-5300	00000	1	CITY/STATE:	Brooklyn, New York	2 of 3	WW-SB-11					
)	<u> </u>	Consul	tants SAMPLE IN	VIEO.	Т		GEI PROJECT	NUMBER:093060							
Ę	Ę	,	SAIVIPLE IN	NFO	<b> </b> ≱	œ									
ELEV.	DEPTH	TYPE and	PEN/REC	PID	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION							
	DE	NO.	IN./IN.	(PPM)	ြ	J									
-	<u> </u>			34.9	* * ! b			(20.1'- 21.4') WIDELY GRADED SAND WITH GRAVEL (SW); ~75%							
<b></b> -10	_							sand, fine to medium, ~20% gravel							
-10					0000			plastic; max. size 1, gray brown. (21.4'- 25') WIDELY GRADED SAN	ND (SW)	); ~95% sand, fine to					
-	_							medium, ~5% fines, non plastic; lig	ht browr	1.					
-	_														
-	25	S4	120/101	0.9	****		1	(25'- 27.3') WIDELY GRADED SAN							
— -15	_					LO		medium, ~5% fines, non plastic; sli	ght petro	bleum-like odor, light brown.					
						LO									
					***		-	(27.3'- 30.3') WIDELY GRADED S	AND (S\	V); ~95% sand, fine to					
-	_							coarse, ~5% fines, non plastic; slig							
	_				P	LO									
					****										
-	<del></del> 30				****		-	(30.3'- 35') WIDELY GRADED SAND (SW); ~90% sand, fine to							
<b></b>	_							~5% gravel, fine, ~5% fines, non plastic; max. size 0.5, slight							
	_							petroleum-like odor.							
,					P. P.	LO									
	_														
) j	_														
i	25														
	<del></del> 35	S5	120/103	2.5			1	(35'- 36.5') WIDELY GRADED SAN ~5% gravel, ~5% fines; slight petro							
25	_				P	LO		75 /6 graver, 75 /6 lines, slight petro	icui i -iiki	e odor, wer, orange brown.					
	_						1	(36.5'- 39.4') WIDELY GRADED S.							
)								(SW-SM); ~75% sand, fine to coars ~10% fines; max. size 2, gray with	red, den	se.					
<u>}</u>	_														
<u> </u>	_														
	<b>—</b> 40				****			(39.4'- 40.1') WIDELY GRADED S							
-	40						1	coarse, ~5% gravel, ~5% fines; we (40.1'- 42.3') WIDELY GRADED S	ÀND (Š\	V); ~95% sand, fine to					
-30	_				l∷∷ N	LO		medium, ~5% fines; slight naphthal	ene-like	odor, gray brown.					
	_			405											
				125	****		1	(42.3'- 52.2') WIDELY GRADED S							
-					ľ∷N	LO		medium, ~5% fines; moderate napl	ımaiene	-like odor, gray brown.					
2	_														
NOTE	S·														
	PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR CrLO= CREOSOTE LIKE ODOR														
REC = PID =	RECO\ PHOTO	/ERY LEI DIONIZAT	NGTH OF SAN	MPLE OR READIN			IN. = INCH FT. = FEE	HES PLO = PETROLEUM LIKE T TLO = TAR LIKE ODOR	ODOR	OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR					
JHS =	JAR HE	EADSPA	CE PID READ	ING (PPM)				CLO = CHEMICAL LIKE O	DOR	MLO = MUSTY LIKE ODOR					

ENVIRONMENTAL BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (PPM)
JHS = JAR HEADSPACE PID READING (PPM)

 $Q_P$  = POCKET PENETROMETER  $S_V$  = TORVANE PEAK

NA = NOT APPLICABLE NM = NOT MEASURED

PLO = PETROLEUM LIKE ODOR
TLO = TAR LIKE ODOR
CLO = CHEMICAL LIKE ODOR
ALO = ASPHALT LIKE ODOR

CLIENT: **BORING LOG** GEI Consultants, Inc. **National Grid** 455 Winding Brook Road Glastonbury, CT 06033 PROJECT: Williamsburg MGP RI **PAGE** WW-SB-11 CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 3 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë Ë STRATA ODOR DEPTH SOIL / BEDROCK **ANALYZED** TYPE ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 45 S6 120/107 -35 NLO 50 546 WWSB-11 (50-51)40 (52.2'- 55') SANDY SILT (ML); ~70% fines, low plasticity, ~30% sand, fine; slight naphthalene-like odor, brown. NLO 55 120/104 S7 0.2 (55'- 60') SILTY SAND (SM); ~85% sand, fine to medium, ~15% fines, non plastic; gray. -45 60 0.3 (60'- 63.7') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; brown. -50 WWSB-11 (63-64)(63.7'- 65') LEAN CLAY (CL); ~90% fines, medium plasticity, ~10% sand, fine; reddish gray. End of Boring at 65 feet. Grouted NOTES: PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR CrLO= CREOSOTE LIKE ODOR REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM) IN. = INCHES FT. = FEET OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR JHS = JAR HEADSPACE PID READING (PPM) CLO = CHEMICAL LIKE ODOR MLO = MUSTY LIKE ODOR ALO = ASPHALT LIKE ODOR

Q<sub>P</sub> = POCKET PENETROMETER

= TORVANE PEAK

BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

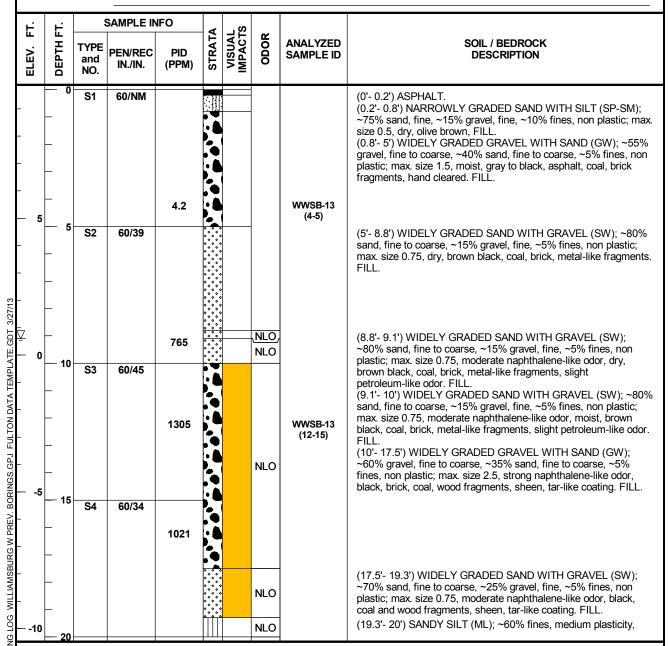
NA = NOT APPLICABLE NM = NOT MEASURED

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York GEI PROJECT NUMBER: 093060

**PAGE WW-SB-13** 1 of 3

**BORING LOG** 

**GROUND SURFACE ELEVATION (FT):** 9.70 LOCATION: North 11th Street NORTHING (FT): 688891 **EASTING (FT):** 641611 TOTAL DEPTH (FT): 45.0 DRILLED BY: Zebra Environmental / Quincy Brandt DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Maura MacLeod DATE START / END: 8/21/2009 - 8/24/2009 DRILLING DETAILS: Geoprobe **GENERAL NOTE:** 



# **NOTES:**

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

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JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER

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CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR MLO = MUSTY LIKE ODOR

NA = NOT APPLICABLE NM = NOT MEASURED = TORVANE PEAK

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE** WW-SB-13 CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 3 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 20 **S5** 60/57 123 ~40% sand, fine; slight naphthalene-like odor, moist, black, wood NLO fragments. FILL. (20'- 21.2') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; slight naphthalene-like odor, wet, (21.2'- 25') WIDELY GRADED SAND (SW): ~95% sand, fine to coarse, ~5% fines, non plastic; slight naphthalene-like odor, NLO brown. -15 25 **S6** 60/47 84.1 (25'- 28') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; slight naphthalene-like odor, wet, brown. NLO (28'- 30') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; dry, brown, silty seams. -20 30 60/51 (30'- 30.5') WIDELY GRADED SAND (SW); ~95% sand, fine to **S7** medium, ~5% fines, non plastic; wet, light brown, loose. (30.5'- 31.4') SILTY SAND (SM); ~70% sand, fine to medium, ~30% fines, low plasticity; moist, brown, dense. (31.4'- 35') WIDELY GRADED SAND (SW); ~95% sand, fine to 27.2 medium, ~5% fines, non plastic; wet, light brown, loose. -25 35 S8 60/46 (35'- 38.8') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; slight naphthalene-like odor, moist, light brown. NLO **WWSB-13** 53.7 (37-38)(38.8'- 40') LEAN CLAY (CL); ~90% fines, medium plasticity, ~10% sand, fine; reddish gray. -30 40 S9 60/60 129 (40'- 45') LEAN CLAY (CL); ~90% fines, medium plasticity, ~10% sand, fine; slight naphthalene-like odor, reddish gray. NLO

#### **NOTES:**

BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

WILLIAMSBURG W PREV.

LOG

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

= TORVANE PEAK NM = NOT MEASURED

ppm = PARTS PER MILLION

NLO = NAPHTHALENE LIKE ODOR IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 **BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** WW-SB-13 CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 3 **GEI PROJECT NUMBER:** 093060 Consultants **SAMPLE INFO** Ë VISUAL Ë STRATA ODOR DEPTH **ANALYZED** SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and (PPM) IN./IN. NO. -35 NLO

End of Boring at 45 feet. Grouted

NOTES:

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK NA = NOT APPLICABLE

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CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR MLO = MUSTY LIKE ODOR

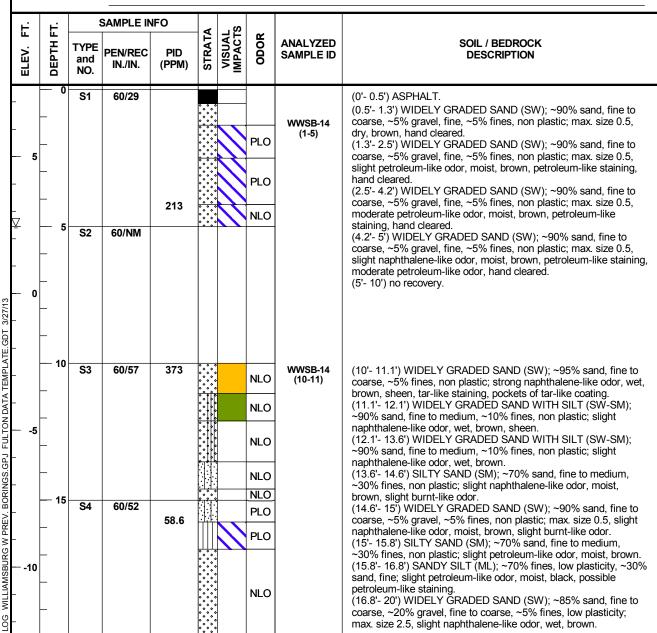
BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York 093060 GEI PROJECT NUMBER:

**PAGE** WW-SB-14 1 of 3

**BORING LOG** 

**GROUND SURFACE ELEVATION (FT):** 7.45 LOCATION: North 12th Street NORTHING (FT): 689182 **EASTING (FT):** 641609 TOTAL DEPTH (FT): 45.0 DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone DRILLED BY: Zebra Environmental / Quincy Brandt LOGGED BY: Maura MacLeod DATE START / END: 9/11/2009 - 9/14/2009 DRILLING DETAILS: Geoprobe **GENERAL NOTE:** 



# **NOTES:**

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

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Q<sub>P</sub> = POCKET PENETROMETER = TORVANE PEAK

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TLO = TAR LIKE ODOR CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE** WW-SB-14 CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 3 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë Ë VISUAL IMPACTS STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK TYPE ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. **S5** 60/56 40.1 (20'- 21.5') WIDELY GRADED SAND WITH SILT (SW-SM); ~85% sand, fine to coarse, ~10% fines, low plasticity, ~5% gravel, **PLO** fine to coarse; max. size 1.5, slight petroleum-like odor, moist, brown, seams of gray petroleum-like staining. (21.5'- 30') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; slight naphthalene-like odor, -15 reddish brown, slight burnt-like odor, color change to brown at 24.2 ft. **S6** 60/46 32.0 NLO -20 30 60/42 (30'- 35') WIDELY GRADED SAND (SW); ~90% sand, fine to **S7** 8.8 medium, ~5% gravel, fine, subrounded, ~5% fines, non plastic; max. size 0.75, slight naphthalene-like odor, wet, brown. -25 NLO 35 S8 60/56 (35'- 40') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; slight naphthalene-like odor, wet, 3.1 brown, lenses of silty sand from 36.6 to 36.7 and 27.2 to 27.3 ft. -30 NLO S9 60/32 1.2 (40'- 45') WIDELY GRADED SAND (SW); ~90% sand, fine to medium, ~5% gravel, fine, subangular, ~5% fines, non plastic; slight naphthalene-like odor, wet, brown, sight sweet/fruit-like odor. NLO -35 **NOTES:** PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR CrLO= CREOSOTE LIKE ODOR IN. = INCHES FT. = FEET OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR REC = RECOVERY LENGTH OF SAMPLE PLO = PETROLEUM LIKE ODOR PID = PHOTOIONIZATION DETECTOR READING (PPM) TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR

ALO = ASPHALT LIKE ODOR

MLO = MUSTY LIKE ODOR

JHS = JAR HEADSPACE PID READING (PPM)

WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/1

GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 **BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** WW-SB-14 CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 3 **GEI PROJECT NUMBER:** 093060 Consultants **SAMPLE INFO** Ë VISUAL Ë STRATA ODOR DEPTH **ANALYZED** SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and (PPM) IN./IN. NO. NLO

End of Boring at 45 feet. Refusal at 45 feet. Grouted

### NOTES:

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK NA = NOT APPLICABLE

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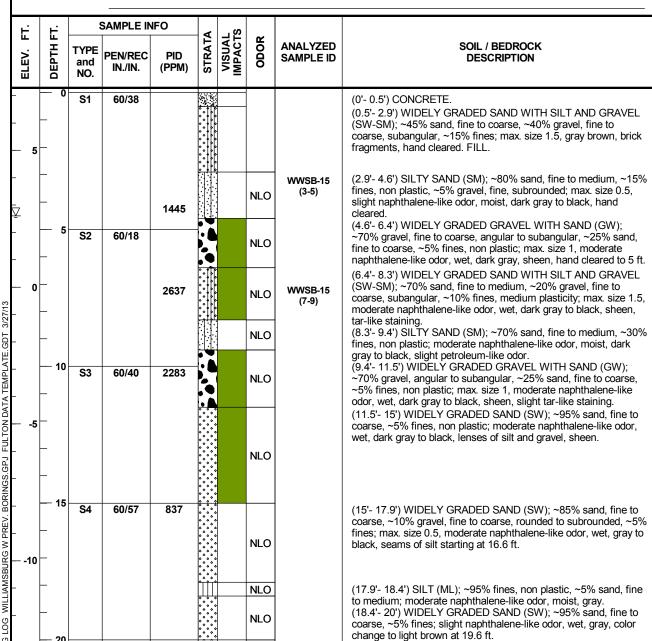
CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York GEI PROJECT NUMBER: 093060

**PAGE** 1 of 3

**WW-SB-15** 

**BORING LOG** 

Consultants **GROUND SURFACE ELEVATION (FT):** 7.11 LOCATION: North 12th Street NORTHING (FT): 689278 **EASTING (FT):** 641493 TOTAL DEPTH (FT): 53.0 DRILLED BY: Zebra Environmental / Quincy Brandt DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone DATE START / END: 9/17/2009 - 9/18/2009 LOGGED BY: Amy Malsbary **DRILLING DETAILS:** Geoprobe **GENERAL NOTE:** 



#### **NOTES:**

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CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR MLO = MUSTY LIKE ODOR

NA = NOT APPLICABLE Q<sub>P</sub> = POCKET PENETROMETER

NM = NOT MEASURED

= TORVANE PEAK

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE** WW-SB-15 CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 3 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. **S5** 60/57 (20'- 21') WIDELY GRADED SAND (SW); ~95% sand, medium to coarse, ~5% fines, non plastic; moist, light brown, loose. (21'- 22.4') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; moist, light brown, loose. -15 156 (22.4'- 23.3') WIDELY GRADED SAND WITH SILT (SW-SM); NLO ~90% sand, fine to coarse, ~10% fines, non plastic; slight naphthalene-like odor, moist, light brown. NLO (23.3'- 24.4') WIDELY GRADED SAND WITH SILT (SW-SM); ~80% sand, fine to coarse, ~20% fines, non plastic; slight NLO naphthalene-like odor, moist, light brown. (24.4'- 25') WIDELY GRADED SAND (SW); ~95% sand, fine to **S6** 60/36 coarse, ~5% fines, non plastic; slight naphthalene-like odor, moist, light brown. (25'- 30') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; slight naphthalene-like odor, moist, -20 light brown to gray. NLO 34.0 30 60/42 **S7** (30'- 33.5') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; slight naphthalene-like odor, wet, light brown. NLO -25 152 PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/1 (33.5'- 35') WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM); ~65% sand, fine to coarse, ~25% gravel, fine to coarse, subangular to subrounded, ~10% fines; max. size 1.5, NLO slight naphthalene-like odor, moist, light brown. 35 60/33 S8 (35'- 38.3') WIDELY GRADED SAND WITH SILT (SW-SM); ~80% sand, fine to coarse, ~20% fines, non plastic; slight 759 naphthalene-like odor, brown, dense. NLO -30 (38.3'- 40') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% gravel, fine to coarse, subangular; max. size 1, brown, loose. 40 S9 60/39 65.5 (40'- 41.3') WIDELY GRADED SAND (SW); ~95% sand, medium to coarse, ~5% fines; moist, brown. WILLIAMSBURG W (41.3'- 45') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines; moist, brown, lenses of silty sand. -35

# **NOTES:**

LOG

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

NA = NOT APPLICABLE Q<sub>P</sub> = POCKET PENETROMETER = TORVANE PEAK

NM = NOT MEASURED

ppm = PARTS PER MILLION

NLO = NAPHTHALENE LIKE ODOR IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York GEI PROJECT NUMBER: 093060

**PAGE** 3 of 3

WW-SB-15

**BORING LOG** 

FT.	Ę	(	SAMPLE IN	IFO	4	ļχ						
ELEV. F	DEPTH F	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION			
- - 40 -	— <b>45</b> — —	\$10	60/39	4.2					(45'- 53') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines; moist, brown.			
- - 45	— <b>50</b> —	S11	36/45	11.5					Find of Davis and 50 food			

End of Boring at 53 feet. Refusal at 53 feet. Grouted

### NOTES:

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Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

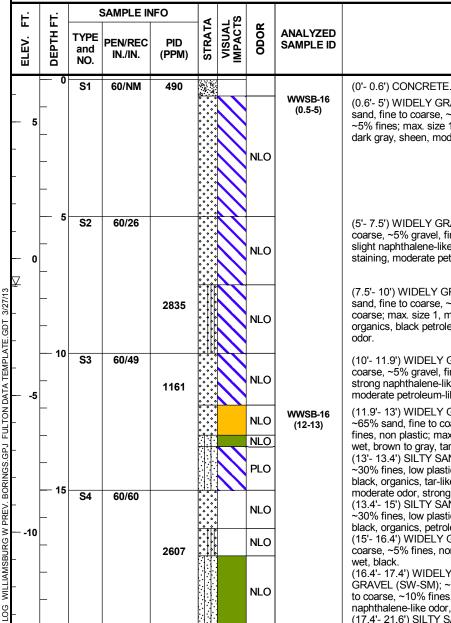
CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York 093060 GEI PROJECT NUMBER:

**PAGE WW-SB-16** 1 of 3

**BORING LOG** 

Consultants **GROUND SURFACE ELEVATION (FT):** 6.54 LOCATION: North 12th Street NORTHING (FT): 689339 **EASTING (FT):** 641416 TOTAL DEPTH (FT): 54.0 DRILLED BY: Zebra Environmental / Quincy Brandt DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Maura MacLeod DATE START / END: 9/22/2009 - 9/28/2009 DRILLING DETAILS: Geoprobe **GENERAL NOTE:** 



(0.6'- 5') WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~25% gravel, fine to coarse, subangular, ~5% fines; max. size 1, moderate naphthalene-like odor, brown to dark gray, sheen, moderate petroleum-like odor, hand cleared.

SOIL / BEDROCK

DESCRIPTION

(5'- 7.5') WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, fine to coarse, ~5% fines; max. size 1.5, slight naphthalene-like odor, moist, black, black petroleum-like staining, moderate petroleum-like odor.

(7.5'- 10') WIDELY GRADED SAND WITH SILT (SW-SM); ~85% sand, fine to coarse, ~10% fines, non plastic, ~5% gravel, fine to coarse; max. size 1, moderate naphthalene-like odor, wet, brown, organics, black petroleum-like staining, moderate petroleum-like

(10'- 11.9') WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, fine, ~5% fines, non plastic; max. size 0.75, strong naphthalene-like odor, moist, black, petroleum-like staining, moderate petroleum-like odor.

(11.9'- 13') WIDELY GRADED SAND WITH GRAVEL (SW); ~65% sand, fine to coarse, ~30% gravel, fine to coarse, ~5% fines, non plastic; max. size 2.5, strong naphthalene-like odor, wet, brown to gray, tar-like blebs, strong organic-like odor. (13'- 13.4') SILTY SAND (SM); ~70% sand, fine to medium, ~30% fines, low plasticity; slight naphthalene-like odor, moist, black, organics, tar-like staining, petroleum-like staining and moderate odor, strong spicy-like odor.

(13.4'- 15') SILTY SAND (SM); ~70% sand, fine to medium, ~30% fines, low plasticity; moderate petroleum-like odor, moist, black, organics, petroleum-like staining, strong spicy odor. (15'- 16.4') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; moderate naphthalene-like odor,

(16.4'- 17.4') WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM); ~70% sand, fine to coarse, ~20% gravel, fine

to coarse, ~10% fines, non plastic; max. size 1, moderate naphthalene-like odor, wet, black, organics, strong spicy odor. (17.4'- 21.6') SILTY SAND (SM); ~70% sand, fine to medium,

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IN. = INCHES FT. = FEET

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NLO = NAPHTHALENE LIKE ODOR

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

MLO = MUSTY LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-SB-16** CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 3 093060 GEI PROJECT NUMBER: Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. **S5** 60/61 ~30% fines, low plasticity; moderate naphthalene-like odor, moist, black, organics, tar-like staining, moderate petroleum-like staining NLO 2286 -15 (21.6'- 21.8') SILT (ML). (21.8'- 24') WIDELY GRADED SAND WITH SILT (SW-SM); ~85% sand, fine to coarse, ~10% fines, low plasticity, ~5% gravel, NLO fine; max. size 0.5, slight naphthalene-like odor, reddish brown, gray varves of silty sand, petroleum-like staining, slight petroleum-like odor, spicy-like odor. (24'- 24.8') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; moist, brown, slight spicy odor. NLO (24.8'- 25') WIDELY GRADED SAND WITH SILT (SW-SM); **S6** 60/42 ~85% sand, fine to coarse, ~10% fines, ~5% gravel, fine; max. size 0.5, slight naphthalene-like odor, reddish brown, gray varves of silty sand, petroleum-like staining, slight petroleum-like odor, -20 spicy-like odor. (25'- 27.7') WIDELY GRADED SAND (SW); ~85% sand, fine to coarse, ~10% gravel, fine to coarse, ~5% fines, non plastic; max. size 2, brown, moderate spicy odor. (27.7'- 30') SILTY SAND (SW-SM); ~70% sand, fine to coarse, ~30% fines, low plasticity; moist, light brown, dense, moderate 28.5 spicy odor. 30 60/52 **S7** (30'- 35') WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, fine to coarse, ~5% fines, low plasticity; max. size 1.5, moist, brown, lens of silty sand, slight spicy odor. -25 28.7 S8 48/NM (35'- 47') WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, fine to coarse, ~5% fines, non plastic; max. size 1.5, slight naphthalene-like odor, wet, brown. -30 7.0 48/53 **S9** NLO 40 -35 **S10** 48/56 **NOTES:** PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR CrLO= CREOSOTE LIKE ODOR IN. = INCHES FT. = FEET

REC = RECOVERY LENGTH OF SAMPLE

WILLIAMSBURG W PREV, BORINGS GPJ FULTON DATA TEMPLATE.GDT 3/27/13

LOG

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= TORVANE PEAK = NOT MEASURED

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OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

MLO = MUSTY LIKE ODOR

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York **GEI PROJECT NUMBER:** 093060

**PAGE** 3 of 3

SOIL / BEDROCK

**DESCRIPTION** 

WW-SB-16

**BORING LOG** 

FT.	Ĥ.	;	SAMPLE IN	NFO	4	, თ		
ELEV. F	ОЕРТН FT.	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL	ODOR	ANALYZED SAMPLE ID
- <b>-40</b>	— 45 –			18.7			NLO	
-	_	S11	48/45	545			NLO	
	_						NLO	
-							NLO	
-	— <b>5</b> 0						NLO	
<b>-45</b> -	_	S12	36/48	29.3			NLO	
_								

(47'- 48.7') SILTY SAND (SM); ~70% sand, fine to coarse, ~30% fines, low plasticity; slight naphthalene-like odor, moist, brown, slight petroleum and spicy-like odor.

(48.7'- 49.3') WIDELY GRADED SAND WITH SILT (SW-SM);

~90% sand, fine to coarse, ~10% fines, non plastic; slight naphthalene-like odor, moist, brown, slight spicy-like odor. (49.3'- 49.8') SILTY SAND (SM); ~70% sand, fine to coarse, ~30% fines, low plasticity; slight naphthalene-like odor, moist, brown, slight spicy-like odor. (49.8'- 51') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to coarse, ~10% fines, non plastic; slight

naphthalene-like odor, moist, brown, slight spicy-like odor. (51'- 54') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; slight naphthalene-like odor, brown.

End of Boring at 54 feet. Refusal at 54 feet. Grouted

### NOTES:

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CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR MLO = MUSTY LIKE ODOR

LOG WILLIAMSBURG W PREV. BORINGS GPJ FULTON DATA TEMPLATE GDT 3/27/13

**BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** WW-SB-17 CITY/STATE: Brooklyn, New York 1 of 3 GEI PROJECT NUMBER: 093060

**GROUND SURFACE ELEVATION (FT):** 14.77 LOCATION: Kent Ave NORTHING (FT): 688591 **EASTING (FT):** 641925 TOTAL DEPTH (FT): 48.0 DRILLED BY: Zebra Environmental / Luke Caballero DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Maura MacLeod DATE START / END: 8/12/2009 - 8/13/2009 DRILLING DETAILS: Geoprobe **GENERAL NOTE:** 

**SAMPLE INFO** VISUAL IMPACTS ᇤ ᇤ STRATA ODOR DEPTH **ANALYZED** SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID** DESCRIPTION and (PPM) IN./IN. NO. **S1** 60/NM 0.0 (0'- 0.5') CONCRETE. (0.5'- 5') NARROWLY GRADED SAND (SP); ~95% sand, fine to medium, ~5% fines, non plastic; dry, brown, hand cleared. FILL. **WWSB-17** (2-4)10 5 S2 60/56 0.0 (5'- 7.3') NARROWLY GRADED SAND (SP); ~95% sand, fine to medium, ~5% fines, non plastic; brown, wet at 6 ft. FILL. (7.3'- 8.7') NARROWLY GRADED SAND (SP); ~95% sand, fine GDT 3/27/13 to medium, ~5% fines, non plastic; wet, gray, iron oxide mottling. FILL. (8.7'- 10') WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, fine, subangular, ~5% fines, non plastic; max. BORINGS.GPJ FULTON DATA TEMPLATE. size 0.5, wet, orange brown to gray, FILL. 5 10 **S3** 60/60 (10'- 12') NARROWLY GRADED SAND (SP); ~95% sand, fine to medium, ~5% fines, non plastic; dry, brown, FILL. (12'- 16.6') WIDELY GRADED SAND (SW); ~85% sand, fine to coarse, ~10% gravel, fine to coarse, subangular, ~5% fines, non plastic; max. size 1, wet, brown to gray brown, lens of cobble from 13.2 to 13.4 ft FILL 0 24/51 **S4** 0.1 WILLIAMSBURG W PREV. (16.6'- 16.8') WIDELY GRADED GRAVEL WITH SAND (GW); S4B 36/0 ~70% gravel, fine to coarse, subangular, ~25% sand, fine to medium, ~5% fines, non plastic; max. size 1.5, wet, reddish brown, FILL. (16.8'- 17') WIDELY GRADED SAND WITH SILT (SW-SM); ~80% sand, fine to coarse, ~10% gravel, fine, subangular, ~10% fines, non plastic; max. size 0.5, wet, dark gray, FILL. (17'- 20') no recovery. FILL.

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**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE** WW-SB-17 CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 3 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 20 **S5** 60/60 4.7 (20'- 20.8') NARROWLY GRADED SAND (SP); ~90% sand, fine to medium, ~5% gravel, fine, subangular, ~5% fines, non plastic; max. size 0.5, moist, light brown, FILL. (20.8'- 21.1') WIDELY GRADED GRAVEL WITH SAND (GW); ~75% gravel, fine to coarse, subangular, ~20% sand, fine to coarse, ~5% fines, non plastic; max. size 1.25, gray, possible cobble fragments. FILL. (21.1'- 25') WIDELY GRADED SAND WITH SILT (SW-SM); ~85% sand, fine to coarse, ~10% fines, low plasticity, ~5% gravel, fine, subangular; max. size 0.75, moist, dark gray, cinders, brick, coal fragments. FILL. -10 25 **S6** 60/44 1099 (25'- 28.9') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; moderate naphthalene-like odor, brown to black, moderate sheen. NLO (28.9'- 30') WIDELY GRADED SAND (SW); ~95% sand, fine to NLO medium. ~5% fines, non plastic; moderate naphthalene-like odor. -15 brown to black, moderate tar-like staining, 30 S7 60/58 8326 (30'- 33') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; moderate naphthalene-like odor, wet, dark brown, sheen, tar-like staining, lenses of tar-like coating. NLO **WWSB-17** (33'- 35') WIDELY GRADED SAND (SW); ~95% sand, fine to (32-33)coarse, ~5% fines, non plastic; slight naphthalene-like odor, wet, NLO dark brown. -20 35 S8 60/48 (35'- 38.6') WIDELY GRADED SAND (SW); ~95% sand, fine to 82 medium, ~5% fines, non plastic; slight naphthalene-like odor, moist, brown. NLO (38.6'- 40') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; moist, brown. -25 40 S9 60/58 166 (40'- 43.4') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; slight naphthalene-like odor, moist, brown. NLO (43.4'- 45') NARROWLY GRADED SAND (SP); ~95% sand, fine, NLO ~5% fines, non plastic; slight naphthalene-like odor, moist, brown

IN. = INCHES FT. = FEET

# **NOTES:**

BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

WILLIAMSBURG W PREV.

LOG

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GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 **BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** WW-SB-17 CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 3 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS Ë STRATA ODOR DEPTH SOIL / BEDROCK **ANALYZED** TYPE ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. -30 NLO 45 (45'- 46.8') SANDY SILT (ML); ~65% fines, low plasticity, slow dilatancy, ~35% sand, fine; slight naphthalene-like odor, wet, S10 36/57 385 **WWSB-17** (45-46)NLO grayish brown, lenses of silty sand.

> medium, ~5% fines, non plastic; wet, brown, lens of sandy silt from 47.2 to 47.4 ft. End of Boring at 48 feet. Refusal at 48 feet. Grouted

(46.8'- 48') WIDELY GRADED SAND (SW); ~95% sand, fine to

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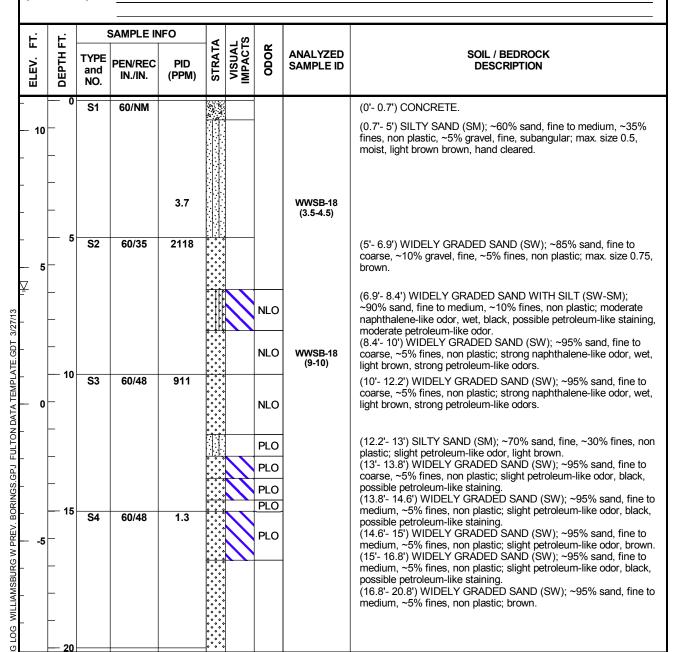
CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York 1 of 3 GEI PROJECT NUMBER: 093060

**PAGE WW-SB-18** 

**BORING LOG** 

Consultants **GROUND SURFACE ELEVATION (FT):** 11.09 LOCATION: Kent Ave NORTHING (FT): 688861 **EASTING (FT):** 642171 TOTAL DEPTH (FT): 55.0 DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone DRILLED BY: Zebra Environmental / Luke Caballero DATE START / END: 7/27/2009 - 8/7/2009 LOGGED BY: Kari Weber DRILLING DETAILS: Geoprobe **GENERAL NOTE:** 



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**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-SB-18** CITY/STATE: (860) 368-5300 Brooklyn, New York 2 of 3 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 20 **S5** 60/50 (20.8'- 21.7') WIDELY GRADED SAND (SW); ~95% sand, fine to -10 NLO coarse, ~5% fines, non plastic; slight naphthalene-like odor, moist, brown, sheen, pockets of tar-like staining. 717 NLO (21.7'- 22.9') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; moderate naphthalene-like odor, moist, brown, sheen, pockets of tar-like staining. (22.9'- 23.9') SANDY SILT (ML); ~55% fines, low plasticity, ~45% NLO sand, fine; slight naphthalene-like odor, light brown. (23.9'- 25') SILTY SAND (SM); ~60% sand, fine to medium, NLO ~40% fines, non plastic; slight naphthalene-like odor, light brown, 25 **S6** 60/42 slight petroleum-like odor. NLO (25'- 25.7') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; moderate naphthalene-like odor, -15 132 moist, brown, sheen. NLO (25.7'- 28.2') SANDY SILT (ML); ~55% fines, low plasticity, ~45% sand, fine; slight naphthalene-like odor, light brown, slight petroleum-like odor. (28.2'- 29.2') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; moist, brown, burnt-like odor. (29.2'- 30') SANDY SILT (ML); ~55% fines, low plasticity, ~45% PLO sand, fine; slight petroleum-like odor, light brown, cobble from 30 60/57 **S7** 29.9 to 30 ft. NLO (30'- 30.8') WIDELY GRADED SAND (SW); ~95% sand, fine to -20 medium, ~5% fines, non plastic; slight naphthalene-like odor, wet, brown, loose. (30.8'- 35') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; slight naphthalene-like odor, moist, brown NLO 439 35 (35'- 38.1') WIDELY GRADED SAND (SW); ~95% sand, fine to 60/50 419 S8 coarse, ~5% fines, non plastic; slight naphthalene-like odor, wet, brown, loose. -25 NLO (38.1'- 40') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; slight naphthalene-like odor, moist, NLO brown. 40 S9 60/NM 18.7 (40'- 45') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; moist, brown. -30 **NOTES:** 

ppm = PARTS PER MILLION

IN. = INCHES FT. = FEET

PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

WILLIAMSBURG W

LOG

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

NA = NOT APPLICABLE Q<sub>P</sub> = POCKET PENETROMETER NM = NOT MEASURED

= TORVANE PEAK

NLO = NAPHTHALENE LIKE ODOR

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York GEI PROJECT NUMBER: 093060

**PAGE** 3 of 3

SOIL / BEDROCK **DESCRIPTION** 

WW-SB-18

**BORING LOG** 

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ELEV. F	DEPTH FT	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL	NOGO	ANALYZED SAMPLE ID
	<b>— 45</b>				***			
- 35 - -		S10	60/56	102			NLO	
_							NLO	
_	— <b>50</b>	S11	60/59	5.9			NLO	
<b>-40</b> -	_						NLO	WWSB-18 (51-53)
-							NLO	
_	<del>55</del>						NLO	
	33							

(45'- 48.4') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; slight naphthalene-like odor, moist, brown, slight petroleum-like odor.

(48.4'- 50') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; slight naphthalene-like odor, brown, slight petroleum-like odor.

(50'- 50.9') SANDY SILT (ML); ~60% fines, low plasticity, ~40% sand, fine; slight naphthalene-like odor, moist, brown, slight petroleum-like odor.

(50.9'- 52.9') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; slight naphthalene-like odor, moist, brown, slight petroleum-like odor.

(52.9'- 53.8') SILTY SAND (ML); ~60% fines, low plasticity, ~40% sand, fine; slight naphthalene-like odor, moist, brown, slight petroleum-like odor, sand lens from 53.7 to 53.8 ft. (53.8'- 55') LEAN CLAY (CL); ~90% fines, medium plasticity, ~10% sand, fine; slight naphthalene-like odor, reddish gray, sand lens from 54.7 to 54.9 ft.

End of Boring at 55 feet. Grouted

### NOTES:

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NM = NOT MEASURED = TORVANE PEAK IN. = INCHES FT. = FEET

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CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR MLO = MUSTY LIKE ODOR

LOG WILLIAMSBURG W PREV, BORINGS GPJ FULTON DATA TEMPLATE GDT 3/27/13

 CLIENT:
 National Grid
 BORING LOG

 PROJECT:
 Williamsburg MGP RI
 PAGE

 CITY/STATE:
 Brooklyn, New York
 1 of 3

 GEI PROJECT NUMBER:
 093060

Consultants **GROUND SURFACE ELEVATION (FT):** 16.10 LOCATION: 35 Kent Ave NORTHING (FT): 688521 **EASTING (FT):** 642165 TOTAL DEPTH (FT): 55.0 DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone DRILLED BY: Boart Longyear / Fred Lavoie LOGGED BY: Maura MacLeod DATE START / END: 7/28/2009 - 7/30/2009 DRILLING DETAILS: Sonic Coring WATER LEVEL DEPTHS (FT): <u>₹ 15.00</u> 7/13/2009 **GENERAL NOTE:** 

**SAMPLE INFO** VISUAL IMPACTS ᇤ ᇤ STRATA ODOR DEPTH **ANALYZED** SOIL / BEDROCK **TYPE** ELEV. PEN/REC **SAMPLE ID** DESCRIPTION and (PPM) IN./IN. NO. **S1** 60/NM (0'- 0.7') CONCRETE. (0.7'- 5') WIDELY GRADED SAND (SW); ~90% sand, fine to 15 coarse, ~5% gravel, fine, ~5% fines, non plastic; max. size 0.5, brown, brick and coal fragments, hand cleared. FILL. **WWSB-19** (2-3)**WWSB-19** 23 5 (4-5)S2 120/50 (5'- 10') rock in sample casing, no recovery. 10 10 (10'- 13') CONCRETE; ~95% sand, fine to coarse, ~5% fines; ~70% concrete fragments, max. size 3, light gray, loose, concrete-like odor. FILL. (13'- 15') SILTY SAND (SM); ~75% sand, fine to coarse, ~15% fines, ~10% gravel, fine to coarse, angular; max. size 1, slight PLO petroleum-like odor, moist, brown to grayish brown, brick and 119 **WWSB-19** concrete fragments, lenses of silt. FILL. (14-15)120/106 (15'- 16.3') WIDELY GRADED GRAVEL WITH SAND (GW); **S3 PLO** ~60% gravel, fine to coarse, ~35% sand, fine to coarse, ~5% fines, non plastic; max. size 3, moderate petroleum-like odor, wet, U brown, loose, slight sheen. (16.3'- 18') WIDELY GRADED SAND (SW); ~95% sand, fine to PLO coarse, ~5% fines, non plastic; moderate petroleum-like odor, wet, brown, slight sheen. (18'- 19.6') SILTY SAND WITH GRAVEL (SM); ~65% sand, fine to medium, ~20% fines, non plastic, ~15% gravel, fine to coarse; PLO max. size 2.5, moderate petroleum-like odor, brown PLO (19.6'- 20.6') WIDELY GRADED SAND (SW); ~95% sand, fine to

#### **NOTES:**

BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

WILLIAMSBURG W

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IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR
TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE** WW-SB-19 CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 3 093060 GEI PROJECT NUMBER: Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 20 457 coarse, ~5% fines, non plastic; moderate petroleum-like odor, wet, PLO brown, slight sheen. (20.6'- 25') WIDELY GRADED SAND (SW); ~95% sand, fine to -5 coarse, ~5% fines, non plastic; moderate petroleum-like odor, wet, **PLO** 25 **S4** 120/105 171 **WWSB-19** (25'- 27') WIDELY GRADED SAND (SW); ~95% sand, fine to (25-35)medium, ~5% fines; moderate naphthalene-like odor, wet, grayish NLO brown, moderate petroleum-like odor. -10 (27'- 28.5') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines; moderate naphthalene-like odor, wet, grayish NLO brown, petroleum-like staining, moderate petroleum-like odor. (28.5'- 30.7') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines; wet, brown. 30 (30.7'- 33.7') NARROWLY GRADED SAND (SP); ~95% sand, -15 fine to medium, ~5% fines; wet, brown to orange brown. (33.7'- 35') SILTY SAND (SM); ~70% sand, fine, ~30% fines; reddish brown. 35 (35'- 36.9') WIDELY GRADED SAND (SW); ~95% sand, fine to **S5** 120/116 23 medium, ~5% fines; slight petroleum-like odor, brown, loose. **PLO** -20 (36.9'- 37.8') SILTY SAND (SM); ~85% sand, fine to medium, PLO ~15% fines; slight petroleum-like odor, reddish brown. (37.8'- 38.6') SILTY SAND (SM); ~70% sand, fine, ~30% fines; PLO slight petroleum-like odor, reddish brown, dense. (38.6'- 45') SANDY SILT (ML); ~70% fines, ~30% sand, fine; gray brown, very dense. 40 -25 **NOTES:** ppm = PARTS PER MILLION

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

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PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

WILLIAMSBURG W

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CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York GEI PROJECT NUMBER: 093060

**PAGE** 3 of 3

WW-SB-19

**BORING LOG** 

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ELEV. F	DEPTH F	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL	ODOR	ANALYZED SAMPLE ID		/ BEDROCK SCRIPTION
- 30 -	<b>45</b>  	S6	120/64					WWSB-19 (47-50)	(45'- 48.8') WIDELY GRADE coarse, ~5% fines; brown, loc	D SAND (SW); ~95% sand, fine to see.
- - 	_			6.0					(48.8'- 55') LEAN CLAY (CL)	; red, dense.
	<del>55</del>								End of Boring at 55 feet.	

