MWH	Client: GE/UNC Project Number:	SOIL BORING LOG FORM	BOREHOLE No.: BL6 Sheet 1 of 13

Drilling Company: National EWP	Drilling Rig: CME-85	Bit Type: Auger	Start Date: 11/14/16
Drillers (day / night): M. Cain	Drilling Method: Cont. Core	Logged by: S. Downey / J. Van Pelt	Finish Date: 11/15/16
Field Representitive (day / night): S. Downey/J. Van Pelt	Core Diameter: 3 in		Total Depth: 126.5 ft

Depth	Sample Number	Blow Count	Recovery (in.)	q_u (tsf)	Lithology / Symbol	Description	Graphic	Remarks	Well Details
0					SP	Poorly graded SAND (SP)		Hand auger to ~3ft Start drilling @ 1300 125 0725729, 3947569 Location surveyed w/ handheld GPS (UTM NAD 83)	
1									
2									
3									
4					SP-SM	Poorly graded SAND with silt and gravel (SP-SM), brown (7.5YR 4/3), loose, dry, coarse gravel (15%), fine gravel (15%), fine grained sand, trace clay			
						grades to fine gravel (10-15%), clay (10-15%) moderately indurated, weak cementation			
5		42	4		ML	Clayey SILT (ML), brown (7.5YR 4/3), soft, dry, trace caliche, moderate to low plasticity			
		50/3	3		SP	Poorly graded SAND (SP), very pale brown (10YR 5/2), very loose, dry, predominantly fine-grained sand		hit boulder or large cobble	
6						No recovery			
7	Bu-7.0-9.3 (GS) 14-Nov-2016				SM	Silty SAND (SM), yellowish brown (10YR 5/4), dense, dry, clay (5-10%), fine-grained sand, trace organics, caliche, and Fe staining, moderate to highly indurated			
8									
9									
10					CL	Silty CLAY with sand (CL), brown (10YR 5/3), stiff, dry, fine-grained sand (10%), caliche (10%), fine to coarse gravel (10-20%), trace coarse sand, moderately indurated			

COARSE-GRAINED SOILS >50% passes #200 sieve	GRAVELS <50% coarse fraction passes #4 sieve	GRAVELS with little or no fines	Well-graded[2] gravels, gravel-sand mixtures, little or no fines — GW
			Poorly-graded[2] gravels, gravel-sand mixtures, little or no fines — GP
		GRAVELS with >15% fines	Silty gravels, poorly-graded[2] gravel-sand-silt mixtures — GM
			Clayey gravels, poorly-graded[2] gravel-sand-clay mixtures — GC
	SANDS <50% coarse fraction passes #4 sieve	SANDS with little or no fines	Well-graded[2] sands, gravelly sands, little or no fines — SW
			Poorly-graded[2] sands, gravelly sands, little or no fines — SP
		SANDS with >15% fines	Silty sands, poorly-graded[2] sand-gravel-silt mixtures — SM
			Clayey sands, poorly-graded[2] sand-gravel-clay mixtures — SC
FINE-GRAINED SOILS >50% passes #200 sieve	SILTS AND CLAYS liquid limit <50		Inorganic silts/very-fine sands, silty or clayey fine sands, silts with slight plasticity — ML
			Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays — CL
			Organic silts and clays of low plasticity — OL
	SILTS AND CLAYS liquid limit >50		Inorganic silts, micaceous or diatomaceous fine sand or silt — MH
			Inorganic clays of high plasticity, fat clays — CH
			Organic silts and clays of medium to high plasticity — OH
HIGHLY ORGANIC SOILS			Peat, humus, swamp soils with high organic content — PT

CONSISTENCY (Silts and Clays)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very soft	0-2	0-2	0-2
soft	2-4	2-4	2-4
medium stiff	4-8	4-8	4-8
stiff	8-15	9-17	9-18
very stiff	15-30	17-39	18-42
hard	30-60	39-78	42-85
very hard	>60	>78	>85

DENSITY (Sands and Gravels)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very loose	0-4	0-5	0-7
loose	4-10	5-12	7-18
medium dense	10-30	12-37	18-51
dense	30-50	37-60	51-86
very dense	>50	>60	>86

* = 140 pound hammer dropped 30 inches

[2]Note: Well-graded = poorly sorted; Poorly-graded = well sorted

PLASTICITY: Nonplastic, Low, Medium, High

MOISTURE

Term	Field Test
Dry	Absence of moisture, dry to touch
Moist	Damp, does not wet palm
Wet	Visible Free Water

CEMENTATION

Term	Field Test
Weak	Crumbles or breaks with handling or slight finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

GRAIN SIZE

Term	Size (mm)	Size (inches)
Boulders	>300	>12
Cobbles	75 to 300	3 to 12
Coarse gravel	19 to 75	3/4 to 3
Fine gravel	4.75 to 19	3/16 to 3/4
Coarse sand	2.0 to 4.75	1/16 to 3/16
Medium sand	0.425 to 2.0	1/64 to 1/16
Fine sand	0.075 to 0.425	0.003 to 1/64
Silt / clay (fines)	<0.075	<0.003

SOIL TYPE MODIFIERS

Percentages of gravel, sand, and fines may be stated in terms indicating a range of percentages as below.

Term	%
Trace	<5
Few	5-10
Little	15-25
Some	30-45
Mostly	50-100

Depth to first water (time and date)

Depth to water after drilling (time and date)

MWH	Client: GE/UNC Project Number:	SOIL BORING LOG FORM	BOREHOLE No.: B16 Sheet 2 of 13

Drilling Company: SEE INFORMATION ON	Drilling Rig:	Bit Type:	Start Date:
Drillers (day / night): FIRST PAGE OF	Drilling Method:	Logged by:	Finish Date:
Field Representitive (day / night): LDG	Core Diameter:		Total Depth:

Depth	Sample Number	Blow Count	Recovery (in.)	q_u (tsf)	Lithology / Symbol	Description	Graphic	Remarks	Well Details
10		9			CH	grades to Fat CLAY (CH), brown (10YR 4/3), very hard, dry, caliche stringers, some silt, highly plastic			
	B16-10.5-11.0 (SS0) 14-Nov-2016	12							
11		17				grades with increasing caliche (10%)			
						same as above			
12					CL	Silty CLAY (CH) yellowish brown (10YR 5/4), loose, dry, medium plasticity			
13	B16-12.8-13.5 (GS) 14-Nov-2016				SP	Poorly graded SAND (SP), pale brown (10YR 6/3) very loose, dry			
	B16-13.5-15.0 (GS) 14-Nov-2016				CH	CH, same as above, brown (10YR 4/3), hard			
14									
15		10			CH	CH, same as above, hard			
	B16-15.5-16.0 (SS0) 14-Nov-2016	12							
16		15				grades w/ decreasing caliche stringers (5%)			
						SAA, dry to slightly moist			
17									
18	B16-16.5-20.0 (GS) 14-Nov-2016								
19									
20									

COARSE-GRAINED SOILS (>50% > #200 sieve)	GRAVELS <50% coarse fraction passes #4 sieve	GRAVELS with little or no fines	Well-graded gravels, gravel-sand mixtures, little or no fines — GW
			Poorly-graded gravels, gravel-sand mixtures, little or no fines — GP
		GRAVELS with >15% fines	Silty gravels, poorly-graded gravel-sand-silt mixtures — GM
			Clayey gravels, poorly-graded gravel-sand-clay mixtures — GC
	SANDS <50% coarse fraction passes #4 sieve	SANDS with little or no fines	Well-graded sands, gravelly sands, little or no fines — SW
			Poorly graded sands, gravelly sands, little or no fines — SP
		SANDS with >15% fines	Silty sands, poorly-graded sand-gravel-silt mixtures — SM
			Clayey sands, poorly-graded sand-gravel-clay mixtures — SC
FINE-GRAINED SOILS (50% > #200 sieve)	SILTS AND CLAYS liquid limit <50		Inorganic silts/very-fine sands, silty or clayey fine sands, silts with slight plasticity — ML
			Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays — CL
			Organic silts and clays of low plasticity — OL
	SILTS AND CLAYS liquid limit >50		Inorganic silts, micaceous or diatomaceous fine sand or silt — MH
			Inorganic clays of high plasticity, fat clays — CH
			Organic silts and clays of medium to high plasticity — OH
	HIGHLY ORGANIC SOILS		Peat, humus, swamp soils with high organic content — PT

CONSISTENCY (Silts and Clays)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very soft	0-2	0-2	0-2
soft	2-4	2-4	2-4
medium stiff	4-8	4-8	4-8
stiff	8-15	9-17	9-18
very stiff	15-30	17-39	18-42
hard	30-60	39-78	42-85
very hard	>60	>78	>85

DENSITY (Sands and Gravels)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very loose	0-4	0-5	0-7
loose	4-10	5-12	7-18
medium dense	10-30	12-37	18-51
dense	30-50	37-60	51-86
very dense	>50	>60	>86

* = 140 pound hammer dropped 30 inches

GRAIN SIZE

Term	Size (mm)	Size (inches)
Boulders	>300	>12
Cobbles	75 to 300	3 to 12
Coarse gravel	19 to 75	3/4 to 3
Fine gravel	4.75 to 19	3/16 to 3/4
Coarse sand	2.0 to 4.75	1/16 to 3/16
Medium sand	0.425 to 2.0	1/64 to 1/16
Fine sand	0.075 to 0.425	0.003 to 1/64
Silt / clay (fines)	<0.075	<0.003

SOIL TYPE MODIFIERS

Percentages of gravel, sand, and fines may be stated in terms indicating a range of percentages as below:

Term	%
Trace	<5
Few	5-10
Little	15-25
Some	30-45
Mostly	50-100

Note: Well-graded = poorly sorted; Poorly-graded = well sorted

PLASTICITY

Nonplastic	
Low	
Medium	
High	

MOISTURE

Term	Field Test
Dry	Absence of moisture, dry to touch
Moist	Damp, does not wet palm
Wet	Visible Free Water

CEMENTATION

Term	Field Test
Weak	Crumbles or breaks with handling or slight finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

Depth to first water (time and date)

Depth to water after drilling (time and date)

SAA = same as above

MWH	Client: GE/UNC Project Number:	SOIL BORING LOG FORM	BOREHOLE No.: B16 Sheet 3 of 13

Drilling Company: SEE INFORMATION ON	Drilling Rig:	Bit Type:	Start Date:
Drillers (day / night): FIRST PAGE OF	Drilling Method:	Logged by:	Finish Date:
Field Representitive (day / night): LOG	Core Diameter:		Total Depth:

Depth	Sample Number	Blow Count	Recovery (in.)	q_u (tsf)	Lithology / Symbol	Description	Graphic	Remarks	Well Details
20		14			CL	SAA, caliche stringers (10-15%)			
	B16-20.5-21.0 (SS0) 14-Nov-2016	20							
21		21				grades w/ decreasing caliche (5%)			
22									
23									
24				>4.5					
25						SAA			
26									
27						SAA, medium stiff to stiff, slightly moist			
28	B16-28.0-30.0 (GS) 14-Nov-2016								
29									
30									

COARSE-GRAINED SOILS (More than half of material is larger than #200 sieve; * q_u = Unconfined Compressive Strength)	GRAVELS <50% coarse fraction passes #4 sieve	GRAVELS with little or no fines	Well-graded gravels, gravel-sand mixtures, little or no fines	GW
			Poorly-graded gravels, gravel-sand mixtures, little or no fines	GP
		GRAVELS with >15% fines	Silty gravels, poorly-graded gravel-sand-silt mixtures	GM
			Clayey gravels, poorly-graded gravel-sand-clay mixtures	GC
	SANDS <50% coarse fraction passes #4 sieve	SANDS with little or no fines	Well-graded sands, gravelly sands, little or no fines	SW
			Poorly-graded sands, gravelly sands, little or no fines	SP
		SANDS with >15% fines	Silty sands, poorly-graded sand-gravel-silt mixtures	SM
			Clayey sands, poorly-graded sand-gravel-clay mixtures	SC
FINE-GRAINED SOILS (More than half of material is smaller than #200 sieve)	SILTS AND CLAYS liquid limit <50		Inorganic silts/very-fine sands, silty or clayey fine sands, silts with slight plasticity	ML
			Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	CL
			Organic silts and clays of low plasticity	OL
	SILTS AND CLAYS liquid limit >50		Inorganic silts, micaceous or diatomaceous fine sand or silt	MH
			Inorganic clays of high plasticity, fat clays	CH
			Organic silts and clays of medium to high plasticity	OH
	HIGHLY ORGANIC SOILS		Peat, humus, swamp soils with high organic content	PT

CONSISTENCY (Silts and Clays)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very soft	0-2	0-2	0-2
soft	2-4	2-4	2-4
medium stiff	4-8	4-8	4-8
stiff	8-15	9-17	9-18
very stiff	15-30	17-39	18-42
hard	30-60	39-78	42-85
very hard	>60	>78	>85

DENSITY (Sands and Gravel)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very loose	0-4	0-5	0-7
loose	4-10	5-12	7-18
medium dense	10-30	12-37	18-51
dense	30-50	37-60	51-86
very dense	>50	>60	>86

* = 140 pound hammer dropped 30 inches

GRAIN SIZE

Term	Size (mm)	Size (inches)
Boulders	>300	>12
Cobbles	75 to 300	3 to 12
Coarse gravel	19 to 75	3/4 to 3
Fine gravel	4.75 to 19	3/16 to 3/4
Coarse sand	2.0 to 4.75	1/16 to 3/16
Medium sand	0.425 to 2.0	1/64 to 1/16
Fine sand	0.075 to 0.425	0.003 to 1/64
Silt / clay (fines)	<0.075	<0.003

SOIL TYPE MODIFIERS

Percentages of gravel, sand, and fines may be stated in terms indicating a range of percentages as below:

Term	%
Trace	<5
Few	5-10
Little	15-25
Some	30-45
Mostly	50-100

PLASTICITY

Note: Well-graded = poorly sorted; Poorly-graded = well sorted

Term	Field Test
Nonplastic	
Low	
Medium	
High	

MOISTURE

Term	Field Test
Dry	Absence of moisture, dry to touch
Moist	Damp, does not wet palm
Wet	Visible Free Water

CEMENTATION

Term	Field Test
Weak	Crumbles or breaks with handling or slight finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

▽ Depth to first water (time and date)

▼ Depth to water after drilling (time and date)

SAA = Same as above

MWH	Client: GE/UNC Project Number:	SOIL BORING LOG FORM	BOREHOLE No.: B6 Sheet 4 of 13

Drilling Company: SEE INFORMATION ON	Drilling Rig:	Bit Type:	Start Date:
Drillers (day / night): FIRST PAGE OF	Drilling Method:	Logged by:	Finish Date:
Field Representitive (day / night): LOG	Core Diameter:		Total Depth:

Depth	Sample Number	Blow Count	Recovery (in.)	q_u (tsf)	Lithology / Symbol	Description	Graphic	Remarks	Well Details
30				3.0					
31	B6-TW-30.0-32.0 (TW) 14-Nov-2016								
32					CL	SAA			
33									
34									
					SC	Clayey SAND (SC), dark yellowish brown (10YR 4/4), loose, soft, slightly moist to moist, low plasticity			
35						No recovery			
36									
37									
38	B6-37.5-38.4 (GS) 14-Nov-2016				SP	Poorly graded SAND (SP), dark yellowish brown (10YR 4/4), very loose, slightly moist to moist			
39					CL	Lean CLAY (CL), dark yellowish brown (10YR 4/4), very soft, slightly moist to moist, medium plasticity, fine-grained sand (10%) SAA, laminated w/ black organic matter, trace Fe staining			
					SP	SP, SAA			
40				1.5	CH	CH, SAA			

COARSE-GRAINED SOILS (50% Retained on #200 sieve)	GRAVELS (<50% coarse fraction passes #4 sieve)	GRAVELS with little or no fines	Well-graded gravels, gravel-sand mixtures, little or no fines — GW
			Poorly-graded gravels, gravel-sand mixtures, little or no fines — GP
		GRAVELS with >15% fines	Silty gravels, poorly-graded gravel-sand-silt mixtures — GM
			Clayey gravels, poorly-graded gravel-sand-clay mixtures — GC
	SANDS (<50% coarse fraction passes #4 sieve)	SANDS with little or no fines	Well-graded sands, gravelly sands, little or no fines — SW
			Poorly-graded sands, gravelly sands, little or no fines — SP
		SANDS with >15% fines	Silty sands, poorly-graded sand-gravel-silt mixtures — SM
			Clayey sands, poorly-graded sand-gravel-clay mixtures — SC
FINE-GRAINED SOILS (50% Passes #200 sieve)	SILTS AND CLAYS liquid limit <50		Inorganic silts/very-fine sands, silty or clayey fine sands, silts with slight plasticity — ML
			Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays — CL
			Organic silts and clays of low plasticity — OL
	SILTS AND CLAYS liquid limit >50		Inorganic silts, micaceous or diatomaceous fine sand or silt — MH
			Inorganic clays of high plasticity, fat clays — CH
			Organic silts and clays of medium to high plasticity — OH
	HIGHLY ORGANIC SOILS		Peat, humus, swamp soils with high organic content — PT

CONSISTENCY (Silts and Clays)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very soft	0-2	0-2	0-2
soft	2-4	2-4	2-4
medium stiff	4-8	4-8	4-8
stiff	8-15	9-17	9-18
very stiff	15-30	17-39	18-42
hard	30-60	39-78	42-85
very hard	>60	>78	>85