Grouted

NOTES:

BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

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CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York **GEI PROJECT NUMBER:** 093060

**PAGE** WW-SB-20 1 of 3

**BORING LOG** 

**GROUND SURFACE ELEVATION (FT):** 15.94 LOCATION: 35 Kent Ave NORTHING (FT): 688605 EASTING (FT): 642141 TOTAL DEPTH (FT): 65.0 DRILLED BY: Boart Longyear / Fred Lavoie DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Maura MacLeod DATE START / END: 6/29/2009 - 7/21/2009 DRILLING DETAILS: Sonic Coring WATER LEVEL DEPTHS (FT): <u>□ 10.00 7/15/2009</u> **GENERAL NOTE:** 

1	:	FT.	9	SAMPLE IN	IFO	d	ုတ			
73 13		DEPTH F	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
<u> </u>	15	— <b>0</b> -	S1	60/NM						(0'- 0.5') CONCRETE. (0.5'- 10') WIDELY GRADED SAND (SW); ~85% sand, fine to coarse, ~10% gravel, fine, ~5% fines, non plastic; max. size 0.5, reddish brown, brick fragments, possible ground brick, hand cleared to 5 feet. FILL.
-	-	-			0.4	`			WWSB-20 (3-5)	
-	10	— <b>5</b> -	S2	60/26	0.3	_				
0T 3/27/13		_				· · · · · · · · · · · · · · · · · · ·				
A TEMPLATE.GI	5	— 10 -	S3	60/20	32.8					(10'- 11.5') LEAN CLAY (CL); ~70% fines, medium plasticity, ~30% sand, fine to medium; gray, FILL.
J FULTON DAT		_								(11.5'- 15') BRICK; brick fragments. FILL.
. BORINGS.GP	-	- 15	S4	120/76	21.6					(15'- 18.7') WIDELY GRADED GRAVEL WITH SAND (GW);
SBURG W PREV	0	_						NLO		~70% gravel, fine to coarse, ~25% sand, fine to coarse, ~5% fines, non plastic; max. size 3, slight naphthalene-like odor, gray, red portions from brick. FILL.
NG LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13		- - 20						NLO		(18.7'- 19.7') WIDELY GRADED SAND WITH GRAVEL (SW); ~75% sand, fine to coarse, ~20% gravel, fine to coarse, ~5% fines, non plastic; max. size 1, strong naphthalene-like odor,

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**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-SB-20** CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 3 093060 GEI PROJECT NUMBER: Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 20 NLO 825 (19.7'- 21.6') SILTY SAND (SM); ~75% sand, fine to coarse, NLO -5 ~15% fines, non plastic, ~10% gravel, fine; max. size 0.5, slight naphthalene-like odor, brown, very dense. (21.6'- 23.2') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; moderate naphthalene-like odor, NLO brown, moderate burnt-like odor. (23.2'- 25') WIDELY GRADED SAND WITH SILT (SW-SM); ~80% sand, fine to coarse, ~10% gravel, fine, ~10% fines, non plastic; max. size 0.75, slight naphthalene-like odor, gray brown, NLO 377 slight burnt-like odor. 25 **S5** 120/112 347 (25'- 26.3') WIDELY GRADED GRAVEL WITH SAND (GW); ~60% gravel, fine to coarse, ~35% sand, fine to coarse, ~5% fines, non plastic; max. size 2, slight petroleum-like odor, gray PLO -10 (26.3'- 26.9') SILTY SAND (SP); ~85% sand, fine to medium, ~15% fines, non plastic; gray, moderate burnt rubber-like odor. (26.9'- 28.1') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; gray, moderate burnt-like odor. (28.1'- 33.2') SILTY SAND (SP); ~85% sand, fine to medium, ~15% fines, non plastic; gray, moderate burnt-like odor. 30 313 -15 (33.2'- 33.8') Possible bolder. (33.8'- 35') SILTY SAND (SP); ~85% sand, fine to medium, ~15% fines, non plastic; gray, moderate burnt rubber-like odor. 35 **S6** 120/56 (35'- 45') WIDELY GRADED SAND WITH SILT (SW-SM); ~85% sand, fine to coarse, ~10% fines, ~5% gravel; max. size 0.5, slight -20 naphthalene-like odor, moist, brown, very dense. 58 NLO 40 -25 1805

NOTES:

PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

WILLIAMSBURG W

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**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-SB-20** CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 3 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë Ë VISUAL IMPACTS STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. NLO 45 S7 120/42 (45'- 52.6') WIDELY GRADED SAND (SW); ~100% sand, fine to medium; moderate naphthalene-like odor, wet, brown, loose. -30 NLO 50 -35 (52.6'- 55') WIDELY GRADED SAND WITH GRAVEL (SW); ~85% sand, fine to coarse, ~15% gravel; ~5% cobbles, max. size 1, strong naphthalene-like odor, wet, brown, loose. NLO 55 120/89 **S8** 2885 WWSB-20 (55'- 58') WIDELY GRADED SAND (SW); ~100% sand, medium (55-57) to coarse; strong naphthalene-like odor, brown, very loose, tar-like -40 staining and partial coating. NLO (58'- 59.4') WIDELY GRADED SAND (SW); ~100% sand, medium to coarse; strong naphthalene-like odor, brown, very NLO NLO (59.4'- 59.8') WIDELY GRADED SAND (SW); ~100% sand, fine 60 to medium; moderate naphthalene-like odor, moist, brown. WWSB-20 (59.8'- 63.1') SANDY SILT (ML); ~75% fines, ~25% sand, fine; (62-63)slight naphthalene-like odor, brown gray, occasional sandy 45 pockets. NLO (63.1'- 64') WIDELY GRADED SAND (SW); ~100% sand, fine to SLO medium; slight sulfur-like odor. (64'- 65') LEAN CLAY (CL); ~100% fines; red, very dense. End of Boring at 65 feet. Geoprobe refusal at 10' with Zebra Environmental, boring completed by Boart Longyear using sonic drilling methods. Grouted

# NOTES:

WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

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**BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** WW-SB-21 CITY/STATE: Brooklyn, New York 1 of 4 **GEI PROJECT NUMBER:** 093060

**GROUND SURFACE ELEVATION (FT):** 12.24 LOCATION: 35 Kent Ave NORTHING (FT): 688662 EASTING (FT): 642188 TOTAL DEPTH (FT): 78.0 DRILLED BY: Boart Longyear / Fred Lavoie DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Sarah Hay DATE START / END: 7/1/2009 - 7/23/2009 DRILLING DETAILS: Sonic Coring WATER LEVEL DEPTHS (FT): <u><u></u> <u><u></u> <u><u></u> <u> </u> <u> </u> <u> <u></u> 9.00 7/1/2009</u></u></u></u> **GENERAL NOTE:** 

				-						
ſ	FT.	FT.	;	SAMPLE IN	IFO	7	. 0			
	ELEV. F	DEPTH F	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
F		— O	S1	60/NM		4				(0'- 0.67') CONCRETE.
_	- 10	_			0.4				WWSB-21 (1-2)	(0.67'- 5') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; moderate organic-like odor, reddish brown, brick fragments, hand cleared. FILL.
_		_						OLO		
		<del></del> 5 -	S2	60/28	5.2					(5'- 7') WIDELY GRADED SAND (SW); ~85% sand, fine to coarse, ~10% gravel, fine to coarse, ~5% fines, non plastic; max. size 2, light brown and dark brown, brick fragments. FILL.
ŀ	- 5	_								(7'- 7.8') layer of brick from 7 to 7.3 ft, layer of organics with roots
OT 3/27/13	<u>Z</u>	_						-		from 7.3 to 7.8 ft. FILL.  (7.8'- 9.2') WIDELY GRADED SAND (SW); ~85% sand, fine to coarse, ~10% gravel, fine to coarse, ~5% fines, non plastic; max. size 2, light brown, brick fragments, layer of brick from 8.5 to 9 ft.
Œ.G						••••		PLO		FILL. (9.2'- 10') WIDELY GRADED SAND (SW); ~85% sand, fine to
LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13	– <b>0</b>	— 10 - -	S3	120/72				NLO		coarse, ~10% gravel, fine to coarse, ~5% fines, non plastic; max. size 2, slight petroleum-like odor, wet, light brown, brick fragments. FILL. (10'- 14.4') BRICK AND CONCRETE; ~95% sand, fine to coarse, ~5% fines; ~75% crushed brick and concrete, moderate naphthalene-like odor, wet, brown to brownish black, coal ash, and wood fragments. FILL.
SS.GF		_			21.0	$\bowtie$				
G W PREV. BORING		— <b>15</b> —						NLO		(14.4'- 17.4') WIDELY GRADED SAND WITH GRAVEL (SW); ~55% sand, fine to coarse, ~40% gravel, ~5% fines; strong naphthalene-like odor, moist, light brown, wood fragments, sheen. FILL.
LOG WILLIAMSBUR	- <b>-5</b>	_			2538			NLO		(17.4'- 20') WIDELY GRADED SAND (SW); ~80% sand, fine to medium, ~15% gravel, ~5% fines; ~15% brick and concrete fragments, strong naphthalene-like odor, moist, brown, orange lenses, sheen, 5 inch concrete fragment in sample tip. FILL.

#### NOTES:

20

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**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-SB-21** CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 4 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. **S4** 60/24 (20'- 25') SILTY SAND (SM); ~80% sand, fine to medium, ~20% fines; moist, gray to grayish brown, dense. 228 -10 **S5** 60/60 149 (25'- 27.7') SANDY SILT (ML); ~70% fines, ~25% sand, fine to coarse, ~5% gravel, fine to coarse, angular to well rounded; max. size 2, moist, dark gray, dense, red sandstone particles from 27.3 to 27.7 ft. -15 (27.7'- 30') WIDELY GRADED SAND WITH SILT (SW-SM); ~65% sand, fine to coarse, ~25% gravel, fine to coarse, angular to subrounded, ~10% fines; max. size 1.5, moist, dark gray, red sandstone. 30 120/104 **S6** (30'- 33.2') WIDELY GRADED SAND (SW); ~100% sand, fine to coarse; slight naphthalene-like odor, moist, brown, loose. NLO -20 WWSB-21 2114 (33.2'- 35.4') WIDELY GRADED SAND (SW); ~100% sand, fine (33-34)to coarse; strong naphthalene-like odor, moist, brown, loose, tar-like staining and blebs. NLO 35 (35.4'- 40') WIDELY GRADED SAND (SW); ~100% sand, fine to coarse; moderate naphthalene-like odor, moist, brown, loose. -25 NLO **S7** 120/96 (40'- 43.3') WIDELY GRADED SAND (SW); ~100% sand, fine to coarse; strong naphthalene-like odor, moist, dark brown, loose, moderate tar-like staining. NLO -30 799 (43.3'- 44.8') WIDELY GRADED SAND (SW); ~100% sand, fine NLO to coarse; slight naphthalene-like odor, moist, brown, loose. **NOTES:** 

IN. = INCHES FT. = FEET

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/1

LOG

PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

= TORVANE PEAK NM = NOT MEASURED

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-SB-21** CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 4 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë Ë VISUAL IMPACTS STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 45 (44.8'- 46.1') WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, fine, rounded, ~5% fines; brown, loose, silty pockets approximately 0.5 inch deposits. (46.1'- 50') WIDELY GRADED SAND (SW); ~100% sand, medium to coarse; brown. -35 50 S8 60/48 (50'- 55') WIDELY GRADED SAND (SW); ~95% sand, medium to coarse, ~5% gravel, fine to coarse, subrounded; max. size 1, moist, brown, loose. 14.6 -40 55 S9 60/60 8.5 (55'- 60') WIDELY GRADED SAND (SW); ~99% sand, medium to coarse, ~1% gravel; brown, loose, trace gravel. -45 S10 96/123 (60'- 63.7') SANDY SILT (ML); ~80% fines, ~20% sand, fine; slight sulfur-like odor, moist, gray. SLO -50 0.0 (63.7'- 68') WIDELY GRADED SAND (SW); ~99% sand, fine to coarse, ~1% fines; brown, loose, pockets of silt, trace red fines. 65 -55 120/113 **WWSB-21** (68'- 69.6') WIDELY GRADED SAND (SW); ~100% sand, fine to SLO (68-69)coarse; slight sulfur-like odor, brown, loose.

## **NOTES:**

BORING LOG

WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/1

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

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Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

NM = NOT MEASURED = TORVANE PEAK S.,

IN. = INCHES FT. = FEET

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

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CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York GEI PROJECT NUMBER: 093060

**PAGE** 4 of 4

WW-SB-21

**BORING LOG** 

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ELEV. F	DEPTH	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
- - - 60	— <b>70</b>						SLO		(69.6'- 73.1') LEAN CLAY (CL); ~100% fines; red and brown gray, dense.
- - - - 65	_ 75 _			1.5					(73.1'- 78') SANDY SILT (ML); ~80% fines, ~20% sand, fine; moist, gray.

End of Boring at 78 feet. Geoprobe refusal at 10' with Zebra Environmental, boring completed by Boart Longyear using sonic drilling methods. Grouted

### NOTES:

BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

NA = NOT APPLICABLE NM = NOT MEASURED Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York **GEI PROJECT NUMBER:** 093060

**PAGE WW-SB-22** 1 of 4

**BORING LOG** 

**GROUND SURFACE ELEVATION (FT):** 16.04 LOCATION: 35 Kent Ave NORTHING (FT): 688642 EASTING (FT): 642078 TOTAL DEPTH (FT): 70.0 DRILLED BY: Boart Longyear / Fred Lavoie DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Maura MacLeod DATE START / END: 6/29/2009 - 7/27/2009

DRILLING DETAILS: Sonic Coring

WATER LEVEL DEPTHS (FT): <u>₹ 10.50 7/1/2009</u>

**GENERAL NOTE:** 

Ë	Ë	SAMPLE INFO  TYPE and PEN/REC PID			4	၂ မှ			
ELEV. F	DEPTH		PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
_	<b>—</b> 0	S1	60/NM	1.2	A 4				(0'- 0.67') CONCRETE.
— 15 -	_						NLO		(0.67'- 5') WIDELY GRADED SAND WITH GRAVEL (SW); ~75% sand, fine to coarse, ~20% gravel, fine to coarse, ~5% fines, non plastic; max. size 0.75, slight naphthalene-like odor, brown, coal fragments, hand cleared.
- - - - 10	_ _ _ 5	S2	60/46	1.0				WWSB-22 (3-4)	(5'- 10') WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, fine, subangular, ~5% fines, non plastic; max size 0.5, brown.
- - - - - - - - - - -	_ _ _ _ 10	S3	60/48	61.9					(10'- 12.8') WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, fine, subangular, ~5% fines, non plastic; brown, moist from 10.5 to 15 ft, gravel layer from 12.6 to 12.8 ft.
- -	_				°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°		PLO	WWSB-22 (13-15)	(12.8'- 15') WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, fine, subangular, ~5% fines, non plastic; slight petroleum-like odor, brown, black staining.
- - 0 -	15  -	\$4	60/60	6.0			PLO		(15'- 20') WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, fine, subangular, ~5% fines, non plastic; slight petroleum-like odor, brown, wet from 15 to 16.7 ft, moist from 16.7 to 20 ft.
_	_ _ 20								

## NOTES:

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK NA = NOT APPLICABLE

NM = NOT MEASURED

IN. = INCHES FT. = FEET

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-SB-22** CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 4 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. **S5** 60/51 20.6 (20'- 25') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; slight petroleum-like odor, brown. PLO 25 **S6** 60/48 18.6 (25'- 30') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; slight naphthalene-like odor, -10 brown, slight petroleum-like odor. NLO 30 60/52 **S7** 24.0 (30'- 31.3') WIDELY GRADED SAND (SW); ~95% sand, fine to PLO coarse, ~5% fines, non plastic; slight petroleum-like odor, brown. -15 (31.3'- 35') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; slight naphthalene-like odor, brown, slight petroleum-like odor. NLO 35 (35'- 36.4') WIDELY GRADED SAND (SW); ~95% sand, fine to S8 120/114 coarse, ~5% gravel; max. size 3, strong naphthalene-like odor, NLO -20 brown, loose, tar-like staining (36.4'- 38.1') SILT WITH SAND (ML); ~80% fines, ~20% sand, fine to coarse; moderate naphthalene-like odor, brown, dense. WWSB-22 >9999 NLO (37-38)(38.1'- 42.2') WIDELY GRADED SAND (SW); ~100% sand, fine to coarse; strong naphthalene-like odor, brown, loose, lenses of tar-like staining. 40 NLO -25 (42.2'- 45') SILT WITH SAND (ML); ~90% fines, ~10% sand, fine to medium; strong organic-like odor, dry, dark brown, very dense. OLO **NOTES:** 

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

WILLIAMSBURG W

LOG

PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

NA = NOT APPLICABLE Q<sub>P</sub> = POCKET PENETROMETER

= TORVANE PEAK NM = NOT MEASURED

ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR

IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-SB-22** CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 4 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë Ë VISUAL IMPACTS STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK TYPE ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. OLO 45 S9 120/97 15.5 (45'- 48.4') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; slight naphthalene-like odor, -30 brown, moderate cement-like odor. NLO (48.4'- 55') SILTY SAND (SM); ~80% sand, fine, ~20% fines, non plastic; slight organic-like odor, brown. 50 -35 OLO 55 120/104 S10 (55'- 56.9') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; slight naphthalene-like odor, NLO -40 brown (56.9'- 60.6') SANDY SILT (ML); ~60% fines, low plasticity, ~40% 76.3 sand, fine; slight naphthalene-like odor, brown. NLO 60 (60.6'- 65') WIDELY GRADED SAND (SW); ~95% sand, fine to 45 medium, ~5% fines, non plastic; slight petroleum-like odor, brown. PLO S11 60/49 9.2 WWSB-22 (65'- 65.6') WIDELY GRADED SAND (SW); ~95% sand, fine to (65-65.5)medium, ~5% fines, non plastic; brown. -50 (65.6'- 70') LEAN CLAY (CL); ~95% fines, medium plasticity, ~5% sand, fine; reddish gray.

#### **NOTES:**

PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

WILLIAMSBURG W

LOG

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NA = NOT APPLICABLE Q<sub>P</sub> = POCKET PENETROMETER

NM = NOT MEASURED = TORVANE PEAK ppm = PARTS PER MILLION

NLO = NAPHTHALENE LIKE ODOR IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

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GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 **BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE WW-SB-22** CITY/STATE: Brooklyn, New York (860) 368-5300 4 of 4 **GEI PROJECT NUMBER:** 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS Ë STRATA ODOR DEPTH **ANALYZED** SOIL / BEDROCK TYPE ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and (PPM) IN./IN. NO.

End of Boring at 70 feet.

Geoprobe refusal at 35 ft with Zebra Environmental, boring completed by Boart Longyear using sonic drilling methods. Grouted

NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

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BORING LOG CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE WW-SB-23** CITY/STATE: Brooklyn, New York 1 of 3 **GEI PROJECT NUMBER:** 093060

**GROUND SURFACE ELEVATION (FT):** 12.10 LOCATION: 50 Kent Ave NORTHING (FT): \_\_\_688787\_\_ EASTING (FT): 641842 TOTAL DEPTH (FT): 65.0 DRILLED BY: Boart Longyear / Fred Lavoie DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone DATE START / END: 7/16/2009 - 7/17/2009 LOGGED BY: Sarah Hay DRILLING DETAILS: Sonic Coring WATER LEVEL DEPTHS (FT): \_\_\_\_ **GENERAL NOTE:** 

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ELEV. F	DEPTH F	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
-	<b>— 0</b>	S1	54/48	188	A 4			WWSB-23 (1-4)	(0'- 0.7') CONCRETE.
- - 10 -	_ _ _				· · · · · · · · · · · · · · · · · · ·		PLO	(1-4)	(0.7'- 4.5') WIDELY GRADED SAND WITH SILT (SW-SM); ~70% sand, fine to coarse, ~20% gravel, ~10% fines; ~5% brick and wood fragments, max. size 2, slight petroleum-like odor, light brown and brown, hand cleared. FILL.
L	_ 5								(4.5'- 5') Rock.
-	  -  s -	S2	120/64	1081			PLO		(5'- 7.5') WIDELY GRADED SAND WITH SILT (SW-SM); ~80% sand, fine to coarse, ~15% fines, ~5% gravel, subangular; max. size 0.5, strong petroleum-like odor, asphalt fragments. FILL.
LION DATA LEMPLATE.GD   3/2/13	_ _ 10 _ _						NLO		(7.5'- 13.1') SILTY SAND (SM); ~75% sand, fine to medium, ~20% fines, ~5% gravel, subrounded; max. size 0.5, strong naphthalene-like odor, brown to dark gray, slight petroleum-like odor.
NG LOG WILLAMSBURG W PREV. BORINGS.GPJ. FULLON DATA TEMPLATE.GDT 3/2/7/3		S3	120/35	1076			NLO		(13.1'- 23.6') SILTY SAND (SM); ~75% sand, fine to medium, ~20% fines, ~5% gravel, subrounded; max. size 0.5, strong naphthalene-like odor, brown to dark gray, lenses of tar-like staining and blebs, slight petroleum-like odor.

IN. = INCHES FT. = FEET

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

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Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK NA = NOT APPLICABLE

NM = NOT MEASURED

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-SB-23** CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 3 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 20 NLO -10 (23.6'- 25') SANDY SILT (ML); ~60% fines, ~40% sand, medium to coarse; dark gray, burnt-like odor. **S4** 120/103 (25'- 27.9') SILTY SAND (SM); ~65% sand, fine to medium, ~35% fines; strong naphthalene-like odor, moist, blue and gray, tar-like blebs. NLO -15 (27.9'- 29.3') SILTY SAND (SM); ~85% sand, fine to coarse, ~15% fines; strong naphthalene-like odor, moist, brown to gray, NLO (29.3'- 30.3') SILTY SAND (SM): ~80% sand, fine to medium. NLO ~20% fines; strong naphthalene-like odor, tar-like staining, partial 30 tar-like coating. (30.3'- 33.6') WIDELY GRADED SAND (SW); ~100% sand, fine to coarse; strong naphthalene-like odor, brown, tar-like coating, **WWSB-23** 452 (31-33)partially tar saturated. NLO -20 (33.6'- 35') WIDELY GRADED SAND (SW); ~100% sand, fine to coarse; strong naphthalene-like odor, brown, tar-like stained. NLO 35 **S5** 180/150 9259 (35'- 38.8') SILTY SANDWELL GRADED GRAVEL WITH SANDSILTY SAND (SM); ~84% sand, fine, ~15% fines, ~1% gravel; strong naphthalene-like odor, moist, gray, dense, tar saturated seams. NLO -25 (38.8'- 39.5') WIDELY GRADED GRAVEL WITH SAND (GW); ~70% gravel, coarse, ~30% sand, fine to coarse; max. size 5, tar 40 (39.5'- 44.5') SILTY SAND (SM); ~84% sand, fine, ~15% fines, ~1% gravel; strong naphthalene-like odor, moist, gray, dense, tar saturated seams. NLO -30 **NOTES:** PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR CrLO= CREOSOTE LIKE ODOR IN. = INCHES FT. = FEET

REC = RECOVERY LENGTH OF SAMPLE

WILLIAMSBURG W PREV, BORINGS GPJ FULTON DATA TEMPLATE.GDT 3/27/13

LOG

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CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR MLO = MUSTY LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road Glastonbury, CT 06033 PROJECT: Williamsburg MGP RI **PAGE WW-SB-23** CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 3 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. (44.5'- 48.2') WIDELY GRADED SAND (SW); ~100% sand; gray, 45 tar-like coating, lenses of tar-like saturation. -35 (48.2'- 50') SILTY SANDWELL GRADED GRAVEL WITH SANDSILTY SAND (SM); ~84% sand, fine, ~15% fines, ~1% NLO gravel; strong naphthalene-like odor, moist, gray, dense, tar saturated seams. 50 S6 180/130 (50'- 54.8') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines; moderate naphthalene-like odor, brown, tar saturated lenses. -40 NLO 55 (54.8'- 59.5') SILTY SAND (SW-SM); ~85% sand, fine to coarse, ~15% fines; strong naphthalene-like odor, lens of sand from 59.2 to 59.7 ft. -45 NLO >9999 (59.5'- 60.4') WIDELY GRADED SAND (SW); ~100% sand, NLO 60 medium to coarse; strong naphthalene-like odor, wet, brown, sheen (60.4'- 65') LEAN CLAY (CL); ~95% fines, ~5% sand; moderate organic-like odor, wet, red, dense, sand pocket at 61 ft. -50 WWSB-23 (62-63) OLO End of Boring at 65 feet. Grouted

# NOTES:

FULTON DATA TEMPLATE.GDT 3/27/1

WILLIAMSBURG W PREV. BORINGS.GPJ

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CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

**BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** WW-SB-24 CITY/STATE: Brooklyn, New York 1 of 3 **GEI PROJECT NUMBER:** 093060

**GROUND SURFACE ELEVATION (FT):** 12.30 LOCATION: 50 Kent Ave NORTHING (FT): 688884 EASTING (FT): 641934 TOTAL DEPTH (FT): 55.0 DRILLED BY: Boart Longyear / Fred Lavoie DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Sarah Hay DATE START / END: 7/16/2009 - 7/16/2009 DRILLING DETAILS: Sonic Coring WATER LEVEL DEPTHS (FT): <u>₹ 5.00 7/16/2009</u>

**GENERAL NOTE:** 

ľ	FT.	Ë	;	SAMPLE IN	IFO	4	ω			
	ELEV. F	<b>DEPTH F</b>	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
-	- 10	— 01 - - -	S1	60/NM	5.5			PLO	WWSB-24	(0'- 0.5') CONCRETE. (0.5'- 5') WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM); ~75% sand, fine to coarse, ~15% gravel, angular, ~10% fines, non plastic; max. size 2, slight petroleum-like odor, moist, brown, slight organic-like odor, hand cleared. FILL.
	<del>7</del> - <b>5</b>	— 5 —	S2	120/78					(4-5)	(5'- 7.6') WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM); ~75% sand, fine to coarse, ~15% gravel, angular to rounded, ~10% fines, non plastic; max. size 2, wet, dark gray, asphalt and brick fragments. FILL.
DATA TEMPLATE.GDT 3/27/13	9	_ _ 10 _						NLO		(7.6'- 12.1') SILTY SAND (SM); ~70% sand, fine to medium, ~25% fines, ~5% gravel, subangular; slight naphthalene-like odor, dark gray to brown, lenses of sand with petroleum-like odor.
RINGS.GPJ FULTON	- 0	_			8959			NLO		(12.1'- 15') SILTY SAND (SM); ~70% sand, fine to medium, ~25% fines, ~5% gravel, subangular; moderate naphthalene-like odor, brown, light tar-like staining, trace tar-like blebs.
G LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13	- <b>-</b> 5	— 15· — — —	S3	120/96	6418			NLO		(15'- 16.7') WIDELY GRADED SAND (SW); ~90% sand, fine to medium, ~5% gravel, rounded, ~5% fines; max. size 0.25, strong naphthalene-like odor, dark gray, shells, tar-like staining, tar-like seam. (16.7'- 20.2') WIDELY GRADED SAND WITH SILT (SW-SM); ~80% sand, fine to coarse, ~10% gravel, angular to rounded, ~10% fines; max. size 2.5, light brown to dark brown, tar-like staining and blebs.

### NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK NA = NOT APPLICABLE

NM = NOT MEASURED

IN. = INCHES FT. = FEET

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-SB-24** CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 3 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 20 (20.2'- 21.8') SILTY SAND (SM); ~85% sand, fine to medium, ~15% fines; moderate naphthalene-like odor, light brown, sheen. NLO (21.8'- 25') SANDY SILT (ML); ~60% fines, ~35% sand, fine to 1326 -10 medium, ~5% gravel; moist, light brown to orange, dense. **S4** 120/60 (25'- 35') SANDY SILT (ML); ~60% fines, ~35% sand, fine to medium, ~5% gravel; slight naphthalene-like odor, moist, light brown to orange, very dense, likely marine deposited. -15 NLO 30 -20 35 **S5** 120/120 (35'- 36.5') WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM); ~75% sand, fine to coarse, ~15% gravel, subrounded, ~10% fines; max. size 1, wet, brown, shale fragments, dense. (36.5'- 37.7') WIDELY GRADED SAND (SW); ~90% sand, fine to medium, ~5% gravel, subrounded, ~5% fines, non plastic; max. -25 size 1, tar-like staining and blebs. (37.7'- 39.5') WIDELY GRADED SAND (SW); ~90% sand, fine to >9999 WWSB-24 medium, ~5% gravel, subrounded, ~5% fines, non plastic; max. (38-40)size 1, tar saturated. (39.5'- 40.3') WIDELY GRADED SAND (SW); ~90% sand, fine to 40 medium, ~5% gravel, subrounded, ~5% fines, non plastic; max. size 1, tar-like staining. (40.3'- 42') SANDY ELASTIC SILT (ML); ~70% fines, ~30% sand, NLO fine; slight naphthalene-like odor, gray, dense. (42'- 47.7') SANDY SILT (ML); ~70% fines, ~30% sand, fine to -30 medium; moist, gray, occasional sand lenses, slight burnt-like odor. **NOTES:** PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR CrLO= CREOSOTE LIKE ODOR IN. = INCHES FT. = FEET

FULTON DATA TEMPLATE.GDT 3/27/1

WILLIAMSBURG W PREV. BORINGS.GPJ

LOG

REC = RECOVERY LENGTH OF SAMPLE

PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE NM = NOT MEASURED

= TORVANE PEAK

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR MLO = MUSTY LIKE ODOR

GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 **BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** WW-SB-24 CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 3 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS Ë STRATA ODOR DEPTH **ANALYZED** SOIL / BEDROCK TYPE ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 45 S6 120/110 -35 (47.7'- 53.4') WIDELY GRADED SAND WITH SILT (SW-SM); 31.8 ~80% sand, fine to coarse, ~10% gravel, subangular, ~10% fines; moderate naphthalene-like odor, wet, brown, moderate organic-like odor.

NLO

WWSB-24 (53-55)

> End of Boring at 55 feet. Grouted

small sand lenses.

(53.4'- 55') LEAN CLAY (CL); ~95% fines, ~5% sand; red, very

## NOTES:

BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

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-40

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Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

NM = NOT MEASURED = TORVANE PEAK

IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE WW-SB-25** CITY/STATE: Brooklyn, New York 1 of 3 **GEI PROJECT NUMBER:** 093060

**GROUND SURFACE ELEVATION (FT):** 9.67 LOCATION: North 12th Street NORTHING (FT): 689045 EASTING (FT): 641849 TOTAL DEPTH (FT): 55.0 DRILLED BY: Zebra Environmental / Luke Caballero DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Kari Weber DATE START / END: 7/28/2009 - 7/29/2009 DRILLING DETAILS: Geoprobe WATER LEVEL DEPTHS (FT): <u>₹ 5.60 7/28/2009</u> **GENERAL NOTE:** 

	FT.	FT.		SAMPLE IN	NFO		. ທ			
	ELEV. F	DEPTH F	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
	- - - - 5	0  	S1	60/NM	1.9				WWSB-25 (1-3)	(0'- 5.6') SILTY SAND (SM); ~80% sand, fine to coarse, ~15% fines, ~5% gravel, fine; max. size 0.5, dry, brown, brick and coal fragments, hand cleared to 5 ft. FILL.
	<b>₽</b> -	— <b>5</b> –	S2	60/60						(5.6'- 7.5') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to medium, ~10% fines, non plastic; wet, brown.
EMPLATE.GDT 3/27/13	- - - 0	_ _ 10	S3	60/0	1894	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		PLO OLO PLO PLO PLO		(7.5'- 8') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to medium, ~10% fines, non plastic; slight petroleum-like odor, wet, brown.  (8'- 8.7') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to medium, ~10% fines, non plastic; slight organic-like odor, wet, brown.  (8.7'- 8.8') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to medium, ~10% fines, non plastic; wet, brown.
BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13	- - 5	_ _ _ _ 15	<b>S</b> 4	60/60	4142	*.*\		NI O		(8.8'- 9.3') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to medium, ~10% fines, non plastic; slight petroleum-like odor, wet, brown. (9.3'- 9.7') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to medium, ~10% fines, non plastic; moderate petroleum-like odor, wet, brown, sheen. (9.7'- 10') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to medium, ~10% fines, non plastic; slight petroleum-like odor, wet, brown. (10'- 15') no recovery.
3 LOG WILLIAMSBURG W PREV. B	- -	_ _ _	S4	60/60	4143			NLO NLO		(15'- 15.5') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to medium, ~10% fines, non plastic; strong naphthalene-like odor, wet, brown, seams of tar-like staining, slight petroleum-like odor. (15.5'- 16.6') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to medium, ~10% fines, non plastic; slight naphthalene-like odor, wet, brown, slight petroleum-like odor. (16.6'- 17.9') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to medium, ~10% fines, non plastic; wet, brown.
3 LOG W	— <b>-</b> 10	20						OLO		(17.9'- 18.1') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to medium, ~10% fines, non plastic; slight

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**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-SB-25** CITY/STATE: (860) 368-5300 Brooklyn, New York 2 of 3 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 20 **S5** 60/52 organic-like odor, wet, brown. NLO (18.1'- 18.7') WIDELY GRADED SAND WITH SILT (SW-SM); 586 ~90% sand, fine to medium, ~10% fines, non plastic; wet, brown. (18.7'- 19.4') SANDY ORGANIC SOIL (OL); low plasticity, fine to ,NLO, medium; moderate organic-like odor, dark gray. (19.4'- 20') WIDELY GRADED SAND (SW); ~95% sand, ~5% NLO fines, low plasticity; wet, brown. (20'- 21.3') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; strong naphthalene-like odor, wet, brown, sheen, seams of tar and petroleum-like staining, NLO strong petroleum-like odor. -15 (21.3'- 21.6') WIDELY GRADED SAND (SW); ~85% sand, fine to 25 **S6** 60/57 3197 medium, ~10% gravel, fine, ~5% fines, non plastic; max. size NLO 0.75, moderate naphthalene-like odor, light brown to brown, very dense, sheen, moderate petroleum-like odor. NLO (21.6'- 23.7') WIDELY GRADED SAND (SW); ~85% sand, fine to NLO<sub>/</sub> medium, ~10% gravel, fine, ~5% fines, non plastic; max. size 0.75, slight naphthalene-like odor, light brown to brown, very dense, slight petroleum-like odor. (23.7'- 25') WIDELY GRADED SAND (SW); ~95% sand, fine to NLO medium, ~5% fines, non plastic; slight naphthalene-like odor, wet, brown, slight petroleum-like odor. (25'- 25.9') WIDELY GRADED SAND (SW); ~95% sand, fine to -20 medium, ~5% fines, non plastic; strong naphthalene-like odor, 30 60/28 **S7** wet, brown, strong petroleum-like odor. (25.9'- 26.6') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; strong naphthalene-like odor, wet, brown, sheen and tar-like blebs, strong petroleum-like odor. NLO (26.6'- 26.8') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; strong naphthalene-like odor, wet, brown, strong petroleum-like odor. (26.8'- 30') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; slight naphthalene-like odor, wet, >15000 WWSB-25 NLO (30'- 33.9') WIDELY GRADED SAND (SW); ~95% sand, fine to (34-35)-25 medium, ~5% fines, non plastic; strong naphthalene-like odor, 35 60/20 S8 116.6 wet, brown, sheen. (33.9'- 35') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; strong naphthalene-like odor, wet, brown, heavy tar-like coating. (35'- 40') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; slight naphthalene-like odor, wet, NLO brown gray. -30 40 S9 60/28 180.7 (40'- 45') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; slight naphthalene-like odor, moist, brown gray. NLO **NOTES:** ppm = PARTS PER MILLION

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BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

WILLIAMSBURG W PREV.

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CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York GEI PROJECT NUMBER: 093060

**PAGE** 3 of 3

WW-SB-25

**BORING LOG** 

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Ë	Ħ.	;	SAMPLE IN	NFO	7	. ග				
ELEV. F	DEPTH F	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL	ODOR	ANALYZED SAMPLE ID		/ BEDROCK SCRIPTION
- - -	— <b>45</b> – –	S10	60/50	57.9			NLO NLO			D SAND (SW); ~95% sand, fine to tic; slight naphthalene-like odor, wet, nd.
- <b>-40</b>	_ 50					•	NLO			O (ML); ~80% fines, low plasticity, thalene-like odor, brown gray, dense.
-	_ 50	S11	60/45	76.1			NLO			SAND (SW); ~95% sand, fine to phthalene-like odor, wet, brown, slight petroleum-like odor.
-	_							WWSB-25 (52-53)	(52'- 54.1') WIDELY GRADE coarse, ~5% gravel, fine, ~5%	D SAND (SW); ~90% sand, fine to % fines; max. size 0.5.
<u>     -45                               </u>	<del>55</del>								gray. End of Boring at 55 feet.	; medium plasticity; moist, red and
									Grouted	

### NOTES:

BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
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CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

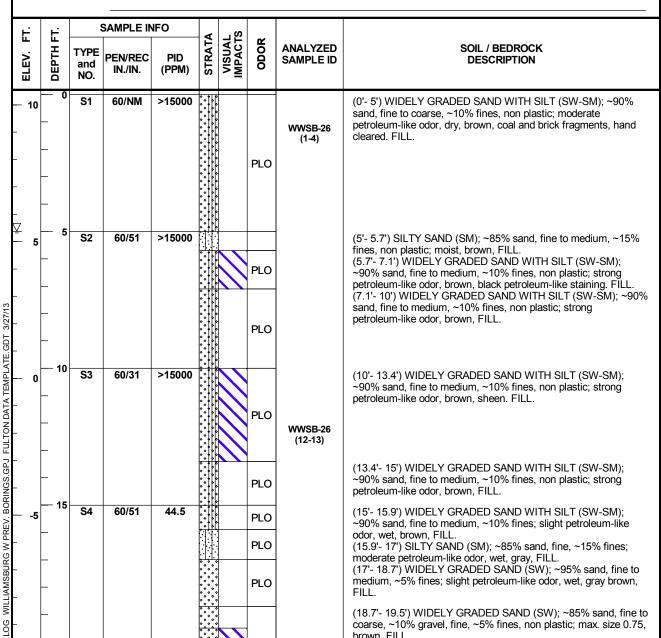
CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York GEI PROJECT NUMBER: 093060

**PAGE** 1 of 2

**WW-SB-26** 

**BORING LOG** 

**GROUND SURFACE ELEVATION (FT):** 10.37 LOCATION: North 12th Street NORTHING (FT): 688965 **EASTING (FT):** 641945 TOTAL DEPTH (FT): 42.0 DRILLED BY: Zebra Environmental / Luke Caballero DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Maura MacLeod DATE START / END: 7/29/2009 - 7/30/2009 DRILLING DETAILS: Geoprobe **GENERAL NOTE:** 



#### **NOTES:**

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Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

NM = NOT MEASURED = TORVANE PEAK brown, FILL.

IN. = INCHES FT. = FEET

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-SB-26** CITY/STATE: (860) 368-5300 Brooklyn, New York 2 of 2 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. **S5** 60/55 10223 (19.5'- 20') WIDELY GRADED SAND (SW); ~85% sand, fine to -10 coarse, ~10% gravel, fine, ~5% fines, non plastic; max. size 0.75, NLO brown, petroleum-like staining. FILL. (20'- 21.5') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines; strong naphthalene-like odor, wet, brown, tar-like blebs and lenses of coating. FILL.
(21.5'- 24.1') WIDELY GRADED SAND WITH SILT (SW-SM); NLO ~85% sand, fine to coarse, ~10% fines, ~5% gravel, fine; max. size 0.75, moderate naphthalene-like odor, moderate petroleum-like odors. FILL. NLO (24.1'- 24.4') WIDELY GRADED SAND (SW); ~95% sand, fine to NLO coarse, ~5% fines; strong naphthalene-like odor, tar-like coating. **S6** 60/35 -15 (24.4'- 25') WIDELY GRADED SAND (SW); ~90% sand, fine to 9853 coarse, ~5% gravel, fine, ~5% fines; max. size 0.25, slight NLO naphthalene-like odor, dense, slight petroleum-like odors. FILL. (25'- 27.6') WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, fine to coarse, ~5% fines; max. size 1.25, strong naphthalene-like odor, wet, brown, sheen, tar-like blebs and lenses of tar-like coating. FILL (27.6'- 30') WIDELY GRADED SAND (SW); ~90% sand, fine to NLO coarse, ~5% gravel, fine, ~5% fines; max. size 0.75, moderate naphthalene-like odor, wet, brown, petroleum-like odors. FILL. 30 60/59 1083 **S7** (30'- 31.4') WIDELY GRADED SAND (SW); ~85% sand, fine to -20 NLO coarse, ~10% gravel, fine to coarse, ~5% fines, non plastic; max. size 1.5, moderate naphthalene-like odor, brown, dense, brick fragments, moderate petroleum and burnt-like odor. FILL. (31.4'- 35') WIDELY GRADED SAND (SW); ~85% sand, fine to coarse, ~10% gravel, fine to coarse, ~5% fines, non plastic; max. size 1.5. slight naphthalene-like odor, brown, dense, brick fragments, slight petroleum and burnt-like odor. FILL. NLO 60/53 (35'- 37') WIDELY GRADED SAND (SW); ~90% sand, fine to S8 6.5 -25 coarse, ~5% gravel, fine, ~5% fines, non plastic; max. size 0.5, NLO slight naphthalene-like odor, dry, gray brown, dry, very dense. (37'- 40') WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, fine, ~5% fines, non plastic; max. size 0.5, slight petroleum-like odor, dry, gray brown, dry, very dense, slight PLO burnt-like odor. 24/47 338.2 (40'- 42') SILTY SAND (SM); ~70% sand, fine to coarse, ~25% S9 -30 fines, ~5% gravel; max. size 0.5, strong naphthalene-like odor, NLO brown, dense from 41.1 to 42 ft, pockets and seams of tar coating. End of Boring at 42 feet. Refusal at 42 feet. Grouted

#### **NOTES:**

BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/1

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CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York **GEI PROJECT NUMBER:** 093060

**PAGE WW-SB-27** 1 of 3

**BORING LOG** 

**GROUND SURFACE ELEVATION (FT):** 11.09 LOCATION: North 12th Street NORTHING (FT): 688923 **EASTING (FT):** 641999 TOTAL DEPTH (FT): 53.0 DRILLED BY: Zebra Environmental / Luke Caballero DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Maura MacLeod DATE START / END: 8/3/2009 - 8/5/2009 DRILLING DETAILS: Geoprobe WATER LEVEL DEPTHS (FT): <u>₹ 1.30 8/3/2009</u>

GENERAL NOTE: Stepout of WWMW-07

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1	Ė	Ę	•	SAMPLE IN	IFO	ַ אַ	TS	œ		
i	ELEV.	DEPTH	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL IMPACTS	ODOR	SAMPLE ID	SOIL / BEDROCK DESCRIPTION
- <u>▼</u> -	10	— <b>0</b> - -	S1	60/34						(0'- 4.7') WIDELY GRADED SAND WITH SILT (SW-SM); ~85% sand, fine to coarse, ~10% fines, non plastic, ~5% gravel, fine; max. size 0.5, brown, dry brick, wet at 1.3 ft, hand cleared. FILL.
-	5	_ 5 _	S2	60/54	84.3			\PLO	WWSB-27 (4-5)	(4.7'- 5') WIDELY GRADED SAND WITH SILT (SW-SM); ~85% sand, fine to coarse, ~10% fines, non plastic, ~5% gravel, fine; max. size 0.5, slight petroleum-like odor, wet, brown, hand cleared. FILL.
TE.GDT 3/27/13		_			958			PLO		(5'- 6.5') WIDELY GRADED SAND WITH SILT (SW-SM); ~85% sand, fine to coarse, ~10% fines, non plastic, ~5% gravel, fine; max. size 0.5, moderate petroleum-like odor, wet, brown, FILL. (6.5'- 10') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; moderate petroleum-like odor, moist, brown, dense. FILL.
IG LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13	0	— 10 - -	S3	60/37				NLO		(10'- 13.8') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to coarse, ~10% fines, non plastic; slight naphthalene-like odor, wet, brown, loose, sheen, moderate petroleum-like odor. FILL.
V. BORINGS.GP		_ 15	<b>S</b> 4	60/53	2045 8.4			NLO	WWSB-27 (14-15)	(13.8'- 15.9') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; moderate naphthalene-like odor, moist, brown, brick fragments from 15 to 15.9 ft, moderate petroleum-like odor. FILL.
BURG W PRE	-5	_				· · · · · · · · · · · · · · · · · · ·				(15.9'- 17.7') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; brown gray, moderate sweet/fruity-like odor.
G LOG WILLIAMSI		_ _ 20				****		PLO PLO		(17.7'- 18.4') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; greenish gray, moderate sweet/fruity-like odor. (18.4'- 18.9') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; slight petroleum-like odor, black,

IN. = INCHES FT. = FEET

#### NOTES:

BORING

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK NA = NOT APPLICABLE

NM = NOT MEASURED

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-SB-27** CITY/STATE: (860) 368-5300 Brooklyn, New York 2 of 3 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 20 **S5** 60/59 3.6 odor is sweet/fruity-like. (18.9'- 20') WIDELY GRADED SAND (SW); ~95% sand, fine to -10 coarse, ~5% fines, non plastic; slight petroleum-like odor, brown, PLO odor is sweet/fruity-like. (20'- 23.1') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, medium plasticity; slight petroleum-like odor, light brown, odor is sweet/fruity-like. (23.1'- 23.7') WIDELY GRADED SAND (SW); ~90% sand, fine to PLO coarse, ~5% gravel, fine, ~5% fines, non plastic; max. size 0.5, slight petroleum-like odor, brown, dense, odor is sweet/fruity-like. (23.7'- 25') WIDELY GRADED SAND (SW); ~90% sand, fine to 25 coarse, ~5% gravel, fine, ~5% fines, non plastic; max. size 0.5, **S6** 60/58 5.0 PLO brown dense (25'- 25.9') WIDELY GRADED SAND (SW); ~95% sand, fine to -15 coarse, ~5% fines, non plastic; slight petroleum-like odor, wet, brown, loose, odor is sweet/fruity-like. (25.9'- 30') WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~15% gravel, fine to coarse, ~5% fines, non plastic; max. size 1.5, dry, brown, dense, iron oxide staining. 30 60/59 **S7** (30'- 30.6') WIDELY GRADED SAND WITH GRAVEL (SW); PLO ~80% sand, fine to coarse, ~15% gravel, fine to coarse, ~5% -20 fines, non plastic; max. size 1.5, slight petroleum-like odor, moist, brown, iron oxide staining. (30.6'- 33.5') WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~15% gravel, fine to coarse, ~5% fines, non plastic; max. size 2, brown, dry, dense, iron oxide staining. (33.5'- 35') WIDELY GRADED SAND WITH GRAVEL (SW); 17.5 ~80% sand, fine to coarse, ~15% gravel, fine to coarse, ~5% **PLO** fines, non plastic; max. size 1.5, slight petroleum-like odor, moist, brown, odor is sweet/fruity-like. 35 S8 60/33 (35'- 38.6') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; slight petroleum-like odor, moist, -25 dark brown **PLO** 79.4 (38.6'- 40') WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~15% gravel, fine to coarse, ~5% fines, non plastic; max. size 1.5, brown, dry, dense, iron oxide 40 staining. S9 60/40 229 (40'- 49.2') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; moderate naphthalene-like odor, -30 moist, brown, moderate petroleum-like odor. NLO

IN. = INCHES FT. = FEET

## **NOTES:**

PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

WILLIAMSBURG W

FOG

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

NA = NOT APPLICABLE Q<sub>P</sub> = POCKET PENETROMETER

NM = NOT MEASURED = TORVANE PEAK ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York GEI PROJECT NUMBER: 093060

**PAGE** 3 of 3

SOIL / BEDROCK

**DESCRIPTION** 

**WW-SB-27** 

**BORING LOG** 

FT.	Ė	•	SAMPLE IN	NFO	_	, თ		
ELEV. F	ОЕРТН FT	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL	ODOR	ANALYZED SAMPLE ID
- <b>-35</b>	<b>45</b>  	S10	60/50	407			NLO	
	50						PLO	
- <b>-40</b> -	— <b>50</b> – –	S11	36/60	149			NLO	

(49.2'- 50') SANDY SILT (ML); ~70% fines, low plasticity, ~30% sand, fine; slight petroleum-like odor, dry, brown. (50'- 50.8') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; slight naphthalene-like odor, moist, brown, slight petroleum-like odor. (50.8'- 53') SANDY SILT (ML); ~70% fines, low plasticity, ~30% sand, fine; dry, brown.

End of Boring at 53 feet. Refusal at 53 feet. Grouted

## NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

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JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK NA = NOT APPLICABLE

NM = NOT MEASURED

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CLIENT: **National Grid** Williamsburg MGP RI PROJECT: PAGE CITY/STATE: Brooklyn, New York 1 of 2 **GEI PROJECT NUMBER:** 093060

**WW-SB-28** 

**BORING LOG** 

**GROUND SURFACE ELEVATION (FT):** 13.13 LOCATION: North 11th Street NORTHING (FT): 688687 EASTING (FT): 641806 TOTAL DEPTH (FT): 30.0 DRILLED BY: Zebra Environmental / Luke Caballero DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Maura MacLeod DATE START / END: 8/14/2009 - 8/19/2009

DRILLING DETAILS: Geoprobe

WATER LEVEL DEPTHS (FT): <u>₹ 5.00 8/14/2009</u>

GENERAL NOTE: Stepout of WWMW-06

L			SAMPLE INFO (0)							
ſ	FT.	FT.	,	SAMPLE IN	IFO	4	ر ,			
	ELEV. F	ОЕРТН Р	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
-	- 10	<b>0</b>  _ _	S1	60/27	18.9			OLO	WWSB-28 (3-5)	(0'- 0.5') CONCRETE. (0.5'- 5') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to medium, ~10% fines, non plastic; slight organic-like odor, moist, dark gray, hand cleared. FILL.
3/27/13	- 5	— <b>5</b> — —	S2	60/24	948			NLO		(5'- 8.8') WIDELY GRADED SAND WITH SILT (SW-SM); ~85% sand, fine to medium, ~10% fines, non plastic, ~5% gravel, fine to coarse, subangular; max. size 1, slight naphthalene-like odor, wet, dark gray, FILL.
LATE.GDT		_ — 10	00	00/00				NLO		(8.8'- 10') WIDELY GRADED SAND WITH SILT (SW-SM); ~85% sand, ~10% fines, non plastic, ~5% gravel; max. size 1, moderate naphthalene-like odor, trace pottery fragments. FILL.
ATA TEMPI		_	S3	60/38	238			NLO		(10'- 11.8') SILTY SAND (SM); ~80% sand, fine to medium, ~15% fines, non plastic, ~5% gravel, fine; max. size 0.5, slight naphthalene-like odor, moist, dark gray.
RING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13	- <b>0</b>	_								(11.8'- 14.7') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to medium, ~10% fines, non plastic; moist, gray.
URG W PREV. BOR		— 15 —	<b>S4</b>	60/56	1633			NLO NLO		(14.7'- 15') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to medium, ~10% fines, non plastic; slight naphthalene-like odor, moist, gray, slight tar-like staining. (15'- 17.5') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to medium, ~10% fines, non plastic; slight naphthalene-like odor, wet, brown gray.
WILLIAMSB	- <b>-</b> 5	_						NLO		(17.5'- 18.2') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to medium, ~10% fines, non plastic; moderate naphthalene-like odor, wet, brown gray, sheen, moderate tar-like
NG LOG \	NOTE	20						NLO		staining and coating. (18.2'- 20') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to medium, ~10% fines, non plastic; slight

#### NOTES:

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JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK NA = NOT APPLICABLE

NM = NOT MEASURED

IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York GEI PROJECT NUMBER: 093060

**PAGE** 2 of 2

**WW-SB-28** 

**BORING LOG** 

)		Consul	lants								
Ë	Ę.	SAMPLE INFO									
ELEV. F	DEPTH	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION		
-	<b>20</b>	S5	60/47				NLO			ED SAND WITH SILT (SW-SM); ~10% fines; slight naphthalene-like	
— -10	_			>9999			NLO WWSB-28 (22-23)	(22.1'- 23.7') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to medium, ~10% fines; slight naphthalene-like odor, wet, brown, moderate tar-like staining and coating.			
	25						NLO		~90% sand, fine to medium, odor, wet, brown, tar-like stail		
- -	_	S6	60/29	384			NLO		sand, fine to coarse, ~10% g	SAND WITH SILT (SW-SM); ~80% ravel, fine, ~10% fines, non plastic; alene-like odor, dry, brown, dense.	
15 -	_ _ 								Ford of Davisor at 20 foot		
I	End of Boring at 30 feet.										

Refusal at 30 feet. Sample shoe chipped with rock in shoe. Grouted

### NOTES:

BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

NA = NOT APPLICABLE NM = NOT MEASURED

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (PPM)

PIN = PARTS PER MILLION
NLO = NAPHTHALENE LIKE ODOR
PLO = PETROLEUM LIKE ODOR
TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York 093060 GEI PROJECT NUMBER:

**PAGE** 1 of 2

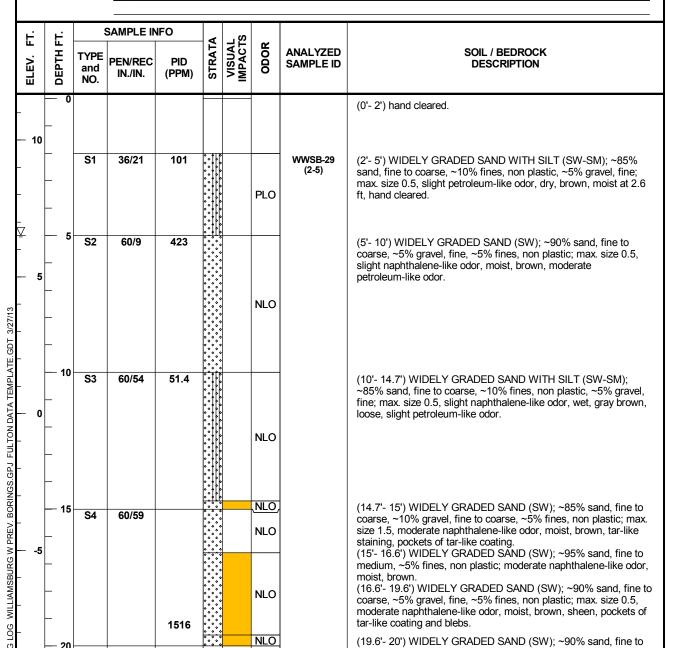
WW-SB-29

**BORING LOG** 

Consultants **GROUND SURFACE ELEVATION (FT):** 11.51 LOCATION: North 11th Street NORTHING (FT): 688760 **EASTING (FT):** 641716 TOTAL DEPTH (FT): 28.0 DRILLED BY: Zebra Environmental / Luke Caballero DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone DATE START / END: 8/18/2009 - 8/19/2009 LOGGED BY: Maura MacLeod **DRILLING DETAILS:** Geoprobe

WATER LEVEL DEPTHS (FT): <u>▼ 5.00 8/18/2009</u>

GENERAL NOTE: Stepout of WWSB-10



**NOTES:** 

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REC = RECOVERY LENGTH OF SAMPLE

PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

ppm = PARTS PER MILLION

IN. = INCHES FT. = FEET

NLO = NAPHTHALENE LIKE ODOR PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

SAMPLE INFO

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York 093060 **GEI PROJECT NUMBER:** 

**PAGE** 2 of 2

SOIL / BEDROCK

**DESCRIPTION** 

**WW-SB-29** 

**BORING LOG** 

	Ħ.	H	•	SAMPLE IN	NFO	-	ုတ္ပ		
ELEV. F		ОЕРТН FT	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID
	- 10	— 20 —	S5	60/59	96.1	••••		NLO	WWSB-29 (20-22)
	-	- - -						NLO	
	- 15 -	— 25 — —	S6	36/16	315			NLO	

coarse, ~5% gravel, fine, ~5% fines, non plastic; max. size 0.5, strong naphthalene-like odor, moist, brown, sheen, pockets of tar-like coating and blebs.

(20'- 21.9') WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, fine, ~5% fines, non plastic; max. size 0.5, moderate naphthalene-like odor, moist, brown, sheen, tar-like blebs, and pockets of tar-like coating.

(21.9'- 25') WIDELY GRADED SAND (SW); ~85% sand, fine to coarse, ~10% gravel, fine to coarse, ~5% fines, non plastic; max. size 1, moderate naphthalene-like odor, dry, reddish brown, very dense, sheen.

(25'- 28') WIDELY GRADED SAND WITH SILT (SW-SM); ~80% sand, fine to coarse, ~10% gravel, fine, ~10% fines, non plastic; max. size 0.5, slight naphthalene-like odor, moist, brown, dense.

End of Boring at 28 feet. Refusal at 28 feet. Rock in sample shoe. Grouted

#### NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

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JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE = TORVANE PEAK

NM = NOT MEASURED

ppm = PARTS PER MILLION

IN. = INCHES FT. = FEET

NLO = NAPHTHALENE LIKE ODOR PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

CLIENT: **National Grid** Williamsburg MGP RI PROJECT: CITY/STATE: Brooklyn, New York **GEI PROJECT NUMBER:** 093060

PAGE WW-SB-30 1 of 3

**BORING LOG** 

**GROUND SURFACE ELEVATION (FT):** 10.51 LOCATION: North 11th Street NORTHING (FT): 688819 EASTING (FT): 641642 TOTAL DEPTH (FT): 50.0 DRILLED BY: Zebra Environmental / Luke Caballero DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Maura MacLeod DATE START / END: 8/18/2009 - 8/20/2009 DRILLING DETAILS: Geoprobe WATER LEVEL DEPTHS (FT): <u>₹ 5.90 8/18/2009</u>

GENERAL NOTE: Stepout of WWMW-08

	Ħ.	Ë	SAMPLE INFO							
	ELEV. F	<b>DEPTH</b> F	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION		
	<b>– 10</b>	— O							(0'- 2') Hand cleared.	
	- 10	_								
	-	_	S1	36/24	562		PLO	WWSB-30 (2-5)	(2'- 5') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to coarse, ~10% fines, non plastic; moderate petroleum-like odor, dry, brown, coal fragments, organics, roots, hand cleared. FILL.	
	<b>_</b> 5	— 5 –	S2	60/47					(5'- 10') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to coarse, ~10% fines, non plastic; moderate petroleum-like odor, dry, brown, brick and coal fragments, change to wet at 5.9 ft. FILL.	
ATE.GDT 3/27/13	-	_ _ _ _ 10			747		PLO	WWSB-30 (7-9)		
ING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13	- <b>0</b>	- - -	<b>S3</b>	60/0					(10'- 15') no recovery.	
SBURG W PREV. BORING	- - <b>-5</b>	— <b>15</b> —	\$4	60/60	63.5				(15'- 17.9') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; wet, light brown.	
NG LOG WILLIAM	-						PLO PLO PLO		(17.9'- 18.7') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; slight petroleum-like odor, light brown, lenses of silt. (18.7'- 19.4') SILTY SAND (SM); ~85% sand, fine to medium, ~15% fines, non plastic; slight petroleum-like odor, gray.	

NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK NA = NOT APPLICABLE

NM = NOT MEASURED

IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

			₩ GEI C	onsultants,	Inc.		CLIENT:	National Grid		BORING LOG				
155		(C	455 W	/inding Bro	ok Ro	oad	PROJECT:	Williamsburg MGP RI	DACE					
		~		368-5300	0003	55	CITY/STATE:	Brooklyn, New York	PAGE 2 of 3	WW-SB-30				
J		Consult	ants				GEI PROJECT	NUMBER: 093060						
FT.	Ħ.	SAMPLE INFO			STRATA	œ	ANAL VZED							
ELEV.	TYPE and NO. PEN/REC PID (PPM)					ODOR	ANALYZED SAMPLE ID		BEDROCI RIPTION	Λ.				
E		NO.	IN./IN.	(PPM)	ြ	U								
<b>— -10</b>	— 20	S5	60/53	95.7				(19.4'- 20') WIDELY GRADED SAND (SW); ~85% sand, fine to coarse, ~10% gravel, fine, ~5% fines, non plastic; max. size 0.5, slight						
_	_					PLO		petroleum-like odor, light brown. (20'- 22.3') SILTY SAND (SM); ~70% sand, fine to medium, ~20% fine: non plastic, ~10% gravel, fine; max. size 0.75, slight petroleum-like odowet, gray brown.						
- - -	-							wet, gray brown.  (22.3'- 23.3') SILTY SAND (SM); ~70% sand, fine to medium, ~20% fines, non plastic, ~10% gravel, fine; max. size 0.75, wet, gray brown.  (23.3'- 25') WIDELY GRADED SAND (SW); ~90% sand, fine to medium, ~5% gravel, fine, ~5% fines, non plastic; max. size 0.5, wet, brown.						
— <b>-15</b> -	— 25 –	S6	60/28	45	••••			(25'- 32.4') WIDELY GRADED SAI medium, ~5% gravel, fine, ~5% fine petroleum-like odor, wet, brown.						
-	- - - - 30					PLO								
<b>-20</b>	_	S7	60/60		* * * * * * * * * * * * * * * * * * *			(32.4'- 34.3') WIDELY GRADED S	AND (SW	/): ∼90% sand. fine to				
-	-			113		PLO		coarse, ~5% gravel, fine, ~5% fines petroleum-like odor, wet, brown to g	s, non`pla gray.	stic; max. size 0.75, slight				
- 25	— 35	S8	60/52					(34.3'- 36.8') NARROWLY GRADE ~5% fines, non plastic; wet, brown,	D SAND color cha	(SP); ~95% sand, fine, ange at 35 ft to gray brown.				
-	_							(36.8'- 37.9') SILT WITH SAND (M sand, fine; wet, gray brown, lens of	sand from	n 37.4 to 37.5 ft.				
-	- 40			3.1				(37.9'- 40.9') NARROWLY GRADE ~5% fines, non plastic; wet, gray br	ED SAND Town.	(SP); ~95% sand, fine,				
<b>-30</b>	- <b>40</b>	<b>S9</b>	60/27	9.9				(40.9'- 50') LEAN CLAY (CL); ~100 red gray.	0% fines,	medium plasticity; moist,				
NOTE		PATION	ENGTH OF S	SAMDI ED O		DE BAD	PEL DOM - DAD	TS PER MILLION NLO = NAPHTHALENE LI	KE ODOP	04 0- 0BE080TE LIKE 0200				

ENVIRONMENTAL BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

NA = NOT APPLICABLE NM = NOT MEASURED  $Q_P$  = POCKET PENETROMETER  $S_V$  = TORVANE PEAK

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
RIN. = INCHES
RIN. = INCHES
RIN. = INCHES
RIN. = INCHES
RIN. = FEET
RILLION
RIN. = NOT APPLICABLE
ROOT = POSCET PENETROMETER
ROOT = POSCET PENETROMETER
ROOT = POSCET PENETROMETER
ROOT = ROOT =

GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 **BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** WW-SB-30 CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 3 **GEI PROJECT NUMBER:** 093060 Consultants **SAMPLE INFO** Ë Ë STRATA ODOR DEPTH **ANALYZED** SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and (PPM) IN./IN. NO. WWSB-30 S10 60/60 10.1 -35 (45-50)End of Boring at 50 feet.

Grouted

NOTES:

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

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NA = NOT APPLICABLE NM = NOT MEASURED

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL REC = RECOVERY LENGTH OF SAMPLE RIGHT OF SAMPLE REC = PHOTOIONIZATION DETECTOR READING (PPM) PLO = PHOTOIONIZATION DETECTOR READING (PPM) PLO = TAR LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

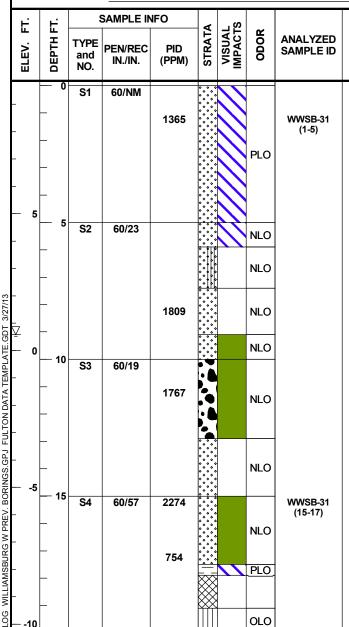
CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York 093060 GEI PROJECT NUMBER:

**PAGE WW-SB-31** 1 of 3

**BORING LOG** 

**GROUND SURFACE ELEVATION (FT):** 9 68 LOCATION: North 11th Street NORTHING (FT): 688864 **EASTING (FT):** 641586 TOTAL DEPTH (FT): 60.0 DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone DRILLED BY: Zebra Environmental / Quincy Brandt LOGGED BY: Maura MacLeod DATE START / END: 8/26/2009 - 8/27/2009 DRILLING DETAILS: Geoprobe 

GENERAL NOTE: Step out of WWSB-13



(0'- 5') WIDELY GRADED SAND WITH GRAVEL (SW); ~75% sand, fine to coarse, ~20% gravel, fine to coarse, ~5% fines, non plastic; max. size 2, moderate petroleum-like odor, brown, brick and coal fragments, black petroleum-like staining, hand cleared.

SOIL / BEDROCK

DESCRIPTION

(5'- 5.9') WIDELY GRADED SAND WITH GRAVEL (SW); ~75% sand, fine to coarse, ~20% gravel, fine to coarse, ~5% fines, non plastic; max. size 2, slight naphthalene-like odor, brown, brick and coal fragments, black petroleum-like staining and odor. FILL. (5.9'- 7.4') WIDELY GRADED SAND WITH SILT (SW-SM); ~85% sand, fine to coarse, ~10% fines, non plastic, ~5% gravel, fine; max. size 0.5, moderate naphthalene-like odor, brown, moderate petroleum-like odor. FILL

(7.4'- 9.1') WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~15% gravel, fine to coarse, ~5% fines, non plastic; max. size 2, moderate naphthalene-like odor, black, coal and brick fragments, moderate petroleum-like odor.

(9.1'- 10') WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~15% gravel, fine to coarse, ~5% fines, non plastic; max. size 2, moderate naphthalene-like odor, wet, black, coal and brick fragments, tar-like staining, moderate petroleum-like odor. FILL

(10'- 12.9') WIDELY GRADED GRAVEL WITH SAND (GW); ~70% gravel, fine to coarse, ~25% sand, fine to coarse, ~5% fines, non plastic; max. size 2, moderate naphthalene-like odor, black, brick and coal fragments, tar and petroleum-like staining. FILL.

(12.9'- 15') WIDELY GRADED SAND WITH GRAVEL (SW); ~60% sand, fine to coarse, ~35% gravel, fine to coarse, ~5% fines, non plastic; max. size 0.75, moderate naphthalene-like odor, brown black, moderate petroleum-like odor. FILL.

(15'- 17.5') WIDELY GRADED SAND WITH GRAVEL (SW); ~60% sand, fine to coarse, ~35% gravel, fine to coarse, ~5% fines, non plastic; max. size 1.5, moderate naphthalene-like odor, moderate tar and petroleum-like staining, moderate petroleum-like

(17.5'- 17.9') ORGANIC SOIL WITH SAND (OL); ~70% fines, low plasticity, ~30% sand, fine; strong petroleum-like odor, wet, black, wood fragments and organics, petroleum-like saturation. FILL.

#### **NOTES:**

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

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PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

ppm = PARTS PER MILLION

IN. = INCHES FT. = FEET

NLO = NAPHTHALENE LIKE ODOR PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR MLO = MUSTY LIKE ODOR

NA = NOT APPLICABLE Q<sub>P</sub> = POCKET PENETROMETER

= NOT MEASURED

= TORVANE PEAK

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-SB-31** CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 3 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë Ë VISUAL IMPACTS STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 20 **S5** 60/56 136 (17.9'- 19.1') WOOD; wood fragments, moderate wood OLO preservative-like odor. FILL. (19.1'- 20.8') SILT WITH SAND (ML); ~75% fines, low plasticity, ~25% sand, fine; moderate organic-like odor, black. (20.8'- 23') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; wet, brown. (23'- 25') WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, ~5% fines, non plastic; max. size 1.75, moist, light brown, dense. -15 25 **S6** 60/56 171 (25'- 27') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to coarse, ~10% fines, non plastic; slight petroleum-like PLO odor, moist, brown. (27'- 30') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; wet, light brown. -20 30 60/46 **S7** 152 (30'- 40') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; slight petroleum-like odor, wet, light brown. -25 PLO 35 S8 60/35 50 1 -30 40 (40'- 45.9') WIDELY GRADED SAND (SW); ~95% sand, fine to S9 60/40 60.4 coarse, ~5% fines, non plastic; slight naphthalene-like odor, moist, brown. NLO

#### **NOTES:**

BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

WILLIAMSBURG W PREV.

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

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JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

= TORVANE PEAK NM = NOT MEASURED

ppm = PARTS PER MILLION

IN. = INCHES FT. = FEET

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CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road Glastonbury, CT 06033 PROJECT: Williamsburg MGP RI **PAGE** WW-SB-31 CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 3 093060 GEI PROJECT NUMBER: Consultants SAMPLE INFO Ë Ë VISUAL IMPACTS STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK TYPE ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. S10 60/41 8.3 NLO (45.9'- 47.8') SANDY SILT (ML); ~70% fines, low plasticity, ~30% sand, fine; moist, gray brown. (47.8'- 50') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; slight naphthalene-like odor, moist, NLO brown. -40 50 S11 60/54 (50'- 53.8') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; moist, brown. WWSB-31 23.7 (52-54)(53.8'- 55') LEAN CLAY (CL); ~90% fines, ~10% sand, fine; red gray. -45 55 **S12** 60/62 398 (55'- 60') LEAN CLAY (CL); ~90% fines, medium plasticity, ~10% sand, fine; slight naphthalene-like odor, reddish gray, dense. NLO

> End of Boring at 60 feet. Grouted

# NOTES:

LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

-50

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

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NM = NOT MEASURED = TORVANE PEAK

IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 (860) 368-5300 Consultants

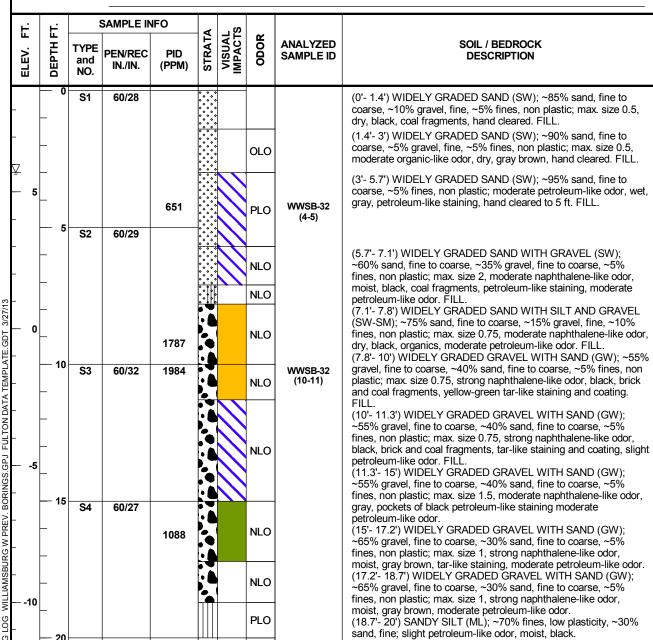
CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York 1 of 3 GEI PROJECT NUMBER: 093060

**PAGE WW-SB-32** 

**BORING LOG** 

**GROUND SURFACE ELEVATION (FT):** 8.70 LOCATION: North 11th Street NORTHING (FT): 688932 **EASTING (FT):** 641502 TOTAL DEPTH (FT): 45.0 DRILLED BY: Zebra Environmental / Quincy Brandt DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Maura MacLeod DATE START / END: 8/27/2009 - 8/28/2009 DRILLING DETAILS: Geoprobe 

GENERAL NOTE: Stepout of WWMW-11



#### **NOTES:**

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**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-SB-32** CITY/STATE: (860) 368-5300 Brooklyn, New York 2 of 3 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 20 **S5** 60/50 1471 (20'- 21.2') WIDELY GRADED SAND (SW); ~95% sand, fine to NLO coarse, ~5% fines, non plastic; moderate naphthalene-like odor, gray black, strong petroleum-like odor. (21.2'- 22.6') WIDELY GRADED GRAVEL WITH SAND (GW); NLO ~65% gravel, fine to coarse, ~30% sand, fine to coarse, ~5% fines, non plastic; max. size 1, strong naphthalene-like odor, moist, gray brown, tar-like staining, moderate petroleum-like odor. (22.6'- 25') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; slight petroleum-like odor, moist, - -15 PLO light brown. 25 **S6** 60/49 5.6 (25'- 30') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; moist, light brown, lens of gravel from 28.3 to 28.4 ft. -20 30 60/34 31.8 **S7** (30'- 33.2') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; slight petroleum-like odor, moist, light brown. PLO (33.2'- 35') WIDELY GRADED SAND (SW); ~85% sand, fine to -25 coarse, ~10% gravel, fine to coarse, ~5% fines, non plastic; max. size 1.5, moist, light brown. 35 S8 60/35 (35'- 40') WIDELY GRADED SAND (SW); ~85% sand, fine to 29 6 coarse, ~10% gravel, fine to coarse, ~5% fines, non plastic; max. size 1.5, moist, light brown, dense, lenses of reddish-brown clay from 38.1 to 40 ft. -30 40 S9 60/57 (40'- 43.6') WIDELY GRADED SAND (SW); ~85% sand, fine to coarse, ~10% gravel, fine to coarse, ~5% fines, non plastic; max. size 1.5, slight petroleum-like odor, moist, light brown, dense, lenses of reddish-brown clay. PLO WWSB-32 (43-44)-35 (43.6'- 45') LEAN CLAY (CL); ~90% fines, medium plasticity, PLO 89.5 ~10% sand, fine; slight petroleum-like odor, moist, reddish gray, **NOTES:** 

IN. = INCHES FT. = FEET

GDT

WILLIAMSBURG W PREV, BORINGS.GPJ FULTON DATA TEMPLATE.

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NM = NOT MEASURED = TORVANE PEAK ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR

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CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 **BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** WW-SB-32 CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 3 **GEI PROJECT NUMBER:** 093060 Consultants **SAMPLE INFO** Ë VISUAL Ë STRATA ODOR DEPTH **ANALYZED** SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and (PPM) IN./IN. NO. PLO dense

End of Boring at 45 feet. Grouted

NOTES:

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK NA = NOT APPLICABLE

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IN. = INCHES
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BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

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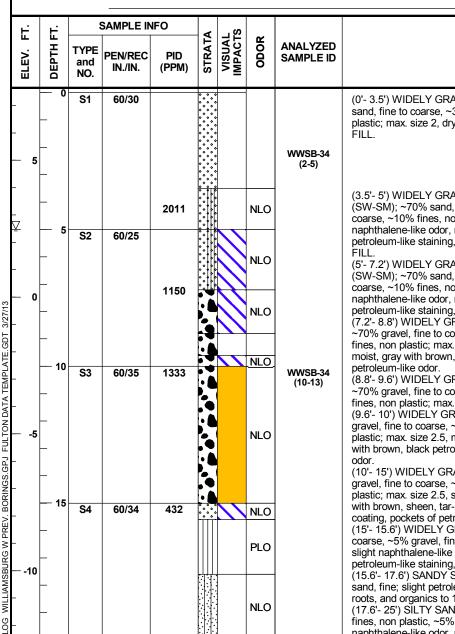
CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York 093060 GEI PROJECT NUMBER:

**PAGE** 1 of 2

**WW-SB-34** 

**BORING LOG** 

Consultants **GROUND SURFACE ELEVATION (FT):** 7 47 LOCATION: North 12th Street NORTHING (FT): 689254 **EASTING (FT):** 641588 TOTAL DEPTH (FT): 26.5 DRILLED BY: Zebra Environmental / Luke Caballero DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone DATE START / END: 9/16/2009 - 9/16/2009 LOGGED BY: Maura MacLeod DRILLING DETAILS: Geoprobe GENERAL NOTE: Stepout of WWMW-13



(0'- 3.5') WIDELY GRADED SAND WITH GRAVEL (SW): ~60% sand, fine to coarse, ~35% gravel, fine to coarse, ~5% fines, non plastic; max. size 2, dry, brown, coal fragments, hand cleared.

SOIL / BEDROCK

DESCRIPTION

(3.5'- 5') WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM); ~70% sand, fine to coarse, ~20% gravel, fine to coarse, ~10% fines, non plastic; max. size 1.5, slight naphthalene-like odor, moist, brown, coal fragments, black petroleum-like staining, strong petroleum-like odor, hand cleared.

(5'- 7.2') WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM); ~70% sand, fine to coarse, ~20% gravel, fine to coarse, ~10% fines, non plastic; max. size 1.5, moderate naphthalene-like odor, moist, brown, coal fragments, black petroleum-like staining, moderate petroleum-like odor. FILL. (7.2'- 8.8') WIDELY GRADED GRAVEL WITH SAND (GW); ~70% gravel, fine to coarse, ~25% sand, fine to coarse, ~5% fines, non plastic; max. size 2.5, moderate naphthalene-like odor, moist, gray with brown, black petroleum-like staining, moderate

(8.8'- 9.6') WIDELY GRADED GRAVEL WITH SAND (GW); ~70% gravel, fine to coarse, ~25% sand, fine to coarse, ~5% fines, non plastic; max. size 2.5, moist, gray with brown. (9.6'- 10') WIDELY GRADED GRAVEL WITH SAND (GW); ~70% gravel, fine to coarse, ~25% sand, fine to coarse, ~5% fines, non plastic; max. size 2.5, moderate naphthalene-like odor, moist, gray with brown, black petroleum-like staining, moderate petroleum-like

(10'- 15') WIDELY GRADED GRAVEL WITH SAND (GW); ~70% gravel, fine to coarse, ~25% sand, fine to coarse, ~5% fines, non plastic; max. size 2.5, strong naphthalene-like odor, moist, gray with brown, sheen, tar-like blebs with pockets of staining and coating, pockets of petroleum-like staining. (15'- 15.6') WIDELY GRADED SAND (SW); ~90% sand, fine to

coarse, ~5% gravel, fine, ~5% fines, non plastic; max. size 0.5, slight naphthalene-like odor, moist, brown black, black petroleum-like staining, moderate petroleum-like odor. (15.6'- 17.6') SANDY SILT (ML); ~70% fines, low plasticity, ~30%

sand, fine; slight petroleum-like odor, moist, brown to black, wood, roots, and organics to 16 ft. (17.6'- 25') SILTY SAND (SM); ~80% sand, fine to coarse, ~15%

fines, non plastic, ~5% gravel, fine; max. size 0.5, slight naphthalene-like odor, moist, brown, slight petroleum-like odor.

#### **NOTES:**

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TLO = TAR LIKE ODOR CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 (860) 368-5300

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York GEI PROJECT NUMBER: 093060

**PAGE** WW-SB-34 2 of 2

**BORING LOG** 

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ELEV. F	<b>DEPTH FT</b>	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL	ODOR	ANALYZED SAMPLE ID
- 	20   25	S5	60/7	83.2			NLO	
-		S6	18/30	70.8			NLO	
							NLO	

(25'- 26') WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, fine to coarse, ~5% fines, non plastic; max. size 2, slight naphthalene-like odor, wet, brown, slight petroleum-like odor. (26'- 26.5') WIDELY GRADED SAND WITH SILT (SW-SM);

~85% sand, fine to coarse, ~10% fines, low plasticity, ~5% gravel, fine; max. size 0.75, slight naphthalene-like odor, moist, brown, slight petroleum-like odor, cobbles from 26.4 to 26.5 ft.

SOIL / BEDROCK

**DESCRIPTION** 

End of Boring at 26.5 feet. Refusal at 26.5 feet. Cobble in sample shoe. Grouted

## NOTES:

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IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

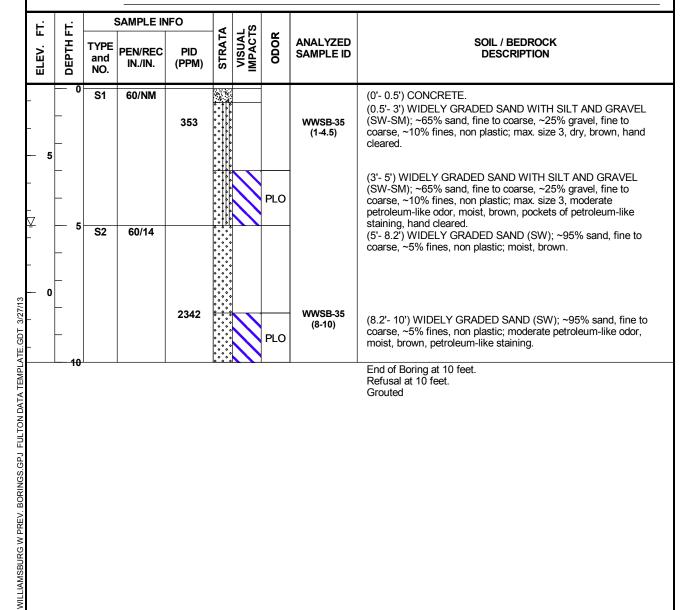


CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York GEI PROJECT NUMBER: 093060

**PAGE WW-SB-35** 1 of 1

**BORING LOG** 

**GROUND SURFACE ELEVATION (FT):** 7.45 LOCATION: North 12th Street NORTHING (FT): 689305 **EASTING (FT):** 641527 TOTAL DEPTH (FT): 10.0 DRILLED BY: Zebra Environmental / Quincy Brandt DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Maura MacLeod DATE START / END: 9/24/2009 - 9/30/2009 DRILLING DETAILS: Geoprobe WATER LEVEL DEPTHS (FT): <u>▼ 5.00 9/24/2009</u> GENERAL NOTE: Stepout of WWSB-15; elevation estimated



Refusal at 10 feet. Grouted

#### **NOTES:**

FOG

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CrLO= CREOSOTE LIKE ODOR

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CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York GEI PROJECT NUMBER: 093060

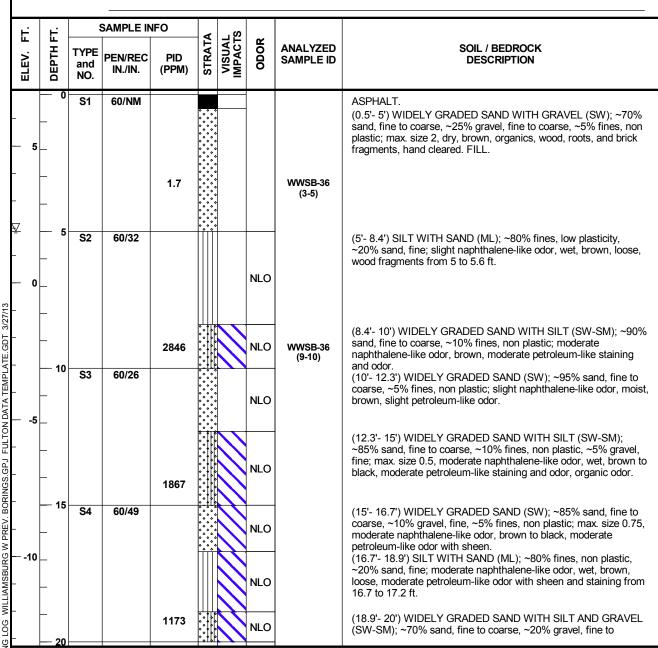
**PAGE** 1 of 2

**WW-SB-36** 

**BORING LOG** 

**GROUND SURFACE ELEVATION (FT):** 6.88 LOCATION: North 12th Street TOTAL DEPTH (FT): 34.0 NORTHING (FT): 689416 **EASTING (FT):** 641383 DRILLED BY: Zebra Environmental / Quincy Brandt DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Maura MacLeod DATE START / END: 9/29/2009 - 9/30/2009 DRILLING DETAILS: Geoprobe 

GENERAL NOTE: Stepout of WWMW-15



**NOTES:** 

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CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 (860) 368-5300 CLIENT: PROJECT: CITY/STATE: BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

**BORING LOG National Grid** Williamsburg MGP RI PAGE WW-SB-36 Brooklyn, New York 2 of 2

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	ELEV. F	DEPTH	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL	ODOR	ANALYZED SAMPLE ID		/ BEDI SCRIPT	
		— 20	S5	60/58				NLO		coarse, ~10% fines, low plast naphthalene-like odor, wet, b		
I		_			555	$\prod$		NLO		odor with staining and pocket (20'- 20.9') WIDELY GRADE		
	15 - -	_ _ _ 25						PLO		(GW-GM); ~60% gravel, fine coarse, ~10% fines, non plas naphthalene-like odor, wet, bi staining, pockets of petroleum petroleum-like odor. (20.9'- 21.6') SILT WITH SAI ~20% sand, fine, ~5% gravel naphthalene-like odor, black.	to coar tic; ma: lack, sh n-like co ND (ML , fine; n	rse, ~30% sand, fine to x. size 1.5, moderate leen, tar-like blebs and pating, moderate ); ~75% fines, low plasticity, nax. size 0.5, moderate
	- <b>-20</b>	<b>25</b> 	S6	60/38	65.5			NLO		coating, moderate petroleum- (21.6'- 25') SILT (ML); ~90% fine; slight petroleum-like odc (25'- 28') SILTY SAND (SM);	like odd fines, r or, mois ~80% I, fine to	or with pockets of coating. medium plasticity, ~10% sand, t, black. sand, fine to coarse, ~15% to coarse; max. size 2.5, slight
	-	_								(28'- 30') SANDY ELASTIC S plasticity, ~40% sand, fine to		
	-	— 30 –	<b>S7</b>	48/46				NLO		(30'- 31.7') SILTY SAND (SM fines, medium plasticity; sligh brownish white, slight burnt-li	t napht	halene-like odor, moist,
2	25	_			18.7			NLO	_			ND (SW); ~95% sand, fine to tanget and the results and the results and the results are said to the results and the results are said to the results are
120 00:	-	_				****	>	NLO		brown, slight burnt-like odor. (32.3'- 33.5') SANDY ELAST	IC SILT	(MH); ~60% fines, medium; slight naphthalene-like odor,
										(33.5'- 34') WIDELY GRADE coarse, ~5% fines, non plasti	D SAN	D (SW); ~95% sand, fine to
										End of Boring at 34 feet.	0, 111015	t, Di OWII.

NOTES:

JHS = JAR HEADSPACE PID READING (PPM)

NA = NOT APPLICABLE NM = NOT MEASURED

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

Refusal at 34 feet. Grouted

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (PPM)

PIN = PARTS PER MILLION
NLO = NAPHTHALENE LIKE ODOR
PLO = PETROLEUM LIKE ODOR
TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 (860) 368-5300 Consultants

BORING LOG CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** WW-SB-37 CITY/STATE: Brooklyn, New York 1 of 5 **GEI PROJECT NUMBER:** 093060

**GROUND SURFACE ELEVATION (FT):** 12.96 LOCATION: 50 Kent Ave NORTHING (FT): 688768 EASTING (FT): 642054 TOTAL DEPTH (FT): 97.0 DRILLED BY: Boart Longyear / Craig Marsh DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Amy Malsbary DATE START / END: 12/28/2009 - 12/28/2009 DRILLING DETAILS: Sonic Coring WATER LEVEL DEPTHS (FT): **GENERAL NOTE:** 

	FT.	Ë	;	SAMPLE IN	IFO	4	·ω			
	ELEV. F	<b>DEPTH F</b>	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
		— o	S1	84/NM						
	- - - 10 -	_								(0.5'- 7') WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM); ~70% sand, fine to coarse, ~20% gravel, fine to coarse, ~10% fines, non plastic; ~20% concrete fragments, max. size 1.5, dry, dark brown, hand cleared to 5 ft. FILL.
	-	— 5 —								
.GDT 3/27/13	<b>– 5</b>	_	S2	120/78						(7'- 10.1') CONCRETE.
NG LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13	-	— 10 –			127			NLO		(10.1'- 12') SILTY SAND WITH GRAVEL (SM); ~65% sand, fine to coarse, ~20% fines, non plastic, ~15% gravel, fine to coarse, subangular to subrounded; max. size 4, moderate naphthalene-like odor, brown, sheen, lenses and seams of black staining.
PJ FULTO	<b>– 0</b>	_						NLO		(12'- 13.5') SILTY SAND WITH GRAVEL (SM); ~65% sand, fine to coarse, ~20% fines, non plastic, ~15% gravel, fine to coarse, subangular to subrounded; max. size 4, strong naphthalene-like
IGS.GI	-	_						NLO		odor, dark gray and black, sheen, lenses and seams of black staining, slight tar-like staining.
G W PREV. BORIN	-	— 15 —			46.2			NLO		(13.5'- 13.9") SILTY SAND (SM); ~75% sand, fine to coarse, ~15% fines, non plastic, ~10% gravel, fine to coarse; max. size 2.5, slight naphthalene-like odor, moist, light brown, sheen. (13.9'- 17') SILTY SAND (SM); ~75% sand, fine to coarse, ~15% fines, non plastic, ~10% gravel, fine to coarse; max. size 2.5, slight naphthalene-like odor, moist, light brown.
SBUR			S3	60/96		n A				(17'- 17.6') COBBLE.
WILLIAM.	- <b>-5</b> -	- -								(17.6'- 20.1') SILTY SAND (SM); ~80% sand, fine to coarse, ~15% fines, non plastic, ~5% gravel, fine to coarse, subangular to subrounded; max. size 1.5, moist, light reddish brown.
OOT OI		<b>—</b> 20			239					

NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK NA = NOT APPLICABLE

NM = NOT MEASURED

IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE** WW-SB-37 CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 5 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 20 (20.1'- 24.5') NARROWLY GRADED SAND (SP); ~100% sand, fine; slight naphthalene-like odor, dry, light gray, color change at 22 feet to light brownish gray, powder-like, cobble from 21.1 to S4 60/84 NLO 241 -10 (24.5'- 26.3') COBBLE; black, light gray specks. 25 (26.3'- 27') WIDELY GRADED GRAVEL WITH SILT AND SAND (GW-GM); ~60% gravel, fine to coarse, ~30% sand, fine to **S5** 120/132 coarse, ~10% fines, non plastic; max. size 4, reddish brown. (27'- 28.4') WIDELY GRADED SAND (SW); ~95% sand, fine to NLO -15 coarse, ~5% fines, non plastic; strong naphthalene-like odor, moist, brown, loose. (28.4'- 31.1') WIDELY GRADED SAND (SW); ~95% sand, fine to 3487 coarse, ~5% fines, non plastic; strong naphthalene-like odor, NLO moist, brown, loose, tar-like staining and coating. 30 (31.1'- 32') WIDELY GRADED SAND (SW); ~95% sand, fine to NLO coarse, -5% fines, non plastic; strong naphthalene-like odor, moist, brown, loose, 3 inch lens of dense fine sand at 32 feet. NLO (32'- 32.9') WIDELY GRADED SAND (SW); ~95% sand, fine to -20 coarse, ~5% fines, non plastic; strong naphthalene-like odor, moist, brown, loose, sheen, tar-like staining and coating. (32.9'- 37') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; moderate naphthalene-like odor, moist, brown, loose. NLO 35 148 120/132 **S6** (37'- 41.5') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; moist, brown, loose. -25 11.1 40 (41.5'- 42.2') WIDELY GRADED SAND (SW); ~95% sand, medium to coarse, ~5% fines, non plastic; moist, orangish brown, -30 (42.2'- 45.2') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; moist, brown, loose. **NOTES:** PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR CrLO= CREOSOTE LIKE ODOR IN. = INCHES FT. = FEET

REC = RECOVERY LENGTH OF SAMPLE

FULTON DATA TEMPLATE GDT

WILLIAMSBURG W PREV, BORINGS.GPJ

LOG

PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

= TORVANE PEAK NM = NOT MEASURED

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR

ALO = ASPHALT LIKE ODOR

OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

MLO = MUSTY LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-SB-37** CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 5 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë Ë VISUAL IMPACTS STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 45 6.3 (45.2'- 45.6') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; moist, brown. (45.6'- 49') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; moist, brown, loose. **S7** 120/180 -35 (49'- 50.2') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; moist, brown. 50 9.8 (50.2'- 50.7') SILTY SAND (SM); ~80% sand, fine to medium, ~20% fines, non plastic; moist, brown. (50.7'- 57') SILT WITH SAND (ML); ~80% fines, low plasticity, ~20% sand, fine to medium; moist, brown, dense, 4 inch sand lens at 52.3 feet. -40 105 55 120/156 (57'- 59.7') WIDELY GRADED SAND (SW); ~95% sand, fine to S8 medium, ~5% fines, non plastic; moist, brown. 45 (59.7'- 67') LEAN CLAY (CL); ~90% fines, medium plasticity, 60 ~10% sand, fine; red with gray, color change to gray at 64.3 feet, 3.2 very dense. -50 65 2.4

## **NOTES:**

-55

WILLIAMSBURG W PREV, BORINGS, GPJ FULTON DATA TEMPLATE, GDT

LOG

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

2.1

120/144

REC = RECOVERY LENGTH OF SAMPLE

S9

PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

= TORVANE PEAK NM = NOT MEASURED

ppm = PARTS PER MILLION

IN. = INCHES FT. = FEET

dense.