DENSITY (Sands and Gravels)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very loose	0-4	0-5	0-7
loose	4-10	5-12	7-18
medium dense	10-30	12-37	18-51
dense	30-50	37-60	51-86
very dense	>50	>60	>86

* = 140 pound hammer dropped 30 inches

GRAIN SIZE

Term	Size (mm)	Size (inches)
Boulders	>300	>12
Cobbles	75 to 300	3 to 12
Coarse gravel	19 to 75	3/4 to 3
Fine gravel	4.75 to 19	3/16 to 3/4
Coarse sand	2.0 to 4.75	1/16 to 3/16
Medium sand	0.425 to 2.0	1/64 to 1/16
Fine sand	0.075 to 0.425	0.003 to 1/64
Silt / clay (fines)	<0.075	<0.003

SOIL TYPE MODIFIERS

Percentages of gravel, sand, and fines may be stated in terms indicating a range of percentages as below:

Term	%
Trace	<5
Few	5-10
Little	15-25
Some	30-45
Mostly	50-100

PLASTICITY

Note: Well-graded = poorly sorted; Poorly-graded = well sorted

Term
Nonplastic
Low
Medium
High

MOISTURE

Term	Field Test
Dry	Absence of moisture, dry to touch
Moist	Damp, does not wet palm
Wet	Visible Free Water

CEMENTATION

Term	Field Test
Weak	Crumbles or breaks with handling or slight finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

Depth to first water (time and date)

Depth to water after drilling (time and date)

SAA = Same as above

MWH	Client: GE/UNC Project Number:	SOIL BORING LOG FORM	BOREHOLE No.: B6 Sheet 5 of 13

Drilling Company: SEE INFORMATION ON	Drilling Rig:	Bit Type:	Start Date:
Drillers (day / night): FIRST PAGE OF	Drilling Method:	Logged by:	Finish Date:
Field Representitive (day / night): LOG	Core Diameter:		Total Depth:

Depth	Sample Number	Blow Count	Recovery (in.)	q_u (tsf)	Lithology / Symbol	Description	Graphic	Remarks	Well Details
40		5	4		CA	SAA			
					SC	grades to clayey SAND (SC), yellowish brown (10YR5/4), loose, slightly moist, fine-grained sand			
	B6-40.5-41.0 (SSD) 14-Nov-2016	8	6						
41		10	6		CL	Sandy CLAY (CL), dark yellowish brown (10YR 4/4) soft, slightly moist		intermitent sand lenses, very thin	
						grades to CLAY			
					CL	Sandy CLAY (CL), brown (10YR 4/3), stiff to medium stiff, slightly moist, fine-grained sand (20%), medium plasticity			
42									
43	B6-42.3-43.8 (GS) 14-Nov-2016								
44					SP	Poorly graded SAND (SP), SAA, trace silt or clay			
45				1.0	CL	Sandy CLAY (CL), SAA, soft			
						No recovery			
46					CL	CLAY (CL), brown (10YR 4/3), stiff to very stiff, slightly moist to moist, moderate plasticity			
47				1.5	CL	Silty CLAY (CL), yellowish brown (10YR 5/4) medium stiff, slightly moist to moist, moderate plasticity			
48	B6-47.0-48.9 (GS) 14-Nov-2016								
49					SM	Silty SAND (SM), brown (10YR 4/3), loose, slightly moist to moist			
50									

COARSE-GRAINED SOILS (USCS - ASTM D2488)			
GRAVELS <50% coarse fraction passes #4 sieve	GRAVELS with little or no fines	Well-graded gravels, gravel-sand mixtures, little or no fines	GW
		Poorly-graded gravels, gravel-sand mixtures, little or no fines	GP
	GRAVELS with >15% fines	Silty gravels, poorly-graded gravel-sand-silt mixtures	GM
		Clayey gravels, poorly-graded gravel-sand-clay mixtures	GC
SANDS <50% coarse fraction passes #4 sieve	SANDS with little or no fines	Well-graded sands, gravelly sands, little or no fines	SW
		Poorly-graded sands, gravelly sands, little or no fines	SP
	SANDS with >15% fines	Silty sands, poorly-graded sand-gravel-silt mixtures	SM
		Clayey sands, poorly-graded sand-gravel-clay mixtures	SC
FINE-GRAINED SOILS (USCS - ASTM D2488) >50% passes #200 sieve	SILTS AND CLAYS liquid limit <50	Inorganic silts/very-fine sands, silty or clayey fine sands, silts with slight plasticity	ML
		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	CL
		Organic silts and clays of low plasticity	OL
	SILTS AND CLAYS liquid limit >50	Inorganic silts, micaceous or diatomaceous fine sand or silt	MH
		Inorganic clays of high plasticity, fat clays	CH
		Organic silts and clays of medium to high plasticity	OH
	HIGHLY ORGANIC SOILS	Peat, humus, swamp soils with high organic content	PT

CONSISTENCY (Silts and Clays)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very soft	0-2	0-2	0-2
soft	2-4	2-4	2-4
medium stiff	4-8	4-8	4-8
stiff	8-15	9-17	9-18
very stiff	15-30	17-39	18-42
hard	30-60	39-78	42-85
very hard	>60	>78	>85

DENSITY (Sands and Gravels)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very loose	0-4	0-5	0-7
loose	4-10	5-12	7-18
medium dense	10-30	12-37	18-51
dense	30-50	37-60	51-86
very dense	>50	>60	>86

* = 140 pound hammer dropped 30 inches

GRAIN SIZE

Term	Size (mm)	Size (inches)
Boulders	>300	>12
Cobbles	75 to 300	3 to 12
Coarse gravel	19 to 75	3/4 to 3
Fine gravel	4.75 to 19	3/16 to 3/4
Coarse sand	2.0 to 4.75	1/16 to 3/16
Medium sand	0.425 to 2.0	1/64 to 1/16
Fine sand	0.075 to 0.425	0.003 to 1/64
Silt / clay (fines)	<0.075	<0.003

SOIL TYPE MODIFIERS

Percentages of gravel, sand, and fines may be stated in terms indicating a range of percentages as below.

Term	%
Trace	<5
Few	5-10
Little	15-25
Some	30-45
Mostly	50-100

Note: Well-graded = poorly sorted; Poorly-graded = well sorted

PLASTICITY: Nonplastic, Low, Medium, High

MOISTURE

Term	Field Test
Dry	Absence of moisture, dry to touch
Moist	Damp, does not wet palm
Wet	Visible Free Water

CEMENTATION

Term	Field Test
Weak	Crumbles or breaks with handling or slight finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

Depth to first water (time and date)

Depth to water after drilling (time and date)

SAA = same as above

MWH	Client: GEIUNL Project Number:	SOIL BORING LOG FORM	BOREHOLE No.: BL6 Sheet 6 of 13

Drilling Company: SEE INFORMATION ON	Drilling Rig:	Bit Type:	Start Date:
Drillers (day / night): FIRST PAGE OF	Drilling Method:	Logged by:	Finish Date:
Field Representitive (day / night): LOGI	Core Diameter:		Total Depth:

Depth	Sample Number	Blow Count	Recovery (in.)	τ (tsf)	Lithology / Symbol	Description	Graphic	Remarks	Well Details
50						No Recovery			
51									
52					SP	Poorly-graded SAND (SP), light yellowish brown (10YR 6/4), very loose, dry			
53	BL6-52.2-53.6 (GS) 14-Nov-2016				CL-SC	Sandy CLAY (CL) to clayey SAND (SC) loose, very thinly bedded w/ black organic material			
54					SP	Poorly graded SAND (SP), SAA			
55					CL	Sandy CLAY (CL) to clayey SAND (SC), SAA, laminated			
						No recovery			
56									
57					SM	Silty SAND (SM), yellowish brown (10YR 5/4), loose, slightly moist to moist, fine-grained sand			
					CL-SC	Sandy CLAY (CL) to clayey SAND (SC), SAA, no bedding or lamination.			
58	BL6-57.2-59.4 (GS) 14-Nov-2016								
59					SP	Poorly graded SAND (SP), (10YR 5/4), loose, dry to moist, trace fine gravel & coarse sand			
					CL-SC	CL-SC, SAA (57.2')			
60									

COARSE-GRAINED SOILS (>50% retained on #200 sieve)	GRAVELS <50% coarse fraction passes #4 sieve	GRAVELS with little or no fines	Well-graded gravels, gravel-sand mixtures, little or no fines	GW
			Poorly-graded gravels, gravel-sand mixtures, little or no fines	GP
		GRAVELS with >15% fines	Silty gravels, poorly-graded gravel-sand-silt mixtures	GM
			Clayey gravels, poorly-graded gravel-sand-clay mixtures	GC
	SANDS <50% coarse fraction passes #4 sieve	SANDS with little or no fines	Well-graded sands, gravelly sands, little or no fines	SW
			Poorly-graded sands, gravelly sands, little or no fines	SP
		SANDS with >15% fines	Silty sands, poorly-graded sand-gravel-silt mixtures	SM
			Clayey sands, poorly-graded sand-gravel-clay mixtures	SC
FINE-GRAINED SOILS (>50% passes #200 sieve)	SILTS AND CLAYS liquid limit <50		Inorganic silts/very-fine sands, silty or clayey fine sands, silts with slight plasticity	ML
			Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	CL
			Organic silts and clays of low plasticity	OL
	SILTS AND CLAYS liquid limit >50		Inorganic silts, micaceous or diatomaceous fine sand or silt	MH
			Inorganic clays of high plasticity, fat clays	CH
			Organic silts and clays of medium to high plasticity	OH
HIGHLY ORGANIC SOILS			Peat, humus, swamp soils with high organic content	PT

CONSISTENCY (Silts and Clays)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very soft	0-2	0-2	0-2
soft	2-4	2-4	2-4
medium stiff	4-8	4-8	4-8
stiff	8-15	9-17	9-18
very stiff	15-30	17-39	18-42
hard	30-60	39-78	42-85
very hard	>60	>78	>85

DENSITY (Sands and Gravels)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very loose	0-4	0-5	0-7
loose	4-10	5-12	7-18
medium dense	10-30	12-37	18-51
dense	30-50	37-60	51-86
very dense	>50	>60	>86

* = 140 pound hammer dropped 30 inches

GRAIN SIZE

Term	Size (mm)	Size (inches)
Boulders	>300	>12
Cobbles	75 to 300	3 to 12
Coarse gravel	19 to 75	3/4 to 3
Fine gravel	4.75 to 19	3/16 to 3/4
Coarse sand	2.0 to 4.75	1/16 to 3/16
Medium sand	0.425 to 2.0	1/64 to 1/16
Fine sand	0.075 to 0.425	0.003 to 1/64
Silt / clay (fines)	<0.075	<0.003

SOIL TYPE MODIFIERS

Percentages of gravel, sand, and fines may be stated in terms indicating a range of percentages as below:

Term	%
Trace	<5
Few	5-10
Little	15-25
Some	30-45
Mostly	50-100

Note:
Well-graded = poorly sorted
Poorly-graded = well sorted

PLASTICITY: Nonplastic, Low, Medium, High

MOISTURE

Term	Field Test
Dry	Absence of moisture, dry to touch
Moist	Damp, does not wet palm
Wet	Visible Free Water

CEMENTATION

Term	Field Test
Weak	Crumbles or breaks with handling or slight finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

▽ Depth to first water (time and date)

▼ Depth to water after drilling (time and date)

SAA = same as above

MWH

Client: GE/UNC

Project Number:

SOIL BORING LOG FORM

BOREHOLE No.: B6

Sheet 7 of 13

Drilling Company: SEE INFORMATION ON	Drilling Rig:	Bit Type:	Start Date:
Drillers (day / night): FIRST PAGE OF	Drilling Method:	Logged by:	Finish Date:
Field Representitive (day / night): LOG	Core Diameter:		Total Depth:

Depth	Sample Number	Blow Count	Recovery (in.)	q_u (tsf)	Lithology / Symbol	Description	Graphic	Remarks	Well Details
60		7			SP-SM	Poorly graded SAND with silt (SP-SM), yellowish brown (10YR 5/4), loose, dry to moist,			
	B6-60.5-61.0 (SS0) 14-Nov-2016	14							
61		14			GW	Well graded GRAVEL with sand (GW), yellowish brown (10YR 5/4) loose, dry, fine to coarse gravel (50%), fine grained sand, coarse sand			
					SP-SM	grades to SP-SM, SAA			
62					SP-SM	Poorly graded sand with silt and gravel (SP-SM), dark yellowish brown (10YR 4/4), loose, dry to moist, coarse gravel (10-20%)			
63					SP	Poorly graded SAND (SP), brown (10YR 5/3), loose, dry to moist, fine-grained sand			
					SC	Sandy CLAY (SC), dark yellowish brown (10YR 4/4), soft, dry to moist			
					SP	Poorly graded SAND (SP) with gravel, yellowish brown (10YR 5/4), loose		dry to moist, fine gravel (15%)	
64					CL	CLAY (CL), trace black organic matter (5%)			
					SP-SM	Poorly graded SAND with silt (SP-SM), SAA (60)			
65						No recovery		water at 65 ft bgs	
66						cobble			
67					GC	Clayey GRAVEL with sand (GC), dark yellowish brown (10YR 4/4), stiff, dense, moist, angular to sub-angular gravel, predominantly coarse gravel, fine grained sand, medium plasticity,		Cobble and gravels are likely sandstone, well indurated	
					CL	grades to Gravelly lean CLAY with sand (CL), fine gravel, trace coarse gravel, trace black organics, fine-grained sand, gravel is sub-angular to sub-rounded			
68									
					SP	Poorly graded sand (SP), yellowish brown (10YR 5/6), loose, moist, clay (5-10%), coarse sand to fine gravel (5-10%), possible weathered bedrock			
69									
70									

COARSE-GRAINED SOILS (>50% passes #200 sieve)	GRAVELS ~50% coarse fraction passes #4 sieve	GRAVELS with little or no fines	Well-graded gravels, gravel-sand mixtures, little or no fines	GW
			Poorly-graded gravels, gravel-sand mixtures, little or no fines	GP
		GRAVELS with >15% fines	Silty gravels, poorly-graded gravel-sand-silt mixtures	GM
			Clayey gravels, poorly-graded gravel-sand-clay mixtures	GC
	SANDS <50% coarse fraction passes #4 sieve	SANDS with little or no fines	Well-graded sands, gravelly sands, little or no fines	SW
			Poorly-graded sands, gravelly sands, little or no fines	SP
		SANDS with >15% fines	Silty sands, poorly-graded sand-gravel-silt mixtures	SM
			Clayey sands, poorly-graded sand-gravel-clay mixtures	SC
FINE-GRAINED SOILS (>50% passes #200 sieve)	SILTS AND CLAYS liquid limit <50		Inorganic silts/very-fine sands, silty or clayey fine sands, silts with slight plasticity	ML
			Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	CL
			Organic silts and clays of low plasticity	OL
	SILTS AND CLAYS liquid limit >50		Inorganic silts, micaceous or diatomaceous fine sand or silt	MH
			Inorganic clays of high plasticity, fat clays	CH
			Organic silts and clays of medium to high plasticity	OH
HIGHLY ORGANIC SOILS			Peat, humus, swamp soils with high organic content	PT

CONSISTENCY (Silts and Clays)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very soft	0-2	0-2	0-2
soft	2-4	2-4	2-4
medium stiff	4-8	4-8	4-8
stiff	8-15	9-17	9-18
very stiff	15-30	17-39	18-42
hard	30-60	39-78	42-85
very hard	>60	>78	>85

DENSITY (Sands and Gravels)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very loose	0-4	0-5	0-7
loose	4-10	5-12	7-18
medium dense	10-30	12-37	18-51
dense	30-50	37-60	51-86
very dense	>50	>60	>86

* = 140 pound hammer dropped 30 inches

GRAIN SIZE

Term	Size (mm)	Size (inches)
Boulders	>300	>12
Cobbles	75 to 300	3 to 12
Coarse gravel	19 to 75	3/4 to 3
Fine gravel	4.75 to 19	3/16 to 3/4
Coarse sand	2.0 to 4.75	1/16 to 3/16
Medium sand	0.425 to 2.0	1/64 to 1/16
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Silt / clay (fines)	<0.075	<0.003

SOIL TYPE MODIFIERS

Percentages of gravel, sand, and fines may be stated in terms indicating a range of percentages as below:

Term	%
Trace	<5
Few	5-10
Little	15-25
Some	30-45
Mostly	50-100

Note: Well-graded = poorly sorted; Poorly-graded = well sorted

PLASTICITY: Nonplastic, Low, Medium, High

MOISTURE

Term	Field Test
Dry	Absence of moisture, dry to touch
Moist	Damp, does not wet palm
Wet	Visible Free Water

CEMENTATION

Term	Field Test
Weak	Crumbles or breaks with handling or slight finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

Depth to first water (time and date)

Depth to water after drilling (time and date)

SAA = same as above

MWH	Client: GE/UNC Project Number:	**SOIL BORING LOG FORM**	BOREHOLE No.: BL6 Sheet 8 of 13

Drilling Company: SEE INFORMATION ON	Drilling Rig:	Bit Type:	Start Date:
Drillers (day / night): FIRST PAGE OF	Drilling Method:	Logged by:	Finish Date:
Field Representitive (day / night): LOGI	Core Diameter:		Total Depth:

Depth	Sample Number	Blow Count	Recovery (in.)	q_u (tsf)	Lithology / Symbol	Description	Graphic	Remarks	Well Details
70						No recovery			
71									
72	BG-72.0-73.6 (GS) 14-Nov-2016				SC	Clayey SAND (SC), dark yellowish brown (10YR 4/4), loose, moist to wet, trace fine gravel to coarse sand (sandstone clasts, weak induration),			
73									
74					SM	Silty SAND (SM), yellowish brown (10YR 5/4), loose, moist to wet, fine-grained sand			
					CL	grades to silty CLAY (CL), trace fine-grained sand, medium plasticity			
75						No recovery			
76									
77					CL	Silty CLAY (CL), SAA, dark yellowish brown (10YR 4/4), very thinly bedded to laminated, trace black organics, FE staining.			
78					SM	Silty SAND (SM), SAA, dark yellowish brown (10YR 4/4), wet			
79					CL	grades to silty CLAY (CL), SAA			
80									

COARSE-GRAINED SOILS (>50% > #200 sieve)	GRAVELS <50% coarse fraction passes #4 sieve	GRAVELS with little or no fines	Well-graded gravels, gravel-sand mixtures, little or no fines — GW
			Poorly-graded gravels, gravel-sand mixtures, little or no fines — GP
		GRAVELS with >15% fines	Silty gravels, poorly-graded gravel-sand-silt mixtures — GM
			Clayey gravels, poorly-graded gravel-sand-clay mixtures — GC
	SANDS <50% coarse fraction passes #4 sieve	SANDS with little or no fines	Well-graded sands, gravelly sands, little or no fines — SW
			Poorly-graded sands, gravelly sands, little or no fines — SP
		SANDS with >15% fines	Silty sands, poorly-graded sand-gravel-silt mixtures — SM
			Clayey sands, poorly-graded sand-gravel-clay mixtures — SC
FINE-GRAINED SOILS (>50% > #200 sieve)	SILTS AND CLAYS liquid limit <50		Inorganic silts/very-fine sands, silty or clayey fine sands, silts with slight plasticity — ML
			Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays — CL
			Organic silts and clays of low plasticity — OL
	SILTS AND CLAYS liquid limit >50		Inorganic silts, micaceous or diatomaceous fine sand or silt — MH
			Inorganic clays of high plasticity, fat clays — CH
			Organic silts and clays of medium to high plasticity — OH
HIGHLY ORGANIC SOILS			Peat, humus, swamp soils with high organic content — PT

CONSISTENCY (Silts and Clays)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very soft	0-2	0-2	0-2
soft	2-4	2-4	2-4
medium stiff	4-8	4-8	4-8
stiff	8-15	9-17	9-18
very stiff	15-30	17-39	18-42
hard	30-60	39-78	42-85
very hard	>60	>78	>85

DENSITY (Sands and Gravels)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very loose	0-4	0-5	0-7
loose	4-10	5-12	7-18
medium dense	10-30	12-37	18-51
dense	30-50	37-60	51-86
very dense	>50	>60	>86

* = 140 pound hammer dropped 30 inches

GRAIN SIZE

Term	Size (mm)	Size (inches)
Boulders	>300	>12
Cobbles	75 to 300	3 to 12
Coarse gravel	19 to 75	3/4 to 3
Fine gravel	4.75 to 19	3/16 to 3/4
Coarse sand	2.0 to 4.75	1/16 to 3/16
Medium sand	0.425 to 2.0	1/64 to 1/16
Fine sand	0.075 to 0.425	0.003 to 1/64
Silt / clay (fines)	<0.075	<0.003

SOIL TYPE MODIFIERS

Percentages of gravel, sand, and fines may be stated in terms indicating a range of percentages as below:

Term	%
Trace	<5
Few	5-10
Little	15-25
Some	30-45
Mostly	50-100

Note: Well-graded = poorly sorted; Poorly-graded = well sorted

PLASTICITY: Nonplastic, Low, Medium, High

MOISTURE

Term	Field Test
Dry	Absence of moisture, dry to touch
Moist	Damp, does not wet palm
Wet	Visible Free Water

CEMENTATION

Term	Field Test
Weak	Crumbles or breaks with handling or slight finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

Depth to first water (time and date)

Depth to water after drilling (time and date)

SAA = same as above

MWH

Client: GE/UNC

Project Number:

SOIL BORING LOG FORM

BOREHOLE No.: B6

Sheet 9 of 13

Drilling Company: SEE INFORMATION ON	Drilling Rig:	Bit Type:	Start Date:
Drillers (day / night): FIRST PAGE OF	Drilling Method:	Logged by:	Finish Date:
Field Representitive (day / night): LOG	Core Diameter:		Total Depth:

Depth	Sample Number	Blow Count	Recovery (in.)	q_u (tsf)	Lithology / Symbol	Description	Graphic	Remarks	Well Details
80		8			CL	grades to silty CLAY with sand (CL), SAA with fine-grained sand (10-20%), medium plasticity grades to silty CLAY (CL), SAA		end day 11/14/16 @ 1040; 81.5' bgs	
	B6-80.5-81.0 (SS0) 14-Nov-2016	7							
81		9		1.5		grades to silty CLAY with sand (CL), SAA grades to silty CLAY (CL), SAA		Begin 11/15/16 @ 0820	
82						No recovery			
					ML	Sandy SILT (ML), brown (10YR 4/3), soft, wet, fine-grained sand (30%)			
83					SM	Silty SAND (SM), SAA @ 73.6', wet			
84					SM	grades to silty SAND (sm) with decreasing silt			
					CL	Silty CLAY (CL), SAA @ 74.9'			
85					SM	Silty sand (sm), SAA 83.8', very wet			
86									
87									
					SM	grades to silty SAND with clay (sm), SAA, clay (10-20%)			
88									
89					CL	Silty CLAY (CL), SAA, laminated			
90									

COARSE-GRAINED SOILS (50% or more passes #200 sieve)	GRAVELS <50% coarse fraction passes #4 sieve	GRAVELS with little or no fines	Well-graded* gravels, gravel-sand mixtures, little or no fines	GW
			Poorly-graded* gravels, gravel-sand mixtures, little or no fines	GP
		GRAVELS with >15% fines	Silty gravels, poorly-graded* gravel-sand-silt mixtures	GM
			Clayey gravels, poorly-graded* gravel-sand-clay mixtures	GC
	SANDS <50% coarse fraction passes #4 sieve	SANDS with little or no fines	Well-graded* sands, gravelly sands, little or no fines	SW
			Poorly-graded* sands, gravelly sands, little or no fines	SP
		SANDS with >15% fines	Silty sands, poorly-graded* sand-gravel-silt mixtures	SM
			Clayey sands, poorly-graded* sand-gravel-clay mixtures	SC
FINE-GRAINED SOILS (50% or more passes #200 sieve)	SILTS AND CLAYS liquid limit <50		Inorganic silts/very-fine sands, silty or clayey fine sands, silts with slight plasticity	ML
			Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	CL
			Organic silts and clays of low plasticity	OL
	SILTS AND CLAYS liquid limit >50		Inorganic silts, micaceous or diatomaceous fine sand or silt	MH
			Inorganic clays of high plasticity, fat clays	CH
			Organic silts and clays of medium to high plasticity	OH
	HIGHLY ORGANIC SOILS		Peat, humus, swamp soils with high organic content	PT

CONSISTENCY (Silts and Clays)

Term	(SPT) 1.4"ID	Blows/ft* 2.0"ID	(modCAL) 2.5"ID
very soft	0-2	0-2	0-2
soft	2-4	2-4	2-4
medium stiff	4-8	4-8	4-8
stiff	8-15	9-17	9-18
very stiff	15-30	17-39	18-42
hard	30-60	39-78	42-85
very hard	>60	>78	>85

DENSITY (Sands and Gravels)

Term	(SPT) 1.4"ID	Blows/ft* 2.0"ID	(modCAL) 2.5"ID
very loose	0-4	0-5	0-7
loose	4-10	5-12	7-18
medium dense	10-30	12-37	18-51
dense	30-50	37-60	51-86
very dense	>50	>60	>86

* = 140 pound hammer dropped 30 inches

GRAIN SIZE

Term	Size (mm)	Size (inches)
Boulders	>300	>12
Cobbles	75 to 300	3 to 12
Coarse gravel	19 to 75	3/4 to 3
Fine gravel	4.75 to 19	3/16 to 3/4
Coarse sand	2.0 to 4.75	1/16 to 3/16
Medium sand	0.425 to 2.0	1/64 to 1/16
Fine sand	0.075 to 0.425	0.003 to 1/64
Silt / clay (fines)	<0.075	<0.003

SOIL TYPE MODIFIERS

Percentages of gravel, sand, and fines may be stated in terms indicating a range of percentages as below:

Term	%
Trace	<5
Few	5-10
Little	15-25
Some	30-45
Mostly	50-100

Note: Well-graded = poorly sorted; Poorly-graded = well sorted

PLASTICITY: Nonplastic, Low, Medium, High

MOISTURE

Term	Field Test
Dry	Absence of moisture, dry to touch
Moist	Damp, does not wet palm
Wet	Visible Free Water

CEMENTATION

Term	Field Test
Weak	Crumbles or breaks with handling or slight finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

Depth to first water (time and date)

Depth to water after drilling (time and date)

SAA = same as above

MWH	Client: GE/UNC Project Number:	SOIL BORING LOG FORM	BOREHOLE No.: B6 Sheet 10 of 13

Drilling Company: SEE INFORMATION on	Drilling Rig:	Bit Type:	Start Date:
Drillers (day / night): FIRST PAGE OF	Drilling Method:	Logged by:	Finish Date:
Field Representitive (day / night): LOM	Core Diameter:		Total Depth:

Depth	Sample Number	Blow Count	Recovery (in.)	q_u (tsf)	Lithology / Symbol	Description	Graphic	Remarks	Well Details
90						No recovery			
91					ML	clayey SILT (ML), brown (10YR 4/3), very soft, very wet, clay (20-30%), medium plasticity			
92					CL	Silty CLAY with sand (CL), SAA, increase in Fe oxidation and organic material, non-laminated, fine-grained sand (10%)			
93									
94					CL	SAA, increasing sand (20-30%), organic content (10%), low plasticity			
95					SM	Silty SAND (SM), dark yellowish brown (10YR 4/4), very loose, wet, fine-grained sand, black organics (5-10%)			
96									
97									
98									
99									
100					CL	Silty CLAY (CL), SAA @ 76.9', laminated to very thinly bedded, fine-grained sand (5-10%)			

COARSE-GRAINED SOILS (>50% > #200 sieve)	GRAVELS <50% coarse fraction passes #4 sieve	GRAVELS with little or no fines	Well-graded gravels, gravel-sand mixtures, little or no fines	GW
			Poorly-graded gravels, gravel-sand mixtures, little or no fines	GP
		GRAVELS with >15% fines	Silty gravels, poorly-graded gravel-sand-silt mixtures	GM
			Clayey gravels, poorly-graded gravel-sand-clay mixtures	GC
	SANDS <50% coarse fraction passes #4 sieve	SANDS with little or no fines	Well-graded sands, gravelly sands, little or no fines	SW
			Poorly-graded sands, gravelly sands, little or no fines	SP
		SANDS with >15% fines	Silty sands, poorly-graded sand-gravel-silt mixtures	SM
			Clayey sands, poorly-graded sand-gravel-clay mixtures	SC
FINE-GRAINED SOILS (>50% < #200 sieve)	SILTS AND CLAYS liquid limit <50		Inorganic silts/very-fine sands, silty or clayey fine sands, silts with slight plasticity	ML
			Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	CL
			Organic silts and clays of low plasticity	OL
	SILTS AND CLAYS liquid limit >50		Inorganic silts, micaceous or diatomaceous fine sand or silt	MH
			Inorganic clays of high plasticity, fat clays	CH
			Organic silts and clays of medium to high plasticity	OH
	HIGHLY ORGANIC SOILS		Peat, humus, swamp soils with high organic content	PT

CONSISTENCY (Silts and Clays)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very soft	0-2	0-2	0-2
soft	2-4	2-4	2-4
medium stiff	4-8	4-8	4-8
stiff	8-15	9-17	9-18
very stiff	15-30	17-39	18-42
hard	30-60	39-78	42-85
very hard	>60	>78	>85

DENSITY (Sands and Gravels)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very loose	0-4	0-5	0-7
loose	4-10	5-12	7-18
medium dense	10-30	12-37	18-51
dense	30-50	37-60	51-86
very dense	>50	>60	>86

** = 140 pound hammer dropped 30 inches*

GRAIN SIZE

Term	Size (mm)	Size (inches)
Boulders	>300	>12
Cobbles	75 to 300	3 to 12
Coarse gravel	19 to 75	3/4 to 3
Fine gravel	4.75 to 19	3/16 to 3/4
Coarse sand	2.0 to 4.75	1/16 to 3/16
Medium sand	0.425 to 2.0	1/64 to 1/16
Fine sand	0.075 to 0.425	0.003 to 1/64
Silt / clay (fines)	<0.075	<0.003

SOIL TYPE MODIFIERS

Percentages of gravel, sand, and fines may be stated in terms indicating a range of percentages as below:

Term	%
Trace	<5
Few	5-10
Little	15-25
Some	30-45
Mostly	50-100

Note: Well-graded = poorly sorted; Poorly-graded = well sorted

PLASTICITY

Term
Nonplastic
Low
Medium
High

MOISTURE

Term	Field Test
Dry	Absence of moisture, dry to touch
Moist	Damp, does not wet palm
Wet	Visible Free Water

CEMENTATION

Term	Field Test
Weak	Crumbles or breaks with handling or slight finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

Depth to first water (time and date)

Depth to water after drilling (time and date)

SAA = same as above

MWH	Client: GE/UNC Project Number:	SOIL BORING LOG FORM	BOREHOLE No.: BU Sheet 11 of 13

Drilling Company: SEE INFORMATION ON	Drilling Rig:	Bit Type:	Start Date:
Drillers (day / night): FIRST PAGE OF	Drilling Method:	Logged by:	Finish Date:
Field Representitive (day / night): LOG	Core Diameter:		Total Depth:

Depth	Sample Number	Blow Count	Recovery (in.)	q_u (tsf)	Lithology / Symbol	Description	Graphic	Remarks	Well Details
100		5			SP	Poorly graded SAND (SP), brown (10YR 4/3), very loose, wet, fine grained sand			
	BU-100.5-101.0 (SS0) 15-Nov-2016	10							
101		20			ML	Clayey SILT (ML) with sand, brown (10YR 4/3), BW plasticity, soft			
					SM	grades to silty SAND (SM), trace organics & Fe			
102	BU-101.5-105.0 (GS) 15-Nov-2016				SP-SM	grades to poorly graded SAND with silt (SP-SM), dark yellowish brown (10YR 4/4), very loose, very wet			
103									
104									
105						No recovery		* driller notes heaving sands	
106									
107									
108						Poorly graded sand (SP), SAA, very wet			
109						grades to moist, black organic matter (10-20%)			
110									

COARSE-GRAINED SOILS (50% - retained #200 sieve)	GRAVELS <50% coarse fraction passes #4 sieve	GRAVELS with little or no fines	Well-graded gravels, gravel-sand mixtures, little or no fines	GW
			Poorly-graded gravels, gravel-sand mixtures, little or no fines	GP
		GRAVELS with >15% fines	Silty gravels, poorly-graded gravel-sand-silt mixtures	GM
			Clayey gravels, poorly-graded gravel-sand-clay mixtures	GC
	SANDS <50% coarse fraction passes #4 sieve	SANDS with little or no fines	Well-graded sands, gravelly sands, little or no fines	SW
			Poorly-graded sands, gravelly sands, little or no fines	SP
		SANDS with >15% fines	Silty sands, poorly-graded sand-gravel-silt mixtures	SM
			Clayey sands, poorly-graded sand-gravel-clay mixtures	SC
FINE-GRAINED SOILS (50% - passes #200 sieve)	SILTS AND CLAYS liquid limit <50		Inorganic silts/very-fine sands, silty or clayey fine sands, silts with slight plasticity	ML
			Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	CL
			Organic silts and clays of low plasticity	OL
	SILTS AND CLAYS liquid limit >50		Inorganic silts, micaceous or diatomaceous fine sand or silt	MH
			Inorganic clays of high plasticity, fat clays	CH
			Organic silts and clays of medium to high plasticity	OH
	HIGHLY ORGANIC SOILS		Peat, humus, swamp soils with high organic content	PT

CONSISTENCY (Silts and Clays)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very soft	0-2	0-2	0-2
soft	2-4	2-4	2-4
medium stiff	4-8	4-8	4-8
stiff	8-15	9-17	9-18
very stiff	15-30	17-39	18-42
hard	30-60	39-78	42-85
very hard	>60	>78	>85

DENSITY (Sands and Gravels)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very loose	0-4	0-5	0-7
loose	4-10	5-12	7-18
medium dense	10-30	12-37	18-51
dense	30-50	37-60	51-86
very dense	>50	>60	>86

* = 140 pound hammer dropped 30 inches

GRAIN SIZE

Term	Size (mm)	Size (inches)
Boulders	>300	>12
Cobbles	75 to 300	3 to 12
Coarse gravel	19 to 75	3/4 to 3
Fine gravel	4.75 to 19	3/16 to 3/4
Coarse sand	2.0 to 4.75	1/16 to 3/16
Medium sand	0.425 to 2.0	1/64 to 1/16
Fine sand	0.075 to 0.425	0.003 to 1/64
Silt / clay (fines)	<0.075	<0.003

SOIL TYPE MODIFIERS

Percentages of gravel, sand, and fines may be stated in terms indicating a range of percentages as below:

Term	%
Trace	<5
Few	5-10
Little	15-25
Some	30-45
Mostly	50-100

Note: Well-graded = poorly sorted; Poorly-graded = well sorted

PLASTICITY: Nonplastic, Low, Medium, High

MOISTURE

Term	Field Test
Dry	Absence of moisture, dry to touch
Moist	Damp, does not wet palm
Wet	Visible Free Water

CEMENTATION

Term	Field Test
Weak	Crumbles or breaks with handling or slight finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

▽ Depth to first water (time and date)

▼ Depth to water after drilling (time and date)

SAA = same as above

MWH	Client: GE/UNC Project Number:	SOIL BORING LOG FORM	BOREHOLE No.: BU Sheet 12 of 13

Drilling Company: SEE INFORMATION ON	Drilling Rig:	Bit Type:	Start Date:
Drillers (day / night): FIRST PAGE OF	Drilling Method:	Logged by:	Finish Date:
Field Representitive (day / night): LOG	Core Diameter:		Total Depth:

Depth	Sample Number	Blow Count	Recovery (in.)	q_u (tsf)	Lithology / Symbol	Description	Graphic	Remarks	Well Details
110						No recovery			
111									
112					CL	Silty CLAY (CL), SAA @ 716.9', laminated to very thinly bedded, silty lenses ~1cm thick			
113					SP-SM	Poorly graded sand with silt (SP-SM), brown (10YR 4/3), loose, wet, trace clay			
					SP	Poorly graded sand (SP), brown (10YR 4/3), loose, wet, trace silt			
114									
115						No recovery			
116									
117									
					CL	CLAY (CL) with silt, dark grayish brown (10YR 4/2), soft, moist, trace sand, med plasticity			
118					SM	Silty SAND (SM), brown (10YR 4/3), very loose, wet, fine-grained sand			
					SM	Silty SAND with clay (SM), brown (10YR 4/4), medium dense, dry to moist, clay (10%), very thinly bedded to laminated w/ black organic mat'l and fe oxidation, nonplastic			
119									
120									

COARSE-GRAINED SOILS (>50% retained on #200 sieve)	GRAVELS <50% coarse fraction passes #4 sieve	GRAVELS with little or no fines	Well-graded gravels, gravel-sand mixtures, little or no fines	GW
			Poorly-graded gravels, gravel-sand mixtures, little or no fines	GP
		GRAVELS with >15% fines	Silty gravels, poorly-graded gravel-sand-silt mixtures	GM
			Clayey gravels, poorly-graded gravel-sand-clay mixtures	GC
	SANDS <50% coarse fraction passes #4 sieve	SANDS with little or no fines	Well-graded sands, gravelly sands, little or no fines	SW
			Poorly-graded sands, gravelly sands, little or no fines	SP
		SANDS with >15% fines	Silty sands, poorly-graded sand-gravel-silt mixtures	SM
			Clayey sands, poorly-graded sand-gravel-clay mixtures	SC
FINE-GRAINED SOILS (>50% passes #200 sieve)	SILTS AND CLAYS liquid limit <50		Inorganic silts/very fine sands, silty or clayey fine sands, silts with slight plasticity	ML
			Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	CL
			Organic silts and clays of low plasticity	OL
	SILTS AND CLAYS liquid limit >50		Inorganic silts, micaceous or diatomaceous fine sand or silt	MH
			Inorganic clays of high plasticity, fat clays	CH
			Organic silts and clays of medium to high plasticity	OH
HIGHLY ORGANIC SOILS			Peat, humus, swamp soils with high organic content	PT

CONSISTENCY (Silts and Clays)

Term	(SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very soft	0-2	0-2	0-2
soft	2-4	2-4	2-4
medium stiff	4-8	4-8	4-8
stiff	8-15	9-17	9-18
very stiff	15-30	17-39	18-42
hard	30-60	39-78	42-85
very hard	>60	>78	>85

DENSITY (Sands and Gravels)

Term	(SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very loose	0-4	0-5	0-7
loose	4-10	5-12	7-18
medium dense	10-30	12-37	18-51
dense	30-50	37-60	51-86
very dense	>50	>60	>86

Blows/ft*

* = 140 pound hammer dropped 30 inches

GRAIN SIZE

Term	Size (mm)	Size (inches)
Boulders	>300	>12
Cobbles	75 to 300	3 to 12
Coarse gravel	19 to 75	3/4 to 3
Fine gravel	4.75 to 19	3/16 to 3/4
Coarse sand	2.0 to 4.75	1/16 to 3/16
Medium sand	0.425 to 2.0	1/64 to 1/16
Fine sand	0.075 to 0.425	0.003 to 1/64
Silt / clay (fines)	<0.075	<0.003

SOIL TYPE MODIFIERS

Percentages of gravel, sand, and fines may be stated in terms indicating a range of percentages as below:

Term	%
Trace	<5
Few	5-10
Little	15-25
Some	30-45
Mostly	50-100

PLASTICITY

Note: Well-graded = poorly sorted; Poorly-graded = well sorted

Nonplastic	
Low	
Medium	
High	

MOISTURE

Term	Field Test
Dry	Absence of moisture, dry to touch
Moist	Damp, does not wet palm
Wet	Visible Free Water

CEMENTATION

Term	Field Test
Weak	Crumbles or breaks with handling or slight finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

▽ Depth to first water (time and date)

▼ Depth to water after drilling (time and date)

SAA - same as above

MWH

Client: GE/UNC

Project Number:

SOIL BORING LOG FORM

BOREHOLE No.: B6

Sheet 13 of 13

Drilling Company: SEE INFORMATION ON	Drilling Rig:	Bit Type:	Start Date:
Drillers (day / night): FIRST PAGE OF	Drilling Method:	Logged by:	Finish Date:
Field Representitive (day / night): LOG	Core Diameter:		Total Depth:

Depth	Sample Number	Blow Count	Recovery (in.)	q_u (tsf)	Lithology / Symbol	Description	Graphic	Remarks	Well Details
120						No recovery			
121									
122									
123					SM	Silty SAND (SM), brown (10YR 4/3), very loose, moist to wet, v. thinly bedded to laminated w/ organics and Fe			
					ML	Sandy SILT (ML), brown (10YR 4/3), very soft, wet, v. thinly bedded to laminated w/ black organic & Fe			
					SM	Silty SAND (SM), SAA			
124									
125		15			SP	Poorly graded SAND (SP), brown (10YR 4/3), loose, moist to wet, trace fine gravel			
		44			SW	grades to well graded SAND with gravel (SW), dark yellowish brown (10YR 4/4), loose, moist, fine to coarse gravel (40-50%)			
		50/2			GW	grades to well graded GRAVEL with sand (GW), SAA, increasing gravel, angular to sub-angular gravel pieces		TD @ 126.5 end at 1130	
						TOTAL DEPTH = 126.5 feet bgs			

COARSE-GRAINED SOILS (50% passes #200 sieve)	GRAVELS <50% coarse fraction passes #4 sieve	GRAVELS with little or no fines	Well-graded gravels, gravel-sand mixtures, little or no fines — GW
			Poorly-graded gravels, gravel-sand mixtures, little or no fines — GP
		GRAVELS with >15% fines	Silty gravels, poorly-graded gravel-sand-silt mixtures — GM
			Clayey gravels, poorly-graded gravel-sand-clay mixtures — GC
	SANDS <50% coarse fraction passes #4 sieve	SANDS with little or no fines	Well-graded sands, gravelly sands, little or no fines — SW
			Poorly-graded sands, gravelly sands, little or no fines — SP
		SANDS with >15% fines	Silty sands, poorly-graded sand-gravel-silt mixtures — SM
			Clayey sands, poorly-graded sand-gravel-clay mixtures — SC
FINE-GRAINED SOILS (50% passes #200 sieve)	SILTS AND CLAYS liquid limit <50		Inorganic silts/very-fine sands, silty or clayey fine sands, silts with slight plasticity — ML
			Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays — CL
			Organic silts and clays of low plasticity — OL
	SILTS AND CLAYS liquid limit >50		Inorganic silts, micaceous or diatomaceous fine sand or silt — MH
			Inorganic clays of high plasticity, fat clays — CH
			Organic silts and clays of medium to high plasticity — OH
HIGHLY ORGANIC SOILS			Peat, humus, swamp soils with high organic content — PT

CONSISTENCY (Silts and Clays)

Term	(SPT) 1.4"ID	Blows/ft* 2.0"ID	(modCAL) 2.5"ID
very soft	0-2	0-2	0-2
soft	2-4	2-4	2-4
medium stiff	4-8	4-8	4-8
stiff	8-15	9-17	9-18
very stiff	15-30	17-39	18-42
hard	30-60	39-78	42-85
very hard	>60	>78	>85

DENSITY (Sands and Gravels)

Term	(SPT) 1.4"ID	Blows/ft* 2.0"ID	(modCAL) 2.5"ID
very loose	0-4	0-5	0-7
loose	4-10	5-12	7-18
medium dense	10-30	12-37	18-51
dense	30-50	37-60	51-86
very dense	>50	>60	>86

* = 140 pound hammer dropped 30 inches

GRAIN SIZE

Term	Size (mm)	Size (inches)
Boulders	>300	>12
Cobbles	75 to 300	3 to 12
Coarse gravel	19 to 75	3/4 to 3
Fine gravel	4.75 to 19	3/16 to 3/4
Coarse sand	2.0 to 4.75	1/16 to 3/16
Medium sand	0.425 to 2.0	1/64 to 1/16
Fine sand	0.075 to 0.425	0.003 to 1/64
Silt / clay (fines)	<0.075	<0.003

SOIL TYPE MODIFIERS

Percentages of gravel, sand, and fines may be stated in terms indicating a range of percentages as below:

Term	%
Trace	<5
Few	5-10
Little	15-25
Some	30-45
Mostly	50-100

Note: Well-graded = poorly sorted; Poorly-graded = well sorted

PLASTICITY: Nonplastic, Low, Medium, High

MOISTURE

Term	Field Test
Dry	Absence of moisture, dry to touch
Moist	Damp, does not wet palm
Wet	Visible Free Water

CEMENTATION

Term	Field Test
Weak	Crumbles or breaks with handling or slight finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

Depth to first water (time and date)

Depth to water after drilling (time and date)

SAA = same as above

MWH	Client: GEI UNC Project Number:	SOIL BORING LOG FORM	BOREHOLE No.: B7 Sheet 1 of 12

Drilling Company: National	Drilling Rig: CME-85	Bit Type: HSA	Start Date: 11/11/16
Drillers (day / night): M. Cain	Drilling Method: Continuous Core	Logged by: S. Downey / J. Van Pelt	Finish Date: 11/12/16
Field Representitive (day / night):	Core Diameter: 3-10CM		Total Depth: 175.0'

Depth	Sample Number	Blow Count	Recovery (in.)	qu (tsf)	Lithology / Symbol	Description	Graphic	Remarks	Well Details
0						Clayey SAND		11/11/16 - start @ 1050 hand auger ~3 ft	
1								12 S 0715645, 3947534 Location surveyed using hand held GPS (UTM NAD 83)	
2									
3					SC	clayey sand (SC), light yellowish brown (10YR 6/4) loose, dry, predominantly fine-grained sand, moderately cemented, low to medium plasticity			
4									
5	B7-TW-5.0-6.5 (TW) 11-Nov-2016								
6									
7	2" ID Modcal	19	6		ML	sandy silt (ML), brown (10YR 5/3), low plasticity, moderately cemented, thinly bedded to laminated, trace caliche, trace organic black material			
	B7-7.0-7.5 (SSO) 11-Nov-2016	37	6						
		23	6		SM	sandy SILT, pale brown (10YR 6/3), low to moderately cemented, clay (10%)			
8	B7-8.0-10.0 (GS) 11-Nov-2016				ML	Sandy SILT (ML), light yellowish brown (10YR 6/4) clay (20-30%), low plasticity, moderately cemented, trace fine gravel to coarse sand, angular, fine-grained sandstone			
9									
10									

COARSE-GRAINED SOILS >50% passes #200 sieve	GRAVELS <50% coarse fraction passes #4 sieve	GRAVELS with little or no fines	Well-graded[a] gravels, gravel-sand mixtures, little or no fines — GW
			Poorly-graded[a] gravels, gravel-sand mixtures, little or no fines — GP
		GRAVELS with >15% fines	Silty gravels, poorly-graded[a] gravel-sand-silt mixtures — GM
			Clayey gravels, poorly-graded[a] gravel-sand-clay mixtures — GC
	SANDS <50% coarse fraction passes #4 sieve	SANDS with little or no fines	Well-graded[a] sands, gravelly sands, little or no fines — SW
			Poorly-graded[a] sands, gravelly sands, little or no fines — SP
		SANDS with >15% fines	Silty sands, poorly-graded[a] sand-gravel-silt mixtures — SM
			Clayey sands, poorly-graded[a] sand-gravel-clay mixtures — SC
FINE-GRAINED SOILS >50% passes #200 sieve	SILTS AND CLAYS liquid limit <50		Inorganic silts/very-fine sands, silty or clayey fine sands, silts with slight plasticity — ML
			Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays — CL
			Organic silts and clays of low plasticity — OL
	SILTS AND CLAYS liquid limit >50		Inorganic silts, micaceous or diatomaceous fine sand or silt — MH
			Inorganic clays of high plasticity, fat clays — CH
			Organic silts and clays of medium to high plasticity — OH
HIGHLY ORGANIC SOILS			Peat, humus, swamp soils with high organic content — PT

CONSISTENCY (Silts and Clays)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very soft	0-2	0-2	0-2
soft	2-4	2-4	2-4
medium stiff	4-8	4-8	4-8
stiff	8-15	9-17	9-18
very stiff	15-30	17-39	18-42
hard	30-60	39-78	42-85
very hard	>60	>78	>85

DENSITY (Sands and Gravels)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very loose	0-4	0-5	0-7
loose	4-10	5-12	7-18
medium dense	10-30	12-37	18-51
dense	30-50	37-60	51-86
very dense	>50	>60	>86

* = *140 pound hammer dropped 30 inches*

[a]Note: Well-graded = poorly sorted; Poorly-graded = well sorted

PLASTICITY: Nonplastic, Low, Medium, High

MOISTURE

Term	Field Test
Dry	Absence of moisture, dry to touch
Moist	Damp, does not wet palm
Wet	Visible Free Water

CEMENTATION

Term	Field Test
Weak	Crumbles or breaks with handling or slight finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

GRAIN SIZE

Term	Size (mm)	Size (inches)
Boulders	>300	>12
Cobbles	75 to 300	3 to 12
Coarse gravel	19 to 75	3/4 to 3
Fine gravel	4.75 to 19	3/16 to 3/4
Coarse sand	2.0 to 4.75	1/16 to 3/16
Medium sand	0.425 to 2.0	1/64 to 1/16
Fine sand	0.075 to 0.425	0.003 to 1/64
Silt / clay (fines)	<0.075	<0.003

SOIL TYPE MODIFIERS

Percentages of gravel, sand, and fines may be stated in terms indicating a range of percentages as below:

Term	%
Trace	<5
Few	5-10
Little	15-25
Some	30-45
Mostly	50-100

Depth to first water (time and date)

Depth to water after drilling (time and date)

MWH	Client: GE/UNC Project Number:	SOIL BORING LOG FORM	BOREHOLE No.: B7 Sheet 2 of 12

Drilling Company: See info on	Drilling Rig:	Bit Type:	Start Date:
Drillers (day / night): first page of	Drilling Method:	Logged by:	Finish Date:
Field Representitive (day / night): log	Core Diameter:		Total Depth:

Depth	Sample Number	Blow Count	Recovery (in.)	q_u (tsf)	Lithology / Symbol	Description	Graphic	Remarks	Well Details
10	2" 10 MOD CAL	17	6			trace organic black material, laminated to very finely bedded			
	B7-10.5-11.0 (SSO) 11-Nov-2016	31	6						
11		26	6		ML	Sandy SILT (ML), clay (5%), non plastic			
12					CL	Sandy CLAY (CL), light yellowish brown (10YR 6/4), dry, medium plasticity, weakly cemented, loose, trace fine gravel (5%), angular			
13									
17 31 26 14	B7-14.0-15.0 (GS) 11-Nov-2016					trace coarse sand, fine sand (30%), clay (25-30%), medium plasticity, weakly cemented			
15	MOD-CAL 2" 10	14	6		SC	trace caliche and black organic material, weak to moderately cemented, very pale brown (10YR 7/4), clayey sand (SC), fine-grained sands, clay (10%), low plasticity, grades to weakly cemented, non cemented			
		16	6						
16	B7-16.0-16.5 (SSO) 11-Nov-2016	11	6						
17					CL	silty clay (CL) with trace sand (5%), light yellowish brown (10YR 6/4), dry, stiff, moderately to strongly cemented, medium plasticity, trace organic material (black), small roots present, clay (30-40%)			
18						grades to moderately cemented			
19	B7-18.0-20.0 (GS) 11-Nov-2016								
20									

COARSE-GRAINED SOILS <50% passes #200 sieve	GRAVELS <50% coarse fraction passes #4 sieve	GRAVELS with little or no fines	Well-graded[3] gravels, gravel-sand mixtures, little or no fines — GW
			Poorly-graded[3] gravels, gravel-sand mixtures, little or no fines — GP
		GRAVELS with >15% fines	Silty gravels, poorly-graded[3] gravel-sand-silt mixtures — GM
			Clayey gravels, poorly-graded[3] gravel-sand-clay mixtures — GC
	SANDS <50% coarse fraction passes #4 sieve	SANDS with little or no fines	Well-graded[3] sands, gravelly sands, little or no fines — SW
			Poorly-graded[3] sands, gravelly sands, little or no fines — SP
		SANDS with >15% fines	Silty sands, poorly-graded[3] sand-gravel-silt mixtures — SM
			Clayey sands, poorly-graded[3] sand-gravel-clay mixtures — SC
FINE-GRAINED SOILS >50% passes #200 sieve	SILTS AND CLAYS liquid limit <50		Inorganic silts/very-fine sands, silty or clayey fine sands, silts with slight plasticity — ML
			Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays — CL
			Organic silts and clays of low plasticity — OL
	SILTS AND CLAYS liquid limit >50		Inorganic silts, micaceous or diatomaceous fine sand or silt — MH
			Inorganic clays of high plasticity, fat clays — CH
			Organic silts and clays of medium to high plasticity — OH
HIGHLY ORGANIC SOILS			Peat, humus, swamp soils with high organic content — PT

CONSISTENCY (Silts and Clays)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very soft	0-2	0-2	0-2
soft	2-4	2-4	2-4
medium stiff	4-8	4-8	4-8
stiff	8-15	9-17	9-18
very stiff	15-30	17-39	18-42
hard	30-60	39-78	42-85
very hard	>60	>78	>85

DENSITY (Sands and Gravels)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very loose	0-4	0-5	0-7
loose	4-10	5-12	7-18
medium dense	10-30	12-37	18-51
dense	30-50	37-60	51-86
very dense	>50	>60	>86

*= 140 pound hammer dropped 30 inches

*Note: Well-graded = poorly sorted; Poorly-graded = well sorted

PLASTICITY: Nonplastic, Low, Medium, High

MOISTURE

Term	Field Test
Dry	Absence of moisture, dry to touch
Moist	Damp, does not wet palm
Wet	Visible Free Water

CEMENTATION

Term	Field Test
Weak	Crumbles or breaks with handling or slight finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

GRAIN SIZE

Term	Size (mm)	Size (inches)
Boulders	>300	>12
Cobbles	75 to 300	3 to 12
Coarse gravel	19 to 75	3/4 to 3
Fine gravel	4.75 to 19	3/16 to 3/4
Coarse sand	2.0 to 4.75	1/16 to 3/16
Medium sand	0.425 to 2.0	1/64 to 1/16
Fine sand	0.075 to 0.425	0.003 to 1/64
Silt / clay (fines)	<0.075	<0.003

SOIL TYPE MODIFIERS

Percentages of gravel, sand, and fines may be stated in terms indicating a range of percentages as below.