NLO = NAPHTHALENE LIKE ODOR PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

(67'- 72') LEAN CLAY (CL); ~90% fines, medium plasticity, ~10%

sand, fine; olive brown, color change to gray at 71.2 feet, very

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-SB-37** CITY/STATE: Brooklyn, New York (860) 368-5300 4 of 5 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë Ë VISUAL IMPACTS STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 70 (72'- 74.5') SILT WITH SAND (ML); ~80% fines, low plasticity, ~20% sand, fine; moist, gray, dense. -60 1.6 (74.5'- 75.8') SILTY SAND (SM); ~70% sand, fine to medium, 75 ~30% fines, non plastic; dry, gray, dense, brittle. (75.8'- 78.3') SILTY SAND (SM); ~70% sand, fine to medium, ~30% fines, non plastic; moist, gray, dense. **S10** 120/138 -65 1.4 (78.3'- 79.2') SANDY SILT (ML); ~70% fines, low plasticity, ~30% sand, fine; moist, gray, dense. (79.2'- 80.5') SILTY SAND (SM); ~70% sand, fine to medium, ~30% fines, non plastic; moist, gray, dense. 80 (80.5'- 87.4') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; moist, gray, loose. -70 1.3 85 120/144 **S11** (87.4'- 90.3') SILTY SAND (SM); ~75% sand, fine to medium, -75 ~25% fines, non plastic; moist, whitish gray, dense. 1.4 90 (90.3'- 92.8') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; moist, whitish gray, loose. -80 (92.8'- 93.3') SILTY SAND (SM); ~75% sand, fine to medium, ~25% fines, non plastic; moist, whitish gray, dense. **NOTES:** 

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

GDT 3/27/13

WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.

PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

= TORVANE PEAK NM = NOT MEASURED

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CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 (860) 368-5300 Consultants

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York GEI PROJECT NUMBER: 093060

**PAGE WW-SB-37** 5 of 5

**BORING LOG** 

SAMPLE INFO Ë VISUAL IMPACTS Ë STRATA ODOR DEPTH SOIL / BEDROCK **ANALYZED** TYPE ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. (93.3'- 94.5') WIDELY GRADED SAND (SW); ~95% sand, medium to coarse, ~5% fines, non plastic; moist, whitish gray, loose, lens of fine to medium dark gray sand. 95 (94.5'- 95.3') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; moist, dark gray, dense. (95.3'- 97') WIDELY GRADED SAND (SW); ~95% sand, fine to WW-SB-37 1.4 coarse, ~5% fines, non plastic; moist, gray. (96-97)

> End of Boring at 97 feet. Grouted

#### NOTES:

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Q<sub>P</sub> = POCKET PENETROMETER

S<sub>v</sub> = TORVANE PEAK

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

NA = NOT APPLICABLE NM = NOT MEASURED

GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 (860) 368-5300

**BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** CITY/STATE: **WW-SB-38** Brooklyn, New York 1 of 5 GEI PROJECT NUMBER: 093060

Consultants		
GROUND SURFACE ELEVATION (FT):	14.58	LOCATION: 50 Kent Ave
NORTHING (FT): 688633 EASTING (FT)	): <u>641969</u>	_ TOTAL DEPTH (FT):97.0
DRILLED BY: Boart Longyear / Craig Marsh		DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone
LOGGED BY: Amy Malsbary		DATE START / END: 12/28/2009 - 12/29/2009
DRILLING DETAILS: Sonic Coring		
WATER LEVEL DEPTHS (FT):		
GENERAL NOTE:		

E	FT.	,	SAMPLE IN	IFO		·ω			
ELEV. F	<b>DEPTH</b> F	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
- - - - 10	0 	S1	84/NM				NLO		(0'- 7') WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM); ~70% sand, fine to coarse, ~20% gravel, fine to coarse, angular, ~10% fines, non plastic; max. size 2, slight naphthalene-like odor, dry, dark gray, brick fragments, hand cleared to 5 ft. FILL.
- - - 5	_ _ _ _ 10	S2	120/57	34.6					(7'- 17') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to coarse, ~10% fines, non plastic; moderate naphthalene-like odor, moist, reddish brown, color change to gray at 10.7 feet, pepper-like odor, dark gray seam from 9.6 to 14.4 feet.
_ 5	- - - 15			80.1			NLO		
- - 5	-	S3	120/138		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		NLO NLO		(17'- 18.7') SILTY SAND (SM); ~85% sand, fine to coarse, ~15% fines, non plastic; moist, brown, dense, moderate pepper-like odor.  (18.7'- 19.2') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to coarse, ~10% fines, non plastic; slight naphthalene-like odor, moist, brown.

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

NA = NOT APPLICABLE NM = NOT MEASURED

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (PPM)

PIN = PARTS PER MILLION
NLO = NAPHTHALENE LIKE ODOR
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TLO = TAR LIKE ODOR

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**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-SB-38** CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 5 093060 GEI PROJECT NUMBER: Consultants SAMPLE INFO Ë Ë VISUAL IMPACTS STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 20 (19.2'- 23.1') SILTY SAND WITH GRAVEL (SM); ~55% sand, fine to coarse, ~30% fines, non plastic, ~15% gravel; max. size 3.5, slight naphthalene-like odor, moist, brown, dense, slight 32.7 NLO pepper-like odor. (23.1'- 25.3') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; strong naphthalene-like odor, moist, brown and grayish brown, pockets of silt, sheen, pockets of NLO -10 tar-like staining. 25 (25.3'- 26.6') WIDELY GRADED SAND (SW); ~95% sand, fine to NLO coarse, ~5% fines, non plastic; strong naphthalene-like odor, 1476 moist, brown, sheen, tar-like staining. NLO (26.6'- 27') WIDELY GRADED SAND (SW); ~95% sand, fine to **S4** 120/126 medium, ~5% fines, non plastic; strong naphthalene-like odor, moist, brown. (27'- 31.3') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; strong naphthalene-like odor, wet, brown, loose, sheen. NLO -15 30 1491 (31.3'- 33.2') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; moderate naphthalene-like odor, NLO moist, brown, loose. (33.2'- 37') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; moist, brown, loose. -20 35 70.1 120/126 **S5** (37'- 43.2') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; strong naphthalene-like odor, moist, brown with gray, sheen. 114 -25 40 NLO (43.2'- 46') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; slight naphthalene-like odor, NLO moist, reddish brown. **NOTES:** 

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

LOG

PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

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**BORING LOG** CLIENT: GEI Consultants, Inc. **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-SB-38** CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 5 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë Ë VISUAL IMPACTS STRATA ODOR DEPTH SOIL / BEDROCK ANALYZED TYPE ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 45 14.4 NLO (46'- 48') SANDY SILT (ML); ~70% fines, low plasticity, ~30% sand, fine to medium; moist, brown. **S6** 120/126 (48'- 49.4') SILTY SAND (SM); ~70% sand, fine to coarse, ~30% fines, low plasticity; moist, brown, dense. (49.4'- 50.3') WIDELY GRADED SAND (SW); ~95% sand, fine to -35 14.8 50 coarse, ~5% fines, non plastic; moist, brown, loose. (50.3'- 67') LEAN CLAY (CL);  $\sim$ 95% fines, medium plasticity,  $\sim$ 5% sand, fine; moist, red with gray, very dense, color change to gray at 65.5 feet. -40 130 55 120/156 **S7** 45 60 12.2 2.9 -50 65 120/144 (67'- 77') LEAN CLAY (CL); ~90% fines, low plasticity, ~10% **S8** sand, fine; moist, gray, very dense, color change to light brown at 75.3 feet. 0.2

# NOTES:

WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

FOG

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

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**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road Glastonbury, CT 06033 PROJECT: Williamsburg MGP RI **PAGE WW-SB-38** CITY/STATE: Brooklyn, New York (860) 368-5300 4 of 5 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë Ë VISUAL IMPACTS STRATA ODOR DEPTH SOIL / BEDROCK ANALYZED TYPE ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. -55 70 -60 75 0.2 S9 120/120 (77'- 87') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; wet, whiteish gray, color change to gray at 86 feet. 0.2 -65 80 -70 85 0.1 120/144 **S10** (87'-88.7') SILT WITH SAND (ML); ~85% fines, low plasticity, ~15% sand, fine; moist, grayish brown, dense. (88.7'- 89.1') SILTY SAND (SM); ~70% sand, fine to coarse, 0.2 ~30% fines, non plastic; moist, brown. -75 (89.1'- 89.5') SILT WITH SAND (ML); ~85% fines, low plasticity, 90 ~15% sand, fine; moist, gray, dense. (89.5'- 92.8') SILTY SAND (SM); ~70% sand, fine to medium, ~30% fines, non plastic; moist, whiteish gray, dense, brittle. (92.8'- 93.7') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; moist, whiteish gray. **NOTES:** 

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

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CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

MLO = MUSTY LIKE ODOR

**BORING LOG** CLIENT: GEI Consultants, Inc. **National Grid** 455 Winding Brook Road Glastonbury, CT 06033 PROJECT: Williamsburg MGP RI **PAGE WW-SB-38** CITY/STATE: Brooklyn, New York (860) 368-5300 5 of 5 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS Ë STRATA ODOR DEPTH **ANALYZED** SOIL / BEDROCK TYPE PEN/REC ELEV. PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. (93.7'- 95.3') SILTY SAND (SM); ~85% sand, fine to coarse, ~15% fines, non plastic; gray to blackish gray, dense. -80 95 0.2 (95.3'- 96.2') SILT WITH SAND (ML); ~85% fines, low plasticity, ~15% sand, fine; moist, gray, dense. (96.2'- 97') WIDELY GRADED SAND WITH SILT (SW-SM); WW-SB-38 ~90% sand, fine to coarse, ~10% fines, non plastic; moist, gray.

(96.5-97)

End of Boring at 97 feet.

Grouted

## NOTES:

LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK NA = NOT APPLICABLE

NM = NOT MEASURED

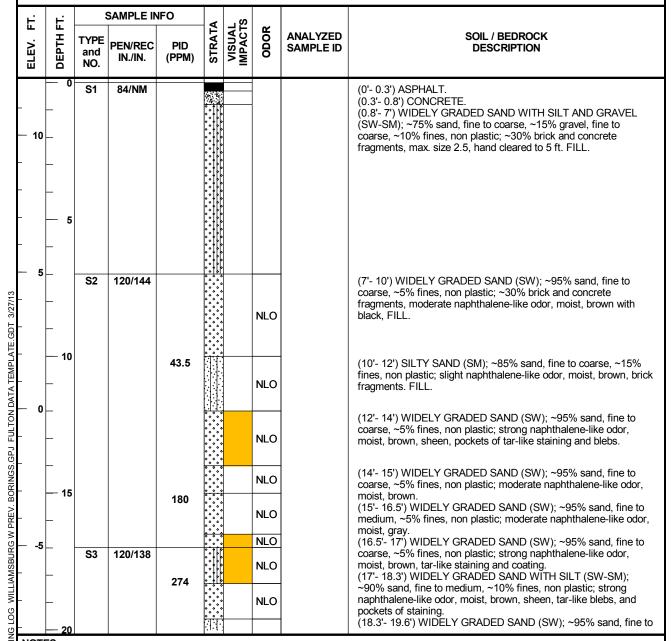
IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 (860) 368-5300

**BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE WW-SB-39** CITY/STATE: Brooklyn, New York 1 of 5 **GEI PROJECT NUMBER:** 093060

GROUND SURFACE ELEVATION (FT):	11.92	LOCATION: 50 Kent Ave
NORTHING (FT): 688828 EASTING (FT)	):641736	TOTAL DEPTH (FT): 97.0
DRILLED BY: Boart Longyear / Craig Marsh		DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone
LOGGED BY: Amy Malsbary		DATE START / END: 12/29/2009 - 12/30/2009
DRILLING DETAILS: Sonic Coring		
WATER LEVEL DEPTHS (FT):		
GENERAL NOTE:		



**NOTES:** 

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ppm = PARTS PER MILLION

NLO = NAPHTHALENE LIKE ODOR IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

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**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-SB-39** CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 5 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 20 coarse, ~5% fines, non plastic; slight naphthalene-like odor, moist, brown. (19.6'- 24.4') SILTY SAND (SM); ~80% sand, fine to coarse, ~20% fines, non plastic; moist, brown. -10 (24.4'- 25.7') WIDELY GRADED SAND (SW); ~95% sand, fine to 25 coarse, ~5% fines, non plastic; moist, brown. 73.6 (25.7'- 27') SILTY SAND (SM); ~80% sand, fine to coarse, ~20% fines, non plastic; moist, brown. -15 **S4** 120/84 (27'- 34.9') SILTY SAND (SM); ~75% sand, fine to coarse, ~15% fines, non plastic, ~10% gravel, fine to coarse; max. size 1, moist, brown, dense. 4.3 30 -20 35 (34.9'- 36.3') COBBLE. 20.4 (36.3'- 37') SILTY SAND (SM); ~85% sand, fine to medium, -25 ~15% fines, non plastic; moist, brown, dense. 120/138 **S5** (37'- 43.5') SILTY SAND WITH GRAVEL (SM); ~65% sand, fine to coarse, ~20% fines, non plastic, ~15% gravel, fine to coarse; max. size 3.5. 81.5 40 -30 (43.5'- 46.6') WIDELY GRADED SAND (SW); ~95% sand, fine to NLO coarse, ~5% fines, non plastic; moderate naphthalene-like odor,

## **NOTES:**

WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

FOG

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

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NM = NOT MEASURED = TORVANE PEAK

IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

MLO = MUSTY LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-SB-39** CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 5 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. moist, brown, loose. 45 NLO 1444 NLO (46.6'- 47') WIDELY GRADED SAND (SW); ~95% sand, fine to -35 **S6** 120/156 coarse, ~5% fines, non plastic; strong naphthalene-like odor, moist, brown, loose, tar-like staining and coating. NLO (47'- 48.7') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; strong naphthalene-like odor, NLO brown, loose, sheen. NLO (48.7'- 48.9') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; strong naphthalene-like odor, 50 1105 brown, loose, sheen, tar-like staining and coating. (48.9'- 49.7') SILTY SAND (SM); ~70% sand, fine to coarse, ~30% fines, non plastic; moderate naphthalene-like odor, brown, dense. (49.7'- 67') LEAN CLAY (CL); ~95% fines, medium plasticity, ~5% -40 sand, fine; moist, red with gray, dense. 55 146 -45 120/138 **S7** 60 2.2 -50 65 0.7 -55 120/150 (67'- 71') SILTY SAND (SM); ~60% sand, fine to medium, ~40% **S8** fines, low plasticity; moist, brown, dense. **NOTES:** PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR CrLO= CREOSOTE LIKE ODOR IN. = INCHES FT. = FEET OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR REC = RECOVERY LENGTH OF SAMPLE PLO = PETROLEUM LIKE ODOR

TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR

ALO = ASPHALT LIKE ODOR

MLO = MUSTY LIKE ODOR

PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/1

LOG

BORING LOG GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-SB-39** CITY/STATE: Brooklyn, New York (860) 368-5300 4 of 5 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 70 0.1 (71'- 71.8') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to medium, ~10% fines, non plastic; dry, gray, -60 (71.8'- 81.8') SILTY SAND (SM); ~80% sand, fine to medium, ~20% fines, non plastic; moist, grayish brown, dense. 75 0.0 -65 S9 120/150 0.0 80 -70 (81.8'- 84.6') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; moist, grayish brown. (84.6'- 86.2') SILTY SAND (SM); ~75% sand, fine to medium, 85 0.0 ~25% fines, non plastic; moist, whiteish gray, dense. (86.2'- 87') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; moist, whiteish gray, loose. -75 S10 120/162 (87'- 88.1') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; moist, brown, loose. (88.1'- 88.9') SILTY SAND (SM); ~60% sand, fine to medium, ~40% fines, non plastic; moist, brown, dense, wood fragments. (88.9'- 90.3') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; moist, brown, loose, lens of silt at 89.6 feet. 90 0.0 (90.3'- 91.1') SILTY SAND (SM); ~75% sand, fine to coarse, ~25% fines, non plastic; moist, brown, dense. (91.1'- 97') SILTY SAND (SM); ~60% sand, fine to medium, ~40% fines, non plastic; moist, gray with white, color change to greenish gray with white at 92.2 feet, dense. -80

#### **NOTES:**

FULTON DATA TEMPLATE.GDT

WILLIAMSBURG W PREV. BORINGS.GPJ

LOG

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

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G	El	Consult	455 W Glasto (860)	consultants, /inding Bro onbury, CT 368-5300	ok Ro	oad 33			National Grid Williamsburg MGP RI Brooklyn, New York BER: 093060	PAGE 5 of 5	BORING LOG WW-SB-39
ELEV. FT.	ОЕРТН FT.	TVDE	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID		 . / BEDF SCRIPT	
-	_ — 95										

WW-SB-39 (96-97)

0.0

End of Boring at 97 feet. Grouted

### NOTES:

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FT. = FEET TLO = TAR LIKE ODOR
CLO = CHEMICAL LIKE ODOR
ALO = ASPHALT LIKE ODOR

GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 (860) 368-5300 Consultants

**BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** WW-SB-40 CITY/STATE: Brooklyn, New York 1 of 5 **GEI PROJECT NUMBER:** 093060

**GROUND SURFACE ELEVATION (FT):** 11.70 LOCATION: 50 Kent Ave NORTHING (FT): 688949 EASTING (FT): 641834 TOTAL DEPTH (FT): 97.0 DRILLED BY: Boart Longyear / Craig Marsh DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Amy Malsbary DATE START / END: 12/23/2009 - 12/23/2009 DRILLING DETAILS: Sonic Coring WATER LEVEL DEPTHS (FT): <u><u></u> <u>□</u> 9.90 12/23/2009</u> **GENERAL NOTE:** 

Ι,	<u>.</u>	SAMPLE INFO		IFO	4	ιø				
	ELEV. F	ОЕРТН Р	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
-	10	0 								(0'- 7') hand cleared to 5 ft.
\ TEMPLATE.GDT 3/27/13	5	_ _ _ 10	S1	120/84	1.5					(7'- 9.9') SILTY SAND WITH GRAVEL (SM); ~55% sand, fine to coarse, ~30% gravel, fine to coarse, subrounded, ~15% fines, non plastic; max. size 3, moist, brown.  (9.9'- 14.1') SILTY SAND (SM); ~85% sand, fine to medium, ~15% fines, non plastic; moderate naphthalene-like odor, wet, brown, sheen.
WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT	-5	_ _ 15			24.1			NLO NLO		(14.1'- 14.9') SILTY SAND (SM); ~85% sand, fine to medium, ~15% fines, non plastic; strong naphthalene-like odor, wet, brown, sheen, tar-like staining and blebs. (14.9'- 17') SILTY SAND (SM); ~85% sand, fine to medium, ~15% fines, non plastic; slight naphthalene-like odor, wet, brown, sheen.
IG LOG WILLIAMSBURG	-	_ _ _ 20	S2	120/126	48.2			NLO		(17'- 21.3') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to medium, ~10% fines, non plastic; slight naphthalene-like odor, wet, brown and dark gray.

# NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR

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CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

MLO = MUSTY LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-SB-40** CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 5 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë Ë VISUAL IMPACTS STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 20 NLO (21.3'- 22.7') WIDELY GRADED SAND WITH SILT AND -10 GRAVEL (SW-SM); ~70% sand, fine to coarse, ~20% gravel, fine NLO to coarse, subangular to subrounded, ~10% fines, non plastic; max. size 3, slight naphthalene-like odor, moist, brownish gray. 9.4 NLO (22.7'- 23.7') SILTY SAND (SM); ~85% sand, fine to coarse, ~15% fines, non plastic; slight naphthalene-like odor, light brown, NLO dense. (23.7'- 24.1') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; slight naphthalene-like odor, moist, 25 brown with red. NLO (24.1'- 27') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to coarse, ~10% fines, non plastic; slight naphthalene-like odor, brown, dense. -15 **S3** 120/36 (27'- 35.3') WIDELY GRADED SAND WITH SILT (SW-SM): ~90% sand, fine to coarse, ~10% fines, non plastic; brown, 30 2.6 -20 35 (35.3'- 37.4') COBBLE; max. size 6. -25 120/138 **S4** (37.4'- 47.7') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; moist, brown, loose. 45.7 40 -30 151

## **NOTES:**

WILLIAMSBURG W PREV, BORINGS GPJ FULTON DATA TEMPLATE.GDT 3/27/13

LOG

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

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**BORING LOG** CLIENT: GEI Consultants, Inc. **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-SB-40** CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 5 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë Ë VISUAL IMPACTS STRATA ODOR DEPTH SOIL / BEDROCK ANALYZED **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 45 -35 S5 120/162 (47.7'- 49.6') SANDY SILT (ML); ~70% fines, low plasticity, ~30% sand, fine; moist, brown, dense. (49.6'- 50') WIDELY GRADED SAND (SW); ~95% sand, fine to 50 medium, ~5% fines, non plastic; moist, brown, loose. (50'- 53.3') SILT WITH SAND (ML); ~80% fines, low plasticity, ~20% sand, fine; moist, brown, dense. 28.1 -40 (53.3'- 55.5') SANDY SILT (ML); ~60% fines, low plasticity, ~40% sand, fine to medium; moist, brown, lens of fine to coarse sand. 55 (55.5'- 57.8') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; moist, brown, loose, 2 inch lens 3.0 with black staining and petroleum-like odor at 55.7 feet. -45 120/144 **S6** (57.8'- 78.3') LEAN CLAY (CL); ~95% fines, medium plasticity, ~5% sand, fine; red and gray, gray only from 64.5 to 67 and 77 to 78.3 feet, very dense. 21.8 60 -50 65 1.4 -55 120/114 1.5 NOTES:

ppm = PARTS PER MILLION

IN. = INCHES FT. = FEET

WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

FOG

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**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-SB-40** CITY/STATE: Brooklyn, New York (860) 368-5300 4 of 5 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë Ë VISUAL IMPACTS STRATA ODOR DEPTH SOIL / BEDROCK ANALYZED **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 70 -60 75 1.3 -65 S8 120/144 (78.3'- 79.5') SANDY LEAN CLAY (CL); ~60% fines, medium plasticity, ~40% sand, fine to medium; light gray, very dense. (79.5'- 84.1') SILTY SAND (SM); ~60% sand, fine to medium, 80 ~40% fines, low plasticity; light gray, dense. -70 1.3 (84.1'- 87') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines, non plastic; wet, light gray, color change to 85 gray at 86.2 feet. 1.2 -75 120/132 (87'- 88.8') SILTY SAND (SM); ~80% sand, fine to coarse, ~20% **S9** fines, non plastic; moist, dark gray, dense. (88.8'- 91.5') LEAN CLAY WITH SAND (CL); ~80% fines, medium plasticity, ~20% sand, fine to medium; light gray, very dense. 90 1.1 -80 (91.5'- 93.4') SILTY SAND (SM); ~80% sand, fine to coarse, ~20% fines, low plasticity; light gray with white, seams of black. **NOTES:** PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL CrLO= CREOSOTE LIKE ODOR

REC = RECOVERY LENGTH OF SAMPLE

WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

BORING LOG

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MLO = MUSTY LIKE ODOR

GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 (860) 368-5300 **BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** CITY/STATE: Brooklyn, New York 5 of 5 GEI PROJECT NUMBER: 093060

F.	F.	;	SAMPLE IN	IFO	₫	ຸ່ິນ				
ELEV. F	DEPTH F	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRAT/	VISUAL IMPACT	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	
- - 85	_ — 95 _			1.1				WW-SB-40 (95-95.5)	(93.4'- 95.6') WIDELY GRADED SAND WITH GRAVEL (SW); ~65% sand, fine to coarse, ~30% gravel, fine to coarse, angular, ~5% fines, non plastic; max. size 2.5, light gray with white, seams of black.  (95.6'- 97') COBBLE; gray.	

End of Boring at 97 feet. Grouted

### NOTES:

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CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR MLO = MUSTY LIKE ODOR

WW-SB-40

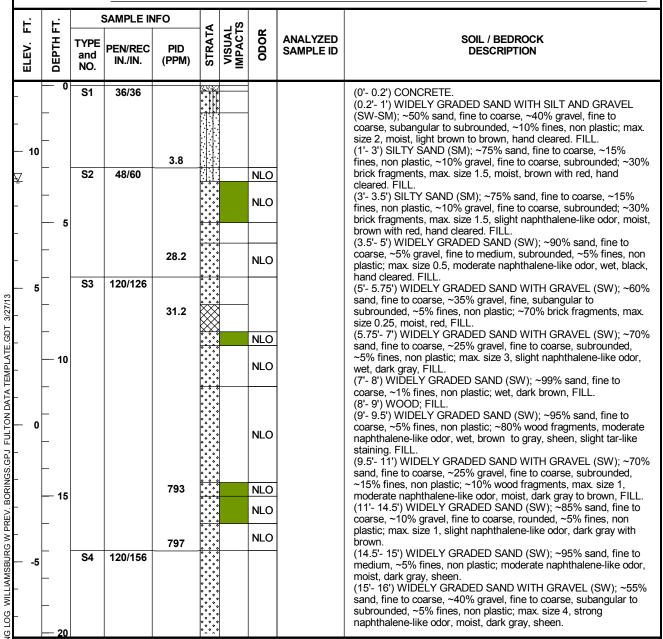
GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 (860) 368-5300

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** CITY/STATE: Brooklyn, New York 1 of 5 093060 GEI PROJECT NUMBER:

WW-SB-41

**BORING LOG** 

Consultants **GROUND SURFACE ELEVATION (FT):** 12.40 LOCATION: 50 Kent Ave NORTHING (FT): 688784 **EASTING (FT):** 641834 TOTAL DEPTH (FT): 97.0 DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone DRILLED BY: Boart Longyear / Craig Marsh LOGGED BY: Amy Malsbary DATE START / END: 12/21/2009 - 12/22/2009 DRILLING DETAILS: Sonic Coring **GENERAL NOTE:** 



**NOTES:** 

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

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TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE** WW-SB-41 CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 5 093060 GEI PROJECT NUMBER: Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 20 199 (16'- 17') WIDELY GRADED SAND (SW); ~85% sand, fine to coarse, ~10% gravel, fine to coarse, rounded, ~5% fines, non plastic; max. size 1, moderate naphthalene-like odor, light brown, (17'- 23.2') WIDELY GRADED SAND (SW); ~90% sand, fine to medium, ~10% gravel, coarse, rounded; max. size 3, light brown, -10 483 (23.2'- 25.8') WIDELY GRADED SAND WITH GRAVEL (SW); ~65% sand, fine to coarse, ~30% gravel, coarse, rounded, ~5% fines, non plastic; max. size 5, brown. 25 (25.8'- 27') WIDELY GRADED SAND WITH GRAVEL (SW); ~75% sand, fine to coarse, ~20% gravel, medium to coarse, rounded, ~5% fines, non plastic; max. size 1.5, moderate NLO 120/126 naphthalene-like odor, moist, grayish brown. (27'- 29.9') WIDELY GRADED SAND WITH SILT (SW-SM); -15 ~85% sand, fine to medium, ~10% fines, non plastic, ~5% gravel, NLO medium to coarse, rounded; max. size 1.5, slight naphthalene-like odor, grayish brown. 30 (29.9'- 33.7') SILTY SAND (SM); ~60% sand, fine, ~40% fines, low plasticity; strong naphthalene-like odor, moist, brown, dense, 3368 seam of fine to coarse sand with tar-like staining and coating. NLO -20 (33.7'- 37') WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~15% gravel, fine to coarse, subangular to subrounded, ~5% fines, non plastic; max. size 2.5, 580 35 strong naphthalene-like odor, moist, brown, tar-like staining with NLO pockets of coating to 36 feet, heavy staining with coating from 36 to 37 feet 120/138 **S6** (37'- 37.9') WIDELY GRADED SAND (SW); ~95% sand, fine to -25 NLO coarse, ~5% fines, non plastic; strong naphthalene-like odor, wet, reddish brown, tar saturated. (37.9'- 38.7') SILTY SAND (SM); ~70% sand, fine, ~30% fines, non plastic; brown, dense. (38.7'- 40.9') WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, fine to coarse, ~5% fines, non plastic; max. NLO 40 size 0.75, strong naphthalene-like odor, seams of tar-like staining and coating. 2533 (40.9'- 52') WIDELY GRADED SAND WITH GRAVEL (SW): ~80% sand, fine to coarse, ~15% gravel, fine to coarse, subrounded to rounded, ~5% fines, non plastic; max. size 2.5, 437 -30 strong naphthalene-like odor, brown, odor decreasing with depth, NLO very dense, 6 inch lens of gravel up to 4 inches beginning at 49.3'.

## NOTES:

WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/1

LOG

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

PID = PHOTOIONIZATION DETECTOR READING (PPM)
JHS = JAR HEADSPACE PID READING (PPM)

NA = NOT APPLICABLE  $Q_p$  = POCKET PENETROMETER

 $Q_p = POCKETPENETKOMETER$   $Q_p = POCKETPENETKOMETER$  $Q_p = POCKETPENETKOMETER$  ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR

IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** CLIENT: GEI Consultants, Inc. **National Grid** 455 Winding Brook Road Glastonbury, CT 06033 PROJECT: Williamsburg MGP RI **PAGE WW-SB-41** CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 5 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS Ë STRATA ODOR DEPTH **ANALYZED** SOIL / BEDROCK TYPE ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 45 **S7** 120/156 -35 NLO 50 (52'- 52.8') WIDELY GRADED SAND (SW); ~95% sand, fine to 40 NLO coarse, ~5% fines, non plastic; strong naphthalene-like odor, moist, reddish brown, loose, dense silty lenses, tar-like staining. (52.8'- 57') LEAN CLAY (CL); ~95% fines, medium plasticity, ~5% sand, fine; slight naphthalene-like odor, red with gray, very dense. 2447 NLO 55 332 120/144 (57'- 69.3') LEAN CLAY (CL); ~90% fines, medium plasticity, S8 45 ~10% sand, fine; red with gray, color change at 64.5 feet to gray, very dense. 60 108 -50 65 20.2 120/156 S9 -55 **NOTES:** 

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

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WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

BORING LOG

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

NM = NOT MEASURED = TORVANE PEAK ppm = PARTS PER MILLION

NLO = NAPHTHALENE LIKE ODOR IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE** WW-SB-41 CITY/STATE: Brooklyn, New York (860) 368-5300 4 of 5 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 0.7 (69.3'- 70.8') SILTY SAND (SM); ~70% sand, fine to medium, ~30% fines, non plastic; dry, brown, dense. 70 (70.8'- 75.8') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to medium, ~10% fines, non plastic; dry, brown, dense. -60 75 0.3 (75.8'- 76.4') WIDELY GRADED SAND WITH GRAVEL (SW); ~75% sand, fine to coarse, ~20% gravel, fine to coarse, subangular to subrounded, ~5% fines, non plastic; max. size 1.5, S10 120/138 dry, light brown. -65 (76.4'- 77') SILTY SAND (SM); ~80% sand, fine to medium, ~20% fines, non plastic; dry, grayish brown, streaks of dark gray, (77'- 78.3') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; wet, brown. (78.3'- 83.1') SILT (ML); ~95% fines, non plastic, ~5% sand, fine; 80 0.4 dark gray, very dense. -70 (83.1'- 85.3') LEAN CLAY (CL); ~95% fines, medium plasticity, 0.3 ~5% sand, fine; light gray, very dense. 85 (85.3'- 87') SILTY SAND (SM); ~85% sand, fine to medium, ~15% fines, non plastic; dark gray, dense. 120/144 **S11** (87'- 92.4') WIDELY GRADED SAND (SW); ~95% sand, fine to -75 coarse, ~5% fines, non plastic; moist, grayish brown. 0.2 90 0.3 -80 (92.4'- 94.1') WIDELY GRADED SAND (SW); ~95% sand, medium to coarse, ~5% fines, non plastic; wet, dark gray to light

#### NOTES:

WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT

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NA = NOT APPLICABLE Q<sub>P</sub> = POCKET PENETROMETER

NM = NOT MEASURED  $S_v = TORVANE PEAK$ 

gray, loose.

IN. = INCHES P
FT. = FEET T

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR MLO = MUSTY LIKE ODOR

CrLO= CREOSOTE LIKE ODOR

GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 (860) 368-5300 CLIENT: PROJECT: CITY/STATE: GELPROJECT NUMBER:

**BORING LOG National Grid** Williamsburg MGP RI **PAGE WW-SB-41** Brooklyn, New York 5 of 5

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ŀ	-	Я.	SAMPLE INFO										
	ELEV. P	<b>DEPTH</b> F	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRAT/	VISUAL	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION			
-		- 95 -							WW-SB-41 (96-97)	(94.1'- 97') SILTY SAND (SM); ~85% sand, fine to coarse, ~15% fines, non plastic; dry, light gray, dense.			

End of Boring at 97 feet. Grouted

### NOTES:

JHS = JAR HEADSPACE PID READING (PPM)

NA = NOT APPLICABLE NM = NOT MEASURED Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
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PID = PHOTOIONIZATION DETECTOR READING (PPM)

PIN = PARTS PER MILLION
NLO = NAPHTHALENE LIKE ODOR
PLO = PETROLEUM LIKE ODOR
TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 (860) 368-5300 Consultants

**BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** WW-SB-42 CITY/STATE: Brooklyn, New York 1 of 5 **GEI PROJECT NUMBER:** 093060

**GROUND SURFACE ELEVATION (FT):** 12.50 LOCATION: 50 Kent Ave NORTHING (FT): 688874 EASTING (FT): 641917 TOTAL DEPTH (FT): 97.0 DRILLED BY: Boart Longyear / Craig Marsh DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Amy Malsbary DATE START / END: 12/22/2009 - 12/22/2009 DRILLING DETAILS: Sonic Coring WATER LEVEL DEPTHS (FT): <u>₹ 7.00 12/22/2009</u> **GENERAL NOTE:** 

ľ	FT.	FT.	,	SAMPLE IN	IFO	_	. ω			
	ELEV. F	ОЕРТН Р	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
ľ	-	— o								(0'- 7') hand cleared to 5 ft. FILL.
		_								
		_								
•	<b>— 10</b>	_								
-	-	_								
-	-	<b>—</b> 5								
-	-									
: K	- ▼									
13	- - 5		S1	120/84						(7'- 17') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to coarse, ~10% fines, non plastic; strong
T 3/27/13	-				385					naphthalene-like odor, moist to wet, brown, sheen, seams of tar-like staining and blebs, coating from 14.5 to 15.6 feet, brick at 17 feet. FILL.
TE.GD.	-	_								17 leet. FILL.
EMPLA	-	— 10								
ATA TI	_	_								
TON E	<b>–</b> 0	_						NLO		
J FUI	_	_								
NGS.GI	_	_								
. BORII		— 15								
PREV	_	_			1921					
JRG W	-		S2	120/132						(17'- 21.5') SILTY SAND (SM); ~75% sand, fine to coarse, ~20%
NG LOG WILLIAMSBURG W PREV. BORINGS GPJ FULTON DATA TEMPLATE GDT	- <b>-</b> 5		- <b>-</b>							fines, non plastic, ~5% gravel, fine to coarse, subangular; max. size 3.5, moderate naphthalene-like odor, moist.
MILL	-							NLO		
E LOG		<b>—</b> 20								

NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR

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REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

NM = NOT MEASURED

IN. = INCHES FT. = FEET

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-SB-42** CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 5 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 20 NLO 2634 (21.5'- 22.5') WIDELY GRADED SAND (SW); ~95% sand, fine to NLO coarse, ~5% fines, non plastic; strong naphthalene-like odor, wet, -10 brown, heavy sheen. (22.5'- 24.3') WIDELY GRADED SAND (SW); ~95% sand, fine to NLO coarse, ~5% fines, non plastic; strong naphthalene-like odor, reddish brown with light brown, sheen, tar-like staining and (24.3'- 26.5') WIDELY GRADED SAND WITH SILT (SW-SM); ~80% sand, fine to coarse, ~10% gravel, fine to coarse, ~10% fines, non plastic; max. size 1, strong naphthalene-like odor, 25 NLO moist, reddish brown, sheen. 876 NLO (26.5'- 27') SILTY SAND (SM); ~85% sand, fine to coarse, ~15% fines, non plastic; strong naphthalene-like odor, brown, seams of 120/114 -15 tar-like coating (27'- 32.8') WIDELY GRADED SAND WITH SILT (SW-SM); 884 ~85% sand, fine to coarse, ~10% fines, non plastic, ~5% gravel, fine to coarse, subangular; max. size 3, moist, brown, dense. 30 -20 (32.8'- 35.9') SILTY SAND (SM); ~85% sand, fine to coarse, ~15% fines, non plastic; moderate naphthalene-like odor, brown, dense, one large 4 inch cobble. NLO 35 (35.9'- 37') WIDELY GRADED SAND (SW); ~90% sand, fine to NLO medium, ~10% gravel, fine to coarse, subrounded; max. size 1, 1261 moderate naphthalene-like odor, moist, reddish brown, two large 5 **S4** 120/156 inch cobbles. -25 (37'- 39.7') WIDELY GRADED SAND (SW); ~95% sand, fine to 3127 coarse, ~5% fines, non plastic; strong naphthalene-like odor, wet, NLO brown, loose, sheen, tar-like staining, blebs from 37 to 37.8 feet, coating from 38.5 to 39.7 feet. (39.7'- 40.5') WIDELY GRADED SAND (SW); ~95% sand, fine to 40 NLO coarse, ~5% fines, non plastic; ~15% cobbles, strong naphthalene-like odor, moist, brown, loose, slight tar-like staining. (40.5'- 42') SILTY SAND (SM); ~55% sand, fine to coarse, ~35% NLO fines, non plastic, ~10% gravel, fine to coarse; slight naphthalene-like odor, brown, dense. (42'- 43.5') SILT WITH SAND (ML); ~80% fines, low plasticity, -30 NLO ~20% sand, fine; slight naphthalene-like odor, brown, dense. (43.5'- 47') SILTY SAND (SM); ~60% sand, fine to coarse, ~40% fines, low plasticity; moist, brown, dense. **NOTES:** PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR CrLO= CREOSOTE LIKE ODOR IN. = INCHES FT. = FEET

REC = RECOVERY LENGTH OF SAMPLE

WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/1

LOG

PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

NA = NOT APPLICABLE Q<sub>P</sub> = POCKET PENETROMETER

= NOT MEASURED = TORVANE PEAK PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR MLO = MUSTY LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-SB-42** CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 5 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë Ë VISUAL IMPACTS STRATA ODOR DEPTH SOIL / BEDROCK ANALYZED TYPE ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 45 886 S5 120/126 (47'- 51.3') WIDELY GRADED SAND (SW); ~95% sand, fine to -35 coarse, ~5% fines, non plastic; slight naphthalene-like odor, moist, brown, loose. NLO 554 50 (51.3'- 57') LEAN CLAY (CL); ~95% fines, medium plasticity, ~5% sand, fine; red with gray, dense. -40 55 112 120/144 (57'- 61.2') LEAN CLAY WITH SAND (CL); ~85% fines, medium **S6** -45 plasticity, ~15% sand, fine; brown with gray, dense. 60 NLO (61.2'- 61.6') WIDELY GRADED SAND WITH SILT (SW-SM); ~80% sand, fine to medium, ~10% gravel, fine to coarse, angular, 838 WW-SB-42 ~10% fines, non plastic; max. size 0.75, slight naphthalene-like -50 (62-62.5) odor, gray. (61.6'- 72') WIDELY GRADED SAND (SW); ~95% sand, fine to medium, ~5% fines, non plastic; moist, gray. 65 6.3 120/144 **S7** -55

# **NOTES:**

WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

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REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

NA = NOT APPLICABLE

Q<sub>P</sub> = POCKET PENETROMETER NM = NOT MEASURED = TORVANE PEAK

ppm = PARTS PER MILLION

NLO = NAPHTHALENE LIKE ODOR IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** CLIENT: GEI Consultants, Inc. **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-SB-42** CITY/STATE: Brooklyn, New York (860) 368-5300 4 of 5 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS Ë STRATA ODOR DEPTH **ANALYZED** SOIL / BEDROCK TYPE ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 21.6 70 (72'- 85') LEAN CLAY (CL); ~95% fines, medium plasticity, ~5% -60 sand, fine; gray, dense. 75 2.3 120/150 -65 1.8 80 -70 85 (85'- 87.8') SILTY SAND (SM); ~70% sand, fine to medium, 1.8 ~30% fines, low plasticity; moist, light gray, very dense. 120/144 S9 -75 (87.8'- 89.5') WIDELY GRADED SAND (SW); ~95% sand, 1.8 medium to coarse, ~5% fines, non plastic; wet, whiteish gray, (89.5'- 94.9') WIDELY GRADED SAND (SW); ~95% sand, fine to 90 coarse, ~5% fines, non plastic; wet, whiteish gray, color change at 90.3 feet to dark brown. -80

# **NOTES:**

WILLIAMSBURG W PREV, BORINGS GPJ FULTON DATA TEMPLATE GDT 3/27/13

LOG

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

1.4

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

NM = NOT MEASURED = TORVANE PEAK

WW-SB-42

IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

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GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 (860) 368-5300 **BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** WW-SB-42 CITY/STATE: Brooklyn, New York 5 of 5 GEI PROJECT NUMBER: 093060 Consultants

Ë	ŀ.	;	SAMPLE IN	IFO	4	L TS						
ELEV. F	DEPTH F	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRAT/	VISUAI	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION			
-	_ 95 _							(96.5-97)	(94.9'- 97') SILTY SAND (SM); ~70% sand, fine to coarse, ~30% fines, non plastic; whiteish gray, dense.			

End of Boring at 97 feet. Grouted

### NOTES:

JHS = JAR HEADSPACE PID READING (PPM)

NA = NOT APPLICABLE NM = NOT MEASURED

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** CITY/STATE: Brooklyn, New York 1 of 3 **GEI PROJECT NUMBER:** 093060

WW-SB-43

**BORING LOG** 

**GROUND SURFACE ELEVATION (FT):** 10.34 LOCATION: 26 N 12th St NORTHING (FT): 688969 EASTING (FT): 642206 TOTAL DEPTH (FT): 50.0 DRILLED BY: Boart Longyear / Frank Gardella DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Amy Malsbary/Kari Weber DATE START / END: 10/21/2010 DRILLING DETAILS: Sonic Coring **GENERAL NOTE:** 

ļ	SAMPLE INFO  TYPE and NO.  PEN/REC PID (PPM)		4	_ မှ	-1							
			and				STRATA VISUAL IMPACTS		ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION		
F	10	— o		60/NM						(0'- 1.5') ASPHALT.		
-		_							WW-SB-43 (1-2)	(1.5'- 2') BRICK. (2'- 5') SILTY SAND WITH GRAVEL (SM); ~60% sand, fine to coarse, ~20% gravel, fine to coarse, ~20% fines; dark gray, hand cleared.		
<u>¥</u> – -	5	— 5 -	S-1	60/36				NLO		(5'- 6.5') WIDELY GRADED GRAVEL WITH SAND (GW); ~65% gravel, fine to coarse, ~30% sand, fine to coarse, ~5% fines; max. size 4, slight naphthalene-like odor, wet, gray, mostly coarse gravel.		
	}	-						NLO		(6.5'- 7') SILTY SAND (SM); ~85% sand, fine, ~15% fines; slight naphthalene-like odor, wet, brownish gray.		
)T 3/27/13	-	_			210			NLO	WW-SB-43 (8-8.5)	(7'-9') WIDELY GRADED GRAVEL WITH SAND (GW); ~60% gravel, fine to coarse, subangular, ~35% sand, fine to coarse, ~5% fines; max. size 1.5, moderate naphthalene-like odor, wet, gray, heavy tar staining; mostly fine gravel and coarse sand. (9'-10') SILTY SAND (SM); ~85% sand, fine, ~15% fines; slight naphthalene-like odor, wet, brownish gray.		
TE.GD								NLO				
RINGS.GPJ FULTON DATA TEMPLA	0	<b>10</b>   -	S-2	60/45	2.2			NLO		(10'- 15') SILTY SAND (SM); ~70% sand, fine to coarse, ~20% fines, ~10% gravel, fine to coarse, subrounded; max. size 2, slight naphthalene-like odor, wet, brownish gray to brown.		
ING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13	-5	— 15 - - - -	S-3	60/48	131			OLO		(15'- 20') PEAT; moderate organic-like odor, moist, dark brown.		

#### NOTES:

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IN. = INCHES FT. = FEET

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-SB-43** CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 3 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. S-4 60/36 OLO (20'- 20.5') SANDY ORGANIC SOIL (OL/OH); ~60% fines, low -10 plasticity, ~40% sand; ~20% peat, moderate organic-like odor, wet. black. (20.5'- 24') NARROWLY GRADED SAND WITH SILT (SP-SM); ~90% sand, fine, ~10% fines; slight organic-like odor, wet, light OLO gray. 9.3 (24'- 25') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~75% sand, fine to medium, ~15% gravel, fine to coarse, subangular, ~10% fines; wet, gray. (25'- 29.2') NARROWLY GRADED SAND WITH SILT (SP-SM); 60/43 S-5 -15 ~90% sand, fine to medium, ~10% fines; wet, grayish brown to 1.1 brown (29.2'- 30') SILTY SAND (SM); ~70% sand, fine to medium, ~25% fines, ~5% gravel, coarse, subangular; max. size 2, wet, 30 120/96 S-6 brown. -20 (30'- 32') WIDELY GRADED SAND (SW); ~85% sand, fine to coarse, ~10% gravel, fine to coarse, subangular, ~5% fines; max. size 2, wet, brown. 4.4 (32'- 33.3') SILTY SAND WITH GRAVEL (SM): ~60% sand, fine BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13 to coarse, ~25% fines, ~15% gravel, coarse, subangular; max. size 4.5, wet, brown. (33.3'- 35') WIDELY GRADED SAND (SW); ~85% sand, fine to coarse, ~10% gravel, fine to coarse, subangular, ~5% fines; max. size 2, wet, brown. 35 (35'- 35.3') LEAN CLAY (CL); ~100% fines, high plasticity, no -25 dilatancy; moist, red with mottled gray. (35.3'- 43.3') SANDY SILT (ML); ~70% fines, low plasticity, slow dilatancy, ~30% sand, fine; moist, gray, seams of fine to medium sand throughout. S-7 60/103 -30 (43.3'- 44.5') WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, fine, subrounded, ~5% fines; max. size 0.75, 0.7 WW-SB-43 wet, brown.