Term	%
Trace	<5
Few	5-10
Little	15-25
Some	30-45
Mostly	50-100

Depth to first water (time and date)

Depth to water after drilling (time and date)

MWH	Client: GE/UNC Project Number:	SOIL BORING LOG FORM	BOREHOLE No.: B7 Sheet 3 of 12

Drilling Company: See info on first	Drilling Rig:	Bit Type:	Start Date:
Drillers (day / night): Page of Log	Drilling Method:	Logged by:	Finish Date:
Field Representitive (day / night):	Core Diameter:		Total Depth:

Depth	Sample Number	Blow Count	Recovery (in.)	q_u (tsf)	Lithology / Symbol	Description	Graphic	Remarks	Well Details
20	Mod-Cal 2.1B	9	6		ML	Sandy silt (ML), very pale brown (10YR 7/4), fine-grained sand (10%), predominantly silt, very low plasticity, dry to moist, weakly cemented			
		17	6						
21	B7-21.0-21.5 (SSO) 11-Nov-2016	18	6			brownish yellow (10YR 6/6), dry to moist, weak to moderatelly cemented			
22					CL	silty clay (CL), light yellowish brown (10YR 6/4), trace fine gravel, dry to moist, low plasticity			
23					GC	coarse gravel, angular			
	B7-23.2-25.0 (GS) 11-Nov-2016				CL	23.2 - 23 sandy clay (CL), brown (10YR 5/3), very fine-grained sand (10%), high plasticity, dry to moist, moderately indurated, weakly cemented			
24									
25					CL	sandy clay (CL), dark yellowish brown (10YR 4/4), very fine-grained sand, medium plasticity, very thinly bedded			
26									
27									
28	B7-27.5-29.2 (GS) 11-Nov-2016					sandy clay (CL), yellowish brown (10YR 5/4) and grayish brown (10 YR 5/2), strong color differentiation in some locations, roots (5%)			
29						29.2 sandy clay (CL), yellowish brown (10YR 5/4), moderate to high plasticity			
30									

COARSE-GRAINED SOILS >50% passes #200 sieve			
GRAVELS <50% coarse fraction passes #4 sieve	GRAVELS with little or no fines	Well-graded[1] gravels, gravel-sand mixtures, little or no fines	GW
		Poorly-graded[1] gravels, gravel-sand mixtures, little or no fines	GP
	GRAVELS with >15% fines	Silty gravels, poorly-graded[1] gravel-sand-silt mixtures	GM
		Clayey gravels, poorly-graded[1] gravel-sand-clay mixtures	GC
SANDS <50% coarse fraction passes #4 sieve	SANDS with little or no fines	Well-graded[1] sands, gravelly sands, little or no fines	SW
		Poorly-graded[1] sands, gravelly sands, little or no fines	SP
	SANDS with >15% fines	Silty sands, poorly-graded[1] sand-gravel-silt mixtures	SM
		Clayey sands, poorly-graded[1] sand-gravel-clay mixtures	SC
FINE-GRAINED SOILS >50% passes #200 sieve	SILTS AND CLAYS liquid limit <50	Inorganic silts/very-fine sands, silty or clayey fine sands, silts with slight plasticity	ML
		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	CL
		Organic silts and clays of low plasticity	OL
	SILTS AND CLAYS liquid limit >50	Inorganic silts, micaceous or diatomaceous fine sand or silt	MH
		Inorganic clays of high plasticity, fat clays	CH
		Organic silts and clays of medium to high plasticity	OH
HIGHLY ORGANIC SOILS		Peat, humus, swamp soils with high organic content	PT

CONSISTENCY (Silts and Clays)

Term	(SPT) 1.4"ID	Blows/ft* 2.0"ID	(modCAL) 2.5"ID
very soft	0-2	0-2	0-2
soft	2-4	2-4	2-4
medium stiff	4-8	4-8	4-8
stiff	8-15	9-17	9-18
very stiff	15-30	17-39	18-42
hard	30-60	39-78	42-85
very hard	>60	>78	>85

DENSITY (Sands and Gravels)

Term	(SPT) 1.4"ID	Blows/ft* 2.0"ID	(modCAL) 2.5"ID
very loose	0-4	0-5	0-7
loose	4-10	5-12	7-18
medium dense	10-30	12-37	18-51
dense	30-50	37-60	51-86
very dense	>50	>60	>86

* = *140 pound hammer dropped 30 inches*

GRAIN SIZE

Term	Size (mm)	Size (inches)
Boulders	>300	>12
Cobbles	75 to 300	3 to 12
Coarse gravel	19 to 75	3/4 to 3
Fine gravel	4.75 to 19	3/16 to 3/4
Coarse sand	2.0 to 4.75	1/16 to 3/16
Medium sand	0.425 to 2.0	1/64 to 1/16
Fine sand	0.075 to 0.425	0.003 to 1/64
Silt / clay (fines)	<0.075	<0.003

SOIL TYPE MODIFIERS

Percentages of gravel, sand, and fines may be stated in terms indicating a range of percentages as below.

Term	%
Trace	<5
Few	5-10
Little	15-25
Some	30-45
Mostly	50-100

[1]Note:
Well-graded = poorly sorted
Poorly-graded = well sorted

PLASTICITY

Nonplastic	
Low	
Medium	
High	

MOISTURE

Term	Field Test
Dry	Absence of moisture, dry to touch
Moist	Damp, does not wet palm
Wet	Visible Free Water

CEMENTATION

Term	Field Test
Weak	Crumbles or breaks with handling or slight finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

Depth to first water (time and date)

Depth to water after drilling (time and date)

MWH	Client: GS / UNC Project Number:	SOIL BORING LOG FORM	BOREHOLE No.: B7 Sheet 4 of 12

Drilling Company: See info on first	Drilling Rig:	Bit Type:	Start Date:
Drillers (day / night): Page of log	Drilling Method:	Logged by:	Finish Date:
Field Representitive (day / night):	Core Diameter:		Total Depth:

Depth	Sample Number	Blow Count	Recovery (in.)	q_u (tsf)	Lithology / Symbol	Description	Graphic	Remarks	Well Details
30	2" ID MODRAL	5	6	4.5	CL	lean clay (CL) with some silt, yellowish brown (10YR 5/4), trace caliche and black organic matter, medium to high plasticity, stiff, dry to moist			
	B7-30.5-31.0 (350) 11-Nov-2016	9	6	2.25					
31		13	6			grades to moist			
32						grades to brown (10YR 5/3) 32'			
33						grades to brown (10YR 4/3)			
34	B7-32.7-35.0 (GS) 11-Nov-2016								
35				3.0	CL	lean clay (CL), yellowish brown (10YR 5/4) moist			
36	B7-35.0-37.0 (GS) 11-Nov-2016								
37					CL	sandy clay (CL) with fine gravel (<5%), sandstone, medium sand, medium to high plasticity, dark yellowish brown (10YR 4/4), fine-grained sand			
38						high plasticity, very fine-grained sand			
39									
40									

COARSE-GRAINED SOILS >50% passes #200 sieve	GRAVELS <50% coarse fraction passes #4 sieve	GRAVELS with little or no fines	Well-graded[1] gravels, gravel-sand mixtures, little or no fines — GW
			Poorly-graded[1] gravels, gravel-sand mixtures, little or no fines — GP
		GRAVELS with >15% fines	Silty gravels, poorly-graded[1] gravel-sand-silt mixtures — GM
			Clayey gravels, poorly-graded[1] gravel-sand-clay mixtures — GC
	SANDS <50% coarse fraction passes #4 sieve	SANDS with little or no fines	Well-graded[1] sands, gravelly sands, little or no fines — SW
			Poorly-graded[1] sands, gravelly sands, little or no fines — SP
		SANDS with >15% fines	Silty sands, poorly-graded[1] sand-gravel-silt mixtures — SM
			Clayey sands, poorly-graded[1] sand-gravel-clay mixtures — SC
FINE-GRAINED SOILS >50% passes #200 sieve	SILTS AND CLAYS liquid limit <50		Inorganic silts/very-fine sands, silty or clayey fine sands, silts with slight plasticity — ML
			Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays — CL
			Organic silts and clays of low plasticity — OL
	SILTS AND CLAYS liquid limit >50		Inorganic silts, micaceous or diatomaceous fine sand or silt — MH
			Inorganic clays of high plasticity, fat clays — CH
			Organic silts and clays of medium to high plasticity — OH
HIGHLY ORGANIC SOILS			Peat, humus, swamp soils with high organic content — PT

CONSISTENCY (Silts and Clays)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very soft	0-2	0-2	0-2
soft	2-4	2-4	2-4
medium stiff	4-8	4-8	4-8
stiff	8-15	9-17	9-18
very stiff	15-30	17-39	18-42
hard	30-60	39-78	42-85
very hard	>60	>78	>85

DENSITY (Sands and Gravels)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
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loose	4-10	5-12	7-18
medium dense	10-30	12-37	18-51
dense	30-50	37-60	51-86
very dense	>50	>60	>86

* = 140 pound hammer dropped 30 inches

[1]Note: Well-graded = poorly sorted; Poorly-graded = well sorted

PLASTICITY: Nonplastic, Low, Medium, High

MOISTURE

Term	Field Test
Dry	Absence of moisture, dry to touch
Moist	Damp, does not wet palm
Wet	Visible Free Water

CEMENTATION

Term	Field Test
Weak	Crumbles or breaks with handling or slight finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
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GRAIN SIZE

Term	Size (mm)	Size (inches)
Boulders	>300	>12
Cobbles	75 to 300	3 to 12
Coarse gravel	19 to 75	3/4 to 3
Fine gravel	4.75 to 19	3/16 to 3/4
Coarse sand	2.0 to 4.75	1/16 to 3/16
Medium sand	0.425 to 2.0	1/64 to 1/16
Fine sand	0.075 to 0.425	0.003 to 1/64
Silt / clay (fines)	<0.075	<0.003

SOIL TYPE MODIFIERS

Percentages of gravel, sand, and fines may be stated in terms indicating a range of percentages as below.

Term	%
Trace	<5
Few	5-10
Little	15-25
Some	30-45
Mostly	50-100

Depth to first water (time and date)

Depth to water after drilling (time and date)

MWH	Client: GE/UNC Project Number:	SOIL BORING LOG FORM	BOREHOLE No.: B7 Sheet 5 of 12

Drilling Company: See info on	Drilling Rig:	Bit Type:	Start Date:
Drillers (day / night): first page of	Drilling Method:	Logged by:	Finish Date:
Field Representitive (day / night): log	Core Diameter:		Total Depth:

Depth	Sample Number	Blow Count	Recovery (in.)	q_u (tsf)	Lithology / Symbol	Description	Graphic	Remarks	Well Details
40	2" D MOD CAL	4	6		CL	Sandy clay (CL), light yellowish brown (10YR 6/4), medium to fine-grained sand, medium plasticity			
	B7-40.5-41.0 (SSO) 11-Nov-2016	6	6	1.5					
41		7	6			Sandy CLAY, brown (10YR 5/3), very fine-grained sands, high plasticity, medium stiff, moist			
42									
43	B7-TW-42.5-43.5 (TW) 11-Nov-2016								
44						Sandy CLAY (CL), predominantly medium to fine-grained sand, fine and coarse gravel (5%), gravel is sandstone w/ iron oxidation spotted on surface at 44'-44.3' very thinly bedded, trace caliche and iron oxidation (5-10%)			
					SS	44.3-45' sandstone, very thinly bedded to laminated, spotty to partially filled iron oxidation, medium to coarse-grained sand, very pale brown (10YR 8/2)			
45					CL	sandy clay (CL) with very fine-grained sand, brown (10YR 5/3), medium plasticity, trace fine gravel (sub-rounded to sub-angular)			
46									
47									
48						brown (10YR 5/3), trace caliche, no gravel, fine to medium grained sand			
49					CL	trace coarse sand (sub-rounded) 48.6-49' increase in sand content, sandy clay (CL), low to medium plasticity, fine to medium grained sand (10-20%), trace fine gravel (sub-angular) lean clay (CL), brown (10YR 5/3), very stiff, trace very fine-grained sand, medium to high plasticity			
50									

COARSE-GRAINED SOILS >50% passes #200 sieve	GRAVELS <50% coarse fraction passes #4 sieve	GRAVELS with little or no fines	Well-graded[3] gravels, gravel-sand mixtures, little or no fines — GW
			Poorly-graded[3] gravels, gravel-sand mixtures, little or no fines — GP
		GRAVELS with >15% fines	Silty gravels, poorly-graded[3] gravel-sand-silt mixtures — GM
			Clayey gravels, poorly-graded[3] gravel-sand-clay mixtures — GC
	SANDS <50% coarse fraction passes #4 sieve	SANDS with little or no fines	Well-graded[3] sands, gravelly sands, little or no fines — SW
			Poorly-graded[3] sands, gravelly sands, little or no fines — SP
		SANDS with >15% fines	Silty sands, poorly-graded[3] sand-gravel-silt mixtures — SM
			Clayey sands, poorly-graded[3] sand-gravel-clay mixtures — SC
FINE-GRAINED SOILS >50% passes #200 sieve	SILTS AND CLAYS liquid limit <50		Inorganic silts/very-fine sands, silty or clayey fine sands, silts with slight plasticity — ML
			Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays — CL
			Organic silts and clays of low plasticity — OL
	SILTS AND CLAYS liquid limit >50		Inorganic silts, micaceous or diatomaceous fine sand or silt — MH
			Inorganic clays of high plasticity, fat clays — CH
			Organic silts and clays of medium to high plasticity — OH
HIGHLY ORGANIC SOILS			Peat, humus, swamp soils with high organic content — PT

CONSISTENCY (Silts and Clays)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very soft	0-2	0-2	0-2
soft	2-4	2-4	2-4
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stiff	8-15	9-17	9-18
very stiff	15-30	17-39	18-42
hard	30-60	39-78	42-85
very hard	>60	>78	>85

DENSITY (Sands and Gravels)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very loose	0-4	0-5	0-7
loose	4-10	5-12	7-18
medium dense	10-30	12-37	18-51
dense	30-50	37-60	51-86
very dense	>50	>60	>86

* = 140 pound hammer dropped 30 inches

GRAIN SIZE

Term	Size (mm)	Size (inches)
Boulders	>300	>12
Cobbles	75 to 300	3 to 12
Coarse gravel	19 to 75	3/4 to 3
Fine gravel	4.75 to 19	3/16 to 3/4
Coarse sand	2.0 to 4.75	1/16 to 3/16
Medium sand	0.425 to 2.0	1/64 to 1/16
Fine sand	0.075 to 0.425	0.003 to 1/64
Silt / clay (fines)	<0.075	<0.003

SOIL TYPE MODIFIERS

Percentages of gravel, sand, and fines may be stated in terms indicating a range of percentages as below.

Term	%
Trace	<5
Few	5-10
Little	15-25
Some	30-45
Mostly	50-100

[3]Note:
Well-graded = poorly sorted
Poorly-graded = well sorted

PLASTICITY

Term
Nonplastic
Low
Medium
High

MOISTURE

Term	Field Test
Dry	Absence of moisture, dry to touch
Moist	Damp, does not wet palm
Wet	Visible Free Water

CEMENTATION

Term	Field Test
Weak	Crumbles or breaks with handling or slight finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

▽ Depth to first water (time and date)

▼ Depth to water after drilling (time and date)

MWH	Client: GE / UNC	SOIL BORING LOG FORM	BOREHOLE No.: B7
	Project Number:		Sheet 6 of 12

Drilling Company: See info on	Drilling Rig:	Bit Type:	Start Date:
Drillers (day / night): first page of	Drilling Method:	Logged by:	Finish Date:
Field Representitive (day / night): log	Core Diameter:		Total Depth:

Depth	Sample Number	Blow Count	Recovery (in.)	q_u (tsf)	Lithology / Symbol	Description	Graphic	Remarks	Well Details
50	2" ID Mod Sal	3	6	2.25		trace caliche and organic material			
	B7-50.5-51.0 (SS0) 11-Nov-2016	7	6	1.75					
51		11	6			yellowish brown (10YR 5/4)			
52									
53	B7-51.5-55.0 (GS) 11-Nov-2016								
54				2.25					
55									
56	B7-TW-55.0-57.0 (TW) 11-Nov-2016								
57					CL	Lean clay (CL) with sand / sandy clay, yellowish brown (10YR 5/4), medium sand (25%), coarse sand (5%)			
58									
59						sandy clay (CL), dark yellowish brown (10YR 4/4), loose, dry to moist, medium to fine-grained sand (30%) decrease in sand (~20%), brown (10YR 4/3), loose to stiff decrease in sand, lean clay (CL) with very fine-grained sand, medium plasticity, stiff to very stiff			
60									

COARSE-GRAINED SOILS >50% passes #200 sieve	GRAVELS <50% coarse fraction passes #4 sieve	GRAVELS with little or no fines	Well-graded[1] gravels, gravel-sand mixtures, little or no fines — GW
			Poorly-graded[1] gravels, gravel-sand mixtures, little or no fines — GP
		GRAVELS with >15% fines	Silty gravels, poorly-graded[1] gravel-sand-silt mixtures — GM
			Clayey gravels, poorly-graded[1] gravel-sand-clay mixtures — GC
	SANDS <50% coarse fraction passes #4 sieve	SANDS with little or no fines	Well-graded[1] sands, gravelly sands, little or no fines — SW
			Poorly-graded[1] sands, gravelly sands, little or no fines — SP
		SANDS with >15% fines	Silty sands, poorly-graded[1] sand-gravel-silt mixtures — SM
			Clayey sands, poorly-graded[1] sand-gravel-clay mixtures — SC
FINE-GRAINED SOILS >50% passes #200 sieve	SILTS AND CLAYS liquid limit <50		Inorganic silts/very-fine sands, silty or clayey fine sands, silts with slight plasticity — ML
			Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays — CL
			Organic silts and clays of low plasticity — OL
	SILTS AND CLAYS liquid limit >50		Inorganic silts, micaceous or diatomaceous fine sand or silt — MH
			Inorganic clays of high plasticity, fat clays — CH
			Organic silts and clays of medium to high plasticity — OH
	HIGHLY ORGANIC SOILS		Peat, humus, swamp soils with high organic content — PT

CONSISTENCY (Silts and Clays)

Term	(SPT) 1.4"ID	Blows/ft* 2.0"ID	(modCAL) 2.5"ID
very soft	0-2	0-2	0-2
soft	2-4	2-4	2-4
medium stiff	4-8	4-8	4-8
stiff	8-15	9-17	9-18
very stiff	15-30	17-39	18-42
hard	30-60	39-78	42-85
very hard	>60	>78	>85

DENSITY (Sands and Gravels)

Term	(SPT) 1.4"ID	Blows/ft* 2.0"ID	(modCAL) 2.5"ID
very loose	0-4	0-5	0-7
loose	4-10	5-12	7-18
medium dense	10-30	12-37	18-51
dense	30-50	37-60	51-86
very dense	>50	>60	>86

* = 140 pound hammer dropped 30 inches

GRAIN SIZE

Term	Size (mm)	Size (inches)
Boulders	>300	>12
Cobbles	75 to 300	3 to 12
Coarse gravel	19 to 75	3/4 to 3
Fine gravel	4.75 to 19	3/16 to 3/4
Coarse sand	2.0 to 4.75	1/16 to 3/16
Medium sand	0.425 to 2.0	1/64 to 1/16
Fine sand	0.075 to 0.425	0.003 to 1/64
Silt / clay (fines)	<0.075	<0.003

SOIL TYPE MODIFIERS

Percentages of gravel, sand, and fines may be stated in terms indicating a range of percentages as below:

Term	%
Trace	<5
Few	5-10
Little	15-25
Some	30-45
Mostly	50-100

[1]Note: Well-graded = poorly sorted; Poorly-graded = well sorted

PLASTICITY: Nonplastic, Low, Medium, High

MOISTURE

Term	Field Test
Dry	Absence of moisture, dry to touch
Moist	Damp, does not wet palm
Wet	Visible Free Water

CEMENTATION

Term	Field Test
Weak	Crumbles or breaks with handling or slight finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

Depth to first water (time and date)

Depth to water after drilling (time and date)

MWH	Client: GE/UNC Project Number:	SOIL BORING LOG FORM	BOREHOLE No.: B7 Sheet 7 of 12

Drilling Company: See info on	Drilling Rig:	Bit Type:	Start Date:
Drillers (day / night): first page of	Drilling Method:	Logged by:	Finish Date:
Field Representitive (day / night): log	Core Diameter:		Total Depth:

Depth	Sample Number	Blow Count	Recovery (in.)	q_u (tsf)	Lithology / Symbol	Description	Graphic	Remarks	Well Details
60	2" ID Mod Rec	4	6		SP-SC	Poorly graded sand with clay (SP-SC), yellow (10YR 8/6) very loose to loose, dry to moist, predominantly medium sand with some clay (10%), low plasticity, no cementation			
	B7-60.5-61.0 (SS0) 11-Nov-2016	6	6						
61		6	6		CL	Sandy clay (CL), brown (10YR 5/3), soft to medium stiff, fine grained to medium grained sands, trace fine and coarse gravel, organic black matter (5-10%), medium plasticity, mostly moist			
62						61.5 no gravel, stiff to very stiff			
63						moist, yellowish brown to dark yellowish brown (10YR 5/4 - 4/4) lean clay (CL), brown (10YR 4/3), soft, moist to wet, very-fine-grained sands (10%), trace black organic matter/coal			
64	B7-64.2-65.0 (GS) 11-Nov-2016				SM	yellowish brown (10YR 5/4), black organic matter (20-25%) silty sand (SM), yellowish brown (10YR 5/4), soft, moist to wet, nonplastic			
65						no recovery			
66					SP-SM	poorly graded sand with silt (SP-SM), dark yellowish brown (10YR 4/4), very soft, non plastic		15:30	
67					CL	lean clay (CL) with sand, brown (10YR 4/3), soft to medium stiff, moderately plastic			
68									
69	B7-68.6-70.0 (GS) 11-Nov-2016				CH	Fat clay (CH) brownish yellow (10YR 6/6), very stiff, dry to moist, laminated to very thinly bedded with black organic matter striping, black organic matter (5-10%) Fe staining laminated to very thinly bedded, high plasticity			
70									

COARSE-GRAINED SOILS >50% passes #200 sieve			
GRAVELS <50% coarse fraction passes #4 sieve	GRAVELS with little or no fines	Well-graded[1] gravels, gravel-sand mixtures, little or no fines	GW
		Poorly-graded[1] gravels, gravel-sand mixtures, little or no fines	GP
	GRAVELS with >15% fines	Silty gravels, poorly-graded[1] gravel-sand-silt mixtures	GM
		Clayey gravels, poorly-graded[1] gravel-sand-clay mixtures	GC
SANDS <50% coarse fraction passes #4 sieve	SANDS with little or no fines	Well-graded[1] sands, gravelly sands, little or no fines	SW
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	SANDS with >15% fines	Silty sands, poorly-graded[1] sand-gravel-silt mixtures	SM
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FINE-GRAINED SOILS >50% passes #200 sieve	SILTS AND CLAYS liquid limit <50	Inorganic silts/very-fine sands, silty or clayey fine sands, silts with slight plasticity	ML
		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	CL
		Organic silts and clays of low plasticity	OL
	SILTS AND CLAYS liquid limit >50	Inorganic silts, micaceous or diatomaceous fine sand or silt	MH
		Inorganic clays of high plasticity, fat clays	CH
		Organic silts and clays of medium to high plasticity	OH
HIGHLY ORGANIC SOILS		Peat, humus, swamp soils with high organic content	PT

CONSISTENCY (Silts and Clays)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very soft	0-2	0-2	0-2
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medium stiff	4-8	4-8	4-8
stiff	8-15	9-17	9-18
very stiff	15-30	17-39	18-42
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DENSITY (Sands and Gravels)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
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loose	4-10	5-12	7-18
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Coarse gravel	19 to 75	3/4 to 3
Fine gravel	4.75 to 19	3/16 to 3/4
Coarse sand	2.0 to 4.75	1/16 to 3/16
Medium sand	0.425 to 2.0	1/64 to 1/16
Fine sand	0.075 to 0.425	0.003 to 1/64
Silt / clay (fines)	<0.075	<0.003

SOIL TYPE MODIFIERS

Percentages of gravel, sand, and fines may be stated in terms indicating a range of percentages as below.

Term	%
Trace	<5
Few	5-10
Little	15-25
Some	30-45
Mostly	50-100

[1]Note: Well-graded = poorly sorted; Poorly-graded = well sorted

PLASTICITY: Nonplastic, Low, Medium, High

MOISTURE

Term	Field Test
Dry	Absence of moisture, dry to touch
Moist	Damp, does not wet palm
Wet	Visible Free Water

CEMENTATION

Term	Field Test
Weak	Crumbles or breaks with handling or slight finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

Depth to first water (time and date)

Depth to water after drilling (time and date)

MWH	Client: GZ/UNC Project Number:	SOIL BORING LOG FORM	BOREHOLE No.: B7 Sheet 8 of 12

Drilling Company: See info on	Drilling Rig:	Bit Type:	Start Date:
Drillers (day / night): first page of	Drilling Method:	Logged by:	Finish Date:
Field Representitive (day / night): log	Core Diameter:		Total Depth:

Depth	Sample Number	Blow Count	Recovery (in.)	q_u (tsf)	Lithology / Symbol	Description	Graphic	Remarks	Well Details
70	2" Δ MODCAL	7	6		CH	Fat CLAY, continued.			
	B7-70.5-71.0 (SS0) 11-Nov-2016	7	6						
71		3	6	1.75				11/11/16 - end of day 1600 @ 71.5'	
						71.5 - 72.5' No recovery (NR)		11/12/16 - begin at 0820	
72					CH	same as above, CH dark yellowish brown (10YR 4/4), moist to wet			
73					SM	silty sand (SM), moist to wet, predominantly fine grained sand, trace organic material, trace clay			
74					CH	sandy fat clay (CH), same as above, moist to wet, fine-grained sand (20-30%), medium plasticity, soft			
						Fat clay (CH), same as above 68.6 - 71.5', brown (10YR 4/3), trace root material			
75				3.0		NR			
76					CH	Same as above (CH) 74.3'			
						sandy fat clay (CH), same as above (73.8')			
77						decrease in sand (10%), sandy fat clay, stiff			
	B7-77.2-78.4 (SS) 12-Nov-2016				SM	silty sand (SM), same as above, dark yellowish brown (10YR 4/4)			
78									
	B7-78.4-80.0 (SS) 12-Nov-2016				CH	Same as above, 77-77.2', sandy fat clay (CH)			
79									
80									

COARSE-GRAINED SOILS >50% passes #200 sieve	GRAVELS <50% coarse fraction passes #4 sieve	GRAVELS with little or no fines	Well-graded[1] gravels, gravel-sand mixtures, little or no fines — GW
			Poorly-graded[2] gravels, gravel-sand mixtures, little or no fines — GP
		GRAVELS with >15% fines	Silty gravels, poorly-graded[2] gravel-sand-silt mixtures — GM
			Clayey gravels, poorly-graded[2] gravel-sand-clay mixtures — GC
	SANDS <50% coarse fraction passes #4 sieve	SANDS with little or no fines	Well-graded[1] sands, gravelly sands, little or no fines — SW
			Poorly-graded[2] sands, gravelly sands, little or no fines — SP
		SANDS with >15% fines	Silty sands, poorly-graded[2] sand-gravel-silt mixtures — SM
			Clayey sands, poorly-graded[2] sand-gravel-clay mixtures — SC
FINE-GRAINED SOILS >50% passes #200 sieve	SILTS AND CLAYS liquid limit <50		Inorganic silts/very-fine sands, silty or clayey fine sands, silts with slight plasticity — ML
			Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays — CL
			Organic silts and clays of low plasticity — OL
	SILTS AND CLAYS liquid limit >50		Inorganic silts, micaceous or diatomaceous fine sand or silt — MH
			Inorganic clays of high plasticity, fat clays — CH
			Organic silts and clays of medium to high plasticity — OH
HIGHLY ORGANIC SOILS			Peat, humus, swamp soils with high organic content — PT

CONSISTENCY (Silts and Clays)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very soft	0-2	0-2	0-2
soft	2-4	2-4	2-4
medium stiff	4-8	4-8	4-8
stiff	8-15	9-17	9-18
very stiff	15-30	17-39	18-42
hard	30-60	39-78	42-85
very hard	>60	>78	>85

DENSITY (Sands and Gravels)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very loose	0-4	0-5	0-7
loose	4-10	5-12	7-18
medium dense	10-30	12-37	18-51
dense	30-50	37-60	51-86
very dense	>50	>60	>86

* = *140 pound hammer dropped 30 inches*

*Note: Well-graded = poorly sorted; Poorly-graded = well sorted

PLASTICITY: Nonplastic, Low, Medium, High

MOISTURE

Term	Field Test
Dry	Absence of moisture, dry to touch
Moist	Damp, does not wet palm
Wet	Visible Free Water

CEMENTATION

Term	Field Test
Weak	Crumbles or breaks with handling or slight finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

GRAIN SIZE

Term	Size (mm)	Size (inches)
Boulders	>300	>12
Cobbles	75 to 300	3 to 12
Coarse gravel	19 to 75	3/4 to 3
Fine gravel	4.75 to 19	3/16 to 3/4
Coarse sand	2.0 to 4.75	1/16 to 3/16
Medium sand	0.425 to 2.0	1/64 to 1/16
Fine sand	0.075 to 0.425	0.003 to 1/64
Silt / clay (fines)	<0.075	<0.003

SOIL TYPE MODIFIERS

Percentages of gravel, sand, and fines may be stated in terms indicating a range of percentages as below.

Term	%
Trace	<5
Few	5-10
Little	15-25
Some	30-45
Mostly	50-100

▽ Depth to first water (time and date)

▼ Depth to water after drilling (time and date)

MWH	Client: GE/UNC Project Number:	SOIL BORING LOG FORM	BOREHOLE No.: B7 Sheet 9 of 12

Drilling Company: See info on	Drilling Rig:	Bit Type:	Start Date:
Drillers (day / night): first page of	Drilling Method:	Logged by:	Finish Date:
Field Representitive (day / night): 109	Core Diameter:		Total Depth:

Depth	Sample Number	Blow Count	Recovery (in.)	qu (tsf)	Lithology / Symbol	Description	Graphic	Remarks	Well Details
80	B 2" Mod Cal	7	6	1.75	CH	increase in iron oxidation staining, slight increase in sand (15-20%), yellowish brown (10YR 5/6), organics (10-20%),			
	B7-80.5-81.0 (SSO) 12-Nov-2016	11	6	2.5					
81		15	6		CH	same as 68.6-71.5', less interbedded organics and Fe			
						same as above?, dark grayish brown (10YR 4/2)			
82	B7-81.5-84.4 (Las) 12-Nov-2016								
83				2.5					
84					CH	interlayered, interbedded fat clay with sand (CH), very fine-grained sand (10%) - see 77-77.2' interlayered with silty, sand (SM), dry to moist, see 72.2'			
85						grades to gray (10YR 5/1)			
86									
87									
88					SM	silty, sand (SM), same as above 77', moist to wet, less silt than @ 77', more sand			
89	B7-88.4-90.0 (Las) 12-Nov-2016								
90									

COARSE-GRAINED SOILS <50% passes #200 sieve				
GRAVELS <50% coarse fraction passes #4 sieve	GRAVELS with little or no fines	Well-graded[◊] gravels, gravel-sand mixtures, little or no fines	GW
		Poorly-graded[◊] gravels, gravel-sand mixtures, little or no fines	GP
	GRAVELS with >15% fines	Silty gravels, poorly-graded[◊] gravel-sand-silt mixtures	GM
		Clayey gravels, poorly-graded[◊] gravel-sand-clay mixtures	GC
SANDS <50% coarse fraction passes #4 sieve	SANDS with little or no fines	Well-graded[◊] sands, gravelly sands, little or no fines	SW
		Poorly-graded[◊] sands, gravelly sands, little or no fines	SP
	SANDS with >15% fines	Silty sands, poorly-graded[◊] sand-gravel-silt mixtures	SM
		Clayey sands, poorly-graded[◊] sand-gravel-clay mixtures	SC
FINE-GRAINED SOILS >50% passes #200 sieve	SILTS AND CLAYS liquid limit <50	Inorganic silts/very-fine sands, silty or clayey fine sands, silts with slight plasticity	ML
		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	CL
		Organic silts and clays of low plasticity	OL
	SILTS AND CLAYS liquid limit >50	Inorganic silts, micaceous or diatomaceous fine sand or silt	MH
		Inorganic clays of high plasticity, fat clays	CH
		Organic silts and clays of medium to high plasticity	OH
HIGHLY ORGANIC SOILS		Peat, humus, swamp soils with high organic content	PT

◊Note: Well-graded = poorly sorted; Poorly-graded = well sorted

CONSISTENCY (Silts and Clays)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very soft	0-2	0-2	0-2
soft	2-4	2-4	2-4
medium stiff	4-8	4-8	4-8
stiff	8-15	9-17	9-18
very stiff	15-30	17-39	18-42
hard	30-60	39-78	42-85
very hard	>60	>78	>85

DENSITY (Sands and Gravels)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very loose	0-4	0-5	0-7
loose	4-10	5-12	7-18
medium dense	10-30	12-37	18-51
dense	30-50	37-60	51-86
very dense	>50	>60	>86

* = 140 pound hammer dropped 30 inches

GRAIN SIZE

Term	Size (mm)	Size (inches)
Boulders	>300	>12
Cobbles	75 to 300	3 to 12
Coarse gravel	19 to 75	3/4 to 3
Fine gravel	4.75 to 19	3/16 to 3/4
Coarse sand	2.0 to 4.75	1/16 to 3/16
Medium sand	0.425 to 2.0	1/64 to 1/16
Fine sand	0.075 to 0.425	0.003 to 1/64
Silt / clay (fines)	<0.075	<0.003

SOIL TYPE MODIFIERS

Percentages of gravel, sand, and fines may be stated in terms indicating a range of percentages as below.