**NOTES:** 

WILLIAMSBURG W

FOG

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

NA = NOT APPLICABLE Q<sub>P</sub> = POCKET PENETROMETER

= TORVANE PEAK NM = NOT MEASURED

IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 (860) 368-5300 **BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** CITY/STATE: Brooklyn, New York 3 of 3 GEI PROJECT NUMBER: 093060

Ë	Ë	•	SAMPLE IN	NFO	_	ري ا							
ELEV. F	DEPTH F	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRAT/	VISUAL	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION				
35	— <b>45</b> –							(44-44.5)	(44.5'- 47') LEAN CLAY (CL); ~100% fines, high plasticity, no dilatancy; moist, red with mottled gray.				
	_ _			0.8					(47'- 47.5') SILTY SAND (SM); ~80% sand, fine to coarse, ~15% fines, ~5% gravel, fine to coarse; max. size 1, wet, brown. (47.5'- 50') SANDY ELASTIC SILT (MH); ~80% fines, low plasticity, slow dilatancy, ~20% sand, fine; moist, gray, seams of fine to medium sand throughout.				

End of Boring at 50 feet. Grouted

## NOTES:

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

NA = NOT APPLICABLE NM = NOT MEASURED

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
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PID = PHOTOIONIZATION DETECTOR READING (PPM)

PIN = PARTS PER MILLION
NLO = NAPHTHALENE LIKE ODOR
PLO = PETROLEUM LIKE ODOR
TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR MLO = MUSTY LIKE ODOR

WW-SB-43

CLIENT: National Grid
PROJECT: Williamsburg MGP RI
CITY/STATE: Brooklyn, New York
GEI PROJECT NUMBER: 093060

PAGE
1 of 3

ww-sb-44

**BORING LOG** 

GROUND SURFACE ELEVATION (FT): 10.80 LOCATION: 26 N 12th St

NORTHING (FT): 688948 EASTING (FT): 642046 TOTAL DEPTH (FT): 55.0

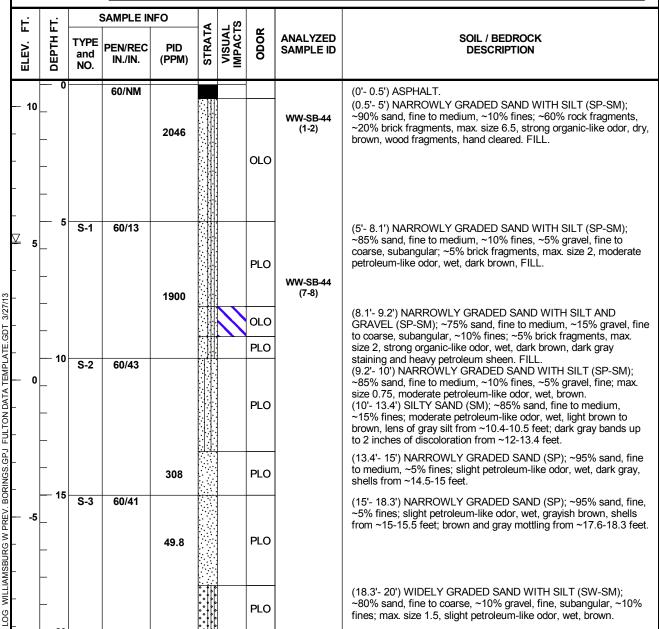
DRILLED BY: Boart Longyear / Frank Gardella DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone

LOGGED BY: Amy Malsbary/Kari Weber DATE START / END: 10/18/2010 - 10/19/2010

DRILLING DETAILS: Sonic Coring

WATER LEVEL DEPTHS (FT): \$\sqrt{5}\$ 5.75 10/18/2010 12:27 pm

GENERAL NOTE:



# NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

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NA = NOT APPLICABLE Q<sub>P</sub> = POCKET PENETROMETER

ppm = PARTS PER MILLION

IN. = INCHES FT. = FEET NLO = NAPHTHALENE LIKE ODOR PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-SB-44** CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 3 093060 GEI PROJECT NUMBER: Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. S-4 120/97 (20'- 20.8') NARROWLY GRADED SAND (SP); ~95% sand, fine **PLO** to medium, ~5% fines; slight petroleum-like odor, wet, brown. -10 (20.8'- 21.7') SILTY SAND WITH GRAVEL (SM); ~70% sand, PLO fine to coarse, ~15% gravel, fine to coarse, subrounded, ~15% fines; slight petroleum-like odor, wet, brown. (21.7'- 23.5') NARROWLY GRADED SAND (SP): ~95% sand. **PLO** fine to medium, ~5% fines; slight petroleum-like odor, wet, brown. (23.5'- 25.9') CLAYEY SAND WITH GRAVEL (SC); ~45% sand, fine to coarse, ~35% fines, medium plasticity, slow dilatancy, ~20% gravel, fine to coarse, subrounded; max. size 2, moderate PLO 33.0 25 petroleum-like odor, moist, gray and brown, pockets of gray elastic silt throughout. -15 (25.9'- 32.6') NARROWLY GRADED SAND (SP); ~95% sand, fine to medium, ~5% fines; slight petroleum-like odor, wet, brown, micaceous 80.2 PLO 30 120/87 S-5 -20 (32.6'- 34.8') WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM); ~75% sand, fine to coarse, ~15% gravel, fine PLO to coarse, subrounded, ~10% fines; max. size 2.5, slight petroleum-like odor, wet, brown. (34.8'- 37.8') WIDELY GRADED SAND (SW); ~90% sand, fine to 35 coarse. ~5% gravel, fine, subrounded. ~5% fines; max. size 0.75. 151 -25 slight petroleum-like odor, wet, brown. **PLO** (37.8'- 40') NARROWLY GRADED SAND WITH SILT (SP-SM); ~90% sand, fine, ~10% fines; slight petroleum-like odor, wet, grayish brown, lenses of silt up to 0.5 inches thick. **PLO** (40'- 42.7') NARROWLY GRADED SAND (SP); ~95% sand, fine S-6 120/102 to medium, ~5% fines; moderate petroleum-like odor, wet, grayish 179 -30 brown. **PLO** (42.7'- 44.7') NARROWLY GRADED SAND WITH SILT (SP-SM); ~85% sand, fine to medium, ~10% fines, ~5% gravel, fine; max. size 0.5, brown.

# **NOTES:**

PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

WILLIAMSBURG W

LOG

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

NA = NOT APPLICABLE Q<sub>P</sub> = POCKET PENETROMETER

ppm = PARTS PER MILLION

IN. = INCHES FT. = FEET

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

NLO = NAPHTHALENE LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

**BORING LOG** CLIENT: GEI Consultants, Inc. **National Grid** 455 Winding Brook Road Glastonbury, CT 06033 PROJECT: Williamsburg MGP RI **PAGE** WW-SB-44 CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 3 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë Ë VISUAL IMPACTS STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK TYPE ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. (44.7'- 48.4') ELASTIC SILT WITH SAND (MH); ~85% fines, low 45 plasticity, slow dilatancy, ~15% sand, fine to medium; moist, -35 brownish gray. (48.4'- 50') NARROWLY GRADED SAND WITH SILT (SP-SM); ~85% sand, fine to medium, ~10% fines, ~5% gravel, fine; max. size 0.5, brown. 6.9 50 S-7 60/48 **WW-SB-44** (50'- 51.4') SILTY SAND (SM); ~75% sand, fine to coarse, ~15% (50-51)5.9 fines, ~10% gravel, fine to coarse; max. size 1, wet, brown. -40 (51.4'- 55') LEAN CLAY (CL); ~100% fines, high plasticity, no

> End of Boring at 55 feet. Grouted

dilatancy; moist, red with mottled gray.

### NOTES:

BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

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JHS = JAR HEADSPACE PID READING (PPM)

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NM = NOT MEASURED

Q<sub>P</sub> = POCKET PENETROMETER

IN. = INCHES FT. = FEET

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** CLIENT: **National Grid** Williamsburg MGP RI PROJECT: **PAGE WW-SB-45** CITY/STATE: Brooklyn, New York 1 of 3 **GEI PROJECT NUMBER:** 093060

Consultants **GROUND SURFACE ELEVATION (FT):** 10.38 LOCATION: 26 N 12th St NORTHING (FT): 689021 EASTING (FT): 641965 TOTAL DEPTH (FT): 65.0 DRILLED BY: Boart Longyear / Frank Gardella DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Amy Malsbary/Kari Weber DATE START / END: 10/18/2010 - 10/20/2010 DRILLING DETAILS: Sonic Coring WATER LEVEL DEPTHS (FT): <u>₹ 10.00 10/20/2010</u> **GENERAL NOTE:** 

Ë	Ë	;	SAMPLE IN	IFO	7	, ω	ODOR		
ELEV. F	DEPTH	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL IMPACTS		ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
- 10 - -	- <b>0</b>		60/NM	665			OLO	WW-SB-45 (1-2)	(0'- 0.5') ASPHALT. (0.5'- 5') NARROWLY GRADED SAND WITH SILT (SP-SM); ~90% sand, fine to medium, ~10% fines; ~50% rock fragments, ~30% brick fragments, max. size 5, strong organic-like odor, dry, brown, hand cleared.
- - - -	_ 5 _	S-1	60/41				OLO		(5'- 10') NARROWLY GRADED SAND WITH SILT (SP-SM); ~90% sand, fine to medium, ~10% fines; strong organic-like odor, moist, gray, petroleum staining and sheen.
G LOG WILLIAMSBURG W PREV. BORNGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13  1	_ _ 10	S-2	60/46	1280 38.3					(10'- 15') NARROWLY GRADED SAND WITH SILT (SP-SM); ~90% sand, fine to medium, ~10% fines; slight petroleum-like odor, wet, light brown.
BORINGS.GPJ FULION DA	_ _ _ _ 15	S-3	60/54				PLO		(15'- 17.5') SANDY SILT (ML); ~60% fines, non plastic, rapid
- <b>-55</b>	_	3-3	00/04				PLO		dilatancy, ~40% sand, fine; trace shells, slight petroleum-like odor, moist, gray.
G LOG WILLIAMSBI				14.6			PLO		(17.5'- 20') NARROWLY GRADED SAND WITH SILT (SP-SM); ~90% sand, fine, ~10% fines; slight petroleum-like odor, wet, brownish gray, 4 inch lens of fine to coarse sand at 18.9 feet.

# NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

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Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** CLIENT: GEI Consultants, Inc. **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-SB-45** CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 3 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë Ë VISUAL IMPACTS STRATA ODOR DEPTH **ANALYZED** SOIL / BEDROCK TYPE ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. S-4 60/38 (20'- 25') CLAYEY SAND WITH GRAVEL (SC); ~45% fines, -10 medium plasticity, slow dilatancy, ~40% sand, fine to coarse, ~15% gravel, fine to coarse, subrounded; max. size 2, moist, gray and brown, pockets of gray elastic silt throughout, intermittent lenses of brown fine to coarse sand up to 2 inches thick. 4.7 S-5 60/48 (25'- 29.4') NARROWLY GRADED SAND (SP); ~95% sand, fine -15 to medium, ~5% fines; wet, brown, thin lenses up to 0.5 inches of gray silt. 17.3 (29.4'- 30') WIDELY GRADED SAND (SW); ~95% sand, fine to 30 coarse, ~5% fines; wet, brown. 120/91 S-6 (30'- 40') WIDELY GRADED SAND (SW); ~85% sand, fine to -20 coarse, ~10% gravel, fine to coarse, subrounded, ~5% fines; max. size 1.75, wet, brown, layer of narrowly graded sand from ~36.5-37.5 feet. 7.6 35 -25 40.8 S-7 120/90 (40'- 50') NARROWLY GRADED SAND (SP); ~95% sand, -30 medium, ~5% fines; moist, brown, 1 ft lens at 47 ft of 90% fine sand and 10% fines.

#### **NOTES:**

WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

FOG

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

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NLO = NAPHTHALENE LIKE ODOR PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-SB-45** CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 3 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 45 4.4 -35 58.0 50 S-8 120/110 (50'- 51.5') NARROWLY GRADED SAND (SP); ~90% sand, fine -40 to medium, ~5% gravel, fine to coarse, subrounded, ~5% fines; NLO max. size 1, strong naphthalene-like odor, wet, brown, moderate to heavy tar staining. (51.5'- 56.5') NARROWLY GRADED SAND (SP); ~90% sand, fine to medium, ~5% gravel, fine to coarse, subrounded, ~5% fines; max. size 1, strong naphthalene-like odor, wet, brown, WW-SB-45 heavy tar coating with tar saturation. 4293 (53-54)NLO 55 -45 (56.5'- 57.6') NARROWLY GRADED SAND (SP); ~90% sand, NLO fine to medium, ~5% gravel, fine to coarse, subrounded, ~5% fines; max. size 1, strong naphthalene-like odor, wet, brown, moderate tar coating. (57.6'- 58.5') SILTY SAND (SM); ~85% sand, fine, ~15% fines; NLO 885 moderate naphthalene-like odor, wet, grayish brown. (58.5'- 60') ELASTIC SILT WITH SAND (MH); ~75% fines, low plasticity, slow dilatancy, ~25% sand, fine to medium; moist, 60/46 S-9 -50 (60'- 64.5') WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~15% gravel, fine to coarse, subrounded, ~5% fines; max. size 1.5, wet, brown, sand grades coarser with depth. WW-SB-45 (64-64.5)(64.5'- 65') LEAN CLAY (CL); ~100% fines, high plasticity, no 28.4 dilatancy; moist, gray with mottled red. End of Boring at 65 feet. Grouted **NOTES:** PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR CrLO= CREOSOTE LIKE ODOR

REC = RECOVERY LENGTH OF SAMPLE

WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

PID = PHOTOIONIZATION DETECTOR READING (PPM)
JHS = JAR HEADSPACE PID READING (PPM)

NA = NOT APPLICABLE Q<sub>P</sub> = POCKET PENETROMETER

NM = NOT MEASURED S<sub>V</sub> = TORVANE PEAK

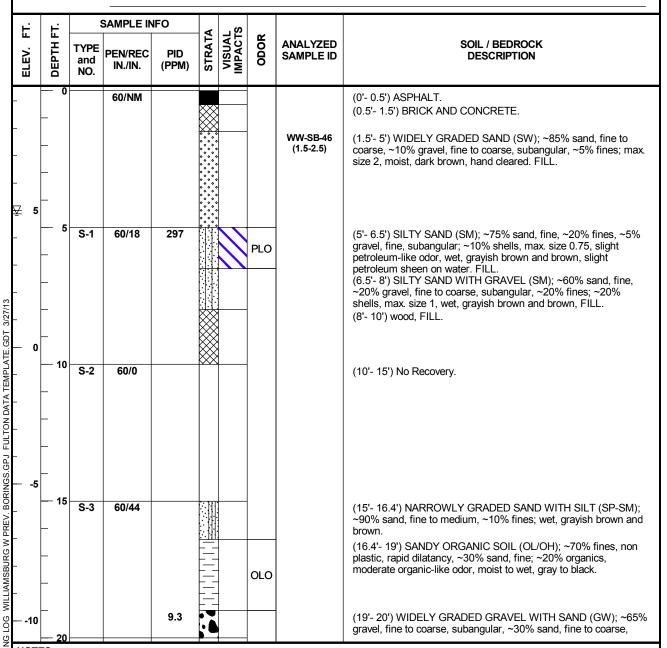
IN. = INCHES PLO = PETROLEUM LIKE ODOR
FT. = FEET TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** CITY/STATE: Brooklyn, New York 1 of 3 093060 GEI PROJECT NUMBER:

**BORING LOG WW-SB-46** 

**GROUND SURFACE ELEVATION (FT):** 9.38 LOCATION: 26 N 12th St NORTHING (FT): 689104 **EASTING (FT):** 641866 TOTAL DEPTH (FT): 65.0 DRILLED BY: Boart Longyear / Frank Gardella DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Amy Malsbary/Kari Weber DATE START / END: 10/21/2010 - 10/25/2010 DRILLING DETAILS: Sonic Coring **GENERAL NOTE:** 



# **NOTES:**

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

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= TORVANE PEAK

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CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

BORING LOG GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-SB-46** CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 3 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. S-4 120/48 ~5% fines; ~30% rock powder, moist, gray. (20'- 22.1') WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, fine, ~5% fines; wet, brown. (22.1'- 24') CLAYEY SAND (SC); ~55% sand, fine to medium, ~35% fines, medium plasticity, slow dilatancy, ~10% gravel, fine to coarse, subrounded; max. size 1, wet, brown and brownish gray, intermittent lenses of brown fine to coarse sand up to 2 inches thick. 121 -15 (24'- 24.8') SILTY SAND (SM); ~85% sand, fine to medium, ~15% fines; wet, brownish gray. 25 (24.8'- 25') cobble. (25'- 30') No Recovery. -20 30 120/111 S-5 (30'- 33.3') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines; slight naphthalene-like odor, wet, brown. NLO **WW-SB-46** (33.3'- 34') WIDELY GRADED SAND WITH GRAVEL (SW); NLO (33-34)~70% sand, medium to coarse, ~25% gravel, fine to coarse, 4628 NLO -25 subangular, ~5% fines; max. size 1, strong naphthalene-like odor, wet, brown, tar saturation with heavy coating. (34'- 34.5') WIDELY GRADED SAND (SW); ~95% sand, fine to 35 coarse, ~5% fines; slight naphthalene-like odor, wet, brown, slight (34.5'- 40') WIDELY GRADED SAND (SW); ~90% sand, fine to medium, ~5% gravel, fine, subrounded, ~5% fines; max. size 1, 2025 NLO slight naphthalene-like odor, wet, grayish brown. -30 40 **S-6** 60/76 (40'- 54.3') WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, fine, subrounded, ~5% fines; max. size 0.5, wet, brown. -35

#### **NOTES:**

WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

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= TORVANE PEAK

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CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CLIENT: **BORING LOG** GEI Consultants, Inc. **National Grid** 455 Winding Brook Road Glastonbury, CT 06033 PROJECT: Williamsburg MGP RI **PAGE WW-SB-46** CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 3 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS Ë STRATA ODOR DEPTH SOIL / BEDROCK ANALYZED TYPE ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 45 258 -40 50 S-7 60/46 147 -45 (54.3'- 55') NARROWLY GRADED SAND (SP); ~95% sand, fine, 55 ~5% fines; wet, brown. S-8 60/53 (55'- 60') SANDY SILT (ML); ~65% fines, non plastic, ~35% sand, fine; wet, gray, lenses of fine sand up to 1 inch throughout. 5.2 -50 60 S-9 60/36 (60'- 61.5') WIDELY GRADED SAND (SW); ~85% sand, fine to WW-SB-46 coarse, ~10% gravel, fine to coarse, subangular, ~5% fines; max. size 2, moist, brown. (60.5-61)(61.5'- 65') LEAN CLAY (CL); ~100% fines, high plasticity, no 2.9 dilatancy; moist, red with mottled gray. -55 End of Boring at 65 feet. NOTES: PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR CrLO= CREOSOTE LIKE ODOR REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM) PLO = PETROLEUM LIKE ODOR

JHS = JAR HEADSPACE PID READING (PPM)

LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

NM = NOT MEASURED = TORVANE PEAK IN. = INCHES FT. = FEET

TLO = TAR LIKE ODOR CLO = CHEMICAL LIKE ODOR

ALO = ASPHALT LIKE ODOR

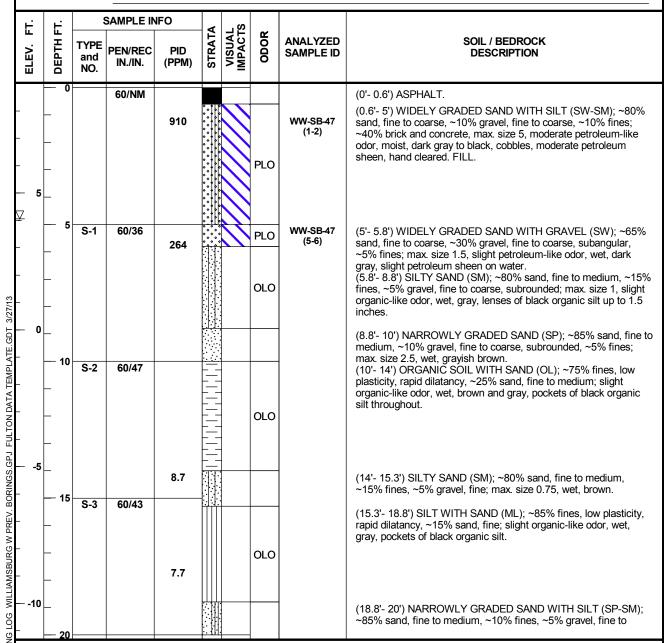
OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York 093060 GEI PROJECT NUMBER:

**PAGE** WW-SB-47 1 of 4

**BORING LOG** 

Consultants **GROUND SURFACE ELEVATION (FT):** 8.85 LOCATION: 26 N 12th St TOTAL DEPTH (FT): \_70.0 NORTHING (FT): 689237 **EASTING (FT):** 641762 DRILLED BY: Boart Longyear / Frank Gardella DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Amy Malsbary/Kari Weber DATE START / END: 10/26/2010 DRILLING DETAILS: Sonic Coring **GENERAL NOTE:** 



# **NOTES:**

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER

NA = NOT APPLICABLE = TORVANE PEAK NM = NOT MEASURED

ppm = PARTS PER MILLION

NLO = NAPHTHALENE LIKE ODOR IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR

TLO = TAR LIKE ODOR CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE** WW-SB-47 CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 4 093060 GEI PROJECT NUMBER: Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. S-4 120/92 coarse, subrounded; max. size 1, wet, brown. (20'- 24') CLAYEY SAND (SC); ~65% sand, fine to coarse, ~30% fines, medium plasticity, slow dilatancy, ~5% gravel, fine to coarse, subrounded; max. size 1, slight chemical-like odor, wet, gray and brown, intermittent lenses of brown fine to coarse sand CLO up to 2 inches thick; slight fruit-like odor. -15 21.5 (24'- 25') NARROWLY GRADED SAND WITH SILT (SP-SM); CLO ~85% sand, fine to medium, ~10% fines, ~5% gravel, fine, 25 subrounded; max. size 0.5, slight chemical-like odor, wet, brown, slight fruit-like odor. (25'- 27') WIDELY GRADED SAND (SW); ~90% sand, fine to CLO coarse, ~5% gravel, fine, ~5% fines; slight chemical-like odor, wet, brown, slight fruit-like odor. (27'- 28.5') WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, fine, ~5% fines; slight naphthalene-like odor, NLO wet, brown. 187 (28.5'- 30') NARROWLY GRADED SAND (SP); ~95% sand, fine, -20 ~5% fines; slight naphthalene-like odor, wet, brown. NLO 30 120/83 S-5 (30'- 36') NARROWLY GRADED SAND (SP); ~90% sand, fine to medium, ~5% gravel, fine, ~5% fines; max. size 0.5, wet, brown. -25 206 35 (36'- 40') NARROWLY GRADED SAND (SP); ~95% sand, fine, ~5% fines; wet, brown. -30 61.8 40 **S-6** 120/100 (40'- 44') WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, coarse, subrounded, ~5% fines; max. size 2, wet, brown. 78.9

#### **NOTES:**

-35

GDT 3/27/13

WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

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PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

NA = NOT APPLICABLE Q<sub>P</sub> = POCKET PENETROMETER

= TORVANE PEAK NM = NOT MEASURED

IN. = INCHES FT. = FEET

PLO = PETROLEUM LIKE ODOR

(44'- 62.5') NARROWLY GRADED SAND (SP); ~95% sand, fine,

TLO = TAR LIKE ODOR CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

CLIENT: **BORING LOG** GEI Consultants, Inc. **National Grid** 455 Winding Brook Road Glastonbury, CT 06033 PROJECT: Williamsburg MGP RI **PAGE WW-SB-47** CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 4 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS Ë STRATA ODOR DEPTH **ANALYZED** SOIL / BEDROCK TYPE ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. ~5% fines; wet, brown. 45 4.8 -40 50 S-7 120/120 2.7 -45 55 1.8 -50 60 S-8 60/52 (62.5'- 65') SILTY SAND (SM); ~80% sand, fine, ~20% fines; wet, brownish gray, lenses of gray sandy silt. 1.6 -55 60/56 (65'- 67') WIDELY GRADED SAND (SW); ~85% sand, fine to S-9 coarse, ~10% gravel, fine to coarse, subangular, ~5% fines; max. size 1.5, wet, brown. WW-SB-47 (66-67)(67'- 70') LEAN CLAY (CL); ~100% fines, high plasticity, no 1.4 dilatancy; moist, red with mottled gray. -60 **NOTES:** 

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE NM = NOT MEASURED

= TORVANE PEAK

IN. = INCHES FT. = FEET

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 **BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** WW-SB-47 CITY/STATE: Brooklyn, New York (860) 368-5300 4 of 4 **GEI PROJECT NUMBER:** 093060 Consultants **SAMPLE INFO** Ë VISUAL Ë STRATA ODOR DEPTH **ANALYZED** SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and (PPM) IN./IN. NO.

End of Boring at 70 feet. Grouted

### NOTES:

NM = NOT MEASURED

JHS = JAR HEADSPACE PID READING (PPM)

NA = NOT APPLICABLE

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York GEI PROJECT NUMBER: 093060

**PAGE WW-SB-48** 1 of 4

**BORING LOG** 

**GROUND SURFACE ELEVATION (FT):** 8.19 LOCATION: 26 N 12th St TOTAL DEPTH (FT): \_70.0 NORTHING (FT): 689325 **EASTING (FT):** 641654 DRILLED BY: Boart Longyear / Frank Gardella DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Amy Malsbary/Kari Weber DATE START / END: 10/27/2010 DRILLING DETAILS: Sonic Coring **GENERAL NOTE:** 

**SAMPLE INFO** VISUAL IMPACTS ᇤ ᇤ STRATA ODOR DEPTH **ANALYZED** SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and (PPM) IN./IN. NO. 60/NM (0'- 0.5') ASPHALT. (0.5'- 5') SILTY SAND (SM); ~75% sand, fine to coarse, ~15% fines, ~10% gravel, fine to coarse, subangular; ~20% brick and 910 WW-SB-48 (1-2)concrete fragments, max. size 3, slight petroleum-like odor, wet, dark gray, slight petroleum staining, hand cleared. FILL. **PLO** 5 S-1 60/29 PLO (5'- 5.5') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~75% sand, fine to medium, ~15% gravel, fine, subangular, ~10% fines; max. size 1, moderate **PLO** petroleum-like odor, brown, wood pieces. FILL. PLO (5.5'- 6.7') NARROWLY GRADED SAND WITH SILT AND WW-SB-48 939 GRAVEL (SP-SM); ~75% sand, fine to medium, ~15% gravel, PLO (7-8)fine, subangular, ~10% fines; <~5% brick fragments, max. size 1, moderate petroleum-like odor, brown, slight petroleum staining. 0 PLO (6.7'- 7') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~75% sand, fine to medium, ~15% gravel, fine, subangular, ~10% fines; max. size 1, moderate 10 petroleum-like odor, brown, FILL. **S-2** 60/53 PLO (7'-8') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~75% sand, fine to medium, ~15% gravel, fine, 329 subangular, ~10% fines; max. size 1, moderate petroleum-like odor, brown, slight to moderate petroleum staining. FILL. (8'- 10') NARROWLY GRADED SAND WITH SILT AND GRAVEL **PLO** (SP-SM); ~75% sand, fine to medium, ~15% gravel, fine, -5 subangular, ~10% fines; max. size 1, moderate petroleum-like odor, brown, FILL (10'- 10.5') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~75% sand, fine to medium, ~15% gravel, fine, subangular, ~10% fines; max. size 1, slight petroleum-like S-3 48/0 odor, brown, slight petroleum sheen. FILL (10.5'- 15') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~75% sand, fine to medium, ~15% gravel, fine, subangular, ~10% fines; max. size 1, slight petroleum-like odor, brown, lenses of fine to coarse sand up to 1 inch and lenses of black organic silt up to 1.5 inches, wood at ~14 feet. FILL. (15'- 19') No Recovery. FILL. -10 (19'- 20') Hard drilling at ~19 feet, possible boulder. FILL. .

#### **NOTES:**

FULTON DATA TEMPLATE GDT

BORINGS.GPJ

WILLIAMSBURG W PREV.

LOG

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

NA = NOT APPLICABLE

Q<sub>P</sub> = POCKET PENETROMETER NM = NOT MEASURED = TORVANE PEAK

ppm = PARTS PER MILLION

IN. = INCHES FT. = FEET

NLO = NAPHTHALENE LIKE ODOR PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road Glastonbury, CT 06033 PROJECT: Williamsburg MGP RI **PAGE WW-SB-48** CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 4 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë Ë VISUAL IMPACTS STRATA ODOR SOIL / BEDROCK DEPTH ANALYZED TYPE ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. S-4 120/0 (20'- 30') No Recovery. -15 25 -20 30 120/110 (30'- 31') WIDELY GRADED SAND (SW); ~90% sand, fine to S-5 CLO coarse, ~5% gravel, fine to coarse, subrounded, ~5% fines; max. size 1, slight chemical-like odor, brown, slight fruit-like odor. 15.5 (31'- 40') NARROWLY GRADED SAND (SP); ~95% sand, fine, ~5% fines; brown, lens of medium to coarse sand from ~36.5-37 feet; slight chemical/fruit-like odor. -25 35 2.0 -30 **S-6** 120/96 (40'- 43') NARROWLY GRADED SAND (SP); ~95% sand, fine, ~5% fines; wet, brown. 1.6 -35 (43'- 51.5') WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, fine to coarse, subrounded, ~5% fines; max. size 1, wet, brown. **NOTES:** PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL CrLO= CREOSOTE LIKE ODOR REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM) PLO = PETROLEUM LIKE ODOR

WILLIAMSBURG W PREV, BORINGS GPJ FULTON DATA TEMPLATE GDT 3/27/13

LOG

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

NM = NOT MEASURED = TORVANE PEAK IN. = INCHES FT. = FEET TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR MLO = MUSTY LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-SB-48** CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 4 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë Ë VISUAL IMPACTS STRATA ODOR DEPTH SOIL / BEDROCK ANALYZED TYPE ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 45 -40 1.7 50 S-7 120/96 (51.5'- 53') NARROWLY GRADED SAND (SP); ~95% sand, fine, 0.7 ~5% fines; wet, brown. -45 (53'- 56.5') WIDELY GRADED SAND (SW); ~85% sand, fine to coarse, ~10% gravel, fine to coarse, subrounded, ~5% fines; max. size 2.5, wet, brown. 55 (56.5'- 58') NARROWLY GRADED SAND (SP); ~95% sand, fine, ~5% fines; wet, brown. 0.7 -50 (58'- 64.5') WIDELY GRADED SAND (SW); ~85% sand, fine to coarse, ~10% gravel, fine to coarse, subrounded, ~5% fines; max. size 1, wet, brown. S-8 120/100 0.5 -55 (64.5'- 67') NARROWLY GRADED SAND (SP); ~95% sand, fine, 65 ~5% fines; wet, brown. 0.4 **WW-SB-48** (65-66)(67'- 70') LEAN CLAY (CL); ~100% fines, high plasticity, no dilatancy; moist, red with mottled gray. -60 **NOTES:** 

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

NM = NOT MEASURED

= TORVANE PEAK

IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

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GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 **BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE WW-SB-48** CITY/STATE: Brooklyn, New York (860) 368-5300 4 of 4 **GEI PROJECT NUMBER:** 093060 Consultants **SAMPLE INFO** Ë VISUAL Ë STRATA ODOR DEPTH **ANALYZED** SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and (PPM) IN./IN. NO.

End of Boring at 70 feet. Grouted

NOTES:

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK NA = NOT APPLICABLE

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PIN = PARTS PER MILLION
IN. = INCHES
PLO = PETROLEUM LIKE ODOR
TLO = TAR LIKE ODOR
TLO = TAR LIKE ODOR

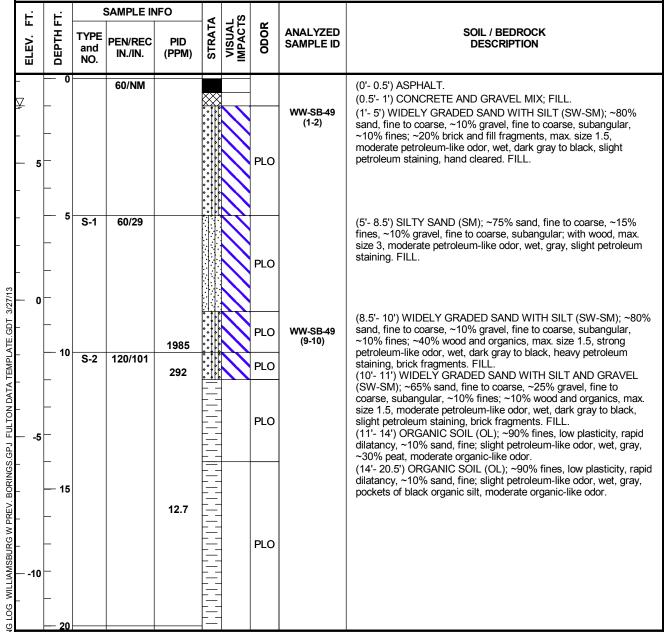
CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** CITY/STATE: Brooklyn, New York 1 of 4 GEI PROJECT NUMBER: 093060

WW-SB-49

**BORING LOG** 

**GROUND SURFACE ELEVATION (FT):** 8.09 LOCATION: 26 N 12th St TOTAL DEPTH (FT): 85.0 NORTHING (FT): 689371 **EASTING (FT):** 641543 DRILLED BY: Boart Longyear / Frank Gardella DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Amy Malsbary/Kari Weber DATE START / END: 11/3/2010 - 11/3/2010 DRILLING DETAILS: Sonic Coring **GENERAL NOTE:** 



#### **NOTES:**

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

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JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

NM = NOT MEASURED

= TORVANE PEAK

ppm = PARTS PER MILLION

IN. = INCHES FT. = FEET

NLO = NAPHTHALENE LIKE ODOR PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR MLO = MUSTY LIKE ODOR

CrLO= CREOSOTE LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE** WW-SB-49 CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 4 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë Ë VISUAL IMPACTS STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK TYPE ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. S-3 120/78 PLO (20.5'- 26') NARROWLY GRADED SAND WITH SILT (SP-SM); ~80% sand, fine to medium, ~10% gravel, fine, subangular, ~10% fines; max. size 0.75, slight chemical-like odor, brown, slight fruit-like odor. 1.4 -15 CLO 25 1.8 (26'- 30') NARROWLY GRADED SAND (SP); ~90% sand, fine to medium, ~5% gravel, fine to coarse, subrounded, ~5% fines; max. size 1.5, slight chemical-like odor, wet, brown, slight fruit-like odor. CLO -20 30 120/89 (30'- 33') WIDELY GRADED SAND (SW); ~90% sand, fine to S-4 coarse, ~5% gravel, fine, subangular, ~5% fines; max. size 0.75, slight chemical-like odor, wet, brown, slight fruit-like odor. CLO 1.1 -25 (33'- 55') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~75% sand, fine to medium, ~15% gravel, fine to coarse, subangular, ~10% fines; max. size 1, wet, grayish 35 4.4 -30 S-5 120/91 9.4

# **NOTES:**

-35

WILLIAMSBURG W PREV, BORINGS, GPJ FULTON DATA TEMPLATE, GDT

LOG

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

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NM = NOT MEASURED = TORVANE PEAK ppm = PARTS PER MILLION

NLO = NAPHTHALENE LIKE ODOR IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CLIENT: **BORING LOG** GEI Consultants, Inc. **National Grid** 455 Winding Brook Road Glastonbury, CT 06033 PROJECT: Williamsburg MGP RI **PAGE** WW-SB-49 CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 4 **GEI PROJECT NUMBER:** 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS Ë STRATA ODOR DEPTH **ANALYZED** SOIL / BEDROCK TYPE ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 45 3.7 -40 50 S-6 180/120 1.0 -45 55 (55'- 62') NARROWLY GRADED SAND (SP); ~95% sand, fine, ~5% fines; wet, brown. 0.3 -50 60 (62'- 64.5') LEAN CLAY (CL); ~100% fines, high plasticity, no dilatancy; moist, red with mottled gray. 0.8 -55 (64.5'- 65') CLAYEY SAND (SC); ~70% sand, fine, ~30% fines, medium plasticity, no dilatancy; moist, light gray with white. 60/60 S-7 (65'- 70') LEAN CLAY (CL); ~100% fines, high plasticity, no dilatancy; moist, gray with mottled red, red with mottled gay at ~67 -60

# **NOTES:**

WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

NM = NOT MEASURED = TORVANE PEAK IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 **BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** WW-SB-49 CITY/STATE: Brooklyn, New York (860) 368-5300 4 of 4 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS Ë STRATA ODOR DEPTH **ANALYZED** SOIL / BEDROCK TYPE ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and (PPM) IN./IN. NO.

70 60/39 S-8 (70'- 85') CLAYEY SAND (SC); ~80% sand, fine, ~20% fines, medium plasticity, no dilatancy; moist, light gray with white. 2.3 -65 120/NM S-9 1.1 -70 80 BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13 0.6 -75 WW-SB-49 (84-85)

End of Boring at 85 feet. Grouted

# NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK NA = NOT APPLICABLE

NM = NOT MEASURED

85

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York **GEI PROJECT NUMBER:** 093060

**PAGE** WW-SB-50 1 of 4

**BORING LOG** 

Consultants **GROUND SURFACE ELEVATION (FT):** 7.54 LOCATION: 26 N 12th St NORTHING (FT): 689302 EASTING (FT): 641950 TOTAL DEPTH (FT): 75.0 DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone DRILLED BY: Boart Longyear / Frank Gardella LOGGED BY: Amy Malsbary/Kari Weber DATE START / END: 11/1/2010 DRILLING DETAILS: Sonic Coring WATER LEVEL DEPTHS (FT): <u>₹ 5.00 11/1/2010</u>

**GENERAL NOTE:** 

DEPTH FT.	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	WW-SB-50 (1-2)	
_ - 3 _		60/NM	60.5	••••••••••••••••••••••••••••••••••••••	(1-2)	(0.5'- 5') WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM); moderate petroleum-like odor, black, brick and wood debris,
_ 5		1			0	
_ _ _	S-1	60/31	21.5	••••••••••••••••••••••••••••••••••••••	WW-SB-50 (5.5-6.5)	(5'- 9.5') WIDELY GRADED SAND WITH SILT (SW-SM); ~80% sand, fine to coarse, ~10% gravel, fine to coarse, subangular, ~10% fines; moderate petroleum-like odor, wet, brown.
— 10 - - 5 -	S-2	60/40	3.4			(9.5'- 10') WIDELY GRADED SAND WITH SILT (SW-SM); ~80% sand, fine to coarse, ~10% gravel, fine to coarse, subangular, ~10% fines; ~30% black organics, slight petroleum-like odor, wet, brown, slight organic-like odor.  (10'- 14') WIDELY GRADED SAND WITH SILT (SW-SM); ~80% sand, fine to coarse, ~10% gravel, fine to coarse, subangular, ~10% fines; slight petroleum-like odor, wet, brown.
_ 15 _ _ _ _ _	S-3	120/110	1.3			(14'- 15') SILTY SAND (SM); ~80% sand, fine to coarse, ~15% fines, ~5% gravel, fine to coarse, subrounded; slight petroleum-like odor, wet, brown, 3 inch lens of gray sandy silt at ~14.5'. (15'- 21') ORGANIC SOIL WITH SAND (OL); ~80% fines, low plasticity, rapid dilatancy, ~20% sand, fine; moderate organic-like odor, wet, dark gray.
	10 15	10	S-2 60/40  - 15 S-3 120/110	21.5  - 10 S-2 60/40  - 3.4  - 15 S-3 120/110 - 1.3	21.5   10   S-2   60/40   3.4   1.3   PL   1.3   C   C   C   C   C   C   C   C   C	21.5 PLO S-2 60/40  3.4 PLO PLO  1.3 — OLO — OLO — — OLO

# NOTES:

BORING

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

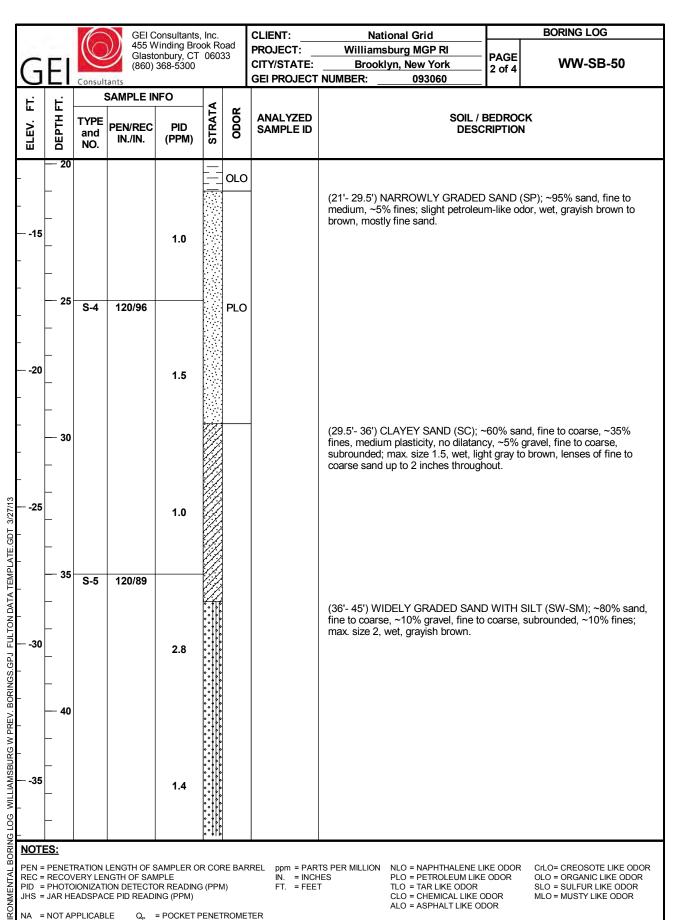
Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK NA = NOT APPLICABLE

NM = NOT MEASURED

IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR

TLO = TAR LIKE ODOR CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR



			GELC	onsultants,	Inc	Т	CLIENT:	National Grid		BORING LOG			
ie.		$\mathbb{C}$	455 W	/inding Bro onbury, CT	ok Roa	ad	PROJECT:	Williamsburg MGP RI	DAGE				
<u>_</u>	EI	~	(860)	368-5300	00033	<b>'</b>	CITY/STATE:	Brooklyn, New York	PAGE 3 of 4	WW-SB-50			
U		Consult	ants				GEI PROJECT	NUMBER:093060	• • •				
Ë	Ë	;	SAMPLE IN	NFO									
	<u> </u>	TYPE			STRATA	ODOR	ANALYZED	SOIL / BEDROCK					
ELEV.	DEPTH	and	PEN/REC IN./IN.	PID (PPM)	띪	8	SAMPLE ID	DESC	RIPTION				
13		NO.		()	0,								
	<b>—</b> 45				:•‡};								
_	45	S-5	120/66					(45'- 55') NARROWLY GRADED S sand, fine to medium, ~10% fines,	AND WI	TH SILT (SP-SM); ~85%			
	-							subrounded; max. size 2, wet, brow					
-								, , ,	0 .	,			
40	_												
— <b>-4</b> 0	_			1.5									
-													
	-												
-	<b>—</b> 50												
_	30												
	-												
-													
4.5	_												
— <b>-4</b> 5	_			0.8									
_													
	-												
-													
	<del> 55</del>	S-6 1	120/87	,	1				(55'- 61') NARROWLY GRADED S	AND (SI	P); ~90% sand, fine to		
	_								medium, ~5% gravel, fine to coarse wet, grayish brown.	e, subang	gular, ~5% fines; max. size 3,		
-								net, g. ayıcı a. emi					
	-												
— <b>-</b> 50	_			1.1									
_													
	-												
-													
	— 60												
	_							(OAL OOD MADDOMEN ODADED O	AND W	TH ODAY(EL (OD): 700/			
-								(61'- 62') NARROWLY GRADED S sand, fine to medium, ~25% gravel.	fine to d	TH GRAVEL (SP); ~70% coarse, subangular, ~5%			
	-							fines; max. size 3, wet, grayish brow	vn.				
— <b>-</b> 55				1.0				(62'- 70') NARROWLY GRADED S medium, ~5% gravel, fine to coarse	AND (Si e. subanc	2); ~90% sand, fine to oular. ~5% fines: max. size 3.			
_								wet, grayish brown.	,	,,			
	_												
-													
	<del></del> 65	S-7	120/85										
	_												
-													
	-												
— <b>-60</b>				1.5									
L I													
	<u> </u>												
NOTE	<u>S:</u>		<u> </u>										
DEN.													

ENVIRONMENTAL BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

NA = NOT APPLICABLE NM = NOT MEASURED

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
RIN. = INCHES
RIN. = INCHES
RIN. = INCHES
RIN. = INCHES
RIN. = FEET
RILLION
RIO = NAPHTHALENE LIKE ODOR
RIO = PETROLEUM LIKE ODOR
RIO = TAR LIKE ODOR
RIO = TAR LIKE ODOR
RIO = APPHALT LIKE ODOR

			OFI.O	`oultonto	Inc		CLIENT:	National	O: 4		BORING LOG
GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 (860) 368-5300							PROJECT: CITY/STATE: GEI PROJECT	Williamsburg Brooklyn, N	MGP RI	PAGE 4 of 4	WW-SB-50
FT.	Ħ.	,	SAMPLE IN	NFO							
ELEV. F	DEPTH F	TYPE and NO. IN./IN. PD					ANALYZED SAMPLE ID	CK N			
- - - <b>-65</b> -	<b>70</b>			0.7				~10% gravel, fine t brown. (71.5'- 75') LEAN (	to coarse, subrou CLAY (CL); ~100 ttled gray, color o	indèd, ~	); ~85% sand, fine to coarse, 5% fines; max. size 2, wet, , high plasticity, no dilatancy; o gray with mottled red and

End of Boring at 75 feet. Grouted

## NOTES:

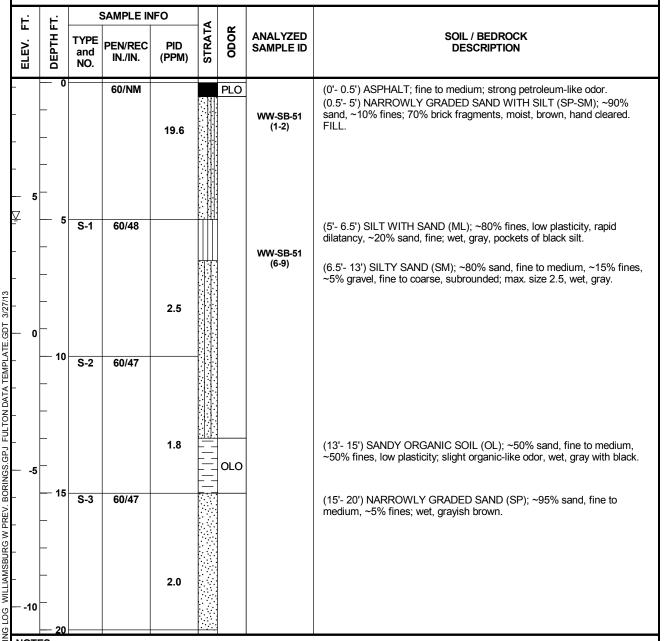
NA = NOT APPLICABLE NM = NOT MEASURED

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
RIN. = INCHES
RIN. = INCHES
RIN. = INCHES
RIN. = INCHES
RIN. = FEET

**BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** WW-SB-51 CITY/STATE: Brooklyn, New York 1 of 3 GEI PROJECT NUMBER: 093060

Consultants **GROUND SURFACE ELEVATION (FT):** 9.16 LOCATION: 26 N 12th St TOTAL DEPTH (FT): \_55.0 NORTHING (FT): 689110 **EASTING (FT):** 642047 DRILLED BY: Boart Longyear / Frank Gardella DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Amy Malsbary/Kari Weber DATE START / END: 10/19/2010 - 10/21/2010 DRILLING DETAILS: Sonic Coring **GENERAL NOTE:** 



# **NOTES:**

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE = TORVANE PEAK

NM = NOT MEASURED

ppm = PARTS PER MILLION

IN. = INCHES FT. = FEET

NLO = NAPHTHALENE LIKE ODOR PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

			<b>∭</b> GEI C	onsultants,	Inc.		CLIENT:	National Grid		BORING LOG					
15		455 Winding Brook Road Glastonbury, CT 06033			PROJECT:	Williamsburg MGP RI	PAGE								
(	FI			368-5300	00000		CITY/STATE:	Brooklyn, New York	2 of 3	WW-SB-51					
	LЦ	Consult	ants				GEI PROJECT	NUMBER: 093060							
FT.	Ë	;	SAMPLE IN	IFO											
		TYPE			STRATA	ODOR	ANALYZED	SOIL / BEDROCK							
ELEV.	DEPTH	and	PEN/REC IN./IN.	PID (PPM)	품	8	SAMPLE ID	DESCRIPTION							
П	ă	NO.	114.7114.	(1 1 111)	"										
-	<b>— 20</b>	S-4	60/42		N31			(20'- 21.2') SILTY SAND (SM); ~80	% sand	I fine to medium ~15% fines					
								~5% gravel, fine to coarse, subroun	ided; ma	ax. size 2.5, wet, gray.					
-				6.2				(21.2'- 24.2') CLAYEY SAND (SC);	~45% :	sand, fine to medium, ~45%					
_	_							fines, ~10% gravel, fine to coarse, s							
								gray, lenses of black organic soil at	~21.2-2	21.4 1 <del>00</del> 1.					
_	_														
	_														
— <b>-</b> 15								(24.2'- 25') SILTY SAND (SM); ~80							
_	25	S-5	60/43					~5% gravel, fine to coarse, subroun (25'- 30') SILTY SAND (SM); ~65%	ided; ma	ax. size 2.5, wet, gray.					
			00/10					~10% gravel, fine to coarse, subrou	ınded; n						
-								brown, lenses and seams of clayey	sand.						
	_														
-	_														
<b>20</b>															
	<b>—</b> 30	S-6	60/41					(30'- 35') WIDELY GRADED SAND WITH SILT AND GRAVEL							
		3-0	60/41					(SW-SM); ~75% sand, fine to coars							
-	_			2.4				subangular, ~10% fines; max. size	2.5, mo	ist, brown.					
	_														
_															
-	_														
25															
	<b>—</b> 35	S-7	400/00					(OFL 44 FIX MUDEL V CDADED CAA	ID (C)A(	). OF0/ and fine to seems					
		5-7	120/92					(35'- 44.5') WIDELY GRADED SAN ~5% fines; wet, brown.	MD (244	); ~95% sand, fine to coarse,					
-	_			2.8				,,							
	_				****										
<b>— -30</b>	_														
	<b>— 40</b>														
-	-			0.7											
				V.,	****										
<b> </b>															
L	_														
<b>— -35</b>	-														
NOT	-e.				P-9										
NOTE		PATION	ENGTH OF 9	SAMPLED OF		BVD	REI nnm - DAD	TS PER MILLION NLO = NAPHTHALENE LI	(E ODOE	)					

ENVIRONMENTAL BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

NA = NOT APPLICABLE NM = NOT MEASURED  $Q_P$  = POCKET PENETROMETER  $S_V$  = TORVANE PEAK

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
IN. = INCHES
PLO = PETROLEUM LIKE ODOR
PID = PHOTOIONIZATION DETECTOR READING (PPM)
FT. = FEET
TLO = TAR LIKE ODOR
CLO = CHEMICAL LIKE ODOR
ALO = ASPHALT LIKE ODOR

**BORING LOG** CLIENT: GEI Consultants, Inc. **National Grid** 455 Winding Brook Road Glastonbury, CT 06033 PROJECT: Williamsburg MGP RI **PAGE** WW-SB-51 CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 3 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë Ë STRATA ODOR DEPTH **ANALYZED** SOIL / BEDROCK TYPE ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. (44.5'- 45') SILT (ML); ~95% fines, ~5% sand, fine; moist, gray. 45 S-8 60/43 (45'- 50') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines; wet, brown, 4 inch lens of silty sand at 45.5 ft. 0.8 -40 50 S-9 60/50 (50'- 53') WIDELY GRADED SAND (SW); ~85% sand, fine to coarse, ~10% gravel, fine to coarse, subrounded, ~5% fines; wet, brown. WW-SB-51 (52.5-53) (53'- 55') LEAN CLAY (CL); ~100% fines, high plasticity, no dilatancy; 0.6 moist, gray with mottled red. -45

End of Boring at 55 feet. Grouted

### NOTES:

BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

NA = NOT APPLICABLE Q<sub>p</sub> = POCKET PENETROMETER

NM = NOT MEASURED S<sub>V</sub> = TORVANE PEAK

IN. = INCHES PLO = PETROLEUM LIKE ODOR
FT. = FEET TLO = TAR LIKE ODOR

TLO = TAR LIKE ODOR
CLO = CHEMICAL LIKE ODOR
ALO = ASPHALT LIKE ODOR



CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York **GEI PROJECT NUMBER:** 093060

**PAGE** 1 of 4

**WW-SB-52** 

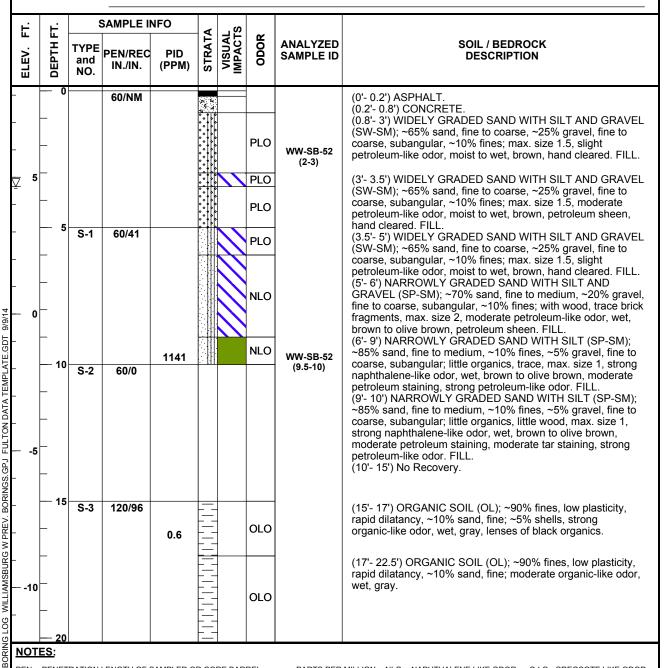
**BORING LOG** 

**GROUND SURFACE ELEVATION (FT):** 8.16 LOCATION: 26 N 12th St NORTHING (FT): 689272 EASTING (FT): 641911 TOTAL DEPTH (FT): 70.0 DRILLED BY: Boart Longyear / Frank Gardella DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone

LOGGED BY: Amy Malsbary/Kari Weber DATE START / END: 10/29/2010

**DRILLING DETAILS: Sonic Coring** 

**GENERAL NOTE:** 



## NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

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= TORVANE PEAK NM = NOT MEASURED

ppm = PARTS PER MILLION

IN. = INCHES

FT. = FEET

NLO = NAPHTHALENE LIKE ODOR PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-SB-52** CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 4 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 20 OLO (22.5'- 25') NARROWLY GRADED SAND WITH SILT (SP-SM); ~90% sand, fine to medium, ~10% fines; slight organic-like odor, -15 wet, brown. OLO 0.8 120/106 (25'- 26.5') NARROWLY GRADED SAND WITH SILT (SP-SM); S-4 ~90% sand, fine to medium, ~10% fines; slight chemical-like odor, CLO wet, brown, slight fruit-like odor. (26.5'- 27') WIDELY GRADED SAND (SW); ~90% sand, fine to CLO coarse, ~5% gravel, fine to coarse, subangular, ~5% fines; max. 2.1 size 1, slight chemical-like odor, wet, gray, slight fruit-like odor. (27'- 29.5') NARROWLY GRADED SAND WITH SILT (SP-SM); -20 CLO ~90% sand, fine to medium, ~10% fines; slight chemical-like odor, wet, brown, slight fruit-like odor. (29.5'- 31') CLAYEY SAND WITH GRAVEL (SC); ~40% sand, 30 fine to coarse, ~35% fines, medium plasticity, no dilatancy, ~25% CLO gravel, fine to coarse, subangular; max. size 2.5, slight chemical-like odor, wet, brown, slight fruit-like odor. (31'- 33.8') CLAYEY SAND (SC); ~55% sand, fine to coarse, ~35% fines, medium plasticity, no dilatancy, ~10% gravel, fine to coarse, subangular; max. size 1.25, slight chemical-like odor, wet, CLO brown, slight fruit-like odor. -25 1.5 (33.8'- 35') NARROWLY GRADED SAND WITH SILT (SP-SM); CLO ~85% sand, fine to medium, ~10% fines, ~5% gravel, fine, subangular; max. size 1, slight chemical-like odor, wet, grayish S-5 120/30 brown, slight fruit-like odor, fractured cobble at ~34.5'. (35'- 37.5') SILTY SAND (SM); ~70% sand, fine to medium, ~20% fines, ~10% gravel, coarse, subangular; max. size 3, wet, 1.2 light gray, ~2 inch lenses of gray sandy silt at ~36' and ~37'. (37.5'- 45') cobble stuck in tip, possible cobbles throughout. -30 40 -35

IN. = INCHES FT. = FEET

**NOTES:** 

FULTON DATA TEMPLATE GDT

WILLIAMSBURG W PREV, BORINGS.GPJ

LOG

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

= TORVANE PEAK = NOT MEASURED

ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-SB-52** CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 4 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë Ë VISUAL IMPACTS STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. S-6 120/100 (45'- 46') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines; wet, brown. (46'- 49') NARROWLY GRADED SAND (SP); ~85% sand, fine to medium, ~10% gravel, fine to coarse, subrounded, ~5% fines; max. size 2, wet, grayish brown. 0.6 40 (49'- 56.5') SILTY SAND WITH GRAVEL (SM); ~70% sand, fine to medium, ~15% gravel, fine to coarse, subrounded, ~15% fines; 50 max. size 3.5, wet, brown to light reddish brown. -45 0.6 55 60/48 **S-7** (56.5'- 60') WIDELY GRADED GRAVEL WITH SAND (GW); ~50% gravel, fine to coarse, subangular, ~45% sand, fine to coarse, ~5% fines; max. size 4, moist, brown, some gravel is possible fractured cobble. -50 60 S-8 120/98 (60'- 63.8') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines; wet, brown. 1.2 -55 (63.8'- 68.5') NARROWLY GRADED SAND (SP); ~90% sand, fine to medium, ~5% gravel, fine, subrounded, ~5% fines; max. size 0.75, wet, grayish brown. 65 WW-SB-52 (67.5-68.5)-60 0.9 (68.5'- 70') LEAN CLAY (CL); ~100% fines, high plasticity, no **NOTES:** 

WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

NM = NOT MEASURED = TORVANE PEAK IN. = INCHES FT. = FEET

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 **BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** WW-SB-52 CITY/STATE: Brooklyn, New York (860) 368-5300 4 of 4 **GEI PROJECT NUMBER:** 093060 Consultants **SAMPLE INFO** Ë VISUAL Ë STRATA ODOR DEPTH **ANALYZED** SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and (PPM) IN./IN. NO. dilatancy; moist, red with mottled gray.

End of Boring at 70 feet. Grouted

NOTES:

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK NA = NOT APPLICABLE

NM = NOT MEASURED

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PHOTOIONIZATION DETECTOR READING (PPM)

PID = PHOTOIONIZATION DETECTOR READING (PPM)

PID = PERTS PER MILLION
PID = PARTS PER MILLION
PID = PETROLEUM LIKE ODOR
PID = TAR LIKE ODOR
TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** WW-SB-53 CITY/STATE: Brooklyn, New York 1 of 2 **GEI PROJECT NUMBER:** 093060

**GROUND SURFACE ELEVATION (FT):** 8.74 LOCATION: 26 N 12th St NORTHING (FT): 689271 EASTING (FT): 641835 TOTAL DEPTH (FT): 25.0 DRILLED BY: Boart Longyear / Frank Gardella DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Amy Malsbary/Kari Weber DATE START / END: 10/27/2010 - 12/8/2010 DRILLING DETAILS: Sonic Coring WATER LEVEL DEPTHS (FT): <u>₹ 5.00 12/8/2010</u> **GENERAL NOTE:** 

l	FT.	SAMPLE INFO		Z Z		ŭ				
	ELEV. F	DEPTH F	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
ĺ		— O		60/NM						(0'- 5') Hand cleared.
	-	_							WW-SB-53 (1-2)	
	- - 5	_								
3	<u>▼</u> - -	— <b>5</b> —	S-1	60/50	12.5			NLO	WW-SB-53	(5'- 8.2') SILTY SAND (SM); ~85% sand, fine to medium, ~15% fines; moderate naphthalene-like odor, wet, brown, moderate petroleum-like odor, sheen, pockets of blebs.
ATE.GDT 3/27/13	- <b>0</b>	_ _ 10						NLO	(7.5-8)	(8.2'- 10') SILTY SAND (SM); ~85% sand, fine, ~15% fines; slight naphthalene-like odor, wet, brown, slight petroleum-like odor.
TON DATA TEMPL	-	- 10 - -	S-2	60/38	12.3					(10'- 15') NARROWLY GRADED SAND WITH SILT (SP-SM); ~90% sand, fine to medium, ~10% fines; moist, brown.
DRINGS.GPJ FUL	- 5 -	_ _ <del></del> 15								
NG LOG WILLIAMSBURG W PREV. BORINGS GPJ FULTON DATA TEMPLATE.GDT 3/27/13	- - - — <b>-10</b>	- -	S-3	60/41	12.5			OLO		(15'- 20') SILT WITH SAND (ML); ~80% fines, ~20% sand, fine; slight organic-like odor, moist, brownish gray, shell fragments at ~16'.
G LOG	_	_ 20								

#### NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

NA = NOT APPLICABLE

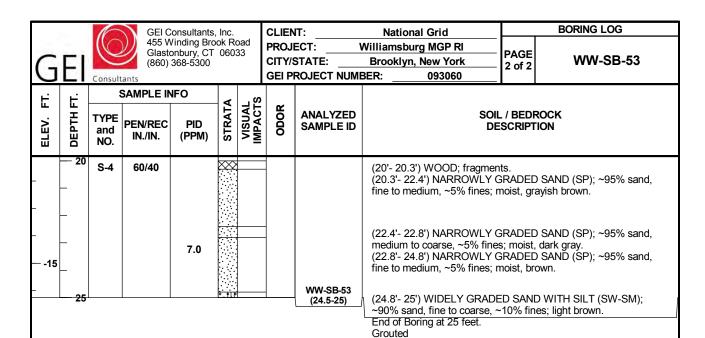
Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK NM = NOT MEASURED

IN. = INCHES FT. = FEET

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NM = NOT MEASURED = TORVANE PEAK IN. = INCHES FT. = FEET

ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** CLIENT: **National Grid** Williamsburg MGP RI PROJECT: PAGE WW-SB-54 CITY/STATE: Brooklyn, New York 1 of 3 **GEI PROJECT NUMBER:** 093060

**GROUND SURFACE ELEVATION (FT):** 13.74 LOCATION: Private property - End of N 10th Street NORTHING (FT): 688425 EASTING (FT): 641709 TOTAL DEPTH (FT): 60.0 DRILLED BY: Boart Longyear / Frank Gardella DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Chris Anastasiou DATE START / END: 11/15/2012 - 11/15/2012 DRILLING DETAILS: Sonic Coring WATER LEVEL DEPTHS (FT): <u>₹ 7.10 11/15/2012</u> **GENERAL NOTE:** 

FT.	FT.	SAMF	LE INFO	_		
ELEV. F	ЭЕРТН F	TYPE and NO.	PEN/REC IN./IN.	STRATA	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
- - - 10	<b>0</b> - - -		60/NM	* * * * * * * * * * * * * * * * * * * *	WW-SB-54 (3-5)	(0'- 0.2') ASPHALT. (0.2'- 1') WIDELY GRADED SAND WITH GRAVEL (SW); ~80% sand, fine to coarse, ~20% gravel, fine to coarse; brick and rock fragments, plastic lining at 8", hand cleared. FILL. (1'- 5') SILTY SAND (SM); ~70% sand, fine to medium, ~30% fines; brown, hand cleared.
-	— 5 –	S-1	60/48			(5'- 7.1') SILTY SAND (SM); ~80% sand, fine to coarse, ~20% fines; brown.
	-				WW-SB-54 (7-9)	(7.1'- 10') SANDY SILT (ML); ~50% sand, fine, ~50% fines; wet, brown.
<b>5</b>	_ 10 _ _	S-2	60/48			(10'- 15') SILTY SAND (SM); ~70% sand, fine to coarse, ~20% fines, ~10% gravel, fine to coarse; brown.
0	_ 15 	S-3	60/48			(15'- 20') SILTY SAND (SM); ~60% sand, fine, ~40% fines; brown.
2	_ _ _ 20					

NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

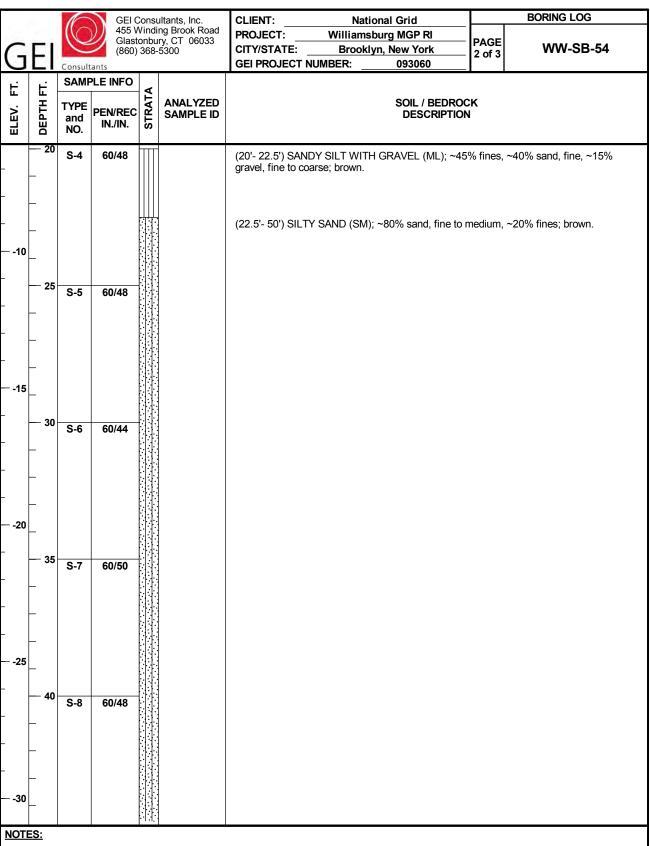
JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK NA = NOT APPLICABLE

NM = NOT MEASURED

IN. = INCHES FT. = FEET

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR



PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK NA = NOT APPLICABLE NM = NOT MEASURED

IN. = INCHES FT. = FEET

ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 **BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** WW-SB-54 CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 3 **GEI PROJECT NUMBER:** 093060 Consultants SAMPLE INFO Ë Ë STRATA **ANALYZED** SOIL / BEDROCK DEPTH TYPE ELEV. PEN/REC **SAMPLE ID DESCRIPTION** and IN./IN. NO. S-9 60/48 -35 50 S-10 60/40 (50'- 57.5') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to coarse, ~10% fines; brown. -40 55 60/48 S-11 WW-SB-54 (57-59)(57.5'- 60') SANDY SILT (ML); ~70% fines, ~30% sand, fine; brown. -45 End of Boring at 60 feet. Grouted NOTES: PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL CrLO= CREOSOTE LIKE ODOR REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM) IN. = INCHES FT. = FEET

LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

NM = NOT MEASURED Sv = TORVANE PEAK PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR MLO = MUSTY LIKE ODOR

CLIENT: **National Grid** PROJECT: Williamsburg Works Former MGP CITY/STATE:

Brooklyn, New York GEI PROJECT NUMBER: 093060

**PAGE** 1 of 3

**WW-SB-55** 

**BORING LOG** 

**GROUND SURFACE ELEVATION (FT):** 9.04 EASTING (FT): NORTHING (FT): 688688 641390

DRILLED BY: Boart Longyear / Frank Gardella

LOGGED BY: Chris Anastasiou

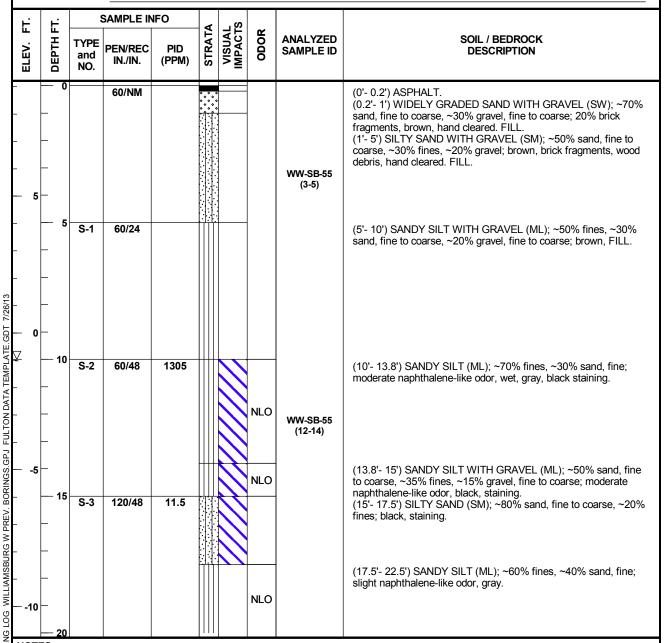
TOTAL DEPTH (FT): 60.0 DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone

DATE START / END: 11/13/2012 - 11/13/2012

LOCATION: Private property - End of N 10th Street

DRILLING DETAILS: Sonic Coring

**GENERAL NOTE:** 



NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION

REC = RECOVERY LENGTH OF SAMPLE

= NOT APPLICABLE

NM = NOT MEASURED

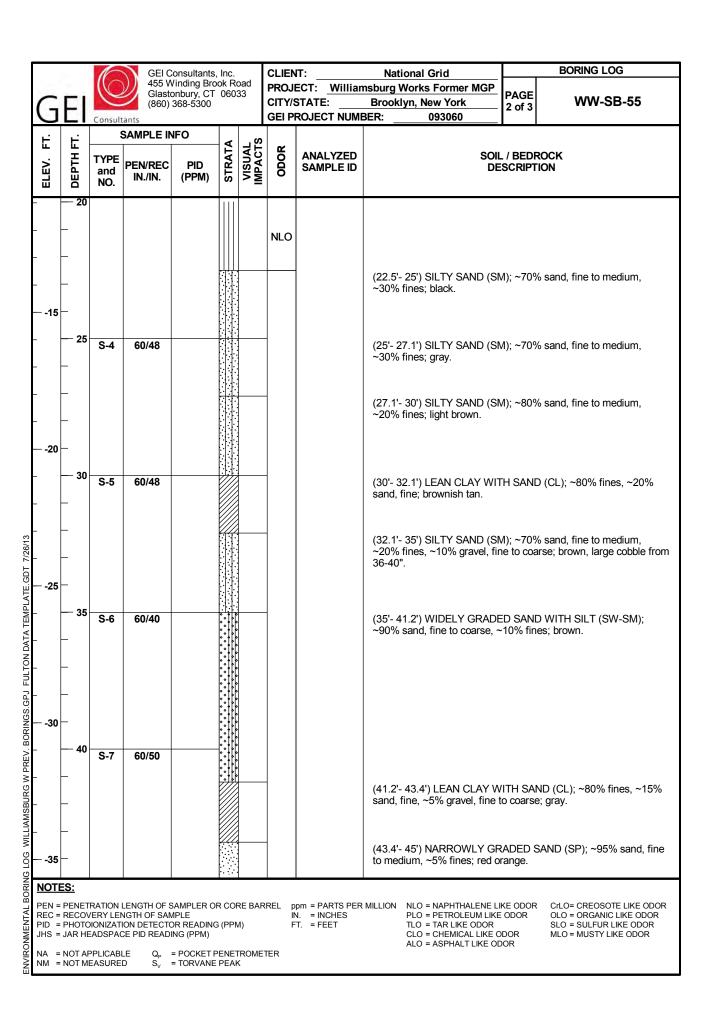
PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

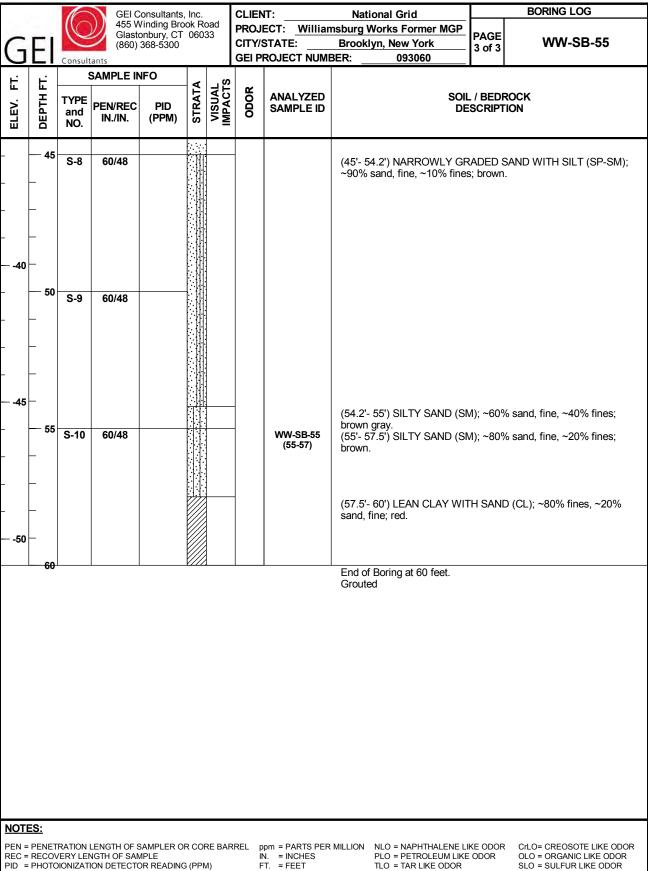
= POCKET PENETROMETER = TORVANE PEAK

IN. = INCHES FT. = FEET

NLO = NAPHTHALENE LIKE ODOR PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR





7/26/13

ENVIRONMENTAL BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT

JHS = JAR HEADSPACE PID READING (PPM)

NA = NOT APPLICABLE = POCKET PENETROMETER NM = NOT MEASURED S<sub>v</sub> = TORVANE PEAK

IN. = INCHES FT. = FEET

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR MLO = MUSTY LIKE ODOR

**BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** WW-SED-01 CITY/STATE: Brooklyn, New York 1 of 2 **GEI PROJECT NUMBER:** 093060

**GROUND SURFACE ELEVATION (FT):** -5.40 LOCATION: East River NORTHING (FT): 689140 EASTING (FT): 641205 TOTAL DEPTH (FT): 20.0 DRILLED BY: Ocean Surveys, Inc. / Dave Kowaleski DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone DATE START / END: 9/30/2009 - 9/30/2009 LOGGED BY: Kari Weber DRILLING DETAILS: Vibracore WATER LEVEL DEPTHS (FT): \_ **GENERAL NOTE:** 

	FT.	FT.	;	SAMPLE IN	NFO	7	. ග			
	ELEV. F	ОЕРТН F	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL IMPACTS	водо	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
		— O	S1	240/206	649				WW-SED-01	(0'- 1.2') ORGANIC SOIL WITH SAND (OL); ~80% fines, non
		_			841			NLO	(0-0.5) WW-SED-01	plastic, ~20% sand, fine; ~30% organics, slight naphthalene-like odor, wet, black, slight petroleum-like odor, wood, sticks, and
	-	_			041			NLO	(1-2)	fibers. (1.2'- 2.3') ORGANIC SOIL WITH SAND (OL); ~80% fines, non plastic, ~20% sand, fine; ~30% organics, moderate
	- - 10	_ _ _ 5						NLO		naphthalene-like odor, wet, black, slight petroleum-like odor, wood, sticks, and fibers, tar-like staining.  (2.3'- 5.8') ORGANIC SOIL WITH SAND (OL); ~80% fines, non plastic, ~20% sand, fine; ~30% organics, moderate naphthalene-like odor, wet, black, wood, sticks, and fibers.
		_			653					(5.8'- 7') SANDY ORGANIC SOIL (OL); ~70% fines, non plastic, ~30% sand, fine to medium; ~30% organics, wet, black, wood,
/13	_							NLO		sticks, and fibers.  (7'- 8.2') SANDY ORGANIC SOIL (OL); ~70% fines, non plastic, ~30% sand, fine to medium; ~30% organics, moderate naphthalene-like odor, wet, black, wood, sticks, and fibers, moderate tar-like staining.  (8.2'- 10') ORGANIC SOIL WITH SAND (OL); ~85% fines, non plastic, ~15% sand, fine; ~30% organics, slight naphthalene-like odor, wet, black, wood, sticks, and fibers, slight tar-like staining.
ATE.GDT 3/27/13	- 15	_ _ 10						NLO		
TA TEMPL	_	_						NLO		(10'- 11.7') ORGANIC SOIL WITH SAND (OL); ~85% fines, non plastic, ~15% sand, fine; ~30% organics, slight naphthalene-like odor, wet, black, wood, sticks, and fibers.
N DA		_								(11.7'- 12.6') ORGANIC SOIL WITH SAND (OL); ~85% fines,
ULTC	_					H				non plastic, ~15% sand, fine; ~30% organics, wet, black, wood, sticks, and fibers.
WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT	- <b>-20</b> -	_ 15			187			NLO		(12.6'- 17.8') ORGANIC SOIL WITH SAND (OL); ~85% fines, non plastic, ~15% sand, fine; ~40% organics, slight naphthalene-like odor, wet, black, wood, sticks, and fibers, slight tar-like staining, layer of wood chips from 17.5 to 17.8 ft.
URG V	_	_								
MSBL	-									(17.8'- 20') ORGANIC SOIL (OL); ~90% fines, non plastic, ~10%
3 WILLIA	-	_						NLO		sand, fine; ~5% organics, slight naphthalene-like odor, wet, black, very soft, fibers and wood.
G LOG	<b>25</b>	20			35.0				WW-SED-01	

#### NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK NA = NOT APPLICABLE

NM = NOT MEASURED

IN. = INCHES FT. = FEET

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR CLO = CHEMICAL LIKE ODOR

MLO = MUSTY LIKE ODOR ALO = ASPHALT LIKE ODOR

OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

CrLO= CREOSOTE LIKE ODOR



CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York **GEI PROJECT NUMBER:** 093060

**PAGE** 2 of 2

WW-SED-01

**BORING LOG** 

Ë ELEV.

Ë

DEPTH

**TYPE** PEN/REC and IN./IN. NO.

SAMPLE INFO

VISUAL IMPACTS STRATA (PPM)

PID

ODOR **ANALYZED** SAMPLE ID

SOIL / BEDROCK **DESCRIPTION** 

(19.5-20) End of Boring at 20 feet.

NOTES:

BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK NA = NOT APPLICABLE

NM = NOT MEASURED

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (PPM)

PD = PARTS PER MILLION
NLO = NAPHTHALENE LIKE ODOR
PLO = PETROLEUM LIKE ODOR
TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York **GEI PROJECT NUMBER:** 093060

**PAGE** 1 of 1

WW-SED-02

**BORING LOG** 

**GROUND SURFACE ELEVATION (FT):** -5.00 LOCATION: East River NORTHING (FT): 689254 EASTING (FT): 641244 TOTAL DEPTH (FT): 12.0 DRILLED BY: Ocean Surveys, Inc. / Dave Kowaleski DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Kari Weber DATE START / END: 9/30/2009 - 9/30/2009 DRILLING DETAILS: Vibracore WATER LEVEL DEPTHS (FT): **GENERAL NOTE:** 

Ŧ.	FT.	,	SAMPLE IN	IFO	_	. ω			
ELEV. F	ОЕРТН F	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
	— 0 –	S1	144/144	457			NLO	WW-SED-02 (0-0.5)	(0'- 1.3') ORGANIC SOIL WITH SAND (OL); ~80% fines, non plastic, ~20% sand, fine to medium; ~40% organics, slight naphthalene-like odor, wet, black, slight petroleum-like odor,
-	_			1460			NLO	WW-SED-02 (4-5)	wood, fibers, and sticks.  (1.3'- 5') ORGANIC SOIL WITH SAND (OL); ~80% fines, non plastic, ~20% sand, fine to medium; ~40% organics, moderate naphthalene-like odor, wet, black, wood, fibers, and sticks, slight tar-like staining.
10 -	— 5 —						NLO		(5'- 6.3') SILTY SAND (SM); ~75% sand, fine to medium, ~20% fines, non plastic, ~5% gravel, fine; ~25% organics, slight naphthalene-like odor, wet, black, wood and sticks, slight
-	_						NLO		sewage-like odor. (6.3'- 7.8') GRAVELY SILT WITH SAND (ML); ~55% fines, non plastic, ~30% gravel, fine to coarse, ~15% sand, fine; max. size 1.5, slight naphthalene-like odor, wet, dark gray.
	_								(7.8'- 12') SANDY ORGANIC SOIL (OL); ~70% fines, non plastic, ~25% sand, fine to medium, ~5% gravel, fine; ~40% organics, max. size 0.5, slight naphthalene-like odor, wet, black, wood, fibers, and sticks.
-15	— 10 –			200			NLO	WW-SED-02 (11-12)	

End of Boring at 12 feet. Refusal at 12 feet.

# NOTES:

BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

NA = NOT APPLICABLE NM = NOT MEASURED

IN. = INCHES FT. = FEET

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

BORING LOG CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** WW-SED-03 CITY/STATE: Brooklyn, New York 1 of 1 **GEI PROJECT NUMBER:** 093060

**GROUND SURFACE ELEVATION (FT):** -7.00 LOCATION: East River NORTHING (FT): 689360 EASTING (FT): 641269 TOTAL DEPTH (FT): 17.0 DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone DRILLED BY: Ocean Surveys, Inc. / Dave Kowaleski LOGGED BY: Kari Weber DATE START / END: 9/30/2009 - 9/30/2009 DRILLING DETAILS: Vibracore WATER LEVEL DEPTHS (FT): \_\_\_ GENERAL NOTE:

				SAMPLE IN	NFO					
	ELEV. FT.	ОЕРТН FT.	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
	- - 10	— <b>0</b> - -	S1	204/204	143 269			NLO	WW-SED-03 (0-0.5)	(0'- 3.6') SANDY ORGANIC SOIL (OL); ~60% fines, non plastic, ~35% sand, fine to medium, ~5% gravel, fine, subangular; ~30% organics, max. size 0.25, strong naphthalene-like odor, wet, black, wood and sticks, tar-like staining.
	-	- 5								(3.6'- 5') CLAYEY SAND WITH GRAVEL (SC); ~50% sand, fine to medium, ~30% gravel, fine to coarse, subrounded, ~20% fines, medium plasticity; max. size 2.5, moist, tannish brown, dense.  (5'- 8.3') ORGANIC SOIL WITH SAND (OL); ~80% fines, low
7/13	- - 15	_ _ _						NLO		plasticity, ~20% sand, fine; ~30% organics, slight naphthalene-like odor, wet, black, wood, sticks, and glass pieces.
PLATE.GDT 3/2	-	_ 10			866		NLO	NLO	WW-SED-03 (9-10)	(8.3'- 10') SANDY ORGANIC SOIL (OL); ~65% fines, non plastic, ~35% sand, fine to medium; ~20% organics, strong naphthalene-like odor, wet, black, wood and sticks, 4 inch cobble at the top, lenses of heavy coating.  (10'- 14.4') ORGANIC SOIL WITH SAND (OL); ~80% fines, low
3 LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13	- - 20	— <b>10</b>								plasticity, ~20% sand, fine to medium; ~30% organics, wet, black, wood, sticks, and glass pieces.
W PREV. BORINGS.G	-	_ 15 _			49.0	=		NLO	MAN GED 02	(14.4'- 15') ORGANIC SOIL WITH SAND (OL); ~80% fines, low plasticity, ~20% sand, fine to medium; ~30% organics, slight naphthalene-like odor, wet, black, wood, sticks, and glass pieces. (15'- 17') ORGANIC SOIL WITH SAND (OL); ~80% fines, low plasticity, ~20% sand, fine to medium; ~30% organics, wet, black,
3 LOG WILLIAMSBURG					48.8	<u></u>			WW-SED-03 (16.5-17)	wood, sticks, and glass pieces, sewage-like odor from 15-16 ft.  End of Boring at 17 feet.  Refusal at 17 feet.

# NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK NA = NOT APPLICABLE

NM = NOT MEASURED

IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

BORING LOG CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** WW-SED-04 CITY/STATE: Brooklyn, New York 1 of 1 **GEI PROJECT NUMBER:** 093060

**GROUND SURFACE ELEVATION (FT):** -8.80 LOCATION: East River NORTHING (FT): 689418 EASTING (FT): 641284 TOTAL DEPTH (FT): 17.3 DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone DRILLED BY: Ocean Surveys, Inc. / Dave Kowaleski LOGGED BY: Kari Weber DATE START / END: 9/30/2009 - 9/30/2009 DRILLING DETAILS: Vibracore WATER LEVEL DEPTHS (FT): **GENERAL NOTE:** 

Ħ.			IFO	4	ုတ္ပ				
ELEV. F	DEPTH F	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
_	— O	S1	208/208	203			NLO	WW-SED-04 (0-0.5)	(0'- 0.9') ORGANIC SOIL WITH SAND (OL); ~85% fines, non plastic, ~15% sand, fine; ~50% organics, slight naphthalene-like
10 - -	_			760			NLO	WW-SED-04 (3-4)	odor, wet, black, wood, sticks, and plastic pieces. (0.9'- 4.3') ORGANIC SOIL WITH SAND (OL); ~85% fines, non plastic, ~15% sand, fine; ~50% organics, slight naphthalene-like odor, wet, black, lenses of medium to coarse sand with staining, moderate to heavy tar-like coating.
_	_ 5								(4.3'- 5') CLAYEY SAND WITH GRAVEL (SC); ~55% sand, fine to medium, ~25% fines, medium plasticity, ~20% gravel, fine to
- 15 -							OLO		coarse, subrounded; max. size 1.5, moist, tannish brown, dense, fabric liner at 4.5 to 5 ft interface.  (5'- 9.6') ORGANIC SOIL WITH SAND (OL); ~80% fines, non plastic, ~20% sand, fine; ~10% organics, slight organic-like odor, wet, black, wood, sticks, foil and plastic pieces.
	<b>— 10</b>			79.2			NLO		(9.6'- 10') SANDY ORGANIC SOIL (OL); ~60% fines, non plastic, ~30% sand, fine to medium, ~10% gravel, fine, subangular; ~20%
20 20 25 25	_			12.8					organics, max. size 0.25, moderate naphthalene-like odor, wet, black, wood and sticks. (10'- 13.8') ORGANIC SOIL WITH SAND (OL); ~85% fines, non plastic, ~15% sand, fine; ~5% organics, wet, black, wood and sticks.
_	_						PLO		(13.8'- 15') ORGANIC SOIL WITH SAND (OL); ~85% fines, non plastic, ~15% sand, fine; ~5% organics, slight petroleum-like odor,
-	<del></del> 15								wet, black, wood and sticks.  ORGANIC SOIL WITH SAND (OL); ~85% fines, non plastic, ~15% sand, fine; ~5% organics, wet, black, wood and sticks.
— <b>-2</b> 5	_			00.0				WW-SED-04	
	1			20.2	<u> </u>			(16.75-17.3)	End of Boring at 17.3 feet. Refusal at 17.3 feet.
NOT			LENGTH OF S					om = PARTS PER	MILLION NLO = NAPHTHALENE LIKE ODOR CrLO= CREOSOTE LIKE ODOR

# NOTES:

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK NA = NOT APPLICABLE

NM = NOT MEASURED

IN. = INCHES FT. = FEET

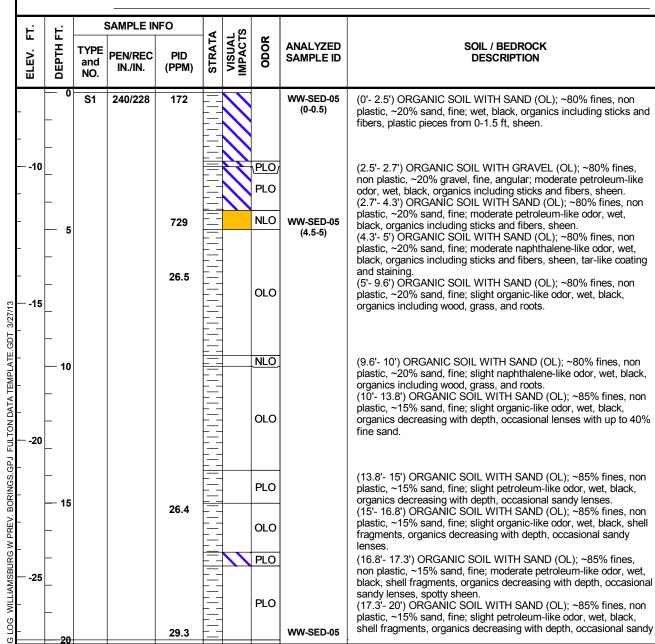
PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

**BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** WW-SED-05 CITY/STATE: Brooklyn, New York 1 of 2 **GEI PROJECT NUMBER:** 093060

GROUND SURFACE ELEVATION (FT):	-7.30	LOCATION: East River
NORTHING (FT): 689230 EASTING (FT)	: 641119	TOTAL DEPTH (FT):
DRILLED BY: Ocean Surveys, Inc. / Dave Kov	waleski	DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone
LOGGED BY: Kari Weber		DATE START / END: _ 9/29/2009 - 9/29/2009
DRILLING DETAILS: Vibracore		
WATER LEVEL DEPTHS (FT):		
GENERAL NOTE:		



**NOTES:** 

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

= NOT MEASURED = TORVANE PEAK ppm = PARTS PER MILLION

IN. = INCHES FT. = FEET

NLO = NAPHTHALENE LIKE ODOR

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR

SLO = SULFUR LIKE ODOR MLO = MUSTY LIKE ODOR

NA = NOT APPLICABLE Q<sub>P</sub> = POCKET PENETROMETER



SAMPLE INFO

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York **GEI PROJECT NUMBER:** 093060

**PAGE** 2 of 2

WW-SED-05

**BORING LOG** 

Ë Ë DEPTH ELEV.