Term	%
Trace	<5
Few	5-10
Little	15-25
Some	30-45
Mostly	50-100

PLASTICITY

Term
Nonplastic
Low
Medium
High

MOISTURE

Term	Field Test
Dry	Absence of moisture, dry to touch
Moist	Damp, does not wet palm
Wet	Visible Free Water

CEMENTATION

Term	Field Test
Weak	Crumbles or breaks with handling or slight finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

▽ Depth to first water (time and date)

▼ Depth to water after drilling (time and date)

MWH	Client: GE / ONC Project Number:	SOIL BORING LOG FORM	BOREHOLE No.: B7 Sheet 10 of 12

Drilling Company: See info on	Drilling Rig:	Bit Type:	Start Date:
Drillers (day / night): first page of	Drilling Method:	Logged by:	Finish Date:
Field Representitive (day / night): log	Core Diameter:		Total Depth:

Depth	Sample Number	Blow Count	Recovery (in.)	q_u (tsf)	Lithology / Symbol	Description	Graphic	Remarks	Well Details
90	21.0 MPRAL	5	6		SM	wet to very wet grades to wet			
	B7-90.5-91.0 (SSO) 12-Nov-2016	10	6						
91		14	6			increase in clay (10%) and organics			
92	B7-91.5-95.0 (GS) 12-Nov-2016					same, brown (10YR 5/3), wet, trace clay, trace organics			
93									
94									
95						same as above			
96									
97					SM	silty sand (SM), dark yellowish brown (10YR 4/4), trace organics, one small sandstone clast, slow to rapid dilatancy, moist, loose, predominantly fine-grained sand			
98									
99						same as above, increase in organic material, black (10%) very thin lamination (1.5cm) of black organic material, increased iron oxidation, dry to moist			
100									

COARSE-GRAINED SOILS >50% passes #200 sieve	GRAVELS <50% coarse fraction passes #4 sieve	GRAVELS with little or no fines	Well-graded[1] gravels, gravel-sand mixtures, little or no fines	GW
			Poorly-graded[2] gravels, gravel-sand mixtures, little or no fines	GP
		GRAVELS with >15% fines	Silty gravels, poorly-graded[2] gravel-sand-silt mixtures	GM
			Clayey gravels, poorly-graded[2] gravel-sand-clay mixtures	GC
	SANDS <50% coarse fraction passes #4 sieve	SANDS with little or no fines	Well-graded[1] sands, gravelly sands, little or no fines	SW
			Poorly-graded[2] sands, gravelly sands, little or no fines	SP
		SANDS with >15% fines	Silty sands, poorly-graded[3] sand-gravel-silt mixtures	SM
			Clayey sands, poorly-graded[3] sand-gravel-clay mixtures	SC
FINE-GRAINED SOILS >50% passes #200 sieve	SILTS AND CLAYS liquid limit <50		Inorganic silts/very-fine sands, silty or clayey fine sands, silts with slight plasticity	ML
			Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	CL
			Organic silts and clays of low plasticity	OL
	SILTS AND CLAYS liquid limit >50		Inorganic silts, micaceous or diatomaceous fine sand or silt	MH
			Inorganic clays of high plasticity, fat clays	CH
			Organic silts and clays of medium to high plasticity	OH
	HIGHLY ORGANIC SOILS		Peat, humus, swamp soils with high organic content	PT

CONSISTENCY (Silts and Clays)

Term	(SPT) 1.4"ID	Blows/ft* 2.0"ID	(modCAL) 2.5"ID
very soft	0-2	0-2	0-2
soft	2-4	2-4	2-4
medium stiff	4-8	4-8	4-8
stiff	8-15	9-17	9-18
very stiff	15-30	17-39	18-42
hard	30-60	39-78	42-85
very hard	>60	>78	>85

DENSITY (Sands and Gravels)

Term	(SPT) 1.4"ID	Blows/ft* 2.0"ID	(modCAL) 2.5"ID
very loose	0-4	0-5	0-7
loose	4-10	5-12	7-18
medium dense	10-30	12-37	18-51
dense	30-50	37-60	51-86
very dense	>50	>60	>86

* = 140 pound hammer dropped 30 inches

[1]Note:
Well-graded = poorly sorted
Poorly-graded = well sorted

PLASTICITY

Nonplastic	
Low	
Medium	
High	

MOISTURE

Term	Field Test
Dry	Absence of moisture, dry to touch
Moist	Damp, does not wet palm
Wet	Visible Free Water

CEMENTATION

Term	Field Test
Weak	Crumbles or breaks with handling or slight finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

GRAIN SIZE

Term	Size (mm)	Size (inches)
Boulders	>300	>12
Cobbles	75 to 300	3 to 12
Coarse gravel	19 to 75	3/4 to 3
Fine gravel	4.75 to 19	3/16 to 3/4
Coarse sand	2.0 to 4.75	1/16 to 3/16
Medium sand	0.425 to 2.0	1/64 to 1/16
Fine sand	0.075 to 0.425	0.003 to 1/64
Silt / clay (fines)	<0.075	<0.003

SOIL TYPE MODIFIERS

Percentages of gravel, sand, and fines may be stated in terms indicating a range of percentages as below.

Term	%
Trace	<5
Few	5-10
Little	15-25
Some	30-45
Mostly	50-100

Depth to first water (time and date)

Depth to water after drilling (time and date)

MWH	Client: GE/UNC Project Number:	SOIL BORING LOG FORM	BOREHOLE No.: B7 Sheet 11 of 12

Drilling Company: See info on	Drilling Rig:	Bit Type:	Start Date:
Drillers (day / night): first page of	Drilling Method:	Logged by:	Finish Date:
Field Representitive (day / night): 109	Core Diameter:		Total Depth:

Depth	Sample Number	Blow Count	Recovery (in.)	q_u (tsf)	Lithology / Symbol	Description	Graphic	Remarks	Well Details
100	2" ID MODAL	15	6		SP-SM	poorly graded sand with silt (SP-SM) trace medium to coarse sand predominantly fine grained sand, dark yellowish brown (10YR 4/4), loose to med. dense			
	B7-100.5-101.0 (SSO) 12-Nov-2016	19	6						
101		16	6		SM	increase in coarse sand and fine gravel grades to silty sand with clay (SM), increase in iron oxide staining, low plasticity, weakly cemented			
	B7-101.5-104.0 (GS) 12-Nov-2016				SP-SM	same as above SP-SM, increase in black organic material (10-20%), trace fine to coarse gravel, moist			
102									
103									
104					CH	FAT CLAY (CH), same as 68.0'			
					SS	SANDSTONE, very pale brown (10YR 8/2), fine-grained sand, highly to completely weathered (W4-W5) extremely weak (R0), very soft to soft (H2-H6), interbedded, very thinly to thinly laminated, inclined bedding (20-30°) with iron oxidation, yellowish brown (10YR 5/8)			
105					CL	Lean CLAY with sand (CL), light brownish gray (10YR 6/2), soft, dry to moist, fine-grained sand, low plasticity, interbedded with iron staining (dark yellowish brown (10YR 4/6)			
106					SS	SANDSTONE, same as above 104.3' fine- to medium-grained sand weak to very weak, soft, very thinly bedded to laminated with iron oxidation, yellow (10YR 7/8)			
107									
108					SS	SANDSTONE, same as 104.3', decrease in interbedding, some clasts size of coarse gravel			
109	B7-108.7-110.0 (GS) 12-Nov-2016				SS	SANDSTONE, yellow (2.5YR 7/6), same as 104.3', non laminated or bedded			
110									

COARSE-GRAINED SOILS <50% passes #200 sieve	GRAVELS <50% coarse fraction passes #4 sieve	GRAVELS with little or no fines	Well-graded[3] gravels, gravel-sand mixtures, little or no fines — GW
			Poorly-graded[3] gravels, gravel-sand mixtures, little or no fines — GP
		GRAVELS with >15% fines	Silty gravels, poorly-graded[3] gravel-sand-silt mixtures — GM
			Clayey gravels, poorly-graded[3] gravel-sand-clay mixtures — GC
	SANDS <50% coarse fraction passes #4 sieve	SANDS with little or no fines	Well-graded[3] sands, gravelly sands, little or no fines — SW
			Poorly-graded[3] sands, gravelly sands, little or no fines — SP
		SANDS with >15% fines	Silty sands, poorly-graded[3] sand-gravel-silt mixtures — SM
			Clayey sands, poorly-graded[3] sand-gravel-clay mixtures — SC
FINE-GRAINED SOILS >50% passes #200 sieve	SILTS AND CLAYS liquid limit <50		Inorganic silts/very-fine sands, silty or clayey fine sands, silts with slight plasticity — ML
			Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays — CL
			Organic silts and clays of low plasticity — OL
	SILTS AND CLAYS liquid limit >50		Inorganic silts, micaceous or diatomaceous fine sand or silt — MH
			Inorganic clays of high plasticity, fat clays — CH
			Organic silts and clays of medium to high plasticity — OH
	HIGHLY ORGANIC SOILS		Peat, humus, swamp soils with high organic content — PT

CONSISTENCY (Silts and Clays)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very soft	0-2	0-2	0-2
soft	2-4	2-4	2-4
medium stiff	4-8	4-8	4-8
stiff	8-15	9-17	9-18
very stiff	15-30	17-39	18-42
hard	30-60	39-78	42-85
very hard	>60	>78	>85

DENSITY (Sands and Gravels)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very loose	0-4	0-5	0-7
loose	4-10	5-12	7-18
medium dense	10-30	12-37	18-51
dense	30-50	37-60	51-86
very dense	>50	>60	>86

** = 140 pound hammer dropped 30 inches*

GRAIN SIZE

Term	Size (mm)	Size (inches)
Boulders	>300	>12
Cobbles	75 to 300	3 to 12
Coarse gravel	19 to 75	3/4 to 3
Fine gravel	4.75 to 19	3/16 to 3/4
Coarse sand	2.0 to 4.75	1/16 to 3/16
Medium sand	0.425 to 2.0	1/64 to 1/16
Fine sand	0.075 to 0.425	0.003 to 1/64
Silt / clay (fines)	<0.075	<0.003

SOIL TYPE MODIFIERS

Percentages of gravel, sand, and fines may be stated in terms indicating a range of percentages as below.

Term	*%*
Trace	<5
Few	5-10
Little	15-25
Some	30-45
Mostly	50-100

[3]Note: Well-graded = poorly sorted; Poorly-graded = well sorted

PLASTICITY: Nonplastic, Low, Medium, High

MOISTURE

Term	Field Test
Dry	Absence of moisture, dry to touch
Moist	Damp, does not wet palm
Wet	Visible Free Water

CEMENTATION

Term	Field Test
Weak	Crumbles or breaks with handling or slight finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

Depth to first water (time and date)

Depth to water after drilling (time and date)

MWH	Client: GE/UNC Project Number:	SOIL BORING LOG FORM	BOREHOLE No.: B7 Sheet 12 of 12

Drilling Company: See info on first page of log	Drilling Rig:	Bit Type:	Start Date:
Drillers (day / night):	Drilling Method:	Logged by:	Finish Date:
Field Representitive (day / night):	Core Diameter:		Total Depth:

Depth	Sample Number	Blow Count	Recovery (in.)	q_u (tsf)	Lithology / Symbol	Description	Graphic	Remarks	Well Details
110	MOSCAT 2" ID	14	6		SS	SANDSTONE, light yellowish brown (10YR 6/4), samples 104.3'			
		50	4.5			increase in clay, light yellowish brown (2.5Y 6/4), course gravel (10%), clay (20-30%)		Bedrock 1140 AM 110.85'	
111						decrease in clay, moist			
112					SS	SANDSTONE, olive yellow (2.5Y 6/6), fine-grained sand, highly weathered (W4) very weak (R1), soft (H1e), laminated to very thinly bedded			
113						SANDSTONE, very pale brown (10YR 7/3) coarse gravel, fine-grained sand, trace organics and Fe staining			
114						increase in clay, yellowish brown (10YR 5/4), some highly weathered sandstone clasts			
115						TOTAL DEPTH = 115.0 feet bgs.		TD 115 ft end at 1145 AM	

COARSE-GRAINED SOILS <50% passes #200 sieve	GRAVELS <50% coarse fraction passes #4 sieve	GRAVELS with little or no fines	Well-graded[3] gravels, gravel-sand mixtures, little or no fines — GW
			Poorly-graded[3] gravels, gravel-sand mixtures, little or no fines — GP
		GRAVELS with >15% fines	Silty gravels, poorly-graded[3] gravel-sand-silt mixtures — GM
			Clayey gravels, poorly-graded[3] gravel-sand-clay mixtures — GC
	SANDS <50% coarse fraction passes #4 sieve	SANDS with little or no fines	Well-graded[3] sands, gravelly sands, little or no fines — SW
			Poorly-graded[3] sands, gravelly sands, little or no fines — SP
		SANDS with >15% fines	Silty sands, poorly-graded[3] sand-gravel-silt mixtures — SM
			Clayey sands, poorly-graded[3] sand-gravel-clay mixtures — SC
FINE-GRAINED SOILS >50% passes #200 sieve	SILTS AND CLAYS liquid limit <50		Inorganic silts/very-fine sands, silty or clayey fine sands, silts with slight plasticity — ML
			Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays — CL
			Organic silts and clays of low plasticity — OL
	SILTS AND CLAYS liquid limit >50		Inorganic silts, micaceous or diatomaceous fine sand or silt — MH
			Inorganic clays of high plasticity, fat clays — CH
			Organic silts and clays of medium to high plasticity — OH
	HIGHLY ORGANIC SOILS		Peat, humus, swamp soils with high organic content — PT

CONSISTENCY (Silts and Clays)

Term	(SPT) 1.4"ID	Blows/ft* 2.0"ID	(modCAL) 2.5"ID
very soft	0-2	0-2	0-2
soft	2-4	2-4	2-4
medium stiff	4-8	4-8	4-8
stiff	8-15	9-17	9-18
very stiff	15-30	17-39	18-42
hard	30-60	39-78	42-85
very hard	>60	>78	>85

DENSITY (Sands and Gravels)

Term	(SPT) 1.4"ID	Blows/ft* 2.0"ID	(modCAL) 2.5"ID
very loose	0-4	0-5	0-7
loose	4-10	5-12	7-18
medium dense	10-30	12-37	18-51
dense	30-50	37-60	51-86
very dense	>50	>60	>86

* = *140 pound hammer dropped 30 inches*

GRAIN SIZE

Term	Size (mm)	Size (inches)
Boulders	>300	>12
Cobbles	75 to 300	3 to 12
Coarse gravel	19 to 75	3/4 to 3
Fine gravel	4.75 to 19	3/16 to 3/4
Coarse sand	2.0 to 4.75	1/16 to 3/16
Medium sand	0.425 to 2.0	1/64 to 1/16
Fine sand	0.075 to 0.425	0.003 to 1/64
Silt / clay (fines)	<0.075	<0.003

SOIL TYPE MODIFIERS

Percentages of gravel, sand, and fines may be stated in terms indicating a range of percentages as below.