**TYPE** PEN/REC and IN./IN. NO.

VISUAL IMPACTS STRATA PID (PPM)

ODOR

**ANALYZED** SAMPLE ID SOIL / BEDROCK **DESCRIPTION** 

(19.5-20)lenses

End of Boring at 20 feet.

NOTES:

BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

JHS = JAR HEADSPACE PID READING (PPM)

NA = NOT APPLICABLE NM = NOT MEASURED Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

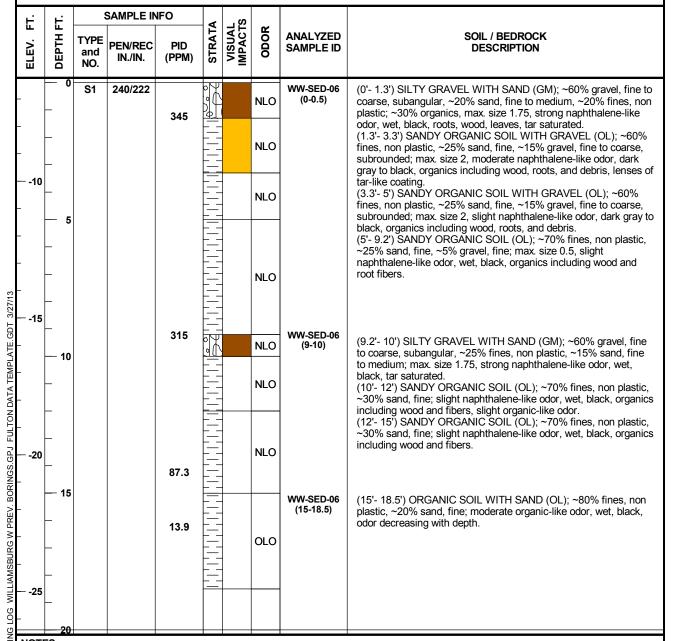
PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (PPM)

PD = PARTS PER MILLION
NLO = NAPHTHALENE LIKE ODOR
PLO = PETROLEUM LIKE ODOR
TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** WW-SED-06 CITY/STATE: Brooklyn, New York 1 of 2 **GEI PROJECT NUMBER:** 093060

Constituits		
GROUND SURFACE ELEVATION (FT):	-6.40	LOCATION: East River
NORTHING (FT): 689367 EASTING (FT):	641159	TOTAL DEPTH (FT): 20.0
DRILLED BY: Ocean Surveys, Inc. / Dave Kow	<i>r</i> aleski	DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone
LOGGED BY: Kari Weber		DATE START / END: _9/29/2009 - 9/29/2009
DRILLING DETAILS: Vibracore		
WATER LEVEL DEPTHS (FT):		
GENERAL NOTE:		
·		



**NOTES:** 

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER = TORVANE PEAK

NM = NOT MEASURED

ppm = PARTS PER MILLION

IN. = INCHES FT. = FEET

NLO = NAPHTHALENE LIKE ODOR PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR



CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York **GEI PROJECT NUMBER:** 093060

**PAGE** 2 of 2

WW-SED-06

**BORING LOG** 

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Ë

ELEV.

DEPTH **TYPE** and NO.

PEN/REC PID IN./IN.

SAMPLE INFO

VISUAL IMPACTS STRATA (PPM)

ODOR **ANALYZED SAMPLE ID** 

SOIL / BEDROCK **DESCRIPTION** 

End of Boring at 20 feet. Bottom 1.5 ft lost due to fall out during recovery on the barge.

NOTES:

BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

NA = NOT APPLICABLE NM = NOT MEASURED

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL REC = RECOVERY LENGTH OF SAMPLE RIGHT OF SAMPLE REC = PHOTOIONIZATION DETECTOR READING (PPM) PLO = PHOTOIONIZATION DETECTOR READING (PPM) PLO = TAR LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

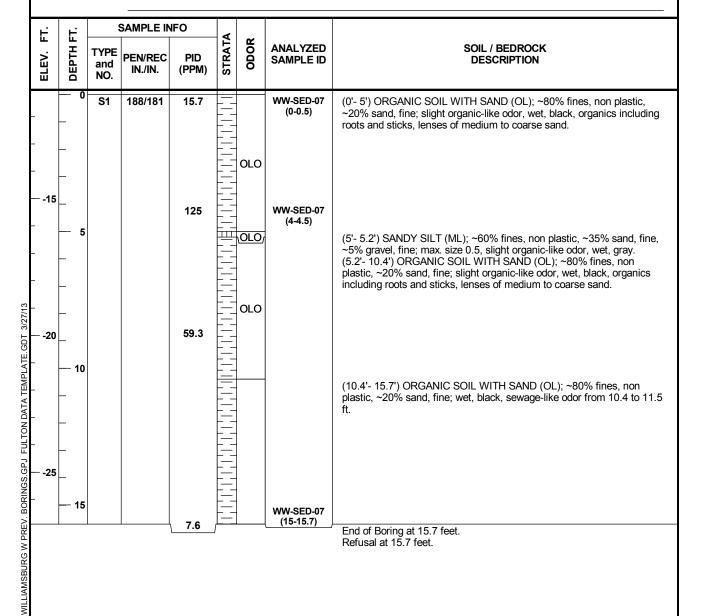
CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York GEI PROJECT NUMBER: 093060

**PAGE** 1 of 1

WW-SED-07

**BORING LOG** 

**GROUND SURFACE ELEVATION (FT):** -11.20 LOCATION: East River NORTHING (FT): 689479 EASTING (FT): 641126 TOTAL DEPTH (FT): 15.7 DRILLED BY: Ocean Surveys, Inc. / Dave Kowaleski DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Kari Weber DATE START / END: 9/29/2009 - 9/29/2009 DRILLING DETAILS: Vibracore WATER LEVEL DEPTHS (FT): **GENERAL NOTE:** 



#### **NOTES:**

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

NA = NOT APPLICABLE

PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER

NM = NOT MEASURED S<sub>v</sub> = TORVANE PEAK

IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** WW-SED-08 CITY/STATE: Brooklyn, New York 1 of 3 GEI PROJECT NUMBER: 093060

Constituits		
GROUND SURFACE ELEVATION (FT):	-13.23	LOCATION: East River
NORTHING (FT): 689096 EASTING (FT)	: 641093	TOTAL DEPTH (FT):65.0
DRILLED BY: Boart Longyear / Frank Gardel	la	DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone
LOGGED BY: Amy Malsbary/Kari Weber		DATE START / END: 11/12/2010 - 11/12/2010
DRILLING DETAILS: Sonic Coring		
WATER LEVEL DEPTHS (FT):		
GENERAL NOTE:		

Ë	Ë	SAMPLE INFO		4 J8 4					
ELEV. F	DEPTH F	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
- 15 -	- - - - -	S-1	240/85				OLO	WW-SED-08 (0-0.5)	(0'- 5') ORGANIC SOIL (OL); ~90% fines, ~10% sand, fine; strong organic-like odor, wet, dark gray to black.
IPLATE.GDT 3/27/13	- - - - -			13.3			OLO		(5'- 15') ORGANIC SOIL (OL); ~90% fines, ~10% sand, fine; slight organic-like odor, wet, dark gray to black.
NG LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13	_ _ _ _ _ 15			32.8					(15'- 24.5') ORGANIC SOIL WITH SAND (OL); ~75% fines, ~20% sand, fine to coarse, ~5% gravel, fine to coarse,
IG LOG WILLIAMSBURG W PRE	_ _ _ _ _ <b>20</b>						OLO		subangular; max. size 1, slight organic-like odor, wet, dark gray to black.

NOTES:

JHS = JAR HEADSPACE PID READING (PPM)

NA = NOT APPLICABLE NM = NOT MEASURED Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (PPM)

PIN = PARTS PER MILLION
NLO = NAPHTHALENE LIKE ODOR
PLO = PETROLEUM LIKE ODOR
TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE** WW-SED-08 CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 3 093060 GEI PROJECT NUMBER: Consultants SAMPLE INFO Ë Ë VISUAL IMPACTS STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. S-2 240/196 -35 OLO (24.5'- 26.5') ORGANIC SOIL WITH SAND (OL); ~75% fines, 25 ~20% sand, fine to coarse, ~5% gravel, fine, subangular; ~10% organic fibers, max. size 0.5, slight naphthalene-like odor, wet, NLO dark gray to black, moderate organic-like odor. WW-SED-08 (26.5'- 30') ORGANIC SOIL WITH SAND (OL); ~75% fines, -40 ~20% sand, fine to coarse, ~5% gravel, fine, subangular; ~10% organic fibers, max. size 0.5, moderate naphthalene-like odor, wet, (26.5-27.5)dark gray to black, moderate organic-like odor, slight tar-like NLO staining from 26.5-27.5', slight to moderate sheen. 1191 30 (30'- 31.6') NARROWLY GRADED SAND WITH SILT (SP-SM); ~90% sand, fine to medium, ~10% fines; slight naphthalene-like NLO odor, wet, gray to brown, rust colored mottling. -45 (31.6'- 34.3') SANDY SILT (ML); ~70% fines, low plasticity, rapid dilatancy, ~30% sand, fine; moist, light gray, dark gray mottling. 172 (34.3'- 35') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, -5% fines; wet, light gray.
(35'- 40') ELASTIC SILT (MH); ~90% fines, low plasticity, slow 35 dilatancy, ~10% sand, fine; moist, gray. -50 25.4 (40'- 50') SANDY ELASTIC SILT (MH); ~70% fines, low plasticity, S-3 180/105 slow dilatancy, ~30% sand, fine; moist, gray, lens of silty fine to medium sand from ~41.5-42'. -55 11.1 **NOTES:** 

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

WILLIAMSBURG W

LOG

PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE NM = NOT MEASURED

= TORVANE PEAK

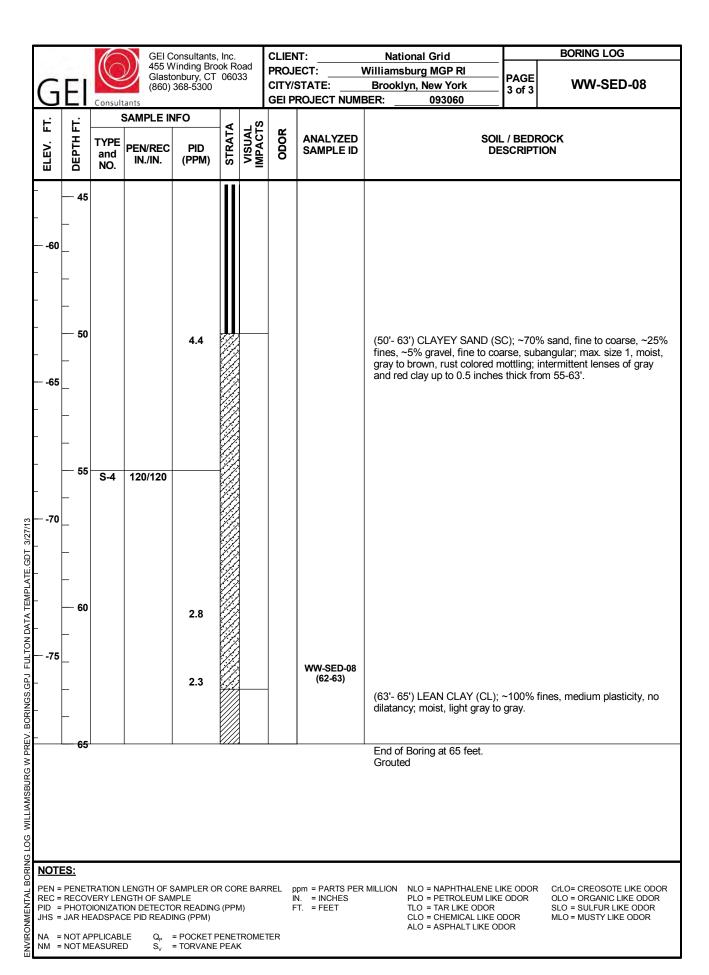
ppm = PARTS PER MILLION

IN. = INCHES FT. = FEET

NLO = NAPHTHALENE LIKE ODOR PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR



CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York **GEI PROJECT NUMBER:** 093060

**PAGE** WW-SED-09 1 of 3

**BORING LOG** 

**GROUND SURFACE ELEVATION (FT):** -12.98 LOCATION: East River NORTHING (FT): 689225 EASTING (FT): 641092 TOTAL DEPTH (FT): 48.0 DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone DRILLED BY: Boart Longyear / Frank Gardella LOGGED BY: Amy Malsbary/Kari Weber DATE START / END: 11/11/2010 - 11/11/2010 DRILLING DETAILS: Sonic Coring WATER LEVEL DEPTHS (FT): \_ **GENERAL NOTE:** 

	Ħ.	FT.	,	SAMPLE IN	IFO	_	. ග			
	ELEV. F	<b>DEPTH</b> F	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
	- 15	— <b>0</b> † — —	S-1	96/42				OLO	WW-SED-09 (0-0.5)	(0'- 4') ORGANIC SOIL (OL); ~90% fines, ~10% sand, fine; strong organic-like odor, wet, dark gray to black.
3	- - 20	_ 5 			51.6			PLO		(4'- 8') ORGANIC SOIL (OL); ~90% fines, ~10% sand, fine; moderate petroleum-like odor, wet, dark gray to black, moderate organic-like odor.
ON DATA TEMPLATE.GDT 3/27/1	25		S-2	240/110	310			NLO		(8'- 14') ORGANIC SOIL (OL); ~90% fines, ~10% sand, fine; slight naphthalene-like odor, wet, dark gray to black, slight organic-like odor.
IG LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13	- - - 30	_ 15 								(14'- 18.5') ORGANIC SOIL (OL); ~90% fines, ~10% sand, fine; ~15% organic fibers, wet, dark gray to black.
IG LOG WILLIAMSE	-	_ _ 20						NLO		(18.5'- 24') ORGANIC SOIL (OL); ~90% fines, ~10% sand, fine; ~30% organic fibers, moderate naphthalene-like odor, wet, dark gray to black, slight to moderate tar-like staining increasing with

NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

NA = NOT APPLICABLE NM = NOT MEASURED

IN. = INCHES FT. = FEET

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE** WW-SED-09 CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 3 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR SOIL / BEDROCK DEPTH ANALYZED **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 20 depth. NLO -35 1818 WW-SED-09 (23.5-24)(24'- 28') NARROWLY GRADED SAND (SP); ~95% sand, fine, ~5% fines; wet, brownish gray. 25 -40 S-3 240/162 (28'- 29.5') NARROWLY GRADED SAND (SP); ~90% sand, fine to medium, ~5% gravel, fine, subrounded, ~5% fines; max. size NLO 0.5, slight naphthalene-like odor, wet, gray. (29.5'- 33') NARROWLY GRADED SAND WITH SILT AND 30 GRAVEL (SP-SM); ~75% sand, fine to medium, ~15% gravel, fine to coarse, subrounded, ~10% fines; max. size 2, wet, brown. -45 (33'- 37.5') WIDELY GRADED SAND (SW); ~85% sand, fine to coarse, ~10% gravel, fine to coarse, subrounded, ~5% fines; max. size 1.5, wet, brown. 35 -50 (37.5'- 38.5') ELASTIC SILT WITH SAND (MH); ~75% fines, low plasticity, no dilatancy, ~25% sand, fine; moist, dark gray. (38.5'- 40') WIDELY GRADED SAND (SW); ~85% sand, fine to coarse, ~10% gravel, fine to coarse, subrounded, ~5% fines; max. size 1, wet, brown. WW-SED-09 40 (39.5-40)(40'- 48') LEAN CLAY (CL); ~100% fines, medium plasticity, no dilatancy; moist, red with mottled gray grading to gray with mottled -55 **NOTES:** PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR CrLO= CREOSOTE LIKE ODOR REC = RECOVERY LENGTH OF SAMPLE IN. = INCHES FT. = FEET

PID = PHOTOIONIZATION DETECTOR READING (PPM)

WILLIAMSBURG W PREV, BORINGS GPJ FULTON DATA TEMPLATE GDT 3/27/13

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G	Εl	Consult	455 W Glasto (860)	Consultants, Vinding Bro onbury, CT 368-5300	ok Ro	oad 33			National Grid Williamsburg MGP RI Brooklyn, New York BER: 093060	PAGE 3 of 3	BORING LOG  WW-SED-09
ELEV. FT.	ОЕРТН FT.	TYPE and NO.	PEN/REC IN./IN.		STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID		L / BEDI ESCRIPT	
-	— <b>45</b> –										

End of Boring at 48 feet. Grouted

### NOTES:

NA = NOT APPLICABLE NM = NOT MEASURED Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
RIN. = INCHES
RIN. = INCHES
RIN. = INCHES
RIN. = FEET
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**BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** WW-SED-10 CITY/STATE: Brooklyn, New York 1 of 4 GEI PROJECT NUMBER: 093060

GROUND SURFACE ELEVATION (FT):	-15.11	LOCATION: East River			
NORTHING (FT): 689144 EASTING (FT)	: 641052	TOTAL DEPTH (FT):			
DRILLED BY: Boart Longyear / Frank Gardel	lla	DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone			
LOGGED BY: Amy Malsbary/Kari Weber		DATE START / END:11/16/2010 - 11/16/2010			
DRILLING DETAILS: Sonic Coring					
WATER LEVEL DEPTHS (FT):					
GENERAL NOTE:					

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ELEV. F	DEPTH F	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
-	_ <b>0</b>	S1	120/84	0.0			OLO	WW-SED-10 (0-0.5)	(0'- 7') ORGANIC SOIL (OL); ~90% fines, ~10% sand, fine; slight organic-like odor, wet, dark gray.
— <b>-20</b>	_ 5 _ _ _			0.0					(7'- 18') SANDY ORGANIC SOIL (OL); ~75% fines, ~25% sand, fine to medium; slight organic-like odor, wet, dark gray.
NG LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13	— 10 —	S2	240/153				OLO		
AMSBURG W PREV. BORING:	15  			1.7					(18'- 19.5') SANDY ORGANIC SOIL (OL); ~75% fines, ~25%
NG LOG WILLI	_ 20			334			NLO NLO		sand, fine to medium; ~25% horse hair and organics, moderate naphthalene-like odor, wet, dark gray, slight organic-like odor, sheen.

NOTES:

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

NA = NOT APPLICABLE NM = NOT MEASURED

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (PPM)

PIN = PARTS PER MILLION
NLO = NAPHTHALENE LIKE ODOR
PLO = PETROLEUM LIKE ODOR
TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE** WW-SED-10 CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 4 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë Ë VISUAL IMPACTS STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 20 WW-SED-10 (19.5'- 22') SANDY ORGANIC SOIL (OL); ~75% fines, ~25% (20-21)sand, fine to medium; ~25% horse hair and organics, moderate 805 NLO naphthalene-like odor, wet, dark gray, slight organic-like odor, slight to moderate tar-like staining, staining increases with depth. (22'- 30') WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, fine, ~5% fines; max. size 0.5, moderate naphthalene-like odor, wet, brownish gray, spotty sheen throughout. -40 - 25 NLO 362 -45 30 240/184 (30'- 32') SILTY SAND (SM); ~80% sand, fine to medium, ~15% S3 fines, ~5% gravel, fine; wet, brown. (32'- 34') CLAYEY SAND (SC); ~55% sand, fine to coarse, ~35% fines, ~10% gravel, fine; max. size 0.5, wet, gray. 96.7 (34'- 44.5') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~75% sand, fine to medium, ~15% gravel, fine -50 35 to coarse, subrounded, ~10% fines; max. size 1.5, wet, brown. 27.9 -55 40

# **NOTES:**

BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

WILLIAMSBURG W PREV.

FOG

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

ppm = PARTS PER MILLION

IN. = INCHES FT. = FEET

NLO = NAPHTHALENE LIKE ODOR PLO = PETROLEUM LIKE ODOR

TLO = TAR LIKE ODOR CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

MLO = MUSTY LIKE ODOR

0.0

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE** WW-SED-10 CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 4 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë Ë VISUAL IMPACTS STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. (44.5'- 48') SILTY SAND (SM); ~75% sand, fine, ~25% fines; -60 45 moist, gray with dark gray mottling. 500 NLO (48'- 48.3') WIDELY GRADED SAND WITH GRAVEL (SW); ~70% sand, fine to coarse, ~25% gravel, coarse, subangular, ~5% fines; max. size 3, strong naphthalene-like odor, wet, brown to light brown, moderate tar-like coating. (48.3'- 51') SILTY SAND (SM); ~75% sand, fine, ~25% fines; -65 50 S4 240/151 moist, gray with dark gray mottling. (51'- 53.5') WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, fine, ~5% fines; max. size 0.5, wet, brown. (53.5'- 64') SILTY SAND (SM); ~75% sand, fine, ~25% fines; moist, gray, lens of brown widely graded fine to coarse sand from ~59-60 -70 55 0.0 -75 60 WW-SED-10 (63-64)(64'- 67') LEAN CLAY (CL); ~100% fines, medium plasticity, no dilatancy; moist, light gray to gray. -80 **- 65** 0.0 (67'- 69') CLAYEY SAND (SC); ~70% sand, fine to coarse, ~20% fines, ~10% gravel, fine; max. size 0.5, wet, whiteish gray to white. **NOTES:** 

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

WILLIAMSBURG W

FOG

PID = PHOTOIONIZATION DETECTOR READING (PPM)
JHS = JAR HEADSPACE PID READING (PPM)

NA = NOT APPLICABLE Q<sub>P</sub> = POCKET PENETROMETER

NM = NOT MEASURED  $S_v = TORVANE PEAK$ 

IN. = INCHES PLO = PETROLEUM LIKE ODOR
FT. = FEET TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 **BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** WW-SED-10 CITY/STATE: Brooklyn, New York (860) 368-5300 4 of 4 **GEI PROJECT NUMBER:** 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS Ë STRATA ODOR DEPTH **ANALYZED** SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and (PPM) IN./IN. NO. (69'- 70') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines; wet, dark gray. -85 End of Boring at 70 feet.

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NOTES:

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL REC = RECOVERY LENGTH OF SAMPLE RIGHT OF SAMPLE REC = PHOTOIONIZATION DETECTOR READING (PPM) PLO = PHOTOIONIZATION DETECTOR READING (PPM) PLO = TAR LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR MLO = MUSTY LIKE ODOR

BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York GEI PROJECT NUMBER: 093060

**PAGE** WW-SED-11 1 of 3

**BORING LOG** 

Consultants	<b></b>	
GROUND SURFACE ELEVATION (FT):	-14.01	LOCATION: East River
NORTHING (FT): 689239 EASTING (FT)	: 641135	TOTAL DEPTH (FT): 63.0
DRILLED BY: Boart Longyear / Frank Gardel	la	DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone
LOGGED BY: Amy Malsbary/Kari Weber		DATE START / END:11/10/2010 - 11/10/2010
DRILLING DETAILS: Sonic Coring		
WATER LEVEL DEPTHS (FT):		
GENERAL NOTE:		
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ľ	Ę.	FT.	,	SAMPLE IN	NFO	4	ုတ္			
	ELEV. F	DEPTH F	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
-	15 -	— <b>0</b>	S-1	96/90					WW-SED-11 (0-0.5)	(0'- 8') ORGANIC SOIL (OL); ~90% fines, ~10% sand, fine; moderate organic-like odor, wet, dark gray.
8	- 	5 						OLO		
ON DATA TEMPLATE.GDT 3/27/13	<b>-25</b>	_ _ 10 _ _	S-2	120/49	74.9					(8'- 17.5') ORGANIC SOIL WITH SAND (OL); ~80% fines, ~20% sand, fine; slight naphthalene-like odor, wet, dark gray, slight sheen on water, hair and organic fragments.
NG LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13	- - 30	_ 15 						NLO		
NG LOG WILLIAMSBUR	-	_ _ 20	S-3	120/67	14.6			NLO NLO		(17.5'- 18') ORGANIC SOIL WITH SAND (OL); ~80% fines, ~20% sand, fine; moderate naphthalene-like odor, wet, dark gray, slight sheen on water, hair and organic fragments, slight tar-like staining. (18'- 25.5') ORGANIC SOIL WITH SAND (OL); ~80% fines, ~20% sand, fine; strong naphthalene-like odor, wet, dark gray,

NOTES:

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (PPM)

PM = PARTS PER MILLION
NLO = NAPHTHALENE LIKE ODOR
PLO = PETROLEUM LIKE ODOR
TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE** WW-SED-11 CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 3 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë Ë VISUAL IMPACTS STRATA ODOR DEPTH **ANALYZED** SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 20 fabric fragments, slight tar-like staining. -35 WW-SED-11 (22-23)NLO 1272 25 (25.5'- 28') NARROWLY GRADED SAND WITH SILT (SP-SM); -40 ~85% sand, fine to medium, ~10% fines, ~5% gravel, fine to coarse, subangular; max. size 1, strong naphthalene-like odor, NLO wet, grayish brown. 891 **S-4** 120/62 (28'- 29') WIDELY GRADED SAND WITH GRAVEL (SW); ~60% NLO sand, fine to coarse, ~35% gravel, fine to coarse, subangular, ~5% fines; max. size 1.5, strong naphthalene-like odor, wet, 816 NLO brown, heavy tar-like coating. (29'- 30') NARROWLY GRADED SAND WITH SILT (SP-SM); 30 ~85% sand, fine to medium, ~10% fines, ~5% gravel, fine to coarse, subangular; max. size 1, moderate naphthalene-like odor, -45 wet, grayish brown, pockets of tar-like staining lenses up to 0.25 (30'- 35') NARROWLY GRADED SAND WITH SILT (SP-SM); ~85% sand, fine to medium, ~10% fines, ~5% gravel, fine to NLO coarse, subangular; max. size 1.5, slight naphthalene-like odor, wet, grayish brown. 35 (35'- 38') WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, fine to coarse, subangular, ~5% fines; max. -50 size 1, wet, brown. 140 S-5 120/79 (38'- 44') WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, fine to coarse, subangular, ~5% fines; max. size 1, wet, gray to brown. 40 -55 (44'- 51') NARROWLY GRADED SAND WITH SILT (SP-SM); **NOTES:** 

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

WILLIAMSBURG W

LOG

PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

NM = NOT MEASURED = TORVANE PEAK

IN. = INCHES FT. = FEET

PLO = PETROLEUM LIKE ODOR

TLO = TAR LIKE ODOR CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road Glastonbury, CT 06033 PROJECT: Williamsburg MGP RI **PAGE** WW-SED-11 CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 3 093060 GEI PROJECT NUMBER: Consultants SAMPLE INFO Ë Ë VISUAL IMPACTS STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK TYPE ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. ~85% sand, fine to medium, ~10% fines, ~5% gravel, fine to 45 coarse, subangular; max. size 1.5, wet, grayish brown, slight unknown/plastic-like odor from ~46-47'. -60 101 180/164 S-6 50 -65 (51'- 55') CLAYEY SAND (SC); ~60% sand, fine to medium, ~40% fines; wet, grayish brown to whiteish gray, lenses of red lean clay (CL) up to 0.5 inches thick. 55 (55'- 58') ELASTIC SILT (MH); ~90% fines, low plasticity, slow dilatancy, ~10% sand, fine; moist, brownish gray with mottled dark -70 gray.

> End of Boring at 63 feet. Grouted

moist, grayish white.

(58'- 59') CLAYEY SAND (SC); ~75% sand, fine, ~25% fines;

(59'- 63') LEAN CLAY (CL); ~100% fines, medium plasticity, no

dilatancy; moist, gray with red mottling in top foot.

#### NOTES:

LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

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-75

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

0.0

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

NM = NOT MEASURED = TORVANE PEAK ppm = PARTS PER MILLION

WW-SED-11

(58-59)

NLO = NAPHTHALENE LIKE ODOR IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

BORING LOG CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** WW-SED-12 CITY/STATE: Brooklyn, New York 1 of 4 **GEI PROJECT NUMBER:** 093060

**GROUND SURFACE ELEVATION (FT):** -15.82 LOCATION: East River NORTHING (FT): 689165 EASTING (FT): 640972 TOTAL DEPTH (FT): 80.0 DRILLED BY: Boart Longyear / Frank Gardella DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Amy Malsbary/Kari Weber DATE START / END: 11/15/2010 - 11/15/2010 DRILLING DETAILS: Sonic Coring WATER LEVEL DEPTHS (FT): **GENERAL NOTE:** 

F.	SAMPLE INFO							
ELEV. F	DEPTH	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA		ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
- - - 20	- <b>0</b>	S-1	60/18			OLO	WW-SED-12 (0-0.5)	(0'- 5') ORGANIC SOIL (OL); ~90% fines, ~10% sand; moderate organic-like odor, wet, dark gray.
E.GDT 3/27/13	_ 5 _ _ _	S-2	60/44	0.2				(5'- 21.8') ORGANIC SOIL (OL); ~90% fines, ~10% sand, fine; slight organic-like odor, wet, dark gray, ~2" gravel at bottom of sample, possible boulder.
IG LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13  19		3-3	60/34	0.2		OLO		
G LOG WILLIAMSBURG W PREV. BC -	15 _ _ _ _ _ 20	5-4	60/42	0.2				

NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

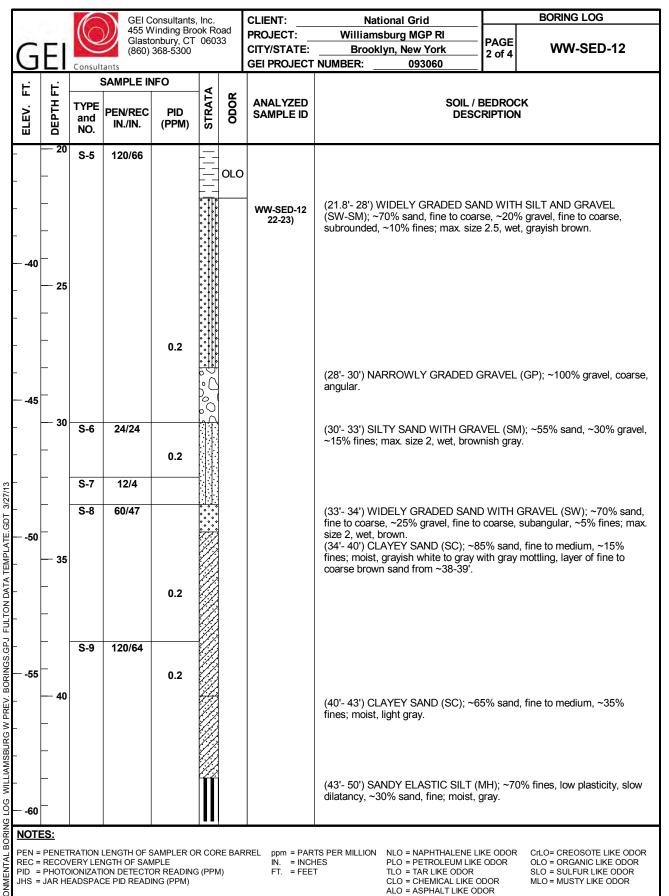
NA = NOT APPLICABLE

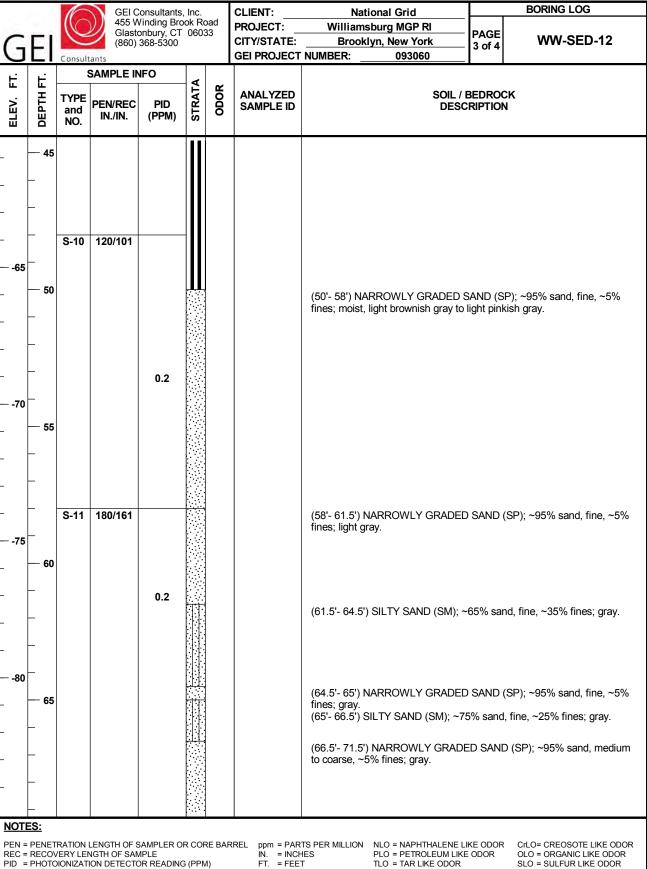
NM = NOT MEASURED

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR

TLO = TAR LIKE ODOR CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR





WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

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JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

NM = NOT MEASURED = TORVANE PEAK IN. = INCHES FT. = FEET TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR MLO = MUSTY LIKE ODOR

GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 **BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** WW-SED-12 CITY/STATE: Brooklyn, New York (860) 368-5300 4 of 4 **GEI PROJECT NUMBER:** 093060 Consultants SAMPLE INFO Ë Ë STRATA ODOR DEPTH **ANALYZED** SOIL / BEDROCK TYPE ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 0.2 70 (71.5'- 73') SILTY SAND (SM); ~70% sand, fine, ~30% fines; grayish white. 84/74 S-12 (73'- 80') SILTY SAND (SM); ~80% sand, fine, ~20% fines; moist, light grayish white. -90 75 0.2 -95 WW-SED-12 80 (79.5-80)

End of Boring at 80 feet.

Grouted

NOTES:

BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK NA = NOT APPLICABLE NM = NOT MEASURED

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR MLO = MUSTY LIKE ODOR

IN. = INCHES FT. = FEET

**BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** WW-SED-13 CITY/STATE: Brooklyn, New York 1 of 3 GEI PROJECT NUMBER: 093060

Constituits		
GROUND SURFACE ELEVATION (FT):	-15.70	LOCATION: East River
NORTHING (FT): 689296 EASTING (FT):	641056	TOTAL DEPTH (FT): _60.0
DRILLED BY: Boart Longyear / Frank Gardell	а	DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone
LOGGED BY: Amy Malsbary/Kari Weber		DATE START / END: 11/16/2010 - 11/16/2010
DRILLING DETAILS: Sonic Coring		
WATER LEVEL DEPTHS (FT):		
GENERAL NOTE:		

ſ	FT.	Ħ.	SAMPLE INFO		7	. თ				
	ELEV. F	DEPTH F	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
	20	- <b>0</b>	S-1	60/28	0.0			OLO	WW-SED-13 (0-0.5)	(0'- 6') ORGANIC SOIL (OL); ~90% fines, ~10% sand, fine; moderate organic-like odor, wet, dark gray, odor decreases to slight from ~1-5'.
-		<b>5</b> -	S-2	60/45				OLO		(6'- 8.3') SANDY ORGANIC SOIL (OL); ~70% fines, ~30% sand, fine; slight organic-like odor, wet, dark gray.
ATE.GD1 3/27/13	25	-			0.0					(8.3'- 15.5') SANDY ORGANIC SOIL (OL); ~70% fines, ~30% sand, fine; ~15% organic fibers, slight petroleum-like odor, wet, dark gray, slight organic-like odor.
LION DATA LEMPL		— 10 - -	S-3	180/112	38.4			PLO		
BORINGS.GPJ FU	30	_ _ 15								
IG LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULION DATA IEMPLATE.GDT 3/27/13		_						NLO		(15.5'- 19') SANDY ORGANIC SOIL (OL); ~70% fines, ~30% sand, fine; ~15% organic fibers, slight naphthalene-like odor, wet, dark gray, slight organic-like odor, slight petroleum-like odor.
G LOG WILLIA	35	- 20			66.3			NLO NLO		(19'- 19.5') WOOD; moderate naphthalene-like odor, tar-like staining.

NOTES:

JHS = JAR HEADSPACE PID READING (PPM)

NA = NOT APPLICABLE NM = NOT MEASURED Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (PPM)

PIN = PARTS PER MILLION
NLO = NAPHTHALENE LIKE ODOR
PLO = PETROLEUM LIKE ODOR
TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE** WW-SED-13 CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 3 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë Ë VISUAL IMPACTS STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 20 (19.5'- 25') SANDY ORGANIC SOIL (OL/OH); ~70% fines, ~30% sand, fine; ~10% organic fibers, moderate naphthalene-like odor, wet, dark gray, slight organic and petroleum-like odor, slight sheen and tar-like staining, moderate tar-like staining in wood at ~20-20.5', ~22.5-23', and ~24-25'. NLO -40 WW-SED-13 (24-24.5)1121 25 240/176 (25'- 31.5') SANDY ORGANIC SOIL (OL/OH); ~70% fines, ~30% S-4 sand, fine; ~10% organic fibers, moderate naphthalene-like odor, wet, dark gray, slight sheen and tar-like staining throughout. NLO 667 -45 30 743 (31.5'- 32.5') NARROWLY GRADED SAND (SP): ~95% sand. NLO fine to medium, ~5% fines; moderate naphthalene-like odor, wet, brownish gray, slight sheen. (32.5'- 42') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~70% sand, fine to medium, ~20% gravel, fine to coarse, subrounded, ~10% fines; max. size 1.5, moist, brown to -50 grayish brown. 35 7.5 -55 40 1.7 (42'- 44.5') SILTY SAND WITH GRAVEL (SM); ~70% sand, ~15% gravel, ~15% fines; max. size 2, wet, brown to reddish brown. -60

# **NOTES:**

WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

NM = NOT MEASURED = TORVANE PEAK ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR

IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 (860) 368-5300 **BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** WW-SED-13 CITY/STATE: Brooklyn, New York 3 of 3 GEI PROJECT NUMBER: 093060

<u> </u>			SAMPLE IN	NFO		<i>(</i> 0			
ELEV. FT.	DEPTH FT.	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
- - - - 65	— <b>45</b> _ _ _	S-5	180/110	0.0					(44.5'- 55') NARROWLY GRADED SAND (SP); ~85% sand, ~10% gravel, fine, subrounded, ~5% fines; max. size 0.75, wet, reddish brown.
- - - - 70	50   55			0.0				WW-SED-13 (54.5-55)	(55'- 58') LEAN CLAY (CL); ~90% fines, medium plasticity, no dilatancy, ~10% sand, fine; moist, red with gray and brown, intermittent lenses of elastic silt and fine to medium sand.
-757/175									(58'- 60') CLAYEY SAND (SC); ~75% sand, fine to medium, ~25% fines; moist, gray.
BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13    A									End of Boring at 60 feet. Grouted
PEN =		RATION	LENGTH OF S	SAMPLER O	R COR	E BARF	REL p	pm = PARTS PER	MILLION NLO = NAPHTHALENE LIKE ODOR CrLO= CREOSOTE LIKE ODOR

## NOTES:

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

NA = NOT APPLICABLE NM = NOT MEASURED

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (PPM)

PIN = PARTS PER MILLION
NLO = NAPHTHALENE LIKE ODOR
PLO = PETROLEUM LIKE ODOR
TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

MLO = MUSTY LIKE ODOR

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York **GEI PROJECT NUMBER:** 093060

**PAGE** WW-SED-14 1 of 3

BORING LOG

**GROUND SURFACE ELEVATION (FT):** -18.20 LOCATION: East River NORTHING (FT): 689411 EASTING (FT): 641074 TOTAL DEPTH (FT): 60.0 DRILLED BY: Boart Longyear / Frank Gardella DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Amy Malsbary/Kari Weber DATE START / END: 11/11/2010 - 11/11/2010 DRILLING DETAILS: Sonic Coring WATER LEVEL DEPTHS (FT): GENERAL NOTE:

	Ë.	Ë	5	SAMPLE IN	IFO	7	. თ			
	ELEV. F	<b>DEPTH F</b>	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
	- <b>-20</b>	— <b>0</b>	S-1	120/38	4.1				WW-SED-14 (0-0.5)	(0'- 6.4') ORGANIC SOIL (OL); ~90% fines, ~10% sand, fine; moderate organic-like odor, wet, dark gray, organic odor decreases with depth.
	- 20	-						OLO		
	-	_ 5								
7/13	<b>-25</b> -	-								(6.4'- 11.9') SANDY ORGANIC SOIL WITH GRAVEL (OL); ~55% fines, ~30% sand, fine to coarse, ~15% gravel, fine to coarse, subangular; max. size 1.5, slight organic-like odor, wet, dark gray, wood fragments.
LATE.GDT 3/2	-	- 10	S-2	60/24				OLO		
N DATA TEMP	- 30	_	3-2	00/24						(11.9'- 13.3') SANDY ORGANIC SOIL WITH GRAVEL (OL);
GPJ FULTO	-	-						NLO		~55% fines, ~30% sand, fine to coarse, ~15% gravel, fine to coarse, subangular; max. size 1.5, slight naphthalene-like odor, wet, dark gray to black, sheen on water.  (13.3'- 15') SANDY ORGANIC SOIL WITH GRAVEL (OL); ~55%
EV. BORINGS	-	_ 15	S-3	120/81	930			NLO		fines, ~30% sand, fine to coarse, ~15% gravel, fine to coarse, subangular; max. size 1.25, moderate naphthalene-like odor, wet, dark gray to black, sheen.  (15'- 17.5') SANDY ORGANIC SOIL (OL); ~60% fines, ~30%
SBURG W PR	— <b>-3</b> 5	-			962			NLO	WW-SED-14 (16-17)	sand, fine to coarse, ~10% gravel, fine to coarse, subangular; max. size 1.25, moderate naphthalene-like odor, wet, dark gray to black, sheen.  (17.5'- 21.5') NARROWLY GRADED SAND WITH SILT (SP-SM);
VG LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13	-	_ _ 20						NLO		~85% sand, fine to medium, ~10% fines, ~5% gravel, fine to coarse, subangular; max. size 1.5, slight naphthalene-like odor, wet, grayish brown to brown.