Term	*%*
Trace	<5
Few	5-10
Little	15-25
Some	30-45
Mostly	50-100

[3]Note: Well-graded = poorly sorted; Poorly-graded = well sorted

PLASTICITY: Nonplastic, Low, Medium, High

MOISTURE

Term	Field Test
Dry	Absence of moisture, dry to touch
Moist	Damp, does not wet palm
Wet	Visible Free Water

CEMENTATION

Term	Field Test
Weak	Crumbles or breaks with handling or slight finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

Depth to first water (time and date)

Depth to water after drilling (time and date)

CORE PHOTOS

1. **B1 – 0 ft bgs to 10.3 ft bgs**

2. **B1 – 10.3 ft bgs to 19.65 ft bgs**

3. B1 – 19.65 ft bgs to 30.4 ft bgs

4. B1 – 30.4 ft bgs to 32.1 ft bgs

5. B2 – 18.1 ft bgs to 28.3 ft bgs

6. B2 – 28.3 ft bgs to 37.5 ft bgs

7. B2 – 37.5 ft bgs to 47.4 ft bgs

8. B2 – 47.4 ft bgs to 52.1 ft bgs

9. B3 – 15.9 ft bgs to 25.7 ft bgs

10. B3 – 25.7 ft bgs to 35.2 ft bgs

11. B3 – 35.2 ft bgs to 44.1 ft bgs

12. B3 – 44.1 ft bgs to 51.3 ft bgs

TEST PIT LOGS

MWH	Client: GE / UNC - NECR UNC JETTY GEOTECH Project Number:	TEST PIT LOG FORM	TEST PIT No.: TP1 Sheet 1 of 1
Location: UNNAMED ARROYO Northing: 12S 0725759 Easting: 3949521 Contractor: MWH / AMEC FW Operator: J. VAN PELT / R. SPITZ	Dimensions: 1.0' Depth: 2.0' 1.0'		Start Date: 12-Nov-2016 Finish Date: 12-Nov-2016 Total Depth: 2.0 feet Logged by: J. Van Pelt

Face

Depth	Sample Number	Lithology Symbol	Description	Remarks	Graphic
0			CLAY with silt (CL), dark greenish brown, hard, dry, clay (60-70%) silt 25% medium to high plasticity	Shovel & Post-hole digger used to excavate & collect sample	
1	TP1	CL			
2			TD = 2.0' bgs		
3					

COARSE-GRAINED SOILS <50% passes #200 sieve	GRAVELS <50% coarse fraction passes #4 sieve	GRAVELS with little or no fines	Well-graded[a] gravels, gravel-sand mixtures, little or no fines	GW
			Poorly-graded[a] gravels, gravel-sand mixtures, little or no fines	GP
		GRAVELS with >15% fines	Silty gravels, poorly-graded[a] gravel-sand-silt mixtures	GM
			Clayey gravels, poorly-graded[a] gravel-sand-clay mixtures	GC
	SANDS <50% coarse fraction passes #4 sieve	SANDS with little or no fines	Well-graded[a] sands, gravelly sands, little or no fines	SW
			Poorly-graded[a] sands, gravelly sands, little or no fines	SP
		SANDS with >15% fines	Silty sands, poorly-graded[a] sand-gravel-silt mixtures	SM
			Clayey sands, poorly-graded[a] sand-gravel-clay mixtures	SC
FINE-GRAINED SOILS >50% passes #200 sieve	SILTS AND CLAYS liquid limit <50		Inorganic silts/very-fine sands, silty or clayey fine sands, silts with slight plasticity	ML
			Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	CL
			Organic silts and clays of low plasticity	OL
	SILTS AND CLAYS liquid limit >50		Inorganic silts, micaceous or diatomaceous fine sand or silt	MH
			Inorganic clays of high plasticity, fat clays	CH
			Organic silts and clays of medium to high plasticity	OH
	HIGHLY ORGANIC SOILS		Peat, humus, swamp soils with high organic content	PT

CONSISTENCY (Silts and Clays)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very soft	0-2	0-2	0-2
soft	2-4	2-4	2-4
medium stiff	4-8	4-8	4-8
stiff	8-15	9-17	9-18
very stiff	15-30	17-39	18-42
hard	30-60	39-78	42-85
very hard	>60	>78	>85

DENSITY (Sands and Gravels)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very loose	0-4	0-5	0-7
loose	4-10	5-12	7-18
medium dense	10-30	12-37	18-51
dense	30-50	37-60	51-86
very dense	>50	>60	>86

* = 140 pound hammer dropped 30 inches

GRAIN SIZE

Term	Size (mm)	Size (inches)
Boulders	>300	>12
Cobbles	75 to 300	3 to 12
Coarse gravel	19 to 75	3/4 to 3
Fine gravel	4.75 to 19	3/16 to 3/4
Coarse sand	2.0 to 4.75	1/16 to 3/16
Medium sand	0.425 to 2.0	1/64 to 1/16
Fine sand	0.075 to 0.425	0.003 to 1/64
Silt / clay (fines)	<0.075	<0.003

SOIL TYPE MODIFIERS

Sand/Gravel (Silt) Term	% fines
trace	<5
little	5-15
some	15-30
clayey / silty	>30

Silt/Clay Term	% coarse
trace	<5
little	5-15
some	15-30
sandy / gravelly	>30

[a]Note: Well-graded = poorly sorted; Poorly-graded = well sorted

PLASTICITY: Nonplastic, Low, Medium, High

MOISTURE

Term	Field Test
Dry	Absence of moisture, dry to touch
Moist	Damp, does not wet palm
Wet	Visible Free Water

CEMENTATION

Term	Field Test
Weak	Crumbles or breaks with handling or slight finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

Depth to first water (time and date)

Depth to water after drilling (time and date)

MWH	Client: GE/UNC NECR JETTY GEOTECH Project Number:	TEST PIT LOG FORM	TEST PIT No.: TP2 Sheet 1 of 1
Location: UNNAMED ARROYO Northing: 12 S 0725748 Easting: 3949499 Contractor: MWH/AMEC FOW Operator: J.VanPelt/R.SPITZ	Dimensions: 1.0' Depth: 2.2' 1.0		Start Date: 12-Nov-2016 Finish Date: 12-Nov-2016 Total Depth: 2.2 feet Logged by: JVanPelt

Face

Depth	Sample Number	Lithology Symbol	Description	Remarks	Graphic
	TP2	ML	Clayey Silt with Sand (ML) medium yellowish brown, dry, low plasticity Silt, Clay: 20%-25%, fine sand (-increasing fine sand w/depth.	Excavated using shovel and posthole digger	
			TD = 2.2' bgs		

COARSE-GRAINED SOILS >50% passes #200 sieve	GRAVELS <50% coarse fraction passes #4 sieve	GRAVELS with little or no fines	Well-graded[1] gravels, gravel-sand mixtures, little or no fines	GW
			Poorly-graded[1] gravels, gravel-sand mixtures, little or no fines	GP
		GRAVELS with >15% fines	Silty gravels, poorly-graded[1] gravel-sand-silt mixtures	GM
			Clayey gravels, poorly-graded[1] gravel-sand-clay mixtures	GC
	SANDS <50% coarse fraction passes #4 sieve	SANDS with little or no fines	Well-graded[1] sands, gravelly sands, little or no fines	SW
			Poorly-graded[1] sands, gravelly sands, little or no fines	SP
		SANDS with >15% fines	Silty sands, poorly-graded[1] sand-gravel-silt mixtures	SM
			Clayey sands, poorly-graded[1] sand-gravel-clay mixtures	SC
FINE-GRAINED SOILS >50% passes #200 sieve	SILTS AND CLAYS liquid limit <50		Inorganic silts/very-fine sands, silty or clayey fine sands, silts with slight plasticity	ML
			Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	CL
			Organic silts and clays of low plasticity	OL
	SILTS AND CLAYS liquid limit >50		Inorganic silts, micaceous or diatomaceous fine sand or silt	MH
			Inorganic clays of high plasticity, fat clays	CH
			Organic silts and clays of medium to high plasticity	OH
	HIGHLY ORGANIC SOILS		Peat, humus, swamp soils with high organic content	PT

[1]Note: Well-graded = poorly sorted; Poorly-graded = well sorted

CONSISTENCY (Silts and Clays)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very soft	0-2	0-2	0-2
soft	2-4	2-4	2-4
medium stiff	4-8	4-8	4-8
stiff	8-15	9-17	9-18
very stiff	15-30	17-39	18-42
hard	30-60	39-78	42-85
very hard	>60	>78	>85

DENSITY (Sands and Gravels)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very loose	0-4	0-5	0-7
loose	4-10	5-12	7-18
medium dense	10-30	12-37	18-51
dense	30-50	37-60	51-86
very dense	>50	>60	>86

* = 140 pound hammer dropped 30 inches

GRAIN SIZE

Term	Size (mm)	Size (inches)
Boulders	>300	>12
Cobbles	75 to 300	3 to 12
Coarse gravel	19 to 75	3/4 to 3
Fine gravel	4.75 to 19	3/16 to 3/4
Coarse sand	2.0 to 4.75	1/16 to 3/16
Medium sand	0.425 to 2.0	1/64 to 1/16
Fine sand	0.075 to 0.425	0.003 to 1/64
Silt / clay (fines)	<0.075	<0.003

SOIL TYPE MODIFIERS

Sand/Gravel (Silt) Term	% fines
trace	<5
little	5-15
some	15-30
clayey / silty	>30

Silt/Clay Term	% coarse
trace	<5
little	5-15
some	15-30
sandy / gravelly	>30

PLASTICITY: Nonplastic, Low, Medium, High

MOISTURE

Term	Field Test
Dry	Absence of moisture, dry to touch
Moist	Damp, does not wet palm
Wet	Visible Free Water

CEMENTATION

Term	Field Test
Weak	Crumbles or breaks with handling or slight finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

▽ Depth to first water (time and date)

▼ Depth to water after drilling (time and date)

MWH	Client: GE/UNC Project Number:	TEST PIT LOG FORM	TEST PIT No.: TP3 Sheet 1 of 1
Location: DILCO HILL Northing: 12 S: 0726668 Easting: : 3947995 Contractor: MWH Operator: J.VanPelt/S.DOWNEY	Dimensions: 1.0 Depth: 1.8' 1.0		Start Date: 14-NOV-2016 Finish Date: 14-NOV-2016 Total Depth: 1.8' Logged by: J.VanPelt/S.DOWNEY

Face

Depth	Sample Number	Lithology Symbol	Description	Remarks	Graphic
	T3	Qcl SP	Qcl Poorly-graded SAND with silt, brown (7.5YR 5/3), sl. moist, loose to medium dense fine to medium sand, (10%) coarse sand trace gravel, silt (10%) trace clay. at 0.9' becomes moist.	Excavated using shovel and post-hole digger	
			TOTAL DEPTH = 1.8 feet BGS.		

COARSE-GRAINED SOILS >50% passes #200 sieve	GRAVELS <50% coarse fraction passes #4 sieve	GRAVELS with little or no fines	Well-graded[3] gravels, gravel-sand mixtures, little or no fines	GW
			Poorly-graded[3] gravels, gravel-sand mixtures, little or no fines	GP
		GRAVELS with >15% fines	Silty gravels, poorly-graded[3] gravel-sand-silt mixtures	GM
			Clayey gravels, poorly-graded[3] gravel-sand-clay mixtures	GC
	SANDS <50% coarse fraction passes #4 sieve	SANDS with little or no fines	Well-graded[3] sands, gravelly sands, little or no fines	SW
			Poorly-graded[3] sands, gravelly sands, little or no fines	SP
		SANDS with >15% fines	Silty sands, poorly-graded[3] sand-gravel-silt mixtures	SM
			Clayey sands, poorly-graded[3] sand-gravel-clay mixtures	SC
FINE-GRAINED SOILS >50% passes #200 sieve	SILTS AND CLAYS liquid limit <50		Inorganic silts/very-fine sands, silty or clayey fine sands, silts with slight plasticity	ML
			Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	CL
			Organic silts and clays of low plasticity	OL
	SILTS AND CLAYS liquid limit >50		Inorganic silts, micaceous or diatomaceous fine sand or silt	MH
			Inorganic clays of high plasticity, fat clays	CH
			Organic silts and clays of medium to high plasticity	OH
HIGHLY ORGANIC SOILS			Peat, humus, swamp soils with high organic content	PT

[3]Note: Well-graded = poorly sorted; Poorly-graded = well sorted

CONSISTENCY (Silts and Clays)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very soft	0-2	0-2	0-2
soft	2-4	2-4	2-4
medium stiff	4-8	4-8	4-8
stiff	8-15	9-17	9-18
very stiff	15-30	17-39	18-42
hard	30-60	39-78	42-85
very hard	>60	>78	>85

DENSITY (Sands and Gravels)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very loose	0-4	0-5	0-7
loose	4-10	5-12	7-18
medium dense	10-30	12-37	18-51
dense	30-50	37-60	51-86
very dense	>50	>60	>86

* = 140 pound hammer dropped 30 inches

GRAIN SIZE

Term	Size (mm)	Size (inches)
Boulders	>300	>12
Cobbles	75 to 300	3 to 12
Coarse gravel	19 to 75	3/4 to 3
Fine gravel	4.75 to 19	3/16 to 3/4
Coarse sand	2.0 to 4.75	1/16 to 3/16
Medium sand	0.425 to 2.0	1/64 to 1/16
Fine sand	0.075 to 0.425	0.003 to 1/64
Silt / clay (fines)	<0.075	<0.003

SOIL TYPE MODIFIERS

Sand/Gravel (Silt) Term	% fines
trace	<5
little	5-15
some	15-30
clayey / silty	>30

Silt/Clay Term	% coarse
trace	<5
little	5-15
some	15-30
sandy / gravelly	>30

PLASTICITY

Nonplastic	
Low	
Medium	
High	

MOISTURE

Term	Field Test
Dry	Absence of moisture, dry to touch
Moist	Damp, does not wet palm
Wet	Visible Free Water

CEMENTATION

Term	Field Test
Weak	Crumbles or breaks with handling or slight finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

Depth to first water (time and date)

Depth to water after drilling (time and date)

MWH	Client: GEIDMC Project Number:	TEST PIT LOG FORM	TEST PIT No.: TP4 Sheet 1 of 1
Location: TP4 Dilco Hill Northing: 125 0726672 Easting: 3947958 UTM NAD83 Contractor: Operator:	Dimensions: 1 ft Depth: 1.1 ft 1ft		Start Date: 14-Nov-2016 Finish Date: 14-Nov-2016 Total Depth: 1.1 ft Logged by: S. Downey / J. Van Pelt

Face

Depth	Sample Number	Lithology Symbol	Description	Remarks	Graphic
0	TP4	Qcl CL	CLAY (CL) with sand and silt, light yellowish brown (10YR 6/4), dry, low to moderate plasticity, fine grained sand (10-15%), stiff to very stiff, caliche stringers from 0.3'-1.1' cobble (sandstone) TD = 1.1 ft bgs	Excavated using shovel and post-hole digger	
1					
2					

COARSE-GRAINED SOILS >50% passes #200 sieve	GRAVELS <50% coarse fraction passes #4 sieve	GRAVELS with little or no fines	Well-graded[1] gravels, gravel-sand mixtures, little or no fines	GW
		GRAVELS with little or no fines	Poorly-graded[1] gravels, gravel-sand mixtures, little or no fines	GP
		GRAVELS with >15% fines	Silty gravels, poorly-graded[1] gravel-sand-silt mixtures	GM
			Clayey gravels, poorly-graded[1] gravel-sand-clay mixtures	GC
	SANDS <50% coarse fraction passes #4 sieve	SANDS with little or no fines	Well-graded[1] sands, gravelly sands, little or no fines	SW
			Poorly-graded[1] sands, gravelly sands, little or no fines	SP
		SANDS with >15% fines	Silty sands, poorly-graded[1] sand-gravel-silt mixtures	SM
			Clayey sands, poorly-graded[1] sand-gravel-clay mixtures	SC
FINE-GRAINED SOILS >50% passes #200 sieve	SILTS AND CLAYS liquid limit <50		Inorganic silts/very-fine sands, silty or clayey fine sands, silts with slight plasticity	ML
			Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	CL
			Organic silts and clays of low plasticity	OL
	SILTS AND CLAYS liquid limit >50		Inorganic silts, micaceous or diatomaceous fine sand or silt	MH
			Inorganic clays of high plasticity, fat clays	CH
			Organic silts and clays of medium to high plasticity	OH
	HIGHLY ORGANIC SOILS		Peat, humus, swamp soils with high organic content	PT

CONSISTENCY (Silts and Clays)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very soft	0-2	0-2	0-2
soft	2-4	2-4	2-4
medium stiff	4-8	4-8	4-8
stiff	8-15	9-17	9-18
very stiff	15-30	17-39	18-42
hard	30-60	39-78	42-85
very hard	>60	>78	>85

DENSITY (Sands and Gravels)

Term	Blows/ft* (SPT) 1.4"ID	2.0"ID	(modCAL) 2.5"ID
very loose	0-4	0-5	0-7
loose	4-10	5-12	7-18
medium dense	10-30	12-37	18-51
dense	30-50	37-60	51-86
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* = 140 pound hammer dropped 30 inches

GRAIN SIZE

Term	Size (mm)	Size (inches)
Boulders	>300	>12
Cobbles	75 to 300	3 to 12
Coarse gravel	19 to 75	3/4 to 3
Fine gravel	4.75 to 19	3/16 to 3/4
Coarse sand	2.0 to 4.75	1/16 to 3/16
Medium sand	0.425 to 2.0	1/64 to 1/16
Fine sand	0.075 to 0.425	0.003 to 1/64
Silt / clay (fines)	<0.075	<0.003

SOIL TYPE MODIFIERS

Sand/Gravel (Silt) Term	% fines
trace	<5
little	5-15
some	15-30
clayey / silty	>30

Silt/Clay Term	% coarse
trace	<5
little	5-15
some	15-30
sandy / gravelly	>30

[1]Note: Well-graded = poorly sorted; Poorly-graded = well sorted

PLASTICITY: Nonplastic, Low, Medium, High

MOISTURE

Term	Field Test
Dry	Absence of moisture, dry to touch
Moist	Damp, does not wet palm
Wet	Visible Free Water

CEMENTATION

Term	Field Test
Weak	Crumbles or breaks with handling or slight finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

Depth to first water (time and date)

Depth to water after drilling (time and date)