IN. = INCHES FT. = FEET

## NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR

NA = NOT APPLICABLE NM = NOT MEASURED

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR MLO = MUSTY LIKE ODOR

CrLO= CREOSOTE LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE** WW-SED-14 CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 3 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë Ë VISUAL IMPACTS STRATA ODOR DEPTH SOIL / BEDROCK ANALYZED **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 20 NLO (21.5'- 25') NARROWLY GRADED SAND WITH GRAVEL (SP); -40 ~75% sand, medium to coarse, ~20% gravel, fine to coarse, subrounded, ~5% fines; max. size 1.5, slight naphthalene-like 52.8 odor, wet, brown, sand grades coarser with depth. NLO S-4 180/107 (25'- 26') WIDELY GRADED SAND WITH GRAVEL (SW); ~75% NLO sand, fine to coarse, ~20% gravel, fine to coarse, subrounded, ~5% fines; max. size 1.5, slight naphthalene-like odor, wet, dark gray, sheen and occasional tar-like blebs. 715 -45 (26'- 40') NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM); ~75% sand, fine to medium, ~15% gravel, fine to coarse, subrounded, ~10% fines; max. size 2, wet, grayish 30 164 -50 35 -55 11.9 S-5 240/205 (40'- 42.5') WIDELY GRADED SAND (SW); ~90% sand, fine to coarse, ~5% gravel, fine to coarse, subangular, ~5% fines; max. size 1, wet, brown. -60 (42.5'- 44.5') NARROWLY GRADED SAND (SP); ~95% sand, fine to medium, ~5% fines; wet, brown. 3.7 **NOTES:** CrLO= CREOSOTE LIKE ODOR

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

FOG

PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

NA = NOT APPLICABLE NM = NOT MEASURED = TORVANE PEAK

Q<sub>P</sub> = POCKET PENETROMETER

ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR IN. = INCHES FT. = FEET

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR MLO = MUSTY LIKE ODOR

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York GEI PROJECT NUMBER: 093060

**PAGE** 3 of 3

WW-SED-14

**BORING LOG** 

7	니	Consul	tants				GEI PI	ROJECT NUMI	BER:093060		
FT.	Ë	;	SAMPLE IN	IFO	_	. ທ					
ELEV. F	DEPTH F	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL IMPACTS	водо	ANALYZED SAMPLE ID	SOIL DE	. / BEDI SCRIPT	ROCK TION
- 65	— <b>45</b> — — —								(44.5'- 53') CLAYEY SAND (~25% fines; wet, whitish gray	SC); ~7 y to gra	'5% sand, fine to medium, yish brown with gray mottling.
- <b>70</b> -	— <b>50</b> — — —			2.1				WW-SED-14 (52.5-53)	(53'- 56.5') LEAN CLAY (CL) dilatancy; moist, gray.	); ~100 <sup>0</sup>	% fines, medium plasticity, no
- <b>-75</b> -	55   			5.8					(56.5'- 60') CLAYEY SAND ( moist, grayish white.	SC); ~7	75% sand, fine, ~25% fines;
-	<del>- 60</del>			0.0					End of Boring at 60 feet. Grouted		
									Grouted		
NOTE	-e.										
NOTE PEN =		RATION	LENGTH OF S	AMPLER OF	R COR	E BARI	REL n	pm = PARTS PER	MILLION NLO = NAPHTHALENE LIK	KE ODOF	R CrLO= CREOSOTE LIKE ODOF

## NOTES:

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

NA = NOT APPLICABLE NM = NOT MEASURED

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (PPM)

PIN = PARTS PER MILLION
NLO = NAPHTHALENE LIKE ODOR
PLO = PETROLEUM LIKE ODOR
TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York

**BORING LOG PAGE WW-SED-15** 1 of 3 **GEI PROJECT NUMBER:** 093060

**GROUND SURFACE ELEVATION (FT):** -19.59 LOCATION: East River NORTHING (FT): 689618 EASTING (FT): 641190 TOTAL DEPTH (FT): 51.0 DRILLED BY: Boart Longyear / Frank Gardelle DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Amy Malsbary DATE START / END: \_\_11/9/2010 - 11/9/2010 **DRILLING DETAILS:** WATER LEVEL DEPTHS (FT): **GENERAL NOTE:** 

	FT.	FT.	,	SAMPLE IN	IFO		ω			
	ELEV. F	DEPTH F	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL IMPACTS	водо	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
	- <b>-20</b>	- <b>0</b>	S1	72/45	0.3				WW-SED-15 (0-0.5)	(0'- 6') ORGANIC SOIL (OL); ~100% fines; strong organic-like odor, dark gray, loose.
		_						OLO		
	- <b>-25</b>	— <b>5</b> _	S2	60/14	0.0					(6'- 15') ORGANIC SOIL (OL); ~100% fines; slight organic-like odor, dark gray, loose.
.GDT 3/27/13		_								
DATA TEMPLATE	- <b>-30</b>	— 10 -	S3	60/44				OLO		
S.GPJ FULION		_								
VG LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13	- <b>-35</b>	— 15 –	S4	60/40	319			PLO	WW-SED-15 (15.5-16)	(15'- 16') SILTY SAND (SM); ~70% sand, fine to medium, ~30% fines; moderate petroleum-like odor, dark gray, petroleum-like sheen. (16'- 18.9') SILT (ML); ~90% fines, ~10% sand, fine; brownish
ILLIAMSBURG v		-								gray.
Ne Log W		- 20						PLO		(18.9'- 20') WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM); ~60% sand, fine to coarse, ~30% gravel, coarse, ~10%

NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK NA = NOT APPLICABLE

NM = NOT MEASURED

IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE** WW-SED-15 CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 3 093060 GEI PROJECT NUMBER: Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 20 171 fines; max. size 2, slight petroleum-like odor, brownish gray. -40 (20'- 21') SILTY SAND WITH GRAVEL (SM); ~55% sand, fine to coarse, ~30% fines, ~15% gravel, fine to coarse; max. size 1, light 60/0 **S5** orangeish brown, dense. (21'- 26') No recovery. 25 -45 60/35 (26'- 26.4') CLAYEY SAND (SC); ~60% sand, fine to medium, **S6** ~40% fines; light gray. (26.4'- 32.9') SILTY SAND (SM); ~60% sand, fine to medium, 6.2 ~30% fines, ~10% gravel, fine; max. size 0.5, brown and reddish brown. 30 -50 120/106 **S7** WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13 (32.9'- 33.6') NARROWLY GRADED SAND WITH SILT (SP-SM); 0.5 ~90% sand, fine to medium, ~10% fines; brown. (33.6'- 34.8') CLAYEY SAND (SC); ~70% fines, ~30% sand, fine; red with brown, light gray bands. (34.8'- 36.1') SILTY SAND (SM); ~60% sand, fine to medium, 35 -55 ~30% fines, ~10% gravel, fine; max. size 0.5, brown and reddish brown. (36.1'- 36.7') SILTY SAND (SM); ~80% sand, fine to medium, ~20% fines; brown with reddish brown. (36.7'- 38.2') SILTY SAND WITH GRAVEL (SM); ~65% sand, fine to medium, ~20% fines, ~15% gravel, rounded; max. size 2, brown, light gray bands. (38.2'- 40.2') ELASTIC SILT (MH); ~60% fines, ~40% sand, fine; greenish gray, brown bands. 1.3 40 -60 (40.2'- 41') SILTY SAND (SM); ~70% sand, fine to coarse, ~30% fines; reddish brown. S8 120/102 (41'- 42') SILTY SAND (SM); ~80% sand, ~20% fines; brown. WW-SED-15 (41.5-42)4.0 (42'- 47.3') LEAN CLAY (CL); ~100% fines; gray.

#### **NOTES:**

FOG

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

NA = NOT APPLICABLE Q<sub>P</sub> = POCKET PENETROMETER

= TORVANE PEAK NM = NOT MEASURED

ppm = PARTS PER MILLION

NLO = NAPHTHALENE LIKE ODOR IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York GEI PROJECT NUMBER: 093060

**BORING LOG PAGE** WW-SED-15 3 of 3

FT.	F.	Consul	SAMPLE IN	NFO	_	. 0				
ELEV. F	DEPTH F	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	
65 - - - - -				3.5					(47.3'- 51') SANDY CLAY (CL); ~70% fines, ~30% sand, fine; light gray.	

End of Boring at 51 feet. Grouted

## NOTES:

JHS = JAR HEADSPACE PID READING (PPM)

NA = NOT APPLICABLE NM = NOT MEASURED Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (PPM)

PIN = PARTS PER MILLION
NLO = NAPHTHALENE LIKE ODOR
PLO = PETROLEUM LIKE ODOR
TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** CITY/STATE: Brooklyn, New York 1 of 3 GEI PROJECT NUMBER: 093060

**BORING LOG** WW-SED-16

GROUND SURFACE ELEVATION (FT): -15.48  NORTHING (FT): 689605 EASTING (FT): 64141  DRILLED BY: Boart Longyear / Frank Gardelle  LOGGED BY: Amy Malsbary	LOCATION: East River  TOTAL DEPTH (FT): 65.0  DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone  DATE START / END: 11/9/2010 - 11/9/2010
DRILLING DETAILS: WATER LEVEL DEPTHS (FT): GENERAL NOTE:	

Ë	Ë	SAMPLE INFO		] _							
ELEV. F	<b>DEPTH</b> F	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION			
- - <b>-20</b>	<b>0</b>  _ _	S1	60/16	0.1		OLO	WW-SED-16 (0-0.5)	(0'- 5') ORGANIC SOIL (OL); ~100% fines; strong organic-like odor, dark gray.			
- - - <b>-25</b>	5 	S2	60/14	0.0		OLO		(5'- 10') ORGANIC SOIL (OL); ~100% fines; slight organic-like odor, dark gray.			
30	— 10 — — —	<b>S</b> 3	120/46	4.9				(10'- 20') ORGANIC SOIL (OL); ~100% fines; slight organic-like odor, dark gray, slight sulfur-like odor; wood fragments from 19.6-20'.			
35	— 15 — — —					OLO					

# NOTES:

JHS = JAR HEADSPACE PID READING (PPM)

NA = NOT APPLICABLE NM = NOT MEASURED Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (PPM)

PIN = PARTS PER MILLION
NLO = NAPHTHALENE LIKE ODOR
PLO = PETROLEUM LIKE ODOR
TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

				onsultants,			CLIENT:	National Grid		BORING LOG
15.				/inding Bro onbury, CT			PROJECT:	Williamsburg MGP RI	PAGE	
G	FΙ			368-5300	0000		CITY/STATE:	Brooklyn, New York	2 of 3	WW-SED-16
U	<u> </u>	Consult					GEI PROJECT	NUMBER:093060		
ELEV. FT.	<b>DEPTH FT</b> .	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	ODOR	ANALYZED SAMPLE ID		BEDROC RIPTION	
- - - - <b>-40</b>	20 	S4	120/70	3.4		OLO		(20'- 26.2') ORGANIC SOIL (OL); dark gray, lenses of whitish gray sil 22.2-22.6'.		
_ _ 45	- - -			363			WW-SED-16 (27-28)	(26.2'- 29.7') WIDELY GRADED S (SW-SM); ~75% sand, fine to med fines; max. size 1.5, brown.	ium, ~15 <sup>(</sup>	% gravel, coarse, ~10%
- - - 50	30 ·    35	S5	120/33	0.0				(29.7'- 30.3') SANDY CLAY (CL); a medium; red with brown, bands of (30.3'- 35.9') WIDELY GRADED S (SW-SM); ~60% sand, fine to med fines; max. size 2.5.	gray and AND WIT	white. TH SILT AND GRAVEL
-	- -							(35.9'- 38.8') SANDY CLAY (CL); medium; red with brown, bands of g	~60% fine gray and	es, ~40% sand, fine to white.
<b>-55</b>	_ 40	S6	60/45	0.0				(38.8'- 40') WIDELY GRADED SAI (SW-SM); ~60% sand, fine to med fines; max. size 2.5. (40'- 35.9') NARROWLY GRADED medium; brown.	ium, ~30 <sup>4</sup>	% gravel, coarse, ~10%
	_							(41.2'- 41.2') SILTY SAND (SM); ~	80% san	d, fine, ~20% fines; brown.
-	- - -							(42.4'- 43.7') SILTY SAND WITH Coarse, ~30% fines, ~15% gravel, 1 (43.7'- 43.9') SANDY CLAY (CL); ~medium; red with brown and gray.	GRAVEL fine; max	(SM); ~55% sand, fine to size 0.25, brown, dense.
NOTE DEN -		DATION!	ENGTH OF S	SAMDLED OF	V///	DE BAD	PEL nom = DAD	TS PER MILLION NLO = NAPHTHALENE LI	IKE ODOD	C4 O- CREOSOTE LIKE CROP

ENVIRONMENTAL BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

NA = NOT APPLICABLE NM = NOT MEASURED  $Q_P$  = POCKET PENETROMETER  $S_V$  = TORVANE PEAK

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
RIN. = INCHES
RIN. = INCHES
RIN. = INCHES
RIN. = INCHES
RIN. = FEET
RILLION
RIO = NAPHTHALENE LIKE ODOR
RIO = PETROLEUM LIKE ODOR
RIO = TAR LIKE ODOR
RIO = TAR LIKE ODOR
RIO = APPHALT LIKE ODOR

			<b>SELC</b>	Consultants	s. Inc.	П	CLIENT:	National Grid		BORING LOG
LS.		$((\bigcirc$	455 W	Vinding Broonbury, CT	ook Road	d	PROJECT:	Williamsburg MGP RI		
G	FI	0	(860)	368-5300	00000	Ĭ	CITY/STATE:	Brooklyn, New York	PAGE 3 of 3	WW-SED-16
U	LI	Consult			<del></del>		GEI PROJECT	NUMBER: 093060		
Ħ.	Ę		SAMPLE IN	NFO	-   ∢	~				
		TYPE	PEN/REC	DID	STRATA	ODOR	ANALYZED	SOIL / E		
ELEV.	DEPTH	and NO.	IN./IN.	PID (PPM)	STA	6	SAMPLE ID	DESC	RIPTION	· ·
ш	Δ	NO.		` ′						
	<b>—</b> 45							(43.9'- 45') LEAN CLAY (CL); ~100		; red and gray, seams and
-		S7	120/52	0.0				lensed of fine to medium brown sar (45'- 46') WIDELY GRADED SAND		~100% sand fine to coarse:
	-							brown.	, ,	
_								(46'- 47.3') SILTY SAND (SM); ~50 brown, dense.	)% sand	, fine to medium, ~50% fines;
_								(47.3'- 48.8') LEAN CLAY (CL); ~1	00% fine	es: red and grav. seams and
	-							lensed of fine to medium brown sar	nd.	3 · <b>,</b> · · · · · · <b>.</b> · · · · · · · · · · · · · · · · · · ·
-								(40.0) FED CANDY OUT (AIL)	0/ C	400/
65								(48.8'- 55') SANDY SILT (ML); ~60	1% fines	, ~40% sand, fine; brown.
	<b>— 50</b>									
-										
	_									
	_ '									
-										
	- '									
	_									
<b></b> -70										
	<del></del> 55	S8	120/100	0.0				(55'- 61.6') WIDELY GRADED SAN	ND (SW	): ~100% sand, fine to
-								coarse; brown.	(011)	,, 100 / 000 10, 1110 10
_					****					
2	-									
-										
					****					
	_ '									
-75					****					
	<b>—</b> 60									
-	_				****					
_					• • • • •					
	_ '				Ш			(61.6'- 63.2') ELASTIC SILT (MH); whiteish gray, very dense.	~90% fi	nes, ~10% sand, fine; dry,
<b>:</b>	L									
	-							(63.2'- 64.7') NARROWLY GRADE	D SANE	O WITH SILT (SP-SM); ~90%
	-  -						WW-SED-16	sand, fine to medium, ~10% fines;	brown.	. , ,
-80							(64-64.5)	、(64.7'- 65') LEAN CLAY (CL); ~100	)% finos	· red with gray
	65							End of Boring at 65 feet.	/0 IIII <del>U</del> S	, rou with gray.
								Grouted		
9										
NOTE	<u> ES:</u>									
			LENGTH OF S		R CORE	BAR	REL ppm = PAR IN. = INCH	TS PER MILLION NLO = NAPHTHALENE LI HES PLO = PETROLEUM LIKE		CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR
PID =	PHOTO	DIONIZAT	ION DETECTO	OR READING	G (PPM)		FT. = FEE	TLO = TAR LIKE ODOR		SLO = SULFUR LIKE ODOR
JIIO =	AVK UE	LADOPAC	CE PID READI	IING (FPIVI)				CLO = CHEMICAL LIKE O ALO = ASPHALT LIKE OD		MLO = MUSTY LIKE ODOR

BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

 $Q_P$  = POCKET PENETROMETER  $S_V$  = TORVANE PEAK NA = NOT APPLICABLE NM = NOT MEASURED

BORING LOG CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** WW-SED-17 CITY/STATE: Brooklyn, New York 1 of 3 **GEI PROJECT NUMBER:** 093060

**GROUND SURFACE ELEVATION (FT):** -18.53 LOCATION: East River NORTHING (FT): 689512 EASTING (FT): 641088 TOTAL DEPTH (FT): 60.0 DRILLED BY: Boart Longyear / Frank Gardella DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Amy Malsbary/Kari Weber DATE START / END: 11/10/2010 - 11/10/2010 DRILLING DETAILS: Sonic Coring WATER LEVEL DEPTHS (FT): **GENERAL NOTE:** 

F.	Ë	,	SAMPLE IN	NFO				
ELEV. F	DEPTH F	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
- 	_ 0 _ _ _ _ _ 5	S-1	120/52			OLO	WW-SED-17 (0-0.5)	(0'- 10') ORGANIC SOIL WITH SAND (OL); ~80% fines, non plastic, rapid dilatancy, ~20% sand, fine; ~10% organics, moderate organic-like odor, wet, dark gray to black.
LATE. GDT 3/27/13	_ _ _ _ _ _			5.4				
NG LOG WILLAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13	_	S-2	120/60	29.9		OLO		(10'- 20') ORGANIC SOIL (OL); ~90% fines, ~10% sand, fine; slight organic-like odor, wet, dark gray.
NG LOG WILLIAMSBURG W PRE	_ _ _ _ _ _ 							

NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR

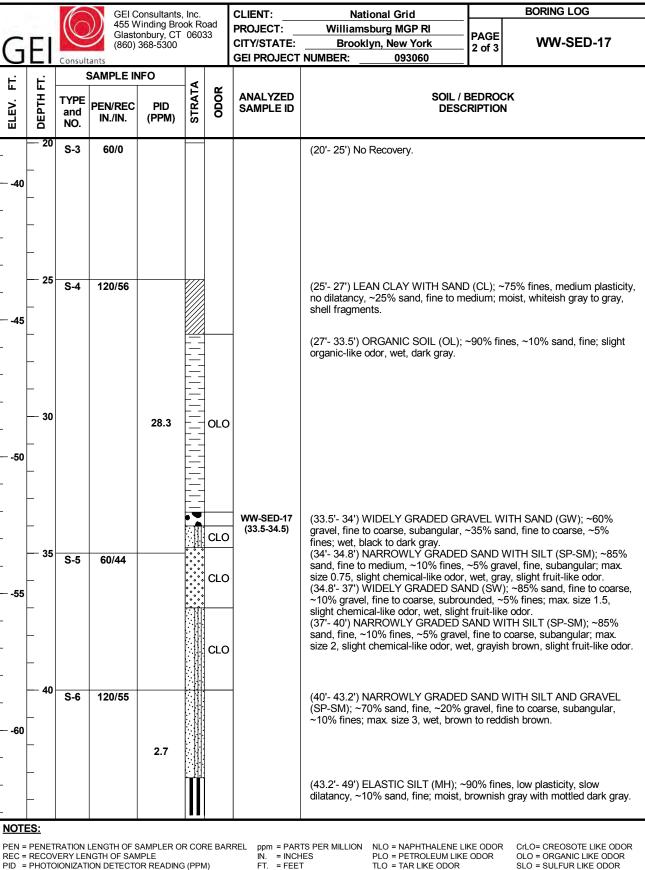
REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK NA = NOT APPLICABLE

NM = NOT MEASURED

IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR



NA = NOT APPLICABLE NM = NOT MEASURED

WILLIAMSBURG W PREV, BORINGS GPJ FULTON DATA TEMPLATE.GDT 3/27/13

LOG

Q<sub>P</sub> = POCKET PENETROMETER

= TORVANE PEAK

JHS = JAR HEADSPACE PID READING (PPM)

TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

SLO = SULFUR LIKE ODOR MLO = MUSTY LIKE ODOR

			GELC	consultants	Inc		CLIENT:	Nationa	al Grid		BORING LOG			
		$\mathbb{C}$	455 V	Vinding Bro onbury, CT	ok Ro	ad	PROJECT:	Williamsbu		- DAGE				
G	FI	<u></u>	(860)	368-5300	0003	5	CITY/STATE:		New York	PAGE 3 of 3	WW-SED-17			
U	<u> </u>	Consult					GEI PROJECT	NUMBER:	093060					
ELEV. FT.	<b>DEPTH FT.</b>	TVDE	PEN/REC IN./IN.	PID (PPM)	STRATA	ODOR	ANALYZED SAMPLE ID							
65 70 75 75	- 50 S-7 120/114 70						WW-SED-17 (53-54)	grayish white to (50'- 52.5') SANI dilatancy, ~40% mottling.  (52.5'- 54') NAR sand, fine, ~10% dilatancy; moist,  (57'- 58.5') NAR sand, fine, ~10% wet, brown.  (58.5'- 60') CLA	gray. DY LEAN CLAY (I sand, fine; wet, wet, wet, gray to the clay (CL); ~1000 gray.  ROWLY GRADEI of fines; wet, gray to the clay (CL); ~1000 gray.	CL); ~60% chitish gray D SAND Vo reddish % fines, m D SAND Vel, fine, sui ~60% san	fine, ~40% fines; moist,  fines, medium plasticity, no to dark gray with gray  VITH SILT (SP-SM); ~90% brown.  medium plasticity, no  VITH SILT (SP-SM); ~85% brounded; max. size 0.5,  ad, fine, ~40% fines; moist,			
NOTE	:S:							End of Boring at Grouted	ou rect.					
PEN = REC = PID = JHS =	PENET RECOV PHOTO JAR HE	ERY LEN HONIZATI EADSPAC	LENGTH OF S NGTH OF SAM ION DETECTO CE PID READ	MPLE OR READING ING (PPM)	G (PPM	1)	IN. = INCH FT. = FEE	HES PLO T TLO CLO	O = NAPHTHALENE L O = PETROLEUM LIK O = TAR LIKE ODOR O = CHEMICAL LIKE ( O = ASPHALT LIKE O	E ODOR ODOR	CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR MLO = MUSTY LIKE ODOR			
		PPLICABI EASURE		= POCKET F = TORVANE			ILIX							

# NOTES:

BORING LOG CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** WW-SED-18 CITY/STATE: Brooklyn, New York 1 of 4 **GEI PROJECT NUMBER:** 093060

**GROUND SURFACE ELEVATION (FT):** -15.13 LOCATION: East River NORTHING (FT): 689050 EASTING (FT): 640955 TOTAL DEPTH (FT): 84.0 DRILLED BY: Boart Longyear / Frank Gardella DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Amy Malsbary/Kari Weber DATE START / END: 11/17/2010 - 11/17/2010 DRILLING DETAILS: Sonic Coring WATER LEVEL DEPTHS (FT): \_\_\_ GENERAL NOTE:

FT.	F	:	SAMPLE IN	NFO .	4	٠.		
ELEV. F	DEPTH FT.	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
- - - - <b>-20</b>	5	S-1	60/22	0.6			WW-SED-18 (0-0.5)	(0'- 9') ORGANIC SOIL (OL); ~90% fines, ~10% sand, fine; wet, dark gray.
- 25 - - - 30	10 	S-3	120/142	4.5				(9'- 18.5') ORGANIC SOIL WITH SAND (OL); ~85% fines, ~10% sand, fine to medium, ~5% gravel, fine to coarse, subangular; ~5% organic fibers, max. size 1, wet, dark gray.
- - -				65.9		PLO	WW-SED-18 (18.5-19)	(18.5'- 20') ORGANIC SOIL WITH SAND (OL); ~85% fines, ~10% sand, fine to medium, ~5% gravel, fine to coarse, subangular; ~5% organic fibers, max. size 1, slight petroleum-like odor, wet, dark gray,

NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK NA = NOT APPLICABLE

NM = NOT MEASURED

IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

		1	<b>∭</b> GEI C	onsultants	Inc.		CLIENT:	National Grid		BORING LOG			
5		$\mathbb{C}$		inding Bro			PROJECT:	Williamsburg MGP RI	PAGE				
G	FI		(860)	368-5300			CITY/STATE: GEI PROJECT	Brooklyn, New York NUMBER: 093060	2 of 4	WW-SED-18			
<u> </u>	<u> </u>	Consult	SAMPLE IN	IFO			GEI PROJECT	100WIDER. 093000					
ELEV. FT.	DEPTH FT.	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / E DESC	BEDROO RIPTION				
- - - -	20   25			6.8				slight organic-like odor. (20'- 22') ORGANIC SOIL WITH SAND (OL); ~85% fines, ~10% sand fine to medium, ~5% gravel, fine to coarse, subangular; ~5% organic fibers, max. size 1, wet, dark gray. (22'- 23') NARROWLY GRADED SAND WITH SILT (SP-SM); ~80% sand, fine to medium, ~10% gravel, fine to coarse, subangular, ~10% fines; max. size 2, wet, brown. (23'- 26') SILTY SAND (SM); ~75% sand, fine, ~25% fines; moist, gravel.					
- -	_							(26'- 28.5') NARROWLY GRADED sand, fine, ~10% fines; moist, gray 0.5 inches throughout.					
- 45 -	_ 30 _	S-4	120/68	15.2				(28.5'- 36') WIDELY GRADED SAN ~10% gravel, fine to coarse, subrou brown to grayish brown.	ND (SW inded, ~	); ~85% sand, fine to coarse, -5% fines; max. size 1.5, wet,			
- - 50 -				2.1				(36'- 39') SILTY SAND (SM); ~65% lenses of sandy silt up to 0.75 inche					
- 55 - -	<b>40</b>	S-5	120/0					(39'- 49') No Recovery, possible bo	ulder.				
NOT	_ ES:												
PEN = REC = PID = JHS =	NOTES:  PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL PPM = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR OLO = ORGANIC L												

ENVIRONMENTAL BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

NA = NOT APPLICABLE NM = NOT MEASURED

			<b>∭</b> GEI C	consultants,	Inc.		CLIENT:	Natio	nal Grid		BORING LOG				
			455 W	Vinding Bro onbury, CT	ok Ro	ad 3	PROJECT:	Williamsbu		PAGE					
G	FI		(860)	368-5300	0000		CITY/STATE:		n, New York	3 of 4	WW-SED-18				
	<u> </u>	Consult	tants				GEI PROJECT	NUMBER:	093060						
Ħ.	FT.		SAMPLE IN	NFO											
		TYPE			¥	R	ANALYZED		SOIL / E	BEDROCK					
ELEV.	DEPTH	and	PEN/REC IN./IN.	PID (PPM)	STRATA	ODOR	SAMPLE ID		DESC	RIPTION	N				
Ξ	ā	NO.	1143,114.	(1 1 111)	"										
<b>— -60</b>	<b>— 45</b>														
	<del></del>														
-	_														
	_														
-	_														
_	_	S-6	240/188					(49'- 50.5') NAI	RROWLY GRADED	SAND	(SP); ~90% sand, fine, ~10%				
-65	<b>—</b> 50							fines; moist, gra	ayish brown.		, ,,				
	- 00							(E0 E' E6') SIL	TV CAND (CM):65	:0/ oand	, fine, ~35% fines; moist,				
-	-							gray, lenses of	sandy silt up to 0.5 i	nches th	hroughout				
-	_														
-	-			0.1											
_				<b>U</b>											
<del>70</del>	<b>—</b> 55														
	_										ITH SILT (SP-SM); ~90%				
-	_							sand, fine, ~10	% fines; moist, brow	nish gra	ay.				
	_														
-	_														
75															
<del>75</del>	<del></del> 60			0.0				(60'- 62') SAND	OY SILT (ML); ~55%	fines, lo	ow plasticity, slow dilatancy,				
-	_							~45% sand, fin	e; moist, dark brown	to redd	ish brown.				
	-				Ш			(62'- 66.5') NAI	RROWLY GRADED	SAND	WITH SILT (SP-SM); ~90%				
-	_							sand, fine, ~10 0.75 inches thr	% fines; moist, gray	to brow	n, lenses of elastic silt up to				
								0.70 11101163 (1111	ougnout.						
	-														
80	<b>—</b> 65														
	-														
-	L							(66.5'- 71') CLA	AYEY SAND (SC); ~	65% sa	nd, fine to medium, ~35%				
				0.7				fines; moist, gra	ayısh white.						
	_														
L	L !														
NOTE	 ≣S:				r://		I								
<u>۱</u>															

ENVIRONMENTAL BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

NA = NOT APPLICABLE NM = NOT MEASURED  $Q_P$  = POCKET PENETROMETER  $S_V$  = TORVANE PEAK

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
RIN. = INCHES
RIN. = INCHES
RIN. = INCHES
RIN. = INCHES
RIN. = FEET
RILLION
RIO = NAPHTHALENE LIKE ODOR
RIO = PETROLEUM LIKE ODOR
RIO = TAR LIKE ODOR
RIO = TAR LIKE ODOR
RIO = APPHALT LIKE ODOR

GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 **BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** WW-SED-18 CITY/STATE: Brooklyn, New York (860) 368-5300 4 of 4 **GEI PROJECT NUMBER:** 093060 Consultants SAMPLE INFO Ë Ë STRATA ODOR DEPTH **ANALYZED** SOIL / BEDROCK TYPE ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. S-7 180/171 -85 70 (71'- 78') CLAYEY SAND (SC); ~75% sand, fine to medium, ~25% fines; moist, grayish white with blue tint. 0.0 -90 75 (78'- 84') NARROWLY GRADED SAND WITH SILT (SP-SM); ~90% sand, fine to medium, ~10% fines; moist, light blueish gray with white. 0.0 -95 80 WW-SED-18 (83.5-84)End of Boring at 84 feet.

Grouted

NOTES:

BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE NM = NOT MEASURED

= TORVANE PEAK

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE WW-SED-19** CITY/STATE: Brooklyn, New York 1 of 4 GEI PROJECT NUMBER: 093060

GROUND SURFACE ELEVATION (FT):  NORTHING (FT):	):640984	LOCATION: East River TOTAL DEPTH (FT): 75.0  DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone
LOGGED BY: Kari Weber		DATE START / END: 11/19/2010 - 11/19/2010
DRILLING DETAILS:		
WATER LEVEL DEPTHS (FT):		
GENERAL NOTE:		

٠	ن		SAMPLE IN	NFO		(0			
ELEV. FT.	ОЕРТН FT.	TYPE and NO.	PEN/REC IN./IN.		STRATA	VISUAL	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
- - - 30	0 	S-1	180/64					WW-SED-19 (0-0.5)	(0'- 20') ORGANIC SOIL (OL); ~90% fines, ~10% sand, fine; dark gray.
- 	_ 10 			5.5					
- 	<b>15</b> 	S-2	240/174	8.7					
_	_ 20			48					

NOTES:

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

NA = NOT APPLICABLE NM = NOT MEASURED

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (PPM)

PIN = PARTS PER MILLION
NLO = NAPHTHALENE LIKE ODOR
PLO = PETROLEUM LIKE ODOR
TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE WW-SED-19** CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 4 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 20 (20'- 27') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to coarse, ~10% fines; moderate naphthalene-like odor, dark gray, petroleum-like odor. 38.2 NLO -50 - 25 325 NLO (27'- 27.2') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to coarse, ~10% fines; moderate naphthalene-like odor, dark gray, petroleum-like odor, tar-like PLO (27.2'- 29') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to coarse, ~10% fines; moderate petroleum-like odor, dark gray, sheen. -55 30 (29'- 30') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% 756 sand, fine to coarse, ~10% fines; dark gray. (30'- 30.2') WIDELY GRADED SAND WITH SILT (SW-SM); 191 ~90% sand, fine to coarse, ~10% fines; dark gray, occasional tar-like blebs. NLO (30.2'- 34') SILTY SAND (SM); ~85% sand, fine to medium, ~15% fines; moderate naphthalene-like odor, light brownish gray. (34'- 35') NARROWLY GRADED SAND (SP); ~95% sand, medium to coarse, ~5% fines; light brown. -60 35 S-3 240/213 (35'- 36') SILTY SAND (SM); ~60% sand, fine to medium, ~40% fines; light gray. 200 (36'- 38') SILTY SAND (SM); ~75% sand, fine to medium, ~25% fines; moderate naphthalene-like odor, light gray, sheen, pockets NLO of tar-like coating. (38'- 39') WIDELY GRADED SAND (SW); ~95% sand, medium to coarse, ~5% fines; light brown. (39'- 40.5') NARROWLY GRADED SAND WITH SILT (SP-SM); ~90% sand, fine to medium, ~10% fines; grayish brown with red. 491 -65 40 (40.5'- 42') NARROWLY GRADED SAND WITH SILT (SP-SM); ~90% sand, fine to medium, ~10% fines; moderate NLO WW-SED-19 naphthalene-like odor, grayish brown with red, pockets of clay, 946 (41.2-41.5) tar-like staining and coating. (42'- 43') SILTY SAND (SM); ~70% sand, fine to medium, ~30% fines; grayish brown with red, pockets of clay.

(43'- 53') SILT WITH SAND (ML); ~60% fines, ~40% sand, fine to medium; light grayish white. **NOTES:** 

IN. = INCHES FT. = FEET

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE

BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

WILLIAMSBURG W

LOG

PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

NA = NOT APPLICABLE

Q<sub>P</sub> = POCKET PENETROMETER NM = NOT MEASURED = TORVANE PEAK

ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** CLIENT: GEI Consultants, Inc. **National Grid** 455 Winding Brook Road Glastonbury, CT 06033 PROJECT: Williamsburg MGP RI **PAGE WW-SED-19** CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 4 **GEI PROJECT NUMBER:** 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS Ë STRATA ODOR DEPTH **ANALYZED** SOIL / BEDROCK TYPE ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. -70 45 102 -75 50 0.0 (53'- 55') NARROWLY GRADED SAND (SP); ~95% sand, fine, ~5% fines; light grayish brown. -80 55 120/NM S-4 (55'- 55.3') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand, fine to coarse, ~10% fines; dark grayish brown. (55.3'- 65') NARROWLY GRADED SAND WITH SILT (SP-SM); ~90% sand, fine, ~10% fines; grayish white. 0.0 -85 60 -90 **- 65** S-5 120/72 (65'- 75') SILT WITH SAND (ML); ~70% fines, ~30% sand, fine to medium; gray.

NOTES:

BORING LOG

WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE

NM = NOT MEASURED = TORVANE PEAK

IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

GEI Consultants, Inc. 455 Winding Brook Road Glastonbury, CT 06033 **BORING LOG** CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE WW-SED-19** CITY/STATE: Brooklyn, New York (860) 368-5300 4 of 4 **GEI PROJECT NUMBER:** 093060 Consultants **SAMPLE INFO** Ë VISUAL IMPACTS Ë STRATA ODOR DEPTH **ANALYZED** SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and (PPM) IN./IN. NO. -95 **- 70** 0.0 WW-SED-19 -100 (74.5-75) End of Boring at 75 feet.

Grouted

NOTES:

BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK NA = NOT APPLICABLE

NM = NOT MEASURED

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL REC = RECOVERY LENGTH OF SAMPLE RIGHT OF SAMPLE REC = PHOTOIONIZATION DETECTOR READING (PPM) PLO = PHOTOIONIZATION DETECTOR READING (PPM) PLO = TAR LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CLIENT: **National Grid** PROJECT: Williamsburg MGP RI CITY/STATE: Brooklyn, New York GEI PROJECT NUMBER: 093060

**PAGE** WW-SED-20 1 of 3

**BORING LOG** 

GROUND SURFACE ELEVATION (FT):	-22.21	LOCATION: East River
NORTHING (FT): 689401 EASTING (FT):	641016	TOTAL DEPTH (FT): 59.0
DRILLED BY: Boart Longyear / Frank Gardella	1	DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone
LOGGED BY: Amy Malsbary/Kari Weber		DATE START / END:11/17/2010 - 11/17/2010
DRILLING DETAILS: Sonic Coring		
WATER LEVEL DEPTHS (FT):		
GENERAL NOTE:		

FT.	FI.	,	SAMPLE IN	IFO_		, w			
ELEV. F	оертн ғ	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	VISUAL	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
- - - - - - - -	0 	S-1	108/56	3.2			OLO	WW-SED-20 (0-0.5)	(0'- 17') ORGANIC SOIL (OL); ~90% fines, ~10% sand, fine; slight organic-like odor, wet, dark gray.
-30	10  15 	S-2	120/52	52.1					(17'- 30') ORGANIC SOIL (OL); ~90% fines, ~10% sand, fine to medium; ~10% organic fibers, slight petroleum-like odor, wet, dark gray, slight organic-like odor.
-	_ 20	S-3	240/159	<b>32.</b> I			PLO		

NOTES:

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (PPM)

PIN = PARTS PER MILLION
NLO = NAPHTHALENE LIKE ODOR
PLO = PETROLEUM LIKE ODOR
TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

CrLO= CREOSOTE LIKE ODOR OLO = ORGANIC LIKE ODOR SLO = SULFUR LIKE ODOR

MLO = MUSTY LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE** WW-SED-20 CITY/STATE: Brooklyn, New York (860) 368-5300 2 of 3 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë VISUAL IMPACTS ᇤ STRATA ODOR DEPTH ANALYZED SOIL / BEDROCK **TYPE** ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. 20 -45 90.6 25 **PLO** -50 159 30 (30'- 33') NARROWLY GRADED SAND WITH SILT (SP-SM); ~85% sand, fine to medium, ~10% fines, ~5% gravel; wet, ~4" cobble at ~31'. -55 533 (33'- 34.5') NARROWLY GRADED SAND WITH GRAVEL (SP); ~75% sand, medium to coarse, ~20% gravel, fine to coarse, NLO subangular, ~5% fines; max. size 1.5, moderate naphthalene-like odor, wet, brown, mostly coarse sand, sheen to light tar-like 35 (34.5'- 39') NARROWLY GRADED SAND (SP); ~90% sand, fine 12.1 to medium, ~5% gravel, fine to coarse, subangular, ~5% fines; wet, brown. -60 120/114 (39'- 41') WIDELY GRADED SAND (SW); ~90% sand, fine to S-4 coarse, ~5% gravel, fine to coarse, subangular, ~5% fines; max. 40 NLO size 1, slight naphthalene-like odor, wet, brown, occasional spotty (41'- 42') WIDELY GRADED SAND (SW); ~90% sand, fine to NLO coarse, ~5% gravel, fine to coarse, subangular, ~5% fines; max. size 1, slight naphthalene-like odor, wet, brown. NLO WW-SED-20 (42'- 42.5') WIDELY GRADED SAND (SW); ~90% sand, fine to (42-42.5)-65 1083 coarse, ~5% gravel, fine to coarse, subangular, ~5% fines; max. size 1, moderate naphthalene-like odor, wet, brown, sheen throughout, ~1" of slight tar-like staining at ~42.3'. (42.5'- 45.5') SILTY SAND (SM); ~75% sand, fine, ~25% fines;

#### **NOTES:**

FULTON DATA TEMPLATE GDT

WILLIAMSBURG W PREV. BORINGS.GPJ

LOG

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

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PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

NA = NOT APPLICABLE Q<sub>P</sub> = POCKET PENETROMETER

= TORVANE PEAK NM = NOT MEASURED

IN. = INCHES FT. = FEET

PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

**BORING LOG** GEI Consultants, Inc. CLIENT: **National Grid** 455 Winding Brook Road PROJECT: Williamsburg MGP RI Glastonbury, CT 06033 **PAGE** WW-SED-20 CITY/STATE: Brooklyn, New York (860) 368-5300 3 of 3 GEI PROJECT NUMBER: 093060 Consultants SAMPLE INFO Ë Ë VISUAL IMPACTS STRATA ODOR DEPTH SOIL / BEDROCK ANALYZED TYPE ELEV. PEN/REC PID **SAMPLE ID DESCRIPTION** and IN./IN. (PPM) NO. wet, brown, silt lenses up to 0.5". 45 10.3 (45.5'- 46.5') LEAN CLAY WITH SAND (CL); ~80% fines, medium plasticity, ~20% sand; gray with red mottling, lenses of fine sand. (46.5'- 48.5') SILTY SAND (SM); ~80% sand, fine, ~20% fines; moist, gray. -70 (48.5'- 54') WIDELY GRADED SAND (SW); ~95% sand, fine to coarse, ~5% fines; wet, gray. 120/91 S-5 50 7.4

CLO

WW-SED-20 (58.5-59)

45.3

~5% fines; moist, light gray to white.

(54'- 55.5') NARROWLY GRADED SAND WITH SILT (SP-SM); ~90% sand, fine to medium, ~10% fines; slight chemical-like odor,

(55.5'- 59') NARROWLY GRADED SAND (SP); ~95% sand, fine,

wet, dark brown, slight unknown/chemical-like odor.

End of Boring at 59 feet. Grouted

## NOTES:

-75

-80

WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT

507

55

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM)

JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER NA = NOT APPLICABLE = TORVANE PEAK

NM = NOT MEASURED

ppm = PARTS PER MILLION

NLO = NAPHTHALENE LIKE ODOR IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR TLO = TAR LIKE ODOR

CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

BORING LOG CLIENT: **National Grid** PROJECT: Williamsburg MGP RI **PAGE** WW-SED-21 CITY/STATE: Brooklyn, New York 1 of 3 **GEI PROJECT NUMBER:** 093060

**GROUND SURFACE ELEVATION (FT):** -23.97 LOCATION: East River NORTHING (FT): 689492 EASTING (FT): 641052 TOTAL DEPTH (FT): 56.0 DRILLED BY: Boart Longyear / Frank Gardella DATUM VERT. / HORZ.: NAVD 88 / NAD83 NY East Zone LOGGED BY: Kari Weber DATE START / END: 11/18/2010 - 11/18/2010 **DRILLING DETAILS:** WATER LEVEL DEPTHS (FT): **GENERAL NOTE:** 

Ę.	H	SAMPLE INFO		<b>IFO</b>	4			
ELEV. F	DEPTH FT.	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
- <b>-2</b> :	5- -	S-1	192/110				WW-SED-21 (0-0.5)	(0'- 16') ORGANIC SOIL (OL); ~90% fines, ~10% sand, fine; dark gray.
-				4.0				
- <b>-3</b>	<b>0</b> –							
NG LOG WILLAMSBURG W PREV. BORINGS.GFJ FULLON DATA TEMPLATE.GDT 3/2/13	_ 10			0.5				
- 3	<b>b</b> —							
PKEV. BOKINGS.G	-   15 	S-2	240/145					(16'- 30') WIDELY GRADED SAND WITH SILT (SW-SM); ~90% sand,
VILLIAMSBURG vv	_	3-2	240/143			PLO		fine to coarse, ~10% fines; moderate petroleum-like odor, dark gray.
N _ SO TOO!	_ 20			2.0				

# NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION NLO = NAPHTHALENE LIKE ODOR

REC = RECOVERY LENGTH OF SAMPLE PID = PHOTOIONIZATION DETECTOR READING (PPM) JHS = JAR HEADSPACE PID READING (PPM)

Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK NA = NOT APPLICABLE

NM = NOT MEASURED

IN. = INCHES FT. = FEET PLO = PETROLEUM LIKE ODOR

TLO = TAR LIKE ODOR CLO = CHEMICAL LIKE ODOR ALO = ASPHALT LIKE ODOR

			₩ GEI C	onsultants,	Inc.		CLIENT:	National Grid		BORING LOG
is.		$\mathbb{C}$	455 W	/inding Bro	ok R	oad	PROJECT:	Williamsburg MGP RI	DACE	
G	FI	~	(860)	368-5300	000		CITY/STATE:	Brooklyn, New York	PAGE 2 of 3	WW-SED-21
)	니	Consult					GEI PROJECT	NUMBER: 093060		
FI.	Ë		SAMPLE IN	NFO .	4					
ELEV. F	DEPTH	TYPE and NO.	PEN/REC IN./IN.	PID (PPM)	STRATA	ODOR	ANALYZED SAMPLE ID		BEDROC RIPTION	
-	— 20									
45	-									
	_									
-	-									
_	_									
-	25					PLO				
-50	-									
	_									
-	-									
_	_									
-	— 30				* ***			(30'- 36') NARROWLY GRADED S	SAND (SI	P); ~85% sand, fine to
-55	-			197				medium, ~10% gravel, fine to coars odor, light brown.	se, ~5%	fines; moderate chemical-like
	_			107				- -		
-	-			3.2		CLO				
_	_									
-	<del></del> 35									
<b>— -60</b>	_	S-3	240/138		***			(36'- 37') WIDELY GRADED SANI	) (SM)).	~00% sand fine to coarse
	_	0-5	240/100			NLO		~5% gravel, fine to coarse, ~5% fir	nes; sligh	t naphthalene-like odor, dark
				207			MAN SED 24	gray brown. (37'- 39') WIDELY GRADED SANI	D (SW); -	~90% sand, fine to coarse,
-	-			307			WW-SED-21 (37.5-38)	~5% gravel, fine to coarse, ~5% fir	nes; dark	gray brown.
	_							(001, 401) 11.77.01.11.1		TH OH T (OF ON)
								(39'- 42') NARROWLY GRADED S sand, fine to medium, ~10% gravel	SAND WI I, fine, ~1	ITH SILT (SP-SM); ~80% 0% fines; brown to light
-	<del> 40</del>							reddish brown.	-	Ť
<b></b> -65	_									
	_									
	-							(42'- 47') SILT (ML); ~90% fines, ~ chemical-like odor, gray.	-10% sar	nd, fine; moderate
-	-					CLO		GIGHIGAI-IIRE GUOI, YIAY.		
L	_									
NOTE					_					
REC =	RECOV	ERY LEN	LENGTH OF S	//PLE			IN. = INCH			OLO = ORGANIC LIKE ODOR
			ON DETECTO E PID READI		(PPI	M)	FT. = FEET	CLO = CHEMICAL LIKE C		SLO = SULFUR LIKE ODOR MLO = MUSTY LIKE ODOR
NA =	NOT AF	PLICABI	_E Q <sub>p</sub> :	= POCKET P	PENET	[ROME]	ΓER	ALO = ASPHALT LIKE OF	OOR	

ENVIRONMENTAL BORING LOG WILLIAMSBURG W PREV. BORINGS.GPJ FULTON DATA TEMPLATE.GDT 3/27/13

		1	GEI C	onsultants,	Inc.		CLIENT:	Na	tional Grid		BORING LOG	
		$\mathbb{C}$	455 W	/inding Bro	g Brook Road		PROJECT:	William	sburg MGP RI	_		
			Glasto	onbury, CT 368-5300	0603	33	CITY/STATE:		klyn, New York	PAGE		
( ¬	-1			300-3300			GEI PROJECT		093060	_ 3 of 3	WW-SEB-21	
	<u> </u>	Consult					GEIPROJECT	NUMBER:	093060	_		
ᇤ	Ë	;	SAMPLE IN	<b>IFO</b>	_							
	ᄔ				STRATA	ODOR	ANALYZED		9011	BEDRO	CK	
ELEV.	DEPTH	TYPE	PEN/REC	PID	₽	8	SAMPLE ID			CRIPTIO		
"	Ü	and NO.	IN./IN.	(PPM)	ST	0	OAMI EE ID		520			
Ι Ψ		NO.		, ,								
					Ш							
-	<del> 45</del>											
						CLO						
-70	H					CLO						
				34			WW-SED-21					
L	<b>-</b>			34			(46.5-47)	(47'- 51') LEAN CLAY (CL).				
							(1010 11)	(47'- 51') LI	EAN CLAY (CL).			
L	_											
L	_											
L	<b>—</b> 50											
	30											
7.												
— <b>-</b> 75												
<b>-</b>												
<b>F</b>												
-	<b> </b>											
F	<del> 55</del>			2.2								
				2.2								

End of Boring at 56 feet. Grouted

## NOTES:

NA = NOT APPLICABLE NM = NOT MEASURED Q<sub>P</sub> = POCKET PENETROMETER S<sub>V</sub> = TORVANE PEAK

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
RIN. = INCHES
RIN. = INCHES
RIN. = INCHES
RIN. = INCHES
RIN. = FEET
